SBM 800 DOUBLE LAY STRANDER / BUNCHER

General Specification

Max Noise	**: 80 dB(A) *(4000 tpm)**
Ambiance Temparature Max.	**: 40 C°**
Altidude above sea level	**: 1000 m**
Supply Voltage:	**: 3 x 380 V AC+PE**
Frequency	**: 50 Hz / 60 Hz**
Control Voltage	**: 230 / 24 V AC/DC**

*** With the Cabine , Accordingto EN ISO 3744 , measured average noise level at 1 m from the machine body.**

Attention :

Machine is designed under the condition explaiden abow , Any changes of the condition will effect the machine performance or can cause loses in machine parts or power of the machine.

1. Unit Specifications

-Adjustment of lay length by synchronized AC Drives for capstan and rotor.
-Electrical equipments ; PLC (Siemens) and frequency controlled drives (Mitsubishi).
-Reel take-up equipments for one reel.
-Complete cabelling between machine and electrical panel with plugs
-Special cabine for noise protection with electro-pneumatic door opener And ventilation by temperature controlled fan motor.
-1 guiding plate. (on customers requirements)
-Traverse width adjustment by HMI on control panel
-7"-colour touch panel Human Machine Interface (HMI) allows intuitive operation of the machine and monitoring of all process related parameters.
-Wireles data transfer to the control electronics of reel carrier is maintenance free. Wireless data transfer with high solution of actual values provides precision of lay length control.
-According to IE3 specification energy efficient operation through power optimized rotor AC motor
-Rotor bearings temperature is controlled by sensors.
-Running surfaces of pulleys are ceramic coated. Strands are secured against jumping out of guidance.
Spindles, barrels and carriers are steel hardened.

2. Machine Specifications

Line Direction	1-Direction from left to right 2-Direction from right to left
Machine Colors	Machine, noise protection cabin, noise protection door, moving parts and electrical cabin colors are defined by customer
Wiring	The connecting cables to the machine are to be provided by the customer, the cables between switch cabinet and machine are connected with the machine
Electrical Panel Cable Feeding	From the button, by plug
Operation and Display Devices	Mounted on the noise protection cabin
Installation of the Line	Without foundadtion
Software	Programmable logic control (PLC) software will be delivered with machine All software used on PLC system is property of company Sarmakina, Customer will have the right to use the software. Modifications to existing software of delivered machines should be done by Sarmakina All warranty claims will discontinue if any program modification will be done by the customer Used PLC and Drivers have a Ethernet utilities , it is suitable with ERP and industry 4.0 entegration
Documentation	Maintenance instructions, Operating instructions, Sub-assembly drawings Spare parts list Wiring diagram Lay-out and foundadtion plan
Machine	Machine consist of machine frame, switch cabinet and noise protection cabin with operator's panel
Machine Frame	It is designed , welded steel structure ; vibration-free construction standing on vibration isolator elements It is user friendly for operation
Noise Protection Cabin	Special Wall on the noise protection cabin , which has a absorbing elements in it Main door on the operator side can be opened totally by the pneumatic cylinder. During the operation door stays locked electrically. There are windows , on the inlet side and operation door
Electrical Panel	All the electrical components are mounted and wired in Fan ventilated panel The connection switch cabinet and machine is done with plug

Reel Carrier	Welded steel construction. The spool axis is placed at the vertical angle according to axis of the machine.
Reel take-up, reel clamping	The reel is set in center by means of take-up cones and they are clamped axially by a pintle, the pintle is released by pneumatically
Reel lifting device	Lifting platform which takes the reel from the floor to the adjustable height; lifting height is adjustable according to reel flange diameter
Number of twists	Number of twist is adjustabled on control panel
Travers	Structure ; consisting of precision screw bolt bearing system, linear ball bearing guiding rail system Drive ; Combined step motor driver By means of step motor and driver, position control is made precisely. During the operation, regulations and corrections are adjusted by operator. Travers width can be adjusted
Travers Width Adjustment	Width adjustment will be done automatically by the set positioning for defined spool and precise corrections at the flange will be done by operator's guidance with indication of regulating differencies from control panel, during machine operation. Correction of the , peaks and valleys are done by automation system automatically using special program on control system
Rotor	Rotor consists of two rotor bodies and an rotor bow. Rotor bow is connected with the rotor bodies. There is not any tension on the bow body on the rotors.
Haul-off	Electriaclly , with capstan and its drive motor with driver. . By means of an AC servo motor, current supply to the motor via slip rings
Rotor drive	AC motor (frequency controlled) via shaft and toothed belt on each rotor side
Spool drive	Load cell provides control of the conductor tension between haul-off capstan and reel, pulling force is adjustabled via control panel. By means of an AC servo motor, current supply to the motor via slip rings
Operator panel	Spooling tension, spool barrel diameter, - spool filling , lay length, number of twists twist direction (S and Z), wire inlet speed

Force-ventilation	A mounted temperature controlled fan in noise protection cabine , provides the fresh air to the motors
Disconnections	push-button quick stop at wire break overturn of reel carrier; braking times are adjustable when the required meter length is reached, disconnections by meter counter normal-off by button, by slowing down of the drives
Control Functions	overturn of the spool carrier, wire break, temperature rotor drive- and spool drive motor, temperature rotor bearings
Lubrication	the guiding parts and the roller bearings are lubricated with a special roller bearing grease the lubrication nipples for the lubrication of the rotor bearings and the shaft bearings are located outside of the cabine Specification of used oil and grease types are stated on the machine
Measuring instruments	running time counter, indication of the output

3. Technical Specification

Line Speed Max.	**: 300 m/min.**
Number of Twist Max. *	**:5000 Twist/min**
Number of max.twist for Total cros section of the wire	
0,25 - 2,00 mm²	**: 5000 Twist/min**
2,00 - 4,00 mm²	**: 4500 Twist/min**
4,00 - 6,00 mm²	**: 4000 Twist/min**
6,00 - 10,00 mm²	**: 3000 Twist/min**
10,00 - 16,00 mm²	**: 2000 Twist/min**
Lay length *	**: 15 - 160 mm**
Twisting direction	**: Right or Left (S / Z)**
Haulf off Power	**: max. 400 N**
Spooling Speed	**: max. 404 rpm**
Braking Times	**:normal-off adjustable (20-200s)** **:quick stop (wire break) adjustable (5-50sn)** **:emergency-off about 8 s**
Dia.of guide pulleys	**:125 mm**
Inlet Height	**:1120 mm**
Final Capstan	**: Ø 178 mm , 5 grooves**

***** **Can be adjusted stepless various value**

4. Specification of Bunched Cupper wire

Wire Material	**: Cu**
Strenght	**: 250 N/mm²**

Wire diameter and cross sections can be bunched

One Wire diameter	**: 0,15 - 1,35 mm 0,15 - 0,80 mm**
Bunched wire cross section	**: 0,25 - 10,00 mm² 10,00 - 16,00 mm²**

Strand constructions	**Bunched stranded conductors** **i.e. 14x 0,16 mm (0,25 mm²)...49x 0,65 mm (16,0 mm²)** **Concentric stranded conductors - 7 wires** **i.e. 7x 0,32 mm (0,56 mm²)...7x 1,35 mm (10,0 mm²)** **Unilay concentric - 19 wires** **i.e. 19x 0,2 mm (0,60 mm²)...19x 0,64 mm (6,0 mm²)** **Flexible stranded conductors** **i.e. 21x 0,16 mm (0,38 mm²)...512x 0,20 mm (16,0 mm²)**

5. Reel specifications and dimentions

Max. Flange Diameter	**: 800 mm**
Min. Flange Diameter	**: 560 mm**
Min. Barrel diameter **	**: 315 mm**
Winding length Max.	**: 500 mm**
Total Length Max.	**: 600 mm**
Max. Reel Weight	**: 1200 kg**
Pintle hole diameter	**: 127 mm**
Pintle hole cone angle	**: 30 / 22,5**

* * Line speed will decrease in small barrel diameter

Reel type and definition

- **According to DIN 46397**
- **According to DIN EN 60264**

Attention:

In case of using special reel , Sarmakina should be informed

If you use kind of reels which are not balanced will cause vibration and can cause damage on machine

•Reels should be balansed According to : ISO R 1940 - G 40

•Wire cross section < 0,25 mm2
•Runout deviation of Cone holl /core = 0,3 mm

•Wire Cross section > 0,25 mm2
•Run out deviation of Cone holl core = 0,8 mm

•Cone core holl is necesssery

6. SBM 800 Machine dimensions

Width	**: 2230 mm**
Length	**: 4620 mm**
Higth	**: 2410 mm**
Wire running line hight	**: 1120 mm**
Weight (Machine + Cabine)	**: 5650 kg**

Electrical Cabine

Width	**: 500 mm**
Length	**: 1000 mm**
Hight	**: 1900 mm**
Weight	**: 400 kg**

7. Power of Driving units

Rotor Motor	**: AC MOTOR-18,5 kW**
Spooler Motor	**: AC Asynchronous Servo Motor-5,5 kW**
Capstan Motor	**: AC Asynchronous Servo Motor-5,5 kW**
Travers Motor **Lifting Motor** **Pressurized Air consumption (6 bar)**	**: Step Motor 9,5-N** **: Gear Motor –AC - 1,5 kW** **: 0,9 m³ / h**

Attention
Machine performance depends on several condition as below

- Requirements of manufacturing quality
- Pay off machines and pay off conditions
- Bunching die and compresin rate
- Guiding equipments on the line
- Operation of Reel loading