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.
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 mm² 30 / 900 60 / 1600
Cu double foil thickness max mm 1.0 + 1.0 1.0 + 1.0
Cu double cross section max mm² 1200 1600
Al single foil thickness min/max mm 0.3 / 2.0 0.3 / 2.5
Al single cross section min/max mm² 45 / 1050 80 / 2000
Al double foil thickness max mm 1.2 + 1.2 1.4 + 1.4
Al double cross section max mm² 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