COILING MACHINE

WATCH THE VIDEO

The coiling machine is completely electronic, designed and made 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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Summary

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ADVANTAGES

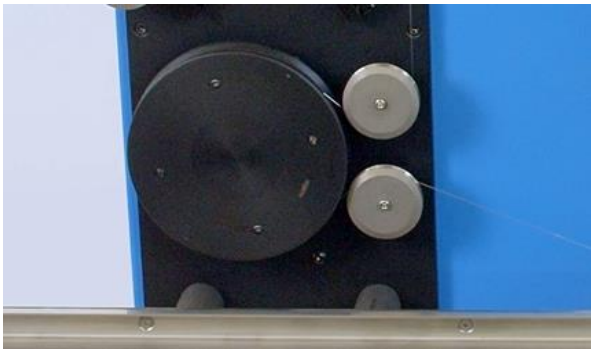
ELIMINATION OF THE DEFORMATION (CURL) NORMALLY PRODUCED DURING THE CUTTING PROCESS

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 8 mm/0.314 inch ø) – 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)

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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), thank s to the parameters saved under the program

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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
- Reactive brake
- Separator
- Kit of spare parts:
    - For machine mod. 125/29.D:

      1 pcs bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷ .0945 inch)
      1 pcs bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
      1 pcs bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
      1 pcs bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
      1 pcs cutting blade for wire diameter from 0,09 to 0,20 mm (.0035 ÷ .0079 inch)
      1 pcs cutting blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
      1 pcs cutting blade for wire diameter from 0,56 to 1,00 mm (.0220 ÷ .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 4 mm (.157 inch)
      1 pcs collet diameter 6 mm (.236 inch)
    - For machine mod. 125/44.D:

      1 pcs bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷ .0945 inch)
      1 pcs bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
      1 pcs bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
      1 pcs bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
      1 pcs bush for coil diameter from 8,10 to 10,00 mm (.3189 ÷ .3937 inch)
      1 pcs cutting blade for wire diameter from 0,09 to 0,20 mm (.0035 ÷ .0079 inch)
      1 pcs cutting blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
      1 pcs cutting blade for wire diameter from 0,56 to 1,00 mm (.0220 ÷ .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 4 mm (.157 inch)
      1 pcs collet diameter 6 mm (.236 inch)
      1 pcs collet diameter 10 mm (.394 inch)

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- For machine mod. 125/45.D:

  1 pcs bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷ .0945 inch)
  1 pcs bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  1 pcs bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  1 pcs bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
  1 pcs bush for coil diameter from 8,10 to 10,00 mm (.3189 ÷ .3937 inch)
  1 pcs bush for coil diameter from 10,10 to 12,00 mm (.3976 ÷.4724 inch)
  1 pcs bush for coil diameter from 12,10 to 15,00 mm (.4764 ÷ .5906 inch)
  1 pcs cutting blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
  1 pcs cutting blade for wire diameter from 0,56 to 1,80 mm (.0220 ÷ .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 4 mm (.157 inch)
  1 pcs collet diameter 6 mm (.236 inch)
  1 pcs collet diameter 10 mm (.394 inch)

Mandrels are not included with the machine

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TECHNICAL CHARACTERISTICS

Standard wire spools type, up to	DIN	250
Length of the standard coil offloading system	mm	670
	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	mm	1340x845xH1845
	inch	52.76x33.27xH72.64
Weight	Kg	230

Limits of use:

	1 wire	**2 wires**	**3 wires**	**4 wires**
$\frac{mandrel\ diameter}{wire\ diameter}$	≥ 2 ÷ 2,5	≥ 2,5 ÷ 3	≥ 3 ÷ 3,5	≥ 3,5 ÷ 4

Notes:

- For 2-wires coils with wire diameter > 1 mm (.039”) and 3-wires or 4 wires coils, it may not be possible to measure continuously the ohmic value of the wire.

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AVAILABLE VERSIONS

Machine model		125/29.D000SA	125/44.D000SA	125/45.D000SA
Ø Coil max. diameter	mm	8	10	16
	inch	.314	.394	.630
Ø Wire diameter	mm	0,15 – 1,00	0,30 – 1,80	0,30 – 1.80
	inch	.006 – .039	.012 - .071	.012 - .071
	gauge	18-34	13-28	13-28
Ø Min mandrel diameter	mm	1,00	1,00	1,00
	inch	.040	.040	.040
N. coil wires		standard: 1 wire – 2 wires option: 3 wires – 4 wires		
Dynamic brake		included		
Coil space winding		Included		

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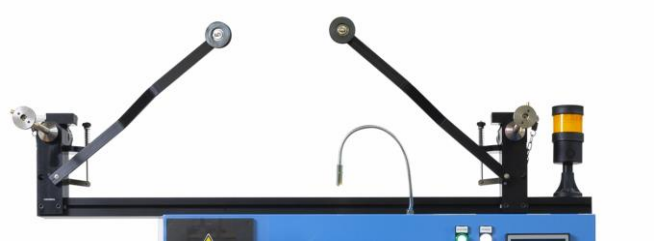
ACCESSORIES INCLUDED

REACTIVE BRAKE

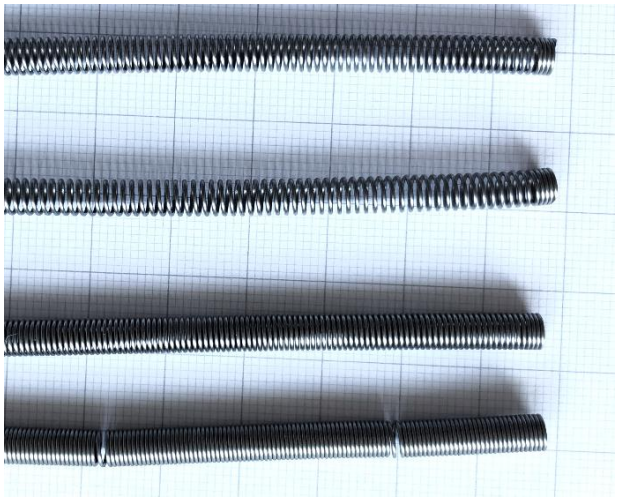
Mechanic braking system to set the required wire tension.



COIL SPACE WINDING

System to separate coils through cutting blade, for wire diameter greater than 0,25 mm (.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 and 125/44) or 6 bushes (for mod. 125/45)



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OPTIONAL PARTS

COIL OFFLOADING SYSTEM AND STATIC OHM MEASUREMENT

The standard coil offloading tray is fixed and has a length of 670 mm (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 (mm)	Tray length (inch)	Type tray	Model ohm measure
125/29.D00030	1340	53	fixed	**125/29.D00024**
125/29.D00032	1340	53	pneumatic	**125/29.D00024**
125/29.D00036	1000	39	fixed	**125/29.D00028**
125/29.D00034	1000	39	pneumatic	**125/29.D00028**
125/29.D00031	2000	79	pneumatic	**125/29.D00027**
125/29.D00033	3000	118	pneumatic	**125/29.D00025**
125/29.D00035	4700	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 1,8 mm (.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

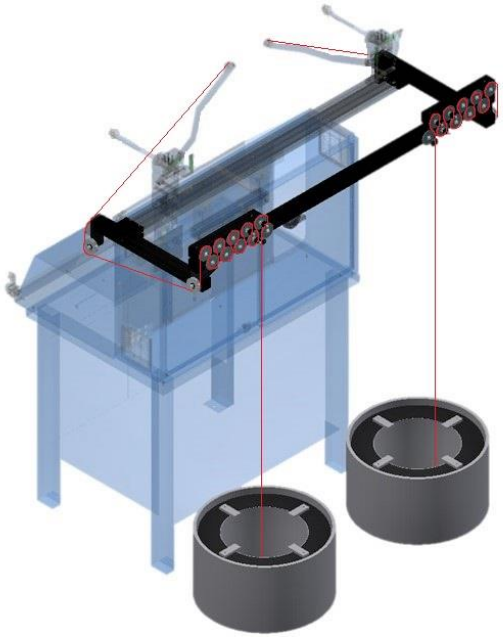

Figura 1 two-wire feeding system for wire in drums

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- **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

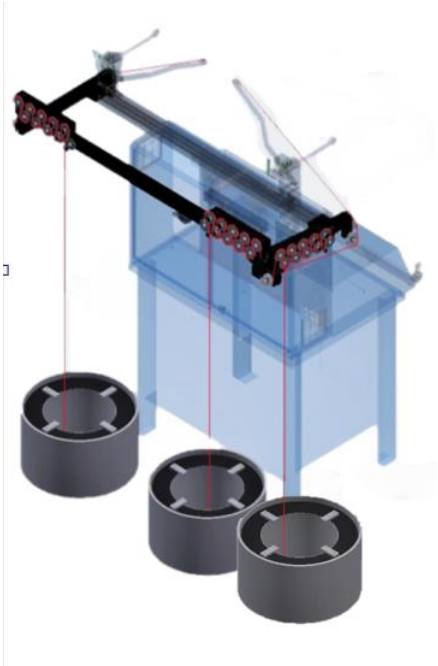
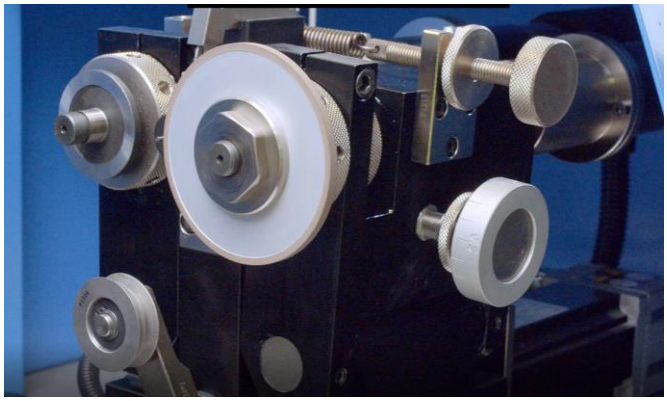


Figura 2 three-wire feeding system for wire in drums

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 < 0,09 (.004 inch) and mandrel diameter < 0,60 mm (.024 inch) using this special kit.

Wire limitations using this kit:

Min. wire diam. **0.08** mm (.003 inch)

Min. mandrel diam. **0.35** mm (.014 inch)

Limitations on use

wire diam. 0,08 mm (.003 inch) on mandrel min. diam. 0,35 mm (.014 inch)

wire diam 0,30 mm (.012 inch) on mandrel min. diam 0,50 mm (.020 inch)

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CALIBRATION UNIT, Mod. 125/29.D00040

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

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

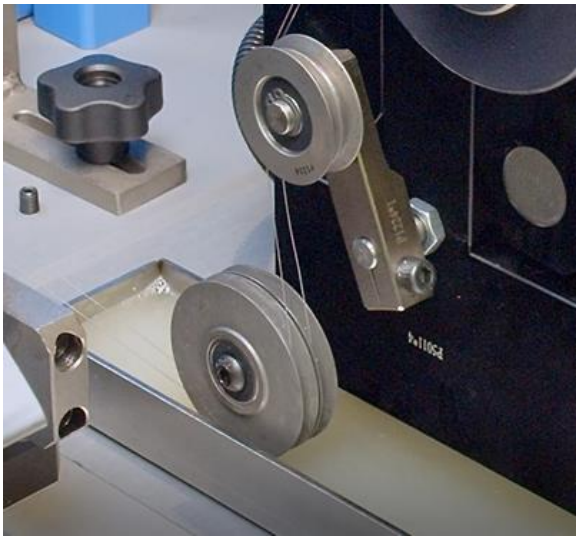
3-COLOUR INDICATOR LIGHT, Mod. 125/29.DL0000

The standard indicator light is orange colour.

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

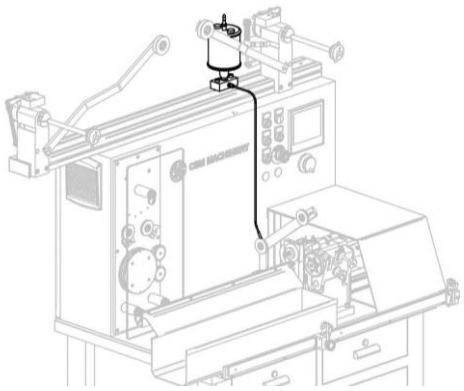
LUBRICANT, Mod. 125/30.000050

Lubricant specially developed for coiling 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.



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SUPPORT TO ALLOW 3-WIRE WINDING

Figure 3 three-wire coiling 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 0,9+0,9+0,9 mm.

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SUPPORT TO ALLOW 3-OR 4 WIRE WINDING

Figure 4 four-wire coiling 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 0,7+0,7+0,7+0,7 mm.

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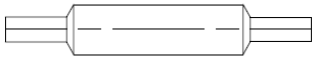
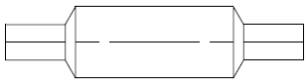
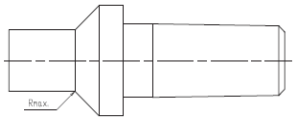
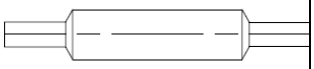
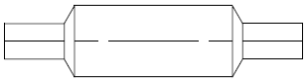
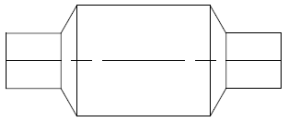
MANDRELS

Coiling machine mod 125/29.D00000

		SHANK 4 MM / .157 INCH DOUBLE CYLINDRICAL	SHANK 6 MM / .236 INCH DOUBLE CYLINDRICAL	SHANK 6 MM / .236 INCH SINGLE CONICAL
Code		P9516*0	PM00003259*0	P2319*0
Mandrel diameter	**mm**	0,8 ÷ 2,9	3,0 ÷ 4,9	5,0 ÷ 6,0
	inch	.031 ÷ .114	.118 ÷ .192	.197 ÷ .236
Layout				

Coiling machine mod.125/44.D00000

		SHANK 4 MM / .157 INCH DOUBLE CYLINDRICAL	SHANK 6 MM / .236 INCH DOUBLE CYLINDRICAL	SHANK 10 MM / .394 INCH DOUBLE CYLINDRICAL
Code		P9516*0	PM00003259*0	PM00003260*0
Mandrel diameter	**mm**	0,8 ÷ 2,9	3,0 ÷ 4,9	5,0 ÷ 8,0
	inch	.031 ÷ .114	.118 ÷ .192	.197 ÷ .315
Layout				

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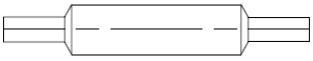
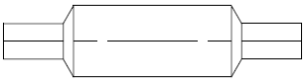
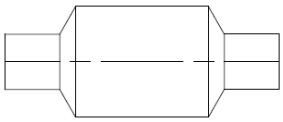
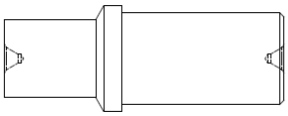
Coiling machine mod. 125/45.D00000

		SHANK 4 MM / .157 INCH DOUBLE CYLINDRICAL	SHANK 6 MM / .236 INCH DOUBLE CYLINDRICAL	SHANK 10 MM / .394 INCH DOUBLE CYLINDRICAL
Code		P9516*0	PM00003259*0	PM00003260*0
Mandrel diameter	**mm**	0,8 ÷ 2,9	3,0 ÷ 4,9	5,0 ÷ 8,5
	inch	.031 ÷ .114	.118 ÷ .192	.197 ÷ .335
Layout				

		SHANK 10 MM / .394 INCH SINGLE CYLINDRICAL
Code		PM00018072*0
Mandrel diameter	**mm**	8,6 ÷ 11,0
	inch	339 ÷ .433
Layout		

Mandrels can be ordered in any diameter within the range shown in the table with a pitch diameter of 0,01mm.
For example, the code PM00018072*0 can be ordered in diameter 8,6 8,61 8,62 mm...

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SET OF SPARE PARTS

Code 125/29.KIT1

Kit of spare parts subject to wear for coiling machine mod. 125/29 composed of:

- 10 pcs mandrels to be chosen between:
  - double cylindrical mandrel with shank 4 mm (.1575 inch) and diameter between 0,8 and 2,9 mm (.0314 ÷ .1142 inch)
  - double cylindrical mandrel with shank 6 mm (.2362 inch) and diameter between 3,0 and 4,9 mm (.1181 ÷ .1929 inch)
  - single conical mandrel with shank 6 mm (.2362 inch) and diameter between 5,0 and 6,0 mm (.1977 ÷ .2362 inch)
- 03 pcs cutting blades to be chosen between:
  - blade for wire diameter from 0,09 to 0,20 mm (.0035 ÷ .0079 inch)
  - blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
  - blade for wire diameter from 0,56 to 1,00 mm (.0220 ÷ .0394 inch)
- 04 pcs cutting bushes to be chosen between:
  - bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷ .0945 inch)
  - bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .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 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
- 05 pcs murlubric (black) wheel
- 02 pcs rubber insert for thrust wheel

Code 125/44.KIT1

Kit of spare parts subject to wear for coiling machine mod. 125/44 composed of:

- 10 pcs mandrels to be chosen between:
  - double cylindrical mandrel with shank 4 mm and diameter between 0,8 and 2,9 mm (.0314 ÷ .1142 inch)
  - double cylindrical mandrel with shank 6 mm and diameter between 3,0 and 4,9 mm
  - (.1181 ÷ .1929 inch)
  - double cylindrical mandrel with shank 10 mm and diameter between 5,0 and 8,0 mm
  - (.1977 ÷ .3150 inch)
- 03 pcs cutting blades to be chosen between:
  - blade for wire diameter from 0,09 to 0,20 mm (.0035 ÷ .0079 inch)
  - blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
  - blade for wire diameter from 0,56 to 1,00 mm (.0220 ÷ .0945 inch)
- 04 pcs cutting bushes to be chosen between:
  - bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷.0945 inch)
  - bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
  - bush for coil diameter from 8,10 to 10,00 mm (.3189 ÷ .3937 inch)

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- 01 pcs blade for space winding device
- 03 pcs bushes for space winding device to be chosen between:
  - bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
- 05 pcs murlubric (black) wheel
- 02 pcs rubber insert for thrust wheel

Code 125/45.KIT1

Kit of spare parts subject to wear for coiling machine mod. 125/45 composed of:

- 10 pcs mandrels to be chosen between:
  - double cylindrical mandrel with shank 4 mm and diameter between 0,8 and 2,9 mm (.0314 ÷ .1142 inch)
  - double cylindrical mandrel with shank 6 mm and diameter between 3,0 and 4,9 mm (.1181 ÷ .1929 inch)
  - double cylindrical mandrel with shank 10 mm and diameter between 5,0 and 8,5 mm (.1977 ÷ .3346 inch)
  - single cylindrical mandrel with shank 10 mm and diameter between 8,6 and 11,0 mm (.3386 ÷ .4331 inch)
- 03 pcs cutting blades to be chosen between:
  - blade for wire diameter from 0,21 to 0,55 mm (.0083 ÷ .0217 inch)
  - blade for wire diameter from 0,56 to 1,80 mm (.0220 ÷ .0709 inch)
- 04 pcs cutting bushes to be chosen between:
  - bush for coil diameter from 0,50 to 2,40 mm (.0197 ÷.0945 inch)
  - bush for coil diameter from 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
  - bush for coil diameter from 8,10 to 10,00 mm (.3189 ÷ .3937 inch)
  - bush for coil diameter from 10,10 to 12,00 mm (.3976 ÷ .4724 inch)
  - bush for coil diameter from 12,10 to 15,00 mm (.4764 ÷ .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 2,50 to 3,00 mm (.0984 ÷ .1181 inch)
  - bush for coil diameter from 3,10 to 4,60 mm (.1220 ÷ .1811 inch)
  - bush for coil diameter from 4,70 to 8,00 mm (.1850 ÷ .3150 inch)
  - bush for coil diameter from 8,10 to 10,00 mm (.3189 ÷.3937 inch)
  - bush for coil diameter from 10,10 to 12,00 mm (.3976 ÷ .4724 inch)
  - bush for coil diameter from 12,10 to 15,00 mm (.4764 ÷ .5906 inch)
- 05 pcs murlubric (black) wheel
- 02 pcs rubber insert for thrust wheel

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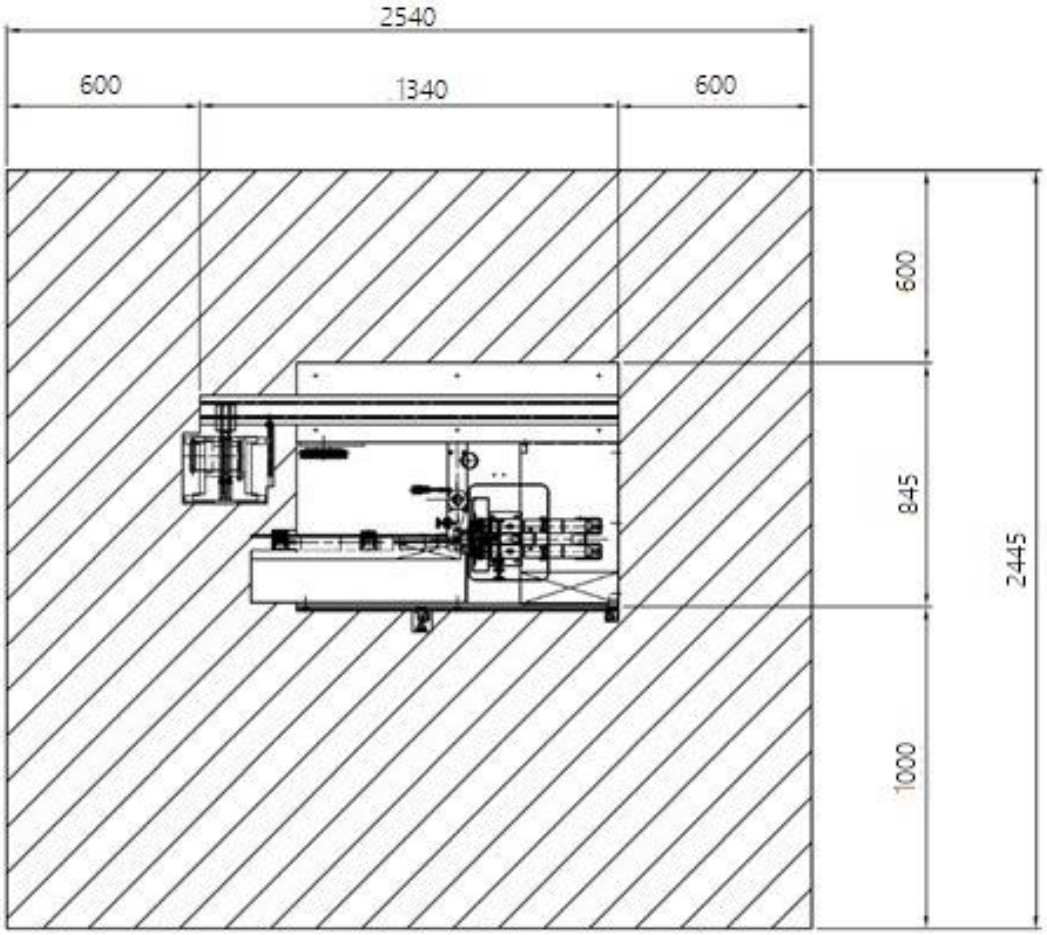
LAYOUT (in millimeter)



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