

FLENDER Standard Couplings

Catalog MD 10.1 · 2008



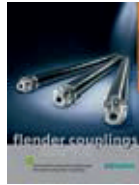
FLENDER Couplings

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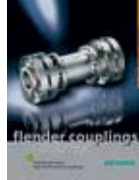
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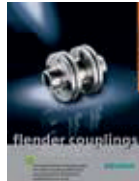


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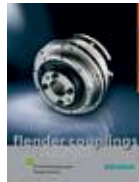
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FLENDER Couplings Standard Couplings

Catalog MD 10.1 · 2008



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The products contained in this catalog can also be found in the e-Catalog CA 01.
Order No.:
E86060-D4001-A110-C6-7600 (CD-ROM)
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Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.

FLENDER Standard Couplings

Introduction

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The mechanical drive train comprises individual units such as motor, gear unit and driven machine. The coupling connects these component assemblies.

As well as the transmission of rotary motion and torque, other requirements may be made of the coupling.

- Compensation for shaft misalignment where restorative forces are low
- Compensation for shaft displacement with low restorative forces
- Control of characteristic angular vibration frequency and damping
- Interruption or limitation of torque
- Noise insulation, electrical insulation

Couplings are frequently chosen after the machines to be connected have already been selected. Thanks to a large number of different coupling assembly options, specified marginal conditions for clearance and connection geometry can be met from the standard range. The coupling also performs secondary functions, e.g. providing a brake disk or brake drum for operating or blocking brakes, devices to record speed or the attachment of sprockets or pulleys.

Couplings are divided into two main groups, couplings and clutches.

Clutches interrupt or limited the transmissible torque. The engaging and disengaging forces on externally operated clutches are introduced via a mechanically, electrically, hydraulically or pneumatically operating mechanism. Overload, centrifugal or

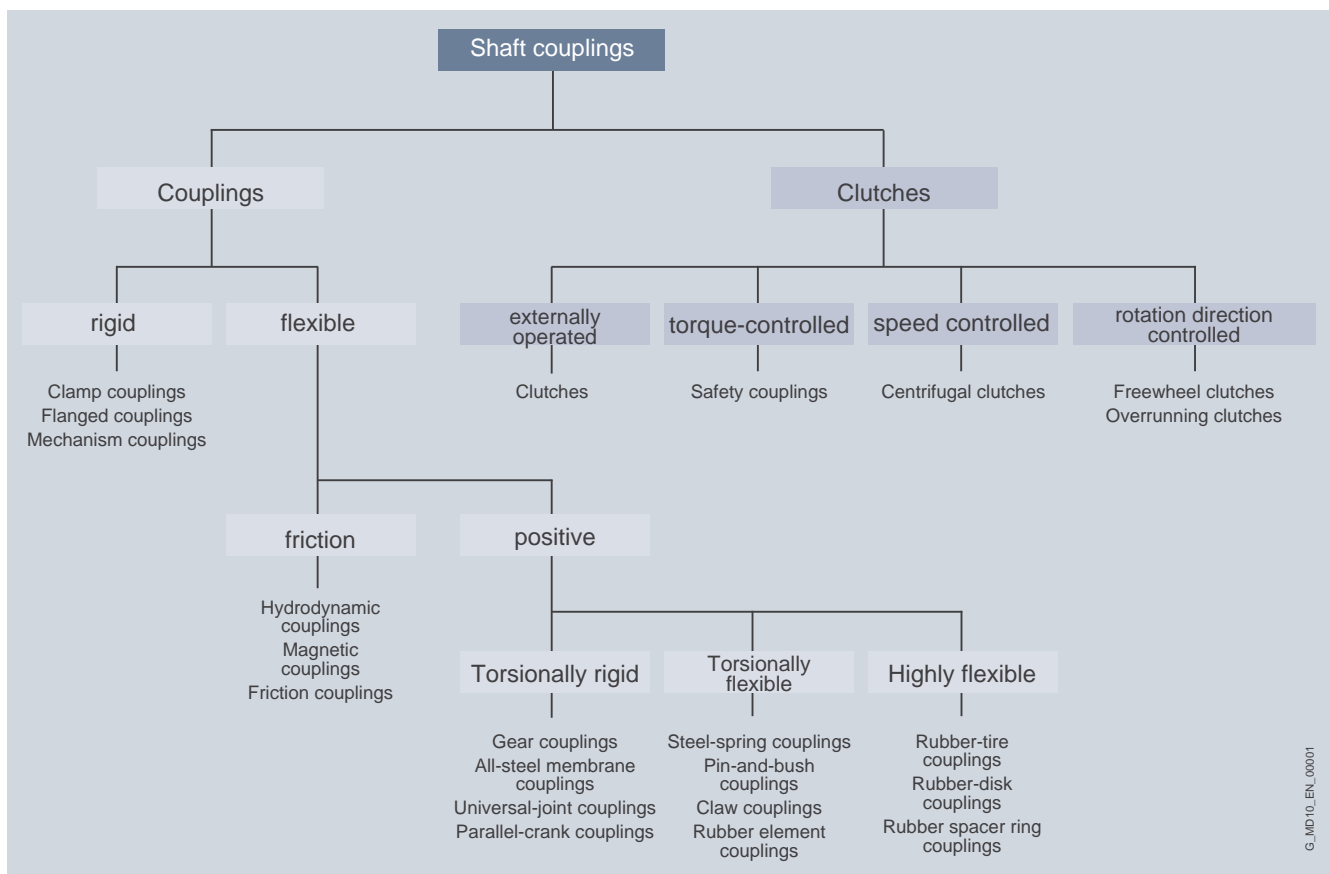
freewheel clutches draw their engaging energy from the transmitted output.

Rigid couplings, designed as clamp, flanged or mechanism couplings, connect machines which must not undergo any shaft misalignment. Hydrodynamic couplings, often also called fluid or Föttinger couplings, are used as starting couplings in drives with high mass moments of inertia of the driven machine. In drive technology very often flexible, positive couplings, which may be designed to be torsionally rigid, torsionally flexible or highly flexible, are used.

Torsionally rigid couplings are designed to be rigid in a peripheral direction and flexible in radial and axial directions. The angle of rotation and torque are conducted through the coupling without a phase shift.

Torsionally flexible couplings have resilient elements usually manufactured from elastomer materials. Using an elastomer material with a suitable ShoreA hardness provides the most advantageous torsional stiffness and damping for the application. Shaft misalignment causes the resilient elements to deform.

Highly flexible couplings have large-volume (elastomer) resilient elements of low stiffness. The angle of rotation and torque are conducted through the coupling with a considerable phase shift.



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FLENDER Standard Couplings

Introduction

Notes

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Technical Information



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FLENDER Standard Couplings

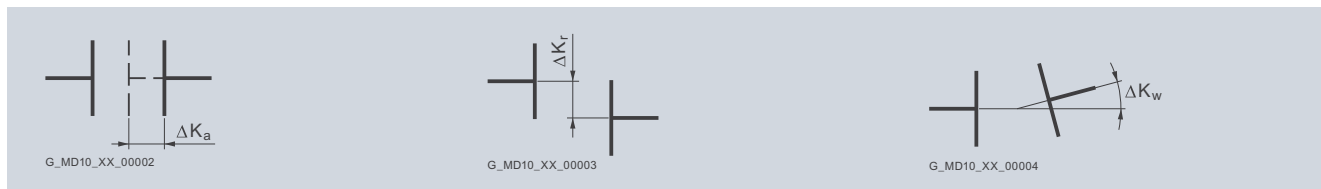
Technical Information

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Shaft misalignment

Shaft misalignment is the result of displacement during assembly and operation and, where machines constructed with two radial bearings each are rigidly coupled, will cause high loads being placed on the bearings. Elastic deformation of base frame, foundation and machine housing will lead to shaft misalignment which cannot be prevented, even by precise alignment.

Depending on the direction of the effective shaft misalignment a distinction is made between:



Axial misalignment

Radial misalignment

Angular misalignment

Couplings can be categorized into one of the following groups:

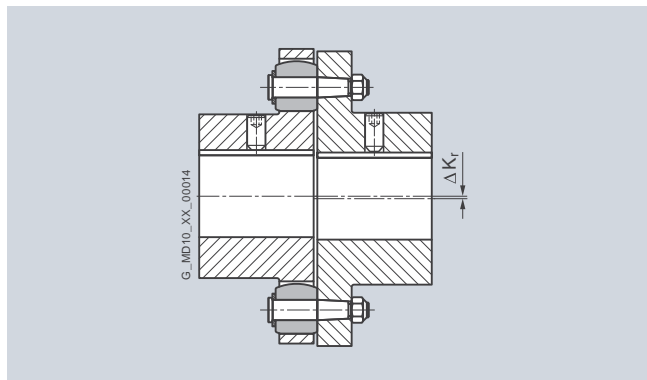
• Single-joint couplings

Couplings with flexible elements mainly made of elastomer materials. Shaft misalignment results in deformation of the elastomer elements. The elastomer elements can absorb shaft misalignment as deformations in an axial, radial and angular direction. The degree of permissible misalignment depends on the coupling size, the speed and the type of elastomer element.

Single-joint couplings do not require an adapter and are therefore short versions.

• Example:

In the case of a RUPEX RWN 198 coupling with an outer diameter of 198 mm and a speed of 1500 rpm, the permitted radial misalignment is $\Delta K_r = 0.3$ mm.



Restorative forces

Shaft misalignment causes restorative forces to act on the coupled shafts which are determined by the displacement stiffness of the coupling. These restorative forces are frequently comparatively weak and can usually be disregarded. Where bearings or shafts are under heavy loads, the restorative forces should be taken into account.

Furthermore, because individual components of the drive train heat up differently during operation, heat expansion of the machine housings causes shaft misalignment.

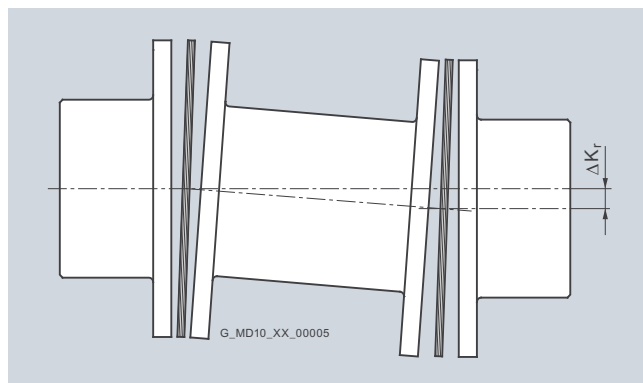
Poorly aligned drives are often the cause of seal, rolling bearing or coupling failure. Alignment should be carried out by specialist personnel in accordance with FLENDER operating instructions.

• Two-joint couplings

Two-joint couplings are always designed with an adapter. The two joint levels are able to absorb axial and angular misalignment. Radial misalignment occurs via the gap between the two joint levels and the angular displacement of the joint levels. The permitted angular misalignment per joint level is frequently about 0.5° . The permitted shaft misalignment of the coupling can be adjusted via the length of the adapter. If there are more than two joint levels, it is not possible to define the position of the coupling parts relative to the axis of rotation. (The less frequently used parallel-crank couplings are an exception).

• Example:

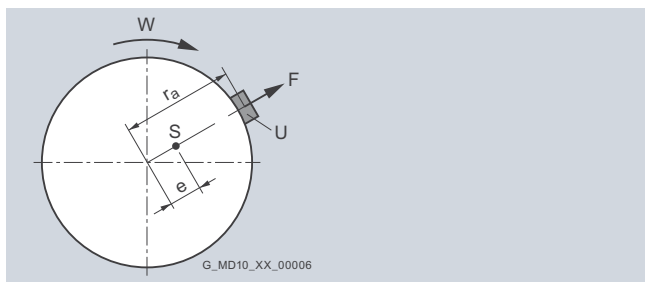
ARPEX ARS-6 NEN 210-6 coupling with a shaft distance of 160 mm with a permitted radial misalignment of $\Delta K_r = 1.77$ mm (angle per joint level 0.7°).



Balancing

Because of primary shaping processes and machining, the coupling components are manufactured with a mass distribution about the axis of rotation of the motor, gear unit or driven machine which is not always ideal.

Balancing means improving the mass distribution of a rotating body so that it rotates on its bearings with a sufficiently limited effect of free centrifugal forces.



The imbalance force increases linearly with the distance between the center of gravity of the body and the axis of rotation, the weight of the body and the rotor speed squared.

F = imbalance force

S = center of gravity of the body

e = distance of center of gravity of body from the pivot axis

In the case of rotating unbalanced coupling parts rotary, imbalance forces develop which impose loads on the bearings of the machine shafts and excite vibration. High vibration values on drives are frequently detected as early as initial start-up if the balance of the machine shafts or the mounted coupling parts is insufficient or the balancing specifications are incompatible. The balance condition of the coupling can be measured on balancing machines. By adding or drilling away material, a balance condition which meets the requirements can be achieved.

Balance quality levels

The so-called quality level G to DIN ISO 1940 indicates a range of permitted residual imbalance from zero up to an upper limit. Applications can be grouped on the basis of similarity analysis. For many applications a coupling balance quality of $G 16$ is sufficient. On drives susceptible to vibration the balance quality should be $G 6.3$. Only in special cases is a better balance quality required.

Single- and two-level balancing

For discoid bodies (such as brake disks, coupling hubs) so-called single-level balancing is carried out. The mass compensation for the imbalance is undertaken at a single level only. For historical reasons single-level balancing is also known as static balancing. On long bodies such as adapters mass compensation must be implemented at two levels to reduce the couple imbalance. Two-level balancing is carried out while the rotor body is rotating. Historically, this is known as dynamic balancing.

Balancing standard in accordance with DIN ISO 8821

Besides the required balance quality, it is necessary to set standards which define how the mass of the parallel key is to be taken into consideration when balancing. In the past, motor rotors have frequently been balanced in accordance with the full parallel key standard. The "appropriate" balance condition of the coupling hub was described as "balancing with open keyway" or "balancing after keyseating". Today it is usual for the motor rotor, as well as the gear unit and driven machine shaft, to be balanced in accordance with the half parallel key standard.

Full parallel key standard

The parallel key is inserted in the shaft keyway, then balancing is carried out. The coupling hub must be balanced without parallel key after keyseating. Marking of shaft and hub with "F" (for "full").

Half parallel key standard

The balancing standard normally applied today. Before balancing, a half parallel key is inserted in the shaft and another in the coupling hub. Alternatively, balancing can be carried out before cutting the keyway. The balanced parts must be marked with an "H". This marking can be dispensed with if it is absolutely clear which parallel key standard has been applied.

No parallel key standard

Balancing of shaft and coupling hub after keyseating, but without parallel key. Not used in practice. Marking of shaft and hub with "N" (for "no").

The length of the parallel key is determined by the shaft keyway. Coupling hubs may be designed considerably shorter than the shaft. To prevent imbalance forces caused by projecting parallel key factors when balancing in accordance with the half parallel key standard in the case of applications with high balancing quality requirements, grooved spacer rings can be fitted or stepped parallel keys used.

FLENDER Standard Couplings

Technical Information

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FLENDER Balancing Standard

The balancing quality level, together with the operating speed, results in the maximum permissible eccentricity of the center of gravity of the coupling or the coupling subassembly. In the FLENDER product code only the maximum eccentricity of the center of gravity of the coupling is to be specified.

The procedure is as follows:

Operating speed and required balancing quality level are known from the application. Using these values, the required eccentricity of the center of gravity can be calculated from the graph below or the specified formula context. The eccentricity of the center of gravity of the coupling must be less than the required eccentricity of the center of gravity to achieve the required balancing quality. The associated product code must be stated in the order; only if standard balancing has been selected is the product code to be dispensed with

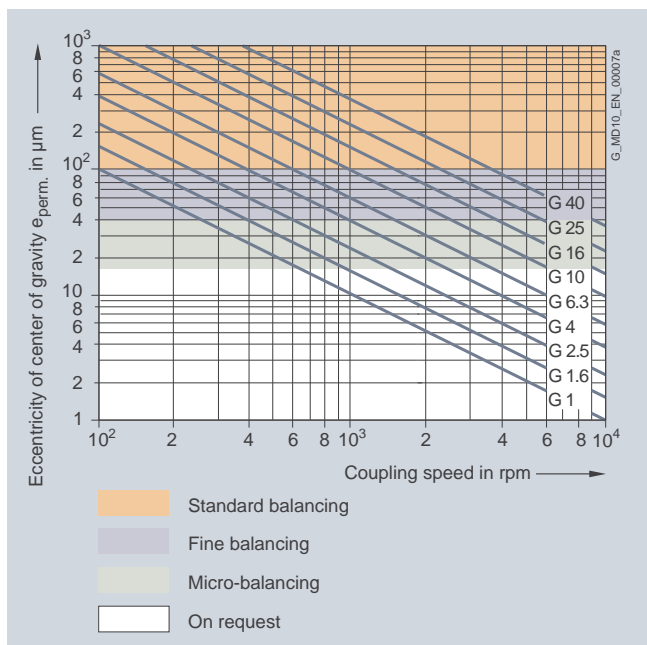
$$e_{perm.} = 9600 \cdot \frac{G}{n}$$

$$e_{coupl} \leq e_{perm.}$$

permitted:

Eccentricity of center of gravity of the coupling	$e_{perm.}$	in μm
Balancing quality level	G	in mm/s
Coupling speed	n	in rpm

Eccentricity of center of gravity of coupling e_{coupl}	FLENDER balancing quality	Order code
maximum 100 μm	standard balancing	without specification
maximum 40 μm	fine balancing	W02
maximum 16 μm	micro-balancing	W03
better than 16 μm	special balancing	on request



Example:

Coupling speed = 1450 rpm
required balancing quality level G 6.3

$$e_{perm.} = 9600 \cdot \frac{G}{n} = 9600 \cdot \frac{6.3}{1450} \mu\text{m}$$

Thus, the required eccentricity of center of gravity is 41.7 μm . The fine balancing with a maximum eccentricity of center of gravity of 40 μm fulfills this requirement; therefore, the order code W02 has to be specified when ordering.

For many applications the following balancing quality recommendation applies:

Coupling	Standard balancing $v = DA \cdot n/19100$	Fine balancing
Short version with $LG \leq 3 \times DA$	$v \leq 30 \text{ m/s}$	$v > 30 \text{ m/s}$
Long version with $LG > 3 \times DA$	$v \leq 15 \text{ m/s}$	$v > 15 \text{ m/s}$

Peripheral speed	v	in m/s
Coupling outer diameter	DA	in mm
Coupling speed	n	in rpm
Coupling length	LG	in mm

The following standards on balancing must be observed:

- couplings are balanced in subassemblies.
- hub parts without finished bore are unbalanced.
- the number of balancing levels (one- or two-level balancing) is specified by FLENDER.
- without special specification balancing is done in accordance with the half-parallel-key standard. Balancing in accordance with the full-parallel-key standard must be specified in the order number.
- for FLUDEX couplings special balancing standards specified in Section 13 apply.
- ARPEX couplings in standard balancing quality are unbalanced. Thanks to steel components machined all over and precisely guided adapters the balancing quality of standard balancing is nearly always adhered to.

Shaft-hub connections

The bore and the shaft-hub connection of the coupling are determined by the design of the machine shaft. In the case of IEC standard motors, the shaft diameters and parallel key connections are specified in accordance with DIN EN 50347. For diesel motors, the flywheel connections are frequently specified in accordance with SAE J620d or DIN 6288. Besides the very widely used connection of shaft and hub with parallel keys to DIN 6885 and cylindrically bored hubs, couplings with Taper clamping bushes, clamping sets, shrink-fit connections and splines to DIN 5480 are common.

The form stability of the shaft/hub connection can only be demonstrated when shaft dimensions and details of the connection are available. The coupling torques specified in the tables of power ratings of the coupling series do not apply to the shaft-hub connection unrestrictedly.

In the case of the shaft-hub connection with parallel key, the coupling hub must be axially secured, e.g. with a set screw or end washer. The parallel key must be secured against axial displacement in the machine shaft.

All FLENDER couplings with a finished bore and parallel keyway are designed with a set screw. Exceptions are some couplings of the FLUDEX series, in which end washers are used. During assembly, Taper clamping bushes are frictionally connected to the machine shaft.

Assembly

Assembly, start-up, maintenance and servicing of the coupling are described in the operating instructions.

Contact protection

Couplings are rotating components which can pose a risk to the environment. FLENDER prescribes fitting couplings with a suitable contact guard, also called a coupling guard in the operating instructions. The contact guard, must provide a firm cover to protect against contact with the rotating coupling. The coupling must also be protected against blows from objects striking it. The coupling guard must enable the coupling to be adequately ventilated. The following guidelines give information on designing the contact guard: 2006/42/EC EC Machinery Directive; EN 13463-1 Section 13.3.2.1; EN 13463-1 Section 7.4; EN 13463-1 Section 8.1.

Maintenance

All-steel membrane couplings of the ARPEX series require no maintenance. If the operating and mounting conditions have been adhered to, only regular visual inspection is required.

Elastomer elements, elastomer seals and lubricants are subject to wear through ageing and loads. To avoid damage to the coupling or failure of the drive, the ZAPEX, N-EUPEX, N-EUPEX DS, RUPEX, BIPEX, ELPEX, ELPEX-S, ELPEX-B and FLUDEX series must be maintained in accordance with the operating instructions.

On gear couplings, the lubricant must be changed at regular intervals.

On flexible or highly flexible couplings, the torsional backlash or the torsion angle must be checked at regular intervals under load. If a limit value is exceeded, the elastomer element must be replaced. It is very important to maintain couplings which are operated in a potentially explosive environment, as couplings which are not maintained can become ignition sources.

Corrosion protection

Depending on the environmental conditions, suitable corrosion protection must be specified for the coupling. Unless otherwise specified in the order, steel and cast iron surfaces are shipped with a simple preservative.

Ambient conditions

Because of the environment, the coupling has to meet a large number of additional requirements. Couplings must be as suitable for use in a potentially explosive environment as for use at a high or low ambient temperature. The environment may be defined as chemically aggressive or be subject to laboratory conditions or requirements of food manufacture.

ATEX and EC Machinery Directive

Wherever a potentially explosive environment cannot be ruled out, the machinery used must meet special conditions in order to prevent the outbreak of fire as far as possible. Within the European Union, Directive 94/9/EC applies to these applications. This directive, also called ATEX 95, harmonizes the individual states' legal requirements for explosion prevention and clearly defines the procedure for checking and circulating machines and parts. Whether or not a machine is used in a potentially explosive environment, the manufacturer is required under EC Machinery Directive 98/37/EC to assess and as far as possible prevent hazards which may arise from his product.

The operator has an obligation to ascertain whether an environment is potentially explosive. Details of this are laid down in Directive 1999/92/EC, also known as ATEX 137.

The manufacturer is responsible for ensuring that the product is safe as defined in the EC Machinery Directive and conforms to Directive 94/9/EC if the EX requirement is specified by the operator.

The drive train mostly comprises individual pieces of equipment which are put together to form a subassembly. If the individual pieces of equipment, such as motor, coupling, gear unit or driven machine conform to Directive 94/9/EC, the manufacturer of the overall unit can limit the risk assessment to the additional hazards which arise from the combination of different individual pieces of equipment. The hazards which can arise from the individual pieces of equipment are assessed by the relevant suppliers.

All FLENDER couplings conform to the requirements of the EC Machinery Directive 98/37/EC.

The coupling series suitable for use in potentially explosive environments are marked EX in the catalog.

Coupling behavior under overload conditions

Behavior under overload where the torque is considerably above the limits of use of the coupling concerned is determined by the engineering design of the coupling series.

The ZAPEX, ARPEX, N-EUPEX, RUPEX and BIPEX coupling series can withstand overloads until the breakage of metal parts. These coupling series are designated as fail-safe. Coupling types which can withstand overload, i.e. fail-safe types, are used e.g. in crane systems.

The N-EUPEX DS, ELPEX-B, ELPEX-S and ELPEX coupling series throw overload. The elastomer element of these couplings is irreparably damaged without damage to metal parts when subjected to excessive overload. These coupling series are designated as non-fail-safe. The types that fail can be fitted with a fail-safe device. This component enables emergency operation, even after the rubber element of the coupling has been irreparably damaged.

The fluid couplings of the FLUDEX series withstand a load for a short time. Persistent overload causes the FLUDEX coupling to heat up beyond limits, causing the fuse to operate and so emptying the coupling and interrupting the torque transmission.

Torsional and bending vibrations

On drives which are prone to torsional and bending vibrations, calculations such as natural frequency calculations, torsional vibration simulations or bending vibration calculations are necessary.

The drive train may, depending on complexity, be regarded as a two-mass vibration-generating system or N-mass vibration-generating system. The vibration-generating masses are defined by the rotating bodies and the couplings by the coupling stiffnesses and shaft stiffnesses. The effect of torsional vibration excitations on the behavior of the system is calculated.

Torsional vibration excitations may occur during the starting of an asynchronous motor, during a motor short circuit or in diesel engine drives. Bending vibrations may be critical if the coupling is insufficiently balanced and/or at an operating speed close to the critical speed.

The details needed for calculating torsional vibration are specified in the coupling catalog:

- Dynamic torsional stiffness
- Damping (specification of the damping coefficient ψ or Lehr's damping $D = \psi/4\pi$).
- Mass moment of inertia of the coupling halves.

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Standards

Machines

2006/42/EC	EC Machinery Directive (formerly: 98/9/EC)
94/9/EC	ATEX 95 Directive – Manufacturer – and ATEX Guideline to Directive 94/9/EC
1999/92/EC	ATEX 137 Directive – Operator – and ATEX Guideline to Directive 199/92/EC
DIN EN 13463	Non-electric equipment for use in potentially explosive areas
DIN EN 1127	Potentially explosive atmospheres, explosion protection
DIN EN 50347	General-purpose three-phase induction motors having standard dimensions and output data

Couplings

DIN 740	Flexible shaft couplings Part 1 and Part 2
VDI Guideline 2240	Shaft couplings - Systematic subdivision according to their properties VDI Technical Group Engineering Design 1971
API 610	Centrifugal Pumps for Petroleum, Chemical and Gas Industry Services
API 670	Machinery Protection System
API 671	Special Purpose Couplings for Petroleum, Chemical and Gas Industry Services
ISO 10441	Petroleum, petrochemical and natural gas industries – Flexible couplings for mechanical power transmission-special-purpose applications

Balancing

DIN ISO 1940	Requirements for the balancing quality of rigid rotors
DIN ISO 8821	Mechanical vibrations; standard governing the type of parallel key during balancing of shafts and composite parts

Shaft-hub connections

DIN 6885	Driver connections without taper action – parallel keys – keyways
SAE J620d	Flywheels for industrial engines ...
DIN 6288	Internal-combustion piston engines Connection dimensions and requirements for flywheels and flexible coupling
ASME B17.1	Keys and keyseats
DIN EN 50347	General-purpose three-phase induction motors with standard dimensions and output data
BS 46-1:1958	Keys and keyways and taper pins Specification

Formula symbols

Key to the formula symbols

Name	Symbol	Unit	Explanation
Torsional stiffness, dynamic	C_{Tdyn}	Nm/rad	For calculating torsional vibration
Excitation frequency	f_{err}	Hz	Excitation frequency of motor or driven machine
Moment of inertia	J	kgm ²	Moment of inertia of coupling sides 1 and 2
Axial misalignment	ΔK_a	mm	Axial misalignment of the coupling halves
Radial misalignment	ΔK_r	mm	Radial misalignment of the coupling halves
Angular misalignment	ΔK_w	°	Angular misalignment of the coupling halves
Service factor	FB		Factor expressing the real coupling load as a ratio of the nominal coupling load
Frequency factor	FF		Factor expressing the frequency dependence of the fatigue torque load
Temperature factor	FT		Factor taking into account the reduction in strength of flexible rubber materials at a higher temperature
Weight	m	kg	Weight of the coupling
Rated speed	n_N	rpm	Coupling speed
Maximum coupling speed	n_{Kmax}	rpm	Maximum permissible coupling speed
Rated power	P_N	kW	Rated output on the coupling, usually the output of the driven machine
Rated torque	T_N	Nm	Rated torque as nominal load on the coupling
Fatigue torque	T_W	Nm	Amplitude of the dynamic coupling load
Maximum torque	T_{max}	Nm	More frequently occurring maximum load, e.g. during starting
Overload torque	T_{OL}	Nm	Very infrequently occurring maximum load, e.g. during short circuit or blocking conditions
Rated coupling torque	T_{KN}	Nm	Torque which can be transmitted as static torque by the coupling over the period of use.
Maximum coupling torque	T_{Kmax}	Nm	Torque which can be frequently transmitted (up to 25 times an hour) as maximum torque by the coupling.
Coupling overload torque	T_{KOL}	Nm	Torque which can very infrequently be transmitted as maximum torque by the coupling.
Fatigue coupling torque	T_{KW}	Nm	Torque amplitude which can be transmitted by the coupling as dynamic torque at a frequency of 10 Hz over the period of use.
Resonance factor	V_R		Factor specifying the torque increase at resonance
Temperature	T_a	°C	Ambient temperature of the coupling in operation
Damping coefficient	ψ	Psi	Damping parameter

Coupling Preselection and Options



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3/2	Selection and ordering data
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3/6	Selection and ordering data
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3/7	Coupling load under maximum and overload conditions
3/7	Coupling load due to dynamic torque load
3/7	Checking the maximum speed
3/7	Checking permitted shaft misalignment
3/7	Checking bore diameter, mounting geometry and coupling design
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Selection of the coupling series

Selection and ordering data

The coupling series is frequently determined by the driven machine and the design of the drive train. Common selection criteria are listed below and assigned to coupling properties, which are used to select the coupling series. Additionally, the price of the coupling and availability are important criteria for determining the coupling series to be used.

The FLUDEX series operates positively and transmits the torque with the aid of a flowing oil or water filling. FLUDEX couplings are used to reduce starting and/or overload torques. During starting, the motor may, for example, run up within a very short time; because of the FLUDEX coupling, the drive train with the driven machine may accelerate after a delay and without increased torque load.

The FLUDEX coupling cannot compensate for shaft misalignment and is therefore designed in combination with a displacement coupling, a cardan shaft or a belt drive. The displacement coupling may be selected in accordance with the criteria described below.

Selection criterion		ZAPEX	ARPEX	N-EUPEX	N-EUPEX DS	RUPEX	BIPEX	ELPEX-B	ELPEX-S	ELPEX
Torque range	Rated coupling torque T_{KN} in Nm	850 ... 7200000	92 ... 1450000	19 ... 62000	19 ... 21200	200 ... 1300000	13.5 ... 3700	24 ... 14500	330 ... 63000	1600 ... 90000
Speed range	Peripheral speed $v_{max} = DA \cdot n_{max}/19100$	60	100	36	36	60	36	35	66	60
Torque load	uniform									
	non uniform									
	rough			-	-		-			
	very rough			-	-	-	-			
Installation and alignment	Rigid installation, well aligned									
	Rigid installation, roughly aligned			-	-	-	-		-	
	Flexible installation			-	-	-	-		-	
Torsional stiffness	Torsionally rigid			-	-	-	-	-	-	-
	Torsionally flexible	-						-	-	-
	Highly flexible	-	-	-	-	-	-			
Torque transmission	Free of torsional backlash	-		-	-		-		-	
	Low torsional backlash		-	-	-			-		-
	Overload withstand capability									
Assembly	Plug-in assembly		-					-		-
	with Taper clamping bushes	-				-				-
Maintenance	Wear parts easily dismountable						-			
	Maintenance-free	-		-		-	-	-	-	-
	Low-maintenance - interval 1 year		-							
Environment	ATEX 94/9/EC Approval						-	-		-
	Operating temperature range	-20 ... +80 °C	-40 ... +280 °C	-50 ... +100 °C	-30 ... +80 °C	-50 ... +100 °C	-30 ... +80 °C	-50 ... +70 °C	-40 ... +120 °C	-40 ... +80 °C
	Chemically aggressive									
Coupling material	Cast iron	-	-							
	Steel			-	-		-			
	Stainless steel	-		-	-		-		-	-
Add-on parts / types	Adapter						-			
	Brake disk				-		-			
	Brake drum				-		-			
	Axial backlash limiter			-	-		-	-		
	Shiftgear			-	-		-	-		
	Flange type				-		-			
	Flange to SAE J620d				-		-			

	Standard
	On request
-	Not possible

FLENDER Standard Couplings

Selection of the coupling series

Typical coupling solutions for different example applications

The specified application factors are recommendations; regulations, rules and practical experience take priority as assessment criteria.

No application factor need be taken into account with FLUDEX couplings. In the case of highly flexible couplings of the ELPEX, ELPEX-S and ELPEX-B series, deviating application factors are stated in the product descriptions.



Example applications	Application factor FB	FLUDEX	ZAPEX	ARPEX	N-EUPEX	RUPEX	BIPEX	ELPEX-B	ELPEX-S	ELPEX
Electric motor without gear unit										
Centrifugal pumps	1.0 ... 1.5								-	-
Piston pumps	1.5 ... 2.0				-		-			
Vacuum pumps	1.5 ... 1.75						-			
Fans	1.5 ... 2.0						-			
Blowers	1.5 ... 2.0						-			
Frequency converters / generators	1.25 ... 1.75						-		-	
Reciprocating compressors	1.75 ... 2.5				-		-			
Screw-type compressors	1.5 ... 1.75						-			
Internal-combustion engine without gear unit										
Generators	1.75 ... 2.5		-	-			-			
Pumps	1.5 ... 1.75		-				-			
Fans	1.75 ... 2.5		-		-		-			
Hydraulic pumps, excavators, construction machines	1.5 ... 1.75									-
Compressors / screw-type compressors	1.5 ... 1.75						-			
Agricultural machinery	1.75 ... 2.5						-			
Other										
Turbine gear units	1.5 ... 1.75				-	-	-	-	-	-
Hydraulic motor - gear unit	1.25 ... 1.5	-								
Electric motor with gear unit										
Chemical industry										
Extruders	1.5 ... 2.0	-					-			
Pumps - centrifugal pumps	1.0 ... 1.5								-	-
Pumps - piston pumps	1.75 ... 2.5						-			
Pumps - plunger pumps	1.5 ... 1.75						-			
Reciprocating compressors	1.75 ... 2.5						-			
Calenders	1.5 ... 1.75						-			-
Kneaders	1.75 ... 2.5						-			
Cooling drums	1.25 ... 1.5							-	-	-
Mixers	1.25 ... 1.5							-	-	-
Stirrers	1.25 ... 1.5								-	-
Toasters	1.25 ... 1.5	-					-		-	-
Drying drums	1.25 ... 1.5						-		-	-
Centrifuges	1.25 ... 1.5								-	-
Crushers	1.5 ... 2.5						-		-	
Power generation and conversion										
Compressed air, reciprocating compressors	1.75 ... 2.5				-		-			
Compressed air, screw-type compressors	1.25 ... 1.5	-								
Air - Blowers	1.5 ... 1.75									
Air - Cooling tower fans	1.5 ... 1.75						-			
Air - Turbine blowers	1.5 ... 1.75	-			-			-	-	-
Generators, converters	1.25 ... 1.5						-	-	-	-
Welding generators	1.25 ... 1.5	-					-	-	-	-
Metal production, iron and steel works										
Plate tilters	1.5 ... 2.0	-			-		-		-	
Ingot pushers	1.75 ... 2.5	-			-		-		-	
Slabbing mill	1.75 ... 2.5	-			-		-		-	
Coiling machines	1.5 ... 2.0	-			-		-		-	
Roller straightening machines	1.5 ... 2.0	-			-		-		-	
Roller tables	1.75 ... 2.5	-			-		-		-	
Shears	1.75 ... 2.0	-			-		-		-	
Rollers	1.75 ... 2.0	-			-		-		-	

Preferred solution
 Possible, less common
 Uncommon

FLENDER Standard Couplings

Selection of the coupling series

Example applications	Application factor FB	FLUDEX	ZAPEX	ARPEX	N-EUPEX	RUPEX	BIPEX	ELPEX-B	ELPEX-S	ELPEX
Metal working machines										
Plate bending machines	1.5 ... 2.0	-			-		-		-	
Plate straightening machines	1.5 ... 2.0	-			-		-		-	
Hammers	1.75 ... 2.5	-			-		-		-	
Planing machines	1.75 ... 2.5	-			-		-		-	
Presses, forging presses	1.75 ... 2.0	-			-		-		-	
Shears	1.5 ... 2.0	-			-		-		-	
Grinding machines	1.25 ... 1.75	-			-		-		-	
Punches	1.5 ... 2.0	-			-		-		-	
Machine tools: Main drives	1.5 ... 1.75	-			-	-	-	-	-	-
Machine tools: Auxiliary drives	1.25 ... 1.5	-			-	-		-	-	-
Food industry										
Filling machines	1.25 ... 1.5	-			-	-	-	-	-	-
Kneading machines	1.5 ... 2.0				-		-	-	-	-
Mashers	1.5 ... 2.0				-		-	-	-	-
Sugar cane production	1.5 ... 2.0						-	-	-	-
Production machines										
Construction machines, hydraulic pumps	1.25 ... 1.5	-			-			-	-	-
Construction machines, traversing gears	1.5 ... 1.75									
Construction machines, suction pumps	1.5 ... 1.75	-			-		-		-	-
Construction machines, concrete mixers	1.5 ... 1.75				-		-			
Printing machines	1.25 ... 1.5	-					-	-	-	-
Woodworking - barking drums	1.5 ... 2.0						-			
Woodworking - planing machines	1.5 ... 2.0	-					-			
Woodworking - reciprocating saws	1.5 ... 1.75	-					-			
Grinding machines	1.5 ... 1.75	-					-		-	-
Textile machines - winders	1.5 ... 1.75	-					-		-	-
Textile machines - printing machines	1.5 ... 1.75	-					-		-	-
Textile machines - tanning vats	1.5 ... 1.75	-					-		-	-
Textile machines - shredders	1.5 ... 1.75	-			-		-		-	
Textile machines - looms	1.5 ... 1.75	-			-		-		-	-
Packaging machines	1.5 ... 1.75	-						-	-	-
Brick molding machines	1.75 ... 2.0	-			-		-		-	
Transport and logistics										
Passenger transport - elevators	1.5 ... 2.0	-			-		-	-	-	-
Passenger transport - escalators	1.5 ... 2.0	-			-		-	-	-	-
Conveyor systems - bucket elevators	1.5 ... 2.0						-	-	-	-
Conveyor systems - hauling winches	1.5 ... 2.0						-	-	-	-
Conveyor systems - belt conveyors	1.5 ... 2.0						-	-	-	-
Conveyor systems - endless-chain conveyors	1.5 ... 2.0				-		-	-	-	-
Conveyor systems - circular conveyors	1.5 ... 2.0						-	-	-	-
Conveyor systems - screw conveyors	1.5 ... 2.0						-	-	-	-
Conveyor systems - inclined hoists	1.5 ... 2.0				-		-	-	-	-
Crane traversing gear	1.5 ... 2.0	-					-	-	-	-
Hoisting gear	1.5 ... 2.0	-			-		-	-	-	-
Crane lifting gear	2.0 ... 2.5	-			-		-	-	-	-
Crane traveling gear	1.5 ... 1.75	-			-		-	-	-	-
Crane slewing gear	1.5 ... 1.75	-			-		-	-	-	-
Crane fly jib hoists	1.5 ... 2.0	-			-		-	-	-	-
Cable railways	1.5 ... 2.0	-			-		-	-	-	-
Drag lifts	1.5 ... 2.0	-			-		-	-	-	-
Winches	1.5 ... 2.0	-			-		-	-	-	-
Cellulose and paper										
Paper-making machines, all	1.5 ... 1.75	-					-	-	-	-
Pulper drives	1.5 ... 1.75						-	-	-	-

 Preferred solution
 Possible, less common
 - Uncommon

FLENDER Standard Couplings

Selection of the coupling series

Example applications	Application factor FB	FLUDEX	ZAPEX	ARPEX	N-EUPEX	RUPEX	BIPEX	ELPEX-B	ELPEX-S	ELPEX
Cement industry										
Crushers	1.75 ... 2.5									
Rotary furnaces	1.5 ... 2.0									
Hammer mills	1.75 ... 2.5									
Ball mills	1.75 ... 2.0									
Pug mills	1.75 ... 2.0									
Mixers	1.5 ... 1.75									
Pipe mills	1.5 ... 1.75									
Beater mills	1.75 ... 2.5									
Separators	1.5 ... 1.75									
Roller presses	1.75 ... 2.5									

- Preferred solution
- Possible, less common
- Uncommon

FLUDEX couplings are mostly mounted on the high-speed gear shaft.

FLENDER Standard Couplings

Selection of the coupling size

Selection and ordering data

The torque load of the coupling must be determined from the output of the driven machine and the coupling speed.

Rated coupling load $T_N = 9550 \cdot P_N / n_N$
(T_N in Nm; P_N in kW; n_N in rpm)

The rated coupling load obtained in this way must be multiplied by factors and compared with the rated coupling torque. An ideal but expensive method is to measure the torque characteristic on the coupling. For this, FLENDER offers special adapters fitted with torque measuring devices.

The rated coupling torque T_{KN} is the torque which can be transmitted by the coupling over an appropriate period of use if the load is applied to the coupling purely statically at room temperature.

Application factors are to express the deviation of the real coupling load from the "ideal" load condition.

Coupling load in continuous operation

The operating principles of the driving and driven machines are divided into categories and the application factor FB derived from these in accordance with DIN 3990-1.

Application factor FB	Torque characteristic of the driven machine			
	Torque characteristic of the driving machine	uniform	uniform with moderate shock loads	non uniform
uniform	1.0	1.25	1.5	1.75
uniform with moderate shock loads	1.25	1.5	1.75	2.0
non uniform	1.5	1.75	2.0	2.5

Coupling	Elastomer material	Low temperature °C	Temperature T_a on the coupling								
			under -30 °C	-30 °C to 50 °C	to 60 °C	to 70 °C	to 80 °C	to 90 °C	to 100 °C	to 110 °C	to 120 °C
N-EUPEX	NBR	-30	-	1.0	1.0	1.0	1.0	-	-	-	-
N-EUPEX	NR	-50	1.1 ¹⁾	1.0	-	-	-	-	-	-	-
N-EUPEX	HNBR	-30	-	1.0	1.0	1.0	1.0	1.25	1.25	-	-
N-EUPEX DS	NBR	-30	-	1.0	1.0	1.0	1.0	-	-	-	-
RUPEX	NBR	-30	-	1.0	1.0	1.0	1.0	-	-	-	-
RUPEX	NR	-50	1.1	1.0	1.0	-	-	-	-	-	-
RUPEX	HNBR	-30	-	1.0	1.0	1.0	1.0	1.25	1.25	-	-
BIPEX	TPU	-30	-	1.0	1.0	1.0	1.0	-	-	-	-
ELPEX	NR	-40	1.1	1.0	1.25	1.40	1.60	-	-	-	-
ELPEX-B	NR	-50	1.1	1.0	-	-	-	-	-	-	-
ELPEX-B	CR	-15	-	1.0	1.0	1.0	-	-	-	-	-
ELPEX-S SN, NN, WN	NR	-40	1.1	1.0	1.25	1.40	1.60	-	-	-	-
ELPEX-S NX	VMQ	-40	1.1	1.0	1.0	1.0	1.0	1.1	1.25	1.4	1.6

NR = natural rubber, natural-synthetic rubber mixture
 NBR = nitril-butadiene-rubber (Perbunan)
 HNBR = hydrated acrylonitrile butadiene rubber
 CR = chloroprene rubber (FRAS fire-resistant and anti-static)
 VMQ = silicone
 TPU = polyurethane

Examples of torque characteristic of driving machines:

- uniform: Electric motors with soft starting, steam turbines
- uniform with moderate shock loads: Electric motors without soft starting, hydraulic motors, gas and water turbines
- non uniform: Internal-combustion engines

Examples of torque characteristic in driven machines:

- uniform: Generators, centrifugal pumps for light fluids
- uniform with moderate shock loads: Centrifugal pumps for viscous fluids, elevators, machine tool drives, centrifuges, extruders, blowers, crane drives
- non uniform: Excavators, kneaders, conveyor systems, presses, mills
- very rough: Crushers, excavators, shredders, iron/smelting machinery

In the case of ARPEX and ZAPEX coupling types, no temperature factor (FT = 1.0) need be taken into account.

$$\text{Coupling size } T_{KN} \geq T_N \cdot FB \cdot FT$$

¹⁾ The N-EUPEX coupling is not suitable for shock loads when used at low temperatures.

Selection of the coupling size

Coupling load under maximum and overload conditions

The maximum torque is the highest load acting on the coupling in normal operation.

Maximum torques at a frequency of up to 25 times an hour are permitted and must be lower than the maximum coupling torque. Examples of maximum torque conditions are: Starting operations, stopping operations or usual operating conditions with maximum load.

$$T_{Kmax} \geq T_{max} \cdot FT$$

Overload torques are maximum loads which occur only in combination with special, infrequent operating conditions.

Examples of overload torque conditions are: Motor short circuit, emergency stop or blocking because of component breakage. Overload torques at a frequency of once a month are permitted and must be lower than the overload torque of the coupling. The overload condition may last only a short while, i.e. fractions of a second.

$$T_{KOL} \geq T_{OL} \cdot FT$$

Coupling load due to dynamic torque load

Applying the frequency factor, the dynamic torque load must be lower than the coupling fatigue torque.

$$T_{KW} \geq T_W \cdot FF \cdot \frac{1.5}{FB - 1.0}$$

Frequency of the dynamic torque load
 $f_{err} \leq 10$ Hz frequency factor $FF = 1.0$

Frequency of the dynamic torque load
 $f_{err} > 10$ Hz frequency factor $FF = \sqrt{(f_{err}/10 \text{ Hz})}$

For the ZAPEX and ARPEX series, the frequency factor is always $FF = 1.0$.

Checking the maximum speed

For all load situations $n_{Kmax} \geq n_{max}$

Checking permitted shaft misalignment

For all load situations, the actual shaft misalignment must be less than the permitted shaft misalignment.

Checking bore diameter, mounting geometry and coupling design

The check must be made on the basis of the dimension tables. The maximum bore diameter applies to parallel keyways to DIN 6885. For other keyway geometries, the maximum bore diameter can be reduced. On request, couplings with adapted geometry can be provided.

Coupling behavior under overload conditions

The ZAPEX, ARPEX, N-EUPEX, RUPEX and BIPEX coupling series can withstand overloads until the breakage of metal parts. These coupling series are designated as fail-safe.

The N-EUPEX DS, ELPEX-B, ELPEX-S and ELPEX coupling series throw overload. The elastomer element of these couplings is irreparably damaged without damage to metal parts when subjected to excessive overload. These coupling series are designated as non-fail-safe. These types that fail can be fitted with a so-called fail-safe device. This additional component enables emergency operation, even after the rubber element of the coupling has been irreparably damaged.

Checking shaft-hub connection

The torques specified in the tables of power ratings data of the coupling series do not necessarily apply to the shaft-hub connection. Depending on the shaft-hub connection, proof of form stability is required. FLINDER recommends obtaining proof of form strength by using calculation methods in accordance with the current state of the art.

Shaft-hub connection	Suggestion for calculation method
Keyway connection to DIN 6885-1	DIN 6892
Shrink fit	DIN 7190
Spline to DIN 5480	
Bolted flange connection	VDI 2230
Flange connection with close-fitting bolts	

Fitting recommendations for the shaft-hub connection are given in catalog section 15.

The coupling hub is frequently fitted flush with the shaft end face. If the shaft projects, the risk of collision with other coupling parts must be checked. If the shaft is set back, in addition to the load-bearing capacity of the shaft-hub connection, the correct positioning of the hub must be ensured as well. If the bearing hub length is insufficient, restorative forces may cause tilting movements and so wear to and impairment of the axial retention. Also, the position of the set screw to be positioned on sufficient shaft or parallel key material must be noted.

Checking low temperature and chemically aggressive environment

The minimum permitted coupling temperature is specified in the Temperature factor FT table. In the case of chemically aggressive environments, please consult the manufacturer.

FLENDER Standard Couplings

Coupling Preselection and Options

Product code key

Overview

The product code consists of a combination of digits and letters and is divided into three blocks linked by hyphens for better clarity. In blocks 1 and 2 the coupling series, the type and the size are encoded. Block 3 contains information applying only to the coupling specified in blocks 1 and 2. The three blocks of the product code are supplemented by information on the bore of the coupling hub parts and information on "Special types".

The bore details with the code letter L always refer to the bore diameter D1 of the hub part shown on the left on the dimension drawing. The order code beginning with M always refers to the bore diameter D2 of the hub part shown on the right on the dimension drawing.

"Special types" are linked to the 3rd block of the product code by appending the code "-Z". Special order requirements are, for example, fine balancing G6.3 or the ATEX design of the coupling.

With this product code key, the couplings shown in the catalog can be completely specified. No further textual details are required, they should be avoided. Couplings in special variants are specified with the digit 9 in the 4th place in the product code (block 1) and additionally with 00-0AA0 in positions 11 to 16. Series, type and size should, as far as possible, be specified in accordance with the coding for the standard coupling. By appending "-Z Y99", plain text information can be included. The plain text information can then clearly specify the features of the special coupling.

Structure of the product code	Position	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16
FLENDER Standard Couplings																			
Positions 1 to 3 digit, letter, letter	Type	2	L	C															
Position 4 digit	Coupling design				0 ... 9														
Positions 5 to 6 digits	Series																		
Positions 7 to 8 digits	Size																		
Positions 9 and 10 letters	Type, subassembly or component part																		
Position 11 digit	Shaft-hub connection, flange connection																		
Position 12 digit	Shaft-hub connection, flange connection, V-belt pulley																		
Positions 13 to 16 digit, letter, letter, digit	Various details																		
Bore specifications	Additional order codes for bores finished in delivery condition Ø D1 and Ø D2 Specification of a 9 in the 11th position of the product code (product code without "-Z") with order codes L.. for Ø D1 and/or specification of a 9 in the 12th position of the product code (product code without "-Z") with order codes M.. for Ø D2 Selection of order codes for diameter and tolerance in the following tables under "Bore specifications".																		
Special types	Additional order codes (product code with "-Z") and, if required, plain text Selection of order codes in this catalog section and in catalog section 13 under "Special types".																		- Z

FLENDER Standard Couplings

Coupling Preselection and Options

Features of the standard type

Features of the standard type

Couplings	Features of the standard type
All coupling series except ARPEX clamping hubs and FLUDEX with keyway to ASME B17.1	Bore tolerance H7
ARPEX clamping hubs	Bore tolerance H6
FLUDEX couplings with keyway to ASME B17.1	Hollow shafts: Bore tolerance K7 Other parts Bore tolerance M7
All coupling series with bore diameter - imperial	Parallel keyway to ASME B17.1
Bore diameter metric in the case of ZAPEX and ARPEX coupling series as well as coupling hubs with applied brake disks or brake drums of the N-EUPEX and RUPEX series	Parallel keyway to DIN 6885-1 keyway width P9
Bore diameter metric in the case of the N-EUPEX, RUPEX, BIPEX, ELPEX-S, ELPEX-B, ELPEX, FLUDEX coupling series	Parallel keyway to DIN 6885-1 keyway width JS9
All coupling series except FLUDEX	Axial locking by means of set screw
FLUDEX coupling series	Axial lock by means of set screw or end washer
All coupling series	Balancing in accordance with half parallel key standard
ZAPEX, ARPEX, N-EUPEX, RUPEX, BIPEX, ELPEX-S, ELPEX-B and ELPEX coupling series	Balancing quality G16
FLUDEX coupling series	Balancing quality G6.3
All series	Unpainted
All series	Preservation with cleaning emulsion
FLUDEX couplings	Fuse 140 °C

Ordering examples

- ZAPEX ZWN 230 Variant A, prebored, unbalanced product code:
2LC0300-5AA11-0AA0
- N-EUPEX A 280 prebored, unbalanced product code:
2LC0101-3AB11-0AA0
- N-EUPEX A 280 finished bores, keyway to DIN 6885-1 and set screw
∅ D1 = 60H7 mm
∅ D2 = 80H7 mm,
balanced G16 in accordance with half parallel key standard product code:
2LC0101-3AB99-0AA0
L1E +M1J
- N-EUPEX A 280 finished bore, keyway to DIN 6885-1 and set screw
∅ D1 = 60H7 mm
∅ D2 = 80H7 mm,
in ATEX variant product code:
2LC0101-3AB99-0AA0-Z
L1E +M1J +X99
- N-EUPEX A 280 finished bore
∅ D1 = 78P6 mm, with keyway to DIN 6885-1 keyway width JS9,
∅ D2 = 3 inch M7 with keyway to ASME B17.1 product code:
2LC0101-3AB99-0AA0-Z
L9Y+M7A+L40+L28+M14
plain text info for L9Y: **78 mm**

The product code can be obtained with the help of PC software **x.CAT**. The coupling can be selected in a product configurator and specified using selection menus.

x.CAT is available for free downloading at www.flender.com

The installation CD is also available through your Siemens AG contact.

FLENDER Standard Couplings

Coupling Preselection and Options

Bore specifications

Options

Additional order codes for bore specifications
(without “-Z” specification)

Order codes have been specified for the bore specifications. Finished bores can be ordered by specifying code digit **9** in the 11th and/or 12th position of the product code and additionally the supplementary order code for $\varnothing D1$ and/or $\varnothing D2$ from the following table.

H7 is selected for all coupling series where no bore tolerance is specified.

Bore diameters deviating from the table values must be ordered by stating the code number **9** in the 11th and/or 12th position of the product code, adding “-Z” to the product code and the order code **L9Y** with plain text for the left-hand hub and order code **M9Y** with plain text for the right-hand hub.

Bore diameter - metric in mm								
Bore diameter	Order code for bore diameter		Bore diameter	Order code for bore diameter		Bore diameter	Order code for bore diameter	
	$\varnothing D1$	$\varnothing D2$		$\varnothing D1$	$\varnothing D2$		$\varnothing D1$	$\varnothing D2$
6	L0A	M0A	45	L1A	M1A	170	L2A	M2A
7	L0B	M0B	48	L1B	M1B	180	L2B	M2B
8	L0C	M0C	50	L1C	M1C	190	L2C	M2C
9	L0D	M0D	55	L1D	M1D	200	L2D	M2D
10	L0E	M0E	60	L1E	M1E	220	L2E	M2E
11	L0F	M0F	65	L1F	M1F	240	L2F	M2F
12	L0G	M0G	70	L1G	M1G	250	L2G	M2G
14	L0H	M0H	75	L1H	M1H	260	L2H	M2H
16	L0J	M0J	80	L1J	M1J	280	L2J	M2J
18	L0K	M0K	85	L1K	M1K	300	L2K	M2K
19	L0L	M0L	90	L1L	M1L	320	L2L	M2L
20	L0M	M0M	95	L1M	M1M	340	L2M	M2M
22	L0N	M0N	100	L1N	M1N	360	L2N	M2N
24	L0P	M0P	105	L1P	M1P	380	L2P	M2P
25	L0Q	M0Q	110	L1Q	M1Q	400	L2Q	M2Q
28	L0R	M0R	115	L1R	M1R	420	L2R	M2R
30	L0S	M0S	120	L1S	M1S	440	L2S	M2S
32	L0T	M0T	125	L1T	M1T	450	L2T	M2T
35	L0U	M0U	130	L1U	M1U	460	L2U	M2U
38	L0V	M0V	140	L1V	M1V	480	L2V	M2V
40	L0W	M0W	150	L1W	M1W	500	L2W	M2W
42	L0X	M0X	160	L1X	M1X			

Bore tolerance to DIN ISO 286								
Tolerance specification	Order code for specifying bore tolerance		Tolerance specification	Order code for specifying bore tolerance		Tolerance specification	Order code for specifying bore tolerance	
	$\varnothing D1$	$\varnothing D2$		$\varnothing D1$	$\varnothing D2$		$\varnothing D1$	$\varnothing D2$
H7	L10	M10	N7	L15	M15	J6	L24	M24
F7	L11	M11	P7	L16	M16	K6	L25	M25
J7	L12	M12	F6	L21	M21	M6	L26	M26
K7	L13	M13	H6	L22	M22	N6	L27	M27
M7	L14	M14	G6	L23	M23	P6	L28	M28

FLENDER Standard Couplings

Coupling Preselection and Options

Bore specifications

Bore diameter - imperial in inches								
Bore diameter	Order code for bore diameter		Bore diameter	Order code for bore diameter		Bore diameter	Order code for bore diameter	
	Ø D1	Ø D2		Ø D1	Ø D2		Ø D1	Ø D2
0.1875	L5A	M5A	2.1875	L6K	M6K	4.25	L7U	M7U
0.25	L5B	M5B	2.25	L6L	M6L	4.375	L7V	M7V
0.3215	L5C	M5C	2.3125	L6M	M6M	4.4375	L7W	M7W
0.375	L5D	M5D	2.375	L6N	M6N	4.5	L7X	M7X
0.5	L5E	M5E	2.4375	L6P	M6P	4.75	L8A	M8A
0.5625	L5F	M5F	2.5	L6Q	M6Q	4.875	L8B	M8B
0.625	L5G	M5G	2.5625	L6R	M6R	4.9375	L8C	M8C
0.6875	L5H	M5H	2.625	L6S	M6S	5	L8D	M8D
0.75	L5J	M5J	2.6875	L6T	M6T	5.1875	L8E	M8E
0.8125	L5K	M5K	2.75	L6U	M6U	5.25	L8F	M8F
0.875	L5L	M5L	2.8125	L6V	M6V	5.4375	L8G	M8G
0.9375	L5M	M5M	2.875	L6W	M6W	5.5	L8H	M8H
1	L5N	M5N	2.9375	L6X	M6X	5.75	L8J	M8J
1.0625	L5P	M5P	3	L7A	M7A	5.9375	L8K	M8K
1.125	L5Q	M5Q	3.0625	L7B	M7B	6	L8L	M8L
1.1875	L5R	M5R	3.125	L7C	M7C	6.25	L8M	M8M
1.25	L5S	M5S	3.1875	L7D	M7D	6.5	L8N	M8N
1.3125	L5T	M5T	3.25	L7E	M7E	6.75	L8P	M8P
1.375	L5U	M5U	3.3125	L7F	M7F	7	L8Q	M8Q
1.4375	L5V	M5V	3.375	L7G	M7G	7.25	L8R	M8R
1.5	L5W	M5W	3.4375	L7H	M7H	7.5	L8S	M8S
1.5625	L5X	M5X	3.5	L7J	M7J	7.75	L8T	M8T
1.625	L6A	M6A	3.5625	L7K	M7K	8	L8U	M8U
1.6875	L6B	M6B	3.625	L7L	M7L	9	L8V	M8V
1.75	L6C	M6C	3.6875	L7M	M7M	10	L8W	M8W
1.8125	L6D	M6D	3.75	L7N	M7N	11	L8X	M8X
1.875	L6E	M6E	3.8125	L7P	M7P	12	L9A	M9A
1.9375	L6F	M6F	3.875	L7Q	M7Q	13	L9B	M9B
2	L6G	M6G	3.9375	L7R	M7R	14	L9C	M9C
2.0625	L6H	M6H	4	L7S	M7S	15	L9D	M9D
2.125	L6J	M6J	4.1875	L7T	M7T			

FLENDER Standard Couplings

Coupling Preselection and Options

Special types

Options

Special types or order codes (code **-Z** must be appended to product code)

Special types	Order code for coupling half		Comment
	1	2	
Shaft-hub connection			
Parallel keyway to DIN 6885 ¹⁾ keyway width JS9 for metric bore diameters	L40	M40	
Parallel keyway to DIN 6885 ¹⁾ keyway width P9 for metric bore diameters	L41	M41	
Parallel keyway to ASME B17.1 for imperial bore diameters	L43	M43	
Two parallel keyways spaced 180° apart	L46	M46	
Two parallel keyways spaced 120° apart	L47	M47	
Shrink fit for oil-hydraulic removal	L44	M44	
Clamp connection with shaft without parallel keyway	L45	M45	
Shaft journal length as stated in order	Y28	Y29	and as stated in order
Bore diameters deviating from standard values (11th and/or 12th position in product code - code number 9)	L9Y	M9Y	and as stated in order
Balancing - balancing principle			
Balancing in accordance with half parallel key standard to DIN ISO 8821	Standard	Standard	before keyseating
Balancing in accordance with full parallel key standard to DIN ISO 8821	L52, M52	M52	after keyseating
Balancing - balance quality			
For standard balancing, see page 2/3.	Standard		
For fine balancing, see page 2/3.	W02		
For micro-balancing, see page 2/3.	W03		
Documentation, test certificates and acceptances			
Operating instructions			
With declaration of compliance with the order acc. to DIN 10204-2.1	D99		
With test report acc. to DIN EN 10204-2.2	D98		
With inspection certificate for leakage test acc. to DIN EN 10204-3.1	E36		
With inspection certificate for fitting dimensions acc. to DIN EN 10204-3.1	E37		
With inspection certificate for balancing test acc. to DIN EN 10204-3.1	E38		
With inspection certificate for surface crack detection acc. to DIN EN 10204-3.1	E39		
With inspection certificate for ultrasonic examination acc. to DIN EN 10204-3.1/3.2	E40		
With inspection certificate for coating layer - thickness measurement acc. to DIN EN 10204-3.1	E41		
With inspection certificate for chemical analysis, mechanical parameters acc. to DIN EN 10204-3.1/3.2	E42		
Acceptance by classification society	On request		
Special ambient conditions			
ATEX variant with CE marking in accordance with Directive 94/9/EC	X99		

Surface coat					
Preservation					
Preservative	Properties	Durability		Depreservatives	Order code
		Indoor storage	Outdoor storage		
Cleaning emulsion	Simple preservation	up to 6 months	–	Aqueous cleaners	Standard
Spray oil	Anti-corrosion agent	up to 12 months	up to 4 months	Aqueous cleaners, solvents	B31
Tectyl 846 or similar	Long-term preservation, wax-based	up to 36 months	up to 12 months	White spirit, special solvents	B28
Cleaning emulsion + VCI film ²⁾	Active system, reusable	up to 5 years	up to 5 years	Aqueous cleaners	B34

¹⁾ The hub keyways are designed to DIN 6885 Sheet 1 "High Form". On some sizes, which are marked in the dimension tables, the keyway is designed to DIN 6885 Sheet 3 "Low Form".

²⁾ VCI films used as export or long-term packing protect against corrosion. The costly removal of e.g. Tectyl 846 is thus unnecessary.

Torsionally Rigid Gear Couplings

ZAPEX ZW Series

4



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4 FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

General information

Overview



Coupling suitable for potentially explosive environments. Complies with Directive 94/9/EC for:

CE Ex II 2 GD c 120 °C (T4)

CE Ex I M2

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle. This means that application-specific solutions can be delivered quickly. ZAPEX couplings require very little maintenance. Regular grease or oil changes at the prescribed intervals prolongs the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry. ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZWNV, for vertical mounting positions.

Design

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. Each set of external teeth engages in a flanged socket with mating internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts.

The teeth are lubricated with oil or grease. On the ZAPEX type ZW, DUO sealing rings are used to seal the tooth space. The DUO sealing rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping.

ZAPEX ZW gear coupling types

Type	Description
ZWN	Standard type
ZZS	with adapter
ZZW	with intermediate shaft
ZWH	with coupling sleeve
ZWBT	with offset brake disk
ZWBG	with straight brake disk
ZWB	with brake drum
ZWTR	for rope drums
ZBR	with shear pins
ZWS	Clutch
ZWNV	Vertical type
ZWSE	Simple clutch-coupling combination

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

The hubs of the standard types can be easily exchanged for multipurpose hubs. Multipurpose hubs are significantly longer and can be shortened to suit customer requirements. The multipurpose hubs are described after the types.

Mode of operation

The torque is transmitted through the coupling teeth. The teeth are crowned, so angular displacement per tooth plane is possible. Radial displacement can be compensated for via the space VA between the tooth planes. The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Torsional stiffness	Permitted shaft misalignment
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	ZW C_{Tdvn} kNm/rad	ΔK_a mm
112	1300	2600	5200	520	2000	1.0
128	2500	5000	10000	1000	3600	1.0
146	4300	8600	17200	1720	6900	1.0
175	7000	14000	28000	2800	9360	1.0
198	11600	23200	46400	4640	15600	1.0
230	19000	38000	76000	7600	26300	1.0
255	27000	54000	108000	10800	33400	1.5
290	39000	78000	156000	15600	44000	1.5
315	54000	108000	216000	21600	64100	1.5
342	69000	138000	276000	27600	81600	1.5
375	98000	196000	392000	39200	115600	1.5
415	130000	260000	520000	52000	106000	1.5
465	180000	360000	720000	72000	134600	2.0
505	250000	500000	1000000	100000	168700	2.0
545	320000	640000	1280000	128000	216900	2.0
585	400000	800000	1600000	160000	263200	2.0
640	510000	1020000	2040000	204000	356000	2.0
690	660000	1320000	2640000	264000	431000	2.0
730	790000	1580000	3160000	316000	538000	2.0
780	1000000	2000000	4000000	400000	696000	3.0
852	1200000	2400000	4800000	480000	926000	3.0
910	1600000	3200000	6400000	640000	1118000	3.0
1020	1900000	3800000	7600000	760000	1339000	3.0
1080	2200000	4400000	8800000	880000	1605000	3.0
1150	2700000	5400000	10800000	1080000	2120000	3.0
1160	3350000	6700000	13400000	1340000	2474000	3.0
1240	3800000	7600000	15200000	1520000	3079000	3.0
1310	4600000	9200000	18400000	1840000	3693000	4.0
1380	5300000	10600000	21200000	2120000	4383000	4.0
1440	6250000	12500000	25000000	2500000	5056000	4.0
1540	7200000	14400000	28800000	2880000	6115000	4.0

In the case of type ZWTR, the rated torques which deviate from the above are specified in the dimension table.

The stated torsional stiffness "ZW" applies to coupling types ZWN and ZWNV.

Torsional stiffness of the remaining types on request.

The axial misalignment ΔK_a must be understood as the maximum permitted enlargement of the hub distance S of the coupling.

Angular misalignment ΔK_w

- Types ZWN, ZZS, ZZW, ZWM-MZ, ZWH, ZWB, ZBR, ZWS: $\Delta K_w = 1^\circ$
- Types ZWBT and ZWBG: $\Delta K_w = 0.2^\circ$
- Type ZWSE: $\Delta K_w = 0.4^\circ$

Radial misalignment ΔK_r

- Types ZWN, ZZS, ZZW, ZWM-MZ, ZWH, ZWB, ZBR, ZWS and ZWSE: $\Delta K_r \leq VA \cdot \tan 1^\circ$
- Types ZWBT and ZWBG: $\Delta K_r \leq VA \cdot \tan 0.2^\circ$

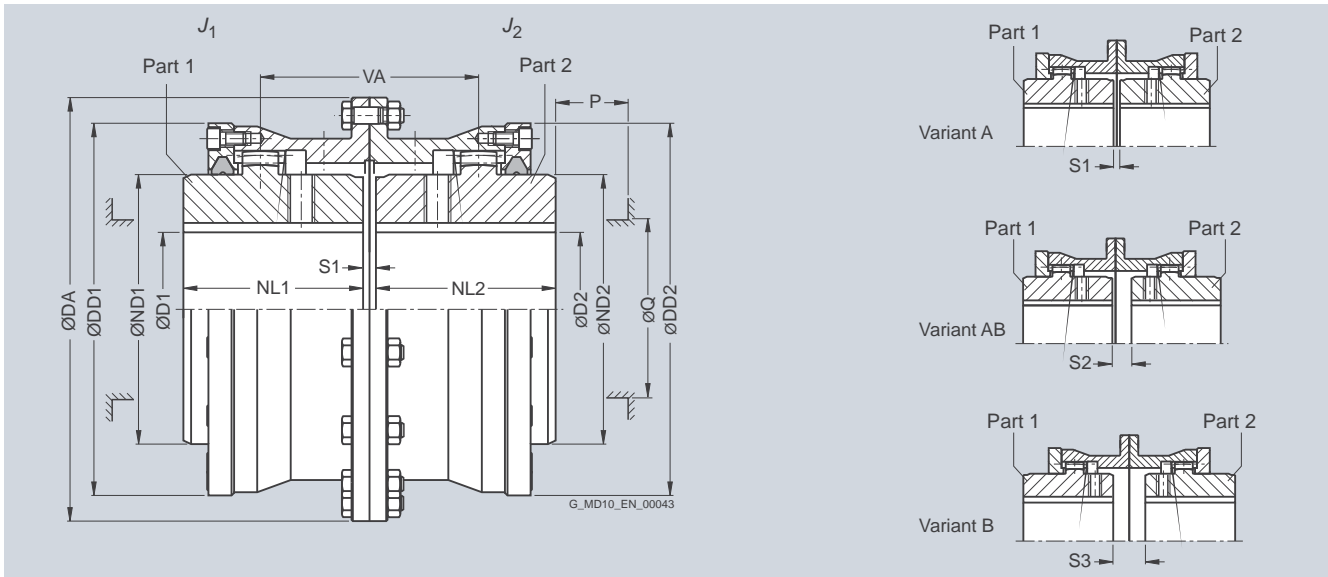
For the tooth distance VA, see the relevant table for the sub-assembly.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWN

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A, AB, B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Dimensions in mm													Mass moment of inertia J_1/J_2	Product code	Weight m	
	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885 min. max.		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	S2	S3	VA	Q				P
112	1300	9400	0	45	143	65	50	110	6	-	-	56	45	35	0.006	2LC0300-0A	6.2
128	2500	8300	0	55	157	80	60	128	6	13	20	73	60	45	0.014	2LC0300-1A	8.4
146	4300	7300	0	65	177	95	75	146	6	13	20	88	75	45	0.022	2LC0300-2A	12
175	7000	6400	0	80	215	112	90	175	8	14	20	104	85	50	0.052	2LC0300-3A	20.5
198	11600	5500	0	95	237	135	100	198	8	19	30	119	110	50	0.089	2LC0300-4A	28.5
230	19000	4700	0	110	265	160	110	230	8	20	32	130	135	50	0.16	2LC0300-5A	41
255	27000	4100	0	125	294	185	125	255	10	25	40	150	160	50	0.27	2LC0300-6A	56
290	39000	3700	70	145	330	210	140	290	10	30	50	170	180	60	0.52	2LC0300-7A	83
315	54000	3300	80	160	366	230	160	315	10	30	50	190	200	60	0.84	2LC0300-8A	110
342	69000	3000	90	180	392	255	180	340	12	42	72	222	225	60	1.3	2LC0301-0A	140
375	98000	2700	100	200	430	290	200	375	12	42	72	242	260	60	2.1	2LC0301-1A	195
415	130000	2500	120	220	478	320	220	415	12	74	136	294	285	80	3.3	2LC0301-2A	250
465	180000	2200	140	250	528	360	240	465	16	96	176	336	325	80	5.5	2LC0301-3A	330
505	250000	2000	160	275	568	400	260	505	16	106	196	366	365	80	8.1	2LC0301-4A	420
545	320000	1800	180	300	620	440	280	545	16	126	236	406	405	80	12.5	2LC0301-5A	560
585	400000	1700	210	330	660	480	310	585	20	150	280	460	445	80	18.5	2LC0301-6A	700
640	510000	1600	230	330	738	480	330	640	20	149	278	479	445	90	26	2LC0301-7A	860
			>330	360		520									29		890
690	660000	1450	250	360	788	520	350	690	20	166	312	516	475	90	37	2LC0301-8A	1050
			>360	390		560									41		1050
730	790000	1350	275	390	834	560	380	730	20	180	340	560	515	90	52	2LC0302-0A	1250
			>390	415		600									56		1350
780	1000000	1250	300	415	900	600	400	780	25	176	327	576	555	110	71	2LC0302-1A	1550
			>415	450		650									83		1650
852	1200000	1150	325	450	970	650	420	850	25	185	345	605	595	110	105	2LC0302-2A	1950
			>450	490		710									115		2050

Variant:	<ul style="list-style-type: none"> • A • B • AB 	A B C
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 9
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 9

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWN

Size	Rated torque T_{KN} Nm	Maximum speed n_{kmax} rpm	Dimensions in mm													Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2	DD1/DD2	S1	S2	S3	VA	Q	P				
			min.	max.														
910	1600000	1050	350	490	1030	710	450	910	25	215	405	665	655	110	150	2LC0302-3A ■■■ -0AA0	2350	
			>490	520		750									155		2450	
1020	1900000	1000	375	520	1112	750	480	1020	25	213	401	693	695	130	215	2LC0302-4A ■■■ -0AA0	2900	
			>520	550		800									235		3100	
1080	2200000	950	400	550	1162	800	500	1080	30	226	422	726	735	135	275	2LC0302-5A ■■■ -0AA0	3300	
			>550	600		860									310		3500	
1150	2700000	900	425	600	1222	860	520	1150	30	238	446	758	795	135	360	2LC0302-6A ■■■	4000	
			>600	650		930									410		4200	
1160	3350000	850	450	600	1292	860	550	1160	30	260	490	810	795	135	440	2LC0302-7A ■■■ -0AA0	4400	
			>600	650		930		480							4700			
			>650	690		990		1210							540		4900	
1240	3800000	800	475	650	1400	930	580	1240	30	250	470	830	865	155	620	2LC0302-8A ■■■ -0AA0	5400	
			>650	690		990		1240							660		5600	
			>690	730		1055		1290							760		6100	
1310	4600000	750	500	650	1470	930	610	1310	35	265	495	875	850	155	770	2LC0303-0A ■■■ -0AA0	6200	
			>650	690		990		1310							810		6400	
			>690	730		1055		1310							910		6800	
			>730	780		1120		1370							1000		7100	
1380	5300000	700	525	690	1540	990	640	1380	35	275	515	915	910	155	980	2LC0303-1A ■■■ -0AA0	7200	
			>690	730		1055		1380							1050		7500	
			>730	780		1120		1380							1150		7800	
			>780	810		1170		1430							1250		8100	
1440	6250000	670	550	730	1600	1055	670	1440	35	295	555	965	975	155	1250	2LC0303-2A ■■■ -0AA0	8400	
			>730	780		1120		1440							1350		8500	
			>780	810		1170		1440							1450		8800	
			>810	860		1240		1510							1550		9400	
1540	7200000	630	575	780	1710	1120	700	1540	35	275	515	975	1030	175	1650	2LC0303-3A ■■■ -0AA0	9700	
			>780	810		1170		1540							1750		9800	
			>810	860		1240		1540							1850		10000	
			>860	910		1310		1610							2050		11500	

Variant:	<ul style="list-style-type: none"> • A • B • AB 	A B C
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D1 – Without order codes • Without finished bore from size 1310 for 4th diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 3 4 9
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D2 – Without order codes • Without finished bore from size 1310 for 4th diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 3 4 9

Up to size 505 available from FLINDER stocks.

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZWN coupling, size 146, variant A,
Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

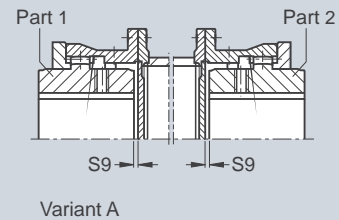
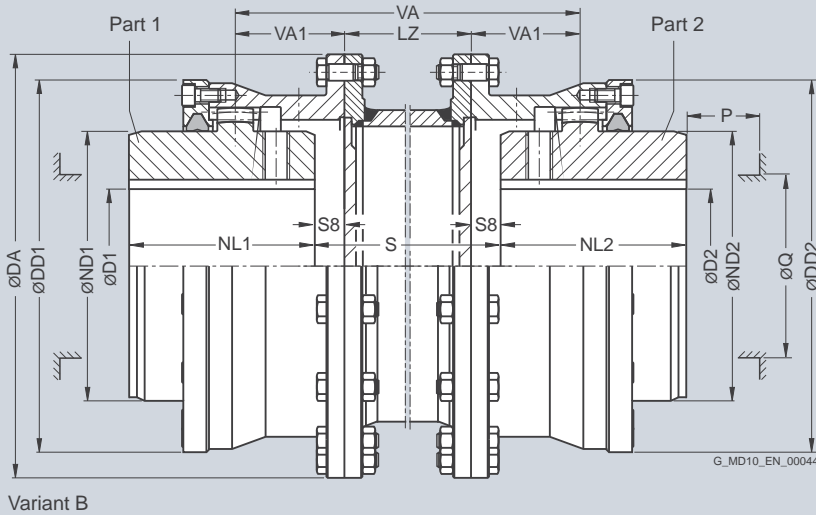
Product code:
2LC0300-2AA99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZZS

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A and B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Rated torque T_{KN} Nm	Dimensions in mm		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S8	S9	VA1	Q	P	LZ min.	Product code Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		min.	max.												m each 100 mm pipe kg	m kg
112	1300	0	45	143	65	50	110	3	3	28	45	35	120	2LC0300-0A ■■■■ -0AZ0 Q0Y	0.8	10
128	2500	0	55	157	80	60	128	10	3	36.5	60	45	120	2LC0300-1A ■■■■ -0AZ0 Q0Y	1.3	13
146	4300	0	65	177	95	75	146	10	3	44	75	45	120	2LC0300-2A ■■■■ -0AZ0 Q0Y	1.8	18
175	7000	0	80	215	112	90	175	10	4	52	85	50	130	2LC0300-3A ■■■■ -0AZ0 Q0Y	2.3	29
198	11600	0	95	237	135	100	198	15	4	59.5	110	50	130	2LC0300-4A ■■■■ -0AZ0 Q0Y	3.5	39
230	19000	0	110	265	160	110	230	16	4	65	135	50	130	2LC0300-5A ■■■■ -0AZ0 Q0Y	4.5	53
255	27000	0	125	294	185	125	255	20	5	75	160	50	140	2LC0300-6A ■■■■ -0AZ0 Q0Y	6.3	76
290	39000	70	145	330	210	140	290	25	5	85	180	60	140	2LC0300-7A ■■■■ -0AZ0 Q0Y	7.2	105
315	54000	80	160	366	230	160	315	25	5	95	200	60	180	2LC0300-8A ■■■■ -0AZ0 Q0Y	9.1	145
342	69000	90	180	392	255	180	340	36	6	111	225	60	180	2LC0301-0A ■■■■ -0AZ0 Q0Y	12	185
375	98000	100	200	430	290	200	375	36	6	121	260	60	180	2LC0301-1A ■■■■ -0AZ0 Q0Y	15	250
415	130000	120	220	478	320	220	415	68	6	147	285	80	200	2LC0301-2A ■■■■ -0AZ0 Q0Y	17	320
465	180000	140	250	528	360	240	465	88	8	168	325	80	200	2LC0301-3A ■■■■ -0AZ0 Q0Y	19	420
505	250000	160	275	568	400	260	505	98	8	183	365	80	200	2LC0301-4A ■■■■ -0AZ0 Q0Y	24	520
545	320000	180	300	620	440	280	545	118	8	203	405	80	220	2LC0301-5A ■■■■ -0AZ0 Q0Y	30	710
585	400000	210	330	660	480	310	585	140	10	230	445	80	220	2LC0301-6A ■■■■ -0AZ0 Q0Y	33	870

Variant	<ul style="list-style-type: none"> • A • B 	D E
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 9
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 9

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZZS

4

Size	Rated torque T_{KN} Nm	Dimensions in mm												LZ min.	Product code Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		D1, D2 Keyway DIN 6885 min. max.		DA	ND1/ND2	NL1/NL2	DD1/DD2	S8	S9	VA1	Q	P	m			m	
640	510000	230	330	738	480	330	640	139	10	239.5	445	90	250	2LC0301-7A ■■■ -0AZ0 QOY	39	1100	
		>330	360		520											1120	
690	660000	250	360	788	520	350	690	156	10	258	475	90	250	2LC0301-8A ■■■ -0AZ0 QOY	45	1500	
		>360	390		560											1400	
730	790000	275	390	834	560	380	730	170	10	280	515	90	250	2LC0302-0A ■■■ -0AZ0 QOY			
		>390	415		600												
780	1000000	300	415	900	600	400	780	163	12.5	288	555	110	280	2LC0302-1A ■■■ -0AZ0 QOY			
		>415	450		650												
852	1200000	325	450	970	650	420	850	172	12.5	302.5	595	110	280	2LC0302-2A ■■■ -0AZ0 QOY			
		>450	490		710												
910	1600000	35	490	1030	710	450	910	202	12.5	332.5	655	110	280	2LC0302-3A ■■■ -0AZ0 QOY			
		>490	520		750												
1020	1900000	375	520	1112	750	480	1020	200	12.5	346.5	695	130	380	2LC0302-4A ■■■ -0AZ0 QOY			
		>520	550		800												
1080	2200000	400	550	1162	800	500	1080	211	15	363	735	135	380	2LC0302-5A ■■■ -0AZ0 QOY			
		>550	600		860												
1150	2700000	425	600	1222	860	520	1150	223	15	379	795	135	380	2LC0302-6A ■■■ -0AZ0 QOY			
		>600	650		930												
1160	3350000	450	600	1292	860	550	1160	245	15	405	795	135	380	2LC0302-7A ■■■ -0AZ0 QOY			
		>600	650		930		1160										
		>650	690		990		1210										
1240	3800000	475	650	1400	930	580	1240	235	15	415	865	155	400	2LC0302-8A ■■■ -0AZ0 QOY			
		>650	690		990		1240										
		>690	730		1055		1290										
1310	4600000	500	650	1470	930	610	1310	247	17.5	437.5	850	155	400	2LC0303-0A ■■■ -0AZ0 QOY			
		>650	690		990		1310										
		>690	730		1055		1310										
		>730	780		1120		1370										
1380	5300000	525	690	1540	990	640	1380	257	17.5	457.5	910	155	400	2LC0303-1A ■■■ -0AZ0 QOY			
		>690	730		1055		1380										
		>730	780		1120		1380										
		>780	810		1170		1430										
1440	6250000	550	730	1600	1055	670	1440	277	17.5	482.5	975	155	400	2LC0303-2A ■■■ -0AZ0 QOY			
		>730	780		1120		1440										
		>780	810		1170		1440										
		>810	860		1240		1510										
1540	7200000	575	780	1710	1120	700	1540	257	17.5	487.5	1030	175	600	2LC0303-3A ■■■ -0AZ0 QOY			
		>780	810		1170		1540										
		>810	860		1240		1540										
		>860	910		1310		1610										

Variant	<ul style="list-style-type: none"> • A • B 	D
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D1 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D1 – Without order codes • Without finished bore from size 1310 for 4th diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 3 4 9
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 640 for 2nd diameter range D2 – Without order codes • Without finished bore from size 1160 for 3rd diameter range D2 – Without order codes • Without finished bore from size 1310 for 4th diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1 2 3 4 9

Up to size 505, without adapter, available from FLENDER stocks.

Weights from size 730 on request.

$$VA = 2 \cdot VA1 + LZ$$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores and an adapter length of LZ min.

Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:

Product code: **2LC0300-2AE99-0AZ0-Z**
LOW+M1A+QOY+M13
 plain text to QOY: **250 mm**

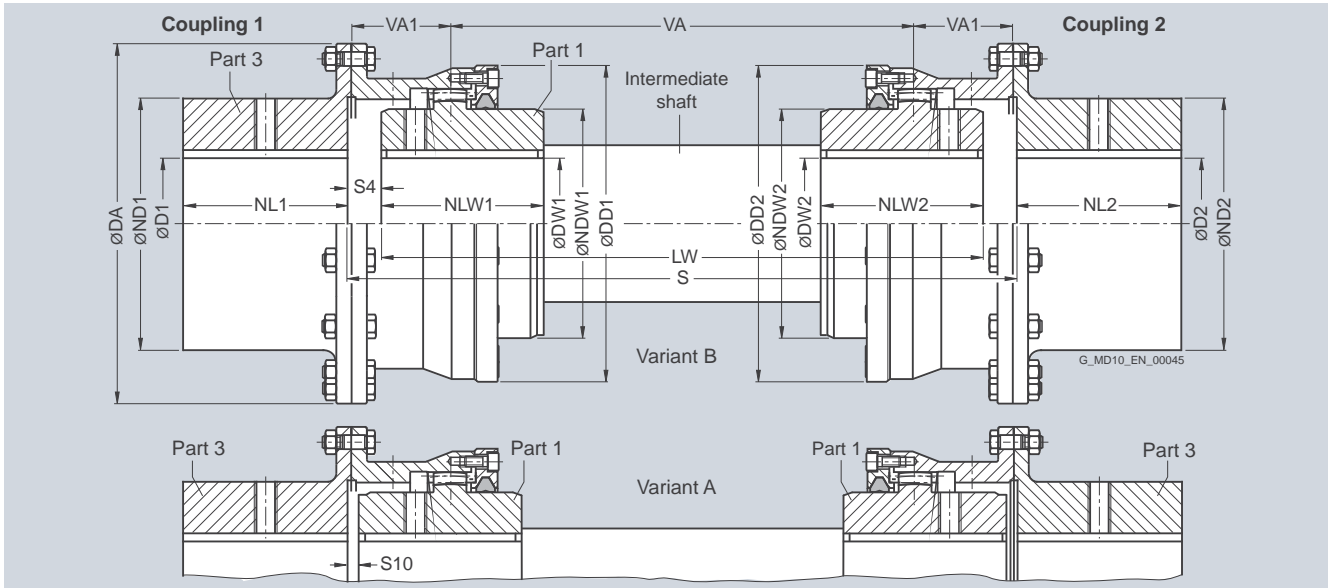
FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZZW

4

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A and B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Rated torque T_{KN} Nm	Dimensions in mm											Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg	
		D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2/NLW1/NLW2	DW1, DW2 Keyway DIN 6885		NDW1/DD1/NDW2/DD2	S4	S10	VA1			
		min.	max.				min.	max.							
112	1300	20	55	143	80	50	0	45	65	110	12.5	12.5	37.5	2LC0300-0B	5.4
128	2500	25	65	157	95	60	0	55	80	128	12.5	5.5	39	2LC0300-1B	6.9
146	4300	30	80	177	112	75	0	65	95	146	12.5	5.5	46.5	2LC0300-2B	10.5
175	7000	35	95	215	135	90	0	80	112	175	12.5	6.5	54.5	2LC0300-3B	17.5
198	11600	40	110	237	160	100	0	95	135	198	17.5	6.5	62	2LC0300-4B	25
230	19000	50	125	265	185	110	0	110	160	230	18.5	6.5	67.5	2LC0300-5B	36
255	27000	60	145	294	210	125	0	125	185	255	23.5	8.5	78.5	2LC0300-6B	50
290	39000	70	160	330	230	140	70	145	210	290	28.5	8.5	88.5	2LC0300-7B	71
315	54000	80	180	366	255	160	80	160	230	315	28.5	8.5	98.5	2LC0300-8B	99
342	69000	90	200	392	290	180	90	180	255	340	39.5	9.5	114.5	2LC0301-0B	130
375	98000	100	220	430	320	200	100	200	290	375	39.5	9.5	124.5	2LC0301-1B	175
415	130000	120	250	478	360	220	120	220	320	415	71.5	9.5	150.5	2LC0301-2B	230
465	180000	140	275	528	400	240	140	250	360	465	91.5	11.5	171.5	2LC0301-3B	310
505	250000	160	300	568	440	260	160	275	400	505	102.5	12.5	187.5	2LC0301-4B	400
545	320000	180	330	620	480	280	180	300	440	545	122.5	12.5	207.5	2LC0301-5B	520
585	400000	210	330	660	480	310	210	330	480	585	144.5	14.5	234.5	2LC0301-6B	610
		>330	360		520										640
640	510000	230	360	738	520	330	230	330	480	640	143.5	14.5	244	2LC0301-7B	780
		>360	390		560		>330	360	520						830
690	660000	250	390	788	560	350	250	360	520	690	160.5	14.5	262.5	2LC0301-8B	910
		>390	415		600		>360	390	560						1000
730	790000	275	415	834	600	380	275	390	560	730	176	16	286	2LC0302-0B	1150
		>415	450		650		>390	415	600						1250
780	1000000	300	450	900	650	400	300	415	600	780	171	20.5	296	2LC0302-1B	1450
		>450	490		710		>415	450	650						1550
852	1200000	325	490	970	710	420	325	450	650	850	180	20.5	310.5	2LC0302-2B	1750
		>490	520		750		>450	490	710						1850

Variant:	<ul style="list-style-type: none"> • A • B 	D	E
øD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1	2
		9	
øD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1	2
		9	

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZZW

4

Size	Rated torque T_{KN} Nm	Dimensions in mm											Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg		
		D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2/NLW1/NLW2	DW1, DW2 Keyway DIN 6885		NDW1/NDW2	DD1/DD2	S4	S10			VA1	
		min.	max.				min.	max.								
910	1600000	350	520	1030	750	450	350	490	710	910	210	20.5	340.5	2LC0302-3B ■■■■-0AA0	2150	
		>520	550		800		>490	520	750						2250	
1020	1900000	375	550	1112	800	480	375	520	750	1020	210	22.5	356.5	2LC0302-4B ■■■■-0AA0	2650	
		>550	600		860		>520	550	800						2800	
1080	2200000	400	600	1162	860	500	400	550	800	1080	221	25	373	2LC0302-5B ■■■■-0AA0	3000	
		>600	650		930		>550	600	860						3300	
1150	2700000	425	600	1222	860	520	425	600	860	1150	233	25	389	2LC0302-6B ■■■■-0AA0	3500	
		>600	650		930		>425	600	860						3600	
		>650	690		990		>600	650	930						3800	
1160	3350000	450	650	1292	930	550	450	600	860	1160	255	25	415	2LC0302-7B ■■■■-0AA0	4000	
		>650	690		990		>600	650	930	1160					4200	
		>690	730		1055		>650	690	990	1210					4600	
1240	3800000	475	650	1400	930	580	475	650	930	1240	245	25	425	2LC0302-8B ■■■■-0AA0	4700	
		>650	690		990		475	650	930	1240					4900	
		>690	730		1055		>650	690	990	1240					5200	
		>730	780		1120		>690	730	1055	1290					5600	
1310	4600000	500	690	1470	990	610	500	650	930	1310	258	28.5	448.5	2LC0303-0B ■■■■-0AA0	5500	
		>690	730		1055		>650	690	990	1310					5800	
		>730	780		1120		>690	730	1055	1310					6100	
		>780	810		1170		>730	780	1120	1370					6600	
1380	5300000	525	730	1540	1055	640	525	690	990	1380	268	28.5	468.5	2LC0303-1B ■■■■-0AA0	6400	
		>730	780		1120		>690	730	1055	1380					6700	
		>780	810		1170		>730	780	1120	1380					7100	
		>810	860		1240		>780	810	1170	1430					7400	
1440	6250000	550	780	1600	1120	670	550	730	1055	1440	288	28.5	493.5	2LC0303-2B ■■■■-0AA0	7400	
		>780	810		1170		>730	780	1120	1440					7600	
		>810	860		1240		>780	810	1170	1440					8000	
		>860	910		1310		>810	860	1240	1510					8600	
1540	7200000	575	810	1710	1170	700	575	780	1120	1540	268	28.5	498.5	2LC0303-3B ■■■■-0AA0	8600	
		575	810		1170		>780	810	1170	1540					8700	
		>810	860		1240		>810	860	1240	1540					9200	
		>860	960		1390		>860	910	1310	1610					10500	

Variant:	<ul style="list-style-type: none"> • A • B 	D	
∅D1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D1 – Without order codes • Without finished bore from size 1150 for 3rd diameter range D1 – Without order codes • Without finished bore from size 1240 for 4th diameter range D1 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	E	1 2 3 4 9
∅D2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • Without finished bore from size 585 for 2nd diameter range D2 – Without order codes • Without finished bore from size 1150 for 3rd diameter range D2 – Without order codes • Without finished bore from size 1240 for 4th diameter range D2 – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 		1 2 3 4 9

$VA = S - 2 \cdot VA1$
 Mass moments of inertia on request.
 Weights apply to either coupling 1 or 2 with maximum bore diameter, without intermediate shaft.
 Maximum speed, limited by weight and critical speed of intermediate shaft, on request.
 Ordering example:
 Coupling ZZW consisting of coupling 1, intermediate shaft, coupling 2
Coupling 1:
 ZAPEX ZZW coupling, size 146, variant B,
 Part 3: Bore D1 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 1: Bore DW1 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw.
 Product code:
2LC0300-2BE99-0AA0-Z
L1A+M1A+M13

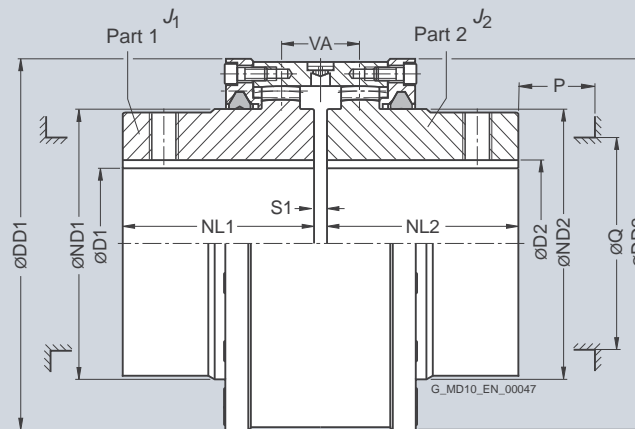
Intermediate shaft:
 Intermediate shaft for ZAPEX coupling ZZW, size 146, length LW = 570 mm, for shaft distance S = 595 mm shaft journal ∅45p6 x 75 long; keyway DIN 6885-1.
 Product code:
2LC0308-8XX00-0AA0-Z
Y99
 plain text to Y99: **DW1 = 45p6 mm, NLW1 = 75 mm, DW2 = 45p6 mm, NLW2 = 75 mm, LW = 570 mm**
Coupling 2:
 ZAPEX ZZW coupling, size 146, variant B,
 Part 1: Bore DW2 = 45H7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 3: Bore D2 = 45K7 mm, keyway to DIN 6885-1 P9 and set screw.
 Product code:
2LC0300-2BE99-0AA0-Z
L1A+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWH

Selection and ordering data



Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm										Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1, D2 Keyway DIN 6885 min.	D1, D2 Keyway DIN 6885 max.	ND1/ ND2	NL1/ NL2	DD1/ DD2	S1	VA	Q	P				
112	1300	9400	0	45	65	50	110	6	28	45	35	0.003	2LC0300-0BB ■■-0AA0	4.0	
128	2500	8300	0	55	80	60	128	6	30	60	45	0.007	2LC0300-1BB ■■-0AA0	5.7	
146	4300	7300	0	65	95	75	146	6	33	75	45	0.013	2LC0300-2BB ■■-0AA0	8.6	
175	7000	6400	0	80	112	90	175	8	46	85	50	0.032	2LC0300-3BB ■■-0AA0	15.5	
198	11600	5500	0	95	135	100	198	8	48	110	50	0.059	2LC0300-4BB ■■-0AA0	21.5	
230	19000	4700	0	110	160	110	230	8	50	135	50	0.11	2LC0300-5BB ■■-0AA0	33	
255	27000	4100	0	125	185	125	255	10	55	160	50	0.21	2LC0300-6BB ■■-0AA0	45	
290	39000	3700	70	145	210	140	290	10	58	180	60	0.38	2LC0300-7BB ■■-0AA0	67	
315	54000	3300	80	160	230	160	315	10	62	200	60	0.59	2LC0300-8BB ■■-0AA0	88	
342	69000	3000	90	180	255	180	340	12	70	225	60	0.85	2LC0301-0BB ■■-0AA0	110	
375	98000	2700	100	200	290	200	375	12	72	260	60	1.5	2LC0301-1BB ■■-0AA0	150	
415	130000	2500	120	220	320	220	415	12	76	285	80	2.4	2LC0301-2BB ■■-0AA0	200	
465	180000	2200	140	250	360	240	465	16	90	325	80	4.2	2LC0301-3BB ■■-0AA0	280	
505	250000	2000	160	275	400	260	505	16	92	365	80	6.3	2LC0301-4BB ■■-0AA0	360	
545	320000	1800	180	300	440	280	545	16	96	405	80	9.5	2LC0301-5BB ■■-0AA0	460	
585	400000	1700	210	330	480	310	585	20	102	445	80	14	2LC0301-6BB ■■-0AA0	570	
øD1:	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 													1 9	
øD2:	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 													1 9	

Larger size couplings on request.

Up to size 255 available from FLENDER stocks.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZWH coupling, size 146,

Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,

Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

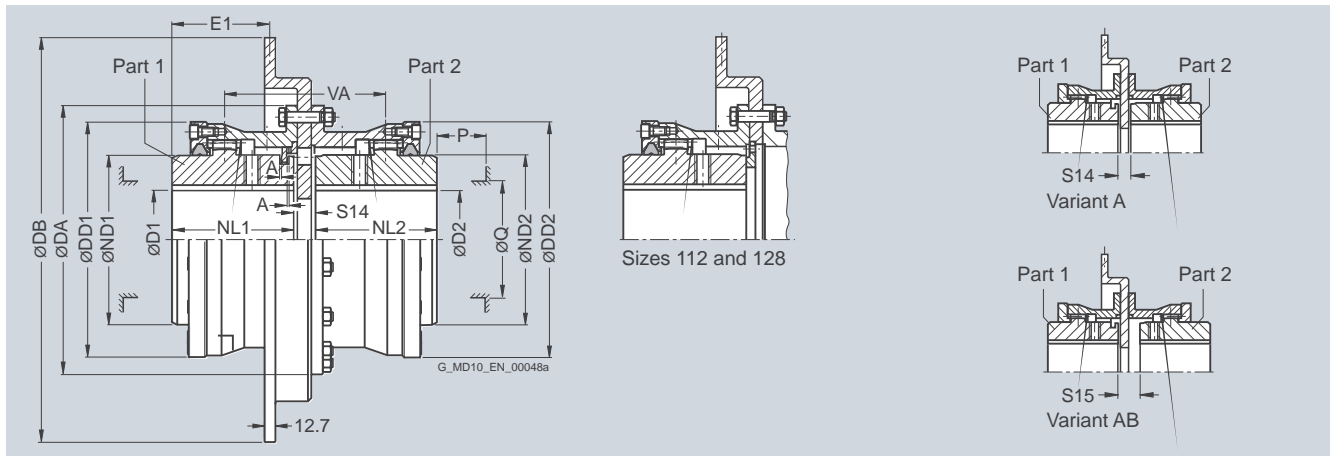
Product code:

2LC0300-2BB99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWBT

Selection and ordering data



Variant limited in displacement and axial movement.
Max. displacement 0.2°.

After the finished bore has been drilled, the variant can no longer be changed.

Coupling parts 1 and 2 can be combined to form coupling variants A and AB.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2	DD1/DD2	S14	S15	A	VA	Q	P	Brake disk		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg
			min.	max.											DB	E1		
112	1300	3800	0	45	143	65	50	110	20	-	0.5	69	45	35	300	32.35	2LC0300-0A ■■■ -0AA0	13
		3200							23	-		72			356	22.35	2LC0300-0A ■■■ -0BA0	16.5
128	2500	3200	0	55	157	80	60	128	23.5	30.5	0.5	89	60	45	356	32.85	2LC0300-1A ■■■ -0AA0	19
		2800							20.5	27.5		86			406	29.85	2LC0300-1A ■■■ -0BA0	22
146	4300	2800	0	65	177	95	75	146	19	26	0.5	101	75	45	406	43.35	2LC0300-2A ■■■ -0AA0	25
		2500							22	29		104			457	46.35	2LC0300-2A ■■■ -0BA0	30
175	7000	2800	0	80	215	112	90	175	21	27	0.5	117	85	50	406	59.35	2LC0300-3A ■■■ -0AA0	34
		2500							24	30		120			457	62.35	2LC0300-3A ■■■ -0BA0	39
		2200							24	30		120			514	62.35	2LC0300-3A ■■■ -0CA0	44
198	11600	2500	0	95	237	135	100	198	24	35	0.5	135	110	50	457	72.35	2LC0300-4A ■■■ -0AA0	47
		2200							24	35		135			514	72.35	2LC0300-4A ■■■ -0BA0	52
230	19000	2200	0	110	265	160	110	230	24	36	0.5	146	135	50	514	82.35	2LC0300-5A ■■■ -0AA0	65
		1850							24	36		146			610	82.35	2LC0300-5A ■■■ -0BA0	76
255	27000	2200	0	125	294	185	125	255	26	41	1	166	160	50	514	98.35	2LC0300-6A ■■■ -0AA0	80
		1850							26	41		166			610	98.35	2LC0300-6A ■■■ -0BA0	92
290	39000	1850	70	145	330	210	140	290	26	46	1	186	180	60	610	113.35	2LC0300-7A ■■■ -0AA0	120
		1600							29	49		189			711	116.35	2LC0300-7A ■■■ -0BA0	135
315	54000	1850	80	160	366	230	160	315	26	46	1	206	200	60	610	133.35	2LC0300-8A ■■■ -0AA0	145
		1600							29	49		209			711	136.35	2LC0300-8A ■■■ -0BA0	160
342	69000	1600	90	180	392	255	180	340	31	61	1	241	225	60	711	157.35	2LC0301-0A ■■■ -0AA0	195
375	98000	1600	100	200	430	290	200	375	31	61	1	261	260	60	711	177.35	2LC0301-1A ■■■ -0AA0	240
415	130000	1400	120	220	478	320	220	415	37	99	1	319	285	80	812	203.35	2LC0301-2A ■■■ -0AA0	340
465	180000	1400	140	250	528	360	240	465	41	121	1	361	325	80	812	225.35	2LC0301-3A ■■■ -0AA0	420

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.
Weights apply to maximum bores.

Ordering example:
ZAPEX ZWBT coupling, size 146, variant A, brake disk DB = 457 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

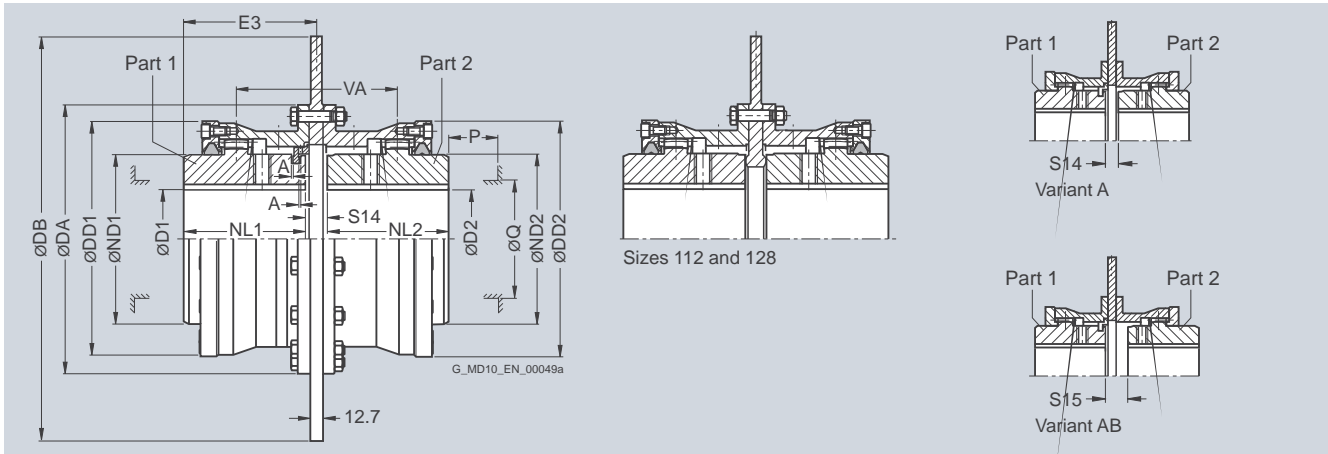
Product code:
2LC0300-2AS99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWBG

Selection and ordering data



4

Variant limited in displacement and axial movement.
Max. displacement 0.2°.

Coupling parts 1 and 2 can be combined to form coupling variants A and AB.

After the finished bore has been drilled, the variant can no longer be changed.

Modified brake disk dimensions on request

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2	DD1/DD2	S14	S15	A	VA	Q	P	Brake disk		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg
			min.	max.											DB	E3		
112	1300	3800	0	45	143	65	50	110	19	-	0.5	69	45	35	300	59.5	2LC0300-0A ■■■-0AA0	13
		3200							22	-		72			356	61	2LC0300-0A ■■■-0BA0	16
128	2500	3200	0	55	157	80	60	128	22	29	0.5	89	60	45	356	71	2LC0300-1A ■■■-0AA0	18.5
		2800							19	26		86			406	69.5	2LC0300-1A ■■■-0BA0	21
146	4300	2800	0	65	177	95	75	146	19	26	0.5	101	75	45	406	84.5	2LC0300-2A ■■■-0AA0	24
		2500							22	29		104			457	86	2LC0300-2A ■■■-0BA0	28
175	7000	2800	0	80	215	112	90	175	21	27	0.5	117	85	50	406	100.5	2LC0300-3A ■■■-0AA0	33
		2500							24	30		120			457	102	2LC0300-3A ■■■-0BA0	37
		2200							24	30		120			514	102	2LC0300-3A ■■■-0CA0	41
198	11600	2500	0	95	237	135	100	198	24	35	0.5	135	110	50	457	112	2LC0300-4A ■■■-0AA0	44
		2200							24	35		135			514	112	2LC0300-4A ■■■-0BA0	49
230	19000	2200	0	110	265	160	110	230	24	36	0.5	146	135	50	514	122	2LC0300-5A ■■■-0AA0	60
		1850							24	36		146			610	122	2LC0300-5A ■■■-0BA0	69
255	27000	2200	0	125	294	185	125	255	26	41	1	166	160	50	514	138	2LC0300-6A ■■■-0AA0	75
		1850							26	41		166			610	138	2LC0300-6A ■■■-0BA0	82
290	39000	1850	70	145	330	210	140	290	26	46	1	186	180	60	610	153	2LC0300-7A ■■■-0AA0	110
		1600							29	49		189			711	154.5	2LC0300-7A ■■■-0BA0	125
315	54000	1850	80	160	366	230	160	315	26	46	1	206	200	60	610	173	2LC0300-8A ■■■-0AA0	140
		1600							29	49		209			711	174.5	2LC0300-8A ■■■-0BA0	150
342	69000	1600	90	180	392	255	180	340	31	61	1	241	225	60	711	195.5	2LC0301-0A ■■■-0AA0	175
375	98000	1600	100	200	430	290	200	375	31	61	1	261	260	60	711	215.5	2LC0301-1A ■■■-0AA0	225
415	130000	1400	120	220	478	320	220	415	37	99	1	319	285	80	812	238.5	2LC0301-2A ■■■-0AA0	300
465	180000	1400	140	250	528	360	240	465	41	121	1	361	325	80	812	260.5	2LC0301-3A ■■■-0AA0	380

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores.

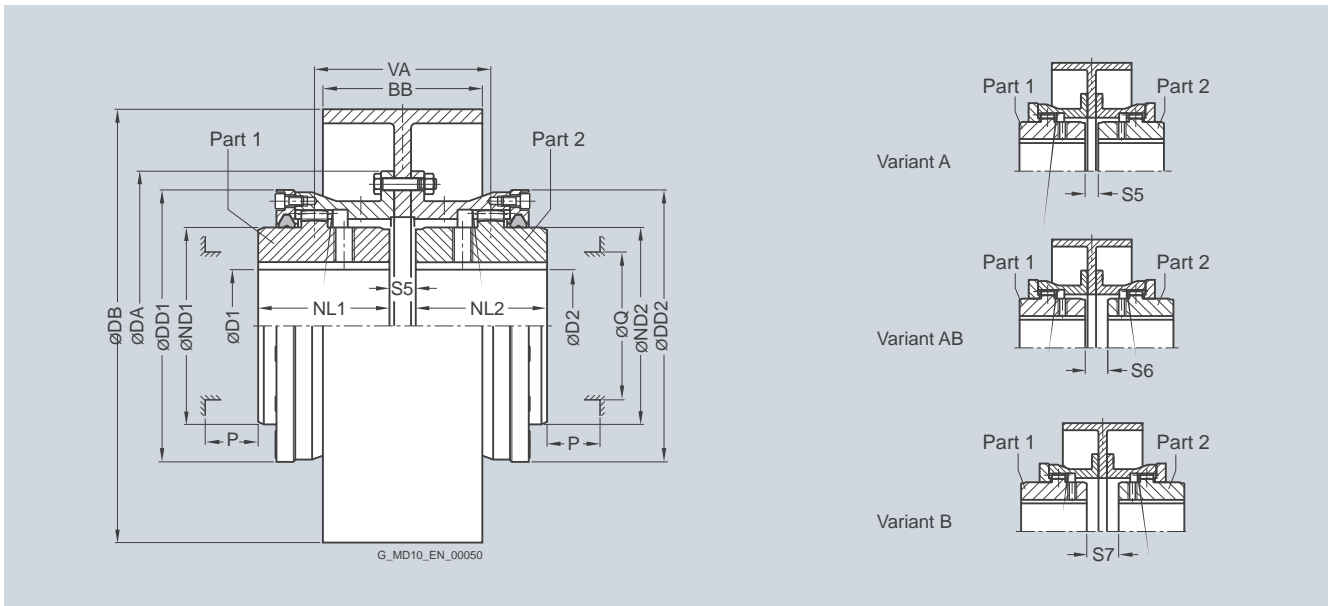
Ordering example:
ZAPEX ZWBG coupling, size 146, variant A, brake disk diameter DB = 457 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0300-2AU99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWB

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A, AB, B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2	DD1/DD2	S5	S6	S7	VA	Q	P	Brake disk		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			min.	max.											DB	BB		
128	2500	2500	0	55	157	80	60	128	16	23	30	83	60	45	200	75	2LC0300-0 ■■■■ -0AA0	12.5
		2000							16	23	30	83			250	95	2LC0300-0 ■■■■ -0BA0	16
146	4300	2000	0	65	177	95	75	146	16	23	30	98	75	45	250	95	2LC0300-1 ■■■■ -0AA0	19
		1600							18	25	32	100			315	118	2LC0300-1 ■■■■ -0BA0	26
175	7000	1600	0	80	215	112	90	175	20	26	32	116	85	50	315	118	2LC0300-2 ■■■■ -0AA0	35
		1250							22	28	34	118			400	150	2LC0300-2 ■■■■ -0BA0	47
198	11600	1600	0	95	237	135	100	198	20	31	42	131	110	50	315	118	2LC0300-3 ■■■■ -0AA0	42
		1250							22	33	44	133			400	150	2LC0300-3 ■■■■ -0BA0	54
230	19000	1250	0	110	265	160	110	230	22	34	46	144	135	50	400	150	2LC0300-4 ■■■■ -0AA0	66
		1000							23	35	47	145			500	190	2LC0300-4 ■■■■ -0BA0	85
255	27000	1000	0	125	294	185	125	255	25	40	55	165	160	50	500	190	2LC0300-5 ■■■■ -0AA0	97
		1000							28	43	58	168			630	236	2LC0300-5 ■■■■ -0BA0	135
290	39000	1000	70	145	330	210	140	290	28	48	68	188	180	60	630	236	2LC0300-6 ■■■■ -0AA0	165
		750							28	48	68	188			710	265	2LC0300-6 ■■■■ -0BA0	195
Variant:																	A W	
																	A X	
																	B A	
∅D1:																	1	
																	9	
∅D2:																	1	
																	9	

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.

Weights apply to maximum bores.

Ordering example:

ZAPEX ZWB coupling, size 146, variant A, brake disk diameter DB = 315 mm, BB = 118 mm, Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw, Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

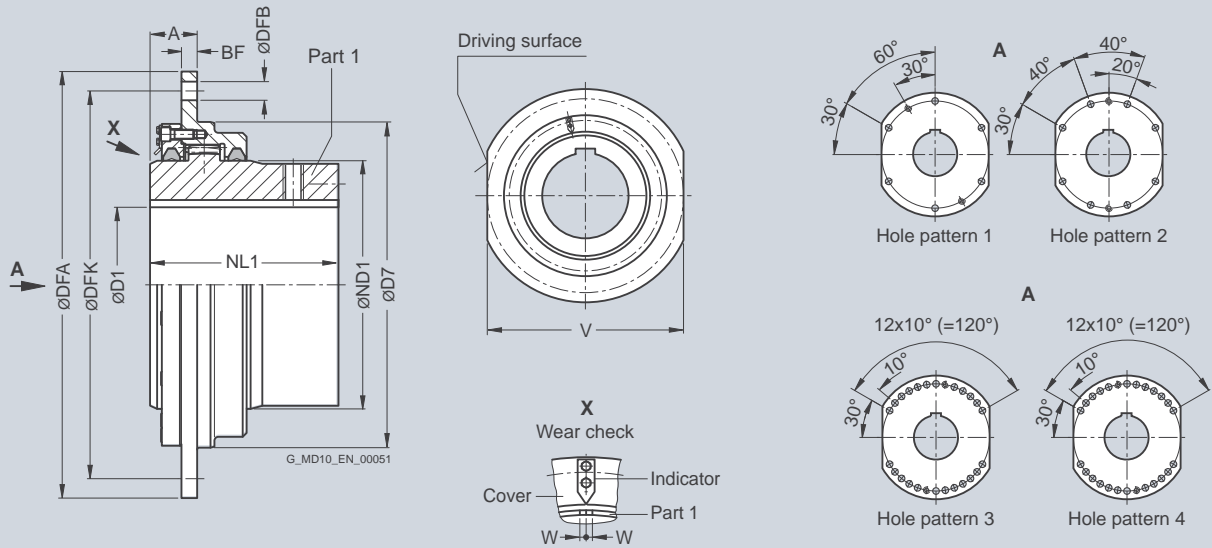
Product code:
2LC0300-2AW99-0BA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWTR

Selection and ordering data



4

Size	Rated torque T_{KN} Nm	Perm. radial load N	Dimensions in mm											Hole pattern	Perm. wear W	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			D1 Keyway DIN 6885 min. max.	ND1	NL1	DFA	D7 h6	V n9	A	BF	DFK	DFB	W				
198	14500	32500	0 95	135	125	340	220	300	45	15	300	15	1	2	2LC0300-4BN	0-0AA0	20
230	17500	36500	0 110	160	130	360	240	320	45	15	320	15	1	2	2LC0300-5BN	0-0AA0	24.5
255	24000	45500	0 125	185	145	380	260	340	45	15	340	19	1	2	2LC0300-6BN	0-0AA0	32
290 ¹⁾	31500	50000	0 145	210	170	400	280	360	45	15	360	19	1	3	2LC0300-7BN	0-0AA0	38
315	42000	70000	0 160	230	175	420	310	380	60	20	380	24	1	3	2LC0300-8BN	0-0AA0	55
342 ¹⁾	55000	90000	0 180	255	185	450	340	400	60	20	400	24	1	3	2LC0301-0BN	0-0AA0	52
375	78000	110000	0 200	290	220	510	400	460	60	20	460	24	1	3	2LC0301-1BN	0-0AA0	79
415 ¹⁾	104000	150000	0 220	320	240	550	420	500	60	20	500	24	1	3	2LC0301-2BN	0-0AA0	100
465 ¹⁾	155000	165000	0 250	360	260	580	450	530	60	20	530	24	2	4	2LC0301-3BN	0-0AA0	120
505 ¹⁾	235000	200000	0 275	400	315	650	530	580	65	25	600	24	2	4	2LC0301-4BN	0-0AA0	185
545 ¹⁾	390000	325000	0 300	440	350	680	560	600	65	25	630	24	3	4	2LC0301-5BN	0-0AA0	235
585 ¹⁾	460000	380000	0 330	480	380	710	600	640	81	35	660	28	4	4	2LC0301-6BN	0-0AA0	270
640 ¹⁾	600000	420000	0 360	520	410	780	670	700	81	35	730	28	4	4	2LC0301-7BN	0-0AA0	320
730 ¹⁾	880000	500000	0 415	600	450	850	730	760	81	35	800	28	4	5	2LC0302-0BN	0-0AA0	440

ØD1:
 • Without finished bore – Without order codes 1
 • With finished bore – With order codes for diameter and tolerance (product code without -Z) 9

Total wear must not exceed 1 x W.

Mass moments of inertia on request.

Weights apply to maximum bores.

Ordering example:
 ZAPEX ZWTR coupling, size 198, bore 80H7 mm, keyway to DIN 6885-1 P9 and set screw.

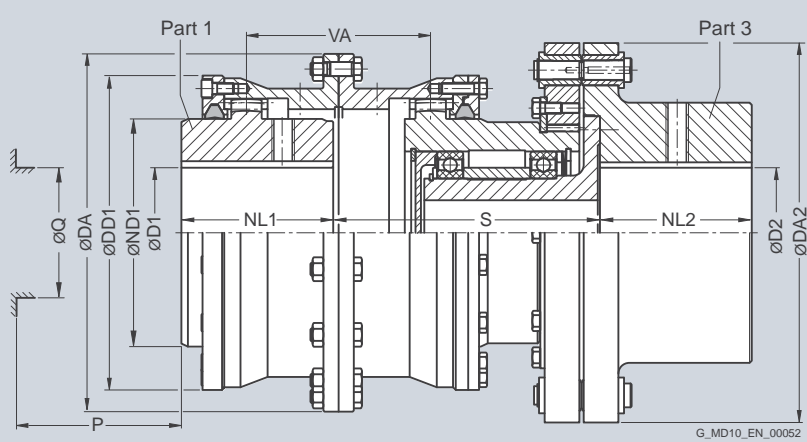
Product code:
2LC0300-4BN90-0AA0
L1J

¹⁾ These sizes have connection dimensions to SEB 666 212.

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZBR

Selection and ordering data



Size	Rated torque T_{KN} Nm	Max. shear torque T_{BR} Nm	Maximum speed n_{Kmax} rpm	Geometry data												Product code Plain text required for max. shear torque. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg	
				D1 Keyway DIN 6885		D2 Keyway DIN 6885		DA	ND1	NL1/ NL2	DA2	DD1	S	VA	Q			P
				min.	max.	min.	max.											
112	1300	1690	9400	0	45	0	55	143	65	50	170	110	106	56	45	35	2LC0300-0BH ■ ■ -0AA0-Z Y99	15
128	2500	3250	8300	0	55	0	65	157	80	60	190	128	116	73	60	45	2LC0300-1BH ■ ■ -0AA0-Z Y99	18
146	4300	5590	7300	0	65	0	75	177	95	75	205	146	131	88	75	45	2LC0300-2BH ■ ■ -0AA0-Z Y99	29.5
175	7000	9100	6400	0	80	0	90	215	112	90	235	175	165	104	85	50	2LC0300-3BH ■ ■ -0AA0-Z Y99	46
198	11600	15080	5500	0	95	0	110	237	135	100	285	198	182	119	110	50	2LC0300-4BH ■ ■ -0AA0-Z Y99	63
230	19000	24700	4700	0	110	0	125	265	160	110	300	230	198	130	135	50	2LC0300-5BH ■ ■ -0AA0-Z Y99	96
255	27000	35100	4100	0	125	0	150	294	185	125	335	255	215	150	160	50	2LC0300-6BH ■ ■ -0AA0-Z Y99	120
290	39000	50700	3700	70	145	70	160	330	210	140	390	290	236	170	180	60	2LC0300-7BH ■ ■ -0AA0-Z Y99	180
315	54000	70200	3300	80	160	80	180	366	230	160	415	315	257	190	200	60	2LC0300-8BH ■ ■ -0AA0-Z Y99	225
342	69000	89700	3000	90	180	90	200	392	255	180	460	340	280	222	225	60	2LC0301-0BH ■ ■ -0AA0-Z Y99	300
375	98000	127400	2700	100	200	100	220	430	290	200	495	375	292	242	260	60	2LC0301-1BH ■ ■ -0AA0-Z Y99	380
415	130000	169000	2500	120	220	120	240	478	320	220	540	415	349	294	285	80	2LC0301-2BH ■ ■ -0AA0-Z Y99	490
465	180000	234000	2200	140	250	140	280	528	360	240	635	465	380	336	325	80	2LC0301-3BH ■ ■ -0AA0-Z Y99	720
505	250000	325000	2000	160	275	160	320	568	400	260	710	505	395	366	365	80	2LC0301-4BH ■ ■ -0AA0-Z Y99	930
545	320000	416000	1800	180	300	180	360	620	440	280	800	545	433	406	405	80	2LC0301-5BH ■ ■ -0AA0-Z Y99	1350
585	400000	520000	1700	210	330	210	390	660	480	310	860	585	466	460	445	80	2LC0301-6BH ■ ■ -0AA0-Z Y99	1700
640	510000	663000	1600	230 >330	330 360	230	420	738 520	480 520	330	900	640	502	479	445	90	2LC0301-7BH ■ ■ -0AA0-Z Y99	1900 1950
690	660000	858000	1450	250 >360	360 390	250	450	788 560	520 560	350	1020	690	528	516	475	90	2LC0301-8BH ■ ■ -0AA0-Z Y99	2650 2700
730	790000	1027000	1350	275 >390	390 415	275	480	834 600	560 600	380	1080	730	555	560	515	90	2LC0302-0BH ■ ■ -0AA0-Z Y99	3200 3250

- | | | |
|------|--|-------------|
| ØD1: | <ul style="list-style-type: none"> Without finished bore – Without order codes Without finished bore from size 640 for 2nd diameter range D1 – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) | 1
2
9 |
| ØD2: | <ul style="list-style-type: none"> Without finished bore – Without order codes Without finished bore from size 640 for 2nd diameter range D2 – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) | 1
2
9 |

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

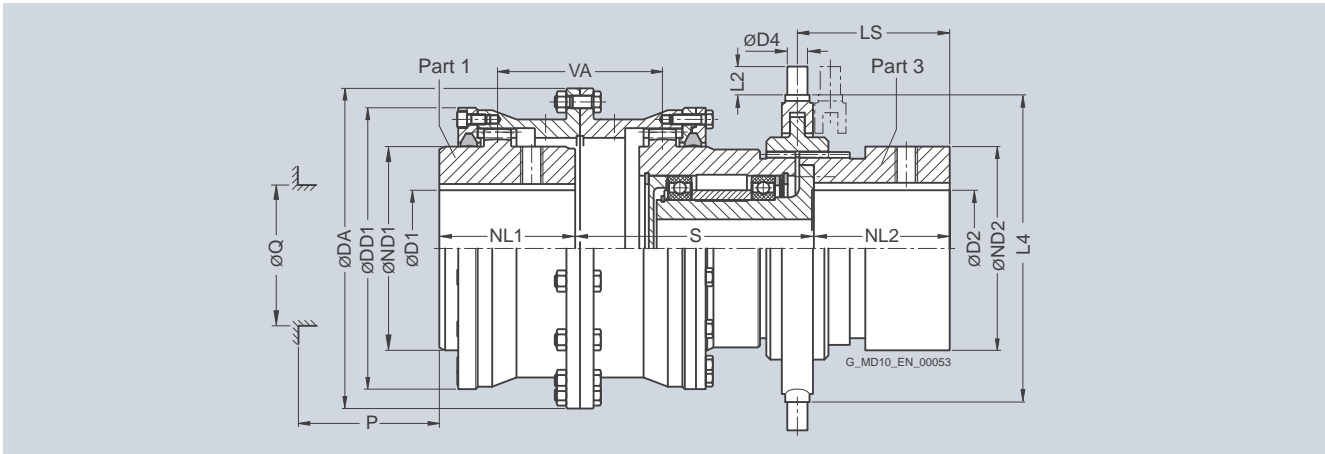
Mass moments of inertia on request.
Weights apply to maximum bores.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWS

Selection and ordering data



For engaging/disengaging during standstill.

Part 3 should be mounted on the shaft while the shaft is disconnected and not being driven.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm												Shift ring L4 D4 L2	Switch KSHN KSZH	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg				
			D1 Keyway DIN 6885		D2 Keyway DIN 6885		DA	ND1/ND2	NL1/NL2	DD1	S	VA	Q	P					LS			
			min.	max.	min.	max.																
128	2500	1500	0	55	0	50	157	80	60	128	116	73	60	45	70	150	15	14	14/11	-	2LC0300-1BK -0AA0	15.5
146	4300	1300	0	65	0	60	177	95	75	146	131	88	75	45	86	180	16	16	16/12	-	2LC0300-2BK -0AA0	22.5
175	7000	1100	0	80	0	70	215	112	90	175	165	104	85	50	101	180	16	16	16/12	-	2LC0300-3BK -0AA0	33
198	11600	960	0	95	0	80	237	135	100	198	182	119	110	50	116	210	20	18	18/13	-	2LC0300-4BK -0AA0	50
230	19000	830	0	110	0	100	265	160	110	230	198	130	135	50	126	260	22	20	18/15	14/14	2LC0300-5BK -0AA0	74
255	27000	750	0	125	0	115	294	185	125	255	215	150	160	50	142	300	25	22	21/17	16/17	2LC0300-6BK -0AA0	115
290	39000	660	70	145	70	130	330	210	140	290	236	170	180	60	157	315	25	35	-	16/211	2LC0300-7BK -0AA0	160
315	54000	600	80	160	80	140	366	230	160	315	257	190	200	60	182	360	30	24	-	18/18	2LC0300-8BK -0AA0	215
342	69000	560	90	180	90	160	392	255	180	340	280	222	225	60	202	360	30	24	-	18/18	2LC0301-0BK -0AA0	270
375	98000	510	100	200	100	180	430	290	200	375	292	242	260	60	222	430	34	26	-	24/20	2LC0301-1BK -0AA0	370
415	130000	460	120	220	120	210	478	320	220	415	349	294	285	80	247	-	-	-	-	-	2LC0301-2BK -0AA0	460
465	180000	410	140	250	140	230	528	360	240	465	380	336	325	80	267	-	-	-	-	-	2LC0301-3BK -0AA0	620
505	250000	380	160	275	160	260	568	400	260	505	395	366	365	80	287	-	-	-	-	-	2LC0301-4BK -0AA0	820
545	320000	350	180	300	180	280	620	440	280	545	433	406	405	80	315	-	-	-	-	-	2LC0301-5BK -0AA0	1000

- ∅D1: • Without finished bore – Without order codes
- With finished bore – With order codes for diameter and tolerance (product code without -Z)
- ∅D2: • Without finished bore – Without order codes
- With finished bore – With order codes for diameter and tolerance (product code without -Z)

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia on request.
Weights apply to maximum bores.

KSHN: Manual lever switch type KSHN to M4218
KSZH: Toothed rack type KSZH to M4215

Pneumatically or hydraulically actuated switches also available.

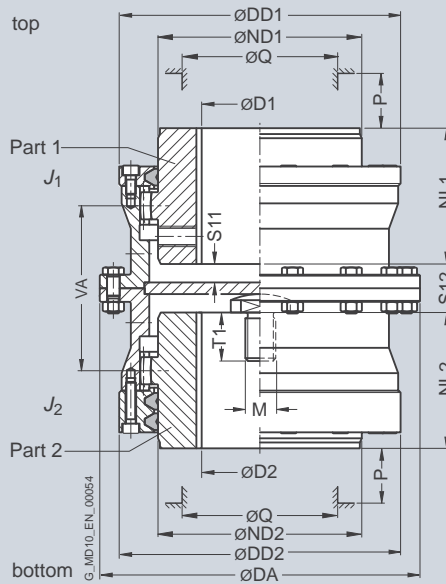
Ordering example:
ZAPEX ZWS coupling, size 146,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0300-2BK99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZWNV Series

Type ZWNV

Selection and ordering data



When ordering, state thread size M and thread depth T1.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ ND2	NL1/ NL2	DD1/ DD2	S11	S12	VA	Q	P	Mass moment of inertia J_1/J_2 kgm ²	Product code Plain text for thread size M and thread depth T1 necessary. Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg
			min.	max.												
128	2500	8300	0	55	157	80	60	128	6.5	26	73	60	45	0.015	2LC0300-1AH ■ ■ -0AA0-Z Y99	9.3
146	4300	7300	0	65	177	95	75	146	6	28	88	75	45	0.024	2LC0300-2AH ■ ■ -0AA0-Z Y99	10.5
175	7000	6400	0	80	215	112	90	175	5.5	33	104	85	50	0.057	2LC0300-3AH ■ ■ -0AA0-Z Y99	23
198	11600	5500	0	95	237	135	100	198	10	40	119	110	50	0.099	2LC0300-4AH ■ ■ -0AA0-Z Y99	32
230	19000	4700	0	110	265	160	110	230	11	32	130	135	50	0.18	2LC0300-5AH ■ ■ -0AA0-Z Y99	46
255	27000	4100	0	125	294	185	125	255	14	40	150	160	50	0.30	2LC0300-6AH ■ ■ -0AA0-Z Y99	62
290	39000	3700	70	145	330	210	140	290	19	50	170	180	60	0.57	2LC0300-7AH ■ ■ -0AA0-Z Y99	94
315	54000	3300	80	160	366	230	160	315	18	50	190	200	60	0.94	2LC0300-8AH ■ ■ -0AA0-Z Y99	125
342	69000	3000	90	180	392	255	180	340	29	72	222	225	60	1.4	2LC0301-0AH ■ ■ -0AA0-Z Y99	155
375	98000	2700	100	200	430	290	200	375	29	72	242	260	60	2.2	2LC0301-1AH ■ ■ -0AA0-Z Y99	205
415	130000	2500	120	220	478	320	220	415	60	136	294	285	80	3.6	2LC0301-2AH ■ ■ -0AA0-Z Y99	270
465	180000	2200	140	250	528	360	240	465	80	176	336	325	80	6.0	2LC0301-3AH ■ ■ -0AA0-Z Y99	360
505	250000	2000	160	275	568	400	260	505	89	196	366	365	80	8.8	2LC0301-4AH ■ ■ -0AA0-Z Y99	450

- øD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- øD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)

Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:
ZAPEX ZWNV coupling, size 146, thread M 10 x 20 deep,
Part 1: Bore 40H7mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0300-2AH99-0AA0-Z
LOW+M1A+M13+Y99
plain text to Y99: **Thread M10 x 20 mm**

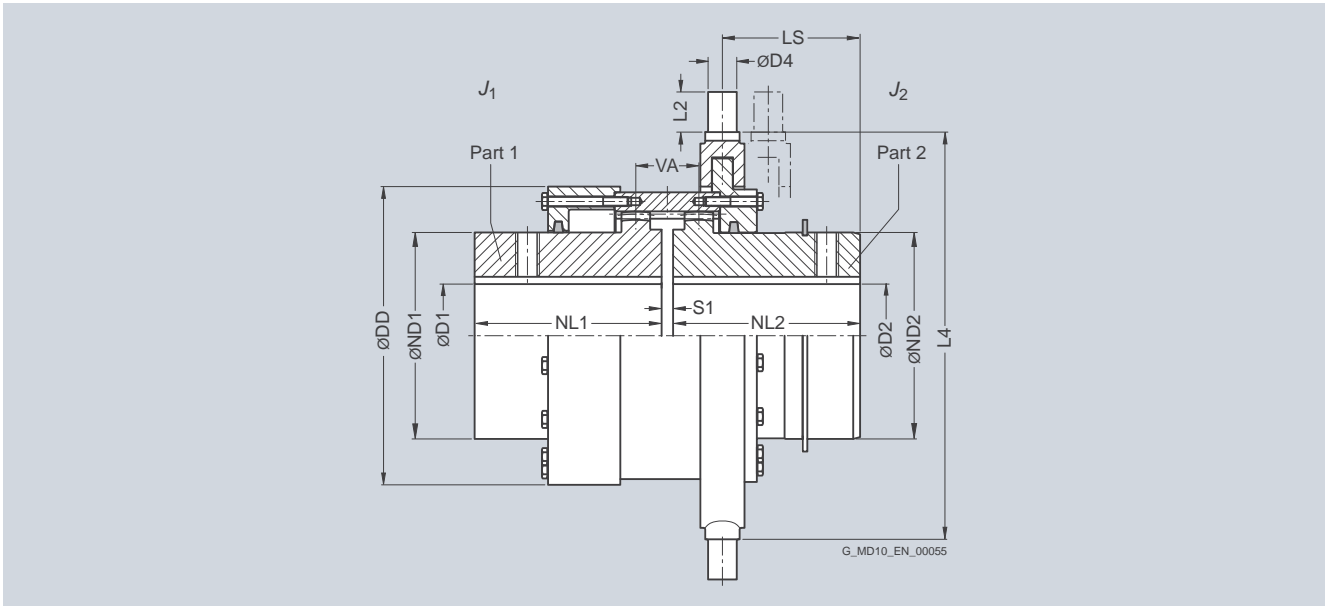
FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Type ZWSE

Selection and ordering data

4



For engaging/disengaging during standstill. Protect sliding surfaces from dirt and corrosion; sprayed with adhesive grease.

Part 2 should be mounted on the shaft while the shaft is disconnected and not being driven.

Size	Dimensions in mm		Shift ring												Switch	Mass moment of inertia J_1/J_2	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1 Keyway DIN 6885 min.	D2 Keyway DIN 6885 max.	ND1	ND2	NL1/ NL2	DD	S1	LS	L4	D4	L2	KSHN					Size
128	2500	730	0	55	0	50	76.5	75	60	130	6	36.5	180	16	16	16/12	0.007	2LC0300-1BM ■ ■ -0AA0	7
146	4300	630	0	65	0	60	91.5	90	75	150	6	50	210	20	18	18/13	0.014	2LC0300-2BM ■ ■ -0AA0	11.5
175	7000	520	0	75	0	75	108	105	90	180	8	56.5	250	20	30	18/18	0.033	2LC0300-3BM ■ ■ -0AA0	17
198	11600	500	0	90	0	90	130	130	100	204	8	64.5	260	22	20	18/14	0.06	2LC0300-4BM ■ ■ -0AA0	28
230	19000	430	0	110	0	105	155	155	110	236	8	73	300	25	22	21/16	0.12	2LC0300-5BM ■ ■ -0AA0	35
255	27000	360	0	125	0	120	180	180	125	260	10	82	355	25	35	24/24	0.23	2LC0300-6BM ■ ■ -0AA0	53
ØD1: <ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1	9
ØD2: <ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1	9

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:
 ZAPEX ZWSE coupling, size 146,
 Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0300-2BM99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZW Series

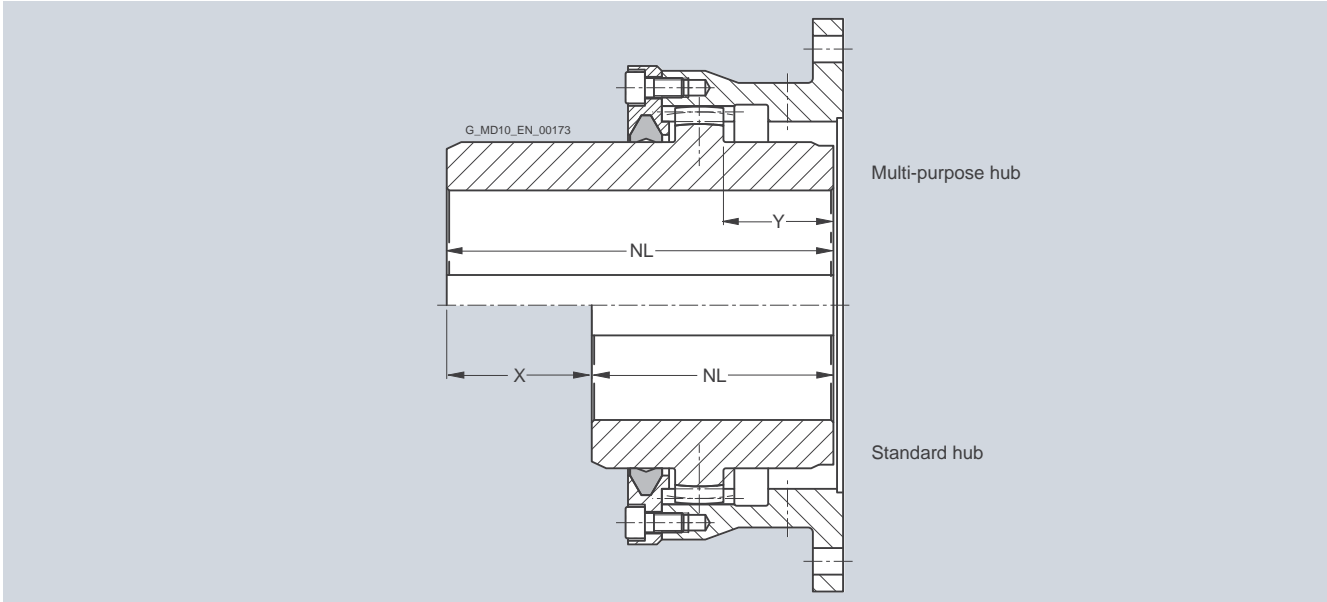
Multipurpose hubs for ZAPEX ZW Series

Selection and ordering data

ZAPEX couplings can be designed with multipurpose hubs in order to implement modified hub geometries. One or both standard hubs can be replaced with multipurpose hubs. Hub lengths and coupling lengths can be altered through the use of multipurpose hubs. The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub reductions X and Y the multipurpose hub can be adapted to the mounting situation.

Details D1, NL1, X1 and Y1 relate to the hub shown on the dimension drawings left; details D2, NL2, X2 and Y2 apply to the hub shown on the dimension drawings right.



Geometric data and permitted reduction of the multipurpose hub

Size	Standard hub		Multipurpose hub	
	NL mm	NL mm	Maximum hub reduction X mm	Y mm
112	50	90	40	20
128	60	100	40	27.5
146	75	115	40	33.5
175	90	150	60	39
198	100	160	60	45.5
230	110	180	70	50
255	125	210	85	57.5
290	140	210	70	66
315	160	240	80	74
342	180	270	90	88
375	200	310	110	97
415	220	310	90	121
465	240	350	110	138
505	260	400	140	152

Up to size 505 available from FLENDER stocks.

Product code

The product code of the respective ZAPEX coupling type must be supplemented with **-Z** and order code **Y99**. The dimensions of the hub reduction X, Y of the multipurpose hub must be stated in plain text.

Ordering example:

ZAPEX ZWN coupling with multipurpose hub size 505, S1 = 66 mm
 Hub left with bore D1 = 200H7 mm, with keyway to DIN 6885-1 P9 and set screw, NL1 = 385 mm, reduced with X1 = 15 mm.
 Hub right with bore D2 = 220K7 mm, with keyway to DIN 6885-1 P9 and set screw, NL2 = 350 mm, reduced with Y2 = 50 mm.

Product code:

2LC0301-4AA99-0AA0-Z
Y99 + L1D + L41 + M2E + M13 + M41

plain text to Y99:

Hub lengths NL1 = 385 mm, NL2 = 350 mm, hub reduction X1 = 15 mm, Y1 = 0 mm, X2 = 0 mm, Y2 = 50 mm

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZW Series

Spare and wear parts

Selection and ordering data

DUO sealing rings

The DUO sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Size	Hub diameter ND1/ND2 mm	Product code
112	65	2LC0300-0XG00-0AA0
128	80	2LC0300-0XG00-0AA0
146	95	2LC0300-2XG00-0AA0
175	112	2LC0300-3XG00-0AA0
198	135	2LC0300-4XG00-0AA0
230	160	2LC0300-5XG00-0AA0
255	185	2LC0300-6XG00-0AA0
290	210	2LC0300-7XG00-0AA0
315	230	2LC0300-8XG00-0AA0
342	255	2LC0301-0XG00-0AA0
375	290	2LC0301-1XG00-0AA0
415	320	2LC0301-2XG00-0AA0
465	360	2LC0301-3XG00-0AA0
505	400	2LC0301-4XG00-0AA0
545	440	2LC0301-5XG00-0AA0
585	480	2LC0301-6XG00-0AA0
640	480 520	2LC0301-7XG10-0AA0 2LC0301-7XG20-0AA0
690	520 560	2LC0301-8XG10-0AA0 2LC0301-8XG20-0AA0
730	560 600	2LC0302-0XG10-0AA0 2LC0302-0XG20-0AA0
780	600 650	2LC0302-1XG10-0AA0 2LC0302-1XG20-0AA0
852	650 710	2LC0302-2XG10-0AA0 2LC0302-2XG20-0AA0
910	710 750	2LC0302-3XG10-0AA0 2LC0302-3XG20-0AA0
1020	750 800	2LC0302-4XG10-0AA0 2LC0302-4XG20-0AA0
1080	800 860	2LC0302-5XG10-0AA0 2LC0302-5XG20-0AA0
1150	860 930	2LC0302-6XG10-0AA0 2LC0302-6XG20-0AA0
1160	860 930 990	2LC0302-7XG10-0AA0 2LC0302-7XG20-0AA0 2LC0302-7XG30-0AA0
1240	930 990 1055	2LC0302-8XG10-0AA0 2LC0302-8XG20-0AA0 2LC0302-8XG30-0AA0
1310	930 990 1055 1120	2LC0303-0XG10-0AA0 2LC0303-0XG20-0AA0 2LC0303-0XG30-0AA0 2LC0303-0XG40-0AA0
1380	990 1055 1120 1170	2LC0303-1XG10-0AA0 2LC0303-1XG20-0AA0 2LC0303-1XG30-0AA0 2LC0303-1XG40-0AA0
1440	1055 1120 1170 1240	2LC0303-2XG10-0AA0 2LC0303-2XG20-0AA0 2LC0303-2XG30-0AA0 2LC0303-2XG40-0AA0
1540	1120 1170 1240 1310	2LC0303-3XG10-0AA0 2LC0303-3XG20-0AA0 2LC0303-3XG30-0AA0 2LC0303-3XG40-0AA0

FLENDER high-performance grease (cartridge 300 g)
FFA: **000 000 501 027**

Sealing compound (tube 60 ml)
FFA: **000 000 243 185**

Torsionally Rigid Gear Couplings

ZAPEX ZI Series

5



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5/2	Benefits
5/2	Application
5/2	Design
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5/4	Type ZIN
5/4	Selection and ordering data
5/5	Type ZIZS
5/5	Selection and ordering data
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5/6	Selection and ordering data
5/7	Type ZIBT
5/7	Selection and ordering data
5/8	Type ZIBG
5/8	Selection and ordering data
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5/10	Type ZIZA
5/10	Selection and ordering data
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FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

General information

Overview



**Coupling suitable for potentially explosive environments.
Complies with Directive 94/9/EC for:**

CE Ex II 2 GD c 120 °C (T4)

CE Ex I M2

Materials

- Hubs and flanged sleeves: Steel
- O ring: Perbunan
- Lubricant: Grease filling

5

Benefits

ZAPEX gear couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. High transmissible torque combined with compactness and light weight are characteristic of ZAPEX couplings. ZAPEX coupling types are constructed on a modular principle, so application-related solutions can be delivered quickly.

This coupling requires very little maintenance. Regular grease changes at the prescribed intervals prolong the service life of the coupling.

Application

ZAPEX couplings are especially suited for operation in harsh operating conditions, such as drives in the iron smelting or cement industry. ZAPEX couplings are suitable for reverse operation and horizontal mounting positions and, in the case of type ZINV, for vertical mounting positions.

Design

A ZAPEX coupling comprises two hub sections with external teeth which are mounted on the machine shafts. The external teeth engage with a flanged sleeve with corresponding internal teeth. The flanged sleeves are connected via two flanges with close-fitting bolts.

The teeth are lubricated with grease. On the ZAPEX type ZI, O-rings are used to seal the tooth space. The O-rings prevent the lubricant from escaping and dirt from entering the tooth space. The parallel keyways must be sealed during assembly to prevent lubricant from escaping.

The torque is transmitted through the coupling teeth. The teeth are crowned, so angular displacement per tooth plane is possible. Radial misalignment can be compensated for via the space VA between the tooth planes. The internal teeth of the flanged sleeves are significantly wider than the external teeth of the hub parts, permitting a relatively high axial misalignment.

A small angular misalignment on the coupling teeth results in an advantageous distribution of the lubricant film in contact with the teeth and a very low wear rate. This favorable condition can be deliberately set by aligning the drive with the machine shafts with a slight radial misalignment.

ZAPEX ZI gear coupling types

Type	Description
ZIN	Standard type
ZIZS	with adapter
ZIW	with intermediate shaft
ZIBT	with offset brake disk
ZIBG	with straight brake disk
ZINA	with axial backlash limiter
ZIZA	with adapter and axial backlash limiter
ZINV	Vertical type
ZIN	for axial displacement
ZIZI	electrically insulating

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

The hubs of the standard types can be easily exchanged for multipurpose hubs. Multipurpose hubs are designed much longer and can be shortened to meet customer requirements.

The multipurpose hubs are described after the types.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Torsional stiffness	Permitted shaft misalignment
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW}	ZI C_{Tdyn} kNm/rad	ΔK_a mm
1	850	1700	3400	340	500	1
1.5	1700	3400	6800	680	1400	1
2	3350	6700	13400	1340	2500	1
2.5	6000	12000	24000	2400	5800	1
3	10000	20000	40000	4000	9200	1
3.5	16000	32000	64000	6400	16600	1
4	23600	47200	94400	9440	27300	1
4.5	33500	67000	134000	13400	41500	1.5
5	47500	95000	190000	19000	61000	1.5
5.5	67000	134000	268000	26800	79000	1.5
6	90000	180000	360000	36000	99000	1.5
7	125000	250000	500000	50000	156000	1.5

The rated torques for type ZIZI deviating from these listed above are provided in the respective dimension table.

The specified torsional stiffness "ZI" applies to coupling types ZIN, ZINA, ZINV and ZIN for axial displacement.

Torsional stiffness of types ZIZS, ZIZW, ZIBT, ZIBG, ZIZA and ZIZI on request.

The axial misalignment K_a must be understood as the maximum permitted enlargement of the hub distance S of the coupling.

Angular misalignment ΔK_W

- Types ZIN, ZIZS, ZIW, ZIN-MZ, ZINV; ZIN for axial displacement, ZIZI: $\Delta K_W = 0.5^\circ$
- Types ZIBG; ZIBT; ZINA; ZIZA: $\Delta K_W = 0.2^\circ$

Radial misalignment ΔK_r

- Types ZIN, ZIZS, ZIW, ZIN-MZ, ZINV; ZIN for axial displacement, ZIZI: $\Delta K_r \leq VA \cdot \tan 0.5^\circ$
- Types ZIBG; ZIBT; ZINA; ZIZA: $\Delta K_r \leq VA \cdot \tan 0.2^\circ$

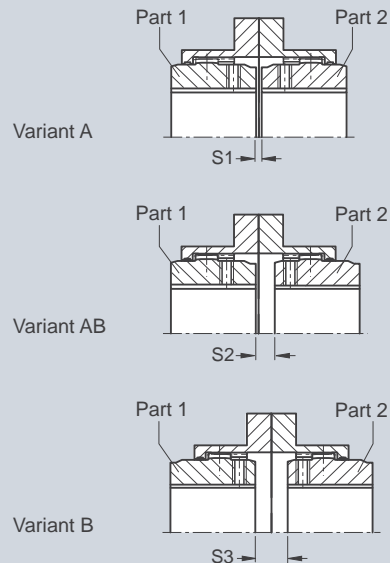
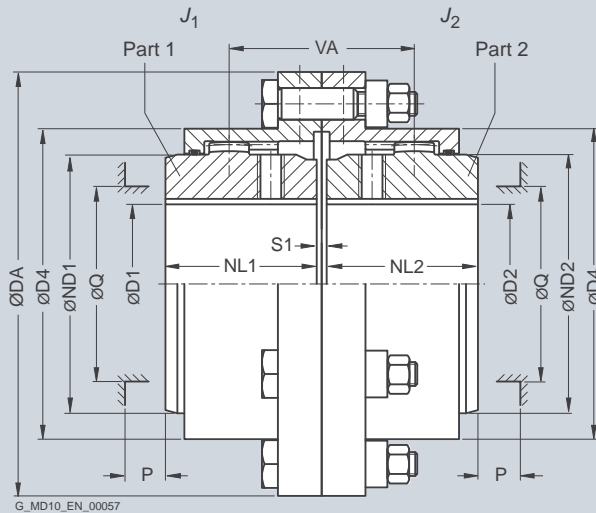
For the tooth distance VA, see the relevant table for the sub-assembly.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIN

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A, AB, B.

After the finished bore has been drilled, the variant can no longer be changed.

Dimensions in mm														Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
Size	Rated torque T_{KN} Nm	Maximum speed n_{kmax} rpm	D1, D2 Keyway DIN 6885 min. max.		DA	ND1/ ND2	NL1/ NL2	D4	S1	S2	S3	VA	Q				P
1	850	8500	0	50	117	67	43	83	3	12	21	55	52	31	0.003	2LC0310-0A ■■■■ -0AA0	3.2
1.5	1700	7700	0	64	152	87	50	107	3	9	15	59	68	34	0.009	2LC0310-1A ■■■■ -0AA0	6.5
2	3350	6900	0	80	178	108	62	129.5	3	17	31	79	85	42	0.02	2LC0310-2A ■■■■ -0AA0	9.8
2.5	6000	6200	0	98	213	130	76	156	5	17	29	93	110	47	0.05	2LC0310-3A ■■■■ -0AA0	17.5
3	10000	5800	0	112	240	153	90	181	5	19	33	109	130	58	0.09	2LC0310-4A ■■■■ -0AA0	25.5
3.5	16000	5100	0	133	280	180	105	211	6	23	40	128	150	67	0.21	2LC0310-5A ■■■■ -0AA0	43
4	23600	4500	0	158	318	214	120	249.5	6	24	42	144	175	72	0.39	2LC0310-6A ■■■■ -0AA0	60
4.5	33500	4000	80	172	347	233	135	274	8	29	50	164	190	81	0.59	2LC0310-7A ■■■■ -0AA0	82
5	47500	3750	90	192	390	260	150	307	8	32	56	182	220	91	1.1	2LC0310-8A ■■■■ -0AA0	115
5.5	67000	3550	100	210	425.5	283	175	332.5	8	39	70	214	250	104	1.8	2LC0311-0A ■■■■ -0AA0	155
6	90000	3400	120	232	457	312	190	364	8	46	84	236	265	126	2.3	2LC0311-1A ■■■■ -0AA0	180
7	125000	3200	150	276	527	371	220	423.5	10	43	76	263	300	140	4.9	2LC0311-2A ■■■■ -0AA0	275
Variant:															A		
															B		
															C		
ØD1:															1		
															9		
ØD2:															1		
															9		

All sizes available from FLINDER stock.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZIN coupling, size 1.5, variant A,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

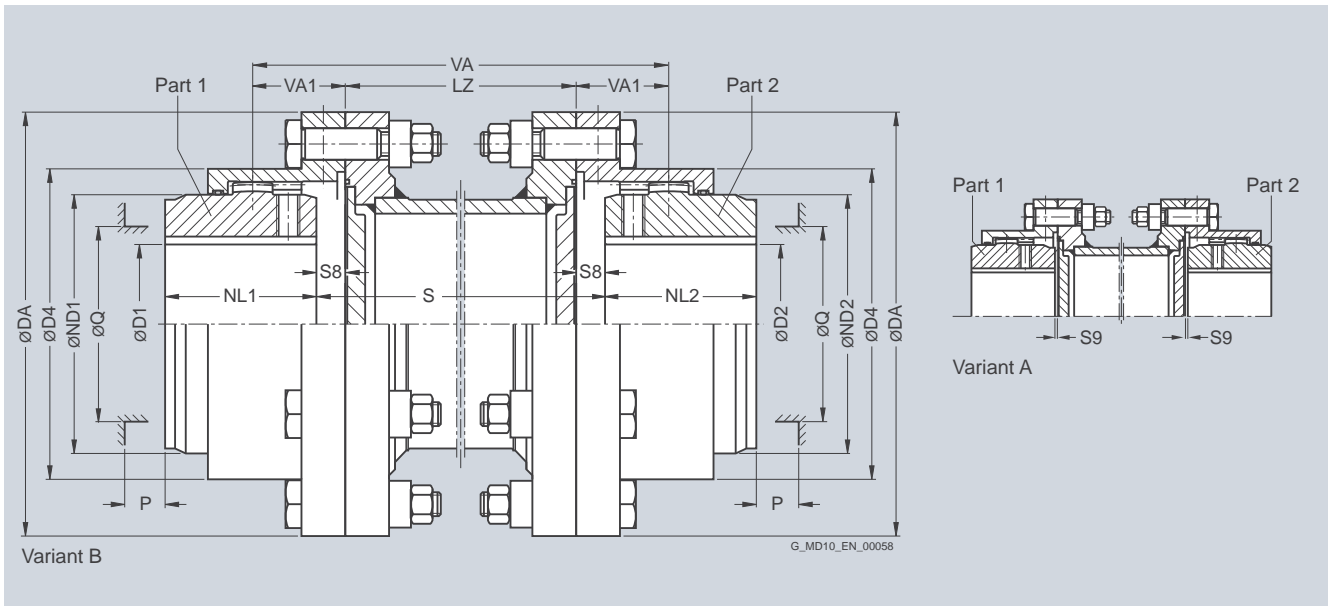
Product code:
2LC0310-1AA99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIZS

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A and B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Rated torque T_{KN} Nm	Dimensions in mm		D1, D2 Keyway DIN 6885 min. max.	DA	ND1/ ND2	NL1/ NL2	D4	S8	S9	VA1	Q	P	LZ	Product code Plain text required for dimension S Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		min.	max.													m	m
1	850	0	50	117	67	43	83	10.5	1.5	27.5	52	31	75	2LC0310-0A ■■■■ -0AZ0 Q0Y	0.9	5.5	
1.5	1700	0	64	152	87	50	107	7.5	1.5	29.5	68	34	85	2LC0310-1A ■■■■ -0AZ0 Q0Y	0.8	12	
2	3350	0	80	178	108	62	129.5	15.5	1.5	39.5	85	42	95	2LC0310-2A ■■■■ -0AZ0 Q0Y	1.2	16	
2.5	6000	0	98	213	130	76	156	14.5	2.5	46.5	110	47	110	2LC0310-3A ■■■■ -0AZ0 Q0Y	2.3	28	
3	10000	0	112	240	153	90	181	16.5	2.5	54.5	130	58	110	2LC0310-4A ■■■■ -0AZ0 Q0Y	3.5	40	
3.5	16000	0	133	280	180	105	211	20	3	64	150	67	125	2LC0310-5A ■■■■ -0AZ0 Q0Y	4.5	64	
4	23600	0	158	318	214	120	249.5	21	3	72	175	72	125	2LC0310-6A ■■■■ -0AZ0 Q0Y	6.3	91	
4.5	33500	80	172	347	233	135	274	25	4	82	190	81	125	2LC0310-7A ■■■■ -0AZ0 Q0Y	7.2	115	
5	47500	90	192	390	260	150	307	28	4	91	220	91	145	2LC0310-8A ■■■■ -0AZ0 Q0Y	9.1	175	
5.5	67000	100	210	425.5	283	175	332.5	35	4	107	250	104	145	2LC0311-0A ■■■■ -0AZ0 Q0Y	12	220	
6	90000	120	232	457	312	190	364	42	4	118	265	126	145	2LC0311-1A ■■■■ -0AZ0 Q0Y	15	245	
7	125000	150	276	527	371	220	423.5	38	5	131.5	300	140	145	2LC0311-2A ■■■■ -0AZ0 Q0Y	16	360	

Variant:	<ul style="list-style-type: none"> • A • B 	D
ØD1:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	E
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1
		9

All sizes, without adapter, available from FLINDER stock.

$$VA = 2 \cdot VA1 + LZ$$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.

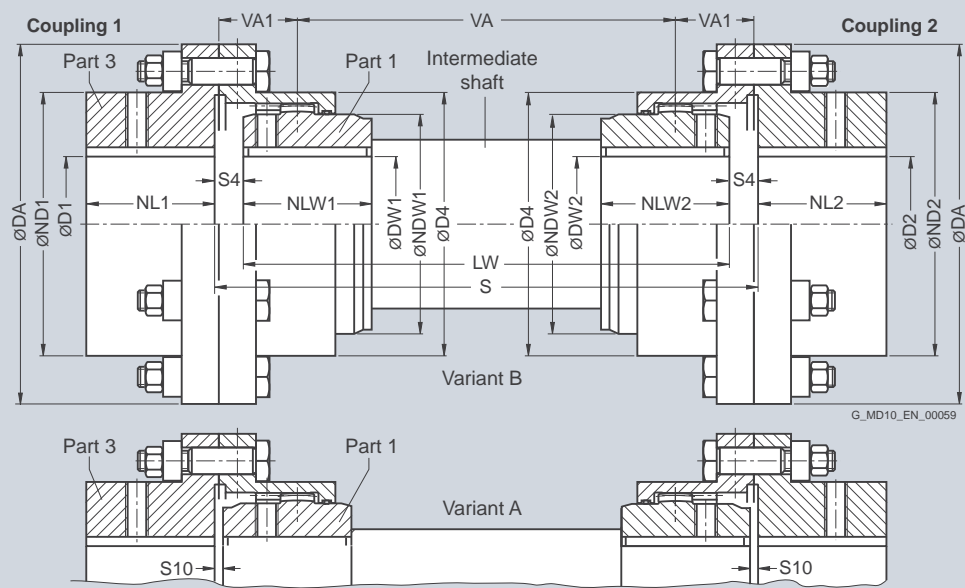
Maximum speed, limited by weight and critical adapter speed, on request.

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIW

Selection and ordering data



Coupling parts 1 and 2 can be combined to form coupling variants A and B.

After the finished bore has been drilled, the variant can no longer be changed.

Size	Rated torque T_{KN} Nm	Dimensions in mm		D1, D2 Keyway DIN 6885	DA	ND1/ ND2	NL1/ NL2/ NLW1/ NLW2	DW1, DW2 Keyway DIN 6885		NDW1/ D4 NDW2	S4	S10	VA1	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg	
		min.	max.					min.	max.							
1	850	0	61	117	83	43	0	50	67	83	12	3	29	2LC0310-0A ■■■ -0AA0	3.1	
1.5	1700	0	79	152	107	50	0	64	87	107	9	3	31	2LC0310-1A ■■■ -0AA0	6.2	
2	3350	0	96	178	129.5	62	0	80	108	129.5	17	3	41	2LC0310-2A ■■■ -0AA0	9.5	
2.5	6000	0	116	213	156	76	0	98	130	156	17	5	49	2LC0310-3A ■■■ -0AA0	17	
3	10000	0	134	240	181	90	0	112	153	181	19	5	57	2LC0310-4A ■■■ -0AA0	24.5	
3.5	16000	0	156	280	211	105	0	133	180	211	23	6	67	2LC0310-5A ■■■ -0AA0	41	
4	23600	0	184	318	249.5	120	0	158	214	249.5	24	6	75	2LC0310-6A ■■■ -0AA0	58	
4.5	33500	80	202	347	274	135	80	172	233	274	29	8	86	2LC0310-7A ■■■ -0AA0	76	
5	47500	90	228	390	307	150	90	192	260	307	32	8	95	2LC0310-8A ■■■ -0AA0	110	
5.5	67000	100	247	425.5	332.5	175	100	210	283	332.5	39	8	111	2LC0311-0A ■■■ -0AA0	150	
6	90000	120	270	457	364	190	120	232	312	364	46	8	122	2LC0311-1A ■■■ -0AA0	170	
7	125000	150	313	527	423.5	220	150	276	371	423.5	43	10	136.5	2LC0311-2A ■■■ -0AA0	270	
Variant:		<ul style="list-style-type: none"> • A • B 													V	
∅D1:		<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 													W	1
∅D2:		<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 														9

$$VA = S - 2 \cdot VA1$$

Mass moments of inertia on request.

Weights apply to either coupling 1 or 2 with maximum bores, without intermediate shaft.
Maximum speed, limited by weight and critical speed of intermediate shaft, on request.

Ordering example:

Coupling 1:
ZAPEX ZIW coupling, size 1.5, variant B,
Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 1: Bore 45H7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0310-1AW99-0AA0-Z
L1A+L13+M1A

Intermediate shaft:

Intermediate shaft to ZAPEX ZIW coupling, size 1.5, length LW = 570 mm, shaft journal ∅45p6 x 50 long; keyway DIN 6885-1.

Product code:
2LC9310-0XH00-0AA0-Z
Y99

plain text to Y99: **DW1 = 45p6 mm, NLW1 = 50 mm, DW2 = 45p6 mm, NLW2 = 50 mm, LW = 570 mm**

Coupling 2:

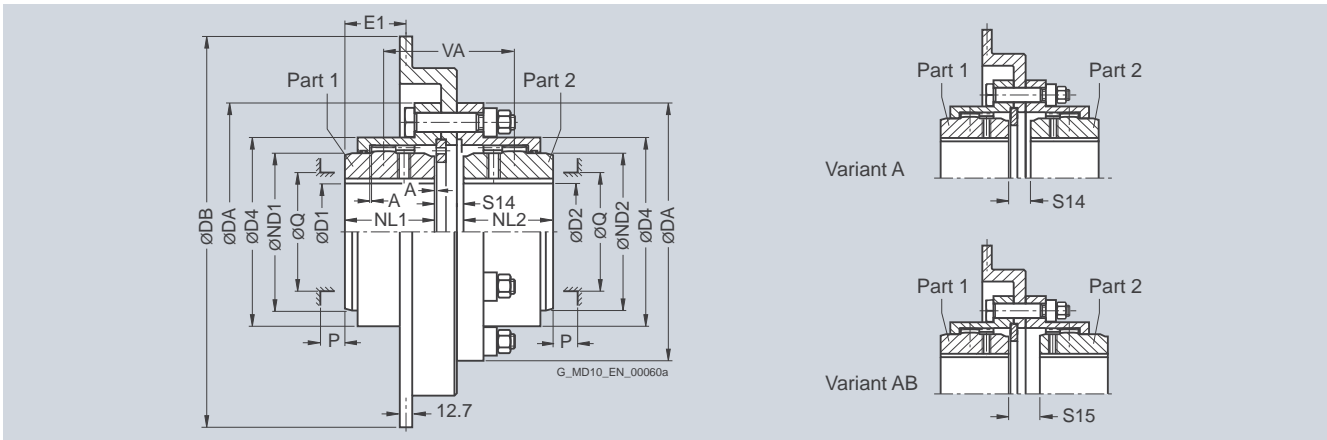
ZAPEX ZIW coupling, size 1.5, variant B,
Part 1: Bore 45H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 3: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0310-0AW99-0AA0-Z
L1A+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIBT

Selection and ordering data



Variant limited in displacement and axial movement.
Max. displacement 0.2°.

After the finished bore has been drilled, the variant can no longer be changed.

Coupling parts 1 and 2 can be combined to form coupling variants A and AB.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	Dimensions in mm											Brake disk		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1, D2 Keyway DIN 6885 min. max.	DA	ND1/ ND2	NL1/ NL2	D4	S14	S15	A	VA	Q	P	DB	E1			
1	850	3800	0 50	117	67	43	83	17	26	0.5	69	52	31	300	23.85	2LC0310-0A	-0AA0	10
1.5	1700	3200	0 64	152	87	50	107	20.5	26.5	0.5	76.5	68	34	356	21.35	2LC0310-1A	-0AA0	17
2	3350	3200	0 80	178	108	62	129.5	20.5	34.5	0.5	96.5	85	42	356	33.35	2LC0310-2A	-0AA0	17.5
		2800						17.5	31.5		93.5			406	30.35	2LC0310-2A	-0BA0	20
2.5	6000	2800	0 98	213	130	76	156	20	32	0.5	108	110	47	406	45.85	2LC0310-3A	-0AA0	30
		2500						23	35		111			457	48.85	2LC0310-3A	-0BA0	35
3	10000	2800	0 112	240	153	90	181	20	34	0.5	124	130	58	406	59.85	2LC0310-4A	-0AA0	39
		2500						23	37		127			457	62.85	2LC0310-4A	-0BA0	44
		2200						23	37		127			514	62.85	2LC0310-4A	-0CA0	49
3.5	16000	2500	0 133	280	180	105	211	24.5	41.5	0.5	146.5	150	67	457	78.85	2LC0310-5A	-0AA0	60
		2200						24.5	41.5		146.5			514	78.85	2LC0310-5A	-0BA0	65
		1850						24.5	41.5		146.5			610	78.85	2LC0310-5A	-0CA0	76
4	23600	2200	0 158	318	214	120	249.5	24	42	1.0	162	175	72	514	93.35	2LC0310-6A	-0AA0	82
		1850						24	42		162			610	93.35	2LC0310-6A	-0BA0	92
		1600						27	45		165			711	96.35	2LC0310-6A	-0CA0	105
4.5	33500	2200	80 172	347	233	135	274	26.5	47.5	1.0	182.5	190	81	514	109.85	2LC0310-7A	-0AA0	100
		1850						26.5	47.5		182.5			610	109.85	2LC0310-7A	-0BA0	110
		1600						29.5	50.5		185.5			711	112.85	2LC0310-7A	-0CA0	125
		1400						35.5	56.5		191.5			812	118.85	2LC0310-7A	-0DA0	160
5	47500	1850	90 192	390	260	150	307	27	51	1.0	201	220	91	610	125.35	2LC0310-8A	-0AA0	145
		1600						30	54		204			711	128.35	2LC0310-8A	-0BA0	160
		1400						36	60		210			812	134.35	2LC0310-8A	-0CA0	195
5.5	67000	1600	100 210	425.5	283	175	332.5	30	61	1.0	236	250	104	711	153.35	2LC0311-0A	-0AA0	195
		1400						36	67		242			812	159.35	2LC0311-0A	-0BA0	230
6	90000	1400	120 232	457	312	190	364	36	74	1.0	264	265	126	812	174.35	2LC0311-1A	-0AA0	260

- Variant:
 - A
 - AB
 - ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
 - ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- Q Diameter required for renewing the sealing rings.
 P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.
 Mass moments of inertia on request.
 Weights apply to the entire coupling with maximum bores.

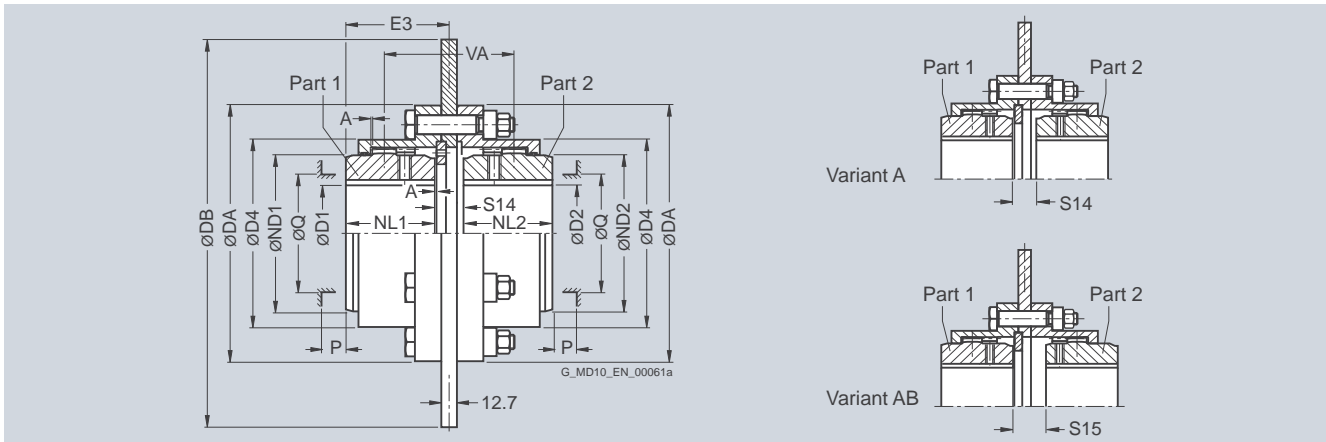
Ordering example:
 ZAPEX ZIBT coupling, size 1.5, variant A, brake disk diameter DB = 356 mm,
 Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.
 Product code: **2LC0310-1AN99-0AA0-Z**
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIBG

Selection and ordering data



Variant limited in displacement and axial movement.
Max. displacement 0.2°.

After the finished bore has been drilled, the variant can no longer be changed.

Coupling parts 1 and 2 can be combined to form coupling variants A and AB.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ ND2	NL1/ NL2	D4	S14	S15	A	VA	Q	P	Brake disk		Product code	Weight <i>m</i> kg
			min.	max.											DB	E3		
1	850	3800	0	50	117	67	43	83	17	26	0.5	69	52	31	300	52	2LC0310-0A ■■■ -0AA0	10
1.5	1700	3200	0	64	152	87	50	107	20.5	26.5	0.5	76.5	68	34	356	61	2LC0310-1A ■■■ -0AA0	16
2	3350	3200	0	80	178	108	62	129.5	17.5	31.5	0.5	96.5	85	42	356	73	2LC0310-2A ■■■ -0AA0	16.5
		2800													406	71.5	2LC0310-2A ■■■ -0BA0	19.5
2.5	6000	2800	0	98	213	130	76	156	20	32	0.5	108	110	47	406	87	2LC0310-3A ■■■ -0AA0	29
		2500													457	88.5	2LC0310-3A ■■■ -0BA0	33
3	10000	2800	0	112	240	153	90	181	20	34	0.5	124	130	58	406	101	2LC0310-4A ■■■ -0AA0	38
		2500													457	102.5	2LC0310-4A ■■■ -0BA0	42
		2200													514	102.5	2LC0310-4A ■■■ -0CA0	46
3.5	16000	2500	0	133	280	180	105	211	24.5	41.5	0.5	146.5	150	67	457	118.5	2LC0310-5A ■■■ -0AA0	58
		2200													514	118.5	2LC0310-5A ■■■ -0BA0	63
		1850													610	118.5	2LC0310-5A ■■■ -0CA0	71
4	23600	2200	0	158	318	214	120	249.5	24	42	1.0	162	175	72	514	133	2LC0310-6A ■■■ -0AA0	77
		1850													610	133	2LC0310-6A ■■■ -0BA0	87
		1600													711	134.5	2LC0310-6A ■■■ -0CA0	97
4.5	33500	2200	80	172	347	233	135	274	26.5	47.5	1.0	182.5	190	81	514	149.5	2LC0310-7A ■■■ -0AA0	97
		1850													610	149.5	2LC0310-7A ■■■ -0BA0	105
		1600													711	151	2LC0310-7A ■■■ -0CA0	115
		1400													812	154	2LC0310-7A ■■■ -0DA0	130
5	47500	1850	90	192	390	260	150	307	27	51	1.0	201	220	91	610	165	2LC0310-8A ■■■ -0AA0	140
		1600													711	166.5	2LC0310-8A ■■■ -0BA0	155
		1400													812	169.5	2LC0310-8A ■■■ -0CA0	170
5.5	67000	1600	100	210	425.5	283	175	332.5	30	61	1.0	236	250	104	711	191.5	2LC0311-0A ■■■ -0AA0	190
		1400													812	194.5	2LC0311-0A ■■■ -0BA0	205
6	90000	1400	120	232	457	312	190	364	36	74	1.0	264	265	126	812	209.5	2LC0311-1A ■■■ -0AA0	235

Variant:	<ul style="list-style-type: none"> A AB 	Q	R
ØD1:	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1	9
ØD2:	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 	1	9

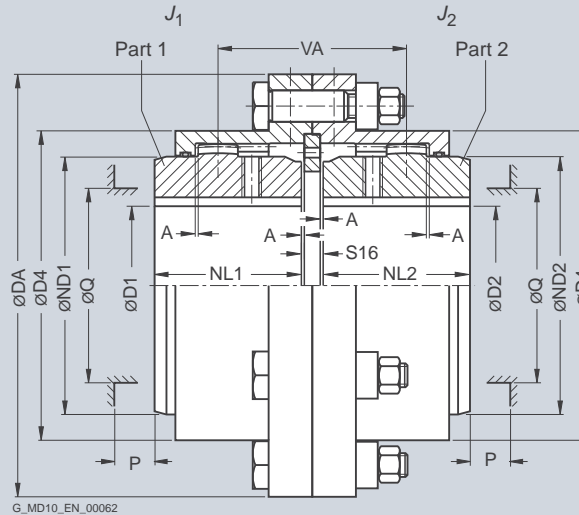
Q Diameter required for renewing the sealing rings.
P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.
Mass moments of inertia on request.
Weights apply to the entire coupling with maximum bores.

Ordering example:
ZAPEX ZIBG coupling, size 1.5, variant A,
brake disk diameter DB = 356 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.
Product code: **2LC0310-1AQ99-0AA0-Z**
LOW+M1A+M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZINA

Selection and ordering data



Variant limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ ND2	NL1/ NL2	D4	S16	A	VA	Q	P	Mass moment of inertia J1/J2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight <i>m</i> kg
			min.	max.												
1	850	8500	0	50	117	67	43	83	5	0.5	57	52	31	0.003	2LC0310-0AF ■ ■ -0AA0	3.3
1.5	1700	7700	0	64	152	87	50	107	6	0.5	62	68	34	0.010	2LC0310-1AF ■ ■ -0AA0	6.7
2	3350	6900	0	80	178	108	62	129.5	6	0.5	82	85	42	0.021	2LC0310-2AF ■ ■ -0AA0	10.5
2.5	6000	6200	0	98	213	130	76	156	9	0.5	97	110	47	0.050	2LC0310-3AF ■ ■ -0AA0	18
3	10000	5800	0	112	240	153	90	181	9	0.5	113	130	58	0.095	2LC0310-4AF ■ ■ -0AA0	26.5
3.5	16000	5100	0	133	280	180	105	211	11	0.5	133	150	67	0.22	2LC0310-5AF ■ ■ -0AA0	44
4	23600	4500	0	158	318	214	120	249.5	10	1	148	175	72	0.40	2LC0310-6AF ■ ■ -0AA0	62
4.5	33500	4000	80	172	347	233	135	274	13	1	169	190	81	0.64	2LC0310-7AF ■ ■ -0AA0	82
5	47500	3750	90	192	390	260	150	307	14	1	188	220	91	1.1	2LC0310-8AF ■ ■ -0AA0	115
5.5	67000	3550	100	210	425.5	283	175	332.5	14	1	220	250	104	1.8	2LC0311-0AF ■ ■ -0AA0	155
6	90000	3400	120	232	457	312	190	364	14	1	242	265	126	2.4	2LC0311-1AF ■ ■ -0AA0	185
7	125000	3200	150	276	527	371	220	423.5	18	1	271	300	140	4.9	2LC0311-2AF ■ ■ -0AA0	285
ØD1:															1	
<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 															9	
ØD2:															1	
<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 															9	

All sizes available from FLENDER stock.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

ZAPEX ZINA coupling, size 1.5,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

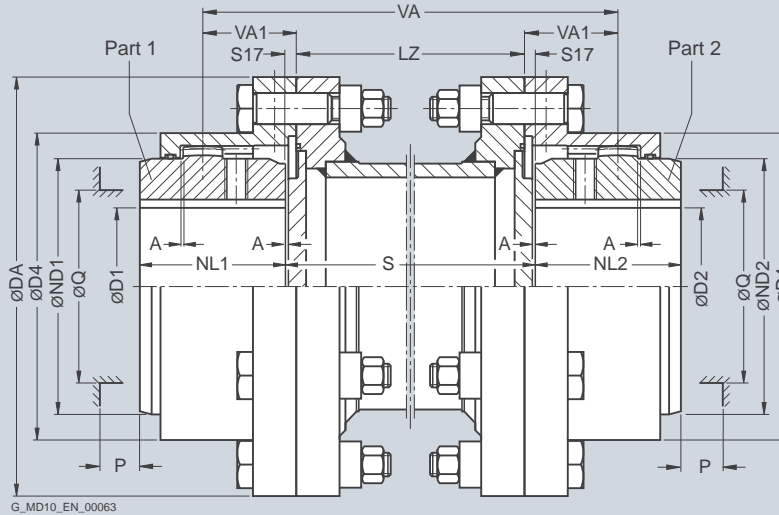
Product code:
2LC0310-1AF99-0AA0-Z
LOW+M1A+M13

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIZA

Selection and ordering data



Variants limited in displacement and axial movement. Max. displacement 0.2°.

Size	Rated torque T_{KN} Nm	Dimensions in mm											Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		D1, D2 Keyway DIN 6885 min. max.	DA	ND1/ ND2	NL1/ NL2	D4	S17	A	VA1	Q	P	LZ min.		m each 100 mm pipe kg	m
1	850	0 50	117	67	43	83	2.5	0.5	28.5	52	31	75	2LC0310-0AG ■ ■ -0AZ0 Q0Y	0.9	5.5
1.5	1700	0 64	152	87	50	107	3	0.5	31	68	34	85	2LC0310-1AG ■ ■ -0AZ0 Q0Y	0.8	12
2	3350	0 80	178	108	62	129.5	3	0.5	41	85	42	95	2LC0310-2AG ■ ■ -0AZ0 Q0Y	1.2	16
2.5	6000	0 98	213	130	76	156	4.5	0.5	48.5	110	47	110	2LC0310-3AG ■ ■ -0AZ0 Q0Y	2.3	28
3	10000	0 112	240	153	90	181	4.5	0.5	56.5	130	58	110	2LC0310-4AG ■ ■ -0AZ0 Q0Y	3.5	40
3.5	16000	0 133	280	180	105	211	5.5	0.5	66.5	150	67	125	2LC0310-5AG ■ ■ -0AZ0 Q0Y	4.5	64
4	23600	0 158	318	214	120	249.5	5	1	74	175	72	125	2LC0310-6AG ■ ■ -0AZ0 Q0Y	6.3	91
4.5	33500	80 172	347	233	135	274	6.5	1	84.5	190	81	125	2LC0310-7AG ■ ■ -0AZ0 Q0Y	7.2	115
5	47500	90 192	390	260	150	307	7	1	94	220	91	145	2LC0310-8AG ■ ■ -0AZ0 Q0Y	9.1	175
5.5	67000	100 210	425.5	283	175	332.5	7	1	110	250	104	145	2LC0311-0AG ■ ■ -0AZ0 Q0Y	12	220
6	90000	120 232	457	312	190	364	7	1	121	265	126	145	2LC0311-1AG ■ ■ -0AZ0 Q0Y	15	245
7	125000	150 276	527	371	220	423.5	9	1	135.5	300	140	145	2LC0311-2AG ■ ■ -0AZ0 Q0Y	16	360

- ∅D1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ∅D2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

All sizes, without adapter, available from FLENDER stock.

$$VA = 2 \cdot VA1 + LZ$$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores and an adapter length of LZ min.

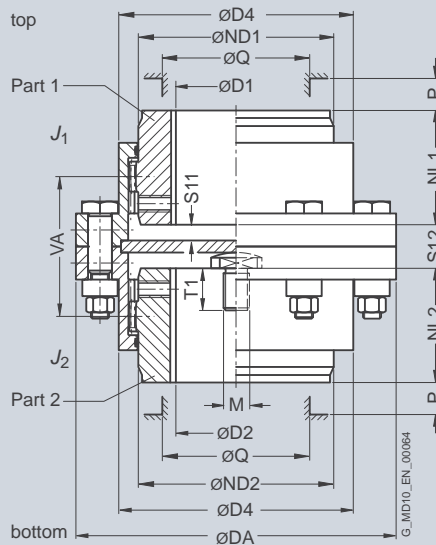
Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:
 ZAPEX ZIZA coupling, size 1.5,
 adapter LZ = 244 mm,
 Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
 Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.
 Product code: **2LC0310-1AG99-0AZ0-Z**
LOW+M1A+Q0Y+M13
 plain text to Q0Y: **LZ = 244 mm**

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZINV

Selection and ordering data



When ordering, state thread size M and thread depth T1.

Size	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885		DA	ND1/ ND2		D4	S11	S12	VA	Q	P	Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			min.	max.												
1	850	8500	0	50	117	67	43	83	8	21	55	52	31	0.003	2LC0310-0AH ■ ■ -0AA0-Z Y99	3.5
1.5	1700	7700	0	64	152	87	50	107	4.5	15	59	68	34	0.009	2LC0310-1AH ■ ■ -0AA0-Z Y99	6.6
2	3350	6900	0	80	178	108	62	129.5	12.5	31	79	85	42	0.023	2LC0310-2AH ■ ■ -0AA0-Z Y99	10.5
2.5	6000	6200	0	98	213	130	76	156	10.5	29	93	110	47	0.055	2LC0310-3AH ■ ■ -0AA0-Z Y99	17
3	10000	5800	0	112	240	153	90	181	12.5	33	109	130	58	0.10	2LC0310-4AH ■ ■ -0AA0-Z Y99	25.5
3.5	16000	5100	0	133	280	180	105	211	15	40	128	150	67	0.22	2LC0310-5AH ■ ■ -0AA0-Z Y99	40
4	23600	4500	0	158	318	214	120	249.5	17	42	144	175	72	0.37	2LC0310-6AH ■ ■ -0AA0-Z Y99	54
4.5	33500	4000	80	172	347	233	135	274	19.5	50	164	190	81	0.64	2LC0310-7AH ■ ■ -0AA0-Z Y99	87
5	47500	3750	90	192	390	260	150	307	22	56	182	220	91	1.2	2LC0310-8AH ■ ■ -0AA0-Z Y99	130
5.5	67000	3550	100	210	25.5	283	175	332.5	29	70	214	250	104	1.8	2LC0311-0AH ■ ■ -0AA0-Z Y99	160
6	90000	3400	120	232	457	312	190	364	36	84	236	265	126	2.6	2LC0311-1AH ■ ■ -0AA0-Z Y99	190
7	125000	3200	150	276	527	371	220	423.5	30	76	263	300	140	5.4	2LC0311-2AH ■ ■ -0AA0-Z Y99	270

- ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)

- Q Diameter required for renewing the sealing rings.
- P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:
ZAPEX ZINV coupling, size 1.5,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw,
thread M10 x 20 deep.

Product code:
2LC0310-1AH99-0AA0-Z
LOW +M1A +M13+Y99
plain text to Y99: **Thread M10 x 20**

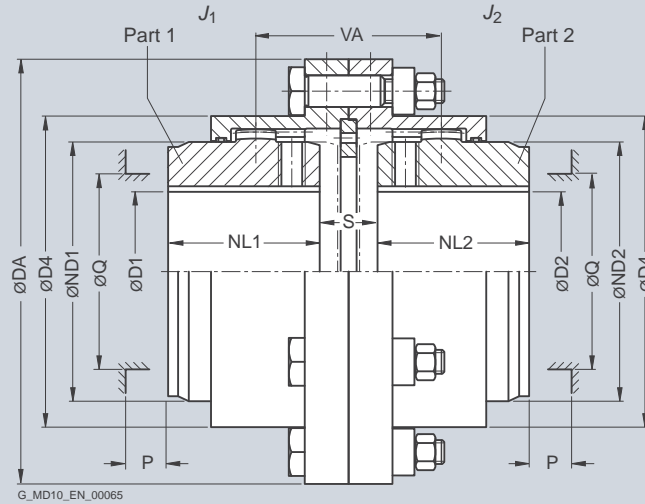
FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIN for axial displacement

Selection and ordering data

5



Size	Dimensions in mm													Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
	Rated torque T_{KN} Nm	Maximum speed n_{Kmax} rpm	D1, D2 Keyway DIN 6885 min. max.		DA	ND1/ NL1/ ND2 NL2	D4	S	S	VA	Q	P				
1	850	8500	0	50	117	67	43	83	6	21	55	52	31	0.003	2LC0310-0AY ■ ■ ■ -0AA0	3.3
1.5	1700	7700	0	64	152	87	50	107	7	15	59	68	34	0.010	2LC0310-1AY ■ ■ ■ -0AA0	6.7
2	3350	6900	0	80	178	108	62	129.5	16	31	79	85	42	0.021	2LC0310-2AY ■ ■ ■ -0AA0	10.5
2.5	6000	6200	0	98	213	130	76	156	11	29	93	110	47	0.050	2LC0310-3AY ■ ■ ■ -0AA0	18
3	10000	5800	0	112	240	153	90	181	11	33	109	130	58	0.095	2LC0310-4AY ■ ■ ■ -0AA0	26.5
3.5	16000	5100	0	133	280	180	105	211	14	40	128	150	67	0.22	2LC0310-5AY ■ ■ ■ -0AA0	44
4	23600	4500	0	158	318	214	120	249.5	12	42	144	175	72	0.40	2LC0310-6AY ■ ■ ■ -0AA0	62
4.5	33500	4000	80	172	347	233	135	274	16	50	164	190	81	0.64	2LC0310-7AY ■ ■ ■ -0AA0	82
5	47500	3750	90	192	390	260	150	307	17	56	182	220	91	1.1	2LC0310-8AY ■ ■ ■ -0AA0	115
5.5	67000	3550	100	210	425.5	283	175	332.5	17	70	214	250	104	1.8	2LC0311-0AY ■ ■ ■ -0AA0	155
6	90000	3400	120	232	457	312	190	364	17	84	236	265	126	2.4	2LC0311-1AY ■ ■ ■ -0AA0	185
7	125000	3200	150	276	527	371	220	423.5	23	76	263	300	140	4.9	2LC0311-2AY ■ ■ ■ -0AA0	285
ØD1:															1	
• Without finished bore – Without order codes															9	
• With finished bore – With order codes for diameter and tolerance (product code without -Z)																
ØD2:															1	
• Without finished bore – Without order codes															9	
• With finished bore – With order codes for diameter and tolerance (product code without -Z)																

All sizes available from FLENDER stock.

VA Valid at S max.

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia apply to a coupling half with maximum bore diameter.

Weights apply to the entire coupling with maximum bores.

Ordering example:

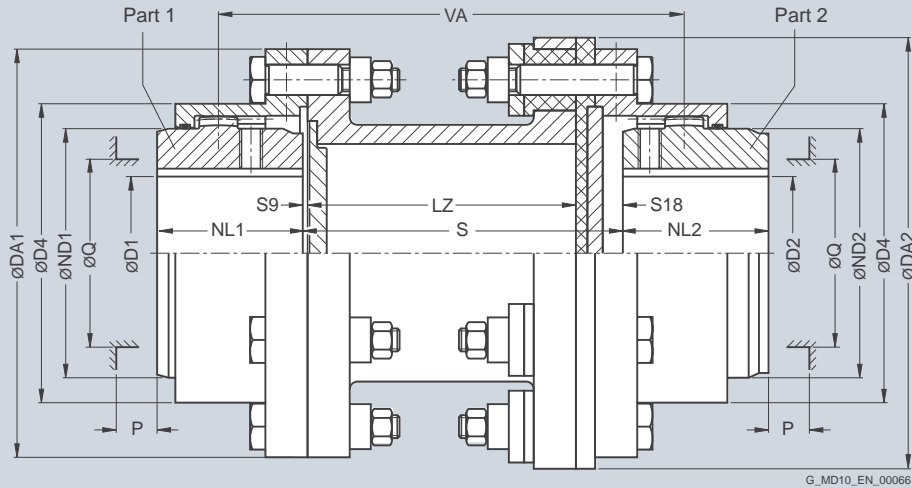
ZAPEX ZIN coupling for axial displacement, size 1.5,
S min. = 7 mm, S max. = 12 mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:
2LC0310-0AY99-0AA0-Z
LOW +M1A +M13

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZIZI

Selection and ordering data



G_MD10_EN_00066

5

Size	Rated torque T_{KN} Nm	Dimensions in mm												Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight	
		D1, D2 Keyway DIN 6885 min. max.	DA1	DA2	ND1/ ND2	NL1/ NL2	D4	S18	S9	VA1	Q	P	m		m	
1	400	0 50	117	117	67	43	83	18.5	1.5	63	52	31	2LC0310-0BE Q0Y	-0AZ0	0.8	10
1.5	1300	0 64	152	152	87	50	107	15.5	1.5	67	68	34	2LC0310-1BE Q0Y	-0AZ0	1.3	17
2	2000	0 80	178	185	108	62	129.5	23.5	1.5	87	85	42	2LC0310-2BE Q0Y	-0AZ0	2	26.5
2.5	3800	0 98	213	225	130	76	156	24.5	2.5	103	110	47	2LC0310-3BE Q0Y	-0AZ0	2.6	43
3	5800	0 112	240	250	153	90	181	26.5	2.5	119	130	58	2LC0310-4BE Q0Y	-0AZ0	3.8	58
3.5	9000	0 133	280	295	180	105	211	30	3	138	150	67	2LC0310-5BE Q0Y	-0AZ0	5.4	88
4	10000	0 158	318	330	214	120	249.5	33	3	156	175	72	2LC0310-6BE Q0Y	-0AZ0	7.4	110
4.5	14000	80 172	347	355	233	135	274	37	4	176	190	81	2LC0310-7BE Q0Y	-0AZ0	8.8	150
5	22000	90 192	390	405	260	150	307	40	4	194	220	91	2LC0310-8BE Q0Y	-0AZ0	10.9	225
5.5	42000	100 210	425.5	430	283	175	332.5	50	4	229	250	104	2LC0311-0BE Q0Y	-0AZ0	12.4	275
6	46000	120 232	457	460	312	190	364	57	4	251	265	126	2LC0311-1BE Q0Y	-0AZ0	15	305
7	60000	150 276	527	530	371	220	423.5	53	5	278	300	140	2LC0311-2BE Q0Y	-0AZ0	18	420

- ∅D1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- ∅D2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)

$VA = VA1 + LZ$

Q Diameter required for renewing the sealing rings.

P Length required for renewing the sealing rings, aligning the coupling parts and tightening the set screw.

Mass moments of inertia on request.

Weights apply to the entire coupling with maximum bores and an adapter length of $LZ = 500$ mm.

Maximum speed, limited by weight and critical adapter speed, on request.

Ordering example:

ZAPEX ZIZI coupling, size 1.5,
adapter $LZ = 244$ mm,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 P9 and set screw,
Part 2: Bore 45K7 mm, keyway to DIN 6885-1 P9 and set screw.

Product code:

2LC0310-1BE99-0AZ0-Z

LOW+M1A+Q0Y+M13

plain text to Q0Y: **LZ = 244 mm**

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

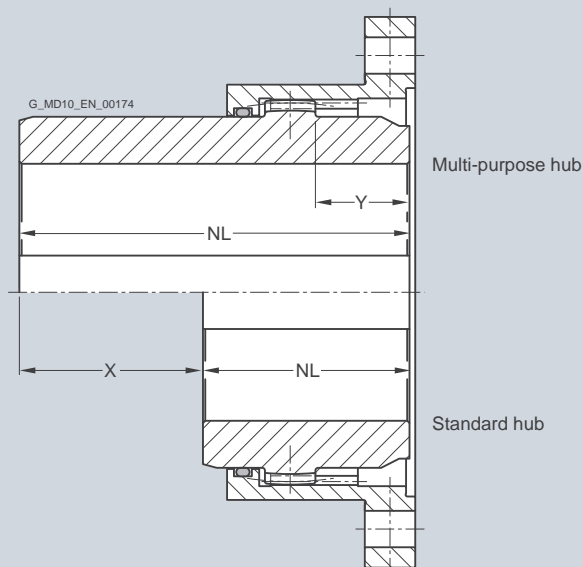
Multipurpose hubs for ZAPEX ZI Series

Selection and ordering data

ZAPEX couplings can be designed with multipurpose hubs in order to implement modified hub geometries. One or both standard hubs can be replaced with multipurpose hubs. Hub lengths and coupling lengths can be altered through the use of multipurpose hubs. The distance VA of the coupling teeth, the permitted bore diameter and the hub diameter remain unchanged.

By stating the hub reductions X and Y the multipurpose hub can be adapted to the mounting situation.

Details D1, NL1, X1 and Y1 relate to the hub shown on the dimension drawings left; details D2, NL2, X2 and Y2 apply to the hub shown on the dimension drawings right.



Geometric data and permitted reduction of the multipurpose hub

Size	Standard hub		Multipurpose hub	
	NL mm	NL mm	Maximum hub reduction X mm	Y mm
1	43	105	62	20.5
1.5	50	115	65	22
2	62	130	68	30.5
2.5	76	150	74	34
3	90	170	80	41
3.5	105	185	80	48
4	120	215	95	56
4.5	135	245	110	60.5
5	150	295	145	68
5.5	175	300	125	81
6	190	305	115	88
7	220	310	90	95

Up to size 7 available from FLENDER stocks.

Product code

The product code of the respective ZAPEX coupling type must be supplemented with **-Z** and order code **Y99**. The dimensions of the hub reduction X, Y of the multipurpose hub must be stated in plain text.

Ordering example:

ZAPEX ZIN coupling with multipurpose hub, size 5.5, variant A.

Hub left: Bore D1 = 190H7 mm, keyway to DIN 6885-1 P9 and set screw, NL1 = 300 mm, unreduced
Hub right: Bore D2 = 200K7 mm, keyway to DIN 6885-1 P9 and set screw, NL2 = 250 mm, reduced with Y2 = 50 mm.

Product code:

2LC0311-0AA99-0AA0-Z

Y99 + L2C + M2D + M13

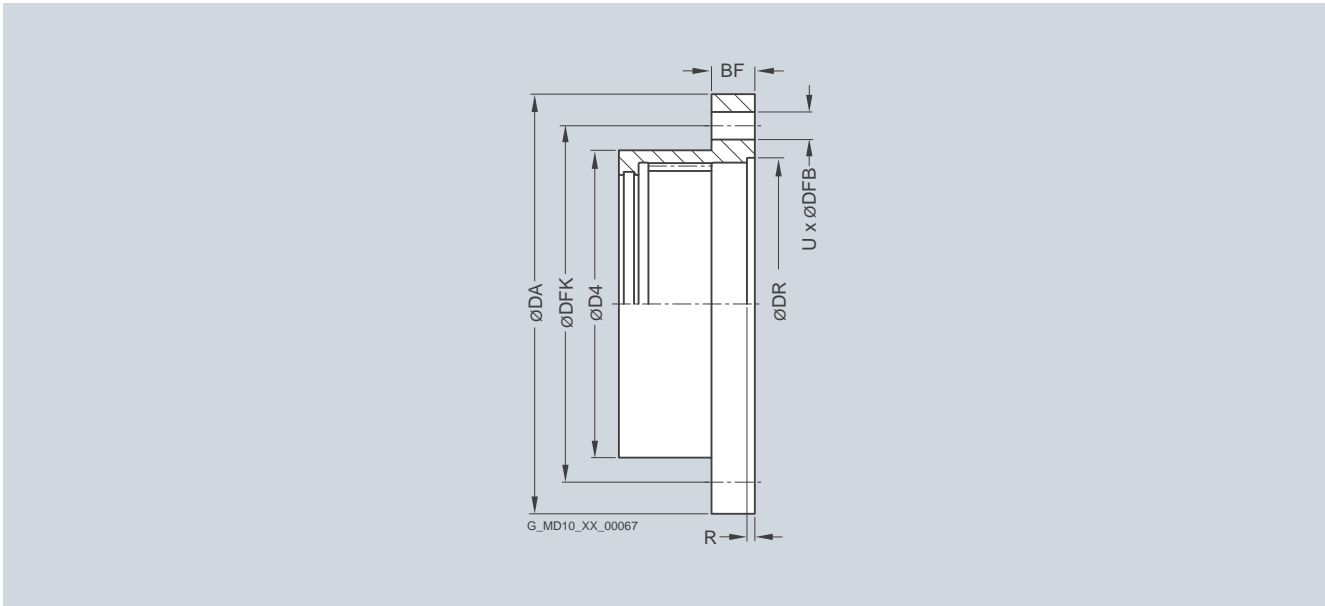
Plain text to Y99:

hub lengths NL1 = 300 mm, NL2 = 250 mm,
hub reduction X1 = 0 mm, Y1 = 0 mm, X2 = 0 mm, Y2 = 50 mm

FLENDER Standard Couplings Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Type ZI - flange connection dimensions

Selection and ordering data



Size	Dimensions in mm							
	DA	BF	D4	DFK	DFB	U Number	DR	R
1	117	14	83	95.25	6.35	6	82	2.5
1.5	152	19	107	122.238	9.525	8	105	3
2	178	19	129.5	149.225	12.7	6	130	3
2.5	213	22	156	180.975	15.875	6	153	4
3	240	22	181	206.375	15.875	8	178	4
3.5	280	28.5	211	241.3	19.05	8	205	5
4	318	28.5	249.5	279.4	19.05	8	243	4
4.5	347	28.5	274	304.8	19.05	10	265	5.5
5	390	38	307	342.9	22.225	8	302	6
5.5	425.5	38	332.5	368.3	22.225	14	320	6
6	457	26	364	400.05	22.225	14	353	6
7	527	28.5	423.5	463.55	25.4	16	412	8

Replacement table

The flange outside diameter (DA) and the screw hole diameter (DFK) as well as the number (U) and the dimensions of the fitting holes (DFB) permit replaceability per half-coupling

with the corresponding screw connection by the American manufacturers listed below:

ZAPEX ZI Size	AJAX 6901 Series	ESCOGEAR FST Series	FALK G-10, G-20 Series	FAST-KOPPERS FS-H Series	ZURN AMERIGEAR F Series
1	1	40	10	1	101
1.5	1.5	55	15	1 ½	101 ½
2	2	70	20	2	102
2.5	2.5	85	25	2 ½	102 ½
3	3	100	30	3	103
3.5	3.5	120	35	3 ½	103 ½
4	4	140	40	4	104
4.5	4.5	160	45	4 ½	104 ½
5	5	180	50	5	105
5.5	5.5	200	55	5 ½	105 ½
6	6	220	60	6	106
7	7	250	70	7	107

FLENDER Standard Couplings

Torsionally Rigid Gear Couplings - ZAPEX ZI Series

Spare and wear parts

Selection and ordering data

Sealing rings

The sealing rings are wear parts and must be replaced in accordance with the operating instructions.

Sealing compound (tube 60 ml)
FFA: **000 000 243 185**

Size	Hub diameter ND1/ND2 mm	Product code
1	67	2LC0310-0XE00-0AA0
1.5	87	2LC0310-1XE00-0AA0
2	108	2LC0310-2XE00-0AA0
2.5	130	2LC0310-3XE00-0AA0
3	153	2LC0310-4XE00-0AA0
3.5	180	2LC0310-5XE00-0AA0
4	214	2LC0310-6XE00-0AA0
4.5	233	2LC0310-7XE00-0AA0
5	260	2LC0310-8XE00-0AA0
5.5	283	2LC0311-0XE00-0AA0
6	312	2LC0311-1XE00-0AA0
7	371	2LC0311-2XE00-0AA0

Torsionally Rigid All-Steel Couplings ARPEX Series

6



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6/4 ARPEX ARS-6 Series

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6/8 [Selection and ordering data](#)

6/10 • Type NUN

6/10 [Selection and ordering data](#)

6/12 • Type NON

6/12 [Selection and ordering data](#)

6/14 • Type NHN

6/14 [Selection and ordering data](#)

6/16 • Type NZN

6/16 [Selection and ordering data](#)

6/18 • Type NWN

6/18 [Selection and ordering data](#)

6/20 Further hubs and flanges

6/20 • J hub

6/20 [Selection and ordering data](#)

6/22 • F flange, D flange, C flange

6/22 [Selection and ordering data](#)

6/24 • Clamping hub

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6/26 Spare and wear parts

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6/30 • Types NEN/NHN

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6/34 • Types MFEFM/MFHFM

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6/36 • Plate pack ARC-8/-10

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6/37 ARPEX ARP-6 Series

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6/45 Spare and wear parts

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6/46 ARPEX ARW-4/-6 Series

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FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX Series

General information

Overview



ARPEX couplings have proved themselves for over 30 years in all areas of technology where reliable, maintenance-free torque transmission is required. ARPEX couplings link machine shafts and compensate for shaft misalignments, while generating only low restorative forces. Thanks to the use of spring steel plates and backlash-free screw connections, ARPEX couplings are torsionally rigid and backlash-free. All ARPEX coupling components are manufactured from high-quality steel. Robust, compact construction guaranteeing a high level of operational reliability and a long service life is therefore possible. High-precision production ensures that at speed in the assembled condition only low forces act on the machine parts connected to them. ARPEX couplings can be used for both directions of rotation and are thus also suitable for reverse operation.

ARPEX couplings are not subject to wear and, if correctly designed, assembled and installed, can be expected to have an unlimited service life. With most types the intermediate spacer can be fitted radially without having to move the driving and driven machines.

Thanks to a large number of standard components ARPEX couplings can be combined to make many different types. In this way, standard types can be used with many drives.

ARPEX couplings can withstand temperatures between -40 °C and $+280\text{ °C}$ in operation. On request, they can also be specially equipped for use in other temperature ranges.



ARPEX coupling optionally suitable for potentially explosive environments.

Complies with Directive 94/9/EC for:

CE Ex II 2G T2/T3/T4/T5/T6
 $-40\text{ °C} \leq T_a \leq +230\text{ °C}/+150\text{ °C}/+85\text{ °C}/+50\text{ °C}/35\text{ °C}$

CE Ex II 2D T 120 °C $-40\text{ °C} \leq T_a \leq +70\text{ °C}$

CE Ex I M2



To meet the high quality demands made of ARPEX couplings, the development and manufacture of ARPEX couplings is integrated into a certified quality management system in accordance with the requirements of DIN EN ISO 9001.

Type approval for use of ARPEX couplings in shipbuilding has been issued by the following classification societies: American Bureau of Shipping (ABS), Det Norske Veritas (DNV), Germanischer Lloyd (GL) and Lloyd's Register of Shipping. Product certification to GOST-R for the Russian market has already been obtained.

Design

ARPEX couplings are manufactured completely from steel. Torque is transmitted by means of torsionally rigid, flexible plates. The plates are held together by a sleeve and ring to form a compact plate pack. This ensures easy, operationally safe installation. Two plate packs fastened alternately to the flanges permit compensation of shaft misalignments in an angular, radial and axial direction. On coupling types with a single plate pack only angular and axial misalignments are possible.

Materials

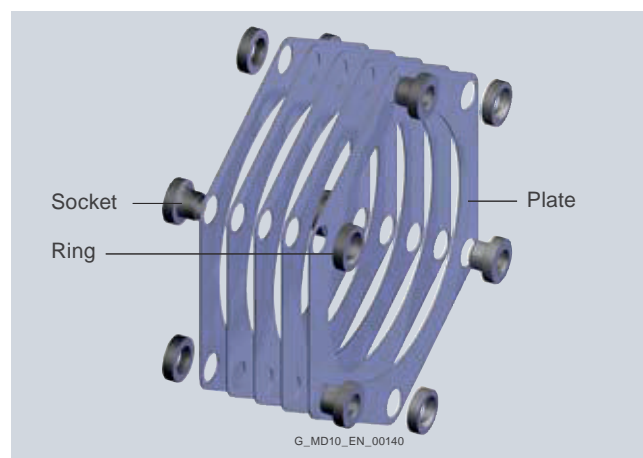
All coupling parts like hubs, spacers and flanges are manufactured from high-grade steel; the plates are made from stainless, hard-rolled CrNi spring steel. Bolts and nuts are of quality 10.9 or 10.

Application

ARPEX couplings are available as a catalog standard from 92 Nm to 1450000 Nm and are divided into various series. Because of this series diversity, ARPEX couplings meet most torque and speed requirements as a universal coupling solution in general mechanical engineering. The individual series and their corresponding possible applications are described in full in the following sections.

Plate pack

The flexible elements in an ARPEX coupling take the form of plate packs. The individual, thin plates are held together by a socket and ring to form a compact plate pack. The picture below shows the structure of a ring plate pack.



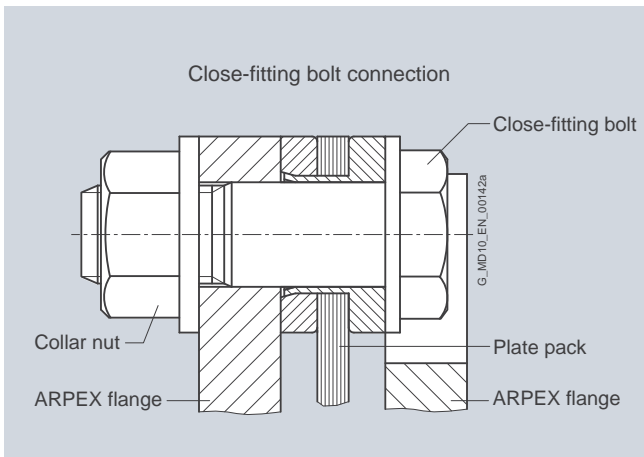
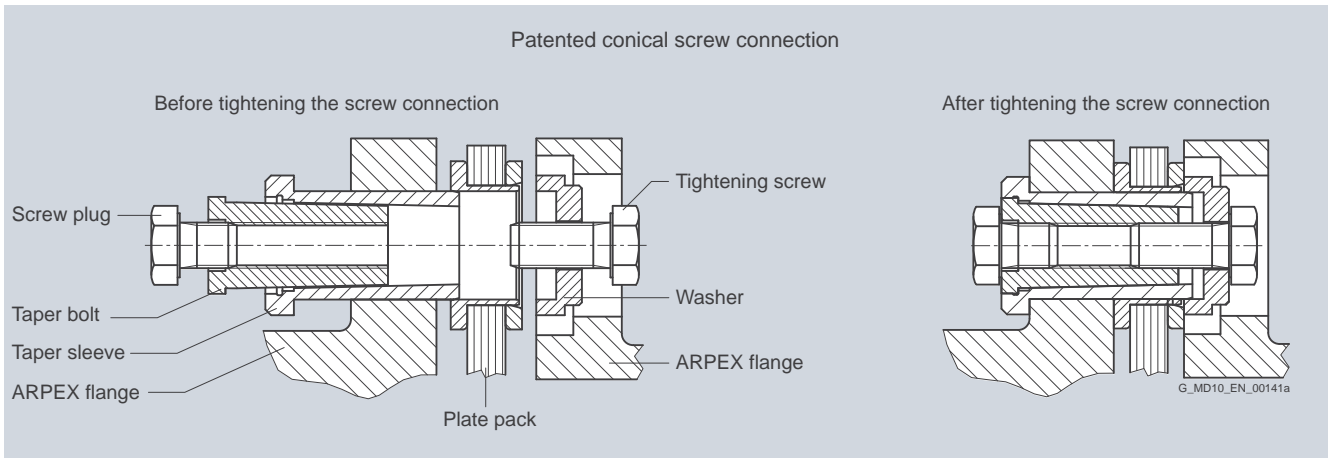
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FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX Series

General information

Plate pack screw connection



Features of plate pack screw connection

Up to bolt size M22, the plate pack screw connection on ARPEX couplings is in the form of a close-fitting bolt connection. After that the patented conical screw connection is used. The decisive advantage of this screw connection is considerably simplified fitting. The use of an hydraulic fitting tool is no longer necessary. All sizes can be fitted with a torque wrench.

A further feature of the conical screw connection is the genuine positive connection resulting in high centering accuracy and, thus, a high balancing quality. Material: High-grade quenched and tempered steel.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

General information

Overview



Coupling can be designed for potentially explosive environments.

6

Benefits

ARPEX couplings of the ARS-6 series are outstanding for their versatility. Most standard components are available from stock, resulting in short delivery times. Their use in potentially explosive environments in accordance with Directive 94/9/EC is possible.

Application

ARPEX couplings of the ARS-6 series are a versatile coupling solution which thanks to standard modular components can be used for most drive requirements at a low to medium speed. Torques of between 170 and 106000 Nm can be transmitted at a permitted angular misalignment of 0.7°. The open flange form is regarded as very easy to fit and has easily accessible screw connection points. On most types, the intermediate spacer can be radially fitted without moving the connected units.

Main areas of application for the ARS-6 series:

- Paper-making machines
- Printing machines
- Compressors
- Pumps
- Fans and blowers
- Film and foil machines
- Generators
- Presses
- Metalworking machines
- Conveyors
- Crane systems
- Textile machines
- Plastics processing machines
- Centrifuges

FLENDER Standard Couplings

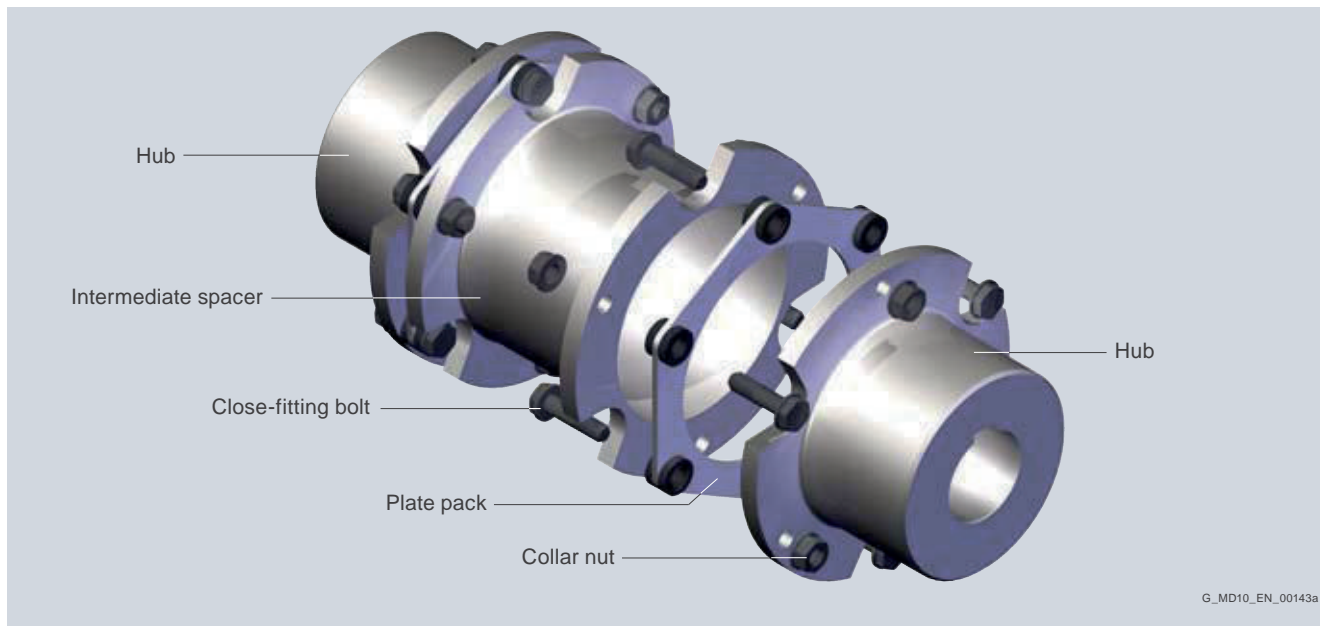
Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

General information

Design

The classic design of an ARPEX couplings of the ARS-6 series is shown in the following illustration. The plate packs are bolted alternately between the flanges of the coupling hubs and the intermediate spacer. Up to size 280-6 close-fitting bolts and from size

305-6 conical screw connections are used for fastening. A large number of intermediate spacer and shafts, hubs and flanges can be combined and thus cover a large number of possible drive requirements.



Design of an ARPEX coupling, ARS-6 series, type NEN

Variants of the ARPEX coupling, ARS-6 series

Types	
NEN, BEN, BEB	Variant with standard intermediate spacer, many sizes available from stock
NON, BON	Variant with shortest intermediate spacer
NUN, BUN, BUB	Variant with split intermediate spacer
NHN	Variant with intermediate spacer for customer-specific shaft distance
NZN	Variant with reinforced intermediate spacer
NWN	Variant with intermediate shaft

All coupling types can be very easily combined with further standard components in the ARPEX modular system. Jumbo hubs are used to permit larger maximum bores.

Clamping hubs transmit torque by friction without the use of parallel keys.

F, D and C flanges offer many different possibilities for flange connection.

The coupling parts of the ARPEX ARS-6 series are machined on all sides. Exceptions are H and Z spacers and intermediate shafts. The spacers are delivered with unmachined, primed spacer tube.

Higher torques and maximum speeds with similar coupling outer diameters DA can be achieved with the ARPEX ARC-8/-10 series.

Further application-specific coupling types are available in selection module **x.CAT** at www.flender.com. Dimension sheets and further information are available on request.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

General information

Technical data

Power ratings

Size DA	Rated torque T_{KN}	Maximum torque T_{Kmax}	Over- load torque T_{KOL}	Fatigue torque T_{KW}	Maximum speed n_{Kmax}	Maximum permitted shaft misalignment			Torsional stiffness								
						$\pm\Delta K_a$	$\pm\Delta K_w$	$\pm\Delta K_r$	C_{Tdn}								
									NHN NZN NWN	NEN/BEN BEB/NUN BUN/BUB	NON BON	NEN BEN/BEB	NUN BUN/BUB	NON BON	NHN	NZN	NWN
	Nm	Nm	Nm	Nm	rpm	mm	mm	mm	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad
78-6	170	320	510	85	13400	1.10	0.7°	12.1	0.57	0.53	0.05	0.04	0.05	0.012	0.032	0.05	
105-6	270	510	810	135	10000	1.80		12.1	0.88	0.53	0.09	0.09	0.09	0.024	0.070	0.09	
125-6	490	930	1470	245	8400	2.02		12.1	1.04	0.68	0.17	0.17	0.18	0.043	0.141	0.19	
140-6	700	1330	2100	350	7500	2.40		12.1	1.28	0.72	0.22	0.22	0.24	0.066	0.203	0.25	
165-6	1250	2370	3750	625	6350	2.74		12.0	1.49	0.84	0.33	0.34	0.36	0.114	0.317	0.39	
175-6	2000	3800	6000	1000	6000	2.86		12.0	1.55	0.98	0.48	0.50	0.52	0.196	0.443	0.57	
195-6	3000	5700	9000	1500	5350	3.06		12.0	1.55	0.98	0.67	0.69	0.73	0.302	0.614	0.79	
210-6	4400	8300	13200	2200	5000	3.14		12.0	1.77	1.10	0.77	0.78	0.82	0.352	0.669	0.88	
240-6	5700	10800	17100	2850	4350	3.70		12.0	1.93	1.20	1.24	1.26	1.32	0.568	1.04	1.40	
255-6	7600	14400	22800	3800	4100	3.84		11.9	2.09	1.50	1.39	1.42	1.46	0.697	1.22	1.57	
280-6	10000	19000	30000	4600	3750	4.18		11.9	2.53	1.53	1.55	1.57	1.65	0.881	1.42	1.73	
305-6	12000	21000	36000	5000	3400	4.46		11.9	2.72	1.80	2.83	2.87	3.05	1.51	2.71	3.32	
335-6	18000	32000	54000	7500	3100	4.84		11.9	2.88	1.89	3.85	3.92	4.14	2.11	3.62	4.49	
372-6	24000	43000	72000	10000	2800	4.98		11.8	3.03	2.16	5.72	5.84	6.12	3.14	-	6.75	
407-6	34000	61000	102000	14000	2550	5.50		11.8	3.31	2.26	7.25	7.42	7.79	5.06	-	8.51	
442-6	43000	77000	129000	18000	2350	6.02		11.8	3.59	2.48	10.0	10.2	10.8	7.42	-	11.9	
487-6	55000	99000	165000	23000	2150	6.80		11.7	4.09	2.64	11.7	11.9	12.7	9.25	-	13.6	
522-6	69000	124000	207000	29000	2000	7.34		11.7	4.35	2.86	14.0	14.3	15.1	11.4	-	16.2	
572-6	92000	166000	276000	38000	1800	7.86		11.6	4.87	3.02	17.9	18.3	19.4	15.2	-	20.7	
602-6	106000	191000	318000	44000	1700	8.24		11.6	5.13	3.24	21.1	21.7	22.9	18.2	-	24.5	

The permitted shaft misalignments ΔK_a , ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table).

The permitted shaft misalignment ΔK_r for types NHN, NZN and NWN applies to a coupling with shaft distance $S = 1000$ mm.

For other shaft distances, the permitted radial misalignment can be determined with the following formula:

$$\Delta K_r = (S - S1) \cdot \tan(\Delta K_w)$$

The shaft distance S is shown in the table for the type.

T_{Kmax} permitted only five times per hour.

The values for torsional stiffness apply to the complete coupling. In the case of types NHN and NZN to a coupling with shaft distance $S = 1000$ mm. In the case of type NWN, the torsional stiffness applies to a coupling without intermediate or torsion shaft. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN} . To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

General information

Permitted shaft misalignments

Size	Permitted angular misalignment $\pm\Delta K_w$								
	0.0°	0.1°	0.2°	0.3°	0.4°	0.5°	0.6°	0.7°	
DA	Permitted axial misalignment $\pm\Delta K_a$ in mm								
78-6	1.10	0.94	0.79	0.63	0.47	0.31	0.16	0.00	
105-6	1.80	1.54	1.29	1.03	0.77	0.51	0.26	0.00	
125-6	2.02	1.73	1.44	1.15	0.87	0.58	0.29	0.00	
140-6	2.40	2.06	1.71	1.37	1.03	0.69	0.34	0.00	
165-6	2.74	2.35	1.96	1.57	1.17	0.78	0.39	0.00	
175-6	2.86	2.45	2.04	1.63	1.23	0.82	0.41	0.00	
195-6	3.06	2.62	2.19	1.75	1.31	0.87	0.44	0.00	
210-6	3.14	2.69	2.24	1.79	1.35	0.90	0.45	0.00	
240-6	3.70	3.17	2.64	2.11	1.59	1.06	0.53	0.00	
255-6	3.84	3.29	2.74	2.19	1.65	1.10	0.55	0.00	
280-6	4.18	3.58	2.99	2.39	1.79	1.19	0.60	0.00	
305-6	4.46	3.82	3.19	2.55	1.91	1.27	0.64	0.00	
335-6	4.84	4.15	3.46	2.77	2.07	1.38	0.69	0.00	
372-6	4.98	4.27	3.56	2.85	2.13	1.42	0.71	0.00	
407-6	5.50	4.71	3.93	3.14	2.36	1.57	0.79	0.00	
442-6	6.02	5.16	4.30	3.44	2.58	1.72	0.86	0.00	
487-6	6.80	5.83	4.86	3.89	2.91	1.94	0.97	0.00	
522-6	7.34	6.29	5.24	4.19	3.15	2.10	1.05	0.00	
572-6	7.86	6.74	5.61	4.49	3.37	2.25	1.12	0.00	
602-6	8.24	7.06	5.89	4.71	3.53	2.35	1.18	0.00	

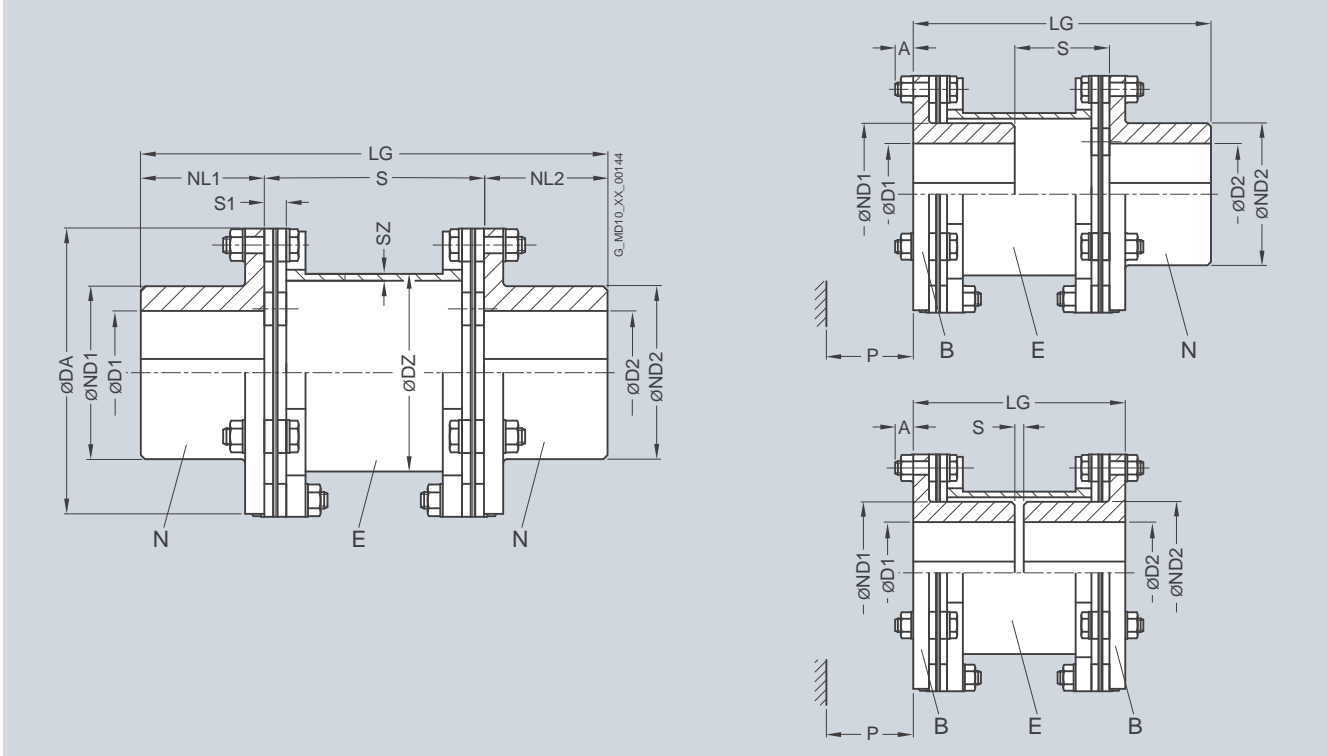
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NEN

Selection and ordering data

Torsionally rigid coupling type NEN with radially freely dismountable intermediate spacer. Types BEN and BEB cannot be dismounted radially without moving the units. On type BEB, the smallest possible shaft distance can be achieved.



6

Size	Rated torque T_{KN}	Maximum speed n_{Kmax}	Type	Dimensions in mm										Mass moment of inertia J	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m			
				D1, D2 Keyway DIN 6885 max. max.	ND1	ND2	DZ	SZ	NL1/ S1 NL2	S	A	P	LG						
78-6	170	13400	NEN	28	28	39	39	45	2.5	30	8	55	-	-	115	0.001	2LC0470-0NS99-0AA0	1.2	
			BEN										32	8	29		92		2LC0470-0AK99-0AA0
			BEB										9				69		2LC0470-0AC99-0AA0
105-6	270	10000	NEN	45	45	63	63	72	2.5	45	8	80	-	-	170	0.003	2LC0470-1NS99-0AA0	2.5	
			BEN										42	8	29		132		2LC0470-1AK99-0AA0
			BEB										4				94		2LC0470-1AC99-0AA0
125-6	490	8400	NEN	55	55	76	76	84	2.5	55	11	96	-	-	206	0.009	2LC0470-2NS99-0AA0	4.5	
			BEN										50	10	37		160		2LC0470-2AK99-0AA0
			BEB										4				114		2LC0470-2AC99-0AA0
140-6	700	7500	NEN	65	65	91	91	99	2.5	65	11	116	-	-	246	0.015	2LC0470-3NS99-0AA0	6.4	
			BEN										60	10	37		190		2LC0470-3AK99-0AA0
			BEB										4				134		2LC0470-3AC99-0AA0
165-6	1250	6350	NEN	75	75	105	105	114	2.5	75	14	136	-	-	286	0.032	2LC0470-4NS99-0AA0	9.7	
			BEN										70	12	45		220		2LC0470-4AK99-0AA0
			BEB										4				154		2LC0470-4AC99-0AA0
175-6	2000	6000	NEN	80	80	110	110	120	3.0	80	15	142	-	-	302	0.048	2LC0470-5NS99-0AA0	12.5	
			BEN										74	15	52		234		2LC0470-5AK99-0AA0
			BEB										6				166		2LC0470-5AC99-0AA0
195-6	3000	5350	NEN	90	90	120	120	131	3.0	80	15	142	-	-	302	0.073	2LC0470-6NS99-0AA0	14.9	
			BEN										74	14	52		234		2LC0470-6AK99-0AA0
			BEB										6				166		2LC0470-6AC99-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NEN

Size	Rated torque	Maximum speed	Type	Dimensions in mm										Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
				D1, D2	ND1	ND2	DZ	SZ	NL1/ NL2	S1	S	A	P				LG	J
mm	Nm	rpm		max.	max.										kgm ²	m		
210-6	4400	5000	NEN	95	95	126	126	139	4.0	90	15	160	-	-	340	0.109	2LC0470-7NS99-0AA0	19.5
			BEN									83	20	61	263		2LC0470-7AK99-0AA0	
			BEB									6			186		2LC0470-7AC99-0AA0	
240-6	5700	4350	NEN	110	110	145	145	162	5.0	100	18	176	-	-	376	0.210	2LC0470-8NS99-0AA0	28.4
			BEN									91	18	66	291		2LC0470-8AK99-0AA0	
			BEB									6			206		2LC0470-8AC99-0AA0	
255-6	7600	4100	NEN	115	115	154	154	170	5.0	110	23	194	-	-	414	0.315	2LC0471-0NS99-0AA0	37.5
			BEN									102	24	81	322		2LC0471-0AK99-0AA0	
			BEB									10			230		2LC0471-0AC99-0AA0	
280-6	10000	3750	NEN	135	135	184	184	186	6.0	130	25	232	-	-	492	0.542	2LC0471-1NS99-0AA0	54.5
			BEN	120	135	161	184					121	22	83	381	0.514	2LC0471-1AK99-0AA0	52.1
			BEB	120	120	161	161					10			270	0.486	2LC0471-1AC99-0AA0	49.7
305-6	12000	3400	NEN	145	145	198	198	200	6.5	140	27	250	-	-	530	0.762	2LC0471-2NS99-0AA0	66.4
			BEN	130	145	175	198					130	13	46	410	0.724	2LC0471-2AK99-0AA0	63.6
			BEB	130	130	175	175					10			290	0.685	2LC0471-2AC99-0AA0	60.9
335-6	18000	3100	NEN	160	160	214	214	218	7.5	150	30	266	-	-	566	1.18	2LC0471-3NS99-0AA0	84.2
			BEN	140	160	190	214					138	15	55	438	1.13	2LC0471-3AK99-0AA0	82.1
			BEB	140	140	190	190					10			310	1.08	2LC0471-3AC99-0AA0	80.0
372-6	24000	2800	NEN	165	165	225	225	228	9.5	160	32	280	-	-	600	1.93	2LC0471-4NS99-0AA0	116
			BEN	145	165	200	225					145	16	65	465	1.87	2LC0471-4AK99-0AA0	113
			BEB	145	145	200	200					10			330	1.80	2LC0471-4AC99-0AA0	110
407-6	34000	2550	NEN	185	185	250	250	245	11.0	175	35	306	-	-	656	3.06	2LC0471-5NS99-0AA0	152
			BEN	145	185	205	250					158	19	71	508	2.91	2LC0471-5AK99-0AA0	148
			BEB	145	145	205	205					10			360	2.76	2LC0471-5AC99-0AA0	144
442-6	43000	2350	NEN	200	200	270	270	273	11.0	190	38	332	-	-	712	4.58	2LC0471-6NS99-0AA0	192
			BEN	170	200	230	270					172	20	79	552	4.38	2LC0471-6AK99-0AA0	185
			BEB	170	170	230	230					12			392	4.18	2LC0471-6AC99-0AA0	178
487-6	55000	2150	NEN	225	225	305	305	298	13.0	215	41	376	-	-	806	7.73	2LC0471-7NS99-0AA0	268
			BEN	180	225	250	305					194	23	87	624	7.32	2LC0471-7AK99-0AA0	258
			BEB	180	180	250	250					12			442	6.91	2LC0471-7AC99-0AA0	248
522-6	69000	2000	NEN	240	240	325	325	324	13.0	230	44	400	-	-	860	10.7	2LC0471-8NS99-0AA0	323
			BEN	200	240	275	325					206	23	90	666	10.2	2LC0471-8AK99-0AA0	312
			BEB	200	200	275	275					12			472	9.72	2LC0471-8AC99-0AA0	301
572-6	92000	1800	NEN	265	265	360	360	356	15.0	255	47	446	-	-	956	17.1	2LC0472-0NS99-0AA0	431
			BEN	220	265	300	360					229	24	97	739	16.2	2LC0472-0AK99-0AA0	413
			BEB	220	220	300	300					12			522	15.2	2LC0472-0AC99-0AA0	394
602-6	106000	1700	NEN	280	280	380	380	368	16.0	270	50	470	-	-	1010	22.6	2LC0472-1NS99-0AA0	514
			BEN	225	280	310	380					241	26	103	781	21.3	2LC0472-1AK99-0AA0	492
			BEB	225	225	310	310					12			552	20.0	2LC0472-1AC99-0AA0	470

Torsionally rigid ARPEX couplings up to size 240-6 available from stock.

For simplified fitting on B hubs, plate packs from size 280-6 available with closing element.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:

ARPEX ARS-6 NEN coupling, size 105-6,
bore ØD1 40H7 mm, with keyway to DIN 6885 and set screw,
bore ØD2 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0470-1NS99-0AA0-Z
LOW+M1A+M13

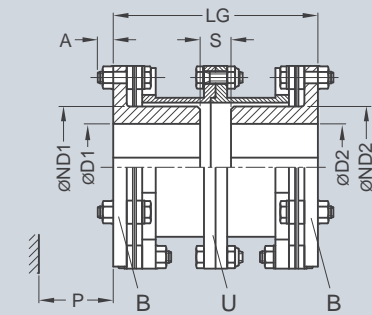
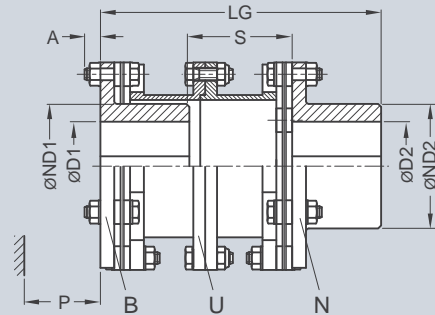
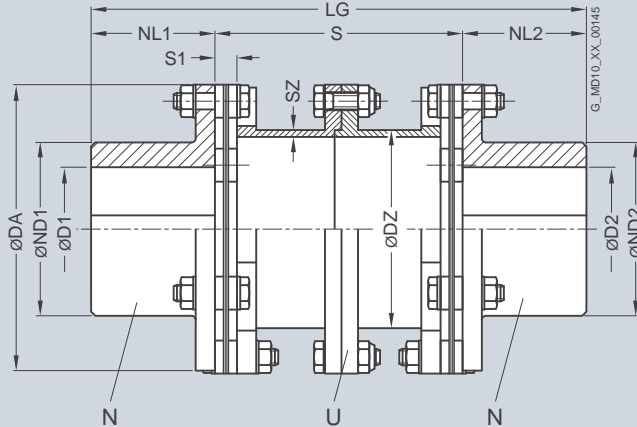
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NUN

Selection and ordering data

Torsionally rigid coupling type NUN with radially freely dismountable intermediate spacer. Types BUN and BUB cannot be radially dismounted without moving the units. On type BUB, the smallest possible shaft distance can be achieved.



6

Size	Rated torque	Maximum speed	Type	Dimensions in mm										Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight			
				D1, D2 Keyway DIN 6885 max. max.	ND1	ND2	DZ	SZ	NL1/ NL2	S1	S	A	P				LG	J	m
mm	Nm	rpm															kg		
78-6	170	13400	NUN	28	28	39	39	45	2.5	30	8	84	-	-	144	0.001	2LC0470-0NW99-0AA0	1.5	
			BUN										61	8	29		121		2LC0470-0BD99-0AA0
			BUB										38				98		2LC0470-0AT99-0AA0
105-6	270	10000	NUN	45	45	63	63	72	2.5	45	8	90	-	-	180	0.004	2LC0470-1NW99-0AA0	2.9	
			BUN										52	8	29		142		2LC0470-1BD99-0AA0
			BUB										14				104		2LC0470-1AT99-0AA0
125-6	490	8400	NUN	55	55	76	76	84	2.5	55	11	116	-	-	226	0.011	2LC0470-2NW99-0AA0	5.3	
			BUN										70	10	37		180		2LC0470-2BD99-0AA0
			BUB										24				134		2LC0470-2AT99-0AA0
140-6	700	7500	NUN	65	65	91	91	99	2.5	65	11	116	-	-	246	0.019	2LC0470-3NW99-0AA0	7.2	
			BUN										60	10	37		190		2LC0470-3BD99-0AA0
			BUB										4				134		2LC0470-3AT99-0AA0
165-6	1250	6350	NUN	75	75	105	105	114	2.5	75	14	136	-	-	286	0.038	2LC0470-4NW99-0AA0	10.9	
			BUN										70	12	45		220		2LC0470-4BD99-0AA0
			BUB										4				154		2LC0470-4AT99-0AA0
175-6	2000	6000	NUN	80	80	110	110	120	3.0	80	15	142	-	-	302	0.057	2LC0470-5NW99-0AA0	14.1	
			BUN										74	15	52		234		2LC0470-5BD99-0AA0
			BUB										6				166		2LC0470-5AT99-0AA0
195-6	3000	5350	NUN	90	90	120	120	131	3.0	80	15	142	-	-	302	0.085	2LC0470-6NW99-0AA0	16.8	
			BUN										74	14	52		234		2LC0470-6BD99-0AA0
			BUB										6				166		2LC0470-6AT99-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NUN

Size	Rated torque	Maximum speed	Type	Dimensions in mm											Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
				D1, D2 Keyway DIN 6885 max. max.	ND1	ND2	DZ	SZ	NL1/ NL2	S1	S	A	P	LG				J	m
mm	Nm	rpm												kgm ²		kg			
210-6	4400	5000	NUN	95	95	126	126	139	4.0	90	15	160	-	-	340	0.128	2LC0470-7NW99-0AA0	21.9	
			BUN										83	20	61		263		2LC0470-7BD99-0AA0
			BUB										6				186		2LC0470-7AT99-0AA0
240-6	5700	4350	NUN	110	110	145	145	162	5.0	100	18	176	-	-	376	0.242	2LC0470-8NW99-0AA0	31.5	
			BUN										91	18	66		291		2LC0470-8BD99-0AA0
			BUB										6				206		2LC0470-8AT99-0AA0
255-6	7600	4100	NUN	115	115	154	154	170	5.0	110	23	194	-	-	414	0.363	2LC0471-0NW99-0AA0	41.6	
			BUN										102	24	81		322		2LC0471-0BD99-0AA0
			BUB										10				230		2LC0471-0AT99-0AA0
280-6	10000	3750	NUN	135	135	184	184	186	6.0	130	25	232	-	-	492	0.611	2LC0471-1NW99-0AA0	59.4	
			BUN	120	135	161	184						121	22	83		381		2LC0471-1BD99-0AA0
			BUB	120	120	161	161						10				270		2LC0471-1AT99-0AA0
305-6	12000	3400	NUN	145	145	198	198	200	6.5	140	27	250	-	-	530	0.861	2LC0471-2NW99-0AA0	72.4	
			BUN	130	145	175	198						130	13	46		410		2LC0471-2BD99-0AA0
			BUB	130	130	175	175						10				290		2LC0471-2AT99-0AA0
335-6	18000	3100	NUN	160	160	214	214	218	7.5	150	30	266	-	-	566	1.35	2LC0471-3NW99-0AA0	93.1	
			BUN	140	160	190	214						138	15	55		438		2LC0471-3BD99-0AA0
			BUB	140	140	190	190						10				310		2LC0471-3AT99-0AA0
372-6	24000	2800	NUN	165	165	225	225	228	9.5	160	32	280	-	-	600	2.21	2LC0471-4NW99-0AA0	127	
			BUN	145	165	200	225						145	16	65		465		2LC0471-4BD99-0AA0
			BUB	145	145	200	200						10				330		2LC0471-4AT99-0AA0
407-6	34000	2550	NUN	185	185	250	250	245	11.0	175	35	306	-	-	656	3.55	2LC0471-5NW99-0AA0	170	
			BUN	145	185	205	250						158	19	71		508		2LC0471-5BD99-0AA0
			BUB	145	145	205	205						10				360		2LC0471-5AT99-0AA0
442-6	43000	2350	NUN	200	200	270	270	273	11.0	190	38	332	-	-	712	5.29	2LC0471-6NW99-0AA0	213	
			BUN	170	200	230	270						172	20	79		552		2LC0471-6BD99-0AA0
			BUB	170	170	230	230						12				392		2LC0471-6AT99-0AA0
487-6	55000	2150	NUN	225	225	305	305	298	13.0	215	41	376	-	-	806	8.79	2LC0471-7NW99-0AA0	294	
			BUN	180	225	250	305						194	23	87		624		2LC0471-7BD99-0AA0
			BUB	180	180	250	250						12				442		2LC0471-7AT99-0AA0
522-6	69000	2000	NUN	240	240	325	325	324	13.0	230	44	400	-	-	860	12.5	2LC0471-8NW99-0AA0	361	
			BUN	200	240	275	325						206	23	90		666		2LC0471-8BD99-0AA0
			BUB	200	200	275	275						12				472		2LC0471-8AT99-0AA0
572-6	92000	1800	NUN	265	265	360	360	356	15.0	255	47	446	-	-	956	19.7	2LC0472-0NW99-0AA0	477	
			BUN	220	265	300	360						229	24	97		739		2LC0472-0BD99-0AA0
			BUB	220	220	300	300						12				522		2LC0472-0AT99-0AA0
602-6	106000	1700	NUN	280	280	380	380	368	16.0	270	50	470	-	-	1010	26.9	2LC0472-1NW99-0AA0	584	
			BUN	225	280	310	380						241	26	103		781		2LC0472-1BD99-0AA0
			BUB	225	225	310	310						12				552		2LC0472-1AT99-0AA0

Up to size 240-6 available from stock.

Because of the split variant, the coupling is optionally available with prefitted plate packs.

For simplified fitting on B hubs, plate packs from size 280-6 available with closing element.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:

ARPEX ARS-6 NUN coupling, size 140-6,
Bore ØD1 60H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 65K7 mm, with keyway to DIN 6885 and set screw.

Product code:

**2LC0470-3NW99-0AA0-Z
L1E+M1F+M13**

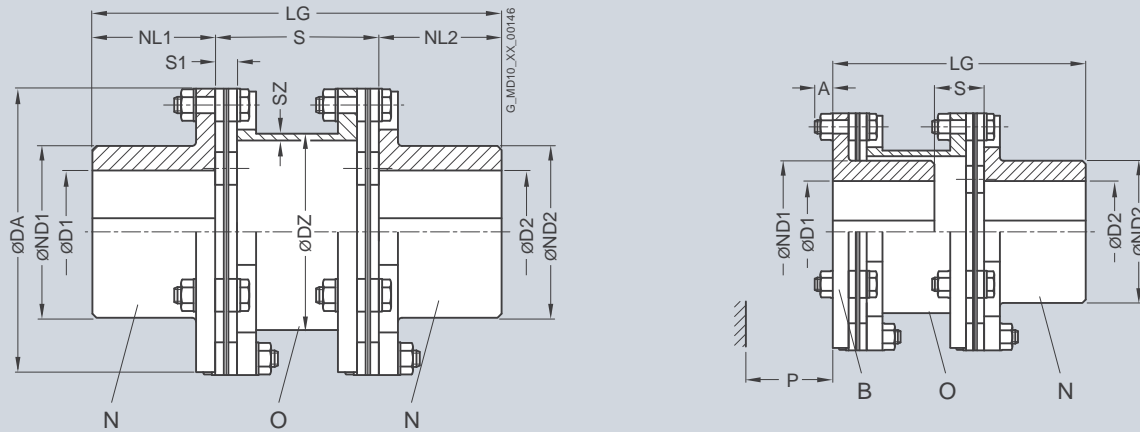
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NON

Selection and ordering data

Torsionally rigid coupling with shortest possible shaft distance enabling problem-free fitting with commercially available tools.
 Type NON with radially freely dismountable intermediate spacer. Type BON cannot be radially dismounted without moving the units.



6

Size	Rated torque	Maximum speed	Type	Dimensions in mm										Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
				D1, D2 Keyway DIN 6885 max. max.	ND1	ND2	DZ	SZ	NL1/ S1 NL2	S	A	P	LG				J	
78-6	170	13400	NON	28	28	39	39	45	2.5	30	8	51	-	-	111	0.001	2LC0470-0NV99-0AA0	1.1
			BON									28	8	29	88		2LC0470-0AS99-0AA0	
105-6	270	10000	NON	45	45	63	63	72	2.5	45	8	51	-	-	141	0.003	2LC0470-1NV99-0AA0	2.4
			BON									13	8	29	103		2LC0470-1AS99-0AA0	
125-6	490	8400	NON	55	55	76	76	84	2.5	55	11	67	-	-	177	0.008	2LC0470-2NV99-0AA0	4.3
			BON									21	10	37	131		2LC0470-2AS99-0AA0	
140-6	700	7500	NON	65	65	91	91	99	2.5	65	11	70	-	-	200	0.015	2LC0470-3NV99-0AA0	6.1
			BON									14	10	37	144		2LC0470-3AS99-0AA0	
165-6	1250	6350	NON	75	75	105	105	114	2.5	75	14	83	-	-	233	0.031	2LC0470-4NV99-0AA0	9.4
			BON									17	12	45	167		2LC0470-4AS99-0AA0	
175-6	2000	6000	NON	80	80	110	110	120	3.0	80	15	95	-	-	255	0.047	2LC0470-5NV99-0AA0	12.1
			BON									27	15	52	187		2LC0470-5AS99-0AA0	
195-6	3000	5350	NON	90	90	120	120	131	3.0	80	15	95	-	-	255	0.071	2LC0470-6NV99-0AA0	14.5
			BON									27	14	52	187		2LC0470-6AS99-0AA0	
210-6	4400	5000	NON	95	95	126	126	139	4.0	90	15	105	-	-	285	0.105	2LC0470-7NV99-0AA0	18.7
			BON									28	20	61	208		2LC0470-7AS99-0AA0	
240-6	5700	4350	NON	110	110	145	145	162	5.0	100	18	116	-	-	316	0.203	2LC0470-8NV99-0AA0	27.3
			BON									31	18	66	231		2LC0470-8AS99-0AA0	
255-6	7600	4100	NON	115	115	154	154	170	5.0	110	23	146	-	-	366	0.309	2LC0471-0NV99-0AA0	36.5
			BON									54	24	81	274		2LC0471-0AS99-0AA0	
280-6	10000	3750	NON	135	135	184	184	186	6.0	130	25	150	-	-	410	0.524	2LC0471-1NV99-0AA0	52.3
			BON	120	135	161	184					39	22	83	299	0.496	2LC0471-1AS99-0AA0	49.9

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NON

Size	Rated torque	Maximum speed	Type	Dimensions in mm										Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
				D1, D2	ND1	ND2	DZ	SZ	NL1/ NL2	S1	S	A	P				LG	J
mm	Nm	rpm		max.	max.										kgm ²		kg	
305-6	12000	3400	NON	145	145	198	198	200	6.5	140	27	174	–	–	454	0.740	2LC0471-2NV99-0AA0	64.1
			BON	130	145	175	198						54	13	46	334	0.702	2LC0471-2AS99-0AA0
335-6	18000	3100	NON	160	160	214	214	218	7.5	150	30	185	–	–	485	1.14	2LC0471-3NV99-0AA0	81.0
			BON	140	160	190	214						57	15	55	357	1.09	2LC0471-3AS99-0AA0
372-6	24000	2800	NON	165	165	225	225	228	9.5	160	32	209	–	–	529	1.89	2LC0471-4NV99-0AA0	112
			BON	145	165	200	225						74	16	65	394	1.82	2LC0471-4AS99-0AA0
407-6	34000	2550	NON	185	185	250	250	245	11.0	175	35	220	–	–	570	2.98	2LC0471-5NV99-0AA0	147
			BON	145	185	205	250						72	19	71	422	2.84	2LC0471-5AS99-0AA0
442-6	43000	2350	NON	200	200	270	270	273	11.0	190	38	241	–	–	621	4.46	2LC0471-6NV99-0AA0	185
			BON	170	200	230	270						81	20	79	461	4.27	2LC0471-6AS99-0AA0
487-6	55000	2150	NON	225	225	305	305	298	13.0	215	41	257	–	–	687	7.51	2LC0471-7NV99-0AA0	257
			BON	180	225	250	305						75	23	87	505	7.10	2LC0471-7AS99-0AA0
522-6	69000	2000	NON	240	240	325	325	324	13.0	230	44	278	–	–	738	10.4	2LC0471-8NV99-0AA0	311
			BON	200	240	275	325						84	23	90	544	9.93	2LC0471-8AS99-0AA0
572-6	92000	1800	NON	265	265	360	360	356	15.0	255	47	294	–	–	804	16.5	2LC0472-0NV99-0AA0	413
			BON	220	265	300	360						77	24	97	587	15.6	2LC0472-0AS99-0AA0
602-6	106000	1700	NON	280	280	380	380	368	16.0	270	50	315	–	–	855	21.9	2LC0472-1NV99-0AA0	492
			BON	225	280	310	380						86	26	103	626	20.6	2LC0472-1AS99-0AA0

Up to size 240-6 available from stock.

For simplified fitting on B hubs, plate packs from size 280-6 available with closing element.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:

ARPEX ARS-6 NON coupling, size 105-6,
Bore ØD1 40H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0470-1NV99-0AA0-Z
LOW+M1A+M13

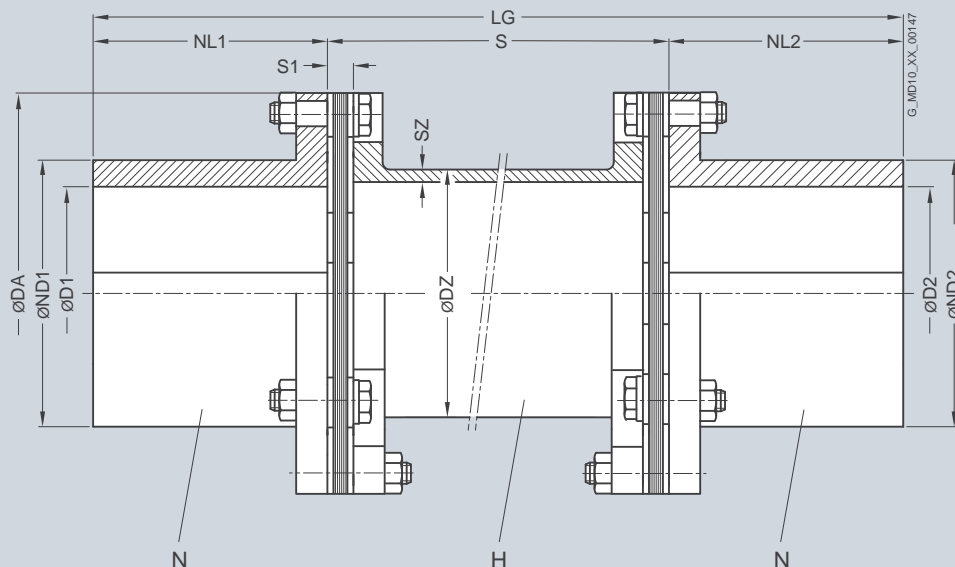
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NHN

Selection and ordering data

Torsionally rigid coupling type NHN with variable shaft distance S. Type NHN with radially freely dismountable intermediate spacer.



Size	Rated torque	Maximum speed	Dimensions in mm						Shaft distance	Mass moment of inertia	Product code	Weight
DA	T_{KN}	n_{Kmax}	D1/D2 Keyway DIN 6885	ND1/ND2	DZ	SZ	NL1/NL2	S1	S	J	Order codes for bore diameters and tolerances are specified in catalog section 3	m
mm	Nm	rpm	max.						min.	kgm ²		kg
78-6	170	13400	28	39	44.5	3.2	30	8	85	0.002	2LC0470-0NT99-0AZ0	4.3
105-6	270	10000	45	63	57.0	3.2	45	8	80	0.006	2LC0470-1NT99-0AZ0	6.6
125-6	490	8400	55	76	63.5	4.0	55	11	95	0.014	2LC0470-2NT99-0AZ0	10.2
140-6	700	7500	65	91	76.1	3.6	65	11	95	0.023	2LC0470-3NT99-0AZ0	12.6
165-6	1250	6350	75	105	88.9	4.0	75	14	100	0.046	2LC0470-4NT99-0AZ0	17.7
175-6	2000	6000	80	110	101.6	5.0	80	15	100	0.074	2LC0470-5NT99-0AZ0	23.7
195-6	3000	5350	90	120	108.0	7.1	80	15	100	0.115	2LC0470-6NT99-0AZ0	31.8
210-6	4400	5000	95	126	114.3	7.1	90	15	130	0.157	2LC0470-7NT99-0AZ0	36.9
240-6	5700	4350	110	145	133.0	7.1	100	18	140	0.287	2LC0470-8NT99-0AZ0	48.6
255-6	7600	4100	115	154	139.7	8.0	110	23	180	0.415	2LC0471-0NT99-0AZ0	61.4
280-6	10000	3750	135	184	152.4	8.8	130	25	180	0.675	2LC0471-1NT99-0AZ0	81.9
305-6	12000	3400	145	198	168.3	10.0	140	27	200	0.962	2LC0471-2NT99-0AZ0	100
335-6	18000	3100	160	214	177.8	12.5	150	30	230	1.46	2LC0471-3NT99-0AZ0	128
372-6	24000	2800	165	225	193.7	14.2	160	32	250	2.32	2LC0471-4NT99-0AZ0	168
407-6	34000	2550	185	250	244.5	14.2	175	35	250	3.85	2LC0471-5NT99-0AZ0	212
442-6	43000	2350	200	270	273.0	16.0	190	38	260	5.82	2LC0471-6NT99-0AZ0	267
487-6	55000	2150	225	305	298.5	17.5	215	41	270	9.39	2LC0471-7NT99-0AZ0	352
522-6	69000	2000	240	325	323.9	17.5	230	44	290	12.8	2LC0471-8NT99-0AZ0	413
572-6	92000	1800	265	360	355.6	20.0	255	47	310	20.1	2LC0472-0NT99-0AZ0	538
602-6	106000	1700	280	380	368.0	22.2	270	50	330	26.1	2LC0472-1NT99-0AZ0	633

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling (see following table).

For greater shaft distances, see type NZN.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2 and S = 1000 mm.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NHN

Permitted shaft distance S of type NHN relative to speed

Size DA mm	Speed n_N rpm												
	500	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000
	Permitted shaft distance S mm												
78-6	2809	2565	2376	2223	2096	1989	1816	1682	1625	1409	1261	1152	998
105-6	3203	2925	2709	2534	2390	2268	2071	1918	1853	1606	1437	1313	1138
125-6	3372	3079	2852	2668	2516	2388	2181	2020	1952	1692	1514	1383	1199
140-6	3719	3396	3145	2943	2775	2633	2405	2227	2152	1865	1669	1525	1322
165-6	4027	3677	3405	3186	3005	2852	2604	2412	2331	2020	1809	1652	1433
175-6	4296	3923	3633	3399	3206	3042	2778	2573	2487	2155	1929	1763	1529
195-6	4393	4011	3715	3476	3278	3110	2841	2631	2542	2204	1973	1802	1563
210-6	4527	4134	3828	3582	3378	3205	2927	2711	2620	2271	2033	1857	1610
240-6	4906	4480	4149	3882	3661	3474	3173	2939	2840	2462	2204	2013	1746
255-6	5023	4587	4249	3976	3750	3558	3250	3011	2910	2523	2259	2064	1791
280-6	5246	4791	4437	4152	3916	3717	3395	3145	3039	2635	2360	2156	
305-6	5509	5031	4660	4361	4113	3903	3566	3303	3192	2768	2479	2265	
335-6	5634	5146	4766	4461	4207	3993	3647	3379	3266	2832	2536	2318	
372-6	5873	5364	4968	4650	4385	4162	3802	3523	3404	2952	2644		
407-6	6647	6071	5623	5262	4963	4710	4303	3986	3852	3341	2992		
442-6	7023	6414	5941	5560	5244	4977	4547	4212	4071	3530			
487-6	7345	6708	6214	5815	5485	5205	4755	4406	4258	3693			
522-6	7669	7005	6489	6072	5728	5436	4966	4601	4446	3857			
572-6	8000	7333	6792	6356	5996	5690	5199	4817	4655				
602-6	8000	7447	6898	6456	6089	5779	5280	4892	4728				

Outside the permitted
speed range

Ordering example:

ARPEX ARS-6 NHN coupling, size 105-6, with shaft distance
S = 1000 mm,Bore ØD1 40H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0470-1NT99-0AZ0-Z**L0W+M1A+Q0Y+M13**plain text to Q0Y: **S = 1000 mm**

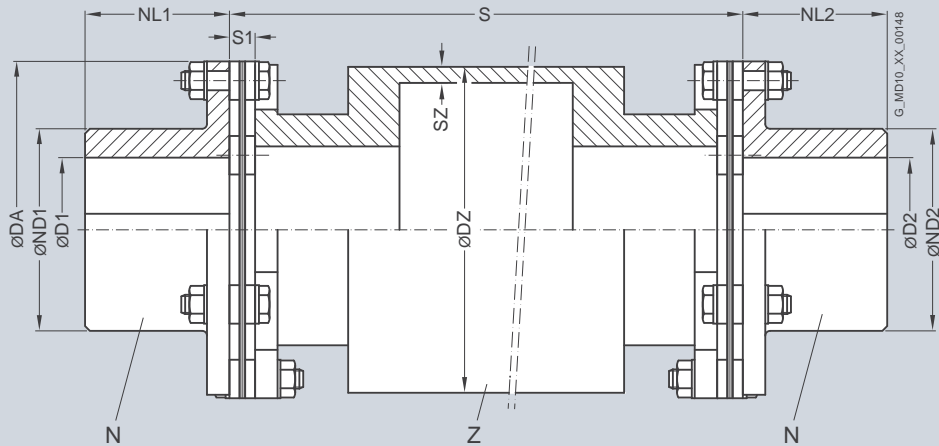
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NZN

Selection and ordering data

Torsionally rigid coupling type NZN with variable shaft distance S and reinforced intermediate spacer.
Type NZN with radially freely dismountable intermediate spacer.



Size	Rated torque	Maximum speed	Dimensions in mm							Shaft distance S_{\min}	Mass moment of inertia J	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m
DA	T_{KN}	n_{Kmax}	D1/D2 Keyway DIN 6885 max.	ND1/ND2	DZ	SZ	NL1/NL2	S1	kgm ²				
78-6	170	13400	28	39	76.1	3.6	30	8	140	0.009	2LC0470-0PC99-0AZ0	7.8	
105-6	270	10000	45	63	101.6	5.0	45	8	140	0.031	2LC0470-1PC99-0AZ0	15.3	
125-6	490	8400	55	76	114.3	7.1	55	11	185	0.061	2LC0470-2PC99-0AZ0	23.9	
140-6	700	7500	65	91	139.7	8.0	65	11	185	0.125	2LC0470-3PC99-0AZ0	33.1	
165-6	1250	6350	75	105	168.3	7.1	75	14	240	0.219	2LC0470-4PC99-0AZ0	41.5	
175-6	2000	6000	80	110	177.8	7.1	80	15	255	0.266	2LC0470-5PC99-0AZ0	45.6	
195-6	3000	5350	90	120	193.7	7.1	80	15	255	0.361	2LC0470-6PC99-0AZ0	51.7	
210-6	4400	5000	95	126	193.7	7.1	90	15	280	0.392	2LC0470-7PC99-0AZ0	55.0	
240-6	5700	4350	110	145	219.1	7.1	100	18	300	0.622	2LC0470-8PC99-0AZ0	68.3	
255-6	7600	4100	115	154	244.5	7.1	110	23	360	0.902	2LC0471-0PC99-0AZ0	85.9	
280-6	10000	3750	135	184	273.0	7.1	130	25	380	1.39	2LC0471-1PC99-0AZ0	112	
305-6	12000	3400	145	198	298.5	11.0	140	27	445	2.28	2LC0471-2PC99-0AZ0	155	
335-6	18000	3100	160	214	323.9	11.0	150	30	460	3.13	2LC0471-3PC99-0AZ0	180	

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling (see following table).

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2 and $S = 1000$ mm.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NZN

Permitted shaft distance S of type NZN relative to speed

Size DA mm	Speed n_N rpm												
	500	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000
	Permitted shaft distance S mm												
78-6	3716	3393	3142	2940	2772	2630	2402	2224	2149	1862	1666	1522	1319
105-6	4289	3916	3626	3392	3199	3035	2771	2566	2480	2148	1922	1756	1522
125-6	4523	4130	3824	3578	3374	3201	2923	2707	2616	2267	2029	1853	1606
140-6	5011	4575	4237	3964	3738	3546	3238	2999	2898	2511	2247	2052	1779
165-6	5543	5061	4687	4385	4135	3924	3583	3318	3206	2779	2487	2271	1969
175-6	5704	5209	4823	4513	4256	4038	3687	3415	3300	2860	2559	2338	2026
195-6	5963	5445	5042	4717	4448	4221	3854	3570	3449	2989	2675	2443	2118
210-6	5963	5445	5042	4717	4448	4221	3854	3570	3449	2989	2675	2443	2118
240-6	6357	5805	5376	5030	4743	4501	4110	3807	3678	3188	2853	2606	2259
255-6	6731	6147	5692	5326	5023	4766	4353	4032	3896	3377	3023	2762	2395
280-6	7124	6505	6025	5637	5316	5045	4607	4267	4124	3574	3200	2923	-
305-6	7410	6767	6267	5864	5530	5248	4793	4439	4290	3719	3329	3041	-
335-6	7732	7061	6539	6119	5771	5476	5002	4633	4477	3881	3474	3174	-

Ordering example:

ARPEX ARS-6 NZN coupling, size 105-6, with shaft distance
S = 1000 mm,
Bore ØD1 40H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0470-1PC99-0AZ0-Z**L0W+M1A+Q0Y+M13**plain text to Q0Y: **S = 1000 mm**

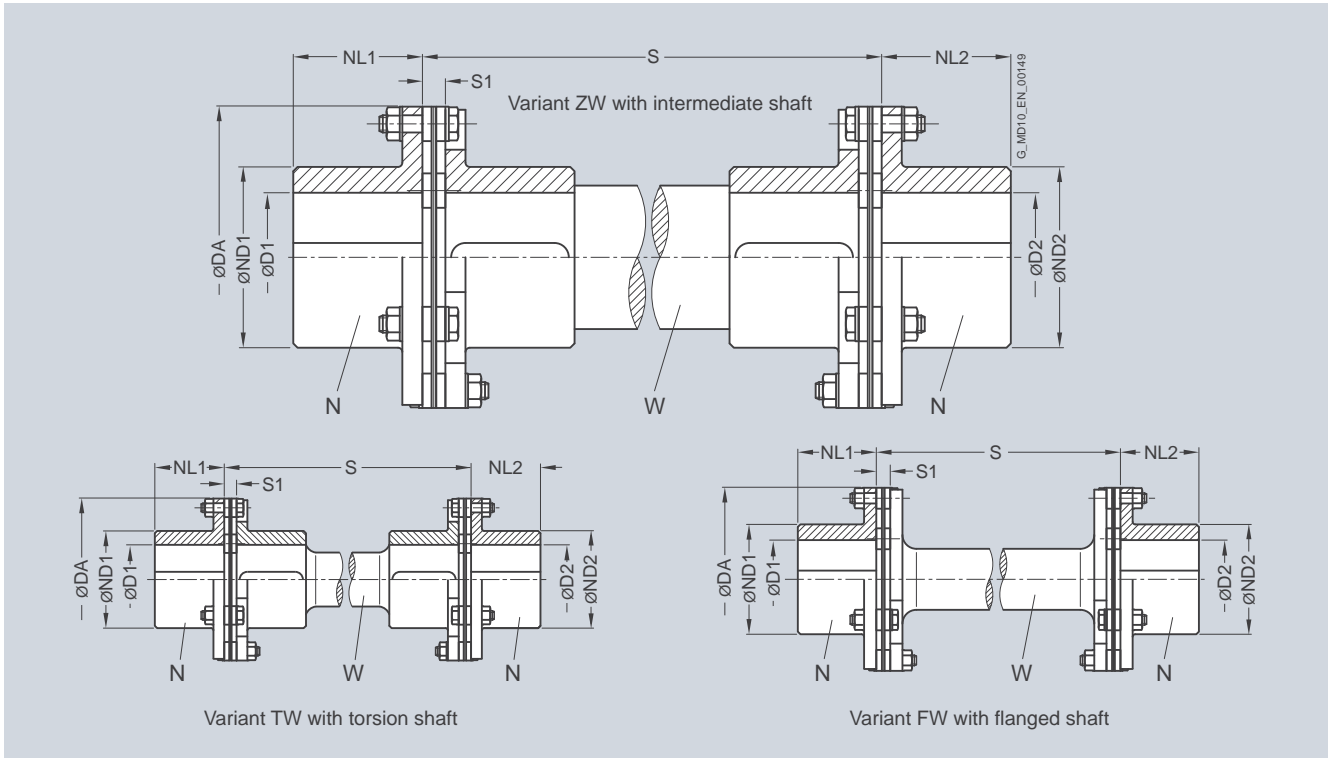
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NWN

Selection and ordering data

Torsionally rigid coupling type NWN with radially freely dismountable intermediate, torsion or flange shaft and variable shaft distance S.



6

Size	Rated torque	Maximum speed	Type	Dimensions in mm				Shaft distance	Mass moment of inertia	Product code	Weight
DA	T_{KN}	n_{Kmax}		D1/D2	ND1	NL1/NL2	S1	S_{min}	J	Order codes for bore diameters and tolerances are specified in catalog section 3	m
mm	Nm	rpm		Keyway DIN 6885 max.					kgm ²		kg
78-6	170	13400	ZW	28	39	30	8	70	0.001	2LC0470-0NX99-0AZ0	1.4
			TW					70		2LC0470-0PB99-0AZ0	
			FW					51		2LC0470-0PA99-0AZ0	
105-6	270	10000	ZW	45	63	45	8	100	0.004	2LC0470-1NX99-0AZ0	3.4
			TW					100		2LC0470-1PB99-0AZ0	
			FW					51		2LC0470-1PA99-0AZ0	
125-6	490	8400	ZW	55	76	55	11	120	0.010	2LC0470-2NX99-0AZ0	6.1
			TW					120		2LC0470-2PB99-0AZ0	
			FW					67		2LC0470-2PA99-0AZ0	
140-6	700	7500	ZW	65	91	65	11	140	0.020	2LC0470-3NX99-0AZ0	9.2
			TW					140		2LC0470-3PB99-0AZ0	
			FW					70		2LC0470-3PA99-0AZ0	
165-6	1250	6350	ZW	75	105	75	14	160	0.041	2LC0470-4NX99-0AZ0	14.2
			TW					160		2LC0470-4PB99-0AZ0	
			FW					83		2LC0470-4PA99-0AZ0	
175-6	2000	6000	ZW	80	110	80	15	170	0.059	2LC0470-5NX99-0AZ0	17.5
			TW					170		2LC0470-5PB99-0AZ0	
			FW					95		2LC0470-5PA99-0AZ0	
195-6	3000	5350	ZW	90	120	80	15	170	0.088	2LC0470-6NX99-0AZ0	20.5
			TW					170		2LC0470-6PB99-0AZ0	
			FW					95		2LC0470-6PA99-0AZ0	
210-6	4400	5000	ZW	95	126	90	15	190	0.127	2LC0470-7NX99-0AZ0	25.9
			TW					190		2LC0470-7PB99-0AZ0	
			FW					105		2LC0470-7PA99-0AZ0	

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Type NWN

Size	Rated torque	Maximum speed	Type	Dimensions in mm				Shaft distance	Mass moment of inertia	Product code	Weight	
DA	T_{KN}	n_{Kmax}		D1/D2	ND1	NL1/NL2	S1	S_{min}	J	Order codes for bore diameters and tolerances are specified in catalog section 3	m	
mm	Nm	rpm		Keyway DIN 6885 max.					kgm ²		kg	
240-6	5700	4350	ZW	110	145	100	18	210	0.245	2LC0470-8NX99-0AZ0	37.7	
			TW					210				2LC0470-8PB99-0AZ0
			FW					116				2LC0470-8PA99-0AZ0
255-6	7600	4100	ZW	115	154	110	23	230	0.368	2LC0471-0NX99-0AZ0	49.9	
			TW					230				2LC0471-0PB99-0AZ0
			FW					146				2LC0471-0PA99-0AZ0
280-6	10000	3750	ZW	135	184	130	25	270	0.667	2LC0471-1NX99-0AZ0	74.8	
			TW					270				2LC0471-1PB99-0AZ0
			FW					150				2LC0471-1PA99-0AZ0
305-6	12000	3400	ZW	145	198	140	27	290	0.944	2LC0471-2NX99-0AZ0	91.9	
			TW					290				2LC0471-2PB99-0AZ0
			FW					174				2LC0471-2PA99-0AZ0
335-6	18000	3100	ZW	160	214	150	30	310	1.43	2LC0471-3NX99-0AZ0	114	
			TW					310				2LC0471-3PB99-0AZ0
			FW					185				2LC0471-3PA99-0AZ0
372-6	24000	2800	ZW	165	225	160	32	330	2.25	2LC0471-4NX99-0AZ0	151	
			TW					330				2LC0471-4PB99-0AZ0
			FW					209				2LC0471-4PA99-0AZ0
407-6	34000	2550	ZW	185	250	175	35	360	3.58	2LC0471-5NX99-0AZ0	198	
			TW					360				2LC0471-5PB99-0AZ0
			FW					220				2LC0471-5PA99-0AZ0
442-6	43000	2350	ZW	200	270	190	38	390	5.36	2LC0471-6NX99-0AZ0	251	
			TW					390				2LC0471-6PB99-0AZ0
			FW					241				2LC0471-6PA99-0AZ0
487-6	55000	2150	ZW	225	305	215	41	440	9.16	2LC0471-7NX99-0AZ0	352	
			TW					440				2LC0471-7PB99-0AZ0
			FW					257				2LC0471-7PA99-0AZ0
522-6	69000	2000	ZW	240	325	230	44	470	12.8	2LC0471-8NX99-0AZ0	428	
			TW					470				2LC0471-8PB99-0AZ0
			FW					278				2LC0471-8PA99-0AZ0
572-6	92000	1800	ZW	265	360	255	47	520	20.4	2LC0472-0NX99-0AZ0	573	
			TW					520				2LC0472-0PB99-0AZ0
			FW					294				2LC0472-0PA99-0AZ0
602-6	106000	1700	ZW	280	380	270	50	550	26.9	2LC0472-1NX99-0AZ0	678	
			TW					550				2LC0472-1PB99-0AZ0
			FW					315				2LC0472-1PA99-0AZ0

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling.

Weights and mass moments of inertia apply to four hubs with maximum bore D1/D2 and two plate packs.

Ordering example:

ARPEX ARS-6 NWN coupling, size 105-6, with intermediate shaft and shaft distance $S = 1000$ mm,
Bore $\varnothing D1$ 40H7 mm, with keyway to DIN 6885 and set screw,
Bore $\varnothing D2$ 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0470-1NX99-0AZ0-Z

L0W+M1A+Q0Y+M13

plain text to Q0Y: **S = 1000 mm**

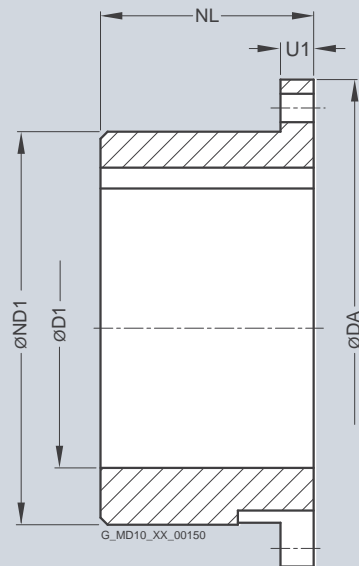
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges
J hub

Selection and ordering data

J hubs or jumbo hubs are used where the shaft diameter is greater than the maximum bore diameter of the N hub. Because of the larger hub core diameter " $\varnothing ND1$ ", the J hub cannot be used as a B hub, i.e. the hub core diameter is greater than the inside diameter of the spacer tube and cannot project into the spacer. The J hub can be combined with any spacer.



FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges
J hub

Size	Dimensions in mm				Mass moment of inertia J	Product code	Weight m
	DA	D1	ND1	NL			
mm	Keyway DIN 6885 max.				kgm ²	Order codes for bore diameters and tolerances are specified in catalog section 3	kg
78-6	40	53	30	7	0.0002	2LC0470-0JU90-0AA0	0.3
105-6	60	80	45	7	0.0013	2LC0470-1JU90-0AA0	0.9
125-6	70	92	55	9	0.0029	2LC0470-2JU90-0AA0	1.5
140-6	80	107	65	9	0.0058	2LC0470-3JU90-0AA0	2.4
165-6	92	124	75	9	0.0121	2LC0470-4JU90-0AA0	3.7
175-6	96	130	80	12	0.0168	2LC0470-5JU90-0AA0	4.5
195-6	106	142	80	12	0.0244	2LC0470-6JU90-0AA0	5.4
210-6	110	149	90	13	0.0347	2LC0470-7JU90-0AA0	6.9
240-6	130	173	100	15	0.0675	2LC0470-8JU90-0AA0	9.9
255-6	135	182	110	18	0.0961	2LC0471-0JU90-0AA0	12.6

Weights and mass moments of inertia apply to a J hub with a maximum bore D1.

Ordering example:

ARPEX ARS-6 J hub, size 105-6,
hub with bore 60H7 mm and parallel keyway to DIN 6885/1 and set screw.

Product code:

2LC0470-1JU90-0AA0
L1E

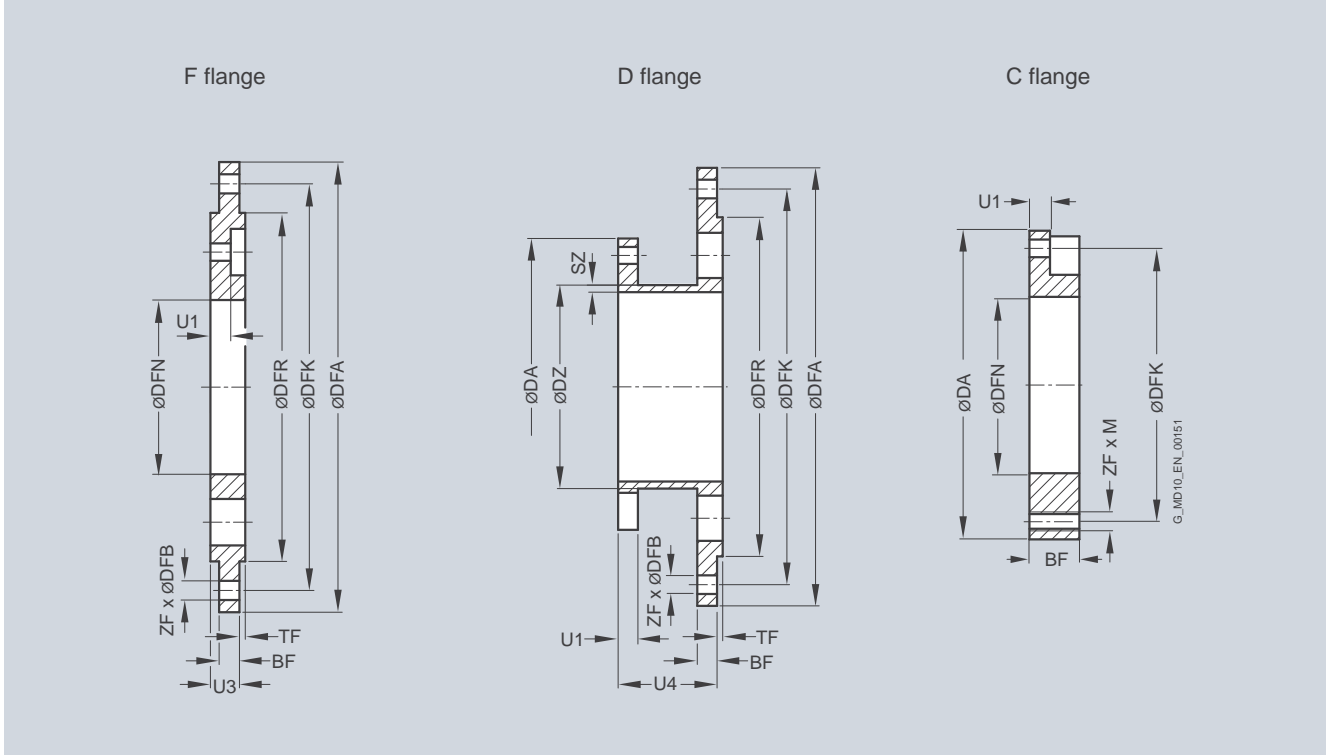
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges
F flange, D flange, C flange

Selection and ordering data

F, D and C flanges are used where torque is to be transmitted by flange connections.
F, D and C flanges can be combined with any spacer.



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Size	Type	Dimensions in mm													Mass moment of inertia J kgm ²	Product code	Weight m kg		
		DA	DFR	DFA	DFN	DZ	SZ	DFK	DFB	M	ZF	BF	U1	U3				U4	TF
78-6	F		90 ₆	125	40	-	-	110	6.6	-	6	7	7	10	-	2	0.0014	2LC0470-0GP00-0AA0	0.7
	D				-	45	2.5							-	35		0.0014	2LC0470-0EC00-0AA0	0.8
	C				40	-	-	66	-	6	6	12						0.0002	2LC0470-0BE00-0AA0
105-6	F		120 ₆	155	60	-	-	140	6.6	-	6	7	7	10	-	2	0.0036	2LC0470-1GP00-0AA0	1.1
	D				-	72	2.5							-	35		0.0036	2LC0470-1EC00-0AA0	1.2
	C				60	-	-	93	-	6	6	12						0.0007	2LC0470-1BE00-0AA0
125-6	F		140 ₆	178	75	-	-	160	9.0	-	6	9	9	13	-	2	0.0077	2LC0470-2GP00-0AA0	1.8
	D				-	84	2.5							-	45		0.0079	2LC0470-2EC00-0AA0	1.9
	C				75	-	-	109	-	8	6	15						0.0016	2LC0470-2BE00-0AA0
140-6	F		155 ₆	194	90	-	-	175	9.0	-	6	9	9	13	-	2	0.0109	2LC0470-3GP00-0AA0	2.0
	D				-	99	2.5							-	45		0.0113	2LC0470-3EC00-0AA0	2.2
	C				90	-	-	124	-	8	6	15						0.0026	2LC0470-3BE00-0AA0
165-6	F		180 ₆	232	95	-	-	210	11.0	-	6	9	9	15	-	2	0.0233	2LC0470-4GP00-0AA0	3.3
	D				-	114	2.5							-	55		0.0226	2LC0470-4EC00-0AA0	3.2
	C				95	-	-	145	-	10	6	17						0.0060	2LC0470-4BE00-0AA0
175-6	F		190 ₆	245	105	-	-	220	14.0	-	6	12	12	19	-	2	0.0365	2LC0470-5GP00-0AA0	4.5
	D				-	120	3.0							-	65		0.0368	2LC0470-5EC00-0AA0	4.7
	C				105	-	-	153	-	12	6	21						0.0091	2LC0470-5BE00-0AA0
195-6	F		215 ₆	270	115	-	-	245	14.0	-	8	12	12	20	-	2	0.0559	2LC0470-6GP00-0AA0	5.6
	D				-	131	3.0							-	65		0.0542	2LC0470-6EC00-0AA0	5.6
	C				115	-	-	169	-	14	6	22						0.0146	2LC0470-6BE00-0AA0
210-6	F		230 ₆	300	120	-	-	270	18.0	-	6	13	13	22	-	2	0.0907	2LC0470-7GP00-0AA0	7.6
	D				-	139	4.0							-	75		0.0889	2LC0470-7EC00-0AA0	7.7
	C				120	-	-	180	-	16	6	24						0.0210	2LC0470-7BE00-0AA0
240-6	F		260 ₆	330	140	-	-	300	18.0	-	8	15	15	26	-	2	0.1549	2LC0470-8GP00-0AA0	10.6
	D				-	162	5.0							-	80		0.1514	2LC0470-8EC00-0AA0	10.7
	C				140	-	-	207	-	18	6	28						0.0416	2LC0470-8BE00-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges
F flange, D flange, C flange

Size	Type	Dimensions in mm														Mass moment of inertia <i>J</i> kgm ²	Product code	Weight <i>m</i> kg
		DA mm	DFR	DFA	DFN	DZ	SZ	DFK	DFB	M	ZF	BF	U1	U3	U4			
255-6	F	275 _{m6}	345	150	-	-	315	18.0	-	8	18	18	30	-	2	0.2167	2LC0471-0GP00-0AA0	13.2
	D			-	170	5.0							-	100	0.2168	2LC0471-0EC00-0AA0	13.9	
	C	-	-	150	-	-	219	-	20	6	32			-	-	0.0586	2LC0471-0BE00-0AA0	5.7
280-6	F	305 _{m6}	375	160	-	-	345	18.0	-	10	19	19	31	-	3	0.3278	2LC0471-1GP00-0AA0	17.1
	D			-	186	6.0							-	100	0.3266	2LC0471-1EC00-0AA0	17.9	
	C	-	-	160	-	-	240	-	22	6	34			-	-	0.0927	2LC0471-1BE00-0AA0	7.6
305-6	F	330 _{m6}	400	180	-	-	370	18.0	-	12	20	20	37	-	3	0.4709	2LC0471-2GP00-0AA0	21.3
	D			-	200	6.5							-	120	0.4519	2LC0471-2EC00-0AA0	21.9	
	C	-	-	180	-	-	260	-	24	6	40			-	-	0.1442	2LC0471-2BE00-0AA0	9.8
335-6	F	365 _{m6}	447	190	-	-	410	22.0	-	10	22	22	41	-	3	0.8051	2LC0471-3GP00-0AA0	29.9
	D			-	218	7.5							-	125	0.7586	2LC0471-3EC00-0AA0	29.7	
	C	-	-	190	-	-	285	-	27	6	44			-	-	0.2334	2LC0471-3BE00-0AA0	13.5
372-6	F	410 _{m6}	505	200	-	-	460	22.0	-	12	25	25	46	-	3	1.4635	2LC0471-4GP00-0AA0	42.9
	D			-	228	9.5							-	145	1.3843	2LC0471-4EC00-0AA0	44.0	
	C	-	-	200	-	-	310	-	30	6	49			-	-	0.3947	2LC0471-4BE00-0AA0	19.0
407-6	F	445 _{m6}	535	210	-	-	490	22.0	-	16	27	27	48	-	3	1.9809	2LC0471-5GP00-0AA0	51.9
	D			-	245	11.0							-	150	1.9083	2LC0471-5EC00-0AA0	54.4	
	C	-	-	210	-	-	340	-	33	6	51			-	-	0.6095	2LC0471-5BE00-0AA0	25.2
442-6	F	490 _{m6}	585	230	-	-	540	22.0	-	18	30	30	55	-	3	3.2065	2LC0471-6GP00-0AA0	70.0
	D			-	273	11.0							-	165	2.9664	2LC0471-6EC00-0AA0	69.0	
	C	-	-	230	-	-	370	-	36	6	58			-	-	0.9466	2LC0471-6BE00-0AA0	33.0
487-6	F	535 _{m6}	645	260	-	-	590	26.0	-	16	33	33	60	-	3	5.1248	2LC0471-7GP00-0AA0	91.6
	D			-	298	13.0							-	175	4.8658	2LC0471-7EC00-0AA0	94.3	
	C	-	-	260	-	-	410	-	39	6	63			-	-	1.5350	2LC0471-7BE00-0AA0	43.4
522-6	F	580 _{m6}	695	280	-	-	640	26.0	-	18	36	36	63	-	4	7.4857	2LC0471-8GP00-0AA0	114
	D			-	324	13.0							-	190	7.0887	2LC0471-8EC00-0AA0	117	
	C	-	-	280	-	-	440	-	42	6	67			-	-	2.0955	2LC0471-8BE00-0AA0	51.4
572-6	F	625 _{m6}	770	310	-	-	700	33.0	-	16	38	38	67	-	4	11.6519	2LC0472-0GP00-0AA0	147
	D			-	356	15.0							-	200	11.2872	2LC0472-0EC00-0AA0	153	
	C	-	-	310	-	-	480	-	45	6	71			-	-	3.2918	2LC0472-0BE00-0AA0	66.6
602-6	F	655 _{m6}	800	320	-	-	730	33.0	-	16	41	41	72	-	4	14.7118	2LC0472-1GP00-0AA0	172
	D			-	368	16.0							-	215	14.3454	2LC0472-1EC00-0AA0	181	
	C	-	-	320	-	-	505	-	48	6	76			-	-	4.3874	2LC0472-1BE00-0AA0	81.1

F, D and C flanges are readily available in many sizes.

Ordering example:

ARPEX ARS-6 F flange, size 105-6.

Product code:

2LC0470-1GP00-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges Clamping hub

Selection and ordering data

Standard clamping hub types 124 and 125 can be combined with any spacer. It should be noted that the clamping hub can be used only as an N hub (hub core outside). Clamping hub as "B hub" (hub core in spacer tube) on request. Transmissible torque and maximum bore diameter are smaller on a B hub variant than stated below.

Function

ARPEX clamping hubs transmit torque with the aid of a flexible press fit. By pulling the clamping ring on by means of the tightening screws the necessary surface pressure is applied in the "shaft/hub" contact area. After the tightening operation the clamping ring lies up against the clamping hub. The gap dimension between the clamping hub and the clamping ring is then zero. This has the effect that even with repeated fitting and dismounting the balancing condition is maintained (no wobble effect). Clamping hubs can be clamped as often as required. It must be ensured that the taper surfaces are adequately lubricated.

Transmissible torque

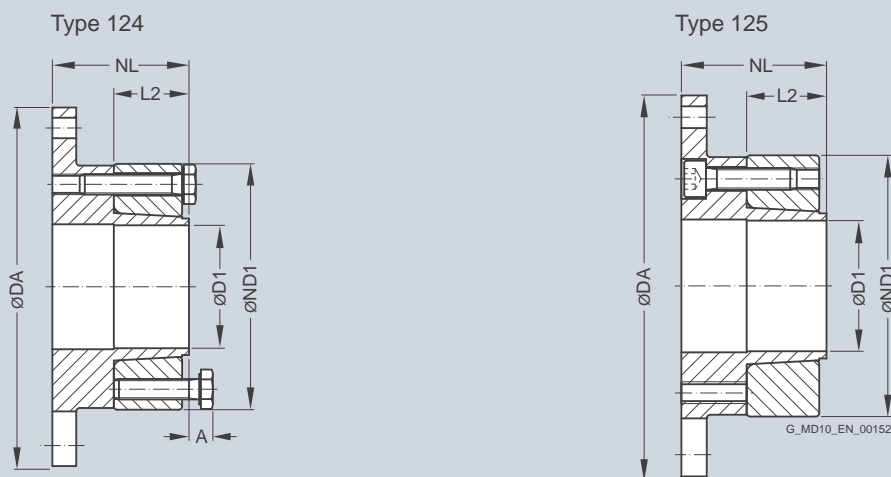
The clamping connections are designed to enable the specified maximum torques to be transmitted. These maximum torques may not be exceeded. The mathematical coefficient of friction between the shaft and the clamping hub is $\mu = 0.16$.

Fitting clearance and surface roughness

The transmissible torques take into account the maximum fitting clearance and maximum surface roughness. For other shaft tolerances reduced torques or other bore tolerances must be used. The surface roughness of the shaft should be $\leq R_a = 1.6 \mu\text{m}$.

The shaft tolerance must be specified in the order. To specify, -Z must be added to the product code and the order code Y26 with plain text specification of the shaft tolerance for D1 must be added as well. The fit pairing G6/h6 should be used wherever possible.

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Size DA mm	Clamping hub Type	Dimensions in mm						Mass moment of inertia J kgm ²	Product code Order codes for bore diameters and toler- ances are specified in catalog section 3	Weight m kg
		D1 min.	D1 max. Keyway to DIN 6885	ND1	NL	L2	A			
78-6	124	15	25	48	35	19	0.0002	2LC0470-0LM90-0AA0	0.5	
	125							2LC0470-0LN90-0AA0		
105-6	124	25	45	74	40	22	0.0012	2LC0470-1LM90-0AA0	1.0	
	125							2LC0470-1LN90-0AA0		
125-6	124	30	50	86	45	28	0.0026	2LC0470-2LM90-0AA0	1.6	
	125							2LC0470-2LN90-0AA0		
140-6	124	30	60	103	50	33	0.0051	2LC0470-3LM90-0AA0	2.4	
	125							2LC0470-3LN90-0AA0		
165-6	124	38	70	118	55	33	0.0096	2LC0470-4LM90-0AA0	3.4	
	125							2LC0470-4LN90-0AA0		
175-6	124	42	75	122	65	43	0.0141	2LC0470-5LM90-0AA0	4.3	
	125							2LC0470-5LN90-0AA0		
195-6	124	48	75	135	70	44	0.0231	2LC0470-6LM90-0AA0	6.2	
	125							2LC0470-6LN90-0AA0		
210-6	124	55	85	141	75	49	0.0309	2LC0470-7LM90-0AA0	7.2	
	125							2LC0470-7LN90-0AA0		
240-6	124	65	95	164	90	59	0.0648	2LC0470-8LM90-0AA0	11.4	
	125							2LC0470-8LN90-0AA0		

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Further hubs and flanges
Clamping hub

Size DA mm	Clamping hub Type	Dimensions in mm						Mass moment of inertia J kgm ²	Product code Order codes for bore diameters and toler- ances are specified in catalog section 3	Weight m kg
		D1 min.	D1 max.	ND1	NL	L2	A			
255-6	124	70	95	171	95	64	10	0.0886	2LC0471-0LM90-0AA0	14.1
	125								2LC0471-0LN90-0AA0	
280-6	124	75	110	189	115	79	–	0.1489	2LC0471-1LM90-0AA0	19.6
	125								2LC0471-1LN90-0AA0	
305-6	124	80	120	203	125	90	–	0.2163	2LC0471-2LM90-0AA0	24.3
	125								2LC0471-2LN90-0AA0	
335-6	124	85	130	221	140	100	–	0.3441	2LC0471-3LM90-0AA0	32.6
	125								2LC0471-3LN90-0AA0	
372-6	124	95	140	230	150	110	–	0.4955	2LC0471-4LM90-0AA0	38.8
	125								2LC0471-4LN90-0AA0	

Additional coupling sizes are available on request.

Smaller bore diameters $D1_{min}$ are available on request.

Forcing-off threads of clamping hubs of type 124 from size 280 fitted from flange side (like type 125).

Weights and mass moments of inertia apply to a clamping hub with a maximum bore $D1$.

Dimensions and torques

Finished bore/shaft in standard fit $D1^{G6/h6}$ mm	Size	78-6	105-6	125-6	140-6	165-6	175-6	195-6	210-6	240-6	255-6	280-6	305-6	335-6	372-6
		Rated coupling torque T_{KN} Nm	170	270	490	700	1250	2000	3000	4400	5700	7600	10000	12000	18000
	Maximum transmissible torque of the clamping hub Nm	200	–	–	–	–	–	–	–	–	–	–	–	–	–
16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
19	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
22	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
24	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
28	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
38	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
40	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
42	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
45	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
48	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
55	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
60	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
65	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
70	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
75	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
80	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
85	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
90	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
100	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
110	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
120	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
130	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
140	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

The maximum transmissible torque of the clamping hub must not be exceeded!

Further coupling sizes and higher torques are available on request.

Ordering example:
ARPEX ARS-6 clamping hub, size 105-6, type 124,
for shaft diameter 40h6 mm.

Product code:
2LC0470-1LM90-0AA0-Z
LOW+Y26
clear text to Y26: **h6**

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARS-6 Series

Spare and wear parts
Plate pack ARS-6

Selection and ordering data

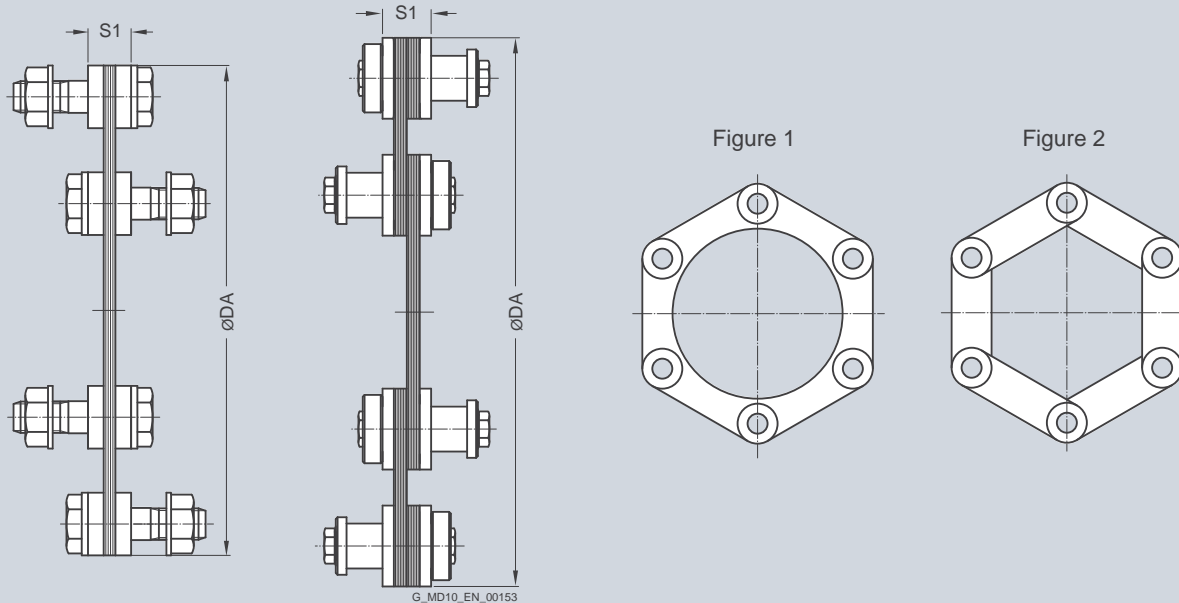


Plate packs up to size 255-6 comprise ring plates (Fig. 1) and from size 280-6 side-bar plates (Fig. 2).

Dimensions in mm		Mass moment of inertia	Product code	Weight
Size	S1	J		m
DA		kgm ²		kg
78-6	8	0.0001	2LC0470-0NQ00-0AA0	0.1
105-6	8	0.0003	2LC0470-1NQ00-0AA0	0.1
125-6	11	0.0009	2LC0470-2NQ00-0AA0	0.3
140-6	11	0.0012	2LC0470-3NQ00-0AA0	0.3
165-6	14	0.0033	2LC0470-4NQ00-0AA0	0.7
175-6	15	0.0050	2LC0470-5NQ00-0AA0	0.9
195-6	15	0.0084	2LC0470-6NQ00-0AA0	1.2
210-6	15	0.0137	2LC0470-7NQ00-0AA0	1.8
240-6	18	0.0253	2LC0470-8NQ00-0AA0	2.5
255-6	23	0.0410	2LC0471-0NQ00-0AA0	3.5
280-6	25	0.0613	2LC0471-1NQ00-0AA0	4.4
305-6	27	0.0734	2LC0471-2NQ00-0AA0	4.6
335-6	30	0.1180	2LC0471-3NQ00-0AA0	6.1
372-6	32	0.2127	2LC0471-4NQ00-0AA0	9.3
407-6	35	0.3387	2LC0471-5NQ00-0AA0	12.3
442-6	38	0.4950	2LC0471-6NQ00-0AA0	15.2
487-6	41	0.7965	2LC0471-7NQ00-0AA0	20.0
522-6	44	1.0849	2LC0471-8NQ00-0AA0	23.6
572-6	47	1.6931	2LC0472-0NQ00-0AA0	31.0
602-6	50	2.2420	2LC0472-1NQ00-0AA0	37.1

The plate pack of the ARS-6 series is readily available as a spare part.

The plate pack is delivered with screw connection.
Up to size 280-6 close-fitting bolts with collar nuts are used.
From size 305-6 patented conical screw connections are used.

Ordering example:
ARPEX ARS-6 plate pack, size 105-6,
complete with screw connections.

Product code:
2LC0470-1NQ00-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

General information

Overview



Coupling can be designed for potentially explosive environments in accordance with 94/9/EC.

Benefits

ARPEX couplings of the ARC-8/-10 series are outstanding for their robust construction. They have been optimized for high torques combined with high speeds. The patented conical screw connection ensures reliable torque transmission by a true

positive fit and is designed to be extremely easy to fit. Couplings can be designed for potentially explosive environments in accordance with 94/9/EC.

Application

ARPEX couplings of the ARC-8 and ARC-10 series are output- and speed-optimized coupling solutions. Power transmission is by means of patented conical screw connections and plate packs of the octagonal and decagonal types. Torques of between 8.5 and 1450 kNm can be transmitted at a permitted angular misalignment of 0.2° to 0.4°. The closed flange shape and a compact construction permit high peripheral speeds and high speeds. On most types, the intermediate spacer can be radially fitted without moving the connected units.

Main areas of application for the ARC-8/-10 series:

- Paper-making machines
- Printing machines
- Compressors
- Fans and blowers
- Generators
- Presses
- Conveyors
- Crane systems
- Pumps
- Mills
- Rotary furnaces
- Stirrers

FLENDER Standard Couplings

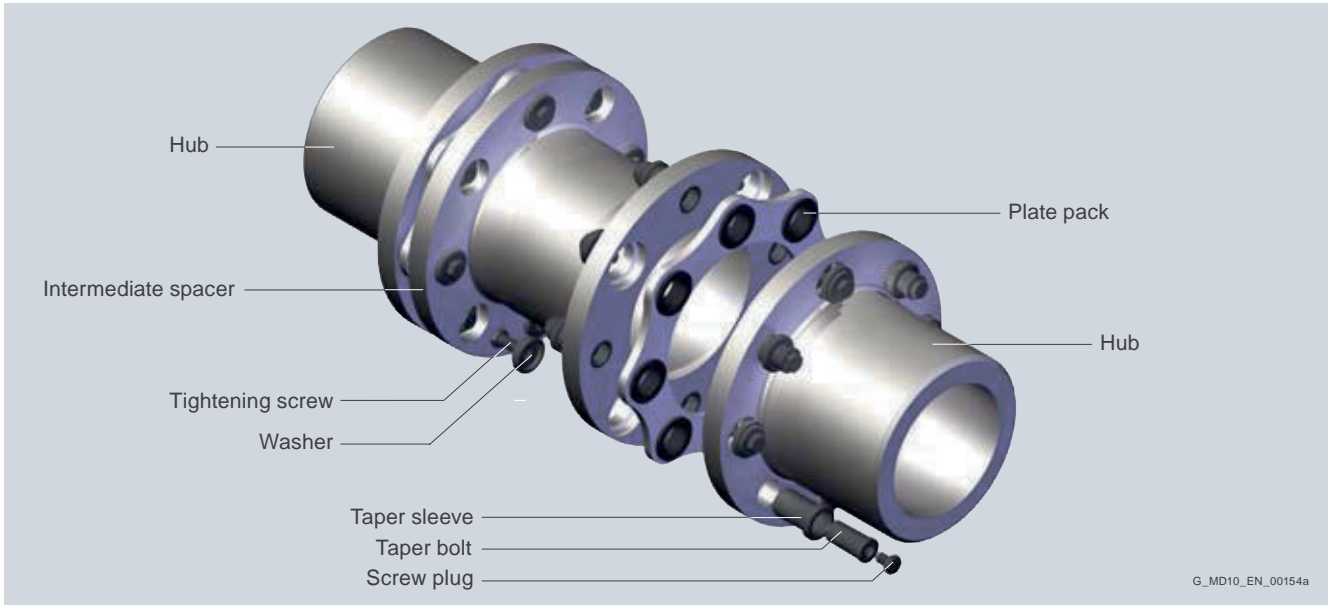
Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

General information

Design

The classic design of an ARPEX coupling of the ARC-8/-10 series type NEN is shown in the following illustration. The plate packs are bolted alternately between the flanges of the coupling hubs and the intermediate spacer.

Conical screw connections are used for fastening. The intermediate spacer lengths are variably designed according to customer specifications.



Design of an ARPEX coupling, ARC-8/-10 series, type NEN

Variants of the ARPEX coupling, ARC-8/-10 series

Types	
NEN	Variant with intermediate spacer machined on all sides, length variable
NHN	Variant with unmachined intermediate spacer, length variable
BUB	Compact variant with split intermediate spacer for short shaft distances
MFEFM	Variant with preassembled intermediate unit and machined intermediate spacer, length variable
MFHFM	Variant with preassembled intermediate unit and unmachined intermediate spacer, length variable

The coupling parts of the ARPEX ARC-8/-10 series with the exception of the H spacers have been machined on all sides. These are delivered with unmachined and primed spacer tube.

Further application-specific coupling types are available in selection module **x.CAT** at www.flender.com. Dimension sheets and further information are available on request.

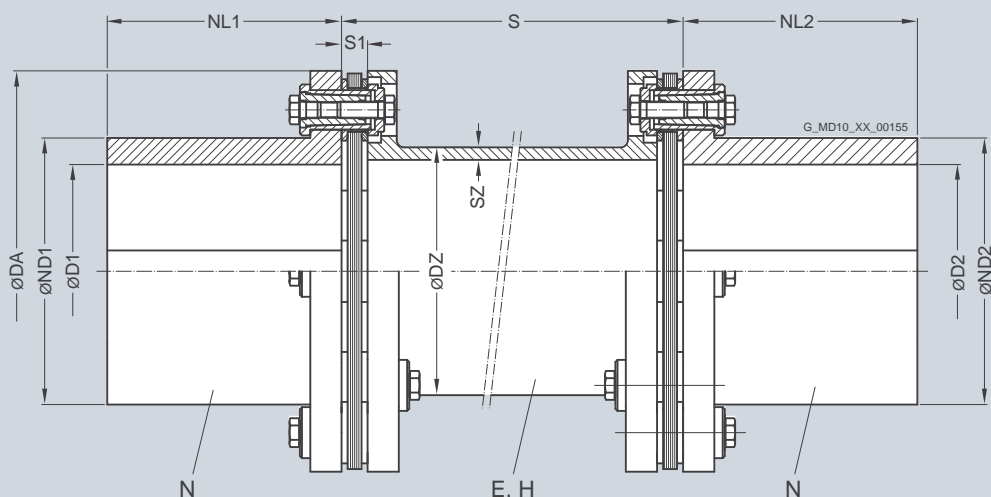
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Types NEN/NHN

Selection and ordering data

Torsionally rigid coupling types NEN and NHN with radially freely dismountable intermediate spacer and variable spacer length. Power transmission via patented conical screw connection.



Size	Rated torque	Maximum speed	Type	Dimensions in mm						Shaft distance	Mass moment of inertia	Product code	Weight
DA	T_{KN}	n_{Kmax}		D1/D2 Keyway DIN 6885 max.	ND1/ ND2	DZ	SZ	NL1/ NL2	S1	S_{min}	J	Order codes for bore diameters and toler- ances are specified in catalog section 3	m
mm	kNm	rpm									kgm ²		kg
225-8	8.5	8500	NEN	120	147	135.0	6.0	140	16	123	0.19	2LC0400-0BE99-0A20	29
			NHN			139.7	8.0			272	0.21	2LC0400-0BF99-0A20	33
255-8	12.7	7500	NEN	140	172	147.0	7.0	160	17	128	0.35	2LC0400-1BE99-0A20	42
			NHN			152.4	8.8			284	0.38	2LC0400-1BF99-0A20	47
270-8	16.5	7000	NEN	150	182	172.0	7.0	170	14	124	0.45	2LC0400-2BE99-0A20	46
			NHN			177.8	7.1			328	0.49	2LC0400-2BF99-0A20	52
295-8	23	6500	NEN	160	199	188.0	8.0	185	17	155	0.75	2LC0400-3BE99-0A20	66
			NHN			193.7	8.8			344	0.82	2LC0400-3BF99-0A20	74
325-8	33	6000	NEN	170	214	197.0	10.5	195	20	174	1.27	2LC0400-4BE99-0A20	93
			NHN			203.0	12.5			420	1.42	2LC0400-4BF99-0A20	108
355-8	45	5500	NEN	185	235	222.0	11.0	215	22	189	2.01	2LC0400-5BE99-0A20	123
			NHN			229.0	12.5			434	2.21	2LC0400-5BF99-0A20	140
385-8	56	5000	NEN	205	256	238.0	12.0	240	25	201	3.02	2LC0400-6BE99-0A20	156
			NHN			244.5	14.2			500	3.35	2LC0400-6BF99-0A20	181
420-8	70	4500	NEN	230	282	266.0	12.0	275	27	231	4.74	2LC0400-7BE99-0A20	202
			NHN			273.0	14.2			524	5.23	2LC0400-7BF99-0A20	230
455-8	88	4200	NEN	255	308	291.0	13.0	300	29	238	6.81	2LC0400-8BE99-0A20	244
			NHN			298.5	14.2			528	7.43	2LC0400-8BF99-0A20	274
505-8	120	3800	NEN	285	344	315.0	15.0	340	31	250	11.5	2LC0401-0BE99-0A20	335
			NHN			323.9	17.5			652	12.8	2LC0401-0BF99-0A20	390
545-8	165	3500	NEN	300	371	346.0	17.0	350	33	268	16.8	2LC0401-1BE99-0A20	427
			NHN			355.6	20.0			666	18.7	2LC0401-1BF99-0A20	497
595-8	210	3200	NEN	330	405	384.0	18.0	390	36	284	25.9	2LC0401-2BE99-0A20	552
			NHN			394.0	20.0			682	28.6	2LC0401-2BF99-0A20	626

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Types NEN/NHN

Size	Rated torque	Maximum speed	Type	Dimensions in mm							Shaft distance S_{min}	Mass moment of inertia J	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m
				D1/D2 Keyway DIN 6885 max.	ND1/ ND2	DZ	SZ	NL1/ NL2	S1	kgm ²				
630-8	260	3000	NEN	340	425	409.0	19.0	400	58	397	40.6	2LC0401-3BE99-0AZ0	763	
			NHN			419.0	20.0				746		43.4	2LC0401-3BF99-0AZ0
700-8	340	2700	NEN	395	479	459.0	19.0	470	62	424	66.5	2LC0401-4BE99-0AZ0	992	
			NHN			470.0	20.0				824		71.0	2LC0401-4BF99-0AZ0
630-10	340	3000	NEN	310	425	396.0	29.0	400	58	397	45.0	2LC0410-0BE99-0AZ0	895	
			NHN			406.4	30.0				746		48.5	2LC0410-0BF99-0AZ0
700-10	430	2700	NEN	350	479	459.0	26.0	470	62	424	75.7	2LC0410-1BE99-0AZ0	1215	
			NHN			470.0	30.0				824		82.4	2LC0410-1BF99-0AZ0
760-10	550	2500	NEN	375	507	483.0	30.0	480	74	507	116	2LC0410-2BE99-0AZ0	1557	
			NHN			495.0	30.0				908		123	2LC0410-2BF99-0AZ0
860-10	770	2200	NEN	425	574	546.0	33.0	510	82	557	208	2LC0410-3BE99-0AZ0	2159	
			NHN			559.0	36.0				1024		223	2LC0410-3BF99-0AZ0
950-10	1050	2000	NEN	470	639	596.0	38.0	550	92	621	347	2LC0410-4BE99-0AZ0	2948	
			NHN			610.0	40.0				1134		371	2LC0410-4BF99-0AZ0
1035-10	1450	1850	NEN	490	693	645.0	46.0	580	102	685	545	2LC0410-5BE99-0AZ0	3974	
			NHN			660.4	50.0				1239		586	2LC0410-5BF99-0AZ0

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling (see following table).

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2 and $S = S_{min}$.

Permitted shaft distance S of type NHN relative to speed

Size	Speed n_N rpm												
	500	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000
	Permitted shaft distance S mm												
225-8	4962	4531	4196	3926	3703	3514	3209	2972	2872	2489	2228	2035	1765
255-8	5170	4721	4372	4091	3858	3661	3343	3097	2992	2594	2322	2121	1839
270-8	5608	5120	4741	4436	4183	3969	3625	3357	3243	2811	2516	2298	1992
295-8	5860	5351	4955	4636	4372	4148	3788	3509	3390	2938	2630	2402	2083
325-8	5969	5451	5048	4723	4454	4227	3860	3575	3455	2994	2680	2449	2123
355-8	6349	5798	5369	5024	4738	4496	4106	3803	3675	3185	2851	2605	2259
385-8	6573	6003	5559	5202	4906	4655	4252	3938	3806	3299	2953	2698	2340
420-8	6968	6363	5893	5514	5200	4935	4507	4175	4034	3497	3131	2861	2481
455-8	7290	6658	6166	5770	5441	5164	4716	4368	4221	3660	3276	2993	2596
505-8	7575	6918	6407	5995	5654	5365	4900	4539	4386	3803	3405	3111	
545-8	7933	7245	6710	6279	5922	5619	5133	4754	4594	3983	3566	3258	
595-8	8368	7642	7078	6623	6246	5928	5414	5015	4847	4202	3762	3438	
630-8	8659	7910	7327	6858	6469	6140	5610	5198	5024	4358	3904	3569	
700-8	9197	8401	7782	7283	6870	6521	5958	5521	5336	4629	4147		
630-10	8410	7682	7116	6660	6283	5963	5449	5049	4880	4234	3793	3468	
700-10	9128	8338	7724	7229	6819	6472	5914	5480	5296	4595	4116		
760-10	9348	8540	7912	7406	6987	6632	6061	5616	5429	4711	4222		
860-10	9951	9091	8423	7884	7438	7060	6452	5980	5780	5016			
950-10	10386	9489	8792	8230	7765	7371	6737	6244	6035	5239			
1035-10	10771	9841	9119	8536	8054	7646	6989	6478	6262				

Ordering example:

ARPEX ARC-8 NHN coupling, size 270-8, with shaft distance $S = 1000$ mm,

Bore $\varnothing D1$ 120H7 mm, with keyway to DIN 6885 and set screw,
Bore $\varnothing D2$ 130K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0400-2BF99-0AZ0-Z

L1S+M1U+Q0Y+M13

clear text to Q0Y **S = 1000 mm**

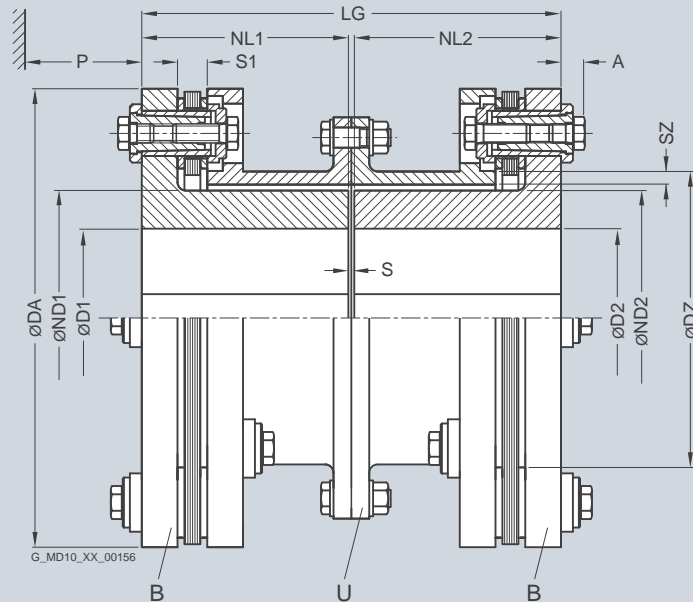
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Type BUB

Selection and ordering data

Torsionally rigid coupling type BUB with split intermediate spacer. Type BUB permits shortest shaft distances.



Size	Rated torque	Maximum speed	Dimensions in mm									Mass moment of inertia	Product code	Weight
			D1/D2 Keyway DIN 6885	ND1/ND2	DZ	SZ	NL1/NL2	S1	S	P	LG			
mm	kNm	rpm	max.									kgm ²		kg
225-8	8.5	8500	105	136	150	4.5	90	16	5	47	185	0.19	2LC0400-0AF99-0AA0	27
255-8	12.7	7500	125	160	175	5.0	100	17	8	49	208	0.34	2LC0400-1AF99-0AA0	38
270-8	16.5	7000	130	169	185	5.5	100	14	8	46	208	0.43	2LC0400-2AF99-0AA0	43
295-8	23	6500	135	185	202	6.0	110	17	7	55	227	0.70	2LC0400-3AF99-0AA0	61
325-8	33	6000	140	195	217	8.5	130	20	10	65	270	1.23	2LC0400-4AF99-0AA0	90
355-8	45	5500	150	215	238	9.0	135	22	12	71	282	1.89	2LC0400-5AF99-0AA0	116
385-8	56	5000	180	235	259	9.5	155	25	8	79	318	2.87	2LC0400-6AF99-0AA0	143
420-8	70	4500	200	260	285	10.0	170	27	10	87	350	4.51	2LC0400-7AF99-0AA0	187
455-8	88	4200	220	285	311	10.5	180	29	10	90	370	6.42	2LC0400-8AF99-0AA0	226
505-8	120	3800	245	316	347	12.0	220	31	12	97	452	11.1	2LC0401-0AF99-0AA0	322
545-8	165	3500	260	334	374	14.5	240	33	16	103	496	15.9	2LC0401-1AF99-0AA0	400
595-8	210	3200	285	364	408	15.0	260	36	16	112	536	24.0	2LC0401-2AF99-0AA0	507
630-8	260	3000	300	381	428	17.0	280	58	16	150	576	37.4	2LC0401-3AF99-0AA0	688
700-8	340	2700	332	431	482	17.5	310	62	20	160	640	62.3	2LC0401-4AF99-0AA0	936
630-10	340	3000	260	377	428	23.0	280	58	16	150	576	41.0	2LC0410-0AF99-0AA0	794
700-10	430	2700	310	430	482	24.0	310	62	20	160	640	66.4	2LC0410-1AF99-0AA0	1023
760-10	550	2500	320	452	512	26.0	330	74	20	191	680	104	2LC0410-2AF99-0AA0	1354
860-10	770	2200	350	515	579	28.0	380	82	20	209	780	191	2LC0410-3AF99-0AA0	1993
950-10	1050	2000	400	574	644	31.0	400	92	25	233	825	311	2LC0410-4AF99-0AA0	2592
1035-10	1450	1850	430	615	698	38.0	420	102	25	257	865	477	2LC0410-5AF99-0AA0	3332

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Type BUB

Split intermediate spacer permits preassembly of the coupling halves at the factory and easy final assembly by the customer (optional).

Power transmission via patented conical screw connection.

The hubs are standard-manufactured from high-grade steel. In the case of smaller bore diameters higher-grade material is used, depending on the application (additional price).

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:

ARPEX ARC-8 BUB coupling, size 270-8,

Bore ØD1 120H7 mm, with keyway to DIN 6885 and set screw,

Bore ØD2 130K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0400-2AF99-0AA0-Z

L1S+M1U+M13

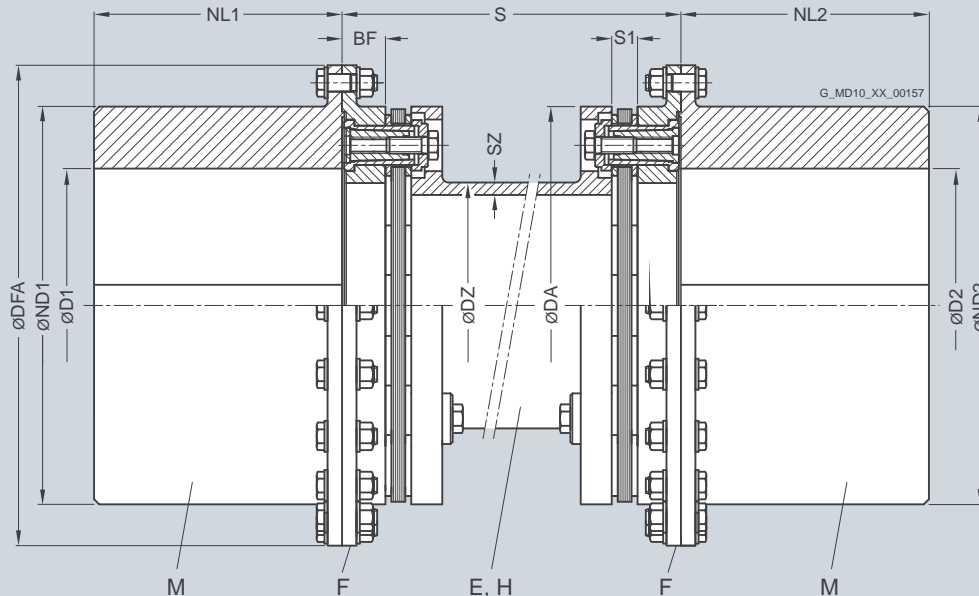
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Types MFEFM/MFHFM

Selection and ordering data

Torsionally rigid coupling types MFEFM and MFHFM with radially freely dismountable FEF or FHF transmission unit and variable spacer length. Power transmission via patented conical screw connection.



Size	Rated torque	Maximum speed	Type	Dimensions in mm										Mass moment of inertia	Product code	Weight
DA	T_{KN}	n_{Kmax}		D1/D2 Keyway DIN 6885 max.	ND1/ ND2	DFA	DZ	SZ	NL1/ NL2	S1	Shaft distance S_{min}	BF	J	Order codes for bore diameters and tolerances are specified in catalog section 3	m	
mm	kNm	rpm											kgm ²		kg	
225-8	8.5	8500	MFEFM	160	225	283	135.0	6.0	170	16	171	24	0.81	2LC0400-0AV99-0AZ0	81	
			MFHFM				139.7	8.0			320		0.83	2LC0400-0AX99-0AZ0	85	
255-8	12.7	7500	MFEFM	180	255	313	147.0	7.0	180	17	178	25	1.37	2LC0400-1AV99-0AZ0	109	
			MFHFM				152.4	8.8			334		1.39	2LC0400-1AX99-0AZ0	114	
270-8	16.5	7000	MFEFM	195	270	328	172.0	7.0	185	14	176	26	1.70	2LC0400-2AV99-0AZ0	119	
			MFHFM				177.8	7.1			380		1.74	2LC0400-2AX99-0AZ0	125	
295-8	23	6500	MFEFM	210	295	353	188.0	8.0	190	17	215	30	2.55	2LC0400-3AV99-0AZ0	153	
			MFHFM				193.7	8.8			404		2.62	2LC0400-3AX99-0AZ0	161	
325-8	33	6000	MFEFM	230	325	389	197.0	10.5	210	20	246	36	4.30	2LC0400-4AV99-0AZ0	215	
			MFHFM				203.0	12.5			492		4.45	2LC0400-4AX99-0AZ0	231	
355-8	45	5500	MFEFM	255	355	419	222.0	11.0	230	22	267	39	6.45	2LC0400-5AV99-0AZ0	270	
			MFHFM				229.0	12.5			512		6.65	2LC0400-5AX99-0AZ0	288	
385-8	56	5000	MFEFM	275	385	465	238.0	12.0	250	25	285	42	10.0	2LC0400-6AV99-0AZ0	354	
			MFHFM				244.5	14.2			584		10.4	2LC0400-6AX99-0AZ0	379	
420-8	70	4500	MFEFM	300	420	507	266.0	12.0	270	27	325	47	15.3	2LC0400-7AV99-0AZ0	454	
			MFHFM				273.0	14.2			618		15.8	2LC0400-7AX99-0AZ0	483	
455-8	88	4200	MFEFM	325	455	542	291.0	13.0	295	29	334	48	22.2	2LC0400-8AV99-0AZ0	563	
			MFHFM				298.5	14.2			624		22.8	2LC0400-8AX99-0AZ0	593	
505-8	120	3800	MFEFM	361	505	601	315.0	15.0	325	31	354	52	37.9	2LC0401-0AV99-0AZ0	773	
			MFHFM				323.9	17.5			756		39.2	2LC0401-0AX99-0AZ0	829	
545-8	165	3500	MFEFM	389	545	641	346.0	17.0	350	33	378	55	54.3	2LC0401-1AV99-0AZ0	959	
			MFHFM				355.6	20.0			776		56.2	2LC0401-1AX99-0AZ0	1029	
595-8	210	3200	MFEFM	425	595	691	384.0	18.0	385	36	404	60	82.8	2LC0401-2AV99-0AZ0	1236	
			MFHFM				394.0	20.0			802		85.5	2LC0401-2AX99-0AZ0	1310	

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Types MFEFM/MFHFM

Size	Rated torque	Maximum speed	Type	Dimensions in mm								Shaft distance		Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight
				D1/D2 Keyway DIN 6885 max.	ND1/ ND2	DFA	DZ	SZ	NL1/ NL2	S1	S _{min}	BF	J			
mm	kNm	rpm											kgm ²		kg	
630-8	260	3000	MFEFM	450	630	736	409.0	19.0	405	58	549	76	116	2LC0401-3AV99-0AZ0	1567	
			MFHFM				419.0	20.0			898		119	2LC0401-3AX99-0AZ0	1634	
700-8	340	2700	MFEFM	500	700	816	459.0	19.0	450	62	586	81	194	2LC0401-4AV99-0AZ0	2106	
			MFHFM				470.0	20.0			986		198	2LC0401-4AX99-0AZ0	2192	
630-10	340	3000	MFEFM	450	630	746	396.0	29.0	405	58	549	76	121	2LC0410-0AV99-0AZ0	1631	
			MFHFM				406.4	30.0			898		125	2LC0410-0AX99-0AZ0	1727	
700-10	430	2700	MFEFM	500	700	816	459.0	26.0	450	62	586	81	197	2LC0410-1AV99-0AZ0	2136	
			MFHFM				470.0	30.0			986		203	2LC0410-1AX99-0AZ0	2273	
760-10	550	2500	MFEFM	545	760	878	483.0	30.0	490	74	701	97	301	2LC0410-2AV99-0AZ0	2810	
			MFHFM				495.0	30.0			1102		308	2LC0410-2AX99-0AZ0	2940	
860-10	770	2200	MFEFM	615	860	991	546.0	33.0	555	82	769	106	547	2LC0410-3AV99-0AZ0	3993	
			MFHFM				559.0	36.0			1236		563	2LC0410-3AX99-0AZ0	4213	
950-10	1050	2000	MFEFM	680	950	1083	596.0	38.0	615	92	857	118	892	2LC0410-4AV99-0AZ0	5368	
			MFHFM				610.0	40.0			1370		916	2LC0410-4AX99-0AZ0	5654	
1035-10	1450	1850	MFEFM	740	1035	1168	645.0	46.0	670	102	947	131	1371	2LC0410-5AV99-0AZ0	7005	
			MFHFM				660.4	50.0			1501		1412	2LC0410-5AX99-0AZ0	7432	

FEF or FHF transmission unit preassembled at the factory enables easy final assembly by the customer.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2 and S = S_{min}.

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling (see following table).

Permitted shaft distance S of type MFHFM relative to speed

Size	Speed n _N rpm													
	500	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000	
	Permitted shaft distance S mm													
225-8	5010	4579	4244	3974	3751	3562	3257	3020	2920	2537	2276	2083	1813	
255-8	5220	4771	4422	4141	3908	3711	3393	3147	3042	2644	2372	2171	1889	
270-8	5660	5172	4793	4488	4235	4021	3677	3409	3295	2863	2568	2350	2044	
295-8	5920	5411	5015	4696	4432	4208	3848	3569	3450	2998	2690	2462	2143	
325-8	6041	5523	5120	4795	4526	4299	3932	3647	3527	3066	2752	2521	2195	
355-8	6427	5876	5447	5102	4816	4574	4184	3881	3753	3263	2929	2683	2337	
385-8	6657	6087	5643	5286	4990	4739	4336	4022	3890	3383	3037	2782	2424	
420-8	7062	6457	5987	5608	5294	5029	4601	4269	4128	3591	3225	2955	2575	
455-8	7386	6754	6262	5866	5537	5260	4812	4464	4317	3756	3372	3089	2692	
505-8	7679	7022	6511	6099	5758	5469	5004	4643	4490	3907	3509	3215		
545-8	8043	7355	6820	6389	6032	5729	5243	4864	4704	4093	3676	3368		
595-8	8488	7762	7198	6743	6366	6048	5534	5135	4967	4322	3882	3558		
630-8	8811	8062	7479	7010	6621	6292	5762	5350	5176	4510	4056	3721		
700-8	9359	8563	7944	7445	7032	6683	6120	5683	5498	4791	4309			
630-10	8562	7834	7268	6812	6435	6115	5601	5201	5032	4386	3945	3620		
700-10	9290	8500	7886	7391	6981	6634	6076	5642	5458	4757	4278			
760-10	9542	8734	8106	7600	7181	6826	6255	5810	5623	4905	4416			
860-10	10163	9303	8635	8096	7650	7272	6664	6192	5992	5228			Outside the permitted speed range	
950-10	10622	9725	9028	8466	8001	7607	6973	6480	6271	5475				
1035-10	11033	10103	9381	8798	8316	7908	7251	6740	6524					

Ordering example:

ARPEX ARC-8 MFHFM coupling, size 270-8, with shaft distance S = 1000 mm,
 Bore ØD1 150H7 mm, with keyway to DIN 6885 and set screw,
 Bore ØD2 160K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0400-2AX99-0AZ0-Z
L1W+M1X+Q0Y+M13

clear text to Q0Y: **S = 1000 mm**

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARC-8/-10 Series

Spare and wear parts
Plate pack ARC-8/-10

Selection and ordering data

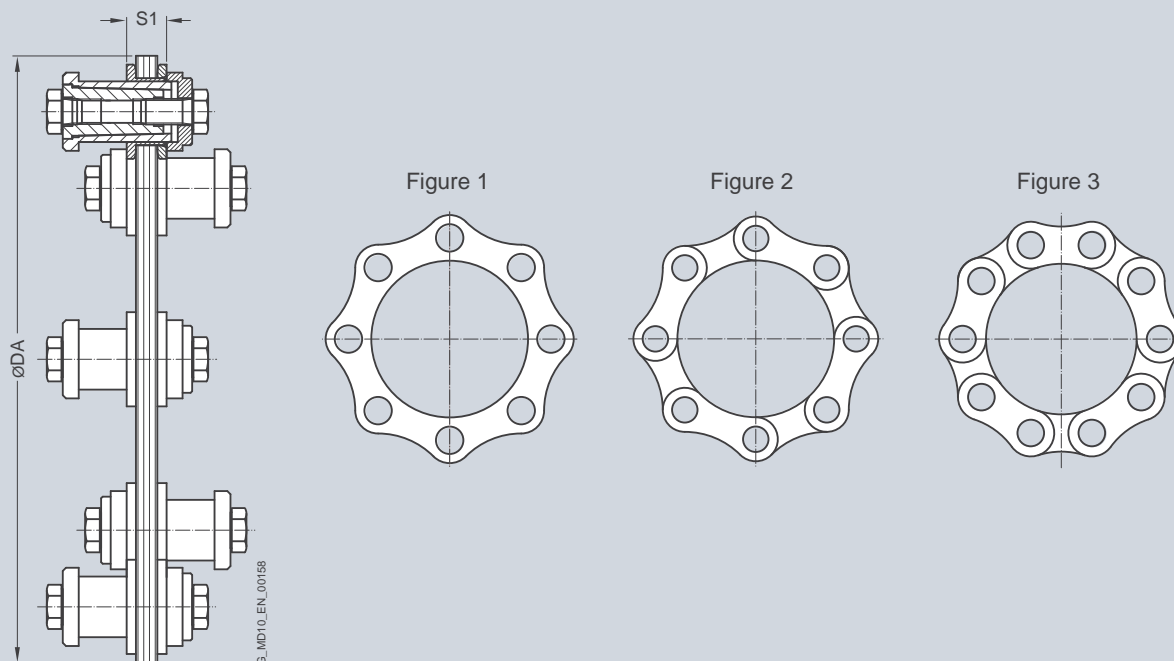


Plate packs of the ARC-8 series up to size 595-8 comprise ring plates (Fig. 1) and from size 630-8 side-bar plates (Fig. 2).

Plate packs of the ARC-10 series in all sizes comprise side-bar plates (Fig. 3).

Dimensions in mm		Plate pack Series	Mass moment of inertia J kgm ²	Product code	Weight m kg
Size	S1				
225-8	16	ARC-8	0.02	2LC0400-0AT00-0AA0	2.4
255-8	17	ARC-8	0.03	2LC0400-1AT00-0AA0	3.1
270-8	14	ARC-8	0.04	2LC0400-2AT00-0AA0	3.4
295-8	17	ARC-8	0.07	2LC0400-3AT00-0AA0	4.8
325-8	20	ARC-8	0.12	2LC0400-4AT00-0AA0	7.2
355-8	22	ARC-8	0.20	2LC0400-5AT00-0AA0	9.8
385-8	25	ARC-8	0.30	2LC0400-6AT00-0AA0	12.7
420-8	27	ARC-8	0.46	2LC0400-7AT00-0AA0	16.2
455-8	29	ARC-8	0.64	2LC0400-8AT00-0AA0	19.2
505-8	31	ARC-8	1.01	2LC0401-0AT00-0AA0	24.5
545-8	33	ARC-8	1.47	2LC0401-1AT00-0AA0	30.8
595-8	36	ARC-8	2.26	2LC0401-2AT00-0AA0	39.8
630-8	58	ARC-8	4.03	2LC0401-3AT00-0AA0	67.2
700-8	62	ARC-8	6.33	2LC0401-4AT00-0AA0	84.5
630-10	58	ARC-10	5.00	2LC0410-0AT00-0AA0	78.0
700-10	62	ARC-10	7.85	2LC0410-1AT00-0AA0	98.0
760-10	74	ARC-10	13.73	2LC0410-2AT00-0AA0	147
860-10	82	ARC-10	24.49	2LC0410-3AT00-0AA0	203
950-10	92	ARC-10	41.26	2LC0410-4AT00-0AA0	277
1035-10	102	ARC-10	65.64	2LC0410-5AT00-0AA0	374

The plate pack of the ARC-8/-10 series is readily available as a spare part.

The plate pack is delivered with conical screw connection.

Ordering example:

ARPEX ARC-8 plate pack, size 225-8,
complete with screw connection

Product code:

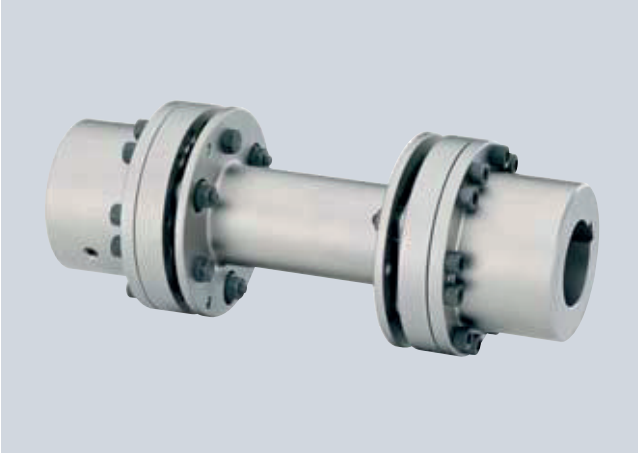
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FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

General information

Overview



Coupling can be used for potentially explosive environments in accordance with 94/9/EC.

Benefits

ARPEX couplings of the ARP-6 series are outstanding for their application-optimized construction. The two types NAN and MCECM have been specially designed for drives with uniform to medium loads and at the same time meet the requirements of API 610. The type MCECM with preassembled CEC intermedi-

ate unit can also be optionally designed to API 671. A special catcher device serves to secure the intermediate spacer in the event of plate breakage. Their use in potentially explosive environments in accordance with Directive 94/9/EC is possible.

Application

ARPEX series ARP-6 couplings have been specially developed for pump drives and specifically for centrifugal pump drives. Special care was taken to meet the requirements of API 610 and API 671 (API = American Petroleum Institute). Power is transmitted via close-fitting bolts and nuts from size 310-6 with conical screw connection and plate packs in hexagonal design. Torques of between 100 and 17000 Nm can be transmitted at a permitted angular misalignment of 0.7°. The closed flange shape and a compact construction permit high peripheral speeds and high speeds. The intermediate spacer can be fitted radially without moving the connected units.

Main areas of application for the ARP-6 series:

- Centrifugal pumps
- Boiler feed pumps
- Propeller pumps
- Wing pumps
- Pipeline pumps
- Turbo compressors
- Screw compressors
- Turbo blowers
- Axial, radial blowers
- Rotary-piston blowers
- Fans

FLENDER Standard Couplings

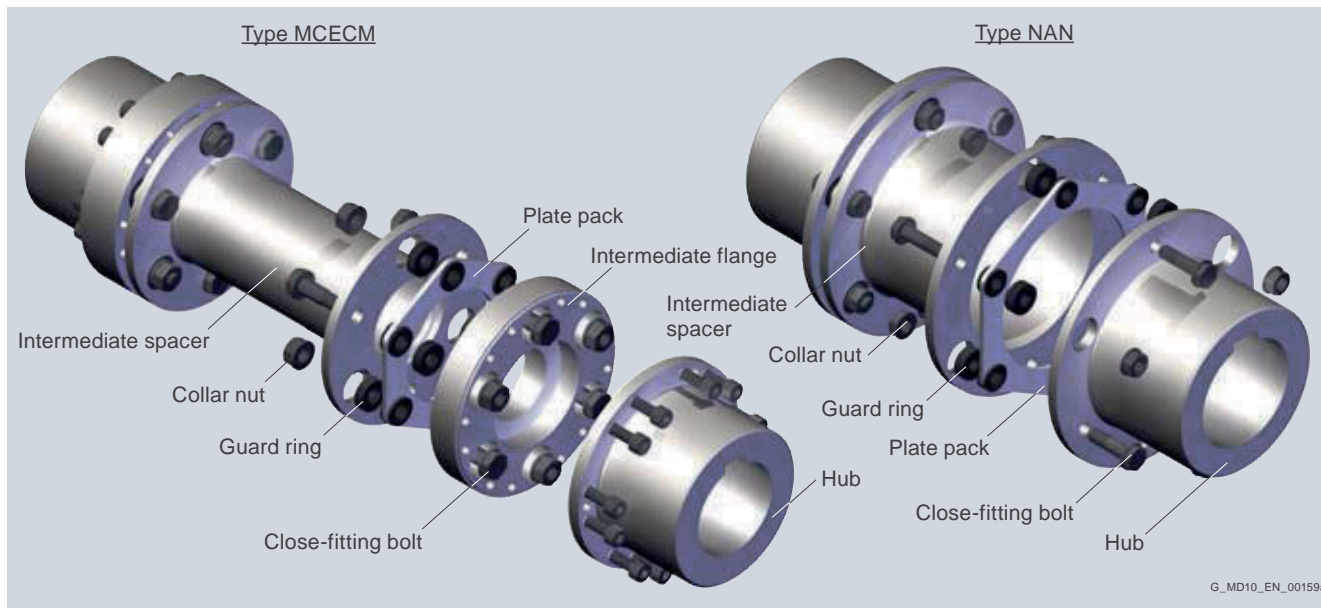
Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

General information

Design

NAN: The design of an ARPEX NAN coupling of the ARP-6 series is shown in the following illustration. The plate packs are bolted alternately between the flanges of the coupling hubs and the intermediate spacer. Up to size 298-6 close-fitting bolts and from size 325-6 conical screw connections are used for fastening. The intermediate spacer is available from stock in various fixed lengths. Hubs are designed with threaded pull-off holes.

MCECM: The design of an ARPEX MCECM coupling of the ARP-6 series is shown in the following illustration. Bolted between two hubs is the CEC transmission unit, the preassembled plate packs of which are bolted alternately between flanges and intermediate spacer. Up to size 275-6 close-fitting bolts and from size 310-6 conical screw connections are used for fastening. The intermediate spacer is available from stock in various fixed lengths. Jumbo hubs for large bore diameters can be optionally used.



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Design of the ARPEX coupling, ARP-6 series

Variants of the ARPEX coupling, ARP-6 series

Types	
NAN	Variant with intermediate spacer, various fixed lengths available from stock
MCECM	Variant with preassembled intermediate unit and spacer machined on all sides, various fixed lengths available from stock

Further application-specific coupling types are available in selection module **x.CAT** at www.flender.com. Dimension sheets and further information are available on request.

Technical data

Power ratings, type NAN

Size	Rated torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Overload torque T_{KOL} Nm	Fatigue torque T_{KW} Nm	Maximum speed n_{Kmax} rpm	Maximum permitted shaft misalignment					Torsional stiffness						
						$\pm\Delta K_a$ mm	$\pm\Delta K_w$ mm	$\pm\Delta K_r$ mm	C_T								
									S = 100 mm	S = 140 mm	S = 180 mm	S = 200 mm	S = 250 mm	S = 100 mm	S = 140 mm	S = 180 mm	S = 200 mm
88-6	190	270	450	70	21700	1.10	0.7°	1.15	1.64	-	-	-	0.04	0.04	-	-	-
115-6	270	410	680	110	16600	1.81		1.15	1.64	2.13	-	-	0.09	0.09	0.08	-	-
135-6	580	870	1450	230	12700	2.02		1.14	1.62	2.11	-	-	0.21	0.19	0.17	-	-
150-6	660	1000	1650	270	11400	2.41		1.14	1.62	2.11	2.36	2.97	0.27	0.25	0.24	0.23	0.21
176-6	1220	1900	3100	490	9750	2.75		1.11	1.6	2.09	2.33	2.94	0.44	0.40	0.38	0.36	0.34
185-6	1875	2900	4700	750	9300	2.85		1.09	1.58	2.06	2.31	2.92	0.56	0.52	0.49	0.47	0.44
212-6	2850	4230	7200	1200	8100	3.06		1.10	1.59	2.08	2.32	2.93	0.81	0.75	0.70	0.67	0.62
225-6	4200	6300	10500	1700	7650	3.14		-	1.59	2.08	2.32	2.93	-	0.85	0.81	0.79	0.74
256-6	5750	8700	15000	2300	6700	3.69		-	1.56	2.05	2.3	2.91	-	1.37	1.31	1.29	1.22
272-6	8050	12000	20000	3200	6300	3.85		-	1.51	2	2.25	2.86	-	1.44	1.39	1.36	1.3
298-6	10000	15000	25000	4000	5150	4.19		-	1.47	1.95	2.2	2.81	-	1.47	1.43	1.41	1.37
325-6	12000	18000	30000	4800	4700	4.45		-	-	1.93	2.17	2.79	-	-	2.48	2.44	2.34

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

General information

Power ratings, type MCECM

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Maximum speed	Maximum permitted shaft misalignment					Torsional stiffness							
	T_{KN}	T_{Kmax}	T_{KOL}	T_{KW}	n_{Kmax}	$\pm\Delta K_a$	$\pm\Delta K_w$	$\pm\Delta K_r$	S = 100 mm	S = 140 mm	S = 180 mm	S = 200 mm	S = 250 mm	S = 100 mm	S = 140 mm	S = 180 mm	S = 200 mm	S = 250 mm
	Nm	Nm	Nm	Nm	rpm	mm	mm	mm	mm	mm	mm	mm	mm	MNm/rad	MNm/rad	MNm/rad	MNm/rad	MNm/rad
64-4	100	150	250	40	22500	0.80	0.7°	0.78	1.27	-	-	-	-	0.009	0.008	-	-	-
96-6	210	310	530	85	19900	1.15		0.78	1.27	-	-	-	-	0.06	0.05	-	-	-
120-6	490	740	1250	200	15900	1.47		0.65	1.14	1.62	-	-	-	0.17	0.15	0.13	-	-
142-6	925	1400	2300	370	13400	1.73		-	1.04	1.53	-	-	-	-	0.28	0.25	-	-
162-6	1600	2400	4000	640	11800	2.07		-	0.92	1.40	1.65	2.26	-	-	0.43	0.39	0.38	0.34
190-6	2500	3800	6300	1000	10000	2.36		-	0.93	1.42	1.66	2.27	-	-	0.71	0.65	0.63	0.57
214-6	3900	5900	9800	1600	8900	2.67		-	0.78	1.27	1.51	2.13	-	-	1.01	0.94	0.92	0.85
230-6	5200	7800	13000	2100	8300	2.88		-	-	1.25	1.49	2.10	-	-	-	1.36	1.32	1.22
245-6	7000	10500	18000	2800	7800	2.99		-	-	1.00	1.25	1.86	-	-	-	1.49	1.45	1.37
275-6	9800	15000	25000	4000	6250	3.38		-	-	-	1.22	1.83	-	-	-	-	1.65	1.58
310-6	12900	20000	33000	5200	5550	3.85		-	-	-	-	1.64	-	-	-	-	-	2.96
345-6	17000	26000	43000	6800	5000	4.24		-	-	-	-	1.61	-	-	-	-	-	4.12

The permitted shaft misalignments ΔK_a , ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table). The permitted shaft misalignment ΔK_r applies to the shaft distance S specified in each case.

T_{Kmax} permitted only five times per hour.

The values for torsional stiffness apply to the complete coupling. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN} . To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

Permitted shaft misalignments, type NAN

Size	Permitted angular misalignment $\pm\Delta K_w$							
	0.0°	0.1°	0.2°	0.3°	0.4°	0.5°	0.6°	0.7°
	Permitted axial misalignment $\pm\Delta K_a$ in mm							
88-6	1.10	0.94	0.79	0.63	0.47	0.31	0.16	0.00
115-6	1.81	1.55	1.29	1.03	0.77	0.52	0.26	0.00
135-6	2.02	1.73	1.44	1.15	0.86	0.58	0.29	0.00
150-6	2.41	2.06	1.72	1.38	1.03	0.69	0.34	0.00
176-6	2.75	2.36	1.96	1.57	1.18	0.79	0.39	0.00
185-6	2.85	2.45	2.04	1.63	1.22	0.82	0.41	0.00
212-6	3.06	2.63	2.19	1.75	1.31	0.88	0.44	0.00
225-6	3.14	2.69	2.24	1.80	1.35	0.90	0.45	0.00
256-6	3.69	3.16	2.64	2.11	1.58	1.05	0.53	0.00
272-6	3.85	3.30	2.75	2.20	1.65	1.10	0.55	0.00
298-6	4.19	3.59	2.99	2.39	1.80	1.20	0.60	0.00
325-6	4.45	3.82	3.18	2.54	1.91	1.27	0.64	0.00

Permitted shaft misalignments, type MCECM

Size	Permitted angular misalignment $\pm\Delta K_w$							
	0.0°	0.1°	0.2°	0.3°	0.4°	0.5°	0.6°	0.7°
	Permitted axial misalignment $\pm\Delta K_a$ in mm							
64-4	0.80	0.68	0.57	0.46	0.34	0.23	0.11	0.00
96-6	1.15	0.99	0.82	0.66	0.49	0.33	0.16	0.00
120-6	1.47	1.26	1.05	0.84	0.63	0.42	0.21	0.00
142-6	1.73	1.48	1.23	0.99	0.74	0.49	0.25	0.00
162-6	2.07	1.77	1.48	1.18	0.89	0.59	0.30	0.00
190-6	2.36	2.02	1.68	1.35	1.01	0.67	0.34	0.00
214-6	2.67	2.29	1.91	1.53	1.14	0.76	0.38	0.00
230-6	2.88	2.47	2.06	1.65	1.23	0.82	0.41	0.00
245-6	2.99	2.56	2.13	1.71	1.28	0.85	0.43	0.00
275-6	3.38	2.90	2.41	1.93	1.45	0.97	0.48	0.00
310-6	3.85	3.30	2.75	2.20	1.65	1.10	0.55	0.00
345-6	4.24	3.64	3.03	2.42	1.82	1.21	0.61	0.00

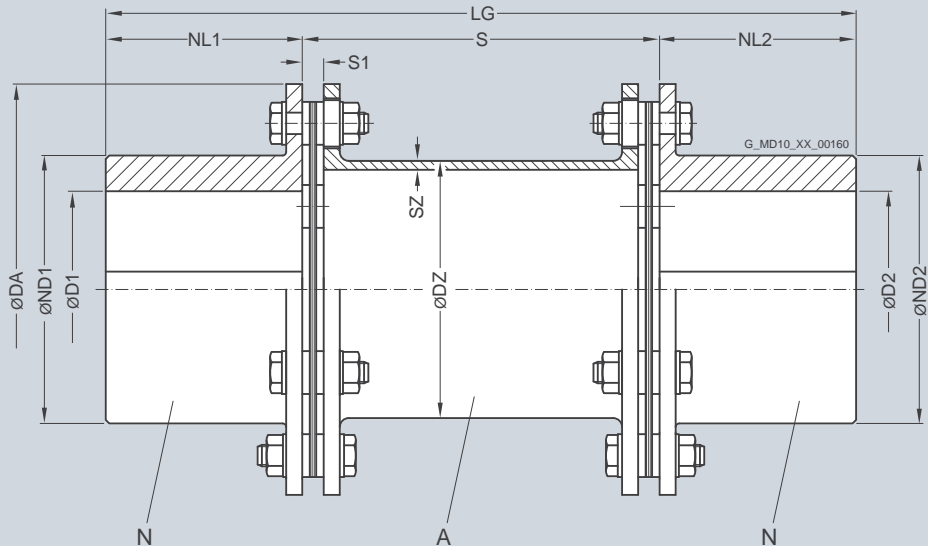
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

Type NAN

Selection and ordering data

Torsionally rigid type NAN coupling with radially freely dismountable intermediate spacer and catcher device for securing the intermediate spacer in the event of plate breakage. Standard coupling type in accordance with **API 610**.



Size	Rated torque	Maximum speed	Dimensions in mm							Shaft distance	Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight
			D1/D2 Keyway DIN 6885 max.	ND1/ND2	DZ	SZ	NL1/ NL2	S1	S				
mm	Nm	rpm									kgm ²		kg
88-6	190	21 700	35	48	45	2.5	40	6	100	180	0.001	2LC0450-0AD99-0AA0	1.6
									140	220	0.001	2LC0450-0AD99-0AB0	1.7
115-6	270	16 600	55	75	72	2.5	55	6	100	210	0.005	2LC0450-1AD99-0AA0	3.2
									140	250	0.005	2LC0450-1AD99-0AB0	3.4
									180	290	0.005	2LC0450-1AD99-0AC0	3.6
135-6	580	12 700	65	86	84	2.5	65	7	100	230	0.011	2LC0450-2AD99-0AA0	5.2
									140	270	0.012	2LC0450-2AD99-0AB0	5.4
									180	310	0.012	2LC0450-2AD99-0AC0	5.6
150-6	660	11 400	75	101	99	2.5	75	7	100	250	0.019	2LC0450-3AD99-0AA0	7.2
									140	290	0.020	2LC0450-3AD99-0AB0	7.5
									180	330	0.021	2LC0450-3AD99-0AC0	7.7
									200	350	0.021	2LC0450-3AD99-0AD0	7.8
									250	400	0.022	2LC0450-3AD99-0AE0	8.1
176-6	1 220	9 750	85	117	114	2.5	85	9	100	270	0.041	2LC0450-4AD99-0AA0	11.4
									140	310	0.042	2LC0450-4AD99-0AB0	11.7
									180	350	0.043	2LC0450-4AD99-0AC0	12.0
									200	370	0.044	2LC0450-4AD99-0AD0	12.1
									250	420	0.045	2LC0450-4AD99-0AE0	12.4
185-6	1 875	9 300	90	122	120	3.0	90	11	100	280	0.056	2LC0450-5AD99-0AA0	13.5
									140	320	0.057	2LC0450-5AD99-0AB0	13.9
									180	360	0.058	2LC0450-5AD99-0AC0	14.2
									200	380	0.058	2LC0450-5AD99-0AD0	14.4
									250	430	0.060	2LC0450-5AD99-0AE0	14.8

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

Type NAN

Size	Rated torque	Maximum speed	Dimensions in mm						Shaft distance		Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight
			D1/D2 Keyway DIN 6885 max.	ND1/ND2	DZ	SZ	NL1/ NL2	S1	S	LG			
mm	Nm	rpm								kgm ²		kg	
212-6	2 850	8 100	100	134	131	3.0	100	10	100	300	0.095	2LC0450-6AD99-0AA0	18.3
									140	340	0.097	2LC0450-6AD99-0AB0	18.6
									180	380	0.098	2LC0450-6AD99-0AC0	19.0
									200	400	0.099	2LC0450-6AD99-0AD0	19.2
									250	450	0.101	2LC0450-6AD99-0AE0	19.7
225-6	4 200	7 650	105	141	139	4.0	105	10	140	350	0.134	2LC0450-7AD99-0AB0	22.8
									180	390	0.136	2LC0450-7AD99-0AC0	23.3
									200	410	0.137	2LC0450-7AD99-0AD0	23.6
									250	460	0.140	2LC0450-7AD99-0AE0	24.2
256-6	5 750	6 700	120	163	162	5.0	120	12	140	380	0.262	2LC0450-8AD99-0AB0	34.3
									180	420	0.267	2LC0450-8AD99-0AC0	35.1
									200	440	0.270	2LC0450-8AD99-0AD0	35.5
									250	490	0.276	2LC0450-8AD99-0AE0	36.5
272-6	8 050	6 300	125	171	170	5.0	130	16	140	400	0.373	2LC0451-0AD99-0AB0	42.9
									180	440	0.378	2LC0451-0AD99-0AC0	43.7
									200	460	0.381	2LC0451-0AD99-0AD0	44.1
									250	510	0.388	2LC0451-0AD99-0AE0	45.1
298-6	10 000	5 150	140	189	186	6.0	140	20	140	420	0.559	2LC0451-1AD99-0AB0	53.6
									180	460	0.567	2LC0451-1AD99-0AC0	54.7
									200	480	0.572	2LC0451-1AD99-0AD0	55.2
									250	530	0.582	2LC0451-1AD99-0AE0	56.5
325-6	12 000	4 700	150	203	200	6.5	150	22	180	480	0.851	2LC0451-2AD99-0AC0	69.4
									200	500	0.857	2LC0451-2AD99-0AD0	70.0
									250	550	0.872	2LC0451-2AD99-0AE0	71.6

Hubs are designed with threaded pull-off holes.
Type NAN with spacer machined on all sides, available in various standard lengths.
A spacers are also available in the following inch dimensions:
S = 3.5"/5"/7"/8"/10".
Other spacer lengths are available on request.

Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:
ARPEX ARP-6 NAN coupling, size 135-6, with shaft distance S = 140 mm,
Bore ØD1 50H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 60K7 mm, with keyway to DIN 6885 and set screw.

Product code:
2LC0450-2AD99-0AB0-Z
L1C+M1E+M13

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

Type MCECM

Size	Rated torque	Maximum speed	Type	Dimensions in mm											Shaft distance		Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight			
				D1/D2 Keyway DIN 6885 max. max.	ND1	ND2	DZ	SZ	NL1/ NL2	S1	BF	A	P	S	LG	J				m		
mm	Nm	rpm															kgm ²		kg			
162-6	1600	11800	MCECM	85	85	122	122	84.5	5.5	85	11	27	-	-	140	310	0.066	2LC0460-4AP99-0AB0	19.2			
																				2LC0460-4AP99-0AC0	19.7	
																					2LC0460-4AP99-0AD0	19.9
																					2LC0460-4AP99-0AE0	20.4
			JCECM	108	85	162	122								10	113	140	310	0.087	2LC0460-4AH99-0AB0	22.0	
																					2LC0460-4AH99-0AC0	22.4
																					2LC0460-4AH99-0AD0	22.6
																					2LC0460-4AH99-0AE0	23.2
			JCECJ	108	108	162	162														2LC0460-4AG99-0AB0	24.8
																					2LC0460-4AG99-0AC0	25.3
																					2LC0460-4AG99-0AD0	25.5
																					2LC0460-4AG99-0AE0	26.0
190-6	2500	10000	MCECM	105	105	145	145	97.6	7.0	105	10	27	-	-	140	350	0.136	2LC0460-5AP99-0AB0	28.4			
																				2LC0460-5AP99-0AC0	29.0	
																					2LC0460-5AP99-0AD0	29.4
																					2LC0460-5AP99-0AE0	30.1
			JCECM	125	105	190	145								12	135	140	350	0.186	2LC0460-5AH99-0AB0	33.8	
																					2LC0460-5AH99-0AC0	34.4
																					2LC0460-5AH99-0AD0	34.7
																					2LC0460-5AH99-0AE0	35.5
			JCECJ	125	125	190	190														2LC0460-5AG99-0AB0	39.2
																					2LC0460-5AG99-0AC0	39.8
																					2LC0460-5AG99-0AD0	40.1
																					2LC0460-5AG99-0AE0	40.9
214-6	3900	8900	MCECM	115	115	164	164	110	9.1	115	10	33	-	-	140	370	0.251	2LC0460-6AP99-0AB0	41.7			
																				2LC0460-6AP99-0AC0	42.6	
																					2LC0460-6AP99-0AD0	43.1
																					2LC0460-6AP99-0AE0	44.2
			JCECM	140	115	214	164								12	145	140	370	0.339	2LC0460-6AH99-0AB0	48.9	
																					2LC0460-6AH99-0AC0	49.8
																					2LC0460-6AH99-0AD0	50.3
																					2LC0460-6AH99-0AE0	51.4
			JCECJ	140	140	214	214														2LC0460-6AG99-0AB0	56.2
																					2LC0460-6AG99-0AC0	57.1
																					2LC0460-6AG99-0AD0	57.6
																					2LC0460-6AG99-0AE0	58.7
230-6	5200	8300	MCECM	125	125	174	174	123	8.8	125	12	33	-	-	180	430	0.359	2LC0460-7AP99-0AC0	51.5			
																				2LC0460-7AP99-0AD0	52.0	
																					2LC0460-7AP99-0AE0	53.2
																					2LC0460-7AP99-0AE0	53.2
			JCECM	155	125	230	174								14	158	180	430	0.484	2LC0460-7AH99-0AC0	60.0	
																					2LC0460-7AH99-0AD0	60.5
																					2LC0460-7AH99-0AE0	61.7
																					2LC0460-7AH99-0AE0	61.7
			JCECJ	155	155	230	230														2LC0460-7AG99-0AC0	68.7
																					2LC0460-7AG99-0AD0	69.2
																					2LC0460-7AG99-0AE0	70.5
																					2LC0460-7AG99-0AE0	70.5
245-6	7000	7800	MCECM	130	130	185	185	128	12.2	130	16	41	-	-	180	440	0.532	2LC0460-8AP99-0AC0	67.0			
																				2LC0460-8AP99-0AD0	67.7	
																					2LC0460-8AP99-0AE0	69.5
																					2LC0460-8AP99-0AE0	69.5
			JCECM	165	130	245	185								16	170	180	440	0.693	2LC0460-8AH99-0AC0	76.2	
																					2LC0460-8AH99-0AD0	76.9
																					2LC0460-8AH99-0AE0	78.6
																					2LC0460-8AH99-0AE0	78.6
			JCECJ	165	165	245	245														2LC0460-8AG99-0AC0	85.5
																					2LC0460-8AG99-0AD0	86.2
																					2LC0460-8AG99-0AE0	86.2
																					2LC0460-8AG99-0AE0	88.0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

Type MCECM

Size	Rated torque	Maximum speed	Type	Dimensions in mm													Mass moment of inertia	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
				D1/D2	ND1	ND2	DZ	SZ	NL1/ NL2	S1	BF	A	P	S	LG	J					
DA	T_{KN}	n_{Kmax}		D1/D2	ND1	ND2	DZ	SZ	NL1/ NL2	S1	BF	A	P	S	LG	J		m			
mm	Nm	rpm		Keyway DIN 6885 max. max.												kgm ²		kg			
275-6	9800	6250	MCECM	150	150	213	213	148	12.6	150	20	40	-	-	200	500	0.917	2LC0461-0AP99-0AD0	91.1		
															250	550	0.927	2LC0461-0AP99-0AE0	93.3		
			JCECM	185	150	275	213								16	200	200	500	1.207	2LC0461-0AH99-0AD0	104.4
																	250	550	1.217	2LC0461-0AH99-0AE0	106.5
			JCECJ	185	185	275	275										200	500	1.499	2LC0461-0AG99-0AD0	118.0
																	250	550	1.509	2LC0461-0AG99-0AE0	120.1
310-6	12900	5550	MCECM	170	170	240	240	160	13.5	170	22	47	-	-	250	590	1.670	2LC0461-1AP99-0AE0	131.7		
			JCECM	205	170	310	240								16	220	2.228	2LC0461-1AH99-0AE0	153.2		
			JCECJ	205	205	310	310										2.788	2LC0461-1AG99-0AE0	175.0		
345-6	17000	5000	MCECM	190	190	267	267	172	18.5	190	24	47	-	-	250	630	2.742	2LC0461-2AP99-0AE0	176.1		
			JCECM	230	190	345	267								20	245	3.684	2LC0461-2AH99-0AE0	205.1		
			JCECJ	230	230	345	345										4.629	2LC0461-2AG99-0AE0	234.3		

Hubs are designed with threaded pull-off holes.
E spacers are also available in the following inch dimensions on request: S = 3.5"/5"/7"/8"/10".
Other spacer lengths are available on request.
Plate packs in the CEC intermediate unit assembled at the factory.
Jumbo hub for large shaft diameters.
Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:
ARPEX ARP-6 MCECM coupling, size 120-6, with shaft distance S = 140 mm,
Bore ØD1 50H7 mm, with keyway to DIN 6885 and set screw,
Bore ØD2 60K7 mm, with keyway to DIN 6885 and set screw.

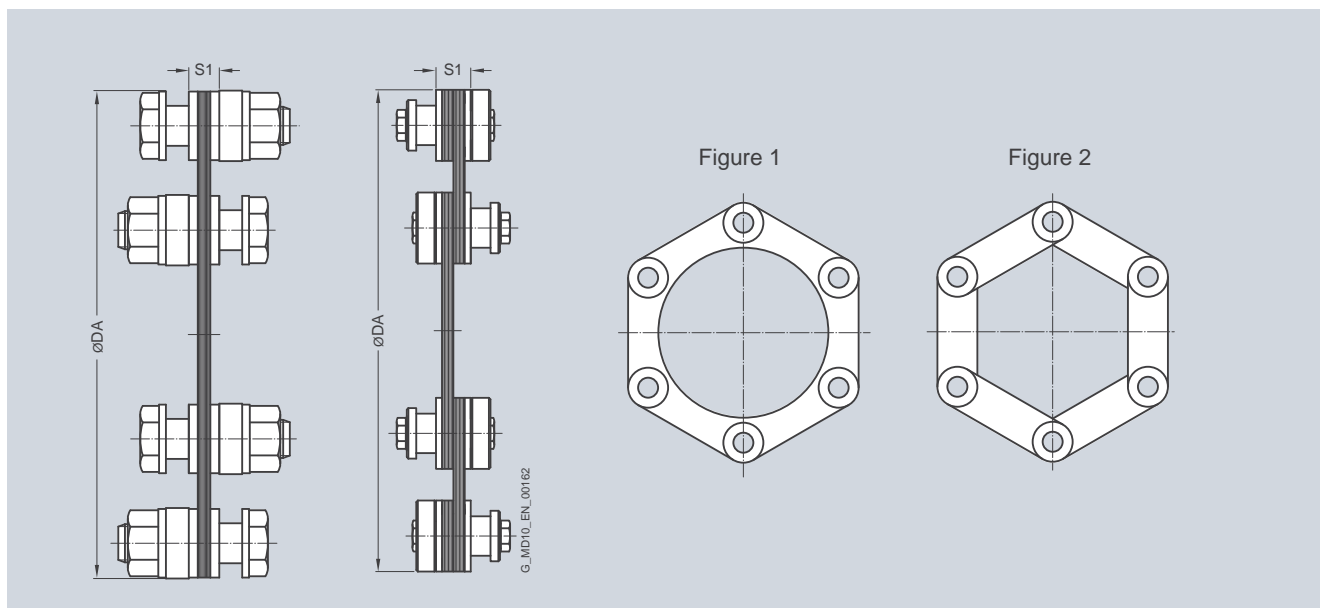
Product code:
2LC0460-2AP99-0AB0-Z
L1C+M1E+M13

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARP-6 Series

Spare and wear parts
Plate pack ARP-6

Selection and ordering data



Mainly ring plates (Fig. 1) are used for the plate packs. Sizes 298-6 and 325-6 comprise side-bar plates (Fig. 2).

The plate pack of the ARP-6 series is delivered with screw connection and is readily available as a spare part.

- With outside diameters up to $DA = 300$ mm, close-fitting bolts with collar nuts are used
- From outside diameter $DA = 300$ mm, patented conical screw connections are used

Plate pack

Dimensions in mm		Mass moment of inertia	Product code	Weight
Size				
DA	S1	J kgm ²		m kg
Plate pack NAN				
88-6	6	0.0001	2LC0450-0AF00-0AA0	0.1
115-6	6	0.0003	2LC0450-1AF00-0AA0	0.1
135-6	7	0.0010	2LC0450-2AF00-0AA0	0.3
150-6	7	0.0013	2LC0450-3AF00-0AA0	0.4
176-6	9	0.0035	2LC0450-4AF00-0AA0	0.7
185-6	11	0.0053	2LC0450-5AF00-0AA0	0.9
212-6	10	0.0088	2LC0450-6AF00-0AA0	1.3
225-6	10	0.0145	2LC0450-7AF00-0AA0	1.8
256-6	12	0.0269	2LC0450-8AF00-0AA0	2.6
272-6	16	0.0425	2LC0451-0AF00-0AA0	3.7
298-6	20	0.0653	2LC0451-1AF00-0AA0	4.7
325-6	22	0.1081	2LC0451-2AF00-0AA0	6.6
Plate pack MCECM				
64-4	6	0.0001	2LC0460-0AS00-0AA0	0.1
96-6	6	0.0002	2LC0460-1AS00-0AA0	0.1
120-6	7	0.0006	2LC0460-2AS00-0AA0	0.3
142-6	9	0.0018	2LC0460-3AS00-0AA0	0.6
162-6	11	0.0033	2LC0460-4AS00-0AA0	0.9
190-6	10	0.0060	2LC0460-5AS00-0AA0	1.2
214-6	10	0.0116	2LC0460-6AS00-0AA0	1.8
230-6	12	0.0189	2LC0460-7AS00-0AA0	2.5
245-6	16	0.0299	2LC0460-8AS00-0AA0	3.5
275-6	20	0.0487	2LC0461-0AS00-0AA0	4.6
310-6	22	0.0891	2LC0461-1AS00-0AA0	6.5
345-6	24	0.1461	2LC0461-2AS00-0AA0	8.7

Ordering example for plate pack NAN:

ARPEX ARP-6 plate pack, size 115-6, complete with screw connection.

Product code:

2LC0450-1AF00-0AA0

Ordering example for plate pack MCECM:

ARPEX ARP-6 plate pack, size 120-6, complete with screw connection.

Product code:

LC0460-2AS00-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARW-4/-6 Series

General information

Overview



Coupling can be designed for potentially explosive environments in accordance with 94/9/EC.

Benefits

ARPEX couplings of the ARW-4/-6 series are outstanding for their large angular misalignment capacity of 3°. They were specially designed for drives where high misalignments which have

to be compensated for by the coupling are to be expected. The intermediate spacer lengths are variable and are manufactured to customer specifications.

Application

ARPEX couplings of the ARW-4/-6 series are used where large misalignment capacities are required. In the paper-making machine industry, the ARW coupling has already proved itself as a maintenance-free alternative to the cardan shaft. Torques of between 92 and 80000 Nm can be transmitted at a permitted angular misalignment of 3.0°. The intermediate spacer can be fitted radially without moving the connected units.

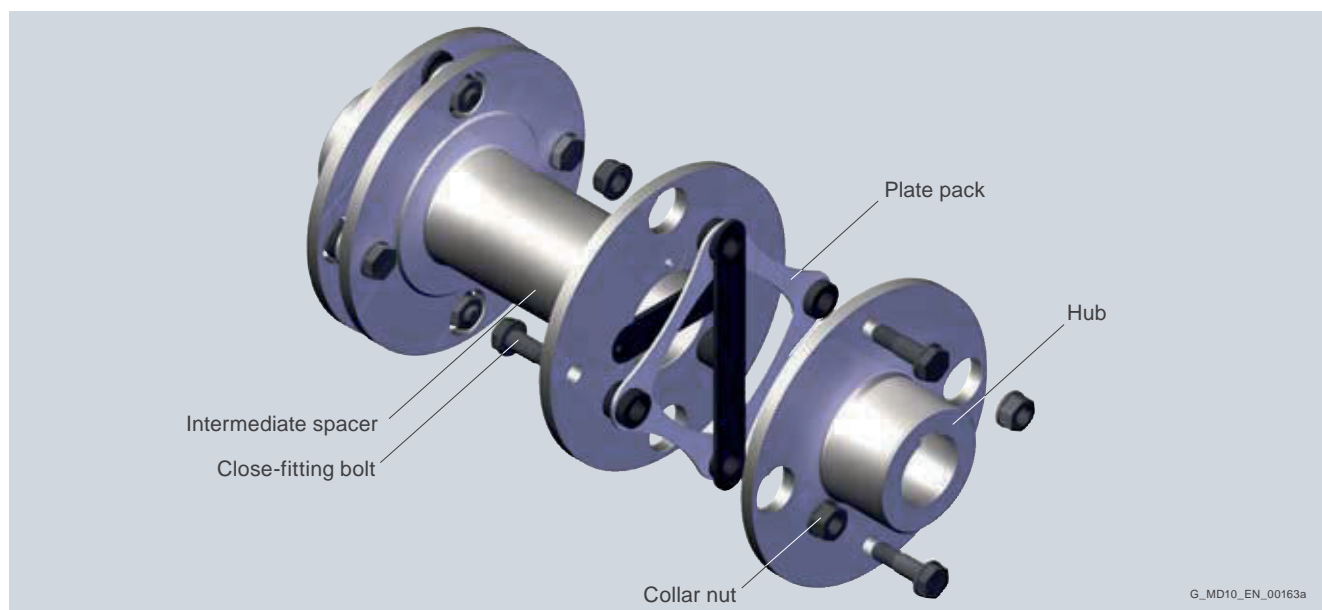
Main areas of application for the ARW-4/-6 series:

- Paper-making machines
- Wind power systems
- Traction drives

Design

The design of an ARPEX NHN coupling of the ARW-4/-6 series is shown in the following illustration. The plate packs are bolted alternately between the flanges of the coupling hubs and the intermediate spacer. Up to size 292-4 close-fitting bolts and from size 324-4 conical screw connections are used for fastening. Up to

size 647-4 plate packs in rectangular design, from size 695-6 in hexagonal design are used. The intermediate spacers are variable in length and are manufactured specifically to customer specifications.



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Variants of the ARPEX coupling, ARW-4/-6 series

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARW-4/-6 Series

General information

Variants of the ARPEX coupling, ARW-4/-6 series

Types

NHN

Variant with unmachined intermediate spacer, with variable spacer length

Further application-specific coupling types are available in selection module **x.CAT** at www.flender.com. Dimension sheets and further information are available on request.

The coupling parts of the ARPEX ARW-4/-6 series with the exception of H spacers are machined on all sides. These are delivered with unmachined, primed spacer tube.

Technical data

Power ratings, type NHN

Size	Rated torque T_{KN}	Maximum torque T_{Kmax}	Overload torque T_{KOL}	Fatigue torque T_{KW}	Maximum speed n_{Kmax}	Maximum permitted shaft misalignment			Torsional stiffness C_{Tdyn} for S = 1000 mm MNm/rad	
						+ ΔK_a Tension	- ΔK_a Compression	$\pm \Delta K_w$		
	Nm	Nm	Nm	Nm	rpm	mm	mm	mm		
101-4	92	140	230	37	10400	2.4	2.0	3.0°	51.8	0.006
133-4	225	340	560	90	7850	3.3	2.2		51.7	0.012
167-4	450	680	1130	180	6250	4.2	2.2		51.6	0.028
196-4	800	1200	2000	320	5350	5.1	2.2		51.6	0.068
230-4	1250	1880	3200	500	4550	5.7	2.2		51.6	0.108
260-4	2000	3000	5000	800	4000	6.6	2.2		51.5	0.174
292-4	2700	4100	6800	1080	3550	7.5	2.8		51.4	0.275
324-4	3850	5800	9700	1540	3200	8.4	2.8		51.4	0.451
355-4	5250	7900	13200	2100	2950	9.0	2.8		51.4	0.622
389-4	6650	10000	16700	2660	2700	10.0	2.8		51.4	0.657
439-4	9850	15000	25000	3940	2350	11.1	3.0		51.3	1.08
499-4	13300	20000	34000	5320	2100	12.4	4.8		50.8	1.32
547-4	19000	29000	48000	7600	1900	13.4	4.8		50.7	2.03
600-4	25150	38000	63000	10060	1750	14.6	4.8		50.6	2.73
647-4	32500	49000	82000	13000	1600	16.0	4.8		50.6	3.93
695-6	41000	62000	103000	16400	1500	17.0	4.8		50.7	10.1
756-6	52000	78000	130000	20800	1350	18.0	4.8		50.6	14.0
817-6	65000	98000	163000	26000	1250	20.0	4.8		50.5	16.9
880-6	80000	120000	200000	32000	1150	22.0	4.8		50.5	21.2

The radial misalignment ΔK_r applies to a type NHN coupling with a shaft distance S = 1000 mm. The radial misalignment ΔK_r for other shaft distances S is calculated as follows:

$$\Delta K_r = (S - S1) \cdot \tan(\Delta K_w)$$

The permitted shaft misalignments ΔK_a , ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table).

Permitted shaft misalignments

Size	Permitted angular misalignment ΔK_w (tension +)			Permitted angular misalignment ΔK_w (compression -)		
	3.0°	1.5°	0.0°	3.0°	1.5°	0.0°
	Permitted axial misalignment ΔK_a in mm					
101-4	0.8	1.6	2.4	0.8	1.6	2
133-4	1.1	2.2	3.3	1.1	2.2	2.2
167-4	1.4	2.8	4.2	1.4	2.2	2.2
196-4	1.7	3.4	5.1	1.7	2.2	2.2
230-4	1.9	3.8	5.7	1.9	2.2	2.2
260-4	2.2	4.4	6.6	2.2	2.2	2.2
292-4	2.5	5.0	7.5	2.5	2.8	2.8
324-4	2.8	5.6	8.4	2.8	2.8	2.8
355-4	3.0	6.0	9.0	2.8	2.8	2.8
389-4	3.3	6.7	10.0	2.8	2.8	2.8
439-4	3.7	7.4	11.1	3.0	3.0	3.0
499-4	4.1	8.3	12.4	4.1	4.8	4.8
547-4	4.5	8.9	13.4	4.4	4.8	4.8
600-4	4.9	9.7	14.6	4.8	4.8	4.8
647-4	5.3	10.7	16.0	4.8	4.8	4.8
695-6	5.6	11.4	17.0	4.8	4.8	4.8
756-6	6	12.1	18.0	4.8	4.8	4.8
817-6	6.7	13.4	20.0	4.8	4.8	4.8
880-6	7.3	14.8	22.0	4.8	4.8	4.8

Because of design specifications, the maximum possible axial shaft misalignment with plate packs pulled apart (**tension +**) is greater than with plate packs pressed together (**compression -**).

The torsional stiffness values apply to the entire coupling with shaft distance S = 1000 mm. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN} . To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

T_{Kmax} permitted only five times per hour.

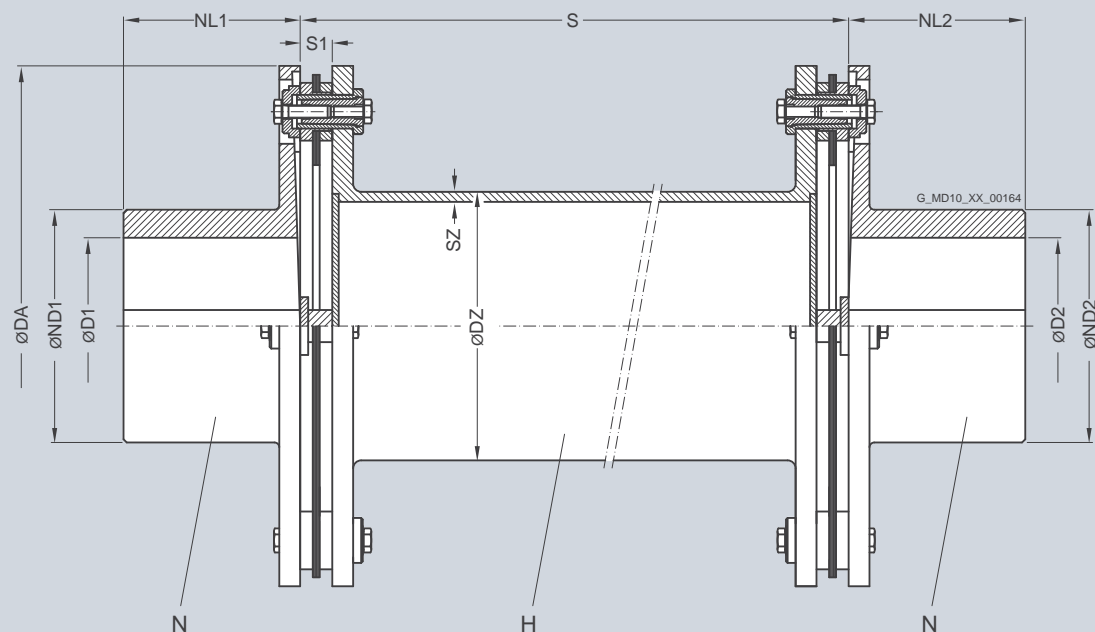
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARW-4/-6 Series

Type NHN

Selection and ordering data

Torsionally rigid type NHN coupling with high angular misalignment capacity up to 3° and radially freely dismountable intermediate spacer and variable shaft distance S.



Size	Rated torque	Maximum speed	Dimensions in mm						Minimum shaft distance	Mass moment of inertia	Product code	Weight
DA	T_{KN}	n_{Kmax}	D1/D2 Keyway DIN 6885	ND1/ ND2	DZ	SZ	NL1/ NL2	S1	S_{min}	J	Order codes for bore diameters and tolerances are specified in catalog section 3	m
mm	Nm	rpm	max.							kgm ²		kg
101-4	92	10400	32	45	45	2.9	32	11	65	0.002	2LC0530-0AD99-0AZ0	1.5
133-4	225	7850	45	60	48	2.9	45	13	85	0.008	2LC0530-1AD99-0AZ0	3.9
167-4	450	6250	50	70	64	4.0	50	15	100	0.022	2LC0530-2AD99-0AZ0	7.1
196-4	800	5350	60	80	89	4.0	60	16	115	0.056	2LC0530-3AD99-0AZ0	12.1
230-4	1250	4550	75	100	102	5.0	75	16	115	0.109	2LC0530-4AD99-0AZ0	17.9
260-4	2000	4000	90	120	133	5.0	90	17	130	0.189	2LC0530-5AD99-0AZ0	24.6
292-4	2700	3550	100	130	152	5.0	100	19	130	0.359	2LC0530-6AD99-0AZ0	35.1
324-4	3850	3200	110	145	168	6.3	110	20	160	0.520	2LC0530-7AD99-0AZ0	43.7
355-4	5250	2950	120	160	178	7.1	120	20	165	0.856	2LC0530-8AD99-0AZ0	59.8
389-4	6650	2700	130	175	194	7.1	130	20	170	1.09	2LC0531-0AD99-0AZ0	68.9
439-4	9850	2350	150	200	219	7.1	150	22	210	2.23	2LC0531-1AD99-0AZ0	106
499-4	13300	2100	165	220	245	7.1	165	30	230	3.81	2LC0531-2AD99-0AZ0	142
547-4	19000	1900	190	250	299	8.8	190	32	240	6.24	2LC0531-3AD99-0AZ0	191
600-4	25150	1750	205	275	324	8.8	205	34	250	10.2	2LC0531-4AD99-0AZ0	257
647-4	32500	1600	225	300	343	10.0	225	35	290	16.5	2LC0531-5AD99-0AZ0	348
695-6	41000	1500	240	325	368	10.0	240	33	290	23.7	2LC0540-0AD99-0AZ0	441
756-6	52000	1350	255	340	394	12.5	255	34	300	33.2	2LC0540-1AD99-0AZ0	525
817-6	65000	1250	270	360	406	12.5	270	36	310	49.1	2LC0540-2AD99-0AZ0	659
880-6	80000	1150	300	400	419	12.5	300	37	330	72.8	2LC0540-3AD99-0AZ0	849

The permitted length of the intermediate spacer depends on the maximum operating speed of the coupling (see following table).

Mass moments of inertia and weights apply to the entire NHN coupling with maximum bores D1/D2 and a shaft distance $S = S_{min}$.

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARW-4/-6 Series

Type NHN

Permitted shaft distance S of type NHN relative to speed

Size	Speed n_N rpm												
	500	600	700	800	900	1000	1200	1400	1500	2000	2500	3000	4000
	Permitted shaft distance S mm												
101-4	2822	2577	2387	2233	2106	1999	1825	1691	1634	1416	1268	1159	1005
133-4	2949	2693	2494	2334	2201	2089	1908	1767	1708	1481	1326	1212	1051
167-4	3376	3083	2856	2672	2520	2392	2185	2024	1956	1696	1518	1387	1203
196-4	4029	3679	3407	3188	3007	2854	2606	2414	2333	2022	1811	1654	1435
230-4	4297	3924	3634	3400	3207	3043	2779	2574	2488	2156	1930	1764	1530
260-4	4943	4514	4181	3912	3689	3500	3197	2961	2861	2480	2220	2028	1759
292-4	5305	4844	4487	4198	3959	3757	3431	3178	3071	2662	2383	2177	
324-4	5562	5079	4704	4401	4151	3939	3597	3332	3220	2791	2499	2283	
355-4	5709	5214	4828	4518	4261	4043	3692	3420	3305	2865	2564		
389-4	5968	5450	5047	4722	4453	4226	3859	3575	3454	2994	2680		
439-4	6361	5809	5380	5034	4747	4505	4114	3811	3682	3192			
499-4	6738	6154	5699	5333	5030	4773	4360	4039	3903	3384			
547-4	7442	6797	6295	5890	5555	5272	4815	4460	4310				
600-4	7762	7089	6565	6144	5794	5499	5022	4652	4496				
647-4	7980	7287	6750	6316	5957	5653	5163	4783	4622	Outside the permitted speed range			
695-6	8000	7553	6995	6545	6173	5858	5350	4956	4789				
756-6	8000	7797	7221	6757	6372	6047	5523						
817-6	8000	7920	7335	6864	6473	6143	5611						
880-6	8000	8000	7456	6977	6580	6244							

Ordering example:

ARPEX ARW-4 NHN coupling, size 133-4, with shaft distance
S = 1000 mm,Bore $\varnothing D1$ 40H7 mm, with keyway to DIN 6885 and set screw,
Bore $\varnothing D2$ 45K7 mm, with keyway to DIN 6885 and set screw.

Product code:

2LC0530-1AD99-0AZ0-Z**L0W+M1A+Q0Y+M13**plain text to Q0Y: **S = 1000 mm**

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARW-4/-6 Series

Spare and wear parts
Plate pack ARW-4/-6

Selection and ordering data

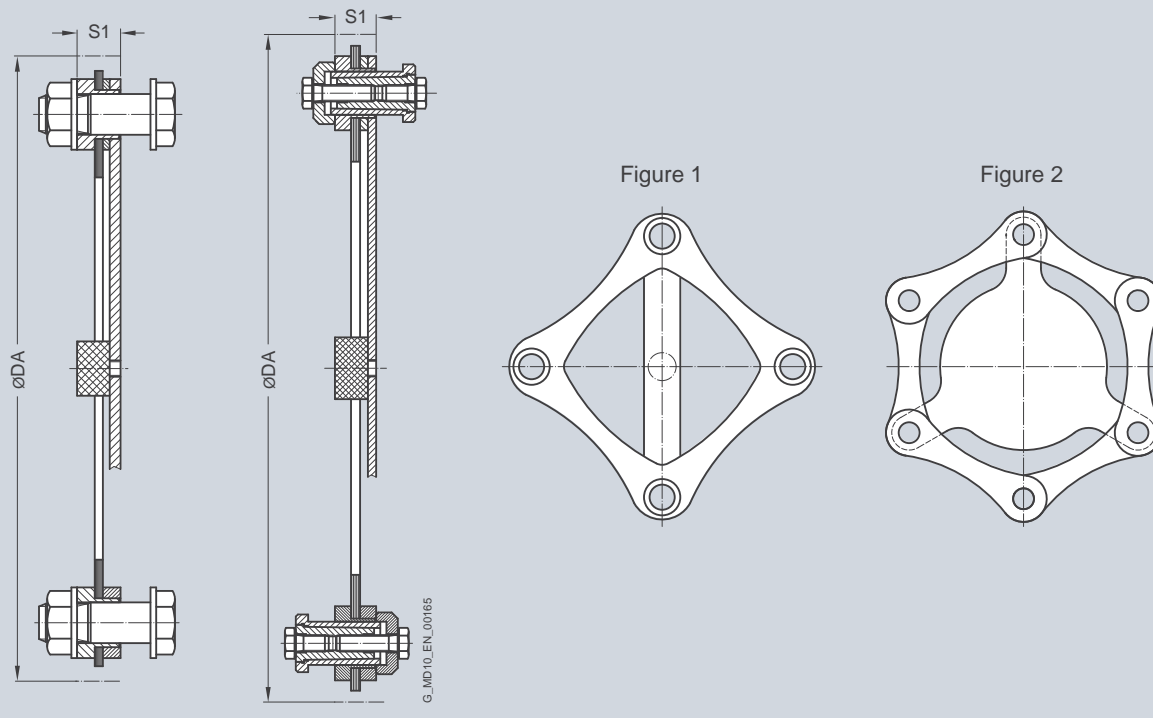


Plate packs of the ARW-4 series comprise ring plates (Fig. 1), those of the ARW-6 series side-bar plates (Fig. 2).

Dimensions in mm		Mass moment of inertia	Product code	Weight
Size	S1	J		m
DA		kgm ²		kg
101-4	11	0.0001	2LC0530-0AB00-0AA0	0.1
133-4	13	0.0005	2LC0530-1AB00-0AA0	0.2
167-4	15	0.0017	2LC0530-2AB00-0AA0	0.5
196-4	16	0.0037	2LC0530-3AB00-0AA0	0.7
230-4	16	0.0068	2LC0530-4AB00-0AA0	1.0
260-4	17	0.0136	2LC0530-5AB00-0AA0	1.5
292-4	19	0.0227	2LC0530-6AB00-0AA0	1.9
324-4	20	0.0288	2LC0530-7AB00-0AA0	2.1
355-4	20	0.0452	2LC0530-8AB00-0AA0	2.7
389-4	20	0.0645	2LC0531-0AB00-0AA0	3.2
439-4	22	0.1147	2LC0531-1AB00-0AA0	4.5
499-4	30	0.2235	2LC0531-2AB00-0AA0	6.9
547-4	32	0.3658	2LC0531-3AB00-0AA0	9.5
600-4	34	0.5355	2LC0531-4AB00-0AA0	11.4
647-4	35	0.7939	2LC0531-5AB00-0AA0	14.6
695-6	33	1.4624	2LC0540-0AB00-0AA0	24.6
756-6	34	1.2250	2LC0540-1AB00-0AA0	20.2
817-6	36	1.7497	2LC0540-2AB00-0AA0	23.9
880-6	37	2.5460	2LC0540-3AB00-0AA0	28.9

The plate pack of the ARW-4/-6 series is readily available as a spare part.

The plate pack is delivered with screw connection.

Up to size 292-4 close-fitting bolts with collar nuts, from size 324-4 patented conical screw connections are used.

Ordering example:

ARPEX ARW-4 plate pack, size 133-4,
complete with screw connection.

Product code:

2LC0530-1AB00-0AA0

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARF-6 Series

General information

Overview



Coupling can be designed for potentially explosive environments in accordance with 94/9/EC.

Benefits

ARPEX couplings of the ARF-6 series are extremely short and so suitable for drives with short shaft distances. They also serve as self-aligning couplings for axial, angular and radial misalignment. The hubs are available both as pure clamping hubs for smooth shafts and with parallel keyway for shafts with parallel

key. The variant with slit clamping hubs enables the delivery of fully preassembled couplings. This means that the entire coupling can be dismounted and fitted without moving the connected units.

Application

ARPEX couplings of the ARF-6 series are designed for minimum fitting spaces without having to sacrifice the advantages of the two-joint coupling. It is thus possible to compensate for both axial and angular as well as radial misalignment. By using half-shell clamping hubs, the coupling can be radially freely dismounted. Power is transmitted via hexagon socket head cap screws and close-fitting bolts with nuts and ring plate packs in

hexagonal design. Torques of between 120 and 6100 Nm can be transmitted at a permitted angular misalignment of 0.7°.

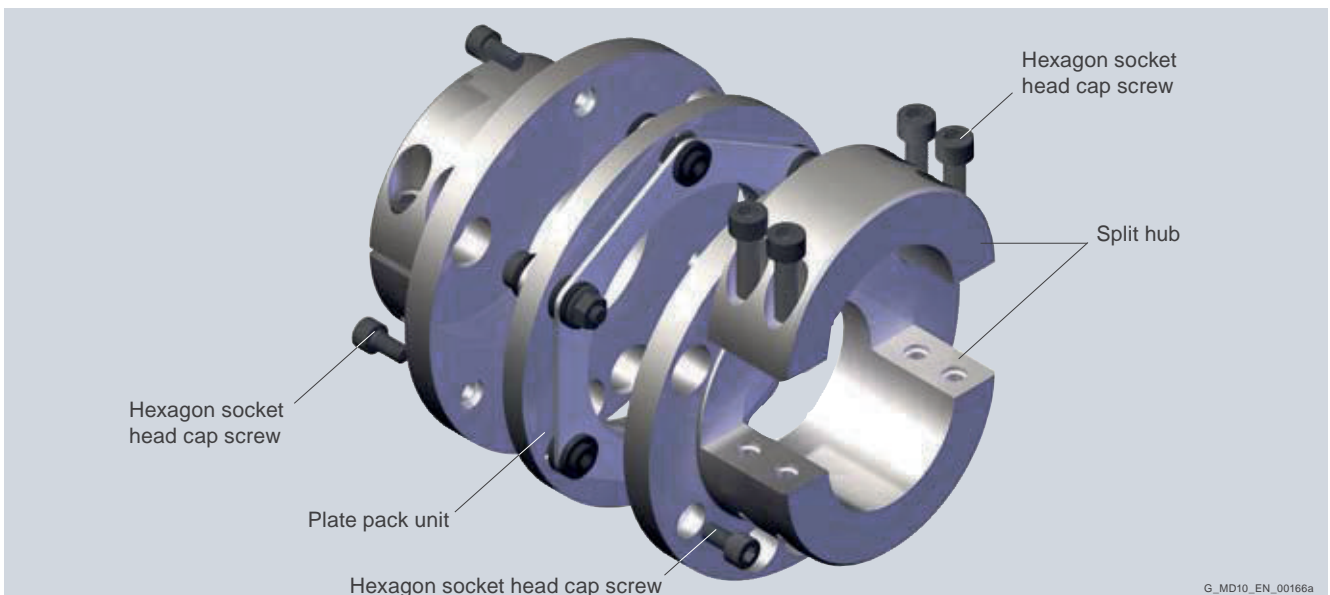
Main areas of application for the ARF-6 series:

- Film stretching machines
- Machines in the cellulose industry
- Machines in confined fitting situations

Design

The two plate packs form a unit with the adapter disk and are screwed together with close-fitting bolts and nuts at three points. The alternate connection of this intermediate unit with the flanges of the split coupling hubs is achieved by means of short

hexagon socket head cap screws at further three points. The hubs are designed as axially slit clamping hubs with a half-shell. For larger bores these can be manufactured as jumbo hubs. Optionally, the hubs are also available without parallel keyway.



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Design of the ARPEX coupling, ARF series

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARF-6 Series

General information

Design of the ARF coupling

Types	
GG	Variant with 2 standard clamping hubs
GJ	Variant with 1 jumbo clamping hub for large bore diameters

Further application-specific coupling types are available in selection module **x.CAT** at www.flender.com. Dimension sheets and further information are available on request.

Technical data

Power ratings, types GG and GJ

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Maximum speed	Maximum permitted shaft misalignment			Torsional stiffness
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	n_{Kmax} rpm	$\pm\Delta K_a$ mm	$\pm\Delta K_w$	$\pm\Delta K_r$ mm	C_{Tdyn} MNm/rad
84-6	120	220	330	55	12500	1.10	0.7°	0.16	0.07
111-6	190	350	520	90	9450	1.80		0.16	0.13
132-6	350	650	950	160	7950	2.02		0.20	0.20
147-6	500	900	1350	230	7100	2.40		0.20	0.28
171-6	900	1700	2450	400	6100	2.74		0.24	0.57
182-6	1450	2600	4000	650	5750	2.86		0.29	0.66
202-6	2150	3900	5800	980	5200	3.06		0.29	0.77
218-6	3200	5800	8700	1450	4800	3.14		0.37	1.25
252-6	4500	8100	12000	2000	4150	3.70		0.45	1.55
267-6	6100	11000	16500	2800	3900	3.84		0.46	1.80

The permitted shaft misalignments ΔK_a , ΔK_r and ΔK_w are maximum values and must not occur at the same time (see following table).

T_{Kmax} permitted only five times per hour.

The values for torsional stiffness apply to the complete coupling. The torsional stiffness of the plate packs applies to the rated coupling torque T_{KN} . To determine the torsional stiffness for a specific operating point, e.g. for calculating torsional vibration, the manufacturer must be consulted.

Permitted shaft misalignments

Size	Permitted angular misalignment $\pm\Delta K_w$							
	0.0°	0.1°	0.2°	0.3°	0.4°	0.5°	0.6°	0.7°
	Permitted axial misalignment $\pm\Delta K_a$ in mm							
84-6	1.10	0.94	0.79	0.63	0.47	0.31	0.16	0.00
111-6	1.80	1.54	1.29	1.03	0.77	0.51	0.26	0.00
132-6	2.02	1.73	1.44	1.15	0.87	0.58	0.29	0.00
147-6	2.40	2.06	1.71	1.37	1.03	0.69	0.34	0.00
171-6	2.74	2.35	1.96	1.57	1.17	0.78	0.39	0.00
182-6	2.86	2.45	2.04	1.63	1.23	0.82	0.41	0.00
202-6	3.06	2.62	2.19	1.75	1.31	0.87	0.44	0.00
218-6	3.14	2.69	2.24	1.79	1.35	0.90	0.45	0.00
252-6	3.70	3.17	2.64	2.11	1.59	1.06	0.53	0.00
267-6	3.84	3.29	2.74	2.19	1.65	1.10	0.55	0.00

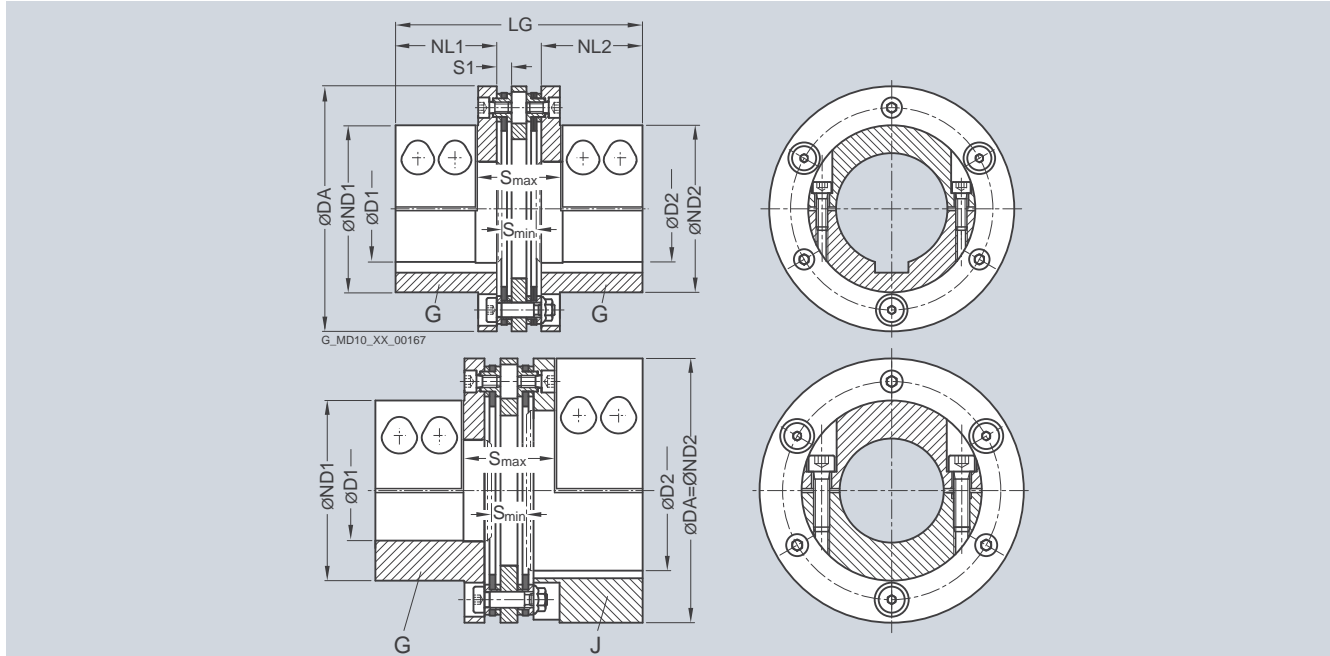
FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARF-6 Series

Types GG and GJ

Selection and ordering data

Radially freely dismountable, torsionally rigid coupling, available as types GG and GJ. Complete dismounting without moving the units with extremely short shaft distances.



The shaft tolerance must be specified in the order. To specify, -Z must be added to the product code and the order codes Y26 and Y27 with plain text specification of the shaft tolerance for D1 and D2 must be added as well.

Size	Rated torque T_{KN}	Maximum speed n_{Kmax}	Type	Dimensions in mm										Mass moment of inertia J	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m
				D1	D2	ND1	ND2	NL1/ NL2	S1	S	LG	Shaft distance min. max.				
mm	Nm	rpm		Keyway DIN 6885 max. Parallel key/ clamping seat	max. Parallel key	max. Parallel key	Clamping seat						kgm ²		kg	
84-6	120	12500	GG	25	25	25	50	50	40	6	16	39	99	0.0013	2LC0420-0AB99-0AA0	1.7
			GJ		40	48		84							0.0021	2LC0420-0AC99-0AA0
111-6	190	9450	GG	48	48	48	76	76	40	6	16	39	99	0.0043	2LC0420-1AB99-0AA0	2.9
			GJ		65	65		111							0.0067	2LC0420-1AC99-0AA0
132-6	350	7950	GG	52	52	52	90	90	55	8	18.5	45	134	0.0110	2LC0420-2AB99-0AA0	5.7
			GJ		75	80		132							0.0177	2LC0420-2AC99-0AA0
147-6	500	7100	GG	60	60	60	105	105	65	8	18.5	45	154	0.0199	2LC0420-3AB99-0AA0	8.3
			GJ		85	85		147							0.0324	2LC0420-3AC99-0AA0
171-6	900	6100	GG	70	70	70	122	122	75	9	22.5	56	179	0.0439	2LC0420-4AB99-0AA0	13.3
			GJ		100	100		171							0.0695	2LC0420-4AC99-0AA0
182-6	1450	5750	GG	70	70	70	126	126	85	11	29	71	205	0.0649	2LC0420-5AB99-0AA0	17.5
			GJ		100	110		182							0.1005	2LC0420-5AC99-0AA0
202-6	2150	5200	GG	75	75	75	138	138	85	11	29	71	205	0.0986	2LC0420-6AB99-0AA0	21.9
			GJ		115	125		202							0.1519	2LC0420-6AC99-0AA0
218-6	3200	4800	GG	90	90	90	149	149	95	14	35	86	234	0.1499	2LC0420-7AB99-0AA0	27.2
			GJ		130	130		218							0.2345	2LC0420-7AC99-0AA0
252-6	4500	4150	GG	100	100	100	166	166	105	17	40.5	101	264	0.2924	2LC0420-8AB99-0AA0	39.9
			GJ		140	150		252							0.4651	2LC0420-8AC99-0AA0
267-6	6100	3900	GG	110	110	100	177	177	110	17	40.5	102	275	0.3827	2LC0421-0AB99-0AA0	45.9
			GJ		150	160		267							0.6129	2LC0421-0AC99-0AA0

Jumbo hubs for larger shaft diameters.
G and J hubs in split clamping hub variant.
The hub variant with keyway rates as standard. Optionally, the shaft/hub connection can be implemented without keyway as a pure clamping seat.
For specification of plate pack, see under spare parts.
Weights and mass moments of inertia apply to the entire coupling with maximum bores D1/D2.

Ordering example:
ARPEX ARF-6 GG coupling, size 132-6,
for shaft diameter $\varnothing D1$ 45h6 mm, without keyway,
for shaft diameter $\varnothing D2$ 50k6 mm, with keyway to DIN 6885-1,
keyway width P9.

Product code: **2LC0420-2AB99-0AA0-Z**
L1A+M1C+L45+Y26+Y27
plain text to Y26: **h6**
plain text to Y27: **k6**

FLENDER Standard Couplings

Torsionally Rigid All-Steel Couplings - ARPEX ARF-6 Series

Spare and wear parts
Plate pack ARF-6

Selection and ordering data

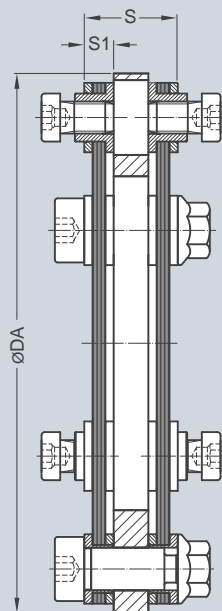
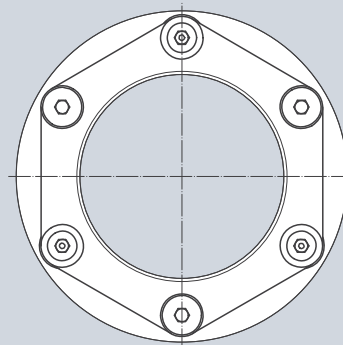


Figure 1



Ring plates (Fig. 1) are used for the plate packs.

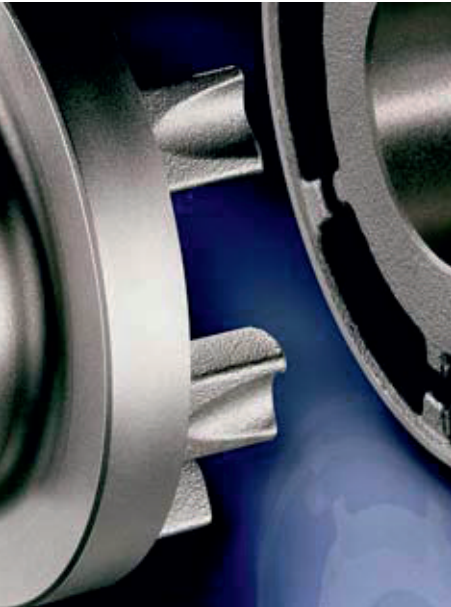
Dimensions in mm				Mass moment of inertia	Product code	Weight
Size	Type	S	S1	J		m
DA				kgm ²		kg
84-6	GG	19	6	0.0003	2LC0420-0AE00-0AA0	0.30
	GJ				2LC0420-0AH00-0AA0	
111-6	GG	19	6	0.0009	2LC0420-1AE00-0AA0	0.46
	GJ				2LC0420-1AH00-0AA0	
132-6	GG	24	8	0.0026	2LC0420-2AE00-0AA0	0.90
	GJ				2LC0420-2AH00-0AA0	
147-6	GG	24	8	0.0038	2LC0420-3AE00-0AA0	1.07
	GJ				2LC0420-3AH00-0AA0	
171-6	GG	29	9	0.0097	2LC0420-4AE00-0AA0	1.96
	GJ				2LC0420-4AH00-0AA0	
182-6	GG	35	11	0.0143	2LC0420-5AE00-0AA0	2.58
	GJ				2LC0420-5AH00-0AA0	
202-6	GG	35	11	0.0240	2LC0420-6AE00-0AA0	3.53
	GJ				2LC0420-6AH00-0AA0	
218-6	GG	44	14	0.0383	2LC0420-7AE00-0AA0	4.89
	GJ				2LC0420-7AH00-0AA0	
252-6	GG	54	17	0.0812	2LC0420-8AE00-0AA0	7.90
	GJ				2LC0420-8AH00-0AA0	
267-6	GG	55	17	0.1152	2LC0421-0AE00-0AA0	9.60
	GJ				2LC0421-0AH00-0AA0	

The plate pack unit for the ARF-6 series is readily available as a spare part in most sizes.

The plate pack unit comprises two preassembled plate packs with adapter disk, including screw connection.

The standard screw connection comprises hexagon socket head cap screws and close-fitting bolts with nuts.

Flexible Couplings N-EUPEX Series



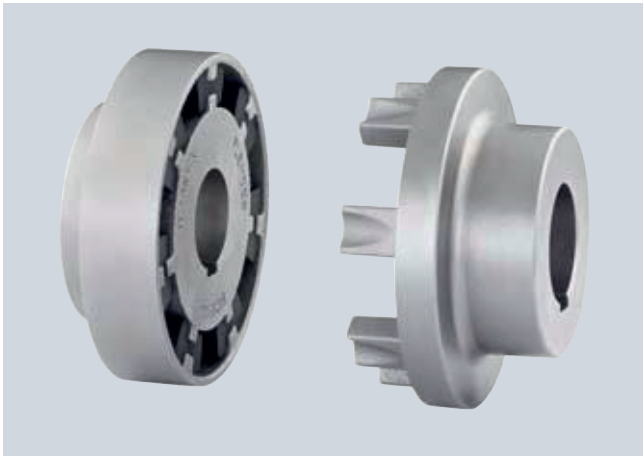
7/2	Overview
7/3	Benefits
7/3	Application
7/3	Function
7/4	Design
7/7	Technical data
7/10	Type A for easy elastomer flexible replacement
7/10	Selection and ordering data
7/11	Type B
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7/12	Type H
7/12	Selection and ordering data
7/14	Type D for easy elastomer flexible replacement
7/14	Selection and ordering data
7/16	Type E
7/16	Selection and ordering data
7/17	Type P with brake drum for easy elastomer flexible replacement
7/17	Selection and ordering data
7/18	Type O with brake drum
7/18	Selection and ordering data
7/19	Type DBDR with brake disk for easy elastomer flexible replacement
7/19	Selection and ordering data
7/20	Type DBD with brake disk for easy elastomer flexible replacement
7/20	Selection and ordering data
7/21	Type EBD with brake disk
7/21	Selection and ordering data
7/22	Type ADS for easy elastomer flexible replacement
7/22	Selection and ordering data
7/23	Type BDS
7/23	Selection and ordering data
7/24	Type HDS
7/24	Selection and ordering data
7/26	Spare and wear parts
7/26	Selection and ordering data

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

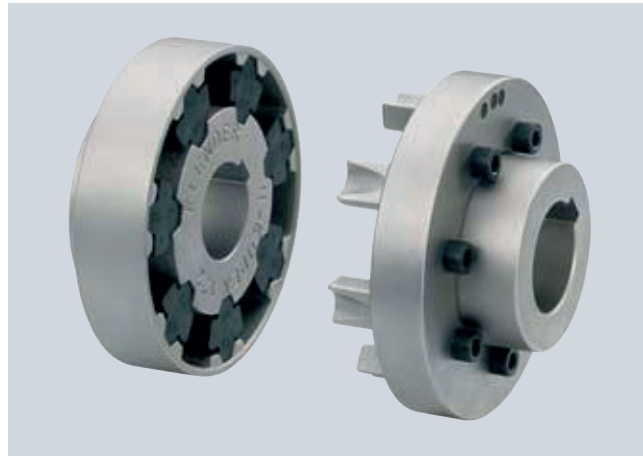
Overview



N-EUPEX as overload-holding, fail-safe series

N-EUPEX and N-EUPEX DS claw couplings connect machines. They compensate for shaft misalignment, generating only low restorative forces.

The torque is conducted through elastomer flexibles, so the coupling has typically flexible rubber properties.



N-EUPEX DS as overload-shedding, non-fail-safe series

N-EUPEX couplings are overload-holding. By contrast, the N-EUPEX DS series is designed so that overload or advanced wear causes irreparable damage to the elastomer flexibles. The metal parts of N-EUPEX DS couplings can then rotate freely against one another without contact.

7

Elastomer flexible of the N-EUPEX series

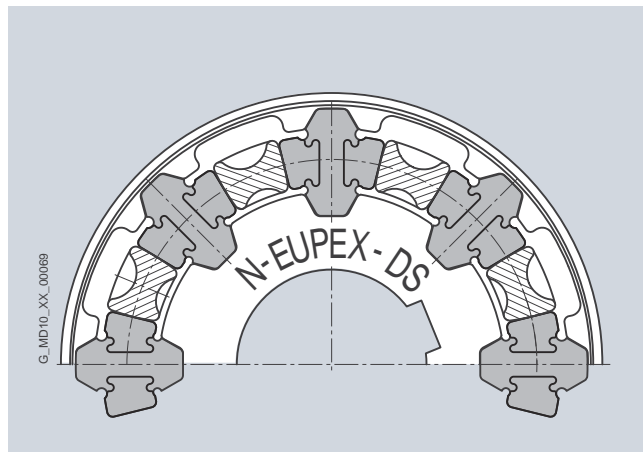
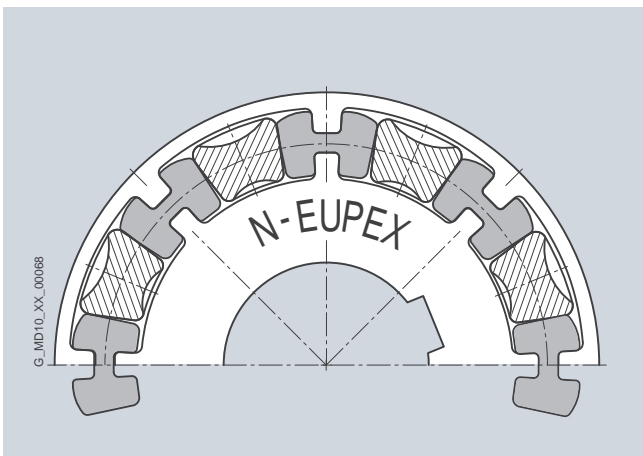


The flexibles of the N-EUPEX coupling are subjected to compression. If the flexibles are irreparably damaged, the hub parts come into contact with metal. This "emergency operation capability" is required, e.g., in the case of fire pump drives.

Elastomer flexible of the N-EUPEX DS series



The flexibles of the N-EUPEX DS series are subjected to compression and bending forces. If the flexibles are irreparably damaged, the metal parts turn against one another without contact, and the power transmission is separated. Fitting new flexibles will make the coupling once more usable. The capacity of the N-EUPEX DS series to shed overloads is especially in demand for highly sensitive machines.



FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

Benefits

N-EUPEX couplings are designed on the modular principle and have a very simple construction. N-EUPEX types are made up of subassemblies to suit requirements. The couplings are assembled by simply fitting the coupling halves together. Wear is restricted to the elastomer flexibles, which must be replaced at the end of their service life.

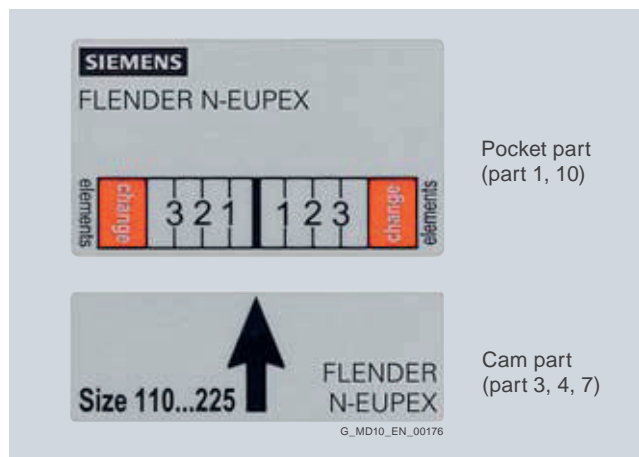
Depending on type, the elastomer flexibles can be changed without moving the coupled machines.

The coupling parts are readily available from stock and are mostly finish-machined, i.e. with finished bore, keyway, set screw and balancing.

Optionally:

The wear indicator for N-EUPEX couplings enables the condition of the flexible to be easily assessed. The wear condition can also be ascertained with the aid of a stroboscope while the coupling is rotating. The production process can thus continue undisturbed.

If the stroboscope is to be used in a potentially explosive environment, you can enquire about the equipment for this at FLENDER.



The wear indicator must be attached to the outside diameter of the coupling after the coupling has been fitted.

Application


The N-EUPEX coupling is available as a catalog standard in 23 sizes with a rated torque of between 19 Nm and 62000 Nm. The coupling is suitable for use at ambient temperatures of between -30 °C and $+80\text{ °C}$. By using alternative elastomer buffers, the permissible ambient temperature range can be extended to between -50 °C and $+100\text{ °C}$.

Frequently, the coupling is used to connect the motor to the gear unit input shaft. The coupling is suitable especially for drives with uniform to average dynamic loads. Examples of applications are pump drives, ventilator drives or crane running gear. Furthermore, N-EUPEX couplings can be used as add-on couplings, particularly on FLUDEX fluid couplings or ARPEX AKR safety couplings. In the case of drives with a diesel engine, N-EUPEX couplings are suitable for driven machines with a low mass moment of inertia.

In the case of diesel engine drives, the actual dynamic coupling load should be checked by measurement or torsional vibration calculations.



Coupling suitable for potentially explosive environments. Complies with Directive 94/9/EC for:

CE  II 2 G T4 / T5 / T6 D120 °C
 $-30\text{ °C} \leq T_a \leq +80\text{ °C} / +50\text{ °C} / +40\text{ °C}$

CE  I M2

Function

The motor torque is transmitted to the hub at the drive end via the shaft-hub connection, which is mostly designed as a keyway connection. The torque is transmitted to the hub on the output side with the aid of elastomer flexibles. The hub on the output side further transmits the torque to the driven machine or a gear unit placed in between. Because of the primarily compression-loaded elastomer flexibles, the coupling has a progressive torsional stiffness.

In the case of the N-EUPEX DS coupling series, the elastomer flexible is subjected to bending and compression loads. In the event of overload or advanced wear, the coupling disconnects positively and the flexibles are irreparably damaged. The metal parts then rotate without touching one another. After new elastomer flexibles are fitted, the N-EUPEX DS coupling is once more operable.

N-EUPEX DS couplings are maintenance-free, even in potentially explosive environments, so long as the possible torque interruption does not lead to an unacceptable disruption of the production process.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

Design

N-EUPEX and N-EUPEX DS couplings consist of two hub parts mounted on the machine shafts. The coupling parts are connected positively by means of elastomer flexibles. On the two-part variant, the elastomer flexibles can be changed only if one

of the coupled machines is moved. On the three-part variants, the bolted cam ring can be released and moved to enable the flexible to be changed without moving the coupled machines.

Materials

Cam parts, pocket parts, adapters and hubs

Grey cast iron EN-GJL-250

Flexible materials

• N-EUPEX series

Material/description	Hardness	Identification	Ambient temperature
NBR standard type	80 Shore A	Flexible black with blue stripe	-30 °C ... +80 °C
NBR soft	65 Shore A	Flexible black with green stripe	-30 °C ... +80 °C
NBR hard	90 Shore A	Flexible black with magenta stripe	-30 °C ... +80 °C
NBR normal low-backlash	80 Shore A	Flexible black with yellow stripe	-30 °C ... +80 °C
NBR soft low-backlash	65 Shore A	Flexible black with white stripe	-30 °C ... +80 °C
NR for low temperature	80 Shore A	Flexible black with orange stripe	-50 °C ... +50 °C
HNBR high temperature	80 Shore A	Flexible black with red stripe	-10 °C ... +100 °C

• N-EUPEX DS series

Material/description	Hardness	Identification	Ambient temperature
NBR compound flexibles for sizes 66 ... 272	80/90 Shore A 2 components	Flexible black	-30 °C ... +80 °C
NBR hard for sizes 305 ... 556	90 Shore A	Flexible black	-30 °C ... +80 °C
PU electrically insulating	95 Shore A	Flexible blue	-30 °C ... +50 °C

PU elastomer flexibles in special design on request.

The technical data and product codes do not include the flexible variants NBR low-backlash, HNBR high temperature and NR low temperature and the DS flexibles polyurethane electrically insulating.

Technical data, prices and product codes on request.

Brake disks

EN-GJS-400 spheroidal graphite cast iron or S355J2G3 steel

Brake drums

Grey cast iron EN-GJL-250

Low-temperature application

Shock loads in the drive caused by e.g. starting of drives with large masses to be accelerated (e.g. in fan drives) result in high component loads, particularly at low temperatures. For such applications a particularly robust coupling series must be selected. Of the flexible couplings, the RUPEX pin-and-bush coupling is especially suited for this.

Types of N-EUPEX claw coupling

Type	Description
A	Fail-safe, 3-part
B	Fail-safe, 2-part
D	Fail-safe, 3-part, flange variant
E	Fail-safe, 2-part, flange variant
H	Fail-safe, with adapter
O	Fail-safe, 2-part, with brake drum
P	Fail-safe, 3-part, with brake drum
EBD	Fail-safe, 2-part, with brake disk
DBD	Fail-safe, 3-part, with brake disk
DBDR	Fail-safe, 3-part, with brake disk, brake disk radially dismountable
ADS	Non-fail-safe, 3-part
BDS	Non-fail-safe, 2-part
HDS	Non-fail-safe, with adapter

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

Types of N-EUPEX claw coupling on request

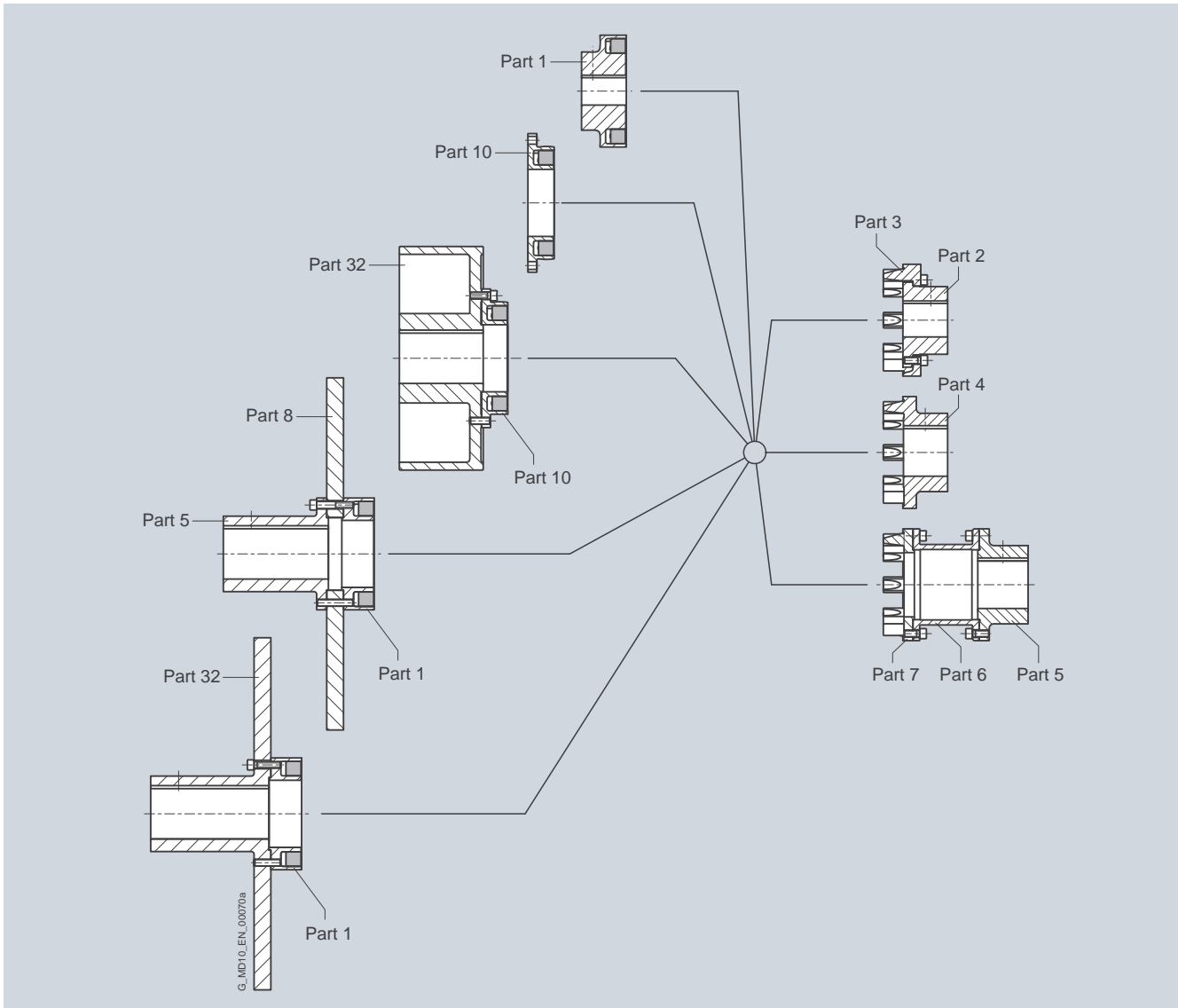
Type	Description
AT	Fail-safe, 3-part, with Taper clamping bush
BT	Fail-safe, 2-part, with Taper clamping bush
G	Fail-safe, 2-part, with intermediate shaft
F	Fail-safe, 3-part, with intermediate shaft
K	Fail-safe, 3-part, with brake drum to customer's requirement
L	Fail-safe, 2-part, with brake drum to customer's requirement
M	Fail-safe, 2-part, with flange dimensions to SAE J620d

FLENDER Standard Couplings

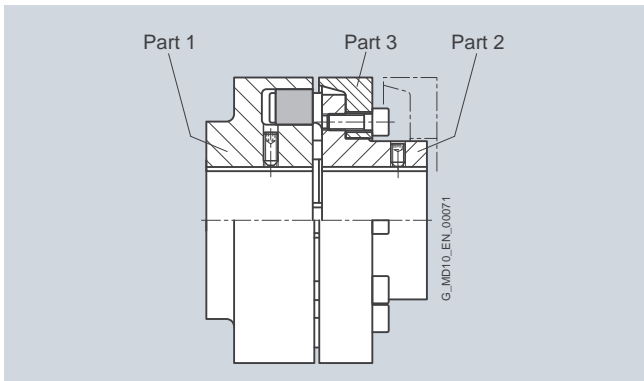
Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

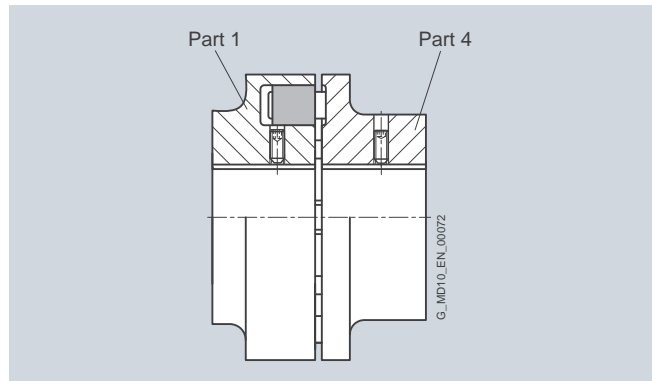
Modular principle of N-EUPEX types



7



Types A and ADS

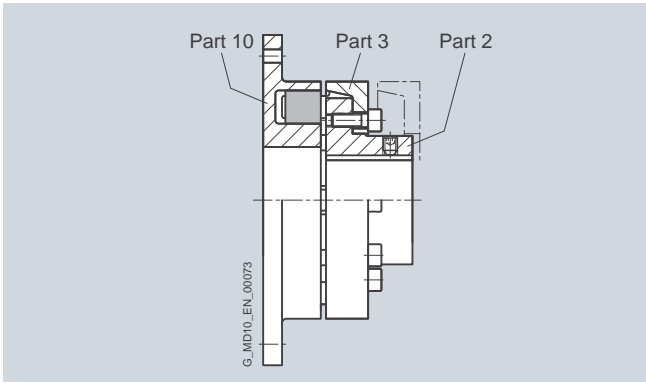


Types B and BDS

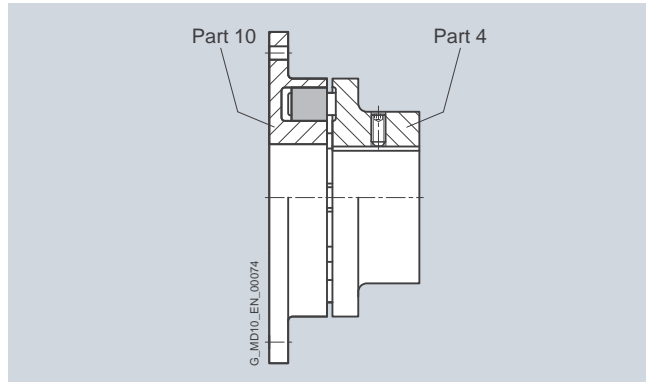
FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

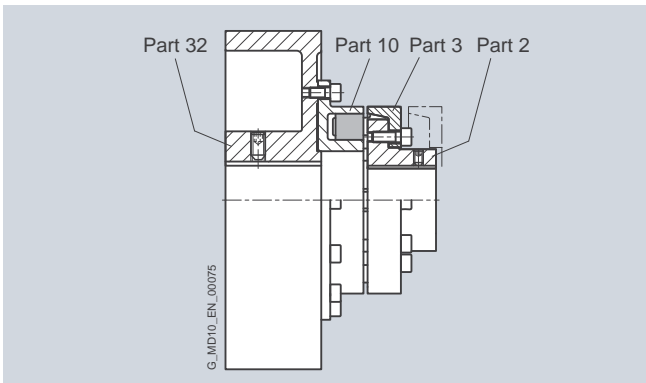
General information



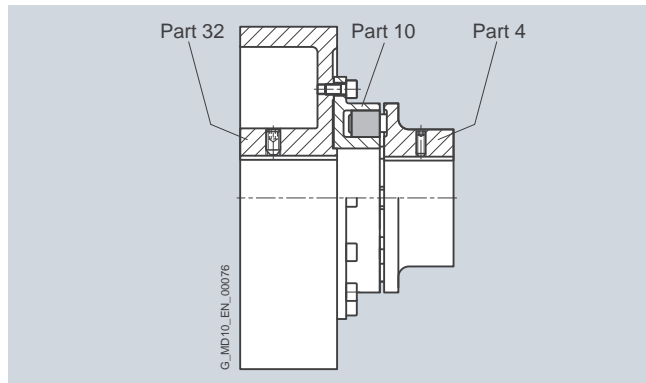
Type D



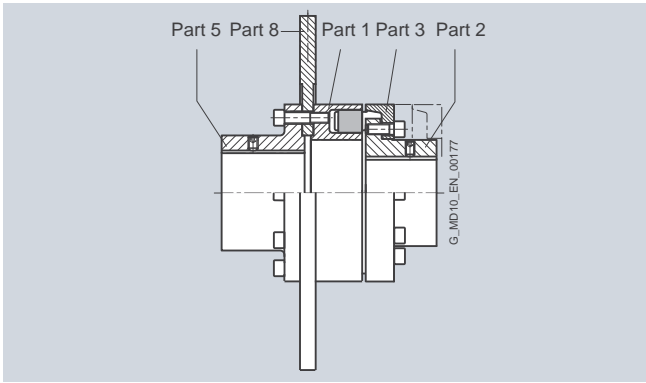
Type E



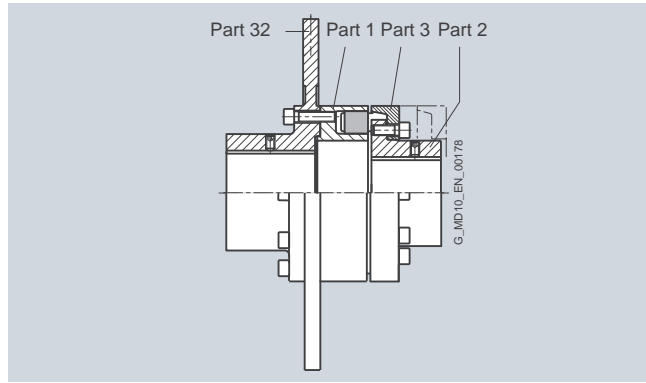
Type P



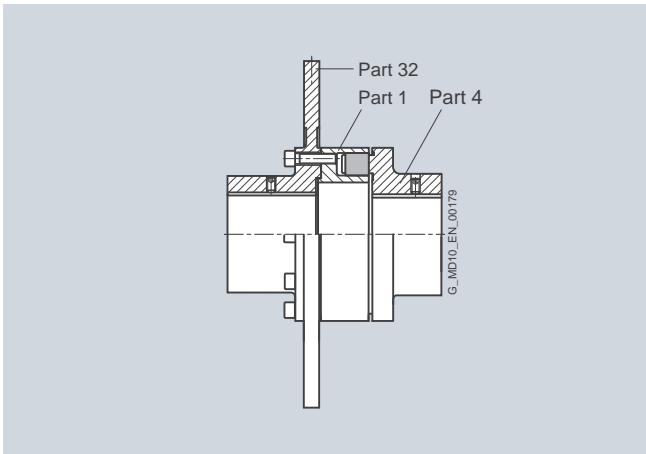
Type O



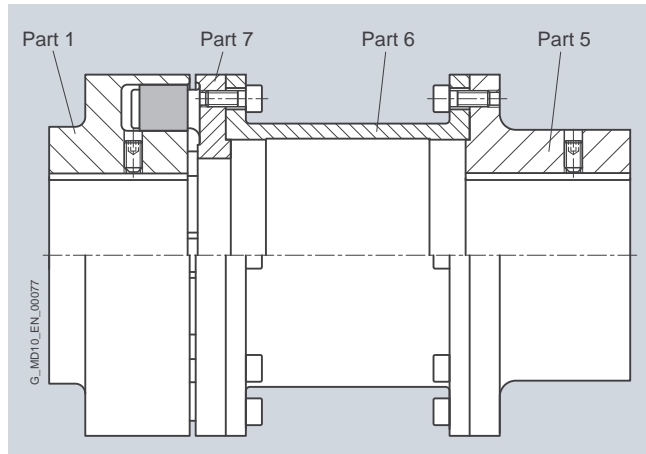
Type DBDR



Type DBD



Type EBD



Types H and HDS

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

Technical data

Power ratings of the N-EUPEX series

Size	Rated torque for flexible type			Torsional stiffness at 50 % capacity utilization for flexible type			Assembly Gap dimension ΔS mm	Permitted shaft misalignment at $n = 1500 \text{ rpm}$ ¹⁾		
	65 ShoreA	80 ShoreA	90 ShoreA	65 ShoreA	80 ShoreA	90 ShoreA		Axial ΔK_a mm	Radial ΔK_r mm	Angle ΔK_w °
	T_{KN} Nm	T_{KN} Nm	T_{KN} Nm	$C_{Tdyn 50 \%}$ kNm/rad	$C_{Tdyn 50 \%}$ kNm/rad	$C_{Tdyn 50 \%}$ kNm/rad				
58	11	19	19	0.22	0.5	0.9	1.0	0.2	0.2	0.15
68	21	34	34	0.4	0.9	1.7	1.0	0.2	0.2	0.15
80	37	60	60	0.9	2.4	4.2	1.0	0.2	0.2	0.12
95	63	100	100	1.5	4	7	1.0	0.2	0.2	0.12
110	100	160	160	2.5	6	11	1.0	0.2	0.2	0.10
125	150	240	240	3.5	9	16	1.0	0.25	0.25	0.10
140	230	360	360	5.5	14	23	1.0	0.25	0.25	0.10
160	350	560	560	11	28	48	2.0	0.3	0.3	0.10
180	550	880	880	18	48	83	2.0	0.3	0.3	0.10
200	850	1340	1340	30	80	130	2.0	0.3	0.3	0.09
225	1260	2000	2000	50	125	200	2.0	0.35	0.35	0.09
250	1760	2800	2800	65	170	290	2.5	0.35	0.35	0.08
280	2460	3900	3900	95	250	400	2.5	0.4	0.4	0.08
315	3500	5500	5500	160	410	660	2.5	0.4	0.4	0.08
350	4850	7700	7700	230	590	940	2.5	0.5	0.5	0.08
400	6500	10300	10300	330	860	1400	2.5	0.5	0.5	0.08
440	8500	13500	13500	470	1200	2000	2.5	0.6	0.6	0.08
480	10500	16600	16600	560	1500	2300	2.5	0.6	0.6	0.07
520	13300	21200	21200	660	1700	2750	2.5	0.65	0.65	0.07
560	18300	29000	29000	1200	3100	4200	3.0	0.65	0.65	0.07
610	24000	38000	38000	1600	4200	5500	3.0	0.75	0.75	0.07
660	30900	49000	49000	2000	5100	6700	3.0	0.8	0.8	0.07
710	39000	62000	62000	2600	6700	8700	3.0	0.9	0.9	0.07

For maximum coupling torque:

$$T_{Kmax} = 3.0 \cdot T_{KN}$$

For coupling overload torque:

$$T_{KOL} = 3.5 \cdot T_{KN}$$

For coupling fatigue torque: $T_{KW} = 0.15 \cdot T_{KN}$, where $T_N > T_W$ must be adhered to.

Torsional stiffness and damping

The values stated in the above table apply to a capacity utilization of 50 %, an excitation amplitude of 10 % T_{KN} with the frequency 10 Hz and an ambient temperature of 20 °C. Dynamic torsional stiffness is dependent on load and increases in proportion to capacity utilization. The following table shows the correction factors for different nominal loads.

$$C_{Tdyn} = C_{Tdyn 50 \%} \cdot FKC$$

	Capacity utilization T_N / T_{KN}						
	20 %	40 %	50 %	60 %	70 %	80 %	100 %
Sizes 58 ... 520							
Correction factor FKC 65/80 ShoreA	0.5	0.8	1	1.2	1.3	1.6	2.0
Correction factor FKC 90 ShoreA	0.7	0.9	1	1.1	1.2	1.3	1.5
Sizes 560 ... 710							
Correction factor FKC 65/80 ShoreA	0.4	0.8	1	1.2	1.4	1.6	2.2
Correction factor FKC 90 ShoreA	0.5	0.8	1	1.2	1.3	1.5	1.9

The damping coefficient is $\Psi = 1.4$

Furthermore, torsional stiffness and damping depend on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

¹⁾ The maximum speed of the respective type must be noted. For further information on permissible shaft misalignment, please see the operating instructions.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size must be observed!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

	Speed in rpm			
	500	1000	1500	3000
Correction factor FKV	1.7	1.2	1.0	0.70

The axial misalignment may occur dynamically at frequencies up to 10 Hz. For fitting, a maximum gap dimension of $S_{max} = S + \Delta S$ and a minimum gap dimension of $S_{min} = S - \Delta S$ are permitted.

Shaft misalignments ΔK_a , ΔK_r and ΔK_w may occur simultaneously.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

Power ratings of the N-EUPEX DS series

Size	Rated torque T_{KN} Nm	Torsional stiffness at 50 % capacity utilization C_{Tdyn} kNm/rad	Assembly Gap dimension ΔS mm	Permitted shaft misalignment at speed $n = 1500$ rpm		
				Axial ΔK_a mm	Radial ΔK_r mm	Angle ΔK_w °
66	19	0.7	1.0	0.2	0.2	0.15
76	34	1.3	1.0	0.2	0.2	0.15
88	60	2.5	1.0	0.2	0.2	0.12
103	100	3.8	1.0	0.2	0.2	0.12
118	160	6	1.0	0.2	0.2	0.10
135	240	10	1.0	0.25	0.25	0.10
152	360	13	1.0	0.25	0.25	0.10
172	560	26	2.0	0.3	0.3	0.10
194	880	45	2.0	0.3	0.3	0.10
218	1340	67	2.0	0.3	0.3	0.09
245	2000	101	2.0	0.35	0.35	0.09
272	2800	142	2.5	0.35	0.35	0.08
305	3900	204	2.5	0.4	0.4	0.08
340	5500	335	2.5	0.4	0.4	0.08
380	7700	459	2.5	0.5	0.5	0.08
430	10300	699	2.5	0.5	0.5	0.08
472	13500	941	2.5	0.6	0.6	0.08
514	16600	1209	2.5	0.6	0.6	0.07
556	21200	1474	2.5	0.65	0.65	0.07

Flexibles of sizes 66 to 272 are of the compound type with a hard core and soft thrust pieces. Sizes 305 to 556 are completely made of 90 ShoreA NBR material.

For maximum coupling torque:

$$T_{Kmax} = 2.0 \cdot T_{KN}$$

For coupling overload torque:

$$T_{KOL} = 3.0 \cdot T_{KN}$$

For coupling fatigue torque:

$$T_{KW} = 0.15 \cdot T_{KN}$$

Torsional stiffness and damping

The values stated in the above table apply to a capacity utilization of 50 %, an excitation amplitude of 10 % T_{KN} with the frequency 10 Hz and an ambient temperature of 20 °C. Dynamic torsional stiffness is dependent on load and increases in proportion to capacity utilization. The following table shows the correction factors for different rated loads.

$$C_{Tdyn} = C_{Tdyn 50\%} \cdot FKC$$

Correction factor FKC	Capacity utilization T_N / T_{KN}						
	20 %	40 %	50 %	60 %	70 %	80 %	100 %
	0.7	0.9	1	1.1	1.2	1.3	1.5

The damping coefficient is $\Psi = 1.4$

Torsional stiffness and damping is further dependent on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size must be noted!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

Correction factor FKV	Speed in rpm			
	500	1000	1500	3000
	1.6	1.20	1.0	0.70

The axial misalignment may occur dynamically at frequencies up to 10 Hz. For fitting, a maximum gap dimension of $S_{max} = S + \Delta S$ and a minimum gap dimension of $S_{min} = S - \Delta S$ are permitted.

Shaft misalignments ΔK_a , ΔK_r and ΔK_w may occur simultaneously.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

General information

Assignment of N-EUPEX sizes to IEC standard motors

The assignment applies to an application factor of 1.25.

Outputs P_M of IEC motors and assigned N-EUPEX couplings

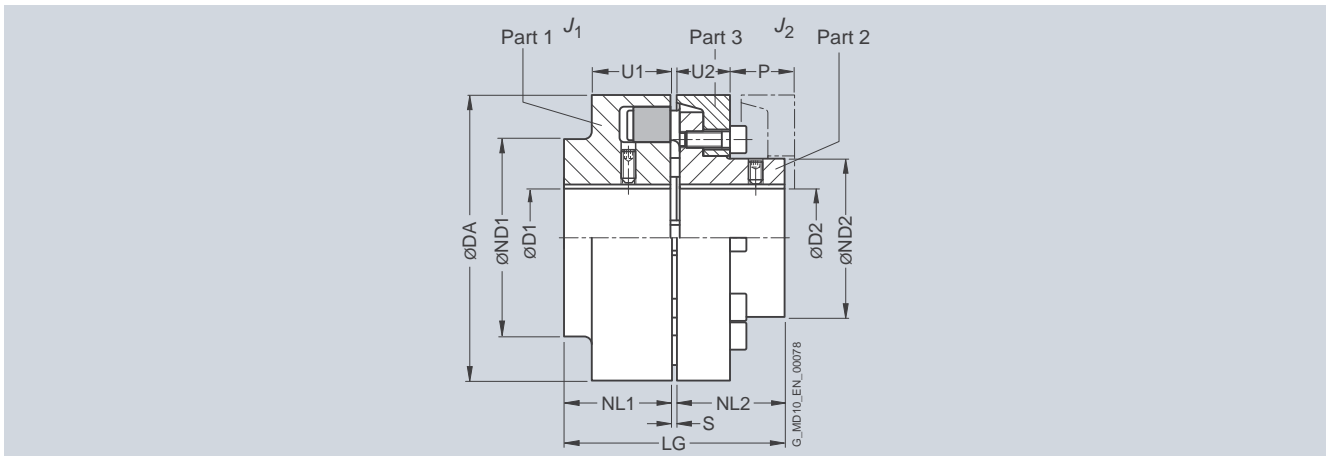
Three-phase motor Size	Output at ≈ 3000 rpm P_M kW	N-EUPEX coupling Size	Output at ≈ 1500 rpm P_M kW	N-EUPEX coupling Size	Output at ≈ 1000 rpm P_M kW	N-EUPEX coupling Size	Output at ≈ 750 rpm P_M kW	N-EUPEX coupling Size	DE shaft end D x E to IEC	
									D mm	E mm
56	0.09	58	0.06	58					9	20
	0.12	58	0.09	58						
63	0.18	58	0.12	58					11	23
	0.25	58	0.18	58						
71	0.37	58	0.25	58					14	30
	0.55	58	0.37	58						
80	0.75	58	0.55	58	0.37	58			19	40
	1.1	58	0.75	58	0.55	58				
90 S	1.5	68	1.1	68	0.75	68			24	50
90 L	2.2	68	1.5	68	1.1	68			24	50
100 L	3	80	2.2	80	1.5	80	0.75	80	28	60
			3	80			1.1	80		
112 M	4	80	4	80	2.2	80	1.5	80	28	60
132 S	5.5	95	5.5	95	3	95	2.2	95	38	80
	7.5	95								
132 M			7.5	95	4	95	3	95	38	80
					5.5	95				
160 M	11	95	11	95	7.5	95	4	95	42	110
	15	95					5.5	95		
160 L	18.5	95	15	110	11	110	7.5	110	42	110
180 M	22	110	18.5	110					48	110
180 L			22	125	15	125	11	125	48	110
200 L	30	125	30	125	18.5	125	15	125	55	110
	37	125			22	140				
225 S			37	140			18.5	140	55	110
									60	140
225 M	45	125	45	140	30	140	22	140	55	110
									60	140
250 M	55	140	55	160	37	160	30	160	60	140
									65	140
280 S	75	160	75	180	45	180	37	180	65	140
									75	140
280 M	90	160	90	180	55	180	45	180	65	140
									75	140
315 S	110	160	110	200	75	200	55	200	65	140
									80	170
315 M	132	160	132	200	90	200	75	200	65	140
									80	170

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type A for easy elastomer flexible replacement

Selection and ordering data



Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm											Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg								
			Bore with keyway to DIN 6885		DA		ND1		ND2		NL1/ NL2		S				U1		U2		P		LG	
			D1 min.	D2 max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
110	160	5300	48	38	110	86	62	40	3	34	20	33	83	0.003	2LC0100-4AB	■ ■ -0AA0	3							
125	240	5100	55	45	125	100	75	50	3	36	23	38	103	0.005	2LC0100-5AB	■ ■ -0AA0	4.8							
140	360	4900	60	50	140	100	82	55	3	34	28	43	113	0.008	2LC0100-6AB	■ ■ -0AA0	6							
160	560	4250	65	58	160	108	95	60	4	39	28	47	124	0.014	2LC0100-7AB	■ ■ -0AA0	8.4							
180	880	3800	75	65	180	125	108	70	4	42	30	50	144	0.025	2LC0100-8AB	■ ■ -0AA0	12							
200	1340	3400	85	75	200	140	122	80	4	47	32	53	164	0.04	2LC0101-0AB	■ ■ -0AA0	17							
225	2000	3000	90	85	225	150	138	90	4	52	38	61	184	0.08	2LC0101-1AB	■ ■ -0AA0	23							
250	2800	2750	46	100	95	250	165	155	100	6	60	42	69	0.13	2LC0101-2AB	■ ■ -0AA0	31							
280	3900	2450	49	110	54	105	280	180	172	110	6	65	42	73	226	0.20	2LC0101-3AB	■ ■ -0AA0	41					
315	5500	2150	49	100	46	100	315	165	165	125	6	70	47	78	256	0.32	2LC0101-4AB	■ ■ -0AA0	57					
			90	120	90	120	200	200						0.35			61							
350	7700	2000	61	110	61	110	350	180	180	140	6	74	51	83	286	0.54	2LC0101-5AB	■ ■ -0AA0	78					
			90	140	90	140	230	230						0.61			82							
400	10300	1700	66	120	66	120	400	200	200	160	6	78	56	88	326	1.0	2LC0101-6AB	■ ■ -0AA0	112					
			100	150	100	150	250	250						1.1			117							
440	13500	1550	80	130	80	130	440	215	215	180	7	86	64	99	367	1.5	2LC0101-7AB	■ ■ -0AA0	147					
			120	160	120	160	265	265						1.7			155							
480	16600	1400	90	145	90	145	480	240	240	190	7	90	65	104	387	2.3	2LC0101-8AB	■ ■ -0AA0	184					
			136	180	136	180	300	300						2.6			200							
520	21200	1300	100	150	100	150	520	250	250	210	7	102	68	115	427	3.3	2LC0102-0AB	■ ■ -0AA0	234					
			140	190	140	190	315	315						3.7			254							
560	29000	1200	120	200	120	200	560	320	320	220	9	115	80	125	449	6.0	2LC0102-1AB	■ ■ -0AA0	329					
610	38000	1100	130	220	130	220	610	352	352	240	9	121	88	135	489	9.0	2LC0102-2AB	■ ■ -0AA0	416					
660	49000	1000	140	240	140	240	660	384	384	260	9	132	96	145	529	13.5	2LC0102-3AB	■ ■ -0AA0	546					
710	62000	1000	140	260	140	260	710	416	416	290	9	138	102	155	589	19	2LC0102-4AB	■ ■ -0AA0	680					

- øD1:
 - Without finished bore – Without order codes
 - Without finished bore sizes 315 to 520 for 2nd diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- øD2:
 - Without finished bore – Without order codes
 - Without finished bore sizes 315 to 520 for 2nd diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to maximum bore diameters.

The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

Ordering example:
 N-EUPEX A coupling, size 200,
 Part 1: Bore D1 65H7 mm, keyway to DIN 6885-1 and set screw,
 Part 2: Bore D2 50H7 mm, keyway to DIN 6885-1 and set screw.

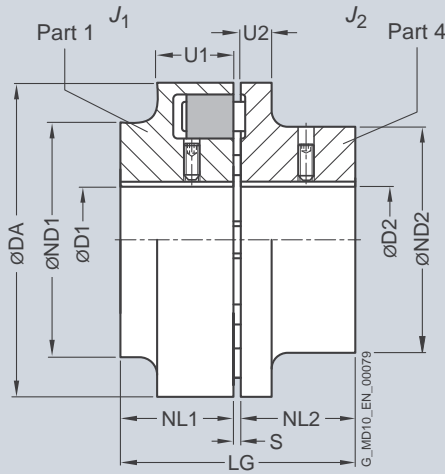
Product code:
2LC0101-0AB99-0AA0
L1F+M1C

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type B

Selection and ordering data



Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm										Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			Bore with keyway to DIN 6885		DA	ND1	ND2	NL1/ S NL2		U1	U2	LG					
			D1 min.	D2 max.													
58	19	7500	19	24	58	58	40	20	3	20	8	43	0.0001	2LC0100-0AA ■ ■ -0AA0	0.4		
68	34	7000	24	28	68	68	50	20	3	20	8	43	0.0002	2LC0100-1AA ■ ■ -0AA0	0.54		
80	60	6000	30	38	80	80	68	30	3	30	10	63	0.0006	2LC0100-2AA ■ ■ -0AA0	1.3		
95	100	5500	42	42	95	76	76	35	3	30	12	73	0.0013	2LC0100-3AA ■ ■ -0AA0	2.2		
110	160	5300	48	48	110	86	86	40	3	34	14	83	0.003	2LC0100-4AA ■ ■ -0AA0	3.3		
125	240	5100	55	55	125	100	100	50	3	36	18	103	0.006	2LC0100-5AA ■ ■ -0AA0	5.2		
140	360	4900	60	60	140	100	100	55	3	34	20	113	0.007	2LC0100-6AA ■ ■ -0AA0	5.6		
160	560	4250	65	65	160	108	108	60	4	39	20	124	0.01	2LC0100-7AA ■ ■ -0AA0	7.8		
180	880	3800	75	75	180	125	125	70	4	42	20	144	0.02	2LC0100-8AA ■ ■ -0AA0	11.5		
200	1340	3400	85	85	200	140	140	80	4	47	24	164	0.04	2LC0101-0AA ■ ■ -0AA0	16		
225	2000	3000	90	90	225	150	150	90	4	52	18	184	0.07	2LC0101-1AA ■ ■ -0AA0	20		
250	2800	2750	46	100	46	100	250	165	165	100	6	60	18	206	0.12	2LC0101-2AA ■ ■ -0AA0	29
280	3900	2450	49	110	54	110	280	180	180	110	6	65	20	226	0.18	2LC0101-3AA ■ ■ -0AA0	38
ØD1:															1		
• Without finished bore – Without order codes															9		
• With finished bore – With order codes for diameter and tolerance (product code without -Z)															9		
ØD2:															1		
• Without finished bore – Without order codes															9		
• With finished bore – With order codes for diameter and tolerance (product code without -Z)															9		

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:

N-EUPEX B coupling, size 95,
 Part 1: Bore D1 42H7 mm, keyway to DIN 6885-1 and set screw,
 Part 2: Bore D2 32H7 mm, keyway to DIN 6885-1 and set screw.

Product code:
2LC0100-3AA99-0AA0
LOX+MOT

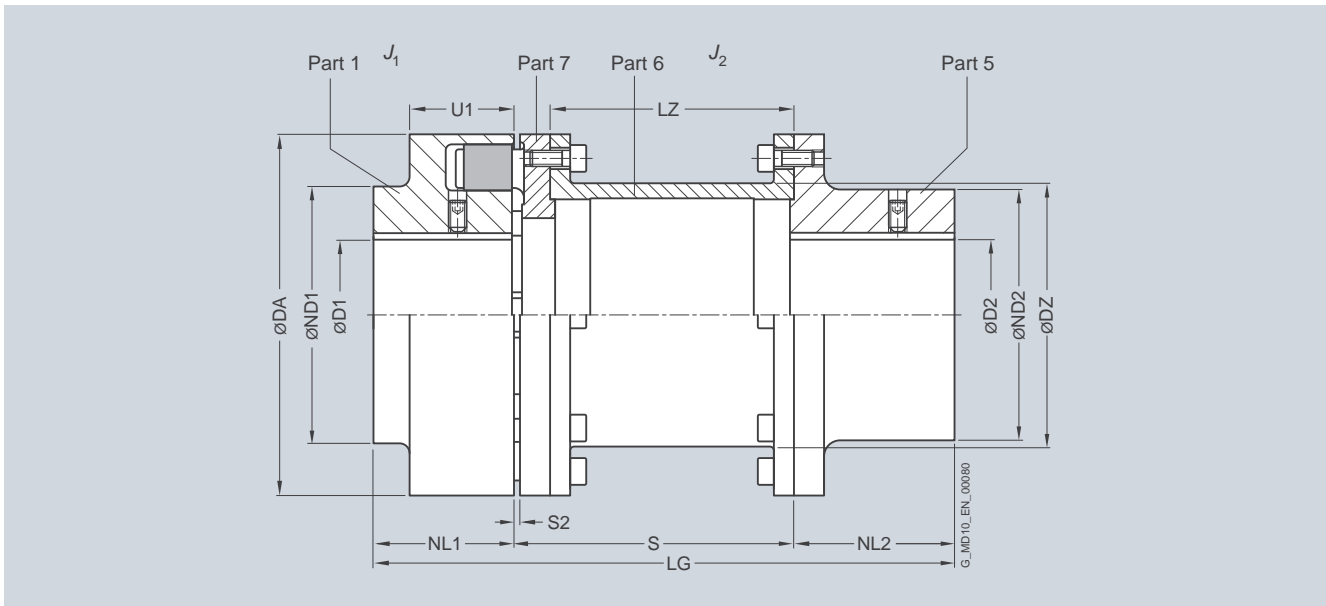
The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type H

Selection and ordering data



For dimension U1, see type A

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885													Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg			
			D1 min.	D2 max.	DA	ND1	ND2	NL1	NL2	S2	S	LZ	DZ	LG	J_1	J_2						
80	60	6000	30	32	80	80	55	30	45	5	100	87	51	175	0.0006	0.001	2LC0100-2AG	-0AA0	2.6			
											140	127	215	0.001						2LC0100-2AG	-0AB0	2.7
95	100	5500	42	42	95	76	70	35	45	5	100	87	63	180	0.001	0.003	2LC0100-3AG	-0AA0	3.5			
											140	127	220	0.003						2LC0100-3AG	-0AB0	3.8
110	160	5300	48	48	110	86	80	40	50	5	100	85	73	190	0.003	0.005	2LC0100-4AG	-0AA0	5.2			
											140	125	230	0.006						2LC0100-4AG	-0AB0	5.4
											180	165	280	0.006						2LC0100-4AG	-0AC0	6.0
125	240	5100	55	55	125	100	90	50	50	5	100	85	85	200	0.005	0.01	2LC0100-5AG	-0AA0	7.2			
											140	125	240	0.01						2LC0100-5AG	-0AB0	7.7
											180	165	290	0.011						2LC0100-5AG	-0AC0	8.2
											200	185	320	0.012						2LC0100-5AG	-0AD0	8.5
											250	235	380	0.012						2LC0100-5AG	-0AE0	9
140	360	4900	60	60	140	100	100	55	65	5	100	82	91	220	0.007	0.018	2LC0100-6AG	-0AA0	10.0			
											140	122	260	0.019						2LC0100-6AG	-0AB0	10.5
											180	162	300	0.02						2LC0100-6AG	-0AC0	11.0
											200	182	320	0.021						2LC0100-6AG	-0AD0	11.3
											250	232	385	0.022						2LC0100-6AG	-0AE0	12.0
											250	232	385	0.022						2LC0100-6AG	-0AE0	12.0
160	560	4250	65	65	160	108	108	60	70	6	100	81.5	111	230	0.013	0.03	2LC0100-7AG	-0AA0	13			
											140	121.5	270	0.032						2LC0100-7AG	-0AB0	13.7
											180	161.5	310	0.034						2LC0100-7AG	-0AC0	14.5
											200	181.5	330	0.035						2LC0100-7AG	-0AD0	14.9
											250	231.5	390	0.037						2LC0100-7AG	-0AE0	15.9
180	880	3800	75	75	180	125	125	70	80	6	140	121.5	131	290	0.023	0.054	2LC0100-8AG	-0AB0	18.5			
											180	161.5	330	0.058						2LC0100-8AG	-0AC0	19.4
											200	181.5	350	0.060						2LC0100-8AG	-0AD0	21
											250	231.5	400	0.065						2LC0100-8AG	-0AE0	22
											250	231.5	400	0.065						2LC0100-8AG	-0AE0	22

- | | | |
|------|--|---|
| ØD1: | • Without finished bore – Without order codes | 1 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |
| ØD2: | • Without finished bore – Without order codes | 1 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type H

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885														Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg								
			D1		D2		DA	ND1	ND2	NL1	NL2	S2	S	LZ	DZ	LG	J_1	J_2										
			min.	max.	min.	max.																						
200	1340	3400	85	85	200	140	140	80	90	6	140	118.5	144	310	0.04	0.095	2LC0101-0AG ■ ■ ■ -0AB0	25.6										
																					2LC0101-0AG ■ ■ ■ -0AC0	26.5						
																								2LC0101-0AG ■ ■ ■ -0AD0	27.2			
																									2LC0101-0AG ■ ■ ■ -0AE0	28.5		
225	2000	3000	90	90	225	150	150	90	100	6	140	118.5	169	330	0.07	0.158	2LC0101-1AG ■ ■ ■ -0AB0	34										
																								2LC0101-1AG ■ ■ ■ -0AC0	35			
																									2LC0101-1AG ■ ■ ■ -0AD0	36		
																									2LC0101-1AG ■ ■ ■ -0AE0	38		
250	2800	2750	46	100	46	100	250	165	165	100	110	8	180	152.5	185	390	0.12	0.27	2LC0101-2AG ■ ■ ■ -0AC0	48								
																										2LC0101-2AG ■ ■ ■ -0AD0	50	
																											2LC0101-2AG ■ ■ ■ -0AE0	52
280	3900	2450	49	110	51	110	280	180	180	110	120	8	250	222.5	215	480	0.20	0.52	2LC0101-3AG ■ ■ ■ -0AE0	70								
315	5500	2150	49	100	51	120	315	165	200	125	140	8	250	222.5	250	515	0.32	0.87	2LC0101-4AG ■ ■ ■ -0AE0	98								
350	7700	2000	61	110	51	140	350	180	230	140	150	8	250	220.5	272	540	0.54	1.4	2LC0101-5AG ■ ■ ■ -0AE0	120								
400	10300	1700	66	120	51	150	400	200	250	160	180	8	250	185.5	310	590	1.0	2.9	2LC0101-6AG ■ ■ ■ -0AE0	195								
440	13500	1550	80	130	51	160	440	215	265	180	180	10	250	182	354	610	1.5	4.1	2LC0101-7AG ■ ■ ■ -0AE0	225								
			120	160			265										1.7		2LC0101-7AG ■ ■ ■ -0AE0	230								

- ∅D1:
 - Without finished bore – Without order codes
 - Without finished bore sizes 315 to 440 for 2nd diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ∅D2:
 - Without finished bore – Without order codes
 - Without finished bore sizes 315 to 440 for 2nd diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

During assembly, the gap dimension S2 must not exceed the permissible tolerance of +1 mm.

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:

N-EUPEX H coupling, size 160, S = 200 mm,
 Part 1: Bore D1 60H7 mm, keyway to DIN 6885-1 and set screw,
 Part 2: Bore D2 55H7 mm, keyway to DIN 6885-1 and set screw.

Product code:
2LC0100-7AG99-0AD0
L1E+M1D

The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

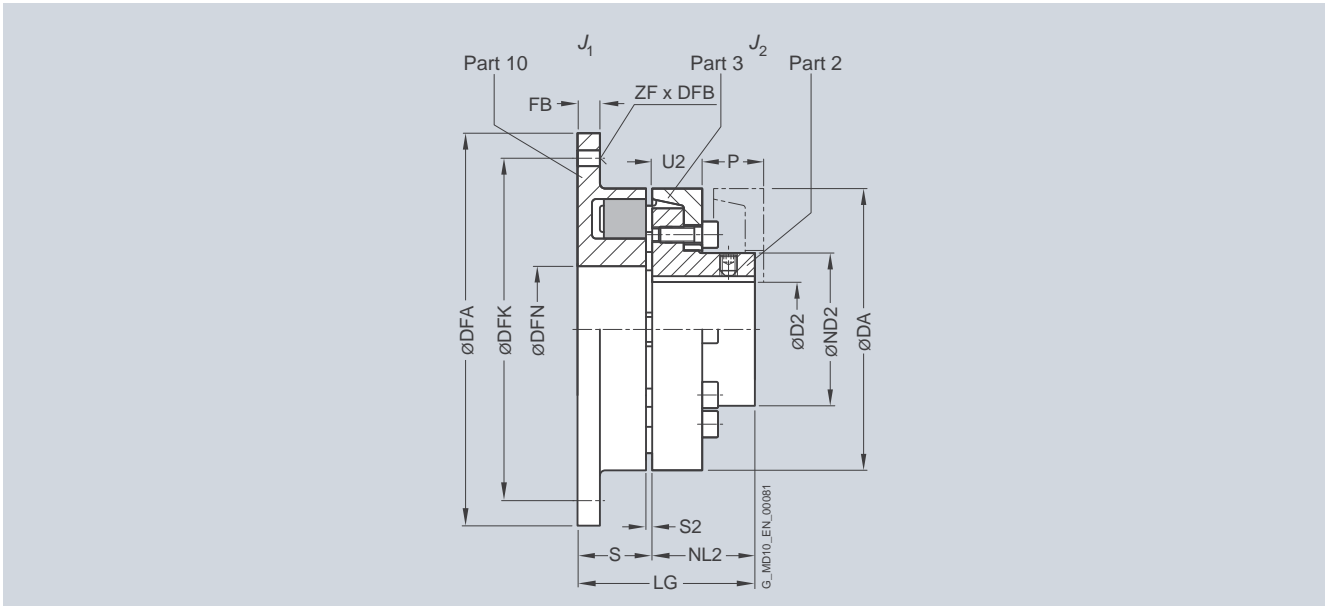


FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type D for easy elastomer flexible replacement

Selection and ordering data



For dimensions U2 and P, see type A

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm													Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			Bore with keyway to DIN 6885		Flange connection dimensions											J_1	J_2			
			D2 min.	DA max.	ND2	NL2	S2	S	LG	DFA h8	DFN H7	DFK	FB	ZF	DFB					
110	160	5300	38	110	62	40	3	30	70	144	62	128	10	6	9	0.003	0.003	2LC0100-4AD1 ■ -0AA0	2.7	
															M8					2LC0100-4AD2 ■ -0AA0
125	240	5100	45	125	75	50	3	34	84	158	75	142	10	6	9	0.005	0.005	2LC0100-5AD1 ■ -0AA0	3.9	
															M8					2LC0100-5AD2 ■ -0AA0
140	360	4900	50	140	82	55	3	37	92	180	82	160	13	6	11	0.011	0.008	2LC0100-6AD1 ■ -0AA0	5.6	
															M10					2LC0100-6AD2 ■ -0AA0
160	560	4250	58	160	95	60	4	43	103	200	95	180	13	7	11	0.017	0.014	2LC0100-7AD1 ■ -0AA0	7.5	
															M10					2LC0100-7AD2 ■ -0AA0
180	880	3800	65	180	108	70	4	46	116	220	110	200	13	8	11	0.026	0.025	2LC0100-8AD1 ■ -0AA0	10.3	
															M10					2LC0100-8AD2 ■ -0AA0
200	1340	3400	75	200	122	80	4	51	131	248	120	224	16	8	14	0.051	0.04	2LC0101-0AD1 ■ -0AA0	14.7	
															M12					2LC0101-0AD2 ■ -0AA0
225	2000	3000	85	225	138	90	4	56	146	274	135	250	16	8	14	0.085	0.08	2LC0101-1AD1 ■ -0AA0	19.5	
															M12					2LC0101-1AD2 ■ -0AA0
250	2800	2750	95	250	155	100	5	65	165	314	150	282	20	8	18	0.16	0.13	2LC0101-2AD1 ■ -0AA0	28.0	
															M16					2LC0101-2AD2 ■ -0AA0
280	3900	2450	54	105	280	172	110	5	70	180	344	170	312	20	18	0.24	0.2	2LC0101-3AD1 ■ -0AA0	35.0	
															M16					2LC0101-3AD2 ■ -0AA0
315	5500	2150	46	100	315	165	125	5	75	200	380	200	348	22	9	18	0.4	0.32	2LC0101-4AD1 ■ -0AA0	47
			90	120	200															
	5500	2150	46	100	315	165	125	5	75	200	380	200	348	22	9	M16	0.4	0.32	2LC0101-4AD2 ■ -0AA0	47
			90	120	200															
350	7700	2000	61	110	350	180	140	5	79	219	430	225	390	25	9	22	0.7	0.54	2LC0101-5AD1 ■ -0AA0	64
			90	140	230															
	7700	2000	61	110	350	180	140	5	79	219	430	225	390	25	9	M20	0.7	0.54	2LC0101-5AD2 ■ -0AA0	64
			90	140	230															
400	10300	1700	66	120	400	200	160	5	83	243	480	265	440	25	10	22	1.1	1.0	2LC0101-6AD1 ■ -0AA0	86
			100	150	250															
	10300	1700	66	120	400	200	160	5	83	243	480	265	440	25	10	M20	1.1	1.0	2LC0101-6AD2 ■ -0AA0	86
			100	150	250															

ØD2:
 • Without finished bore – Without order codes 1
 • Without finished bore – Only for sizes 315 to 520 in each case with a larger diameter D2 – Without order codes 2
 • With finished bore – With order codes for diameter and tolerance (product code without -Z) 9

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type D for easy elastomer flexible replacement

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm														Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			Bore with keyway to DIN 6885		Flange connection dimensions												J_1	J_2		
			D2 min.	DA max.	ND2	NL2	S2	S	LG	DFA h8	DFN H7	DFK	FB	ZF	DFB					
440	13500	1550	80	130	440	215	180	8	94	274	520	295	480	25	10	22	1.7	1.5	2LC0101-7AD1 ■ -0AA0	114
			120	160		265														1.7
480	16600	1400	80	130	440	215	180	8	94	274	520	295	480	25	10	M20	1.7	1.5	2LC0101-7AD2 ■ -0AA0	114
			120	160		265														1.7
480	16600	1400	90	145	480	240	190	8	98	288	575	325	528	30	10	26	2.7	2.3	2LC0101-8AD1 ■ -0AA0	146
			136	180		300														2.6
520	21200	1300	90	145	480	240	190	8	98	288	575	325	528	30	10	M24	2.7	2.3	2LC0101-8AD2 ■ -0AA0	146
			136	180		300														2.6
520	21200	1300	100	150	520	250	210	8	110	320	615	355	568	30	10	26	3.8	3.3	2LC0102-0AD1 ■ -0AA0	177
			140	190		315														3.7
520	21200	1300	100	150	520	250	210	8	110	320	615	355	568	30	10	M24	3.8	3.3	2LC0102-0AD2 ■ -0AA0	177
			140	190		315														3.7

- ØD2:
- Without finished bore – Without order codes
 - Without finished bore – Only for sizes 315 to 520 in each case with a larger diameter D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

1
2
9

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:

N-EUPEX D coupling, size 125,

Part 10: with through bores,

Part 2: Bore D2 38H7 mm, with keyway to DIN 6885-1 and set screw.

Product code:

2LC0100-5AD19-0AA0

MOV

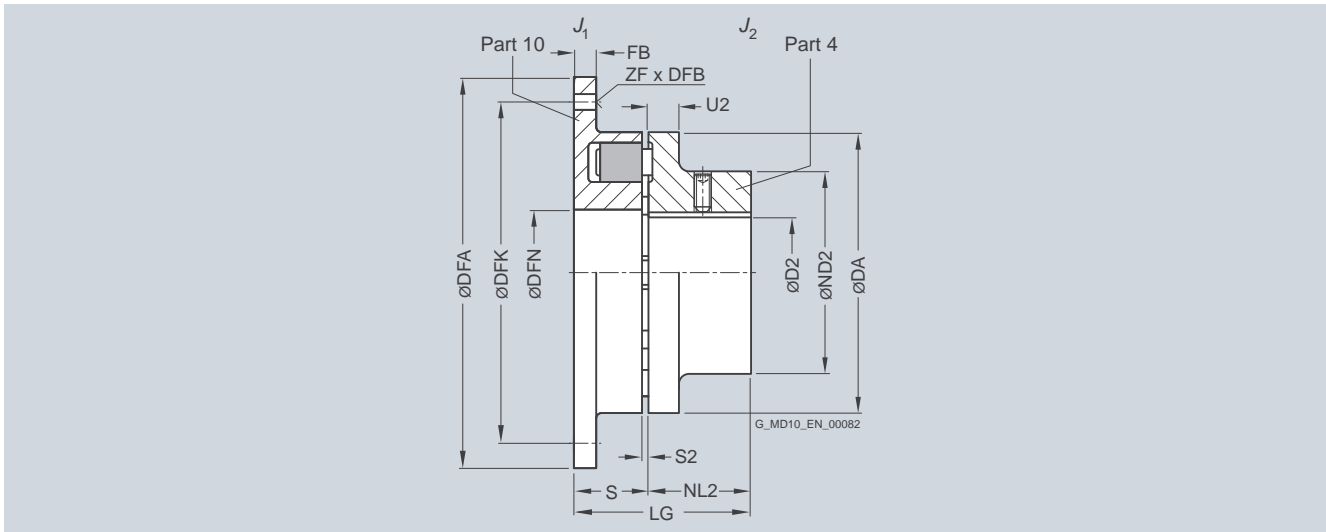
The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type E

Selection and ordering data



For dimension U2, see type B

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm										Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			Bore with keyway to DIN 6885			Flange connection dimensions							J_2	J_1				
			D2 from to	DA	ND2	NL2	S2	S	LG	DFA h8	DFN H7	DFK	FB	ZF	DFB			
68	34	7000	28 68	50	20	3	23	43	90	34	80	7	6	5.5	0.0004	0.0002	2LC0100-1AC1 -0AA0	0.63
														M5			2LC0100-1AC2 -0AA0	
80	60	6000	38 80	68	30	3	24	54	106	42	94	8	6	6.6	0.0008	0.0006	2LC0100-2AC1 -0AA0	1.35
														M6			2LC0100-2AC2 -0AA0	
95	100	5500	42 95	76	35	3	27	62	120	52	108	8	6	6.6	0.0014	0.0013	2LC0100-3AC1 -0AA0	2.0
														M6			2LC0100-3AC2 -0AA0	
110	160	5300	48 110	86	40	3	30	70	144	62	128	10	6	9	0.0034	0.0030	2LC0100-4AC1 -0AA0	3.0
														M8			2LC0100-4AC2 -0AA0	
125	240	5100	55 125	100	50	3	34	84	158	75	142	10	6	9	0.0052	0.0060	2LC0100-5AC1 -0AA0	4.5
														M8			2LC0100-5AC2 -0AA0	
140	360	4900	60 140	100	55	3	37	92	180	82	160	13	6	11	0.011	0.007	2LC0100-6AC1 -0AA0	5.6
														M10			2LC0100-6AC2 -0AA0	
160	560	4250	65 160	108	60	4	43	103	200	95	180	13	7	11	0.017	0.01	2LC0100-7AC1 -0AA0	7.2
														M10			2LC0100-7AC2 -0AA0	
180	880	3800	75 180	125	70	4	46	116	220	110	200	13	8	11	0.026	0.02	2LC0100-8AC1 -0AA0	10.3
														M10			2LC0100-8AC2 -0AA0	
200	1340	3400	85 200	140	80	4	51	131	248	120	224	16	8	14	0.051	0.04	2LC0101-0AC1 -0AA0	14
														M12			2LC0101-0AC2 -0AA0	
225	2000	3000	90 225	150	90	4	56	146	274	135	250	16	8	14	0.085	0.7	2LC0101-1AC1 -0AA0	17
														M12			2LC0101-1AC2 -0AA0	
250	2800	2750	46 100	250	165	100	5	65	165	314	150	282	20	18	0.16	0.12	2LC0101-2AC1 -0AA0	26
														M16			2LC0101-2AC2 -0AA0	
280	3900	2450	54 110	280	180	110	5	70	180	344	170	312	20	18	0.24	0.13	2LC0101-3AC1 -0AA0	32
														M16			2LC0101-3AC2 -0AA0	

øD2:
 • Without finished bore – Without order codes 1
 • With finished bore – With order codes for diameter and tolerance (product code without -Z) 9

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:
 N-EUPEX E coupling, size 125,
 Part 10 with through bores,
 Part 4: Bore D2 38H7 mm, keyway to DIN 6885-1 and set screw.

Product code:
2LC0100-5AC19-0AA0
M0V

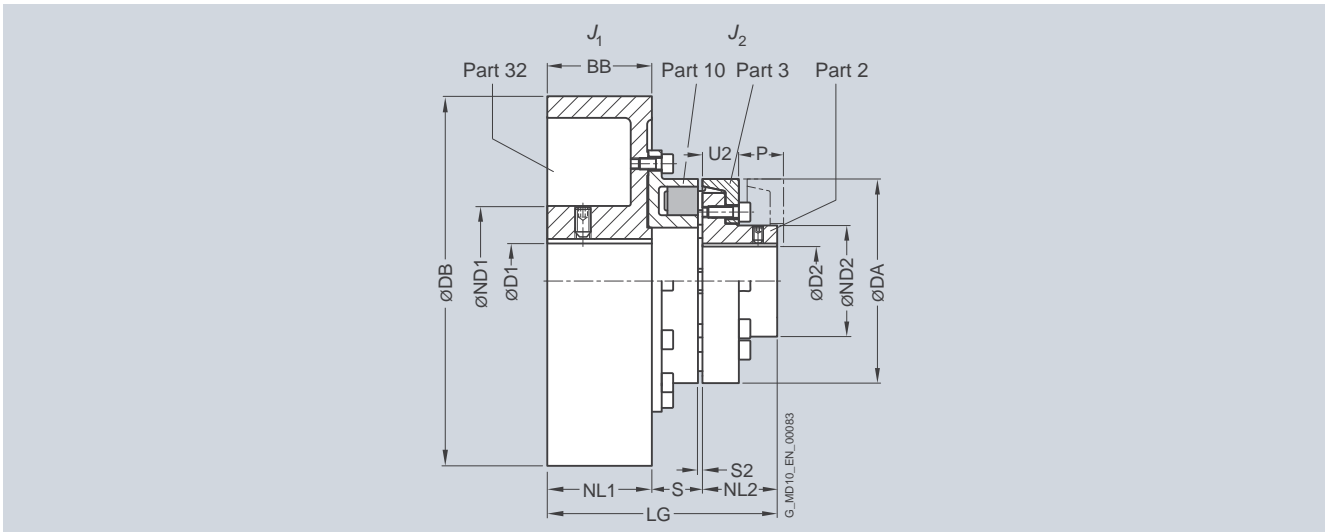
The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

**Type P with brake drum
for easy elastomer replacement**

Selection and ordering data



For dimensions U2 and P, see type A

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885													Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1 min.	D2 max.	DA	ND1	ND2	NL1/BB	NL2	S2	S	DB	U2	LG	J_1	J_2				
125	240	3400	55	45	125	84	75	75	50	3	31	200	23	156	0.043	0.004	2LC0100-5AF11 ■ ■ -0BA0	10.9		
140	360	2750	60	50	140	128	82	95	55	3	34	250	28	184	0.13	0.008	2LC0100-6AF11 ■ ■ -0CA0	21		
160	560	2750	70	58	160	128	95	95	60	4	40	250	28	195	0.14	0.014	2LC0100-7AF11 ■ ■ -0CA0	22		
180	880	2750	70	65	180	128	108	95	70	4	41	250	30	206	0.16	0.025	2LC0100-8AF11 ■ ■ -0CA0	28		
200	1340	2150	80	75	200	128	122	118	80	4	48	315	32	246	0.37	0.04	2LC0101-0AF11 ■ ■ -0DA0	40		
200	1700	1400	90					150			48	400		278	1.1		2LC0101-0AF11 ■ ■ -0FA0	60		
			110				175	190		48	500		318	2.8						
225	2000	2150	80	85	225	128	138	118	90	4	51	315	38	259	0.39	0.08	2LC0101-1AF11 ■ ■ -0DA0	47		
225	1700	1400	90					150			53	400		293	1.1		2LC0101-1AF11 ■ ■ -0FA0	65		
			110				175	190		53	500		333	3.1						
250	2800	1700	100	95	250	160	155	150	100	5	63	400	42	313	1.16	0.13	2LC0101-2AF11 ■ ■ -0FA0	76		
250	1400	38	110					175			63	500		353	2.9		2LC0101-2AF11 ■ ■ -0HA0	113		
280	3900	1700	100	54	105	280	160	172	150	110	5	65	400	42	325	1.24	0.2	2LC0101-3AF11 ■ ■ -0FA0	85	
280	1400	48	110					175			68	500		368	3.1		2LC0101-3AF11 ■ ■ -0HA0	118		
280	1100	48	110					175			68	630		414	8.0		2LC0101-3AF11 ■ ■ -0KA0	171		
315	5500	1700	100	46	100	315	160	165	150	125	5	73	400	47	348	1.4	0.32	2LC0101-4AF11 ■ ■ -0FA0	96	
315	1400	48	110					175			73	500		388	3.3		2LC0101-4AF11 ■ ■ -0HA0	134		
315	1100	48	110					175			73	630		434	8.2		2LC0101-4AF11 ■ ■ -0KA0	183		
315	1000	55	120					192			73	710		463	14.2		2LC0101-4AF11 ■ ■ -0LA0	236		
315	5500	1700	100	90	120	315	160	200	150	125	5	73	400	47	348	1.4	0.35	2LC0101-4AF11 ■ ■ -0FA0	97	
315	1400	48	110					175			73	500		388	3.3		2LC0101-4AF11 ■ ■ -0HA0	136		
315	1100	48	110					175			73	630		434	8.2		2LC0101-4AF11 ■ ■ -0KA0	185		
315	1000	55	120					192			73	710		463	14.2		2LC0101-4AF11 ■ ■ -0LA0	238		
350	7700	1100	48	110	61	110	350	175	180	236	140	5	76	630	51	452	8.5	0.54	2LC0101-5AF11 ■ ■ -0KA0	200
350	1000	55	120					192			76	710		481	14.6		2LC0101-5AF11 ■ ■ -0LA0	253		
350	7700	1100	48	110	90	140	350	175	230	236	140	5	76	630	51	452	8.5	0.61	2LC0101-5AF11 ■ ■ -0KA0	203
350	1000	55	120					192			76	710		481	14.6		2LC0101-5AF11 ■ ■ -0LA0	257		

- ØD1:
 - Without finished bore – Without order codes **1**
 - With finished bore – With order codes for diameter and tolerance (product code without -Z) **9**
- ØD2:
 - Without finished bore – Without order codes **1**
 - With finished bore – With order codes for diameter and tolerance (product code without -Z) **9**

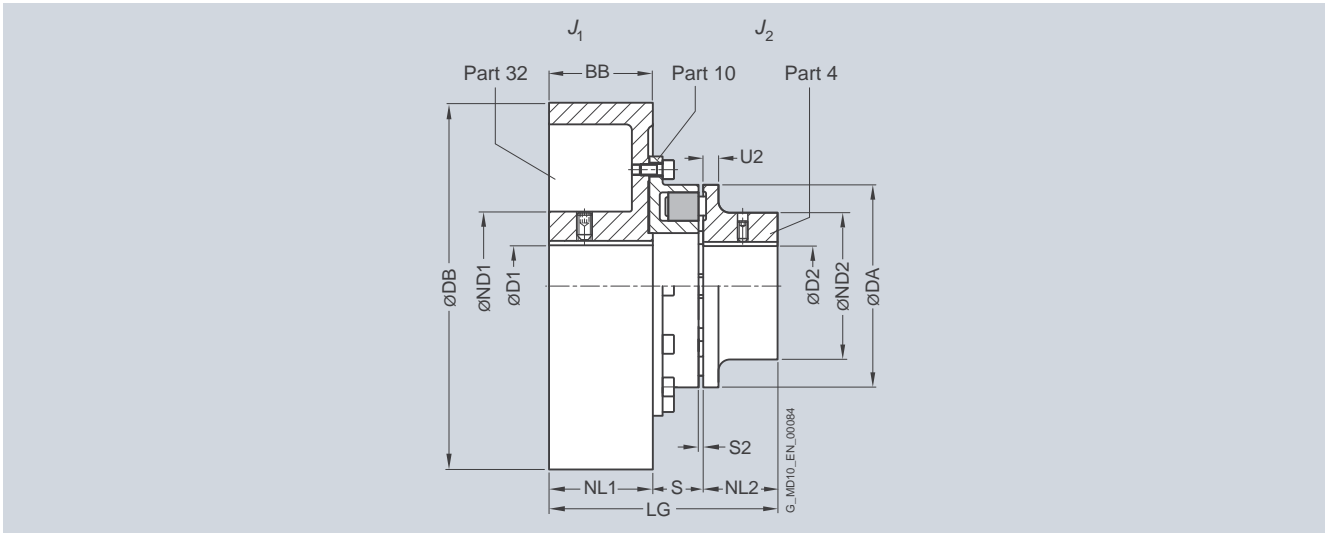
Weights and mass moments of inertia apply to maximum bore diameters.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type O with brake drum

Selection and ordering data



Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm														Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			Bore with keyway to DIN 6885		DA	ND1	ND2	NL1	NL2	S2	S	DB	U2	LG	J_1	J_2				
			D1 min.	D2 max.																
125	240	3400	55	55	125	84	100	75	50	3	31	200	18	156	0.043	0.006	2LC0100-5AE ■ ■ ■ -0BA0	11.3		
140	360	2750	60	60	140	128	100	95	55	3	34	250	20	184	0.13	0.007	2LC0100-6AE ■ ■ ■ -0CA0	22.3		
160	560	2750	70	65	160	128	108	95	60	4	40	250	20	195	0.14	0.01	2LC0100-7AE ■ ■ ■ -0CA0	24		
180	880	2150	70	75	180	128	125	95	70	4	41	250	20	206	0.16	0.02	2LC0100-8AE ■ ■ ■ -0CA0	28		
			80				118					43	315		231	0.35		2LC0100-8AE ■ ■ ■ -0DA0	35	
200	1340	2190	80	85	200	128	140	118	80	4	48	315	24	246	0.37	0.04	2LC0101-0AE ■ ■ ■ -0DA0	40		
		1700	90			160		150			48	400		278	1.10		2LC0101-0AE ■ ■ ■ -0FA0	60		
		1400	110			175		190			48	500		318	2.80		2LC0101-0AE ■ ■ ■ -0HA0	98		
225	2000	2150	80	90	225	128	150	118	90	4	51	315	18	259	0.39	0.07	2LC0101-1AE ■ ■ ■ -0DA0	45		
		1700	90			160		150			53	400		293	1.10		2LC0101-1AE ■ ■ ■ -0FA0	63		
		1400	38 110			175		190			53	500		333	3.10		2LC0101-1AE ■ ■ ■ -0HA0	102		
250	2800	1700	100	46 100	250	160	165	150	100	5	63	400	18	313	1.16	0.12	2LC0101-2AE ■ ■ ■ -0FA0	73		
		1400	38 110			175		190			63	500		353	2.90		2LC0101-2AE ■ ■ ■ -0HA0	108		
280	3900	1700	110	54 110	280	160	180	150	110	5	65	400	20	325	1.24	0.18	2LC0101-3AE ■ ■ ■ -0FA0	82		
		1400	48			175		190			68	500		368	3.10		2LC0101-3AE ■ ■ ■ -0HA0	115		
		1100	48			175		236			68	630		414	8.0		2LC0101-3AE ■ ■ ■ -0KA0	168		
ØD1:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																1	9	
ØD2:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																1	9	

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:
 N-EUPEX O coupling, size 200,
 brake drum 315 x 118 mm,
 Part 32: Bore D1 55H7 mm, keyway to DIN 6885 P9 and set screw,
 Part 4: Bore D2 60H7 mm, keyway to DIN 6885 and set screw.

Coupling micro-balanced G6.3 at 1500 rpm in accordance with half parallel key standard.

Product code:
2LC0101-0AE99-0DA0-Z
L1D+M1E+W02

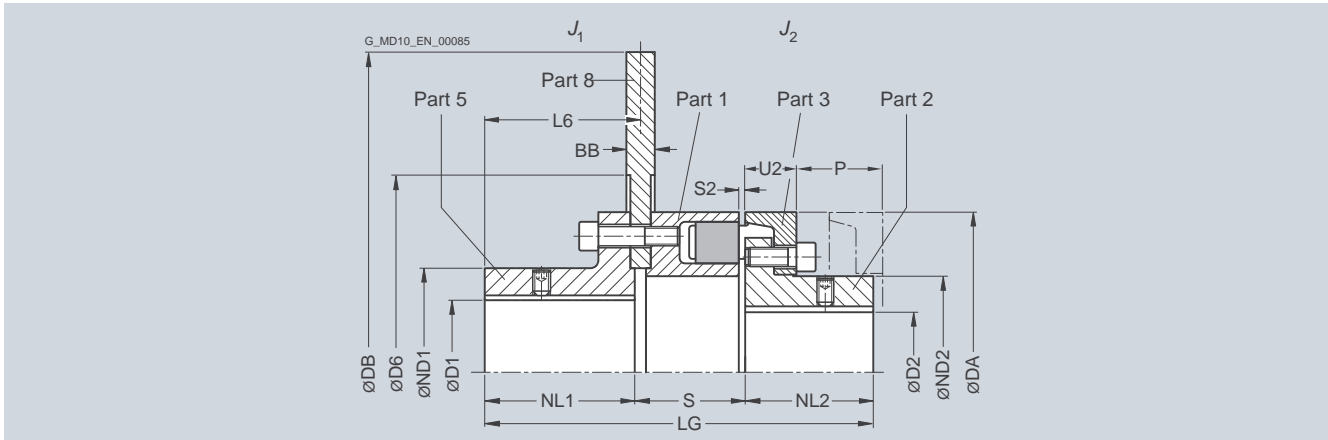
The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type DBDR with brake disk for easy elastomer flexible replacement

Selection and ordering data



For dimensions U2 and P, see type A

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Dimensions in mm														Mass moment of inertia		Product code Plain text specification DB; BB; D6; NL1 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m min. kg
		Bore with keyway to DIN 6885														J_1	J_2		
		D1 max.	D2 min.	DA max.	ND1	ND2	NL1	NL2	S	S2	DB min.	D6 min.	BB	L6	LG	min. kgm^2	kgm^2		
140	360	55	50	140	85	82	72	55	54.35	3	315	175	12.7	74	181.35	0.11	0.008	2LC0100-6AV ■ ■ -OZA0 P0Y	15.5
							72		57.5				15	76	184.5	0.13	17		
							188		73				30	200	316	0.24	28.5		
160	560	70	58	160	105	95	90	60	58.35	4	315	175	12.7	91	208.35	0.12	0.014	2LC0100-7AV ■ ■ -OZA0 P0Y	19
							90		62.5				15	94	212.5	0.14	20.5		
							188		78				30	200	326	0.26	32		
180	880	80	65	180	125	108	90	70	60.35	4	355	200	12.7	91	220.35	0.35	0.025	2LC0100-8AV ■ ■ -OZA0 P0Y	25.5
							90		64.5				15	94	224.5	0.37	27		
							188		80				30	200	338	0.57	43		
200	1340	90	75	200	135	122	95	80	67.35	4	400	220	12.7	97	242.35	0.32	0.04	2LC0101-0AV ■ ■ -OZA0 P0Y	33
							95		70.5				15	99	245.5	0.36	36		
							188		86				30	200	354	0.67	55		
225	2000	105	85	225	160	138	100	90	72.35	4	450	250	12.7	103	262.35	0.52	0.08	2LC0101-1AV ■ ■ -OZA0 P0Y	44
							100		74.5				15	104	264.5	0.59	47		
							188		90				30	200	368	1.1	72		
250	2800	110	95	250	170	155	105	100	83.35	6	500	280	12.7	107	288.35	1.6	0.13	2LC0101-2AV ■ ■ -OZA0 P0Y	58
							105		86.5				15	109	291.5	1.7	61		
							188		102				30	200	390	2.5	90		
280	3900	130	54	105	280	200	120	110	87.35	6	560	310	12.7	122	317.35	1.3	0.20	2LC0101-3AV ■ ■ -OZA0 P0Y	76
							120		90.5				15	124	320.5	1.5	80		
							188		106				30	200	404	2.7	115		
315	5500	130	46	100	315	200	130	125	87.35	6	630	350	12.7	130	342.35	2.1	0.32	2LC0101-4AV ■ ■ -OZA0 P0Y	98
							130		92.5				15	134	347.5	2.3	100		
							188		108				30	200	421	4.2	140		
315	5500	130	90	120	315	200	130	125	87.35	6	630	350	12.7	130	342.35	2.1	0.35	2LC0101-4AV ■ ■ -OZA0 P0Y	100
							130		92.5				15	134	347.5	2.3	105		
							188		108				30	200	421	4.2	145		
350	7700	140	61	110	350	230	135	140	97.35	6	710	390	12.7	136	372.35	3.3	0.54	2LC0101-5AV ■ ■ -OZA0 P0Y	130
							135		101.5				15	139	376.5	3.8	135		
							188		117				30	200	445	6.7	190		
350	7700	140	90	140	350	230	135	140	97.35	6	710	390	12.7	136	372.35	3.3	0.61	2LC0101-5AV ■ ■ -OZA0 P0Y	135
							135		101.5				15	139	376.5	3.8	140		
							188		117				30	200	445	6.7	190		

- ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**) 1 9
- ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**) 1 9

Weights and mass moments of inertia apply to maximum bore diameters.

Maximum speed in rpm
 $n_{max} = 1146/DB$ DB in m

Other brake disk diameters DB and brake disk widths BB on request.

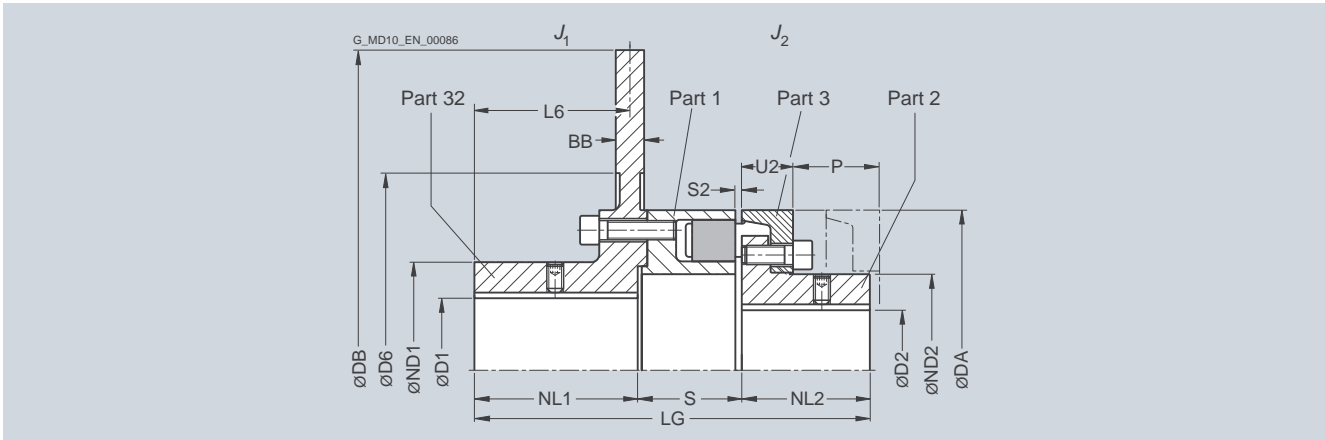


FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type DBD with brake disk
for easy elastomer flexible replacement

Selection and ordering data



For dimensions U2 and P, see type A

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Dimensions in mm														Mass moment of inertia		Product code Plain text specification DB ; BB ; D6 ; NL1 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m min. kg						
		Bore with keyway to DIN 6885			D1		D2		DA		ND1		ND2		NL1		NL2			S	S2	DB	D6	BB	L6
140	360	55	50	140	85	82	81.5	55	49.5	3	315	175	12.7	74	186	0.10	0.008	2LC0100-6AU ■ ■ -OZA0 P0Y	15						
		81.5																		16					
		211.5																			26				
160	560	70	58	160	105	95	98.5	60	54.5	4	315	175	12.7	91	213	0.11	0.014	2LC0100-7AU ■ ■ -OZA0 P0Y	18						
		98.5																			19				
		211.5																			30				
180	880	80	65	180	125	108	98.5	70	56.5	4	355	200	12.7	91	225	0.33	0.025	2LC0100-8AU ■ ■ -OZA0 P0Y	24						
		98.5																				25.5			
		211.5																				40			
200	1340	90	75	200	135	122	104.5	80	62.5	4	400	220	12.7	97	247	0.30	0.04	2LC0101-0AU ■ ■ -OZA0 P0Y	32.5						
		104.5																				34			
		211.5																				51			
225	2000	105	85	225	160	138	111.5	90	66.5	4	450	250	12.7	103	268	0.48	0.08	2LC0101-1AU ■ ■ -OZA0 P0Y	43						
		111.5																				45			
		211.5																				66			
250	2800	110	95	250	170	155	116.5	100	78.5	6	500	280	12.7	107	295	1.5	0.13	2LC0101-2AU ■ ■ -OZA0 P0Y	56						
		116.5																				58			
		211.5																				83			
280	3900	130	54	105	280	200	172	131.5	110	82.5	6	560	310	12.7	122	324	1.2	0.20	2LC0101-3AU ■ ■ -OZA0 P0Y	73					
		131.5																					76		
		211.5																					107		
315	5500	130	46	100	315	200	165	141.5	125	87.5	6	630	350	12.7	130	351	1.9	0.32	2LC0101-4AU ■ ■ -OZA0 P0Y	93					
		141.5																					97		
		211.5																					130		
315	5500	130	90	120	315	200	200	141.5	125	87.5	6	630	350	12.7	130	351	1.9	0.35	2LC0101-4AU ■ ■ -OZA0 P0Y	96					
		141.5																					100		
		211.5																					135		
350	7700	140	61	110	350	230	180	146.5	140	93.5	6	710	390	12.7	136	380	3.8	0.54	2LC0101-5AU ■ ■ -OZA0 P0Y	145					
		146.5																					150		
		211.5																					170		
350	7700	140	90	140	350	230	230	146.5	140	93.5	6	710	390	12.7	136	380	3.8	0.61	2LC0101-5AU ■ ■ -OZA0 P0Y	150					
		146.5																					155		
		211.5																					175		

- øD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- øD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

Weights and mass moments of inertia apply to maximum bore diameters.

Maximum speed in rpm
 $n_{max} = 1146/DB$ DB in m

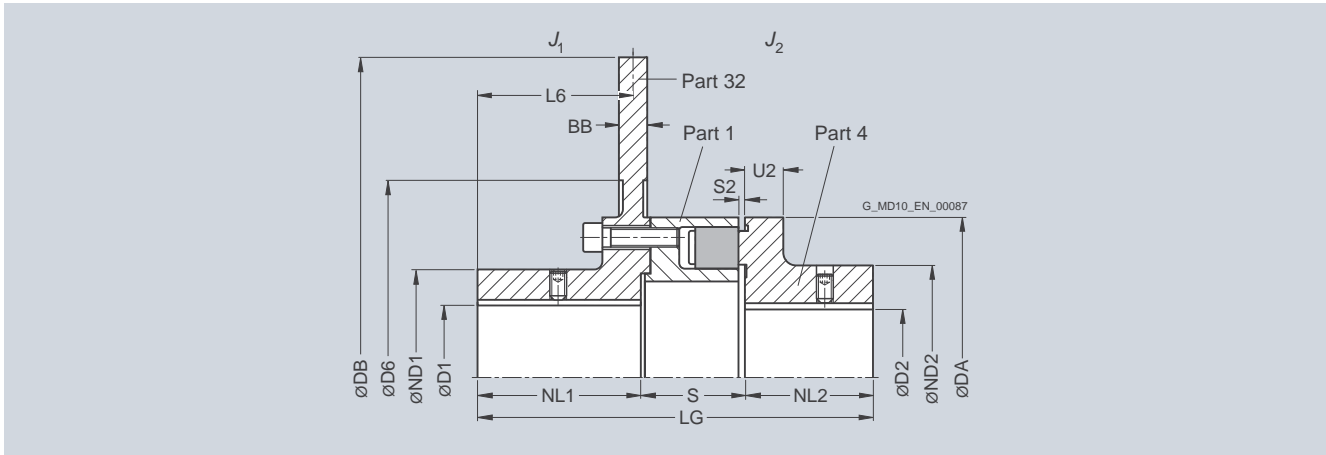
Other brake disk diameters DB and brake disk widths BB in request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type EBD with brake disk

Selection and ordering data



For dimension U2, see type B

Size	Rated torque flexible type 80 ShoreA T_{KN} Nm	Dimensions in mm														Mass moment of inertia		Product code Plain text specification DB; BB; D6; NL1 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m min. kg				
		Bore with keyway to DIN 6885			DA		ND1 ND2		NL1 NL2		S S2		DB D6		BB L6		LG			J_1	J_2		
		D1 max.	D2 min.	max.																			
140	360	55	60	140	85	100	81.5	55	49.5	3	315	175	12.7	74	186	0.10	0.007	2LC0100-6AW ■ ■ -OZA0 P0Y	15				
							81.5						15	73	186	0.12			16				
							211.5						30	200	316	0.22			26				
160	560	70	65	160	105	108	98.5	60	54.5	4	315	175	12.7	91	213	0.11	0.01	2LC0100-7AW ■ ■ -OZA0 P0Y	18				
							98.5						15	90	213	0.13			19				
							211.5						30	200	326	0.23			30				
180	880	80	75	180	125	125	98.5	70	56.5	4	355	200	12.7	91	225	0.33	0.02	2LC0100-8AW ■ ■ -OZA0 P0Y	24				
							98.5						15	90	225	0.36			25.5				
							211.5						30	200	338	0.53			40				
200	1340	90	85	200	135	140	104.5	80	62.5	4	400	220	12.7	97	247	0.30	0.04	2LC0101-0AW ■ ■ -OZA0 P0Y	32.5				
							104.5						15	96	247	0.34			34				
							211.5						30	200	354	0.61			51				
225	2000	105	90	225	160	150	111.5	90	66.5	4	450	250	12.7	103	268	0.48	0.07	2LC0101-1AW ■ ■ -OZA0 P0Y	43				
							111.5						15	102	268	0.55			45				
							211.5						30	200	368	1.0			66				
250	2800	110	46	100	250	170	116.5	100	78.5	6	500	280	12.7	107	295	1.5	0.12	2LC0101-2AW ■ ■ -OZA0 P0Y	56				
							116.5						15	106	295	1.6			58				
							211.5						30	200	390	2.3			83				
280	3900	130	54	110	280	200	131.5	110	82.5	6	560	310	12.7	122	324	1.2	0.18	2LC0101-3AW ■ ■ -OZA0 P0Y	73				
							131.5						15	121	324	1.3			76				
							211.5						30	200	404	2.4			107				

- ∅D1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ∅D2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:
 N-EUPEX EBD coupling, size 200,
 brake disk DIN 15432-AM-400 mm x 30 mm,
 Bore D1 55H7 mm, with keyway to DIN 6885 P9 and set screw,
 Bore D2 60H7 mm, with keyway to DIN 6885 and set screw.
 Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

Product code:
2LC0101-0AW99-0ZA0-Z
L1D+M1E+P0Y+W02
 plain text to P0Y:
DB = 400 mm; BB = 30 mm; D6 = 220 mm; NL1 = 211.5 mm

The product code applies to standard flexibles of 80 ShoreA; the product code for alternative flexible types is available on request.

Other brake disk diameters DB and brake disk widths BB on request.

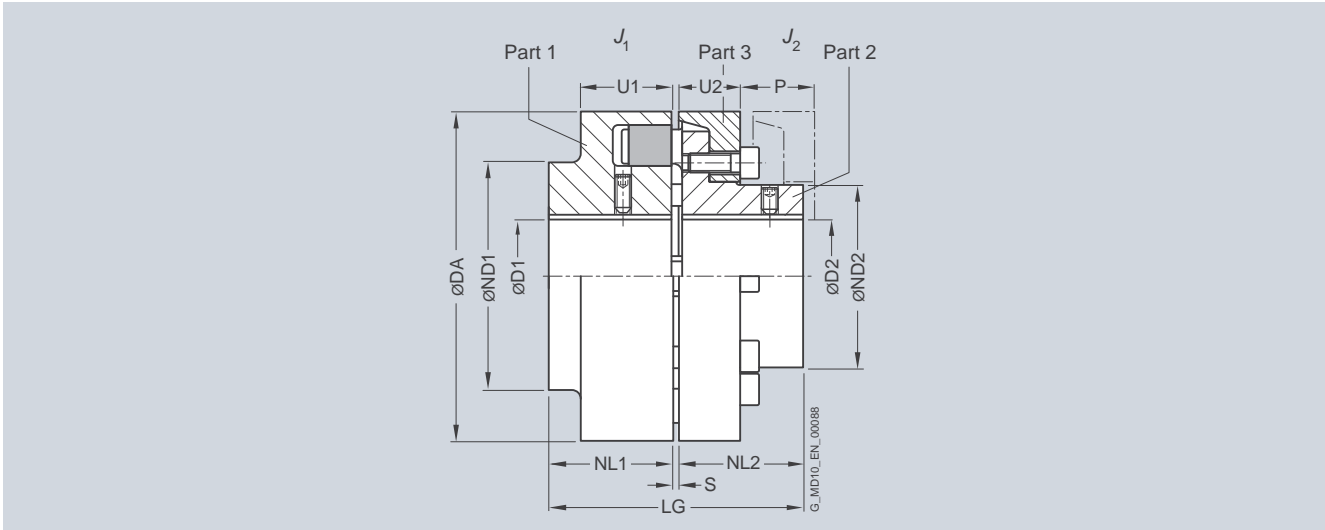
Maximum speed in rpm
 $n_{max} = 1146/DB$ DB in m

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type ADS
for easy elastomer flexible replacement

Selection and ordering data



Size	Rated torque T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm											Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg										
			Bore with keyway to DIN 6885		D1		D2		DA		ND1		ND2				NL1/ S		NL2		U1		U2		P	
			min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
118	160	5300	48	38	118	86	62	40	3	34	20	33	83	0.003	2LC0110-4AB ■ ■ -0AA0	3.5										
135	240	5100	55	45	135	100	75	50	3	36	23	38	103	0.006	2LC0110-5AB ■ ■ -0AA0	5.5										
152	360	4900	60	50	152	108	82	55	3	36	28	43	113	0.011	2LC0110-6AB ■ ■ -0AA0	7.7										
172	560	4250	65	58	172	118	95	60	4	41	28	47	124	0.019	2LC0110-7AB ■ ■ -0AA0	10.5										
194	880	3800	75	65	194	135	108	70	4	44	30	50	144	0.036	2LC0110-8AB ■ ■ -0AA0	15										
218	1340	3400	85	75	218	150	122	80	4	47	32	53	164	0.062	2LC0111-0AB ■ ■ -0AA0	21										
245	2000	3000	90	85	245	150	138	90	4	52	38	61	184	0.10	2LC0111-1AB ■ ■ -0AA0	28										
272	2800	2750	46	100	95	272	165	155	100	5	60	42	69	205	0.18	2LC0111-2AB ■ ■ -0AA0	40									
305	3900	2450	49	110	54	105	305	180	172	110	5	65	42	73	225	0.28	2LC0111-3AB ■ ■ -0AA0	50								
340	5500	2150	49	120	46	100	340	200	165	125	5	70	47	78	255	0.45	2LC0111-4AB ■ ■ -0AA0	72								
			90	120				200						0.50		73										
380	7700	2000	61	140	61	110	380	230	180	140	5	74	51	83	285	0.75	2LC0111-5AB ■ ■ -0AA0	100								
			90	140				230						0.80		104										
430	10300	1700	66	150	66	120	430	250	200	160	5	78	56	88	325	1.2	2LC0111-6AB ■ ■ -0AA0	135								
			100	150				250						1.4		140										
472	13500	1550	80	160	80	130	472	265	215	180	8	86	64	99	368	2.0	2LC0111-7AB ■ ■ -0AA0	174								
			120	160				265						2.1		180										
514	16600	1400	90	180	90	145	514	300	240	190	8	90	65	104	388	2.9	2LC0111-8AB ■ ■ -0AA0	220								
			136	180				300						3.2		237										
556	21200	1300	100	190	100	150	556	315	250	210	8	102	68	115	428	4.3	2LC0112-0AB ■ ■ -0AA0	281								
			140	190				315						4.7		290										

- ∅D1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ∅D2:
 - Without finished bore – Without order codes
 - Without finished bore from size 340 for 2nd diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:
N-EUPEX ADS coupling, size 135,
Part 1: Bore D1 42H7 mm, keyway to DIN 6885 and set screw,
Part 2: Bore D2 32H7 mm, keyway to DIN 6885 and set screw.

Product code:
2LC0110-5AB99-0AA0
LOX+MOT

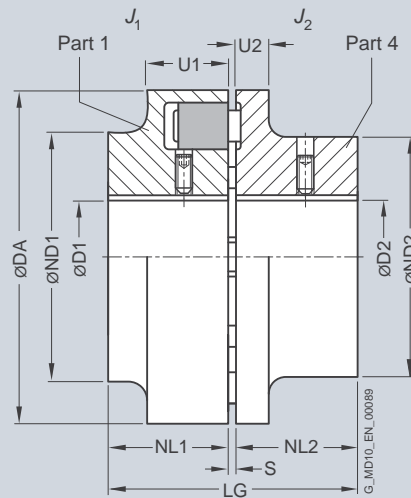
The product code applies to NBR standard flexibles; the product code for alternative flexible type is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type BDS

Selection and ordering data



Size	Rated torque T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm										Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg											
			Bore with keyway to DIN 6885		D1		D2		DA		ND1					ND2		NL1/ NL2		S		U1		U2		LG
			min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
66	19	7500	19	24	66	66	40	20	3	20	8	43	0.0001	2LC0110-0AA ■ ■ ■ -0AA0	0.50											
76	34	7000	24	28	76	76	50	20	3	20	8	43	0.0002	2LC0110-1AA ■ ■ ■ -0AA0	0.65											
88	60	6000	30	38	88	88	68	30	3	30	10	63	0.0006	2LC0110-2AA ■ ■ ■ -0AA0	1.8											
103	100	5500	42	42	103	76	76	35	3	30	12	73	0.0015	2LC0110-3AA ■ ■ ■ -0AA0	3											
118	160	5300	48	48	118	86	86	40	3	34	14	83	0.003	2LC0110-4AA ■ ■ ■ -0AA0	3.7											
135	240	5100	55	55	135	100	100	50	3	36	18	103	0.007	2LC0110-5AA ■ ■ ■ -0AA0	6.1											
152	360	4900	60	60	152	108	100	55	3	36	20	113	0.011	2LC0110-6AA ■ ■ ■ -0AA0	7.0											
172	560	4250	65	65	172	118	108	60	4	41	20	124	0.019	2LC0110-7AA ■ ■ ■ -0AA0	11											
194	880	3800	75	75	194	135	125	70	4	44	20	144	0.035	2LC0110-8AA ■ ■ ■ -0AA0	17											
218	1340	3400	85	85	218	150	140	80	4	47	24	164	0.06	2LC0111-0AA ■ ■ ■ -0AA0	23											
245	2000	3000	90	90	245	150	150	90	4	52	18	184	0.085	2LC0111-1AA ■ ■ ■ -0AA0	27											
272	2800	2750	46	100	46	100	272	165	165	100	5	60	18	205	0.15	2LC0111-2AA ■ ■ ■ -0AA0	36									
305	3900	2450	49	110	49	110	305	180	180	110	5	65	20	225	0.25	2LC0111-3AA ■ ■ ■ -0AA0	47									
ØD1:														1	9											
<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 														1	9											
ØD2:														1	9											
<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 														1	9											

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:

N-EUPEX BDS coupling, size 103,
 Part 1: Bore D1 42H7 mm, keyway to DIN 6885 and set screw,
 Part 4: Bore D2 32H7 mm, keyway to DIN 6885 and set screw.

Product code:

2LC0110-3AA99-0AA0
LOX+M0T

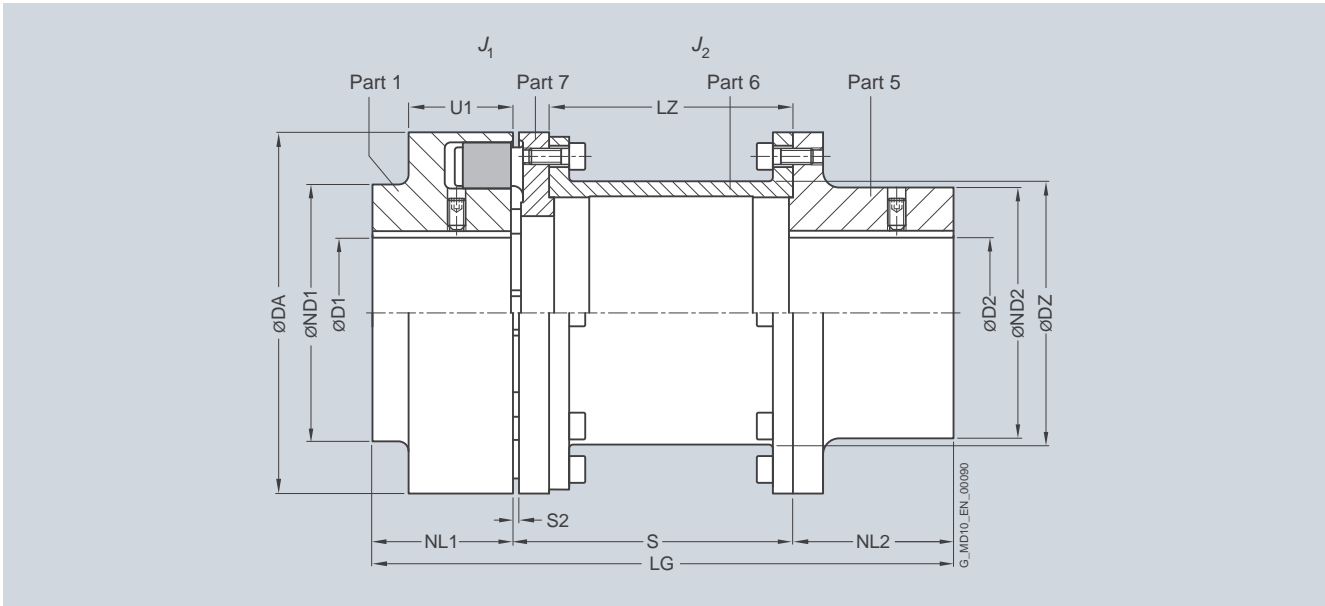
The product code applies to NBR standard flexibles; the product code for alternative flexible type is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type HDS

Selection and ordering data



For dimension U1, see type A

Size	Rated torque T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm													Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg																	
			Bore with keyway to DIN 6885		DA		ND1		ND2		NL1		NL2		S2	S	LZ			DZ	LG	J_1	J_2													
			D1 min.	D2 max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
88	60	6000	30	32	88	88	55	30	45	5	100	87	51	175	0.0007	0.0014	2LC0110-2AC	-0AA0	2.8																	
											140	127	215	0.0015					2LC0110-2AC	-0AB0	2.9															
103	100	5500	42	42	103	76	70	35	45	5	180	87	63	180	0.001	0.003	2LC0110-3AC	-0AA0	4.0																	
											140	127	220	0.0033					2LC0110-3AC	-0AB0	4.3															
118	160	5300	48	48	118	86	80	40	50	5	100	85	73	190	0.003	0.006	2LC0110-4AC	-0AA0	5.3																	
											140	125	230	0.0064					2LC0110-4AC	-0AB0	5.7															
											180	165	280	0.0068					2LC0110-4AC	-0AC0	6.1															
135	240	5100	55	55	135	100	90	50	50	5	100	85	85	200	0.006	0.01	2LC0110-5AC	-0AA0	7.6																	
											140	125	240	0.01					2LC0110-5AC	-0AB0	8.1															
											180	165	290	0.012					2LC0110-5AC	-0AC0	8.6															
											200	185	320	0.012					2LC0110-5AC	-0AD0	8.9															
											250	235	380	0.013					2LC0110-5AC	-0AE0	9.4															
152	360	4900	60	60	152	108	100	55	65	5	100	82	91	220	0.011	0.02	2LC0110-6AC	-0AA0	11.2																	
											140	122	260	0.02					2LC0110-6AC	-0AB0	11.7															
											180	162	300	0.022					2LC0110-6AC	-0AC0	12.2															
											200	182	320	0.023					2LC0110-6AC	-0AD0	12.5															
											250	232	385	0.024					2LC0110-6AC	-0AE0	13.1															
172	560	4250	65	65	172	118	108	60	70	6	100	81.5	111	230	0.019	0.03	2LC0110-7AC	-0AA0	14.3																	
											140	121.5	270	0.034					2LC0110-7AC	-0AB0	15.0															
											180	161.5	310	0.036					2LC0110-7AC	-0AC0	15.9															
											200	181.5	330	0.037					2LC0110-7AC	-0AD0	16.2															
											250	231.5	390	0.039					2LC0110-7AC	-0AE0	17.2															
194	880	3800	75	75	194	135	125	70	80	6	140	121.5	131	290	0.037	0.058	2LC0110-8AC	-0AB0	21																	
											180	161.5	330	0.062					2LC0110-8AC	-0AC0	22															
											200	181.5	350	0.064					2LC0110-8AC	-0AD0	23															
											250	231.5	400	0.069					2LC0110-8AC	-0AE0	24															
											140	118.5	144	310					0.062	0.10	2LC0111-0AC	-0AB0	30													
180	158.5	350	0.11	2LC0111-0AC	-0AC0	31																														
200	178.5	370	0.11	2LC0111-0AC	-0AD0	32																														
250	228.5	420	0.12	2LC0111-0AC	-0AE0	33																														

- øD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- øD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Type HDS

Size	Rated torque T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885														Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1		D2		DA	ND1	ND2	NL1	NL2	S2	S	LZ	DZ	LG	J_1	J_2			
			min.	max.	min.	max.															
245	2000	3000	90	90	245	150	150	90	100	6	140	118.5	169	330	0.09	0.16	2LC0111-1AC ■ ■ ■ -0AB0	35			
											180	158.5		370			0.17	2LC0111-1AC ■ ■ ■ -0AC0	36		
											200	178.5		390			0.18	2LC0111-1AC ■ ■ ■ -0AD0	37		
											250	228.5		430			0.19	2LC0111-1AC ■ ■ ■ -0AE0	39		
272	2800	2750	46	100	46	100	272	165	165	100	110	8	180	152.5	185	390	0.16	0.3	2LC0111-2AC ■ ■ ■ -0AC0	51	
													200	172.5		410			0.31	2LC0111-2AC ■ ■ ■ -0AD0	52
													250	222.5		460			0.33	2LC0111-2AC ■ ■ ■ -0AE0	55
305	3900	2450	49	110	51	110	305	180	180	110	120	8	250	222.5	215	480	0.28	0.52	2LC0111-3AC ■ ■ ■ -0AE0	74	
340	5500	2150	49	120	51	120	340	200	200	125	140	8	250	222.5	250	515	0.50	0.87	2LC0111-4AC ■ ■ ■ -0AE0	105	
380	7700	1980	61	140	51	140	380	230	230	140	150	8	250	220.5	272	540	0.80	1.4	2LC0111-5AC ■ ■ ■ -0AE0	130	
430	10300	1700	66	150	51	150	430	250	250	160	180	8	250	185.5	310	590	1.4	2.5	2LC0111-6AC ■ ■ ■ -0AE0	205	
472	13500	1550	80	160	51	160	472	265	265	180	180	10	250	182	354	610	2.1	4.1	2LC0111-7AC ■ ■ ■ -0AE0	235	
ØD1:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																1			
ØD2:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																1			
																		9			
																		9			

During assembly, the gap dimension S2 must not exceed the permissible tolerance of +1 mm.

Weights and mass moments of inertia apply to maximum bore diameters.

Ordering example:

N-EUPEX HDS coupling, size 103, S3 = 100

Part 1: Bore D1 42H7 mm, keyway to DIN 6885-1 and set screw,

Part 5: Bore D2 32H7 mm, keyway to DIN 6885-1 and set screw.

Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

Product code:

2LC0110-3AC99-0AA0-Z

LOX+M0T+W02

The product code applies to NBR standard flexibles; the product code for alternative flexible type is available on request.

FLENDER Standard Couplings

Flexible Couplings - N-EUPEX and N-EUPEX DS Series

Spare and wear parts

Selection and ordering data

Elastomer flexibles

The elastomer flexibles are wear parts. The service life depends on the operating conditions.

Elastomer flexibles of the N-EUPEX series

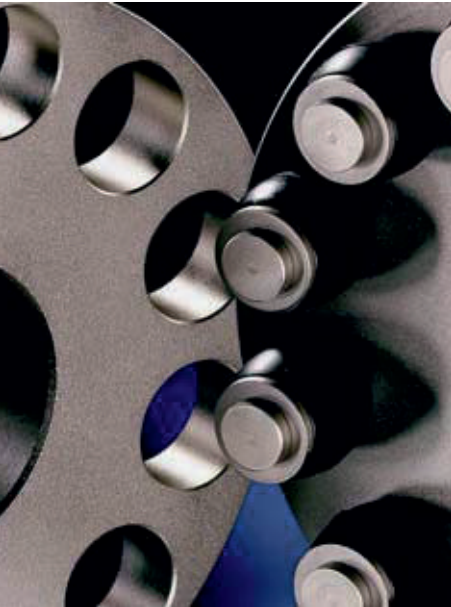
Size	Product code flexible set for one coupling NBR elastomer flexibles 80 ShoreA standard type	Number of flexibles per set	Weight per set kg
58	2LC0100-0WA00-0AA0	4	0.012
68	2LC0100-1WA00-0AA0	5	0.015
80	2LC0100-2WA00-0AA0	6	0.02
95	2LC0100-3WA00-0AA0	6	0.03
110	2LC0100-4WA00-0AA0	6	0.045
125	2LC0100-5WA00-0AA0	6	0.06
140	2LC0100-6WA00-0AA0	6	0.09
160	2LC0100-7WA00-0AA0	7	0.12
180	2LC0100-8WA00-0AA0	8	0.17
200	2LC0101-0WA00-0AA0	8	0.23
225	2LC0101-1WA00-0AA0	8	0.3
250	2LC0101-2WA00-0AA0	8	0.38
280	2LC0101-3WA00-0AA0	8	0.55
315	2LC0101-4WA00-0AA0	9	0.7
350	2LC0101-5WA00-0AA0	9	0.85
400	2LC0101-6WA00-0AA0	10	1.2
440	2LC0101-7WA00-0AA0	10	1.5
480	2LC0101-8WA00-0AA0	10	2.1
520	2LC0102-0WA00-0AA0	10	2.6
560	2LC0102-1WA00-0AA0	10	3.6
610	2LC0102-2WA00-0AA0	10	4.9
660	2LC0102-3WA00-0AA0	10	6.3
710	2LC0102-4WA00-0AA0	10	7.6

Elastomer flexibles of the N-EUPEX DS series

Size	Product code flexible set for one coupling NBR elastomer flexibles standard type	Number of flexibles per set	Weight per set kg
66	2LC0110-0WA00-0AA0	4	0.012
76	2LC0110-1WA00-0AA0	5	0.015
88	2LC0110-2WA00-0AA0	6	0.021
103	2LC0110-3WA00-0AA0	6	0.033
118	2LC0110-4WA00-0AA0	6	0.048
135	2LC0110-5WA00-0AA0	6	0.072
152	2LC0110-6WA00-0AA0	6	0.1
172	2LC0110-7WA00-0AA0	7	0.16
194	2LC0110-8WA00-0AA0	8	0.21
218	2LC0111-0WA00-0AA0	8	0.28
245	2LC0111-1WA00-0AA0	8	0.45
272	2LC0111-2WA00-0AA0	8	0.64
305	2LC0111-3WA00-0AA0	8	0.72
340	2LC0111-4WA00-0AA0	9	0.92
380	2LC0111-5WA00-0AA0	9	1.2
430	2LC0111-6WA00-0AA0	10	1.6
472	2LC0111-7WA00-0AA0	10	2.0
514	2LC0111-8WA00-0AA0	10	2.5
556	2LC0112-0WA00-0AA0	10	3.2

Flexibles of sizes 66 to 272 are of the compound type with a hard core and soft thrust pieces. Sizes 305 to 556 are completely made of 90 ShoreA NBR material.

Flexible Couplings RUPEX Series



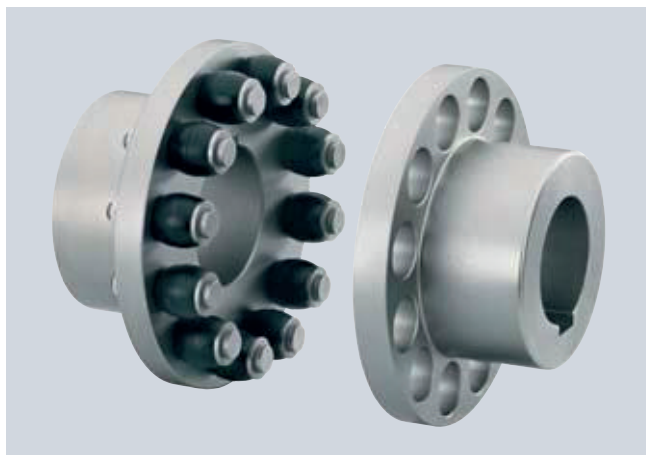
8/2	Overview
8/2	Benefits
8/2	Application
8/2	Design
8/4	Function
8/4	Technical data
8/6	Type RWN hub material grey cast iron
8/6	Selection and ordering data
8/8	Type RWS hub material steel
8/8	Selection and ordering data
8/10	Type RFN with hub in grey cast iron
8/10	Selection and ordering data
8/11	Type RFS in steel
8/11	Selection and ordering data
8/12	Type RWB with brake disk to DIN 15432
8/12	Selection and ordering data
8/14	Type RBS with brake disk to DIN 15432 Sizes 144 to 360
8/14	Selection and ordering data
8/16	Type RBS with brake disk to DIN 15432 Sizes 400 to 1000
8/16	Selection and ordering data
8/18	Type RWB with brake drum to DIN 15431
8/18	Selection and ordering data
8/19	Type RBS with brake drum to DIN 15431
8/19	Selection and ordering data
8/20	Spare and wear parts
8/20	Selection and ordering data

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

General information

Overview



Coupling suitable for potentially explosive environments. Complies with Directive 94/9/EC for:

CE Ex II 2 G T4 / T5 / T6 D120 °C
-30 °C ≤ T_a ≤ +80 °C / +50 °C / +40 °C

CE Ex I M2

RUPEX pin and bush couplings link machine shafts and compensate for shaft misalignment with weak restorative forces. The torque is conducted through elastomer buffers, so the coupling has typically flexible rubber properties. Thanks to their robust design, RUPEX couplings are also suitable for rough operating conditions.

Benefits

RUPEX couplings can also hold loads when overloaded and are therefore especially suitable for drives for special safety and reliability requirements.

Torque shock loads and changing loads are no problem for robust, compact flexible RUPEX couplings.

The steel variant is also especially suitable for high-speed drives.

RUPEX couplings are fitted by putting together the coupling halves. Fitting with low torsional backlash is simplified by the barrel-shaped geometry of the buffers.

RUPEX couplings require little maintenance. Only the elastomer buffers, as wear parts, need be replaced and the coupled machines need not be moved to do so.

RUPEX couplings are suitable for reversing operation and horizontal and vertical fitting or fitting at any required angle.

Application

RUPEX couplings are available as a catalog standard in 26 sizes with a rated torque of between 200 Nm and 1300000 Nm.

The coupling is suitable for use at ambient temperatures of between -30 °C and +80 °C. By using alternative elastomer buffers, the permissible ambient temperature range can be extended to between -50 °C and +100 °C.

Frequently, the coupling is used to connect the gear shaft to the driven machine. In the case of drives without gear units, the cou-

pling is particularly suitable for operation in rough conditions or heavy-duty drives with electric motor drive. Ventilator drives with high ventilator mass and drives in the cement industry are typical applications.

Examples of particularly safety-relevant areas of application are cable railway drives, lifting gear for crane drives or escalator drives.

Design

A RUPEX coupling comprises two hub sections which are mounted on the machine shafts. The hub parts are connected positively by steel pins and elastomer buffers. The coupling can be fitted with add-on parts such as brake disks or brake drums. Up to size 360, the pins and buffers are fitted on one side. From size 400 up, the pins and buffers are fitted in the hubs on alternate sides.

Materials

Hubs

- Types RWN and RWB made of grey cast iron EN-GJL-250
- Types RWS and RBS made of steel with yield point higher than 400 N/mm²

Flange

- Types RFN, RFS made of steel

Pin

Material steel 42CrMo4, surface fine-machined

Buffer material

Material/description	Hardness	Identification	Ambient temperature
NBR standard type	80 ShoreA	Buffer black	-30 °C ... +80 °C
NBR electrically insulating	80 ShoreA	Buffer green	-30 °C ... +80 °C
NBR soft	60 ShoreA	Buffer black with green dot	-30 °C ... +80 °C
NBR hard	90 ShoreA	Buffer black with magenta dot	-30 °C ... +80 °C
NR for low temperature	80 ShoreA	Buffer black with white dot	-50 °C ... +50 °C
HNBR high temperature	80 ShoreA	Buffer black with red dot	-10 °C ... +100 °C

Brake disks

- Type RWB made of EN-GJS-400 spheroidal graphite cast iron
- Type RBS made of steel

Brake drums

- Type RWB made of EN-GJL-250 grey cast iron
- Type RBS made of steel

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

General information

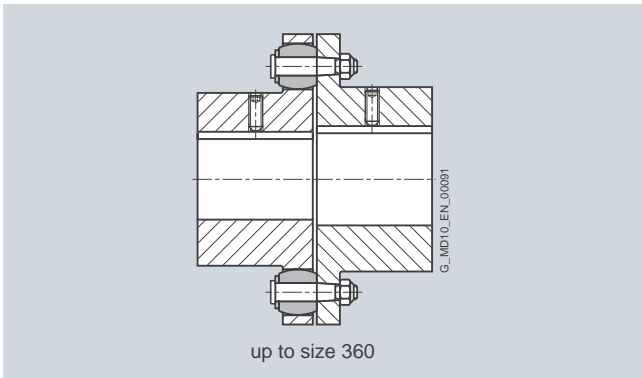
RUPEX pin and bush coupling types

Type	Description
RWN	Coupling made of grey cast iron
RWS	Coupling made of steel
RWB	Coupling made of grey cast iron with brake drum or brake disk
RBS	Coupling made of steel with brake drum or brake disk
RFN	Coupling made of grey cast iron in flange-shaft variant
RFS	Coupling made of steel in flange-shaft variant

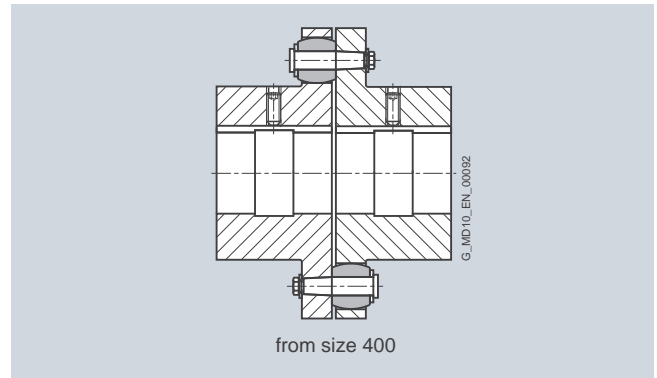
Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

RUPEX pin and bush coupling types on request

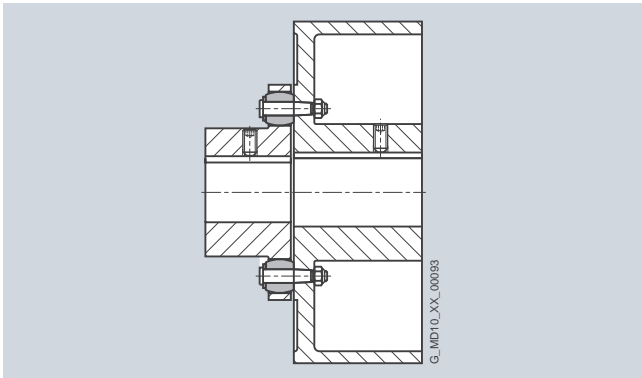
Type	Description
All	Coupling with axial backlash limitation
All	Coupling with pretensioned buffers
All	Coupling with lengthened pins and spacer sleeves
RKS	Coupling for engaging/disengaging during standstill
RWNH, RWSH	Coupling with extension piece
RBM	Coupling with lengthened pins for sliding rotor motors
RAK	Coupling combination RUPEX with ARPEX all-steel membrane coupling



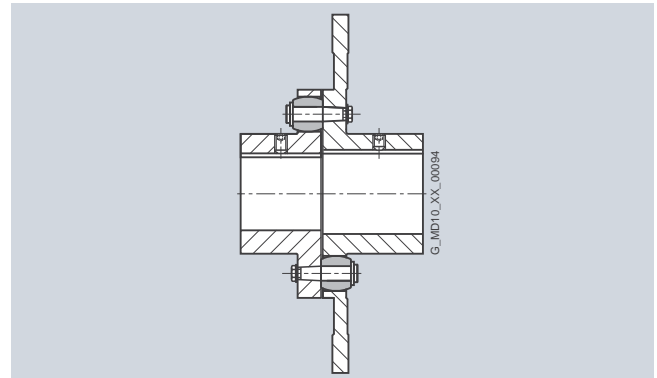
Types RWN/RWS – One-sided arrangement of pins and buffers



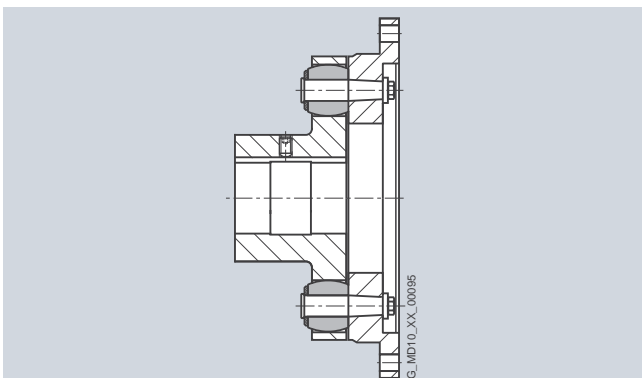
Types RWN/RWS – Alternate-sided arrangement of pins and buffers



Types RWB/RBS with brake drum



Types RWB/RBS with brake disk



Types RFN, RFS

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

General information

Function

The motor torque is transmitted to the hub on the drive side via the shaft-hub connection, which is mostly designed as a keyway connection. With the aid of elastomer buffers mounted on steel pins, the torque is conducted to the hub on the output side.

The hub on the output side further transmits the torque to the driven machine or a gear unit located in between. Because of the primarily compression-loaded buffers, the coupling has a progressive torsional stiffness.

Technical data

Power ratings

Size	Rated torque for buffer type			Torsional stiffness at 50 % capacity utilization for buffer type			Assembly Gap dimension ΔS mm	Permitted shaft misalignment at speed $n = 1500 \text{ rpm}^{1)}$		
	65 ShoreA	80 ShoreA	90 ShoreA	65 ShoreA	80 ShoreA	90 ShoreA		Axial ΔK_a mm	Radial ΔK_r mm	Angle ΔK_w Degree
	T_{KN} Nm	T_{KN} Nm	T_{KN} Nm	$C_{Tdyn 50 \%}$ kNm/rad	$C_{Tdyn 50 \%}$ kNm/rad	$C_{Tdyn 50 \%}$ kNm/rad				
105	120	200	200	8	13	20	1.0	0.2	0.2	0.11
125	210	350	350	14	24	36	1.0	0.2	0.2	0.10
144	300	500	500	25	42	62	1.0	0.23	0.23	0.09
162	450	750	750	31	54	80	1.5	0.25	0.25	0.09
178	570	950	950	48	83	125	1.5	0.27	0.27	0.09
198	780	1300	1300	67	116	177	1.5	0.29	0.29	0.08
228	1300	2200	2200	102	176	260	1.5	0.3	0.3	0.08
252	1650	2750	2750	143	246	366	1.5	0.34	0.34	0.08
285	2600	4300	4300	220	380	540	1.5	0.36	0.36	0.07
320	3300	5500	5500	300	520	760	1.5	0.4	0.4	0.07
360	4700	7800	7800	350	610	910	1.5	0.43	0.43	0.07
400	7500	12500	12500	650	1100	1650	1.5	0.48	0.48	0.07
450	11000	18500	18500	900	1560	2300	1.5	0.52	0.52	0.07
500	15000	25000	25000	1350	2300	3500	1.5	0.57	0.57	0.07
560	23500	39000	39000	1740	3000	4500	2.0	0.62	0.62	0.06
630	31000	52000	52000	2600	4500	7080	2.0	0.68	0.68	0.06
710	50000	84000	84000	4000	7000	10500	2.0	0.75	0.75	0.06
800	66000	110000	110000	6000	10500	16100	2.0	0.84	0.84	0.06
900	90000	150000	150000	8250	14000	21700	2.5	0.93	0.93	0.06
1000	115000	195000	195000	12000	20800	31700	2.5	1.03	1.03	0.06
1120	160000	270000	270000	15600	26800	42000	2.5	1.14	1.14	0.06
1250	205000	345000	345000	22900	39250	60000	2.5	1.26	1.26	0.06
1400	320000	530000	530000	35700	60500	94000	3.0	1.39	1.39	0.06
1600	450000	750000	750000	58800	100000	155000	3.0	1.55	1.55	0.06
1800	585000	975000	975000	74100	130000	200000	4.0	1.76	1.76	0.06
2000	780000	1300000	1300000	112000	196000	300000	4.0	2.17	2.17	0.06

All product codes listed below apply to standard buffers of NBR material in the 80 ShoreA variant.

¹⁾ The maximum speed of the respective type must be noted. For further information on permissible shaft misalignment, please see the operating instructions.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

General information

For maximum coupling torque:

$$T_{Kmax} = 3.0 \cdot T_{KN}$$

For overload torque:

$$T_{KOL} = 4 \cdot T_{KN}$$

For coupling fatigue torque:

$$T_{KW} = 0.20 \cdot T_{KN}$$

The axial misalignment may occur dynamically at frequencies up to 10Hz.

For fitting, a maximum gap dimension of $S_{max} = S + \Delta S$ and a minimum gap dimension of $S_{min} = S - \Delta S$ are permitted.

Torsional stiffness

The dynamic torsional stiffness is load-dependent and increases in proportion to capacity utilization. The values shown in the table are based on a capacity utilization of 50 %. The following table shows the correction factors for different rated loads.

$$C_{Tdyn} = C_{Tdyn 50\%} \cdot FKC$$

	Capacity utilization T_N/T_{KN}							
	20 %	40 %	50 %	60 %	70 %	80 %	90 %	100 %
Correction factor FKC 65/80 Shore	0.41	0.78	1	1.25	1.52	1.8	2.1	2.41
Correction factor FKC 90 Shore	0.48	0.81	1	1.21	1.43	1.66	1.91	2.17

The damping coefficient is $\Psi = 1.4$

Furthermore, torsional stiffness and damping depend on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size and type must be observed!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

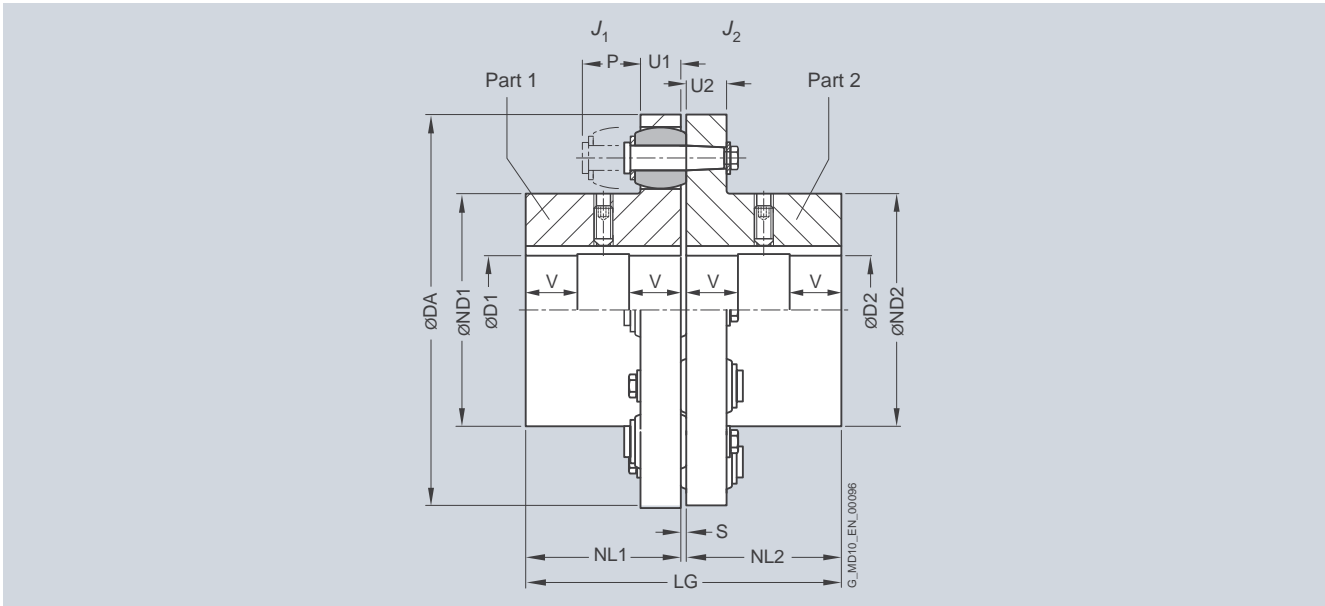
	Speed in rpm			
	500	1000	1500	3000
Correction factor FKV	1.60	1.20	1.0	0.70

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RWN - hub material grey cast iron

Selection and ordering data



Size	Rated torque buffer 80 ShoreA	Speed	Dimensions in mm											Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight		
			Bore with keyway to DIN 6885											J_1	J_2			m	
	T_{KN}	n_{Kmax}	D1 min.	D2 max.	DA	ND1	ND2	NL1/ NL2	S	U1	U2	P	LG	kgm ²	kgm ²		kg		
105 ¹⁾	200	7000	- 32	- 38	105	53	59	45	3	13	12	30	93	0.001	0.001	2LC0130-1AA	1.9		
125 ¹⁾	350	6000	- 40	- 48	125	65	68	50	3	16	15	35	103	0.003	0.003	2LC0130-2AA	3.2		
144	500	5250	- 45	- 55	144	76	84	55	3	16	15	35	113	0.004	0.006	2LC0130-3AA	4.5		
162	750	4650	- 50	- 60	162	85	92	60	3.5	20	18	40	123.5	0.007	0.013	2LC0130-4AA	6.7		
178	950	4200	- 60	- 70	178	102	108	70	3.5	20	18	40	143.5	0.014	0.022	2LC0130-5AA	9.7		
198	1300	3750	- 70	- 80	198	120	128	80	3.5	20	18	40	163.5	0.022	0.030	2LC0130-6AA	12.9		
228	2200	3300	- 80	- 90	228	129	140	90	3.5	26	24	50	183.5	0.038	0.071	2LC0130-7AA	19		
252	2750	3000	- 90	- 100	252	150	160	100	3.5	26	24	50	203.5	0.07	0.12	2LC0130-8AA	26.3		
285	4300	2650	48	100	48	110	285	164	175	110	4.5	32	30	60	224.5	0.13	0.22	2LC0131-0AA	39
320	5500	2350	55	110	55	120	320	180	192	125	4.5	32	30	60	254.5	0.23	0.30	2LC0131-1AA	53
360	7800	2100	65	120	65	130	360	200	210	140	4.5	42	42	75	284.5	0.41	0.70	2LC0131-2AA	78
400	12500	2050	75	140	75	140	400	230	230	160	4.5	42	42	75	324.5	0.87	0.87	2LC0131-3AA	105
450	18500	1800	85	160	85	160	450	260	260	180	5.5	52	52	90	365.5	1.7	1.7	2LC0131-4AA	156
500	25000	1600	95	180	95	180	500	290	290	200	5.5	52	52	90	405.5	2.8	2.8	2LC0131-5AA	200
560	39000	1450	100	140	100	140	560	250	250	220	6	68	68	120	446	4.6	4.6	2LC0131-6AA	280
			140	180	140	180	300	300	5	5	2LC0131-6AA	290							
			180	200	180	200	320	320	5.1	5.1	2LC0131-6AA	295							
630	52000	1280	100	140	100	140	630	250	250	240	6	68	68	120	486	7.2	7.2	2LC0131-7AA	345
			140	180	140	180	300	300	7.7	7.7	2LC0131-7AA	370							
			180	220	180	220	355	355	8.4	8.4	2LC0131-7AA	400							
710	84000	1150	110	160	110	160	710	290	290	260	7	80	80	140	527	13	13	2LC0131-8AA	510
			160	200	160	200	330	330	14	14	2LC0131-8AA	515							
			200	240	200	240	385	385	15	15	2LC0131-8AA	540							

- | | | |
|------|---|---|
| ØD1: | • Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes | 1 |
| | • Without finished bore from size 560 for 2nd diameter range D1 – Without order codes | 2 |
| | • Without finished bore from size 710 for 3rd diameter range D1 – Without order codes | 3 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |
| ØD2: | • Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes | 1 |
| | • Without finished bore from size 560 for 2nd diameter range D2 – Without order codes | 2 |
| | • Without finished bore from size 710 for 3rd diameter range D2 – Without order codes | 3 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |

¹⁾ Hub material EN-GJS 400 spheroidal graphite cast iron.

FLENDER Standard Couplings Flexible Couplings - RUPEX Series

Type RWN - hub material grey cast iron

Size	Rated torque buffer 80 ShoreA T_{KN}	Speed n_{Kmax} rpm	Dimensions in mm												Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			Bore with keyway to DIN 6885				DA	ND1	ND2	NL1/ S NL2	U1	U2	P	LG	J_1	J_2			
			D1 min.	D1 max.	D2 min.	D2 max.													
800	110000	1000	125	180	125	180	800	320	320	290	7	80	80	140	587	22	22	2LC0132-0AA ■ ■ ■ -0AA0	670
			180	220	180	220		360	360	23	23					2LC0132-0AA ■ ■ ■ -0AA0	690		
			220	260	220	260		420	420	24.5	24.5					2LC0132-0AA ■ ■ ■ -0AA0	730		
900	150000	900	140	220	140	220	900	360	360	320	7.5	90	90	160	647.5	39	39	2LC0132-1AA ■ ■ ■ -0AA0	940
			220	260	220	260		425	425	41	41					2LC0132-1AA ■ ■ ■ -0AA0	960		
			260	290	260	290		465	465	43	43					2LC0132-1AA ■ ■ ■ -0AA0	1030		
1000	195000	810	150	240	150	240	1000	395	395	350	7.5	90	90	160	707.5	60	60	2LC0132-2AA ■ ■ ■ -0AA0	1200
			240	280	240	280		460	460	63	63					2LC0132-2AA ■ ■ ■ -0AA0	1250		
			280	320	280	320		515	515	68	68					2LC0132-2AA ■ ■ ■ -0AA0	1310		
1120	270000	700	160	200	160	200	1120	360	360	380	8.5	100	100	180	768.5	98	98	2LC0132-3AA ■ ■ ■ -0AA0	1470
			200	250	200	250		410	410	100	100					2LC0132-3AA ■ ■ ■ -0AA0	1510		
			250	300	250	300		495	495	105	105					2LC0132-3AA ■ ■ ■ -0AA0	1600		
1250	345000	650	180	230	180	230	1250	410	410	420	8.5	100	100	180	848.5	150	150	2LC0132-4AA ■ ■ ■ -0AA0	1850
			230	280	230	280		460	460	155	155					2LC0132-4AA ■ ■ ■ -0AA0	1900		
			280	330	280	330		540	540	165	165					2LC0132-4AA ■ ■ ■ -0AA0	2025		
1400	530000	570	200	260	200	260	1400	465	465	480	9	120	120	210	969	290	290	2LC0132-5AA ■ ■ ■ -0AA0	2820
			260	320	260	320		525	525	300	300					2LC0132-5AA ■ ■ ■ -0AA0	2900		
			320	380	320	380		620	620	310	310					2LC0132-5AA ■ ■ ■ -0AA0	3180		
1600	750000	500	260	320	260	320	1600	565	565	540	9	120	120	210	1089	490	490	2LC0132-6AA ■ ■ ■ -0AA0	3780
			320	380	320	380		625	625	500	500					2LC0132-6AA ■ ■ ■ -0AA0	3870		
			380	440	380	440		720	720	530	530					2LC0132-6AA ■ ■ ■ -0AA0	4150		
1800	975000	450	320	380	320	380	1800	660	660	600	12	140	140	240	1212	850	850	2LC0132-7AA ■ ■ ■ -0AA0	5550
			380	440	380	440		720	720	930	930					2LC0132-7AA ■ ■ ■ -0AA0	5630		
			440	500	440	500		820	820	980	980					2LC0132-7AA ■ ■ ■ -0AA0	6000		
2000	1300000	400	380	440	380	440	2000	760	760	660	12	140	140	240	1332	1350	1350	2LC0132-8AA ■ ■ ■ -0AA0	6800
			440	500	440	500		820	820	1400	1400					2LC0132-8AA ■ ■ ■ -0AA0	7000		
			500	560	500	560		920	920	1500	1500					2LC0132-8AA ■ ■ ■ -0AA0	7350		
			560	600	560	600		960	960						1550	1550	2LC0132-8AA ■ ■ ■ -0AA0	7620	

- ØD1:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D1 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D1 – Without order codes
 - Without finished bore from size 1120 for 4th diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ØD2:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D2 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D2 – Without order codes
 - Without finished bore from size 1120 for 4th diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

From size 560 bores D1 and D2 are each provided with a recess of $D = +1$ mm halfway along the hub. $V \approx 1/3$ NL

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:
 RUPEX RWN coupling, size 710,
 Part 1: hub left with bore 180H7 mm, with keyway to DIN 6885 and set screw,
 Part 2: hub right with bore 200H7 mm, with keyway to DIN 6885 and set screw.

Product code:
2LC0131-8AA99-0AA0
L2B+M2D

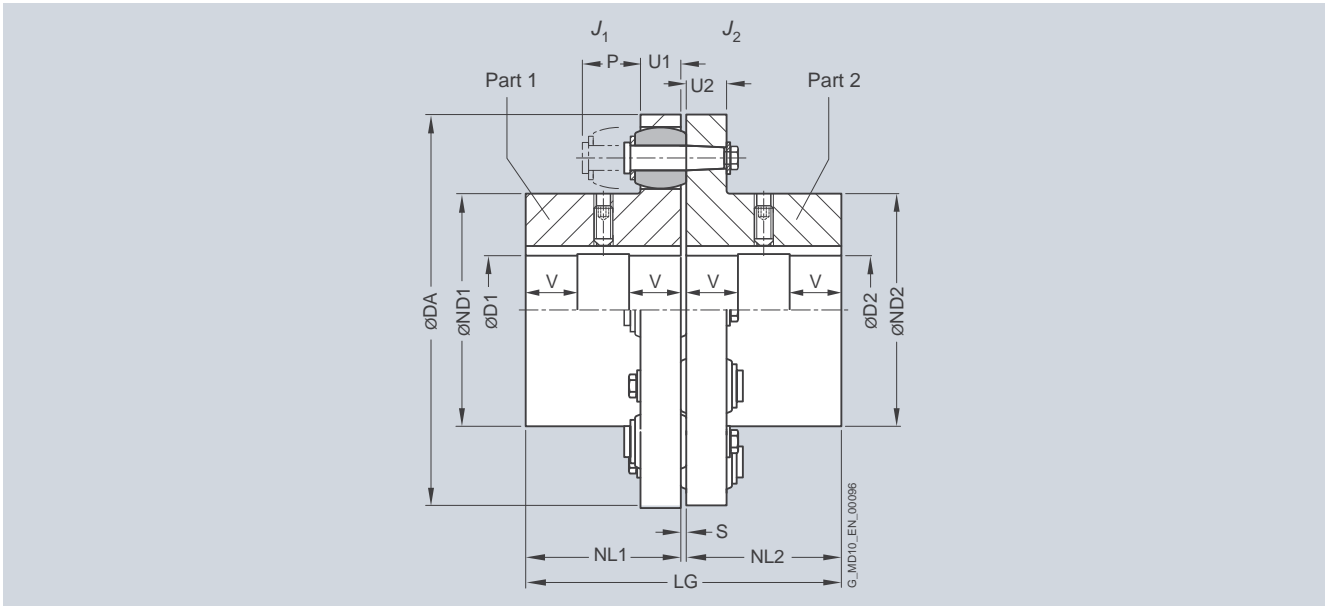
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RWS - hub material steel

Selection and ordering data



Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm											Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			Bore with keyway to DIN 6885				DA	ND1	ND2	NL1/ NL2	S	U1	U2	P	LG			J_1	J_2
			D1 min.	D1 max.	D2 min.	D2 max.													
105	200	10000	-	32	-	38	105	53	59	45	3	13	12	30	93	0.001	0.001	2LC0130-1AB ■ ■ -0AA0	1.9
125	350	9000	-	40	-	48	125	65	68	50	3	16	15	35	103	0.003	0.003	2LC0130-2AB ■ ■ -0AA0	3.2
144	500	7800	-	50	-	60	144	76	84	55	3	16	15	35	113	0.004	0.006	2LC0130-3AB ■ ■ -0AA0	4.5
162	750	6900	-	55	-	65	162	85	92	60	3.5	20	18	40	123.5	0.007	0.013	2LC0130-4AB ■ ■ -0AA0	6.7
178	950	6300	-	70	-	75	178	102	108	70	3.5	20	18	40	143.5	0.014	0.022	2LC0130-5AB ■ ■ -0AA0	9.7
198	1300	5600	-	80	-	85	198	120	128	80	3.5	20	18	40	163.5	0.022	0.030	2LC0130-6AB ■ ■ -0AA0	12.9
228	2200	4900	-	85	-	95	228	129	140	90	3.5	26	24	50	183.5	0.038	0.071	2LC0130-7AB ■ ■ -0AA0	19
252	2750	4400	-	100	-	110	252	150	160	100	3.5	26	24	50	203.5	0.07	0.12	2LC0130-8AB ■ ■ -0AA0	26.3
285	4300	3900	48	110	48	120	285	164	175	110	4.5	32	30	60	224.5	0.13	0.21	2LC0131-0AB ■ ■ -0AA0	39
320	5500	3500	55	125	55	130	320	180	192	125	4.5	32	30	60	254.5	0.23	0.32	2LC0131-1AB ■ ■ -0AA0	53
360	7800	3100	65	135	65	140	360	200	210	140	4.5	42	42	75	284.5	0.41	0.69	2LC0131-2AB ■ ■ -0AA0	78
400	12500	2800	75	150	75	150	400	230	230	160	4.5	42	42	75	324.5	0.92	0.92	2LC0131-3AB ■ ■ -0AA0	110
450	18500	2500	85	170	85	170	450	260	260	180	5.5	52	52	90	365.5	1.7	1.7	2LC0131-4AB ■ ■ -0AA0	163
500	25000	2200	95	190	95	190	500	290	290	200	5.5	52	52	90	405.5	2.8	2.8	2LC0131-5AB ■ ■ -0AA0	217
560	39000	2000	100	165	100	165	560	250	250	220	6	68	68	120	446	4.8	4.8	2LC0131-6AB ■ ■ -0AA0	274
			165	200	165	200	300	300	5.2	5.2	2LC0131-6AB ■ ■ -0AA0	292							
			200	210	200	210	320	320	5.4	5.4	2LC0131-6AB ■ ■ -0AA0	305							
630	52000	1800	100	165	100	165	630	250	250	240	6	68	68	120	486	7.6	7.6	2LC0131-7AB ■ ■ -0AA0	352
			165	200	165	200	300	300	7.9	7.9	2LC0131-7AB ■ ■ -0AA0	370							
			200	235	200	235	355	355	8.7	8.7	2LC0131-7AB ■ ■ -0AA0	400							
710	84000	1600	110	190	110	190	710	290	290	260	7	80	80	140	527	14.4	14.4	2LC0131-8AB ■ ■ -0AA0	507
			190	220	190	220	330	330	14.6	14.6	2LC0131-8AB ■ ■ -0AA0	530							
			220	250	220	250	385	385	15.9	15.9	2LC0131-8AB ■ ■ -0AA0	560							

- | | | |
|------|---|---|
| ØD1: | • Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes | 1 |
| | • Without finished bore from size 560 for 2nd diameter range D1 – Without order codes | 2 |
| | • Without finished bore from size 560 for 3rd diameter range D1 – Without order codes | 3 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |
| ØD2: | • Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes | 1 |
| | • Without finished bore from size 560 for 2nd diameter range D2 – Without order codes | 2 |
| | • Without finished bore from size 560 for 3rd diameter range D2 – Without order codes | 3 |
| | • With finished bore – With order codes for diameter and tolerance (product code without -Z) | 9 |

FLENDER Standard Couplings Flexible Couplings - RUPEX Series

Type RWS - hub material steel

Size	Rated torque buffer 80 ShoreA T_{KN}	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885											Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1		D2		DA	ND1	ND2	NL1 NL2	S	U1 U2	P	LG	J_1			J_2	
			min.	max.	min.	max.									kgm ²			kgm ²	
800	110000	1400	125	210	125	210	800	320	320	290	7	80	140	587	23.1	23.1	2LC0132-0AB	■ ■ -0AA0	683
			210	240	210	240		360	360						23.3	23.3	2LC0132-0AB	■ ■ -0AA0	715
			240	280	240	280		420	420						25.7	25.7	2LC0132-0AB	■ ■ -0AA0	762
900	150000	1250	140	210	140	210	900	320	320	320	7.5	90	160	647.5	40	40	2LC0132-1AB	■ ■ -0AA0	907
			210	240	210	240		360	360					41	41	2LC0132-1AB	■ ■ -0AA0	933	
			240	280	240	280		425	425					44	44	2LC0132-1AB	■ ■ -0AA0	1000	
			280	310	280	310		465	465					45	45	2LC0132-1AB	■ ■ -0AA0	1025	
1000	195000	1100	150	230	150	230	1000	355	355	350	7.5	90	160	707.5	63	63	2LC0132-2AB	■ ■ -0AA0	1170
			230	260	230	260		395	395					64	64	2LC0132-2AB	■ ■ -0AA0	1208	
			260	300	260	300		460	460					68	68	2LC0132-2AB	■ ■ -0AA0	1290	
			300	340	300	340		515	515					70	70	2LC0132-2AB	■ ■ -0AA0	1343	
1120	270000	1000	160	240	160	240	1120	360	360	380	8.5	100	180	768.5	105	105	2LC0132-3AB	■ ■ -0AA0	1560
			240	270	240	270		410	410					106	106	2LC0132-3AB	■ ■ -0AA0	1660	
			270	330	270	330		495	495					109	109	2LC0132-3AB	■ ■ -0AA0	1730	
			330	370	330	370		560	560					119	119	2LC0132-3AB	■ ■ -0AA0	1870	
1250	345000	900	180	270	180	270	1250	410	410	420	8.5	100	180	848.5	168	168	2LC0132-4AB	■ ■ -0AA0	2000
			270	300	270	300		460	460					172	172	2LC0132-4AB	■ ■ -0AA0	2150	
			300	360	300	360		540	540					179	179	2LC0132-4AB	■ ■ -0AA0	2200	
			360	400	360	400		610	610					189	189	2LC0132-4AB	■ ■ -0AA0	2420	
1400	530000	800	200	310	200	310	1400	465	465	480	9	120	210	969	316	316	2LC0132-5AB	■ ■ -0AA0	3020
			310	350	310	350		525	525					322	322	2LC0132-5AB	■ ■ -0AA0	3120	
			350	410	350	410		620	620					337	337	2LC0132-5AB	■ ■ -0AA0	3350	
			410	460	410	460		700	700					357	357	2LC0132-5AB	■ ■ -0AA0	3570	
1600	750000	700	260	370	260	370	1600	565	565	540	9	120	210	1089	540	540	2LC0132-6AB	■ ■ -0AA0	3890
			370	410	370	410		625	625					554	554	2LC0132-6AB	■ ■ -0AA0	4270	
			410	480	410	480		720	720					587	587	2LC0132-6AB	■ ■ -0AA0	4300	
			480	510	480	510		770	770					611	611	2LC0132-6AB	■ ■ -0AA0	4630	
1800	975000	600	320	440	320	440	1800	660	660	600	12	140	240	1212	1043	1043	2LC0132-7AB	■ ■ -0AA0	6230
			440	480	440	480		720	720					1072	1072	2LC0132-7AB	■ ■ -0AA0	6460	
			480	540	480	540		820	820					1122	1122	2LC0132-7AB	■ ■ -0AA0	6770	
			540	580	540	580		870	870					1143	1143	2LC0132-7AB	■ ■ -0AA0	7030	
2000	1300000	550	380	500	380	500	2000	760	760	660	12	140	240	1332	1628	1628	2LC0132-8AB	■ ■ -0AA0	8140
			500	540	500	540		820	820					1664	1664	2LC0132-8AB	■ ■ -0AA0	8430	
			540	610	540	610		920	920					1735	1735	2LC0132-8AB	■ ■ -0AA0	8860	
			610	640	610	640		960	960					1793	1793	2LC0132-8AB	■ ■ -0AA0	9050	

- ∅D1:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D1 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D1 – Without order codes
 - Without finished bore from size 900 for 4th diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ∅D2:
- Without finished bore up to size 500, from size 560 for 1st diameter range D2 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D2 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D2 – Without order codes
 - Without finished bore from size 900 for 4th diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

From size 560 bores D1 and D2 are each provided with a recess of D = +1 mm halfway along the hub. $V \approx 1/3 NL$

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

RUPEX RWS coupling, size 710,
Part 1: Hub left with bore 180H7 mm, with keyway to DIN 6885 and set screw,
Part 2: Hub right with bore 200H7 mm, with keyway to DIN 6885 and set screw.

Coupling balanced G6.3 in accordance with the half parallel key standard.

Product code:
2LC0131-8AB99-0AA0-Z
L2B+M2D+W02

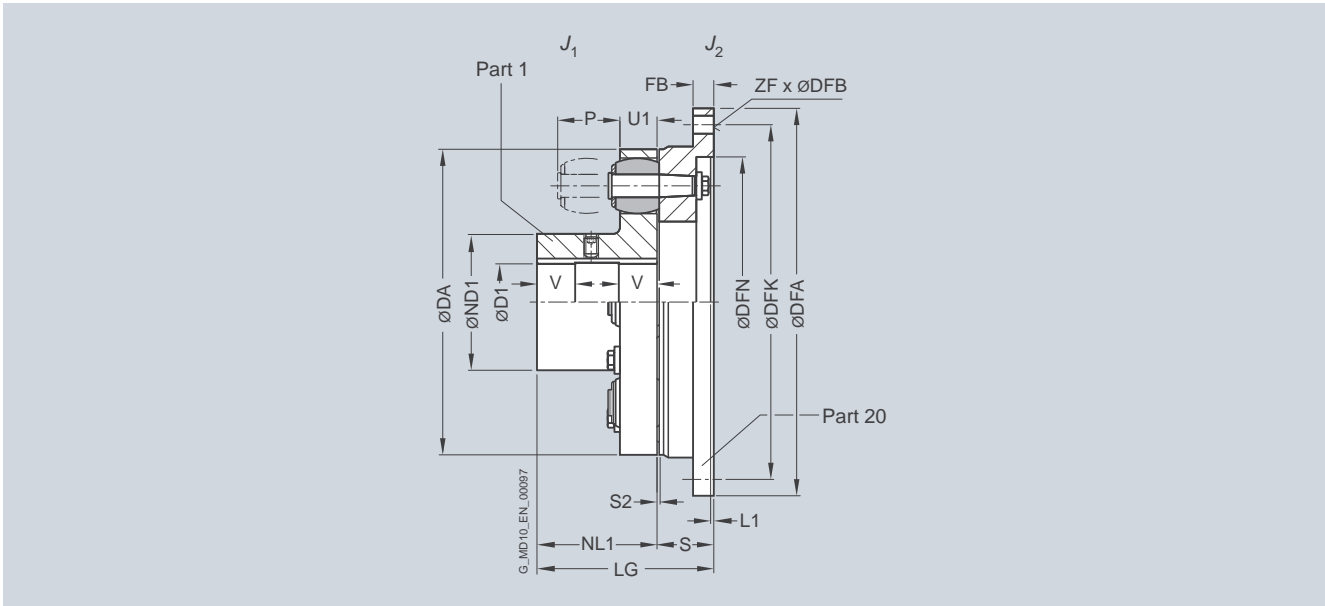
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RFN with hub in grey cast iron

Selection and ordering data



For dimensions U1, P and S2, see type RWN.

Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Speed n_{kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885							Flange connection						Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg			
			D1 min.	DA	ND1	NL1	S	LG	DFA	FB	DFN	L1	DFK	ZF	DFB	J_1 kgm ²	J_2 kgm ²					
105	200	7000	-	32	105	53	45	26	71	158	10	142	6	9	0.001	0.005	2LC0130-1AJ	1-0AA0	2.3			
125	350	6000	-	40	125	65	50	31	81	180	13	160	6	11	0.003	0.012	2LC0130-2AJ	1-0AA0	4.4			
144	500	5250	-	45	144	76	55	31	86	200	13	180	7	11	0.004	0.018	2LC0130-3AJ	1-0AA0	5.0			
162	750	4650	-	50	162	85	60	37.5	97.5	220	13	200	8	11	0.007	0.032	2LC0130-4AJ	1-0AA0	7.3			
178	950	4200	-	60	178	102	70	37.5	117.5	248	16	224	8	14	0.014	0.055	2LC0130-5AJ	1-0AA0	10			
198	1300	3750	-	70	198	120	80	37.5	117.5	274	16	250	8	14	0.022	0.080	2LC0130-6AJ	1-0AA0	13			
228	2200	3300	-	80	228	129	90	45.5	135.5	314	20	282	8	18	0.038	0.18	2LC0130-7AJ	1-0AA0	20			
252	2750	3000	-	90	252	150	100	45.5	145.5	344	20	312	8	18	0.07	0.26	2LC0130-8AJ	1-0AA0	25.5			
285	4300	2650	48	100	285	164	110	55.5	165.5	380	22	348	9	18	0.13	0.46	2LC0131-0AJ	1-0AA0	38			
320	5500	2350	55	110	320	180	125	55.5	175.5	430	25	390	9	22	0.23	0.76	2LC0131-1AJ	1-0AA0	50			
360	7800	2100	65	120	360	200	140	70.5	210.5	480	25	440	10	22	0.41	1.4	2LC0131-2AJ	1-0AA0	76			
400	12500	2050	75	140	400	230	160	74.5	234.5	520	50	380	4	480	10	22	0.87	1.8	2LC0131-3AJ	1-0AA0	125	
450	18500	1800	85	160	450	260	180	85.5	265.5	575	45	428	6	528	12	26	1.7	3.2	2LC0131-4AJ	1-0AA0	170	
500	25000	1600	95	180	500	290	200	85.5	285.5	620	45	475	6	570	12	26	2.8	4.3	2LC0131-5AJ	1-0AA0	205	
560	39000	1500	100	140	560	250	220	106	326	700	65	532	8	650	16	26	4.6	8.2	2LC0131-6AJ	1-0AA0	330	
			140	180	300													5		2LC0131-6AJ	1-0AA0	330
			180	200	320													5.1		2LC0131-6AJ	1-0AA0	340
630	52000	1280	100	140	630	250	240	106	346	785	60	602	8	725	16	33	7.2	13.8	2LC0131-7AJ	1-0AA0	390	
			140	180	300													7.7		2LC0131-7AJ	1-0AA0	400
			180	220	355													8.4		2LC0131-7AJ	1-0AA0	420
710	84000	1200	110	160	710	290	260	127	387	875	80	675	10	815	18	33	13	26	2LC0131-8AJ	1-0AA0	550	
			160	200	330													14		2LC0131-8AJ	1-0AA0	550
			200	240	385													15		2LC0131-8AJ	1-0AA0	570
800	110000	1000	125	180	800	320	290	127	417	1000	70	765	10	930	16	39	22	45	2LC0131-9AJ	1-0AA0	680	
			180	220	360													23		2LC0131-9AJ	1-0AA0	690
			220	260	420													24.5		2LC0131-9AJ	1-0AA0	710

- ØD1:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D1 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- 1
2
3
9

From size 560 bore D1 is provided with a recess of D = +1 mm halfway along the hub. $V \approx 1/3 NL$

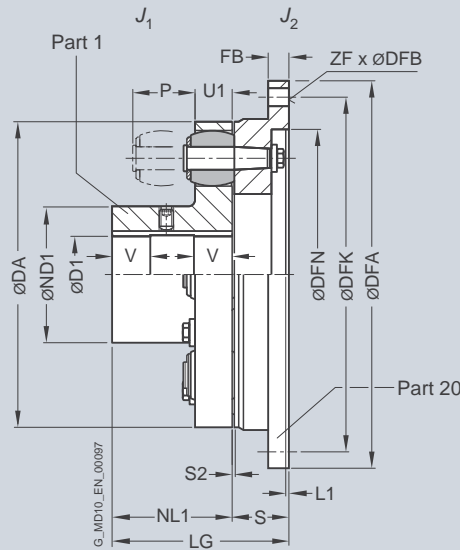
Weight and mass moments of inertia apply to maximum bore diameters.

The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings Flexible Couplings - RUPEX Series

Type RFS in steel

Selection and ordering data



For dimensions U1, P and S2, see type RWS.

Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Speed n_{kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885										Flange connection					Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1 min.	DA max.	ND1	NL1	S	LG	DFA	FB	DFN	L1	DFK	ZF	DFB	J_1	J_2						
105	200	10000	-	32	105	53	45	26	71	158	10							0.001	0.005	2LC0130-1AK	1-0AA0	2.3	
125	350	9000	-	40	125	65	50	31	81	180	13							0.003	0.012	2LC0130-2AK	1-0AA0	4.2	
144	500	7800	-	50	144	76	55	31	86	200	13							0.004	0.018	2LC0130-3AK	1-0AA0	5.0	
162	750	6900	-	55	162	85	60	37.5	97.5	220	13							0.007	0.032	2LC0130-4AK	1-0AA0	7.3	
178	950	6300	-	70	178	102	70	37.5	107.5	248	16							0.014	0.055	2LC0130-5AK	1-0AA0	10.0	
198	1300	5600	-	80	198	120	80	37.5	117.5	274	16							0.022	0.080	2LC0130-6AK	1-0AA0	13	
228	2200	4900	-	85	228	129	90	45.5	135.5	314	20							0.038	0.18	2LC0130-7AK	1-0AA0	20	
252	2750	4400	-	100	252	150	100	45.5	145.5	344	20							0.07	0.26	2LC0130-8AK	1-0AA0	25	
285	4300	3900	48	110	285	164	110	55.5	165.5	380	22							0.13	0.46	2LC0131-0AK	1-0AA0	38	
320	5500	3500	55	125	320	180	125	55.5	175.5	430	25							0.23	0.76	2LC0131-1AK	1-0AA0	50	
360	7800	3100	65	135	360	200	140	70.5	210.5	480	25							0.41	1.4	2LC0131-2AK	1-0AA0	76	
400	12500	2800	75	150	400	230	160	74.5	234.5	520	50	380	4	480	10	22		0.92	1.8	2LC0131-3AK	1-0AA0	125	
450	18500	2500	85	170	450	260	180	85.5	265.5	575	45	428	6	528	12	26		1.7	3.2	2LC0131-4AK	1-0AA0	175	
500	25000	2200	95	190	500	290	200	85.5	285.5	620	45	475	6	570	12	26		2.8	4.3	2LC0131-5AK	1-0AA0	210	
560	39000	2000	100	165	560	250	220	106	326	700	65	532	8	650	16	26		4.8	8.2	2LC0131-6AK	1-0AA0	330	
			165	200	300														5.2		2LC0131-6AK	1-0AA0	340
			200	210	320															5.4		2LC0131-6AK	1-0AA0
630	52000	1800	100	165	630	250	240	106	346	785	60	602	8	725	16	33		7.6	13.8	2LC0131-7AK	1-0AA0	390	
			165	200	300														7.9		2LC0131-7AK	1-0AA0	400
			200	235	355														8.7		2LC0131-7AK	1-0AA0	420
710	84000	1600	110	190	710	290	260	127	387	875	80	675	10	815	18	33		14.4	26	2LC0131-8AK	1-0AA0	550	
			190	220	330														14.6		2LC0131-8AK	1-0AA0	560
			220	250	385														15.9		2LC0131-8AK	1-0AA0	580
800	110000	1400	125	210	800	320	290	127	417	1000	70	765	10	930	16	39		23.1	45	2LC0131-9AK	1-0AA0	690	
			210	240	360														23.3		2LC0131-9AK	1-0AA0	710
			240	280	420														25.7		2LC0131-9AK	1-0AA0	730

- ØD1:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D1 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- 1
2
3
9

From size 560 bore D1 is provided with a recess of $D = +1$ mm halfway along the hub. $V \approx 1/3$ NL

Weight and mass moments of inertia apply to maximum bore diameters.

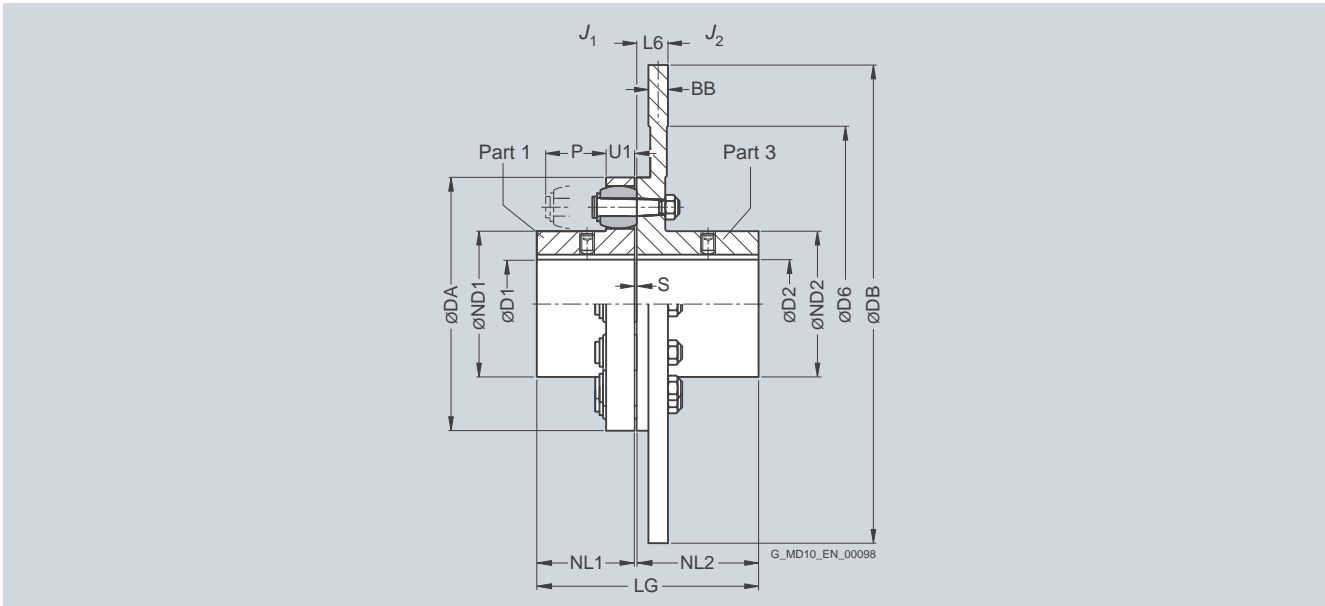
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RWB with brake disk to DIN 15432

Selection and ordering data



Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Dimensions in mm											Brake disk				Product code Plain text specification DB ; BB ; D6 ; NL2 required for order code POY Order codes for bore diameters and tolerances are specified in catalog section 3			
		Bore with keyway to DIN 6885		D1		D2		DA	ND1	ND2	NL1	NL2	S	U1	P	LG		DB	DB	D6
		min.	max.	min.	max.						max.			max.	max.	min.	min.			
144	500	-	45	-	45	144	76	84	55	219	3	16	35	277	500	315	175	30	34	2LC0130-3AE ■ ■ -0ZA0 POY
162	750	-	50	-	50	162	85	92	60	219	3.5	20	40	282.5	560	315	175	30	34	2LC0130-4AE ■ ■ -0ZA0 POY
178	950	-	60	-	60	178	102	108	70	219	3.5	20	40	292.5	560	355	200	30	34	2LC0130-5AE ■ ■ -0ZA0 POY
198	1300	-	70	-	70	198	120	128	80	219	3.5	20	40	302.5	560	355	200	30	34	2LC0130-6AE ■ ■ -0ZA0 POY
228	2200	-	80	-	80	228	129	140	90	219	3.5	26	50	312.5	800	450	250	30	34	2LC0130-7AE ■ ■ -0ZA0 POY
252	2750	-	90	38	100	252	150	160	100	219	3.5	26	50	322.5	800	500	280	30	34	2LC0130-8AE ■ ■ -0ZA0 POY
285	4300	48	100	48	110	285	164	175	110	219	4.5	32	60	333.5	800	560	310	30	34	2LC0131-0AE ■ ■ -0ZA0 POY
320	5500	55	110	55	120	320	180	192	125	219	4.5	32	60	348.5	1000	630	350	30	34	2LC0131-1AE ■ ■ -0ZA0 POY
ØD1:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1 9
ØD2:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1 9

8

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RWB with brake disk to DIN 15432

Brake disk diameter DB in accordance with customer specification.

Additional sizes are available on request. Further dimensions for part 3 on request.

Maximum speed in rpm:

$$n_{Kmax} = 1146/DB \quad DB \text{ in m}$$

Observe maximum speed of type RWN!

Mass moments of inertia and weights can be sufficiently precisely determined as follows:

- Mass moments of inertia in kgm^2 :
 $J_1 = J_1$ from type RWN
 $J_2 = J_2$ from type RWN + $710 \cdot BB \cdot DB^4$ BB, DB in m
- Weight in kg:
 $m = m$ from type RWN + $5700 \cdot BB \cdot DB^2$ BB, DB in m

Ordering example:

RUPEX RWB coupling, size 252,

Part 1: Bore D1 = 48H7 mm, keyway to DIN 6885-1 and set screw,

Part 3: Brake disk DB = 630; BB = 30 mm; D6 = 350 mm, bore 42H7 mm, keyway to DIN 6885-1 P9 and set screw.

Hub reduced to NL2 = 200 mm

Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

Mass moment of inertia:

$$J_1 = 0.07 \text{ kgm}^2,$$

$$J_2 = 0.12 \text{ kgm}^2 + 3.3 \text{ kgm}^2 = 3.42 \text{ kgm}^2$$

Weight:

$$m = 26.3 \text{ kg} + 68 \text{ kg} = 94.3 \text{ kg}$$

Product code:

2LC0130-8AE99-OZA0-Z

L1B+M0X+POY+W02

plain text to POY:

DB = 630 mm; BB = 30 mm;

D6 = 350 mm; NL2 = 200 mm

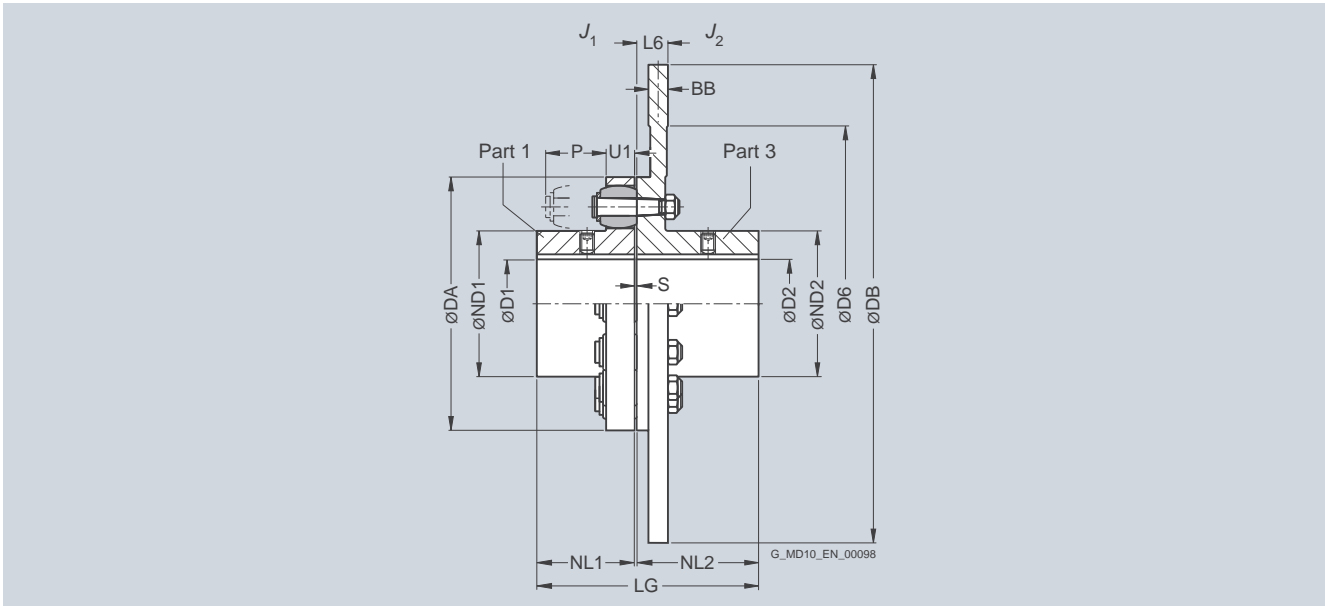
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RBS with brake disk to DIN 15432
 Sizes 144 to 360

Selection and ordering data



Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Dimensions in mm													Brake disk				Product code Plain text specification DB ; BB ; D6 ; NL2 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3	
		Bore with keyway to DIN 6885		D1		D2		DA	ND1	ND2	NL1	NL2	S	U1	P	LG	DB	D6		BB
		min.	max.	min.	max.										max.	min.	min.			
144	500	-	50	-	45	144	76	84	55	219	3	16	35	277	315	175	30	34	2LC0130-3AH ■ ■ ■ -0ZA0 P0Y	
162	750	-	55	-	50	162	85	92	60	219	3.5	20	40	282.5	315	175	30	34	2LC0130-4AH ■ ■ ■ -0ZA0 P0Y	
178	950	-	70	-	60	178	102	108	70	219	3.5	20	40	292.5	355	200	30	34	2LC0130-5AH ■ ■ ■ -0ZA0 P0Y	
198	1300	-	80	-	70	198	120	128	80	219	3.5	20	40	302.5	355	200	30	34	2LC0130-6AH ■ ■ ■ -0ZA0 P0Y	
228	2200	-	85	-	80	228	129	140	90	219	3.5	26	50	312.5	450	250	30	34	2LC0130-7AH ■ ■ ■ -0ZA0 P0Y	
252	2750	-	100	38	100	252	150	160	100	219	3.5	26	50	322.5	500	280	30	34	2LC0130-8AH ■ ■ ■ -0ZA0 P0Y	
285	4300	48	110	48	120	285	164	175	110	219	4.5	32	60	333.5	560	310	30	34	2LC0131-0AH ■ ■ ■ -0ZA0 P0Y	
320	5500	55	125	55	130	320	180	192	125	219	4.5	32	60	348.5	630	350	30	34	2LC0131-1AH ■ ■ ■ -0ZA0 P0Y	
360	7800	65	135	65	140	360	200	210	140	221	4.5	42	75	365.5	710	390	30	34	2LC0131-2AE ■ ■ ■ -0ZA0 P0Y	
øD1:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1 9
øD2:		<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 																		1 9

8

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RBS with brake disk to DIN 15432
Sizes 144 to 360

Brake disk diameter DB in accordance with customer specification.

Additional sizes are available on request. Further dimensions for part 3 on request.

Maximum speed in rpm:

$$n_{Kmax} = 1528/DB \quad DB \text{ in m}$$

Observe maximum speed of type RWS!

Mass moments of inertia and weights can be sufficiently precisely determined as follows:

- Mass moments of inertia in kgm^2 :
 $J_1 = J_1$ from type RWS
 $J_2 = J_2$ from type RWS + $770 \cdot BB \cdot DB^4$ BB and DB in m
- Weight in kg: $m = m$ from type RWS + $6160 \cdot BB \cdot DB^2$
 BB and DB in m

Ordering example:

RUPEX RBS coupling, size 252,

Part 1: Bore D1 = 48H7 mm, keyway to DIN 6885-1 and set screw,

Part 3: Brake disk DB = 630 x BB = 30 mm, D6 = 350 mm, bore 42H7 mm, keyway to DIN 6885-1 P9 and set screw.

Hub reduced to NL2 = 200 mm

Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

Mass moment of inertia:

$$J_1 = 0.07 \text{ kgm}^2, J_2 = 0.12 \text{ kgm}^2 + 3.6 \text{ kgm}^2 = 3.72 \text{ kgm}^2$$

$$\text{Weight: } m = 25.8 \text{ kg} + 73 \text{ kg} = 98.8 \text{ kg}$$

Product code:

2LC0130-8AH99-OZA0-Z

L1B+M0X+POY+W02

plain text to POY:

DB = 630 mm; BB = 30 mm;

D6 = 350 mm; NL2 = 200 mm

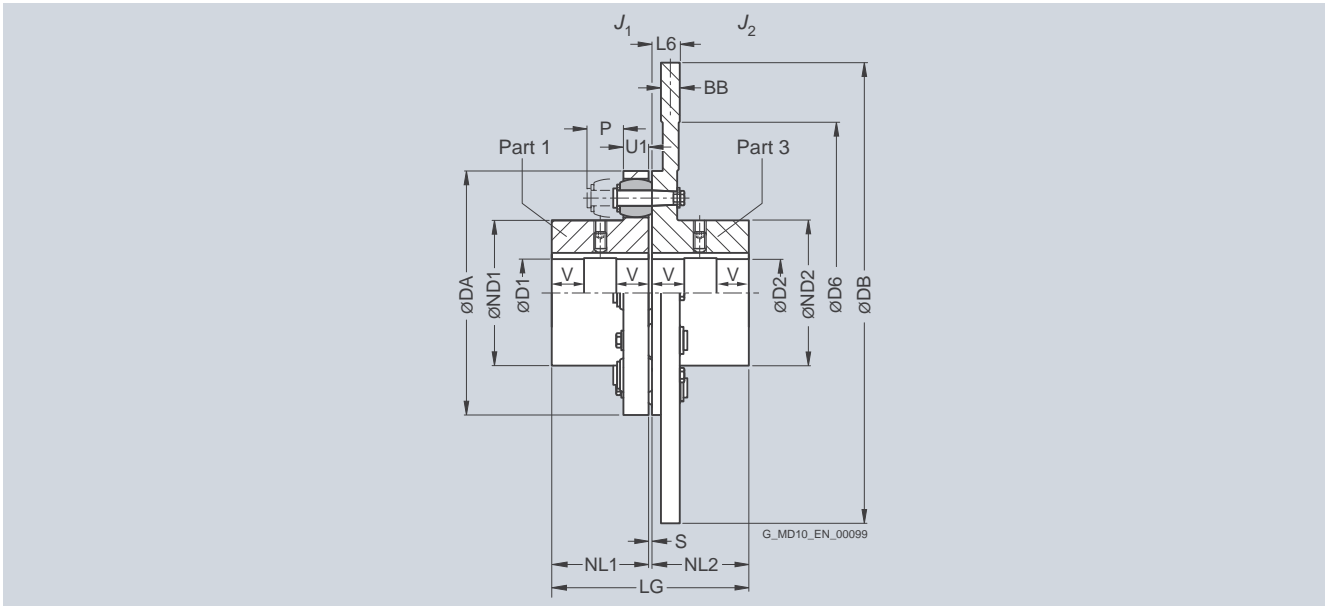
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RBS with brake disk to DIN 15432
 Sizes 400 to 1000

Selection and ordering data



Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Dimensions in mm Bore with keyway to DIN 6885														Brake disk			Product code Plain text specification DB ; BB ; D6 ; NL2 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3
		D1 min.	D1 max.	D2 min.	D2 max.	DA	ND1	ND2	NL1	NL2	S	U1	P	LG	D6 min.	BB	L6		
400	12500	75	150	75	150	400	230	230	160	225	4.5	42	75	389.5	440	30	40	2LC0131-3AH ■ ■ -0ZA0 P0Y	
450	18500	85	170	85	170	450	260	260	180	225	5.5	52	90	410.5	500	30	40	2LC0131-4AH ■ ■ -0ZA0 P0Y	
500	25000	95	190	95	190	500	290	290	200	225	5.5	52	90	430.5	500	30	40	2LC0131-5AH ■ ■ -0ZA0 P0Y	
560	39000	100	165	100	210	560	250	320	220	225	6	68	120	451	560	30	40	2LC0131-6AH ■ ■ -0ZA0 P0Y	
		165	200				300											2LC0131-6AH ■ ■ -0ZA0 P0Y	
		200	210				320											2LC0131-6AH ■ ■ -0ZA0 P0Y	
630	52000	100	165	100	235	630	250	355	240	240	6	68	120	486	630	30	55	2LC0131-7AH ■ ■ -0ZA0 P0Y	
		165	200				300											2LC0131-7AH ■ ■ -0ZA0 P0Y	
		200	235				355											2LC0131-7AH ■ ■ -0ZA0 P0Y	
710	84000	110	190	110	250	710	290	385	260	260	7	80	140	527	710	30	75	2LC0131-8AH ■ ■ -0ZA0 P0Y	
		190	220				330											2LC0131-8AH ■ ■ -0ZA0 P0Y	
		220	250				385											2LC0131-8AH ■ ■ -0ZA0 P0Y	
800	110000	125	210	125	280	800	320	420	290	290	7	80	140	587	800	30	75	2LC0132-0AH ■ ■ -0ZA0 P0Y	
		210	240				360											2LC0132-0AH ■ ■ -0ZA0 P0Y	
		240	280				420											2LC0132-0AH ■ ■ -0ZA0 P0Y	

ØD1:	• Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes	1
	• Without finished bore from size 560 for 2nd diameter range D1 – Without order codes	2
	• Without finished bore from size 560 for 3rd diameter range D1 – Without order codes	3
	• With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
ØD2:	• Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes	1
	• Without finished bore from size 560 for 2nd diameter range D2 – Without order codes	2
	• Without finished bore from size 560 for 3rd diameter range D2 – Without order codes	3
	• With finished bore – With order codes for diameter and tolerance (product code without -Z)	9

FLENDER Standard Couplings Flexible Couplings - RUPEX Series

Type RBS with brake disk to DIN 15432
Sizes 400 to 1000

Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Dimensions in mm													Brake disk			Product code Plain text specification DB ; BB ; D6 ; NL2 required for order code P0Y Order codes for bore diameters and tolerances are specified in catalog section 3
		Bore with keyway to DIN 6885				DA	ND1	ND2	NL1	NL2	S	U1	P	LG	D6 min.	BB	L6	
D1 min.	D1 max.	D2 min.	D2 max.															
900	150000	140	210	140	310	900	320	465	320	-	7.5	90	160	647.5	900	30	75	2LC0132-1AH ■ ■ ■ -0ZA0 P0Y
		210	240				360											2LC0132-1AH ■ ■ ■ -0ZA0 P0Y
		240	280				425											2LC0132-1AH ■ ■ ■ -0ZA0 P0Y
		280	310				465											2LC0132-1AH ■ ■ ■ -0ZA0 P0Y
1000	195000	150	230	150	340	1000	355	515	350	-	7.5	90	160	707.5	1000	30	75	2LC0132-2AH ■ ■ ■ -0ZA0 P0Y
		230	260				395											2LC0132-2AH ■ ■ ■ -0ZA0 P0Y
		260	300				460											2LC0132-2AH ■ ■ ■ -0ZA0 P0Y
		300	340				515											2LC0132-2AH ■ ■ ■ -0ZA0 P0Y

- ØD1:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D1 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D1 – Without order codes
 - Without finished bore from size 900 for 4th diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- ØD2:
- Without finished bore up to size 500, from size 560 for 1st diameter range D1 – Without order codes
 - Without finished bore from size 560 for 2nd diameter range D2 – Without order codes
 - Without finished bore from size 560 for 3rd diameter range D2 – Without order codes
 - Without finished bore from size 900 for 4th diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

From size 560 bore D1 is provided with a recess of $D = +1$ mm halfway along the hub.
 $V \approx 1/3$ NL

Brake disk diameter DB in accordance with customer specification.

Additional sizes are available on request. Further dimensions for part 3 on request.

Maximum speed in rpm:

$$n_{Kmax} = 1528/DB \quad DB \text{ in m}$$

Observe maximum speed of type RWS!

Mass moments of inertia and weights can be sufficiently precisely determined as follows:

- Mass moments of inertia in kgm^2 :
 $J_1 = J_1$ from type RWS
 $J_2 = J_2$ from type RWS + $770 \cdot BB \cdot DB^4$ BB and DB in m
- Weight in kg:
 $m = m$ from type RWS + $6160 \cdot BB \cdot DB^2$ BB and DB in m

Ordering example:

RUPEX RBS coupling, size 450,
Part 1: Bore D1 = 130H7 mm, keyway to DIN 6885-1 and set screw,
Part 3: Brake disk DB = 900; BB = 30 mm; D6 = 500 mm; bore 120H7 mm, keyway to DIN 6885-1 P9 and set screw.

Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

Mass moment of inertia:

$$J_1 = 1.74 \text{ kgm}^2$$

$$J_2 = 1.74 \text{ kgm}^2 + 15 \text{ kgm}^2 = 16.74 \text{ kgm}^2$$

Weight:

$$m = 25.8\text{kg} + 149 \text{ kg} = 174.8 \text{ kg}$$

Product code:

2LC0131-4AH99-0ZA0-Z
L1U+M1S+P0Y+W02

plain text to P0Y:

DB = 900 mm; BB = 30 mm;
D6 = 500 mm; NL2 = 322 mm

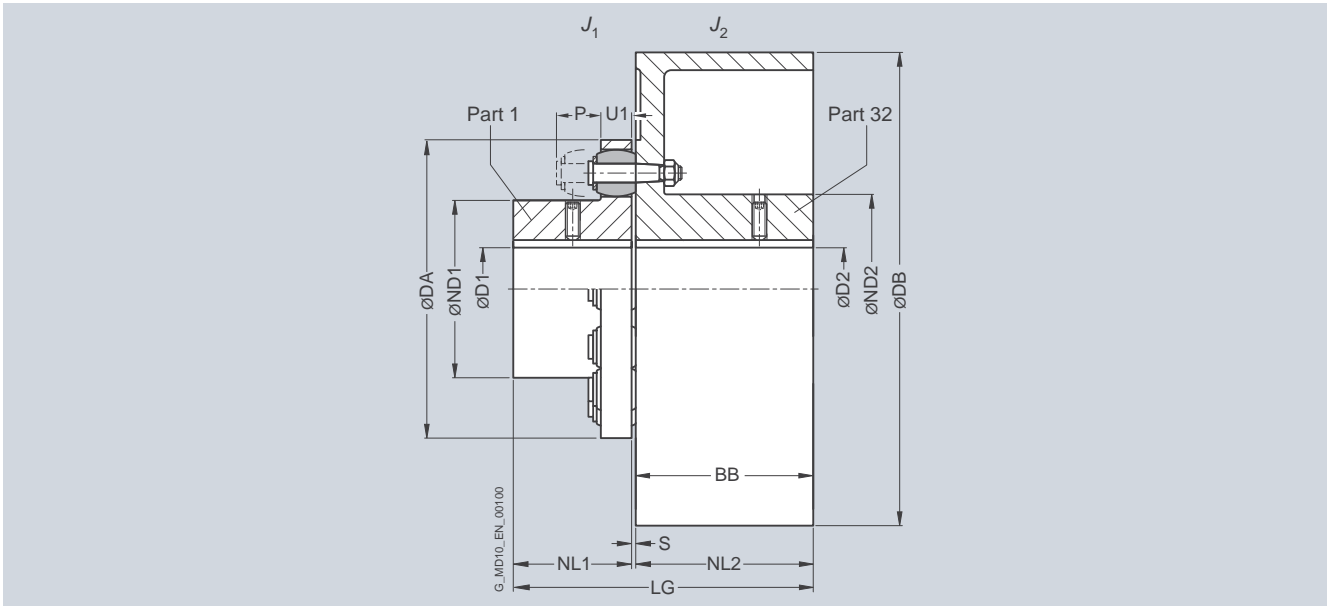
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

Flexible Couplings - RUPEX Series

Type RWB with brake drum to DIN 15431

Selection and ordering data



For dimensions U1 and P, see type RWN.

Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885											Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg		
			D1 from	D2 to	DA	ND1	ND2	NL1	NL2/ S	DB	LG	J_1	J_2						
144	500	3400	-	45	-	55	144	76	84	55	75	3	200	133	0.004	0.04	2LC0130-3AC	■ ■ -0BA0	9.5
162	750	2750	-	50	-	60	162	85	92	60	95	3.5	250	158.5	0.007	0.11	2LC0130-4AC	■ ■ -0CA0	17
178	950	2750	-	60	-	70	178	102	108	70	95	3.5	250	168.5	0.014	0.12	2LC0130-5AC	■ ■ -0CA0	20
		2150	-	60	-	70	178	102	108	70	118	315	191.5	0.31					2LC0130-5AC
198	1300	2750	-	70	-	80	198	120	128	80	95	3.5	250	178.5	0.022	0.13	2LC0130-6AC	■ ■ -0CA0	24
		2150	-	70	-	80	198	120	128	80	118	315	201.5	0.32					2LC0130-6AC
228	2200	1700	-	80	-	90	228	129	140	90	150	3.5	400	243.5	0.038	1.0	2LC0130-7AC	■ ■ -0EA0	54
252	2750	1700	-	90	38	100	252	150	160	100	150	3.5	400	253.5	0.07	1.0	2LC0130-8AC	■ ■ -0EA0	63
		1400	-	90	38	100	252	150	160	100	190	500	293.5	2.8					2LC0130-8AC
285	4300	1400	48	100	48	110	285	164	175	110	190	4.5	500	304.5	0.13	2.8	2LC0131-0AC	■ ■ -0FA0	104
		1100	-	48	100	48	285	164	175	110	236	630	350.5	7.8					2LC0131-0AC
320	5500	1100	55	110	55	120	320	180	192	125	236	4.5	630	365.5	0.23	7.9	2LC0131-1AC	■ ■ -0GA0	172
		950	-	55	110	55	320	180	192	125	265	710	394.5	13.9					2LC0131-1AC
360	7800	1100	65	120	65	130	360	200	210	140	236	4.5	630	380.5	0.41	8.1	2LC0131-2AC	■ ■ -0GA0	191
		950	-	65	120	65	360	200	210	140	265	710	409.5	14.0					2LC0131-2AC

- ØD1:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)
- ØD2:
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without -Z)

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:
 RUPEX RWB coupling, size 252,
 Part 1: Bore 48H7 mm, keyway to DIN 6885-1 and set screw,
 Part 3: 500 x 190, bore 42H7 mm, keyway to DIN 6885-1 P9 and set screw.

Coupling micro-balanced G6.3 at 1500 rpm in accordance with the half parallel key standard.

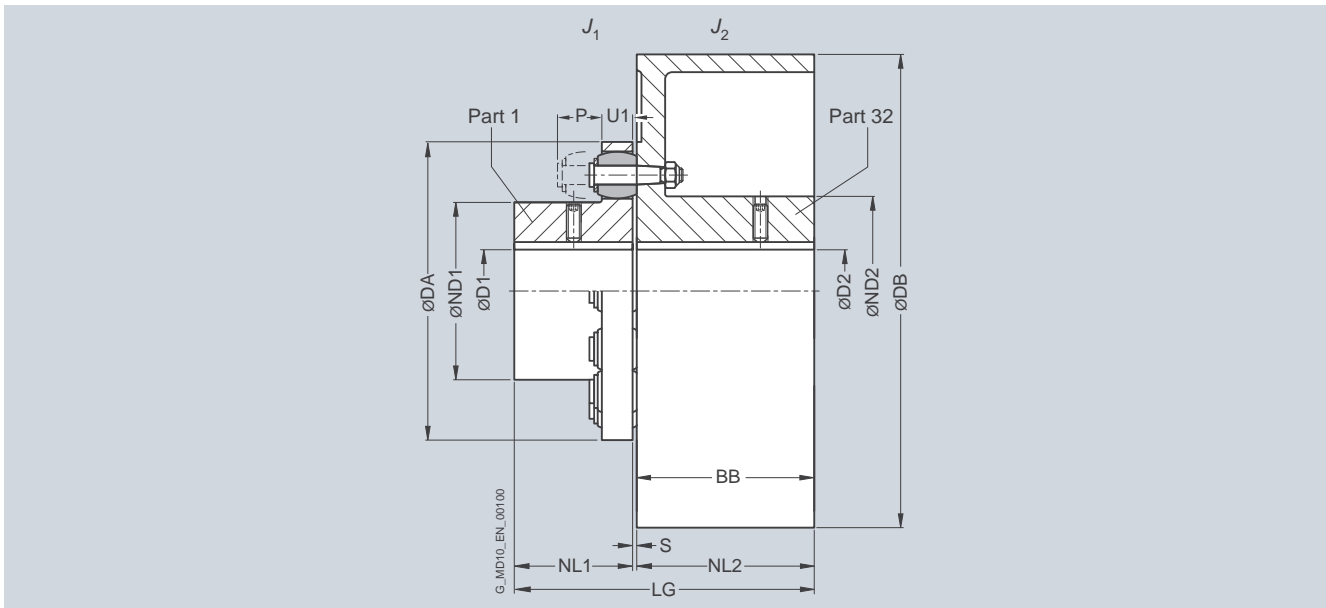
Product code:
2LC0130-8AC99-0FA0-Z
L1B+M0X+W02

The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings Flexible Couplings - RUPEX Series

Type RBS with brake drum to DIN 15431

Selection and ordering data



For dimensions U1 and P, see type RWS

Size	Rated torque buffer 80 ShoreA T_{KN} Nm	Speed n_{Kmax} rpm	Dimensions in mm Bore with keyway to DIN 6885											Mass moment of inertia		Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg	
			D1 min.	D2 max.	DA	ND1	ND2	NL1	NL2 BB	S	DB	LG	J_1	J_2				
144	500	5000	-	50	-	60	144	76	84	55	75	3	200	133	0.004	0.04	2LC0130-3AD ■ ■ ■ -0BA0	10
162	750	5000	-	55	-	65	162	85	92	60	95	3.5	250	158.5	0.007	0.13	2LC0130-4AD ■ ■ ■ -0CA0	18
178	950	4900 4350	-	70	-	75	178	102	108	70	95 118	3.5	250 315	168.5 191.5	0.014	0.13 0.34	2LC0130-5AD ■ ■ ■ -0CA0 2LC0130-5AD ■ ■ ■ -0DA0	22 30
198	1300	4600 4350	-	80	-	85	198	120	128	80	95 118	3.5	250 315	178.5 201.5	0.022	0.14 0.35	2LC0130-6AD ■ ■ ■ -0CA0 2LC0130-6AD ■ ■ ■ -0DA0	26 35
228	2200	3400	-	85	-	95	228	129	140	90	150	3.5	400	243.5	0.038	1.1	2LC0130-7AD ■ ■ ■ -0EA0	60
252	2750	3400 2750	-	100	38	110	252	150	160	100	150 190	3.5	400 500	253.5 293.5	0.067	1.1 3.1	2LC0130-8AD ■ ■ ■ -0EA0 2LC0130-8AD ■ ■ ■ -0FA0	68 103
285	4300	2750 2150	48	110	48	120	285	164	175	110	190 236	4.5	500 630	304.5 350.5	0.13	3.1 8.5	2LC0131-0AD ■ ■ ■ -0FA0 2LC0131-0AD ■ ■ ■ -0GA0	115 171
320	5500	2150 1900	55	125	55	130	320	180	192	125	236 265	4.5	630 710	365.5 394.5	0.23	8.6 14.8	2LC0131-1AD ■ ■ ■ -0GA0 2LC0131-1AD ■ ■ ■ -0HA0	185 230
360	7800	2150 1900	65	135	65	140	360	200	210	140	236 265	4.5	630 710	380.5 409.5	0.41	8.9 15.1	2LC0131-2AD ■ ■ ■ -0GA0 2LC0131-2AD ■ ■ ■ -0HA0	210 255
ØD1: <ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 																	1 9	
ØD2: <ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 																	1 9	

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:
RUPEX RBS coupling, size 252,
Part 1: Bore 48H7 mm, keyway to DIN 6885-1 and set screw,
Part 3: 500 x 190, bore 42H7 mm, keyway to DIN 6885-1 P9 and set screw.

Coupling micro-balanced.

Product code:
2LC0130-8AD99-0FA0-Z
L1B+M0X+W02

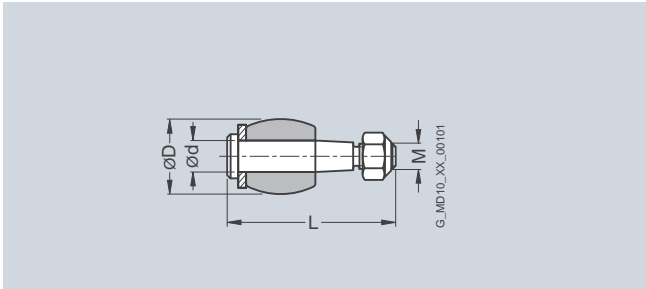
The product code applies to standard buffers of 80 ShoreA; the product code for alternative buffer types is available on request.

FLENDER Standard Couplings

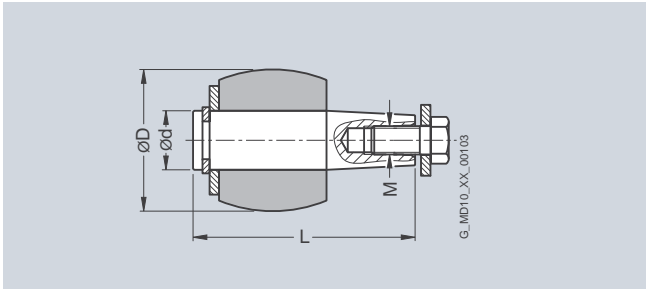
Flexible Couplings - RUPEX Series

Spare and wear parts

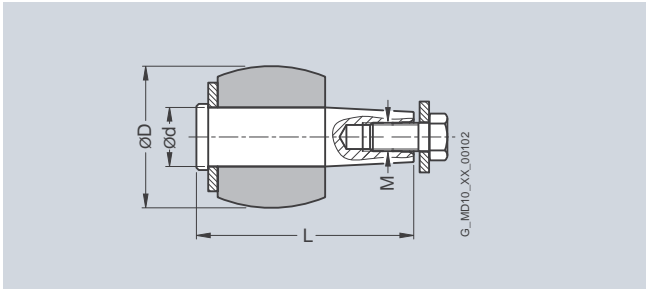
Selection and ordering data



Sizes 105 ... 400



Sizes 710 ... 2000



Sizes 450 ... 630

Buffers and pins

The buffers of RUPEX couplings are wear parts. The service life depends on the operating conditions.

Size	Number per set	Product code for a set of buffers				Weight	Pin complete, incl. fasteners	Weight	
		DA	DB	L	M				
		mm	mm	mm		kg	kg		
105	8	20	8	45	M6	2LC0130-1WA00-0AA0	0.043	2LC0130-1WB00-0AA0	0.14
125	8	24	10	53.5	M8	2LC0130-2WA00-0AA0	0.098	2LC0130-2WB00-0AA0	0.28
144	10	24	10	53.5	M8	2LC0130-3WA00-0AA0	0.12	2LC0130-3WB00-0AA0	0.35
*)				59.5				2LC0130-3WB00-0AA0-Z Y99	0.4
162	9	30	12	64.5	M10	2LC0130-4WA00-0AA0	0.17	2LC0130-4WB00-0AA0	0.57
*)				67.5				2LC0130-4WB00-0AA0-Z Y99	0.60
178	10	30	12	64.5	M10	2LC0130-5WA00-0AA0	0.19	2LC0130-5WB00-0AA0	0.65
*)				67.5				2LC0130-5WB00-0AA0-Z Y99	0.67
198	12	30	12	67.5	M10	2LC0130-6WA00-0AA0	0.23	2LC0130-6WB00-0AA0	0.76
*)								2LC0130-6WB00-0AA0-Z Y99	0.80
228	11	40	16	79	M12	2LC0130-7WA00-0AA0	0.42	2LC0130-7WB00-0AA0	1.40
252	12	40	16	79	M12	2LC0130-8WA00-0AA0	0.45	2LC0130-8WB00-0AA0	1.50
285	11	48	20	98	M16	2LC0131-0WA00-0AA0	0.81	2LC0131-0WB00-0AA0	2.50
320	12	48	20	98	M16	2LC0131-1WA00-0AA0	0.88	2LC0131-1WB00-0AA0	2.80
360	10	64	25	123	M18	2LC0131-2WA00-0AA0	1.6	2LC0131-2WB00-0AA0	4.4
400	14	64	25	123	M18	2LC0131-3WA00-0AA0	2.2	2LC0131-3WB00-0AA0	6.1
450	12	78	32	123	M16	2LC0131-4WA00-0AA0	3.5	2LC0131-4WB00-0AA0	11
500	14	78	32	123	M16	2LC0131-5WA00-0AA0	4.0	2LC0131-5WB00-0AA0	13
560	12	101	42	158	M20	2LC0131-6WA00-0AA0	7.1	2LC0131-6WB00-0AA0	25
630	14	101	42	158	M20	2LC0131-7WA00-0AA0	8.3	2LC0131-7WB00-0AA0	29
710	14	120	50	185.5	M24	2LC0131-8WA00-0AA0	14	2LC0131-8WB00-0AA0	49
800	16	120	50	185.5	M24	2LC0132-0WA00-0AA0	16	2LC0132-0WB00-0AA0	56
900	16	136	55	207.5	M24	2LC0132-1WA00-0AA0	24	2LC0132-1WB00-0AA0	71
1000	18	136	55	207.5	M24	2LC0132-2WA00-0AA0	27	2LC0132-2WB00-0AA0	80
1120	18	155	60	232.5	M30	2LC0132-3WA00-0AA0	41	2LC0132-3WB00-0AA0	110
1250	20	155	60	232.5	M30	2LC0132-4WA00-0AA0	45	2LC0132-4WB00-0AA0	125
1400	20	175	70	274	M30	2LC0132-5WA00-0AA0	65	2LC0132-5WB00-0AA0	185
1600	24	175	70	274	M30	2LC0132-6WA00-0AA0	78	2LC0132-6WB00-0AA0	225
1800	22	200	80	327	M36	2LC0132-7WA00-0AA0	115	2LC0132-7WB00-0AA0	320
2000	26	200	80	327	M36	2LC0132-8WA00-0AA0	135	2LC0132-8WB00-0AA0	380

* Only for type RWB with brake disk and type RBS with brake disk. Plain text to Y99: "Type RWB/RBS with brake disk"

Flexible Couplings BIPEX Series



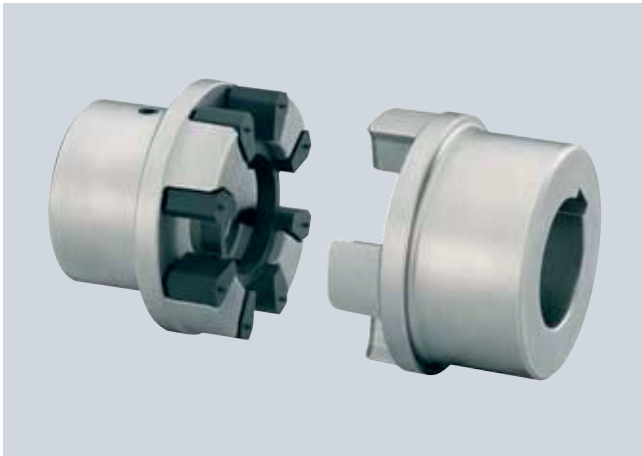
9/2	Overview
9/2	Benefits
9/2	Application
9/3	Design
9/4	Technical data
9/5	Type BWN
9/5	Selection and ordering data
9/6	Type BWT
9/6	Selection and ordering data
9/7	Type BNT
9/7	Selection and ordering data
9/8	Spare and wear parts
9/8	Selection and ordering data

FLENDER Standard Couplings

Flexible Couplings - BIPEX Series

General information

Overview



BIPEX couplings are torsionally flexible with low torsional backlash. They are outstanding for their particularly compact construction. BIPEX couplings link machine shafts.

BIPEX couplings are specially suited for electric motor drives which are well aligned with the driven machines and have uniform torque loads.

Benefits

BIPEX couplings are suitable for mounting horizontally, vertically or at any desired angle. The coupling parts can be arranged as required on the shaft extensions to be connected.

The cam ring is mounted with low backlash and achieves progressive torsional stiffness, i.e. torsional stiffness increases in proportion to capacity utilization.

The BIPEX coupling is fail-safe, i.e. if the cam ring is worn, the cast cams of the coupling hub provide for emergency operation.

Application

The BIPEX coupling is available as a catalog standard in 13 sizes with rated torque of between 13.5 Nm and 3700 Nm. The coupling is suitable for ambient temperatures of between $-30\text{ }^{\circ}\text{C}$ and $+80\text{ }^{\circ}\text{C}$.

BIPEX couplings are particularly suited for electric motor drives which have a uniform torque load and are well aligned. BIPEX couplings are frequently fitted and used in motor bell housings.

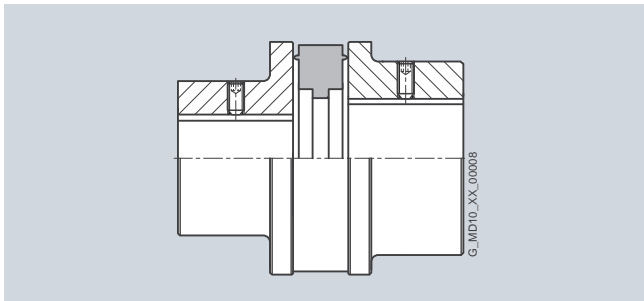
FLENDER Standard Couplings

Flexible Couplings - BIPEX Series

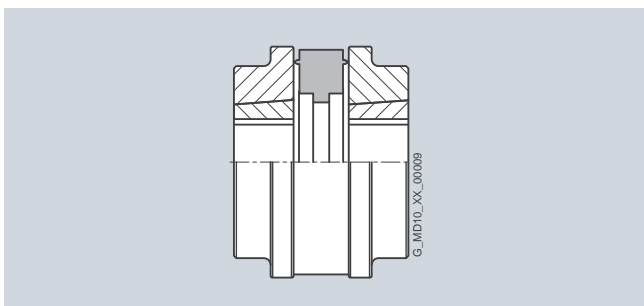
General information

Design

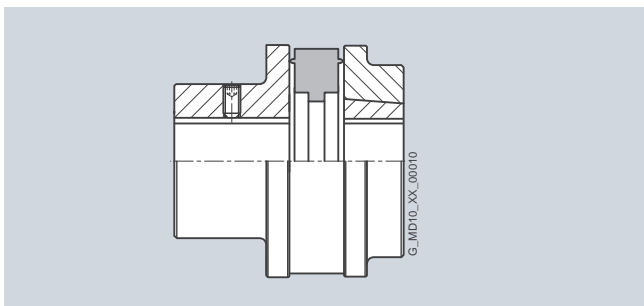
BIPEX couplings of types BWN, BWT and BNT each comprise two hub parts connected by a cam ring of elastomer material.



Type BWN



Type BWT



Type BNT

The couplings are inserted during fitting. The hubs are connected to the respective shafts via Taper clamping bushes or finished bores with parallel keyway connection.

BIPEX couplings are positive-locking and torsionally flexible thanks to the polyurethane cam ring. Shaft misalignment will result in deformation of the cam ring.

Coupling materials:

Hubs: EN-GJL-250

Cam ring: PU 92 ShoreA -30 °C to +80 °C

Types of BIPEX coupling

Type	Description
BWN	Coupling as a shaft-to-shaft connection with drilled and grooved hubs
BWT	Coupling as a shaft-shaft connection with Taper clamping bushes
BNT	Coupling as a shaft-shaft connection with drilled and grooved hubs and a Taper clamping bush

The coupling comprises the following:

- Cam ring
- 2 hub parts with identical cams. The hub parts are designed with a bore and keyway to DIN 6885 or with a taper bore for mounting a Taper clamping bush.

Fitting the clamping bush connects the hub firmly to the machine shaft.

In the case of part 4 the Taper clamping bush is inserted from the machine housing side. If there is insufficient space, the Taper clamping bush cannot be fitted from this side. Besides space for fitting the Taper clamping bush, space for the fitting tool (offset screwdriver) must be taken into consideration. In the case of part 3 the Taper clamping bush is inserted from the shaft end face side. The hub must be fitted before the machines to be connected are pushed together.

FLENDER Standard Couplings

Flexible Couplings - BIPEX Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Maximum speed	Torsional stiffness at 50 % capacity utilization	Assembly Gap dimension	Permissible shaft misalignment at speed n=1500 rpm ¹⁾		
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW}	n_{max} rpm	$C_{Tdyn 50\%}$ Nm/rad	ΔS mm	ΔK_a mm	ΔK_r mm	ΔK_w Degree
43	13.5	40.5	54	2.7	5000	1100	0.5	0.25	0.08	0.1
53	24	72	96	4.8	5000	2000	0.5	0.25	0.09	0.1
62	42	126	168	8.4	5000	3300	0.5	0.25	0.11	0.1
72	75	225	300	15	5000	5800	0.5	0.25	0.12	0.1
84	130	390	520	26	5000	9100	0.5	0.25	0.14	0.1
97	220	660	880	44	5000	15000	1.0	0.5	0.16	0.1
112	360	1080	1440	72	5000	22000	1.0	0.5	0.19	0.1
127	550	1650	2200	110	5000	35000	1.0	0.5	0.21	0.1
142	800	2400	3200	160	4900	54000	1.0	0.5	0.24	0.1
162	1250	3750	5000	250	4200	81000	1.0	0.5	0.27	0.1
182	1750	5250	7000	350	3800	121000	1.0	0.5	0.30	0.1
202	2650	7950	10600	530	3400	163000	1.0	0.5	0.34	0.1
227	3700	11100	14800	740	3000	271000	2.0	1.0	0.38	0.1

Torsional stiffness

The dynamic torsional stiffness is load-dependent and increases in proportion to capacity utilization. The values shown in the table are based on a capacity utilization of 50 %. The following table shows the correction factors for different rated loads.

$$C_{Tdyn} = C_{Tdyn 50\%} \cdot FKC$$

Correction factor FKC	Capacity utilization T_N / T_{KN}						
	20 %	40 %	50 %	60 %	70 %	80 %	100 %
	0.7	0.9	1.0	1.1	1.25	1.4	1.7

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size and type must be observed!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

Correction factor FKV	Speed in rpm			
	500	1000	1500	3000
	1.20	1.10	1.0	0.70

The damping coefficient is $\Psi = 1.4$

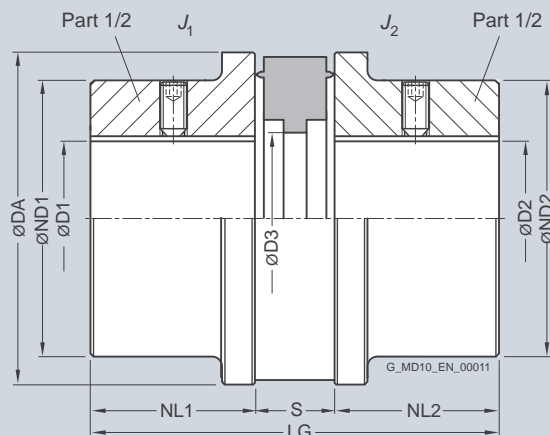
Furthermore, torsional stiffness and damping depend on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

¹⁾ The maximum speed of the respective type must be noted. For further information on permissible shaft misalignment, please see the operating instructions.

FLENDER Standard Couplings Flexible Couplings - BIPEX Series

Type BWN

Selection and ordering data



Size	Rated torque T_{KN} Nm	Dimensions in mm							Mass moment of inertia J_1/J_2 gm^2	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
		Bore with keyway to DIN 6885		DA	ND1/ND2	NL1/NL2	D3	S			
		D1/D2	max.								
43	13.5	25	43	43	22	21	12	56	0.04	2LC0120-0AA ■ ■ -0AA0	0.36
53	24	30	53	50	25	25	14	64	0.12	2LC0120-1AA ■ ■ -0AA0	0.62
62	42	35	62	58	30	29	16	76	0.26	2LC0120-2AA ■ ■ -0AA0	0.96
72	75	32	72	54	35	36	18	88	0.55	2LC0120-3AA ■ ■ -0AA0	1.4
		42		68					0.65		1.6
84	130	38	84	64	40	40	21	101	0.8	2LC0120-4AA ■ ■ -0AA0	2.1
		48		76					1.1		2.3
97	220	42	97	72	50	48	24	124	1.6	2LC0120-5AA ■ ■ -0AA0	3.3
		50		90					2.2		3.6
112	360	48	112	82	60	54	27	147	3.2	2LC0120-6AA ■ ■ -0AA0	5.0
		60		100					4.8		5.8
127	550	55	127	94	65	61	27	157	6.0	2LC0120-7AA ■ ■ -0AA0	7.3
		65		110					8.0		7.8
142	800	60	142	100	75	70	31	181	10.0	2LC0120-8AA ■ ■ -0AA0	9.8
		75		126					16.0		11.5
162	1250	65	162	110	80	81	36	196	18.0	2LC0121-0AA ■ ■ -0AA0	13.5
		80		134					26.0		15.5
182	1750	75	182	126	90	90	42	222	35.0	2LC0121-1AA ■ ■ -0AA0	19.5
		90		152					46.0		22.0
202	2650	80	202	134	100	100	48	248	55.0	2LC0121-2AA ■ ■ -0AA0	25.0
		100		168					80.0		30.0
227	3700	90	227	150	110	111	54	274	85.0	2LC0121-3AA ■ ■ -0AA0	40.0
		110		180					110.0		45.0

ØD1:	• Without finished bore – Without order codes for diameter and tolerance	1
	• Without finished bore from size 72 for 2nd diameter range D1 – Without order codes	2
	• With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
ØD2:	• Without finished bore – Without order codes for diameter and tolerance	1
	• Without finished bore from size 72 for 2nd diameter range D2 – Without order codes	2
	• With finished bore – With order codes for diameter and tolerance (product code without -Z)	9

Mass moment of inertia J in gm^2 , $1 gm^2 = 0.001 kgm^2$, with reference to one coupling half.

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

BIPEX BWN coupling, size 43,
Part 1/2: Bore D1 20H7 mm, with keyway to DIN 6885-1 and set screw,
Part 1/2: Bore D2 22H7 mm, with keyway to DIN 6885-1 and set screw.

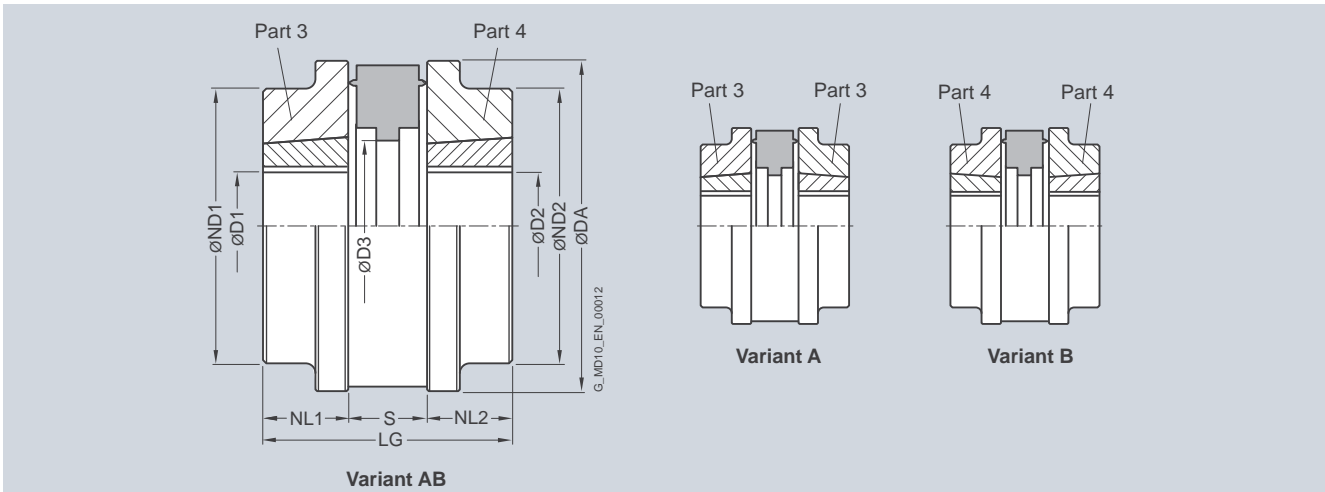
Product code:
2LC0120-0AA99-0AA0
L0M+M0N

FLENDER Standard Couplings

Flexible Couplings - BIPEX Series

Type BWT

Selection and ordering data



Coupling parts 3 and 4 can be combined as required. In the case of part 3, the Taper clamping bush is fitted from the

shaft end face side, in the case of part 4 from the shaft shoulder side.

Size	Rated torque T_{KN} Nm	Taper clamping bush Size	Dimensions in mm										Mass moment of inertia J gm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			Bore with keyway to DIN 6885-1		DA	ND1 ND2	NL1 NL2	D3	S	LG	D1/D2 min.	D1/D2 max.			
62	42	1008	10	25 ¹⁾									62	58	23
72	75	1108	10	28 ¹⁾	72	68	23	36	18	64	0.41	2LC0120-3A ■■■ -0AA0	1.2		
84	130	1210	11	32	84	76	26	40	21	73	0.85	2LC0120-4A ■■■ -0AA0	1.5		
112	360	1610	14	42 ¹⁾	112	100	26	54	27	79	2.70	2LC0120-6A ■■■ -0AA0	3.2		
142	800	2012	14	50	142	126	33	70	31	97	9.25	2LC0120-8A ■■■ -0AA0	6.2		
182	1750	2517	16	60	182	126	45	90	42	132	27.0	2LC0121-1A ■■■ -0AA0	11.3		
202	2650	3020	25	75	202	168	52	100	48	152	52.5	2LC0121-2A ■■■ -0AA0	15.6		
227	3700	3535	35	90	227	180	90	111	54	134	82.5	2LC0121-3A ■■■ -0AA0	30.0		
Variant:		<ul style="list-style-type: none"> • A • B • AB 										<ul style="list-style-type: none"> B C D 			
ØD1:		<ul style="list-style-type: none"> • Without Taper clamping bush – Without order codes for diameter and tolerance • With Taper clamping bush – With order codes for diameter (product code without -Z) 										<ul style="list-style-type: none"> 1 9 			
ØD2:		<ul style="list-style-type: none"> • Without Taper clamping bush – Without order codes for diameter and tolerance • With Taper clamping bush – With order codes for diameter (product code without -Z) 										<ul style="list-style-type: none"> 1 9 			

Mass moment of inertia J in gm², $1 \text{ gm}^2 = 0.001 \text{ kgm}^2$, with reference to one coupling half.

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:
BIPEX BWT coupling, size 62, variant AB
Part 3: with Taper clamping bush size 1008, Bore D1 20 mm, with keyway to DIN 6885-1,
Part 4: with Taper clamping bush size 1008, Bore D2 22 mm, with keyway to DIN 6885-1 and set screw.

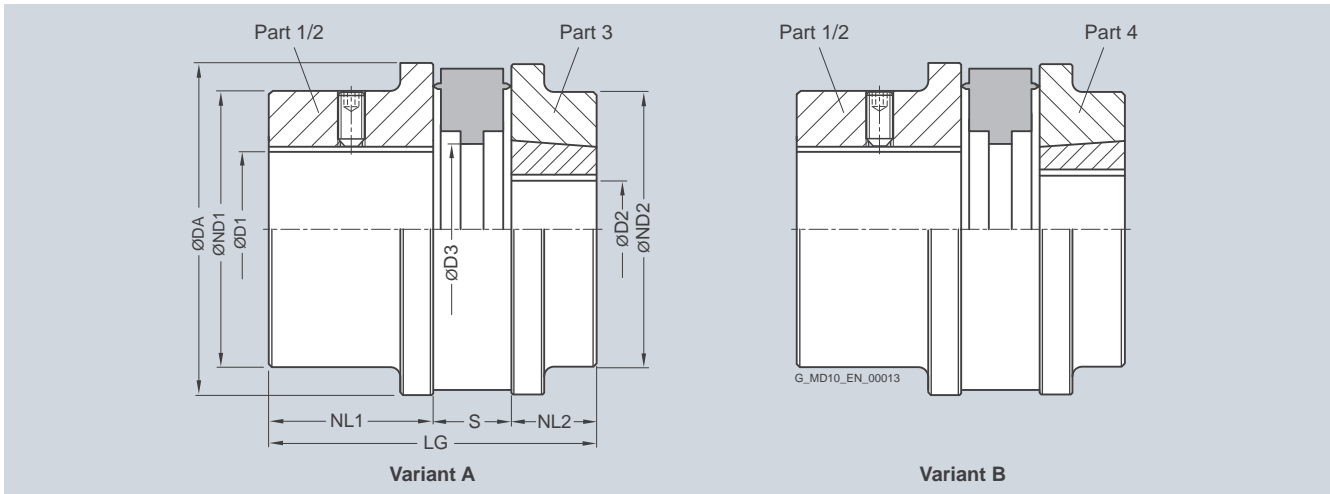
Product code:
2LC0120-2AD99-0AA0
L0M+M0N

¹⁾ Maximum bore with shallow keyway, see catalog section 14.

FLENDER Standard Couplings Flexible Couplings - BIPEX Series

Type BNT

Selection and ordering data



Dimension D3, see type BWN.

Size	Rated torque T_{KN} Nm	Variant	Dimensions in mm											Mass moment of inertia ¹⁾ J gm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
			Bore with keyway to DIN 6885-1 max.	Taper clamping bushes Size	Bore with keyway to DIN 6885-1		DA	ND1	ND2	NL1	NL2	S	LG			
62	42	A	35	1008	10	25 ¹⁾	62	58	58	30	23	16	69	0.22	2LC0120-2AE ■■ -0AA0	0.9
		B													2LC0120-2AF ■■ -0AA0	
72	75	A	32	1108	10	28 ¹⁾	72	54	68	35	23	18	76	0.41	2LC0120-3AE ■■ -0AA0	1.4
		B	42												2LC0120-3AF ■■ -0AA0	
84	130	A	38	1210	11	32	84	64	76	40	26	21	87	0.85	2LC0120-4AE ■■ -0AA0	1.9
		B	48												2LC0120-4AF ■■ -0AA0	
112	360	A	48	1610	14	42 ¹⁾	112	82	100	60	26	27	113	2.70	2LC0120-6AE ■■ -0AA0	4.5
		B	60												2LC0120-6AF ■■ -0AA0	
142	800	A	60	2012	14	50	142	100	126	75	33	31	139	9.25	2LC0120-8AE ■■ -0AA0	8.9
		B	75												2LC0120-8AF ■■ -0AA0	
182	1750	A	75	2517	16	60	182	126	126	90	45	42	177	27.0	2LC0121-1AE ■■ -0AA0	16.7
		B	90												2LC0121-1AF ■■ -0AA0	
202	2650	A	80	3020	25	75	202	134	168	100	52	48	200	52.5	2LC0121-2AE ■■ -0AA0	23
		B	100												2LC0121-2AF ■■ -0AA0	
227	3700	A	90	3535	35	90	227	150	180	110	90	54	254	30.0	2LC0121-3AE ■■ -0AA0	37.5
		B	110												2LC0121-3AF ■■ -0AA0	

ØD1:	<ul style="list-style-type: none"> Without finished bore – Without order codes for diameter and tolerance With finished bore – With order codes for diameter and tolerance (product code without -Z) 	2 9
ØD2:	<ul style="list-style-type: none"> Without Taper clamping bush – Without order codes for diameter and tolerance With Taper clamping bush – With order codes for diameter (product code without -Z) 	1 9

Mass moment of inertia J in gm², 1 gm² = 0.001 kgm², with reference to one coupling half.

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

BIPEX BNT coupling, size 62, variant B
 Part 1/2: Bore D1 20H7 mm, with keyway to DIN 6885-1 and set screw,
 Part 4: Bore D2 22H7 mm, with keyway to DIN 6885-1 and set screw.

Product code:
2LC0120-2AF99-0AA0
LOM+MON

¹⁾ Bores, some with shallow keyway, see catalog section 14.

FLENDER Standard Couplings

Flexible Couplings - BIPEX Series

Spare and wear parts

Selection and ordering data

BIPEX cam ring

Size	Product code	Weight kg
43	2LC0120-0WA00-0AA0	0.004
53	2LC0120-1WA00-0AA0	0.005
62	2LC0120-2WA00-0AA0	0.008
72	2LC0120-3WA00-0AA0	0.013
84	2LC0120-4WA00-0AA0	0.021
97	2LC0120-5WA00-0AA0	0.034
112	2LC0120-6WA00-0AA0	0.062
127	2LC0120-7WA00-0AA0	0.082
142	2LC0120-8WA00-0AA0	0.14
162	2LC0121-0WA00-0AA0	0.18
182	2LC0121-1WA00-0AA0	0.3
202	2LC0121-2WA00-0AA0	0.4
227	2LC0121-3WA00-0AA0	0.54

The elastomer cam rings are wear parts. The service life depends on the operating conditions.

Highly Flexible Couplings ELPEX-B Series



10/2	Overview
10/2	Benefits
10/2	Application
10/2	Design
10/4	Technical data
10/5	Type EBWN
10/5	Selection and ordering data
10/6	Type EBWT
10/6	Selection and ordering data
10/8	Type EBWZ
10/8	Selection and ordering data
10/10	Spare and wear parts
10/10	Selection and ordering data

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

General information

Overview



ELPEX-B couplings are highly flexible and free of torsional backlash. Because of their low torsional stiffness and damping capacity, ELPEX-B couplings are especially suitable for coupling machines with a highly non uniform torque pattern. ELPEX-B couplings are also suitable for connecting machines with high shaft misalignment.

Standard ELPEX-B coupling types are designed as shaft-shaft connections. Application-related types can be manufactured on request.

Benefits

The ELPEX-B coupling is suitable for horizontal and vertical mounting positions or mounting positions at any required angle.

The elastic tire is slit at the circumference and can be changed without having to move the coupled machines.

The elastic tire is fitted without backlash and gives the coupling linear torsional stiffness, thus the torsional rigidity remains constant as the load on the coupling increases.

The ELPEX-B coupling is especially suitable for reversing operation or operation with changing directions of load.

The coupling parts can be arranged as required on the shaft ends to be connected.

If the elastic tire is irreparably damaged or worn, the metal parts can rotate freely against one another because they are not in contact with one another.

Application

The ELPEX-B coupling is available as a catalog standard in 15 sizes with a rated torque of between 24 Nm and 14500 Nm. The coupling can be fitted with elastic tires made of natural rubber for ambient temperatures of -50 °C to $+50\text{ °C}$ and with elastic

tires made of chloroprene rubber for -15 °C to $+70\text{ °C}$. The chloroprene rubber tire is marked FRAS, "Fire-resistant and Anti-static".

Design

The ELPEX-B coupling's transmission characteristic is determined essentially by the elastic tire. The elastic tire is manufactured from a natural rubber or a chloroprene rubber mixture with a multiply fabric insert. The elastic tire is fastened to the hubs with bolts and two clamping rings.

In type EBWT, the shaft-hub connection is achieved with Taper clamping bushes, in type EBWN with finish-drilled hubs and parallel keys. The type EBWZ connects the machine shafts additionally via a detachable adapter.

Materials

Metal part materials

EN-GJL-250 grey cast iron or steel of quality $R_e > 300\text{ N/mm}^2$.

Elastic tire material

Material	Hardness	Identification	Ambient temperature
Natural rubber	70 ShoreA	048	-50 °C to $+50\text{ °C}$
Chloroprene rubber	70 ShoreA	068 FRAS	-15 °C to $+70\text{ °C}$

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

General information

ELPEX-B coupling types

Type	Description
EBWN	Coupling as a shaft-shaft connection with drilled and grooved hubs
EBWT	Coupling as a shaft-shaft connection with Taper clamping bushes
EBWZ	Coupling as shaft-shaft connection with detachable adapter

Further application-specific coupling types are available; dimension sheets for and information on these are available on request.

The coupling types set up for shaft-hub connections with Taper clamping bushes are designated as follows:

- Variant A: Coupling with part 3 – part 3
- Variant B: Coupling with part 4 – part 4
- Variant AB: Coupling with part 3 – part 4

In the case of part 3, the Taper clamping bush is screwed in from the shaft end face side. The coupling half must be fitted before the machines to be connected are pushed together.

In the case of part 4, the Taper clamping bush is screwed in from the machine-housing side. If there is insufficient room, the Taper clamping bushes cannot be fitted from this side. Besides fitting space for the Taper clamping bush bolts, space for the fitting tool (offset screwdriver) must be taken into account.

In the case of coupling type EBWT, part 3 and part 4 can be combined as required. Furthermore, the variant with a Taper clamping bush can be combined with the finish-drilled hub.



Unfitted coupling

The elastic tire can simply be slipped over the hub parts. The elastic tire is held firmly in place by fitting the clamping ring. The connection transmits the torque by frictional engagement.



Fitted coupling, shown without connecting shafts.



Fitted elastic tire

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Maximum speed	Dynamic torsional stiffness for 100 % load	Permitted shaft misalignment at speed $n = 1500$ rpm ¹⁾		
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	n_{Kmax} rpm	C_{Tdyn} Nm/rad	ΔK_a mm	ΔK_r mm	ΔK_w Degrees
105	24	48	72	7	4500	285	1.3	1.1	4
135	66	132	200	20	4500	745	1.7	1.3	4
165	125	250	375	38	4000	1500	2.0	1.6	4
190	250	500	750	75	3600	2350	2.3	1.9	4
210	380	760	1140	114	3100	3600	2.6	2.1	4
235	500	1000	1500	150	3000	5200	3.0	2.4	4
255	680	1360	2040	204	2600	7200	3.3	2.6	4
280	880	1760	2640	264	2300	10000	3.7	2.9	4
315	1350	2700	4050	405	2050	17000	4.0	3.2	4
360	2350	4700	7050	705	1800	28000	4.6	3.7	4
400	3800	7600	11400	1140	1600	44500	5.3	4.2	4
470	6300	12600	18900	1890	1500	78500	6.0	4.8	4
510	9300	18600	27900	2790	1300	110000	6.6	5.3	4
560	11500	23000	34500	3450	1100	160000	7.3	5.8	4
630	14500	29000	43500	4350	1000	200000	8.2	6.6	4

Torsional stiffness and damping

The damping coefficient is $\Psi = 0.9$

The technical data for the elastic tires made of natural rubber and chloroprene rubber are virtually identical.

Torsional stiffness depends on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The correction factors for different speeds are specified in the following table.

The maximum speed for the respective coupling size must be observed!

$$\Delta K_{perm} = \Delta K_{1500} \cdot F_{KV}$$

	Speed in rpm			
	500	1000	1500	3000
Correction factor F_{KV}	1.6	1.25	1.0	0.70

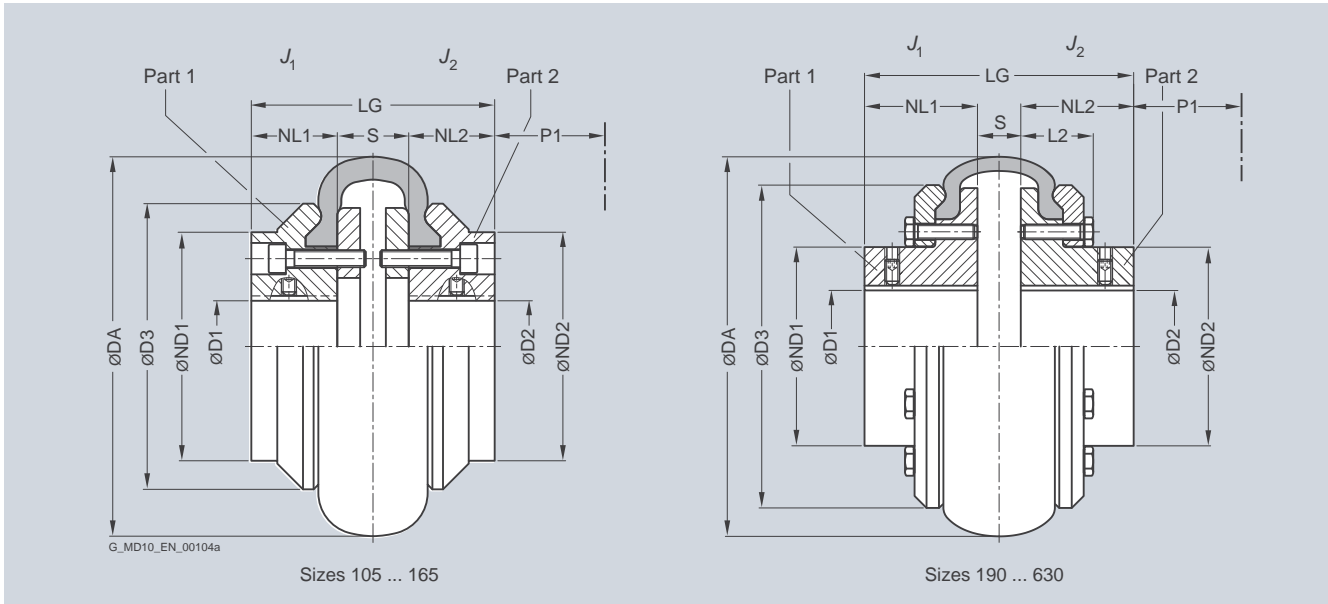
The restorative force (including in the axial direction) depends on speed, system torque and shaft misalignment. Restorative forces on request.

¹⁾ The maximum speed of the respective type must be noted. For further information on permissible shaft misalignment, please see the operating instructions.

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-B Series

Type EBWN

Selection and ordering data



Size	Rated torque T_{KN} Nm	Dimensions in mm										Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
		Bore with keyway to DIN 6885-1 D1, D2		DA	ND1 ND2	NL1 NL2	D3	L2	S	LG				
		min.	max.											
105	24	-	30	104	70	30	82	-	22	82	0.0011	2LC0210-0AA	1-0AA0	2.2
135	66	-	38	134	80	40	100	-	25	105	0.0025	2LC0210-1AA	1-0AA0	3.6
165	125	-	45	165	70	50	125	-	33	133	0.0056	2LC0210-2AA	1-0AA0	5.4
190	250	-	50	187	80	55	145	39	23	133	0.0095	2LC0210-3AA	1-0AA0	6.9
210	380	-	60	211	98	65	168	42	25	155	0.020	2LC0210-4AA	1-0AA0	11
235	500	-	70	235	112	70	188	47	27	167	0.023	2LC0210-5AA	1-0AA0	14.8
255	680	-	80	254	130	75	216	49	27	177	0.060	2LC0210-6AA	1-0AA0	20
280	880	-	90	280	145	80	233	50	25	185	0.083	2LC0210-7AA	1-0AA0	24.5
315	1350	-	90	314	150	90	264	53	29	209	0.129	2LC0210-8AA	1-0AA0	35
360	2350	-	125	359	200	100	311	57	32	232	0.32	2LC0211-0AA	1-0AA0	54
400	3800	-	135	402	216	125	345	63	30	280	0.55	2LC0211-1AA	1-0AA0	78
470	6300	-	160	470	260	140	398	71	46	326	1.12	2LC0211-2AA	1-0AA0	120
510	9300	-	140	508	250	150	429	79	48	348	1.6	2LC0211-3AA	1-0AA0	146
		140	180	290							1.7	2LC0211-3AA	1-0AA0	154
560	11500	-	140	562	250	165	474	91	55	385	2.5	2LC0211-4AA	1-0AA0	200
		140	180	300							2.7	2LC0211-4AA	1-0AA0	206
630	14500	80	140	629	250	195	532	96	59	449	4.1	2LC0211-5AA	1-0AA0	258
		140	180	300							4.4	2LC0211-5AA	1-0AA0	265

- $\varnothing D1$:
- Without finished bore – Without order codes
 - Without finished bore from size 510 for 2nd diameter range D1 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- $\varnothing D2$:
- Without finished bore – Without order codes
 - Without finished bore from size 510 for 2nd diameter range D2 – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

Weight and mass moments of inertia apply to maximum bore diameters.

The product code applies to elastic tires made of natural rubber.

Product code with **-Z** and order code **K01** for variant of the elastic tire made of chloroprene rubber.

P1 = fitting space for offset screwdriver and ejector bolt for dismounting the Taper clamping bush. For dismounting the elastic tire on sizes 105 to 165, a fitting space of P1 = 35 mm must be provided for the offset screwdriver. Sizes 190 to 630 require P1 = 35 mm of fitting space to undo the clamping ring bolts.

Ordering example:

ELPEX-B EBWN coupling, size 210,
Part 1: Bore 40H7 mm, keyway to DIN 6885-1 and set screw,
Part 2: Bore 45H7 mm, keyway to DIN 6885-1 and set screw.

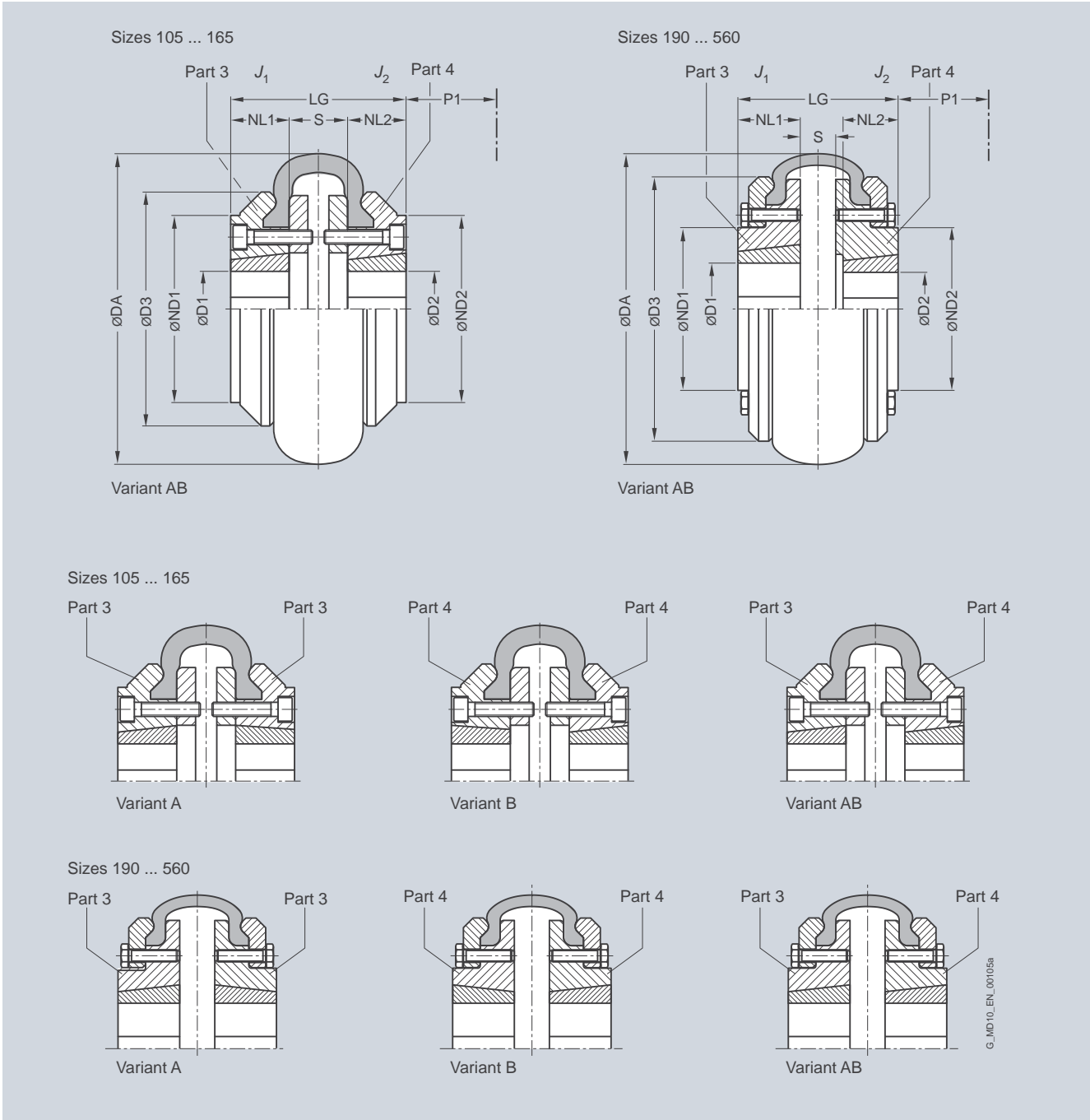
Product code:
2LC0210-4AA99-0AA0
L0W+M1A

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

Type EBWT

Selection and ordering data



Part 3: Screw connection for Taper clamping bush from the shaft end face side
 Part 4: Screw connection for Taper clamping bush from the machine-housing side

10

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

Type EBWT

Size	Rated torque T_{KN} Nm	Part no.	Taper clamp- ing bush Size	Dimensions in mm								Mass moment of inertia J_1/J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
				Bore with keyway to DIN 6885-1		DA	ND1/ND2	NL1/NL2	D3	S	LG			
				min.	max.									
105	24	3	1008	10	25	104	-	22	82	22	66	0.0009	2LC0210-0A ■■■-0AA0	1.8
		4												
135	66	3	1210	11	32	134	80	25	100	25	75	0.0019	2LC0210-1A ■■■-0AA0	2.4
		4												
165	125	3	1610	14	42	165	103	25	125	33	83	0.0049	2LC0210-2A ■■■-0AA0	4
		4												
190	250	3	2012	14	50	187	80	32	145	23	87	0.0085	2LC0210-3A ■■■-0AA0	5.4
		4	1610	14	42			25						
210	380	3	2517	16	60	211	98	45	168	25	115	0.017	2LC0210-4A ■■■-0AA0	8
		4	2012	14	50			32						
235	500	3	2517	16	60	235	108	45	188	27	119	0.019	2LC0210-5A ■■■-0AA0	12
		4												
255	680	3	3020	25	75	254	120	51	216	27	129	0.050	2LC0210-6A ■■■-0AA0	14
		4	2517	16	60			113						
280	880	3	3020	25	75	280	146	51	233	25	129	0.075	2LC0210-7A ■■■-0AA0	22
		4												
315	1350	3	3525	35	90	314	140	65	264	29	161	0.11	2LC0210-8A ■■■-0AA0	23
		4	3020	25	75			51						
360	2350	3	3525	35	90	359	178	65	311	32	162	0.26	2LC0211-0A ■■■-0AA0	38
		4												
400	3800	3	4030	40	100	402	197	77	345	30	184	0.44	2LC0211-1A ■■■-0AA0	54
		4												
470	6300	3	4535	55	110	470	205	89	398	46	224	0.8	2LC0211-2A ■■■-0AA0	72
		4												
510	9300	3	4535	55	110	508	200	89	429	48	226	1.5	2LC0211-3A ■■■-0AA0	120
		4												
560	11500	3	5040	70	125	562	222	102	474	55	259	2.0	2LC0211-4A ■■■-0AA0	120
		4												

Variant:

- A
- B
- AB

B
C
D

∅D1: • Without finished bore – Without order codes

- With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

1
9

∅D2: • Without finished bore – Without order codes

- With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

1
9

Weights and mass moments of inertia apply to couplings with Taper clamping bushes with maximum bore diameter.

The product code applies to elastic tires made of natural rubber.

Product code with **-Z** and order code **K01** for variant of the elastic tire made of chloroprene rubber.

P1 = fitting space for offset screwdriver and ejector bolt for dismounting the Taper clamping bush. For dismounting the elastic tire on sizes 105 to 165, a fitting space of P1 = 35 mm must be provided for the offset screwdriver. Sizes 190 to 630 require P1 = 35 mm of fitting space to undo the clamping ring bolts.

Taper clamping bush size 1008 and bores diameters 24 mm and 25 mm with shallow keyway.

Taper clamping bush size 1610 and bores diameter 42 mm with shallow keyway. See catalog section 14.

Ordering example:

ELPEX-B EBWT coupling, size 210,
variant AB, including Taper bushes,
Part 3: with Taper clamping bush, bore 60 mm;
Part 4: with Taper clamping bush, bore 40 mm.

Product code:

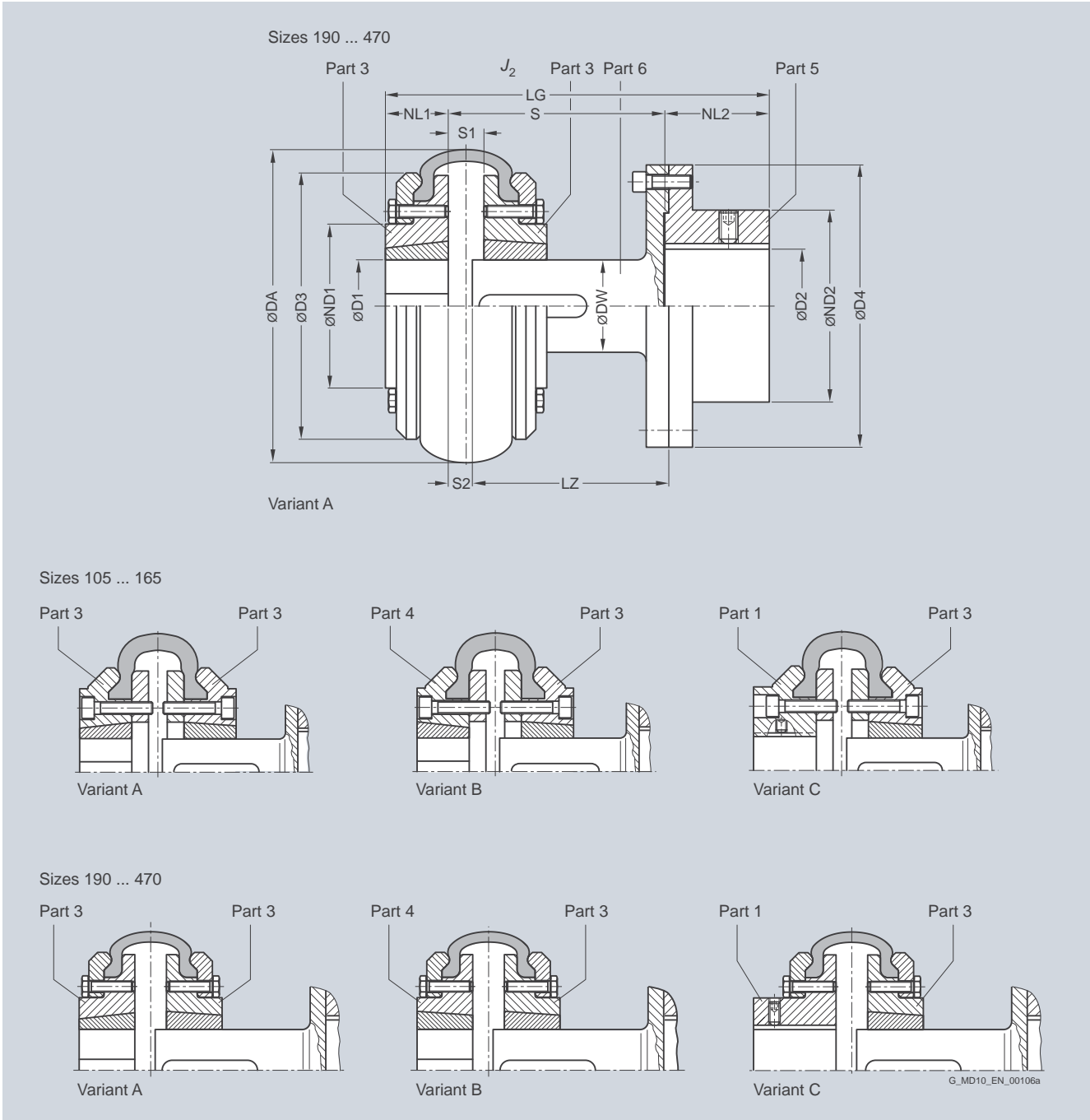
2LC0210-4AD99-0AA0
L1E+MOW

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

Type EBWZ

Selection and ordering data



Part 3: Screw connection for Taper clamping bush from the shaft end face side
 Part 4: Screw connection for Taper clamping bush from the machine-housing side

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

Type EBWZ

Size	Rated torque T_{KN} Nm	Dimensions in mm												Mass moment of inertia J_2 kgm ²	Product code Order codes for bore diameters and tolerances are specified in catalog section 3	Weight m kg
		Bore with keyway to DIN 6885-1		DA	ND2	D4	DW	NL2	LZ	S	S1	S2				
		D2 min.	D2 max.							min.	max.	min.				
105	24	–	42	104	70	95	25	45	96	100	116	22	6	0.0027	2LC0210-0A ■■■■-0A ■ 0	3.3
									133	140	156					
135	66	–	55	134	90	125	32	50	93	100	116	25	9	0.0085	2LC0210-1A ■■■■-0A ■ 0	5.4
									133	140	156					
165	125	–	55	165	90	125	32	50	93	100	124	33	9	0.012	2LC0210-2A ■■■■-0A ■ 0	6.2
									133	140	164					
190	250	–	75	187	125	180	48	80	93.5	100	114	23	9	0.046	2LC0210-3A ■■■■-0A ■ 0	16.0
									133.5	140	154					
									173.5	180	194					
210	380	–	75	211	125	180	48	80	133.5	140	156	25	9	0.053	2LC0210-4A ■■■■-0A ■ 0	17
									173.5	180	196					
235	500	–	75	235	125	180	48	80	133.5	140	158	27	9	0.056	2LC0210-5A ■■■■-0A ■ 0	25
									173.5	180	198					
255	680	–	90	254	150	225	60	100	133.5	140	158	27	9	0.15	2LC0210-6A ■■■■-0A ■ 0	29
									173.5	180	198					
280	880	–	90	280	150	225	60	100	133.5	140	156	25	9	0.17	2LC0210-7A ■■■■-0A ■ 0	33
									173.5	180	196					
315	1350	46	100	314	165	250	80	110	134.5	140	160	29	9	0.28	2LC0210-8A ■■■■-0A ■ 0	40
									174.5	180	200					
360	2350	46	100	359	165	250	80	110	134.5	140	163	32	9	0.43	2LC0211-0A ■■■■-0A ■ 0	48
									174.5	180	203					
400	3800	51	110	402	180	280	90	120	223.5	200	220	30	10	0.88	2LC0211-1A ■■■■-0A E 0	73
470	6300	51	120	470	200	315	100	140	207.5	250	286	46	10	0.97	2LC0211-2A ■■■■-0A E 0	104

Variant:

- A
- B
- C

G
H
J

∅D1:

- Without finished bore (for variant C only) – Without order codes
- With finished bore/Taper clamping bush – With order codes for diameter and tolerance in the case of finished bore (product code without **-Z**)

1
9

∅D2:

- Without finished bore – Without order codes
- With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

1
9

S min.

- 100 mm
- 140 mm
- 180 mm

A
B
C

Dimensions D1, ND1, NL1, J1 and fitting space for dismounting elastic tire and Taper clamping bush, see types EBWN or EBWT.

The product code applies to elastic tires made of natural rubber.

Product code with **-Z** and order code **K01** for variant of the elastic tire made of chloroprene rubber.

Mass moment of inertia J_2 and weight m as total of part 3, part 5 and part 6 with maximum bore diameter.

Ordering example:

ELPEX-B EBWZ coupling, size 360,
variant C, for fitting length $S_{min} = 190$ mm,
Part 1: Bore 65H7 mm, keyway to DIN 6885-1 and set screw,
Part 5: Bore 70H7 mm, keyway to DIN 6885-1 and set screw

Product code:

2LC0211-0AJ99-0AC0
L1F+M1G

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FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-B Series

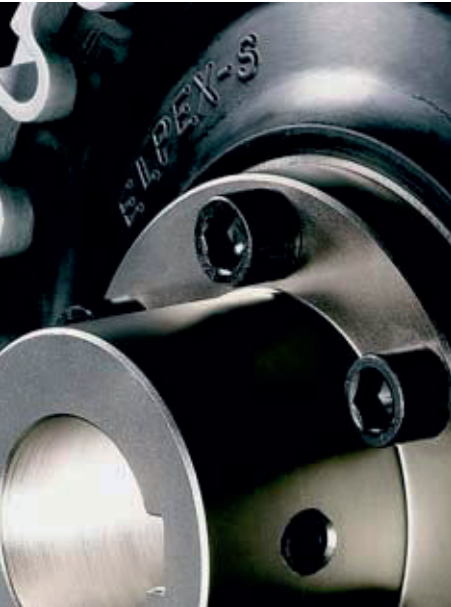
Spare and wear parts

Selection and ordering data

The elastic tires are wear parts. The service life depends on the operating conditions.

Size	Product code		Weight	
	Natural rubber Identification 048		kg	Chloroprene rubber Identification 068 FRAS kg
105	2LC0210-0WA00-0AA0	0.1	2LC0210-0WA00-0AA0-Z K01	0.1
135	2LC0210-1WA00-0AA0	0.2	2LC0210-1WA00-0AA0-Z K01	0.2
165	2LC0210-2WA00-0AA0	0.4	2LC0210-2WA00-0AA0-Z K01	0.4
190	2LC0210-3WA00-0AA0	0.5	2LC0210-3WA00-0AA0-Z K01	0.5
210	2LC0210-4WA00-0AA0	0.8	2LC0210-4WA00-0AA0-Z K01	0.8
235	2LC0210-5WA00-0AA0	1.0	2LC0210-5WA00-0AA0-Z K01	1.0
255	2LC0210-6WA00-0AA0	1.2	2LC0210-6WA00-0AA0-Z K01	1.2
280	2LC0210-7WA00-0AA0	1.4	2LC0210-7WA00-0AA0-Z K01	1.4
315	2LC0210-8WA00-0AA0	2.6	2LC0210-8WA00-0AA0-Z K01	2.6
360	2LC0211-0WA00-0AA0	2.9	2LC0211-0WA00-0AA0-Z K01	2.9
400	2LC0211-1WA00-0AA0	3.1	2LC0211-1WA00-0AA0-Z K01	3.1
470	2LC0211-2WA00-0AA0	5.3	2LC0211-2WA00-0AA0-Z K01	5.3
510	2LC0211-3WA00-0AA0	7.8	2LC0211-3WA00-0AA0-Z K01	7.8
560	2LC0211-4WA00-0AA0	10.8	2LC0211-4WA00-0AA0-Z K01	10.8
630	2LC0211-5WA00-0AA0	12.4	2LC0211-5WA00-0AA0-Z K01	12.4

Highly Flexible Couplings ELPEX-S Series



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FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

General information

Overview



**Coupling suitable for potentially explosive environments.
Complies with Directive 94/9/EC for:**

CE Ex II 2 G T3 D160 °C X

CE Ex II 2 G T3 D120 °C X

ELPEX-S couplings are highly torsionally flexible and because of their low torsional stiffness and damping capacity are especially suitable for coupling machines with a highly non uniform torque pattern.

Standard ELPEX-S coupling types are designed as flange-shaft-connections or shaft-shaft connections. Application-related types can be implemented on request.

Benefits

The ELPEX-S coupling is suitable for horizontal and vertical mounting positions or mounting at any required angle. The coupling parts can be arranged as required on the shafts to be connected.

ELPEX-S couplings are especially suitable for reversing operation or operation with changing directions of load.

The rubber disk elements are fitted virtually without backlash and give the coupling linear torsional stiffness, i.e. the torsion stiffness remains constant even when the load on the coupling increases.

There are 4 different rubber element versions with different grades of torsional stiffness available for each size from stock.

On certain types the flexible rings can be changed without having to move the coupled machines.

If substantial overload occurs, the rubber disk element of the coupling is irreparably damaged, the coupling throws the load and thus limits the overload for particular operating conditions. The coupling can be inserted and fitted blind e.g. in a bell housing.

There are outer flanges with different connection dimensions available for each coupling size.

Application

The ELPEX-S coupling is available as a catalog standard in 12 sizes with rated torques of between 330 Nm and 63000 Nm.

The coupling is suitable for ambient temperatures of between -40 °C and +120 °C.

The ELPEX-S coupling is frequently used for diesel motor drives or reciprocating compressor drives. Because the different rubber versions enable the torsional stiffness to be adjusted to meet requirements, the coupling is also suitable for drives which require a specific and preferably precalculated torsional vibration behavior setting.

Design

The rubber disk element is vulcanized onto a flange on the inside diameter. The flange can mount e.g. a Taper clamping bush or a hub. On its outer diameter the rubber disk element has driving teeth, which are inserted into the outer flange. The torque is transmitted positively between the rubber disk element and the outer flange.

In the type for shaft-shaft connection the outer flange is screwed to a flange hub mounted on a machine shaft.

Materials

	Type EST	Types ESN. and ESD.
Rubber disk element	Grey cast iron EN-GJL-250/elastomer	Spheroidal graphite cast iron EN-GJL-400/elastomer
Hubs, part 1, part 2	Steel	Steel
Outer flange	Cast aluminum AlZnSi108. Sizes 680 and 770 of spheroidal graphite cast iron EN-GJS-500	Cast aluminum AlZnSi108. Sizes 680 and 770 of spheroidal graphite cast iron EN-GJS-500

Steel of quality Rm >450 N/mm²

Elastomer materials of the rubber disk element

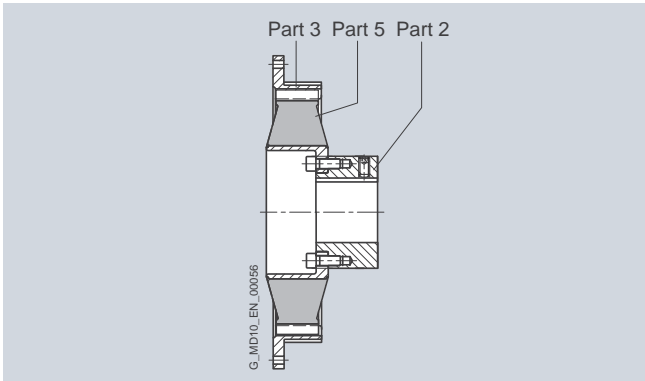
Material / description	Shore hardness A	Identification	Ambient temperature
Natural-synthetic rubber mixture	50 ° ... 55 °	WN	-40 °C ... +80 °C
Natural-synthetic rubber mixture	60 ° ... 65 °	NN	-40 °C ... +80 °C
Natural-synthetic rubber mixture	70 ° ... 75 °	SN	-40 °C ... +80 °C
Silicone rubber	55 ° ... 65 °	NX	-40 °C ... +120 °C

ELPEX-S coupling types

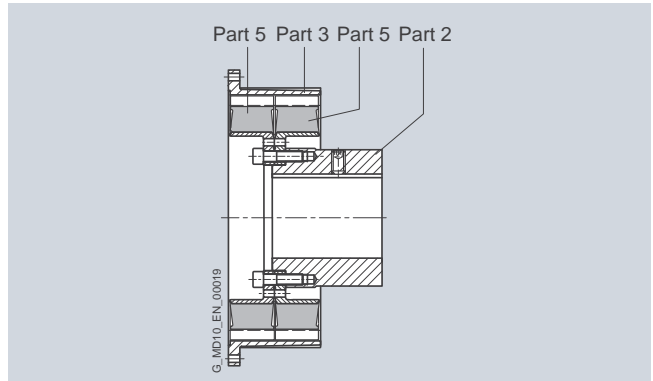
Type	Description
ESN	Coupling with hub, long or short version
ESD	Coupling with hub, with two rubber disk elements
ESNR	Coupling with hub, rubber disk element radially dismountable
ESDR	Coupling with hub with two rubber disk elements; rubber disk elements radially dismountable
ESNW	Coupling designed as a shaft-shaft connection with a rubber disk element; rubber disk element radially dismountable
ESDW	Coupling designed as a shaft-shaft connection with two rubber disk elements; rubber disk element radially dismountable
EST	Coupling suitable for mounting a Taper clamping bush

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-S Series

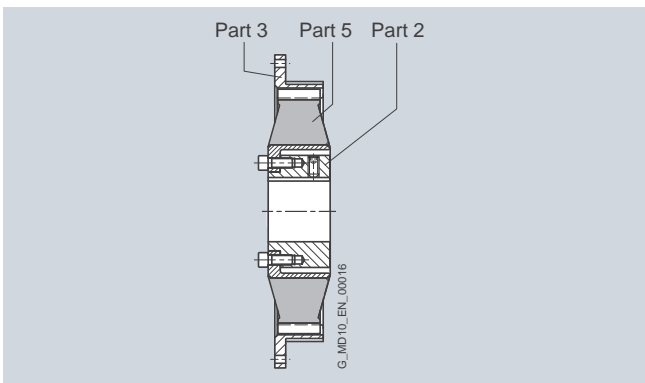
General information



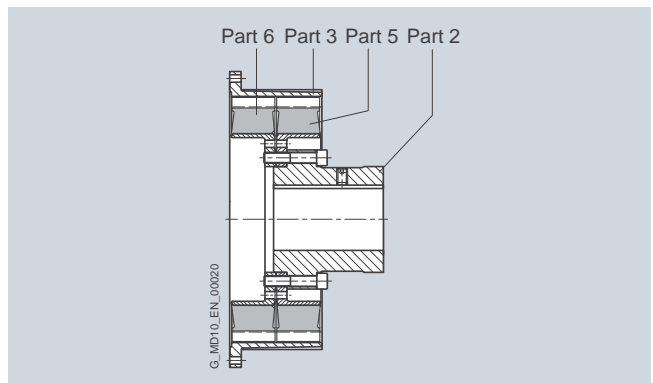
Type **ESN** – long version



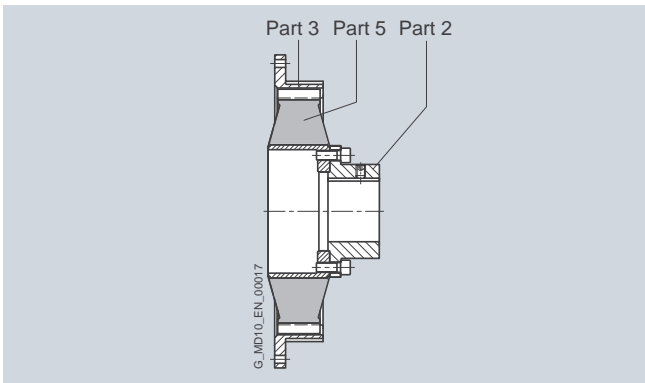
Type **ESD**



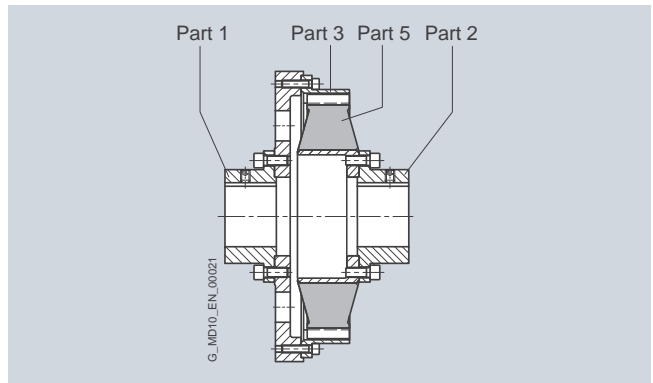
Type **ESN** – short version



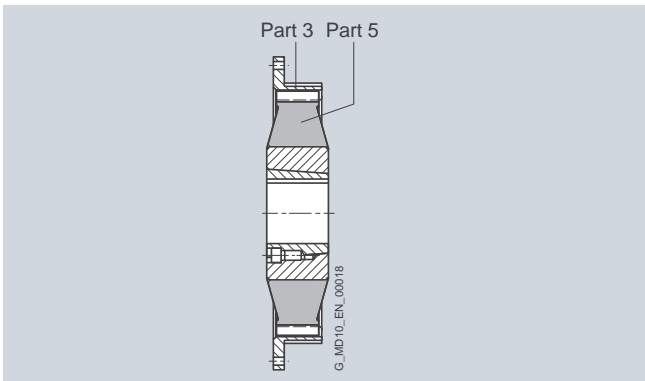
Type **ESDR**



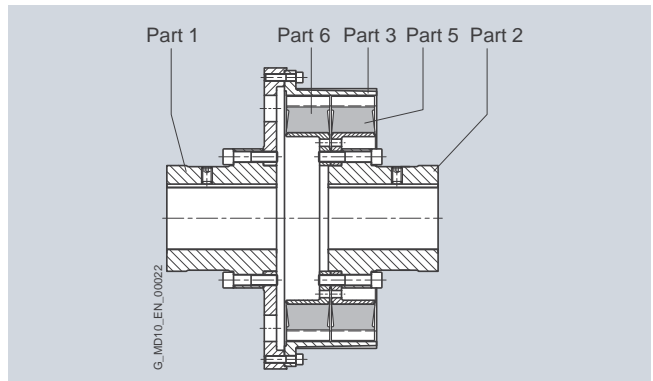
Type **ESNR**



Type **ESNW**



Type **EST**



Type **ESDW**

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

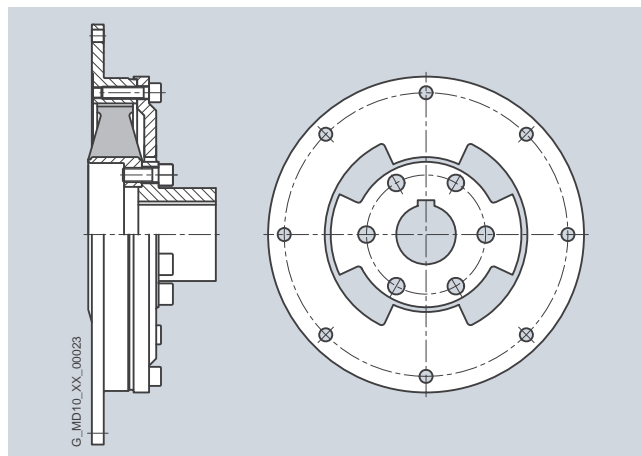
General information

Further application-related coupling types are available. Dimension sheets for and information on these are available on request.

The following versions have already been implemented a number of times:

- ELPEX-S coupling with brake drum, brake disk or flywheel mass
- ELPEX-S coupling with axial backlash limiter
- ELPEX-S coupling with adapter
- ELPEX-S coupling with bearing for mounting a cardan shaft
- ELPEX-S coupling for engaging/disengaging during standstill
- ELPEX-S coupling as part of a coupling combination
- ELPEX-S coupling with fail-safe device

Fail-safe device of ELPEX-S coupling



The ELPEX-S coupling can also be designed with a fail-safe device. If the rubber disk element fails, the coupling can continue operating in emergency mode for a short time. This option is frequently required e.g. in the case of marine drives.

If the rubber disk element fails, cams transmit the torque from the inner and outer parts of the fail-safe device.

In normal operation the torsion angle of the rubber disk element is smaller than the gap between the cams, so there is no metal-metal contact.

Function

The ELPEX-S coupling's transmission characteristic is determined essentially by the rubber disk element. The torque is transmitted positively between the rubber disk element and the outer flange. The outer flange can be bolted to e.g. a diesel motor or compressor flywheel.

Configuration

Coupling selection

The ELPEX-S coupling is especially suitable for rough operating environments. An application factor lower than that in catalog section 3 is therefore sufficient for all applications. In the case of machines which excite torsional vibration, FLENDER urgently recommends carrying out a torsional vibration calculation or measuring the coupling load occurring in the drive.

Coupling load in continuous operation

Application factor FB	Torque characteristic of the driven machine			
	Torque characteristic of the driving machine	uniform with moderate shock loads	non uniform	very rough
Electric motors, hydraulic motors, gas and water turbines	1.0	1.3	1.4	
Internal combustion engines	1.3	1.4	1.6	

Examples of torque characteristic in driven machines:

- uniform with moderate shock loads: generators, fans, blowers
- non uniform: reciprocating compressors, mixers, conveyor systems
- very rough: crushers, excavators, presses, mills

Coupling	Rubber version	Elastomer material	Temperature T_a on the coupling									
			-40 to -30 °C	-30 to +50 °C	to 60 °C	to 70 °C	to 80 °C	to 90 °C	to 100 °C	to 110 °C	to 120 °C	
ELPEX-S	SN, NN, WN	NR	1.1	1.0	1.25	1.40	1.60					
ELPEX-S	NX	VMQ	1.1	1.0	1.0	1.0	1.0	1.1	1.25	1.4	1.6	

NR = natural-synthetic rubber mixture
VMQ = silicone rubber

Select coupling size with: $T_{KN} \geq T_N \cdot FB \cdot FT$

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

General information

Coupling load under maximum and overload conditions

The maximum torque is the highest load acting on the coupling in normal operation.

Maximum torques at a frequency of up to 25 times an hour are permitted and must be lower than the maximum coupling torque. Examples of maximum torque conditions are: Starting operations, stopping operations or usual operating conditions with maximum load.

$$T_{Kmax} \geq T_{max} \cdot FT$$

Overload torques are maximum loads which occur only in combination with special, infrequent operating conditions.

Examples of overload torque conditions are: Motor short circuit, emergency stop or blocking because of component breakage. Overload torques at a frequency of once a month are permitted and must be lower than the maximum overload torque of the coupling. The overload condition may last only a short while, i.e. fractions of a second.

$$T_{KOL} \geq T_{OL} \cdot FT$$

Coupling load due to dynamic torque load

Applying the frequency factor FF, the dynamic torque load must be lower than the coupling fatigue torque.

Dynamic torque load

$$T_{KW} \geq T_W \cdot FT \cdot FF \cdot \frac{0.6}{FB - 1.0}$$

Frequency of the dynamic torque load


$f_{err} \leq 10$ Hz frequency factor FF = 1.0

Frequency of the dynamic torque load


$f_{err} > 10$ Hz frequency factor FF = $\sqrt{(f_{err}/10 \text{ Hz})}$

 Operation in potentially explosive environments is subject to the following restriction:

Operation with low fatigue load

 The fatigue torque T_{KW} must be reduced by 70 %. In these particular operating conditions the coupling satisfies the requirements of temperature class T4 D120 °C.

Operation with medium fatigue load

 The fatigue torque T_{KW} must be reduced by 50 %. In these particular operating conditions the coupling satisfies the requirements of temperature class T3 D160 °C.

Checking the maximum speed

The following must apply to all load situations: $n_{Kmax} \geq n_{max}$

The maximum speed of a size depends only on the size of the outer flange (part 3).

Checking permitted shaft misalignment and restorative forces

For all load situations, the actual shaft misalignment must be less than the permitted shaft misalignment.

Checking bore diameter, mounting geometry and coupling design

The check must be made on the basis of the dimension tables. On request, couplings with adapted geometry can be provided.

Checking shaft-hub connection

Please refer to catalog section 3 for instructions.

Checking temperature and chemically aggressive environment

The permitted coupling temperature is specified in the Temperature Factor FT table. In the case of chemically aggressive environments, please consult the manufacturer.

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

General information

Technical data

Power ratings

Rubber dusk elements made of a natural and synthetic rubber mixture									
Type	Size	Rubber element	Rated torque	Maximum torque	Overload torque	Fatigue torque	Dynamic torsional stiffness	Motor flange	Maximum speed
			T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	C_{Tdyn} Nm/rad	SAE J620d Size	n_{max} rpm
ESN . EST	220	WN	330	660	750	165	1100	6.5	4200
		NN	360	720	900	180	1700	7.5	4200
		SN	400	800	1000	200	2500	8 10	4200 3600
ESN . EST	265	WN	500	1000	1250	250	2100	8	4200
		NN	600	1200	1800	300	3100	10	3600
		SN	700	1400	2100	350	4500	11.5	3500
ESN . EST	290	WN	800	1600	2000	400	3600	10	3600
		NN	900	1800	2700	450	5000	11.5	3500
		SN	1000	2000	3000	500	7500		
ESN . EST	320	WN	1200	2400	3000	600	8000	11.5	3500
		NN	1350	2700	3600	650	10000	14	3000
		SN	1550	3100	4200	750	13500		
ESN . EST	360	WN	1800	3600	4500	900	8500	11.5	3200
		NN	2000	4000	5400	1000	13000	14	3000
		SN	2500	5000	7500	1250	22000		
ESN . EST	420	WN	3100	6200	7700	1500	16000	14	3000
		NN	3450	6900	10000	1700	30000	16	2600
		SN	4200	8400	12600	2100	45000	18	2300
ESN . EST	465	WN	4600	9200	10000	2300	35000	14	3000
		NN	5200	10400	15600	2600	56000	16	2600
		SN	6300	12600	18900	3100	100000	18	2300
ESN .	520	WN	6200	12400	14000	3100	38000	18	2300
		NN	7000	14000	21000	3500	75000	21	2000
		SN	7800	15600	23400	3900	110000		
ESD .	520	WN	12400	24800	28000	6200	76000	18	2300
		NN	14000	28000	42000	7000	150000	21	2000
		SN	15600	31200	46800	7800	220000		
ESN .	560	WN	8000	16000	18000	4200	55000	18	2300
		NN	9000	18000	27000	4800	100000	21	2000
		SN	10000	20000	30000	5500	190000		
ESD .	560	WN	16000	32000	36000	8400	110000	18	2300
		NN	18000	36000	54000	9600	200000	21	2000
		SN	20000	40000	60000	11000	380000		
ESN .	580	WN	11000	22000	28000	5500	75000	18	2300
		NN	12500	25000	37000	6250	120000	21	2000
		SN	14000	28000	42000	7000	210000		
ESD .	580	WN	22000	44000	56000	11000	150000	21	2000
		NN	25000	50000	74000	12500	240000	24	1800
		SN	28000	56000	84000	14000	420000		
ESN .	680	WN	16000	32000	40000	8000	150000	21	2000
		NN	18000	36000	54000	9000	250000	24	1800
		SN	20000	40000	60000	10000	450000		
ESD .	680	WN	32000	64000	80000	16000	300000	21	2000
		NN	36000	72000	108000	18000	500000	24	1800
		SN	40000	80000	120000	20000	900000		
ESN .	770	WN	25000	50000	75000	12500	250000	similar to DIN 6288	1500
		NN	28000	56000	84000	14000	400000		
		SN	31500	63000	94000	15000	700000		
ESD .	770	WN	50000	100000	150000	25000	500000	similar to DIN 6288	1300
		NN	56000	112000	168000	28000	800000		
		SN	63000	126000	189000	30000	1400000		

Torsional stiffness depends on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

General information

Rubber disk elements made of silicone rubber

Type	Size	Rubber version	Rated torque	Maximum torque	Overload torque	Fatigue torque	Dynamic torsional stiffness for 100 % load
			T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} (10 Hz) Nm	C_{Tdyn} kNm/rad
ESN .	220	NX	200	300	400	87	1.70
ESN .	265	NX	300	450	600	133	3.10
ESN .	290	NX	500	750	1000	213	5.40
ESN .	320	NX	770	1150	1530	320	12.0
ESN .	360	NX	1200	1800	2400	480	12.7
ESN .	420	NX	2000	3000	4000	800	30.0
ESN .	465	NX	3000	4500	6000	1200	53.0
ESN .	520	NX	4100	6100	8200	1600	75.0
ESD .	520	NX	8200	12300	16400	3200	150
ESN .	560	NX	5000	7500	10000	2200	83
ESD .	560	NX	10000	15000	20000	4400	166
ESN .	580	NX	6500	9750	13000	2667	113
ESD .	580	NX	13000	19500	26000	5867	226
ESN .	680	NX	10000	15000	20000	4000	225
ESD .	680	NX	20000	30000	40000	8000	450
ESN .	770	NX	15000	22500	30000	6000	480
ESD .	770	NX	30000	45000	60000	12000	960

Torsional stiffness

The dynamic torsional stiffness of the silicone rubber elements is load-dependent and increases in proportion to the load. The values specified in the selection table represent 100 % loading. The following table shows the correction factors for different rated loads.

$$C_{Tdyn} = C_{Tdyn 100\%} \cdot FK$$

Correction factor	Load T_N / T_{KN}						
	20 %	50 %	60 %	70 %	80 %	100 %	150 %
FKC	0.42	0.57	0.64	0.72	0.8	1	1.6

Torsional stiffness also depends on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

Damping coefficient of the rubber versions

Rubber version	Hardness Shore A	Damping coefficient ψ
WN	50° ... 55°	0.80
NN	60° ... 65°	1.15
SN	70° ... 75°	1.25
NX	55° ... 65°	1.15

Size	Assembly ΔS mm	Permitted shaft misalignment at n = 1500 rpm		
		Axial ΔK_a mm	Radial ΔK_r mm	Angle ΔK_w degrees
220	1.3	0.2	1.2	0.5
265	1.3	0.2	1.2	0.5
290	1.5	0.2	1.2	0.5
320	1.5	0.2	1.2	0.5
360	1.5	0.2	1.2	0.5
420	1.5	0.3	1.3	0.4
465	1.7	0.3	1.3	0.4
520	1.7	0.3	1.4	0.4
560	1.7	0.3	1.4	0.4
580	1.8	0.4	1.5	0.3
680	1.8	0.4	1.5	0.3
770	2.0	0.5	1.5	0.3

For fitting, a maximum gap dimension of $S_{max} = S + \Delta S$ and a minimum gap dimension of $S_{min} = S - \Delta S$ are permitted.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size and type must be noted!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

Correction factor FKV	Speed in rpm			
	500	1000	1500	3000
FKV	1.20	1.10	1.0	0.70

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

General information

Variants of the outer flange

The outer flange of sizes 220 to 680 is designed to fit the connection dimensions of the SAE J620d standard. The centering depth on the connection flange of the machine should be between 4 mm and 6.4 mm as a maximum.

Type	Size	Flange connection size	Figure
ESN	220	6.5	1
ESN	220	7.5	2
ESN, ESNR	265	8	
ESN, ESNR	360	11.5	
ESN, ESNR	465	14	
ESN, ESNR	560	18	
ESN, ESNR	580	18	
ESN, ESNR	680	21	
ESN	220	8, 10	3
ESN, ESNR	265	10, 11.5	
ESN, ESNR	290	All	
ESN, ESNR	320	All	
ESN, ESNR	360	14	
ESN, ESNR	420	All	
ESN, ESNR	465	16, 18	
ESN, ESNR	520	All	
ESN, ESNR	560	21	
ESN, ESNR	580	21	
ESN, ESNR	680	24	
ESD, ESDR	520	All	4
ESD, ESDR	560	All	
ESD, ESDR	580	All	
ESD, ESDR	680	21	5
ESD, ESDR	680	24	6
ESD, ESDR	770	All	

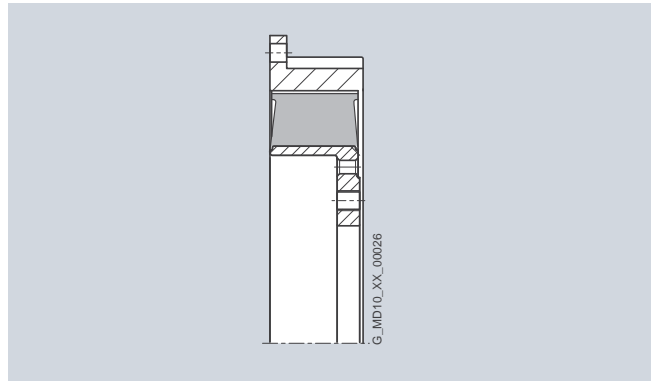


Figure 3

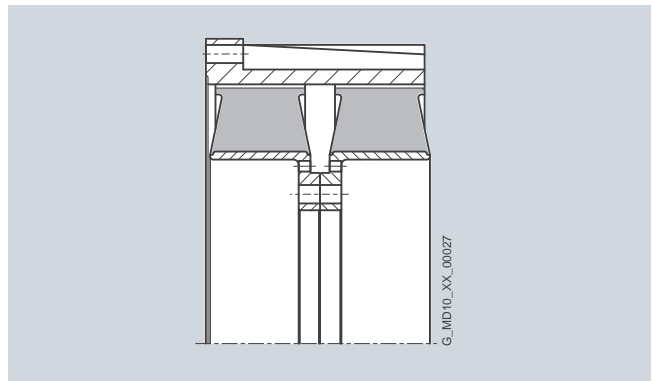


Figure 4

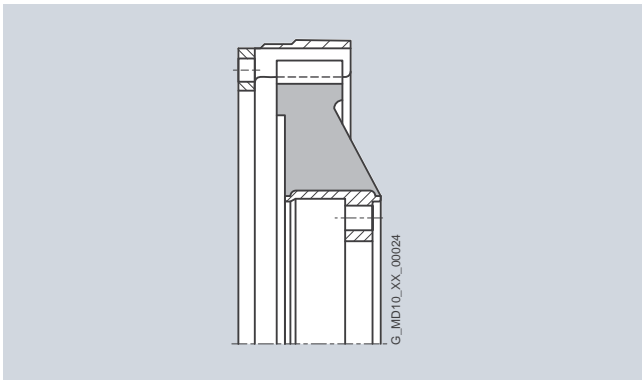


Figure 1

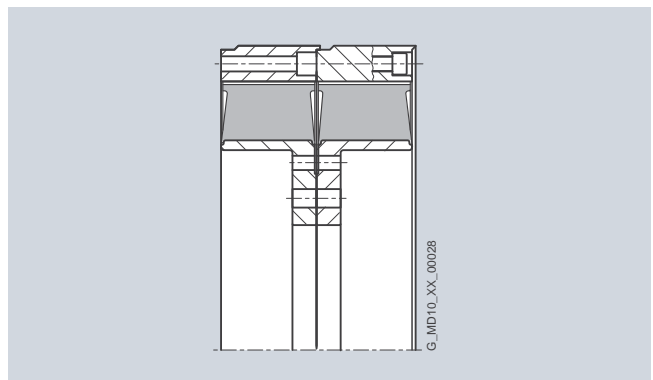


Figure 5

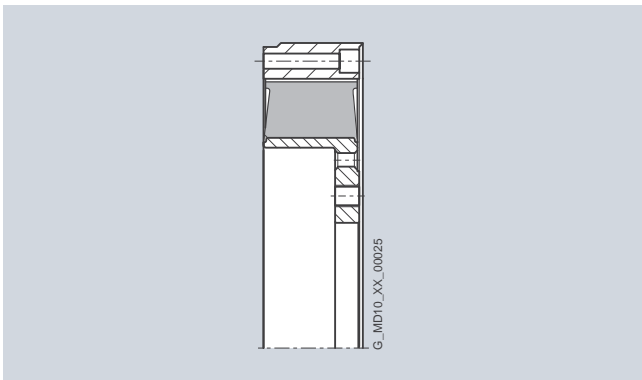


Figure 2

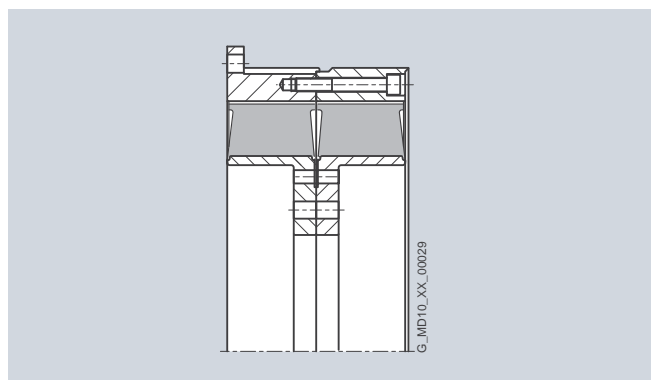
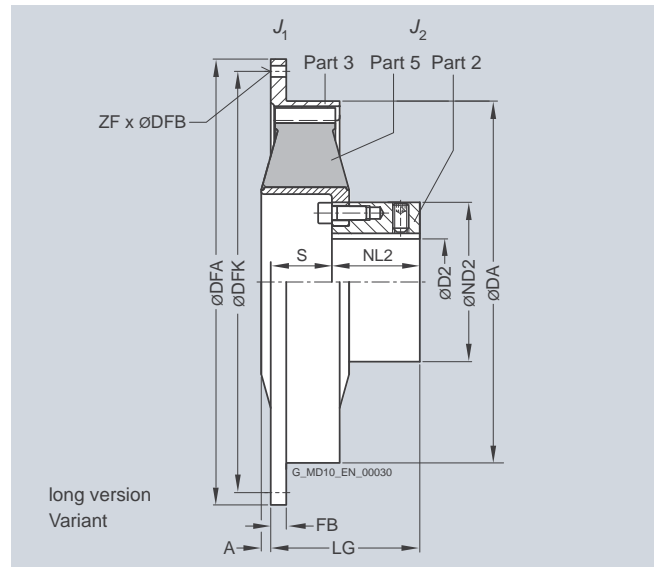
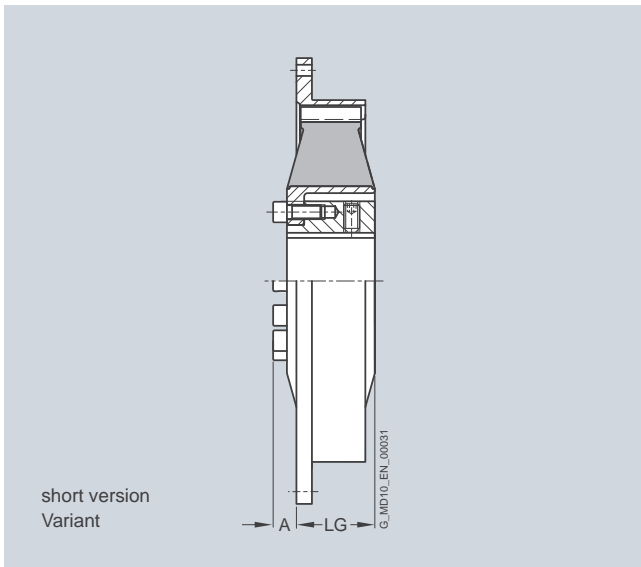


Figure 6

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-S Series

Type ESN

Selection and ordering data



The rubber disk element cannot be dismantled until the machines have been moved.

Size	Dimensions in mm						Flange connection dimensions						Mass moment of inertia		Product code with order codes M.. for bore diameter ØD2 and tolerances (product code without -Z) - selection in catalog part 3	Weight <i>m</i> kg			
	D2 Keyway DIN 6885 max.	DA	ND2	NL2	A	LG	SAE	DFA	DFK	FB	ZF	DFB	<i>J</i> ₁	<i>J</i> ₂					
220	60	222	98	54	-	0	49	103	6.5	215.9	200.0	8	6	8.5	0.008	0.01	2LC0220-0A B 0 - - AAO	5.8	
						40	94	7.5	241.3	222.3	33	8	8.5	0.011		2LC0220-0A B 0 - - BAO	6.1		
						40	94	8	263.5	244.5	8	6	10.5	0.011		2LC0220-0A B 0 - - CAO	6.4		
						40	94	10	314.3	295.3	8	8	10.5	0.017		2LC0220-0A B 0 - - DAO	6.9		
265	65	263	118	65	15	74	3	39	104	8	263.5	244.5	38	6	10.5	0.011	0.022	2LC0220-1A 0 0 - - CA0	6.6
						10	314.3	295.3	10	8	0.017		2LC0220-1A 0 0 - - DA0	6.9					
						11.5	352.4	333.4	10	8	0.024		2LC0220-1A 0 0 - - EA0	7.2					
290	65	290	118	70	19	58	6	36	106	10	314.3	295.3	16	8	10.5	0.026	0.026	2LC0220-2A 0 0 - - DA0	9.2
						11.5	352.4	333.4	16	8	0.036		2LC0220-2A 0 0 - - EA0	10.5					
320	80	318	140	87	20	91	8	65	152	11.5	352.4	333.4	16	8	10.5	0.062	0.061	2LC0220-3A 0 0 - - EA0	19
						14	466.7	438.2	16	8	13	0.18		2LC0220-3A 0 0 - - FA0	20.5				
360	90	358	160	105	29	92	13	56	161	11.5	352.4	333.4	65	8	10.5	0.065	0.13	2LC0220-4A 0 0 - - EA0	24.5
						14	466.7	438.2	15	8	13	0.18		2LC0220-4A 0 0 - - FA0	27.5				
420	100	420	185	102	26	92	10	72	174	14	466.7	438.2	18	8	13	0.22	0.32	2LC0220-5A 0 0 - - FA0	36
						16	517.5	489.0	18	8	13	0.32		2LC0220-5A 0 0 - - GA0	38				
						18	571.5	542.9	18	6	17	0.47		2LC0220-5A 0 0 - - HA0	40				
465	120	465	222	125	0	92	33	39	164	14	466.7	438.2	85	8	13	0.31	0.58	2LC0220-6A 0 0 - - FA0	56
						16	517.5	489.0	27	8	13	0.41		2LC0220-6A 0 0 - - GA0	57				
						18	571.5	542.9	18	6	17	0.52		2LC0220-6A 0 0 - - HA0	61				
520	165	514	250	142	16	159	0	83	225	18	571.5	542.9	18	12	17	0.48	0.93	2LC0220-7A 0 0 - - HA0	55
						21	673.1	641.4	18	12	0.95		2LC0220-7A 0 0 - - JA0	60					
560	200	560	320	140	25	136	9	83	223	18	571.5	542.9	35	12	17	0.85	1.2	2LC0220-8A 0 0 - - HA0	69
						21	673.1	641.4	35	12	1.8		2LC0220-8A 0 0 - - JA0	78					
580	200	580	316	200	23	215	3	100	300	18	571.5	542.9	104	12	17	0.77	1.8	2LC0221-0A 0 0 - - HA0	100
						21	673.1	641.4	26	12	1.2		2LC0221-0A 0 0 - - JA0	105					
680	220	682	380	210	24	232	0	102	312	21	673.1	641.4	85	12	17	4.1	5.3	2LC0221-1A 0 0 - - JA0	205
						24	733.4	692.2	20	12	21	5.3		2LC0221-1A 0 0 - - KA0	215				

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

ELPEX-S ESN coupling, size 520, WN rubber element, hub with bore ØD2 = 150H7 mm, with keyway to DIN 6885 and set screw, outer flange to SAE J620d size 21.

Product code:

short version: **2LC0220-7AA09-1JA0 M1W**

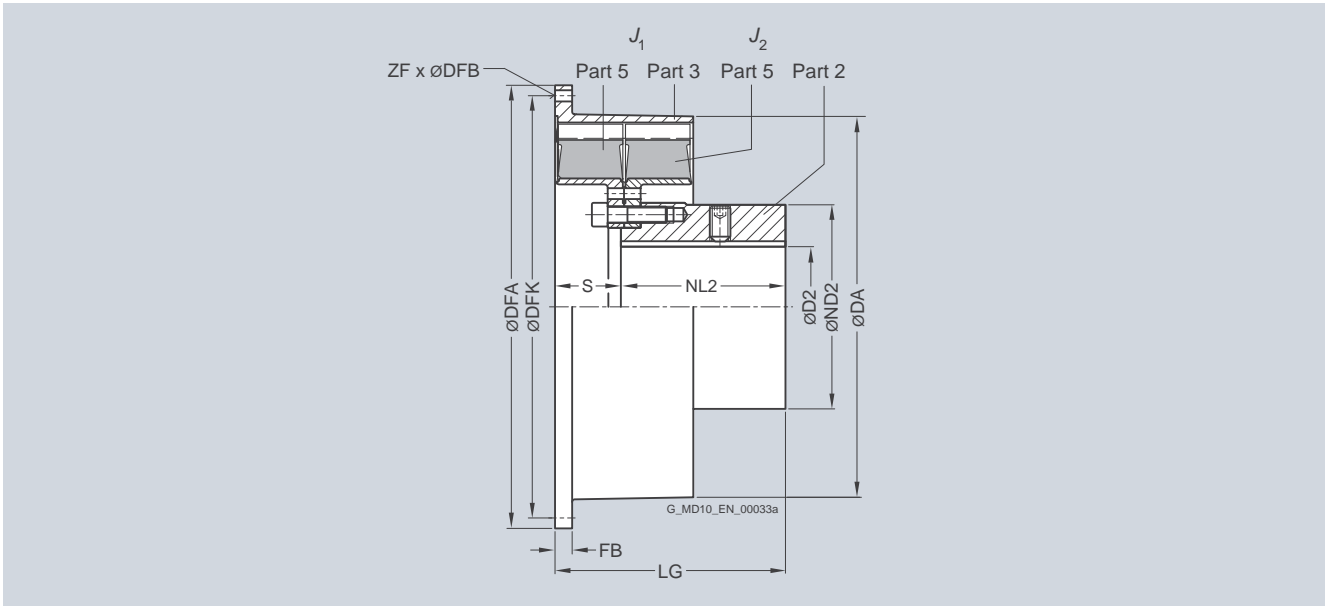
long version: **2LC0220-7AB09-1JA0 M1W**

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

Type ESD

Selection and ordering data



The rubber disk element cannot be dismantled until the machines have been moved.

Size	Dimensions in mm						Flange connection dimensions						Mass moment of inertia		Product code with order codes M.. for bore diameter ØD2 and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i>
	D2 Keyway DIN 6885 max.	DA	ND2	NL2	S	LG	SAE Size	DFA g7	DFK	FB	ZF	DFB	<i>J</i> ₁ kgm ²	<i>J</i> ₂ kgm ²		
520	165	525	250	174	81	255	18	571.5	542.9	25	12	17	1	1.6	2LC0220-7AD0 ■ - ■ HA0 2LC0220-7AD0 ■ - ■ JA0	85 90
							21	673.1	641.4	18	12	17	1.5	2.8		
560	170	560	316	210	60	270	18	571.5	542.9	35	12	17	1.7	2.8	2LC0220-8AD0 ■ - ■ HA0 2LC0220-8AD0 ■ - ■ JA0	140 150
							21	673.1	641.4	35	12	17	2.6	3.8		
580	200	585	310	250	100	350	21	673.1	641.4	26	12	17	2	3.8	2LC0221-0AD0 ■ - ■ JA0 2LC0221-0AD0 ■ - ■ KA0	170 175
							24	733.4	692.2	26	12	21	2.6	7		
680	220	682	380	250	17	267	21	673.1	641.4	85	12	17	8.2	7	2LC0221-1AD0 ■ - ■ JA0 2LC0221-1AD0 ■ - ■ KA0	265 275
							24	733.4	692.2	20	12	21	9.4			
ØD2															1	
<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 															9	
Rubber element															1	
<ul style="list-style-type: none"> WN NN SN NX 															2	
															3	
															4	

Weight and mass moments of inertia apply to maximum bore diameters.

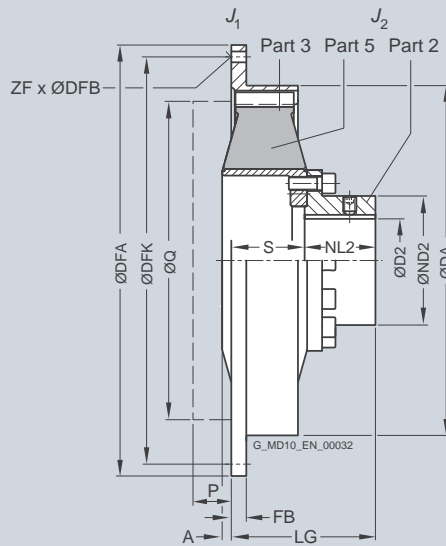
Ordering example:
 ELPEX-S ESD coupling, size 680, WN rubber element,
 hub with bore ØD2 = 180H7 mm, with keyway to DIN 6885 and
 set screw, outer flange to SAE J620d size 24.

Product code:
2LC0221-1AD09-1KA0
M2B

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-S Series

Type ESNR

Selection and ordering data



Size	Dimensions in mm														Mass moment of inertia		Product code with order codes M.. for bore diameter ØD2 and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg	
	D2 Keyway DIN 6885 max.	DA	ND2	NL2	S	A	P	Q	LG	SAE	DFA	DFK	FB	ZF	DFB	<i>J</i> ₁			<i>J</i> ₂
265	50	263	78	65	42	10	225	107	8	263.5	244.5	38	6	10.5	0.011	0.022	2LC0220-1AC0 - - CA0 2LC0220-1AC0 - - DA0 2LC0220-1AC0 - - EA0	5.0 5.3 5.6	
									10	314.3	295.3	10	8	0.017	2LC0220-2AC0 - - DA0 2LC0220-2AC0 - - EA0	8.1 8.4			
									11.5	352.4	333.4	10	8	0.024					
290	50	290	78	65	59	2	15	276	124	10	314.3	295.3	16	8	10.5	0.026	0.026	2LC0220-3AC0 - - EA0 2LC0220-3AC0 - - FA0	13.5 16
										11.5	352.4	333.4	16	8	0.036				
320	65	318	98	87	69	4	20	310	156	11.5	352.4	333.4	16	8	10.5	0.062	0.061	2LC0220-4AC0 - - EA0 2LC0220-4AC0 - - FA0	20 23
										14	466.7	438.2	16	8	0.18				
360	85	358	123	88	77	9	28	314	165	11.5	352.4	333.4	65	8	10.5	0.065	0.13	2LC0220-5AC0 - - EA0 2LC0220-5AC0 - - HA0	23 35
										14	466.7	438.2	15	8	0.18				
420	100	420	155	85	93	6	28	409	178	14	466.7	438.2	18	8	13	0.22	0.32	2LC0220-6AC0 - - EA0 2LC0220-6AC0 - - GA0 2LC0220-6AC0 - - HA0	31 32 35
										16	517.5	489.0	18	8	0.32				
										18	571.5	542.9	18	6	0.47				
465	130	465	190	119	88	15	409	207	14	466.7	438.2	85	8	13	0.31	0.58	2LC0220-7AC0 - - EA0 2LC0220-7AC0 - - GA0 2LC0220-7AC0 - - HA0	41 42 45	
									16	517.5	489.0	27	8	0.41					
									18	571.5	542.9	18	6	0.52					
520	150	514	227	162	85	10	498	247	18	571.5	542.9	18	12	17	0.48	0.93	2LC0220-8AC0 - - EA0 2LC0220-8AC0 - - JA0	59 64	
									21	673.1	641.4	18	12	0.95					
560	150	560	240	180	99	10	498	279	18	571.5	542.9	35	12	17	0.85	1.2	2LC0221-0AC0 - - EA0 2LC0221-0AC0 - - JA0	80 84	
									21	673.1	641.4	35	12	1.8					
580	160	580	240	200	102	10	498	302	18	571.5	542.9	104	12	17	0.77	1.8	2LC0221-1AC0 - - EA0 2LC0221-1AC0 - - JA0	155 165	
									21	673.1	641.4	26	12	1.2					
680	200	682	300	210	102	10	584	312	21	673.1	641.4	85	12	17	4.1	5.3	2LC0221-2AC0 - - EA0 2LC0221-2AC0 - - MA0	330 350	
									24	733.4	692.2	20	12	5.3					
770	260	780	390	255	134	10	750	389	-	860.0	820.0	26	32	21	10.7	12	2LC0221-3AC0 - - EA0 2LC0221-3AC0 - - LA0 2LC0221-3AC0 - - NA0	330 350 375	
									-	920.0	880.0	27	32	21	15.4				
									-	995.0	950.0	27	32	21	20.5				

- ØD2
 - Without finished bore – Without order codes 1
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**) 9
- Rubber element
 - WN 1
 - NN 2
 - SN 3
 - NX 4

Weight and mass moments of inertia apply to maximum bore diameters.

P, Q = required space for radial dismounting of the rubber disk element

Ordering example:

ELPEX-S ESNR coupling, size 320, WN rubber element, hub with bore ØD2 = 50H7 mm, with keyway to DIN 6885 and set screw, outer flange to SAE J620d size 14.

Product code:

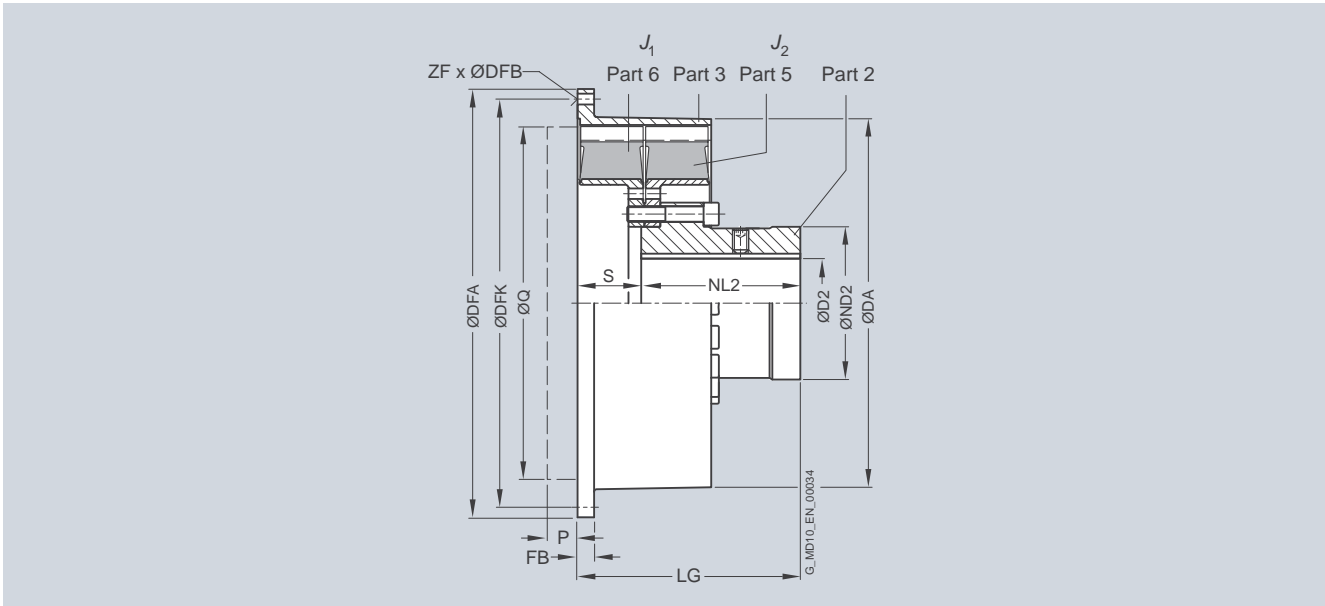
2LC0220-3AC09-1FA0
M1C

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

Type ESDR

Selection and ordering data



Dimensions in mm										Flange connection dimensions					Mass moment of inertia		Product code with order codes M.. for bore diameter ØD2 and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg
Size	D2 Keyway DIN 6885 max.	DA	ND2	NL2	S	P	Q	LG	SAE	DFA g7	DFK	FB	ZF	DFB	<i>J</i> ₁ kgm ²	<i>J</i> ₂ kgm ²		
520	150	525	227	226	83	10	498	309	18	571.5	542.9	18	12	17	1	1.8	2LC0220-7AE0 ■ - ■ HA0 2LC0220-7AE0 ■ - ■ JA0	105 110
									21	673.5	641.4	18	12	17	1.5	2.6		
560	160	560	248	240	100	10	498	340	18	571.5	542.9	35	12	17	1.7	2.5	2LC0220-8AE0 ■ - ■ HA0 2LC0220-8AE0 ■ - ■ JA0	135 140
									21	673.1	641.4	35	12	17	2.6	3.2		
580	160	585	240	250	100	10	560	350	21	673.1	641.4	26	12	17	2	3.2	2LC0221-0AE0 ■ - ■ JA0 2LC0221-0AE0 ■ - ■ KA0	145 150
									24	733.4	692.2	26	12	21	2.6	9.4		
680	200	682	300	250	102	10	584	352	21	673.1	641.4	85	12	17	8.2	6.5	2LC0221-1AE0 ■ - ■ JA0 2LC0221-1AE0 ■ - ■ KA0	260 270
									24	733.4	692.2	20	12	21	9.4	22.3		
770	260	780	390	300	200	10	750	500	860.0	820.0	19	32	21	22.3	20	2LC0221-2AE0 ■ - ■ LA0 2LC0221-2AE0 ■ - ■ MA0 2LC0221-2AE0 ■ - ■ NA0	540 555 600	
									920.0	880.0	27	32	26					
									995.0	950.0	27	32	31					

- ØD2
 - Without finished bore – Without order codes
 - With finished bore – With order codes for diameter and tolerance (product code without **-Z**)
- Rubber element
 - **WN**
 - **NN**
 - **SN**
 - **NX**

Weight and mass moments of inertia apply to maximum bore diameters.

P, Q = required space for radial dismounting of the rubber disk element

Ordering example:

ELPEX-S ESDR coupling, size 560, WN rubber element, hub with bore ØD2 = 120H7 mm, with keyway to DIN 6885 and set screw, outer flange to SAE J620d size 21.

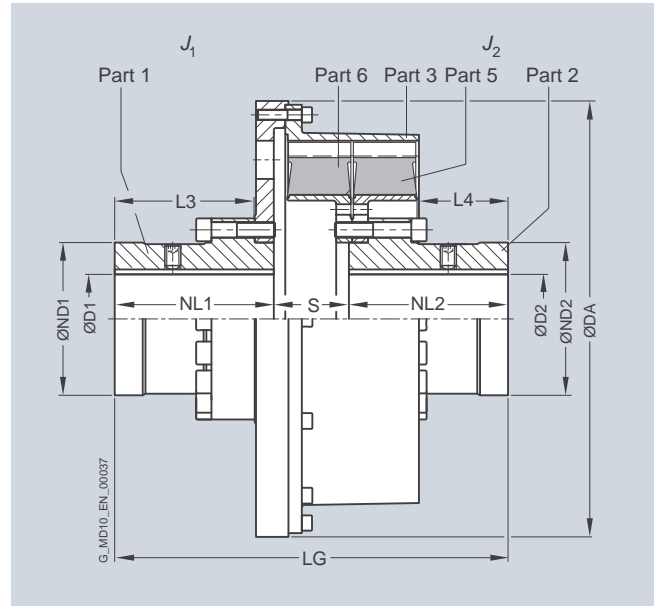
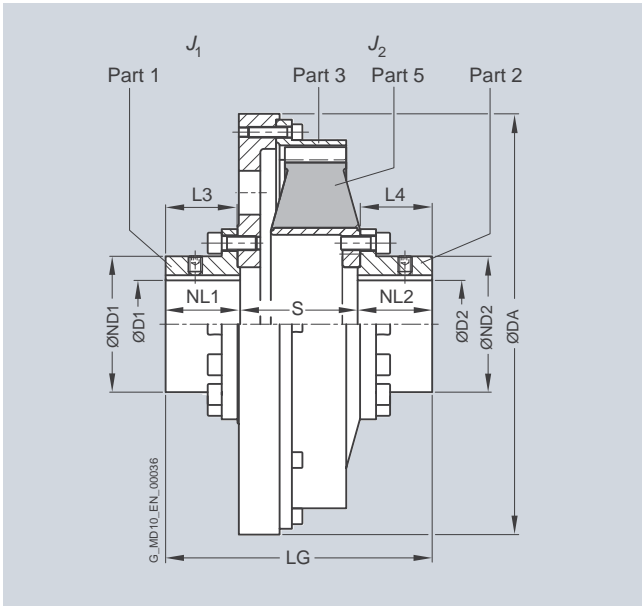
Product code:

2LC0220-8AE09-1JA0
M1S

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-S Series

Types ESNW and ESDW

Selection and ordering data



Type ESNW

Type ESDW

Size	Dimensions in mm								Mass moment of inertia		Product code with order codes M.. for bore diameter $\varnothing D2$ and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg
	D1/D2 Keyway DIN 6885 max.	DA	ND1/ND2	NL1/NL2	L3	L4	S	LG	J_1 kgm ²	J_2 kgm ²		
Type ESNW												
265	50	275	78	65	62	66	68	198	0.11	0.017	2LC0220-1AG ■ ■ - ■ ■ AA0	15
290	50	325	78	65	62	68	89	219	0.21	0.028	2LC0220-2AG ■ ■ - ■ ■ AA0	22
320	65	365	98	87	84	92	100	274	0.37	0.042	2LC0220-3AG ■ ■ - ■ ■ AA0	32
360	85	365	123	88	85	96	123	299	0.45	0.11	2LC0220-4AG ■ ■ - ■ ■ AA0	43
420	100	480	155	85	82	94	134	304	1.5	0.3	2LC0220-5AG ■ ■ - ■ ■ AA0	75
465	130	480	190	119	116	119	125	363	1.6	0.54	2LC0220-6AG ■ ■ - ■ ■ AA0	89
520	150	585	227	162	159	161	123	447	4	0.94	2LC0220-7AG ■ ■ - ■ ■ AA0	155
560	150	585	240	180	174	174	132	492	4.1	1.2	2LC0220-8AG ■ ■ - ■ ■ AA0	160
580	150	585	240	200	195	198	145	545	5.5	1.6	2LC0221-0AG ■ ■ - ■ ■ AA0	185
680	160	685	300	210	205	201	150	570	12	3.6	2LC0221-1AG ■ ■ - ■ ■ AA0	315
770	260	870	390	255	250	253	180	690	27.2	12	2LC0221-2AG ■ ■ - ■ ■ AA0	500
Type ESDW												
520	150	585	227	226	201	135	100	552	4.7	1.8	2LC0220-7AH ■ ■ - ■ ■ AA0	215
560	160	585	248	240	215	133	117	597	5.4	2.5	2LC0220-8AH ■ ■ - ■ ■ AA0	250
580	160	685	240	250	220	140	120	620	10.1	3.2	2LC0221-0AH ■ ■ - ■ ■ AA0	300
680	200	685	300	250	218	134	125	625	14.5	6.5	2LC0221-1AH ■ ■ - ■ ■ AA0	440
770	260	870	390	300	265	238	220	820	40	20	2LC0221-2AH ■ ■ - ■ ■ AA0	720
$\varnothing D1$	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 										1 9	1 9
$\varnothing D2$	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 										1 9	1 9
Rubber element	<ul style="list-style-type: none"> WN NN SN NX 										1 2 3 4	1 2 3 4

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

ELPEX-S ESNW coupling, size 520, WN rubber element, hub with bore $\varnothing D1 = 140H7$ mm, with keyway to DIN 6885 and set screw, bore $\varnothing D2 = 120H7$ mm, with keyway to DIN 6885 and set screw.

Product code:

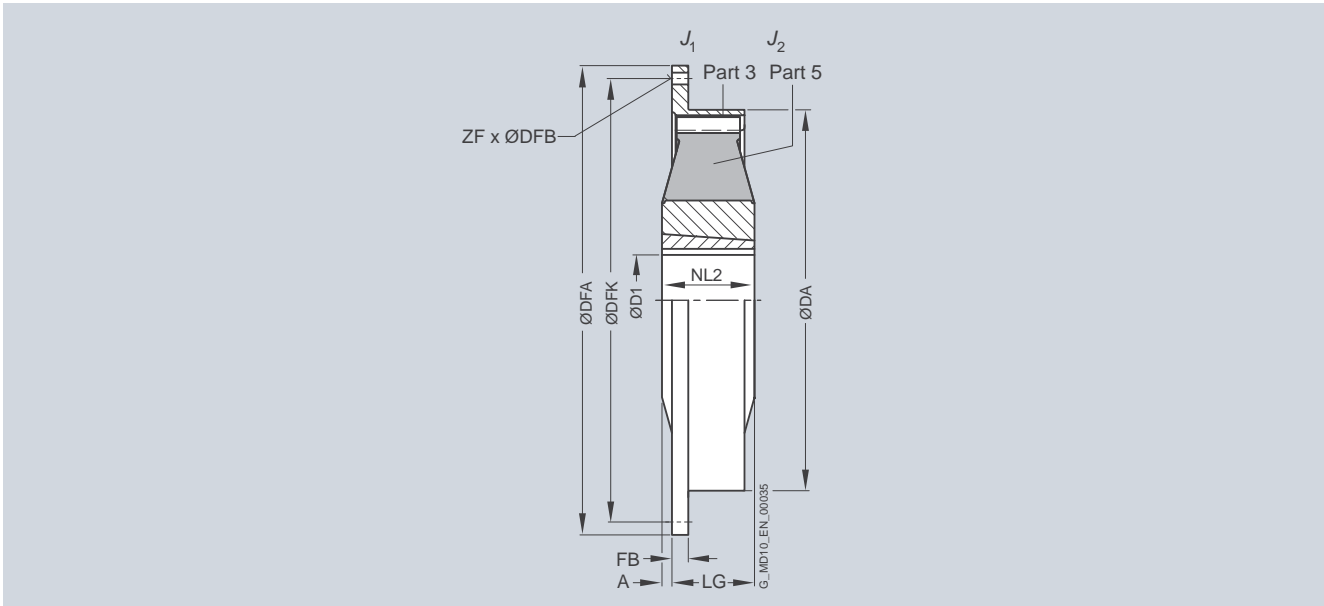
2LC0220-7AG99-1AA0
L1V+M1S

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

Type EST

Selection and ordering data



The rubber disk element cannot be dismantled until the machines have been moved.

Size	Dimensions in mm											Mass moment of inertia		Product code with order codes M.. for bore diameter ØD2 and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i>		
	Taper bush	D1 Keyway DIN 6885		DA	NL2	A	LG	Flange connection dimensions					J ₁			J ₂	
		Size	min.					max.	Size	SAE	DFA	DFK					FB
220	2012	14	50	222	32	0	52	6.5	215.9	200.0	8	6	8.5	0.008	0.008	2LC0220-0AF ■ 9- ■ AA0	3.6
								7.5	241.3	222.3	33	8	8.5	0.008	2LC0220-0AF ■ 9- ■ BA0	3.5	
								8	263.5	244.5	8	6	10.5	0.011	2LC0220-0AF ■ 9- ■ CA0	3.7	
								10	314.3	295.3	8	8	10.5	0.020	2LC0220-0AF ■ 9- ■ DA0	4.2	
265	2517	16	60	263	45	3	42	8	263.5	244.5	38	6	10.5	0.011	0.019	2LC0220-1AF ■ 9- ■ CA0	5.9
								10	314.3	295.3	10	8	0.017	2LC0220-1AF ■ 9- ■ DA0	6.2		
								11.5	352.4	333.4	10	8	0.024	2LC0220-1AF ■ 9- ■ EA0	6.5		
290	2517	16	60	290	64	6	58	10	314.3	295.3	16	8	10.5	0.026	0.026	2LC0220-2AF ■ 9- ■ DA0	8.5
								11.5	352.4	333.4	16	8	0.036	2LC0220-2AF ■ 9- ■ EA0	8.8		
320	3030	35	75	318	76	8	68	11.5	352.4	333.4	16	8	10.5	0.062	0.06	2LC0220-3AF ■ 9- ■ EA0	14
360	3535	35	90	358	89	13	76	11.5	352.4	333.4	65	8	10.5	0.065	0.13	2LC0220-4AF ■ 9- ■ EA0	21
								14	466.7	438.2	15	8	13	0.18	2LC0220-4AF ■ 9- ■ FA0	24	
420	4040	40	100	420	102	10	92	14	466.7	438.2	18	8	13	0.22	0.33	2LC0220-5AF ■ 9- ■ FA0	37
								16	517.5	489.0	18	8	13	0.32	2LC0220-5AF ■ 9- ■ GA0	38	
								18	571.5	542.9	18	6	17	0.47	2LC0220-5AF ■ 9- ■ HA0	41	
465	4545	55	110	465	115	28	87	14	466.7	438.2	85	8	13	0.31	0.76	2LC0220-6AF ■ 9- ■ FA0	63
								16	517.5	489.0	27	8	13	0.41	2LC0220-6AF ■ 9- ■ GA0	64	
								18	571.5	542.9	18	6	17	0.52	2LC0220-6AF ■ 9- ■ HA0	68	

ØD1	<ul style="list-style-type: none"> Without Taper clamping bush With Taper clamping bush – With order code for diameter and tolerance (product code without -Z) 	1 9
Rubber element	<ul style="list-style-type: none"> WN NN SN NX 	1 2 3 4

Weight and mass moments of inertia apply to maximum bore diameters.

Ordering example:

ELPEX-S EST coupling, size 265, WN rubber element, with Taper clamping bush size 2517, with bore ØD2 = 30 mm, outer flange to SAE J620d size 10.

Product code:

2LC0220-1AF99-1DA0
MOS

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX-S Series

Spare and wear parts

Selection and ordering data

Rubber disk elements

The rubber disk elements of the ELPEX-S coupling are wear parts. The service life depends on the operating conditions.

Product code set of rubber disk elements for a coupling						
Size	Type	EST	ESN	ESNR, ESNW	ESD	ESDR, ESDW
220		2LC0220-0XL 0- AA0	2LC0220-0XJ00- AA0			
265		2LC0220-1XL 0- AA0	2LC0220-1XJ00- AA0	2LC0220-1XM00- AA0		
290		2LC0220-2XL 0- AA0	2LC0220-2XJ00- AA0	2LC0220-2XM00- AA0		
320		2LC0220-3XL 0- AA0	2LC0220-3XJ00- AA0	2LC0220-3XM00- AA0		
360		2LC0220-4XL 0- AA0	2LC0220-4XJ00- AA0	2LC0220-4XM00- AA0		
420		2LC0220-5XL 0- AA0	2LC0220-5XJ00- AA0	2LC0220-5XM00- AA0		
465		2LC0220-6XL 0- AA0	2LC0220-6XJ00- AA0	2LC0220-6XM00- AA0		
520			2LC0220-7XJ00- AA0	2LC0220-7XM00- AA0	2LC0220-7XK00- AA0	2LC0220-7XN00- AA0
560			2LC0220-8XJ00- AA0	2LC0220-8XM00- AA0	2LC0220-8XK00- AA0	2LC0220-8XN00- AA0
580			2LC0221-0XJ00- AA0	2LC0221-0XM00- AA0	2LC0221-0XK00- AA0	2LC0221-0XN00- AA0
680			2LC0221-1XJ00- AA0	2LC0221-1XM00- AA0	2LC0221-1XK00- AA0	2LC0221-1XN00- AA0
770				2LC0221-2XM00- AA0		2LC0221-2XN00- AA0
Without Taper clamping bush	1					
With Taper clamping bush	9					
Rubber element						
	• WN	1	1	1	1	1
	• NN	2	2	2	2	2
	• SN	3	3	3	3	3
	• NX	4	4	4	4	4

Ordering examples:

WN rubber element for ELPEX-S EST 265 coupling, including taper bush 2517 with bore $\varnothing D1 = 24$ mm, keyway to DIN 6885.

Product code:

2LC0220-1XL90-1AA0
L0P

WN rubber element for ELPEX-S EST 265 coupling without Taper clamping bush.

Product code:

2LC0220-1XL10-1AA0

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX-S Series

Notes

11



Highly Flexible Couplings ELPEX Series



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FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

General information

Overview



ELPEX couplings are highly torsionally flexible and free of torsional backlash. Because of their low torsional stiffness and damping capacity, ELPEX couplings are especially suitable for coupling machines with a very non uniform torque pattern. ELPEX couplings are also suitable for connecting machines with high shaft misalignment.

Standard ELPEX coupling types are designed as shaft-shaft connections or flange-shaft connections. Application-related types can be implemented on request.

Benefits

The ELPEX coupling is suitable for horizontal and vertical mounting positions or mounting at any required angle. The coupling parts can be arranged as required on the shafts to be connected.

The split flexible rings can be changed without having to move the coupled machines.

The flexible rings are mounted without backlash and give the coupling progressive torsional stiffness, i.e. torsional stiffness increases in proportion to coupling load.

The ELPEX coupling is especially suitable for reversing operation or operation with changing directions of load.

The coupling is delivered preassembled. The flexible rings are completely assembled. On the type ENG, the coupling halves have to be bolted together after the hub has been mounted. On the type EFG, after mounting the coupling hub, only the outer flange has to be connected to the machine.

Outer flanges with different connection dimensions are available for the type EFG.

If the flexible rings are irreparably damaged or worn, the metal parts can rotate freely against one another, they are not in contact with one another.

Application

The ELPEX coupling is available in 9 sizes with a nominal torque of between 1600 Nm and 90000 Nm. The coupling is suitable for ambient temperatures of between $-40\text{ }^{\circ}\text{C}$ and $+80\text{ }^{\circ}\text{C}$.

The ELPEX coupling is frequently used for high-quality drives which have to guarantee very long service life in harsh operating conditions. Examples of applications are mill drives in the cement industry, marine main and secondary drives or drives on large excavators powered by an electric motor or diesel engine.

Design

Design and function

The ELPEX coupling's transmission characteristic is determined essentially by the flexible rings. The flexible rings are manufactured from a natural rubber mixture with a multiply fabric lining. The flexible rings are split so that they can be changed without having to move the coupled machines.

The flexible rings are fastened to the hub with a clamping ring and to the outer flange with a clamping ring, using pins and bolts.

On the type EFG, the outer flange is designed with connection dimensions for connection to e.g. a diesel engine flywheel. On ENG types, the outer flange is fitted to a second hub part, which then enables the shaft-shaft connection.

Materials:

	Type	
	Cast iron	Steel
Hub part 1	Grey cast iron EN-GJL-250	Steel
Hub part 2	Steel	Steel
Retaining ring, outer ENG, ENGS	Grey cast iron EN-GJL-250	Steel
Outer flange EFG, EFGS	Grey cast iron EN-GJL-250	Steel

Steel in quality $R_m > 450\text{ N/mm}^2$

Flexible ring materials:

Material/ description	Hardness	Identification	Ambient temperature
Natural rubber	70 ShoreA	Size - 2	$-40\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$

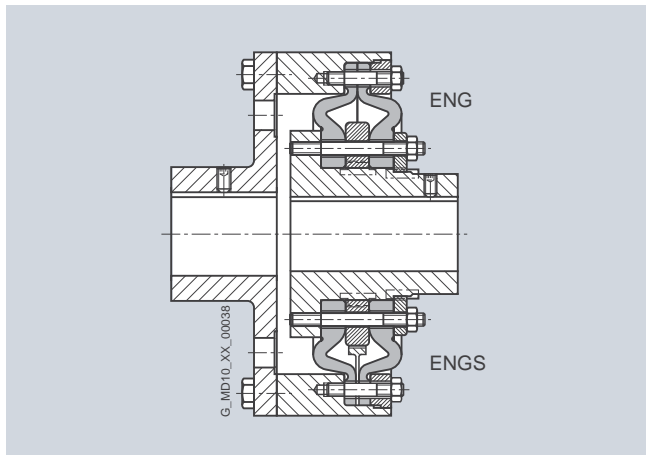
FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

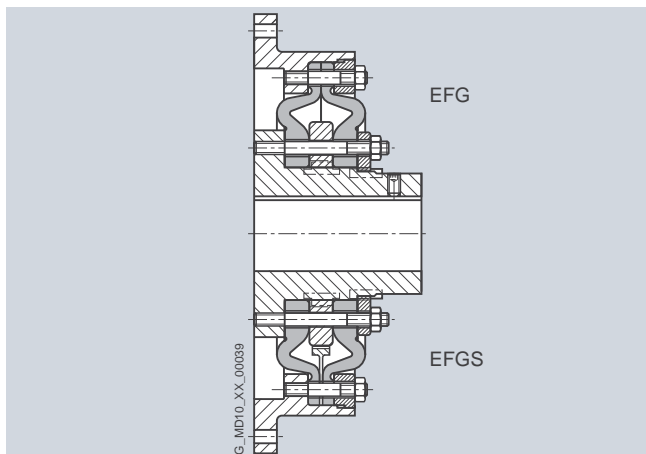
General information

ELPEX coupling types

Type	Description
ENG	Coupling as shaft-shaft connection
EFG	Coupling as flange-shaft connection
ENGs	as ENG with fail-safe device
EFGs	as EFG with fail-safe device



Types ENG/ENGs



Types EFG/EFGs

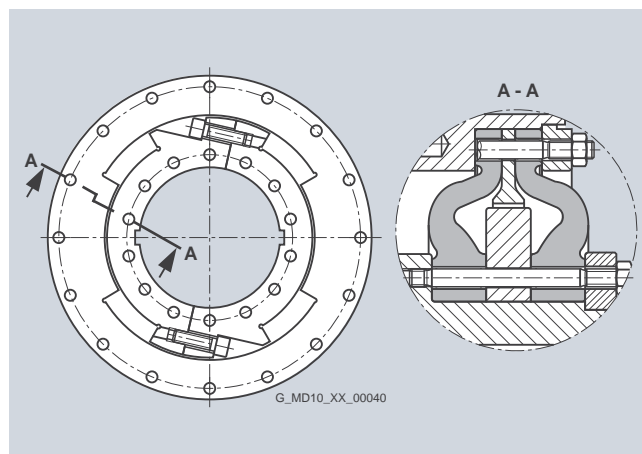
Further application-specific coupling types are available. Dimension sheets for and information on these are available on request. The following versions have already been implemented a number of times:

- ELPEX coupling with brake drum, brake disk or flywheel mass
- ELPEX coupling with axial backlash limiter
- ELPEX coupling with adapter
- ELPEX coupling in combination with a safety slip clutch
- ELPEX coupling for engaging/disengaging during standstill
- ELPEX coupling as part of a coupling combination

Fail-safe device of ELPEX coupling

Types ENGs and EFGs are provided with a fail-safe device. In normal operation the torsion angle of the flexible rings is smaller than the gap between the cams. In normal operation there is no metal-metal contact.

If the flexible rings fail, cams transmit the torque from the inner part and outer part. These enable the coupling to be used in emergency mode for a short time. This option is frequently required e.g. in the case of marine drives.



Fail-safe device

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

General information

Configuration

The ELPEX coupling is especially suitable for rough operation. An application factor different from that in catalog section 3 is therefore sufficient for all applications. In the case of machines which excite torsional vibration, FLENDER urgently recommends carrying out a torsional vibration calculation or measuring the coupling load occurring in the drive.

Coupling selection

Coupling load in continuous operation

The operating principles of the driving and driven machines are divided into categories and the application factor FB derived from these in accordance with DIN 3990-1.

Application factor FB Torque characteristic of the driving machine	Torque characteristic of the driven machine		
	uniform with moderate shock loads	non uniform	very rough
Electric motors, hydraulic motors, gas and water turbines	1.0	1.3	1.4
Internal combustion engines	1.3	1.4	1.6

Examples of torque characteristic in driven machines:

- uniform with moderate shock loads: generators, fans, blowers
- non uniform: reciprocating compressors, mixers, conveyor systems
- very rough: crushers, excavators, presses, mills

Coupling	Elastomer material	Temperature T_a on the coupling				
		-40 °C to -30 °C	-30 °C to +50 °C	to 60 °C	to 70 °C	to 80 °C
ELPEX	NR	1.1	1.0	1.25	1.40	1.60

NR: Natural rubber mixture

Select size with: $T_{KN} \geq T_N \cdot FB \cdot FT$

Coupling load at maximum and overload conditions

The maximum torque is the highest load acting on the coupling in normal operation.

Maximum torques at a frequency of up to 25 times an hour are permitted and must be lower than the maximum coupling torque. Examples of maximum torque conditions are: Starting operations, stopping operations or usual operating conditions with maximum load.

$$T_{Kmax} \geq T_{max} \cdot FT$$

Overload torques are maximum loads which occur only in combination with special, infrequent operating conditions.

Examples of overload torque conditions are: Motor short circuit, emergency stop or blocking because of component breakage. Overload torques at a frequency of once a month are permitted and must be lower than the maximum overload torque of the coupling. The overload condition may last only a short while, i.e. fractions of a second.

$$T_{KOL} \geq T_{OL} \cdot FT$$

Coupling load due to dynamic torque load

Applying the frequency factor FF, the dynamic torque load must be lower than the coupling fatigue torque.

Dynamic torque load

$$T_{KW} \geq T_W \cdot FT \cdot FF \cdot \frac{0.6}{FB - 1.0}$$

Frequency of the dynamic torque load

$f_{err} \leq 10$ Hz frequency factor FF = 1.0

Frequency of the dynamic torque load

$f_{err} > 10$ Hz frequency factor FF = $\sqrt{(f_{err} / 10 \text{ Hz})}$

Checking the maximum speed:

The following must apply to all load situations: $n_{Kmax} \geq n_{max}$

Checking permitted shaft misalignment and restorative forces

For all load situations the actual shaft misalignment must be less than the permitted shaft misalignment.

Checking bore diameter, mounting geometry and coupling design

The check must be made on the basis of the dimension tables. On request, couplings with adapted geometry can be provided.

Checking shaft-hub connection

Please refer to catalog section 3 for instructions.

Checking temperature and chemically aggressive environment

The permitted coupling temperature is specified in the Temperature Factor FT table. In the case of chemically aggressive environments, please consult the manufacturer.

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

General information

Technical data

Power ratings

Size	Rated torque	Maximum torque	Overload torque	Fatigue torque	Dynamic torsional stiffness for 100 % capacity utilization	Stiffness		Permitted shaft misalignment at speed n = 1500 rpm		
						Axial	Radial	Axial	Radial	Angle
	T_{KN} Nm	T_{Kmax} Nm	T_{KOL} Nm	T_{KW} Nm	C_{Tdyn} kNm/rad	C_a N/mm	C_r N/mm	ΔK_a mm	ΔK_r mm	ΔK_w Degree
270	1600	4800	6400	640	22.0	660	770	2.2	2.2	0.2
320	2800	8400	11200	1120	38.0	780	910	2.6	2.6	0.2
375	4500	13500	18000	1800	63.0	970	1130	3	3	0.2
430	7100	21300	28400	2840	97.0	1160	1350	3.4	3.4	0.2
500	11200	33600	44800	4480	155	1410	1630	3.8	3.8	0.2
590	18000	54000	72000	7200	240	1710	1990	4.2	4.2	0.2
690	28000	84000	112000	11200	365	2060	2390	4.6	4.6	0.2
840	45000	135000	180000	18000	685	2570	2990	5	5	0.2
970	90000	270000	360000	36000	1100	3020	3510	5.5	5.5	0.2

The damping coefficient is $\Psi = 1.1$

Torsional stiffness

The dynamic torsional stiffness is load-dependent and increases in proportion to capacity utilization. The values specified in the selection table apply to a capacity utilization of 100 %. The following table shows the correction factors for different rated loads.

$$C_{Tdyn} = C_{Tdyn 100\%} \cdot FKC$$

Correction factor FKC	Capacity utilization T_N / T_{KN}					
	20 %	50 %	60 %	70 %	80 %	100 % 200 %
	0.3	0.56	0.65	0.74	0.82	1 1.9

Torsional stiffness also depends on the ambient temperature and the frequency and amplitude of the torsional vibration excitation. More precise torsional stiffness and damping parameters on request.

Permitted shaft misalignment

The permitted shaft misalignment depends on the operating speed. As the speed increases, lower shaft misalignment values are permitted. The following table shows the correction factors for different speeds.

The maximum speed for the respective coupling size must be noted!

$$\Delta K_{perm} = \Delta K_{1500} \cdot FKV$$

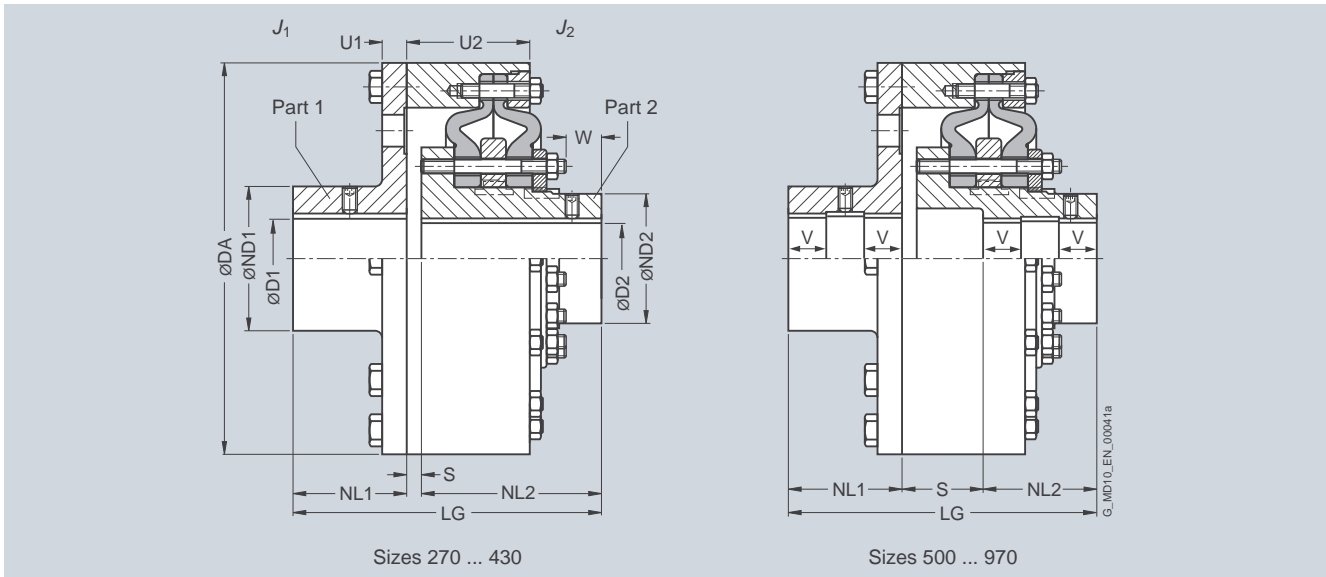
Correction factor FKV	Speed in rpm			
	500	1000	1500	3000
	1.6	1.25	1.0	0.70

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

Types ENG/ENGs

Selection and ordering data



Size	Rated torque T_{KN} Nm	Max. speed n_{kmax} rpm	Dimensions in mm													Mass moment of inertia		Product code with order codes for bore diameter and tolerances (product code without -Z) - selection in catalog part 3	Weight m kg
			Keyway DIN 6885			Type										J_1	J_2		
			D1	D2	DA	ND1	ND2	NL1	NL2	S	U1	U2	LG	W	kgm ²	kgm ²			
270	1600	3000	45	80	70	270	128	94	80	155	10	14	86	245	42	0.21	0.037	2LC0200-3A ■■■ -0AA0	29
320	2800	2500	55	100	85	320	160	115	100	180	6	16	97.5	286	48	0.49	0.082	2LC0200-4A ■■■ -0AA0	50
375	4500	2100	65	115	105	375	184	143	120	205	10	18	118.8	335	62	1.0	0.21	2LC0200-5A ■■■ -0AA0	80
430	7100	1900	75	130	120	430	208	165	140	235	8	22	126	383	68	2.0	0.37	2LC0200-6A ■■■ -0AA0	113
500	11200	1600	90	150	150	500	240	202	160	160	112	25	139.7	432	80	3.9	0.85	2LC0200-7A ■■■ -0AA0	174
590	18000	1360	100	140	170	590	224	230	190	190	130	28	162.7	510	95	8.2	1.7	2LC0200-8A ■■■ -0AA0	254
			140	180			288									8.4		2LC0200-8A ■■■ -0AA0	284
690	28000	1200	110	140	200	690	224	278	220	220	140	32	175.6	580	102	16.3	3.7	2LC0201-0A ■■■ -0AA0	350
			140	180			288									16.8		2LC0201-0A ■■■ -0AA0	370
			180	210			336									16.9		2LC0201-0A ■■■ -0AA0	385
840	45000	1000	140	180	240	840	288	342	280	280	125	42	231	685	105	49	11	2LC0201-1A ■■■ -0AA0	700
			180	220			352									50		2LC0201-1A ■■■ -0AA0	725
970	90000	850	160	200	280	970	320	390	350	350	167	70	290	867	137	104	26	2LC0201-2A ■■■ -0AA0	1265
			200	240			384									106		2LC0201-2A ■■■ -0AA0	1310
			240	280			448									110		2LC0201-2A ■■■ -0AA0	1350
			280	320			512									115		2LC0201-2A ■■■ -0AA0	1410

Type	<ul style="list-style-type: none"> ENG cast iron ENG steel ENGs cast iron ENGs steel 	F
ØD1:	<ul style="list-style-type: none"> Without finished bore – Without order codes Without finished bore from size 590 for 2nd diameter range D1 – Without order codes Without finished bore from size 690 for 3rd diameter range D1 – Without order codes Without finished bore for size 970 for 4th diameter range D1 – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 	L
ØD2:	<ul style="list-style-type: none"> Without finished bore – Without order codes With finished bore – With order codes for diameter and tolerance (product code without -Z) 	G
		M

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to cast iron version with maximum bore.

From size 500, the bores D1 and D2 are each provided with a recess of $D = +1$ mm halfway along the hub. $V \approx 1/3$ NL

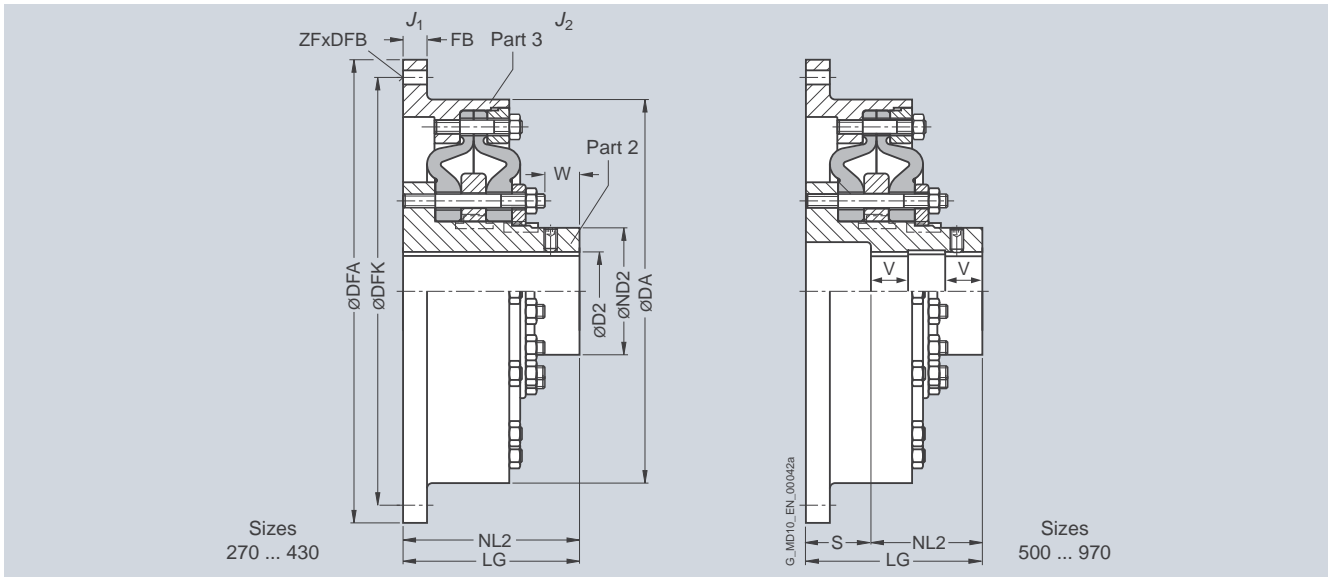
Ordering example:
ELPEX coupling ENG, size 690, cast iron version, bore $\text{ØD1} = 180\text{H7}$ mm with keyway to DIN 6885 and set screw, the hub diameter $\text{ND1} = 288$ mm is thus assigned; bore $\text{ØD2} 200\text{H7}$ mm, with keyway to DIN 6885 and set screw, the hub diameter $\text{ND2} = 278$ mm is thus assigned.

Product code:
2LC0201-0AF99-0AA0
L2B+M2D

FLENDER Standard Couplings Highly Flexible Couplings - ELPEX Series

Types EFG/EFGS

Selection and ordering data



Size	Rated torque T_{KN} Nm	Max. speed n_{Kmax} rpm	Keyway DIN 6885		Flange connection dimensions ¹⁾								Mass moment of inertia		Product code with order codes for bore diameter and tolerances (product code without -Z) - selection in catalog part 3	Weight m				
			Type	max.	D2	DA	ND2	NL2	S	LG	W	DFA	DFK	FB			ZF	DFB	J_1	J_2
270	1600	3000	Cast iron	4250	70	270	94	155	-	155	42	466.7 ₆	438.2 ¹⁾	12	8	13	0.47	0.037	2LC0200-3A ■ 2 ■ -0AA0	27
			Steel	3600	70	270	94	155	-	155	42	325.6 ₆	300	8	8	14	0.16		2LC0200-3A ■ 1 ■ -0AA0	19
320	2800	2500	Cast iron	3600	85	320	115	180	-	180	48	517.5 ₆	489 ¹⁾	14	8	13	0.87	0.082	2LC0200-4A ■ 2 ■ -0AA0	42
			Steel	3600	85	320	115	180	-	180	48	392.6 ₆	360	8	8	18	0.39		2LC0200-4A ■ 1 ■ -0AA0	33.5
375	4500	2100	Cast iron	3100	105	375	143	205	-	205	62	571.5 ₆	542.9 ¹⁾	16	6	17	1.5	0.21	2LC0200-5A ■ 2 ■ -0AA0	65
			Steel	3100	105	375	143	205	-	205	62	448.6 ₆	415	8	8	18	0.78		2LC0200-5A ■ 1 ■ -0AA0	53
430	7100	1900	Cast iron	2650	120	430	165	235	-	235	68	673.5 ₆	641.4 ¹⁾	20	12	17	3.4	0.37	2LC0200-6A ■ 2 ■ -0AA0	100
			Steel	2650	120	430	165	235	-	235	68	515.6 ₆	475	8	8	22	1.5		2LC0200-6A ■ 1 ■ -0AA0	78
500	11200	1600	Cast iron	2300	150	500	202	160	100	260	80	673.5 ₆	641.4 ¹⁾	20	12	17	4.0	0.85	2LC0200-7A ■ 2 ■ -0AA0	150
			Steel	2300	150	500	202	160	100	260	80	585.6 ₆	545	10	10	22	2.7		2LC0200-7A ■ 1 ■ -0AA0	140
590	18000	1350	Cast iron	2000	170	590	230	190	120	310	95	733.5 ₆	692.2 ¹⁾	24	12	21	7.0	1.7	2LC0200-8A ■ 2 ■ -0AA0	200
			Steel	2000	170	590	230	190	120	310	95	692.6 ₆	645	10	10	26	6.0		2LC0200-8A ■ 1 ■ -0AA0	190
690	28000	1200	Cast iron	1650	200	690	278	220	130	350	102	890 ₆	850 ¹⁾	24	32	17	15	3.7	2LC0201-0A ■ 2 ■ -0AA0	270
			Steel	1650	200	690	278	220	130	350	102	800.6 ₆	750	12	12	26	11		2LC0201-0A ■ 1 ■ -0AA0	250
840	45000	1000	Cast iron	1350	240	840	342	280	115	395	105	1105 ₆	1060 ¹⁾	30	32	21	46	11	2LC0201-1A ■ 2 ■ -0AA0	530
			Steel	1350	240	840	342	280	115	395	105	960.6 ₆	908	16	16	30	32		2LC0201-1A ■ 1 ■ -0AA0	470
970	90000	850	Cast iron	1180	280	970	390	350	155	505	137	1385 ₆	1320 ¹⁾	35	24	31	130	26	2LC0201-2A ■ 2 ■ -0AA0	1050
			Steel	1180	280	970	390	350	155	505	137	1112.6 ₆	1051	16	16	35	76		2LC0201-2A ■ 1 ■ -0AA0	920
Type	<ul style="list-style-type: none"> • EFG cast iron • EFG steel • EFGS cast iron • EFGS steel 																	B J C K		
ØD2:	<ul style="list-style-type: none"> • Without finished bore – Without order codes • With finished bore – With order codes for diameter and tolerance (product code without -Z) 																	1 9		

The hub diameter of the component part is assigned according to the diameter of the finished bore. Where bore diameters overlap, the component with the smaller hub diameter is always selected.

Weights and mass moments of inertia apply to cast iron version with maximum bore.

From size 500, the bores D1 and D2 are each provided with a recess of D = +1 mm halfway along the hub. $V \approx 1/3 NL$

Notice: The application factor FB in the coupling selection section must be noted.

Ordering example:

ELPEX EFG coupling, size 430, steel version, bore $\varnothing D1 = 100H7$ mm with keyway to DIN 6885 and set screw, flange to SAE J620d size 21 with $DFA = 673.5g7$ mm.

Coupling balanced G6.3 in accordance with the half parallel key standard.

Product code:
2LC0200-6AJ29-0AA0-Z
M1N+W02

¹⁾ The top line of the flange connection dimensions in accordance with the SAE J620d or DIN 6288 standards.

FLENDER Standard Couplings

Highly Flexible Couplings - ELPEX Series

Spare and wear parts

Selection and ordering data

Flexible rings

The flexible rings are wear parts. The service life depends on the operating conditions.

Size	Product code Flexible rings for a coupling	Weight kg	Types EFG, ENG Flexible ring screw connection set of pins and bolts	Types EFGS, ENGS Flexible ring screw connection set of pins and bolts
270	2LC0200-3XV00-0AA0	1.6	2LC0200-3XU00-0AA0	2LC0200-3XW00-0AA0
320	2LC0200-4XV00-0AA0	2.6	2LC0200-4XU00-0AA0	2LC0200-4XW00-0AA0
375	2LC0200-5XV00-0AA0	4.4	2LC0200-5XU00-0AA0	2LC0200-5XW00-0AA0
430	2LC0200-6XV00-0AA0	6.8	2LC0200-6XU00-0AA0	2LC0200-6XW00-0AA0
500	2LC0200-7XV00-0AA0	9.4	2LC0200-7XU00-0AA0	2LC0200-7XW00-0AA0
590	2LC0200-8XV00-0AA0	18	2LC0200-8XU00-0AA0	2LC0200-8XW00-0AA0
690	2LC0201-0XV00-0AA0	36	2LC0201-0XU00-0AA0	2LC0201-0XW00-0AA0
840	2LC0201-1XV00-0AA0	68	2LC0201-1XU00-0AA0	2LC0201-1XW00-0AA0
970	2LC0201-2XV00-0AA0	120	2LC0201-2XU00-0AA0	2LC0201-2XW00-0AA0

Fluid Couplings FLUDEX Series



13/2	Overview	13/27	Types FGD/FVD
13/2	Benefits	13/27	Selection and ordering data
13/2	Application	13/28	Types FGE/FVE
13/2	Design	13/28	Selection and ordering data
13/5	Function	13/29	Types FGM/FVM
13/6	Technical data	13/29	Selection and ordering data
13/7	Configuration	13/30	Oil filling quantities for FG/FV series
13/7	Selection of coupling	13/30	Selection and ordering data
13/7	Selection of series	13/32	Type FNO
13/10	Selection of type	13/32	Selection and ordering data
13/11	Selection of size	13/33	Type FNA
13/12	FLUDEX coupling as aid to starting IEC motors	13/33	Selection and ordering data
13/12	Selection and ordering data	13/34	Type FND
13/12	Speed $n = 1500$ rpm	13/34	Selection and ordering data
13/14	Speed $n = 3000$ rpm	13/35	Type FNDB
13/16	Type FAO	13/35	Selection and ordering data
13/16	Selection and ordering data	13/37	Type FNDS SB
13/17	Type FAR with attached V-belt pulley	13/37	Selection and ordering data
13/17	Selection and ordering data	13/38	Type FNDS HB
13/18	Type FAD	13/38	Selection and ordering data
13/18	Selection and ordering data	13/39	Oil filling quantities for FN series
13/19	Type FAE	13/39	Selection and ordering data
13/19	Selection and ordering data	13/41	Spare parts
13/20	Type FAM	13/41	Selection and ordering data
13/20	Selection and ordering data	13/45	Mass moments of inertia and maximum oil filling quantities
13/21	Type FADB	13/45	Technical data
13/21	Selection and ordering data	13/48	Special types
13/22	Type FADS SB	13/48	Selection and ordering data
13/22	Selection and ordering data	13/50	Form
13/23	Type FADS HB	13/50	Technical specifications for the selection of type and size for FLUDEX fluid couplings
13/23	Selection and ordering data		
13/24	Oil filling quantities for FA series		
13/24	Selection and ordering data		
13/26	Types FGO/FVO		
13/26	Selection and ordering data		

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

Overview



Coupling suitable for potentially explosive environments. Complies with Directive 94/9/EC for:

CE Ex II 2 Gc T3 D160 °C II B
-30 °C ≤ T_a ≤ +50 °C

CE Ex I M2

Benefits

FLUDEX couplings are hydrodynamic fluid couplings which operate on the Föttinger principle. The coupling parts on the input and output sides are not mechanically connected to each other. Output is transmitted via the oil filling which rotates in the coupling and is conducted over radially arranged blades.

FLUDEX couplings limit starting and maximum torque in the drive train and, through the property of rotational slip, serve as an aid to starting the motor, as overload protection in the event of fault and for isolating torsional vibration.

When large masses are started up, the drive train is accelerated only at the torque determined by the coupling characteristic. The starting operation is spread over time, the driven machine started softly and smoothly.

In the case of special operating conditions, such as overload or blocking of the driven machine, the effect of the motor mass is eliminated and the maximum torque load of the drive train limited by the FLUDEX coupling.

The coupling then acts as a load-holding safety clutch until the drive is shut off by the motor control or coupling monitoring system.

The FLUDEX coupling further acts as a means of decoupling during torsional vibration excitation. Torsional vibration excitation with a frequency of >5 Hz is virtually absorbed by the coupling.

To compensate for shaft misalignment, the FLUDEX coupling is combined with a displacement coupling e.g. of the N-EUPEX type.

All FLUDEX couplings are designed with radial unset blades and are therefore suitable for rotation in both directions and reversing operation. They can be fitted horizontally, at an angle or vertically. In the case of FLUDEX couplings with a delay chamber it must be ensured, when fitting at an angle or vertically, that the delay chamber is below the working chamber.

Application

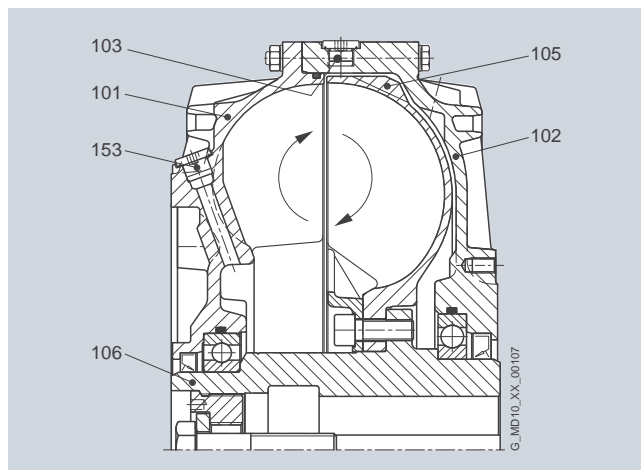
FLUDEX couplings are used in drives for conveyor systems such as belt conveyors, bucket elevators and chain conveyors. In heavy industry FLUDEX couplings are used for applications such as blade wheel drives, crushers, roller presses, mixers, large ventilators, boiler feed pumps, large compressors, centrifuges and auxiliary drives for mills.

Further applications are, for example, pump drives, PTO generator drives, windpower systems and door and gate drives.

In drives with diesel engine FLUDEX couplings are used on driven machines with a high mass moment of inertia.

Design

FLUDEX couplings are constructed of just a few, robust components. Internal components include the hollow shaft or solid shaft (106), to which the blade wheel (105) is connected. The outer housing comprises the cover (102) and the blade wheel housing (101). The joint is constructed as a bolted flange joint and sealed with an O ring. The outer housing and the shaft or hollow shaft have double bearing support and are sealed off to the outside with radial shaft seals. The coupling is provided with two filler plugs (153) with integral overflow protection and with one or two fusible safety plugs (103) in the coupling housing for protection against overheating. The fusible safety plug or a screw plug fitted in the same position also serves as a fluid drain plug and with the aid of a scale marking on the housing can be used as a level indicator.



G_MD10_XX_00107

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

General information

Materials

Blade wheel and housing

Cast aluminum AISi10Mg

Shaft and hollow shaft

Steel with a yield point higher than 400 N/mm²

Static seals and radial shaft seals

Perbunan NBR or Viton FPM

Add-on parts

Grey cast iron EN-GJL-250, spheroidal graphite cast iron EN-GJS-400 or steel with a yield point higher than 400 N/mm²

Fusible safety plugs

If a FLUDEX coupling is operated with an impermissibly high slip for a prolonged period, the oil filling and the coupling housing will overheat. Fusible safety plugs which release the oil filling into the environment upon reaching a preset temperature are therefore fitted in each coupling housing. These protect the coupling from irreparable damage through overheating or overpressure and disconnect the drive motor from the driven machine.

Thermal switching equipment

By adding thermal switching equipment leakage and loss of the hydraulic fluid as well as a risk to and contamination of the environment in the event that the coupling overheats can be avoided.

The thermal switching equipment does not work if a machine side is blocked and the coupling housing is connected to this side. If the coupling is stationary, the switching pin cannot actuate the switching equipment.

The thermal switching equipment comprises the thermal switch and the switchgear.

The switchgear comprises a limit switch with a make-and-break contact and a swiveling cam. Limit switch and cam are mounted on a common base plate. The thermal switch is screwed into the housing in place of a screw plug. The fusible safety plug (with a higher response temperature) remains in the coupling for additional safety.

If the set temperature is exceeded, the switching pin is released from the fusible element, emerges 10 mm from the housing and actuates the switchgear while the coupling is rotating. The switchgear can cut out the drive motor and/or trigger an optical or acoustic alarm signal.

The housing of the coupling remains closed and no operating fluid will escape.

Assignment

Continuous operating temperature	Thermal switch	Fusible safety plug
≤85 °C	110 °C	140 °C
>85 ° ... 110 °C	140 °C	160 °C

Thermal equipment

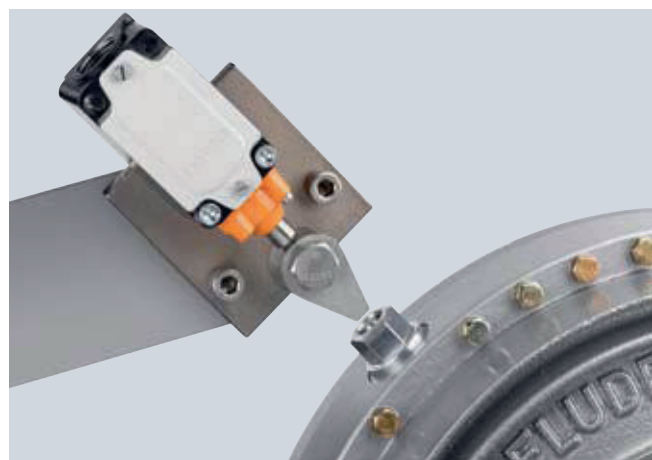
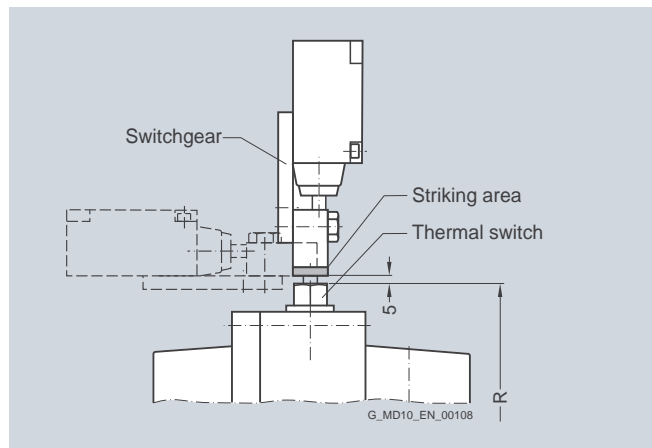
Equipment	Suitability	Fusible safety plug	Sealing material	Additional order info -Z with order code
Standard	1	110 °C	NBR	F01
			FPM	F05
Standard	1	140 °C	NBR	-
			FPM	F07
Standard	2	160 °C	FPM	F08
			NBR	F02
ATEX	1	110 °C ex	NBR	F02
			FPM	F06
With thermal switch ¹⁾	1	140 °C + thermal switch 110 °C	NBR	F03
			FPM	F10
With thermal switch ¹⁾	2	160 °C + thermal switch 140 °C	FPM	F11
			NBR	F04
With EOC system ¹⁾ transmitter	2	160 °C + EOC transmitter (125 °C)	NBR	F04
			FPM	F12

1) not available for size 222

Suitability:

- 1 = suitable for continuous coupling operation temperatures up to 85 °C
- 2 = suitable for continuous coupling operation temperatures up to 110 °C

The switchgear or sensor and evaluation instrument for the EOC system must be ordered separately, using the product code.



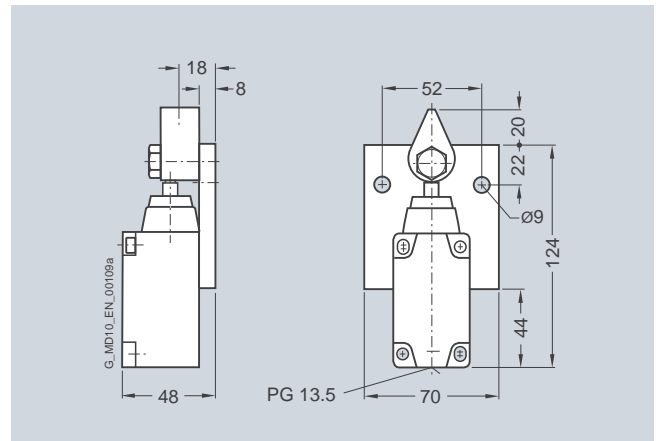
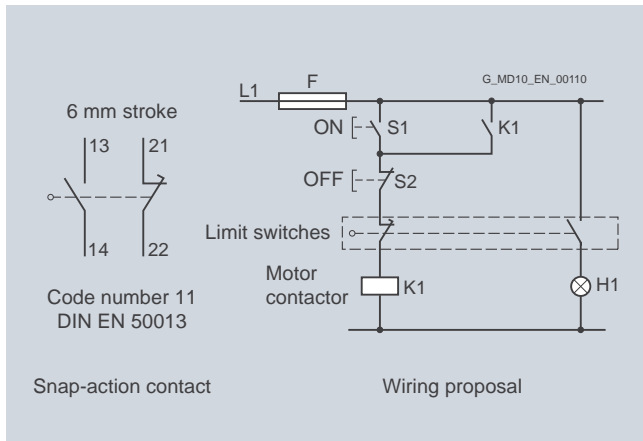
	Size												
	297	342	370	395	425	450	490	516	565	590	655	755	887
Perm. speed in rpm	2500	2240	2100	2000	1900	1800	1650	1600	1500	1450	1250	1100	1000
Radius of travel R in mm	188	215	226	239	251	271	292	307	330	346	383	435	507

From coupling size 297, the thermal switching equipment can be used up to a peripheral speed of 50 m/s. At higher speeds, an EOC system should be provided.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

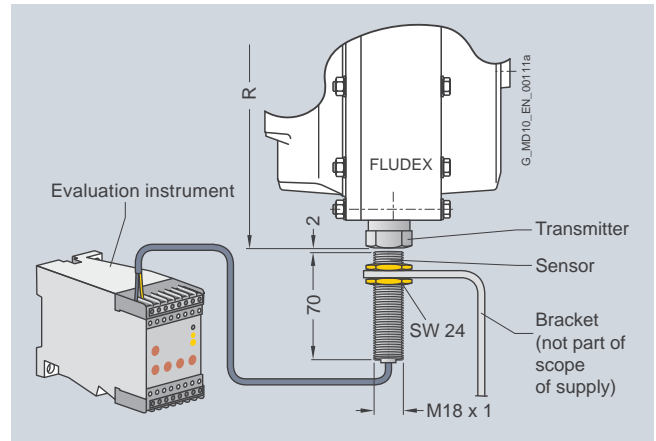
General information



Switchgear: FFA 00000652020

EOC system

On the EOC system the temperature-dependent magnitude of the magnetic field of the EOC transmitter is measured and used for a switching pulse. The transmitter signal is transmitted via the fixed sensor to the evaluation instrument and there compared with the set value. If the signal does not exceed the minimum value or no signal is received, the relay of the evaluation instrument switches over. This can cause a malfunction message to be sent and the motor cut out. The coupling housing remains closed. The fusible safety plug with a higher response temperature remains in the coupling for additional safety.



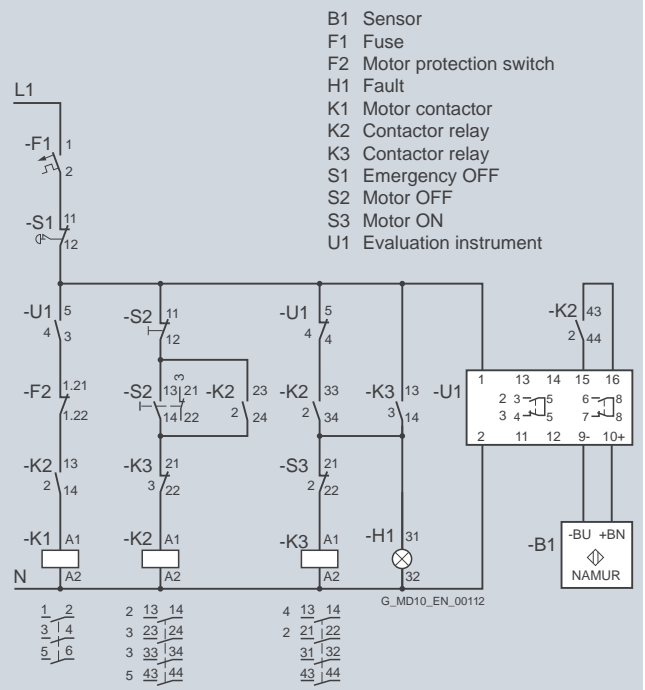
Radius of travel R to the transmitter

Size	297	342	370	395	425	450	490	516	565	590	655	755	887
R in mm	188	215	226	239	251	271	292	346	330	346	383	435	507

Components of the EOC system

Component	Product code	Note
EOC transmitter	FFA 00000652781	Supplied with coupling
Seal	FFA 00000306525	
Sensor EOC	FFA 00000361460	To be ordered separately
Evaluation instrument EWD	FFA 00001205294	

Wiring proposal



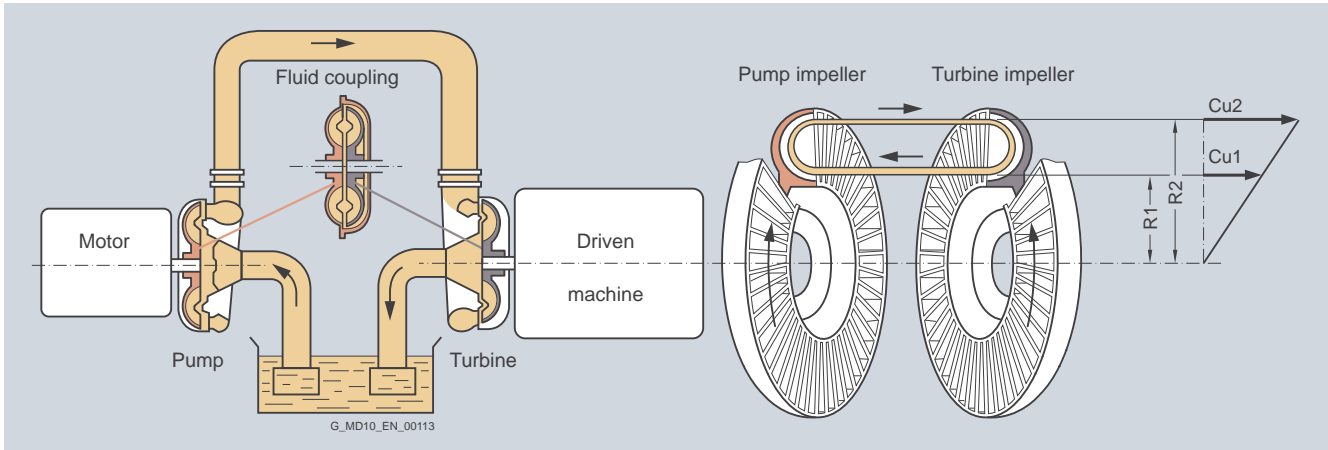
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

Function

Föttinger principle



Two opposing, radially bladed impellers are housed in a leak-proof housing. The impellers are not mechanically connected to each other. Because of the axially parallel arranged blades, the torque is transmitted independently of the direction of rotation and solely by the oil filling.

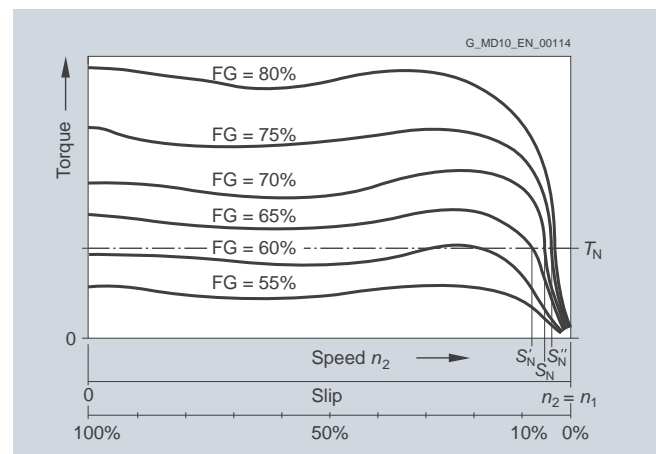
Hydrodynamic couplings have the characteristic properties of fluid flow engines. The transmissible torque depends on the density and quantity of the operating fluid and increases as the square of the drive speed and the fifth power of the profile diameter denoting the coupling size. In the driven pump impeller, mechanical energy is converted into kinetic flow energy of the operating fluid. In the turbine impeller, which is connected to the output side, flow energy is converted back to mechanical energy.

To generate the operating fluid circulation necessary for torque transmission, a difference in speed is necessary between the pump and turbine impellers. A centrifugal force pressure field is set up that is greater in the faster rotating pump impeller than in the turbine impeller. The difference in speed, usually termed "slip", at the continuous operating point of the coupling is between 2 % and 6 %, depending on application and coupling size. Immediately after drive motor start-up slip is 100 %, i.e. the pump impeller is driven at the speed of the motor, but the turbine impeller remains stationary.

Slip multiplied by the transmitted power represents the power loss of the coupling, which is converted into heat inside the oil filling. The amount of heat generated must be released into the environment via the coupling housing to prevent an impermissible temperature rise. The rated coupling output is mainly determined by the power loss which can be dissipated at a still acceptable operating temperature or a reasonable set slip limit. This distinguishes the FLUDEX coupling from all positively acting coupling assembly options for which the rated coupling torque is the defining characteristic.

Depending on the FLUDEX coupling series, drive is via the inner rotor (shaft/hollow shaft with rigidly connected blade wheel) or via the bladed housing impeller (blade wheel housing). The driving impeller is the pump impeller, and the driven impeller is the turbine impeller.

A low-viscosity mineral oil VG 22/VG 32, which also serves to lubricate the bearings, is used as fluid. In special types water, a water emulsion or low-flammability fluid may be used as a non-combustible fluid.



Slip-torque characteristics for different filling levels FG

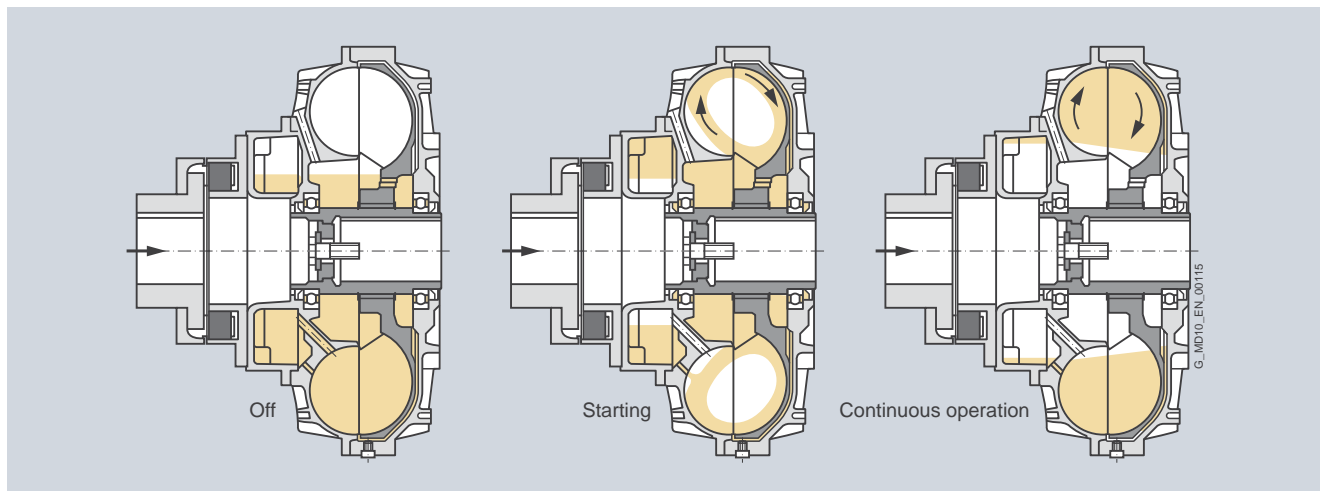
The torque characteristic depends on the oil filling quantity FG in the coupling. This enables the transmissible torque on starting up to be set via the filling level. With a higher filling level the starting torque increases, while the operating slip and thus the coupling temperature rise decreases.

Conversely, with a lower filling level the starting torque decreases, the coupling becomes softer, while slip and coupling temperature rise.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information



Operation of the delay chamber

Starting torque can be reduced without increasing continuous operating slip by using a type of coupling with a delay chamber. On these couplings part of the oil filling is initially stored inactively in the delay chamber. The starting torque is considerably reduced because of the thus reduced starting filling in the work-

ing chamber of the coupling. The filling in the delay chamber runs very slowly, mostly only at the finish of the starting operation, from the delay chamber into the working chamber, causing the active filling in it to rise gradually and the continuous operating slip to reach a value corresponding to the whole filling.

Technical data

Balancing FLUDEX couplings

In deviation from the balancing specifications in catalog section 2, all FLUDEX couplings complying with DIN ISO 1940 are balanced to balancing quality G6.3 for 1800 rpm. For operating speeds higher than 1800 rpm micro-balancing, based on operating speed, can be requested (order code +W03 required).

Balancing is a two-level balancing with the specified oil quantity or a 75 % filling.

FLUDEX couplings are balanced in accordance with the half parallel key standard. Other balancing standards must be specified in the order, using the product code key (see catalog section 2).

Add-on couplings are subject to the standards as set out in catalog section 2.

Oil filling

FLUDEX couplings can be delivered with or without oil filling.

- Delivery without oil filling: without order code
- Delivery with oil filling: product code with **-Z** and order code **F16** and **Y90** with plain text specification of the oil filling quantity in liters.
- Delivery without oil filling but with oil filling quantity specification: Product code with **-Z** and order code **Y90** with plain text specification of the oil filling quantity in liters.

Hollow shafts of the FA, FG and FV series

Variant of FLUDEX hollow shafts only with finished bore: Order code for bore diameter is required.

Operating conditions for FLUDEX couplings in potentially explosive environments

The coupling with fusible safety plugs with identity marking Ex T3 is suitable for the operating conditions set out in Directive 94/9/EC:

- Equipment group II (above-ground applications) temperature class T3 of categories 2 and 3 for environments where there are potentially explosive gas, vapors, mist and air mixtures and for environments where dust can form potentially explosive atmospheres.
- Equipment group I (below-ground applications) of category M2

Ex If used in potentially explosive environments under ground, aluminum couplings must be provided with a robust enclosure to preclude the risk of ignition caused by e.g. friction, impact or friction sparks. The deposit of heavy-metal oxides (rust) on the coupling housing must be prevented by the enclosure or other suitable means.

Ex FLUDEX couplings can be delivered with fitted brake disk or V-belt pulley. Designing the belt drive or the brake disk to conform with the guidelines is the responsibility of the subassembly supplier. It should be noted that there is a risk from, amongst other things, electrostatic charges and hot surfaces. Under BGR 132 (regulations of German Institute for Occupational Safety) the use of V-belts in conjunction with IIC gases is not permitted.

Axial retention

Axial retention is provided by a set screw or end washer with a retaining screw for shaft ends to DIN 748/1 with a centering thread to DIN 332/2. Other methods must be specified in the order, using the product code with **-Z** and order code **Y99** with plain text specification.

Bore and keyway width tolerances are specified in catalog section 15.

Weights specified in the dimension order tables apply to maximum bore diameters without oil filling.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

Configuration

Selection of FLUDEX coupling

In accordance with the requirements catalog various series, sizes and types of FLUDEX coupling are available. The FLUDEX coupling series is characterized by various flow chamber configurations, fitted delay chambers or fittings in the flow chamber. The types are determined by the design of the add-on coupling. This results in different starting factors and characteristics which

Selection of FLUDEX series

FLUDEX couplings which are to be used without special conditions solely as an aid to starting the motor can be selected using the assignment tables on page 13/12 (for $n = 1500$ rpm) or page 13/14 (for $n = 3000$ rpm).

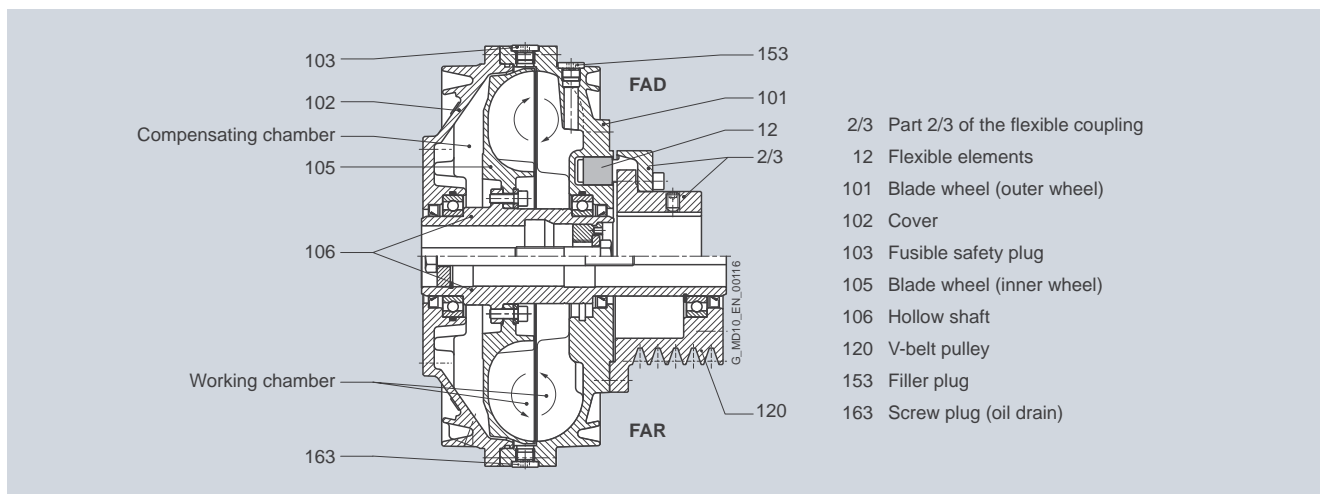
can be used for the most varied applications. The size is specified by stating the flow outside diameter.

When selecting, the series required for the application, taking into account the starting factor and the characteristic, must be selected.

If special requirements, based on the operating method of the prime mover or driven machine, are made of the coupling or the coupling is to be used in extreme environmental conditions, please give specific details in the enquiry or order. The form "Technical specifications for the selection of type and size" can be used for this purpose.

Description of the FLUDEX series

FA series – drive via the hollow shaft (impeller drive)



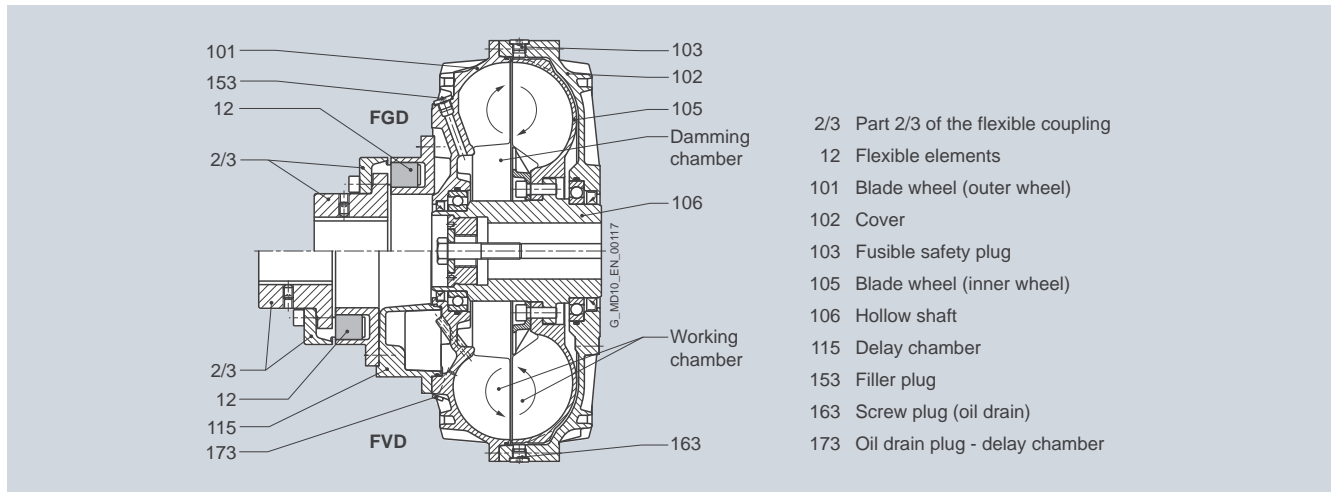
FLUDEX FA series couplings are basic couplings (without delay chamber) which are driven via the hollow shaft (106) with attached blade wheel (105). This enables the advantages of the compensating chamber and the working chamber to be used to best effect. Combinations with brake drums/disks and pulleys can also be easily achieved. When the coupling is started, part of the oil filling in the area of greatest slip is forced into the radially inner chambers and the compensating chamber by the strong rotational flow. This causes the effective oil filling in the working chamber to be reduced and the desired torque limitation (approx. twice T_N) to be achieved during starting. By means of additional fittings the coupling torque at the start of the starting operation can be limited to approx. 1.5 times of the rated value. During run-up to speed the compensating chamber again empties into the working chamber, and this helps to reduce slip.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

FG and FV series – drive via the housing



FLUDEX FG and FV series couplings are designed for drive via the coupling housing. In the FV series (coupling with delay chamber), the motor drives the coupling housing, comprising a blade wheel (101) and a cover (102), via the flexible N-EUPEX coupling (part 2/3) and the delay chamber (115). The rotational flow of the coupling filling drives the blade wheel (105) and the hollow shaft (106) on the output side, which is mounted on the gear unit or driven machine shaft. In the FG series (basic coupling), there is no delay chamber, and the flexible coupling is directly flange-mounted on the blade wheel.

When the coupling is started up, part of the oil filling is forced into the damming chamber. This enables the desired torque limitation (approx. twice T_N) to be achieved during starting. In the FV series the delay chamber also receives part of the oil filling in accordance with the fluid level when the coupling is stationary. During starting the effective oil filling in the working chamber is

reduced by the amount of fluid in the delay chamber, thus considerably reducing the starting torque (approx. 1.5 times T_N). From the delay chamber located on the drive side, the oil is fed back time-dependently to the working chamber via small holes and the coupling torque is raised, even if the output is blocked.

This replenishing function enables a drive to be soft-started with a very low starting torque and with an almost load-free motor. At the same time, however, increased load torques can be overcome by the torque increase in the coupling.

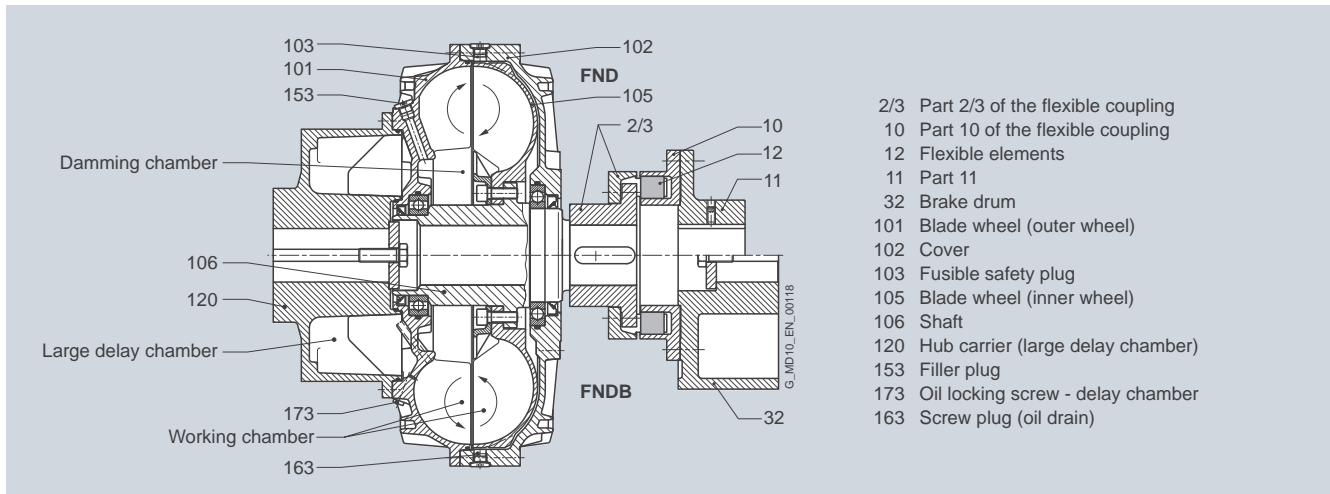
The property of the coupling with delay chamber can be used advantageously, for example, to soft-start empty, partly loaded and fully loaded conveyor belts.

FG series couplings are used for normal starting torque limitation, as a starting clutch for isolating vibration and for overload limitation in the event of drive blockage.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

General information

FN series – drive via the housing

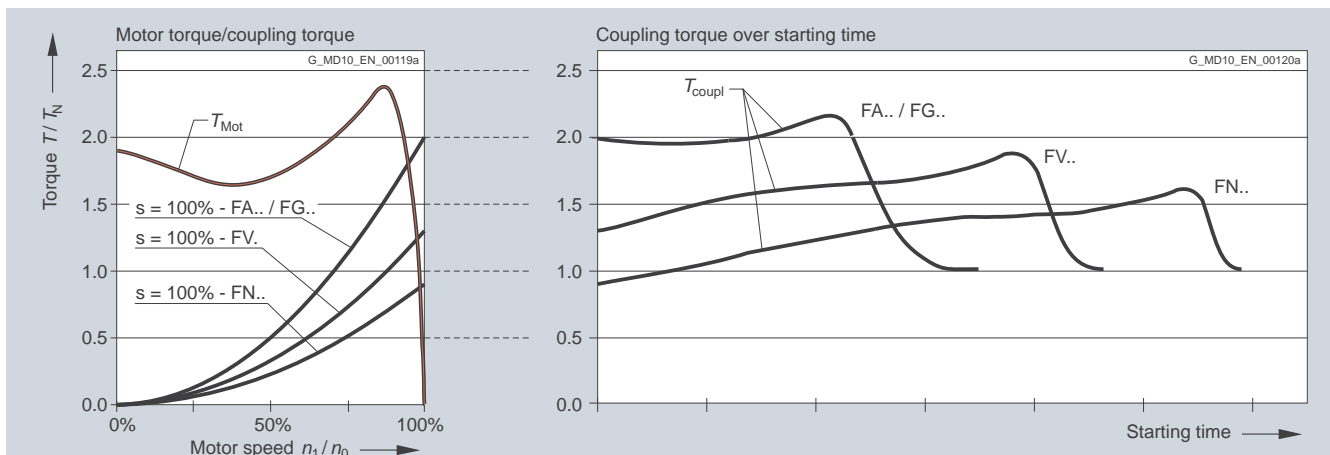


FLUDEX FN series couplings have a larger delay chamber than the FV series. The delay chamber is designed as a hub carrier (120) and is mounted on the motor shaft. The hub carrier is flange-fitted to the housing (101, 102) of the FLUDEX coupling. Output is via the blade wheel (105) and the shaft (106) to the flexible N-EUPEX coupling connecting to the gear unit or driven machine. With types FND, FNDDB and FNDS the coupling can be dismantled radially without moving the coupled machines.

Because of the larger delay chamber, FN couplings enable even softer starting than FV couplings. Torque limitation during starting is approx. 1.3 times T_N . A further advantage of types FNDDB and FNDS is the favorable weight distribution.

The normally stronger motor shaft bears the weight of the hub carrier (cast version) and the main coupling. The gear unit shaft carries only the brake drum or disk and the output-side part of the flexible coupling. At the same time, the principle of the drive-side delay chamber with the capacity for increasing torque time-dependently is retained. FN couplings have the same fields of application as FV couplings. However, they offer special advantages in the brake disk design because of the weight distribution.

Depending on the series selected, different starting characteristics arise during starting.



FLUDEX series:

Series	Description
FA../FG..	Basic coupling without delay chamber
FV..	Coupling with delay chamber
FN..	Coupling with large delay chamber

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

Selection of FLUDEX type

Listed in the catalog are FLUDEX couplings with pulley, brake drum, brake disk and flexible N-EUPEX coupling. Further types, e.g. in combination with a torsionally rigid steel

membrane coupling of the ARPEX series or a highly flexible coupling of the ELPEX or ELPEX-S series, are available.

Series	Type	Add-on coupling	Characteristic feature
FA - without delay chamber - impeller-driven - Starting torque: $T_{\max} = 2.0 \times T_{\text{eff}}$ - Starting aid for standard motors and torsional vibration isolation	FAO	Without	Basic coupling with connecting flange
	FAR	Without	with attached pulley
	FAD	N-EUPEX D	¹⁾
	FAE	N-EUPEX E	enables larger bores on the output side
	FAM	N-EUPEX M	enables a short fitting length
	FADB	N-EUPEX D	with brake drum
	FADS SB	N-EUPEX D	¹⁾ with brake disk for stopping brakes
FADS HB	N-EUPEX D	¹⁾ with brake disk for blocking brakes	
FG - without delay chamber - Housing-driven - Starting torque: $T_{\max} = 2.0 \times T_{\text{eff}}$ - Starting aid for standard motors, for torsional vibration isolation and for overload limitation in the event of drive blockage.	FGO	Without	Basic coupling with connecting flange
	FGD	N-EUPEX D	¹⁾
	FGE	N-EUPEX E	enables larger bores on the output side
	FGM	N-EUPEX M	enables a short fitting length
FV - with delay chamber - Housing-driven - Starting torque: $T_{\max} = 1.5 \times T_{\text{eff}}$ - Starting aid for motors and soft-starting of conveyor equipment	FVO	Without	Coupling with connecting flange
	FVD	N-EUPEX D	¹⁾
	FVE	N-EUPEX E	enables larger bores on the output side
	FVM	N-EUPEX M	enables a short fitting length
FN - with large delay chamber - Housing drive via hub carrier - Starting torque: $T_{\max} = 1.3 \times T_{\text{eff}}$ - Starting aid for motors with very unfavorable characteristic and soft-starting of empty and full conveying equipment - favorable weight distribution on brake-drum variant	FNO	Without	Coupling with connecting shaft
	FNA	N-EUPEX A	¹⁾ enables a short fitting length
	FND	N-EUPEX D	^{1) 2)}
	FNDB	N-EUPEX D	^{1) 2)} with brake drum
	FNDS SB	N-EUPEX D	^{1) 2)} with brake disk for stopping brakes
	FNDS HB	N-EUPEX D	^{1) 2)} with brake disk for blocking brakes

The maximum shaft displacements permissible for an N-EUPEX add-on coupling are shown in catalog section 7. For greater shaft displacements FLUDEX couplings can be combined with cardan shafts or other displacement couplings.

¹⁾ Enables change of flexible elements without moving the machines axially.

²⁾ Enables the coupling to be fitted or dismounted without displacing the coupled machines.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

General information

Selection of FLUDEX size

The FLUDEX size is determined by the output to be transmitted in comparison with the rated outputs listed in the following tables. No application factors or additional safety factors need be taken into consideration. The rated outputs stated in the tables normally require the maximum permissible filling (80 % to 85 %) of the coupling and because of operating slip, lead to the cou-

pling heating up by approx. 50 °C relative to the ambient (cooling air) temperature. With lower outputs, coupling heating will be proportionately lower. If for continuous operation of the coupling an absolute temperature (ambient temperature + coupling heating) of >85 °C is expected, the coupling must be fitted with FPM seals and 160 °C fusible safety plugs.

FA series

Speed in rpm														
600	740	890	980	1180	1350	1470	1600	1770	2000	2300	2600	2950	3550	Size
Rated output P_N in kW														
		1.2	1.6	2.8	4.2	5.5	6.9	8.7	11.7	15	19	24	33	222
1.2	2.3	4	5.5	9	14	18.5	23	29	37	48	60	70	90	297
2.6	4.8	8.7	11.5	18	27	34	40	51	65	82	97	120	145	342
5.7	10	16	21	36	49	61	74	87	105	135	165	180		395
11	21	32	41	65	90	110	127	155	190	230	290	370		450
19	36	60	75	115	154	190	215	260	310	395				516
37	69	109	134	200	260	320	360	435	540					590

FG, FV and FN series

Speed in rpm														
600	740	890	980	1180	1350	1470	1600	1770	2000	2300	2600	2950	3550	Size
Rated output P_N in kW														
4	7.5	12	16	26	38	48	61	85	110	140	170	220	290	370
7.5	15	23	30	48	70	90	115	140	175	220	280	340		425
15	30	45	58	95	140	180	210	245	300	380	480			490
28	55	85	110	180	255	300	350	420	525	660				565
55	110	170	220	350	450	520	600	730	900					655
110	210	330	440	600	760	870	1010	1220						755
240	440	700	810	1130	1440	1660								887
480	880	1400	1600	2000	2350	2500								887D¹⁾

¹⁾ D = double-flow variant on request.

FLENDER Standard Couplings

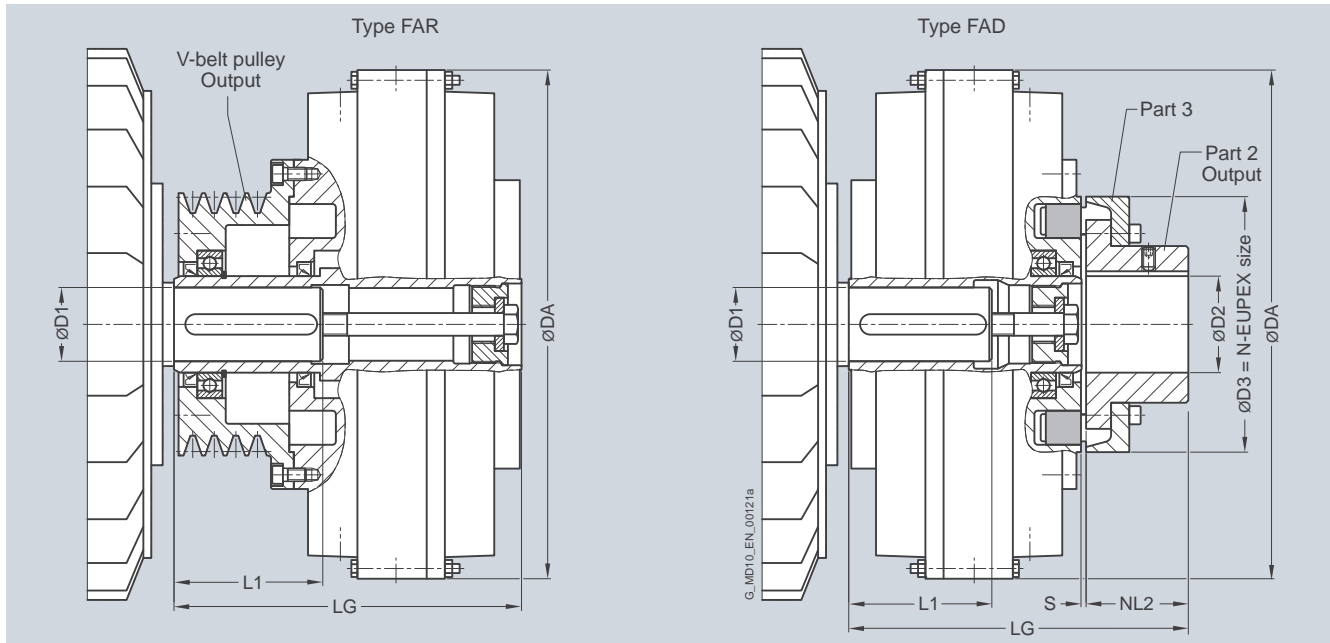
Fluid Couplings - FLUDEX Series

FLUDEX coupling as aid to starting IEC motors

Selection and ordering data

Speed $n = 1500 \text{ rpm}$

This assignment offers safety in normal load cases and includes standard types with 140 °C fusible safety plugs, for horizontal fitting and an ambient air temperature from -40 °C to +40 °C.



Three-phase motor		FLUDEX		Type FAR (with V-belt pulley)				Type FAR		Type FAD (with N-EUPEX D add-on coupling)				Type FAD		
Size	F_M 1500 rpm D1 x L1	Size	Oil filling	DA	Profile, pitch Ø	No. of grooves	Recommended no. of belts ¹⁾	LG	Product code	Weight	LG	NL2	D3	D2 ²⁾	Product code	Weight
									with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3						with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	
									Available ex stock						Available at short term	
									Available at short term	m				max.	Available at short term	m
										kg						kg
80 M	0.55	19 x 40	222	0.9	263	SPZ 2	1	153	2LC0900-0AF90-0AA0 L0L	12	180	40	110	38	2LC0900-0AA9 -0AA0 L0L+M..	12
80 M	0.75	19 x 40		1.0		SPZ 2	1		2LC0900-0AF90-0AA0 L0L						2LC0900-0AA9 -0AA0 L0L+M..	
90 S	1.1	24 x 50		1.1		SPZ 2	1		2LC0900-0AF90-0AA0 L0P						2LC0900-0AA9 -0AA0 L0P+M..	
90 L	1.5	24 x 50		1.2		SPZ 2	1		2LC0900-0AF90-0AA0 L0P						2LC0900-0AA9 -0AA0 L0P+M..	
100 L	2.2	28 x 60		1.4		SPZ 2	2		2LC0900-0AF90-0AA0 L0R						2LC0900-0AA9 -0AA0 L0R+M..	
100 L	3	28 x 60		1.5		SPZ 2	2		2LC0900-0AF90-0AA0 L0R						2LC0900-0AA9 -0AA0 L0R+M..	
112 M	4	28 x 60		1.6		SPZ 3	2		2LC0900-0AF91-0AA0 L0R	14					2LC0900-0AA9 -0AA0 L0R+M..	
132 S	5.5	38 x 80		1.65		SPZ 3	2		2LC0900-0AF91-0AA0 L0V						2LC0900-0AA9 -0AA0 L0V+M..	

ØD2: • Without finished bore
 • With finished bore – With order codes for diameter and tolerance (product code without -Z)

1) If the recommended number of belts is ..X, raw-edged belts are required.
 2) Larger bores on the output side are possible with type FAE.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

FLUDEX coupling as aid to starting IEC motors

Three-phase motor			FLUDEX				Type FAR (with V-belt pulley)				Weight	Type FAD (with N-EUPEX D add-on coupling)				Weight	
Size	P_M 1500 rpm x D1 x L1		Size	Oil filling	DA	Pro- file, pitch Ø	No. of grooves	Recom- mended no. of belts ¹⁾	LG	Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3		LG	NL2	D3	D2 ²⁾		Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3
	kW	mm		l	mm	mm			mm	Available ex stock					max.	Available at short term	
										kg		mm	mm	mm	mm	kg	
132 M	7.5	38 x 80	297	3.2	340	SPZ 150	5	3	226	2LC0900-1AF90-0AA0 L0V	27	233	50	125	45	2LC0900-1AA9 -0AA0 L0V+M..	24
160 M	11	42 x 110		3.5		SPZ 150	5	4		2LC0900-1AF90-0AA0 LOX						2LC0900-1AA9 -0AA0 LOX+M..	
160 L	15	42 x 110		3.8		SPZ 150	5	5		2LC0900-1AF90-0AA0 LOX						2LC0900-1AA9 -0AA0 LOX+M..	
180 M	18.5	48 x 110		4.0		SPA 190	4	4		2LC0900-1AF91-0AA0 L1B	32					2LC0900-1AA9 -0AA0 L1B+M..	
180 L	22	48 x 110	342	5.5	400	SPA 180	5	5	278	2LC0900-2AF90-0AA0 L1B	40	271	55	140	50	2LC0900-2AA9 -0AA0 L1B+M..	34
200 L	30	55 x 110		6.0		SPA 180	5	5X		2LC0900-2AF90-0AA0 L1D						2LC0900-2AA9 -0AA0 L1D+M..	
225 S	37	60 x 140	395	7.6	448	SPB 224	5	5	325	2LC0900-3AF90-0AA0 L1E	63	299	90	225	85	2LC0900-3AA9 -0AA0 L1E+M..	53
225 M	45	60 x 140		7.9		SPB 224	5	5		2LC0900-3AF90-0AA0 L1E						2LC0900-3AA9 -0AA0 L1E+M..	
250 M	55	65 x 140		8.4		SPB 224	5	5X		2LC0900-3AF90-0AA0 L1F						2LC0900-3AA9 -0AA0 L1F+M..	
280 S	75	75 x 140	450	10.8	512	SPB 250	8	7	410	2LC0900-4AF90-0AA0 L1H	94	338	100	250	95	2LC0900-4AA9 -0AA0 L1H+M..	70
280 M	90	75 x 140		11.3		SPB 250	8	8		2LC0900-4AF90-0AA0 L1H						2LC0900-4AA9 -0AA0 L1H+M..	
315 S	110	80 x 170		12.0		SPB 250	8	8X		2LC0900-4AF90-0AA0 L1J						2LC0900-4AA9 -0AA0 L1J+M..	
315 M	132	80 x 170	516	17.7	584	SPB 315	10	10	491	2LC0900-5AF90-0AA0 L1J	152	398	125	315	120	2LC0900-5AA9 -0AA0 L1J+M..	113
315 M	160	80 x 170		18.6		SPB 315	10	10X		2LC0900-5AF90-0AA0 L1J						2LC0900-5AA9 -0AA0 L1J+M..	

- ØD2: • Without finished bore for sizes 222 to 450 and 516 with small hub (ØD2 max. 100 mm) – Without order code M..
 • Without finished bore only for size 516 with large hub (ØD2 max. 88 ... 120 mm) – Without order code M..
 • With finished bore – With order codes for diameter and tolerance (product code without -Z)

1
2
9

Delivery without oil filling: Without order code.

Delivery with oil filling (only above -20 °C): Product code with “-Z” and order codes “F16” and “Y90” with plain text specification of the oil filling quantity in liters.

Delivery with specification of oil filling quantity: Product code with “-Z” and order code “Y90” with plain text specification of the oil filling quantity in liters.

Axial retention is provided by a set screw and/or end washer with a retaining screw for shaft ends to DIN 748/1 with a centering thread to DIN 332/2.

Other methods must be specified in the order using the product code with “-Z” and order code “Y99” with plain text specification.

Ordering example:

Drive with motor 200 L, 30 kW at 1470 rpm with starting clutch and pulley

Selection:

FLUDEX FAR 342 coupling, standard type,
 Hollow shaft: Bore ØD1 = 55H7 with keyway to DIN 6885/1 and retaining screw,
 with pulley 5xSPA Ø180.

Product code:

- Delivery without oil filling:
2LC0900-2AF90-0AA0 L1D
- Delivery with oil filling:
2LC0900-1AF90-0AA0-Z L1D+F16+Y90
 plain text to Y90: **6.0 I**
- Delivery with specification of oil filling quantity:
2LC0900-1AF90-0AA0-Z L1D+Y90
 plain text to Y90: **6.0 I**

1) If the recommended number of belts is ..X, raw-edged belts are required.
 2) Larger bores on the output side are possible with type FAE.

FLENDER Standard Couplings

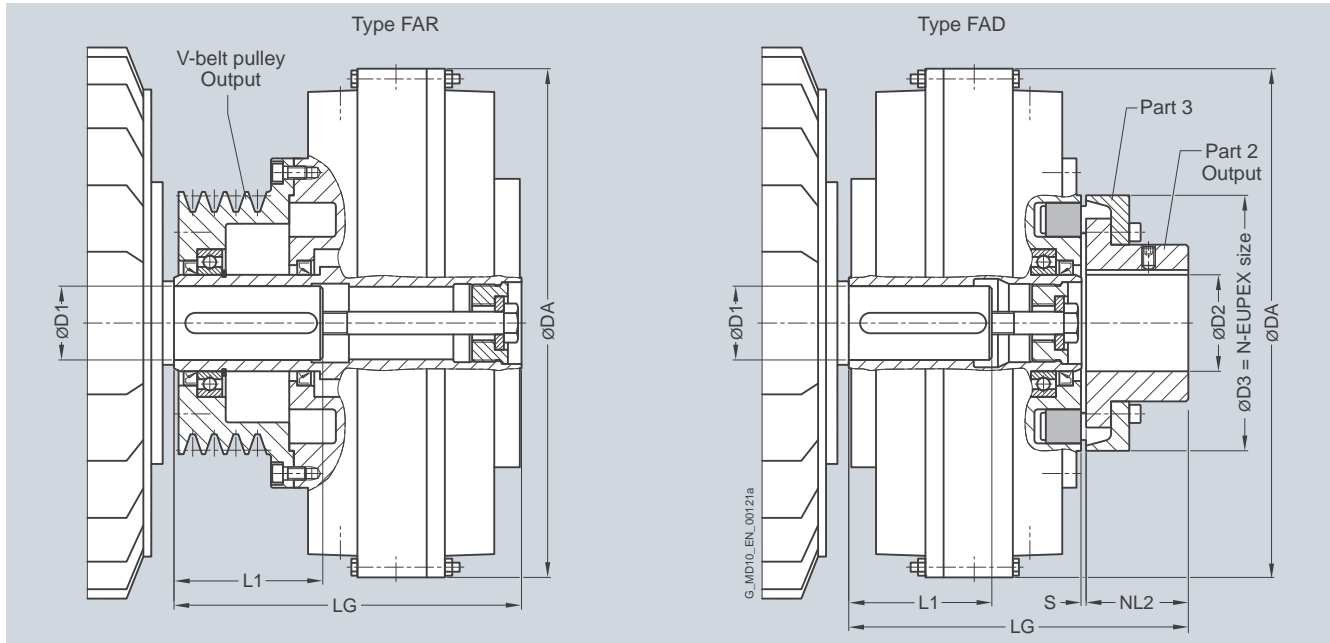
Fluid Couplings - FLUDEX Series

FLUDEX coupling as aid to starting IEC motors

Selection and ordering data

Speed $n = 3000 \text{ rpm}$

This assignment offers safety in normal load cases and includes standard types with 140 °C fusible safety plugs, for horizontal fitting and an ambient air temperature from -40 °C to +40 °C.



Three-phase motor Size P_M 3000 rpm D1 x L1	FLUDEX		Type FAR (with V-belt pulley)				Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight	Type FAD (with N-EUPEX D add-on coupling)				Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight	
	Size	Oil filling	DA	Profile, pitch Ø	No. of grooves	Recommended no. of belts ¹⁾			LG	LG	NL2	D3			D2 ²⁾ max.
90 S	1.5	24 x 50	222	0.7	263	SPZ 2	1	153	12	180	40	110	38	2LC0900-0AF90-0AA0-Z LOP+W03	12
90 L	2.2	24 x 50		0.8		SPZ 2	1							2LC0900-0AA9 -0AA0-Z LOP+M..+W03	
100 L	3	28 x 60		0.9		SPZ 2	1							2LC0900-0AA9 -0AA0-Z LOR+M..+W03	
112 M	4	28 x 60		1.0		SPZ 2	2							2LC0900-0AA9 -0AA0-Z LOR+M..+W03	
132 S	5.5	38 x 80		1.0		SPZ 2	2							2LC0900-0AA9 -0AA0-Z LOV+M..+W03	
132 S	7.5	38 x 80		1.1		SPZ 3	2		14					2LC0900-0AA9 -0AA0-Z LOV+M..+W03	
160 M	11	42 ³⁾ x 110		1.2		SPZ 3	2							2LC0900-0AA9 -0AA0-Z LOX+M..+W03	
160 M	15	42 ³⁾ x 110		1.3		SPZ 3	3							2LC0900-0AA9 -0AA0-Z LOX+M..+W03	
160 L	18.5	42 ³⁾ x 110		1.4		SPZ 3	3							2LC0900-0AA9 -0AA0-Z LOX+M..+W03	

ØD2: • Without finished bore – Without order code M..
• With finished bore – With order codes for diameter and tolerance (product code without -Z)

1) If the recommended number of belts is ..X, raw-edged belts are required.
2) Larger bores on the output side are possible with type FAE.

3) Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

FLUDEX coupling as aid to starting IEC motors

Three-phase motor			FLUDEX				Type FAR (with V-belt pulley)					Type FAD (with N-EUPEX D add-on coupling)					
Size	P_M 3000 rpm	D1 x L1	Size	Oil filling	DA	Profile, pitch Ø	No. of grooves	Recommended no. of belts ¹⁾	LG	Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight	LG	NL2	D3	D2 ²⁾ max.	Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight
	kW	mm	l	mm	mm	mm			mm	<i>m</i> kg	mm	mm	mm	mm		<i>m</i> kg	
180 M	22	48 x 110	297	2.5	340	SPZ 150	5	4	226	2LC0900-1AF90-0AA0-Z L1B+W03	27	233	50	125	45	2LC0900-1AA9 L1B+M..+W03	24
200 L	30	55 x 110		2.7		SPZ 150	5	5		2LC0900-1AF90-0AA0-Z L1D+W03						2LC0900-1AA9 L1D+M..+W03	
200 L	37	55 x 110		2.8		SPA 190	4	4		2LC0900-1AF91-0AA0-Z L1D+W03	32					2LC0900-1AA9 L1D+M..+W03	
225 M	45	55 x 110		2.9		SPA 224	5	4		2LC0900-1AF92-0AA0-Z L1D+W03	35					2LC0900-1AA9 L1D+M..+W03	
250 M	55	60 ³⁾ x 140		3.1		SPA 224	5	5		2LC0900-1AF92-0AA0-Z L1E+W03						2LC0900-1AA9 L1E+M..+W03	
280 S	75	65 x 140	395	5.3	448	SPB 236	7	5	363.5	2LC0900-3AF91-0AA0-Z L1F+W03	70	299	90	225	85	2LC0900-3AA9 L1F+M..+W03	53
280 M	90	65 x 140		5.6		SPB 236	7	6		2LC0900-3AF91-0AA0-Z L1F+W03						2LC0900-3AA9 L1F+M..+W03	
315 S	110	65 x 140		5.9		SPB 236	7	7		2LC0900-3AF91-0AA0-Z L1F+W03						2LC0900-3AA9 L1F+M..+W03	
315 M	132	65 x 140		6.2		SPB 236	7	7X		2LC0900-3AF91-0AA0-Z L1F+W03						2LC0900-3AA9 L1F+M..+W03	
315 L	160	65 x 140		6.8		SPB 280	7	7X		2LC0900-3AF92-0AA0-Z L1F+W03	83					2LC0900-3AA9 L1F+M..+W03	
ØD2:										• Without finished bore – Without order code M..							1
										• With finished bore – With order codes for diameter and tolerance (product code without -Z)							9

Delivery without oil filling: Without order code.

Delivery with oil filling (only above -20 °C): Product code with **"-Z"** and order codes **"F16"** and **"Y90"** with plain text specification of the oil filling quantity in liters.

Delivery with specification of oil filling quantity: Product code with **"-Z"** and order code **"Y90"** with plain text specification of the oil filling quantity in liters.

Axial retention is provided by a set screw and/or end washer with a retaining screw for shaft ends to DIN 748/1 with a centering thread to DIN 332/2.

Other methods must be specified in the order using the product code with **"-Z"** and order code **"Y99"** with plain text specification.

Ordering example:

Drive with motor 280 M, 90 kW at 2950 rpm with starting clutch for connecting two shafts.

Selection:

FLUDEX FAD 395 coupling, standard type,
Hollow shaft: Bore ØD1 = 65H7 with keyway to DIN 6885/1 and retaining screw,
Part 2: Bore ØD2 = 60H7 with keyway to DIN 6885/1 and set screw.

Product code:

- Delivery without oil filling:
2LC0900-3AA99-0AA0-Z L1F+M1E+W03
- Delivery with oil filling:
2LC0900-3AA99-0AA0-Z L1F+M1E+W03+F16+Y90
plain text to Y90: **5.6 I**
- Delivery with specification of oil filling quantity:
2LC0900-3AA99-0AA0-Z L1F+M1E+W03+Y90
plain text to Y90: **5.6 I**

¹⁾ If the recommended number of belts is ..X, raw-edged belts are required.

²⁾ Larger bores on the output side are possible with type FAE.

³⁾ Variant with shallow keyway to DIN 6885/3.

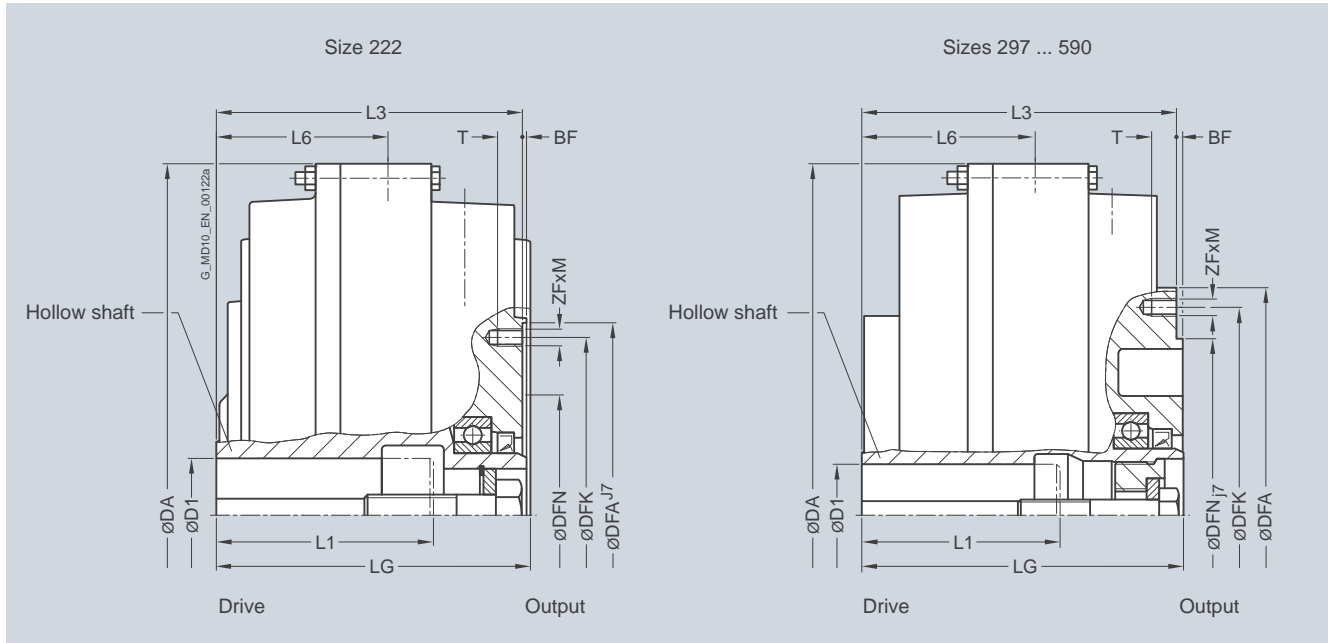
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FAO

Selection and ordering data

Basic coupling of the FA series with connecting flange.



Size	Maximum speed n_{kmax}	Dimensions in mm													Tightening torque for screws in thread ZF x M T_A	Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight m
		D1	L1	DA	LG	L3	L6	DFN	DFA	BF	DFK	ZF x M	T				
	rpm	min.	max.	Preferred bore	max.									Nm		kg	
222	3600	38	28	80	263	112	110	58	90	144	2	128	6 x M8	12	18.7	10	
		>38 ¹⁾	42 ¹⁾														
297	3600	38		80	340	150	145	83	125	195	3	172	6 x M8	12	18.7	18	
		>38	55	42	110												
		>55 ¹⁾	60 ¹⁾	110													
342	3600	55	48 + 55	110	400	180	174	101	140	230	4	205	8 x M10	15	31	26	
		>55 ¹⁾	60 ¹⁾	120													
395	3000	65	60 + 65	140	448	205	200.5	110.5	225	290	4	265	8 x M12	18	54	40	
		>75	80	170													
450	3000	75	65 + 75	140	512	233	228	126	250	310	4	285	8 x M12	18	54	53	
		>75	80	170													
516	2300	55		140	584	270	263	147	315	390	5	360	8 x M16	24	135	84	
		>55	90	80	170												
590	2000	75		140	662	305	298	166	315	390	5	360	8 x M16	24	135	109	
		>75	95	170													
		>95	100	210													

Ordering example:
Motor 37 kW, $P_{eff} = 30$ kW, $n_1 = 1470$ rpm, maximum output torque: $T_{max} = 2.0 \times T_{eff}$.

Selection:
FLUDEX FAO coupling size 342,
Hollow shaft: Bore $\text{ØD1} = 60\text{H7}$ mm with keyway to DIN 6885/3 and retaining screw, seal set Viton.
Specification of oil filling quantity: 6.0 l (see under oil filling quantities for the FA series in this catalog section).

Product code:

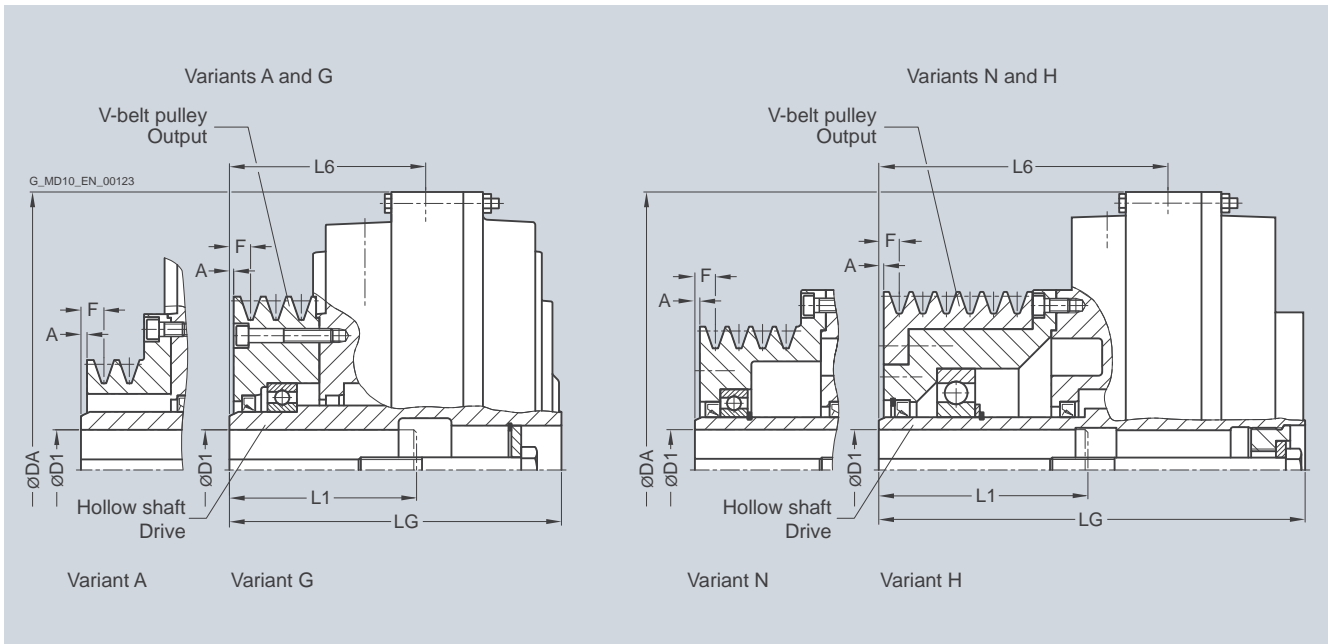
- With 110°C fuse:
2LC0900-2AG90-0AA0-Z
L1E+Y90+F05
plain text to Y90: **6.0 l**
- With 140°C fuse:
2LC0900-2AG90-0AA0-Z
L1E+Y90+F07
plain text to Y90: **6.0 l**

¹⁾ Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FAR with attached V-belt pulley

Selection and ordering data



Size	Maximum speed n_{kmax} rpm	Dimensions in mm						V-belt pulley				Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3 In standard type available ex stock Available at short term	Weight m kg
		D1 Keyway to DIN 6885 min. max. Preferred bore	L1 max.	DA	LG	L6	Profile, pitch diameter	No. of grooves	A	F	Variant		
222	3600	28 28 60 263 153 95	SPZ 100	2	1	9	A	2LC0900-0AF90-0AA0 L..	12				
		>28 38 105	SPZ 160	3			G	2LC0900-0AF91-0AA0 L..	14				
		>38 ¹⁾ 42 ¹⁾ 110											
297	3600	38 80 340 226 143	SPZ 150	5	2	10	N	2LC0900-1AF90-0AA0 L..	27				
		>38 55 42 110	SPZ 150	5	2		N	2LC0900-1AF90-0AA0 L..	27				
		>55 ¹⁾ 59 ¹⁾ 110	SPA 190	4	0		H	2LC0900-1AF91-0AA0 L..	32				
		>59 ¹⁾ 60 ¹⁾ 140	SPA 224	5	0		G	2LC0900-1AF92-0AA0 L..	35				
342	3600	55 55 110 400 278 177	SPA 180	5	4	14	N	2LC0900-2AF90-0AA0 L..	40				
395	3000	55 110 448 325 214.5	SPB 224	5	4	16.5	N	2LC0900-3AF90-0AA0 L..	63				
		>55 65 60 + 65 140											
	3000	55 110 448 363.5 253	SPB 236	7			N	2LC0900-3AF91-0AA0 L..	70				
	2700	>55 75 140	SPB 280	7			H	2LC0900-3AF92-0AA0 L..	83				
450	3000	55 110 512 410 284	SPB 250	8	4	16.5	N	2LC0900-4AF90-0AA0 L..	94				
		>55 75 65 + 75 140											
		>75 80 170											
516	2300	55 110 584 491 344	SPB 315	10	4	16.5	N	2LC0900-5AF90-0AA0 L..	152				
		>55 75 140											
		>75 95 170											
		>95 100 210											
590	2000	55 110 662 642 476	SPC 315	12	4	21	N	2LC0900-6AF90-0AA0 L..	208				
		>55 75 140											
		>75 95 170											
		>95 100 210											

General specifications and ordering instructions on page 13/10, 13/11. **Ordering example on page 13/24.**

¹⁾ Variant with shallow keyway to DIN 6885/3.

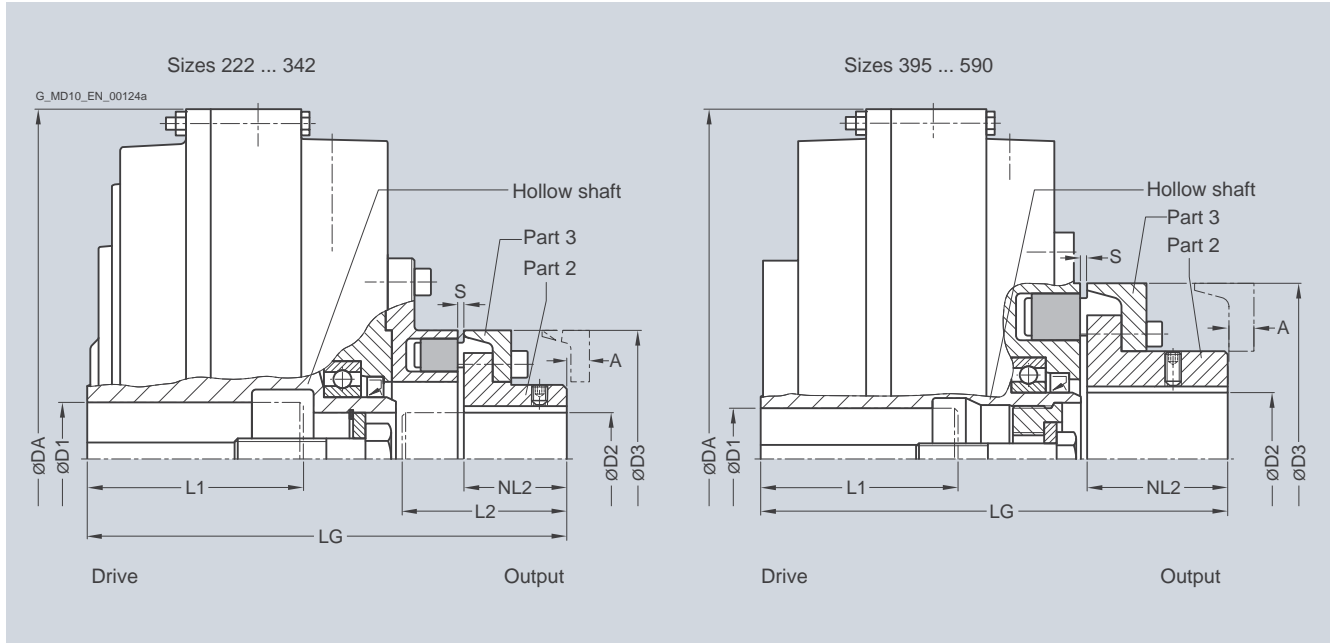
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FAD

Selection and ordering data

Type with attached N-EUPEX D coupling. Enables change of flexible elements without axial displacement of the shafts if the space "A" is provided.



Size	Maximum speed n_{kmax}	Dimensions in mm FLUDEX coupling					N-EUPEX D coupling					Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight <i>m</i>	
		D1	L1	DA	LG	D2	L2	NL2	D3	S	A			
	rpm	min.	max.	Preferred bore	max.	max.	max.	N-EUPEX size				In standard type available ex stock	kg	
222	3600	38	28	80	263	180	38	65	40	110	2...4	13	2LC0900-0AA9 ■ -0AA0 L...M..	12
		>38 ¹⁾	42 ¹⁾											
297	3600	38		80	340	233	45	80	50	125	2...4	11	2LC0900-1AA9 ■ -0AA0 L...M..	24
		>38	55	42	110									
		>55 ¹⁾	60 ¹⁾		110									
342	3600	55	48 + 55	110	400	271	50	88	55	140	2...4	16	2LC0900-2AA9 ■ -0AA0 L...M..	34
		>55 ¹⁾	60 ¹⁾		120									
395	3000	65	60 + 65	140	448	299	85	90	90	225	3...6	9	2LC0900-3AA9 ■ -0AA0 L...M..	53
450	3000	75	65 + 75	140	512	338	95	100	100	250	3...8	11	2LC0900-4AA9 ■ -0AA0 L...M..	70
		>75	80		170									
516	2300	55		140	584	398	120	125	125	315	3...8	0	2LC0900-5AA9 ■ -0AA0 L...M..	113
		>55	90	80	170									
590	2000	75		140	662	433	120	125	125	315	3...8	0	2LC0900-6AA9 ■ -0AA0 L...M..	138
		>75	95		170									
		>95	100		210									

- ØD2: 1 • Without finished bore for sizes 222 to 450, 516 and 590 with small hub (ØD2 max. 100 mm) – Without order code M..
- 2 • Without finished bore only for sizes 516 and 590 with large hub (ØD2 max. 88 ... 120 mm) – Without order code M..
- 9 • With finished bore – With order codes for diameter and tolerance (product code without -Z)

Ordering example:
Motor 160 kW, $P_{eff} = 132$ kW, $n_1 = 1470$ rpm, maximum output torque: $T_{max} = 2.0 \times T_{eff}$.

Selection:
FLUDEX FAD coupling size 516,
Hollow shaft: Bore ØD1= 80H7 mm with keyway to DIN 6885/1 and retaining screw,
Part 2: with finished bore ØD2 = 80H7

Specification of oil filling quantity: 16.9 l (see under oil filling quantities for the FA series in this catalog section).

Product code:
2LC0900-5AA99-0AA0-Z
L1J+M1J+Y90
plain text to Y90: **16.9 l**

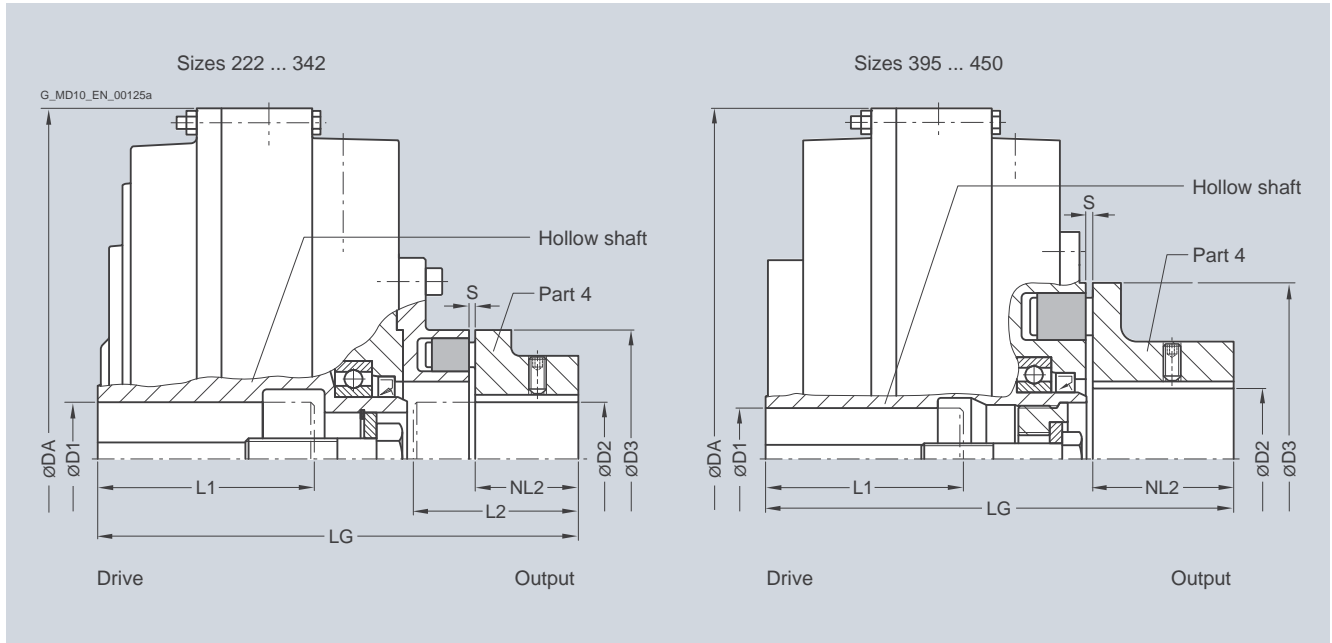
¹⁾ Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FAE

Selection and ordering data

Type with attached N-EUPEX E coupling. Enables larger bores on the output side.



Size	Maximum speed n_{Kmax} rpm	Dimensions in mm FLUDEX coupling					N-EUPEX E coupling					Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3 In standard type available ex stock Available at short term	Weight <i>m</i> kg
		D1 Keyway to DIN 6885 min. max. Preferred bore	L1	DA	LG	D2 max.	L2 max.	NL2	D3 N-EUPEX size	S			
222	3600	38	28	80	263	180	48	65	40	110	2...4	2LC0900-0AB9 -0AA0 L...M..	12
		>38 ¹⁾	42 ¹⁾										
297	3600	38	80	340	233	55	80	50	125	2...4	2LC0900-1AB9 -0AA0 L...M..	24	
		>38	55	42	110								
		>55 ¹⁾	60 ¹⁾	110									
342	3600	55	48 + 55	110	400	271	60	88	55	140	2...4	2LC0900-2AB9 -0AA0 L...M..	34
		>55 ¹⁾	60 ¹⁾	120									
395	3000	65	60 + 65	140	448	299	90	90	90	225	3...6	2LC0900-3AB9 -0AA0 L...M..	50
450	3000	75	65 + 75	140	512	338	100	100	100	250	3...8	2LC0900-4AB9 -0AA0 L...M..	68
		>75	80	170									

ØD2: • Without finished bore – Without order codes
• With finished bore – With order codes for diameter and tolerance (product code without -Z)

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9

Weights specified in the table apply to maximum bore diameters without oil filling.

Ordering example:

Motor 45 kW, $P_{eff} = 42$ kW, $n_1 = 2950$ rpm

Selection:

FLUDEX FAE coupling size 342,
Hollow shaft: Bore ØD1= 55H7 mm with keyway to DIN 6885/1 and retaining screw,
Part 4: Bore ØD2 = 60H7 with keyway to DIN 6885/1 and set screw,

with micro-balancing (high speed),
with electronic or mechanical operation monitoring, seal set Perbunan.
Delivery without oil filling, no oil filling quantity specification.

Product code:

- With 110 °C thermal switch:
2LC0900-2AB99-0AA0-Z
L1D+M1E+W03+F03
plain text to Y90: **16.9 I**
- With 125 °C EOC transmitter:
2LC0900-2AB99-0AA0-Z
L1D+M1E+W03+F04

1) Variant with shallow keyway to DIN 6885/3.

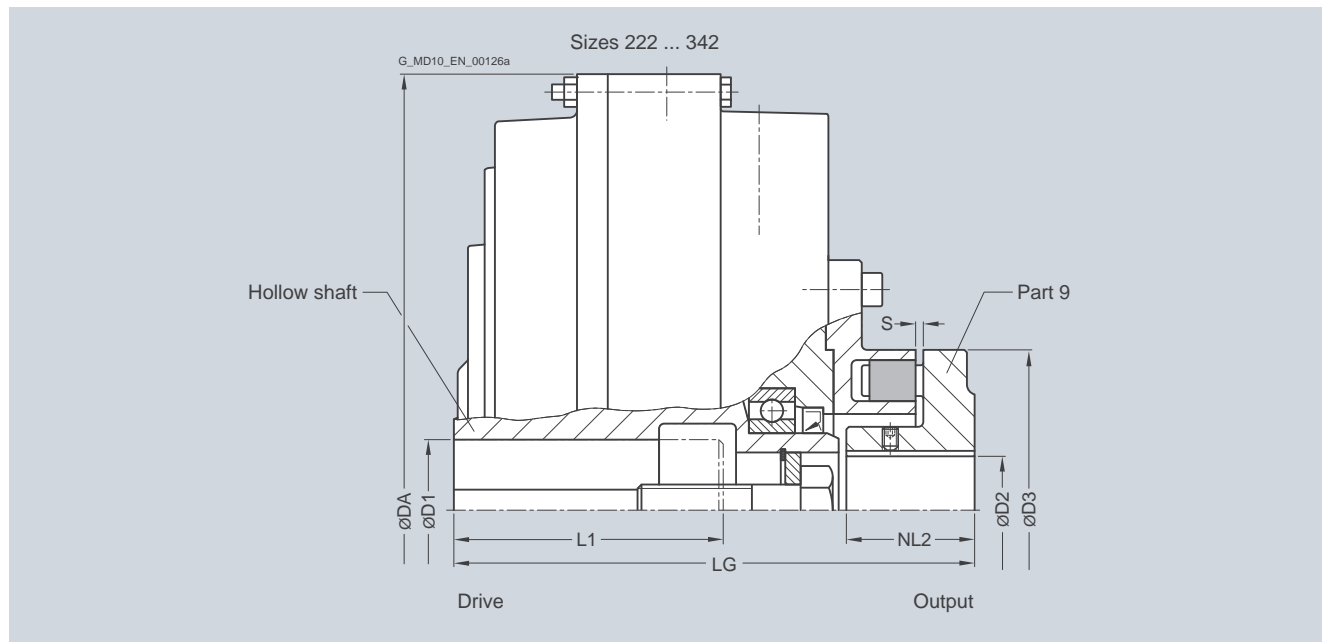
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FAM

Selection and ordering data

Type with attached N-EUPEX M coupling. Enables a short fitting length.



Size	Maximum speed n_{Kmax}	Dimensions in mm FLUDEX coupling					N-EUPEX M coupling				Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3 In standard type available ex stock Available at short term	Weight <i>m</i>
		D1 Keyway to DIN 6885 min. max. Preferred bore		L1 max.	DA	LG	D2 max.	NL2	D3 N-EUPEX size	S		
222	3600 rpm	38	28	80	263	150	38	36	110	2...4	2LC0900-0AH9 -0AA0 L...M..	12 kg
		>38 ¹⁾	42 ¹⁾									
297	3600 rpm	38		80	340	203	48	50	125	2...4	2LC0900-1AH9 -0AA0 L...M..	24 kg
		>38	55	42	110							
		>55 ¹⁾	60 ¹⁾	110								
342	3600 rpm	55	48 + 55	110	400	238	52	55	140	2...4	2LC0900-2AH9 -0AA0 L...M..	34 kg
		>55 ¹⁾	60 ¹⁾	120								

ØD2: • Without finished bore – Without order codes
 • With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

Ordering example:

Motor 37 kW, $P_{eff} = 30$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FAM coupling size 342,

Hollow shaft: Bore ØD1 = 60H7 mm with keyway to DIN 6885/1 and retaining screw,

Part 9: Bore ØD2 = 50H7 mm with keyway to DIN 6885/1 and set screw.

Delivery without oil filling, no oil filling quantity specification.

Product code:

- With drive via hollow shaft:
2LC0900-2AH99-0AA0-Z
L1E+M1C
plain text to Y90: **16.9 I**
- With drive via housing:
2LC0900-2AH99-0AA0-Z
L1E+M1C+F23

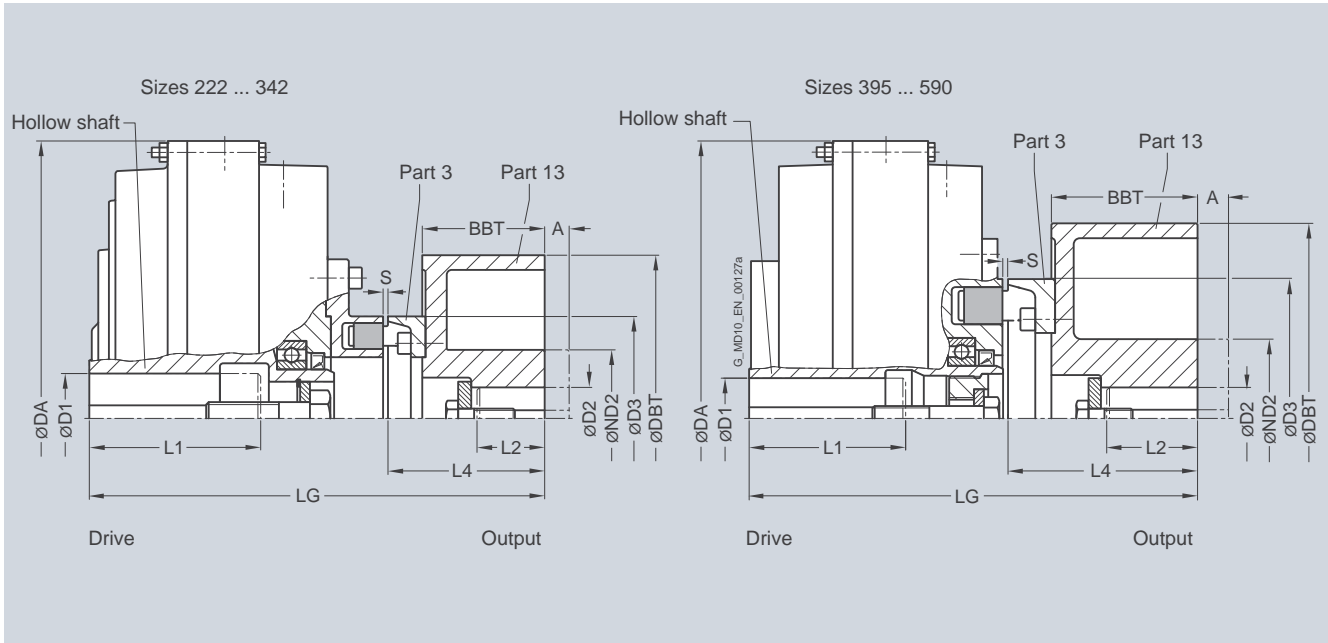
¹⁾ Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FADB

Selection and ordering data

Type with attached N-EUPEX coupling and brake drum.



Size	Maximum speed n_{Kmax} rpm	Dimensions in mm													Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight m kg
		FLUDEX coupling			N-EUPEX coupling			Part 13								
		D1	L1	DA	LG	D3	S	L4	D2	ND2	DBT	BBT	A			
		min.	max.	max.		N-EUPEX size			max.							
222	3600	38	80	263	232	110	2...4	92	42	84	200	75	30	2LC0900-0AC9 ■ -0 ■ A0-Z L..+M..+Y..	17	
		>38 ¹⁾	42 ¹⁾													
297	3600	38	80	340	279	125	2...4	96	55	84	200	75	30	2LC0900-1AC9 ■ -0 ■ A0-Z L..+M..+Y..	29	
		>38	55	110												
		>55 ¹⁾	60 ¹⁾	110												
342	3000	55	110	400	337	140	2...4	121	60	128	250	95	50	2LC0900-2AC9 ■ -0 ■ A0-Z L..+M..+Y..	48	
		>55 ¹⁾	60 ¹⁾	120												
395	2400	65	140	448	362	225	3...6	153	80	128	315	118	50	2LC0900-3AC9 ■ -0 ■ A0-Z L..+M..+Y..	71	
450	2400	75	140	512	395	250	3...8	157	80	128	315	118	50	2LC0900-4AC9 ■ -0 ■ A0-Z L..+M..+Y..	86	
		>75	80	170												
516	1900	55	140	584	466	315	3...8	193	100	160	400	150	80	2LC0900-5AC9 ■ -0 ■ A0-Z L..+M..+Y..	146	
		>55	90	170												
590	1500 ²⁾	75	140	662	540	315	3...8	232	110	175	500	190	110	2LC0900-6AC9 ■ -0 ■ A0-Z L..+M..+Y..	207	
		>75	95	170												
		>95	100	210												

ØD2: • Without finished bore – Without order codes
• With finished bore – With order codes for diameter and tolerance (product code without -Z)

Part 13 • Standard brake drum, without extension A
• Long brake drum (increase of lengths L4 and LG by the amount A)

1
9
A
B

L2 denotes the shaft insertion depth.
In the case of shaft ends deviating from DIN 748 the insertion depth must be specified in plain text with **Y29**.

For ordering example, see page 13/24.

¹⁾ Variant with shallow keyway to DIN 6885/3.

²⁾ With version of brake drum in grey cast iron: Maximum speed 1800 rpm possible.

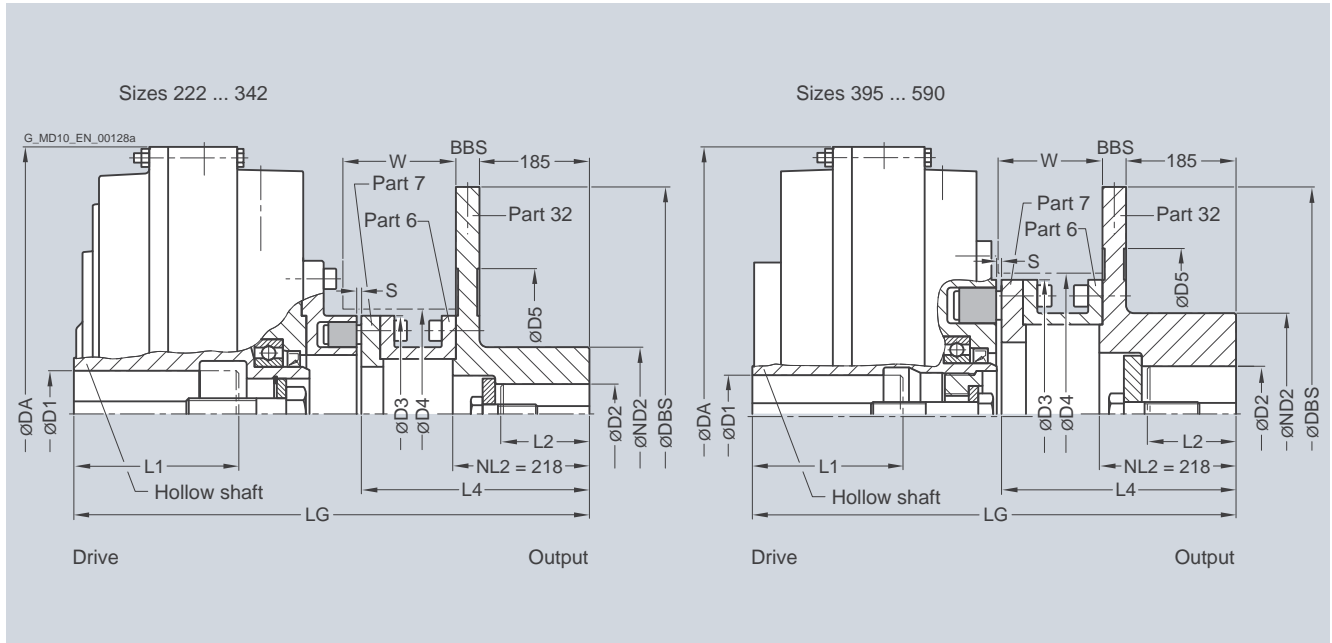
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FADS SB

Selection and ordering data

Type with attached N-EUPEX coupling and brake drum for stopping brakes.



Size	Maximum speed n_{Kmax} rpm	Dimensions in mm															Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight m kg	
		FLUDEX coupling				N-EUPEX coupling			Part 32 ¹⁾			Space dimensions							
		D1	L1	DA	LG	D3	S	L4	D2	ND2	DBS	BBS	D5	D4	W				
		min.	max.	max.		N-EUPEX size			max.										
222	3000	38	80	263	494	110	5...6	352	42	100	315	30	165	115	149			2LC0900-0AD9 ■ -0AA0 L..+M..	35
297	2600	38	80	340	537	125	5...6	352	60	120	355	30	205	130	154			2LC0900-1AD9 ■ -0AA0 L..+M..	68
342	2300	55	110	400	570	140	5...6	352	60	120	400	30	250	145	155			2LC0900-2AD9 ■ -0AA0 L..+M..	83
395	2100	65	140	448	602	225	6...7	391.5	80	150	450	30	300	230	182			2LC0900-3AD9 ■ -0AA0 L..+M..	102
450	1700	75	140	512	631.5	250	8...9	390.5	90	160	560	30	370	260	182			2LC0900-4AD9 ■ -0AA0 L..+M..	141
516	1500	55	140	584	706.5	315	8...9	430.5	100	160	630	30	440	325	222			2LC0900-5AD9 ■ -0AA0 L..+M..	199
590	1500	75	140	662	741.5	315	8...9	430.5	100	160	630	30	440	325	222			2LC0900-6AD9 ■ -0AA0 L..+M..	224

∅D2: Without finished bore – Without order codes
With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

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Ordering example:

Motor 90 kW, $P_{eff} = 75$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FADS SB coupling size 450,
Hollow shaft: Bore ∅D1 = 75H7 mm with keyway to DIN 6885/1 and retaining screw,
Part 32: Bore ∅D2 = 80H7 mm with keyway to DIN 6885/1 and retaining screw,
with preservative suitable for storage indoors,
shaft end insertion depth L2 = 90 mm.
Delivery without oil filling, no oil filling quantity specification.

Product code:

with preservation 24 months:

2LC0900-4AD99-0AA0-Z

L1H+M1J+B28+Y29

plain text Y29: **L2 = 90 mm**

L2 denotes the shaft insertion depth.

In the case of shaft ends deviating from DIN 748 the insertion depth must be specified in plain text with **Y29**.

¹⁾ Hub reduction possible; specify product code with **"-Z"** and order code **"Y99"** with dimension NL2 in plain text..

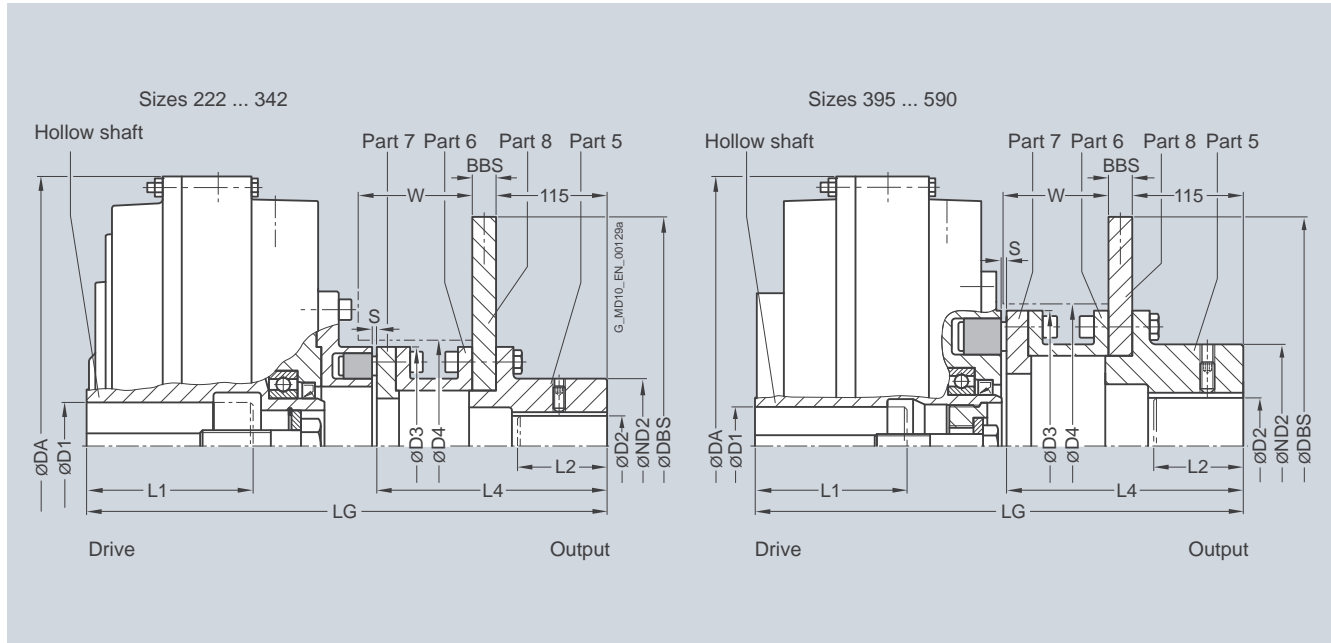
²⁾ Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FADS HB

Selection and ordering data

Type with attached N-EUPEX coupling and brake disk for blocking brakes.



Size	Maximum speed n_{Kmax} rpm	Dimensions in mm										Space dimensions D4 W	Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight m kg		
		FLUDEX coupling			N-EUPEX coupling			Part 5/8 ¹⁾								
		D1	L1	DA	LG	D3	S	L4	D2	ND2	DBS	BBS				
		min.	max.	max.		N-EUPEX size			max.							
222	3600	38 >38 ²⁾	80 42 ²⁾	263	366.5	110	5...6	224.5	42	70	250	12.5	115	109	2LC0900-0AE9 ■ -0AA0 L..+M..	22
297	3600	38 >38 >55 ²⁾	80 55 60 ²⁾	340	409.5	125	5...6	224.5	60	85	250	12.5	130	114	2LC0900-1AE9 ■ -0AA0 L..+M..	33
342	3600	55 >55 ²⁾	110 60 ²⁾	400	442.5	140	5...6	224.5	60	90	250	12.5	145	115	2LC0900-2AE9 ■ -0AA0 L..+M..	45
395	3000	65	140	448	478	225	6...7	267.5	80	150	355	16	230	142	2LC0900-3AE9 ■ -0AA0 L..+M..	80
450	3000	75 >75	140 80	512	546.5	250	8...9	306.5	90	160	355	16	260	182	2LC0900-4AE9 ■ -0AA0 L..+M..	101
516	2300	55 >55	140 90	584	566.5	315	8...9	290.5	100	160	450	16	325	166	2LC0900-5AE9 ■ -0AA0 L..+M..	154
590	2000	75 >75 >95	140 95 170 210	662	601.5	315	8...9	290.5	100	160	450	16	325	166	2LC0900-6AE9 ■ -0AA0 L..+M..	179

∅D2: Without finished bore – Without order codes
With finished bore – With order codes for diameter and tolerance (product code without -Z)

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9

L2 denotes the shaft insertion depth.
In the case of shaft ends deviating from DIN 748 the insertion depth must be specified in plain text with **Y29**.

For ordering example, see page 13/25.

1) Hub reduction possible; specify product code with “-Z” and order code “Y99” in plain text.
2) Variant with shallow keyway to DIN 6885/3.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FA series

Selection and ordering data

This assignment is valid for a maximum starting torque $T_{\max} = 2.0 \times T_{\text{eff}}$ and mineral oils with a viscosity of VG 22/VG 32, with drive via the hollow shaft.

If other operating fluids are used, or with drive via the housing or $T_{\max} \neq 2.0 \times T_{\text{eff}}$, changed filling quantities must be observed!

P_{eff} kW	Speed in rpm										Size
	600	740	890	980	1180	1470	1770	2300	2950	3550	
	Oil filling quantity in l										
0.55	4.3	1.5	1.4	1.3	1.1						
0.75	4.7	1.65	1.5	1.4	1.2						
1.1	5.1	4.4	1.65	1.6	1.4	1.1					
2.2	6.2	5.2	4.5	4.2	1.6	1.4	1.2				
3.0	9.5	5.6	4.9	4.6	1.65	1.5	1.3	1.0			
4.0	10.2	6.1	5.3	4.9	4.3	1.6	1.4	1.1			
5.5	11.0	9.4	5.7	5.3	4.6	1.65	1.5	1.2	1.0		
7.5	12.0	10.2	6.2	5.8	5.0	4.3	1.6	1.3	1.1		
11	13.4	11.2	9.7	6.4	5.5	4.7	4.1	1.5	1.2	1.0	222
15	24.8	12.2	10.5	9.8	6.0	5.0	4.4	1.6	1.3	1.1	
18	25.9	12.9	11.0	10.3	6.3	5.3	4.6	3.9	1.4	1.2	
22	27.3	23.3	11.6	10.8	9.4	5.5	4.8	4.0	1.4	1.25	
30	29.7	25.2	12.7	11.7	10.1	6.0	5.2	4.3	3.7	1.4	
37	31.5	26.5	23.1	12.4	10.7	9.1	5.5	4.5	3.9	1.5	
45		27.9	24.2	22.6	11.2	9.5	5.8	4.7	4.0	3.5	342
55		29.5	25.5	23.7	11.9	10.0	8.8	5.0	4.2	3.7	
75			27.6	25.7	22.3	10.8	9.4	5.4	4.5	3.9	
90			29.0	26.9	23.4	11.3	9.8	8.1	4.7	4.1	
110				28.3	24.5	12.0	10.4	8.6	4.9	4.3	
132				29.7	25.7	21.9	10.8	8.9	7.6	4.5	
160					27.0	22.9	20.0	9.3	7.8		450
180					27.8	23.5	20.6	10.0	8.0		
200					28.6	24.2	21.2	10.9	8.2		
225						24.9	21.8	11.5	8.5		
250						25.6	22.3		9.6		
280						26.3	22.9		9.9		
315						27.1	23.6		10.5		
350							24.2				590
400							26.4				

Ordering example type FAR from page 13/17:

Motor 45 kW, $P_{\text{eff}} = 37$ kW, $n_1 = 1470$ rpm, maximum output torque: $T_{\max} = 2.0 \times T_{\text{eff}}$.

Selection:

FLUDEX FAR coupling size 395,

Hollow shaft: Bore $\varnothing D1 = 60H7$ mm with keyway to DIN 6885/1 and retaining screw.

Specification of oil filling quantity: 7.6 l (see under oil filling quantities for the FA series in this catalog section).

Product code:

- With pulley 5xSPB224:
2LC0900-3AF90-0AA0-Z
L1E+Y90
plain text to Y90: **7.6 l**
- With pulley 7xSPB236:
2LC0900-3AF91-0AA0-Z
L1E+Y90
plain text to Y90: **7.6 l**
- With 160°C fuse:
2LC0900-3AF90-0AA0-Z
L1E+Y90+F08
plain text to Y90: **7.6 l**

Ordering example type FADB from page 13/21:

Motor 30 kW, $P_{\text{eff}} = 22$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FADB coupling size 342, standard type,

Hollow shaft: Bore $\varnothing D1 = 55H7$ mm with keyway to DIN 6885/1 and retaining screw,

Part 13: Bore $\varnothing D2 = 50H7$ mm with keyway to DIN 6885/1 and set screw,

shaft end insertion depth $L2 = 90$ mm.

Delivery without oil filling, no oil filling quantity specification.

Product code:

- Part 13: Standard brake drum
2LC0900-2AC99-0AA0-Z
L1D+M1C+Y29
plain text to Y29: **90 mm**
- Part 13: Long brake drum
2LC0900-2AC99-0BA0-Z
L1D+M1C+Y29
plain text to Y29: **90 mm**

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FA series

P_{eff} kW	Speed in rpm										Size	
	600	740	890	980	1180	1470	1770	2300	2950	3550		
0.55	3.2	2.8										
0.75	3.5	3.0	2.6									
1.1	3.9	3.3	2.9	2.7								
2.2	7.3	4.0	3.4	3.2	2.8							
3.0	7.9	6.8	3.7	3.4	3.0	2.5						
4.0	8.5	7.3	4.0	3.7	3.2	2.7						
5.5	9.4	7.9	6.8	4.1	3.5	2.9	2.6					
7.5	17.0	8.5	7.4	6.9	3.8	3.2	2.8	2.4				
11	18.7	16.0	8.1	7.6	6.6	3.5	3.0	2.5				
15	20.3	17.3	8.9	8.2	7.1	3.8	3.3	2.7				
18	21.4	18.0	15.7	8.6	7.4	4.0	3.4	2.8	2.4			
22		19.0	16.5	15.4	7.8	6.6	3.6	3.0	2.5			
30		20.6	17.8	16.6	8.5	7.2	6.3	3.2	2.7	2.4		297
37			18.8	17.5	15.2	7.6	6.6	3.4	2.8	2.5		
45			19.8	18.4	16.0	7.9	6.9	3.6	2.9	2.6		
55			21.0	19.3	16.8	8.4	7.3	6.0	3.1	2.7		
75				21.1	18.1	15.4	7.9	6.5	5.3	2.9		
90					19.0	16.1	14.1	6.7	5.6	3.0		
110					20.1	16.9	14.8	7.1	5.9			395
132						17.7	15.4	7.9	6.2			
160						18.6	16.2	13.4	6.8			
180						19.2	16.7	13.8	7.2			
200							17.1	14.1				516
225							17.6	14.6				
250							18.1	14.9				
280								15.3				
315								15.8				
350								17.1				

Ordering example type FADS HB from page 13/23:

Motor 160 kW, $P_{\text{eff}} = 132$ kW, $n_1 = 2950$ rpm

Selection:

FLUDEX FADS HB coupling size 395,

Hollow shaft: Bore $\varnothing D1 = 65H7$ mm with keyway to DIN 6885/1 and retaining screw,

Part 5: Bore $\varnothing D2 = 80H7$ mm with keyway to DIN 6885/1 and set screw,

Fitting position: horizontal/vertical, motor overhead (MO)/motor underneath (MU),

shaft insertion depth $L2 = 80$ mm.

Delivery without oil filling, no oil filling quantity specification.

Product code:

- Horizontal version:
2LC0900-3AE99-0AA0-Z
L1F+M1J+Y29
plain text to Y29: **80 mm**
- Vertical version MO:
2LC0900-3AE99-0AA0-Z
L1F+M1J+F13+Y29
plain text to Y29: **80 mm**
- Vertical version MU:
2LC0900-3AE99-0AA0-Z
L1F+M1J+F14+Y29
plain text to Y29: **80 mm**

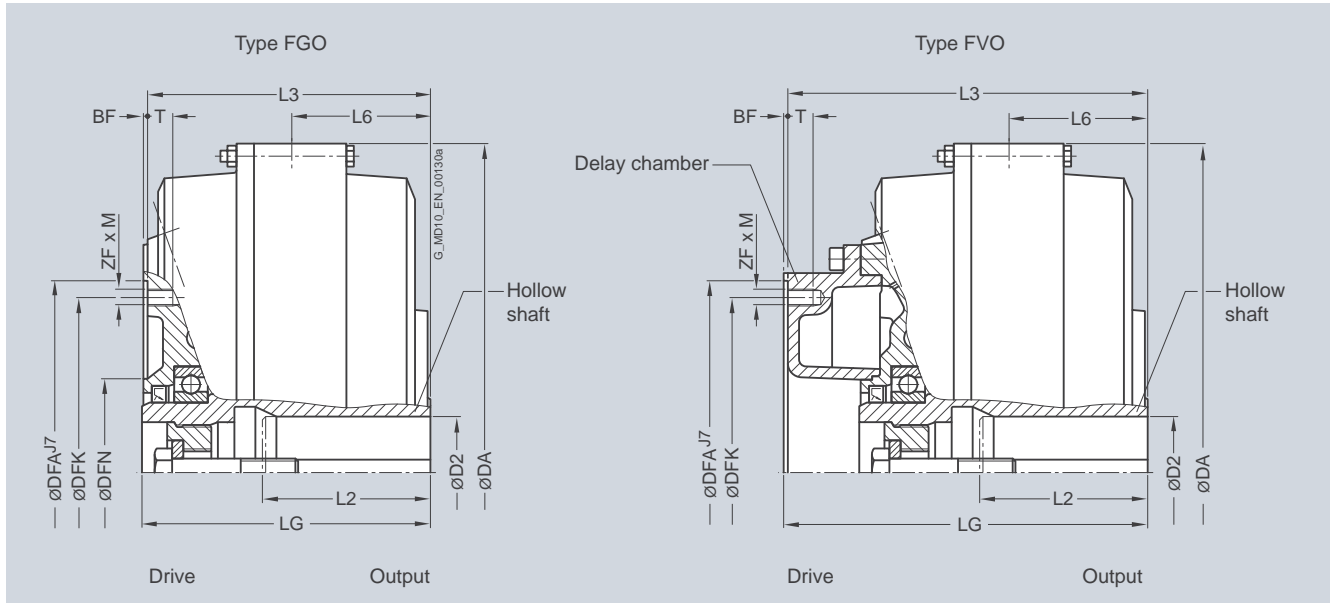
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Types FGO/FVO

Selection and ordering data

Basic coupling of the FG series and delay chamber coupling of the FV series with connecting flange.



Size	Type	Maximum speed n_{Kmax} rpm	Dimensions in mm			Flange connection dimensions							Tightening torque for screws in thread ZF x M T_A Nm	Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight m		
			D2	L2	DA	LG	L3	L6	DFN	DFA	BF	DFK				ZF x M	T
			Keyway to DIN 6885 min. max. max.														
																	Available at short term
370	FGO	3600	75	140	420	185	182	84	125	220	3	200	8 x M10	15	31	2LC0900-8CE09-0AA0 M..	35
	FVO					228	225									2LC0900-8ED09-0AA0 M..	38
425	FGO	3000	80	140	470	205	202	99	134	274	3	250	8 x M12	18	54	2LC0901-0CE09-0AA0 M..	46
	FVO					260	257									2LC0901-0ED09-0AA0 M..	50
490	FGO	2600	55	110	555	236	232	105	138	314	4	282	8 x M16	24	135	2LC0901-1CE09-0AA0 M..	77
	FVO		>55	75	140	301	297									2LC0901-1ED09-0AA0 M..	83
			>75	100	170												
565	FGO	2300	110	170	630	254	250	123	170	344	4	312	8 x M16	24	135	2LC0901-2CE09-0AA0 M..	98
	FVO					337	333									2LC0901-2ED09-0AA0 M..	106
655	FGO	2000	130	210	736	301	296	145	180	430	5	390	8 x M20	25	260	2LC0901-3CE09-0AA0 M..	144
	FVO					389	384									2LC0901-3ED09-0AA0 M..	156
755	FGO	1800	150	240	840	346	341	176	226	480	5	440	10 x M20	25	260	2LC0901-4CE09-0AA0 M..	210
	FVO					445	440									2LC0901-4ED09-0AA0 M..	223
887	FGO	1500	150	275	990	396	391	217	244	520	5	480	10 x M20	25	260	2LC0901-5CE09-0AA0 M..	380
	FVO					498	493									2LC0901-5ED09-0AA0 M..	404

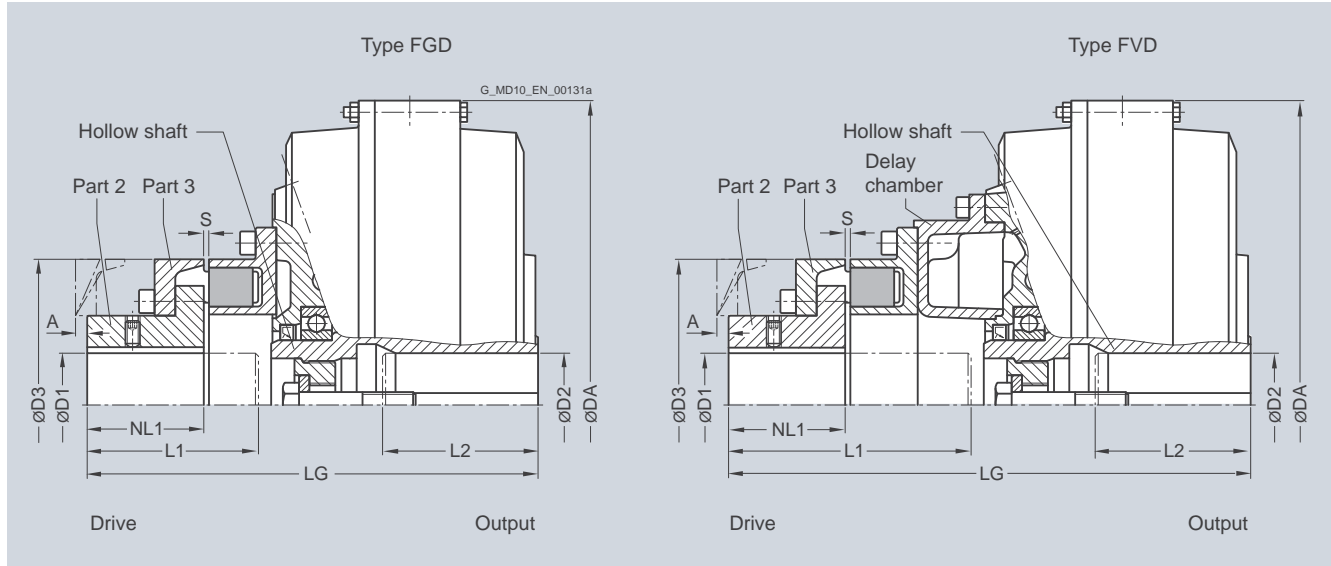
For ordering example, see page 13/30.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Types FGD/FVD

Selection and ordering data

Type with attached N-EUPEX D coupling.
Enables change of flexible elements without axial displacement of the shafts if the space "A" is provided.



Size	Type	Maximum speed n_{Kmax} rpm	Dimensions in mm FLUDEX coupling				N-EUPEX D coupling				S	A	Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight m
			D2	L2	DA	LG	D1	L1	NL1	D3				
370	FGD	3600	75	140	420	298	65	110	70	180	2...6	10	2LC0900-8CA ■ 9-0AA0 L..+M..	46
	FVD					341		150					2LC0900-8EA ■ 9-0AA0 L..+M..	49
425	FGD	3000	80	140	470	348	85	140	90	225	2...6	9	2LC0901-0CA ■ 9-0AA0 L..+M..	66
	FVD					403		195					2LC0901-0EA ■ 9-0AA0 L..+M..	70
490	FGD	2600	55	110	555	397	95	158	100	250	3...8	11	2LC0901-1CA ■ 9-0AA0 L..+M..	106
	FVD		>55	75	140	462		220					2LC0901-1EA ■ 9-0AA0 L..+M..	112
565	FGD	2300	110	170	630	430	105	170	110	280	3...8	5	2LC0901-2CA ■ 9-0AA0 L..+M..	134
	FVD					513		255					2LC0901-2EA ■ 9-0AA0 L..+M..	142
655	FGD	2000	130	210	736	515	140	210	140	350	3...8	0	2LC0901-3CA ■ 9-0AA0 L..+M..	214
	FVD					603		295					2LC0901-3EA ■ 9-0AA0 L..+M..	225
755	FGD	1800	150	240	840	584	150	230	160	400	3...8	0	2LC0901-4CA ■ 9-0AA0 L..+M..	302
	FVD					683		330					2LC0901-4EA ■ 9-0AA0 L..+M..	316
887	FGD	1500	150	275	990	665	160	260	180	440	5...10	0	2LC0901-5CA ■ 9-0AA0 L..+M..	502
	FVD					767		365					2LC0901-5EA ■ 9-0AA0 L..+M..	526

ØD1: Without finished bore from size 655 with small hub for:

- Size 655 ØD1max = 110 mm
- Size 755 ØD1max = 120 mm
- Size 887 ØD1max = 130 mm – Without order code L..

Without finished bore from size 655 with large hub for:

- Size 655 ØD1 = 88 ... 140
- Size 755 ØD1 = 98 ... 150
- Size 887 ØD1 = 118 ... 160 – Without order code L..

With finished bore – With order codes for diameter and tolerance (product code without -Z)

1
2
9

For ordering example, see page 13/31.

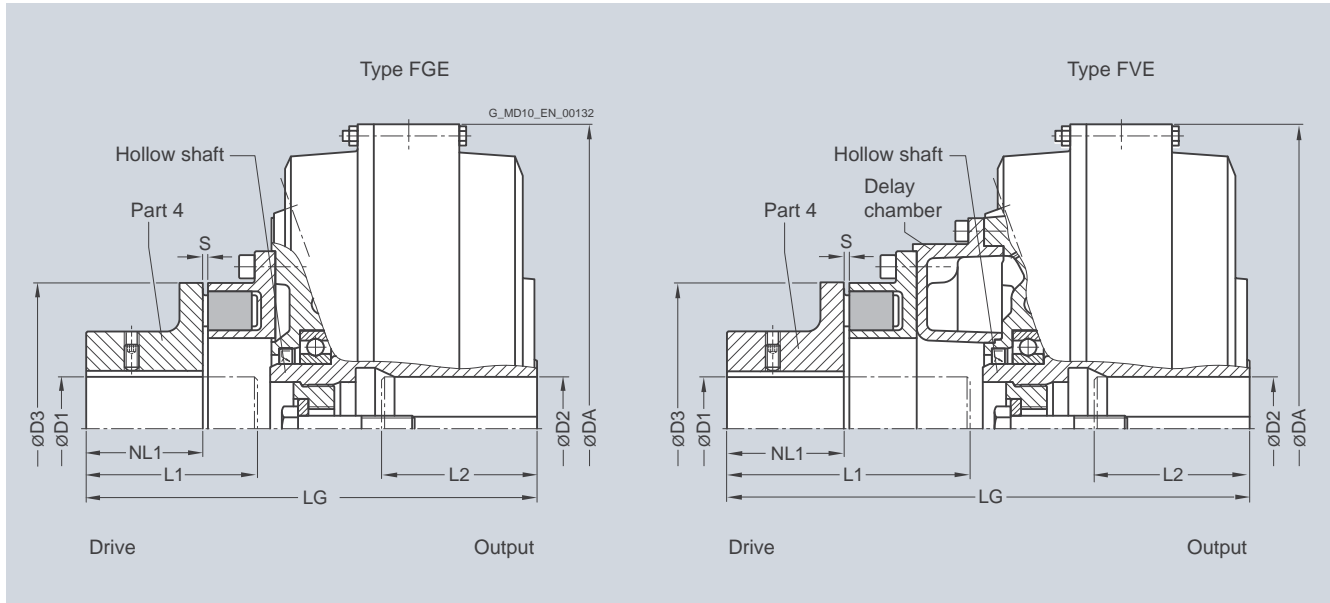
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Types FGE/FVE

Selection and ordering data

Type with attached N-EUPEX E coupling. Enables larger bores on the drive side.



Size	Type	Maximum speed n_{kmax} rpm	Dimensions in mm FLUDEX coupling					N-EUPEX E coupling					Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight <i>m</i>
			D2 Keyway to DIN 6885 min.	D2 max.	L2 max.	DA	LG	D1 max.	L1 max.	NL1 min.	D3 N-EUPEX size	S		
370	FGE	3600	75	140	420	298	75	110	70	180	2...6	2LC0900-8CB ■ 9-0AA0 L...M..	45	
	FVE					341		150				2LC0900-8EB ■ 9-0AA0 L...M..	49	
425	FGE	3000	80	140	470	348	90	140	90	225	2...6	2LC0901-0CB ■ 9-0AA0 L...M..	63	
	FVE					403		195				2LC0901-0EB ■ 9-0AA0 L...M..	67	
490	FGE	2600	>55	55	110	555	397	100	158	100	250	3...8	2LC0901-1CB ■ 9-0AA0 L...M..	104
	FVE		>75	75	140		462		220			2LC0901-1EB ■ 9-0AA0 L...M..	110	
565	FGE	2300	110	170	630	430	110	170	110	280	3...8	2LC0901-2CB ■ 9-0AA0 L...M..	138	
	FVE					513		255				2LC0901-2EB ■ 9-0AA0 L...M..	146	

ØD1: Without finished bore – Without order codes

With finished bore – With order codes for diameter and tolerance (product code without -Z)

1
9

Ordering example:

Motor 45 kW, $P_{eff} = 37$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FVE coupling size 370,

Hollow shaft: Bore ØD2 = 60H7 mm with keyway to DIN 6885/1 and retaining screw,

Part 4: Bore ØD1 = 60H7 mm with keyway to DIN 6885/1 and set screw,

with electronic or mechanical operation monitoring, seal set Perbunan.

Delivery without oil filling, no oil filling quantity specification.

Product code:

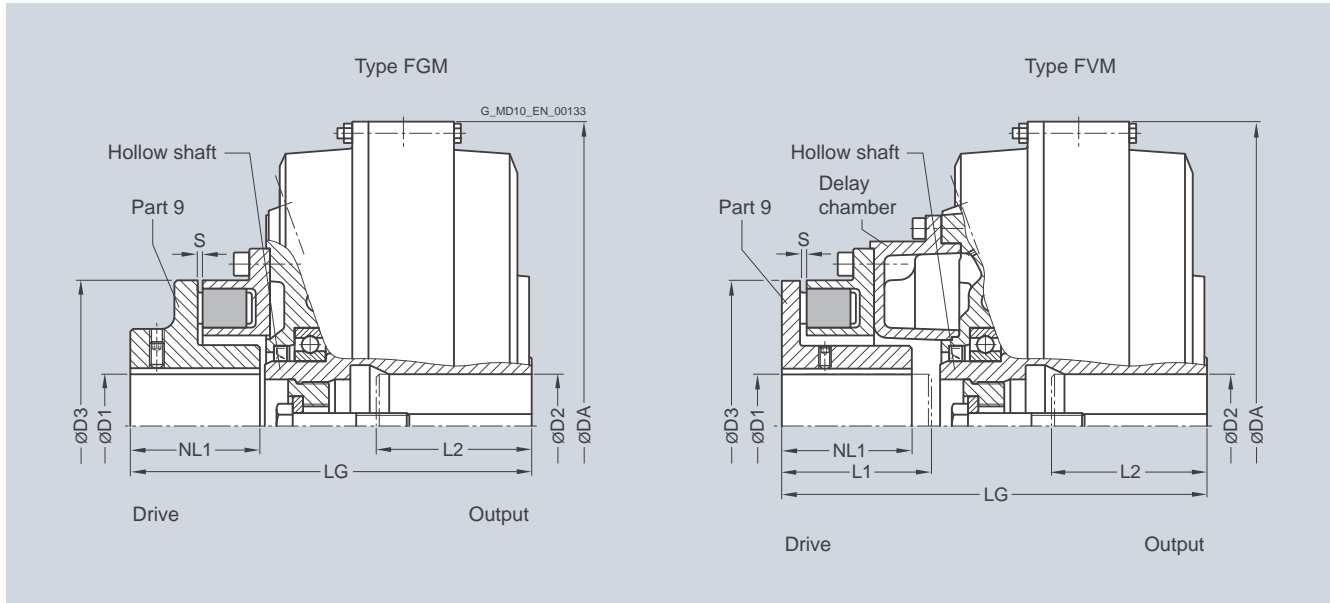
- With 110 °C thermal switch:
2LC0900-8EB99-0AA0-Z
L1E+M1E+F03
- With 125 °C EOC transmitter:
2LC0900-8EB99-0AA0-Z
L1E+M1E+F04

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Types FGM/FVM

Selection and ordering data

Type with attached N-EUPEX M coupling. Enables a short fitting length.



Size	Type	Maximum speed n_{Kmax} rpm	Dimensions in mm FLUDEX coupling					N-EUPEX M coupling					Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight <i>m</i>
			D2 Keyway to DIN 6885 min.	L2 max.	DA	LG	D1 max.	L1 max.	NL1 min.	D3	S	N-EUPEX size		
370	FGM	3600	75	140	420	274	70	80	80	180	2...6	Available at short term		kg
	FVM											288	100	
425	FGM	3000	80	140	470	310	85	100	100	225	2...6	Available at short term		kg
	FVM											327	120	
490	FGM	2600	55	110	555	350	90	105	105	250	3...8	Available at short term		kg
	FVM											>55 >75	75 100	
565	FGM	2300	110	170	630	380	100	120	120	280	3...8	Available at short term		kg
	FVM											425	165	
												2LC0901-1EC ■ 9-0AA0 L...M..	9-0AA0	105
												2LC0901-2CD ■ 9-0AA0 L...M..	9-0AA0	112
												2LC0901-2EC ■ 9-0AA0 L...M..	9-0AA0	134
												2LC0901-2CD ■ 9-0AA0 L...M..	9-0AA0	142

ØD1: Without finished bore – Without order codes

With finished bore – With order codes for diameter and tolerance (product code without -Z)

1

9

Ordering example:

Motor 45 kW, $P_{eff} = 37$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FGM coupling size 370,

Hollow shaft: Bore ØD2 = 60H7 mm with keyway (for number of keyways, see "Special types") to DIN 6885/1 and retaining screw,

Part 4: Bore ØD1 = 60H7 mm with keyway to DIN 6885/1 and set screw.

Delivery without oil filling, no oil filling quantity specification.

Product code:

- With one keyway:
**2LC0900-8CD99-0AA0
L1E+M1E**
- With two keyways set 180° apart:
**2LC0900-8CD99-0AA0-Z
L1E+M1E+L46**
- With two keyways set 120° apart:
**2LC0900-8CD99-0AA0-Z
L1E+M1E+L47**

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FG/FV series

Selection and ordering data

This assignment is valid for a maximum starting torque $T_{\max} = 2.0 \times T_{\text{eff}}$ (FG series) or $T_{\max} = 1.5 \times T_{\text{eff}}$ (FV series), and mineral oils with a viscosity of VG 22/VG 32.

If other operating fluids are used, or with drive via the hollow shaft or $T_{\max} \neq 2.0 \times T_{\text{eff}}$ or $T_{\max} \neq 1.5 \times T_{\text{eff}}$, changed filling quantities must be observed!

P_{eff}	Speed in rpm																				Size
	600	740	890	980	1180	1470	1770	2300	2950	3550											
kW	Series																				
	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	
	Oil filling quantity in l																				
1.1		5.3																			
2.2	6.4	6.7		5.5																	
3.0	7.0	7.4	5.9	6.1		5.0															
4.0	7.2	8.0	6.4	6.6		5.6		5.0													
5.5	13.0	13.8	6.9	7.4	6.0	6.2		5.6													
7.5	14.4	15.2	7.2	8.0	6.5	6.8	6.0	6.2		5.1											
11	15.9	17.4	13.3	14.1	7.2	7.7	6.7	7.1	5.7	5.9											
15	17.0	18.5	14.7	15.6	12.4	13.0	7.2	7.7	6.2	6.5		5.2									
18	17.0	31.6	15.4	16.6	13.1	13.8	12.0	12.5	6.5	6.9		5.5									
22	31.1	33.2	16.2	17.7	14.0	14.8	12.7	13.4	6.9	7.3	5.7	5.9		4.8							
30	35.9	36.5	17.0	18.5	15.2	16.3	14.1	14.9	11.8	12.3	6.3	6.5	5.3	5.5							
37	37.9	39.9	29.9	32.4	16.1	17.5	14.9	15.9	12.6	13.3	6.6	7.0	5.7	5.9		4.2					
45	39.7	44.0	32.3	34.0	17.0	18.5	15.7	17.0	13.4	14.1	7.0	7.5	6.0	6.2		4.6					
55	40.0	44.0	35.5	36.2	28.4	31.0	16.6	18.1	14.3	15.1	11.6	12.0	6.4	6.7	5.0	5.1					
75	70.5	75.8	38.7	41.4	31.7	33.6	28.5	31.2	15.5	16.7	12.7	13.5	6.9	7.4	5.5	5.7	4.3	4.2			
90	74.7	80.0	40.0	44.0	34.4	35.4	30.4	32.7	16.3	17.7	13.5	14.3	11.4	11.6	5.9	6.1	4.6	4.5			
110	81.0	84.3	40.0	44.0	37.0	38.2	33.0	34.5	27.3	29.9	14.4	15.2	12.1	12.6	6.2	6.4	4.9	5.0	4.0	4.1	370
132	88.2	89.2	69.3	74.6	38.8	41.6	36.0	36.7	28.6	31.3	15.1	16.2	12.8	13.5	6.5	6.9	5.2	5.4	4.4	4.2	
160	93.5	96.3	73.3	78.7	40.0	44.0	37.8	39.8	30.6	32.9	15.9	17.3	13.6	14.4	10.6	10.4	5.5	5.7	4.7	4.6	
180	96.4	101.8	76.5	81.3	65.4	44.0	38.9	42.1	32.1	33.9	26.2	17.9	14.1	14.9	11.0	11.0	5.8	6.0	4.9	4.9	
200	98.0	107.0	79.8	83.6	67.0	72.1	39.9	44.0	33.7	34.9	26.9	29.4	14.6	15.4	11.4	11.7	6.0	6.2	5.0	5.1	
250	98.0	107.0	88.7	89.5	70.9	76.3	40.0	44.0	36.8	37.9	28.4	31.1	15.4	16.7	12.2	12.8			5.4	5.5	
315		84.7	98.5	76.6	81.5	69.8	75.6	39.0	42.1	30.8	33.0	26.2	28.6	13.1	13.9						490
350		97.2	103.6	80.0	83.7	71.8	77.7	39.9	44.0	32.2	33.9	26.9	29.5	13.6	14.4						
400		98.0	107.0	85.1	86.9	75.2	80.5	64.5	68.4	34.2	35.3	27.8	30.4								655
500		98.0	107.0	92.4	94.5	82.5	85.3	68.1	73.8	37.1	38.4	29.7	32.3								
600					96.9	102.9	90.1	90.6	71.5	77.3	38.8	41.8	31.9	33.8							
750					98.0	107.0	95.3	99.6	77.3	81.9	64.0	67.8	35.4	36.2							
900						98.0	107.0	83.7	86.0	67.0	72.7										887
1100								81.1	92.3	70.4	76.2										
1300								95.2	99.3	74.2	79.8										
1600									80.6	84.0											

Ordering example type FGO/FVO from page 13/26:

Motor 132 kW, $P_{\text{eff}} = 110$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FGO/FGV coupling size 490,

Hollow shaft: Bore $\varnothing D2 = 70H7$ mm with keyway to DIN 6885/1 and retaining screw.

Delivery with oil filling: FGO = 14.4 l / FVO = 15.2 l (see under oil filling quantities for FG/FV series in this catalog section).

Product code:

- In type FGO:
2LC0901-1CE09-0AA0-Z
L1G+F16+Y90
plain text to Y90: **14.4 l**
- In type FGV:
2LC0901-1ED09-0AA0-Z
L1G+F16+Y90
plain text to Y90: **15.2 l**

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FG/FV series

P_{eff}	Speed in rpm																				Size		
	600		740		890		980		1180		1470		1770		2300		2950		3550				
	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV	FG	FV			
kW	Oil filling quantity in l																						
3.0	8.7	9.1																					
4.0	9.5	9.9		8.1																			
5.5	10.3	11.1	8.7	9.0																			
7.5	10.9	12.0	9.5	9.9			8.3		7.4														
11	19.9	21.4	10.5	11.3	9.1	9.4			8.6														
15	22.0	23.7	10.9	12.0	9.8	10.4	9.1	9.5		7.8													
18	23.2	25.2	19.1	20.5	10.3	11.1	9.6	10.1		8.4													
22	24.3	27.0	20.3	21.9	10.9	11.7	10.1	10.8	8.6	9.0													
30	42.0	45.0	22.4	24.2	18.9	20.1	10.9	11.8	9.5	9.9			7.9										
37	44.4	47.5	23.7	26.0	20.1	21.7	18.5	19.5	10.0	10.7	8.2	8.6			6.7								
45	47.7	50.0	24.9	27.7	21.5	23.1	19.5	21.0	10.5	11.3	8.8	9.2			7.5								
55	52.0	53.0	25.5	28.0	22.8	24.6	20.8	22.5	17.5	18.3	9.3	9.7	7.8	8.1									
75	58.0	59.5	45.6	48.5	24.6	27.4	22.9	24.8	19.3	20.7	10.1	10.8	8.6	9.0			6.5						
90	60.5	65.5	49.1	50.5	25.5	28.9	23.9	26.5	20.4	22.0	10.7	11.4	9.2	9.5	7.2	7.1							
110	61.0	67.0	54.0	54.0	43.2	46.4	25.5	28.0	21.8	23.4	17.7	18.7	9.7	10.2	7.6	7.8							
132			57.0	58.0	45.8	48.7	42.1	45.1	23.0	24.9	18.7	19.9	10.1	10.9	8.1	8.4	6.3	6.1					425
160			60.0	63.5	49.5	51.0	44.3	47.4	24.0	26.7	19.8	21.4	16.7	16.8	8.6	8.9	6.8	6.6					
180			61.5	67.0	52.3	53.0	46.2	49.0	24.8	27.6	20.6	22.2	17.3	18.0	8.8	9.3	7.0	6.9					
200			62.5	67.0	55.0	55.0	48.1	50.0	25.5	43.7	21.4	23.0	17.9	18.9	9.2	9.6	7.3	7.3					
250					58.5	60.5	53.5	53.5	42.9	46.0	22.8	24.7	19.2	20.6	14.6	14.7	7.8	8.0					
315					61.0	67.0	57.5	58.5	46.2	49.0	24.2	26.8	20.6	22.3	16.1	16.1	8.3	8.7					
350					62.5	67.0	59.0	61.5	48.2	50.0	39.7	42.4	21.4	23.0	16.7	16.8							565
400							61.0	66.0	51.0	52.0	41.0	44.0	22.2	24.0	17.4	18.1							
500							61.0	67.0	56.0	56.5	43.3	46.5	37.8	40.0	18.7	19.9							
600									59.0	61.0	46.0	49.0	39.5	42.1		21.2							
750											50.5	51.5	41.7	45.0									755
900											55.5	55.0	43.7	47.0									
1100													46.8	49.5									

Ordering example type FGD from page 13/27:

Motor 350 kW, $P_{\text{eff}} = 315$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FGD coupling size 655, standard type,
Hollow shaft: Bore $\varnothing D_2 = 120H7$ mm with keyway to DIN 6885/1
and retaining screw,

Part 2: Bore $\varnothing D_1 =$ see ordering data table "Without finished
bore" and "With finished bore",
keyway to DIN 6885/1 and set screw.

Delivery without oil filling, no oil filling quantity specification.

Product code:

- Without finished bore for $\varnothing D_1 = 110$ mm:
2LC0901-3CA19-0AA0
L1S
- Without finished bore for $\varnothing D_1 = 130$ mm:
2LC0901-3CA29-0AA0
L1S
- With finished bore for $\varnothing D_1 = 140H7$ mm:
2LC0901-3CA99-0AA0
L1S+M1V

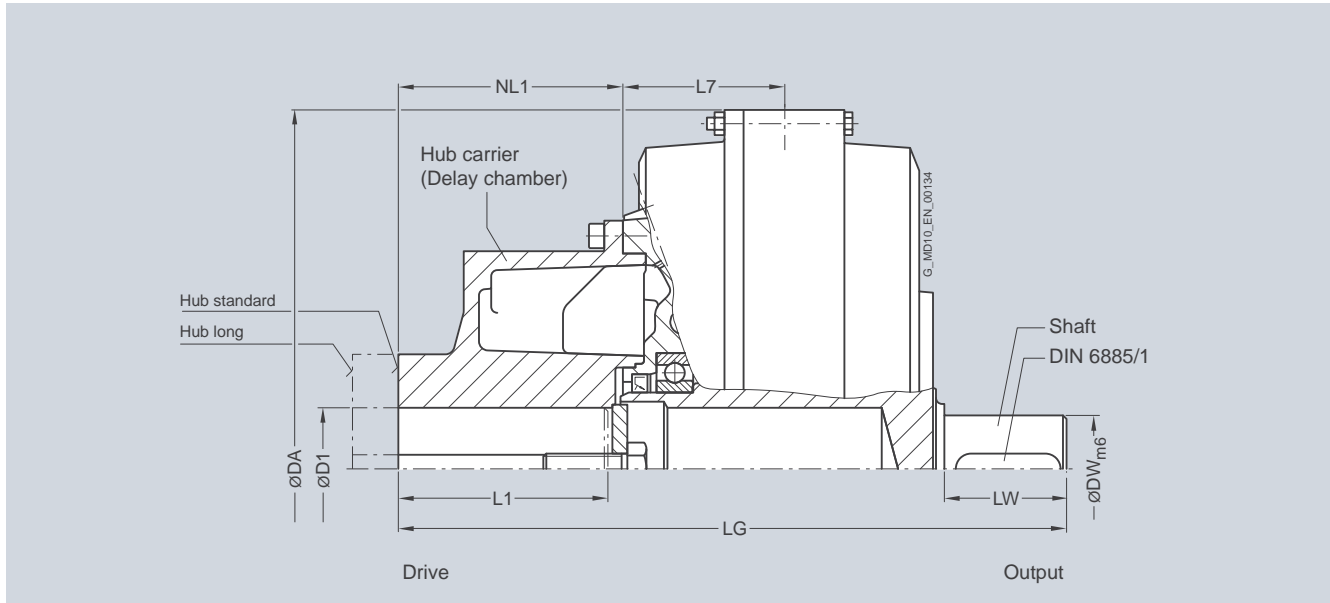
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FNO

Selection and ordering data

Type with large delay chamber and connecting shaft.



Size	Maximum speed n_{Kmax} rpm	Hub carrier	Dimensions in mm Installation dimensions			Connection dimensions		Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg					
			D1 Keyway to DIN 6885 min. max.	L1 max.	NL1	DA	LG			L7	DW	LW		
370	3600	Hub Standard	38	55	110	115	420	380	101	60	70	2LC0900-8GA L..	0-1AA0	56
		Hub Long	38	80	140	145	420	410					2LC0900-8GA L..	0-2AA0
425	3000	Standard	42	75	140	147	470	437	106	70	80	2LC0901-0GA L..	0-1AA0	77
		Long	42	100	170	177	470	467					2LC0901-0GA L..	0-2AA0
490	2600	Standard	48	75	140	148	555	485	131	70	90	2LC0901-1GA L..	0-1AA0	120
		Long	48	110	170	178	555	515					2LC0901-1GA L..	0-2AA0
565	2300	Standard	65	95	170	178	630	543	131	90	100	2LC0901-2GA L..	0-1AA0	161
		Long	65	120	210	218	630	583					2LC0901-2GA L..	0-2AA0
655	2000	Standard	65	120	210	218	736	644	156	100	125	2LC0901-3GA L..	0-1AA0	233
		Long	65	135	250	258	736	684					2LC0901-3GA L..	0-2AA0
755	1800	Standard	65	120	210	219	840	705	170	110	140	2LC0901-4GA L..	0-1AA0	309
		Long	65	150	250	259	840	745					2LC0901-4GA L..	0-2AA0
887	1500	Standard	65	150	250	251	990	835	187	120	178	2LC0901-5GA L..	0-1AA0	541
		Long	65	170	300	301	990	885					2LC0901-5GA L..	0-2AA0

∅D1: Without finished bore – Without order codes
 With finished bore – With order codes for diameter and tolerance (product code without -Z)

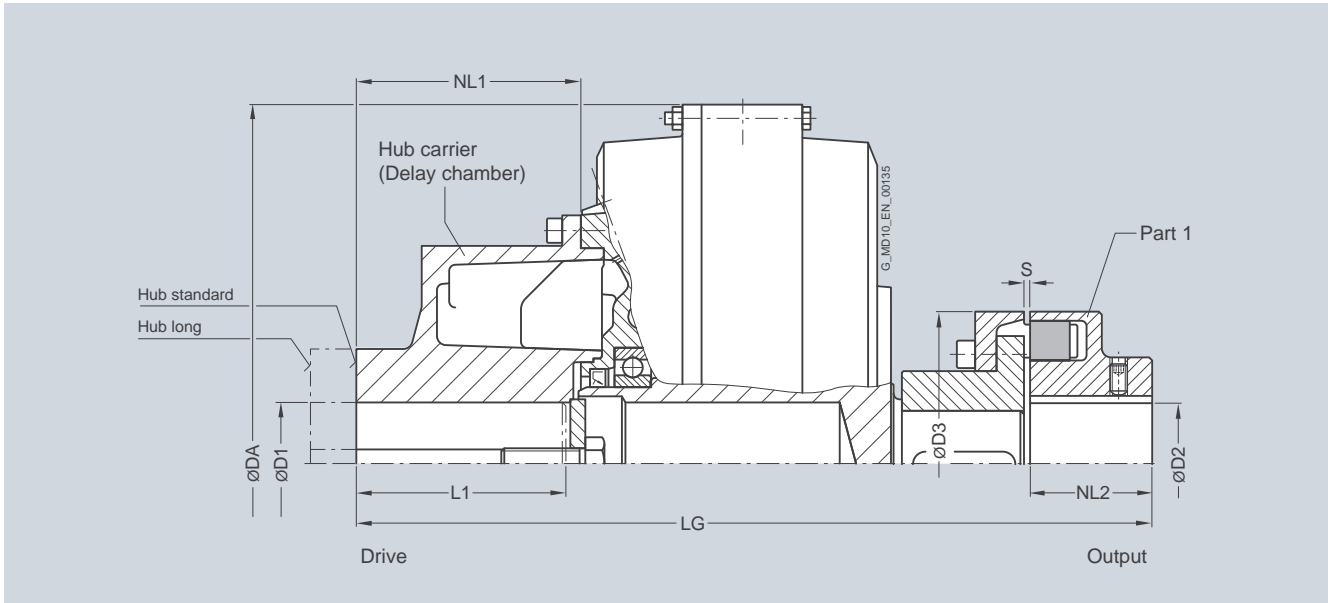
For ordering example, see page 13/39.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FNA

Selection and ordering data

Type with large delay chamber and attached N-EUPEX A coupling. Enables a short fitting length.



Size	Maximum speed n_{Kmax} rpm	Hub carrier	Dimensions in mm FLUDEX coupling					N-EUPEX A coupling					Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight m kg
			D1	L1	NL1	DA	LG	D2	NL2	D3	S			
			Keyway to DIN 6885						N-EUPEX size		Available at short term			
			min.	max.	max.				max.					
370	3600	Standard	38	55	110	115	420	454	75	70	180	3...6	2LC0900-8GB ■ ■ -1AA0 L...M..	69
		Long	38	80	140	145	420	484					2LC0900-8GB ■ ■ -2AA0 L...M..	67
425	3000	Standard	42	75	140	147	470	521	85	80	200	3...6	2LC0901-0GB ■ ■ -1AA0 L...M..	99
		Long	42	100	170	177	470	551					2LC0901-0GB ■ ■ -2AA0 L...M..	96
490	2600	Standard	48	75	140	148	555	579	90	90	225	3...6	2LC0901-1GB ■ ■ -1AA0 L...M..	149
		Long	48	110	170	178	555	609					2LC0901-1GB ■ ■ -2AA0 L...M..	144
565	2300	Standard	65	95	170	178	630	648	100	100	250	3...8	2LC0901-2GB ■ ■ -1AA0 L...M..	200
		Long	65	120	210	218	630	688					2LC0901-2GB ■ ■ -2AA0 L...M..	199
655	2000	Standard	65	120	210	218	736	774	120	125	315	3...8	2LC0901-3GB ■ ■ -1AA0 L...M..	308
		Long	65	135	250	258	736	814					2LC0901-3GB ■ ■ -2AA0 L...M..	307
755	1800	Standard	65	120	210	219	840	850	140	140	350	3...8	2LC0901-4GB ■ ■ -1AA0 L...M..	426
		Long	65	150	250	259	840	890					2LC0901-4GB ■ ■ -2AA0 L...M..	424
887	1500	Standard	65	150	250	251	990	1023	160	180	440	5...10	2LC0901-5GB ■ ■ -1AA0 L...M..	693
		Long	65	170	300	301	990	1073					2LC0901-5GB ■ ■ -2AA0 L...M..	697

ØD1:	Without finished bore – Without order codes	1
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
ØD2:	Without finished bore from size 655 with small hub for:	1
	Size 655 ØD2max = 100 mm, size 755 ØD2max = 110 mm, size 887 ØD2max = 130 mm – Without order codes	
	Without finished bore from size 655 with large hub for:	2
	Size 655 ØD2 = 88 ... 120, size 755 ØD2 = 88 ... 140, size 887 ØD2 = 118 ... 160 – Without order codes	
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9

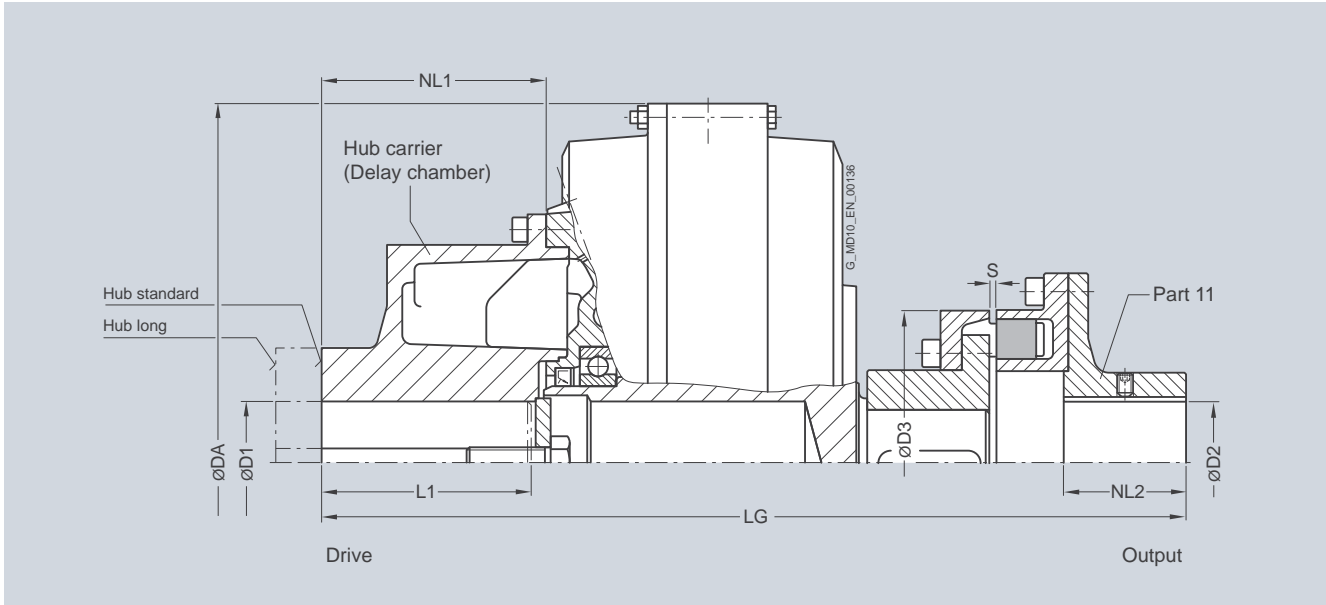
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FND

Selection and ordering data

Type with large delay chamber and attached N-EUPEX D coupling.
Enables fitting and dismantling of the coupling without displacement of the coupled shafts.



Size	Maximum speed n_{Kmax} rpm	Hub carrier	Dimensions in mm FLUDEX coupling			N-EUPEX D coupling			S	Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg			
			D1 min	L1 max.	NL1 max.	D2 max.	NL2 max.	D3 N-EUPEX size						
370	3600	Hub Standard	38	55	110	115	420	494	70	70	180	4...6	2LC0900-8GC ■ ■ ■ -1AA0 L...M..	74
		Hub Long	38	80	140	145	420	524						2LC0900-8GC ■ ■ ■ -2AA0 L...M..
425	3000	Standard	42	75	140	147	470	566	80	80	200	4...6	2LC0901-0GC ■ ■ ■ -1AA0 L...M..	101
		Long	42	100	170	177	470	596						2LC0901-0GC ■ ■ ■ -2AA0 L...M..0
490	2600	Standard	48	75	140	148	555	629	90	90	225	4...6	2LC0901-1GC ■ ■ ■ -1AA0 L...M..	153
		Long	48	110	170	178	555	659						2LC0901-1GC ■ ■ ■ -2AA0 L...M..
565	2300	Standard	65	95	170	178	630	706	100	100	250	5...8	2LC0901-2GC ■ ■ ■ -1AA0 L...M..	207
		Long	65	120	210	218	630	746						2LC0901-2GC ■ ■ ■ -2AA0 L...M..
655	2000	Standard	65	110	210	218	736	842	110	125	315	5...8	2LC0901-3GC ■ ■ ■ -1AA0 L...M..	315
		Long	65	135	250	258	736	882						2LC0901-3GC ■ ■ ■ -2AA0 L...M..
755	1800	Standard	65	120	210	219	840	921	120	140	350	5...8	2LC0901-4GC ■ ■ ■ -1AA0 L...M..	433
		Long	65	150	250	259	840	961						2LC0901-4GC ■ ■ ■ -2AA0 L...M..
887	1500	Standard	65	150	250	251	990	1104	130	180	440	5...10	2LC0901-5GC ■ ■ ■ -1AA0 L...M..	719
		Long	65	170	300	301	990	1154						2LC0901-5GC ■ ■ ■ -2AA0 L...M..

ØD1: Without finished bore – Without order codes
With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

ØD2: Without finished bore – Without order codes
With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

For ordering example, see page 13/39.

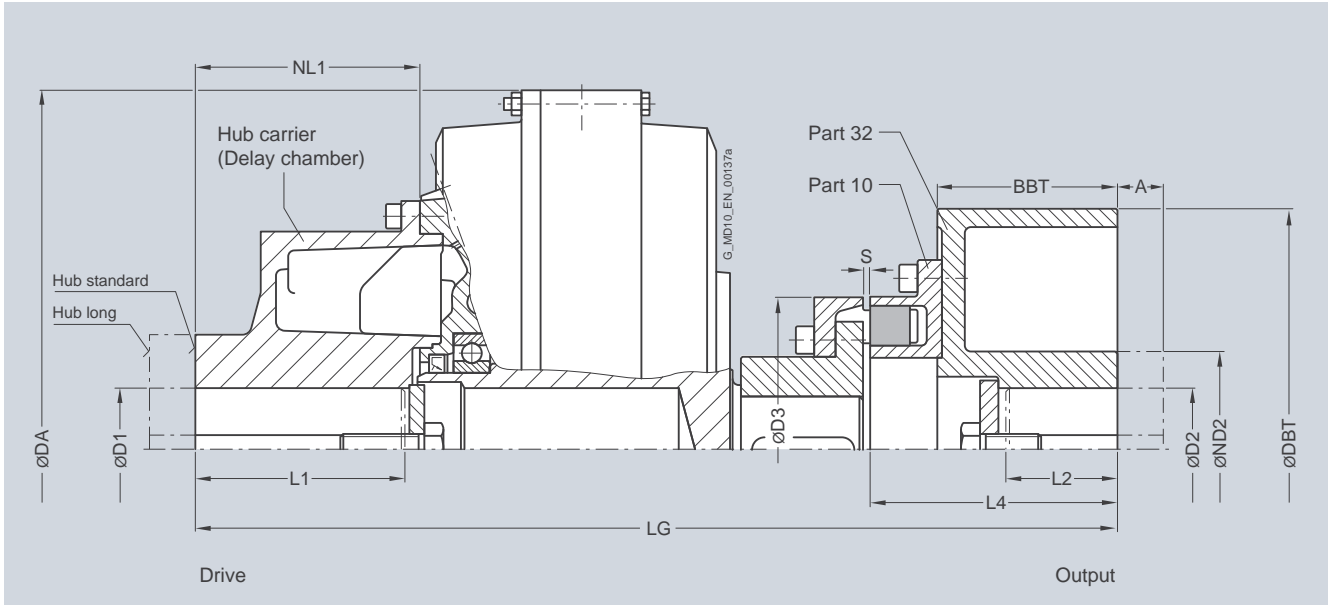
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FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FNDB

Selection and ordering data

Type with large delay chamber and attached N-EUPEX coupling and brake drum.
Enables fitting and dismantling of the coupling without displacement of the coupled shafts.



Size	Maximum speed n_{Kmax} rpm	Hub carrier	Dimensions in mm						N-EUPEX coupling			Part 32 – Brake drum				Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg	
			FLUDEX coupling		Keyway to DIN 6885		DA	LG	D3	S	L4	D2	ND2	DBT	BBT			A
			min.	max.	max.			N-EUPEX size		max.								
370	2400	Hub Standard	38	55	110	115	420	542	180	4...6	157	80	128	315	118	50	2LC0900-8GD ■ ■ -1 ■ A0 L..+M..	98
		Hub Long	38	80	140	145	420	572									2LC0900-8GD ■ ■ -2 ■ A0 L..+M..	97
	1900	Hub Standard	38	55	110	115	420	574			189	90	160	400	150	80	2LC0900-8GD ■ ■ -1 ■ A0 L..+M..	125
		Hub Long	38	80	140	145	420	604									2LC0900-8GD ■ ■ -2 ■ A0 L..+M..	124
425	2400	Hub Standard	42	75	140	147	470	604	200	4...6	162	80	128	315	118	50	2LC0901-0GD ■ ■ -1 ■ A0 L..+M..	126
		Hub Long	42	100	170	177	470	634									2LC0901-0GD ■ ■ -2 ■ A0 L..+M..	125
	1900	Hub Standard	42	75	140	147	470	636			194	90	160	400	150	80	2LC0901-0GD ■ ■ -1 ■ A0 L..+M..	151
		Hub Long	42	100	170	177	470	666									2LC0901-0GD ■ ■ -2 ■ A0 L..+M..	150

∅D1:	Without finished bore – Without order codes	1
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
∅D2:	Without finished bore – Without order codes	1
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
Part 32:	Small brake drum, without extension A	A
	Small brake drum, with extension A (increase of lengths L4 and LG by the amount A)	B
	Large brake drum, without extension A	C
	Large brake drum, with extension A (increase of lengths L4 and LG by the amount A)	D

L2 denotes the shaft insertion depth.
In the case of shaft ends deviating from DIN 748 the insertion depth must be specified in plain text and with **Y29**.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FNDB

Size	Maximum speed n_{Kmax}	Hub carrier	Dimensions in mm																Product code with order codes for bore diameters and tolerances (product code without -Z) - selection in catalog part 3	Weight <i>m</i>	
			FLUDEX coupling						N-EUPEX coupling			Part 32 – Brake drum									
			D1	L1	NL1	DA	LG	D3	S	L4	D2	ND2	DBT	BBT	A						
			Keyway to DIN 6885			N-EUPEX size			max.												
	rpm	Hub	min.	max.	max.											Available at short term	kg				
490	1900	Standard	48	75	140	148	555	689	225	4...6	199	90	160	400	150	80	2LC0901-1GD	-1	A0	201	
		Long	48	110	170	178	555	719								2LC0901-1GD	-2	A0	198		
	1500 ¹⁾	Standard	48	75	140	148	555	729				247	100	175	500	190	110	2LC0901-1GD	-1	A0	240
		Long	48	110	170	178	555	759								2LC0901-1GD	-2	A0	237		
565	1900	Standard	65	95	170	178	630	756	250	5...8	207	90	160	400	150	80	2LC0901-2GD	-1	A0	258	
		Long	65	120	210	218	630	796								2LC0901-2GD	-2	A0	256		
	1500 ¹⁾	Standard	65	95	170	178	630	796				247	100	175	500	190	110	2LC0901-2GD	-1	A0	291
		Long	65	120	210	218	630	836								2LC0901-2GD	-2	A0	293		
655	1500 ¹⁾	Standard	65	120	210	218	736	907	315	5...8	257	100	175	500	190	110	2LC0901-3GD	-1	A0	394	
		Long	65	135	250	258	736	947								2LC0901-3GD	-2	A0	390		
	1500	Standard	65	120	210	218	736	953				303	140	224	630	236	100	2LC0901-3GD	-1	A0	449
		Long	65	135	250	258	736	993								2LC0901-3GD	-2	A0	445		
755	1500	Standard	65	120	210	219	840	1018	350	5...8	307	140	224	630	236	100	2LC0901-4GD	-1	A0	569	
		Long	65	150	250	259	840	1058								2LC0901-4GD	-2	A0	572		
887	1300	Standard	65	150	250	251	990	1190	440	5...10	347	160	265	710	265	-	2LC0901-5GD	-1	A0	902	
		Long	65	170	300	301	990	1240								2LC0901-5GD	-2	A0	915		
ØD1:		Without finished bore – Without order codes																1			
		With finished bore – With order codes for diameter and tolerance (product code without -Z)																9			
ØD2:		Without finished bore – Without order codes																1			
		With finished bore – With order codes for diameter and tolerance (product code without -Z)																9			
Part 32:		Small brake drum, without extension A																A			
		Small brake drum, with extension A (increase of lengths L4 and LG by the amount A)																B			
		Large brake drum, without extension A																C			
		Large brake drum, with extension A (increase of lengths L4 and LG by the amount A)																D			

Ordering example:

Motor 55 kW, $P_{eff} = 45$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FNDB coupling size 370, standard type,
Hub carrier: Long hub bore ØD1 = 65H7 mm with keyway to
DIN 6885/1 and set screw,
Part 32: Ø315 x 118, bore ØD2 = 80H7 mm with keyway to
DIN 6885/1 and retaining screw,
with electronic or mechanical operation monitoring, seal set
Perbunan.
Delivery without oil filling, no oil filling quantity specification.

Product code:

- With brake drum part 32 Ø315 x 118:
2LC0900-8GD99-2AA0
L1F+M1J
- With brake drum part 32 Ø400 x 150 extended:
2LC0900-8GD99-2DA0
L1F+M1J

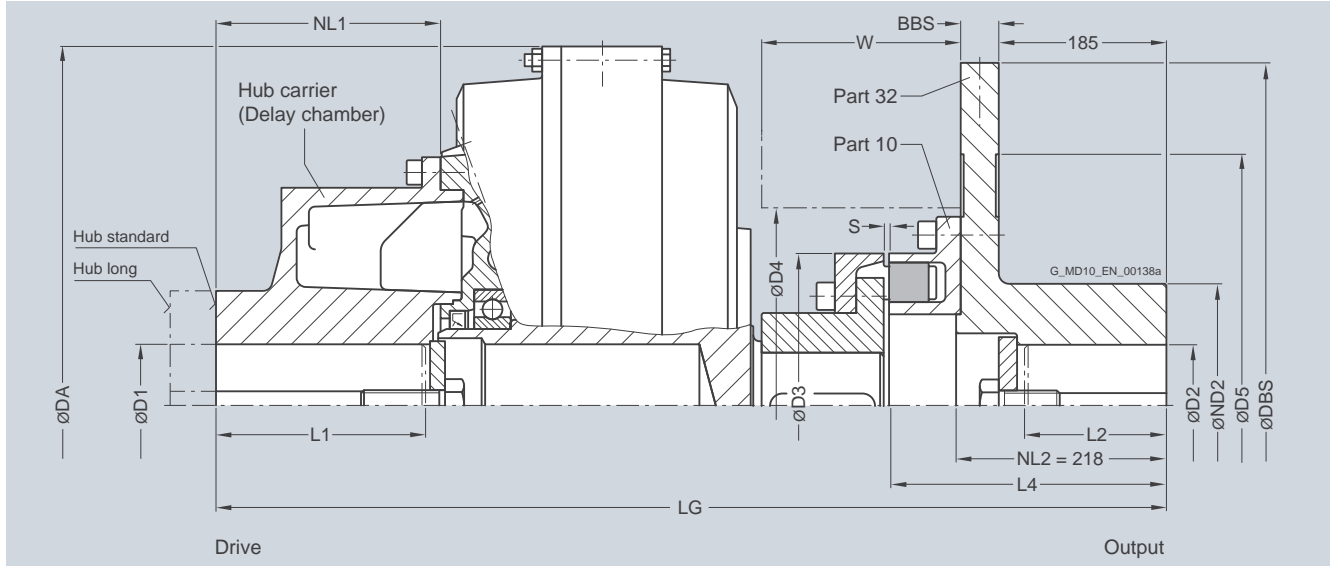
¹⁾ With version of brake drum in grey cast iron: Maximum speed 1800 rpm possible.

FLENDER Standard Couplings Fluid Couplings - FLUDEX Series

Type FNDS SB with large delay chamber and brake disk for stopping brake

Selection and ordering data

Type with large delay chamber, attached N-EUPEX coupling and brake disk for stopping brakes. Enables fitting and dismantling of the coupling without displacement of the coupled shafts.



Size	Maximum speed n_{kmax} rpm	Hub carrier	Dimensions in mm FLUDEX coupling							N-EUPEX coupling			Part 32 – Brake disk ¹⁾			Space dimensions			Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight <i>m</i> kg
			D1	L1	NL1	DA	LG	D3	S	L4	D2	ND2	DBS	BBS	D5	D4	W			
			min.	max.	max.	N-EUPEX size			max.						Available at short term					
370	2100	Hub Standard	38	55	110	115	420	642	180	4...6	257	80	145	450	30	300	222	127	2LC0900-8GE -1CA0 L..+M..	109
		Hub Long	38	80	140	145	420	672											2LC0900-8GE -2CA0 L..+M..	108
425	1900	Hub Standard	42	75	140	147	470	704	200	4...6	262	80	160	500	30	340	250	144	2LC0901-0GE -1BA0 L..+M..	161
		Hub Long	42	100	170	177	470	734											2LC0901-0GE -2BA0 L..+M..	159
490	1700	Hub Standard	48	75	140	148	555	757	225	4...6	267	90	160	560	30	370	276	159	2LC0901-1GE -1BA0 L..+M..	214
		Hub Long	48	110	170	178	555	787											2LC0901-1GE -2BA0 L..+M..	211
565	1500	Hub Standard	65	95	170	178	630	824	250	5...8	275	100	175	630	30	440	317	181	2LC0901-2GE -1BA0 L..+M..	290
		Hub Long	65	120	210	218	630	864											2LC0901-2GE -2BA0 L..+M..	291
655	1500	Hub Standard	65	120	210	218	736	935	315	5...8	285	100	175	630	30	440	385	203	2LC0901-3GE -1AA0 L..+M..	382
		Hub Long	65	135	250	258	736	975											2LC0901-3GE -2AA0 L..+M..	385
755	1300	Hub Standard	65	120	210	219	840	1000	350	5...8	289	140	220	710	30	520	435	222	2LC0901-4GE -1AA0 L..+M..	508
		Hub Long	65	150	250	259	840	1040											2LC0901-4GE -2AA0 L..+M..	511
887	1100	Hub Standard	65	150	250	251	990	1144	440	5...10	301	140	220	800	30	610	525	268	2LC0901-5GE -1AA0 L..+M..	788
		Hub Long	65	170	300	301	990	1194											2LC0901-5GE -2AA0 L..+M..	801

∅D1:	Without finished bore – Without order codes	1
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9
∅D2:	Without finished bore – Without order codes	1
	With finished bore – With order codes for diameter and tolerance (product code without -Z)	9

L2 denotes the shaft insertion depth.
In the case of shaft ends deviating from DIN 748 the insertion depth must be specified in plain text and with **Y29**.

For ordering example, see page 13/40.

¹⁾ Hub reduction possible; specify product code with “-Z” and order code “Y99” with dimension NL2 in plain text.

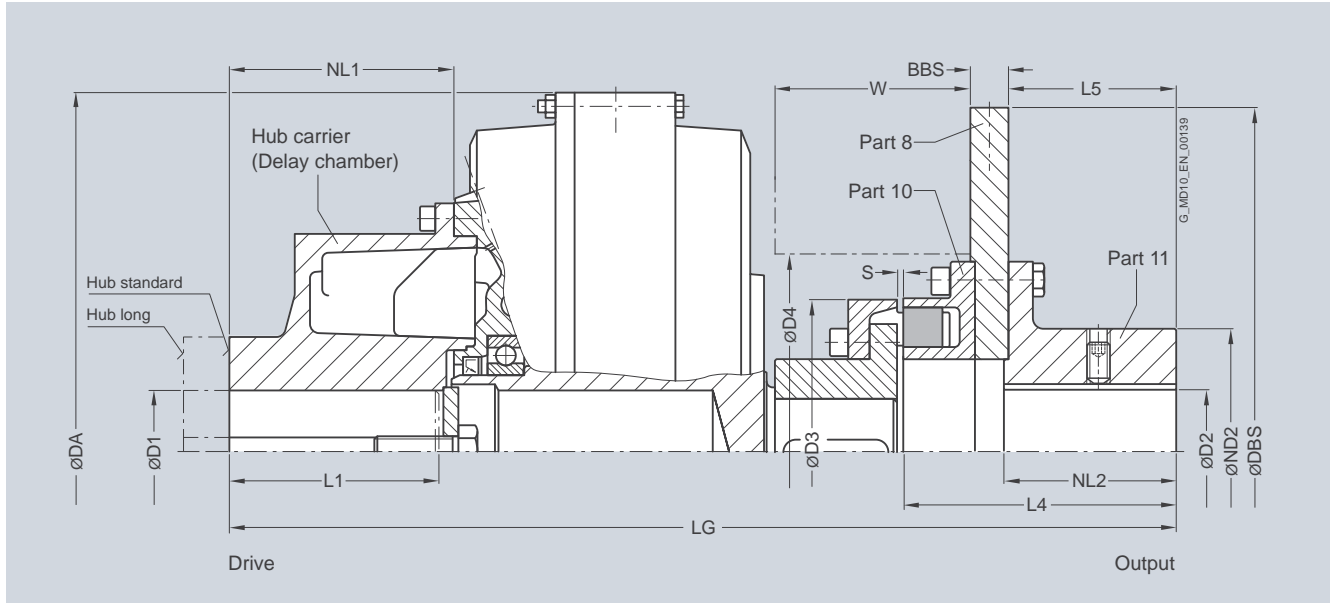
FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Type FNDS HB with large delay chamber and brake disk for blocking brake

Selection and ordering data

Type with large delay chamber, attached N-EUPEX coupling and brake disk for blocking brakes. Enables fitting and dismantling of the coupling without displacement of the coupled shafts.



Size	Maximum speed n_{kmax} rpm	Hub carrier	Dimensions in mm FLUDEX coupling						N-EUPEX coupling				Part 8 – Brake disk/ part 11 – hub			Space dimensions		Product code with order codes for bore diameters and tolerances (product code without -Z) – selection in catalog part 3	Weight kg		
			D1	L1	NL1	DA	LG	D3	S	L4	D2	NL2	ND2	DBS	BBS	L5	D4			W	
			min.	max.	max.			N-EUPEX size									Available at short term				
370	3200	Standard	38	55	110	115	420	555	180	4...6	170	80	118	130	355	16	115	222	127	2LC0900-8GF ■■ -1AA0 L..+M..	84
		Long	38	80	140	145	420	585												2LC0900-8GF ■■ -2AA0 L..+M..	83
425	3000	Standard	42	75	140	147	470	617	200	4...6	175	80	118	130	355	16	115	250	144	2LC0901-0GF ■■ -1AA0 L..+M..	116
		Long	42	100	170	177	470	647												2LC0901-0GF ■■ -2AA0 L..+M..	115
490	2600	Standard	48	75	140	148	555	670	225	4...6	180	90	118	135	400	16	115	276	159	2LC0901-1GF ■■ -1AA0 L..+M..	169
		Long	48	110	170	178	555	700												2LC0901-1GF ■■ -2AA0 L..+M..	166
565	2300	Standard	65	95	170	178	630	737	250	5...8	188	100	118	160	450	16	115	317	181	2LC0901-2GF ■■ -1AA0 L..+M..	227
		Long	65	120	210	218	630	777												2LC0901-2GF ■■ -2AA0 L..+M..	229
655	2000	Standard	65	110	210	218	736	848	315	5...8	198	100	118	170	500	16	115	385	203	2LC0901-3GF ■■ -1AA0 L..+M..	348
		Long	65	135	250	258	736	888												2LC0901-3GF ■■ -2AA0 L..+M..	351
755	1800	Standard	65	120	210	219	840	961	350	5...8	250	140	164	225	630	20	160	435	222	2LC0901-4GF ■■ -1AA0 L..+M..	486
		Long	65	150	250	259	840	1001												2LC0901-4GF ■■ -2AA0 L..+M..	489
887	1500	Standard	65	150	250	251	990	1105	440	5...10	262	140	164	225	710	20	160	525	268	2LC0901-5GF ■■ -1AA0 L..+M..	769
		Long	65	170	300	301	990	1155												2LC0901-5GF ■■ -2AA0 L..+M..	782

∅D1: Without finished bore – Without order codes
 With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

∅D2: Without finished bore – Without order codes
 With finished bore – With order codes for diameter and tolerance (product code without **-Z**)

For ordering example, see page 13/40.

1) Hub reduction possible; specify product code with **"-Z"** and order code **"Y99"** with dimension L5 in plain text.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FN series

Selection and ordering data

This assignment is valid for a maximum starting torque
 $T_{\max} = 1.3 \times T_{\text{eff}}$ and mineral oils with a viscosity of
 VG 22/VG 32.

If other operating fluids are used, or with drive via the shaft or
 $T_{\max} \neq 1.3 \times T_{\text{eff}}$, changed filling quantities must be observed!

P_{eff} kW	Speed in rpm										Size	
	600	740	890	980	1180	1470	1770	2300	2950	3550		
1.1	5.6											
2.2	7.1	5.7										
3.0	7.9	6.4	5.1									
4.0	8.2	7.0	5.8	5.1								
5.5	14.4	7.8	6.5	5.9								
7.5	16.0	8.2	7.2	6.5	5.3							
11	18.2	14.7	8.2	7.4	6.2							
15	19.0	16.3	13.4	8.2	6.8	5.4						
18	33.5	17.3	14.4	12.9	7.2	5.8						
22	35.4	18.6	15.4	13.9	7.8	6.2	4.9					
30	38.5	19.0	17.0	15.5	12.5	6.9	5.7					
37	41.6	34.3	18.4	16.6	13.7	7.4	6.1	4.4				
45	45.0	36.2	19.0	17.7	14.7	7.9	6.6	4.7				
55	45.0	38.2	32.9	19.0	15.8	12.2	7.0	5.3				
75	76.5	43.0	35.8	33.1	17.4	14.0	7.8	6.0	4.3			
90	80.5	45.0	37.6	34.8	18.7	14.9	11.7	6.4	4.6			
110	85.2	45.0	40.1	36.7	31.8	16.0	13.1	6.8	5.1			
132	89.5	74.7	43.3	38.6	33.2	16.9	14.0	7.2	5.6	4.3	370	
160	95.6	80.0	45.0	41.5	35.0	18.1	15.0	10.7	6.0	4.7		
200	105.5	84.5	71.5	45.0	37.1	31.1	16.2	11.8	6.5	5.2		
250	110.0	89.7	76.9	45.0	39.7	33.0	17.4	13.2		5.8		
315		97.5	82.4	76.5	43.8	35.1	30.2	14.5			490	
350		102.1	84.6	78.4	45.0	36.1	31.2	15.0				
400		108.9	87.6	81.2	45.0	37.4	32.3				655	
500			94.1	86.1	73.3	40.2	34.2					
600			101.4	90.6	78.1	43.5	35.9					
750			110.0	98.5	82.9	66.9	38.2					
900				107.2	86.8	72.7					887	
1100					92.1	77.1						
1300					98.2	80.4						
1600						84.9						

Ordering example type FNO from page 13/32:

Motor 110 kW, $P_{\text{eff}} = 90$ kW, $n_1 = 1470$ rpm, maximum output torque $T_{\max} = 1.3 \times T_{\text{eff}}$

Selection:

FLUDEX FNO coupling size 425,
 Hub carrier: Standard hub bore $\varnothing D1 = 75H7$ mm with keyway to
 DIN 6885/1 and retaining screw,
 seal set Viton.

Specification of oil filling quantity: 12.4 l (see under oil filling quantities for the FN series in this catalog section).

Product code:

- With 110 °C fuse:
2LC0901-0GA90-1AA0-Z
L1H+Y90+F05
 plain text to Y90: **12.4 l**
- With 140 °C fuse:
2LC0901-0GA90-1AA0-Z
L1H+Y90+F07
 plain text to Y90: **12.4 l**
- With 160 °C fuse:
2LC0901-0GA90-1AA0-Z
L1H+Y90+F08
 plain text to Y90: **12.4 l**

Ordering example type FND from page 13/34:

Motor 132 kW, $P_{\text{eff}} = 110$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FND coupling size 490,
 Hub carrier: Long hub bore $\varnothing D1 = 80H7$ mm with keyway to
 DIN 6885/1 and set screw,
 Part 11: Bore $\varnothing D1 = 80H7$ mm with keyway to DIN 6885/1 and
 set screw,
 with electronic or mechanical operation monitoring, seal set
 Perbunan.
 Delivery without oil filling, no oil filling quantity specification.

Product code:

- With 110 °C thermal switch:
2LC0901-1GC99-2AA0-Z
L1J+M1J+F03
- With 125 °C EOC transmitter:
2LC0901-1GC99-2AA0-Z
L1J+M1J+F04

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Oil filling quantities for FN series

P_{eff} kW	Speed in rpm										Size	
	600	740	890	980	1180	1470	1770	2300	2950	3550		
3.0	9.7											
4.0	10.7	8.6										
5.5	12.0	9.7										
7.5	12.5	10.7	8.8	7.7								
11	22.6	12.2	10.2	9.2								
15	25.2	12.5	11.2	10.2	8.3							
18	26.6	21.4	12.0	10.8	8.9							
22	28.6	23.1	12.5	11.6	9.6							
30	46.3	25.7	21.1	12.5	10.7	8.5						
37	48.6	27.5	22.9	20.5	11.4	9.2	7.1					
45	51.5	29.0	24.5	22.0	12.3	9.8	7.8					
55	54.0	29.0	26.1	23.7	18.7	10.5	8.6					
75	60.0	49.5	29.0	26.3	21.7	11.6	9.7	6.9				
90	65.0	52.0	29.0	27.9	23.2	12.4	10.3	7.4				
110	69.0	55.0	47.5	29.0	24.9	19.0	11.0	8.3				
132		58.5	50.0	46.4	26.3	20.9	11.7	8.9	6.6			425
160		63.5	52.5	48.5	28.1	22.5	17.4	9.6	6.9			
180		67.5	54.0	50.0	29.0	23.4	18.4	10.0	7.2			
200		69.0	55.5	51.5	44.4	24.3	19.5	10.3	7.6			
250			60.5	54.5	47.0	26.2	21.6	16.0	8.6			
315			67.5	59.0	50.0	28.3	23.5	16.7	9.3			
350				62.0	51.5	43.1	24.4	17.4				565
400				66.0	53.5	44.9	25.5	18.5				
500					57.0	47.5	40.7	20.8				
600					61.0	50.0	42.9	22.3				
750						53.0	45.9					755
900						55.5	48.0					
1100							50.5					
1200							53.0					

Ordering example type FNDS SB from page 13/37:

Motor 37 kW, $P_{\text{eff}} = 30$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FNDS SB coupling size 370,
Hub carrier: Standard hub bore $\varnothing D1 = 55H7$ mm with keyway to DIN 6885/1 and retaining screw,
Part 32: Bore $\varnothing D2 = 75H7$ mm with keyway to DIN 6885/1 and retaining screw,
with preservation suitable for indoor storage.
Delivery without oil filling, no oil filling quantity specification.

Product code:

- With standard preservation:
2LC0900-8GE99-1CA0
L1D+M1H
- With preservation for 6 months:
2LC0900-8GE99-1CA0-Z
L1D+M1H+B31
- With preservation for 24 months:
2LC0900-8GE99-1CA0-Z
L1D+M1H+B28
- With preservation for 36 months:
2LC0900-8GE99-1CA0-Z
L1D+M1H+B34

Ordering example type FNDS HB from page 13/38:

Motor 200 kW, $P_{\text{eff}} = 160$ kW, $n_1 = 1470$ rpm

Selection:

FLUDEX FNDS HB coupling size 490,
Hub carrier: Long hub bore $\varnothing D1 = 110H7$ mm with keyway to DIN 6885/1 and set screw,
Part 11: Bore $\varnothing D2 = 80H7$ mm with keyway to DIN 6885/1 and set screw,
Fitting position: Horizontal/vertical motor underneath (MU).
Delivery without oil filling, no oil filling quantity specification.

Product code:

- In horizontal version:
2LC0901-1GF99-2AA0
L1Q+M1J
- In vertical version MU:
2LC0901-1GF99-2AA0-Z
L1Q+M1J+F14

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Spare parts

Selection and ordering data

Apply to standard catalog couplings

Flexible elements for N-EUPEX add-on coupling

Series	FLUDEX size	Type	N-EUPEX size	Number flexibles per set	Product code for one set flexibles
FA	222	FAK ¹⁾ ; FAKB ¹⁾	95	6	FFA:000001194870
		Other types	110	6	FFA:000001194871
	297	FAK ¹⁾ ; FAKB ¹⁾	125	6	FFA:000001194872
		FAK ²⁾ ; FAKB ²⁾	125	6	FFA:000001194873
		Other types	125	6	FFA:000001194873
	342	All types	140	6	FFA:000001194874
	395	FAD ¹⁾ ; FAE ¹⁾ ; FADB ¹⁾	225	8	FFA:000001194875
		FAD ²⁾ ; FAE ²⁾ ; FADB ²⁾	225	8	FFA:000001194876
		Other types	225	8	FFA:000001194876
	450	FAD ¹⁾ ; FAE ¹⁾ ; FADB ¹⁾	250	8	FFA:000001194877
		FAD ²⁾ ; FAE ²⁾ ; FADB ²⁾	250	8	FFA:000001194878
		Other types	250	8	FFA:000001194878
	516	FAD ¹⁾ ; FADB ¹⁾	315	9	FFA:000001194879
		FAD ²⁾ ; FADB ²⁾	315	9	FFA:000001194880
		Other types	315	9	FFA:000001194880
590	All types	315	9	FFA:000001194879	
FG/FV	370	All types	180	8	FFA:000001194881
	425		225	8	FFA:000001194876
	490		250	8	FFA:000001194878
	565		280	8	FFA:000001194882
	655		350	9	FFA:000001194883
	755		400	10	FFA:000001194884
	887		440	10	FFA:000001194885
FN	370	FNDB ØDBT = 400	200	8	FFA:000001194886
		All types	180	8	FFA:000001194881
	425	All types	200	8	FFA:000001194886
	490	FNDB ØDBT = 500	250	8	FFA:000001194878
		All types	225	8	FFA:000001194876
	565	All types	250	8	FFA:000001194878
	655		315	9	FFA:000001194879
	755		350	9	FFA:000001194883
	887		440	10	FFA:000001194885

¹⁾ For couplings up to and including year of construction 2003.

²⁾ For couplings from year of construction 2004.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Spare parts

Thermal equipment

FLUDEX size	Thread	Part no.	Fuse element	Response temperature	Product code (FFA) for one unit
222	M10	103	Fusible safety plug ¹⁾	110 °C	FFA:00000805600
		203		140 °C	FFA:00000652653
				160 °C	FFA:00000652654
	M10	153	Oil filler plug ¹⁾	–	FFA:00000326951
297	M10	153	Oil filler plug ¹⁾	–	FFA:00000326951
297 - 887	M18 x 1.5	103	Fusible safety plug	110 °C	FFA:00001250338
		203		140 °C	FFA:00001250339
				160 °C	FFA:00001250380
	M18 x 1.5	110	Thermal switch	110 °C	FFA:00001361795
		210		140 °C	FFA:00001361796
	M18 x 1.5	153	Oil filler plug (except size 887)	–	FFA:00001337653
	163	Screw plug			
	–	301	Cut-out device	–	FFA:00000652020
887	M30 x 1.5	153	Oil filling plug (up to and including year of construction 2007) ²⁾	–	FFA:00000326906
			Oil filler plug (from year of construction 2008)	–	FFA:00001349554

Sealing and rolling bearing sets for the FA series (except type FAR)

FLUDEX size	Seal set material	Product code (FFA) for one seal set	Product code (FFA) for one rolling bearing set
222 (Up to and including year of construction 2000)	NBR	FFA:00001194900	FFA:00001194800
222 (From year of construction 2001)	NBR	FFA:00001194901	FFA:00001194801
	FPM	FFA:00001194902	
297 (Up to and including year of construction 2000)	NBR	FFA:00001194903	FFA:00001194802
	FPM	FFA:00001194904	
297 (From year of construction 2001)	NBR	FFA:00001194905	FFA:00001194803
	FPM	FFA:00001194906	
342	NBR	FFA:00001194907	FFA:00001194804
	FPM	FFA:00001194908	
395	NBR	FFA:00001194909	FFA:00001194805
	FPM	FFA:00001194910	
450	NBR	FFA:00001194911	FFA:00001194806
	FPM	FFA:00001194912	
516	NBR	FFA:00001194913	FFA:00001194807
	FPM	FFA:00001194914	
590	NBR	FFA:00001194915	FFA:00001194808
	FPM	FFA:00001194916	

¹⁾ A seal (product code: **FFA:00000342251**) is also needed.

²⁾ A seal (product code: **FFA:00000342253**) is also needed.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Spare parts

Seal and rolling bearing sets for type FAR¹⁾

FLUDEX size	Variant	Up to and including year of construction	From year of construction	Seal set material	Product code (FFA) for one seal set	Product code (FFA) for one rolling bearing set
222	2 x SPZ 100	2000	2001	NBR	FFA:000001194917	FFA:000001194809
				NBR	FFA:000001194918	FFA:000001194810
				FPM	FFA:000001194919	
	3 x SPZ 160		2001	NBR	FFA:000001194920	FFA:000001194811
				FPM	FFA:000001194921	
297	5 x SPZ 140	2000		NBR	FFA:000001194922	FFA:000001194812
				FPM	FFA:000001194923	
	7 x SPZ 140	2000		NBR	FFA:000001194924	FFA:000001194813
				FPM	FFA:000001194925	
5 x SPZ 150 4 x SPA 190 5 x SPA 224			2001	NBR	FFA:000001194926	FFA:000001194814
				FPM	FFA:000001194927	
				NBR	FFA:000001194928	
342	5 x SPA 180			FPM	FFA:000001194929	
				NBR	FFA:000001194930	FFA:000001194815
				FPM	FFA:000001194931	
	7 x SPA 180	2000		NBR	FFA:000001194932	FFA:000001194816
				FPM	FFA:000001194933	
				NBR	FFA:000001194934	FFA:000001194817
395	5 x SPB 224			FPM	FFA:000001194935	
				NBR	FFA:000001194936	FFA:000001194818
	7 x SPB 224	2000		FPM	FFA:000001194937	
				NBR	FFA:000001194938	FFA:000001194819
450	8 x SPB 250	2000 ($\text{ØD1} \leq 75$)		NBR	FFA:000001194939	
				FPM	FFA:000001194940	FFA:000001194820
				NBR	FFA:000001194941	
				FPM	FFA:000001194942	FFA:000001194821
516	10 x SPB 250	2000		NBR	FFA:000001194943	
				FPM	FFA:000001194944	FFA:000001194822
				NBR	FFA:000001194945	
				FPM	FFA:000001194946	FFA:000001194823
				NBR	FFA:000001194947	
590	10 x SPB 315	2000		NBR	FFA:000001194948	FFA:000001194824
				FPM	FFA:000001194949	
				NBR	FFA:000001194950	FFA:000001194825
				FPM	FFA:000001194951	
590	12 x SPB 315	2000		NBR	FFA:000001194952	FFA:000001194826
				FPM	FFA:000001194953	
				NBR	FFA:000001194954	FFA:000001194827
590	12 x SPC 315	2000	2001	FPM	FFA:000001194955	
				NBR	FFA:000001194956	FFA:000001194828
				FPM	FFA:000001194957	

¹⁾ Spare parts valid only for specified pulleys. When enquiring for other numbers of grooves, please quote original delivery number.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Spare parts

Seal and rolling bearing sets for the FG/FV/FN series

FLUDEX size	Series	Additional bore specifications	Seal set material	Product code (FFA) for one seal set	Product code (FFA) for one rolling bearing set	
370	FG		NBR	FFA:000001194958	Up to and including year of construction 2000: FFA:000001194850	
			FPM	FFA:000001194959		
	FV/FN		NBR	FFA:000001194960	From year of construction 2001: FFA:000001194851	
			FPM	FFA:000001194961		
425	FG		NBR	FFA:000001194962	FFA:000001194852	
			FPM	FFA:000001194963		
	FV/FN		NBR	FFA:000001194964		
			FPM	FFA:000001194965		
490	FG		NBR	FFA:000001194966	FFA:000001194853	
			FPM	FFA:000001194967		
	FV/FN		NBR	FFA:000001194968		
			FPM	FFA:000001194969		
565	FG		NBR	FFA:000001194970	FFA:000001194854	
			FPM	FFA:000001194971		
	FV/FN		NBR	FFA:000001194972		
			FPM	FFA:000001194973		
655	FG	$\text{ØD1} \leq 100$	NBR	FFA:000001194974	FFA:000001194855	
			FPM	FFA:000001194975		
			$\text{ØD1} > 100$	NBR	FFA:000001194976	FFA:000001194856
				FPM	FFA:000001194977	
	FV	$\text{ØD1} \leq 100$	NBR	FFA:000001194978	FFA:000001194855	
			FPM	FFA:000001194979		
		$\text{ØD1} > 100$	NBR	FFA:000001194980	FFA:000001194856	
			FPM	FFA:000001194981		
FN			NBR	FFA:000001194978	FFA:000001194855	
			FPM	FFA:000001194979		
755	FG	$\text{ØD1} \leq 110$	NBR	FFA:000001194982	FFA:000001194857	
			FPM	FFA:000001194983		
			$\text{ØD1} > 110$	NBR	FFA:000001194984	FFA:000001194858
				FPM	FFA:000001194985	
	FV	$\text{ØD1} \leq 110$	NBR	FFA:000001194986	FFA:000001194857	
			FPM	FFA:000001194987		
		$\text{ØD1} > 110$	NBR	FFA:000001194988	FFA:000001194858	
			FPM	FFA:000001194989		
FN			NBR	FFA:000001194990	FFA:000001194859	
			FPM	FFA:000001194991		
887	FG/FV/FN		FPM	FFA:000001194992	FFA:000001194860	

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Mass moments of inertia
and maximum oil filling quantities

Technical data

FA series (for type FAR, see separate table)

FLUDEX size	Series	Types	FAD	FAE	FAM	FADB	FADS SB	FADS HB	Oil filling quantity
	FA	FAO							max.
	J_I kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	l
222	0.014	0.056	0.061	0.061	0.060	0.084	0.287	0.109	1.65
297	0.040	0.173	0.193	0.193	0.193	0.226	0.673	0.246	4.2
342	0.092	0.314	0.356	0.352	0.353	0.469	1.002	0.420	6.6
395	0.203	0.660	0.745	0.730	–	1.030	1.814	1.150	9.5
450	0.404	1.087	1.217	1.217	–	1.497	3.611	1.818	13.4
516	0.896	2.109	2.439	–	–	3.359	5.969	3.238	22.7
590	1.295	3.455	3.785	–	–	6.605	7.315	4.584	33

Type FAR

FLUDEX size	J_I	J_A	Oil filling quantity		
	kgm ²	kgm ²	max. l		
222	0.014	2 x SPZ 100 0.062	3 x SPZ 160 0.071	1.65	
297	0.107	5 x SPZ 150 0.202	4 x SPA 190 0.235	5 x SPA 224 0.273	4.2
342	0.095	5 x SPA 180 0.386		6.6	
395	5 x SPB = 0.214 7 x SPB = 0.210	5 x SPB 224 0.840	7 x SPB 236 0.960	7 x SPB 280 1.144	9.5
450	0.426	8 x SPB 250 1.467		13.4	
516	0.946	10 x SPB 315 3.209		22.7	
590	1.375	12 x SPC 315 4.955		33	

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Mass moments of inertia and maximum oil filling quantities

FG/FV series

FLUDEX size	Series		Types								Oil filling quantity	
	FG	FV	FGO	FVO	FGD	FVD	FGE	FVE	FGM	FVM	FG	FV
	J_I kgm ²	J_I kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	J_A kgm ²	max. l	max. l
370	0.191	0.191	0.519	0.551	0.571	0.603	0.571	0.603	0.571	0.603	7.2	8
425	0.342	0.342	0.819	0.876	0.989	1.046	0.974	1.031	0.963	1.020	11	12
490	0.723	0.723	1.992	2.110	2.312	2.430	2.272	2.390	2.264	2.382	17	18.5
565	1.269	1.269	3.216	3.441	3.696	3.921	3.636	3.861	3.616	3.841	25.5	28
655	2.567	2.567	7.287	7.757	8.687	9.157	–	–	–	–	40	44
755	4.856	4.856	12.575	13.291	14.775	15.491	–	–	–	–	61	67
887	11.817	11.817	26.832	28.212	30.102	31.482	–	–	–	–	98	107

FN series (for type FNDB, see separate table)

FLUDEX size	Hub carrier	Series	Types						Weights		Oil filling quantity	
		FN	FNO	FNA	FND	FNDS SB	FNDS HB	Y	F _Y	max. l		
	Hub	J_A kgm ²	J_I kgm ²	J_I kgm ²	J_I kgm ²	J_I kgm ²	J_I kgm ²	mm	N			
370	Standard	0.657	0.237	0.281	0.320	1.180	0.386	197	665	8.2		
	Long	0.647						227				
425	Standard	1.107	0.343	0.470	0.491	1.841	0.659	224	940	12.5		
	Long	1.102						254				
490	Standard	2.480	0.737	0.954	0.999	3.009	1.285	235	1420	19		
	Long	2.474						265				
565	Standard	4.175	1.364	1.715	1.835	5.075	2.081	278	1900	29		
	Long	4.251						318				
655	Standard	9.319	2.567	3.587	3.777	6.777	4.701	330	3000	45		
	Long	9.523						370				
755	Standard	15.616	4.910	6.878	7.198	12.078	9.689	352	4200	69		
	Long	15.950						392				
887	Standard	33.662	11.832	15.132	16.632	24.030	20.428	406	6900	110		
	Long	34.462						456				

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Mass moments of inertia
and maximum oil filling quantities

Type FNDB

FLUDEX size	Hub carrier	Brake drum	J_A	J_I	Weights Y	F_Y	Oil filling quantity max.
			kgm ²	kgm ²	mm	N	l
370	Standard	ØDBT x BBT	0.657	0.640	197	665	8.2
		Ø315 x 118					
	Ø400 x 150	0.647	0.640	227			
Long	Ø315 x 118						
425	Standard	Ø315 x 118	1.107	0.811	224	940	12.5
		Ø400 x 150					
	Long	Ø315 x 118	1.102	0.811	254		
Ø400 x 150							
490	Standard	Ø400 x 150	2.480	1.994	235	1420	19
		Ø500 x 190					
	Long	Ø400 x 150	2.474	1.994	265		
Ø500 x 190							
565	Standard	Ø400 x 150	4.175	2.835	278	1900	29
		Ø500 x 190					
	Long	Ø400 x 150	4.251	2.835	318		
Ø500 x 190							
655	Standard	Ø500 x 190	9.319	6.677	330	3000	45
		Ø630 x 236					
	Long	Ø500 x 190	9.523	6.677	370		
Ø630 x 236							
755	Standard	Ø630 x 236	15.616	15.178	352	4200	69
	Long		15.950				
887	Standard	Ø710 x 265	33.662	30.832	406	6900	110
	Long		34.462				

J_I Mass moment of inertia of the inner rotor (hollow shaft (106)/shaft (106) + blade wheel (105) + any parts of the add-on coupling connected to them) in kgm²

J_A Mass moment of inertia of the outer housing (shell (101) + cover (102) + any hub carrier (120) or add-on coupling) in kgm²

Mass moments of inertia J (including the power-transmitting oil filling components) apply to maximum bores

Y Centroidal distance of the drive-side coupling masses, measured from the hub end face of the hub carrier.

F_Y Effective weight in mass center

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Special types

Selection and ordering data

Selection of additional ordering data

Special types	Additional ordering data -Z with order code and, if necessary with plain text specification
Oil filling	
Without oil filling and without oil filling quantity specification stamped on the coupling	Without addition – standard
With oil filling (specification of oil filling quantity "+Y90" required)	F16
With specification of oil filling quantity	Y90 • and orderer specification
Thermal equipment	
Standard type (fuse 140 °C, seal set Perbunan)	Without addition – standard
Fuse 110 °C, seal set Perbunan	F01
Explosion protection in conformity to 94/9EG ATEX100A, seal set Perbunan	F02
Thermal switch 110 °C, fuse 140 °C, seal set Perbunan (option not available with size 222)	F03
EOC transmitter 125 °C, fuse 160 °C, seal set Perbunan (option not available with size 222)	F04
Explosion protection in conformity to 94/9EG ATEX100A, seal set Viton	F06
Fuse 110 °C, seal set Viton	F05
Fuse 140 °C, seal set Viton	F07
Fuse 160 °C, seal set Viton	F08
Thermal switch 110 °C, fuse 140 °C, seal set Viton (option not available with size 222)	F10
Thermal switch 140 °C, fuse 160 °C, seal set Viton (option not available with size 222)	F11
EOC transmitter 125 °C, fuse 160 °C, seal set Viton (option not available with size 222)	F12
For preservation, see catalog section 3	
Drive	
Standard drive side	Without addition – standard
FA series with housing drive	F23
FG/FV/FN series with impeller drive	F24
Position	
Horizontal version	Without addition – standard
Vertical version, motor overhead (option not permitted in FV and FN series)	F13
Vertical version, motor underneath	F14

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Special types

Special types	Additional ordering data -Z with order code and, if necessary with plain text specification
Shaft and bore	
Shaft insertion depth to DIN 748/1	Without addition – standard
Shaft insertion depth 1 deviating from DIN 748/1	Y28 and plain text specification for L1
Shaft insertion depth 2 deviating from DIN 748/1	Y29 and plain text specification for L2
Bore tolerance ISO H7	Without addition – standard ¹⁾
Bore tolerance ISO K7 for hollow shafts with imperial bores	L13/M13 ¹⁾
Bore tolerance ISO M7 for hub parts with imperial bores	L14/M14 ¹⁾
Keyway to DIN 6885/1 or DIN 6885/3 keyway width JS9	Without addition – standard
Keyway to ASME B17.1, if necessary with reduced keyway depth	L43/M43 ¹⁾
2 parallel keyways set 180° apart	L46/M46 ¹⁾
Half parallel key balancing (before keyseating)	Without addition – standard
Full parallel key balancing (after keyseating)	L52/M52 ¹⁾
Internal add-on parts	
No additional internal add-on parts	Without addition – standard
With baffle plate (only for FA series)	F17
With damming ring	F18
With damming delay chamber (only for FV and FN series)	F19
For documentation, test certificates and acceptances, see catalog section 3²⁾	
No test certificate, acceptance certificates	Without addition – standard
Other additions	
Micro-balancing, high speed	W03
With special fixed bearings	F20
With additional dust seal	F21
Special data	Y99 and plain text specification

- This order code designates only the type price – plain text required additionally.

¹⁾ Order code “**L..**” for hollow shaft side and “**M..**” for opposite side.

²⁾ Surface crack and ultrasound testing are not possible on FLUDEX couplings.

FLENDER Standard Couplings

Fluid Couplings - FLUDEX Series

Technical specifications for the selection of type and size for FLUDEX fluid couplings

Please complete as far as possible and return to your Siemens Sales Office.

1. Intended use of coupling

- As starting aid For overload protection For torsional vibration isolation

2. Data for prime mover

- 2.1. Electric motor characteristic enclosed
 Power rating $P_1 = \dots\dots\dots$ kW at speed $n_1 = \dots\dots\dots$ rpm
 Starting: Direct Star delta Other: $\dots\dots\dots$
 Motor shaft: $\varnothing \dots\dots\dots$ x length $\dots\dots\dots$ mm
- 2.2. Internal combustion engine Number of cylinders: $\dots\dots\dots$
 Planned max. power rating: $\dots\dots\dots$ kW at $\dots\dots\dots$ rpm
 Operating range min. power rating: $\dots\dots\dots$ kW at $\dots\dots\dots$ rpm
 Attachment via shaft $\varnothing \dots\dots\dots$ x length $\dots\dots\dots$ mm Attachment to flywheel SAE $\dots\dots\dots$ "
 Motor rigidly Motor flexibly installed on foundation/base frame

3. Data for driven machine

- 3.1. Type of driven machine: $\dots\dots\dots$
 3.2. Required power rating P_2 : $\dots\dots\dots$ kW at $n_2 = \dots\dots\dots$ rpm
 3.3. Mass moment of inertia $J = \dots\dots\dots$ kgm² (based on n_2)
 3.4. Operational cycle: uniform operation non uniform operation
 3.4.1. Starting frequency min.: 1 x / day 1 x / week 1 x / month Continuous operation (min. 2 months without stopping)
 Starting frequency max.: < 3 x in succession Number in succession: $\dots\dots\dots$
 < 5 x / hour Number per hour: $\dots\dots\dots$
 3.4.2. Duty cycle per operational cycle: 60 - 100 % DC = $\dots\dots\dots$ %
 3.4.3. Dimensions of the gear unit/machine shaft on the coupling side $\varnothing \dots\dots\dots$ x length $\dots\dots\dots$ mm

4. Ambient conditions

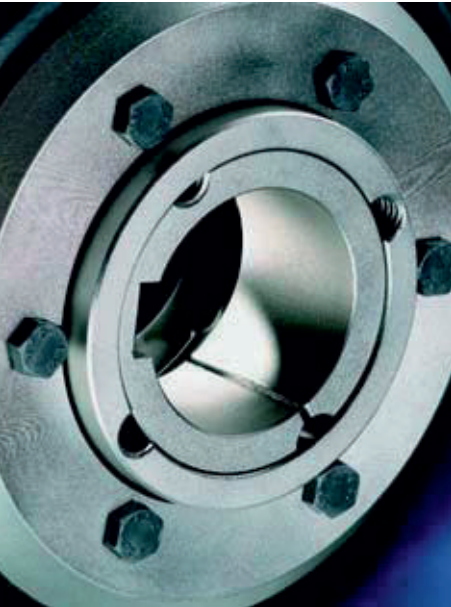
- 4.1. Place of installation: < 1000 m above sea-level $\dots\dots\dots$ m above sea-level
 out of doors in narrow space other: $\dots\dots\dots$
- 4.2. Temperature of the ambient air (cooling air): min $\dots\dots\dots$ °C max $\dots\dots\dots$ °C
- 4.3. Fitting into guard bell housing
 Holes: with large (well ventilated) with small (less well ventilated)
 without holes: with forced ventilation without forced ventilation
- 4.4. Environment: normally dusty extremely dusty abrasively dusty
 aggressive atmosphere: $\dots\dots\dots$
- 4.5. Use in potentially explosive environment
 in conformity with ATEX 95: || 2 G c T3 D160 °C || B -30 °C = $T_a = +50$ °C / | M2
 other class: $\dots\dots\dots$

5. Arrangement of coupling

- 5.1. horizontal at an angle (max 20°) vertical: motor overhead vertical: motor underneath
- 5.2 between: and:
 Motor | Driven machine
 Gear unit ($n_1 = \dots\dots\dots$ rpm) | Gear unit
 Transmission/belt drives | Transmission/belt drives

13

Taper Clamping Bushes



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14/4 **Bores in metric sizes**

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14/6 **Bores in imperial sizes (inches)**

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14/7 Available imperial bore diameters (inches) and order codes

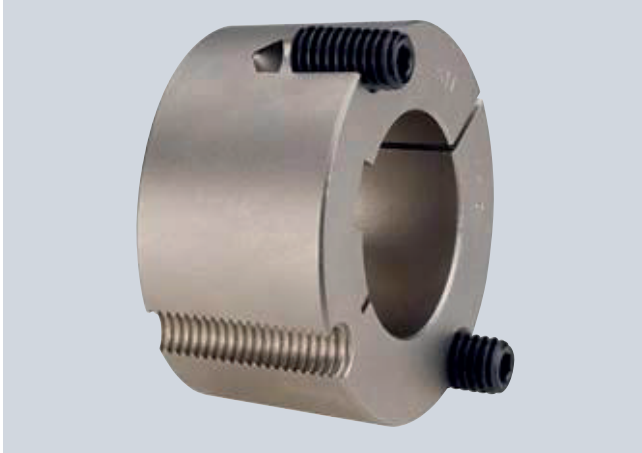
14/7 Shallow keyway dimensions

FLENDER Standard Couplings

Taper Clamping Bushes

General information

Overview



Taper clamping bushes are machine elements which connect a machine shaft with a hub part positively and non-positively. The machine shaft must be designed as a cylinder with a keyway. The hub part must have a conical mounting hole with special threads and forcing-off holes.

Each Taper clamping bush size is available with a large number of metric or imperial holes in inches and can therefore connect the respective hub part to shafts of different diameters.

Benefits

Hub parts must frequently be provided with a finished bore to receive the machine shaft. In the case of very economically priced hub parts, this remachining is frequently costlier than the component itself. With the Taper clamping bush, a very simple and economically priced shaft/hub connection which can be used without remachining is achieved.

Although the dimensions of the Taper clamping bushes are not standardized, standard dimensions have become accepted, so that replacement Taper clamping bushes are nearly always available locally. Since in Europe and North America unfortunately different fixing bolts (UNC and BSW threads) are used, these Taper clamping bushes are not interchangeable.

Thanks to standard dimensioning, Taper clamping bushes can be used in different hub parts, thus facilitating storage. Taper clamping bushes are also standard stock at many specialist dealers and so are readily available.

Application

Taper clamping bushes are used in BIPEX, ELPEX-B and ELPEX-S coupling types. Taper clamping bushes are also used in pulleys, sprockets and, with the aid of a welded-on hub, in other components.

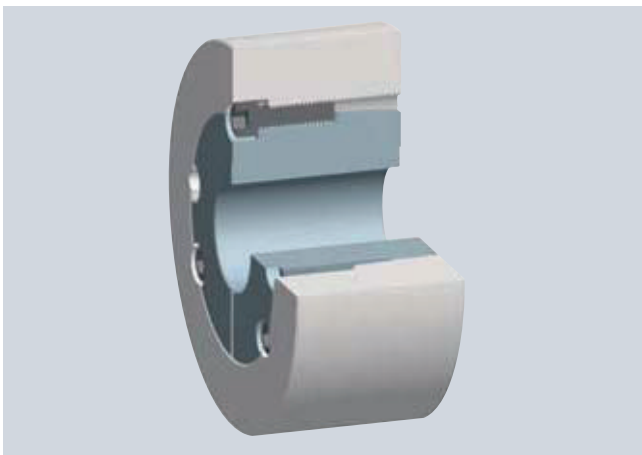
Design

Taper clamping bushes are designed with a cylindrical bore and a parallel keyway. A Taper clamping bush has a tapered outside diameter and fits into the taper bore of the hub part. The Taper clamping bush has a slot running along its length. To fit, half blind holes are drilled in the Taper clamping bush, while on the opposite side half thread turns are cut in the hub part. With the aid of the fitting bolts, which are supported on the base of the blind holes, the Taper clamping bush is pushed into the taper bore. The Taper clamping bush is compressed, thus generating a parallel key and clamp connection between shaft and hub part.

To dismantle, the fitting bolts are removed and screwed into the forcing-off threads. The forcing-off threads are cut half in the Taper clamping bush and half in a blind hole in the hub part. When the forcing-off bolts are fitted, the Taper clamping bush is forced out of the taper hub bore. The connection is broken.

The Taper clamping bush and the fitting and dismantling bolts are always screwed in from the larger outer diameter side of the taper.

The torque is transmitted via the clamping connection and the parallel key. No axial fixture is required with normal axial forces, as the clamping connection is sufficient.



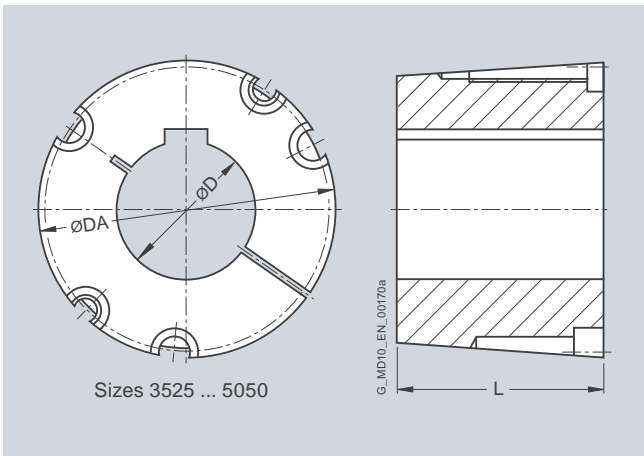
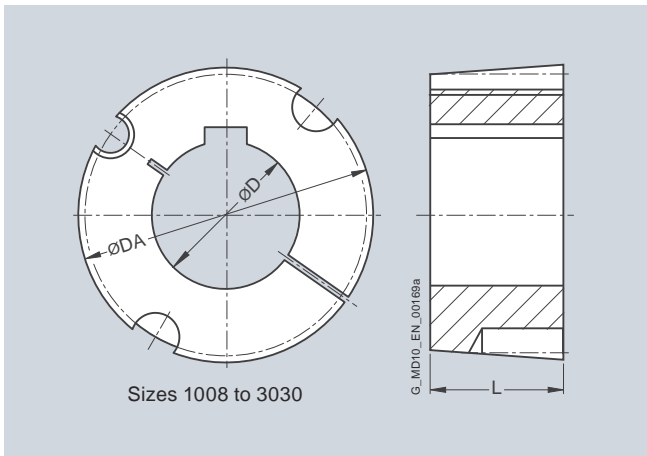
Materials

Grey cast iron EN-GJL-220 to 250
alternatively: Steel in quality $R_e > 300 \text{ N/mm}^2$

FLENDER Standard Couplings Taper Clamping Bushes

Bores in metric sizes

Selection and ordering data



Fitting with 2 set screws

Fitting with 3 bolts with hexagon socket

Size	Dimensions in mm			L	Fixing bolts		Offset screwdriver DIN ISO 2936 (DIN 911)		Product code with order codes for bore diameter and tolerances (product code without -Z) - selection in catalog part 3	Weight	
	D	DA			DS	LS	Spanner width S	Space require- ment S+l		min. bore	max. bore
	min.	max.			BSW	Inch	mm	mm		m	m
1008	10	25	35	22	1/4	1/2	3	23	2LC0020-0AA90-0AA0	0.12	0.06
1108	10	28	38	22	1/4	1/2	3	23	2LC0020-1AA90-0AA0	0.15	0.07
1210	11	32	47	25	3/8	5/8	5	33	2LC0020-2AA90-0AA0	0.27	0.15
1215	11	32	47	38	3/8	5/8	5	33	2LC0020-3AA90-0AA0	0.39	0.20
1610	14	42	57	25	3/8	5/8	5	33	2LC0020-5AA90-0AA0	0.38	0.18
1615	14	42	57	38	3/8	5/8	5	33	2LC0020-6AA90-0AA0	0.56	0.25
2012	14	50	70	32	7/16	7/8	5	33	2LC0020-7AA90-0AA0	0.75	0.36
2517	16	60	85	45	1/2	1	6	38	2LC0021-0AA90-0AA0	1.58	0.78
3020	25	75	108	51	5/8	1 1/4	8	44	2LC0021-2AA90-0AA0	2.79	1.44
3030	35	75	108	76	5/8	1 1/4	8	44	2LC0021-3AA90-0AA0	3.78	2.00
3525	35	90	127	65	1/2	1 1/2	10	50	2LC0021-4AA90-0AA0	4.77	2.07
3535	35	90	127	89	1/2	1 1/2	10	50	2LC0021-5AA90-0AA0	6.34	3.08
4030	40	100	146	77	5/8	1 3/4	12	57	2LC0021-6AA90-0AA0	7.61	4.80
4040	40	100	146	102	5/8	1 3/4	12	57	2LC0021-7AA90-0AA0	9.62	5.06
4535	55	125	162	89	3/4	2	14	70	2LC0021-8AA90-0AA0	10.06	4.09
4545	55	110	162	114	3/4	2	14	70	2LC0022-0AA90-0AA0	12.56	7.06
5040	70	125	178	102	7/8	2 1/4	14	70	2LC0022-1AA90-0AA0	11.42	4.92
5050	70	125	178	127	7/8	2 1/4	14	70	2LC0022-2AA90-0AA0	15.99	8.75

Ordering example:
Taper clamping bush 3020 with bore D1 = 55 mm
Product code:
2LC0021-2AA90-0AA0
L1D

Taper clamping bushes must be fitted with a parallel key. The positively operating torque transmission via shaft without keyway is not permitted.

FLENDER Standard Couplings Taper Clamping Bushes

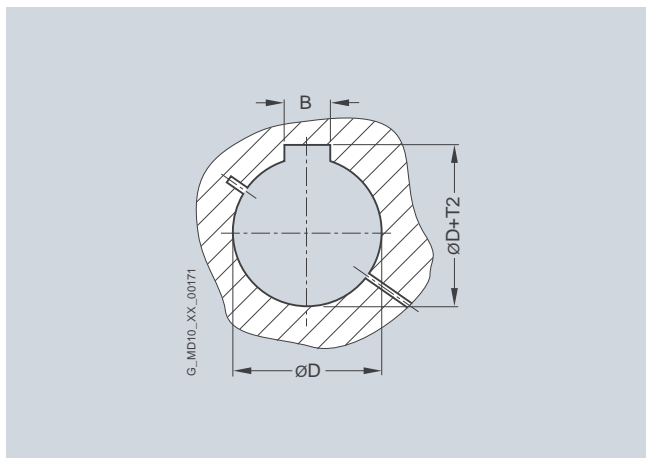
Bores in metric sizes

Available metric bore diameters in mm and order codes

Bore diameter D	Taper clamping bush size															Order code for bore diameter (without -Z)	
	1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545		5040 5050
10																	LOE
11																	LOF
12																	LOG
14																	LOH
16																	LOJ
18																	LOK
19																	LOL
20																	LOM
22																	LON
24	ST-FN																LOP
25	ST-FN																LOQ
28		ST-FN															LOR
30																	LOS
32			ST														LOT
35																	LOU
38																	LOV
40																	LOW
42				ST-FN	ST-FN												LOX
45																	L1A
48																	L1B
50																	L1C
55																	L1D
60																	L1E
65																	L1F
70																	L1G
75																	L1H
80																	L1J
85																	L1K
90																	L1L
95										ST							L1M
100										ST-FN							L1N
105											ST						L1P
110											ST						L1Q
115											ST-FN	ST					L1R
120												ST					L1S
125												ST					L1T

ST = Taper clamping bush in steel
 FN = Taper clamping bush with shallow keyway

Shallow keyway dimensions

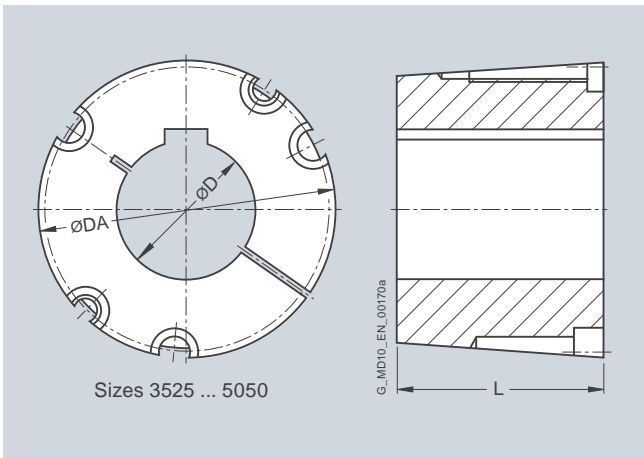
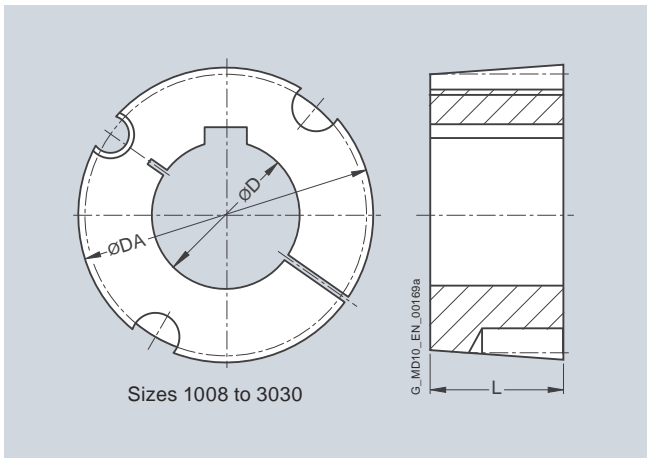


Taper clamping bush		Keyway to DIN 6885	
Size	Diameter D mm	Keyway width B mm	Keyway depth D + T2 mm
1008	24	8	D + 2.0
1008	25	8	D + 1.3
1108	28	8	D + 2.0
1610/15	42	12	D + 2.2
3525	100	28	D + 4.4
4030	115	32	D + 5.4

FLENDER Standard Couplings Taper Clamping Bushes

Bores in imperial sizes (inches)

Selection and ordering data



Fitting with 2 set screws

Fitting with 3 bolts with hexagon socket

Size	Dimensions			L	Fixing bolts		Offset screwdriver DIN ISO 2936 (DIN 911)		Product code	Weight	
	D1	DA	Keyway BS46 -1 min. max.		DS	LS	Spanner width S	Space requirement S+l		min. bore	max. bore
	inch	inch			mm	BSW				Inch	mm
1008	3/8	1	35	22	1/4	1/2	3	23	2LC0020-0AA90-0AA0	0.12	0.06
1108	3/8	1 1/8	38	22	1/4	1/2	3	23	2LC0020-1AA90-0AA0	0.15	0.06
1210	5/8	1 1/4	47	25	3/8	5/8	5	33	2LC0020-2AA90-0AA0	0.25	0.15
1215	5/8	1 1/4	47	38	3/8	5/8	5	33	2LC0020-3AA90-0AA0	0.36	0.21
1610	1/2	1 5/8	57	25	3/8	5/8	5	33	2LC0020-5AA90-0AA0	0.39	0.18
1615	1/2	1 5/8	57	38	3/8	5/8	5	33	2LC0020-6AA90-0AA0	0.57	0.26
2012	5/8	2	70	32	7/16	7/8	5	33	2LC0020-7AA90-0AA0	0.74	0.34
2517	5/8	2 1/2	85	45	1/2	1	6	38	2LC0021-0AA90-0AA0	1.55	0.67
3020	1 1/8	3	108	51	5/8	1 1/4	8	44	2LC0021-2AA90-0AA0	2.74	1.39
3030	1 1/4	3	108	76	5/8	1 1/4	8	44	2LC0021-3AA90-0AA0	3.87	1.93
3525	1 1/2	4	127	65	1/2	1 1/2	10	50	2LC0021-4AA90-0AA0	4.69	1.62
3535	1 1/2	3 1/2	127	89	1/2	1 1/2	10	50	2LC0021-5AA90-0AA0	6.23	3.18
4030	1 3/4	4 1/2	146	77	5/8	1 3/4	12	57	2LC0021-6AA90-0AA0	7.30	3.00
4040	1 3/4	4	146	102	5/8	1 3/4	12	57	2LC0021-7AA90-0AA0	9.41	4.89
4535	2 1/4	5	162	89	3/4	2	14	70	2LC0021-8AA90-0AA0	9.94	3.86
4545	2 1/4	4 1/2	162	114	3/4	2	14	70	2LC0022-0AA90-0AA0	12.4	6.47
5040	2 7/8	5	178	102	7/8	2 1/4	14	70	2LC0022-1AA90-0AA0	12.9	7.07
5050	2 7/8	5	178	127	7/8	2 1/4	14	70	2LC0022-2AA90-0AA0	15.7	8.41

Ordering example:
Taper clamping bush 3020 with bore D1 = 2 in

Product code:
2LC0021-2AA90-0AA0
L6G

FLENDER Standard Couplings Taper Clamping Bushes

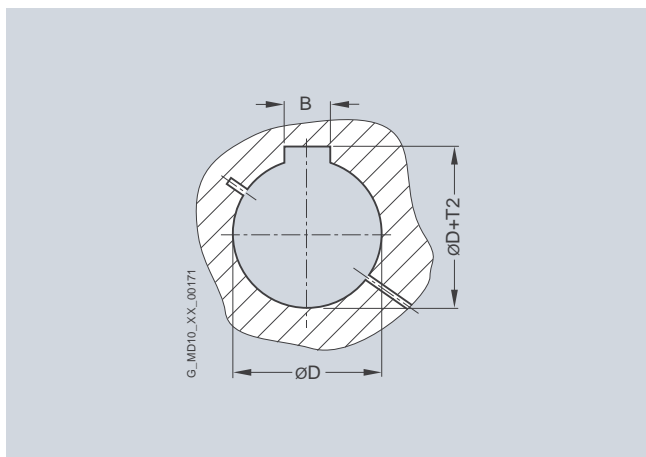
Bores in imperial sizes (inches)

Available imperial bore diameters in inches and order codes

Bore diameter D	Taper clamping bush size																Order code for bore diameter (without -Z)	
	1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545	5040		
0.375																		L5D
0.500																		L5E
0.625																		L5G
0.750																		L5J
0.875																		L5L
1.000	FN																	L5N
1.125		ST-FN																L5Q
1.250																		L5S
1.375																		L5U
1.500																		L5W
1.625					FN													L6A
1.750																		L6C
1.875																		L6E
2.000																		L6G
2.125																		L6J
2.250																		L6L
2.375																		L6N
2.500																		L6Q
2.625																		L6S
2.750																		L6U
2.875																		L6W
3.000																		L7A
3.125																		L7C
3.250																		L7E
3.375																		L7G
3.500																		L7J
3.750										ST-FN								L7N
4.000										ST-FN								L7S
4.250												ST						L7U
4.500												ST-FN						L7X
4.750														ST				L8A
5.000															ST-FN			L8D

ST = Taper clamping bush in steel
FN = Taper clamping bush with shallow keyway

Shallow keyway dimensions



Taper clamping bush		Keyway to BS 46 - 1	
Size	Diameter D mm	Keyway width B mm	Keyway depth D + T2 mm
1008	25.400	6.350	D + 1.321
1108	28.575	7.925	D + 1.626
1615	41.275	11.100	D + 2.616
3525	95.250	25.400	D + 6.223
3525	101.600	25.400	D + 3.937
4030	114.300	31.750	D + 6.477
4535	127.000	31.750	D + 6.553

FLENDER Standard Couplings

Taper Clamping Bushes

Notes



Appendix



15/2	Fits
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15/2	Fitting recommendations
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15/6	Technical Support
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15/6	Repairs and Spare Parts
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15/8	Subject index
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FLENDER Standard Couplings

Appendix

Fits

Overview

Fitting recommendations

Description	Application	Shaft tolerance	Bore tolerance
Sliding fit with parallel key connection not suitable for reversing operation	For steel and cast hubs	j6 h6	H7 J7
Press fit with parallel key connection not suitable for reversing operation	For steel and cast hubs	h6 k6	K7 H7
Interference fit with parallel key connection suitable for reversing operation	For steel and cast hubs	m6 n6 h6	H7 H7 M7
Interference fit with parallel key connection suitable for reversing operation	Only for steel hubs Preferred for ZAPEX and ARPEX coupling series.	h6 k6 m6 n6 p6 s6	P7 M7 K7 J7 H7 F7
Shrink fit connection without parallel key	Only for steel hubs The permitted hub tension must be urgently checked.	u6 v6 x6	H6 H6 H6

For many applications, the fit assignment m6/H7 is especially suitable.

Deviation table to DIN ISO 286 for above-mentioned fits for bore diameters from 10 mm to 250 mm

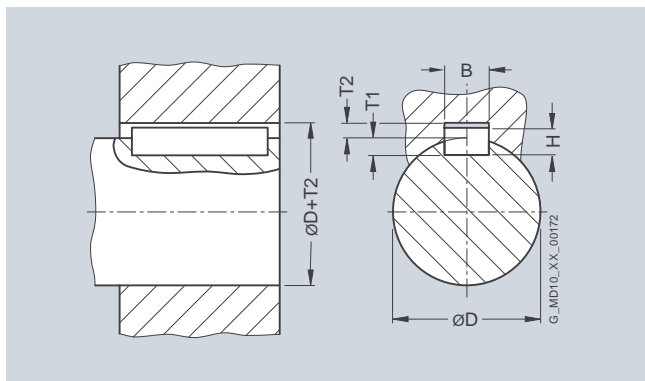
Diameter		Bore						Shaft					
over	to	F7	H7	J7	K7	M7	P7	h6	j6	k6	m6	n6	p6
10 to 18		Deviations in μm											
		+34	+18	+10	+6	0	-11	0	+8	+12	+18	+23	+29
		+16	0	-8	-12	-18	-29	-11	-3	+1	+7	+12	+18
18 to 30		+41	+21	+12	+6	0	-14	0	+9	+15	+21	+28	+35
		+20	0	-9	-15	-21	-35	-13	-4	+2	+8	+15	+22
30 to 50		+50	+25	+14	+7	0	-17	0	+11	+18	+25	+33	+42
		+25	0	-11	-18	-25	-42	-16	-5	+2	+9	+17	+26
50 to 80		+60	+30	+18	+9	0	-21	0	+12	+21	+30	+39	+51
		+30	0	-12	-21	-30	-51	-19	-7	+2	+11	+20	+32
80 to 120		+71	+35	+22	+10	0	-24	0	+13	+25	+35	+45	+59
		+36	0	-13	-25	-35	-59	-22	-9	+3	+13	+23	+37
120 to 180		+83	+40	+26	+12	0	-28	0	+14	+28	+40	+52	+68
		+43	0	-14	-28	-40	-68	-25	-11	+3	+15	+27	+43
180 to 250		+96	+46	+30	+13	0	-33	0	+16	+33	+46	+60	+79
		+50	0	-16	-33	-46	-79	-29	-13	+4	+17	+31	+50

Cylindrical shaft ends, extract from DIN 748 Part 1

ISO tolerance zone	Diameter in mm																				
	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75	80	85	90	95
End length in mm	k6					m6															
	50	60	80			110					140					170					210

Overview

Parallel key connections to DIN 6885-1



In harsh operating conditions or during reversing operation, the keyway width tolerance P9 must be chosen.

Diameter over D mm	to mm	Keyway width B mm	Parallel key height H mm	Shaft keyway depth T1 mm	Hub keyway depth T2 mm	Deviation table for keyway width B	
						JS9 μm	P9 μm
	10	3	3	1.8	1.4	+12.5 -12.5	-6 -31
10	12	4	4	2.5	1.8	+15 -15	-12 -42
12	17	5	5	3	2.3	+15 -15	-12 -42
17	22	6	6	3.5	2.8	+15 -15	-12 -42
22	30	8	7	4	3.3	+18 -18	-15 -51
30	38	10	8	5	3.3	+18 -18	-15 -51
38	44	12	8	5	3.3	+21.5 -21.5	-18 -61
44	50	14	9	5.5	3.8	+21.5 -21.5	-18 -61
50	58	16	10	6	4.3	+21.5 -21.5	-18 -61
58	65	18	11	7	4.4	+21.5 -21.5	-18 -61
65	75	20	12	7.5	4.9	+26 -26	-22 -74
75	85	22	14	9	5.4	+26 -26	-22 -74
85	95	25	14	9	5.4	+26 -26	-22 -74
95	110	28	16	10	6.4	+26 -26	-22 -74
110	130	32	18	11	7.4	+31 -31	-26 -88
130	150	36	20	12	8.4	+31 -31	-26 -88
150	170	40	22	13	9.4	+31 -31	-26 -88
170	200	45	25	15	10.4	+31 -31	-26 -88
200	230	50	28	17	11.4	+31 -31	-26 -88
230	260	56	32	20	12.4	+37 -37	-32 -106
260	290	63	32	20	12.4	+37 -37	-32 -106
290	330	70	36	22	14.4	+37 -37	-32 -106
330	380	80	40	25	15.4	+37 -37	-32 -106
380	440	90	45	28	17.4	+43.5 -43.5	-37 -124
440	500	100	50	31	19.4	+43.5 -43.5	-37 -124

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Appendix

Siemens contact partners worldwide



At

<http://www.siemens.com/automation/partner>

you can find details of Siemens contact partners worldwide responsible for particular technologies.

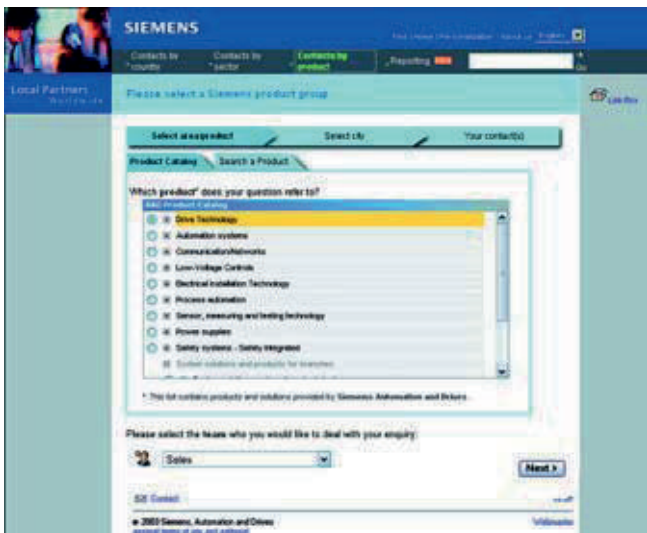
You can obtain in most cases a contact partner for

- Technical Support,
- Spare parts/repairs,
- Service,
- Training,
- Sales or
- Consultation/engineering.

You start by selecting a

- Country,
- Product or
- Sector.

By further specifying the remaining criteria you will find exactly the right contact partner with his/her respective expertise.



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Appendix

A&D Online Services – Information and ordering options on the Internet and on CD-ROM

Siemens Industry Automation and Drive Technologies in the WWW



A detailed knowledge of the range of products and services available is essential when planning and configuring automation systems. It goes without saying that this information must always be fully up-to-date.

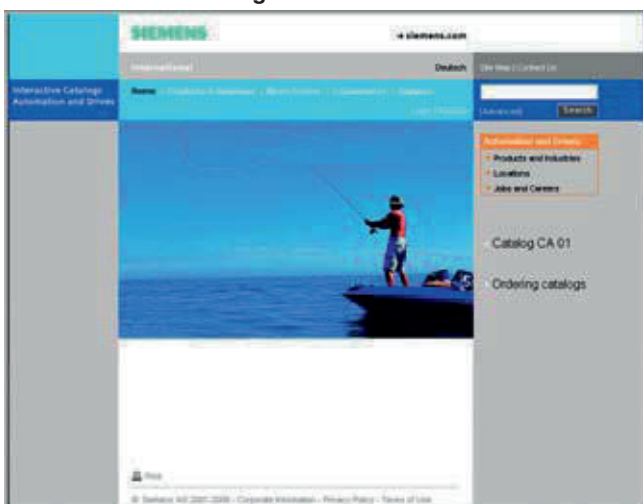
Siemens Industry Automation and Drive Technologies has therefore built up a comprehensive range of information in the World Wide Web, which offers quick and easy access to all data required.

Under the address

<http://www.siemens.com/automation>

you will find everything you need to know about products, systems and services.

Product Selection Using the Offline Mall



Detailed information together with convenient interactive functions:

The Offline Mall CA 01 covers more than 80,000 products and thus provides a full summary of the Siemens Automation and Drives product base.

Here you will find everything that you need to solve tasks in the fields of automation, switchgear, installation and drives. All information is linked into a user interface which is easy to work with and intuitive.

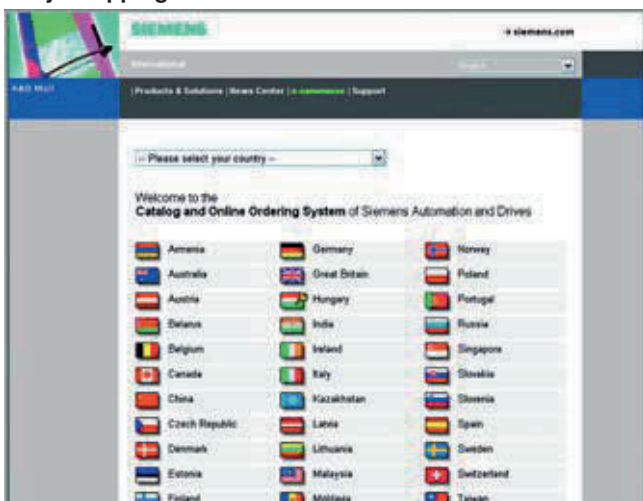
After selecting the product of your choice you can order at the press of a button, by fax or by online link.

Information on the Offline Mall CA 01 can be found in the Internet under

<http://www.siemens.com/automation/ca01>

or on CD-ROM or DVD.

Easy Shopping with the A&D Mall



The A&D Mall is the virtual department store of Siemens AG in the Internet. Here you have access to a huge range of products presented in electronic catalogs in an informative and attractive way.

Data transfer via EDIFACT allows the whole procedure from selection through ordering to tracking of the order to be carried out online via the Internet.

Numerous functions are available to support you.

For example, powerful search functions make it easy to find the required products, which can be immediately checked for availability. Customer-specific discounts and preparation of quotes can be carried out online as well as order tracking and tracing.

Please visit the A&D Mall on the Internet under:

<http://www.siemens.com/automation/mall>

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Appendix

Customer support Our services at every stage of the project



In the face of harsh competition you need optimum conditions to keep ahead all the time:

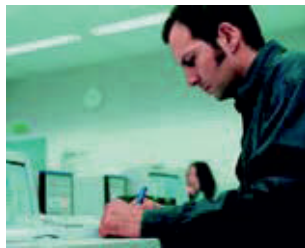
A strong starting position. A sophisticated strategy and team for the necessary support - in every phase.

Service & Support from Siemens provides this support with a complete range of different services for automation and drives.

In every phase: from planning and startup to maintenance and upgrading.

Our specialists know when and where to act to keep the productivity and cost-effectiveness of your system running in top form.

Configuration and Software Engineering



Support in configuring and developing with customer-oriented services from actual configuration to implementation of the automation project. ¹⁾

Service On Site



With Service On Site we offer services for startup and maintenance, essential for ensuring system availability.

In Germany
0180 50 50 444 ¹⁾
(0.14 €/min from the German fixed network)

Online Support



The comprehensive information system available round the clock via Internet ranging from Product Support and Service & Support services to Support Tools in the Shop.

<http://www.siemens.com/automation/service&support>

Repairs and Spare Parts



In the operating phase of a machine or automation system we provide a comprehensive repair and spare parts service ensuring the highest degree of operating safety and reliability.

In Germany
0180 50 50 446 ¹⁾
(0.14 €/min from the German fixed network)

Technical Support



Competent consulting in technical questions covering a wide range of customer-oriented services for all our products and systems.

Tel.: +49 (0)180 50 50 222
Fax: +49 (0)180 50 50 223
(0.14 €/min from the German fixed network)

<http://www.siemens.com/automation/support-request>

Optimization and Upgrading



To enhance productivity and save costs in your project we offer high-quality services in optimization and upgrading. ¹⁾

Technical Consulting



Support in the planning and designing of your project from detailed actual-state analysis, target definition and consulting on product and system questions right to the creation of the automation solution. ¹⁾

¹⁾ For country-specific telephone numbers go to our Internet site at: <http://www.siemens.com/automation/service&support>

Knowledge Base on CD-ROM



For locations without online connections to the Internet there are excerpts of the free part of the information sources available on CD-ROM (Service & Support Knowledge Base). This CD-ROM contains all the latest product information at the time of production (FAQs, Downloads, Tips and Tricks, Updates) as well as general information on Service and Technical Support.

The CD-ROM also includes a full-text search and our Knowl-

edge Manager for targeted searches for solutions. The CD-ROM will be updated every 4 months.

Just the same as our online offer in the Internet, the Service & Support Knowledge Base on CD comes complete in 5 languages (German, English, French, Italian, Spanish).

You can order the **Service & Support Knowledge Base** CD from your Siemens contact.

Order no. **6ZB5310-0EP30-0BA2**

Orders via the Internet (with Automation Value Card or credit card) at:

<http://www.siemens.com/automation/service&support>
in the Shop domain.

Automation Value Card



Small card – great support

The Automation Value Card is an integral component of the comprehensive service concept with which Siemens Automation and Drives will accompany you in each phase of your automation project.

It doesn't matter whether you want just specific services from our Technical Support or want to purchase high-quality Support Tools in our Online Shop, you can always pay with your Automation Value Card. No invoicing, transparent and safe. With your personal card number and associated PIN you can view the state of your account and all transactions at any time.

Services on card. This is how it's done.

Card number and PIN are on the back of the Automation Value Card. When delivered, the PIN is covered by a scratch field, guaranteeing that the full credit is on the card.

By entering the card number and PIN you have full access to the Service & Support services being offered. The charge for the services procured is debited from the credits on your Automation Value Card.

All the services offered are marked in currency-neutral credits, so you can use the Automation Value Card worldwide.

Automation Value Card order numbers

Credits	Order no.
200	6ES7 997-0BA00-0XA0
500	6ES7 997-0BB00-0XA0
1000	6ES7 997-0BC00-0XA0
10000	6ES7 997-0BG00-0XA0

Detailed information on the services offered is available on our Internet site at:

<http://www.siemens.com/automation/service&support>

Service & Support à la Card: Examples

Technical Support

"Priority"	Priority processing for urgent cases
"24 h"	Availability round the clock
"Extended"	Technical consulting for complex questions

Support Tools in the Support Shop

"System Utilities"	Tools that can be used directly for configuration, analysis and testing
"Applications"	Complete topic solutions including ready-tested software
"Functions & Samples"	Adaptable blocks for accelerating your developments

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Conditions of sale and delivery Export regulations

Terms and Conditions of Sale and Delivery

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General

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Insofar as there are no remarks on the corresponding pages, - especially with regard to data, dimensions and weights given - these are subject to change without prior notice.

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Industry Automation, Drive Technologies and Electrical Installation Technology

Further information can be obtained from our branch offices listed in the appendix or at www.siemens.com/automation/partner

Automation and Drives	<i>Catalog</i>	Industrial Communication for Automation and Drives	<i>Catalog</i> IK PI
Interactive catalog on CD-ROM and on DVD			
• The Offline Mall of Automation and Drives	CA 01		
Automation Systems for Machine Tools		Low-Voltage	
SINUMERIK & SIMODRIVE	NC 60	Controls and Distribution – SIRIUS, SENTRON, SIVACON	LV 1
SINUMERIK & SINAMICS	NC 61	Controls and Distribution – Technical Information	LV 1 T
		SIRIUS, SENTRON, SIVACON	
Drive Systems		SIDAC Reactors and Filters	LV 60
<u>Variable-Speed Drives</u>		SIVENT Fans	LV 65
SINAMICS G110/SINAMICS G120	D 11.1	SIVACON 8PS Busbar Trunking Systems	LV 70
Inverter Chassis Units			
SINAMICS G120D			
Distributed Frequency Inverters			
SINAMICS G130 Drive Converter Chassis Units, SINAMICS G150 Drive Converter Cabinet Units	D 11		
SINAMICS GM150/SINAMICS SM150	D 12		
Medium-Voltage Converters			
SINAMICS S150 Drive Converter Cabinet Units	D 21.3		
Asynchronous Motors Standardline	D 86.1		
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2		
DC Motors	DA 12		
SIMOREG DC MASTER 6RA70 Digital Chassis Converters	DA 21.1		
SIMOREG K 6RA22 Analog Chassis Converters	DA 21.2		
<i>PDF: SIMOREG DC MASTER 6RM70 Digital Converter Cabinet Units</i>	DA 22		
SIMOVERT PM Modular Converter Systems	DA 45		
SIEMOSYN Motors	DA 48		
MICROMASTER 420/430/440 Inverters	DA 51.2		
MICROMASTER 411/COMBIMASTER 411	DA 51.3		
SIMOVERT MASTERDRIVES Vector Control	DA 65.10		
SIMOVERT MASTERDRIVES Motion Control	DA 65.11		
Synchronous and asynchronous servomotors for SIMOVERT MASTERDRIVES	DA 65.3		
SIMODRIVE 611 universal and POSMO	DA 65.4		
<u>Low-Voltage Three-Phase-Motors</u>			
IEC Squirrel-Cage Motors	D 81.1		
IEC Squirrel-Cage Motors · New Generation 1LE1	D 81.1 N		
MOTOX Geared Motors	D 87.1		
<u>Automation Systems for Machine Tools SIMODRIVE</u>	NC 60		
• Main Spindle/Feed Motors			
• Converter Systems SIMODRIVE 611/POSMO			
<u>Automation Systems for Machine Tools SINAMICS</u>	NC 61		
• Main Spindle/Feed Motors			
• Drive System SINAMICS S120			
<u>Drive and Control Components for Hoisting Equipment</u>	HE 1		
<u>Mechanical Driving Machines</u>			
Flender Standard Couplings	MD 10.1		
Electrical Installation Technology		Motion Control System	
<i>PDF: ALPHA Small Distribution Boards and Distribution Boards, Terminal Blocks</i>	ETA 1	SIMOTION, SINAMICS S120 and Motors for Production Machines	PM 21
<i>PDF: ALPHA 8HP Molded-Plastic Distribution System</i>	ETA 3		
<i>PDF: BETA Low-Voltage Circuit Protection</i>	ET B1		
<i>PDF: DELTA Switches and Socket Outlets</i>	ET D1		
GAMMA Building Controls	ET G1		
Human Machine Interface Systems SIMATIC HMI	ST 80	Process Instrumentation and Analytics	
		Field Instruments for Process Automation	FI 01
		Measuring Instruments for Pressure, Differential Pressure, Flow, Level and Temperature, Positioners and Liquid Meters	
		<i>PDF: Indicators for panel mounting</i>	MP 12
		SIREC Recorders and Accessories	MP 20
		SIPART, Controllers and Software	MP 31
		SIWAREX Weighing Systems	WT 01
		Continuous Weighing and Process Protection	WT 02
		Process Analytical Instruments	PA 01
		<i>PDF: Process Analytics, Components for the System Integration</i>	PA 11
		SIMATIC Industrial Automation Systems	
		SIMATIC PCS Process Control System	ST 45
		Products for Totally Integrated Automation and Micro Automation	ST 70
		SIMATIC PCS 7 Process Control System	ST PCS 7
		Add-ons for the SIMATIC PCS 7 Process Control System	ST PCS 7.1
		Migration solutions with the SIMATIC PCS 7 Process Control System	ST PCS 7.2
		pc-based Automation	ST PC
		SIMATIC Control Systems	ST DA
		SIMATIC Sensors	
		Sensors for Factory Automation	FS 10
		Systems Engineering	
		Power supplies SITOP power	KT 10.1
		System cabling SIMATIC TOP connect	KT 10.2
		System Solutions	
		Applications and Products for Industry are part of the interactive catalog CA 01	
		TELEPERM M Process Control System	
		<i>PDF: AS 488/TM automation systems</i>	PLT 112

PDF: These catalogs are only available as pdf files.

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