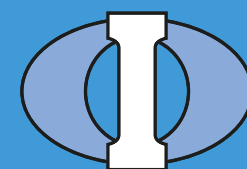




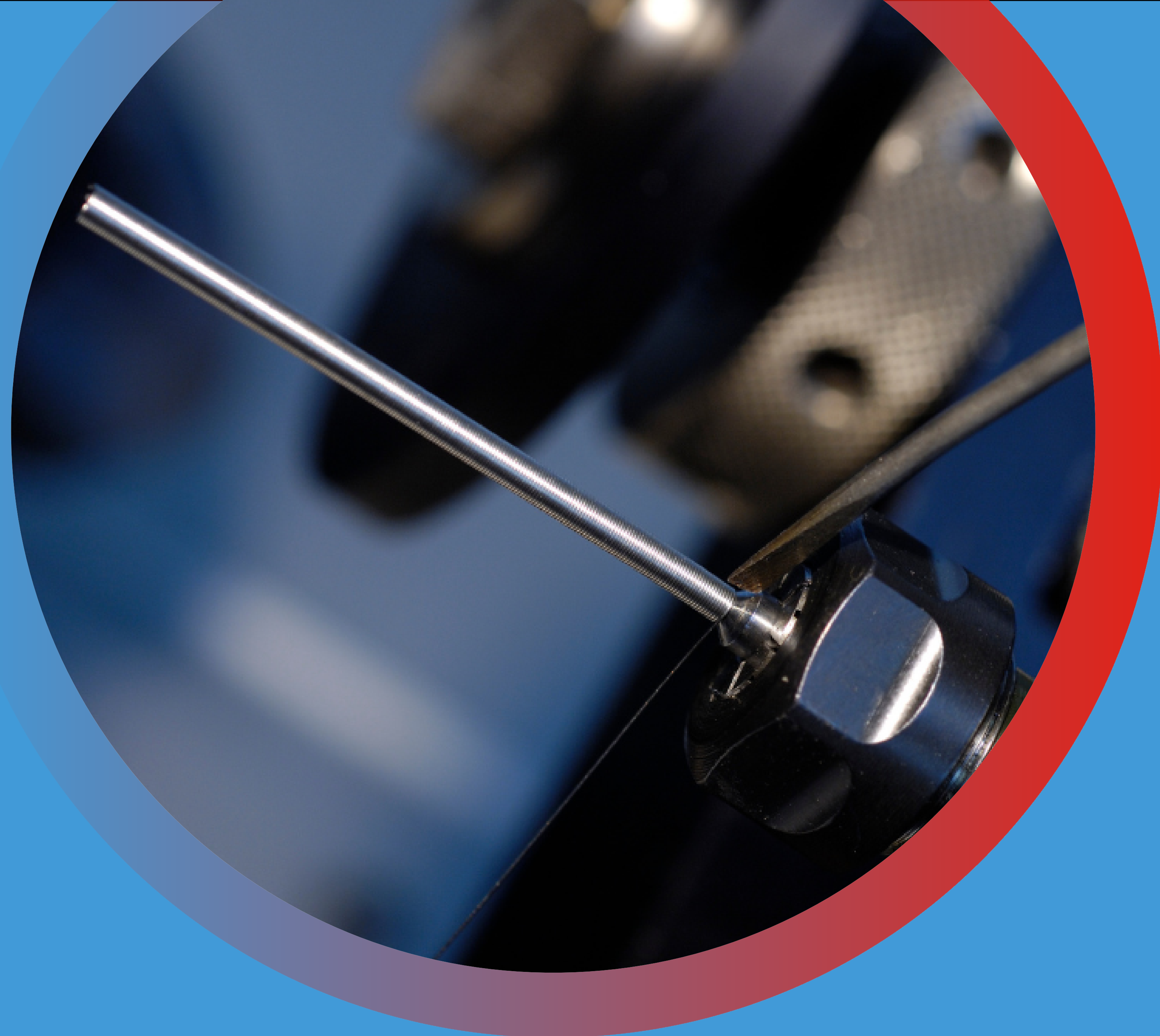
CSM MACHINERY



OAKLEY
INDUSTRIAL MACHINERY

Coiling Machine

Coil winding machine for the production of
resistive wire coils.



Machine composition

- **Two wire pay-off units** (spool holder and unwinding system) with wire guide arms
- **Two reactive brakes**, mechanical braking systems that set the required wire tension and compensate for winding defects or tangling of the spool
- **Ohmic value measuring device**: an electronic board and the contacts of the measuring wheel continuously measure the wire's ohmic value, for operation in coil-to-resistance mode
- **Wire length measuring device**: an encoder on the same measuring wheel continuously measures the wire length, allowing coil-to-length operation as an alternative to the coil-to-resistance mode
- **Mandrel unit for coil winding**, driven by a brushless motor
- **Two motorized counter-pressure wheels** (support wheel unit), each driven by its own DC motor and spring-loaded against the mandrel, applying the correct pressure and rotation to the wire as it forms into a coil
 - The rotation speed of each wheel can be set separately and independently of the mandrel speed, unlike older systems using clutches linked to the main drive
- **Cutting device**, driven by a DC motor, operating in two steps
 - Pre-cut: the blade moves down to an intermediate position, approaches the coil and inserts itself between two turns
 - Cut: the blade completes its stroke and cuts the coil cleanly, avoiding any tail on the cut end and resulting in a clean cut, ready for the next production step
- **Hopper (collection tray)** for collecting the finished coils after cutting
 - Ohmic value checking device for finished coils
 - Used in production for sample checks of the coils' ohmic values
 - Used to calibrate the continuous ohmic value measuring wheel: through a dedicated procedure, production is calibrated against the checking system, compensating any ohmic offset caused by the small change in resistance once the coil is welded to the terminal pin
- **Machine frame with workbench**, complete with two drawers for tooling and tools
- **Coil space winding system (separator)**, for producing spaced coils instead of close-wound ones, with slightly open turns
 - Spacing is obtained by fitting special blades and bushes and lowering the blade to an intermediate position, where it inserts itself between the turns and opens them
 - The amount of opening is adjusted through the blade position
 - The achievable opening has limits, depending on the wire type and the coil diameter
 - The spaced areas can be programmed: the whole coil can be spaced (except the start and end of the coil), or only selected portions, defined as a percentage of the coil, as a length or as an ohmic value
 - Complete with software module, one cutting blade and three bushes (for models 125/29) or six bushes (for model 125/45)



Available versions

Machine name	Notes	Machine model	Coil max. diameter	Wire diameter	Min. mandrel diameter	N. coil wires
COIL WINDER	The COIL WINDER is the most versatile machine in the range, suited to the majority of armored heating element manufacturers. It covers coil diameters up to .314" (8 mm), with wire from 18 to 34 gauge, matching the typical production needs of the cartridge, tubular, and compact heating element segment.	125/29.D000SA	.314" (8 mm)	18-34 gauge (0,15 – 1,00 mm)	.040" (1,00 mm)	standard: 1 wire - 2 wires option: 3 wires - 4 wires
COIL WINDER HEAVY-DUTY XL	The machine is built for manufacturers of large-diameter coils, up to .630" (16 mm), typically used in open-coil elements for air/duct heating and industrial furnaces, as well as in kiln/annealing furnace elements, where larger coil bodies are required with wire in the same range as the Heavy Duty version.	125/45.D000SA	.630" (16 mm)	13-28 gauge (0,30 - 1,80 mm)	.040" (1,00 mm)	standard: 1 wire - 2 wires option: 3 wires - 4 wires

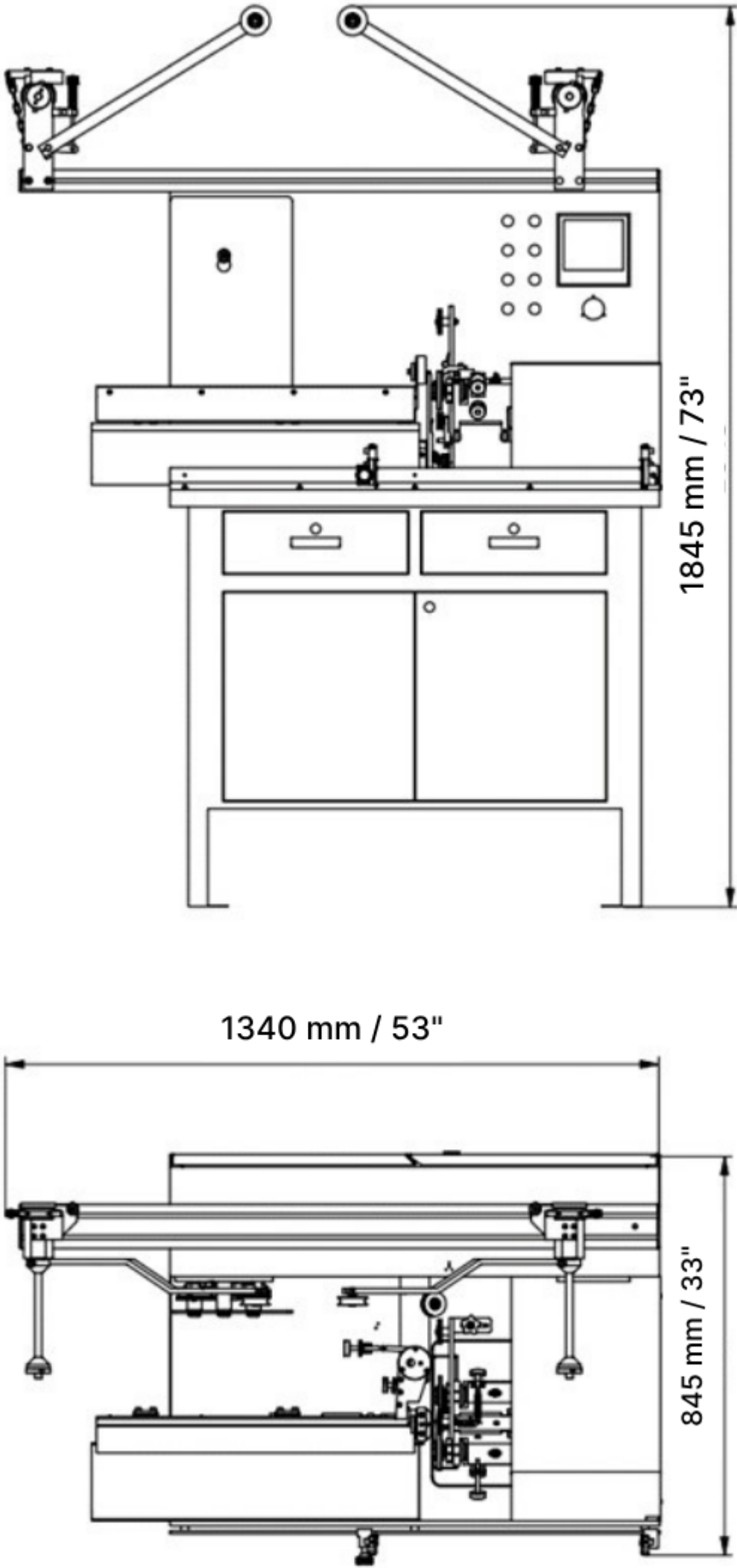
Technical characteristics

Standard wire spools type, up to	250 DIN
Length of the standard coil offloading system	26" (670 mm)
Max number of mandre revolutions	6000 rev/min
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)	0,5% - 0,8% ohm ±
Electric supply	L+N/PE V
Total installed power	1 kVA
Machine dimensions	53 × 33 x H 73" (1340 × 845 x H 1845 mm)
Recommended working space around the machine	24" 600 mm
Weight	507 lbs (230 kg)

LIMITS OF USE

	1 wire	2 wires	3 wires	4 wires
mandrel diameter	≥ 2 ÷ 2,5	≥ 2,5 ÷ 3	≥ 3 ÷ 3,5	≥ 3,5 ÷ 4

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



Options

COIL OFFLOADING SYSTEM AND STATIC OHM MEASUREMENT

The standard coil offloading tray is fixed and has a length of 26" (670 mm).
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.

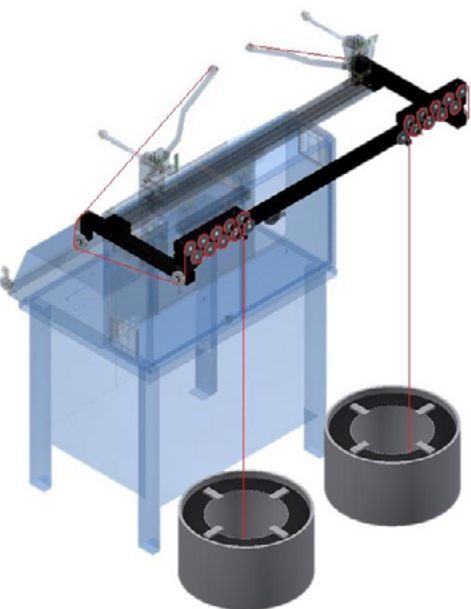
Tray + ohm measure models	Length (mm/inch)	Off-load type
125/29.D00030 + 125/29.D00024	53" (1340 mm)	Fixed
125/29.D00032 + 125/29.D00024	53" (1340 mm)	Pneumatic
125/29.D00036 + 125/29.D00028	39" (1000 mm)	Fixed
125/29.D00034 + 125/29.D00028	39" (1000 mm)	Pneumatic
125/29.D00031 + 125/29.D00027	79" (2000 mm)	Pneumatic
125/29.D00033 + 125/29.D00025	118" (3000 mm)	Pneumatic
125/29.D00035 + 125/29.D00026	185" (4700 mm)	Pneumatic



SYSTEM TO FEED WIRE FROM DRUMS OR PAIL PACKS

Device for unwinding and tensioning wire in drums or pail packs. Max wire size .071" (1,8 mm).
The system is completed with support bar for idle wheels, idle wheels for wire tensioning and cover for wire in drums or pail packs.

Version	Model
One-Wire	125/29.D00200
Two-Wire	125/29.D00100
Three-Wire	125/29.D00300



Two-wire feeding system for wire in drums



Three-wire feeding system for wire in drums

Options

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

125/00.KIT000 for mandrel grinding (available only for model 125/29.D00000)

It is possible to produce coils with single wire, wire diameter $< .004''$ (0,09 mm) and mandrel diameter $< .024''$ (0,60 mm) using this special kit.

Wire limitations using this kit:

- Min. wire diam. $.003''$ (0,08 mm)
- Min. mandrel diam. $.014''$ (0,35 mm)

Limitations on use:

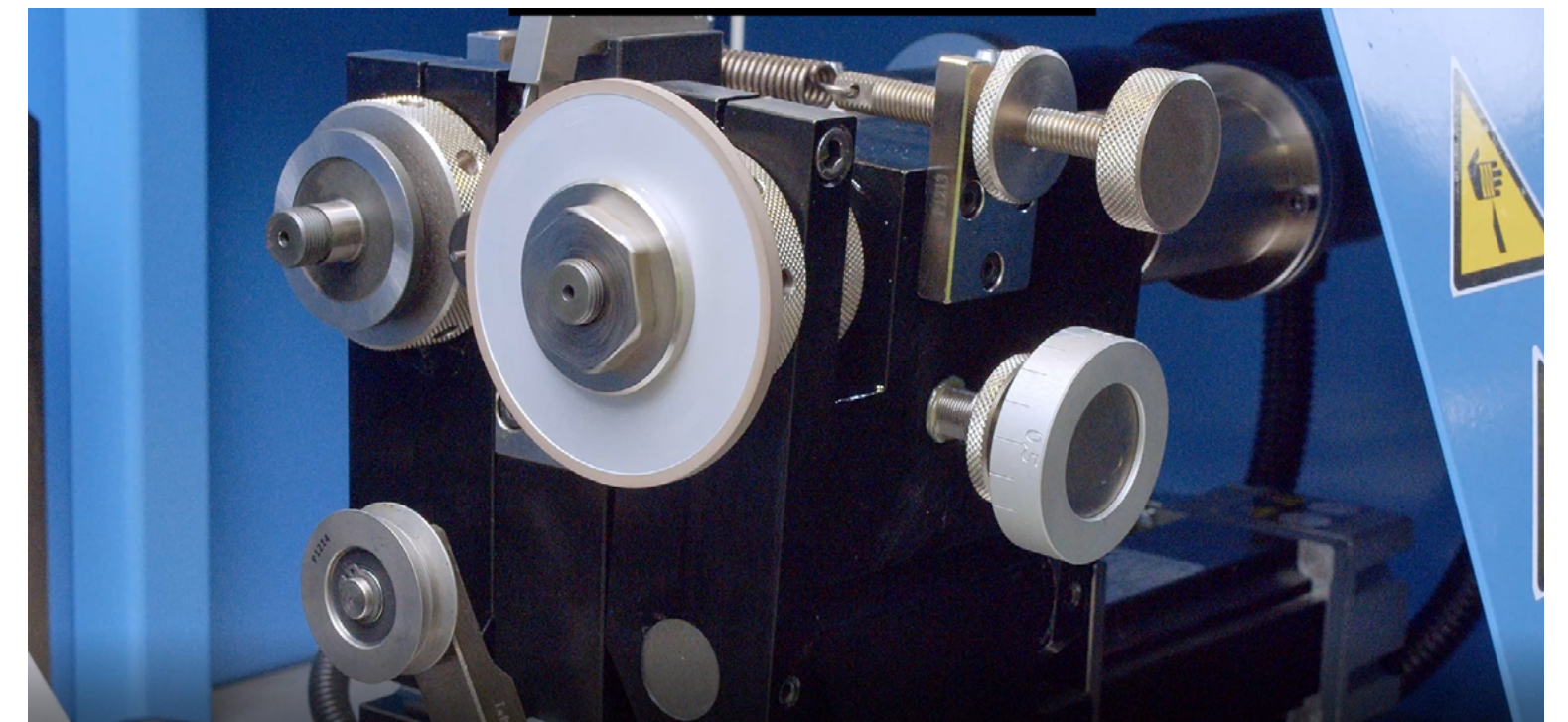
- wire diam. $.003''$ (0,08 mm) on mandrel min. diam. $.014''$ (0,35 mm)
- wire diam $.012''$ (0,30 mm) on mandrel min. diam $.020''$ (0,50 mm)

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



Options

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

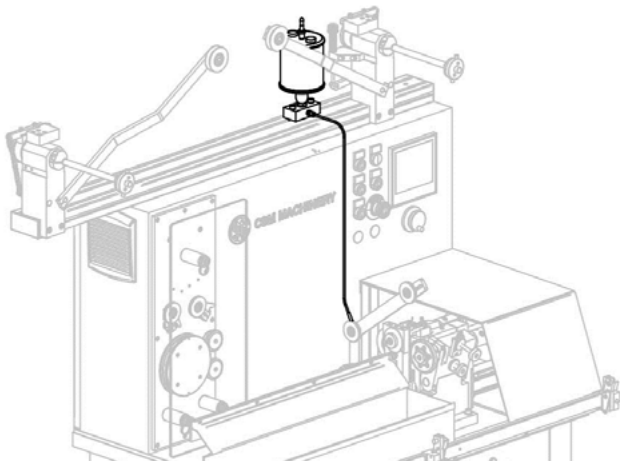
Lubricant specially developed for coiling machines biodegradable and to be washed away with water.

Model	Quantity
LUBRICANT05	11 lb (5 kg)
LUBRICANT10	22 lb (10 kg)
LUBRICANT25	55 lb (25 kg)

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.



Configurations

SUPPORT TO ALLOW 3-WIRE WINDING

Mod. 125/29.000310

Support to allow the formation of 3-wire coils. It is composed by:

- DIN 250 spool holder
- Dynamic brake

The largest wire diameter when winding 3-wire coils is .035+.035+.035" (0,9+0,9+0,9 mm).



COIL WINDING MACHINE

SUPPORT TO ALLOW 3-OR 4 WIRE WINDING

Mod. 125/29.000320

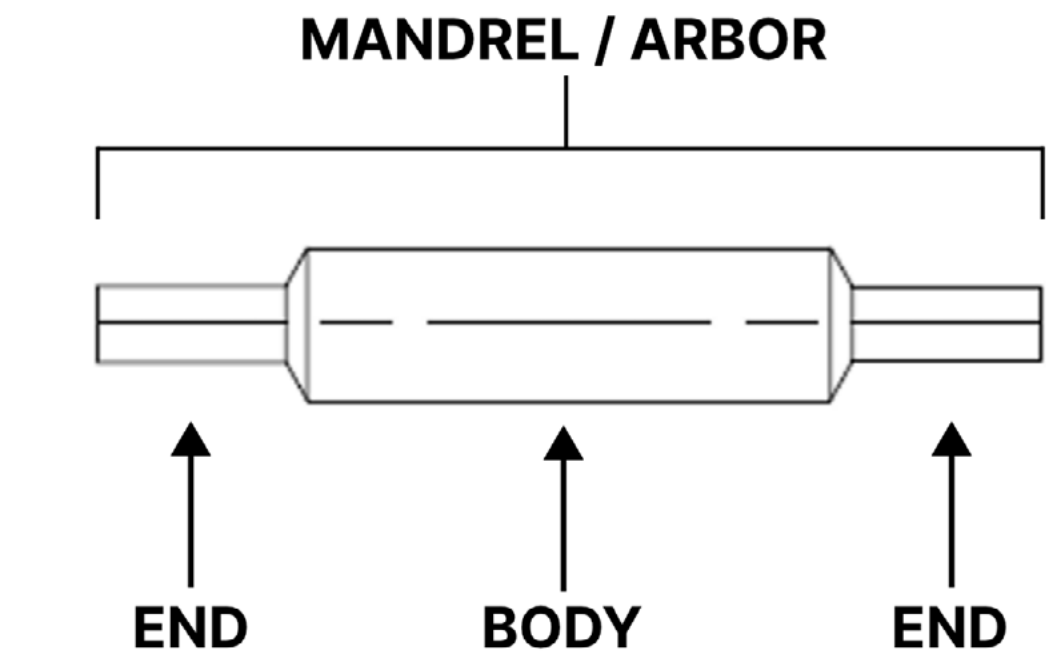
Support to allow the formation of 3-4 wire coils. It is composed by:

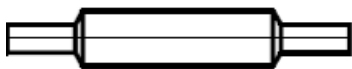
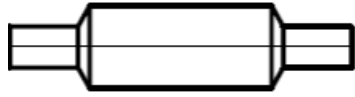
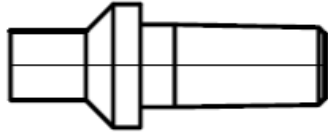
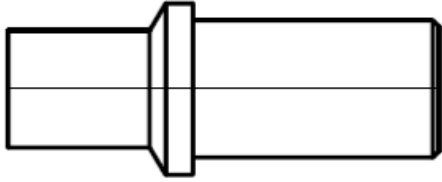
- No. 2 DIN 250 spool holder
- No. 2 Dynamic brake
- Holder frame

The largest wire diameter when winding 4-wire coils is .027+.027+.027+.027" (0,7+0,7+0,7+0,7 mm).



Mandrels



					
ITEM NO.	P9516*0	PM00003259*0	PM00003260*0	P2319*0	PM00018072*0
BODY TYPE AND DIAMETERS	Cylindrical .157" (4 mm)	Cylindrical .236" (6 mm)	Cylindrical .394" (10 mm)	Conical .236" (6 mm)	Cylindrical .394" (10 mm)
ENDS TYPE AND DIAMETERS	Double .031 ÷ .118" (0,8 ÷ 3,0 mm)	Double .118 ÷ .192" (3,0 ÷ 4,9 mm)	Double .197 ÷ .315" (5,0 ÷ 8,0 mm)	Single .197 ÷ .236" (5,0 ÷ 6,0 mm)	Single 339 ÷ .433" (8,6 ÷ 11,0 mm)
COIL WINDER	X	X		X	
COIL WINDER HEAVY-DUTY XL	X	X	X		X

Tooling included

		COIL WINDER	COIL WINDER HEAVY-DUTY XL
Bushes for coil diameter	.020 ÷ .094" (0,50 to 2,40 mm)	1 pc.	1 pc.
	.098 ÷ .118" (2,50 to 3,00 mm)	1 pc.	1 pc.
	.122 ÷ .181" (3,10 to 4,60 mm)	1 pc.	1 pc.
	.185 ÷ .315" (4,70 to 8,00 mm)	1 pc.	1 pc.
	.319 ÷ .394" (8,10 to 10,00 mm)	-	1 pc.
	.398 ÷ .472" (10,10 to 12,00 mm)	-	1 pc.
	.476 ÷ .591" (12,10 to 15,00 mm)	-	1 pc.
Cutting blade for wire diameter	.003 ÷ .008" (0,09 to 0,20 mm)	1 pc.	-
	.008 ÷ .022" (0,21 to 0,55 mm)	1 pc.	1 pc.
	.022 ÷ .039" (0,56 to 1,00 mm)	1 pc.	-
	.022 ÷ .070" (0,56 to 1,80 mm)	-	1 pc.
Wheels/Inserts	Thrust wheel (complete assembly)	1 pc.	1 pc.
	Steel wheel	2 pcs.	2 pcs.
	Murlubric (black plastic) wheel	2 pcs.	2 pcs.
Collets	.157" (4 mm)	1 pc.	1 pc.
	.236" (6 mm)	1 pc.	1 pc.
	.394" (10 mm)	-	1 pc.



Set of spare parts

	COIL WINDER Mod. 125/29KIT1	COIL WINDER HEAVY-DUTY XL Mod. 125/45KIT1
MANDRELS / ARBORS	10 pcs. to be chosen between: - double cylindrical with shank .157" (4 mm) - double cylindrical with shank .236" (6 mm) - single conical mandrel with shank .236" (6 mm)	10 pcs. to be chosen between: - double cylindrical with shank .157" (4 mm) - double cylindrical with shank .236" (6 mm) - double cylindrical with shank .394" (10 mm) - single cylindrical mandrel with shank .394" (10 mm)
CUTTING BLADES	3 pcs. to be chosen between: - blade for wire diameter from .0035 ÷ .0079" (0,09 to 0,20 mm) - blade for wire diameter from .0083 ÷ .0217" (0,21 to 0,55 mm) - blade for wire diameter from .0220 ÷ .0394" (0,56 to 1,00 mm)	3 pcs. to be chosen between: - blade for wire diameter from .0083 ÷ .0217" (0,21 to 0,55 mm) - blade for wire diameter from .0220 ÷ .0394" (0,56 to 1,00 mm)
CUTTING BUSHES	4 pcs. to be chosen between: - bush for coil diameter from .0197 ÷ .0945" (0,50 to 2,40 mm) - bush for coil diameter from .0984 ÷ .1181" (2,50 to 3,00 mm) - bush for coil diameter from .1220 ÷ .1811" (3,10 to 4,60 mm) - bush for coil diameter from 1850 ÷ .3150" (4,70 to 8,00 mm)	4 pcs. to be chosen between: - bush for coil diameter from .0197 ÷ .0945" (0,50 to 2,40 mm) - bush for coil diameter from .0984 ÷ .1181" (2,50 to 3,00 mm) - bush for coil diameter from .1220 ÷ .1811" (3,10 to 4,60 mm) - bush for coil diameter from .1850 ÷ .3150" (4,70 to 8,00 mm) - bush for coil diameter from .3189 ÷ .3937" (8,10 to 10,00 mm) - bush for coil diameter from .3976 ÷ .4724" (10,10 to 12,00 mm) - bush for coil diameter from .4764 ÷ .5906" (12,10 to 15,00 mm)
BLADE FOR SPACE WINDING DEVICE	1 pc.	1 pc.
BUSHES FOR SPACE WINDING DEVICE	3 pcs. to be chosen between: - bush for coil diameter from .0984 ÷ .1181" (2,50 to 3,00 mm) - bush for coil diameter from .1220 ÷ .1811" (3,10 to 4,60 mm) - bush for coil diameter from .1850 ÷ .3150" (4,70 to 8,00 mm)	3 pcs. to be chosen between: - bush for coil diameter from .0984 ÷ .1181" (2,50 to 3,00 mm) - bush for coil diameter from .1220 ÷ .1811" (3,10 to 4,60 mm) - bush for coil diameter from .1850 ÷ .3150" (4,70 to 8,00 mm) - bush for coil diameter from .3189 ÷ .3937" (8,10 to 10,00 mm) - bush for coil diameter from .3976 ÷ .4724" (10,10 to 12,00 mm) - bush for coil diameter from .4764 ÷ .5906" (12,10 to 15,00 mm)
MURLUBRIC WHEEL	5 pcs.	5 pcs.
RUBBER INSERT FOR THRUST WHEEL	2 pcs.	2 pcs.