



WIRE WINDING MACHINES FOR DISTRIBUTION TRANSFORMERS



TARGET

The BOB FPN is a very powerful and versatile machine which can wind a wide range of HV coils for distribution transformers using round and rectangular wires. It is available in 3 different sizes: **BOB FPN 06** (ranging from **200** to **2000** kVA) **BOB FPN 08** (ranging from **250** to **5000** kVA) and **BOB FPN 14** (ranging from **250** to **10000** kVA).

Depending on the shape of the Windings, each size can be produced in two variant: 1) for Circular Windings; 2) for Oblong Windings; the first with a simple pneumatic wire tensioner, the latter with a high-performing electronic wire tensioner, which allows winding at high speed on non-circular Windings.

MAIN FEATURES

The machine can perform windings using the full interlayer insulation and edge strips or the strip graded insulation giving extreme flexibility of use which, together with the software, enables different distribution modes for the insulating material:

- Automatic winding
- Semiautomatic winding
- Only interlayer
- Conventional winding

Building the whole insulation by means of paper strips gives to the BOB FPN the highest automation according to the recent transformer technologies. Using this concept of winding, through the use of a powerful CNC control with dedicated software, the main advantages compared to a conventional winding method, are:

- Reduction of winding times;
- Reduction of stock material;
- Reduction of insulation material;
- Reduction of all materials.





MACHINE COMPOSITION

MAIN MACHINE :	ACCESSORIES :
(a) Headstock and Transmission system with AC 3-phases Inverter duty motor	(1) Round or Oblong expandable mandrel
(b) Tailstock	(2) 1 or 2 Unwinding unit for round wire
(c) Wire guiding carriage	(3) 1 or 2 Flat wire dereelers
(d) Wire tensioner alternatively with pneumatic or electronic control	(4) 1 st Full width insulation decoiler & rolls
(e) Strip tensioner with electronic control	(5) 2 nd Full width insulation decoiler
(f) Controls with Computer	(6) Dereelers for edge strips
(g) Internet teleservice	(7) Adhesive tape dispenser
	(8) Data transfer from remote PC
	(9) Modem teleservice
	(10) Two way flattener SF2
	(11) Four way flattener SF4
	(12) Mechanical turn counter

TECHNICAL DATA

GENERAL			BOB FPN 06	BOB FPN 08	BOB FPN 14
Weight of basic machine	approx.	kg	3000	3000	3500

WINDING					
Length	max	mm	600	800	1380
Diameter	max	mm	500	500	800
Weight	max	kg	300	550	850

MANDREL					
Mandrel rotation speed	max	rpm	450	450	270
Mandrel torque	max	Nm	310	710	1150

CONDUCTORS					
No. of round wires	max		2	2	2
Round wire diameter	max	mm	0.4 / 5	0.5 / 5	0.5 / 5
Recommended Diameter of round wire with graded insulation	min/max	mm	1.2 / 5.0	1.2 / 5.0	1.2 / 5.0
No. of flat wire	max		1	2	2
Flat wire width	min/max	mm	5 / 15	5 / 15	5 / 15
Flat wire thickness	max	mm	1.5 / 4.0	1.5 / 4.0	1.5 / 4.0
Conductor total section	max	mm ²	60	120	120

INSULATION					
Full width insulation thickness	min/max	mm	0.1 / 0.5	0.1 / 0.5	0.1 / 0.5
Strip insulation thickness	min/max	mm	0.05 / 0.15	0.05 / 0.15	0.05 / 0.15
Strip insulation width	min/max	mm	10 / 50	10 / 50	10 / 50