



COIL WINDING



WATCH THE VIDEO

The coil winding is completely electronic, designed to solve a series of problems and limitations common to traditional machines, such as:

- inconsistency of speed due to a single motorization and to the use of clutches to transmit movement to the backing wheels
- long set up times and skilled operators to run the machine
- variation of the coil ohmic value due to possible variations within the wire used
- difficulty to obtain a product without the deformations on the ends due to the cutting operation (curl)



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ADVANTAGES

ELIMINATION OF THE DEFORMATION (CURL) NORMALLY PRODUCED DURING THE CUTTING PROCESS

Thanks to:

- adjustment of the pre-cut position on the run (no need to stop the machine)
- NC control: electronic positioning of the blade (can be set very precisely from the operator panel)
- motorized cutting device (coils up to .314 inch \varnothing) – no pneumatic



DYNAMIC RESISTANCE MEASUREMENT:

- Constant ohmic value of the coil
- Enabling of the cutting system at the set ohmic value (without measuring)
- Identification of wire tensioning problems (I see the log jumping and I adjust the brake)
- Hot spots/ zebra effect/ different materials on a specific section of the wire
- Ohm measure validation (if the operator has typed a wrong ohm parameter, the machine stops)



PRODUCTION IN AUTOMATIC MODE WITHOUT THE PRESENCE OF THE OPERATOR

Thanks to:

- Possibility to program the production (quantity and ohmic value)
- Automatic system which stops the machine in case the wire is tangled around the mandrel.
- The speed of the thrust wheels follows automatically the mandrel speed in proportional way
- The mandrel speed and thrust wheels speed are constant, thanks to the use of cc motors (no clutch)





EASE OF USE

- User-friendly operator interface: easy and intuitive touchscreen HMI
- Fast and easy format change (different coil diameter, mandrel diameter and/or wire diameter), typo to the parameters saved under the program





COMPOSITION

The machine is formed by:

- No. 2 coil holders for resistive wire
- Device to continuous measurement of ohmic values
- Device to continuous measurement the length of the wire (encoder)
- Mandrel group to wind the coil; driven by a brushless motor
- No. 2 thrust (support) wheel group, pushed against the mandrel so that the coil can be wound. They are operated by a d.c. motor
- Cutting device, operated by a d.c. motor
- Hopper to collect coils after the cutting operation
- Device to check the ohmic value of the first coil produced and also used for the automatic self-calibration of the machine at the set ohmic value
- Work bench, complete with drawers
- Reative
- Kit of spare parts:
 - For machine mod. 125/29.D:
 - 1 pcs bush for coil diameter from .0197 to .0945 inch
 - 1 pcs bush for coil diameter from .0984 to .1181 inch
 - 1 pcs bush for coil diameter from .1220 to .1811 inch
 - 1 pcs bush for coil diameter from .1850 to .3150 inch
 - 1 pcs cutting blade for wire diameter from .0035 to .0079 inch
 - 1 pcs cutting blade for wire diameter from .0083 to .0217 inch
 - 1 pcs cutting blade for wire diameter from .0220 to .0394 inch
 - 1 pcs thrust wheel (complete assembly of flanges + yellow rubber insert)
 - 2 pcs steel wheel
 - 2 pcs murlubric (black plastic) wheel
 - 1 pcs collet diameter .157 inch
 - 1 pcs collet diameter .236 inch
 - For machine mod. 125/45.D:
 - 1 pcs bush for coil diameter from .0197 to .0945 inch
 - 1 pcs bush for coil diameter from .0984 to .1181 inch
 - 1 pcs bush for coil diameter from .1220 to .1811 inch
 - 1 pcs bush for coil diameter from .1850 to .3150 inch
 - 1 pcs bush for coil diameter from .3189 to .3937 inch
 - 1 pcs bush for coil diameter from .3976 to .4724 inch
 - 1 pcs bush for coil diameter from .4764 to .5906 inch
 - 1 pcs bush for coil diameter from .5945 to .6299 inch
 - 1 pcs cutting blade for wire diameter from .0083 to .0217 inch
 - 1 pcs cutting blade for wire diameter from .0220 to .0709 inch
 - 1 pcs thrust wheel (complete assembly of flanges + yellow rubber insert)
 - 2 pcs steel wheel
 - 2 pcs murlubric (black plastic) wheel
 - 1 pcs collet diameter .157 inch
 - 1 pcs collet diameter .236 inch
 - 1 pcs collet diameter .394 inch

**Mandrels are not included with the machine****TECHNICAL CHARACTERISTICS**

Standard wire spools type, up to	DIN	250
Length of the standard coil offloading system	inch	26.38
Max number of mandrel revolutions	rev/min	6000
Product codes to be stored (wire Ø - alloy - mandrel Ø - 1-2 wire coil)	n.	2000
Max. batches to be set (same product code)	n.	20
Precision on final coil ohmic value (depending on speed)	ohm ±	0,5 - 0,8%
Electric supply	V	L+N/PE
Total installed power	KVA	1
Machine dimensions	inch	52.76x33.27x72.64
Weight	Kg	230

Limits of use:

	1 wire	2 wires	3 wires	4 wires
Ratio mandrel diameter / wire diameter	$\geq 2 \div 2,5$	$\geq 2,5 \div 3$	$\geq 3 \div 3,5$	$\geq 3,5 \div 4$

Notes:

- For 2-wires coils with wire diameter > .039" and 3-wires or 4 wires coils, it may not be possible to measure continuously the ohmic value of the wire.

AVAILABLE VERSIONS

Machine model		125/29.D000SA	125/45.D000SA
Ø Coil max. diameter	inch	.314	.630
Ø Wire diameter	inch	.006 – .039	.012 - .071
	gauge	18-34	13-28
Ø Minimum mandrel diameter	inch	.040	.040
N. coil wires	standard: 1 wire – 2 wires option: 3 wires – 4 wires		
Dynamic brake	included		
Coil space winding	Included		



ACCESSORIES INCLUDED

REACTIVE BRAKE

Mechanic braking system to set the required wire tension.



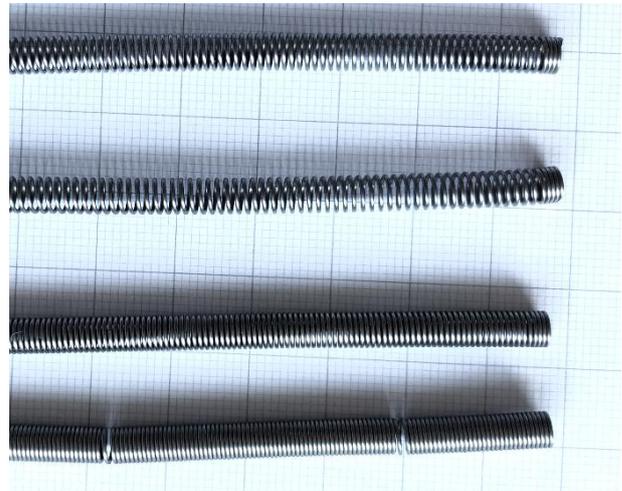
COIL SPACE WINDING

System to separate coils through cutting blade, for wire diameter greater than .010 inch.

Possibility to program up to 100 separations with definition of the separation field either in ohmic value, number of coils or percentage of the total nominal ohmic value of the coil.

Device complete with:

- software module
- no. 1 cutting blade
- no. 3 bushes (for mod. 125/29) or no. 6 bushes (for mod. 125/45)





OPTIONAL PARTS

COIL OFFLOADING SYSTEM AND STATIC OHM MEASUREMENT

The standard coil offloading tray is fixed and has a length of 26.38 inch.

Longer trays are available, as detailed in the table below.

In case of production of long coils, the use of pneumatic offloading systems is recommended. When producing longer elements, a longer system of static ohm measurement is recommended.



Model tray	Tray length (inch)	Type tray	Model ohm measure
125/29.D00030	53	fixed	125/29.D00024
125/29.D00032	53	pneumatic	125/29.D00024
125/29.D00036	39	fixed	125/29.D00028
125/29.D00034	39	pneumatic	125/29.D00028
125/29.D00031	79	pneumatic	125/29.D00027
125/29.D00033	118	pneumatic	125/29.D00025
125/29.D00035	185	pneumatic	125/29.D00026

SYSTEM TO FEED WIRE FROM DRUMS OR PAILPACKS

Device for unwinding and tensioning wire in drums or pail packs. Max wire size .071. inch

• **ONE- WIRE VERSION Mod. 125/29.D00200**

Device complete with:

- no. 1 support bar for idle wheels
- no. 13 idle wheels for wire tensioning
- no. 1 cover for wire in drums or pail packs

• **TWO-WIRE VERSION Mod. 125/29.D00100**

Device complete with:

- no. 1 support bar for idle wheels
- no. 26 idle wheels for wire tensioning
- no. 2 cover for wire in drums or pail packs

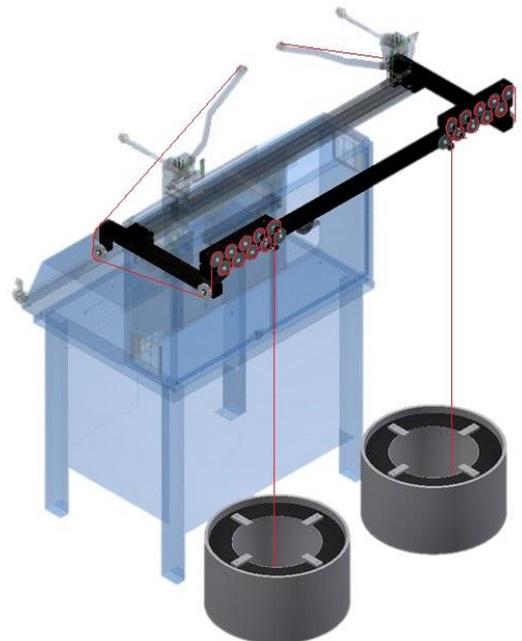


Figure 1 two-wire feeding system for wire in drums



• **THREE-WIRE VERSION Mod. 125/29.D00300**

Device complete with:

- no. 1 support bar for idle wheels
- no. 39 idle wheels for wire tensioning
- no. 3 cover for wire in drums or pail packs

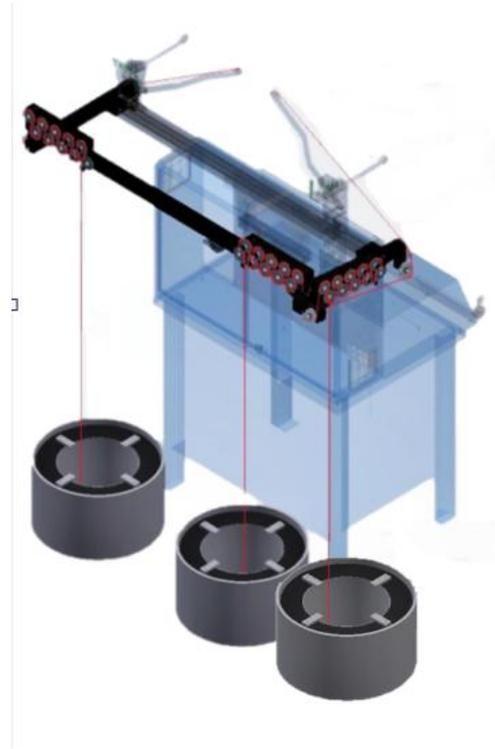


Figure 2 three-wire feeding system for wire in drums

TELESERVICE KIT, Mod. 125/29.D000SW

Software patch to manage ethernet interface. It allows remote control of the machine

KIT TO PRODUCE COILS WITH THIN WIRES OR SMALL MANDRELS Mod. 125/00.KIT000 FOR MANDREL GRINDING (available only for model 125/29.D00000)

It is possible to produce coils with single wire, wire diameter < .004 inch and mandrel diameter < .024 inch using this special kit.

Wire limitations using this kit:

- Min. wire diam. .003 inch
- Min. mandrel diam. .014 inch

Limitations on use

- wire diam. .003 inch on mandrel min. diam. .014 inch
- wire diam. .012 inch on mandrel min. diam. .020 inch





CALIBRATION UNIT, Mod. 125/29.D00040

Device to verify calibration, for coil winding machines. Dynamic and static Ohmic test is provided complete with:

- Mechanic connectors to measuring wheel
- box with certified test resistors
- set of connection cables

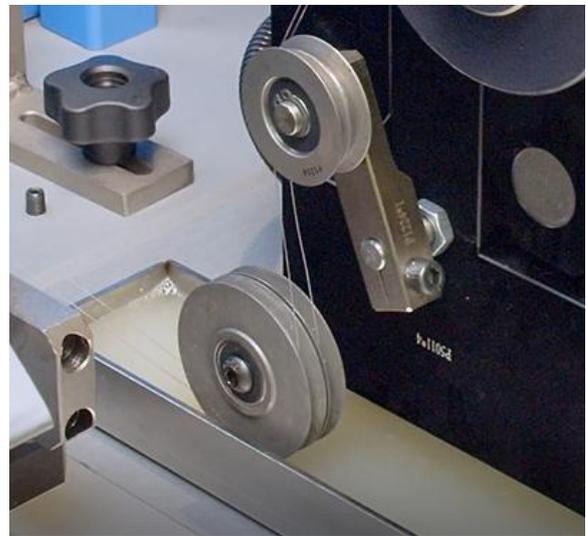
3-COLOUR INDICATOR LIGHT, Mod. 125/29.DL0000

The standard indicator light is orange color.

The 3-colour indicator light allows the use of color to indicate the machine status (green: machine in use; yellow: machine during setting or production batch ready; red: machine in alarm).

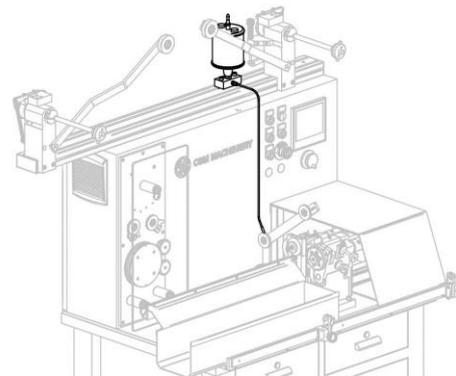
LUBRICANT, Mod. 125/30.000050

Lubricant especially developed for coil winding machines, biodegradable and to be washed away with water.



DISPENSER FOR LUBRICANT, Mod. 125/29.D00120

The dispenser restores the level of lubricant in the lubricant basin. It is recommended in case the machine works without frequent surveillance.





SUPPORT TO ALLOW 3-WIRE WINDING



Figure 3 three-wire coil winding machine, with 3 dynamic brakes

To allow the formation of 3-wire coils, the following support must be provided:

DYNAMIC SUPPORT TO ALLOW 3-WIRE WINDING, Mod. 125/29.000310

composed by:

- DIN 250 spool holder
- Dynamic brake

The largest wire diameter when winding 3-wire coils is $.035+.035+.035$ inch.



SUPPORT TO ALLOW 3-OR 4 WIRE WINDING



Figure 4 four-wire coil winding machine, with 4 dynamic brakes

To allow the formation of 3-4 wire coils, the following support must be provided:

DYNAMIC SUPPORT TO ALLOW 3-OR 4 WIRE WINDING, Mod. 125/29.000320

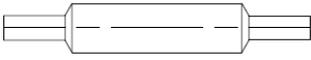
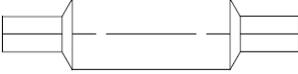
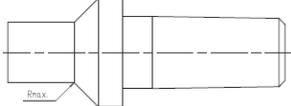
composed by:

- N°2 DIN 250 spool holder
- N°2 Dynamic brakes
- Holder frame

The largest wire diameter when winding 4-wire coils is $.027+.027+.027+.027$ inch.

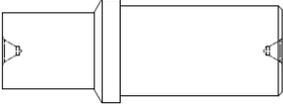
**MANDRELS**

Coil winding machine mod 125/29.D00000

		SHANK .157 INCH DOUBLE CYLINDRICAL	SHANK .236 INCH DOUBLE CYLINDRICAL	SHANK .236 INCH SINGLE CONICAL
Code		P9516*0	PM00003259*0	P2319*0
Mandrel diameter	inch	.031 ÷ .114	.118 ÷ .192	.197 ÷ .236
Layout				

Coil winding machine mod. 125/45.D00000

		SHANK .157 INCH DOUBLE CYLINDRICAL	SHANK .236 INCH DOUBLE CYLINDRICAL	SHANK .394 INCH DOUBLE CYLINDRICAL
Code		P9516*0	PM00003259*0	PM00003260*0
Mandrel diameter	inch	.031 ÷ .114	.118 ÷ .192	.197 ÷ .335
Layout				

		SHANK .394 INCH SINGLE CYLINDRICAL
Code		PM00018072*0
Mandrel diameter	inch	.339 ÷ .433
Layout		

Mandrels can be ordered in any diameter within the range shown in the table with a pitch diameter of .00039 inch.

For example, the code PM00018072*0 can be ordered in diameter .33858, .33897, .33937 inch.

SET OF SPARE PARTS

**Part number 125/29.KIT1**

Kit of spare parts subject to wear for coil winder mod. 125/29 composed of:

- 10 pcs mandrels to be chosen between:
 - double cylindrical mandrel with shank .1575 inch and diameter between .0314 and .1142 inch
 - double cylindrical mandrel with shank .2362 inch and diameter between .1181 and .1929 inch
 - single conical mandrel with shank .2362 inch and diameter between .1977 and .2362 inch
- 03 pcs cutting blades to be chosen between:
 - blade for wire diameter from .0035 to .0079 inch
 - blade for wire diameter from .0083 to .0217 inch
 - blade for wire diameter from .0220 to .0394 inch
- 04 pcs cutting bushes to be chosen between:
 - bush for coil diameter from .0197 to .0945 inch
 - bush for coil diameter from .0984 to .1181 inch
 - bush for coil diameter from .1220 to .1811 inch
 - bush for coil diameter from .1850 to .3150 inch
- 01 pcs blade for space winding device
- 03 pcs bushes for space winding device to be chosen between:
 - bush for coil diameter from .0984 to .1181 inch
 - bush for coil diameter from .1220 to .1811 inch
 - bush for coil diameter from .1850 to .3150 inch
- 05 pcs murlubric (black) wheel
- 02 pcs rubber insert for thrust wheel

Part number 125/45.KIT1

Kit of spare parts subject to wear for coil winder mod. 125/45 composed of:

- 10 pcs mandrels to be chosen between:
 - double cylindrical mandrel with shank .1575 inch and diameter between .0314 and .1142 inch
 - double cylindrical mandrel with shank .2362 inch and diameter between .1181 and .1929 inch
 - double cylindrical mandrel with shank .3937 inch and diameter between .1977 and .3346 inch
 - single cylindrical mandrel with shank .3937 inch and diameter between .3386 and .4331 inch
- 03 pcs cutting blades to be chosen between:
 - blade for wire diameter from .0083 to .0217 inch
 - blade for wire diameter from .0220 to .0709 inch
- 04 pcs cutting bushes to be chosen between:
 - bush for coil diameter from .0197 to .0945 inch
 - bush for coil diameter from .0984 to .1181 inch
 - bush for coil diameter from .1220 to .1811 inch
 - bush for coil diameter from .1850 to .3150 inch



- bush for coil diameter from .3189 to .3937 inch
- bush for coil diameter from .3976 to .4724 inch
- bush for coil diameter from .4764 to .5906 inch
- 01 pcs blade for space winding device
- 03 pcs bushes for space winding device to be chosen between:
 - bush for coil diameter from .0984 to .1181 inch
 - bush for coil diameter from .1220 to .1811 inch
 - bush for coil diameter from .1850 to .3150 inch
 - bush for coil diameter from .3189 to .3937 inch
 - bush for coil diameter from .3976 to .4724 inch
 - bush for coil diameter from .4764 to .5906 inch
- 05 pcs murlubric (black) wheel
- 02 pcs rubber insert for thrust wheel

LAYOUT (INCH)

