

# SPIRAL WINDING MACHINE MODEL KWM-PLE

## WITH LARGE DISPLAY WITH 5,5" MONITOR AND GRAPHICAL INFORMATION.

This automatic high speed winding machine is designed for continuous winding onto endless carrier material with one permanent wire pitch but also with several different lengths with each independent pitch.

### FEATURES

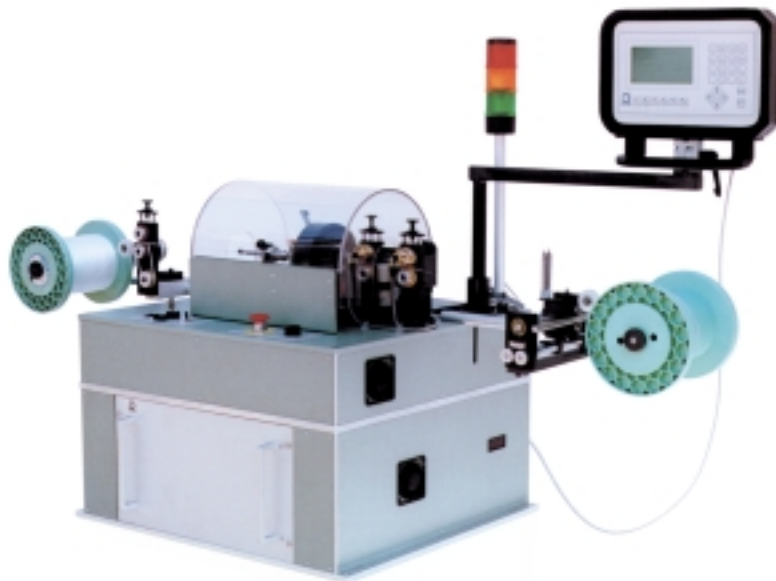
- Versatile applications
- Many standard accessories
- Non stop operation
- Virtually maintenance free
- PLC control
- Production data screen
- Programming with user friendly windows

### WINDING MATERIALS

- Round or flat wire
- Copper, aluminium, chrome-nickel and more
- Wire diam. 0,015 – 0,40 mm, AWG 35 – 26
- Wire supply spools up to DIN 125 (250)
- Also tape wrapping

### CARRIER MATERIALS

- Flat- or round carriers up to 8 (10) mm in size (larger on request)
- Steel, glass fibre, plastic fibre, Nomex, cables and more
- Tube shaped materials
- Material supply spools up to DIN 400 (1000)
- Multi-strands from several suppl cones



### MACHINE SPECIFICATION

- Power supply:
- 230 Volt AC, 50/60 Hz
- Motor power: 400 Watt
- Net weight: 140 kg
- Machine size: 2700 mm x 900 mm

### MACHINE CONSISTING OF:

- 1 machine base with stepper motor for pitch drive 0 – 4,0 mm per turn, servomotor for winding head drive up to 6.000 RPM, plexiglass security cover
- 1 winding nozzle and one set of flyer arms
- 1 PLC controller with 5,5 inch monitor
- 1 Signal lamp for operation status
- Memory capacity of 10 programmes with each 20 independent lengths
- Interface for PC
- Optional software for data exchange

### PROGRAMMING CAPABILITY

#### PROGRAMMABLE WINDING DATA:

- Production quantity (No. of Products)
- Carrier material diameter
- Winding material diameter
- Winding material Ohm Value with automatic pitch calculation
- No. of lengths with independent pitch
- Distance per length
- Pitch of turns per length
- Autostop per length
- Special functions per length (start, duration and end)

#### PROGRAMMABLE MACHINE FUNCTIONS:

- Auto control of winding speed (acceleration, top speed and deceleration)
- Auto control of winding pitch (stepless 0 – 4,0 mm per turn)
- Auto control of wire tension (electromagnetic)
- Auto control of speed adjustment when pitch changes
- Auto Ohm control when resistance controller is used
- Auto carrier material brake control
- Auto winding material brake control

#### PRODUCTION DATA DISPLAY:

- Current program No. and length No.
- Current winding speed (in RPM)
- Current winding pitch (in mm)
- Current wire tension value (in %)
- Current Ohm control
- Current special function
- Current production quantity
- Programmed quantity reached

### ACCESSORIES

- KWM-PLE-Z01: Standard take off unit for carrier material
- KWM-PLE-Z0: Overhead take off unit for fibre carrier material
- KWM-PLE-Z05: Brake tension unit for fibre carrier material
- KWM-PLE-Z13: Wire straightening unit for metal carrier material
- KWM-PLE-Z03: Standard take up unit with traverse fixture
- KWM-PLE-Z10: Motorized take up with auto speed control
- KWM-PLE-Z12: Winding head and software setup for music strings
- KWM-PLE-Z02: Standard take up unit without traverse
- KWM-PLE-Z11: Motorized take off with auto speed control
- KWM-PLE-Z06: Detwisting unit w. take up and traverse device
- KWM-PLE-Z08: Resistance controller (tolerance +/- 1%)
- KWM-PLE-Z07: Cutting device for finished product
- KWM-PLE-Z09: Separate transport machine for carrier material

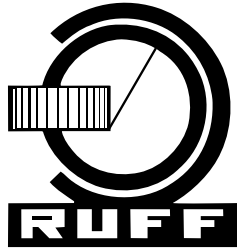


# TYPICAL INPUT AND PRODUCTION SCREEN

## INTRODUCTION SCREEN

Spiral Winder  
Type **KWM-PLE**

RUFF GmbH & Co. KG  
D-85567 Grafing  
Industriepark  
Tel. 0 80 92 / 7 05 70  
Fax 0 80 92 / 70 57 57



## PRODUCTION BASIC SCREEN

Production phase		Programme No.	
Basic screen		1	
		Distance No. 2	
Speed		rpm	5000
Distance		mm	1000
Product		Distances	20
Quantity		Products	100
Start F1	Stop F2	Data F3	Pitch F4
		Brake F5	Quantity F6

## PROGRAMMING PRODUCT DATA

Programming phase		Programme No.	
Product data		1	
		Distance No. 2	
No. of distances	<input type="text" value="20"/>		
Dia. of carrier material	<input type="text" value="1.500"/>	mm	
Dia. of winding material	<input type="text" value="0.200"/>	mm	
Resistance of wire	<input type="text" value="100.0"/>	Ohm/m	
Brake power	<input type="text" value="1000"/>	pcs	
Next F1	Change Begin	<input type="text" value="20"/>	%
	End	<input type="text" value="80"/>	%

## PRODUCTION PARAMETER

Production phase		Programme No.	
Parameter		1	
		Distance No. 2	
Total length	1000		
Measuring Resistance at	<input type="text" value="2000"/>	mm	<input type="text"/>
Cut at	<input type="text" value="2500"/>	mm	<input type="text"/>
Special Function at	<input type="text" value="3000"/>	mm	<input type="text"/>
Quantity Order	<input type="text" value="1000"/>	Actual	<input type="text" value="555"/>
Start F1	Stop F2	End Stop F3	Extra F4
			Return F6

## PROGRAMMING PITCH PER TURN

Programming phase		Programme No.	
Winding data		1	
		Distance No. 2	
Select Input	<input type="text" value="Pitch = 0"/>	Resistance = 1	<input type="text" value="0"/>
Pitch per turn	mm	<input type="text" value="2.500"/>	
Length of distance	mm	<input type="text" value="1000"/>	
Select functions with 0 or 1			
<input checked="" type="checkbox"/>	Gapless	<input type="checkbox"/>	Ohm Control
<input type="checkbox"/>	Stop		
F1 Next			

## PRODUCTION PITCH CONTROL

Production phase		Programme No.	
Pitch control		1	
		Distance No. 2	
Resistance Correction 1 measured	Pitch	<input type="text" value="1.234"/>	mm
	gapless		
Start F1	Stop F2	Hand F3	Up F4
		Down F5	Return F6

## PROGRAMMING OHM VALUE

Programming phase		Programme No.	
Winding data		1	
		Distance No. 2	
Select Input	<input type="text" value="Pitch = 0"/>	Resistance = 1	<input checked="" type="text" value="1"/>
Resistance / metre	Ohm	<input type="text" value="3000.0"/>	
Length of distance	mm	<input type="text" value="1000"/>	
Select functions with 1 or 0			
<input checked="" type="checkbox"/>	Ohm Control	<input type="checkbox"/>	Stop
F1 Next			

## PRODUCTION BRAKE DATA

Production phase		Programme No.	
Brake		1	
		Distance No. 2	
Brake 50 %		Change	<input type="text" value="1000"/>
Acceleration		Begin	<input type="text" value="20"/>
Consumption +		End	<input type="text" value="80"/>
		Regulation factor	
		Acceleration	<input type="text" value="100"/>
		Consumption	<input type="text" value="100"/>
Start F1	Stop F2	Up F4	Down F5
			Return F6

