INSTRUCTION MANUAL

BS-300/60 AFI-E
Automatic Hitch Feed Metal Cutting Band Saw (415V)
300 x 180mm (W x H) Rectangle

B100

INSTRUCTIONS FOR USE

Automatic, hydraulic bandsaw BS300/60 AFI-E

USER'S INSTRUCTIONS

INSTRUCTIONS FOR USE

We recommend to read carefully the information here included in order to install, use and maintain correctly and safely this machine.
Please refer always to this instruction manual in case of assistance service need and keep it carefully for all the machine life.
A consequence of the continuous improvement of the product is that some images/descriptions here included could not correspond to the improved features of the machines.
Your kind collaboration would help us in intevening asap.
In the enclosed Compliance Declaration you will find the Safety and Reference Norms applied during the planning and construction of this machine.
The choice and the use of the parts have been made by considering the conditions of use and the long machine life.
The identification plate, with the serial number, is fixed on the front right angle of the base or on a side of control box.

1.1 - ATTACHED DOCUMENT FOR E.M.C. (INDUSTRIAL ENVIRONMENT)
The user is responsible for installation and use of this machine in compliance with the manifacturer's instructions shown in this manual. This plant meets the protection requirements in accordance with the Directives 89/336/EEC,
92/31/EEC e 93/68/EEC as for electromagnetic compatibility (EMC).
In particular, it follow the technical instructions of the Rules EN55011,EN50082-2 and it has been realized for industrial and not for household use.
In the event that should be electromagnetic interferences the user is responsible for solving the problem together with the technical assistance of the manifacturer.
Before installing the machine the user must take into account possible electromagnetic problems of the working area. In particular, we suggest installing the plant away from:
-signalling, control and telephone cables; -radiotelevision transmitters and receivers;
-computers or controlling and measuring instrument; -safety and protection devices.
The electric supply cable must be kept as short as possible, well right and without wires.
The covers, the door and the frame must be suitably closed when the plant is operating.
Under no circumstances the plant must be modified except for adjusting and changing established by the manifacturer. Follow the maintenance schedule.

INSTRUCTIONS FOR USE

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DECLARATION OF CONFORMITY

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according to the law that transposes the Machine Directives
THE MANUFACTURER : IMET S.p.A
Località Tre Fontane
24034 - CISANO BERGAMASCO –BG- ITALIA

HEREBY DECLARES THAT

in designing and manufacturing the machine described here below , we have considered the most important requirements of safety and health dictated by the European Directives of the Machine Security.
Remember that this declaration loses its validity if machine is modified without our agreement.

AUTOMATIC BAND SAWING MACHINE FOR METALS

Code / Model / Type

Manufacturing year

Serial number

ORIGINAL DECLARATION IS AT THE MACHINE

Reference Directives: Machine Directives (89/392/CE) in the versions
91/368/CE, 93/44/CE, 93/68/CE,98/37/CE, 2006/95/CE, 2002/95/CE, 2002/96/CE, 2003/108/CE.
Low Tension Directive (73/23/CE).
Electromagnetic Compatibility (89/336/CE)
in the versions 92/31/CEE, 93/68/CEE, 2004/108/CE.

Norms Applied: EN 292-1 and EN 292-2; EN 60204-1, EN 13898.
EN 55011, EN 50082-2

Date : 01.01.2008

The signatory identification

The manager
Angelo Meroni

File : Machine no. Delivery note no dated

INSTRUCTIONS FOR USE

3 - MACHINE NOISE

The decibel pointed out in the workplace in the conditions under described is appointed to the simoultaneous working of some machine parts in motion (it depends on the detailed cycle) added to that one of the tool when is cutting the workpiece.
In several moments the decibel are pointed out to note the different using conditions.
The phon-meter is placed at about 1 meter near the machine and at about 1,60 m from the floor.
The results of each test is in dBA and they mean the average of 3 tests made from the: left side, opposite side, right side.
For any machines the using conditions are the following :
When running at the highest blade speed without cutting: dBA 63
When cutting a steel solid (St12=~C20 diameter 100mm) at a suited blade speed: dBA 75
(the measuring is = + - 2dB).
In the standard production the test is made by a same machine of above mentioned one, in compliance with E.C. safety norms 89/392/CEE and 86/188/CEE .
The use of the machine in bad conditions or the use of the wrong tools cause also sensitive alterations of these tests and it is prejudicial for the health of the staff and for the good results of the work .
Most of all the noice depends on the cutting material, on its sizes and on the locking system.
By expecting that above mentioned decibels could be exceeded, we recommend the operator the using of the personal means of protection (head phones, plugs etc.) in case of working a long time at highest levels**positioning/clamping in the vice, *taking into account other possible machinery running nearby and the characteristics of the working place***

3.1 - ADDITIONAL HEALTH AND SAFETY REQUIREMENTS

This type of machine, manually controlled during some working operations, must respond to further health and safety requirements as specified by article 2.2 of the Annexed I of the European Directive 89/392 and following.
In particular, the level of vibrations emitted by the machine while in use must be clearly specified in the instructions.
This machine does not emit vibrations of a level higher than 2,5 m/s 2

The measurement procedure used conforms to the general norms applied to this type of machine.

As in the preceding paragraph, using the machine in unsuitable conditions or using the wrong tools can cause changes affecting this value, endangering the health of the work force as well as the quality of production.
Vibrations emitted during cutting may be amplified by the material, by its dimensions and its positioning/clamping in the vice.

INSTRUCTIONS FOR USE

4 - GUARANTEE NORMS

I.ME.T. offers a wide range of sawing machines and accessories, destined to who buys/uses them as part of a commercial or professional activity.

The manufacturer grants that this product has been strongly controlled and that there are no defects in the used and working materials for a period of 12 months from the date of the delivery note.
The italian law D.L. n°24 issued on 02/02/2002 and valid since 23/03/2002 (which carries out the European Directive 1999/44/CE) indicates different terms only for convenience products for private use.

If the user points out some defects to the manufacturer during the warranty time, the manufacturer will replace the components that are considered defected.
In case of reparation of the machine during the warranty time the shipment will be accepted only if the delivery is Free Destiny (that is the freight costs are supported by the owner of the machine), and the return of the machine to the customer is considered EX WORKS.

If the manufaturer is not able to remplace a component within an acceptable time, both companies (manufacturer and user) will reach an agreement for satisfying completely the needs of the user.
The a.m. warranty is not valid in case of accidental damages, or defects provoked by a wrong use of the machine or maintenance, by variations made on the machine, or by the use of the machine in a place not corresponding to the indicated enviromental specifications.

4.1 - The manufacturer does not offer further warranties, written or spoken, explicit or implicit of its products and does not offer implicit warranties on saleability or adequacy for particular uses not foreseen by the agreement.

The a.m. limitations and exclusions can also be not applicable in Countries, where there are no implicit limits of warranty time on the products. Anyway each implicit warranty is limited to a time of 12 months from the date of the delivery note.

4.2 - The date of manufacture, deducible from the serial number placed on the machine, is a very necessary reference for the warranty, for the assistance after-sale and for the identification of the product.

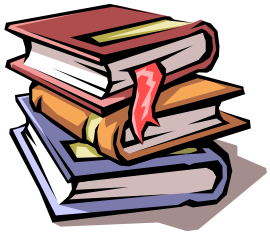
Each tampering on the products, expecially the installation of safety devices, will relieve the manufacturer of any kind of responsability.

The parts most subject to rapid and continuous wear are not included in the warranty (for example: transmission belts, gaskets, oils, blades, and so on).

For the electrical, electronic and hydraulic equipments and for the other equipments having its own individuality (of which there is the possibility to know the name of the constructor), the manufacturer gives to the user the same warranty received by the primary constructor of these parts.

4.3 - The components replaced during the assistance operated by the manufacturer have a **warranty of 6 months** from the installation date indicated on the Technical Service paper, one copy of which is given to the owner.

INSTRUCTIONS FOR USE



5 - SUMMARY pag.

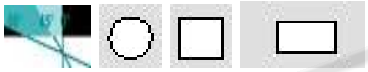
INSTRUCTIONS FOR USE

6 – TECHNICAL DETAILS

Automatic electronic bandsaw with numeric control and hydraulic working , suitable for cutting metal profiles and solids from 0 to 45 deg. left in automatic cycle, from 0 to 60 deg. left in semiautomatic cycle Material feeder equipped with recirculating-ball screw. In compliance with E.C. - CSA - UL Safety Norms and with the Norms of Electromagnetic Compatibility (EMC

STANDARD MODEL EQUIPPED WITH:
2 SPEED Three-phase motor, - with band speed 35/70 m/min. - electrical components complying with E.C. Norm EN60204-1, EN55011, EN50082-2
- low voltage (24V), main switch with interlocking attachment and minimum tension coil, thermo-magnetic overload motor protections, emergency stop
- easy to use CNC control; all operating functions of the machine are programmed from the control panel, Showing of the operating conditions, band speed, piece counter and number of pieces still to cut on an alphanumeric display, , - autodiagnostics circuit displaying error CODES wholly controlling the machine actuators - front fixed screw vice with hydraulic action, jaws height 130 mm - quick and positive location at 0 feeder equipped with recirculating-ball screw, 300 mm maximum opening, 4 mm minimum stroke, 210 mm minimum scrap-end,.- feeder vices fitted to a floating plate, sliding by ball-bushing on chromium-plated and tempered guides- monobloc floor stand predisposed for handling with lift truck Connection for loading roller tables - unloading chute -removable chip tray and tank, coolant pump and washing spray gun, hydraulic unit with oil. New band-cleaning device by means of a brush, , - bi-metal band, wrenches and manual of instructions, maintenance and spare parts.
WIDE RANGE OF ACCESSORIES: Two pressure reducers for hydraulic vices with gauges, upper rollers for cutting more pieces side by side (max dimensions 300x100 mm, only for straight cut) , RTS = modular loading roller tables, 400 mm wide and 2 m long.

If not differently indicated, all data reported in this manual refer to the standard version, suitable for working at 400 V / 50 Hz THREEPHASE with NEUTRAL WIRE.

 = cutting capacity (max. dimensions on PROFILES & TUBES)

 = BLADE DIMENSIONS  = WEIGHT  =VICE OPENING

 = motor choice and blade speeds (at 50 Hz);

mm.	Kw	Mt/min	mm.	Kg.
2765 +-10 X27X0,9	1,5 3~	18 to 110	300	635
	1,5/1,8	35/70	300	630

	mm.	mm.	mm.
0°	255	230	300x180
45°	210	190	200X160
60°	135	110	130X100

N.B. If the device of MINIMAL LUBRICATION is mounted on the machine, the cutting capacity is reduced by around 10 mm due to the spray nozzles on the anterior band guide.

Dimensions (mm)	B width	L lenght	H height	H min. worktable
In use	1800	1850	1880	870
For transport	1800	1750	1600	

INSTRUCTIONS FOR USE

7 - INSTALLATION

The machine can work according to the parameters provided by the manufacturer if it is rightly installed and the minimum requirements are observed, as follows :
- Machine must be used indoor and with temperatures from +5 to + 40 °C.
- The relative humidity of the environment must not go over 95%.
- The nominal value of the voltage of electric energy must be between + - 10 and the frequency of the nominal value must be between + - 2%.

The floor must have good characteristiques of capacity and level.
Floor space, operator position and working area are indicated in the included drawing that concerns the machine only without fittings as optional.
Work table must be leveled: by using the screws and nuts (NOT SUPPLIED) put in the little feet holes fix the machine to the floor .
The included electrical schemes reproduces the necessary details to arrange the connections, to be predisposed for 5KW power reques, with NEUTRAL WIRE.

Grounding of all electric parts thanks to a GREEN/YELLOW wire, linked via a TN system to the power supply cable. A supplementary grounding point – marked “PE” – can possibly be located on the metallic structure of the machine.

7.1 - DIFFERENTIAL PROTECTION

For the connection of the differential protection on the power supply line it is necessary to use switches with a threshold of interference on the power dissipation of not less than 300 mA (size 0.3 A or higher is recommended), having possibly time adjustment availability (0>1.5 sec).

E.M.C. Electromagnetic noise
This machine has been foreseen for industrial and not for household use. In the event that should be electromagnetic interferences the user is responsable for solving the problem together with the technical assistance of the manufacturer. Before installing the machine the user must take into account possible electromagnetic problems of the working area. In particular we suggest to install the plant away from:
- signalling, control and telephone cables;
- radiotelevision transmitters and receivers;
- computers or controlling and measuring instruments;
- safety and protection devices.

8 – TRANSPORT & LIFTING

For the transport of the machine only the methods indicated below are possible. However, be sure that the means of transport snd lifting are able to stand the machine's weight and its packing (about 1000 Kg):

WARNING
The personnel in charge of loading, unloading and moving the machines should use protective gloves.
WARNING
When lifting or moving the machine, or a part of it, take care of clearing the operations area of the people, considering also an appropriate safety area around it, so as to avoid any risks of injuring people or damaging things located nearly.

Special packings – wooden crate , wooden case –may be predisposed on request, by charge.

INSTRUCTIONS FOR USE

ALL THE OPERATIONS THAT INVOLVE MOVING THE MACHINE MUST BE CONDUCTED WHILE RESPECTING THE FOLLOWING BASIC RULES:

+ When moving the machine, an appropriate means has to be used, with a loading capacity higher than the weight to lift, which is indicated on the machine.
+ When choosing and then using equipment such as ropes, chains or lifting belts, be careful about their geometry during the lifting and about the consequent actual loading capacity.
+ The machine is structured so as to offer lifting points, which are appropriately indicated and will have to be used for lifting it.
+ In case the lifting belts touch parts of the machine, nylon belts are required; ropes or chains wrapped with jute or clean covering can also be used. A great care is necessary while slinging and moving the machine in order to hinder damages.
+ All operations have to be conducted with graduality, so as to avoid jolts and dangerous situations.
+ The person in charge of the operations has to make sure that all the national, local and company norms in reference to injury prevention and work safety are respected.
+ Onr or more areas for material storage have to be identified.

Transport with machine at sight

This type of transport is usually chosen for deliveries by covered truck, in case of short trips. The machine is wrapped with thermoplastic material in order to assure a suited protection of all its parts; the machine is then loaded on a truck and should be wrapped with ropes that tie it up . To lift it, use a forklift from front side of machine, with forks length 1.5 m or more.

Warning: if machine is delivered by open trucks, please cover it !

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Transport with wooden crate or wooden case. (BY REQUEST , ON CHARGE)

The machine is wrapped with thermoplastic material in order to assure a suited protection of all its parts; then it is packed into a wooden crate or cage to protect it from collisions, inclement weather and so on.
To lift it, use a forklift from front side of machine, with forks length 1.5 m or more (see picture).
You need to follow the indications you find on the packing before proceeding to moving or opening it.

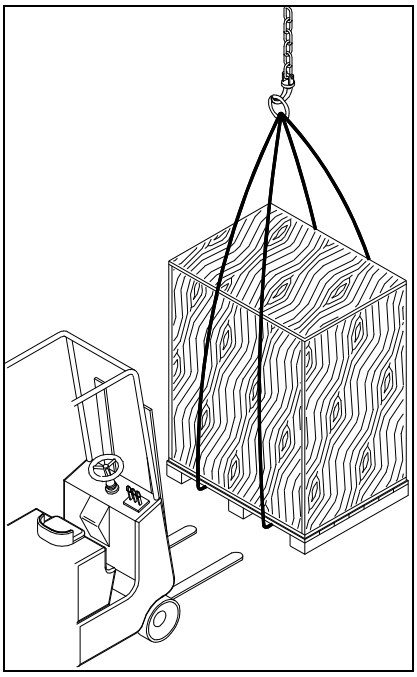
WARNING

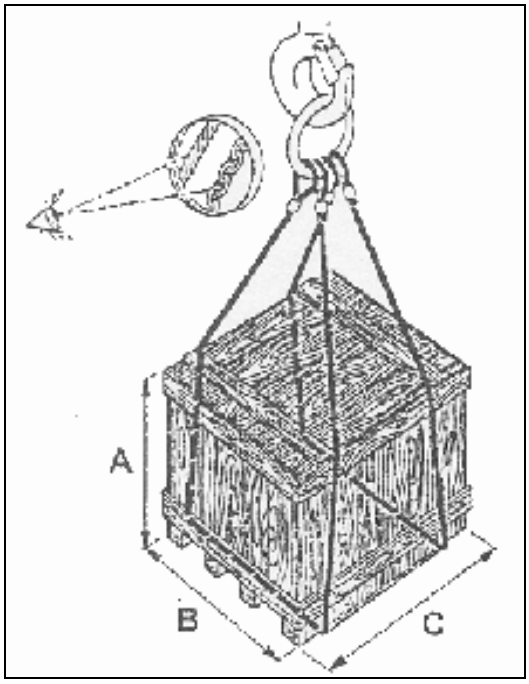
The size of the packing varies according to the machine ordered and its configuration.

WARNING

INSTRUCTIONS FOR USE

The machine is fixed to the packing by means of screws, so as to hinder that it can move during the transport (see drawing in the following page)

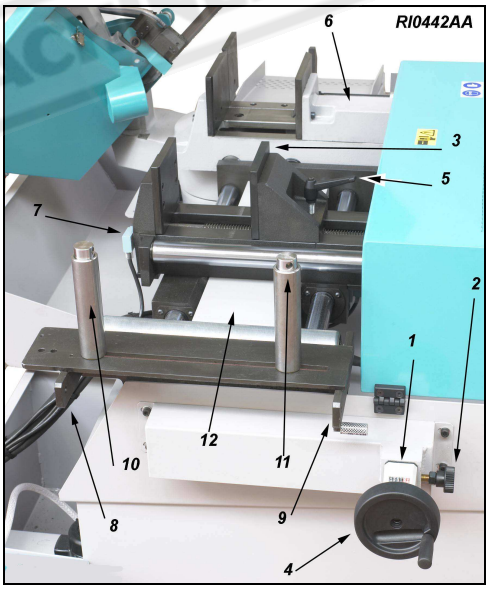




FITTINGS ASSEMBLING

The installation informations are supplied together to the same fitting, but we include herebelow a little working description.

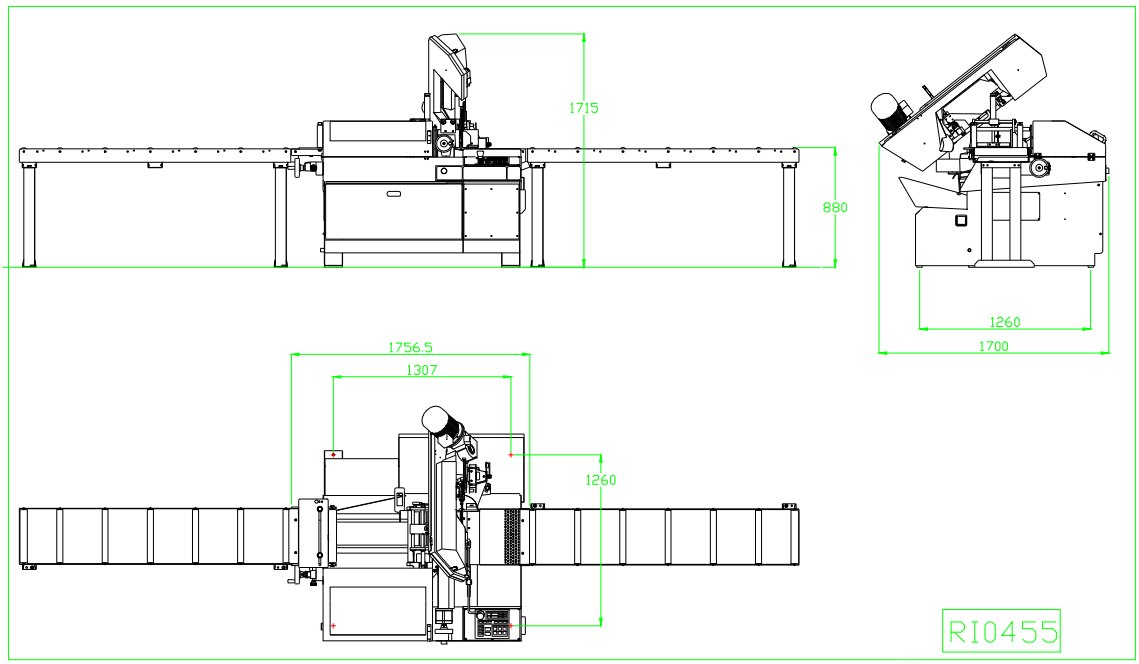
Loading roller table- To rightly install the loading roller table, first of all it is necessary to level and to adhere the machine.



Therefore level the loading roller table to the same level of the work table and the back supporting jaws by beginning to that nearest the machine. For very long workpieces adhere the pedestals on the floor and

INSTRUCTIONS FOR USE

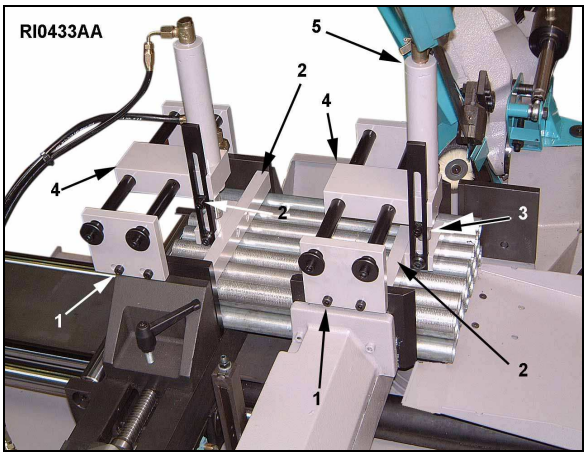
recycle the coolant transported by the workpieces that have to be cut .

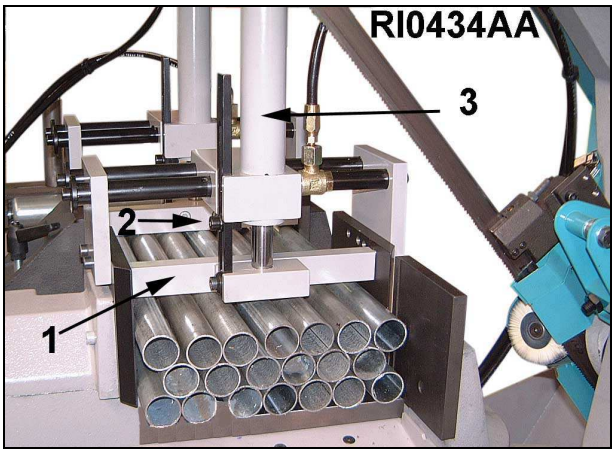


Upper roller for simultaneous cutting of several bars- it is an optional - together with the vertical vice, it allows to move and to lock a group of bars suitably prepared, or tubulars placed side by side (not one on the other) . The maximum dimensions that can be reached are : width 280 mm., height .... mm., bar stop = ... mm. minimum.

Additional supporting roller for the feeding - it increases the support of the material to cut (when the bar is almost finished). You can assemble it and dismantle with great ease.

Hydraulic vertical vices for cutting bundles, connected to the standard vices. They allow to clamp and feed a bundle of bars – maximum breadth 250mm, minimum breadth 110mm, maximum height 120 mm.



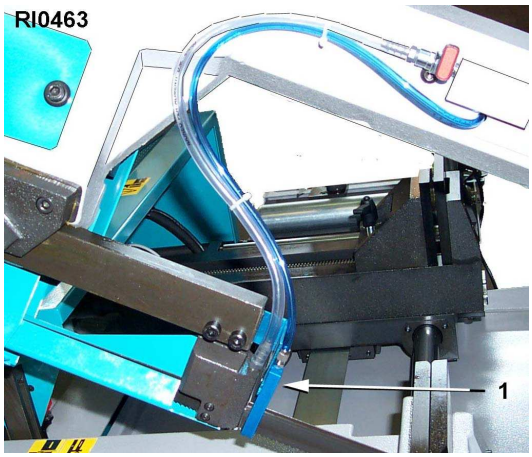


Minimal lubrication system – This device, applied to the saw, allows to eliminate almost completely the traditional coolant system, keeps the material much cleaner and avoids to waste cutting oil and water. It works only during the cut.

It is comprised of a nozzle - 1/RI0463 - with 5 micro-holes, a tank with devices to adjust the quantity of oil and the air pressure. The switch of the electric system - 3/RI0462 - working with low tension 24V AC allows to turn

INSTRUCTIONS FOR USE

it off at any moment and use the normal coolant system. . Remove the nozzle 1/RI0463 to obtain the maximal cutting capacity.



Voltage transformer - place it between the electric supply of the premises and the electric supply of the machine. It allows to work with a different voltage than the standard one (that is 400V / 50 Hz). Available voltages: 230V, 460V, 500V, 575V.

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BAND CHOICE

In this paragraph we recommend the type of cutting band in accordance with the material to use . To get the best performance from this machine it is necessary to undestand the right use of the used tools and what you have not to do with them.

The band you have to use must have the following sizes (in mm.) :

maximum lenght = 2770
minimum lenght = 2750
total height = 27
thickness = 0,90

Blades with a different thickness can be utilized by changing appropriately the width of the blade guides (see the paragraph ADJUSTMENTS) and the band tension.

The blade material is also important; generally the bi-metal blade is used, with different levels of HARDNESS, named **M42 or SVGLB (for general purpose: tube, solids and profiles, available in all pitches), M51 or SHL (preferred for big solids of hardened steel, INOX material too, available in 3/4 and 2/3 pitch).**

The teeth hardness increases - and the fragility too - by going from the material M2 to the M51.

To make a good cut it's crucial to choose the right pitch (t) or NUMBER OF TEETH PER INCH (z). The blade must generally have the toothing as follows:

- small teeth when cutting thin materials, tubular and profiles.
- big teeth when cutting solids or pieces with a long cutting section (for example the central part of a U profile), or in case of softer materials such as aluminium, copper, soft bronze.

By choosing the suited pitch you can avoid a lot of mistakes and you can get a good blade penetration and the necessary room for the chips. **If you cut more pieces at the same time, you must consider them as a single piece (that is, you have to consider the total size).** The enclosed chart gives the necessary information for a correct choice. **It can however be updated or modified by the user according to his personal experiences.**

Even if there are blades with constant pitch, most bandsaws allow the use of blades with variable pitch, that is, groups of teeth having different pitch one from each other, which reduce vibrations and noise and improve the quality of the cut and the cutting performance.

SUGGESTED PITCH		SOLIDS Outer Diameter (mm)	BIG PROFILES Wall Thickness (mm)	PROFILES Wall Thickness (mm)	BUNDLE Lenght to Cut (mm)	REF.
VARIABLE	CONSTANT					
	14 M42	-	-	1,5 max	-	
10/14 M42	10 M42	-	-	1 a 2	-	
8/12 M42	8 M42	20 max	-	2 a 4	-	
6/10 M42	6 M42	40 max	-	4 a 8	-	
5/8 or 5/7 M42	5 M42	30 a 80	6 a 12	-	50 a 100	
4/6 M42	4 M42	40 a 90	10 a 20	-	70 a 120	
3 / 4 M42 o M51	3 M42 o M51	70 a 150	15 a 25	-	100 a 200	
2 / 3 M42 o M51	2 M42 o M51	120 a 230	Oltre 25		120 a 300	

INSTRUCTIONS FOR USE

These cutting recommendations refer to 100 mm. diameter solid bars and a standard saw of our product range. For 2-speed machines we suggest the motor speed to use; when it's into a bracket ( ) it is recommended to use a machine with ESC, which grants a continuous blade speed variation.

If the size of the material decreases, the indicated figures can be increased, considering also the machine model and its performance and/or some accessories, for example the ESC (Electronic Speed Control):

If the material size increases, it is necessary to decrease the indicated values, considering also the machine model and its performance and/or some accessories, such as the ESC (Electronic Speed Control):

MATERIAL GROUP	i.e. DIN denomination	DIN N°	Maximum BLADE SPEED m/min	Minimum BLADE SPEED m/min	MOTOR SPEED (1or2)	FEED FORCE	COOL ratio
1)STRUCTURAL STEEL	St3 7						
	St 5			35	1	LOW	10%
HARDENING STEEL	C10 C15	10301 10401		35	1	LOW	15%
	16MnCr5 20CrMo5	17131 17264	40	30	1	LOW	10%
AUTOMATIC STEEL	9S20 10SPb28	10711	70	50	1 2	Low/Med	15%
BEARING STEEL	100Cr6	13505	50	25	1	LOW	5%
SPRING	65Si7	15028	40	30	1	Med/Hig	5%
2)TOOL STEEL	GG15 GG30	--	50	30	1	Med/Hig	dry
ALLOYED	AL99.5 GalSi15Mg	--	300	50	2	HIGH	2%
	CuSn6 CuSn6Zn	--	120 200	40 50	2 1 2	HIGH	2%
HIGH SPEED	C80W1	11525 11663	40	30	(1)	HIGH	5%
INOX STEEL	210Cr12 X155CrVMo	12080 12379	30	20	(1)	HIGH	dry
3)SPECIAL ALLOYS	X40CrMoV51	12344	30	20	(1)	HIGH	5%
	S-6-5-2-2	13243	30	20	(1)	HIGH	5%
	X5CrNi18 X10Cr1810	14305	30	20	(1)	HIGH	5%
TITANIUM	NiCr19NbMo	24668	20	15	--	HIGH	20%
	NiMo30	24810	20	15	--	ALTA	15%
1)STRUCTURAL STEEL	NiCr13Mo6Ti3 (Nimonic)	24662	20	15	--	ALTA	15%
	Ti1	37025	30	20	(1)	ALTA	10%
	G-TiAl6V4	37164	35	20	(1)	ALTA	10%

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ⓘ 3. INSTRUCTIONS FOR USE AND WARNINGS

This machine can make automatic work cycles, however at the end of each one the operator has to remove the material that has been cut and possibly change the cutting conditions. Therefore the saw sometimes must be manually adjusted and then it works in automatic cycle (so the operator is not indispensable).

The working cycle ends when the machine stops; in order to begin a new cycle, the starting procedure will have to be repeated.

ⓘThis machine is designed and manufactured so as to be safely used by the operator, provided that it is properly operated . No protections will ever suffice if the operator does not work with due caution, does not make sure that the machine is in top operating conditions and does not follow the instructions below.
You must remember that the machine is designed to CUT METALS with a sharp tool, and you are responsible to see that it is operated in a SAFE and CORRECT manner.

1. make sure that the machine is properly installed and electrical installation is proper.
2. be sure you are familiar with all operating, safety, and applications information before running this saw.
3. see that all who operate this machine are properly trained and fully aware of all safety practices.
4. do not expose yourself or other people to any risk.
5. insist on proper personal protective equipment and practices.
6. maintain all factory-installed SAFETY DEVICES and make sure that these are never removed or altered or restricted in any way.
7. the operator must have a safe and organized work area with suitable light and operating room.
8. the whole equipment has to be correctly and constantly maintained and inspected on a regular basis.
9. never use tools with different features from those for which the machine is designed for.
10. never use this machine to cut material bigger than the cutting capacity.

11. keep the cutting area clear of tools or other loose objects.
12. never operate the saw unless all protections are in place.
13. NEVER WEAR loose clothing, long sleeves, large gloves, jewelry, or any other items that may be trapped into a part of the equipment. Confine long hair.
14. always disconnect the power at source when performing maintenance or making adjustments.
15. never insert hands or arms into or near the cutting area while machine is running.
16. properly clamp the material in the vice and never hold it with your hands.
17. support suitably the bar on both sides of the machine to prevent falling.

We recommend to connect an unloading table in case the cutting length of the material is longer than the distance between the blade and the right edge of the saw.

18. when cutting very short pieces, make sure they do not jam into the blade.
19. if the blade becomes jammed, turn immediately off the emergency locking button, then move the cutting unit to the CUTTING START position. If this is not possible, open the vice and move the piece, check that the blade or teeth are not broken, if so replace it.
20. never change the working conditions when cutting, with exception of those specifically allowed (for example, changing speed with the Inverter).
21. do not move the saw while cutting and avoid its instability.
22. wear personal safety equipment, if required for a safe operation.

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ALWAYS OPERATE THE MACHINE SAFELY, USING COMMON SENSE AND ALERTNESS

On some parts of the machine there are some stickers which warn about the safety measures that have to be taken by the operator who runs it. Their meaning (easy to understand) is indicated in the following chart

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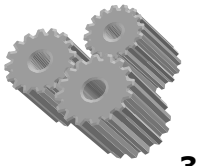
INSTRUCTIONS FOR USE

OPERATOR'S SAFETY

This section illustrates the safety protections applied on the saw, according to the current legislation in the field of safety.

3.2.1. ELECTRIC EQUIPMENT – Norm EN 60204-01

. Electric board closed with screws - general switch
. Marking of the electric components used, according to the indications on the electric scheme
. Control circuit with 24V tension – Control transformer with fuses on input and output
. Earthing of all electric parts with a dedicated GREEN/YELLOW wire, connected with a TN system to the supply cable. A supplementary earthing point – indicated with PE – can be located on the metallic structure of the machine.
. Minimum tension coil that prevents accidental restarting after a lack of tension.
. Protection from overloads and high temperature thanks to bimetal thermo-protectors placed directly in the blade motor
. Emergency button for interrupting immediately all the movements of the machine. In order to restore all the functions, rotate the button half a turn.
. Sensor of the blade tension: in case the blade breaks or the tension strength diminishes, the machine stops immediately
. Sensor of the closing of the blade protection: if it opens during the working, the machine stops.
. The stops caused by one of the aforementioned devices needs a complete restoring of the working cycle



3.2.2 – PROTECTION AGAINST ACCIDENTAL CONTACTS

. Complete metallic protection of the blade and the pulleys, the blade-cleaning brush and the back blade-driving pads
. Forward metallic moving guard, fixed to the forward blade-driving pad. It assures the coverage of the blade in every position, except for the stretch of blade which makes the cut. Joint to the blade-driving pad, it can be opened only after the opening of the main protection
. Positioning of the saw blade thanks to 2 buttons located on the control board, in order to limit the width of the danger area to the stretch of blade strictly necessary for the cut.
. During the cycle an automatic approaching device stops the saw blade near the material, in order to start the cut.
. Clamping vice with a maximum stroke of 7 mm, according to the norms on automatic closing
. Guard extended to both sides which retains the coolant used during the cut, preventing its spilling on the floor
. Parts of the machine with suitably chamfered or rounded angles

3.2.5. LIGHTING OF THE WORKING AREA

An inadequate lighting can cause accidents to the operator, who consequently needs a suited lighting in the working area. In case of a lack of precise indications (for example, norm ISO 8995) for special areas, we advise to supply a lighting equal to 750 LUX.

INSTRUCTIONS FOR USE

MACHINE DESCRIPTION, E.C. SAFETY NORMS

Automatic electronic band sawing machine with hydraulic movement . The head swivels from 0 deg. to 60 deg. left of metal profiles and solids.
It is not suitable for cutting wood or similar materials (cfr.D.M. 89/392, Enclosures I, paragraph 2.3).
It automatically makes a working cycle usually consisting of :
Locking material, approaching and cutting , tool return, unlocking material and its displacement for a new cut.
The operator has to adjust the cutting parameters , to adjust the saw frame swiveling to make the inclined cuts , to program the strokes quantity , the lenght and the quantity of pieces, and the cycle starting .

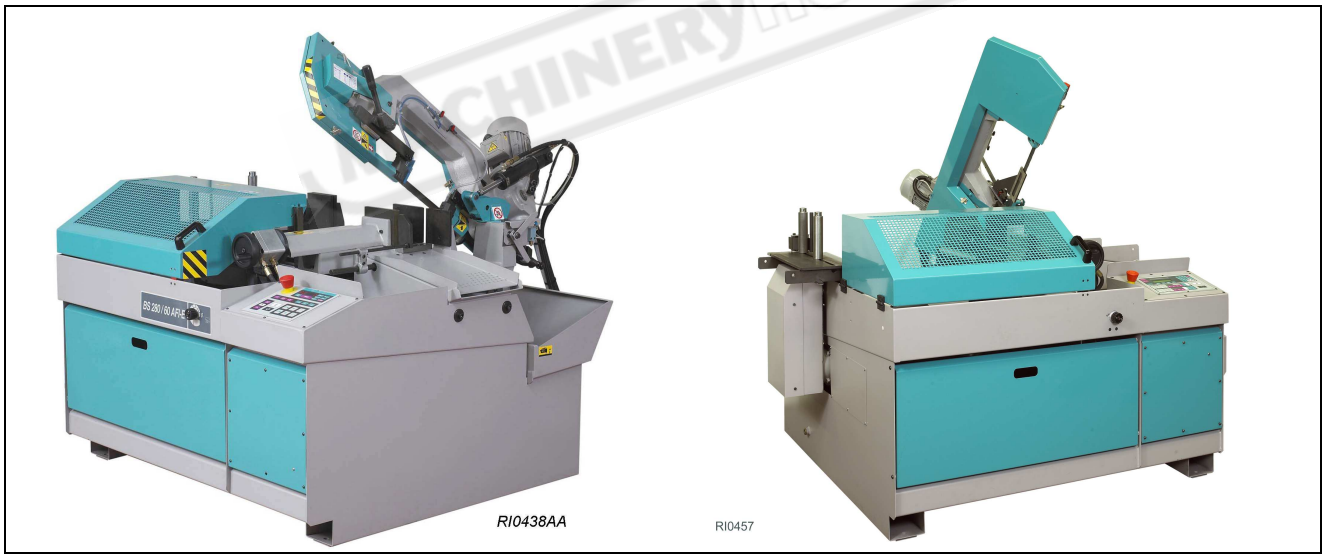
In designing and manufacturing this machine, we have considered the requirements of the Machine Directive (89/392/ EEC and so on..), important document valid in all E.E.C. Countries. Furthermore we have considered the norms as type A (EN292/1, EN292/2, EN414) in the case that specifications of type C are not available.

The choice and the use of the parts have been made by considering the conditions of use and the long machine life.

From the position of the work, in front of the frontal vice, the operator has the possibility to actuate the controls and to control the good working of the machine.

In the other paragraphs you will find any informations to use the machine in the best way and for a very long time.

Hereunder described you will find the recapitulation of the informations for the machine marking, its identification plate is fixed on the right front angle.
The keyboard of the electronic control has a further register number placed on the back shield.



1.1 - APPENDIX FOR E.M.C.

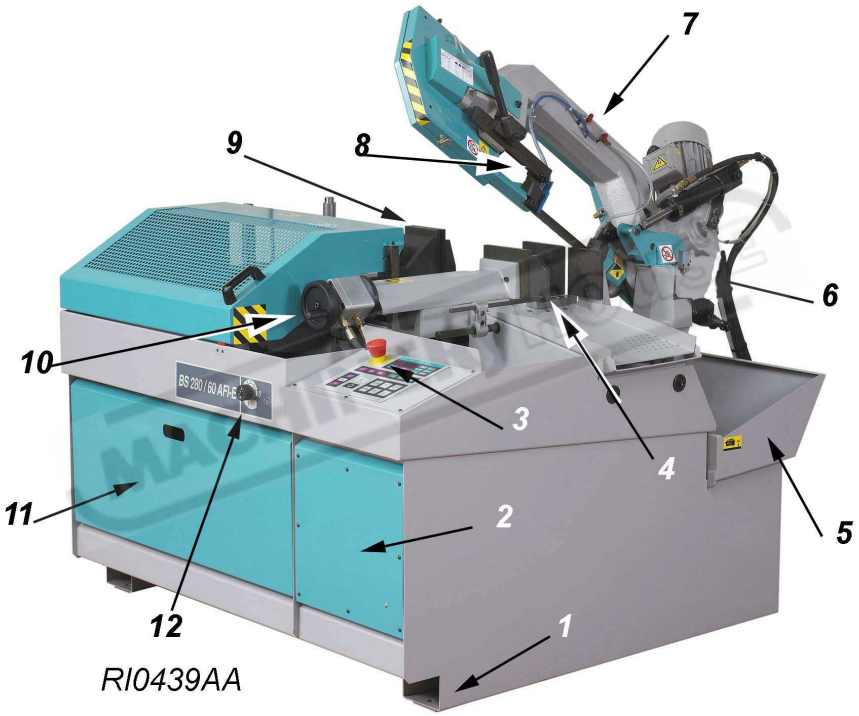
The structure of this machine complies to the protection requirements of the EEC Directives 89/336/EEC, 92/31/EEC and 93/68/EEC in terms of Electromagnetic Compatibility (E.M.C.).

It especially abides by the technical prescriptions of the norms EN 55011 and EN 50082-2, and it is fit to be used in industrial environments and not in residential ones.

INSTRUCTIONS FOR USE

- MACHINE SETTING FOR STARTING

Verify that machine has not clear damages or faults and check upon the standard equipment that includes the tools, fittings to do some adjustments, using and maintenance handbook .
In case the machine is supplied with additional equipment make sure that it is adaptable to the machine.
Point in good time the possible damages or faults to the reseller or to the service staff before starting machine.
Remove the locking shaft between sawframe and base, tighten the small threaded handle placed in the hole of the shaft base - 4/RI0461 – in order to prevent the blade guide from moving.
-. Remove the protective substances from the surfaces, used to keep the machine during the moving and transit, by cleaning them with a non-filamentous cloth or paper and please check that there is no rust in the metallic parts.
In case of using compressed air jet always wear proper eye protection.
Take the chip pan tank out -pos.5/dr.RI0439- by unhooking it from the guides then remove the possible dirty that can obstruct the passage of the coolant.
The parts in motion (band guides, trolleys, pivots, bearing support, bearing disc and so on) are already lubricated, the reducer gear holds the exact quantity of oil necessary to the operation.
Hydraulic system is ready to start.



If not tensioned : stretch the springs.-6/RI0439 - placed at the back side of the machine to balance the saw frame : loosen the fixing springs of the sliding plate - and, by a lever , place it about the half of the slots. Hardly lock the screws immediately. It is necessary to do these operations with the saw frame completely up.

8.1 - COOLING SYSTEM

Prepare the cooling by mixing the cutting oil and water (the tank holds about 40. litres) in proportion 1/10, 1/15 or according to the instructions of product supplier .Pour out the cooling in the tank - you can approach it by the rear side of the floor stand - or directly on the work table - pos.4/dr.RI01..-. In this case keep attention that the chip pan tank is correctly placed .

8.2 - ELECTRICAL CONNECTION

Verify that voltage and power frequency are compatible with numbers reported in the technical data plate (placed on the right side of the floor stand) difference over 10% causes some working unevenness more or less manifested. This operation must be made by authorized , operators (for ex. by an electrician) .
The pashing performed by the manufacturer allows to get a right rotation of all motors by connecting the wires in the following order L1=R, L2=S, L3=T, anyhow check as follows : (rightly close the coverband protections) .

INSTRUCTIONS FOR USE

a) If the EMERGENCY-.. - button is on , press it off and turn it 1/4 of turning in the marked direction.
b) press the button ON of the main switch-pos.6/drawing RI01..- , placed on the column of the rear side of the machine ; some leds of the control panel of the control are flashing-pos.7/drawing RI01 - and the display shows some numbers and/or figures.
c) be sure that the manometer of the hydraulic installation-pos.1/drawing RI0085 , accessible from the door , shows a pressure of about 10/12 BAR.
d) if it does not happen in the first 10 seconds turnf off the machine by switching off the main switch and check the connection with the line .(Disconnect the feeding plug , reverse the connection of two of the wires of line connection , excluding the green / yellow cable of grounding and start again from point a) .
e) Be sure that coolant is sucked in by the tank and arrives in the cutting area. (with the taps open, by pressing the button -pos.23/dr.RI0055- the recycling pump brings into action).
f) Stop the working by pressing the main switch-pos.6/dr.RI01..- .

8.3 - BAND TENSIONING

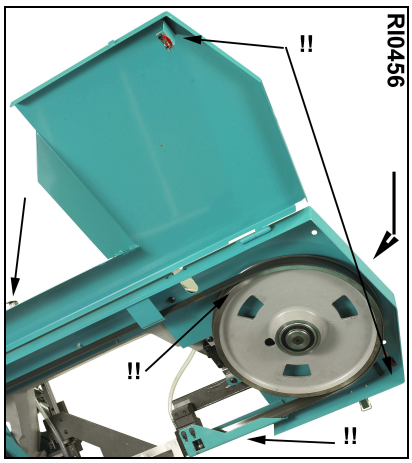
The machine is equipped with a tensioned band and the starting of the motor is impossible if right force of tension has not been opened up before. If it is not so:open the hinge of the cover band protection and remove it from the supports -pos.1/dr.RI0054 - to be sure that the band (" or blade ") is against the pulley and it is correctly put in the band guides head -pos.3/dr.RI0054-.
If necessary loosen a little the screw of the band stretcher-pos.4/dr.RI0054, to place again the band , then assemble again the protection guard by being sure that the safety stroke end -pos.3dr.RI01..- is rightly pressed.
The drawing shows the operation without the cover band protection, to only better illustrate the working area. But it is not possible to work like this.

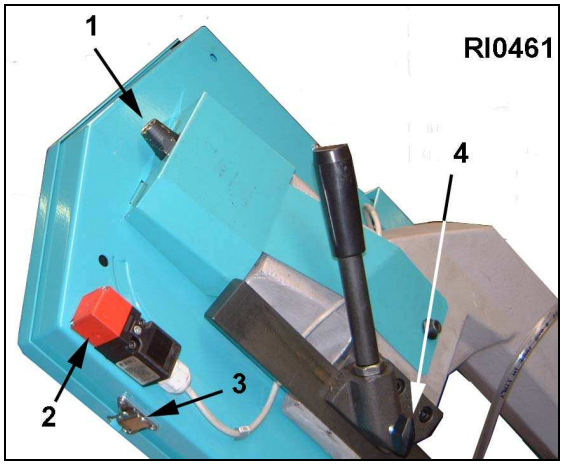
Press the main switch -pos.6/dr.RI01..-, wait for some seconds that the panel - drawing 7/RI01.. - stabilizes its workings, then press many times the pushbutton MODE -pos.10/dr.RI0055- until the LED light marked with the "band" symbol -pos.6/dr.RI0055- is on.

If the LED flashes , it means that the band is not tensioned : screw the frontal grub screw -pos.4/dr.RI0054- by using the proper spanner-pos.5/dr.RI0054- , until the LED will be continuinghly flashing.

The procedure to change the blade after a change of pitch, wear and tear and break is the same one of the above described procedure .In this case it will be necessary a careful cleaning of all points of connection with the band.

In the following paragraph you will find the full controls list .





INSTRUCTIONS FOR USE

9 - SYSTEM STARTING

By turning on the system, the display shows the release software code (example 3.5) during the loading of the set up data from the permanent memory "Eeprom". Then, for a time of about 2 seconds, it shows the identification code of the machine (for example 4.0, SIL, or something else).

For going on it is necessary to push the button - pos. 19 / dr. RIOO55 - (=CLOSE THE VICE) that activates the oil pump - in the hydraulic models - or that allows the flux of compressed air- in the hydropneumatic models-.

Please note that in some previous models the starting can be activated by pushing any other button.

If you push other buttons the display shows the error message: ER0034.

If you do not push any other button within 10 minutes, the electronic control deactivates the oil pump - in hydralic models -, or it stops the compressed air - in the hydropneumatic models-. For starting up the system push again the button -pos..19/dr.RI0055- (=Close the vice) the display shows for an instant a series of led lights-.

After this operation the system is ready to work.

The led lights appearing on the keyboard show the operative functions of the machine.

Sometimes, after starting the machine or following to some “caused anomalies” (for ex. the blade is not tensioned during the moving), the keyboard shows diagnostic error codes. In that case, please, refer to the enclosed errors table (paragraph 9.3.2) for the identfication of the kind of error.

Push any button to cancel such errors, after removing the anomaly.

9.1 - KEYBOARD / Description and use of the buttons - See drawing RI0055

Pushing the FEED-BACK buttons made with polyester support and IP65 protection, you can program all machine operations, including the positioning of the cutting unit :

BACKWARD (16): to remove the cutting unit from the workpiece up to the maximum programmed point. The led light shows that the tool is moving..

For automatic machine only, if you press it within the TEST button -pos.4/dr.RI0055- it move the feeder backward.

FORWARD (17): to move the cutting unit in the direction of the workpiece up to the minimum programmed point. The corresponding led light shows that the tool is moving. For automatic machine only, if you press it within the TEST button -pos.4/dr.RI0055- it move the feeder forward.

NEW – PROGRAMMATION OF THE CUTTING AREA

Thanks to the new device – position sensor – to detect automatically the start-cut point, the user doesn’t have to set up the start-cut and end-cut points. The sawframe drops always quickly until the position sensor - 1/RI0460 – touches the material, then the sawframe speed is automatically reduced to the one selected by the user. The end-cut position can be adjusted by means of the small rod – 4/RI0460 – of the end-stroke.

The movement of the sawframe is possible in four symbols:

*HIGHEST SAWFRAME POSITION*** SET BY THE MANUFACTURER**, corresponds to the highest point the sawframe can reach,

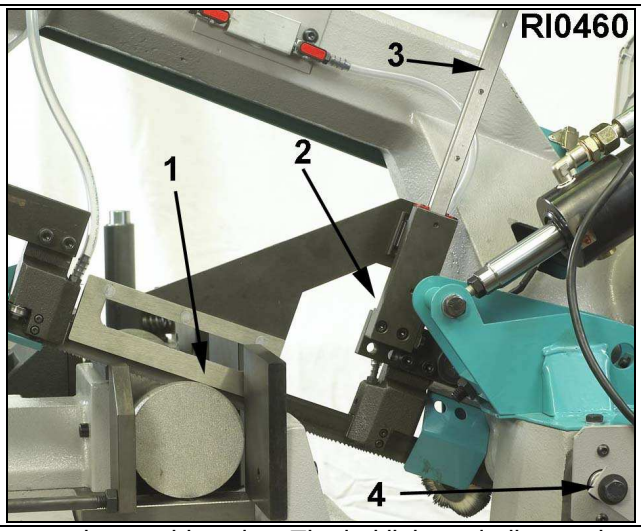
2- *START OF THE CUT automatic thanks to the position sensor –1/RI0460-.

3- *END OF THE CUT chosen by the user, by moving up or down the small rod which activates the correspondent end-stroke –4/RI0460-.

4- *LOWEST SAWFRAME POSITION* **SET BY THE MANUFACTURER,** corresponds to the lowest point the sawframe can reach

Usually the positions 1 and 4 – set by the manufacturer – correspond to 100% of the maximum cutting capacity allowed. In case of variations please contact the Technical Service.

INSTRUCTIONS FOR USE



OPEN VICE (18): push it to open the machine vice. The led light on indicates that the command has been set (ex. when the cycle starts by open vice, the vice will open again at the end of the working cycle).
For automatic machine only, if you press it within the TEST button -pos.4/dr.RI0055- it open the feeder vice
CLOSE VICE (19): push it to close the machine vice. The same as for the open vice (see above).
For automatic machine only, if you press it within the TEST button -pos.4/dr.RI0055- it close the feeder vice

CYCLE START(20): it allows to start a semiautomatic cutting cycle (when the led light of the function F3 is not flashing - pos. 25 / dr. RI0055).
On request we can also programme the machine so that this button is not operative (for ex. by connecting the command to the pedal), in order to avoid unwanted startings (ask it to Service Assistance).
The corresponding led light indicates that the machine is working.
CYCLE STOP (21): it allows to stop the semiautomatic or automatic cutting cycle in each moment and to push other buttons of the manual commands.

FUNCTION 1 = F1 (26): If the led light is on, the returning stroke can be done with the tool in movement; if it is off with the tool stopped.
FUNCTION 2 = F2 (27): it allows only the slow cutting stroke, if the led light is on (short cycle); it allows the approaching + slow cutting stroke if the led light is off (normal cycle).
FUNCTION 3 = F3 (25): if led light is on, it stops the semiautomatic cutting cycle on the returning point (at the end of the cut).

TOOL SPEED -1 (11): by pushing this button when the machine is not working you can pre-select the lowest cutting speed (only for 2 speed machines**); if pushed when the tool is in movement there is a speed decrease (only in machines with ESC).** If the led is on, it means that the preselection has been made.
TOOL SPEED 0 (12): by pushing it when the machine is not working you can pre-select cutting speed 0. For safety the function is not operative when machine is working. The led light on indicates that pre-selection has been made.
TOOL SPEED+2 (13): by pushing it when the machine is not working you can pre-select the highest speed (only for 2 speed machines); **if pushed when the tool is moving, it determins a speed increase (only in machines equipped with inverter = ESC).** The led light on indicates that pre-selection has been made.

COOLANT ON IN SEMIAUTOMATIC CYCLE (24): by led light on the coolant pump is operative only in the semiautomatic cutting cycle.
It is better if the working cycle time is longer than 15 seconds.
COOLANT ON (23): by led light on, the coolant pump is always operative.
Use only if the working cycle time is shorter than 15 seconds.
If the machine is not working you can use the cleaning gun by pushing this button.
COOLANT OFF (22): by led light on, the coolant pump is always off, for example by dry cuttings or by setting up the machine.

TEST (4) = Special functions for diagnostic

MODE (10) = Special functions for programming
The buttons on the right side (14 and 15) were used to memorize the cutting area on older versions of this saw.

9.2 - SETTING OF THE CUTTING LIMITS
Thanks to the new device which automatically detects the material, no memorization of the start and end-cut points is required: the sawframe drops always quickly until the “position sensor” - 1/RI0465 - touches the material, then it slows down and continues to lower according to the speed chosen by the user. The end-cut point can be easily adjusted by moving the small rod – 3/RI0465 – of the end-stroke.

9.3.1 - INFORMATION ON DISPLAY /1 = functioning parameters
The key MODE (10) allows to display a series of data concerning the functioning of the machine. If you push this button for an instant, a led light, corresponding to one of the five parameters of the machine, lights on and you can read automatically on the display a value. If you push again MODE the following led lights, corresponding to the other paramets, light on clockwise. The parameters are the following:

MACHINE CYCLE TIME = by led light (5) on. The display is in seconds "S" (more often), in minutes "n" or in hours " ". Please note that the indicator adapts itself automatically to the passed time.

FUNCTIONING TIME OF THE MOTOR BLADE = by led light (6) on. Display as in “**MACHINE CYCLE TIME”. The usual case is “ “ (on hours).**
For band sawing machines this led light flashing indicates that there is **a wrong or insufficient tension of the band.**

NUMBER OF CUT PIECES = by led light (7) on. Progressive display of numbers from 1 to 9999, and following appearance of the points next to the numbers, that is from 1. to 9.9.9.9.

CUTTING SPEED PREVIOUSLY SET = by led light (8) on. In meters/minutes for bands (optional in feet/minutes); in r.p.m. for circular blades and discs.

ELECTRICAL ABSORPTION = by led light (9) on. Maximum current load in Ampere pointed out in each cutting cycle.

Each one of these parameters can be zero-set by pushing the keys TEST + MODE together for about 2 seconds, while the corresponding light is on.

The display (2) indicates constantly the electric motor absorption in Ampere, and by reading it together with the display (3), you can get ERROR MESSAGES.

9.3.2. - INFORMATION ON DISPLAY / 2 = **Errors table** (SELF-DIAGNOSTICS)
The machine is equipped with self-diagnostics function, that allows to find out the working anomalies of the machine and to inform the worker giving the code numbersindicated here below (the ones printed in bold type are the most frequent):

DISPLAY ANOMALIES

ER0001 error in the configuration EEPROM
ER0002 error in the data checksum in EEPROM 1 1st. block
ER0003 error in the data checksum in EEPROM 2 2nd. block
ER0004 error in the data checksum in EEPROM 3 3rd. block
ER0005 error in the saved data in the permanent memory
ER0020 emergency active (emergency pushed?)
ER0021 motor overload protections (overheated motor?)
ER0022 open carter
ER0023 broken band
ER0024 FREE
ER0025 blocked inverter (motor under stress?)
ER0026 too high motor absorption

INSTRUCTIONS FOR USE

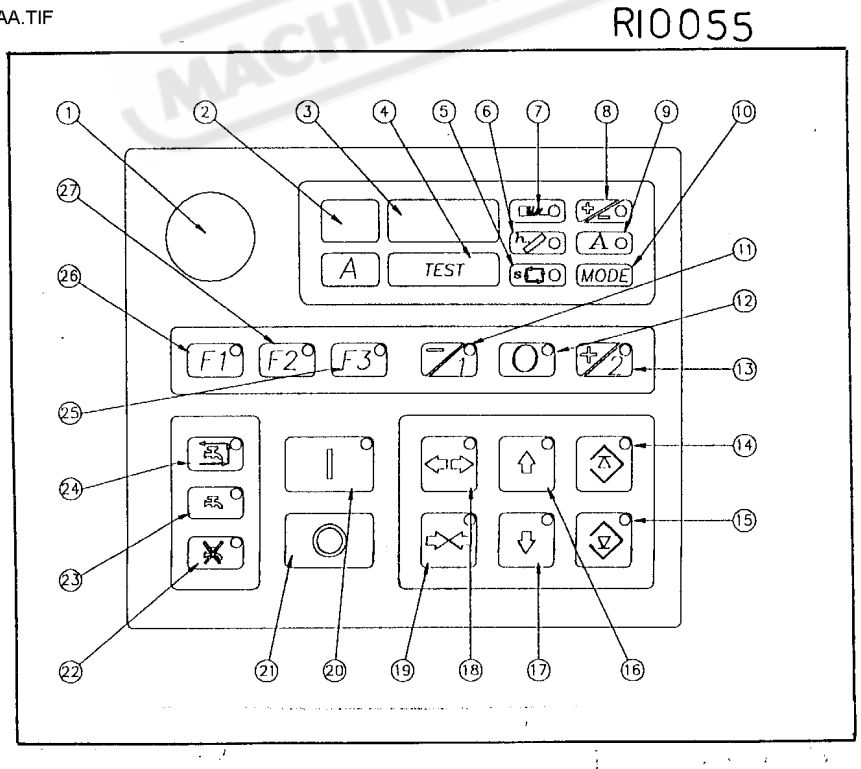
ER0027 not correct position of the tool for starting the cutting cycle (blade locked in the workpiece?)
ER0028 vice pressure problem (vice too open/oil pressure?)
ER0029 blade unblocking -for SIRIO models only-
ER0030 bar end - in automatic cycle - (end of the material?)
ER0031 carriage not in correct position - for starting the automatic cycle -
ER0032 feeder vice (vice too open/closed?)
ER0033 piece counter selection on 0 (for automatic cycle)
ER0034 OIL PUMP DEACTIVATED - for hydraulic models - or DISCONNECTED AIR - for hydropneumatic models
ER9999 overflow in the machine timer (it is necessary to switch the system off and then on).

Remove the causes of the anomaly and push any other key to cancel the display code.

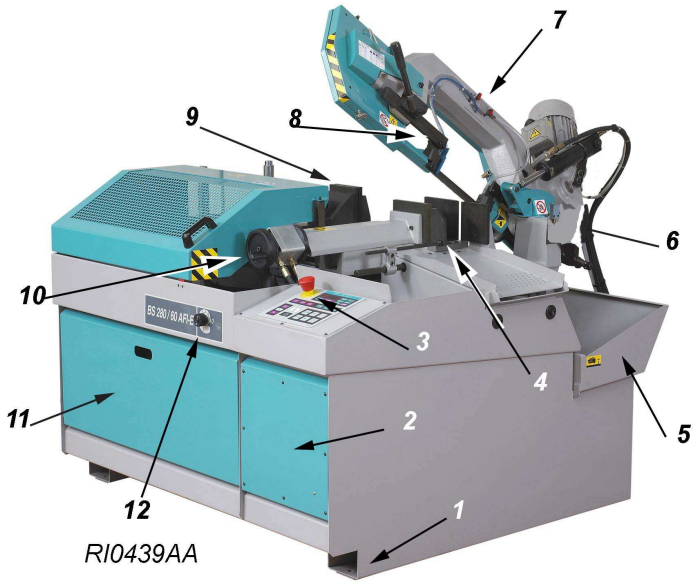
9.3.3. - SPECIAL FUNCTIONS of the key MODE (for qualified technicians or assistance staff only)
If you keep pushed the button MODE (10) for more than 3 seconds, you can enter a diagnostics menu used for the technical assistance.
In this function all LED lights corresponding to the key MODE are on.
If you want to get out from this situation you have to push again the button MODE for 3 seconds.
The parameters consultation is always made by pushing for an instant the button MODE; the display shows:
P1 - historical piece counter of the machine
P2 - hour counter of the band motor functioning

9.3.4. - SPECIAL FUNCTIONS of the key TEST (for qualified technicians or assistance staff only)
If you push the key TEST (10) together with the button COOLANT ON (23) you can enter a menu used by the technical assistance (the display shows: IN, DAC, .., and so on in case you push any bottons).
If you want to get out you can switch the machine off and then on, or you can push again TEST + COOLANT ON.

RI0055AA.TIF



INSTRUCTIONS FOR USE



RI0439AA

9.4 - CONTROL DESCRIPTION - .
- Main switch with magnetic and thermic protection. It can be locked and is equipped with device to protect it against power failures.
- Emergency button: it stops all drivers – pos.14/RI0439 – to restore them rotate the button to the right
- Control panel with display – pos.3/RI0439 – (see paragraph KEYBOARD)

Other drivers are located in easily accessible positions:
- hydraulic device to adjust the down-feed speed – pos.12/RI0439
- device to adjust the general pressure – pos.1/RI0426
- manual opening/closing of the frontal vice – pos.10/RI0439
- unlocking of the worktable rotation for miter cutting – pos.6/RI0439, located on the right side of the turning table
- taps of the coolant system – pos.7/RI0439
- locking/unlocking of the mobile forward blade guide – pos.8/RI0439
- lever and wheel to adjust the cutting length – pos. 2,4/RI0442
- locking of the feeder vice – pos.5/RI0442

9.5 - SEMIAUTOMATIC CUTTING SETTING
The original band allows to cut different sections of material, thanks to the variable pitch toothing (alternate little teeth with big teeth), but it is necessary to have the most suitable band for the piece to cut, to get the best machine performance. So we recommend to read the paragraph BAND CHOICE - for a right use.

Place the material in the vice, leaving 2-3 mm between it and the jaws, necessary for the automatic closing of the vice. The bar has to be behind the cutting line. Unlock the emergency button if it's been pushed -/RI0464- turn on the hydraulic unit motor by pushing the button CLOSE VICES – pos.19/RI0055 – and push it a second time to close the vice.
Verify that the bar is properly clamped by the jaws and that the clamping pressure is suited – it doesn't have to cause a deformation of the material.
The vertical roller – pos. 11/RI0442 – has to be moved close to the bar to help the feeding.
During the semiautomatic cycle, the feeder covering can be open or closed, since the safety end-stroke is not active.
Lock the small screw – 2/RI0468 – located over the main screw, in order to prevent the vice from opening while the saw is running. Position the forward blade guide – 8/RO0464 – so that it doesn't collide with the bar or the jaws when the sawframe drops.

9.6 - SEMIAUTOMATIC CYCLE
Place the material so it goes over the cutting line, then lock it, select the motor speed , the working, the coolant delivery and start the cycle with the button START CYCLE- pos.20/dr.RI0055. Adjust the coolant flow

that reaches the band and after the rapid approaching start the descent by planning the speed with the control(8).
At the cutting end the band goes up again and the semiautomatic cycle finishes.If the pushbutton F3 ils lighing, the saw frame and the blade stops at the end of thew cut.

9.7 - ESC (Electronic Speed Control - if it is installed)
As the motor is running, increase or decrease the speed by pushing the button (+/2) - pos.13/RI0055 - or (-/1) - pos.11/RI0055 – on the display you can read the current speed.
In case the maximum power supply threshold is exceeded - for example, because of an excessive cutting pressure or because the blade remains stuck into the material - the Inverter stops the motor and the error message “Er0025” appears on the display. To restore it, the main switch has to be turned to 0 (OFF), wait for about one minute and then turn it on I (ON).
In the meantime, try to find out the reason that caused the interruption and eliminate it.

9.8 - LOCKING / EMERGENCY LOCKING
It is possible to lock the cycle in any moment :
a - by the button STOP CYCLE-pos.21/dr.RI0055 the machine stops immediately , but there is also the possibility to use the other controls, for instance to change the cycle type or the blade speed);
b - by the emergency button.. the cycle stops immediately and it is not possible to push other controls before restoring it.
c - by the main switch -.the energy of the machine is off.
d - by opening the cover blade, a safety stroke end stops the control circuit by causing the movements locking.
e - in case of electric energy interruption the main sectionalising switch- goes to 0 position and it is necessary to reset it to start the machine again.

9.9 - HEAD ROTATION FOR OBLIQUE CUTTING
In order to perform cuts between 0°and 60°in auto matic cycle unlock the lever placed on the side of the worktable, manually rotate the sawframe until reaching the required angle on the graduated scale, then lock again the lever. Easy stops at 0°and 45°.
The cut with automatic feeding has to take place in the cutting range from 0°to 45°left; beyond 45° the vice can collide with the sawframe. When changing angles there shouldn’t be any materials clamped by the vice and/or on the worktable.

The sawframe can rotate up to 60°only if:

a) the device for easy stop at 45°is removed
b) the back blade guide is moved backwards all the way (by loosening the screws and positioning it where the back holes are)

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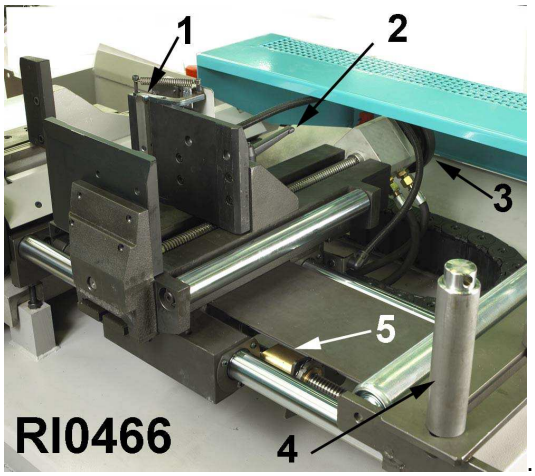
it is highly recommended to bring the blade guide back to the original position when finishing cutting at 60°, in order to avoid stressing the blade uselessly

---

-9.10 - AUTOMATIC CUTTING SETTING
In order to carry out an automatic cutting cycle the feeder stroke has to be set. Proceed as follows:
Position the feeder jaw – pos. 1/RI0466 – about 2-3 mm far from the material, and make sure its cylinder is opened by pushing simultaneously the buttons 4 and 18/RI0055. Lock with the upper handle – pos.2/RI0466**.**

INSTRUCTIONS FOR USE

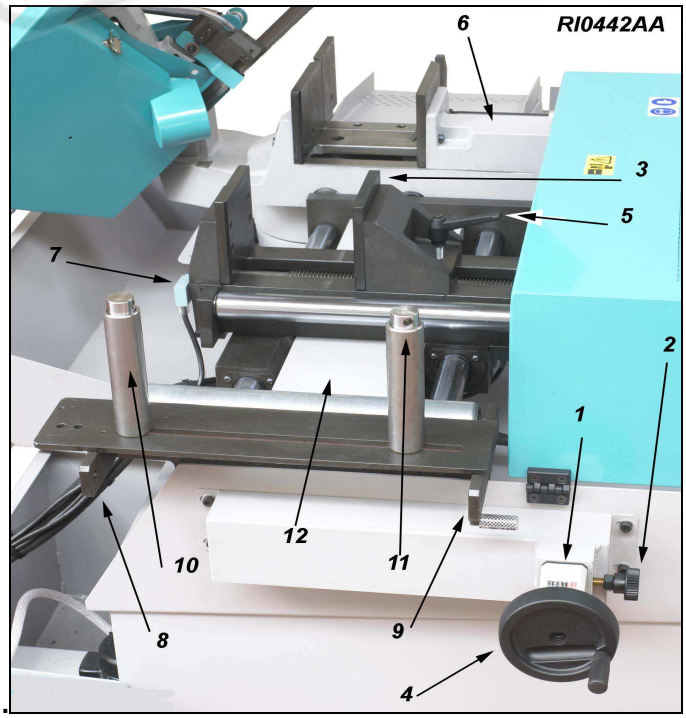


Setting up the feeder stroke: unlock the lateral wheel – 2/RI0442 – then rotate it – pos. 4/RI0442 – to set up the correct cutting length, which can be any between 4 and 515 mm, with single stroke. Each complete turn of the wheel corresponds to a 5-mm shift, making also very easy the adjustment of the decimal values. After reaching the desired cutting length, lock the wheel – 2/RI0442. In order to compensate possible plays on the transmission, reach the correct cutting length by rotating the wheel clock-wise.

Note: when setting up the correct feeder stroke, the breadth of the cut caused by the blade – about 1.5 mm with the original blade – has to be taken into account and added to the cutting length. In case more than one feeder strokes (selection by means of the keyboard) are required, you must divide it by the number of strokes to get the correct length to set up.

Example: cutting length required = 1500 mm; Scrap = 1.5 mm; Feeder strokes = 3;
1500 + 1.5 = 1501.5; 1501.5 : 3 = 500.5 = Correct cutting length to set up

After making the first cut, you can check the actual length of the material cut and possibly make an adjustment by means of the wheel.
It's recommended to always verify the actual length of the first cuts carried out. When changing the blade, make a few cuts in order to check the breadth of the cut.



15.11- AUTOMATIC CYCLE

INSTRUCTIONS FOR USE

Setting up the cutting length is the only step which can't be made by using the control panel, all other operations can be programmed thanks to the keyboard. – picture RI0055. Choose the blade speed using the buttons (-1) and (+2) – Pos. 11,13/RI0055) and the blade working modality which can be:
F1 on = the blade runs while the material is forwarded (recommended when the cutting very short lengths): push the button F1 – 26/RI0055 – to turn on the corresponding led.
F2 off = the blade stops while the material is forwarded (recommended when cutting longer cutting lengths – it allows to get a longer blade life): push the button F1 – 26/RI0055 – to turn off the corresponding led.

Set up the saw for the automatic cycle, by pushing at the same time the buttons TEST (4/RI0055) and F3 (25/RI0055). The led by the button F3 flashes when the machine is in automatic mode. To go back to the semiautomatic cycle, use the same combination of buttons until the same led doesn't flash anymore.

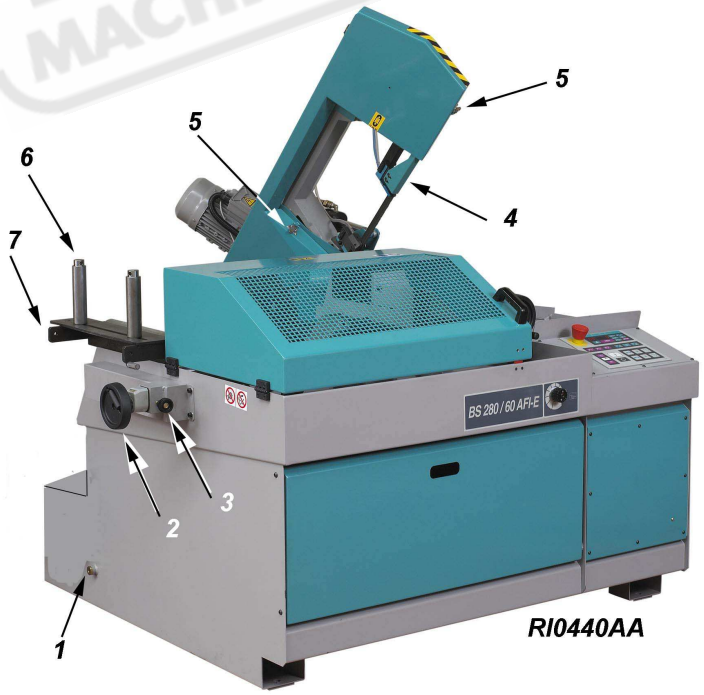
*__Select the number of cuts to make__: while pushing F2 (27/RI0055), push repeatedly the buttons 13,14/RI0055 to increase or 11,15/RI0055 to reduce such number, which appears on the display – from 1 up to 9999. When releasing F2, the number is memorized.

*__Select the feeder strokes:__ while pushing F1 (26/RI0055), push repeatedly the buttons 13,14/RI0055 to increase or 11,15/RI0055 to reduce the number, which appears on the display – from 1 up to 29. When releasing F1, the number is memorized.

***Reset the piece counter: while pushing F3 (25/RI0055), push the button 12/RI0055. When releasing it, the piece counter is set to zero.**

*** Push the Start button I (20/RI0055):** the feeder moves to the required position, both vices close, **the led by the button I (20/RI0055) flashes, signaling that the automatic cycle can begin (STAND-BY).**

*** The automatic cycle starts by pushing again the button I (20/RI0055).** The electronic driver makes a self-checking, and in case the aforementioned operations have not been properly carried out the cycle does not begin and an error message appears on the display. The reason of the problem has to be removed to start the automatic cycle.



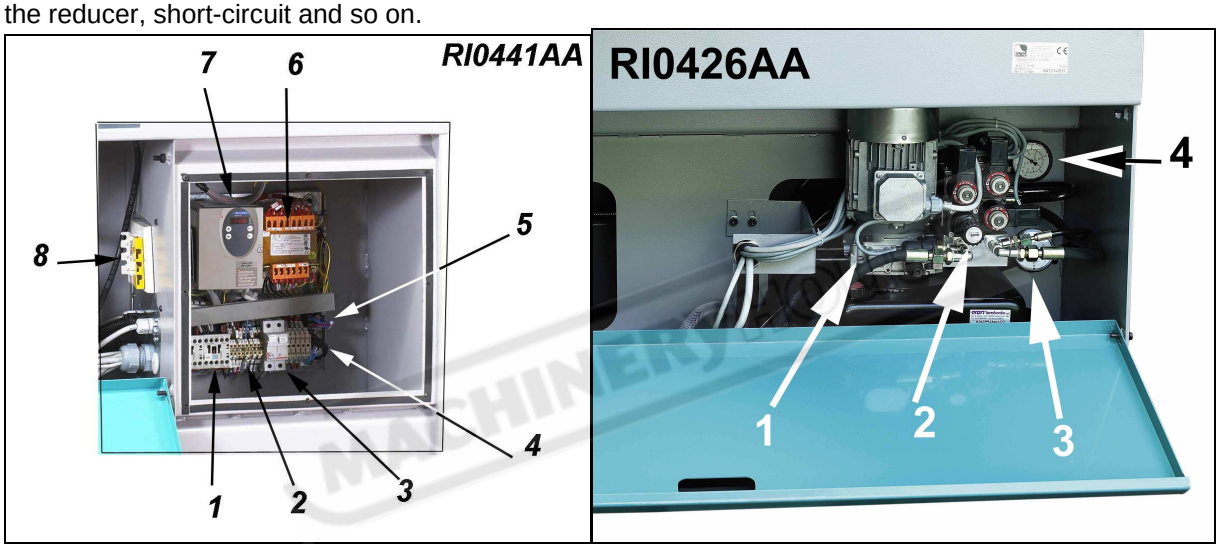
DURING THE AUTOMATIC CUTTING CYCLE THE PRESENCE OF THE USER IS NOT REQUIRED AND CAN BE LIMITED TO OVERSEEING THE WHOLE PROCESS.

INSTRUCTIONS FOR USE

Note: after finishing the cutting cycle the saw stops, waiting for the piece counter to be set to zero again or for a new cycle to start, without leaving the automatic modality. On the display the message EP appears.
*** When a bar ends, the saw stops waiting for a new one to be loaded, and it goes back to the semiautomatic mode.**
After removing what is left of the bar, place a new one on the feeder, just a few millimeters beyond the cutting line. Set up the saw for the automatic cycle again by means of the buttons TEST+F3 - (4) + (25) – and, without resetting the piece counter, start the cycle again by pushing the button I (20/RI0055) twice.

* During the automatic cycle - F3 flashing - the buttons 22,23,24 (coolant), 11,13 (blade speed), 10 (information on the cycle) are active and can be used. Moreover, by pushing F1, F2 and F3, the feeder strokes, number of cuts to make and piece counter can respectively be shown on the display.

15.12 - PROTECTION AGAINST OVERLOADS
The motor is protected against overheating by means of bimetallic thermo-protectors which stop all drivers. If this happens, the error message ER0021 appears on the display. After the temperature has dropped below the overheating threshold, the cycle has to be started again. In the meantime, try to find out the reasons which led to the overheating – i.e. excessive cutting pressure, blade entrapped into the material, lack of oil in the reducer, short-circuit and so on.



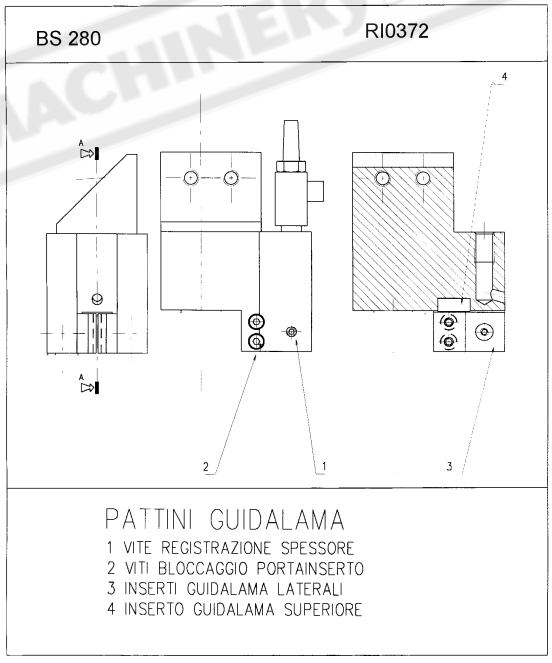
16 - ADJUSTMENTS for BS 300/60 AFI-E
(to carry out when the machine is disconnected, except for the operations described in the paragraphs 16.3, 16.4, 16.5,
16.1 - VICE Adjustment of the guides play (NOTE that the hydraulic vice driver must be in the 'open' position): when the vice is almost completely open, make the lower opening – which can be seen below the vice - coincide with the plate that is screwed inside the sliding part - 7/RI0442. Tighten slightly the two lateral screws by means of an hexagonal wrench. Check if the adjustment is correct by closing and opening the vice. If the sliding is difficult, tighten strongly the central screw to increase the play.
16.2 - Blade - **Carbide metal pad adjustment according to blade thickness** : drawing RI0372
This adjustment must be done when you have a blade with thickness other than 0.9 mm or in case the hard metal pads are worn out. The easiest test is the following: put a blade in the guides and move it back and forth to evaluate the mechanical play. Depending on the result, proceed as follows: loosen slightly one screw – 1/RI0372 – to make more room for the blade (or tighten it to get the pads closer).
put the blade inside a guide and, while pressing manually the two parts one against each other, tighten strongly the two aforementioned screws.
Check that the mechanical play is not excessive (Max. 0.02 or 0.03 mm) and make sure that both screws – 2/RI0372 - are properly tightened.
The lateral pads are mechanically fixed and each can be replaced without removing the whole blade guide, just by loosening completely the two screws – 2/RI0372. By removing both lateral pads, the special upper pad which is in contact with the blade can be removed.

16.3 - Blade - Check the perpendicularity between blade and worktable: this is very important and, along with the blade tension, it assures straight cuts. Check it the following way: with the sawframe up and at 0° and the vice completely open, put a square at 90° on th e worktable (close to the supporting jaws) and very close to the blade.
While keeping the square still, lower the sawframe until reaching the end-cut point and evaluate if the blade gets closer to it or farther. Lift the sawframe, move the square towards the operator so that the blade is close to the higher extremity of the square, then lower the sawframe again until reaching the end-cut point while always keeping the square still.

Usually this test allows to single out geometrical errors, but it is even more important in order to ensure that, in case of not perfectly perpendicular cuts, the reason is not linked with factors external to the machine (for example, blade in a bad condition, wrong tension, wrong tooth pitch, excessive pressure during the cut).

16.4 - GENERAL PRESSURE
The general pressure is produced by an hydraulic unit - picture RI0426 - comprised of: manometer (pos. 4, when working it shows about 16/18 BAR), the vice valve (pos. 3), the sawframe valve (pos. 2), the feeder vice valve (pos. 4), the feeder vice (pos. 5), the pump/filter/valve for maximum pressure (pos. 1), the motor (pos. 6), and the oil tank (pos.8).
The general pressure can be adjusted by means of the cartridge valve (pos. 5), which is equipped with a locking nut. Never go beyond 20 BAR.
On this hydraulic machines a modular valve can be assembled to reduce the vice clamping pressure, which can be helpful when cutting material that may deform.

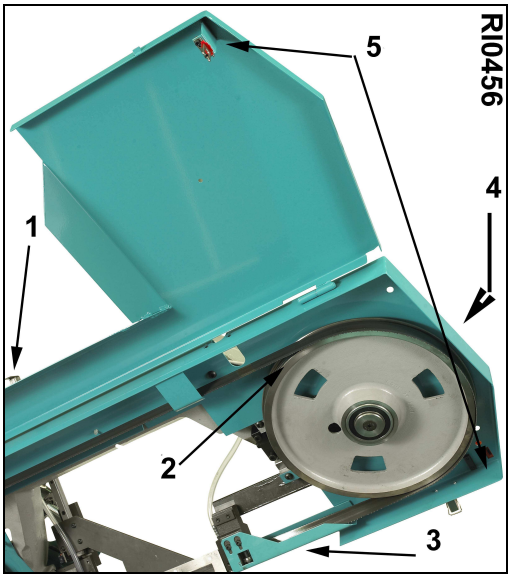
16.5 - CUTTING SPEED
Rotate the handle – 12/RI0439 – from 0 to the maximum level to increase the down-feed speed: any variations should be made considering the type, shape and size of the material, the blade speed and life, the coolant, and so on.

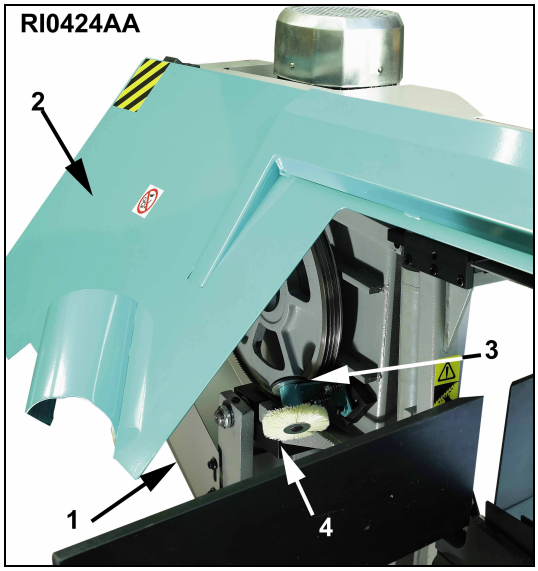


17 – MAINTENANCE – for the user
Regularly carry out maintenance operations as described below to maintain unchanged the machine safety devices and technical features of the saw.

BLADE REPLACEMENT: This is the most frequent maintenance operation, due to the natural deterioration of the blade; it is essential to replace it correctly and safely. With the sawframe up and at 0°, power o ff: Open the blade guard and fix it to the upper hook, remove the backward and forward protection, loosen the blade tension device by means of the front screw. Remove first the blade from the pulleys, then from the blade guides, using protective gloves while carrying out these operations.

INSTRUCTIONS FOR USE





Make sure that there are no chips or dirt on the pulleys, and following the cutting direction, shown also by an arrow, put the new blade in the guides **without removing the plastic protection,** and then on the pulleys. The upper supports prevent the blade from falling. Tighten the tension-adjusting screw and make sure the blade is correctly placed on the pulleys. **Remove the plastic protection,** then assemble the blade guard and the front mobile protections.

17.1 PERIODICAL MAINTENANCE

To be carried out **DAILY** or more often if the machine is doing a heavy job. Remove the chips from the machine conveying the smallest ones into the chip tray – 5/RI0439. Remove and empty the chip tray; add coolant if necessary; check the wear of the saw blade and replace it if necessary; check the blade brush and the transmission ring – 3/RI0424 - and possibly adjust or replace it.

Clean the machine **WEEKLY**, lubricate all joints and surfaces in contact with oil or grease. Make sure that there is oil in the hydraulic unit tank – 8/RI0138 – while the saw is off. Check the oil level in the gearbox by means of the proper stick – 4/RI0051.

Replace the coolant **MONTHLY** and clean the tank. Ensure that all screws and bolts since they may have loosened. Make sure that stroke-ends and switches work properly; check the leads, tubes and hydro-pneumatic connections; make sure that seldom-used devices work properly. Check the two blade guides and the hard metal pads inside, adjust and possibly replace them (drawing RI0372).

Once a **YEAR -** or after 2000 working hours - replace the oil in the gearbox, as shown in the chapter MACHINE RUN IN.

18 - BAND RUNNING-IN

For granting a better machine efficiency and a longer blade life it is really necessary a good running-in of the machine.

For the first works of each band we recommend to reduce the penetration speed of the blade in the workpiece until half of the normal value - about 40/50 cm² / min.- and keep the blade rotation speed constant. Only after cutting 250/350 cm² of the material it is possible to increase the penetration speed till reaching the normal value.

The working conditions can be also valued by considering the chips produced during the cutting; you can find 3 kinds of chips:

THIN OR POWDERED CHIPS indicate poor advancing pressure and / or low speed, too little teeth.

BIG CHIPS - MAYBE BLUE / BROWN indicate overload on the blade, poor lubricating.

SPIRAL AND RIGHT ENVELOPPED CHIPS indicate the ideal cutting conditions.

For a right use see the paragraph CHOICE OF THE BAND.

19 - MACHINE RUN-IN

INSTRUCTIONS FOR USE

The maintenance required by this machine is essential to guarantee the continuous correct working over the course of time and keep the saw in an efficient condition. When you start to use the machine you must do some extra operations to allow all parts of the machine to settle down to the working conditions.

Please check frequently the working of the machine and avoid to force it to make too many cuts. For a time of 80/100 working hours control the heating of the gear reducer and of the electric motor
Then take away the oil (better if it is warm) by taking out the lower plug placed between the reducer head and the blade cover and drain it completely. Plug it up again and put into some gas oil for cleaing it inside. Let the motor idling for some seconds, take out the cleaning gas oil, and put into the new oil, about 2 litres, till reaching the usual level.
N.B. The presence of bronze or ferrous particles in the replaced oil is normal. The heating of the mechanical parts (and of the oleodynamic parts for semautomatic / automatic machines) is normal during the usual working and anyway it does not exceed the foreseen thermic limits.
For the semiautomatic versions control also the oil level in the tank of the hydraulic unit (see parapraph 11).
Control also the oil level in the tank of the hydraulic unit as described in Maintenance for the user).
N.B.. The heating of the mechanical parts (and of the oil-hydraulic parts for semiautomatic saws) is normal during the usual working and anyway it does not exceed the conventional thermic limits.

Please see the OIL AND LUBRICANTS TABLE in order to choose the most suitable one and to compare the different types (see drawing RI0108).

20 - DRAINING OF USED / PRODUCED SUBSTANCES

Please remember to abide by the current Law Norms concerning the draining of:

- materials used by the machine (for example hydraulic circuit oil, reduction gear oil, oil for installations of lubrication and so on);
- scrap materials or materials not usable anymore (for example ferrous and not ferrous chips, tools like blades and so on);
- substances used for cleaning and maintenance;
- materials used in some instances of the machine life (for example when packing, shipping and so on).

21 - DEFECTS IDENTIFICATION

The solution of most inconvenients that could happen during the working can be found by consulting this paragraph.
The first part concerns the machine working and includes a list of the possible defects with respective controls that must be made; the second part concerns the inconvenients that can be found by checking the blade and / or the cut pieces.
If your problem is not included in the forseen ones or you need the presence of qualified technicians, please get in touch with the manufacturer or the reseller by keeping in evidence this instruction book .

12.1 - DEFECTS CAUSED BY THE MACHINE

Inconvenients	**Check**
A* The band electric motor does not work	3-4-5-9
B* The hydraulic circuit motor does not work	1-2-3-4-5-9-17
C* The electronical/electric panel does not light on	6-7-8-9
D* No enough pressure in the hydraulic circuit	10-11-12-13
E* The pump of the hydraulic unit is noisy	14-15-16-17
F* The coolant is not sufficient	18-19-20-21
G* The workpiece moves or deformes	22-23-24

INSTRUCTIONS FOR USE

H* The cycle don't start 23

LIST OF THE PARTS THAT MUST BE CONTROLLED

1 = Plug is right inserted in the socket
2 = Main switch
3 = The motor is burnt or demaged
4 = Electric supply is not right
5 = Transmission blocked between blade and blade arbor
6 = Fuses on the primary of the transformer
7 = Fuses on the secondary of the transformer
8 = Transformer demaged or burnt
9 = Connection of the supply cables
10 = Oil level in the tank of the hydraulic unit
11 = Loss from pipes and/or connections
12 = The adjustments screw of the maximum pressure valveis loosened
13 = the maximum pressure valveis broken
14 = Quality of the hydraulic oil (consumed, too much liquid)
15 = There is some water in the oil and / or there is some condensate in the tank
16 = Too high circuit pressure (over 20 BAR)
17 = The hydraulic pump locked (seizure, expansion, oxidation)
18 = The circuit taps are closed
19 = The cooling filters are obstructed or must be cleaned
20 = The electropump does not work (see 3-4-5-9-24)
21 = The tank is empty or dirty
22 = Excesive cutting feed
23 = The vice is not closed enough (or is too closed), the piece is not rightly clamped
24 = The control LUBRICANT OFF is active (pos. 22 / dr. RI0055 for models SH-E, SHI-E)

12.2 - DEFECTS OF THE BAND / CAUSES / SOLUTIONS

In case of broken teeth, broken blades or short blade life, lay down the broken band on the floor and check the body and teeth defects; look for them in the following table and read the solution of the cutting problem .

1. PREMATURE AND EXCESSIVE TEETH WEAR AND TEAR
- thrust pressure to short: increase it;
- reduce the band wheel speed;
- cooling jet too short;
- improper cooling emulsion;
- uncorrect toothing: use a band with a thicker toothing:
- improper band-running-in;
- the teeth move towards the opposite cutting direction; turn the band.

2. BAND VIBRATION
- Increase or reduce the band speed
- dull vibration: incresae the band tension;
- too big teeth for the piece that must be cut;
- the vibration reverberates in the base; reduce the cutting pressure;
- the vibration could be dued to the high frequency: increase the speed of the saw frame lowering;
- the material is not rightly locked;
- use a viariable pitch or a positive toothing.

3. BROKEN TEETH
- Too big teeth for the section that must be cut;
- the material is not perfectly locked;
- improper coolant;
- inadequate coolant;
- cutting pressure too high: control the chip;
- too low band wheel speed;

- the grooves are full of cut material.

4. CUTTING SURFACE TOO ROUGH
- Choose a thinner pitch;
- increase the band wheel speed;
- reduce the head lowering;
- measure better the coolant.

5. PREMATURE BAND BREAKAGE
- Too hugh band thickness for the diameter of the band wheel;
- band guides too open with high speed;
- oncrease or reduce the speed;
- check if the band wheels are defective;
- too big toothing;
- band tension too high; the lying down band rises on the side;
- saw frame lowering too strong: the band back is polish and upset;
- The thrust bearings are not aligned with the band wheels: the lying band curves and the band back is polish and upset;
- the band guides are too tight: the lying band spiralles up as a spring; the more the teeth are tight, the more the band twists;
- short coolant.

6. BENT CUTS
- Increase the band tension;
- approach the band guides to the cutting unit;
- the teeth are too thin;
- reduce the cutting pressure.

7. THE CUT IS NOT RIGHT
- Approach the band guides to the cutting unit;
- check if the cutting piece is rightly horizonataly placed on the support table;
- control the band perpendicularity: if it is out of perpendicularity, work on the band guides;
- toothing too thick;
- the teeth are broken or variegated;
- increase the cutting speed.

8. BAND NOISE ON THE THRUST BEARINGS
- Burr or adjust the band back;
- check the band wheel alignement;
- check the thrust bearing wear and tear;
- the welding is not perfect.

9. THE BAND CURVES POSITIVELY
- Reduce the cutting pressure;
- use bigger teeth for increasing the penetration;
- approach the band guides to the cutting unit.

10. THE BAND CURVES NEGATIVELY
- The band back strains against the upper thrust bearing band guides; check if the space between the band back and the band wheel rim is always the same by band in movement and band stopped;
- check the alignement of the band wheels.

11. SLOW CUTTING, THIN CHIPS
- Increase the bend wheels speed;
- increase the cutting pressure;
- use bigger teeth;
- use a proper coolant.

INSTRUCTIONS FOR USE

12. PREMATURE LOSS OF THE SIDE SETTING
- Reduce the bad wheels speed;
- increase the distribution of the coolant.

13. THE BAND WARPS AS A SPRING
- Reduce the cutting pressure;
- reduce the band tension;
- excessive pressure on the band guides: adjust it;
- approach the bad guides to the cutting unit.

14. THE CHIP WELDS TO THE TOOTH / CHIPS ARE TOO BIG
- Reduce the cutting pressure
- use proper coolant and in a good quantity;
- check the wear and tear of the burst used for clening the chips from the grooves.

15. THE BAND IS SIGNED OR SCRATCHED ON ONE SIDE
- Check the wear and tera of band pads;
- the pads press too much against the band back;
- check the alignement and the perpendicularity of the band guides.

16. BURR OR SWANGING ON THE BAND BACK
- Increase the tension and adjust the band guides;
- check the pressure and the alignement of the thrust bearings on the band back;
- reduce the cutting pressure;
- use a bigger toothing.

17. THE CUT PIECE HAS BLACK DIRT
- The band back touches the lip angle and becomes dirty;
- if the dirt is on the left side: the left band guide is out of axle;
- if the dirt is on the right side: the right band guide is out of square;
  the dirt is on the complete cutting line: the band guides are out of square, or: the pressure is too high; the band tension is too low; teeth are too thick and cannot set free from the dirt; the used coolant is wrong
-

22 - MACHINE DEMOLITION

This paragraph may give some informations about the macrooperations of machine disassembly for its scrapping.
Special procedures are not required but it is necessary to take only some cares to avoid damages in the last phase of the machine life.
Generally: you must empty the cooling installation tank, take out the oil from the reduction box, from the hydraulic or hydropneumatic installation.
Lock the parts that could move and cause danger or instability.

Remove the parts assigned to the differentiated draining, for example the printed circuit, display stations, programming keyboards, buffer batteries and so on, especially the ones which shows the picture

..In these cases, in relation with the WEEE/AEEE Regulations, ask to the supplier to know the right process, that depends by the machine size and purpose.

- SPARE PARTS

The choice of the required spare parts is aided by the included drawings that allow, together with the working schemes, to know better the machine.

INSTRUCTIONS FOR USE

17.1 - NORMS TO REQUEST THE SPARE PARTS

It is necessary to inform the TECHNICAL SERVICE about the following data:

- the serial number indicated on the identification plate
- model, version, type
- voltage and power frequency
- code number of the spare-parts
- requested quality
- eventually the fittings settled later too.

17.2 OILS AND LUBRICANTS (Comparation table marked RI0108):

RI0108	#1		#2		#3			
GEBRAUCH	GETRIEBE		HYDRAULISCHER KREIS		PNEUM. KREIS	SCHMIERE	KUEHLMITTEL	
UTILISATION	ROUAGES DE LA TÊTE		CIRCUITS HYDRAULIQUES		CIRCUITS PNEUMATIQUES	GRAISSES	RÉFRIGÉRATION DE LA LAME	
USE	GEAR HEAD		HYDRAULIC PLANT		PNEUMATIC PLANT	GREASE	COOLANT	
USO	ROTISMI TESTA		CIRCUITI IDRAULICI		CIRC. PNEUMATICI	GRASSI	REFRIGERAZIONE LAMA	
	BS 280 BS 350	*IDEAL PERFECT SIRIO RECORD*	*BS280 SH SIRIO VELOX*	*BS280 SHI/SHIE VTF500 BS350 XT360 XT410*			STAHL ACIER STEEL ACCIAIO	ALUMINIUM ALUMINIUM ALUMINIUM ALLUMINIO
AGIP	BLASIA 100	BLASIA 220	OSO 15	OSO 46	ASP 3/C	GR MU 2	OXALIS 250	ULEX 100
BRIT. PETROL.	(SAE 80-GL4) (150 cSt.)	ENERGOL GR-XP 220	ENERGOL HLP 15	ENERGOL HPL 46	ENERGOL HLP 32	ENERGREASE L2		
CASTROL	ALPHA SP100	ALPHA SP220	HISPIN AWS15	HISPIN AWS46	HYSPIN AWS 32	SPHEEROL APT2	SUPEREDGE 4	SUPEREDEGE 4
CHEVRON	NL GEAR COMPOUND 100	NL GEAR COMPOUND 220	EP HYDRAULIC OIL 15	EP HYDRAULIC OIL 46	VISTAC OIL 68	DURA LIGHT GREASE 2	EP SOLUBLE	
ESSO	SPARTAN EP 100	SPARTAN EP 220	NUTO H15	NUTO H46	NUTO H32	BEACON 2	KUTWELL 40	
FINA	GIRAN 100	GIRAN 220	HYDRAN 15	HYDRAN 46	PURFIROK EP 32	MARSON EPL 2	PURFISOL PURFISOL LAM	PURFISOL IT4/018
SHELL	OMALA OIL 100	OMALA OIL 220	TELLUS OIL 15	TELLUS OIL 46	TELLUS OIL S 32	ALVANIA GREASE R2	DROMUS OIL F	
TOTAL	CARTER EP 100	CARTER EP 220	AZOLLA ZS 15	AZOLLA ZS 46	PNEUMA 46	NYCTEA 2	LACTUCA EP	LACTUCA EP
TEXACO	MEROPA 100	MEROPA 220	RANDO OIL HD 15	RANDO OIL HD46		MULTIFAC EP 2		
VANGUARD	GEARING EP 100	GEARING EP 220	HYDRAULIC 15	HYDRAULIC 46	KOMOL SRV 32	LIKO 2	VANSIN 80 EP	VANSIN 80 EP
SINOL	SINTREX EP 100	SINTREX EP 220	SINOLUBE	SINOLUBE		BEARING EP 2	SINOL BIO 90	
ITAL. PETROLI	MELLANA OIL 100	MELLANA OIL 220	HIDRUS OIL 15	HIDRUS OIL 46	BANTIA OIL R 32	ATHESIA GREASE 2	UTENS FLUID F	UTENS FLUID F
CINCINNATI							CIMPERIAL C 60	CIMCOOL AL
ISO - UNI CLASS.	CC100	CC220	HM15	HM32	FD32	XM2		

INSTRUCTIONS FOR USE

24 - MAINTENANCE - for qualified technicians

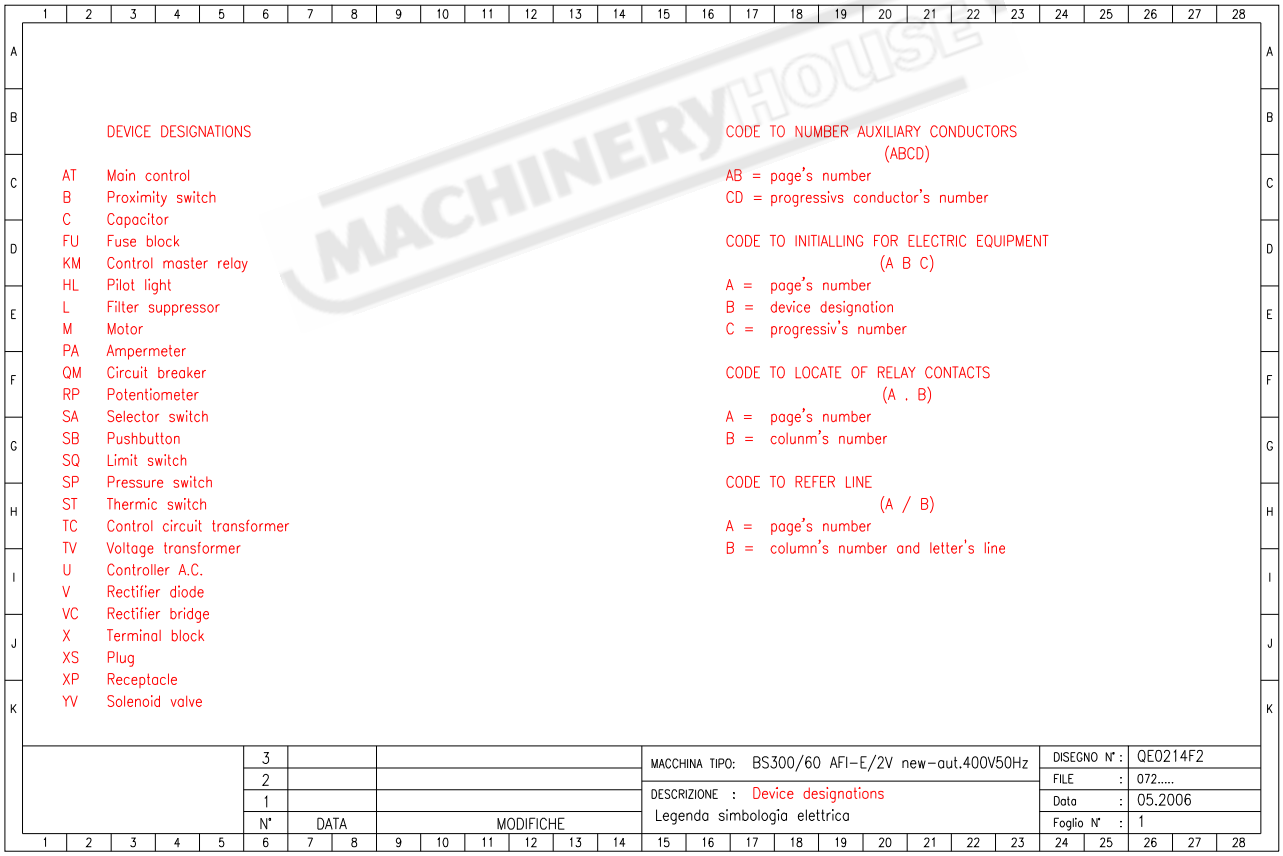
IMPORTANT

If you want to make some special maintenance/disassembly/resetting operations on the machine, it is necessary to know all information concerning safety procedures.
The skills of specialized personnel allow to solve more easily all problems found by the user when running the saw. This allows also to safeguard the technical, productive and safety features of this equipment, according to the initial setting by the manufacturer.
To get a detailed knowledge of this machine you can find here enclosed:

- Electrical scheme/s: divided into theme tables and made according to the current norms concerning this subject, with index, material indication, reference code numbers.

- Pneumatic or Hydraulic circuit

If the users want to know this saw in detail, they can study this manual and follow its indications meticulously, but they do not have to modify any parts of this equipment, since by doing so the DECLARATION OF CONFORMIITY would lose its validity.



DEVICE DESIGNATIONS

AT	Main control
B	Proximity switch
C	Capacitor
FU	Fuse block
KM	Control master relay
HL	Pilot light
L	Filter suppressor
M	Motor
PA	Ampermeter
QM	Circuit breaker
RP	Potentiometer
SA	Selector switch
SB	Pushbutton
SQ	Limit switch
SP	Pressure switch
ST	Thermic switch
TC	Control circuit transformer
TV	Voltage transformer
U	Controller A.C.
V	Rectifier diode
VC	Rectifier bridge
X	Terminal block
XS	Plug
XP	Receptacle
YV	Solenoid valve

CODE TO NUMBER AUXILIARY CONDUCTORS
(ABCD)
AB = page's number
CD = progressivs conductor's number

CODE TO INITIALLING FOR ELECTRIC EQUIPMENT
(A B C)
A = page's number
B = device designation
C = progressiv's number

CODE TO LOCATE OF RELAY CONTACTS
(A . B)
A = page's number
B = colunm's number

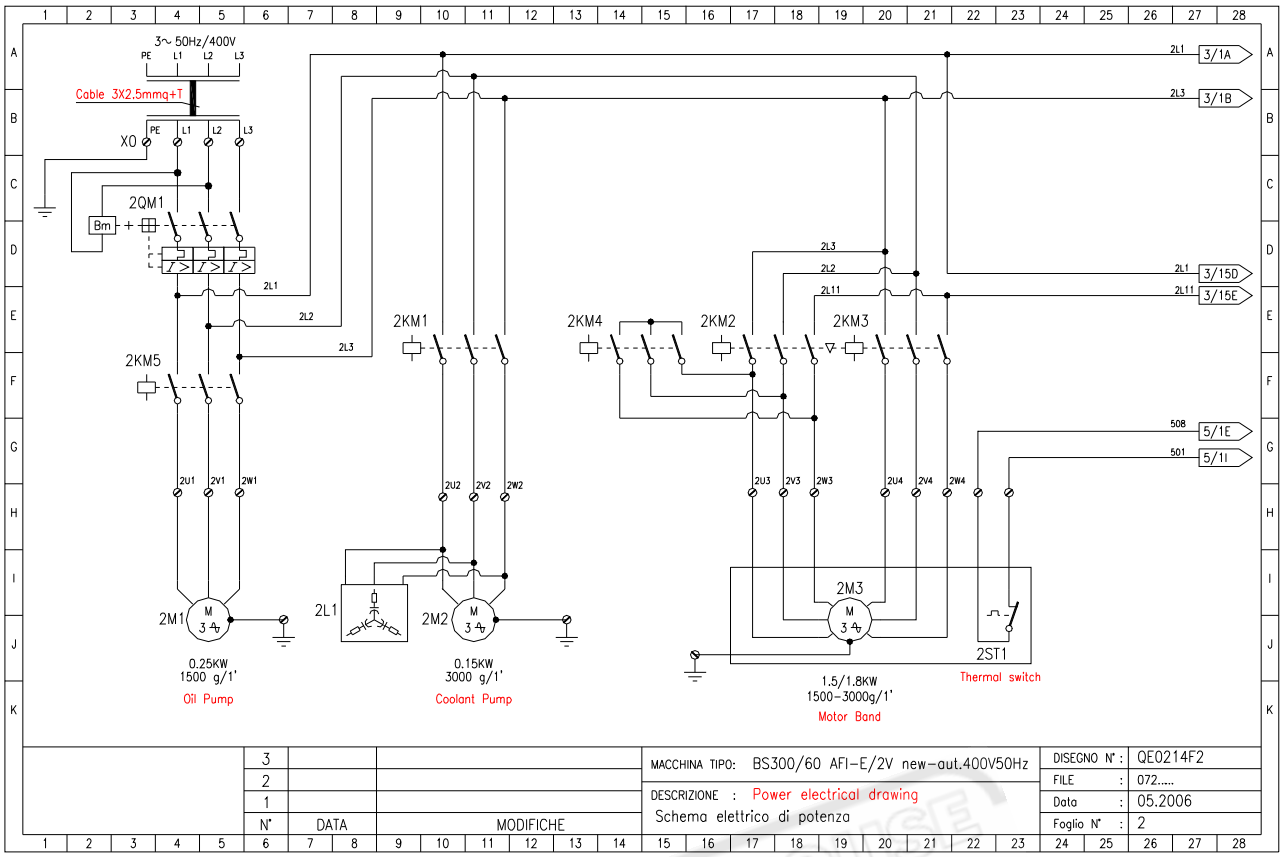
CODE TO REFER LINE
(A / B)
A = page's number
B = column's number and letter's line

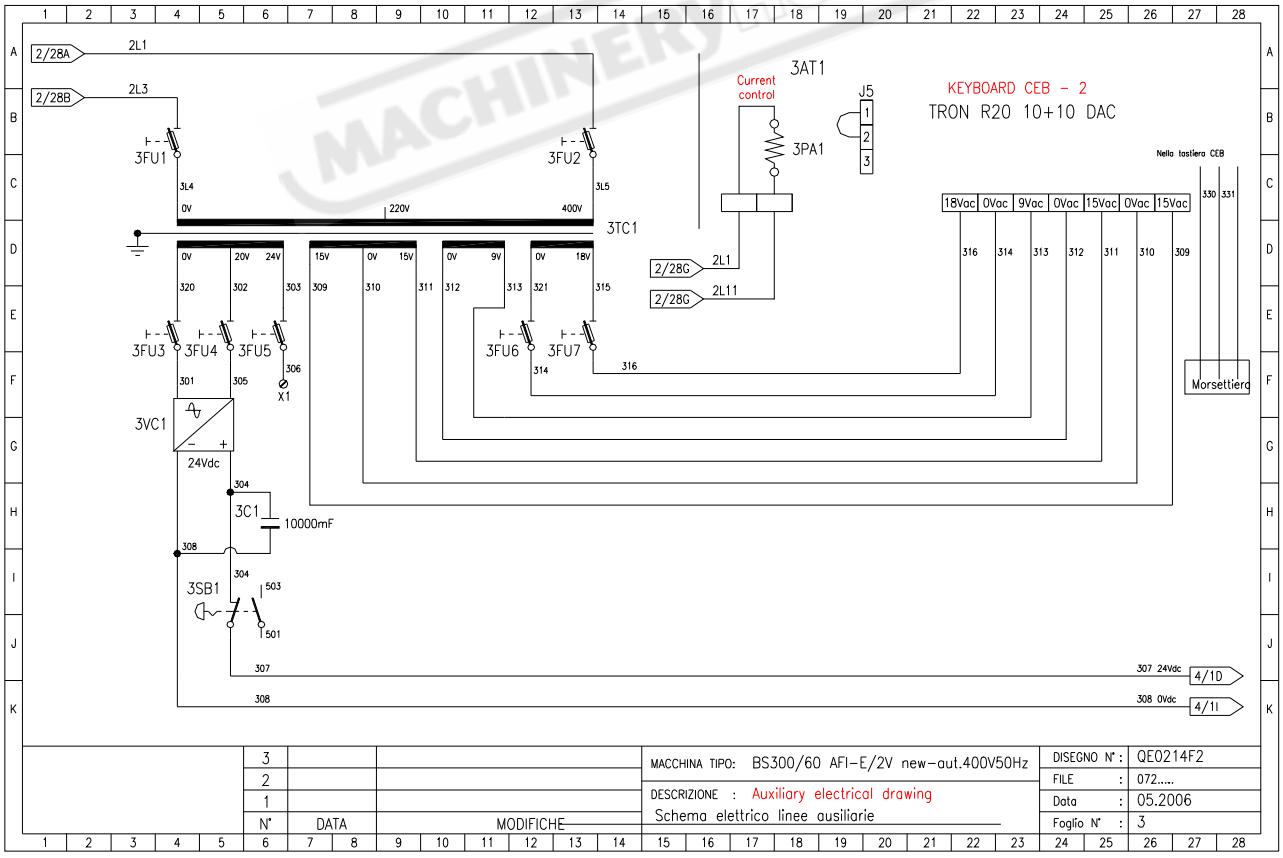
N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/2V new-aut.400V50Hz
DESCRIZIONE : Device designations
Legenda simbologia elettrica

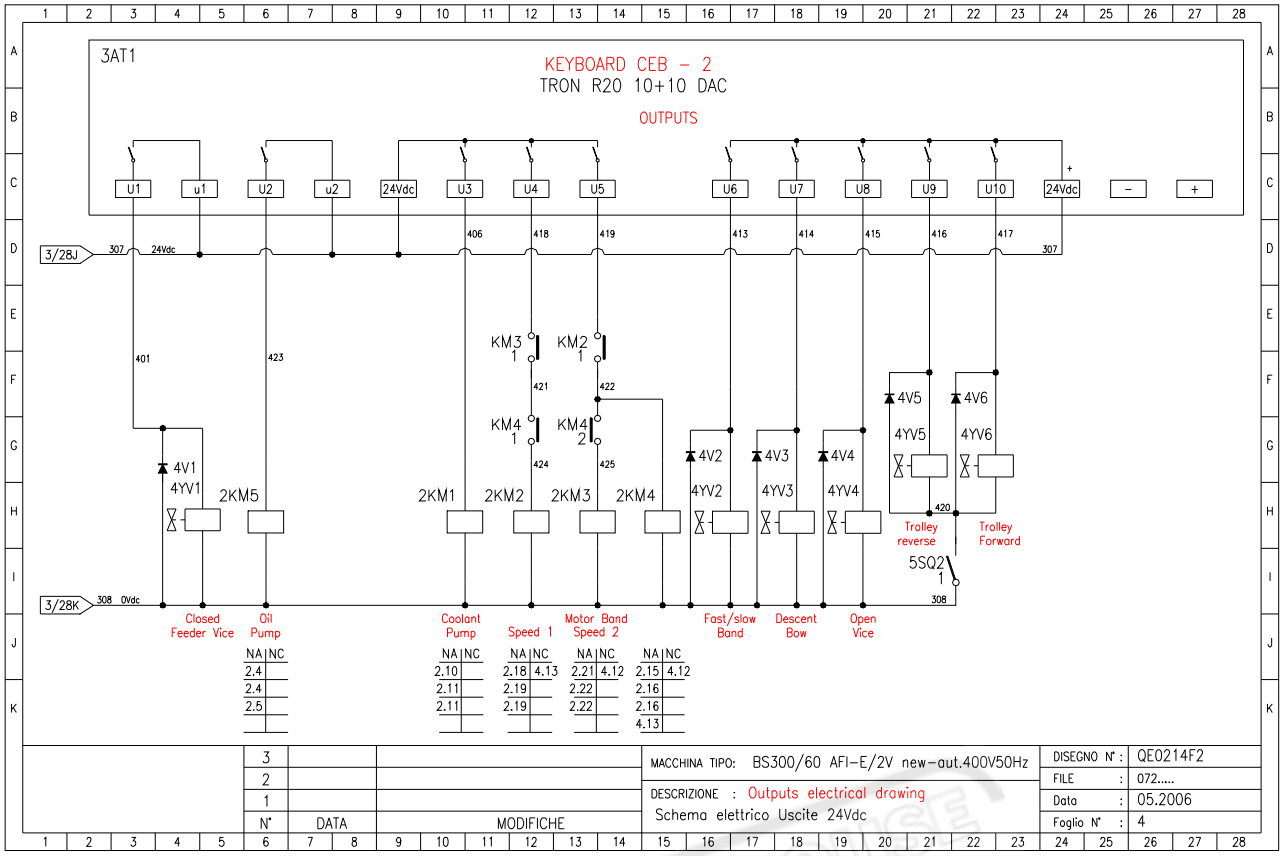
DISEGNO N° :	QE0214F2
FILE :	072.....
Data :	05.2006
Foglio N° :	1

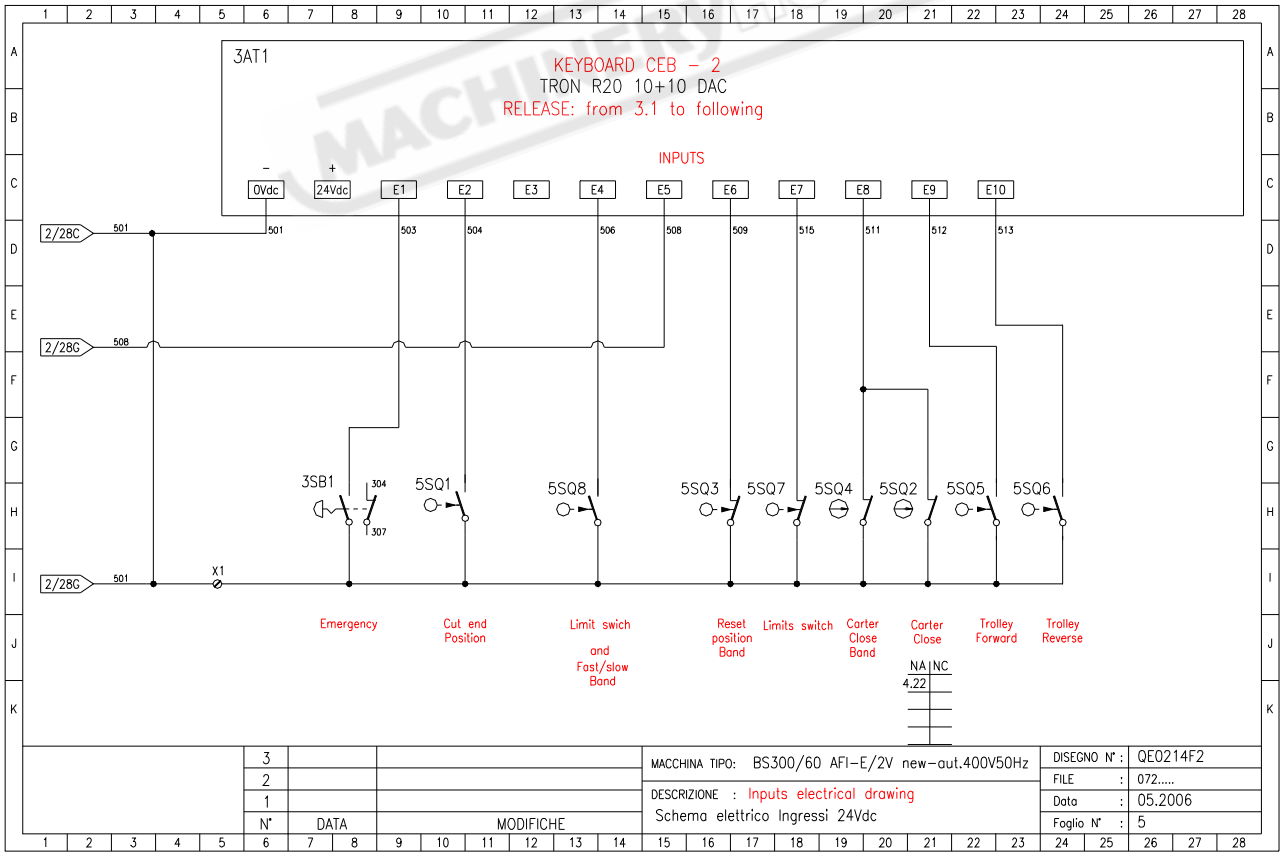
INSTRUCTIONS FOR USE



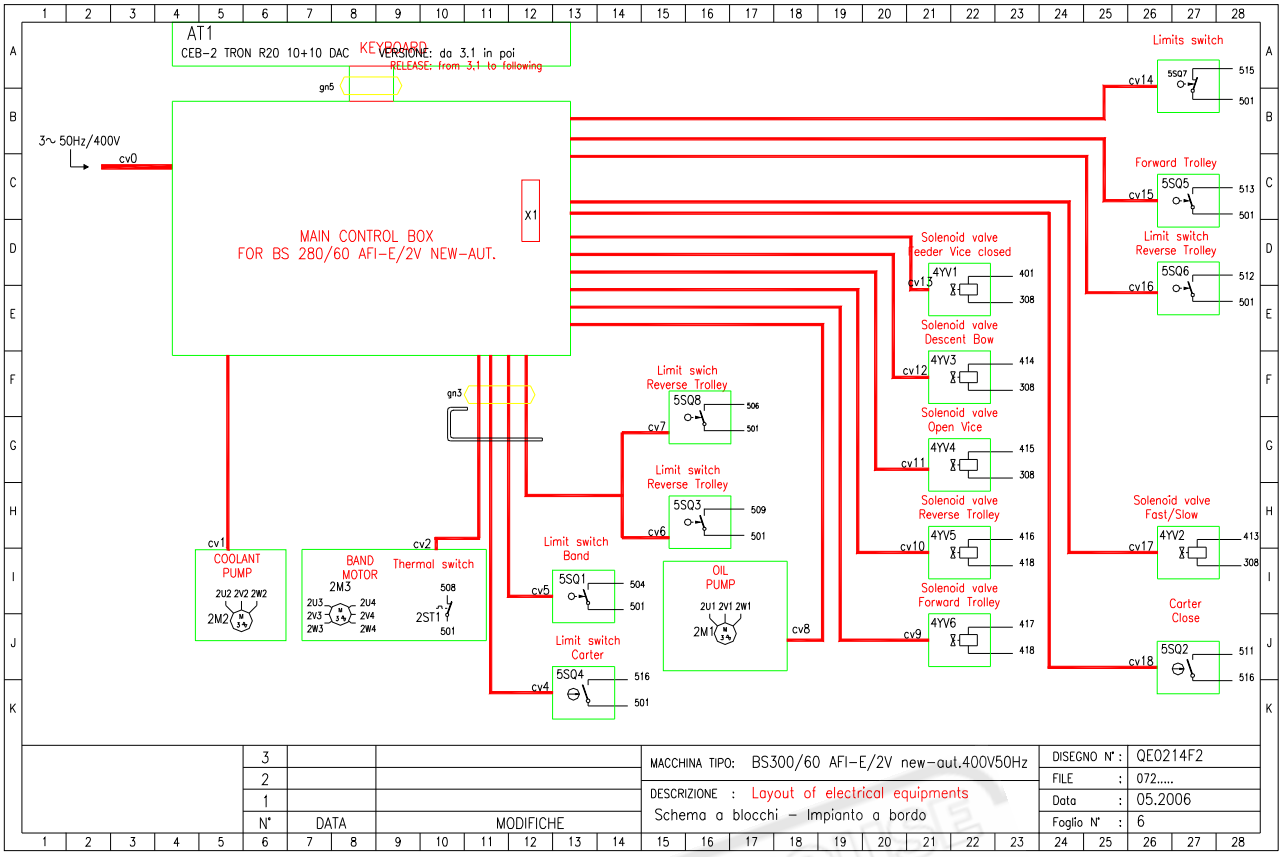


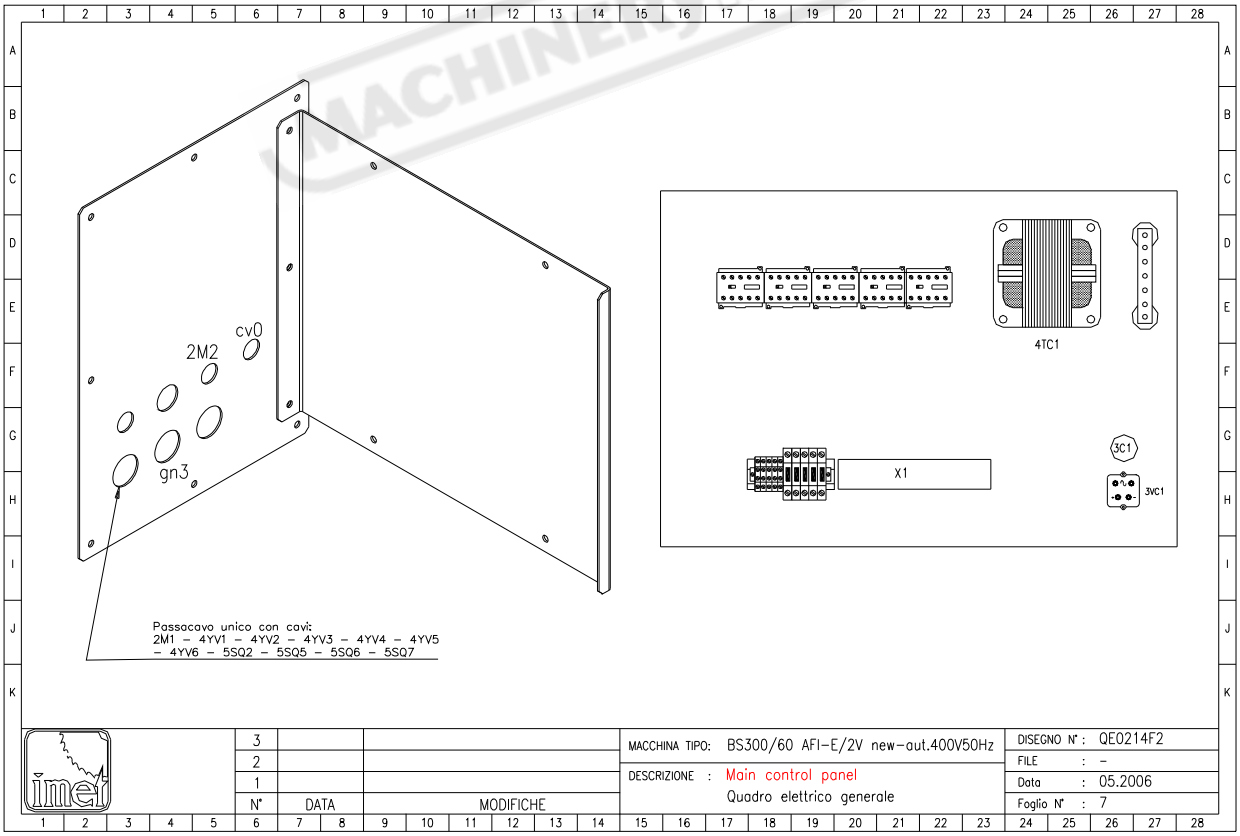
INSTRUCTIONS FOR USE





INSTRUCTIONS FOR USE





INSTRUCTIONS FOR USE

REF.	DEVICE	SPECIFICATIONS	FINCTION	FACTORY	TYPE	ITEM N°	Q.TY
2QM1	Circuit breaker	3P-P.I. 6KA-4/6.3A-Reg. 4.5A	Main circuit breacker - Ampere rating 4.5	TELEMECANIQUE	GV2 M10-4/6.3A	766162	1
2QM1	Min. voltage relay	400V	Unlooh main circuit	TELEMECANIQUE	GV2 AU385	164908	1
2QM1	Terminal box	IP55	Terminal box for main circuit breacker	TELEMECANIQUE	GV2 MP02+V01	766198	1
2M1	3 Phase motor	0.37KW-400V-1500G/1'	Oil motor pump	ELECTRO ADDA	B14 FC71 4POLI	562850	1
2M2	3 Phase motor	0.15KW-400V-3000g/1'	Coolant motor pump	OMCG	PMU60L P150	331524	1
2M3	3 Phase motor	1.5/1.8KW-400V-1500/3000g/1'	Motor band	ELETTROADDA	B5 FC90 2-4RL	590050	1
2L1	Filter (optional)	RC + Cavo 575V	Noise suppressor	MPM	130809	334010	1
2ST1	Thermal switch	Classe B	Protection overload motor band	TERMIK			3
AT1	Station control 10+10 DAC	IP65 Code 2AI-Vers: da 3.1	Contro unity and program	C.E.B.	R20 10+10 DAC	XF91868	1
3FU1	Fuse block	4mmq./6.3A	Primary protection transformer	CUNTACLIP	5TK 1 PA	694520	1
3FU1	Fuse	5x25mm./size 2A	Primary protection transformer	WEBER	5x25mm./2A	390010	1
3FU2	Fuse block	4mmq./6.3A	Primary protection transformer	CUNTACLIP	5TK 1 PA	694520	1
3FU2	Fuse	5x25mm./size 2A	Primary protection transformer	WEBER	5x25mm./2A	390010	1
3FU3	Fuse block	4mmq./6.3A	Secondary protection transformer 0-20-24V	CUNTACLIP	5TK 1 PA	694520	1
3FU3	Fuse	5x20mm./size 6.3 A	Secondary protection transformer 0-20-24V	WEBER	5x20mm./6.3A	390001	1
3FU4 / 6	Fuse block	4mmq./6.3A	Secondary protection transformer 15-0-15V	CUNTACLIP	5TK 1 PA	694520	1
3FU4 / 6	Fuse	5x20mm./size 6.3A	Secondary protection transformer 15-0-15V	WEBER	5x20mm./6.3A	390001	1
3FU5 / 7	Fuse block	4mmq./6.3A	Secondary protection transformer 0-18V	CUNTACLIP	5TK 1 PA	694520	1
3FU5 / 7	Fuse	5x20mm./size 3.2A	Secondary protection transformer 0-18V	WEBER	5x20mm./3.2A	390001	1
3TC1	Control circuit transformer	VA160/Ve 400 Vu1 0-20-24	Main auxiliari supply	C.E.	T.T. CEI 14/6	931200	1
3SB1	Poshbutton (emergency)	ø40mm. - Clearing rotation	Emergency stop button	BRETER	RM 065R +	709170	1
				CEMA	P9XER4RN		
3SB1	Normaly closed contact	NC - Rosso	Emergency stop button	BRETER	V 40 +	260231	1
				CEMA	P9B01UN		
3SB1	Normaly open contact	NC - Verde	Emergency stop button	BRETER	V 50	260397	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/2V new-aut.400V50Hz

DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° :	QE0214F2
FILE :	072.....
Data :	05.2006
Foglio N° :	8

REF.	DEVICE	SPECIFICATIONS	FINCTION	CEMAFACTORY	P9B10UNTYPE	ITEM N°	Q.TY
3VC1	Rectifier bridge	24Vd.c./6A	Auxiliary 24Vd.c. supply	FAGOR	CDFB 2504	723723	1
3C1	Capacitor	10000uF 63V	Auxiliary 24Vd.c. supply	ELNA		259530	1
2KM1	Control master relay	4KW-9A-24Vac	Power coolant motor pump	LOVATO	MC9-10 24V	260750	1
2KM2	Control master relay	5.7KW-12A-24Vac	Power motor band - speed 1	LOVATO	BF12-01 24V	260783	1
2KM3	Control master relay	5,7KW-12A-24Vac	Power motor band - speed 2	LOVATO	BF12-01 24V	260783	1
2KM4	Control master relay	4KW-9A-24Vac	Power motor band - speed 2	LOVATO	MC9-10 24V	260750	1
2KM4	Auxiliary contact	1NO+1NC - 9A	Power motor band - speed 2	LOVATO	G320/1	260795	1
2KM5	Control master relay	4KW-9A-24Vac	Power hydraulic oil pump	LOVATO	MC9-10 24V	260750	1
5SQ1	STROKE END SWITCH	no - nc		-	ABV121260	520941	1
5SQ2	SAFETY SWITCH	FK3393-D1	Carter	Pizzato	FK3393-D1	520765	1
5SQ3	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ4	SAFETY SWITCH	FK3393-D1	Carter band	Pizzato	FK3393-D1	520765	1
5SQ5	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ6	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ7	STROKE END SWITCH	90°E700-0-BM/90		Telemecanique	XCMA1032	521000	1
5SQ8	STROKE END SWITCH	no - nc		-	ABV121260	520941	1
4V1 a 6	DIODE	700V/1A	No interference	Imet	IN 40007	312207	6
4YV1	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV2	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV3	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV4	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV5	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV6	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/2V new-aut.400V50Hz

DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° :	QE0214F2
FILE :	072.....
Data :	05.2006
Foglio N° :	9

INSTRUCTIONS FOR USE

REF.	DEVICE	SPECIFICATIONS	FINCTION	FACTORY	TYPE	ITEM N°	Q.TY
X2	Terminal block	Single terminal 2.5mmq/4A	Connections external equipments	CONTACLIP	RK 2.5 4PA	558790	12
X1	Terminal block	Double terminals 2.5mmq./4A	Connections external equipments	CONTACLIP	RKD 2.5 PA	559092	5
X	Terminal block (4 terminals)	Terminals 2.5mmq./4A	Connections external equipments	SCHIAVI	ART.6904	558853	1
cv0	Flexible cable	4+Tx2,5mmq	Connection main supply	--		--	--
cv1	Flexible cable	3+Tx2,5mmq	Connection main supply	--		--	--
cv2	Flexible cable sect.0,35 shield	3+Tx2,5mmq	Connection main supply	--		--	--
cv3	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv4	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv5	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv6	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv7	Flexible cable	3x0,75mmq	Connection main supply	--		--	--
cv8	Flexible cable	3+Tx2,5mmq	Connection main supply	--		--	--
cv9	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv10	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv11	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv12	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv13	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv14	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv15	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv16	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv17	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv18	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
gn3	Flexible tube	PVC 1"	Connection	Teaflex		--	--
gn4	Flexible tube	PVC 1/2"	Connection	Teaflex		--	--

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/2V new-aut.400V50Hz
DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° : QE0214F2
FILE : 072.....
Data : 05.2006
Foglio N° : 10

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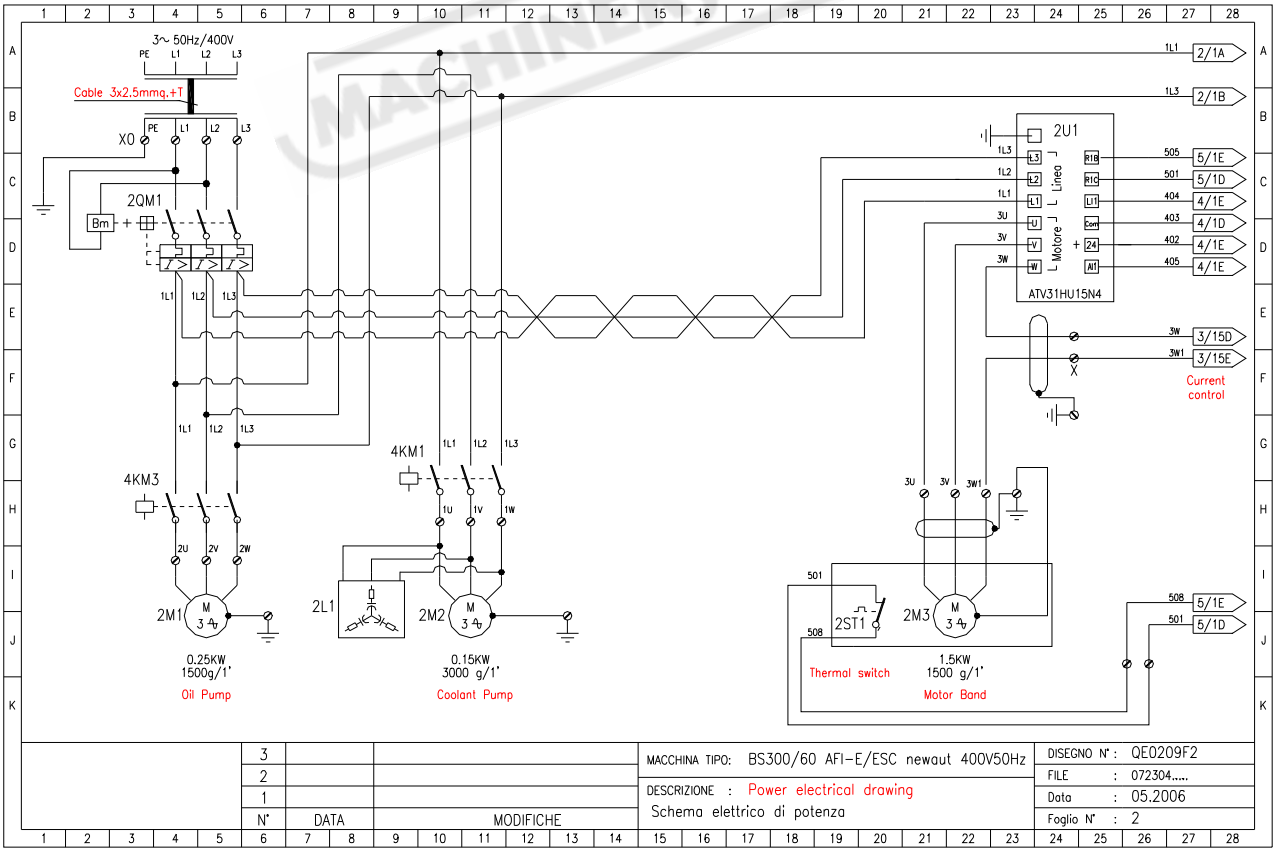
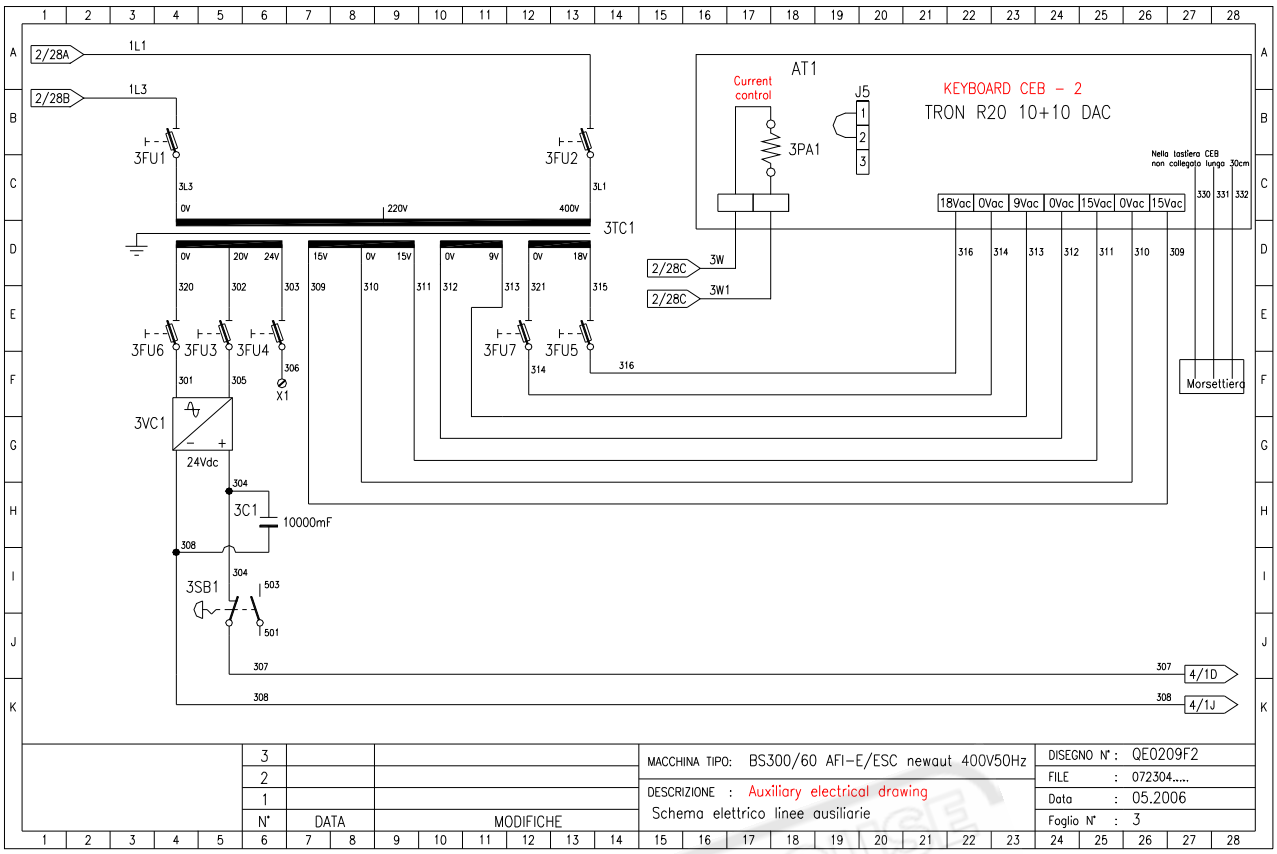


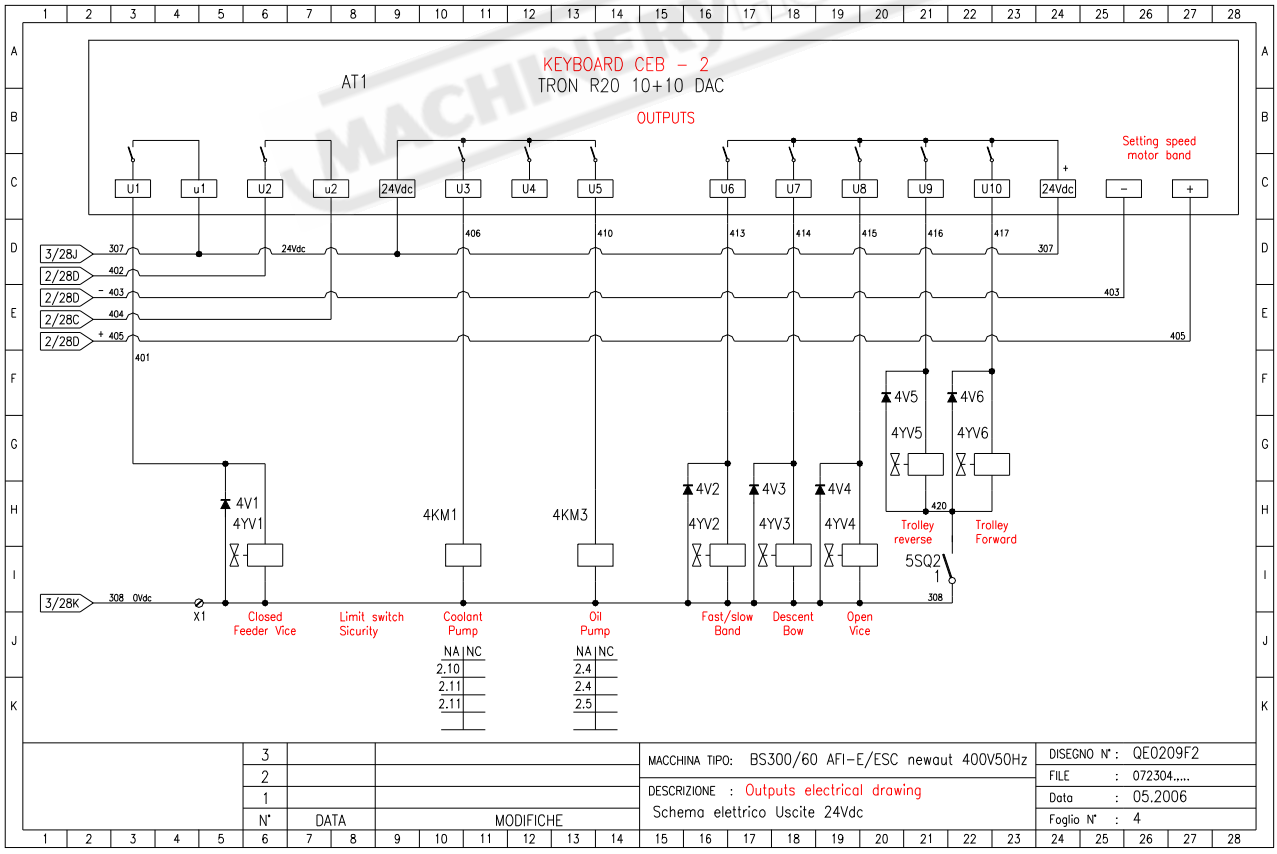
N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/ESC newaut 400V50Hz
DESCRIZIONE : Power electrical drawing
Schema elettrico di potenza

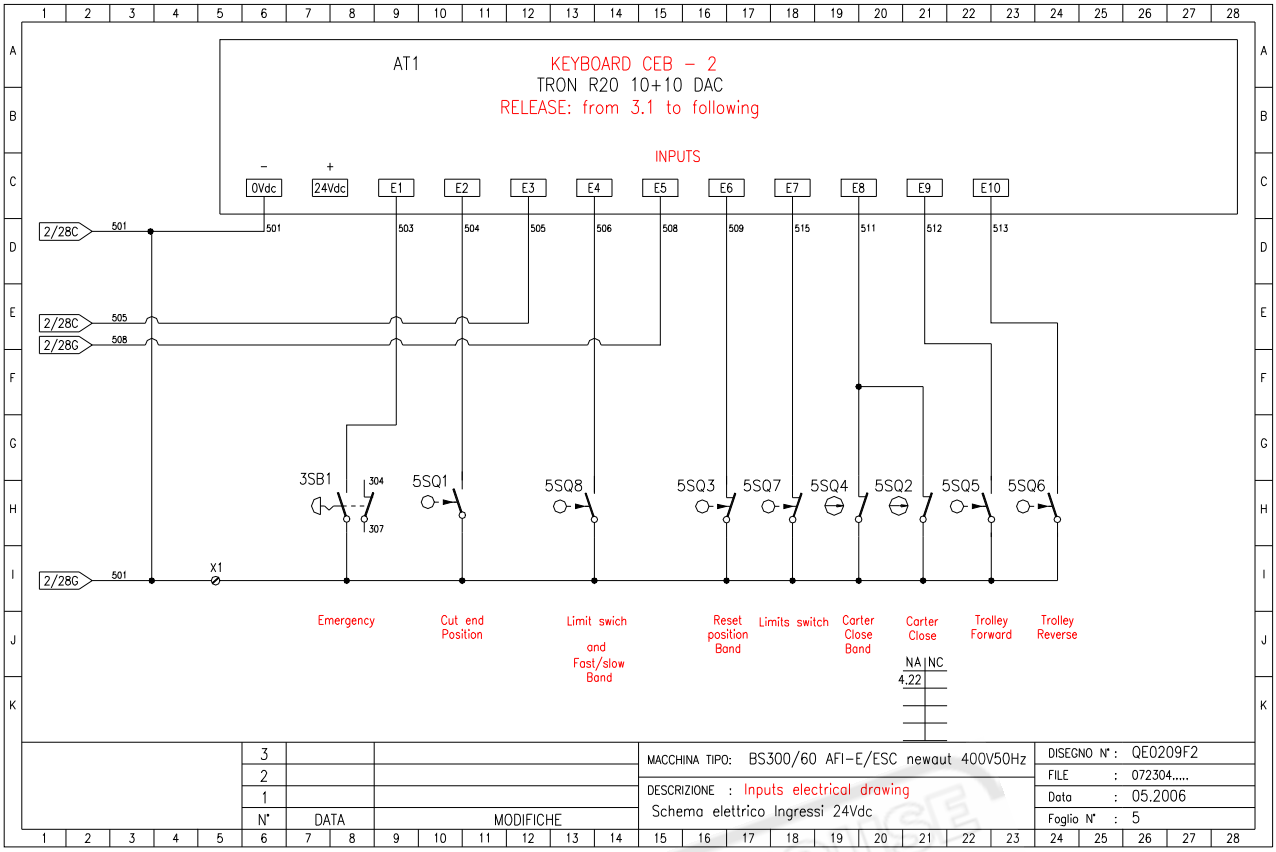
DISEGNO N° : QE0209F2
FILE : 072304.....
Data : 05.2006
Foglio N° : 2

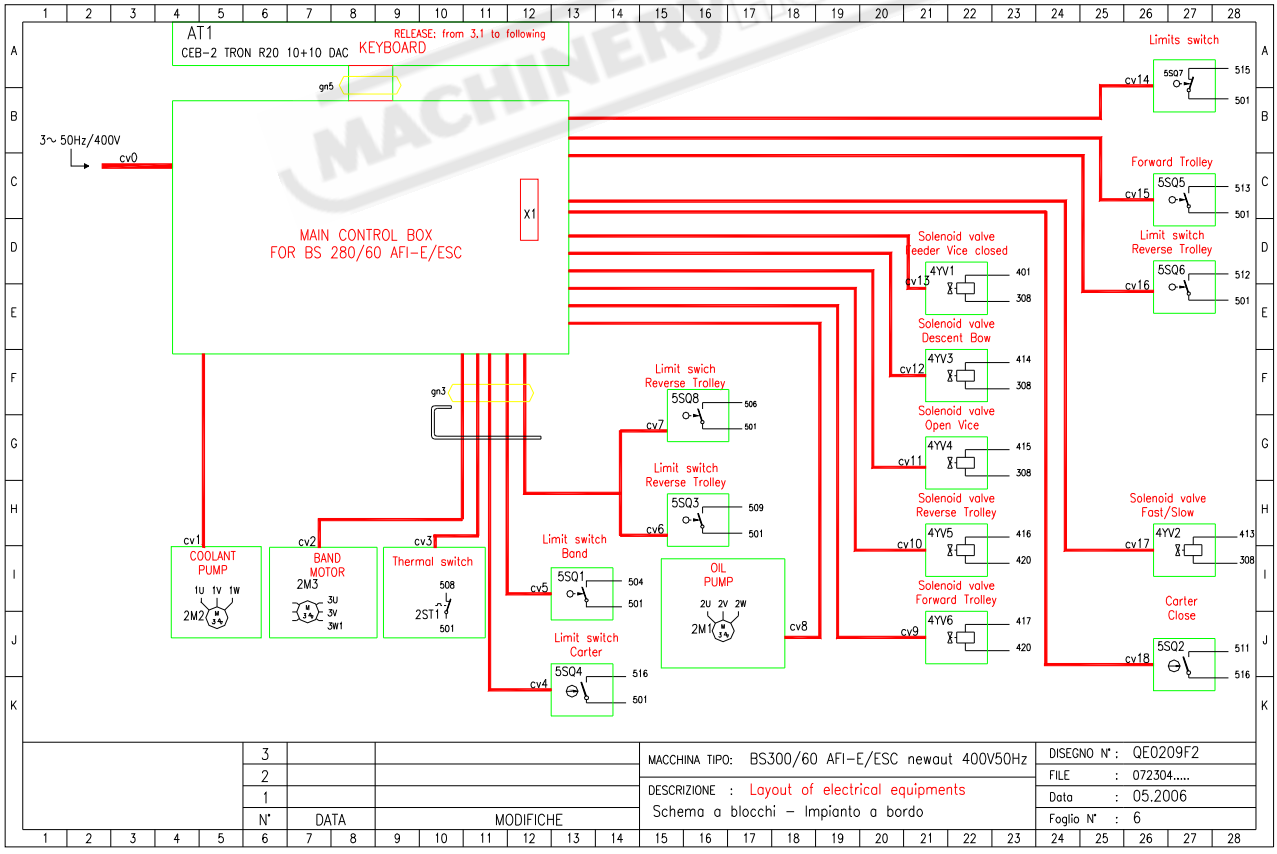
INSTRUCTIONS FOR USE



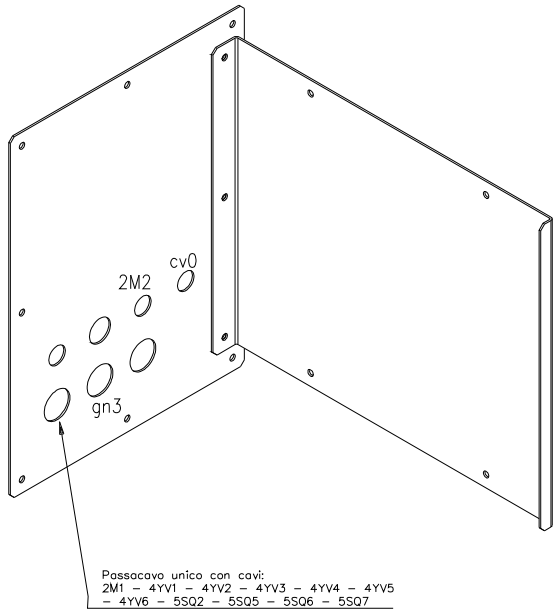


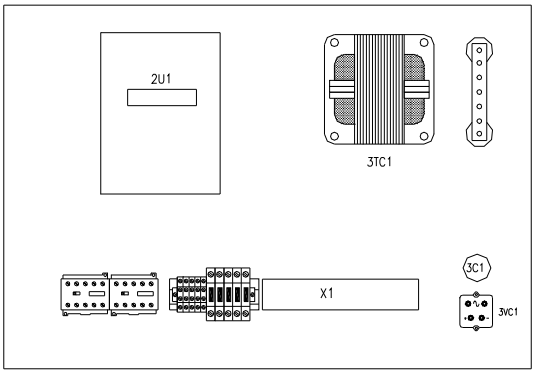
INSTRUCTIONS FOR USE





INSTRUCTIONS FOR USE





N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS280/60 AFI-E/ESC newaut 400V50Hz

DESCRIZIONE : Main control panel
Quadro elettrico generale

DISEGNO N° : QE0209F2
FILE : –
Data : 05.2006
Foglio N° : 7

REF.	DEVICE	SPECIFICATIONS	FINCTION	FACTORY	TYPE	ITEM N°	Q.TY
3SB1	Poshbutton (emergency)	ø40mm. – Clearing rotation	Emergency stop button	BRETER	RM 065R +	709170	1
				CEMA	P9XER4RN		
3SB1	Normaly closed contact	NC – Rosso	Emergency stop button	BRETER	V 40 +	260231	1
				CEMA	P9B01UN		
3SB1	Normaly open contact	NC – Verde	Emergency stop button	BRETER	V 50	260397	1
				CEMA	P9B10UN		
3VC1	Rectifier bridge	24Vd.c./6A	Auxiliary 24Vd.c. supply	FAGOR	CDFB 2504	723723	1
3C1	Capacitor	10000uF 63V	Auxiliary 24Vd.c. supply	ELNA		259530	1
4KM1	Control master relay	4KW-9A-24Vac	Power coolant motor pump	SIEMENS	V24AC NO 9A 4KW	260750	1
4KM3	Control master relay	4KW-9A-24Vac	Power hydraulic oil pump	SIEMENS	V24AC NO 9A 4KW	260750	1
							1
5SQ1	STROKE END SWITCH	NO – NC		–	ABV121260	520941	1
5SQ2	SAFETY SWITCH	FK3393-D1	Carter	Pizzato	FK3393-D1	520765	1
5SQ3	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ4	SAFETY SWITCH	FK3393-D1	Carter band	Pizzato	FK3393-D1	520765	1
5SQ5	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ6	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ7	STROKE END SWITCH	90°E700-0-BM/90		Telemecanique	XCMA1032	521000	1
5SQ8	STROKE END SWITCH	NO -NC		–	ABV121260	520941	1
4V1 a 6	DIODE	700V/1A	No interference	Imet	IN 40007	312207	6
4YV1	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV2	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV3	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV4	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV5	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV6	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/ESC newaut 400V50Hz

DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° : QE0209F2
FILE : 072304.....
Data : 05.2006
Foglio N° : 9

INSTRUCTIONS FOR USE

REF.	DEVICE	SPECIFICATIONS	FINCTION	FACTORY	TYPE	ITEM N°	Q.TY
3SB1	Poshbutton (emergency)	ø40mm. - Clearing rotation	Emergency stop button	BRETER	RM 065R +	709170	1
				CEMA	P9XER4RN		
3SB1	Normaly closed contact	NC - Rosso	Emergency stop button	BRETER	V 40 +	260231	1
				CEMA	P9B01UN		
3SB1	Normaly open contact	NC - Verde	Emergency stop button	BRETER	V 50	260397	1
				CEMA	P9B10UN		
3VC1	Rectifier bridge	24Vd.c./6A	Auxiliary 24Vd.c. supply	FAGOR	CDFB 2504	723723	1
3C1	Capacitor	10000uF 63V	Auxiliary 24Vd.c. supply	ELNA		259530	1
4KM1	Control master relay	4KW-9A-24Vac	Power coolant motor pump	SIEMENS	V24AC NO 9A 4KW	260750	1
4KM3	Control master relay	4KW-9A-24Vac	Power hydraulic oil pump	SIEMENS	V24AC NO 9A 4KW	260750	1
							1
5SQ1	STROKE END SWITCH	NO - NC		-	ABV121260	520941	1
5SQ2	SAFETY SWITCH	FK3393-D1	Carter	Pizzato	FK3393-D1	520765	1
5SQ3	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ4	SAFETY SWITCH	FK3393-D1	Carter band	Pizzato	FK3393-D1	520765	1
5SQ5	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ6	STROKE END SWITCH	DIR.E700-0-BM/3M		Telemecanique	XCMA1023	521145	1
5SQ7	STROKE END SWITCH	90°E700-0-BM/90		Telemecanique	XCMA1032	521000	1
5SQ8	STROKE END SWITCH	NO -NC		-	ABV121260	520941	1
4V1 a 6	DIODE	700V/1A	No interference	Imet	IN 40007	312207	6
4YV1	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV2	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV3	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV4	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV5	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1
4YV6	CONNECTOR	4WAYS	ELECTROVALVE	Imet	C18209N21	260150	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/ESC newaut 400V50Hz

DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° : QE0209F2
FILE : 072304.....
Data : 05.2006
Foglio N° : 9

REF.	DEVICE	SPECIFICATIONS	FINCTION	FACTORY	TYPE	ITEM N°	Q.TY
X2	Terminal block	Single terminal 2.5mmq/4A	Connections external equipments	CONTACLIP	RK 2.5 4PA	558790	12
X1	Terminal block	Double terminals 2.5mmq./4A	Connections external equipments	CONTACLIP	RKD 2.5 PA	559092	5
X	Terminal block (4 terminals)	Terminals 2.5mmq./4A	Connections external equipments	SCHIAVI	ART.6904	558853	1
cv0	Flexible cable	4+Tx2,5mmq	Connection main supply	--		--	--
cv1	Flexible cable	3+Tx2,5mmq	Connection main supply	--		--	--
cv2	Flexible cable sect.0,35 shield	3+Tx2,5mmq	Connection main supply	--		--	--
cv3	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv4	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv5	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv6	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv7	Flexible cable	3x0,75mmq	Connection main supply	--		--	--
cv8	Flexible cable	3+Tx2,5mmq	Connection main supply	--		--	--
cv9	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv10	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv11	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv12	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv13	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv14	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv15	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv16	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv17	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
cv18	Flexible cable	2x0,75mmq	Connection main supply	--		--	--
gn3	Flexible tube	PVC 1"	Connection	Teaflex		--	--
gn4	Flexible tube	PVC 1/2"	Connection	Teaflex		--	--

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E/ESC newaut 400V50Hz

DESCRIZIONE : General list of electrical equipments
Elenco generale componenti elettrici

DISEGNO N° : QE0209F2
FILE : 072304.....
Data : 05.2006
Foglio N° : 10

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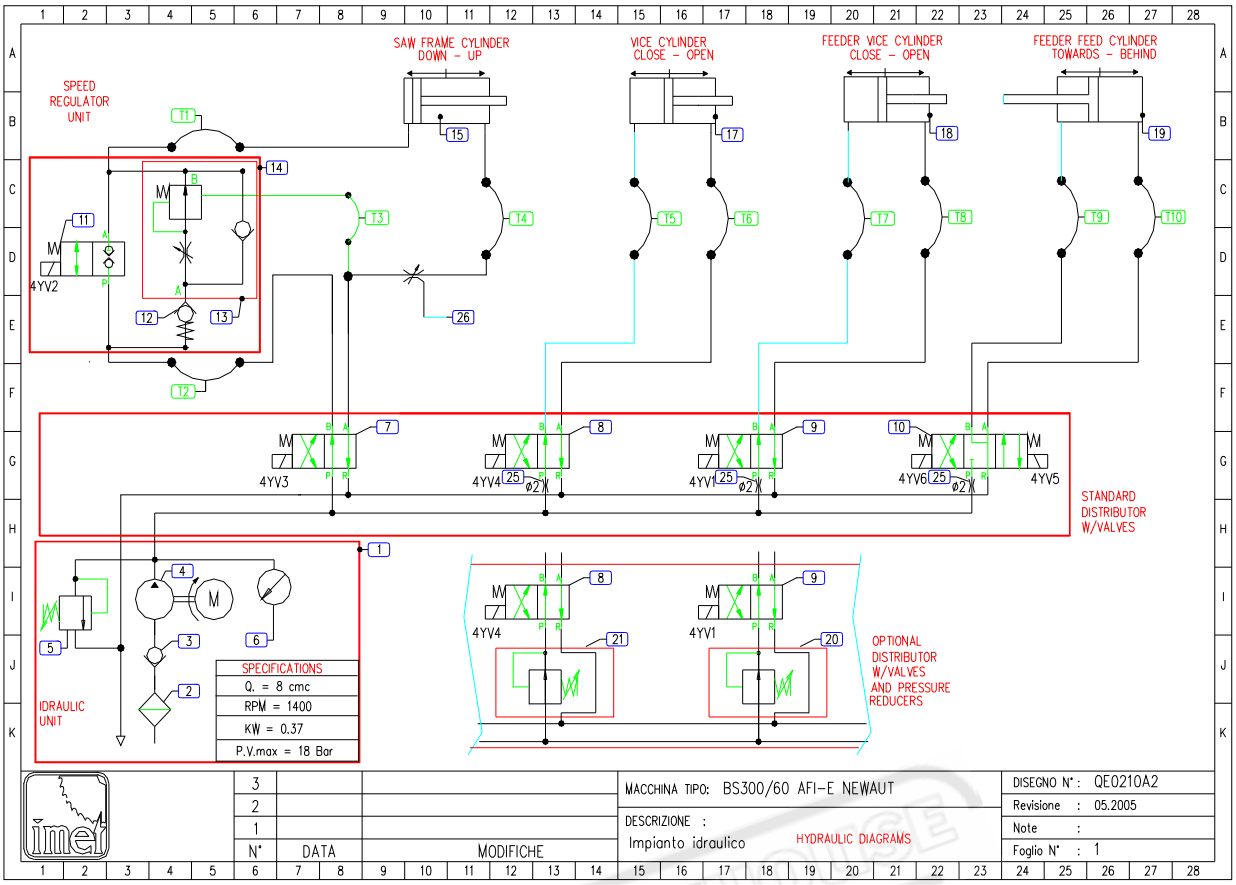
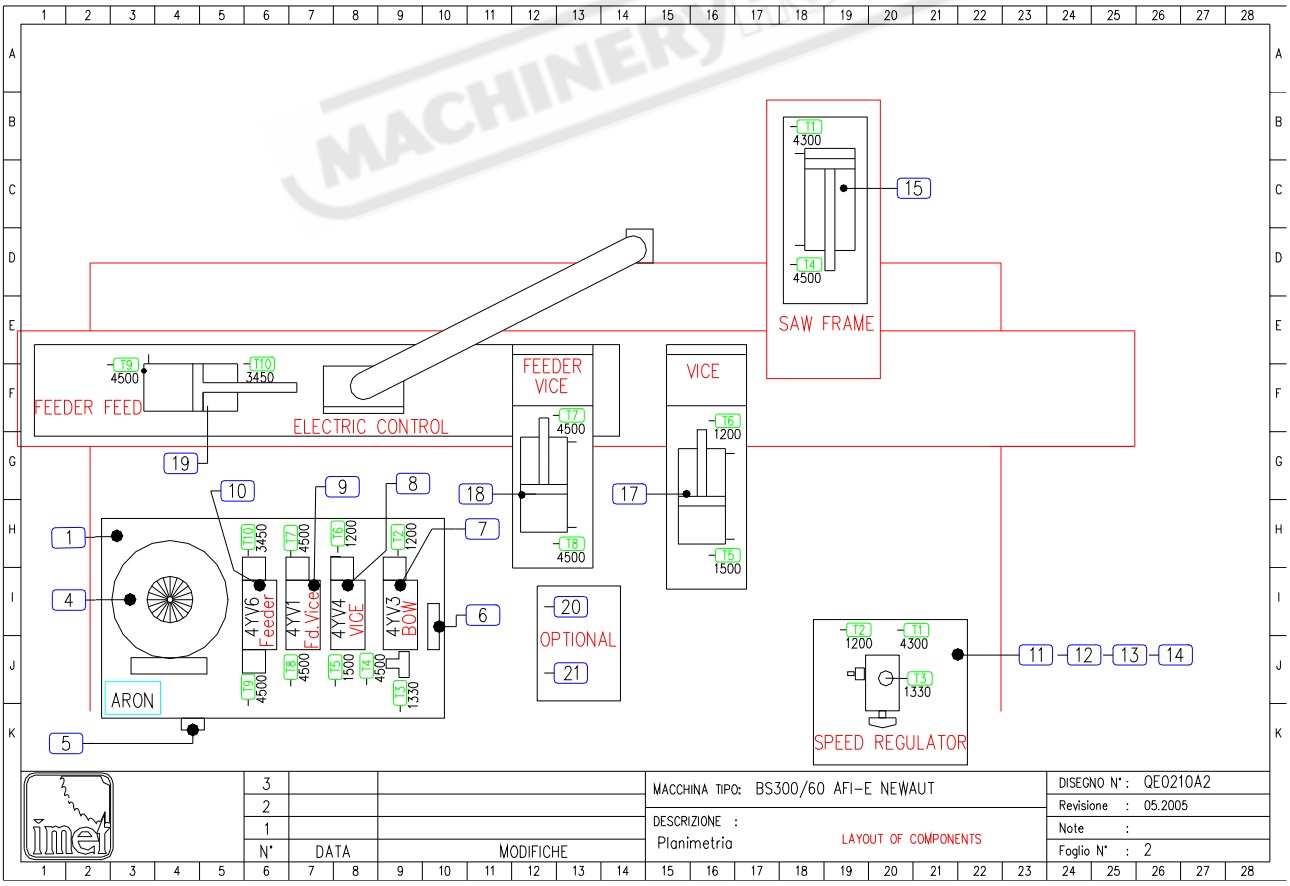
INSTRUCTIONS FOR USE





INSTRUCTIONS FOR USE

REF.	DEVICE	SPECIFICATIONS	FUNCTION	FACTORY	TYPE	ITEM N°	Q.TY
1	COMPLETE HYDRAULIC UNIT	4P 0,37Kw	MODULAR ELEMENTS	Aron	-	205277	1
2	OIL FILTER	D. 80 X 28	-	Aron		--	1
3	ONE-WAY CHECK VALVE	A cartuccia/CARTRIDGE TYPE	-	Aron		--	1
4	HYDRAULIC PUMP	9.2 cc	----	Marzocchi	K1PS 9.2 G	--	1
5	MAX. PRESSURE CONTROL VALVE	0 - 50bar	----	--	V388916A04	--	1
6	PRESSURE GAUGE	0 - 40bar	----	Wika	113-13-063	539877	1
7	CONTROL VALVE/ONE POSITION	4/2 - 24Vd.c.	----	Aron	331541	AD3E15A	1
8	CONTROL VALVE/ONE POSITION	4/2 - 24Vd.c.	----	Aron	331541	AD3E15A	1
9	CONTROL VALVE/ONE POSITION	4/2 - 24Vd.c.	----	Aron	331541	AD3E15A	1
10	CONTROL VALVE/TWO POSITION	4/2 - 24Vd.c. - OPEN CENTRE	----	Aron	AD3E03C M20	331536	1
11	CONTROL VALVE/ONE POSITION	4/2 - Tensione 24Vd.c.	----	Aron	331541	AD3E15A	1
12	ONE-WAY CHECK VALVE	A cartuccia / CARTRIDGE TYPE	----	Comatrol	RC 06-05-00	202202	1
13	SPEED REGULATOR	3 Lt/min	----	Aron	QCV32GK2R	727035	1
14	COMPLETE SPEED REGULATOR	--	----	Imet		--	1
15	CYLINDER	--	----	Imet		222830	1
17	CYLINDER	--	Vice	Imet		222755	1
18	CYLINDER	--	Vice	Imet		222755	1
19	CYLINDER	--	-	Imet		T22930	1
20	Optional	-	PRESSURE REGULATOR VALVE	Imet		000964	1
21	Optional	-	PRESSURE REGULATOR VALVE	Imet		000964	1
25	DIAPHRAGM BUSH	D2 H11	----	Imet		172255	.
26	ON/OFF Cock	F1/4"-F1/4"	----	Aignep	a 400 ff 1/4"	755888	1
T1	FLEXIBLE LINE	R7 1/4"4300+CODOL.	----	Imet	R7 1/4"4300	936865	1
T2	FLEXIBLE LINE	R6 3/8" 1200+FEMM.REC.3/8	----	Imet	R6 3/8" 1200	933633	1
T3	FLEXIBLE LINE	TUBO R7 3/16"1330+CODOL	----	Imet	R7 3/16"1330	937711	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E NEWAUT

DESCRIZIONE : Elenco componenti COMPONENTS

DISEGNO N°: QE0210A2
Revisione : 05.2005
Note :
Foglio N° : 3

REF.	DEVICE	SPECIFICATIONS	FUNCTION	FACTORY	TYPE	ITEM N°	Q.TY
T4	FLEXIBLE LINE	R6 3/8" 4500+FEMM.REC.3/8	----	Imet	R6 3/8" 4500	933571	1
T5	FLEXIBLE LINE	R6 3/8" 1500+FEMM.REC.3/8	----	Imet	R6 3/8" 1500	933625	1
T6	FLEXIBLE LINE	R6 3/8" 1200+FEMM.REC.3/8	----	Imet	R6 3/8" 1200	933633	1
T7	FLEXIBLE LINE	R6 3/8" 4500+FEMM.REC.3/8	----	Imet	R6 3/8" 4500	933571	1
T8	FLEXIBLE LINE	R6 3/8" 4500+FEMM.REC.3/8	----	Imet	R6 3/8" 4500	933571	1
T9	FLEXIBLE LINE	R6 3/8" 4500+FEMM.REC.3/8	----	Imet	R6 3/8" 4500	933571	1
T10	FLEXIBLE LINE	R6 3/8" 3450+FEMM.REC.3/8	----	Imet	R6 3/8" 3450	933572	1

N°	DATA	MODIFICHE
3		
2		
1		

MACCHINA TIPO: BS300/60 AFI-E NEWAUT

DESCRIZIONE : Elenco componenti COMPONENTS

DISEGNO N°: QE0210A2
Revisione : 05.2005
Note :
Foglio N° : 4

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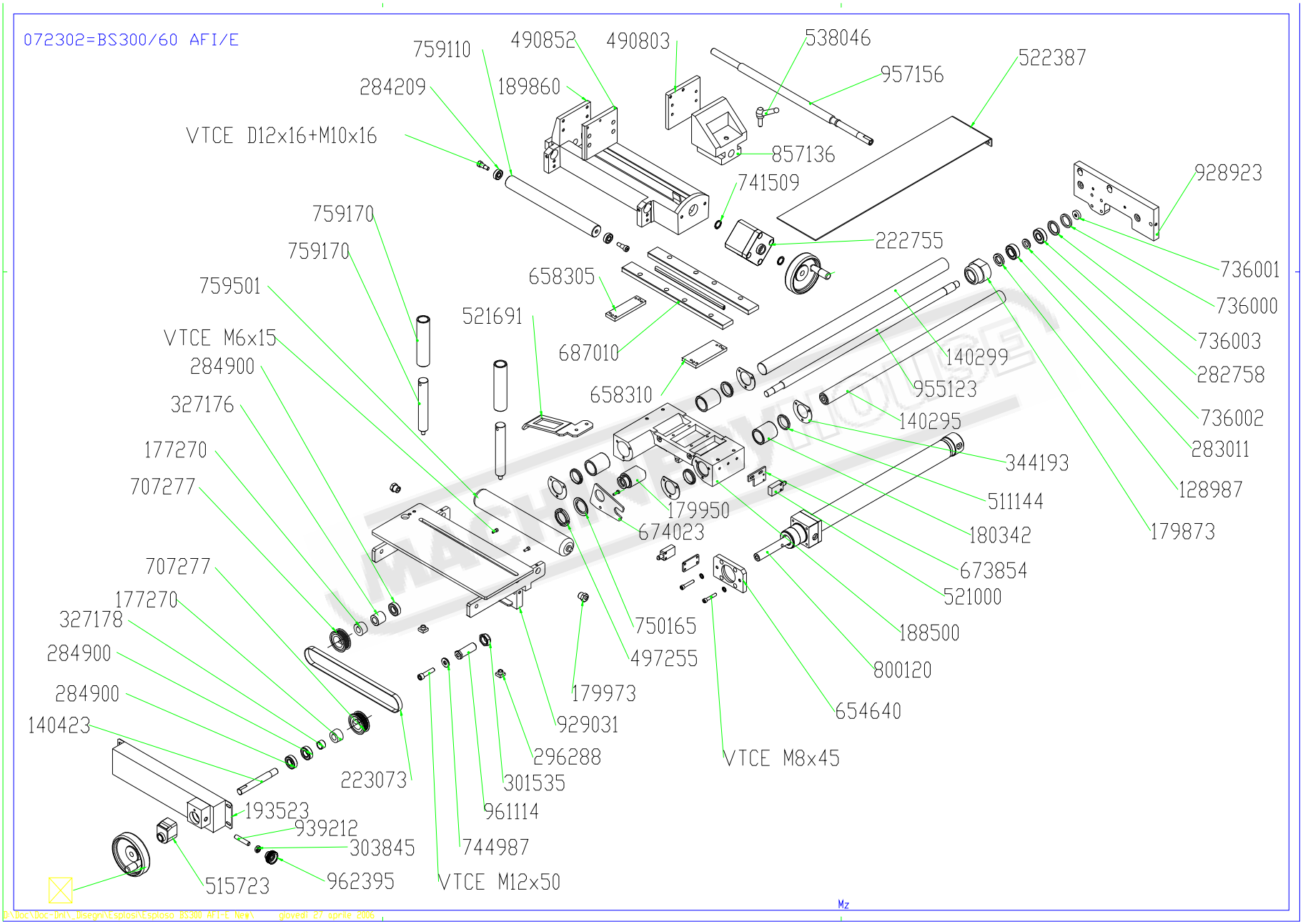
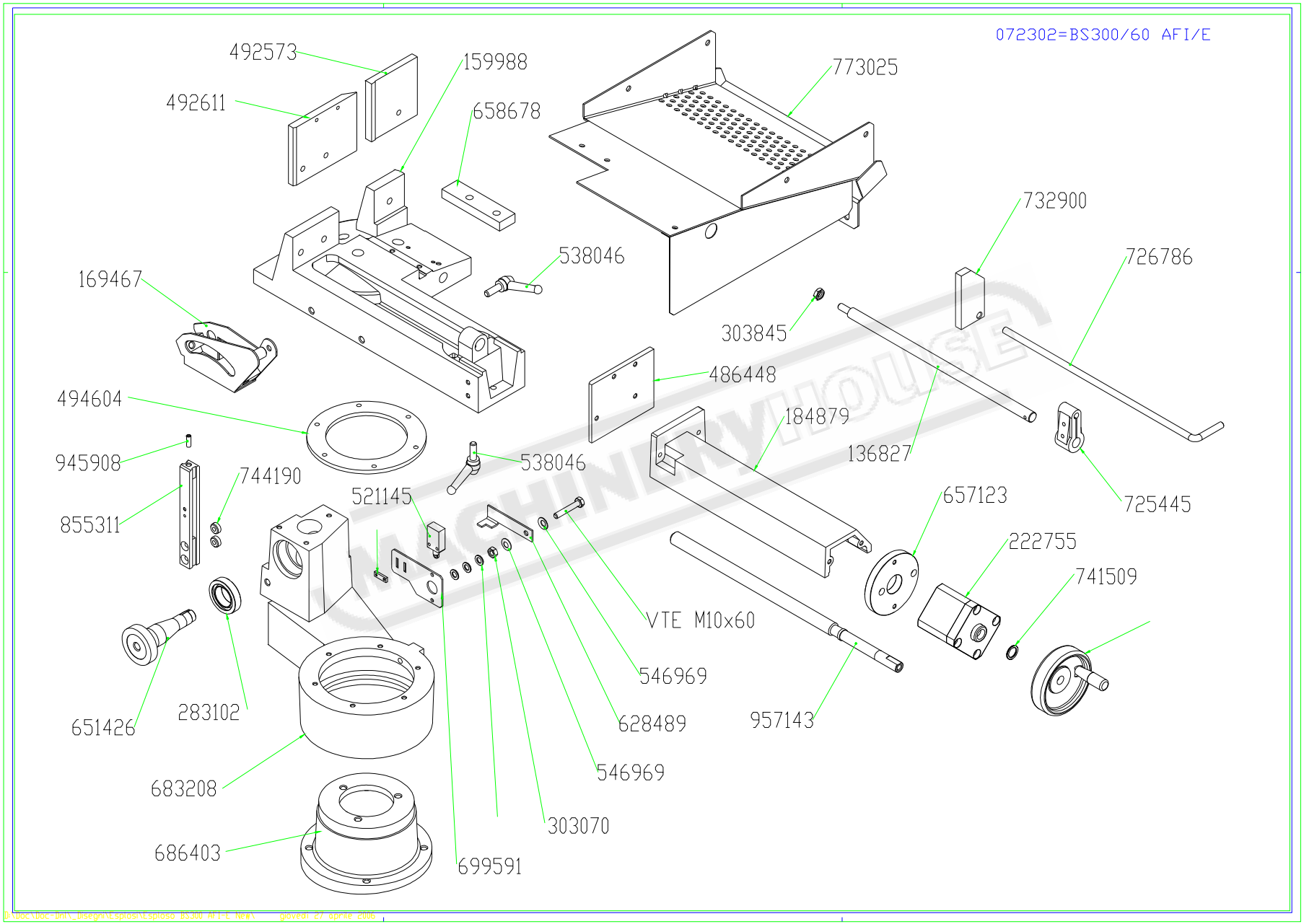
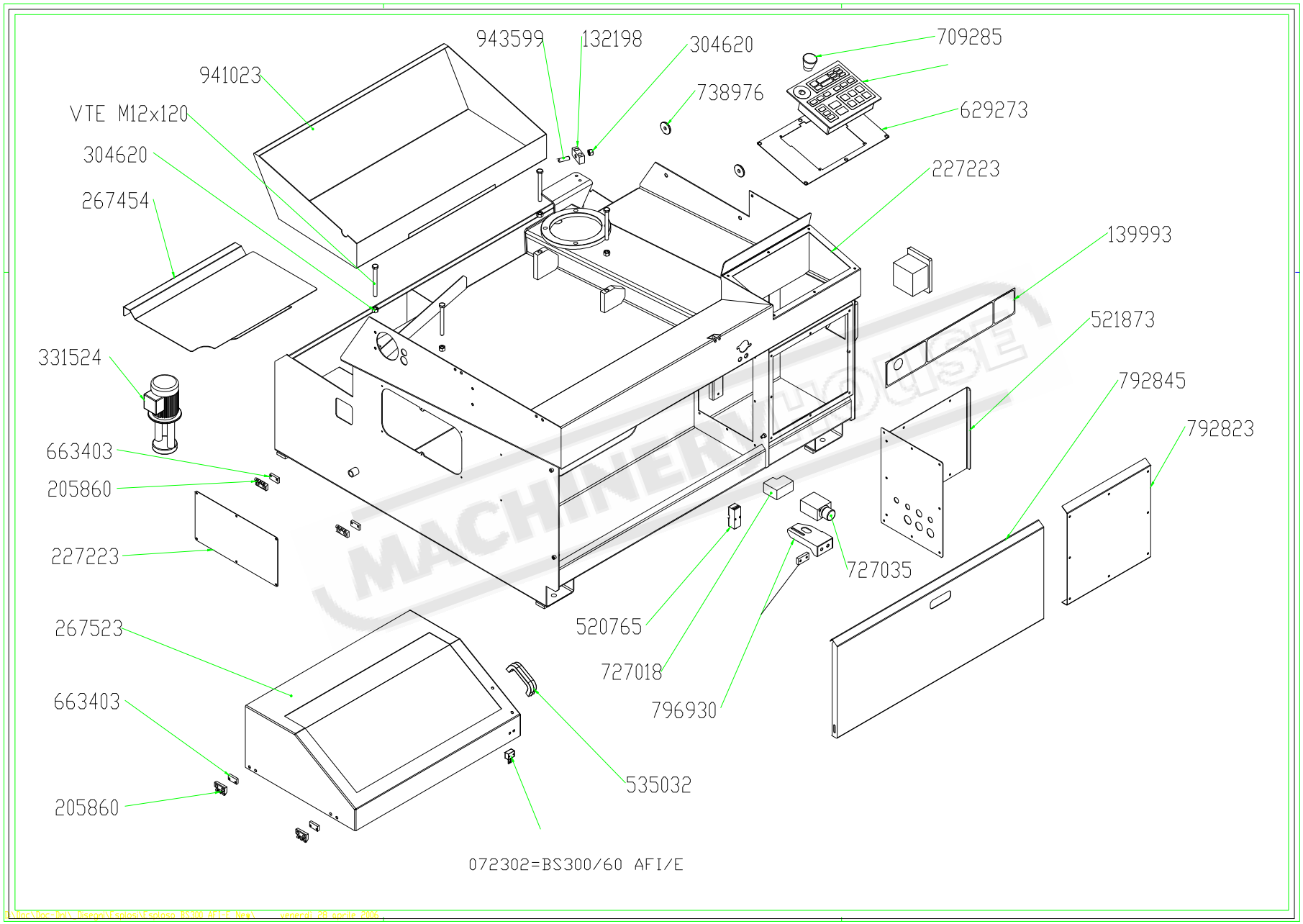
INSTRUCTIONS FOR USE



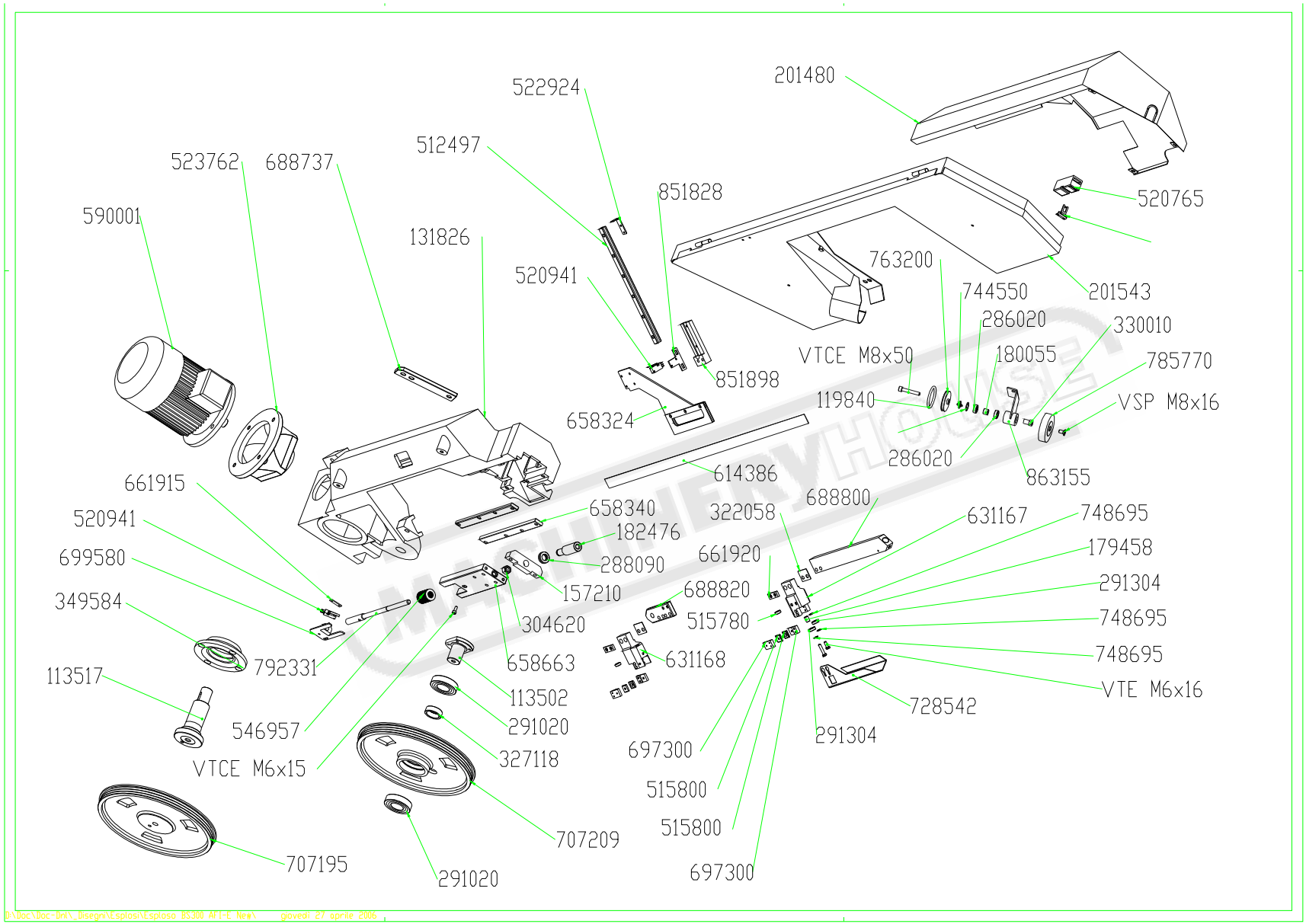
INSTRUCTIONS FOR USE



INSTRUCTIONS FOR USE



INSTRUCTIONS FOR USE



INSTRUCTIONS FOR USE

COD.	ITALIANO	ENGLISH	FRANCOISE	DEUTSCH
072302	BS 300/60 AFI-E NEWAUT 2VEL.V. 400 SEGATR (SARA' BS 300/60)	BS 300/60 AFI-E 3PH.2SPEED	SCIE A RUBAN 2VI.BS300/60AFI-E	
113502	ALBERO X PULEGG.ANT.BS280 FRES ATO	BS 280 FRONT BAND WHEEL SHAFT		BS 280 VORDERSCHEIBE SAEGEARM
113517	ALBERO PULEGGIA POST.BS280	BS 280 BACK BAND WHEEL SHAFT		
118842	ANELLO ANTIESTR.BRS230 CIL.PN. KS450/600/	BACK-UP RING BRS230		
118932	ANELLO TENUTA OR 119 2,62X15,0 8	OR RING 2,62X15,08		
119395	ANELLO TENUTA OR 159 3,53X55,5 6	OR RING 3,53X55,56		
119576	ANELLO TENUTA OR3300 2,62X75,8 7	SEAL RING OR3300 2,62X75,87		
119603	ANELLO TENUTAOR4250 3,53X63,09	SEAL RING OR4250 3,53X63,09		
119621	ANELLO TENUTA OR 171 3,53X68,2 6	OR RING 3,5X68,26		
119840	ANELLO TENUTA OR 6187 5,34X47	OR RING 6400 3,34X47	BOUCLE OR 6187 5,34X47	DICHTRING OR 6187 5,34X47
127810	ANELLO SEEGER A17 RIGA RTD	SEEGER RING A17 RTD TABLE		
128030	ANELLO SEEGER J22 SPAZZ. BS350	SEEGER RING J22 / BS350 BRUSH		
128116	ANELLO SEEGER J72 PULEGGE FORO 72	SEEGER INNER RING J72	BOUCLE SEEGER J72 POULIES	SEEGER INNERER RING J72
128702	ANELLO TENUTA 25X35X7	SEAL RING 25X35X7		
128987	ANELLO TEN.PARAP.BASL25X40X7	SEAL RING BASL 25X40X7		
129107	ANELLO TEN.PARAP.BASL 55X70X8	SEAL RING 55X70X8 FOR COUPLING		
129736	ANELLO TENUTA 47X22X7	SEAL RING 47X22X7		
131828	ARCO-RIDUTTORE BS300 LAVORATO	FRAME REDUCER BS300		
132198	ARRESTO POSIZIONAM.BS280/60	MECHANICAL STROKE-END BS280/60		
132828	ASTA COM.DISC.ARCO 280 SHE/SHI -E/VELOX SHE/AF	FEED CONTROL LEVER BS280/VELOX		
134120	ASTA DISC.TESTA/REGISTRO MORSA D.20X400	FEED CONTROL/VICE STD LEVER	TIGE DE BUTEE	
136800	ASTA X RISCONTRO SCAR.280 AFI- E D.12	ROD FOR LENGTH STOP 280AFI D12		
139993	AUTOAD.DISC.ARCO BS300/60AFI-E (SU COLONNA)	STICKER SAW FRAME FEED 280AFIE		
139995	AUTOADES.DISC.ARCO BS300 AFI-E (SU COLONNA)MIS.628X107	STICKER DOWNFEED SP.280NEWAUT		
140295	BARRA CROM.40X788 AVANZAT.IMET LARGH.300/400 CON RETE PROTEZ	FEEDER CHROM.BAR 40X788		
140299	BARRA CROM.40X807 AVANZAT.BS35 0/60	40X807 CHROM. BAR BS35 FEEDER		
140423	BARRA TRASMISS.AVANZ.NEWAUT (NEW14)	TRANSMISS. ROD FEEDER NEWAUT		
153980	BLOCCHETTO GUIDA MORSA FILETT. BS280/60	VICE THREADED GUIDE		
154080	BLOCCHETTO GUIDA MORSA FORATO BS280/60	VICE HOLED GUIDE		
157210	BLOCCHETTO TENDINASTRO 280350 FRONTALE	BAND TENSIONER BLOCK 280350NEW		
159988	BLOCCO MORSA BS280 AFI-E (DERIVATA DA 280/60)	FIXED VICE ASSEMBLY BS280AFIE		
159990	BLOCCO MORSA BS280/60 MAN/SEMI AUT.	FIXED VICE ASSEMBLY BS280/60		
167248	BOCCOLA OTTONE D.20X30	BOW CYLINDER BRASSED		

INSTRUCTIONS FOR USE

	CIL.ARC O 280S.AUT	WASHER		
169467	BRACCIO X CILINDRO ARCO 280AFI -E	BOW CYLINDER ARM BS 280AFI-E		
172190	BUSSOLA OTT.D8X15 BLOC.PIATTO PATTINO BS280	D8X15 PLATE BLOCKING BUSH		
177257	BUSSOLA CONIC.TAPERL 1108-19 (PER PULEGGIA HTD TL38-5M-15)	TAPER BUSH 1108-19		
177280	BUSSOLA D.16X25 PERNO OSC.BS28 0	OSCILLATING PIN BUSH D.16X25		
179458	BUSSOLA DISTANZ.D.6,5X10X14	SPACER D.6,5X10X14		
179873	BUSSOLA CUSC.VITE AVANZ.NEWAUT D.47X68	FEEDER BEARING SCREW BUSH		
179950	BUSSOLA FILET.TPN25 AVANZ NC PROGRAM E NEWAUT	FEEDER THREADED BUSH TPN25		
179965	BUSSOLA MOLLE/ARCO 280-GH BRUN	280-GH BUSH SPRINGS/BOW		
179973	BUSSOLA X REGISTR.RULLO NEWAUT (BS280-350)	BUNDLE		
180055	BUSSOLA DISTANZ.SPAZ.280/60 NC	-		-
180342	BUSSOLA A SFERE 0658-240-40 CO MPACT STAR 40X52X60	BALL BUSH 0658-240-40	2	
182476	BUSSOLA TENDINASTR.300350 NEWA UT	BAND STRETCHER BUSH		
182946	CAPICORD.OCCH.11039112=6,5 X6 GIALLO BM 00331			
184879	CARRELLO MORSA FISSA BS280/60	FIXED VICE CARRIAGE BS280/60		
188051	CARRELLO HIWIN HGW15CAZ0C X GU IDE SENZA PRECARICO	HIWIN HGW15CAZ0C CARRIAGE		-
188500	CARRO INFER.AVANZ.BS350/60LAVO RATO X NC	BS350/60		
189861	CARRO SUPER.AVANZ.AFI-E LAVOR. (MODELLI AFI-E)	FEEDER UPPER CARRIAGE AFI-E		
193523	CARTER CINGHIA TRASM.NEWAUT. (NEW07)	BELT GUARD FOR NEWAUT. BASE		
201543	CARTER NASTRO-2PEZ.-BS300AFINC SPAZZOLINO TRASCINATO PULEGGI	BAND GUARD-2 PIECES- BS300 NC		
205277	CENTRALIN.ARON 4 POS.COMPL+MOT MONTARE:BS280/350 AFI-E	COMPL.HYDRAULIC UNIT W/MOTOR		
205860	CERNIERA ART.401-30-M6 BOTECO PER XT410	ITEM 40-30-MT6 BOTECO HINGE		
214700	CHIAVETTA 6X6X20 UNI6604	KEY 6X6X20		
215123	CHIAVETTA 8X7X15 UNI6604	KEY 8X7X15 UNI6604		
216270	CHIAVETTA 8X7X25 UNI6604	KEY 8X7X25 UNI6604	TL CLAVETTE ENTR.BAGUE	
222755	CILINDRO MORSA KS450/600 80X10	VICE HYDR. CYLINDER KS450		SCHRAUBSTOCK HYDR.ZYLINDER 450
222830	CILINDRO IDRAUL.ARCO 350 TIPO 50X140 AVVITATO	CYLINDER SHI D.50		
227223	COLONNA NEWAUT.BS300/60 AFI-E (NEW01)	BASE FOR NEWAUT.		GRUNDLAGE NEWAUT
260163	CONNETTORE 4VIE+LED=S18209TC42 1 DIN43650A TRASPARENTE	4WAYS+LED CONNECTOR		4WEGE+LED VERBINDER
267454	COPERCHIO VASC.REFR.BS300 NEWA UT AFI-E	-		
267523	COPRIAVANZATORE BS300 NEWAUT	FEEDER COVER NEWAUT 280		
268253	COPRIFINCORSA ANT.NASTRO BS280	BAND STROKE-END COVER BS280		
276674	CORONA BRONZ. M2,75 Z35 BS280	BRONZE WHEEL M2,75 Z35 BS280		

INSTRUCTIONS FOR USE

282758	CUSCINETTO 30204A 20X47X14	BEARING 30204A 20X47X14		
283011	CUSCINETTO 32005X 25X47X15	BEARING 32005X 25X47X15		
283102	CUSCINETTO 32008XA 40X68X19	CARRIAGE CONNECT.32008X4 40X68		
284209	CUSCINETTO 6201.2ZR 12X32X10	BEARING 6201.2ZR 12X32X10		LAGER 6201 2ZR 12X32X10
284900	CUSCINETTO 6004.2RSR 20X42X12	CARRIAGE CONN. 6004EE 20X42X12	ROULEMENT 6004.2RSR 20X42X12	
286020	CUSCINETTO 608.2ZR 8X22X7	BRUSH/PUMP CARRIAGE CONNECTION	ROULEMENT 608.2ZR 8X22X7	
286302	CUSCINETT.30305DJR 25X62X17/13 =310305A	BEARING 31305A 25X62X17/13		
286795	CUSCINETTO 30305DR 25X62X15/13 = 30305A	CARRIAGE CONNECTION 25X62X15	ROULEMENT 30305A 25X62X15/13	
288090	CUSCINETTO ASS.51103 17X30X9	BEARING 51103 ..X..X.		
288725	CUSCINETTO 6206 30X62X16	CARRIAGE CONNECTION 6206 30X62	ROULEMENT 6206 30X62X16	
288995	CUSCINETTO 6209 45X85X19	CARRIAGE CONNECTION 6209 45X85		
291020	CUSCINETTO 6207.2RSR 35X72X17	CARRIAGE CONNECTION 6207 35X72		LAGER 6207EE 35X72X17
291304	CUSCINETTO 626.2ZR 6X19X6 PATTINI 280/300	BEARING 626.2ZR 6X19X6		
294002	DADO ES.M4 BASS AUTOBL.DIN985	HEXAGONAL NUT M4 DIN 980		SECHSKANTIGE MUTTER M4 DIN 980
294189	DADO ES.M8 BASS AUTOBL.DIN985	ES M8 DIN980 NUT		
296183	DADO M12 CAVE T CL.10 UNI5531 DIN508	NUT M12 FOR KEY T UNI5531		
300745	DADO ES.M8 RIBASSATO BRUNITO	HEXAGONAL NUT M8		
303070	DADO ES.M10 UNI5588 6.S BRUN.M	HEXAGONAL NUT M10 UNI5588 6.S		SECHSKANTIGE MUTTER M10 6.S
303845	DADO ES.M12 UNI5588 6.S BRUN.M EDIO	HEXAGONAL NUT M12 UNI5588 6.S		
304620	DADO ES.M12 UNI5589 6.S BRUN.B ASSO	HEXAGONAL NUT M12 UNI5589 6.S		SECHSKANTIGE MUTTER M12 6.S
305080	DADO ES.M14 ALTO UNI5587	HEXAGONAL NUT M14		
306120	DADO ES.M16X1,5 UNI5589 6.S	HEXAGONAL NUT M16X1,5 UNI5589		
306500	DADO ES.M6 UNI5588 6.S BRUNITO	HEXAGONAL NUT UNI 5588 6.S	ECROU M6 UNI5588 6.S	SECHSKANTIGE MUTTER M6 UNI5588
307720	DADO ES.M8 UNI5588 6.S BRUNITO	HEXAGONAL NUT M8 UNI5588 6.S	ETAU ECROU POUR RENFORT	SECHSKANTIGE MUTTER M8 6.S
315285	DISCO REGISTR.VSF BS280	SCREW ADJUSTING DISC BS280		
322160	DISTANZIALE CORONA BS280	WHEEL SPACER BS280		
325859	DISTANZIALE GIUNTO/MOT.BS280	MOTOR COUPLING SPACER BS280		
327118	DISTANZIALE PUL.D.35X42 BS280	PULLEY SPACER D.35X42 BS280		SCHEIBE DISTANZSTUECK D35X42
327176	DISTANZIALE PULEG.AVANZ.NEWAUT (NEW22)	NEWAUT PULLEY SPACER 30X20X41		
327178	DISTANZIALE TRASM.AVANZ.NEWAUT (NEW21)	NEWAUT TRANSM.SPACER 30X20X17		
330010	ESAGONO ATT.SPAZ.D100 BS350	HEXAGONAL BRUSH CONNECTION	HEXAGONAL POUR BROSSE D100	SECHSKANTIGER BUERSTEANSCHLUSS
331524	EL.POMPA LUNGA AST60 PIEDE=150 230400V 1/2"-W120=PMU60LP170	LONG ELECTRIC PUMP 230400	POMPE 331524	
331925	FASCETTA TUBO TORRO S 12-22/9 C7 W1	HOSE CLAMP W2 12-20		SCHLAUCHSCHELLE W2 12-20
349584	FLANGIA CHIUS.RIDUTT.BS280	REDUCTION CLOSING FLANGE BS280		
486448	GANASCIA CARR.MORSA BS300/60 130X10X161	VICE CARRIAGE JAW 130X15X172		

INSTRUCTIONS FOR USE

	UNIOFICATA			
490803	GANASCIA CHIUS.AVANZ.BS280AFIE	FEEDER CLOSING JAW BS280AFIE		
490852	GANASCIA APP.X AVANZ.BS280AFI- E	FEEDER SUPPORT JAW BS280AFI		
492568	GANASCIA APPOGGIO DX BS300/60 130X15X113 UNIFICATA	RIGHT VICE SUPPORT JAW BS280/6		
492611	GANASCIA APPOGGIO SX BS300/60 130X15X162 UNIFICATA	LEFT SUPPORT JAW BS280AFI-E		
494604	GHIERA INTERNA PIATTAFORMA BS2 80/60	PLATFORM INTERNAL LOCKRING BS2		
497110	GHIERA KM5 M25X1,5 PERNO OSC.B S280	RING KM5 M25X1,5		
497255	GHIERA KM8 M40X1,5 SIRIO 300	RING KM8 M40X1,5 BS340PR		
500316	GIUNTO M24JUNIOR D.19X24 BS280	COUPLING D.19X24 BS 280		
510200	GUARNIZIONE EL.POMPA D.130X102 X2 GOMMA ANTIOLIO	ELECTROPUMP SEAL D.130X102		
511144	GUARNIZIONE PARAP.AS40-50-5-8	ANTIDUST GASKET AS40-50-5-8		
511163	GUARNIZIONE RS3240 CIL. IDR.KS	PISTON SEAL RS3240		
511290	GUARNIZ.IDROSTOP DBM196133/M BS350/280 D50XD34X20.5	SAW FR.CYL.GASKET MDB2X400501		
511300	GUARNIZIONE LANTERNA BS280 120 X80	GASKET BS 280		
511330	GUARNIZIONE FLANGIA BS280 D.14 5X110	FLANGE GASKET BS 280 D.14		
512497	GUIDA HIWIN HGR15R340C BS300 (FORO 20MM!) TASTATORE280/300	GUIDE HIWIN LGR15R340C 20/20		-
513095	IMPUGNATURA NERA 20X80 PLAST. X ASTA	PLASTIC BLACK HANDLE D.20X80		
515723	INDICATORE DIG.MIL.PAS5 GRIGIO DD52AN0005.0-D/ELESA=CE.08625	POSITION INDICATOR MM5 PITCH		
515753	INGRASSATORE M8 CH10 SFERA+MOL LA L1	OILER M8 CH10		
515780	INSERTO SPECIALE D15.95X6.4 BS350	SPECIAL INSERT D15,95X6,4	PLAQUETTE SPECIALE D15,95X6,4	
515800	INSERTO QUADRO SVAS.19,3X4 F.4 WXP0274=GATTIA191DB10.OD C4.2G	SQUARE CARBURE PAD 19,3X4 F.4	PLAQUETTE CARBURE 19,3X4 F.4	VIERECKIGER EINSATZ 19.3X4 F.4
520765	INTER.SICUR.FK3393-D1 CHIAV.90 °PIZZATO	SAFETY SWITCH FK3393-D1		
520941	FINCORSA LEVA ABV121260 NAIS= OMRON D2VW5L1B1M-BS-230	STROKE-END ABV161660		
521000	INTER.FINCORS=TELEMEC.XC MA1032 CAVO 2M,RUOTA 90°E700-0-BM/90	STROKE END SWITCH TELEMEC.	FIN DE COURSE	
521145	INTER.FINCORS=TELEMEC.XC MA1023 CAVO 3M,RUOTA DIR.E700-0-BM/3	STROKE END SWITCH TELEMEC.	FIN DE COURSE	ENDSCHALTER TELEMEC. XCMA1023
521580	LACCIO LEGRAND 320-32 2,4X180	LEGRAND PLASTIC STRING		
521585	BASE A INCASTRO 320.76 X LACCI LEGRAND	SUPPORT FOR STINGS 320.76		
521691	LAMIERA X CAVI AVANZ.BS300AFIE NEWAUT	SHEET HOLDER FEEDER NEWAUT.		
521718	LAMIERA FC CARRO AVANZ NEWAUT. (NEW16)	NEWAUT. STROKE-END HOLDER		
521873	LAMIERA COM.EL.NEWAUT. (NEW10)	EL.CONTROL SHEET METAL NEWAUT.		
521951	LAMIERA X	COOLANT DISTR.SHEET		

INSTRUCTIONS FOR USE

	DISTRIB.REFRIG.BS280 SU ARCO	METAL 280		
522387	LAMIERA COPRI VITE AV.NEWAUT	-		
522924	LAMIERA "L" FERMO TASTATORE	-		
522941	LAMIERA TASTATORE BS300	-		
523762	LANTERNA MOTORE BS280 FINITA	MOTOR/BOW STRAINER BS280		
535032	MANIGLIA "U" NERA ART.1102BOM8 =M243/140	BLACK HANDLE 1102BOM8		
536585	MANIGLIA RIPRES.M12 FEMM.TIP80	TURNING HANDLE M12 TYPE 80	POIGNEE M12 TIP80	
536675	MANIGLIA RIPRESA M12X45 TIP.80 MASCHIO	TURNING HANDLE M12X45 TYPE 80	POIGNEE M 12X45	DREHEBARER HANDGRIFF M12X45 80
544666	MOLLA COMPENSAZ.CUSC.D.62 MOT	SPRING WASHER DIA. 62		
546938	MOLLA TAZZA 40X20,4X2,5 MANDRI NO/PULEGG.	SPINDLE CUP SPRING 40X20,4X2,5	RESSORT 40X20,4X2,5	SPINDEL FEDERRING 40X20,4X2,5
546957	MOLLA TAZZA 31,5X16,3X2 TENDIN AST.BS280	CUP SPRING 31,5X16,3X2	RESSORT 31,5X16,3X2	TELLERFEDER 31,5X16,3X2
546969	MOLLA TAZZA 25X12,2X1,5	CUP SPRING 25X12,2X1,5		TELLERFEDER 25X12,2X1,5
547652	MOLLA PER ARCO BS230-280-350-3 40	SAW FRAME RETURN SPRING 340280	RESSORT RAPPEL ARCHET BS340-BS	RAHMEN RUECKFEDER BS340-BS280
590050	MOT.3F 2/4P FC90TP B5 V400 280 CE*1,7/1,3*B5 *SENZA CHIAVETT	3PH MOTOR 2-4P FC90 V400 B5		
614397-6/10	NASTRO"280"2765X27X09 M42SVGLB (STB)DENTATURA =6/10 HV950	BAND 2765X27X09 SVGLB M42 6/10	RUBAN "280" 2765X27X09 M42	
616170	NIPPLO N4-4 1/4"A1/4" OTTONE	BRASS THREADED CONNECTION M4-4		MESSING NIPPEL M4-4 1/4"
616230	NIPPLO OLIO 1/4"X3/8"BSP RACC PER TUBO R6(CON FEMMINA 3/8")	OIL THREADED CONNECTION 1/4	616517	OEL NIPPEL 1/4" X 3/8"
628489	PALETTA ARCOGIU FINE TAGLIO (MACCHINE CON TASTATORE)	STROKE-END PLATE BOW DOWN		
629273	PANNELLO FRONT.COM.NEWAUT/TRON	FRONT PANEL FOR NEWAUT/TRON		
630632	PASSACAVO A MEMBRANA DG9 D.15	DIAPHRAGM CABLE GLAND DG9		
630975	PASSACAVO SCATTO SB1750-22 NER O 145051	CABLE GLAND SB1750-22		
631163	PATTINO ANTER.COMPLETO BS280 N EW	FRONT BAND GUIDE BS280		VORD.BANDFUEHRUNGSCHUHK.BS280
631165	PATTINO POST.COMPLETO BS280 NE W	LOWER BAND GUIDE BS280		HINTERER BANDFUEHRUNGSCHUH 280
631167	PATTINO GUIDALAM.ANT.BS280 LAV ORATO	FRONT BAND GUIDE BS280		VORDERER BANDFUEHRUNGSCHUH
631168	PATTINO GUIDALAM.POST.BS280 LA VORATO	BACK BAND GUIDE BS280		HINTERER BANDFUEHRUNGSCHUH
632788	PASTIGLIA D.10 OTTONE	BRASS. SPACER D.10		MESSING DISTANZSTUECK D.10
651426	PERNO OSCILLANTE BS280 x POTEN ZIOMETRO	OSCILLATING PIN FOR BS 280		
654640	PIASTRA ATT.CIL.AVANZ.NEWAUT. (NEW17)	NEWAUT.FEEDER CYL. PLATE		
657123	PIASTRA FRONT.MORSA IDR.NEWAUT (NEW20)	VICE CYLIND. PLATE FOR NEWAUT.		
658305	PIASTRINA SLITTA MOBILE AVANZA TORE	FEEDER MOVING PLATE		
658310	PIASTRINA SLITTA MOBILE AFI-E	MOVING SLIDE PLATE AFI-E		
658324	PIASTRA TASTATORE BS300	APPROACHING PLATE BS280		BANDSPANNERFUEHRUNGSPLATTE
658340	PIASTRA	BAND TENSIONING GUIDE		BANDSPANNERFUEHRUNGSPL

INSTRUCTIONS FOR USE

	GUIDATENDINASTR.300350 FRONTALE	PLATE BS		ATTE
658663	PIASTRA TENDINASTRO ANT.80X20 BS280	FRONT BAND TENS.PLATE 80X20		VORDERE BANDSPANN.PLATTE 80X20
658678	PIASTRINA APP.PEZZO MORSA 280A FI-E	VICE PIECE SUPPORT PLATE 280A		
661900	PIASTRINA X FINC.PATT.INF.VTF NUOVO	PLATE FOR LOWER BANDGUIDE VTF		
661915	PIASTRINA FINC.NASTRO NEW 2XM3 10X2X35 BRUNITA	PLATE FOR BANDSTRETCHER 2XM3		
661920	PIASTR.BLOCC.SPAZZOLINO PLUS60 (BS280 PLUS 60 GRADI)	BRUSH LOCKING PLATE BS280/60PL		
673854	PIASTRINA FINCORS.CARRO BS280 NEW-AUT.	BANDGUIDE STROKE-END PLATE		
673860	PIASTRINA FINCORS.PATT.SUP.VTF 500 (LAMIERA)	BANDGUIDE STROKE-END PLATE		
674023	PIASTRINA RISC. AVANZ.NEWAUT. (NEW13)	FEEDER STOP PLATE FOR NEWAUT		
687010	PIATTO SLITTA MOBILE 45X443X15 AVANZAT.IMET (2 PEZ. X CODICE	MOVING SLIDE PLATE 45X443X15		
688448	PIATTO ATTACC.MOLLE BS280 BRUN	SPRINGS CONNECTION PLATE BS280		
688737	PIATTO 40X10X173 CIL/FRENO BS2 80	CYLINDER/BRAKE PLATE 40X10X173		
688802	PIATTO GUID.ANT.SCOR. 280 NEW	NEW SLID. BAND GUIDE PLATE 280		
688820	PIATTO GUID.POST.FISSO 280 NEW	280 NEW FIX. BACK GUIDE PLATE		
695115	PORTAGOMMA PG8-4 D.8 INT.X1/4" DIRITTO	RUBB.HOSE CONNECTOR PG8-4 D.8		SCHLAUCHANSCHLUSS D.8 PG8-4
696080	PORTAGOMMA NYLON GES6 R1/8	NYLON RUBB.HOSE CONNECTOR GES6		
696346	PORTAGOMMA NYLON WES8 R1/2 GOM ITO	NYLON PUSH-ON CONNECTOR R1/2		NYLON ANSCHLUSS R1/2 KNIE
697300	PORTA PLACCHETTE PATTINO BS350	PAD SUPPORT FOR BAND GUIDE 350		EINSATZLAGER FUER BANDFUEHRUNG
699580	PORTA FINCORS/MOLLE NASTRO 280 350 FRONTALE	BAND FRONT STROKE-END HOLDER		BAND VORD. ENDSCHALTER TRAGER
699591	PORTA FINCORS.ARCO FINE TAGLIO (MACCHINE CON TASTATORE)	STROKE-END HOLDER NEWAUT		ENDSCHALTER TRAGER NEWAUT
707195	PULEGGIA D.320X14 POST.BS280	BACK PULLEY D.320X14 BS280		
707209	PULEGGIA D.320X72 ANT.BS280	FRONT PULLEY D.320X72 BS280		
707313	PULEGG. HTD TL 38-5M-15F CHIAR AVALLI X NEWAUT300350			
714785	QUADRO DERIV.REFR.ARCO 280AFIE	COOLANT JUNCTION BOX BS280AFIE		
716145	RACCORDO GOMITO G-4MF=5020A1/4	ELBOW CONNECTION G-AMF=5020A1		KNIEVERBINDUNG G-AMF=5020A1
716823	RACC.OLIO DIR.D.6 1/4"CIL=E211 -106S	OIL CONNECTION D.6 1/4"		
716834	RACC.OLIO DIR.D.8 1/4"CIL.E211 -108L	OIL CONNECTION D.8 1/4"CILE211		OELLEITUNG D.8 1/4" CILE 211
719061	RACC.OLIO GIR.D.8 1/4"CIL.E321 -108L=TN131	OIL CONNECTION D.8 1/4"CILE321		
719073	RACC.OLIO DIR.D.6 1/8"CON.	OIL CONNECTION D.6 1/8"		
719108	RACC.OLIO GOM.BSP F91-110 3/8- 3/8 (BS350 AFI-E)	OIL CONNECTION 3/8" F91-110		
722345	RACCORDO T-4FFM-L=4050 DA 1/4"	CONNECTION T-4FFM-L=4050 1/4"	2	T-VERBINDUNG 4FFM-L 1/4"
725445	REGISTRO MISURA ALLUM.+2VITI FORI D.20/12	ALUMINIUM LENGTH STOP DEVICE	SUPPORT DIA 20	ALUMESSANSCHLAG + 2 SCHRAUBEN
727044	REGOLAT.IDR.ARON TIPO 2 COMPL. ALL.USO:BS280/350 SHIE+AFIE+N	CMP.UNIT SPEED REGULATOR ARON		

INSTRUCTIONS FOR USE

727785	RIDUZ.OLIO 1/4"M-1/4"F	REDUCTION 1/4"M 1/4"F		REDUKTION 1/4"M 1/4"F
728542	RIPARO ANTER.NASTRO BS280 NEW	FRONT SAW BAND COVER BS280 NEW		
728560	RIPARO NAST.POST.280/60 NEW PA TTINO	BACK BLADE NEW COVER,280 NEW		
728563	RIPARO NASTRO POS.BS280/60 NEW	BACK BAND COVER BS280/60 NEW		
732900	RISCONTRO REGISTRO SCAR.PEZZI BS280 AFI-E	WORKPIECE OUTLET ADJUSTAB.STOP		
734694	RONDELLA RAME 1/4	COPPER WASHER 1/4		
734698	RONDELLA RAME 1/8	COPPER WASHER 1/8		
734745	RONDELLA ALLUMINIO 1-4	ALUMINIUM WASHER 1-4		ALU DICHTRING 1-4
735602	RONDELLA APPOGGIO SS22X32X2 DIN 988 HRC45	SUPPORT WASHER SS22X32X2		AUFLAGE-FEDERRING SS22X32X2
735755	RONDELLA APPOGGIO SS30X42X2,5 DIN 988 HRC45	WASHER SS30X42X2,5		
736000	RONDELLA POLIURET.ARANCIO D.47 VITE AVANZ.NC	WASHER D.47 BS340PR		
737845	RONDELLA 35X12X6 SVASAT.BRUNIT	WASHER 35X12X6		
741509	RONDELLA APPOGGIO SS20X28X2 DIN 988 HRC45	SUPPORT WASHER SS20X28X2	RONDELLE VOLANT SS20X28X2	DICHTRING SS20X28X2
741725	RONDELLA 35X9X5 SPIANAT.BRUN. VKS300/280	WASHER 35X9X5		
742100	RONDELLA 35X8X5 BRUNITA	BURNISHED WASHER 35X8X5		SPEZIALUNTERLEGSCHEIBE 38X8X5
742282	RONDELLA 40X30X10,5 SVASATA (GREZZO =AVP D.40 BARRA)	WASHER 40X30X10,5		
742333	RONDELLA 45X35X10,5 SVASATA	WASHER 45X35X10,5	RONDELLE 45X35X10,5	FEDERRING 45X35X10,5
742431	RONDELLA 35X10X6 BRUNITA	BURNISHED WASHER 35X10X6		
744045	RONDELLA SPECIALE D.20X5 BRUN.	SPECIAL BURNISHED WASHER 20X5	RONDELLE D.20X5	SPEZIALUNTERLEGSCHEIBE D.20X5
744500	RONDELLA APPOGGIO SS9X15X1.2 DIN988 HRC45E CILINDRI PN/IDR.	SUPPORT WASHER SS9X15X1,2		DICHTRING SS9X15X1,2 DIN988
744550	RONDELLA APPOGGIO SS13X19X1,5 DIN988 HRC45 AVANZAT.280AFIE	SUPPORT WASHER SS13X19X1,5		AUFLAGE FEDERRING SS13X19X1,5
744611	RONDELLA STAMPATA 5X15X1,2	PRINTED WASHER 5X15X1,2		
744715	RONDELLA STAMPATA 6X18X2	PRINTED WASHER 6X18X2		GEDRUECKTER FEDERRING 6X18X2
744820	RONDELLA STAMPATA 8X24X2	PRINTED WASHER 8X24X2		
744987	RONDELLA STAMP.12X30X4 BRUNITA	PRINTED WASHER 12X30X4		GEDRUCKTER FEDERRING 12X30X4
744998	RONDELLA STAMPATA 14X35X3	PRINTED WASHER 16X40X3,5		
755801	RUBINETTO ART.6310 1/8"MF (DISTR.REFRIG.280 AFIE)	COCK 6310 1/8"MF		HAHN 6310 1/8"MF
755888	RUBINETTO SFERA ART.400 1/4"FF FEM/FEM (ART.6300 -1/4-FFAGNE	COCK ART.400 1/4" FEM/FEM.		
759110	RULLO D.40X383 AVANZATORI AFI	FEEDER SLIDE ROLLER AFI-E		
759170	RULLO AP.VERT.40x168+30xM12X20 NEWAUT	VERT.ROLLER FEEDER NEWAUT		
759501	RULLO GL/10 60Z C400 D10 S1,5 MOLLA ACC.ZINC.(RULLIERE W40)	ROLLER GL/10 60HZ C400 D10S1,5	2	ROLLER GL/10 60HZ C400 D10S1,5
763200	RUOTA TRASCINAM.SPAZZOL.BS350	BRUSH DRIVE WHEEL FOR BS 350		BUERSTE FUEHRUNGSRAD FUER BS35
773023	SCIVOLO SCARIC.COL.NEWAUT.280 (NEW08)	NEWAUT.BASE UNLOADED SHUTE 280		

INSTRUCTIONS FOR USE

780850	SNODO UNIBALL SMG10 M10 MASCHI O	UNIBALL JOINT SMG10 M10		UNIBALL GELENK SMG10 M10 ZAPFE
785768	SPAZZOLA NYLON D.75x20	NYLON BRUSH D.75X20	BROSSE NYLON D.75X20	NYLON BUERSTE D.75X20
786162	SPIA OLIO HE45 PERFECT-RECORD- 280 COD.12001	OIL SIGHT GLASS HE45 PERF/REC	PERFECT-RECORD BOUCH. NIVEAU	OELSCHAUGLAS HE45 PERF/REC
792331	SPINA TENDINASTRO BS300350 M12 D.16X290	BAND TENSIONING ROD 280350 NEW		VORDERER BANDSPANNER STIFT
792823	SPORTELLO FISSO DX.COL.BS300 A FI-E NEWAUT	FRONT FIX DOOR FOR BASE NEWAUT		
792845	SPORTELLO MOBILE COLON. NEWAUT (NEW03)	FRONT MOB.DOOR FOR BASE NEWAUT		
796930	SQUADRETTA PORTA REGOLATORE VE LOCITA'	REGULATOR SUPPORT PLATE		REGLER AUFLAGEPLATTE
798940	STAFFA BLOC.GUIDALAM BS280 NEW	BS280NEW BLOCK.BRACKETS.BLAD.G		
851828	SUPPORTO GRUPPO TASTAT.BS300	-		-
851898	SUPPORTO GUIDA TASTATORE BS300			
855311	SUPPORTO X COPRIAV.BS280 AFI-E	FEEDER COVER SUPPORT BS280AFIE		
857136	SUPP/CHIOCC.AVANZ.LAVORA T.AFIE	FEEDER LEADNUT SUPPORT AFIE		
863155	SUPPORTO SPAZ.SALDATO 300/60NC	-		-
864381	TAPPO+DADO FIL.PG29 NYLON	PLUG+NUT PG29 NYLON		
864623	TAPPO OLIO+GUARN.1/2"CIL.=E336 FOSFATATO NERO	OIL TANK PLUG AND GASKET 1/2"		VERSCHLUSSSTOPFEN 1/2"
864724	TAPPO OLIO+GUARN.1/4"CIL.=	OIL PLUG+GASKET 1/4"		
865362	TAPPO+ASTINA ALS 2-18	PLUG+BAR ALS 2-18		
910710	TARGHETTA GRAD.MORSA BS280/60 (O°-60°)	VICE GRADUATED PLATE BS280/60		
918687	TASTIERA CONTR.TRON R20 10+10/ DAC CEB AU	EL. KEYBOARD TRON 10+10		
928923	TESTATA ANT.AVANZ.BS300NEWAUT	FEEDER FRONT HEAD NEWAUT.		
929031	TESTATA POST.AVANZ.NEWAUT.AFNC (SAW2++)	FEEDER REAR HEAD NEWAUT. NC		
929290	TIRANTE M10X95 CENTR.IDR.AFI-E	TIE ROD M10X95 AFIE		
929312	TIRANTE M12X62 OTTONE BS230	TIE RODS M12X62		
929342	TIRANTE M12X115 MORSA 280AFI-E	TIE ROD M12X115 FOR VICE 280AF		
933571	TUBO R6 3/8" 4500+FEMM.REC.3/8 " 350 AFI-E	TUBE R6 3/8"		
933572	TUBO R6 3/8" 3450+FEMM.REC.3/8 " 280 AFI-E	TUBE R6 3/8" 3450		
933625	TUBO R6 3/8" 1500+FEMM.REC.3/8	TUBE R6 3/8" 1500		
933633	TUBO R6 3/8" 1200+FEMM.REC.3/8 " 280SHIE	TUBE R6 3/8" 1200		
935500	TUBO RETINATO 8X14 ARIANNA	PLASTIC TUBE 8X14 ARIANNA		SCHLAUCH 8X14 ARIANNA
936245	TUBETTO GEMMA 8X12 = 80 GR/MT.	COOLANT HOSE 8X12		
936359	TUBETTO GEMMA 6X9 = 45 GR/MT.	TUBE 6X9		
936865	TUBO R7 1/4"4300+CODOL.d8:2DIR ITTI KS450	TUBE R7 1/4" 4300		
937711	TUBO R7 3/16"1330+CODOL.d6:1DI R/1-90°340	TUBE R7 3/16" 1330		
941023	VASCA RACC.TRUCIOLI NEWAUT.300 AFI-E (NEW04)	CHIPS CONTAINER NEWAUT. BASE		
955123	VITE TPN25	FEEDER POSIT.SCREW		

INSTRUCTIONS FOR USE

	POSIZ.AVANZ.NEWAUT (NEW12)	NEWAUT		
956843	VITE TE M14X30 SIN.SVASATA	LEFT SCREW TE M14X30	VIS GAUCHE TE M14X30	
957143	VITE MORSA BS300/60 AFI-E NEWA UT	VICE SCREW FOR BS 280 NEWAUT		SCHRAUBSTOCK SCHRAUBE NEWAUT
957156	VITE CHIUS.PINZA AVANZ.NEWAUT BS300/350 AFI-E-NC	FEEDER VICE CLOSIN.SCREW AFINC		VORSCHUBSCHRAUBSTOCK SCHRAUBE
958928	VITE SENZA FINE BS280	ENDLESS SCREW BS280		SCHNECKE BS 280
961114	VITE REGOLAZIONE M24X2 XT410	XT410 M24X2 REG. SCREW		-
962390	VOLANTINO ART.751-32-M8X30 BS280	WHEEL 750-32-M8 BS280		
962395	VOLANTINO ART.765-..-M12 BS230	WHEEL 765-..-M12		
964234	VOLANTINO 19912520H7PFT-O IMET FINITO (PRECED.GE0016A6)	WHEEL 19912520H7PFT-O		HANDRAD 19912520H7PFT-0
T22930	CILINDRO AVANZ.AFI-NC PREMONTA TO	FEEDER CYLINDER AFI-NC		

FAST INSTRUCTION FOR USE OUR AUTOMATIC MACHINE

1- If the machine has not been installed yet, pls. read the 2 pages here attached (63LD in the instruction manual).
In order to check that the electrical supply has been connected, push buttons16 or 17:
if the cutting unit moves up or down everything is OK; if nothing moves, disconnect and reverse two of the wire in the plug.
(NOTE: if the emergengy button is pressed, nothing moves and the display shows "Er0020")

2 - This is a semiautomatic & automatic machine;

§ use keys 16 / 17 to move upwards the blade 10 mm about over the piece to be cut,
§ " " 16 / 17 to move downwards the blade below the piece to be cut
§ " " 16 to return in high position

3 - If you carry out well these regulations, it is possible that the machine starts to work in SEMIAUTOMATIC cycle:
Push key 20 to make a simulated cut; if everything is OK , the cutting unit goes down fastly, slows down 10 mm over the piece, cuts and then goes up. It does not go up if the function F3 has been chosed.
It is better to make some cuts to check the cutting speed and others working conditions.

4 - Push together keys 4+25 to prepare AUTOMATIC CUT: if all is OK, button 25 flashes;
§ **adjust the feeder stroke** = unlock the lever under the digital indicator , turn the wheel until you read 501.5 (500 mm piece lenght + 1.5 mm blade thickness)* and close the lever
§ **adjust the feeder vice** = (keys 4 and 18 = opening; 4 and 19 = closing)
§ **select the number of feeder stroke** = keep pushed key 26 and push key 11 or 13 to select : 1 for one stroke; 2 for two stroke; 3 for three stroke; max. 29 stroke. Release key 26
§ **select the number of pices to be cut =** keep pushed the key 27 and push key 11 or 13 to select one by one the quantity, or push key 14 or 15 to select hundred by hundred the quantity;. max. 9999 pieces. Release key 27
§ **zero-adjust the piece-counter** = keep pushed key 25 and push key 12 to zero-adjust the piece-counter. Release key 25.

***** *The above point is OK for 1 feeder stroke. In case of 2 feeder stroke you have to act as follows: piece lenght divided into 2 + blade thickness divided 2.*
In case of 3 feeder stroke you have to act as follows: piece lenght divided into 3 + blade thickness divided into 3. And so on for 4, 5, 6, ...

5 - If you carry out well these selections, it is possible that the machine starts to work in AUTOMATIC cycle:
Push key 20 to start the automatic cycle; if everything is OK the feeder moves backwards to take the material an the key 20 flashes.

6 - Push again key 20 to start definitiverly the automatic cycle.
It is better to make some cuts and verify the lenght of cutted pieces in order to correct it by the decimal regulator putted at the end of feeder cylinder. (1 CLICK = 0,1 mm).
NOTE : when the bar ends, the program returns to semiautomatic cycle.

INSTRUCTIONS FOR USE

You have to change the material, cut the initial scrap of the bar, and after return to the automatic cycle by pushing keys 4 + 25 . Operate as indicated to point 5.

If more that 10 minutes passes before any key is pushed(and machine is not running) the electronic control switch-off the motor of the oil hydraulic unit. To switch-on the motor again, push any key: the display shows for one second a serie of flashes.

ER0001 error in the configuration EEPROM
ER0002 error in the data checksum in EEPROM 1 1st. block
ER0003 error in the data checksum in EEPROM 2 2nd. block
ER0004 error in the data checksum in EEPROM 3 3rd. block
ER0005 error in the saved data in the permanent memory
ER0020 emergency active (emergency pushed?)
ER0021 motor overload protections (overheated motor?)
ER0022 open carter
ER0023 broken band
ER0024 FREE
ER0025 blocked inverter (motor under stress?)
ER0026 too high motor absorption
ER0027 not correct position of the tool for starting the cutting cycle (blade locked in the workpiece?)
ER0028 vice pressure problem (vice too open/oil pressure?)
ER0029 blade unblocking -for SIRIO models only-
ER0030 bar end - in automatic cycle - (end of the material?)
ER0031 carriage not in correct position - for starting the automatic cycle -
ER0032 feeder vice (vice too open/closed?)
ER0033 piece counter selection on 0 (for automatic cycle)
ER0034 OIL PUMP DEACTIVATED - for hydraulic models - or DISCONNECTED AIR - for hydropneumatic models
ER9999 overflow in the machine timer (it is necessary to switch the system off and then on).

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