FOIL WINDING MACHINES FOR LV TRANSFORMER COILS

TARGET

The winding machines BOB L 600 and BOB L 800 are designed to wind LV transformer coils ranging from approx 10 to 2.000 kVA and 100 to 3.150 kVA respectively, with one foil or two overlapped foils, made of copper or aluminium.

MAIN FEATURES

The machines feature an **high precision control** of the foil tension, in order to accommodate a wide range of requirements, with actual measurement of foil tension, by means of load-cells. Moreover, the needed braking action is **regenerative**, so to bring a substantial **energy saving** to the winding process.
The quality of the finished product is assured by the electronic control of the foil tensioning and alignment, while the **productivity is boosted** by several machine's features:

- welding unit inside the frame, either in its **TIG or Cold Welding** version;
- the welding can be executed either in **manual or fully automatic** mode;
- all the needed **stops can be programmed** and are executed by the machine's PC;
- increased **capacity** of the foil decoiler, so that wasting set up times are reduced.

The operator interface is a **21'' wide multitouch HMI**, that allows easy programming of the winding data and a simple control of the machine.
Round, oval or rectangular coils can be quickly produced thanks to several available accessories.

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MACHINE COMPOSITION

MAIN MACHINE :

(a) 1 conductor foil decoiler
(b) Foil tension control and measuring through load cells
(c) Foil automatic alignment
(d) Foil cleaning unit
(e) Foil feeding unit
(f) Bus-bar TIG welding unit + cooling unit **or** Cold Welding unit + foil brushing
(g) Driving unit & Tailstock
(h) Winding locking
(i) 1 insulation dereeler
(j) Edge filling strip units
(k) Foil manual cutting device
(l) Controls with computer
(m) Internet teleservice

ACCESSORIES :

(1) Expandable mandrels (round or oblong)
(2) Second insulation dereeler
(3) Deburring unit
(4) Foil protection paper collecting system
(5) Camber reverse roller (for not circular windings)
(6) Insulation edges trimming
(7) Double pressure roller for rectangular windings
(8) Winding extracting device
(9) Second conductor foil decoiler & accessories
(10) External TIG welding unit for bus-bar (only for CW version)
(11) Winding program editor application

TECHNICAL DATA

GENERAL			**BOB L 600**	**BOB L 800**
Weight of basic machine	approx.	kg	5300	4600
WINDING				
Height	max	mm	670	870
Winding diameter	max	mm	500	500
Overall diameter	max	mm	600	600
FOIL MOVEMENT				
Winding mandrel speed	max	rpm	30	30
Single foil tension	min/max	N	450 / 9000	1000 / 17000
Double foil tension	max	N	13000	27000
Weight between centres	max	kg	800	1350
CONDUCTOR (Cu or Al)				
Foil width	min/max	mm	150 / 600	200 / 800
Cu single foil thickness	min/max	mm	0.2 / 1.8	0.3 / 2.0
Cu single cross section	min/max	mm^2	30 / 900	60 / 1600
Cu double foil thickness	max	mm	1.0 + 1.0	1.0 + 1.0
Cu double cross section	max	mm^2	1200	1600
Al single foil thickness	min/max	mm	0.3 / 2.0	0.3 / 2.5
Al single cross section	min/max	mm^2	45 / 1050	80 / 2000
Al double foil thickness	max	mm	1.2 + 1.2	1.4 + 1.4
Al double cross section	max	mm^2	1440	2240
	(Indicative data, depending on requested foil tension, winding diameter and total conductor section)			
INSULATING MATERIAL				
Width	min/max	mm	150 / 670	200 / 870
Thickness	min/max	mm	0.05 / 0.5	0.05 / 0.5
Roll outer diameter	max	mm	400	400
OTHER MATERIALS				
Edge filling strip each side	max	mm	No. 3 : 35 x 1	No. 3 : 35 x 1
Bus-bar size	max	mm	120 x 12	150 x 15
Right bus-bar allowance	max	mm	400	400

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