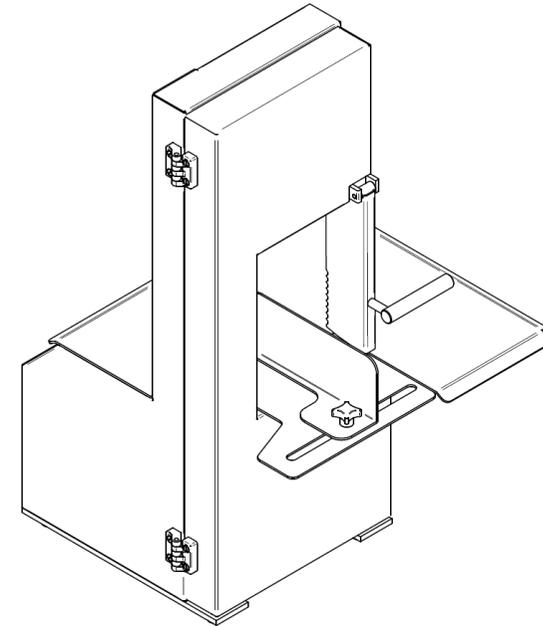



SIRMAN S.p.a.
Via dell'Industria 9/11
35010 Curtarolo
Padova (Italy)
Tel: 049 9698666
Fax: 049 9698688

www.sirman.com
info@sirman.com


BAND SAW

SO 1650 Inox Start
SO 1840 Inox Start



AUTHORISED DEALER

SO_1650-1840_ix-start_004 Ed. 05.2021

OPERATING AND MAINTENANCE MANUAL



PRD N° 0082 B
 Member of IFA EA for the schemes of accreditation:
 SQA, SCA, PRA, PRA, TSP, QMS, LMS, LMS, PPS e SPS
 S.I.M.A. IAF per gli schemi di accreditamento SQA, SCA,
 SCS, SCA, PRA e PRA e di SPS, LMS per gli schemi di
 accreditamento LMS, PRA, LMS, TSP e PPS
 Repository of EA NEN for the accreditation schemes:
 SQA, SCA, PRA, PRA, TSP, QMS, LMS, LMS, PPS and
 SPS. S.I.M.A. IAF for the accreditation schemes SQA,
 SCA, SCS, SCA, PRA, PRA and PRA and of SPS, LMS for
 the accreditation schemes LMS, LMS, LMS, TSP and PPS

CERTIFICATO DI ESAME CE DEL TIPO
EC TYPE-EXAMINATION CERTIFICATE

0407-MD-11-11-027 (IG-355-2011)

Il presente documento certifica che il "Tipo"
 è stato valutato secondo la procedura stabilita nell'Allegato IX della Direttiva Macchine 2006/42/CE
 e che soddisfa i requisiti essenziali della Direttiva Europea 2006/42/CE.
*This document certifies that the "Type" has been assessed according to the procedure foreseen by Annex IX of Machinery Directive 2006/42/EC
 and complies with the essential requirements of European Directive 2006/42/EC.*

Richiedente
 Applicant

SIRMAN S.p.A.

Viale dell'Industria, 9/11 - 35010 PIEVE DI CURTAROLO (PD) - Italia

Descrizione
 Description

SEGA A NASTRO PER L'INDUSTRIA ALIMENTARE
BAND SAW MACHINE FOR FOOD INDUSTRY

Modelli
 Models

**SO 1550 F3, SO 1650 F3, SO 1840 F3, SO 1650 INOX START, SO 1840 INOX START,
 SO 1650 INOX, SO 2020 INOX, SO 2400 INOX, SO 2020 INOX START, SO 3100 INOX**

Categoria secondo l'Allegato IV della Direttiva Macchine 2006/42/CE
 Category according to Annex IV of Machinery Directive 2006/42/EC

4.1

Norma di riferimento
 Standard reference

EN 12268:2014

Sulla base di questo certificato e in accordo alle procedure stabilite dalla Direttiva Europea 2006/42/CE,
 il richiedente deve procedere alla marcatura CE dei prodotti citati, come da Allegato III,
 ed alla firma della dichiarazione CE di conformità, come da Allegato II.1.A.
*On the basis of this certificate and according to the procedures established by European Directive 2006/42/EC (MD), the Applicant shall proceed
 with the CE marking of the above mentioned products, according to Annex III, and with the signature of the EC declaration of conformity,
 according to Annex II.1.A.*

Bellaria-Igea Marina - Italia, 14 maggio 2021
 Bellaria-Igea Marina - Italy, 14 May 2021

Revisione n. / Revision No. 4

Data della prima emissione: 30 novembre 2011
 Date of first issue: 30 November 2011

Valido fino al: 13 maggio 2026
 Valid until: 13 May 2026

Il Direttore Tecnico della Sezione Macchine
 Machinery Department Technical Manager
 (Dott. Ing. Giuseppe Persano Adorno)

L'Amministratore Delegato
 Chief Executive Officer
 (Dott. Arch. Sara Lorenza Giordano)

Firmato digitalmente da SARA LORENZA GIORDANO

Il presente certificato è composto da
 n. 1 pagina e n. 1 allegato (in formato
 bilingue (italiano e inglese), in caso di
 dubbio è valida la versione in lingua
 italiana).

L'originale del presente documento è
 costituito da un documento
 informatico firmato digitalmente al
 sensi della Legislazione Italiana
 applicabile.

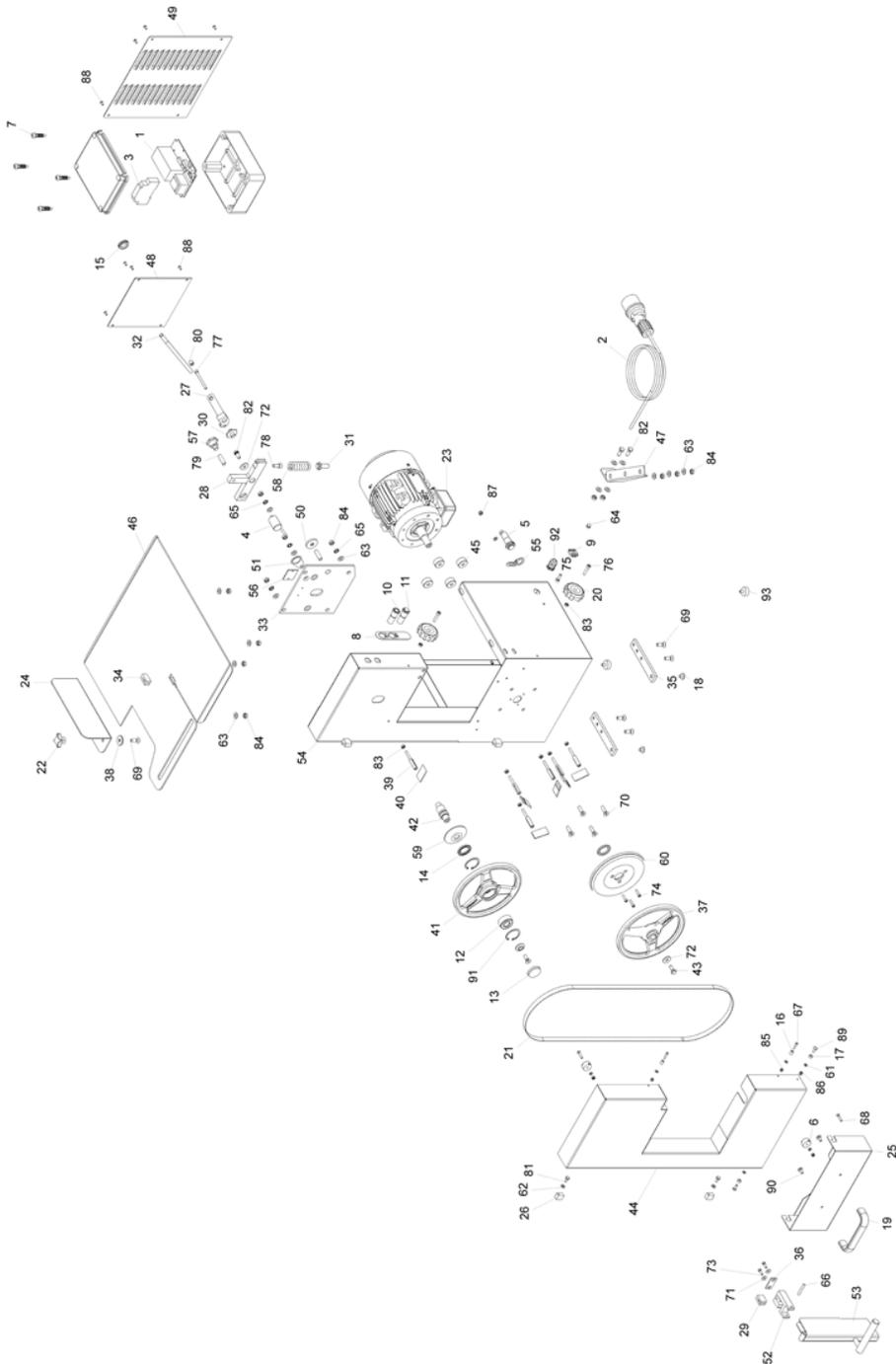
*This certificate is made up of 1 page and 1 annex (in a
 bilingual format (Italian and English), in case of dispute
 the only valid version is the Italian one).*
*The original of this document consists of an electronic
 document digitally signed pursuant to the applicable
 Italian Legislation.*

Pagina 1 di 1 / Page 1 of 1

1	LF1010034
2	LF1010047
3	LF1010080
4	LF1010088
5	LF1010090
6	LF1010094
7	LF1010704
8	LF1013032
9	LF1030522050
10	LF1041023
11	LF1041025
12	LF1110003
13	LF1201001
14	LF1210002
15	LF1400116001
16	LF1400416004
17	LF1400416007
19	LF1510010
20	LF1510704
22	LF1537002
23	LF1810506
24	LF2001001
25	LF2001003
26	LF2001004B
27	LF2001005
28	LF2001006
29	LF2001008
30	LF2001009
31	LF2001011
32	LF2001012
33	LF2001013
34	LF2001014
35	LF2001018
36	LF2001023
37	LF2001027
38	LF2001028
39	LF2001030
40	LF2001032
41	LF2001037
42	LF2001038
43	LF2001039
44	LF2001040
45	LF2001053
46	LF2001070
47	LF2001072

48	LF2001074
49	LF2001076
50	LF2001081
51	LF2001087
52	LF2001088
53	LF2001089
54	LF20010GR
55	LF2007022
57	LF2010078
58	LF2010080
59	LF2010085
60	LF2010517
61	IX2125005
62	IX2125006
63	IX2125008
64	IX21587LC006
65	IX26798A008
67	IX27380004020
68	IX27991PINTX525
69	IX27991008020
70	IX27991008030
71	IX29021005015
72	IX29021008024
74	IX2912005020
75	IX2912006020
76	IX2912006030
78	IX2912008020
79	IX2913010035
80	IX2913012010
81	IX2933006012
82	IX2933008020
83	IX2934006
84	IX2934008
85	IX2982004
86	IX2982005
87	IX2982006
88	IX2POEL004010
89	IX2POEL005016
90	IX2POEL006010
91	IX2472042
92	LF1010063
93	19560160

10 Spare parts



Modelli/Models	SO 1650 INOX START	SO 1840 INOX START
Descrizione Description	Sega a nastro con tavola di alimentazione fissa e pressatore Band saw machine with a fixed feed table and a product pusher	
Tipo coperchio Type of cover	Inox	Inox
Tipo secondo EN 12268:2014 Type according to EN 12268:2014	Tipo/Type A	Tipo/Type A
Lunghezza nastro Band saw length	[mm] 1650	1840
Motore Motor	1,5 HP - 1400 giri/rounds	1,5 HP - 1400 giri/rounds
Diametro puleggia Pulley diameter	[mm] 210	250
Superficie di lavoro Working area	[mm] 400 x 450	440 x 450
Posizione comandi Position of controls	in alto/at the top	in alto/at the top

Modelli/Models	SO 2020 INOX	
Descrizione Description	Sega a nastro con piano di lavoro e guida di protezione Band saw machine with a feed table and protective rail	
	piano di lavoro fisso fixed feed table	piano di lavoro scorrevole sliding feed table
	con o senza cavalletto with or without stand	
Tipo secondo EN 12268:2014 Type according to EN 12268:2014	B	C
Lunghezza nastro Band saw length	[mm] 2020	
Motore Motor	1,5 HP - 1400 giri/rounds	
Diametro puleggia Pulley diameter	[mm] 250	
Superficie di lavoro Working area	[mm] 480 x 600	
Posizione comandi Position of controls	in alto/at the top	

INDEX

1.	Delivery and guarantee	6
1.1 -	Foreword	
1.2 -	Keeping and using the manual	
1.3 -	Guarantee	
1.4 -	Machine description	
1.5 -	Use	
1.6 -	Use not permitted	
1.7 -	Identification	
1.8 -	Safety devices	
1.9 -	Warning and danger signs	
1.10 -	Working position	
1.11 -	Working condition	
1.12 -	Lighting	
1.13 -	Vibration	
2.	Technical Specifications	10
2.1 -	Main parts	
2.2 -	Technical specifications	
2.3 -	Maximum dimensions of the product to be cut	
2.4 -	Machine dimensions and weight	
2.5 -	Noise level	
3.	Testing, transport, delivery and installation	12
3.1 -	Testing	
3.2 -	Machine delivery and handling	
3.2.1 -	List of provided equipment	
3.3 -	Installation	
3.3.1 -	Disposal of the packing	
3.3.2 -	Handling the machine	
3.4 -	Connection to the electrical system	
3.4.1 -	400 volt 50 Hz three-phase machine and 220 volt 50 Hz three-phase machine	
3.4.2 -	230 volt 50 Hz single-phase machine	
4.	Commands and indicators	14
4.1 -	List of commands and indicators	
5.	Starting and stopping	15
5.1 -	Checking the correct electrical connection	
5.2 -	Checking presence and efficiency of the guards and safety devices	
5.3 -	Starting the saw	
5.4 -	Stopping	
6.	Using the saw	16
6.1 -	Foreword	
6.2 -	Preliminary settings	
6.3 -	Using the saw	

9.2 - Single-phase wiring diagram

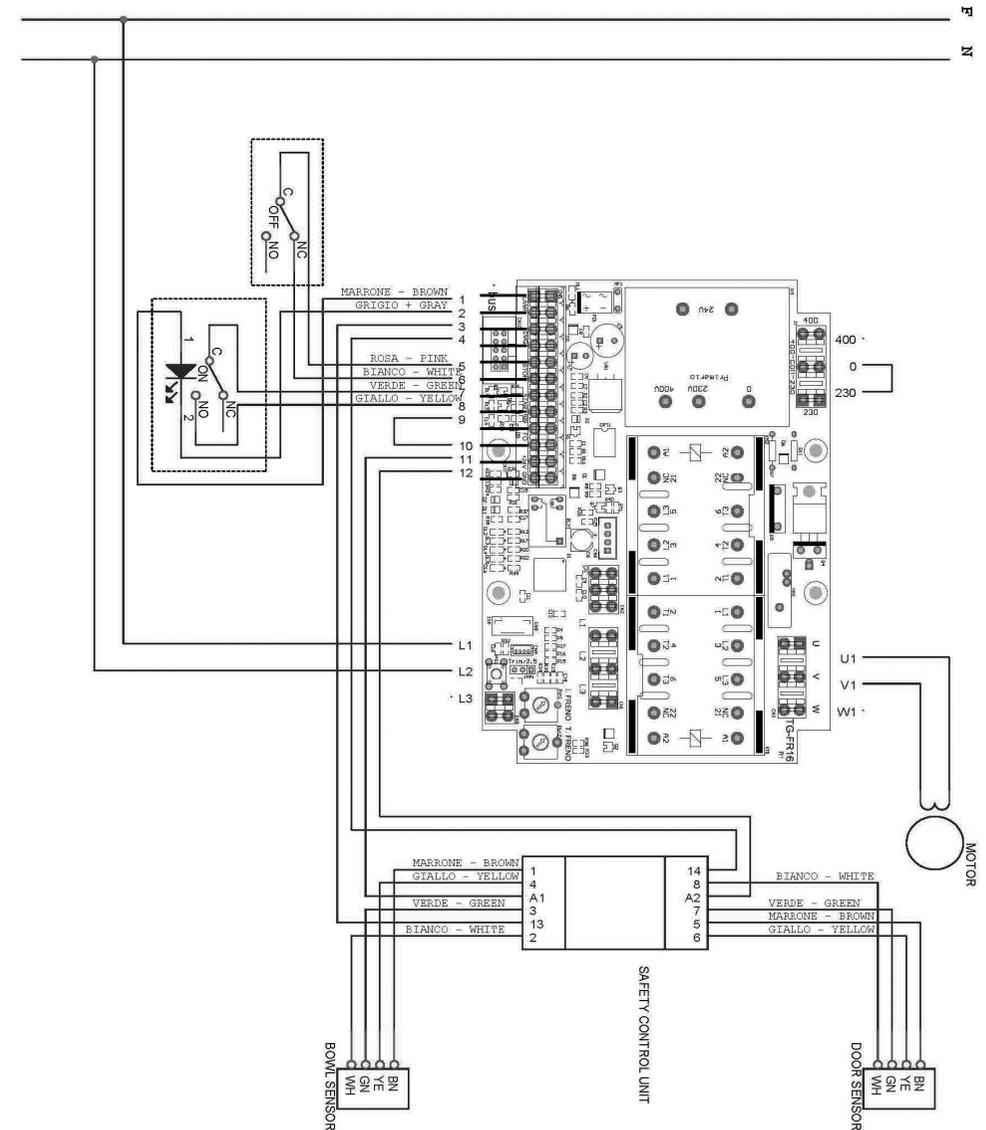


Fig. 9.2.1

9 Wiring diagrams

9.1 - Three-phase wiring diagram 380V

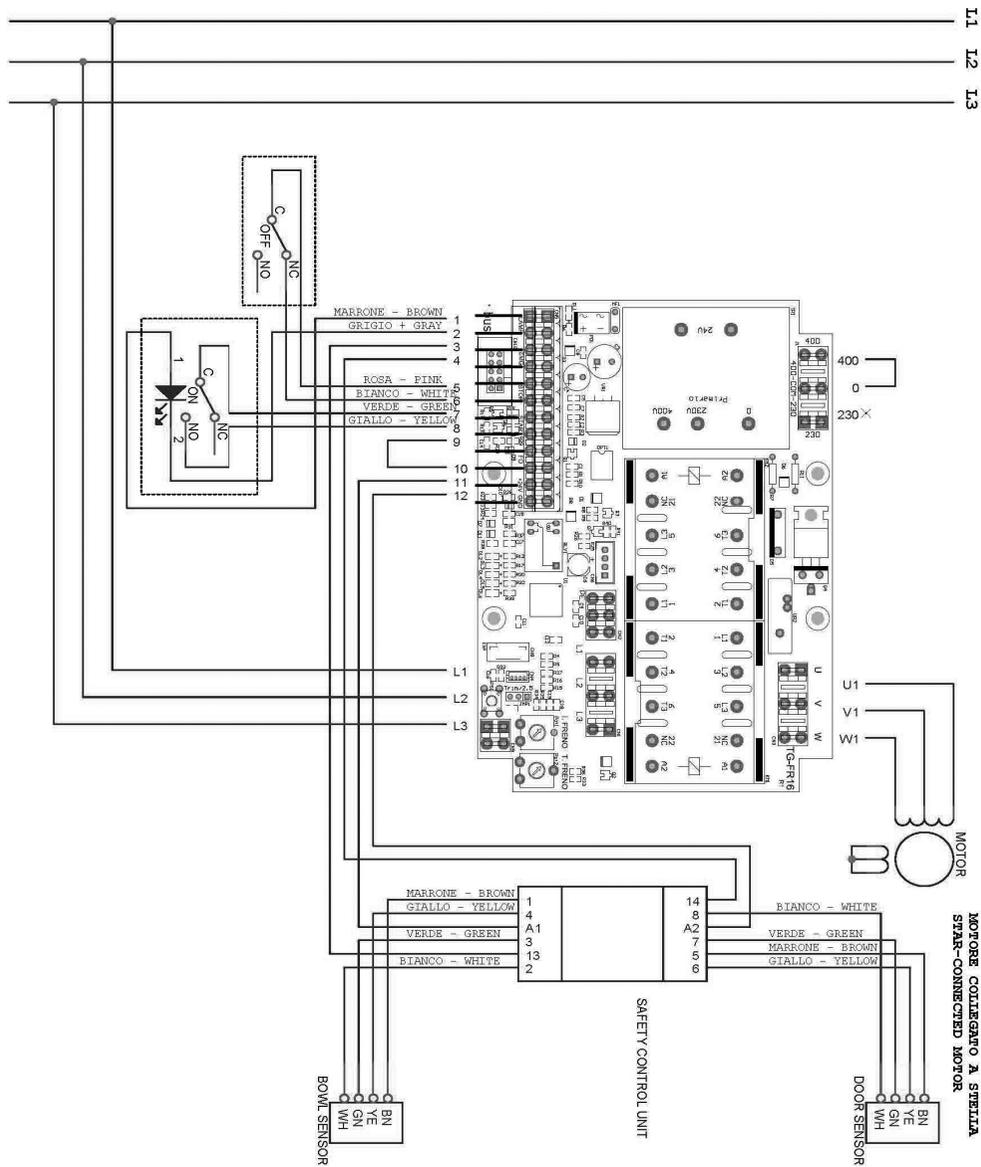


Fig. 9.1.1

7.	Maintenance	17
7.1 -	Important warnings	
7.2 -	Foreword	
7.3 -	Checks carried out at our factory	
7.4 -	Checks to be carried out at installation	
7.5 -	Periodical checks	
7.6 -	How to perform the required checks	
7.6.1 -	Blade tensioning settings	
7.6.2 -	Replacing the blade	
7.6.3 -	Type of blade	
7.6.4 -	How to handle the blade	
7.7 -	Cleaning of the machine	
7.7.1 -	General guidelines	
7.7.2 -	Cleaning of the machine	
7.8 -	Cleaning of blade-guide bosses	
7.9 -	WEEE Waste of Electric and Electronic Equipment	
7.10 -	Replacement of spare parts	
8.	Troubles and remedies	23
8.1 -	Problems, causes and solution	
9.	Wiring diagrams	24
9.1.1 -	Three-phases wiring diagram at 380 V	
9.2.1 -	Single-phases wiring diagram at 230 V	
10.	Spare parts	26

1 Delivery and guarantee

1.1 - Foreword

ATTENTION! This symbol draws the reader's attention to points and operations that can endanger the personal safety of operators or risk damaging the machine. Do not use the machine unless you are certain that you have correctly understood these warnings. For greater clarity, certain illustrations in this manual show the machine or parts of it with panels or casing removed. Do not use the machine in these conditions; all protections must be correctly fitted and in perfect working order. This manual may not be reproduced, even partially, and its contents cannot be used for purposes other than those permitted by the manufacturer. All breaches of the above are legally punishable.

1.2 - Keeping and using the manual

The aim of this manual is to instruct the user, via text and figures, with regard to transport, handling, use and maintenance of the machine; the manual must therefore be carefully read before using the machine. Keep it safely near the machine in an easily and quickly accessible place for future reference. If the manual is misplaced or damaged, ask your dealer or manufacturer for a copy. If the machine is sold, inform the manufacturer of the name and address of the new owner. The manual reflects the state of technology at the time the machine is sold and cannot be considered inadequate if it is subsequently updated on the basis of new knowledge. In this regard the manufacturer reserves the right to update its products and related manuals without being obliged to update previous products and manuals barring exceptional cases. If in doubt, consult the nearest servicing centre or the manufacturer. The manufacturer's aim is continuous product optimisation and it is therefore pleased to receive any comments or proposals for improvement of the machine and/or manual.

The machine is delivered to the user under the guarantee conditions in force at the time of purchase. Contact your supplier for any clarifications required.

1.3 - Guarantee

The user is not authorized to tamper with the machine for any reason. If a fault occurs, contact the manufacturer. Any attempts at dismantling or in general tampering with any component of the machine by the user or non-authorized personnel will render the guarantee null and void and exempt the manufacturer from all responsibility for any damage either to people or things deriving from the above. The manufacturer is also exempt from all responsibility in the following cases:

- incorrect installation;
- improper use of the machine by inadequately trained personnel;
- failure to comply with the regulations in force in the country in which the machine is used;
- lack of or insufficient maintenance;
- use of non-original spare parts and spare parts not specifically designed for the model;
- total or partial failure to follow the instructions.

1.4 - Machine description

The saw you have purchased is a safe reliable machine and easy to use. Pulleys are made of aluminium. Machine body and accessories are made of stainless steel AISI 304.

It is provided with mechanical guards (casings, doors, etc...) and electrical safety devices (micro switch, emergency stop button etc.) in order to reduce operator risks to a minimum.

The pulley angle can be adjusted both horizontally and vertically in order to ensure maximum blade contact.

7.9 - WEEE Waste of Electric and Electronic Equipment

Directive 2002/95/EC, 2002/96/EC and 2003/108/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment, and waste electrical and electronic equipment



This symbol, crossed out wheeled bin, on the product or on its packaging indicates that this product must not be disposed of with your other household waste.

Separate waste collection of this appliance is organised and managed by the manufacturer. It is the user's responsibility to contact the manufacturer and follow the waste treatment system the manufacturer has adopted for separate waste collection.

The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

7.10 - Spare parts

In case of necessity of spare parts, contact the manufacturer that will provide to send you the catalogue. Do not use original spare parts. Assembly must be carried out from specialised personnel only.

8 Troubleshooting

8.1 - Malfunctions, causes and remedies

MALFUNCTIONS	CAUSES	REMEDIES
- The machine does not start	<ul style="list-style-type: none"> - The general power switch is in position "0". - Pulley casing is not closed properly - One or all the microswitches are faulty - The emergency stop hit button (optional) is engaged - Electric motor or electronic circuit board are faulty 	<ul style="list-style-type: none"> - Switch the general power switch to position "I" - Close pulley casing correctly - Inspect for cause and if necessary replace microswitch - Release the emergency stop hit button - Contact the service centre for assistance
- Cutting is not linear	<ul style="list-style-type: none"> - The blade is too slack - The blade is blunt . 	<ul style="list-style-type: none"> - Tension blade - Replace blade
- The blade falls off the pulley	<ul style="list-style-type: none"> - The top pulley is misaligned - The blade is not perfectly welded - Incorrect blade tension - Incorrect blade setting 	<ul style="list-style-type: none"> - This must be performed by specialised and authorised personnel - Replace blade even if new. - Tension blade leaving gaps between the spring coils - Contact the service centre for assistance .
- The blade overheats	<ul style="list-style-type: none"> - Waste or off-cuts are trapped near the blade guide - bearing on top pulley are trapped - The blade is blunt 	<ul style="list-style-type: none"> - Remove waste or off-cuts trapped near the blade guide - Replace bearings - Replace blade

7.7 - Cleaning

7.7.1 - General guidelines

- The machine must be cleaned at least once a day and if necessary more frequently.
- Always accurately and thoroughly clean all the parts of the bone saw which come into direct or indirect contact with the food product.
- Never clean the machine with powered water cleaners or water jets, only use neutral detergents (pH 7). **It is strictly forbidden to use any other types of detergent.** Do not use cleaning utensils, brushes or any other the tool which could damage the surface of the machine

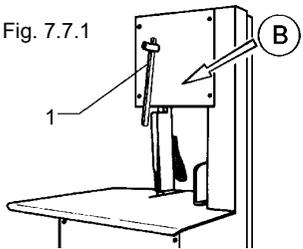
Before cleaning the machine unplug the plug from the power socket isolating the machine from the power supply;

CAUTION: When cleaning pay attention to cutting hazards created by sharp and pointed surfaces or parts.

7.7.2 - When cleaning the machine

- Always wear suitable safety gloves for handling sharp objects
- Slacken tension in the blade by turning knob "1" anticlockwise completely and remove knob.

Fig. 7.7.1



- Grip blade "2" and remove from pulley as illustrated in fig. 7.7.2 and 7.7.3

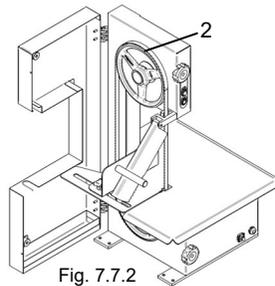


Fig. 7.7.2

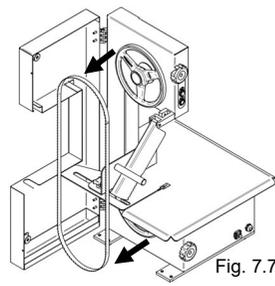


Fig. 7.7.3

- Remove all scrapers "9" and wash utilising a pH 7 neutral detergent.

- Having removed all the removal parts it is possible to clean the smooth surface of the machine utilising a pH 7 neutral detergent

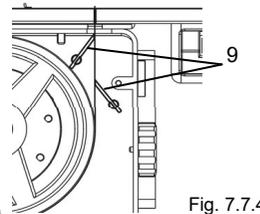


Fig. 7.7.4

- Rinse all components to eliminate any residual detergent and replace all parts removed. To replace proceed by inverting this procedure.

7.8 - Cleaning of blade-guide bosses (Fig. 7.8.1)

Once finished every work-shift, clean carefully plug "1".

- Stop the machine, put the differential switch in "0" position and take the electric feeding plug away.
- Open casing and clean carefully the blade cleaning "1" removing every working-residue.
- Close the casing and block it with knob "2".

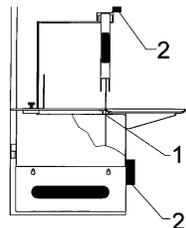


Fig.7.8.1

The motor is self-cooling, water-protected, self-braking and operates intermittently. The push-button panel is located in an easily accessible position with the controls powered at 24 volts.

The machine has been designed to facilitate cleaning operations, in particular due to the following technical features:

- easy removal of the blade and upper pulley without using tools;
- once the pulley has been removed, the machine has a smooth surface thus facilitating cleaning operations and allowing the dirt on the blade to deposit directly in the tray;
- all the electrical parts are protected to **IP 56** (minimum).

1.5 - Use

The saw has been designed and produced to cut bones, meat and fish. It must only be used on a work table.

As it is designed for food, the material used for the blade and all other components that can come into contact with the product being cut have been carefully selected. The machine is designed for professional use and should therefore be used by a skilled operator who must carefully read this manual before using the machine.

This equipment complies with the essential health and safety requirements of directive 2006/42 / EC and the requirements of directives 2014/30/EU, 2014/35/EU, 2006/42/EC, RoHs 2011/65/EU and Regulation 1935/2004/EC.

The machine was designed and built according to the requirements of EN 12268: 2014.

The saw is also suitable for cutting frozen fish and does not require any particular environmental conditions. You are nevertheless advised to keep it in a closed environment, protected from bad weather and sudden changes in temperature.

1.6 - Uses not permitted

The saw must be used for the purposes expressly intended by the manufacturer only. In particular:

- **Do not** use the machine unless it has been correctly installed with all the guards in perfect condition and correctly fitted to avoid the risk of severe injury.
- **Do not** use the machine if the blade is not in perfect condition and correctly sharpened as the blade can break.
- **Do not** stand on machine, even if not working. Apart from the danger of falling, the machine may also be damaged
- **Do not** access the electrical components without previously disconnecting the machine: **risk of electrocution.**
- **Do not** use the machine for cutting items other than meat, bones, fish and similar.
- **Do not** stop the blade with your hands; wait until it stops to avoid the risk of serious injury.
- **Do not** wear rings, watches, jewellery, loose or hanging garments such as scarves, ties, torn clothes, unbuttoned jackets or smocks with open zip which can get tangled in the moving parts. Use approved safety clothing: non-slip shoes, safety goggles, work gloves, ear defenders and safety mask. Consult your employer re. current safety regulations and safety devices required.
- **Do not** start the machine if it is not working correctly. Before using the machine, ensure that any dangerous condition has been appropriately eliminated. If a fault occurs, stop the machine and notify the maintenance personnel.
- **Do not** allow non - authorised personnel to carry out work on the machine. In the event of an electrical accident, firstly remove the victim from the conductor (as he will usually be unconscious). This operation is dangerous as the victim is a conductor in this case and touching him can cause electrocution. You should there-

fore disconnect the contact directly from the line power supply valve or, if this is not possible, distance the victim using insulating material (wooden or PVC sticks, fabric, leather etc.). A doctor should be promptly called and the patient taken to hospital.

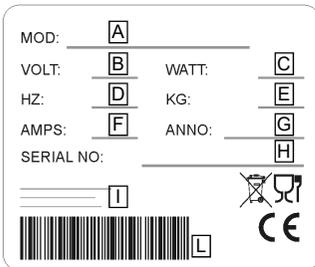
- **Do not** make any intervention without authorisation.
- **Follow** the procedures given for maintenance and technical assistance

1.7 - Identification

specification of the "Model", "Serial number" and "Year of manufacture" will enable our servicing department to provide a rapid efficient response. Whenever you contact the servicing department or request spare parts, always quote the above information. As a memorandum, you are advised to fill in the box shown in fig. 1.7.1 with specifications of your machine.

Bone saw model.....
Serial number.....
Year of manufacture.....
Type

!! ATTENTION !! Do not, for any reason, alter the data given on the rating plate.



A = machine model
 B = motor frequency volt
 C = motor power Watt
 D = motor frequency Hz
 E = machine weight kg
 F = Ampere
 G = year of production
 H = serial number
 I = manufacturer
 L = barcode

Fig. 1.7.1

1.8 - Safety devices

Before using the machine, ensure that the safety devices are correctly positioned and in perfect condition.

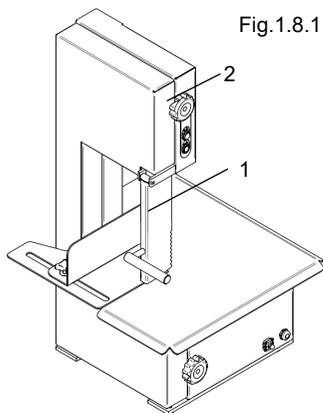


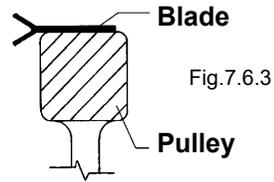
Fig.1.8.1

At the beginning of each working shift, check that they are fitted and working efficiently; if not, notify the head of maintenance.

- 1 - Blade working area mobile guard.
 If nothing is being cut, it prevents contact with the cutting blade. (Fig. 1.8.1)
- 2 - Casing closed control micro switch.
 If the casing opens, the micro switch cuts off the electrical power supply to the machine, stopping it. When the casing is closed, the machine will not restart unless the start button has been pressed. Also in the event of accidental stoppage of the machine, for example due to a power failure, the machine will not restart when is restored unless the star button is pressed. (Fig. 1.8.1).

5	Using both hands grip the blades and open the pack until the blades are stretched out.		
6	With one hand grip the blades		
7	With the other hand remove the second tie fixture...		
8	With both hands grip the blades and carefully open the pack on top of the work surface.		
9	Now the blades are completely open grip one of the blades from the centre bend and slide it along the table as illustrated in the photo, now grip both ends and move it towards the centre. At this point lift the blade.		
10	Once you have lifted the blade off the table using both hands stretch open. The blade is now ready to be mounted on the machine. .		The other spare blades must be tied and protected. To do this invert the procedure from point 8. It is recommended not to remove safety gloves before having completed all blade handling operations.

- Connect the electric plug to its outlet.
- Put the differential switch in "1" position.
- Start and stop the machine to verify that the blade remains in the right position as regards the pulley.



7.6.3 - Types of blades

There are several blades on the market of different tooth pitches, blade thickness, height and steel quality.

We recommend for our bone saw tempered steel blades with a 16 cm height and 6 mm tooth pitch.

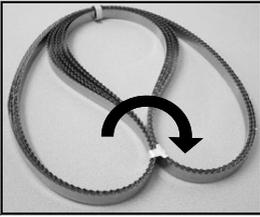
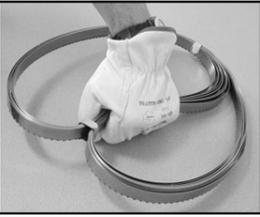
For different kinds of food products such as chicken or frozen meats, specific blades with different tooth pitches exist on the market offering perfect cutting without waste or altering the product.

Blade length	mm	1650
Blade width	mm	16
Material		AISI 420

7.6.4 - Handling the blade

HOW TO HANDLE A BLADE WITHOUT CUTTING YOURSELF

Proceed following each step in order.

1	Wear a pair of gloves adequate and suitable for handling sharp objects		
2	Remove the pack of blades from the box and position on top of a work surface. Make sure the teeth are facing downwards.		
3	Grip the blades with one hand, always wearing suitable and adequate gloves as illustrated in the photo.....		
4	.. With the other hand, always wearing suitable and adequate gloves, loosen and remove the tie fixture.	 	

1.9 - Warning and danger signs

Do not hold your hands near the blade in particular when moving.

Risk of serious injury. Do not carry out work on electrical components with the machine connected. Risk of electrocution. **Observe the precautions given in the signs. Failure to observe them can cause serious injury and even death.**

Ensure that the signs are always fitted and readable. If not, fit or replace them.

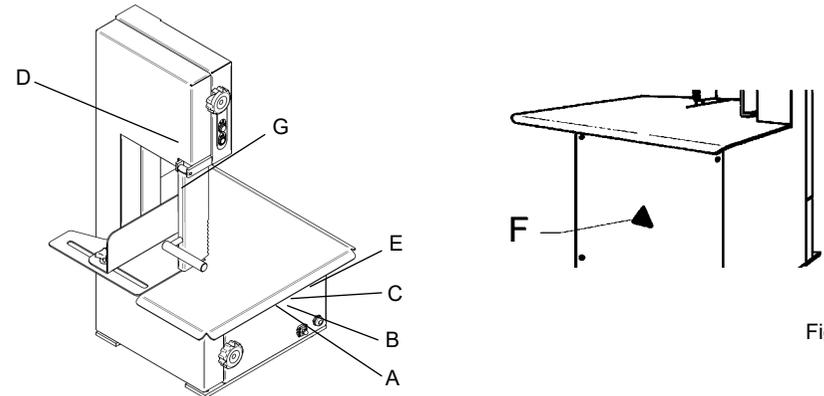


Fig.1.9.1

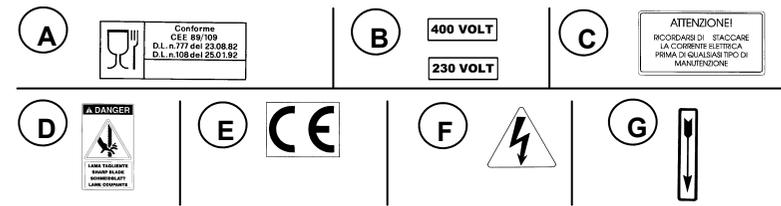


Fig.1.9.2

1.10 - Working position

The correct operator working position is shown in fig. 1.10.1.

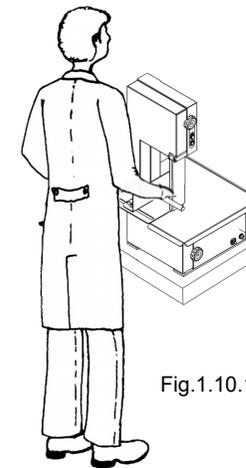


Fig.1.10.1

1.11 - Working condition

The machine is created to work with the following conditions:

- minimum room temperature: -5 °C;
- maximum room temperature: +40 °C;
- relative humidity: 50% a 40 °C.

1.12 - Lighting

Suitable lighting must be provided around the machine to ensure correct operator visibility. Lighting must be disposed in accordance with the low in force in the destination county and should not create reflections. Lighting must allow a good reading of control pannel and safety button.

1.13 - Vibration

The vibrations that machine transmit to band are not significant.

2 Technical specification

2.1 - Main parts

To facilitate understanding of the manual, the main machine components are listed below and shown in fig. 2.1.1

- 1 - Pulleys protection casing in stainless steel AISI 304
- 2 - Control panel.
- 3 - Portioning device in stainless steel AISI 304
- 4 - Pusher in stainless steel AISI 304
- 5 - Work top in stainless steel AISI 304
- 6 - Electrical motor.
- 7 - Upper driven pulley in polished aluminium EN46100
- 8 - Band cutting blade in carbon steel C95
- 9 - Dirt and rest collection tray are made of stainless steel AISI 304
- 10 - Lower drive pulley polished aluminium EN46100
- 11 - Electrical system.
- 12 - Body machine are made of stainless steel AISI 304
- 13 - Lever for the assembly blade.
- 14 - Alimentary plastic blade scraper
- 15 - Blade guide insert in hardened steel

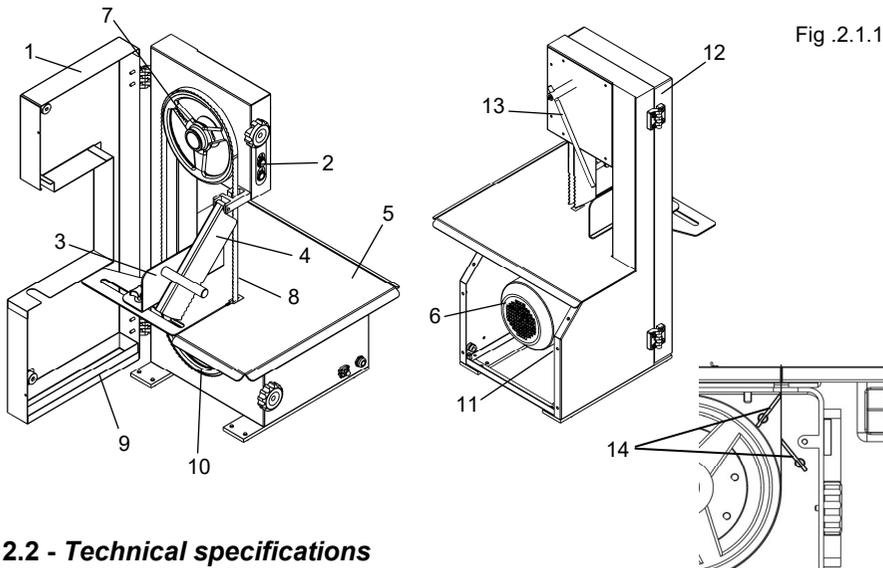


Fig. 2.1.1

2.2 - Technical specifications

	Motor	Pulleys diameter	Blade length	Working surface
	Hp / r.p.m.	mm	mm	mm
1650	1 ,5/ 1400	210	1650	400x450
1840	1 ,5/ 1400	250	1840	440x450

7.6 - How to perform the required checks

7.6.1 - Blade tensioning setting (Fig. 7.6.1)

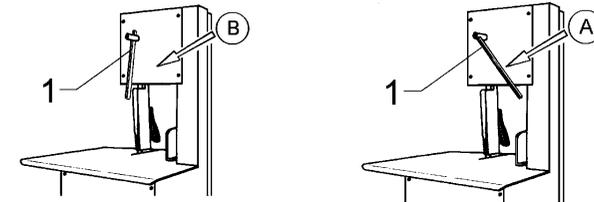


Fig. 7.6.1

Blade tensioning could be settled mechanically moving knob "1". Rotate the knob in position "A" (Fig. 7.6.1) blade is tensioning. To unblock the blade rotate the knob in the position "B".

ATTENTION! This operation is very delicate and dangerous, it must be done exclusively by qualified staff, expressly authorized.

7.6.2 - Replacing the blade (Fig. 7.6.2)

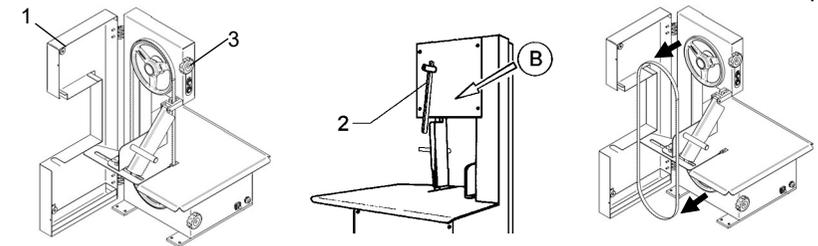


Fig. 7.6.2

- Set the differential switch fitted upstream to "0" and disconnect the mains plug.
- Open the casing "1" rotating knobs "3".
- Release knob "2" as indicated in fig. 7.6.2 arrow "B".
- Take the blade away from the pulleys.
- Before assembling the new blade, clean carefully the pulleys and the blade-guide.
- Assemble the new blade.
- Stretch the blade rotating the knob in position "A" (Fig. 7.6.2).
- Check the positioning of the blade on the pulleys: the blade must lean on the pulleys, except for the sharp part that must jut out of the pulley. See picture 7.6.3.
- Rotate by hands the pulleys and check the right positioning of the blade.
- Close casing "1" and lock it by knobs "3".

With the machine operating:

- Check on the efficiency of the guards and safety devices; opening door or rest tray of 5 mm at least the machine have to stop.
- Check on correct alignment of the blade drive pulleys.
- general operating check.
- Repeated cutting tests to check correct machine set-up according to the type of work required.
- Check that the blade stop within 4 sec, if not contact the maintenance.

7.4 - Check to be carried out at installation

To ensure that the machine has not been damaged during transport or installation, the following checks should be carefully performed:

Before start-up:

- Check that the power supply voltage corresponds to the value given on the machine rating plate.
- Check that the warning and danger signs are fitted and in perfect condition.
- Check correct tensioning of the blade.

Check with the machine operating:

- Check the efficiency of the guards and safety devices. Transport could have damaged or altered the setting.
- Check that the cutting blade is correctly aligned.
- Perform some cutting tests with pieces the same size as those to be cut by the user.

7.5 - Periodical checks

To ensure long-lasting reliability of your machine, in addition to the above, constant checks and controls must be performed as follows.

Before beginning each shift:

- check operation of the safety devices.
- Check the condition of the blade. If not sharpened or not in perfect condition, replace.
- Check that blade stop within 4 seconds
- Check tensioning of the blade.
- Check alignment of the blade respect to the pulleys.

ATTENTION!

If the blade don't stop within 4 sec. or for any other failures, contact the maintenance

After each shift:

- Thoroughly clean, eliminating all remains.
- Slide out, clean and refit the blade guide.

2.3 - Maximum dimensions of the product to be cut (Fig. 2.3.1)

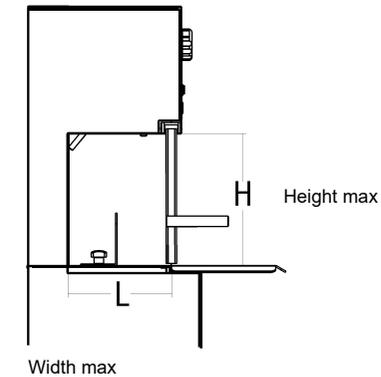


Fig.2.3.1

2.4 - Machine dimensions and weight

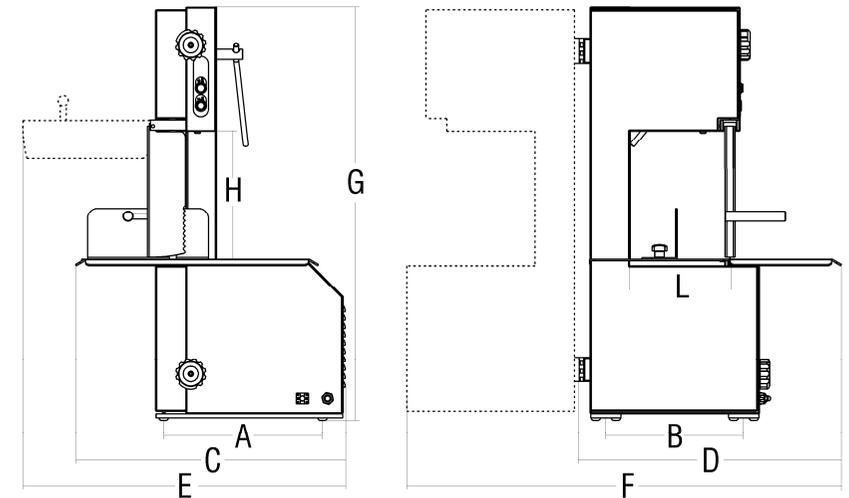


Fig.2.4.1

	A	B	C	D	E	F	G	H	L	Net weight
	mm	kg								
1650	315	314	535	520	640	862	815	248	197	46
1840	315	334	537	560	640	923	843	248	237	51

2.5 - Noise level

The noise level of this machine results to be 73 dB for SO 1650 and 73 dB for SO 1840. We recommend that the operator utilises ear defenders when operating the bone saw.

3 Testing, transport, delivery and installation

3.1 - Testing

Your machine has been tested at our factory to ensure correct operation and regulation. During testing, cutting tests are performed on material identical to the material cut by the user.

3.2 - Delivery and handling

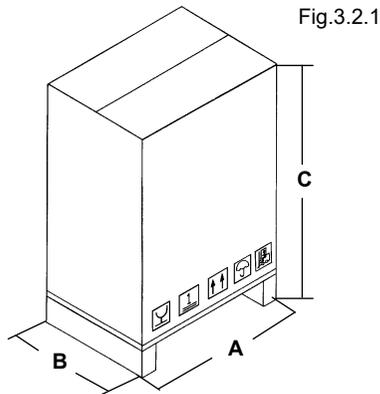


Fig.3.2.1

	A	B	C	Gross weight
	mm	mm	mm	kg
1650	720	570	1020	58
1840	720	570	1020	63

All the equipment delivered is thoroughly checked before delivery to the forwarding agent.

Unless agreements have been reached otherwise with the customer or transport conditions are particularly critical, the machine will be wrapped in nylon and cardboard on pallet.

The dimensions of the packing are shown in Fig. 3.2.1. Upon receipt of the machine, check that the packing is intact. If it has been damaged, sign the carrier's delivery note but add: "I accept, with reservation....." and the reason.

If, once the package has been opened, some of the machine components are found to be damaged, report the fact to the forwarding agent within three days from the date specified in the documents.

3.2.1 - List of provided equipment

The following equipment is included in the machine packing:
N° 1 use and maintenance manual

3.3 - Installation

ATTENTION!

The installation area must be level and firm. The supporting surface must provide a completely safe base.

7 Maintenance

7.1 - Important warnings

All maintenance and cleaning operations on the saw must be carried out with the machine at a standstill and disconnected from the mains. The area where the maintenance operations are carried out must always be kept clean and dry.. Do not allow non-authorized personnel to work on the machine. Do not touch the openings without adequate protections (gloves, goggles, etc...). Do not use petrol, solvents or other inflammable liquid as detergents; use the authorized non-toxic and non-flammable solvents on sale. Do not use compressed air to clean the machine. If really necessary, use goggles with side protections and limit the pressure to a maximum of 2 atm. (1,9 bar). Do not use naked flames as a means of lighting when carrying out checking and maintenance operations. Do not lubricate the machine when operating.

7.2 - Foreword

Good maintenance and correct use are fundamental to ensure good saw performance and safety. To guarantee regular and constant operation of the machine and to avoid lapse of the guarantee, only original spare parts must be used when replacing components.

7.3 - Checks carried out at our factory

Your machine has undergone extensive testing by the manufacturer in order to ensure correct start-up and settings. In particular, the manufacturer has carried out the following checks:

Before starting up:

- Check on the machine operating voltage: it must correspond to the purchaser requirements.
- Check to ensure that all the warning and danger signs and rating plate with technical specifications and serial number are fitted.
- Check on tightening of all the bolts.
- Check on tensioning of the cutting blade.
- Check to ensure that the machine complies with the current regulations and the previous of this manual.

5.3 - Starting the saw (Fig. 5.3.1)

Move the machine power supply differential switch from position "0" to position "1". The illuminated indicator "2", indicating that the machine is powered, must be illuminated. Press the start push-button "1", thus activating rotation of the blade.

5.4 - Stopping the saw (Fig. 5.3.1)

To stop quickly, for example in emergencies, press the emergency stop button "3". The illuminated indicator "2" remains on and indicates that the electrical panel is still powered. Set the differential switch fitted upstream to "0", thus disconnecting the machine.

Note: Whenever a work shift is finished and the machine is left to rest, the differential switch must be set to "0".

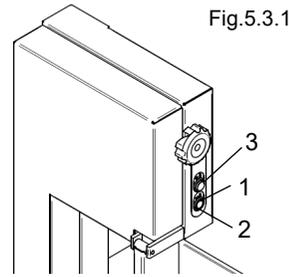


Fig.5.3.1

6 Using the saw

6.1 - Important warnings

ATTENTION! Only authorized personnel may use the machine. Before beginning work, the operator must ensure that all the guards are in place and that the safety devices are fitted and in efficient working order. If not, switch the machine off and contact the head of maintenance. Perform several empty cutting operations with the assistance of specialist personnel in order to acquire the sensitivity necessary for working in complete safety.

6.2 - Preliminary settings (Fig. 6.2.1)

The portioning device "2" must be regulated according to the size of the piece to be cut.

- To regulated the portioning device "2" loosen the knob "1" and set the portioning device to the required distance from the cutting width.

Tighten the knob "1".

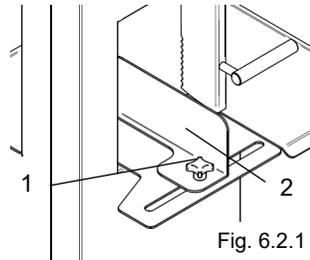


Fig. 6.2.1

6.3 - Using the saw (Fig. 6.3.1)

Having performed the settings described in par. 6.2, the machine is ready for use.

- Rest the piece to be cut "3" on the work top against the portioning device "1".
- Start the machine.
- with one hand grip the handle on the pusher "2", and With the other guide the food product towards the blade. Once having cut the required slices using only the pusher "2" and not your hands, push the product towards the blade.

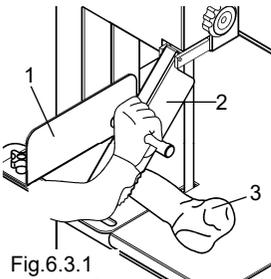


Fig.6.3.1

IT IS STRICTLY FORBIDDEN FOR SAFETY REASONS TO CUT FOOD PRODUCTS SMALLER THAN 50 mm
Never cut food products without utilising the pusher "2"

Note: The saw is designed to work intermittently, i.e. after a period of work there will be a pause.

Plenty of space must be left around the machine - see Fig. 2.4.1. This permit greater manoeuvrability in the work phases and provides access for subsequent maintenance operation.

Suitable lighting must be provided around the machine to ensure correct operator visibility.

Move the packing with a forklift truck or similar as the machine is packed on a pallet and protected in a cardboard (Fig. 3.3.1).

- Remove the two bands that fix cardboard to pallet.
- Unscrew the saw form pallet.
- Remove cellophane machine wrapping and all other packing inside.
- Two people are at least necessary to move the machine and they have to catch it from working surface (Fig. 3.3.2)

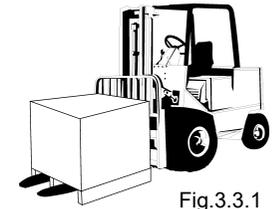


Fig.3.3.1

"ATTENTION!"

To move the machine are necessary two people.

3.3.1 - Disposal of the packing

The packing components - cardboard, nylon, wood - can be considered solid urban refuse and can therefore be disposed of normally. If the machine is delivered to countries with special regulations, the packing must be disposed of in accordance with the laws in force.

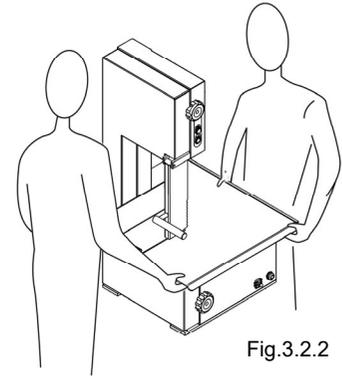


Fig.3.2.2

3.3.2 - Handling the machine

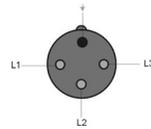
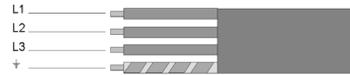
Lift the machine with a forklift truck of suitable capacity. Check the stability and positioning of the load on the forks, in particular on rough, slippery or sloping surfaces. When the machine is being moved, keep the load as low as possible in order to ensure greater stability and visibility. Widen the forks to obtain maximum stability.

3.4 - Connection to the electrical system

- Connect a 16 Amp plug, provided by manufacturer, to the electrical supply cable. Check that the electrical power supply line corresponds to the value on the machine identification plate. All work must be carried out by specialist personnel only, specifically authorised by the person in charge. Connect up to a mains with efficient earth socket.

3.4.1 - 400 volt 50/60 Hz and 230 volt 50/60 Hz three-phase machine

In these versions, the saw is provided with a power supply cable with section of 4x1 and length of approximately 1.5 metres. Connect the cable to the three-phase power mains, fitting a 16 A magneto thermal differential switch in between.

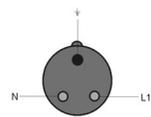


3.4.2 - 230 volt 50/60 Hz single-phase machine

In this version, the saw is provided with a power supply cable with section of 3x1.5 and length of approximately 1.5 metres. Connect the cable to the 220V-50/60 Hz single-phase power mains, fitting a 16 Ampere magneto thermal differential switch in between. For versions with voltages different from the above, consult the manufacturer. If you need to lengthen the power supply cable, use a cable with the same section as the one fitted. To check the correct electrical connection see 5.1.



N: solitamente o è di colore BLU oppure è indicato con il N° 4



4 Control panel and indicators

4.1 Commands and indicators list

1 Start button

Push to start the cutting blade.

2 Start light indicator

Indicates that the blade is moving. It's near the start button. It's visible just when the machine is working.

3 Stop button

Push to stop the cutting blade.

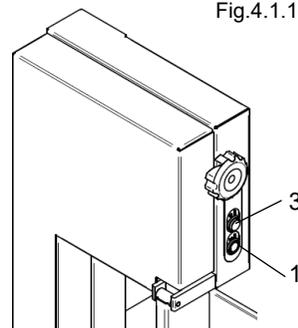
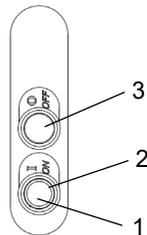


Fig.4.1.1

5 Starting and stopping

5.1 - Checking the correct electrical connection

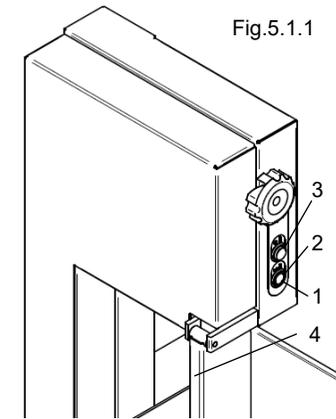


Fig.5.1.1

Set the differential switch fitted upstream to position "I".

The illuminated indicator "2" indicating that the machine is powered must be illuminated. Press the start button "1" and, immediately afterwards, the stop button "3", checking the blade rotation direction. The blade must rotate in the direction indicated by the arrow "4" fig. 5.1.1, i.e. towards the work top. If the rotation direction is incorrect, disconnect the differential switch, setting it to "0". In this way the electrical power supply is disconnected. Invert one current wire in the plug and repeat the procedure for checking the correct electrical connection (see 5.1)

Note: In the machines connected to a single-phase line and designed for single-phase power supply, the correct rotation direction is defined directly by the manufacturer.

5.2 - Checking the presence and efficiency of the guards and safety devices

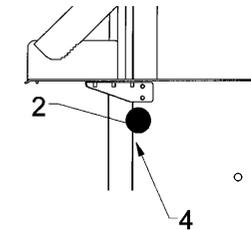
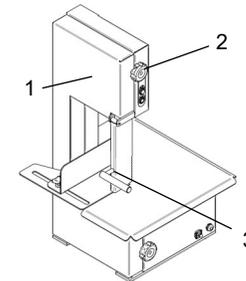


Fig.5.2.1

A - Checking the efficiency of the micro switch "4" (Fig. 5.2.1)

With the machine connected to the mains and blade working, open the snap lock "2" thus releasing the casing "1". Slightly open the casing until the micro switch "4" cuts in. This operation should stop the machine to prevent object or hands coming into contact with pulleys and moving blades. Reclose the casing "1" and lock it with the snap locks "2". The machine should not restart when the casing is closed - the start button must be pressed to enable restarting. In the case of faulty operation, switch the machine off and call the servicing department

B - Blade mobile guard in the work area (pusher) "3" (Fig. 5.2.1)

Check that the pusher "3", which prevents operator contact with the blade, is fitted, in perfect condition and correctly positioned.