	<p>Object</p> <p>Technical Specification</p>	<p>Factory BRESCIA</p> <p>Firm Sector COMMERCIAL</p>
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TECHNICAL SPECIFICATION

EDDY CURRENTS MAGNETIC SEPARATOR

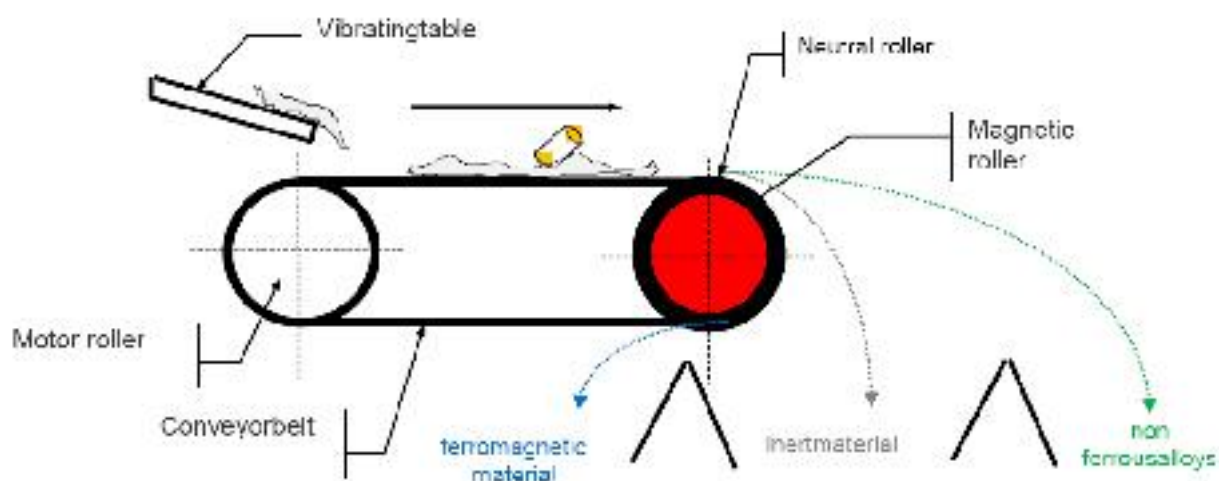
Our type: **ECS 1500 L**

The **ECS** separators have the purpose of separating the metals and nonferrous alloys from inert material or between themselves.


This separation is better the higher the ratio of electrical conductivity and specific gravity of the metals to be separated.

The operating principle is based on the action of the eddy currents (or Foucault currents) generated in the metal by a strong alternating magnetic field at high frequency. This action is translated mechanically in a shift, also of considerable size, of its fall trajectory. By exploiting the differences in trajectory between the metal and the inert or between the metals themselves, it is possible to accomplish separation between metals.

To extract the metal intrusions present in the material process and discharged separately into special containers, the separator must be mounted in a horizontal position in line with the conveyor belts.



Scheda N°	Prep. da	Approv. da	Archiv. da	File	Rev.	Data	Pag.
S 03/02	COM	DIR	COM	GMST ECS 1500 L C-E	C	24/02/21	1 di 3

	<p style="text-align: center;"><i>Object</i></p> <p style="text-align: center;">Technical Specification</p>	<p style="text-align: center;"><i>Factory</i> BRESCIA</p> <p style="text-align: center;"><i>Firm Sector</i> COMMERCIAL</p>
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The machine consists principally in the whole of the following components:

- a)** Frame in IPE 260 and UPN 240 soldered profiles.
The belt conveyor structure will have got some bolted uprights to facilitate the maintenance and the belt change operations.
- b)** Swelled drive roller, autotrueing, assembled on turnbuckle supports, to tension and to adjust the belt movement.
The drive roller is driven by geared motor at electronically variable speed by inverter.
Power 1,5 KW, 3 x 380 V, 4 poles.
- c)** Cylinder in dielectric material for magnetic rotor. The inside ball-bearings are protected by gaskets.
- d)** Magnetic rotor made with permanent magnets in Nd at very high energy product, arranged in alternate axial polarities, width 1500 mm. Real width of the working face: 1500 mm.
The magnetic roller is dynamically balanced for high speeds.
The magnetic rotor turns on bearings for high speed and has two cooling fans.
The movement is made by trapezoidal driving belts and by pulley at double way.
- e)** Control motor of the magnetic rotor at variable speed by inverter.
Power 5,5 KW, 3 x 380 V at 4 poles (the rotation speed of the magnetic rotor depends on the material to separate).
Pulley at double way, mounted on the shaft, driving belts tensioner slide.
- f)** Conveyor belt at two synthetic clothes, PVC or RUBBER covering, with side rims, height 40 mm.
Belt development 5000 mm x width 1650 mm, useful working width 1500 mm.

The movement of the belt follows the magnetic roller one.

The carters protect the machine from the materials intrusion and from the accidental contact with the machine-members in motion, and two anti-sideslip limit switches control the belt gear.
A back-rotating scraper keeps the belt steadily clean.
- g)** Electronic control unit in IP 55 waterproof box, dimensions mm 800 x 500 x h. 1.100, including:

Scheda N°	Prep. da	Approv. da	Archiv. da	File	Rev.	Data	Pag.
S 03/02	COM	DIR	COM	GMST ECS 1500 L C-E	C	24/02/21	2 di 3

	<p align="center"><i>Object</i></p> <p align="center">Technical Specification</p>	<p align="center"><i>Factory</i> BRESCIA</p> <p align="center"><i>Firm Sector</i> COMMERCIAL</p>
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- main switch with door-stop;
- remote control switch with thermic relay for 1,5 kW and 5,5 kW motors;
- no. 2 inverters for driving at variable speed of the magnetic rotor and of the belt motor;
- digital counter-turns display, ampere-metre;
- local-remote selector;
- potentiometers of regulation;
- warning lights;
- possibility of control at distance.

h) Weight of the complete machine: 2.500 Kg.

i) Operation warrant: 1 year, for working by a daily turn, with exclusion of the ware parts (for which particular control and maintenance are recommended and for which we advice to buy the spare parts) like the conveyor belt (2.15), dielectric cylinder for magnetic rotor (2.7), inside and outside ball-bearings (2.8 - 2.9).

Other dimensions: as drawing no. 03-AS-0098-R0 attached.

Main components: as drawing no. ECS 49-01 attached.

The machine is made in conformity with:

Machine Directive 2006/42/CE

Directive EMC 2014/30/CE

Low Voltage Directive 2014/35/UE

Scheda N°	Prep. da	Approv. da	Archiv. da	File	Rev.	Data	Pag.
S 03/02	COM	DIR	COM	GMST ECS 1500 L C-E	C	24/02/21	3 di 3



Object
Technical Specification

Factory **BRESCIA**
Firm Sector **COMMERCIAL**

separator, or by qualified personnel as prescribed in this publication and/or in the accompanying documentation and does not require the use of special tools and equipment

Daily interventions by the operator expert in the use of the separator:

1. general visual inspections;
 2. check the status of the conveyor belt;
 - * check the status of the external surface of the dielectric cylinder; motovibrators test, "start / stop button test" and other functions of the panel);
 3. provide a general cleaning of the machine by removing dust deposits.;
 4. it is essential to remove any intrusion of ferromagnetic material from under the conveyor belt;
 5. you need to replace or repair the belt every time you encounter the cuts, holes or abrasions;
 6. remove from belt any intrusion of sharp materials (nails, staples, etc.), which were embedded;
- functional tests (test engines, test buttons "start / stop" and other functions of the panel).

Weekly interventions by qualified personnel:

1. visual inspection of each mechanism and search for possible loss of lubricant;
 2. functional control of the machine and if necessary, grease mechanisms to ensure the orderly functioning and limit the wear and tear;
 3. functionality and integrity of control panel and control devices and cables;
 4. visual inspection wear/damage of the belt;
 5. check that there is no noise and/or vibrations;
 6. if any, control sensor operation skid control (with separator stopped, manually activate the devices, controlling the ignition of the relevant alarm on panel);
- control functionality and integrity.

Monthly interventions by qualified personnel:

1. verification of efficiency of the machine;
 2. verification of the grease;
 3. verification of efficiency and integrity of the supply line and its components;
 4. check the efficiency and the state of conservation of the structure (painting, oxidation, etc.).
 5. check the efficiency of the skid control and emergency button;
 6. verification efficiency and wear of bearings;
 - * check for the integrity of the safety chain or the steel safety cable;
 - * verify continuity towards the earthing system;
 - * verify the electric control equipment and clamp fastening;
 - * verify the suspension structure and supports;
 7. verify bolted joint fastening.
- visual verification within the frameworks to ascertain the possible presence of dust.

The frequency of maintenance operations which are indicated in Table 2 refer to a machine subject to a service working under normal conditions of 1 (a) daily work shift of **8 (eight) hours**.

Table 2 - PERIODIC MAINTENANCE

O = operator assigned by the use of the separator M = maintenance by specialized

Checks and controls to be performed	Daily	Weekly	Monthly (*)	Half-yearly (*)	Change
Visual check ¹	O				

Schedule N°	Prep. by	Approved by	Filed by	File	Rev.	Date	Page
S 03/02	COM	DIR	COM	GMST ECS 1300L E	C	24/02/21	4 of 11



Object
Technical Specification

Factory **BRESCIA**
Firm Sector **COMMERCIAL**

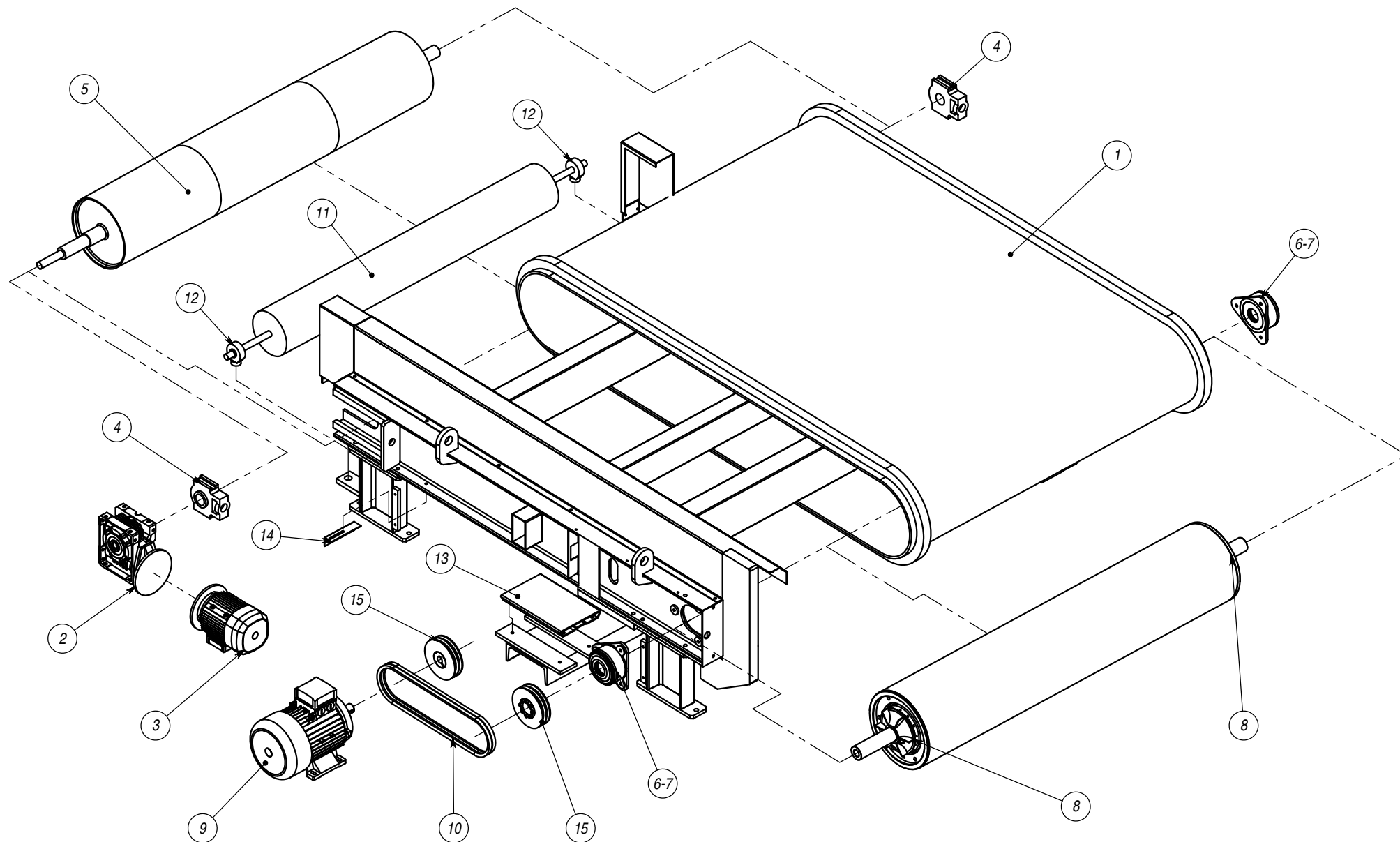
General Testing	O			M	
Control of corrosion absence		O	M		
Check tightness of bolts and screws			M		
Cleaning and lubricating	O	M			
Plates readability	O		M		If illegible
transmission belts		O	M		If worn or damaged
oil level and topping up (if applicable) of the gearmotor		O	M		
belt		O		M	If worn or damaged
internal magnetic rotor bearings		O		M	If worn or damaged
external magnetic rotor bearings		O		M	If worn or damaged
Slow bearings		O		M	If worn or damaged
powered roller conveyor				M	
Cylinder in dielectric material	O			M	If worn or damaged
control of electric cabinet				M	
control of electric motors				M	
Vibrating Feeder					
Visual check	O			M	
Overall Testing	O			M	
Control of vibrations and efficiency in material handling	O			M	
Cleanliness	O				
Control of corrosion absence		O	M		
Plate and sign legibility		O	M		To be replaced if illegible, ask the manufacturer
Motovibrators		O	M		
Control of bolt and nut tightening			M		To be performed also a few hours after installation
Suspension structure and supports			M		
Control of the integrity of the belt or safety cable			M		Replace them if damaged or worn out
Control electrical equipment, continuity towards earthing system and control of clamp tightening				M	
Bearing lubrication				M	First lubrication after 500 hours, the following ones every 4 months or every 1,000 hours of operation, according to the earliest occurring



NOTE: (*) The maintenance operations, where required, shall be recorded in the control register (Chapter 7)

1 - Check the condition of the cylinder in dielectric material: if the cylinder has signs such as deep scratches, holes, small craters or blisters, bruises, it should be

	GAUSS SPARE PARTS LIST
	EDDY CURRENT ECS 1500 drawing 03-AS-0098-R1

N°	Spare parts Description	
1	Dielectric cylinder ceramic coated , Ø 345 x 1700 mm, WT2000-ECS1500	
1	Gear unit W 86 U 10 PAM 90 B3 B5	
1	Rubber belt 1650 x 5000 mm EP250 NTG-ECS1500L	
1	SET of internal bearings - - type 6312 C3	
1	Set of external bearings - type 22213 EKC 3	
1	Set Flange unit Cast housing 722513DB diam 60mm	
1	Drive roller Ø 320 x 1700 mm with pulley	
1	Motor - 1,5 KW 4 P B 5	
2	Motor - 5,5 KW 4 P B 3	
2	Belts type	

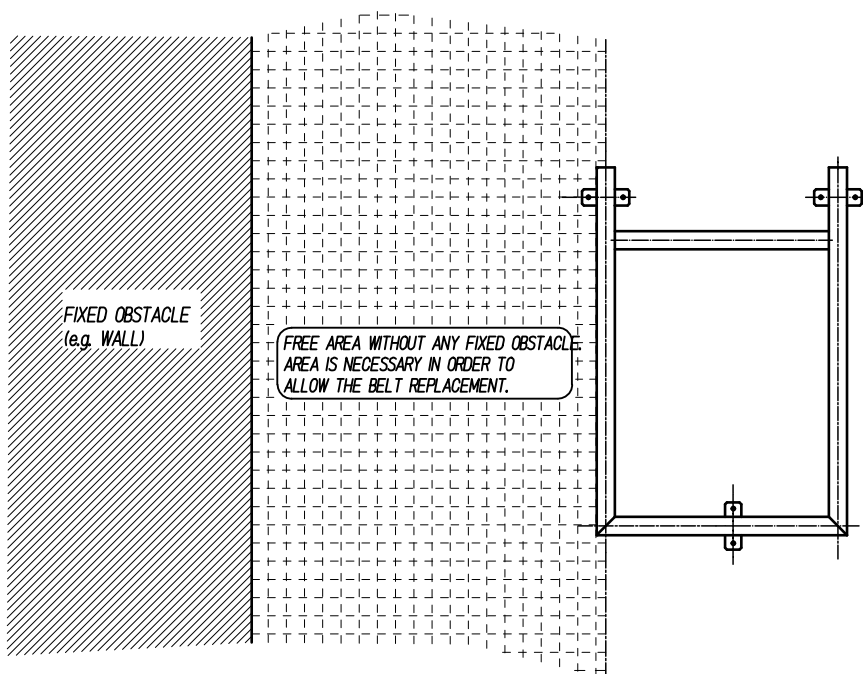
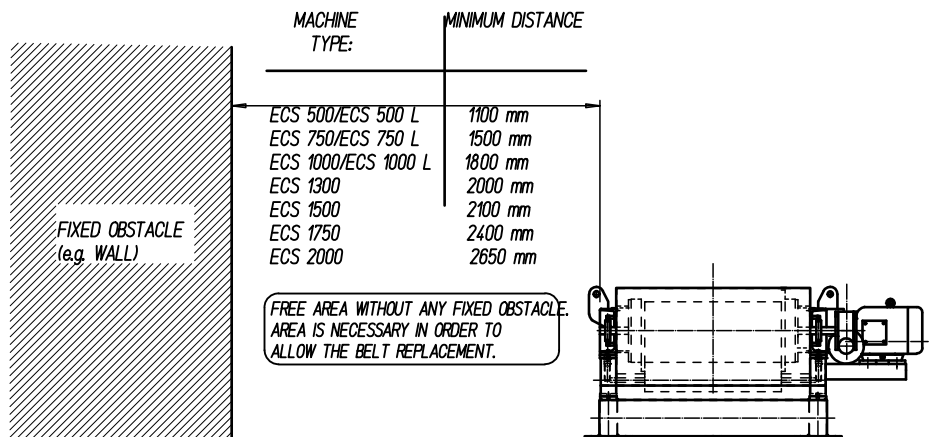


	VISTE ORTOGONALI SECONDO UNI 3970		DATA REV 0	SCALA	DISEGNATO DA
			04-05-2011	1:15	A. Lorini
	CODICE ID		DISEGNO N° 03-AS-0103-R0	FORMATO A3	QUOTE SENZA INDICAZIONE DI TOLLERANZA
			CONTROLLATO DA:	IL:	ISO 2768 - M ISO 2768 - C ISO 2768 - V


OGGETTO

Esploso componenti ECS per richiesta ricambi

LA PROPRIETÀ DI QUESTO DISEGNO E' RISERVATA A TERMINI DI LEGGE E' VIETATO QUINDI RIPRODURLO O RENDERLO NOTO A TERZI



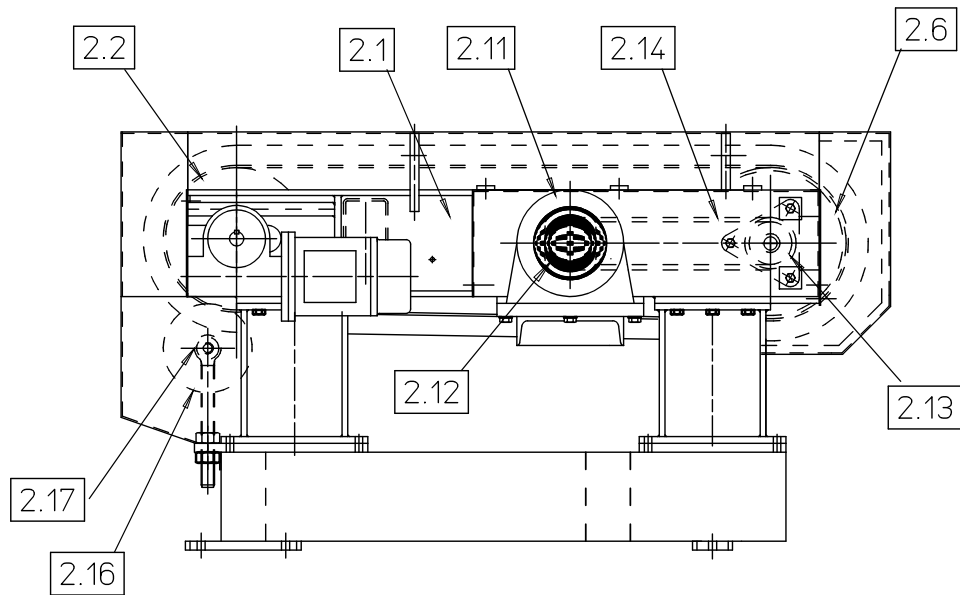
TOTAL WEIGHT kg.

POS	QUANT	DENOMINAZIONE	MATERIALE	DIMENSIONI		PESO UNIT. kg	PESO TOT. kg
 Gauss magneti GAUSS MAGNETI srl 25131 BRESCIA ITALIA Via S. Scaroni 27 Loc. Fornaci Tel. 030 3580375 Fax. 030 3580486 e-mail: magneti@tin.it				DATA REV. 0	SCALA	DESEGNATO	
				03/06/02	1:30	A. Davelli	
				DISEGNO N°	REV.	FORMATO	
				ECS133	2	A4	
				CONTROLLATO DA:	EL:	Quote senza indicazione di tolleranza ■ ISO 2768 - m ■ H ■ ISO 2768 - c ■ K ■ ISO 2768 - v ■ L	

2	03/06/02	AGGIUNTE QUOTE PER ECS 2000-1750
1	03/12/99	AGGIUNTE QUOTE PER ECS 1000
REV.	DATA	REVISIONE
		SIG.

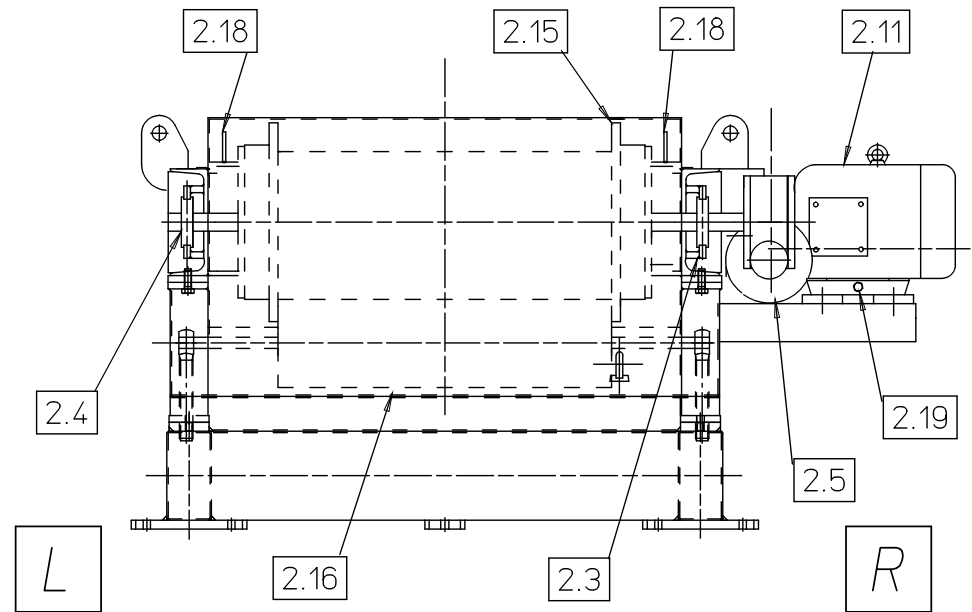
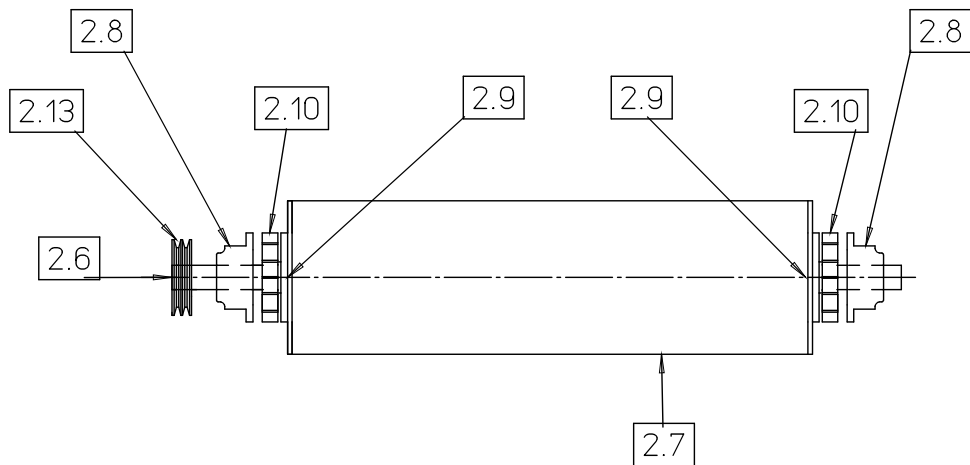
OGGETTO DISTANCES IN ORDER TO PLACE THE ECS PROPERLY

LA PROPRIETA' DI QUESTO DISEGNO E' RISERVATA A TERMINI DI LEGGE E' VIETATO QUINDI RIPRODURLO O RENDERSLO NOTO A TERZI



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2.19	MOTOR SUPPORT
2.18	MICROSWITCHES FOR BELT CENTRING CONTROL
2.17	BALL BEARINGS SUPPORTS FOR ROTATING BRUSH
2.16	ROTATING BRUSH FOR BELT CLEANING
2.15	OVERBELT WITH SIDE EDGES
2.14	TRANSMISSION BELT
2.13	PULLEY ON THE MAGNETIC ROTOR
2.12	PULLEY ON THE MOTOR
2.11	MOTOR FOR MAGNETIC ROTOR DRIVER
2.10	COOLING FANS
2.9	FIXED INTERNAL BEARING WITH GASKET
2.8	EXTERNAL SHAFT SUPPORT
2.7	DIELECTRIC CYLINDER
2.6	MAGNETIC ROTOR
2.5	GEARBOX WITH MOTOR
2.4	TENSIONER SUPPORT FOR OVERBELT SETTING
2.3	TENSIONER SUPPORT ON THE MOTOR SIDE
2.2	OVERBELT MOTORISED ROLLER
2.1	FRAME IN UNP-IPE PROFILES

POS.	DESCRIZIONE	DATA	SCALA	DISEGNATO
		14/10/1998	***	A. Lorini
		DIS. N.	ECS49E-0	PART. N.
		CONTROLLATO DA:	IL:	



Gauss
magneti

GAUSS MAGNETI srl
25131 BRESCIA ITALIA
Via S. Scaroni 27 Loc. Fornaci
Tel. 030 2680641
Fax. 030 3580517

OGGETTO

COMPONENTS FOR INDUCED CURRENT MAGNETIC SEPARATOR TYPE ECS

LA PROPRIETA' DI QUESTO DISEGNO E' RISERVATA A TERMINI DI LEGGE E' VIETATO QUINDI RIPRODURLO O RENDERLO NOTO A TERZI