

TECHNICAL ASSISTENCE

We recommend to read carefully the info here included to install, to use and to maintain correctly and safely this machine. Please always refer to this instruction manual in case of need of the assistance service staff and keep it carefully for all the life of the machine . The reference number is shown on the cover.

GENERAL INDEX

- Machine description- applied norms	63DE
- Technical specifications	63EC
- Foreseen use and controindication	63FB
- Moving and transit	63GC
- Installation - minimum requirements	63HC
- Fittings assembling	63IC
- BLADE CHOICE	63ISB
- Machine setting for starting	63LC
.1 - Cooling system	"
.2 - Electrical connection	"
.3 - BAND TENSION (for types with blade only)	"
Starting	63MC
.1 - Cutting setting	"
.2 - Semiautomatic cycle	"
.3 - Electronic speed control working	"
.4 - Locking device / EMERGENCY LOCKING	"
.5 - Head rotation for oblique cutting	"
.6 - Vice and band guides rod	"
.7 - Keyboard	63MZ
.8 - Cut end setting	"
.9 - Display info	"
Adjustments	63NC
.1 - Vice	"
.2 - Band	"
.3 - General working pressure	"
.4 - Cutting speed	"
.5 - Recurrent maintenance	"
.6 - BAND REPLACEMENT	"
- BLADE RUNNING-IN	63NRA
- Machine running-in	63NRF
- Defects identified	
- Machine	
- Band	
- Working schemes	
- Electrical circuits	QE0019B2+QE0020B2
- Hydraulic circuit	QE0029A5
- Machine noise	63PB
- The draining of used / made substances	63RA
- Machine demolition	63SA
- Guarantee norms	
- SPARE-PARTS	
- Norms to request the spare-parts	63OA
- Part drawings	RI0035A4PARTS
- Norms to request the spare-parts	
- Part drawings	
€□□□B	
□□□□ Arial□□□	63LC
.1 - Cooling system	"
.2 - Electrical connection	"

1 - MACHINE DESCRIPTION, E.C. SAFETY NORMS, SUGGESTIONS FOR THE USE

Semiautomatic, electro-hydraulic band sawing machine with hydraulic movements. Suitable for cutting metal profiles and solids from 45 deg. right to 45 deg.left.

It is not suitable to cut wood and assimilated materials (cfr.D.M.89/392, enclosure I, paragraph 2.3).

The automatic working cycle is usually consisting of : locking of the material, feeding and cutting, tool return and unlocking of the material.

The operator must make the cutting adjustments , the displacement of the material and the starting. For making oblique cuts it is also necessary to tilt manually the saw frame from 45 deg. right to 45 deg. left .

The applied safety norms are mentioned in the included compliance declaration.

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 precision of the sawing .

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

The following picture sums up all indications necessary for the machine marking:

- identification plate, with the serial number, is fixed on the front right angle - pos. A ;
- the keyboard of the electronic control has a further register number placed on the back shield - pos. B ;
- each motor - pos. C and D, has its own serial number.

1.1 - APPENDIX FOR E.M.C.

The structure of this machine is complying 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.).

In particular it respects the technical prescriptions of the norms EN 55011 and EN 50082-2, and it is foreseen to be used in industrial enviroments and not in residential ones.

The technical specifications that you will find in the following tables serve to have a general evaluation of the machine and its performances.

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

From the top to the food the tables illustrate :

- 1) cutting capacity (maximum possible sizes)
- 2) foreseen tool type
- 3) Type of motors to be used and tool speed.

INSTRUCTIONS FOR USE - SUGGESTIONS FOR THE OWNER AND THE OPERATOR

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.

The machine can make some automatic work cycles, but at the end of each one the operator is necessary to replace the cut workpiece and to change the cutting conditions. Therefore sometimes the machine must be used with manual cycle and sometimes with automatic cycle (so the operator is not indispensable).

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.

You must :

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 operating this machine.
3. see that all who operate this machine are properly trained and fully aware of all safety practices.
4. 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. insure that the operator has a safe and orderly work area with adequate light and operating room.
8. be certain that your machinery receives responsible and competent maintenance and that your machinery is inspected on a regular basis.
9. never mount tools with different features from those for which the machine is designed for.
10. never use this machine to cut workpieces larger than the stated capacity.
11. keep cutting area clear of tools or other loose objects.
12. never operate machine unless all guards are in place.
13. NEVER WEAR loose clothing, long sleeves, large gloves, jewellery, or any other items that may be caught. Confine long hair.
14. always disconnect power at source when performing maintenance or making adjustments.
15. never insert hands or arms into or near cutting area while machine is running.
16. properly clamp the workpiece in the vice and never hold it with your hands.
17. adequately support stock on both sides of the machine to prevent falling.
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 replace the cutting unit on CUTTING START position. If it is not possible open the vice and move the piece check that the blade or the teeth are not broken, if so replace it.
20. never change the working conditions during the cutting, change them for those precisely indicated only (for example speed changing with inverter ESC).
21. not move the machine while cutting and avoid its instability.
22. wear the personal safety equipment, if required for a safe operation.

ALWAYS OPERATE MACHINE SAFELY, USING COMMON SENSE AND ALERTNESS .

63GC

4 - MOVING AND TRANSIT

After unpacking, take out the lockings placed as regards to the little locking feet. Use the 2 plates already fixed on the sides of the floor stand to hook the end of the tools suitable to sling the machine. The weight is shown on the identification number plate, the weight is also written in the technical data of the manual.

Make sure that lifting tools are proper for the weight and that the moving is correctly made without unbalancing the machine. Lockings for example tools are proper for the weight and that the moving is correctly made without unbalancing the machine. Lifting and cutting Arial and unlocking of the material. The operator must make the cutting adjustments, the displacement of the material

63HC

5 - 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 be good leveled and have a good capacity.

Floor space, distances and sources of energy are indicated in the included drawing RI0041.

Work table must be leveled : by using the screws + nuts put in the little feet holes it is also possible to adhere the machine to the floor if necessary (for ex. when there are the connected features).

The included electrical and pneumatic schemes reproduce the necessary details to arrange the connections. At the top of the feeding cables it is necessary to set up a sectionalizing device particularly if it is equipped with the external VOLTAGE TRANSFORMER .

Floor space, distances and sources of energy are indicated in the included drawing.....

Work table must be leveled by using the screws + nuts put in the little feet holes it is also possible to adhere the machine to the floor

63IC

FITTINGS ASSEMBLING

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

Loading roller table- To install rightly 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 recycle the coolant transported by the workpieces that have to be cut .

63ISB

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 understand 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 length	= 3450
minimum length	= 3430
total height	= 27 (or 1 inch)
thickness	= 0,90

It is possible to use the band with a different thickness by changing the adjustment of the guide pads.

It is also important the material of the band, it is usually used the bi-metal band type in the different endurance quality .

The standard types are named M2, M48, M42, M51.

The endurance of the teeth increases, and also the fragility, when going from the material M2 to M51.

For making a right cut it is also necessary to choose the pitch (t) or the number of the teeth per inch (z). Usually the band must have the toothing as follows :

- close toothing - to cut thin materials, tubular and profiles.

- thin toothing- to cut solid materials or pieces that need a long band (for example . the central part of a profile " U "), or softer materials as aluminium, copper, soft bronze.

By choosing the right one you can avoid a lot of working errors and you can get a good band penetration and the necessary space for the chips.

If you cut some pieces at the same time, you must consider them as only one piece by considering the global size.

The included table supply you the informations for a right choice, the same one can also be updated or changed by the user according to his personal experiences.

Even if there are toothings with constant pitch, the most of the band sawing machines allow the use of band with variable pitch toothing - groups of teeth with different pitch between them- that reduce vibrations and noise, by getting better the finishing and the capacity of removal. This is the reason for which we give you only the data concerning this kind of toothing.. informations for a right choice, the same one can also be updated.

63LC

8 - MACHINE SETTING FOR STARTING

Verify that the machine has not clear damages or faults and check upon the standard equipment that includes the tools, fittings to carry out 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 the starting machine.

Remove the lock flask between saw frame and base, and bring it again inside the floor stand. All these surfaces must be cleaned by a non-filamentous cloth or paper, please check that there is no rust on the metallic parts.

In case of using compressed air jet always wear proper eye protection.

Open the door of the floor stand by loosening the lower hook-pos.1/dr.RI0093-, take out the chip tray by taking off it from the guides and remove the possible dirty that can obstruct the passage of the coolant.

The parts in motion (band guides, trolleys, pivots, bearing support, bearing disc etc.) are already lubricated, the reducer gear holds the exact quantity of oil necessary to the operation.

The hydraulic installation is ready to start.

COOLING SYSTEM

Prepare the cooling by mixing the cutting oil and water (the tank holds about 15 litres) in proportion of 1/10, 1/15 or according to the instructions of the supplier of the product. Lift the punched lid of the tank and pour out some cooling in the tank or directly on the work table-pos.2/dr.RI0093. In this case keep attention that the chip tray and the tank are rightly placed.

ELECTRICAL CONNECTION

Verify that the voltage and the power frequency are compatible with numbers reported in the technical data plate (it is placed on the right side of the floor stand) a difference over 10 % causes some working unevenness more or less manifested. Connect the standard switch to a suitable socket or replace it with that of normal use. The phasing performed by the manufacturer allows to get a rotation of all motors by connecting the wires in the following order L1=R, L2=S, L3=T, anyhow check as follows :(close the carter in the tight way, connected air, pressure < 2 bar).

- a) in case of EMERGENCY, the emergency button is on, turn it off and turn it 1/4 of turning in the marked direction-pos.2/dr.RI0052.
- b) turn "ON" the main switch-pos.-1/dr.RI0052, some lights of the control panel -pos.3/dr.RI0052- flash and the display shows some numbers and / or figures.
- c) Be sure that the pressure gauge of hydraulic installation-pos.1/dr.RI0085-, accessible from behind, shows a pressure of 20 BAR about.
- d) if it does not happen in the first ten seconds, it is necessary to turn off the main switch and to check the connection to the line. (disconnect the feeding plug ,reverse the connection of two wires of line connection , excluding the green/ yellow grounding cable and start again from point a).
- e)Be sure that coolant is sucked in by the tank and it arrives in the cutting area.
- i) stop the working by pushing the main switch-pos.1/dr.RI0052

BAND TENSION

The machine is equipped with an untensioned band and the starting of the motor is impossible if right force of tension has not been opened before .Take out the two forward and rear cover band carter -pos.3/dr.RI0093- to be sure that the blade ("or band") is against the pulley and it is correctly put in the band guides head. If necessary tighten a little the screw of the band stretcher-pos.2/dr.RI0086- to replace the band, then reassemble the two carter by screwing the respective screws. Turn on the main switch-pos.1/dr.RI0052-, wait for some seconds that control panel -pos.3/dr.RI0052- reset its working, then push some times MODE -pos.10/dr.RI0055-until light led that shows the symbol "band " -pos.6/dr.RI0055 is flashing. If the led flashes, it means that the band is not tense : Screw the frontal screw -pos.2/dr.RI0086- by using the proper hexagonal spanner, until the led will be continually 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.

You will find the full control devices list in the following

The sectionalising device of the outer energy is on the left side of the control panel that is the main switch with interlocking attachment , pos.1/dr.RI0052-.

The control panel, drawing RI0052 placed in front of the operator includes :

- 1- The main switch with interlocking attachment with thermo-magnetic overload protection of all installation ,equipped with releasing device for drop of current -pos.1-.
 - 2- Emergency device ; lock any electrical devices when pushing . Wheel the pushbutton 1/4 of turning to restore it-pos.2-.
 - 3- Control panel with display (see paragraph KEYBOARD)-pos.3-.
 - 4- Hydraulic regulator of cutting speed-pos.4-.
- Other devices are installed in other same accessible parts.
- 5- General regulator of installation pressure-pos.5/dr.RI0085-.
 - 6- Manual opening/closing of frontal vice-pos.6/dr.RI0093-.
 - 7- Unlocking/locking of rotation of work table for inclined cuts-pos.1/dr.RI0082-.
 - 8 -Tap / taps of the cooling circuit-pos.3/dr.RI0086-.
 - 9 -Unlocking / locking of the front sliding shaft of the band guide-pos.1/dr.RI0083- .
 - 10-Unlocking/locking of the back sliding band guide -pos.2/dr.RI0083-.
 - 11-Unlocking/locking of the rapid approach feeler -pos.3/dr.RI0083-.
 - 12-Wall socket for synchronism with external gear-pos.12/dr.RI0093-.
 - 13-Tension screw of the band-pos.2/dr.RI0086-.

CUTTING SETTING

The assembled blade allows to cut different sections of material, thanks to the variable pitch of the tothing (alternating little teeth to big teeth) but it is necessary to have the most suitable blade for the workpiece and for making the most of the machine.

Therefore see the included schedules - THE BLADE CHOICE - for a right using.

Put the workpiece (that you have to cut) in the vice by keeping 2/3 mm between the piece and the jaw necessary for a better using of automatic closing and place it rightly according to the cutting line .

Be sure that the handle -pos.1/dr.RI0082- locks the rotation of the work table.

Turn on the main switch -pos.1/dr.RI0052-, turn on the emergency button in case it is off-pos.2/dr.RI0052-, close the vice with button-pos.19/dr.RI0055- CLOSE ARROWS and check if jaws clamp rightly the piece. Position the front - pos.5/dr.RI0083 and the back -pos.6/dr.RI0083 shaft of the blade guide holder so that it does not bump against the piece or the jaws when the saw frame coming down. Wheel the speed regulator-pos.4/dr.RI0052-on 1 and push the button - pos.20/dr.RI0055- START CYCLE .

Whatever the cycle may be stated, the machine makes the following:

Rapid approach (with band in motion), down feed of cutting, band stop, rapid return (it can be excluded) .

The choice of the most suitable cycle F1, F2, F3, coolant off.....) must be made according to the working needs.

Please see the paragraphs KEYBOARD and PROGRAMMING OF THE CUTTING SAW FRAME POSITION .

SEMI-AUTOMATIC CYCLE

Set the bar, so that it goes over the cutting line, and clamp it; select the motor speed , the function, the cooling off and start the working by pushing the button start I -pos.20/dr.RI0055-. Control the cooling flow that reaches the blade and after the rapid feeder, start the cutting by selecting the speed with button -pos.4/dr.RI0052-.

In particular cases (for ex. oblique cuts on big sizes materials or with round surfaces) can be necessary to exclude the electric feeler working-pos.9/dr.RI0083- by locking it up, as shown in the drawing RI0083.

In these conditions the saw frame makes all the stroke with slow speed (cutting slow speed) .

At the cut end , the motor stops and band goes up again and the cycle finishes.

Thanks to the the electronic control, the over described cycle can be changed depending on the working requirements.

ESC = Electronic Speed Control (if equipped with) .

The electronic inverter allows to change continuously the r.p.m. of band motor.By utilizing the two speeds of the motor you can get (MEDIUM LOW SPEED and MEDIUM HIGH SPEED) that give a better use of the band and the material to use .

Switch the motor on and increase or reduce the speed by pushing the button +2) = pos.13/dr.RI0055 or -1) = pos.- 11/dr.RI0055 , until you can see on the display the desired speed in meters per minute.

LOCKING/EMERGENCY LOCKING

At any time it is possible to stop the cycle.

- By pushing the button 0 -pos.21/dr.RI0055- STOP CYCLE the machine stops immediately, but anyway there is the possibility to use the other keys, for example to change the cycle type or band speed; by pushing the emergency key - pos.2/dr.RI0055- the cycle stops immediately and it is not possible to push other keys before having restored it;

By pushing the main switch -pos.1/dr.RI0052- you turn the current of the machine off;

In case of current breaking the sectionalising switch-pos.1/dr.RI0052- goes on 0 position and it is necessary to restore it to make the machine working.

HEAD ROTATION FOR OBLIQUE CUTTING

To make cuts included between 45 deg. right and 45 deg. left it is necessary to unlock the lever -pos.1/dr.RI0082-, by turning manually the saw frame until you read on the scale -pos.2/dr.RI0082-the requested angle and by locking the lever -pos.1/dr.RI0082 again. Automatic lockings make you to position easily on the positions 0 deg. and 45 deg. right/left. Before going from an angle to another control that the swivel parts do not go against the jaws or the upper side of the vice.

Thanks to the special form of the work table-pos.3/dr.RI0082-, the swivel of the saw frame is never difficult even if there is some material in the vice .

POSITIONNING OF THE VICE AND THE BLADE GUIDE SHAFTS

As the self-centring, double vice clamps the workpiece at both sides , there is no burr on the cut piece . Furthermore when the transversally sliding jaws -pos.4 and 5 /dr.RI0082- are positioned as close as possible to the cutting line, the vice clamps even very short pieces.In case the workpiece cannot be clamped at both sides, we advise inserting a piece of material similar to the workpiece between the jaws you do not use.

Thanks to the scale-pos.4/dr.RI0083 fixed on the saw frame , the band guide shafts-pos.5 and 6 /dr.RI0083-, can be properly positioned, so as to prevent the parts in motion from interfering with one another.The graduation is divided into two sections :

UPPER SECTION : Workpieces over 150 mm of height-pos.7/dr.RI0083-: This section shows the position at 0 deg. and 45 deg. left/right in which the band guides should be locked.

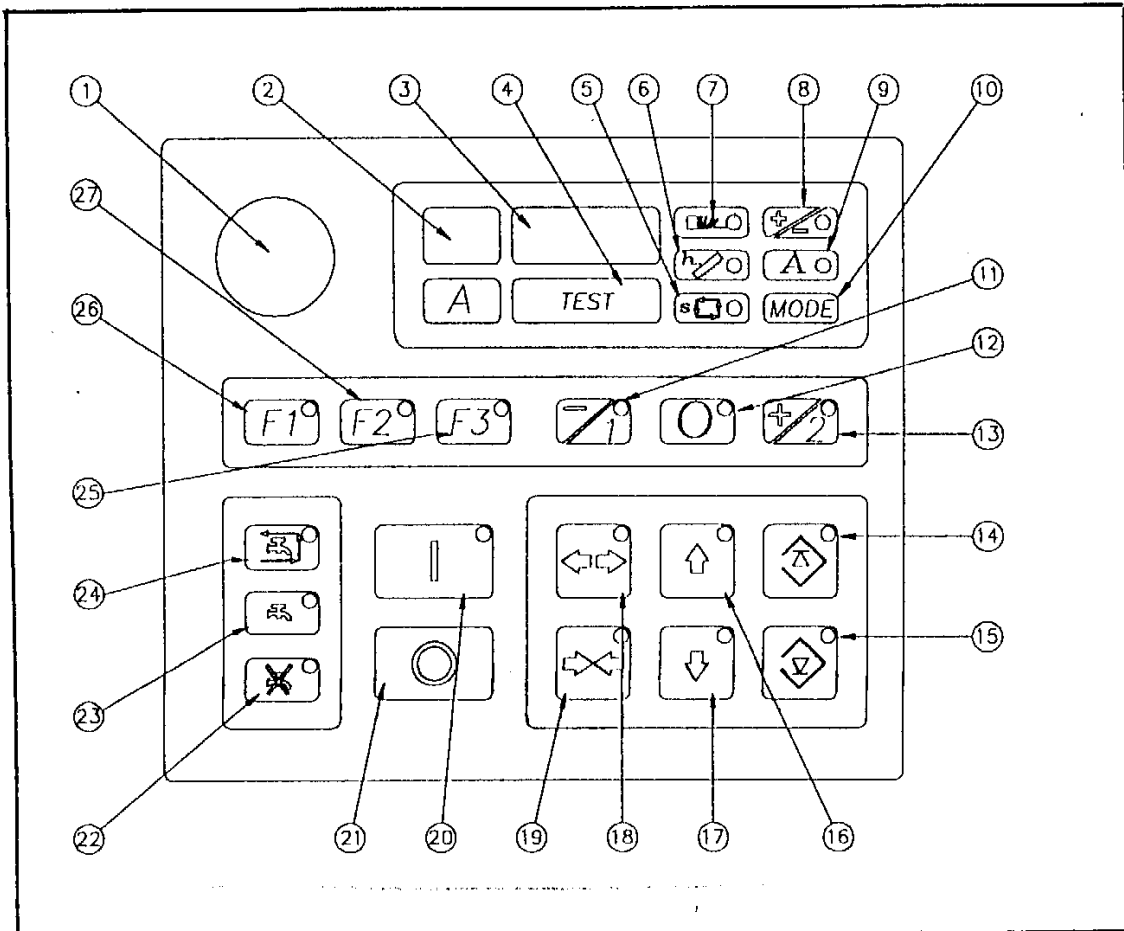
LOWER SECTION : Workpieces under 150 mm of height-pos.8/dr.RI0083- : The band guides can be positioned closer to one another, as shown for cuts at 0 deg. and at 45 deg.

The band life and the cutting perpendicularity depends on the position of the band guides. Therefore , we suggest you should lock the band guides at the advised minimum distance from one another

63MZ (FOR BS 340 SHI-E ONLY)-

RI0055AA.TIF

RI0055



1) KEYBOARD / 1 = Ignition system

When you switch the system on, the keyboard displays the loading of the set up data from the permanent memory "Eeprom" and the release software code. Then, for about 2 seconds, it displays the identification code of the machine.

For going on it is necessary to push the button "Close the vice"- pos. 19 / dr. RIO055 - 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 could 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 in 10 minutes, the electronic control deactivates the motor of the oil unit (if the machine is hydraulic). For starting up the system push again the button "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 on the function keys show the operative condition of the machine . A series of led lights give information regarding the piece counter, hours counter and so on.

When you switch the machine on for the first time or after anomalies, the keyboard display error codes (please refer to the enclosed list of error codes). Push any key to cancel such errors.

2) KEYBOARD/2 = Buttons description and use, see drawing RI0055.

By pushing the buttons FEED-BACK made with polyester support and IP65 protection, you can schedule any machine operation, including the position of cutting unit :
BACKWARD (16) to move the tool back to the rest position. The corresponding led light flashes to show that the tool is moving.

FORWARD (17) to move the tool in the direction of the cut. The corresponding led light flashes to show that the tool is moving.

CUT START SETTING (14) usually the led flashes the position of the cutting unit as regards to the stroke limits (led light flashing = in limit; led light unflashing = out of limit).

In the machines that are not supplied with automatic rapid approach device (special version for particular needs), by pushing this key about 3 seconds you fix the changing over point from the rapid approach speed to the slow approach speed (cut starting) . If the led flashes that means that the selected intervention point is disconnected.

CUT END SETTING (15) as per the cut start setting , usually the led flashes the position of the cutting unit as regards to the stroke limits. In the machines supplied with automatic rapid approach (special version for particular needs) by pushing it about 3 seconds you fix the changing over point from the slow return cutting (cutting end) . The led light flashing indicates that the selected intervention point is disconnected.

OPEN VICE (18) push it to open the vice. The led light flashes to indicate that intervention is operative (ex. when cycle starts with open vice, open vice will open again at the end of the working).

CLOSE VICE (19) push it to close the vice. The same as above, that is, as for the open vice.

START CYCLE (20) to start a semiautomatic cutting cycle. This intervention can be no longer operative (ex. if pedal drive is connected). The led light flashing indicates that machine is working.

CYCLE STOP (21) to stop the semiautomatic cutting cycle at any time and to push the other keys.

FUNCTION 1 (26) determines the return of the tool to the rest position when the tool motor is working if led light is flashing; if led light is unflashing the tool is idle.

FUNCTION 2 (27) determines the movement of the tool only in the programmed field of movement (between setting of the cut start and setting of the cut end) if led light is flashing the cycle is short, if led light is unflashing the cycle is normal.

FUNCTION 3 (25) if led light is flashing, it stops the semiautomatic cutting cycle at the end of the cut without moving the tool back to the rest position.

TOOL SPEED 1 (11) The motor must be off to select the lower speed. If the tool is in motion it determines a decrease of speed, (for machines equipped with inverter = ESC only) Led light flashing indicates that pre-selection has been made.

TOOL SPEED 0 (12) The motor must be off to select the speed 0 (motor out of motion) , for reasons of security when motor starting it is out of use. Led light flashing indicates that pre-selection has been made.

TOOL SPEED 2 (13) when the machine is not working you can pre-select the highest cutting speed 2; or, if the machine is fitted with inverter, during the cutting cycle the cutting speed can be increased by this function). Led light flashing indicates that the pre-selection has been made.

COOLANT ON IN SEMIAUTOMATIC CYCLE (24) the coolant pump is on only in semiautomatic cutting cycle.

COOLANT ON (23) the coolant pump is always on, for example washing spraygun can be used to clean the machine.

COOLANT OFF (22) the coolant pump is always off, for example for dry cutting or in programming machine phase .

CUTTING LIMITS PROGRAMMING

It is not necessary any programming of the limits as the machine makes the automatic rapid approach on the surface of the cut piece . Do not absolutely move the mechanical stopping of the present stroke end.

The following informations concern the special versions only
(without automatic rapid approach to the piece).

In the machines that are not supplied with this feeler device, the tool feed motion is controlled by four programmable values, two of them are already set by the manufacturer to guarantee a right and safety use of the machine:

- Key "4" + "14" MAXIMUM POINT OF RETURN (selected in the factory).
- POINT OF INTERVENTION OF THE SLOW DOWN FEED, according to worker choice:
use keys (16) + (17) to move the cutting unit and the (14) to store the position.
- CUT END POSITION, according to worker choice : use keys (16) + (17) to move the cutting unit and (15) to store the position.
- MINIMUM POINT OF DOWN FEED (selected in the factory) with keys (4)+(15).

It is important that storing of these points follows a logical order (MAXIMUM POINT OF RETURN > POINT OF INTERVENTION OF THE SLOW DOWN FEED > CUT END POSITION > MINIMUM POINT OF DOWN FEED .

You can see the word "BAD" on the display when there are some errors. It is necessary to move the cutting unit to be in the point of DOWN FEED / RETURN; led light flashes when this intervention has been made.

It is possible to make only one extra down feed without changing the point of intervention of the slow down feed / end already selected ; please make as follows :

- a) Led light flashes when you push the key (14)
- b) Led light flashes when you push the key (15)
- c) Start a cycle: the cycle starts slowly from MAXIMUM POINT OF RETURN TO MINIMUM POINT OF DOWN FEED. By PUSHING cycle stop (21) the cycle can be stopped at any time.
To make again another extra down feed the operation must be repeated.

4. DISPLAY = mode function

By the key MODE (10) you can accede to a table showing the machine parameters. During the display of such parameters the led light corresponding to the mode keys is on.

By pushing the key MODE in succession you can read the whole sequence of parameters as follows:

MACHINE CYCLE TIME = led light (5) flashing. Display is in seconds "S" or in minutes "M" or in hours " " "

TOOL LIFE (HOURS OF WORKING OF THE TOOL MOTOR) led light (6) is flashing.

Display as above . For band saw machines this led light flashing indicates that there is no band tension.

NUMBER OF CUT PIECES = Led light (7) is flashing . Progressive display of numbers from 1 to 9999 , after which the points appear by side the numbers that is from 1. to 9.9.9.9.

CUTTING SPEED PREVIOUSLY SET = led light (8) is flashing . In meters/minutes for band ; r.p.m. for circular blades and discs.

MAXIMUM CURRENT LOAD OF THE MOTOR = led light (9) is flashing . Maximum current load in Amp. pointed out in semiautomatic cycle.

Each one of these parameters can be zero-set by the key sequence TEST + MODE (4)+(10) while the corresponding light is on.

The display (2) constantly shows the electric motor absorption in ampere and also displays (3) the informative messages.

5) DISPLAY INFORMATIONS / 2 = Error codes (DIAGNOSTICS)

The machine is equipped with diagnostics data and it allows to find the working anomalies of the machine and to show them to the worker by the error codes as follows :

ER0001 error in the configuration EEPROM

ER0002 error in the data checksum in EEPROM 1

ER0003 error in the data checksum in EEPROM 2

ER0004 error in the data checksum in EEPROM 3

ER0020 emergency entry active

ER0021 active entry of the motor overload protections

ER0022 open carter entry active

ER0023 broken band entry active

ER0024 machine pressure entry active

ER0025 indication of blocked inverter or overrun of threshold value

ER0026 anomalous motor absorption

ER0027 incorrect position of the tool to start cutting cycle

ER0028 vice entry active
ER0029 unblocking entry active
ER0030 bar end entry in automatic cycle
ER0031 carriage not in correct position to start the automatic cycle
ER0032 open feeder vice
ER0033 piece counter selection on 0 for automatic cycle
ER0034 hydraulic unit is switched off
ER9999 overflow in the machine timers (it is necessary to switch the system off and then on).
Remove the causes of the anomaly and push any key to cancel the display code.

63NC

ADJUSTMENTS FOR BS 340 SHIE, BS 340 MA (make it with the machine disconnected) .

Vice - dr.RI0082- Adjustment of the position of each one of the 4 locking jaws-pos.4 and 5 - by the screws-pos.6 and 7- ; for clear reasons of safety the jaws can be only taken away from the machine by sliding them towards the vice centre .

The closing line must be centered on the axle by the vice:

For this operation, please ask to the TECHNICAL SERVICE .

Blade -dr.RI0057- Carbide metal pad adjustment to change the thickness of the band :

You should adjust the carbide metal pads only if you fit a band with a thickness different from 0,90 mm to the machine, or in case of longer use , the band is not good directed anymore by the hard metal tip . Please do as following :

Unscrew the central grub screw -pos.1 - and tighten the two lateral grub screws -pos.2- to widen the space where the band is (or tighten the central screw -pos.3- to reduce the space for the band). Be sure that there is not too much shake.(max.0.02 or 0.03 mm) and tighten again the grub screw-pos.1- you unscrewed before.The carbide metal pads are fixed to their supports by screws and can be replaced separately: Distance the carbide metal pad supports at the 2 halves by unscrewing the fixed screws-pos.4 - , take out the Torx shape fixing screws-pos.5- and mount the new carbide metal pads-pos.6- (type APKA 220408TR H2M). The central square carbide metal -pos.7 - (type SNMA 190616 H2M) can be used on the 4 sides before being replaced.

- perpendicularity between the band and the work table: it is very important because together to their tensionning it guarantees the right cuts .

-dr.RI0057- With the machine on cutting position at 0 deg.and the saw frame up , put a square at 90 deg. on the work table (near the bearing jaws) and into the blade (in a point where the teeth do not restrict the contact).

Turn out the 2 screws-pos.8 - that fix the back carbide metal pad , use the 3 grub screws to correct the noticed error and tighten the 2 screws;

(FOR SHI-E VERSION ONLY)

General working pressure -dr.RI0085- In the hydraulic version the pressure is produced by a modular central station that incorporates the manometer -pos.1 - (by working shows about 20 BAR) the vice valve -pos.3 - , the saw frame valve-pos.2 - , the motor -pos.6-, the pump -pos.4 - , the relief valve -pos.5- , and the duplex valve -pos.8 - .

It is possible to install a proper valve to reduce the closing force of the vice , in the cases where the cut piece can be deformed .

Cutting speed - dr.RI0052- Wheel from 0 to the maximum power indicated to increase the speed of the blade that penetrates the workpiece; to change it , it is necessary to consider the following :

the cutting material, the blade speed, form and sizes of the workpiece and its blocking, the cooling band conditions and so on .

MAINTENANCE

Follow regularly the above mentioned operations to keep at best the technical features, the productive features and the security one anticipated by the manufacturer.

Do it daily or more frequently if you make a demanding work.

Remove the metal chips of the machine by conveying the most little in the chip pan that must be taken away and emptied ; restore the coolant level.

Check upon the band conditions and replace it if necessary.

Control the band cleaning brush, put back it again or replace it if necessary.

Clean the machine every week , lubricate any joint points and the sliding surfaces with oil or grase; be sure that there is some oil in the tank of the hydraulic unit (for SHI-E version only)

by using the proper tap with control level stick -pos.7/dr.RI0085-

Make sure that there is some oil in the box of transmission by gears by ckecking the proper contro level stick-pos.1/dr.RI0084-.

Every month replace the coolant and clean the tank; be sure that any screws and nuts that can be loosened when using are locked.

Insure that stroke end and switches are working and the conditions of the cables, tubes and pneumatic connections are good.

Test all devices that are not usually very used.

REPLACEMENT OF THE BAND

Work in cutting position 0 deg., with the saw frame up and the current off.

Open the front band covers carter-pos.1/dr.RI0086 and the back one -pos.3/dr.RI0093- and remove that one placed in the middle , remove also the back and front sliding protections, loosen the band tensioner by unscrewing the screw - pos.2/dr.RI0086- and remove the blade from the pulley and from the guide slides.

Be sure that there is no chip or dirty on the pulleys by considering the cutting direction-pos.4/dr.RI0086- ; put in the new blade, at first in the slides then on the pulleys. Screw the screw -pos.2/dr.RI0086 and be sure that the back band is in contact to the pulleys. Assemble the protections and the carter again, then tension the band as detailed in the paragraph BAND TENSION.

63 NRA

11.3 - 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.

63NRF

MACHINE RUNNING-IN

The recurrent maintenance that this machine needs is necessary to guarantee the continuous right working in the time and to keep the starting features of the machine. At the beginning of the use you must do some extra operations to allow the all parts of the machine to settle down in the final using conditions.

Please check frequently the working of the machine and do not force it to make too much cuts For a time of 80/100 working hours control the oil level of the drive box by the tap-pos.1/dr.RI0084 - . While locking the motor , the oil must lap the end of the control level stick when the saw frame is completely down.

Then discharge the oil (better if it is warm) by taking the lower tap off -pos.2/dr.RI0084- and drip it completely.

Put the tap again and put into some gas oil to clean it inside . Idle the motor for some seconds, take away the cleaning water and put into the new oil , about 3,5 litres, until the usual level is restored.

The presence of bronze or ferrous particles in the replaced oil is normal. The heating of the mechanical parts (and the oleodynamic parts for semautomatic/ automatic machines) is part of the usual working and anyhow does not exceed the foreseen thermic limits Please see the OIL AND LUBRICANTS TABLE to choose the most suitable one and to compare the different types.

63NDA

12 - DEFECTS LOCALISATION

The solution of most of the inconvenients that could happen during the work can be find by consulting this paragraph.

The first part concerns the machine working and includes a list of the possible defects with relevant controls that have to be made;

The second part concerns the inconvenients that can be found by checking the band and / or the cut pieces.

If your problem is not included in or you need the presence of qualified technicians , please get in touch with the manufacturer or the reseller by keeping this instruction book .

12.1 - MACHINE DEFECT

Inconvenients

A* Electric motor does not work (for the band)

B* Electric motor does not work (for hydraulic central station)

C* Electronic control does not start

D* Hydraulic circuit is not under pressure

E* Noisy hydraulic pump

F* Missing / lacking cooling

Check

3-4-5-9

1-2-3-4-5-9-17

6-7-8-9

10-11-12-13

14-15-16-17

18-19-20-21

Parts list to control

- 1 = Plug is right insert in the socket
- 2 = The main switch is off
- 3 = The motor is damaged or blown
- 4 = Incorrect electric feeding
- 5 = Locked transmission (seizure, oxidation , etc.)
- 6 = The fuse is in the primary transformer circuit
- 7 = The fuse is in the secondary transformer circuit
- 8 = The transformer is blown or breakdown
- 9 = The connection terminals of the feeding wire
- 10=The tank oil level
- 11=Pipes and / or connections loss
- 12=The adjustment valve screw of the maximum pressure is loosened
- 13=The maximum pressure valve is broken
- 14=Hydraulic oil quality (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=Locked hydraulic pump (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=Excessive cutting feed
- 23=The vice is not closed enough , the piece is not right clamped .
- 24=The control LUBRICANT OFF is in action.
- 25= The limit switch placed under the vice isn't in the right position

12.2 LIST OF PROBLEMS- CAUSES- SOLUTIONS OF THE BAND

In case of broken teeth , broken bands or short band life, please laid out the broken band on the floor and check the body or teeth defects; look for them in the following list and read the solution of the cutting problem .

1. PREMATURE AND EXCESSIVE TEETH WEAR AND TEAR

- thrust pressure to short : increase it;
- reduce velocity of flywheel;
- short cooling jet;
- improper cooling emulsion;
- improper band running-in;
- teeth go to the opposite cutting direction: reverse the band.

2. BAND VIBRATION

- increase or reduce flywheel velocity;
- dull vibration : increase band tension;
- too coarse teeth for piece being cut;
- vibration reverberated in the base; reduce cutting pressure;
- vibration can be due to the high frequency ; increase the head lowering ;
- incorrect locking material;
- use a variable pitch or a right teeth.

3. BROKEN TEETH

- too coarse teeth for section being cut;
- incorrect locking material;
- improper cooling;
- inadequate cooling;
- too high cutting pressure; check chip;
- too low flywheel velocity;
- overload groove of cut material

4. TOO COARSE CUTTING SURFACE

- choose a thinner pitch;
- increase flywheel velocity;
- reduce head lowering;
- measure the cooling better;

5. PREMATURE BAND BREAKAGE

- too high band thickness for the diameter of the flywheel;
- band guides too open with high speed;
- increase or reduce speed ;
- check flywheels are not defective;
- teeth too coarse;
- band tension too high : the layed down band curves the sides ;
- head thrust too high: back band is polish or upset;
- thrust bearings are not aligned with flywheels: the layed down band curves and the band back is polish and upset;
- band guides too tight : the layed down band spiralles up as a spring ; more tight , more twist;
- improper cooling fluid.

6 - BENDED CUTS

- increase band tension;
- approach band guides to the cut;
- teeth too thin;
- reduce cutting pressure;

7 - TWISTED CUTTING

- approach band guide to the cut;
- check piece support table - it must be horizontaly adjusted with the piece ;
- check band perpendicularity; if it is out of perpendicularity , operate the band guide;
- teeth too tick;
- fracture or broken teeth;
- increase cutting speed;

8 - BAND NOICE ON THRUST BEARING

- burr or adjust the back;
- check flywheel alignment;
- check thrust bearing wear and tear;
- incorrect welding;

9 - BAND CURVES POSITIVELY

- reduce cutting pressure;
- use bigger teeth to increase penetration;
- approach band guides to the cut;

10- BAND CURVES NEGATIVELY

- the back strains against the upper thrust bearing band guides; check the light on the flywheel rim and on the thrust bearing when immobile cut and when motor in motion;
- check flywheels alignment.

11 - SLOW CUTTING, THIN CHIPS

- increase flywheel velocity;
- increase cutting pressue;
- use bigger teeth;
- use a suitable cooling ;

□63 PB- MODEL BS 340

13 - 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 :

By idling, at the maximum rotation speed with the maximum shown diameter tool assembled :

dBA 63

During the cut: made with steel solid material : dBA 75

If the machine is semiautomatic or automatic the saw frame is moved by the motion control unit. (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 and 86/188 .

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 noise 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) in case of working a long time at highest levels.

13.1 - ADDITIONAL HEALTH AND SAFETY REQUIREMENTS

This type of machine, manually controlled by an operator during all the work phases, 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/s²

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.

63 RA

14 - DRAINING OF USED / PRODUCED SUBSTANCES

Please remember to follow 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);

- working scrap materials or materials not usable anymore (for example ferrous and not ferrous chips, tools like: saw bands and blades and so on);

- substances used for cleaning and maintenance;

- materials used in some periods of machine life only (for example for packing, transit and so on).

- Do not throw the packing away as it might be used in case you should transit the machine or return it to the distributor or to the service staff - when the machine is still under guarantee.

63 SA

15 - 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.

63 OA

17 - 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.

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 (Comparison table marked RI0108):

RI0108									
									
GERÄUCH	GETRIEBE		HYDRAULISCHER KREIS		PNEUM. KREIS	SCHMIERE	KÜHLMITTEL		
UTILIZATION	REDUCTEURS		CIRCUIT HYDRAULIQUE		CIRC. PNEUMATIQ.	LUBRICANT	LIQUIDE REFRIGERATION		
USE	GEAR HEAD		HYDRAULIC PLANT		PNEUMATIC PLANT	GREASE	COOLANT		
USD	ROTISM TESTA		CIRCUIT IDRAULIC		CIRCUIT PNEUMATICO	GRASS	REFRIGERAZIONE LAMA		
	BS 300 BS 350	SING PERFECT IDEAL RECORD	SH SH SH-E AF-E AF-NC	KS KT XT XS SW SWE AF-E AF-NC			SCHMOLZ-WASSER AZOLLA OIL MATER+ OIL	LUBRIFICAZIONE MINERALE MINERAL LUBRICATION NATURAL SYNTHETIC	
	BLASIA 100	BLASIA 220	OSD 15	OSD 46	OSD 15	GR MU 2	DXALIS 250		
	ENERGOL GR-XP 100	ENERGOL GR-XP 220	ENERGOL HLP 15	ENERGOL HPL 46	ENERGOL HLP 15	ENERGREASE L2			
	ALPHA SP100	ALPHA SP220	HISPIN AWS15	HISPIN AWS46	HISPIN AWS15	SPHEERDL APT2	SUPEREDGE 4		
	NL GEAR COMPOUND 100	NL GEAR COMPOUND 220	EP HYDRAULIC OIL 15	EP HYDRAULIC OIL 46	EP HYDRAULIC OIL 15	DURA LIGHT GREASE 2	EP SOLUBLE		
	SPARTAN EP 100	SPARTAN EP 220	MUTO H15	MUTO H46	MUTO H15	BEACON 2	KUTWELL 40		
	GRAN 100	GRAN 220	HYDRAN 15	HYDRAN 46	HYDRAN 15	WARSON EPL 2	PURFISOL PURFISOL LAM		
	OMALA OIL 100	OMALA OIL 220	TELLUS OIL 15	TELLUS OIL 46	TELLUS OIL 15	ALYANIA GREASE R2	DRONIS OIL F		
	CARTER EP 100	CARTER EP 220	AZOLLA ZS 15	AZOLLA ZS 46	AZOLLA ZS 15	NYCTEA 2	LACTUCA EP		
	MEROPA 100	MEROPA 220	RANCO OIL HD 15	RANCO OIL HD 46	RANCO OIL HD 15	MULTIFAC EP 2			
	GEARING EP 100	GEARING EP 220	HYDRAULIC 15	HYDRAULIC 46	HYDRAULIC 15	LUKO 2	VAHSON 80 EP		
	SINTREX EP 100	SINTREX EP 220	SINOLUBE	SINOLUBE	SINOLUBE	BEARING EP 2	SINOL 80 80		
	MELLANA OIL 100	MELLANA OIL 220	HIDRUS OIL 15	HIDRUS OIL 46	HIDRUS OIL 15	ATHESIA GREASE 2	UTENS FLUID F		
ISD - UNI CLASS.	CG100	CG220	HM15	HM32	HM15	XM2			
IMET CODE	621006	621595	620045	620382	620045	620501	622000	620501	620457