PM-304 2+0
PRESS BANK

GENERAL MANUAL
USE AND MAINTENANCE

ORDER : S.N. :

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FOREWORD

IMPORTANT

BEFORE INSTALLING, SETTING UP AND OPERATING THE MACHINE, THE CUSTOMER MUST CAREFULLY READ THIS MANUAL AND CAREFULLY FOLLOW THE INSTRUCTIONS IT CONTAINS IN ORDER TO ENSURE THE MACHINE IS USED SAFELY AND CORRECTLY.
ALL OPERATORS AND/OR MAINTENANCE PERSONNEL MUST KNOW THIS MANUAL TO ENABLE THEM TO WORK SAFELY ON THE MACHINE.

SUMMARY

SUMMARY OF THE FIGURES

SUMMARY OF TABLES

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A. REGULATIONS AND GENERAL WARNING NOTES

A.1 Reading assistance notes

Meanings of notes used in this manual:

ATTENTION

Note of particular interest for the safety of the people running and maintaining the machine.

WARNING

Note of particular interest concerning the safety of the machine.

NOTE

A request for the reader's attention referred to the subsequent paragraph.

A.2 How the manual is organized

This machine was designed, built and tested by expert technicians. The high quality materials used to build the machine make it operationally highly reliable.
For further, more detailed information or in regard to problems, please contact our the following address:

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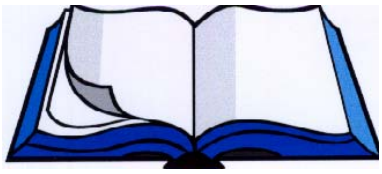

This manual observes the organizational rules and requirements of Directive 98/37/CE, duly amended, being the Directive of the Council of the European Community of June 14, 1989, concerning the reconciliation of the laws of member states regarding machines, also known as the «Machine Directive», and also all the other Directives and Regulations referred to in the said Machine Directive, inspired by criteria which, in addition to illustrating the technical characteristics of the machine and its use, maintenance and troubleshooting methods, also clearly indicate the following:

All the protection measures adopted on the machine, fully integrating design safety planning and construction safety

All protection measures to be adopted to meet those risks that cannot be completely eliminated

All indications for the training of personnel using the machine, while indicating where it is necessary to provide for individual safety protection devices.

The manual is divided up into sections. Each section deals with a specific subject in which every aspect of safety is considered and clearly highlighted in the text.

A.3 Use criteria

HABASIT requests the Customer to fully read this manual on delivery of the machine it accompanies, and always before attempting any action on the machine. This manual is arranged to supply all the instructions, indications and warnings the user may need in order to know the machine, understand its operating principles, and to be adequately informed to ensure safe use.

In addition to the instructions in this manual, we would ask users to observe any specific current laws. This manual must be considered as an essential part of the machine. Its content must be made known to the entrusted maintenance persons and users.
The purpose is to provide all the information required for good, correct use of the device.

The manual must be kept throughout the life of the machine and must be updated in the event of modifications aimed at improving the device's performance.
The manual must be available to qualified personnel.

Consultation of this manual is facilitated by the general index on the first page, which makes it possible to immediately find the subject of interest.
If the subject dealt with is particularly important it is highlighted with references to the type of technical personnel required to intervene.

All updates HABASIT considers necessary to improve the quality of the machine will be communicated by way of sending further specific documentation or a new manual to replace the previous one.
If the machine is sold to another customer, the manual must accompany the machine and the new customer must be notified to HABASIT for any future modifications and updates.

A copy of this manual, delivered with the machine, is meant for the maintenance operators, who shall read and keep it near the machine, and consult it before undertaking any action on the machine.

A.4 Guarantee conditions

A.4.1 Guarantee terms and validity

The manufacturer guarantees the product against any faults either in materials or in workmanship, for 1 (one) year from the date of installation of the product at the Buyer's premises. In this case, the manufacturer shall limit itself to replacing or repairing any part or parts returned to the manufacturer, which was/were found to be faulty.
The manufacturer may, at his own discretion, also replace or repair any part or parts of the product being repaired that is/are felt to be defective.
The manufacturer shall have the sole right to decide if such parts should be repaired or replaced.
The manufacturer shall not be liable in any other case for collateral or incidental damage.
The guarantee does not apply to plant that has been repaired by third parties that have NOT been authorized by the manufacturer.
Spare parts supplied by the manufacturer must be used. Any deviation from this rule will mean the guarantee will not apply.

A.4.2 When the guarantee can be voided

The manufacturer's guarantee for the plant and associated equipment may be annulled as a result of improper intervention or repairs.

The manufacturer's guarantee for the equipment may be annulled as a result of the use of improper materials or materials not supplied by the manufacturer.

This manual's instructions must be observed or the guarantee cover will be lost.

IMPORTANT

HABASIT CANNOT BE HELD RESPONSIBLE FOR ANY DAMAGE CAUSED BY IMPROPER, INCORRECT AND UNREASONABLE USE OF THE MACHINE.

A.5 Visual signs

ATTENTION

Visual signs – indicator notices – are applied to the machine. A knowledge of their meaning helps ensure that safety regulations are observed to prevent accidents and assure good operation. There are also indicator lights for each press showing their status.

All people approaching the machine must have a clear understanding of the symbol, the color of the indicator light and its meaning. Non observance may cause accidents entailing damage to personnel and to the machine.

A.5.1 Signs

The signs affixed to the machine are shown below. Such signs enable staff operating or working on the machine to know about and so prevent the dangers and risks of not observing the principal safety rules.

TABLE 1 - DANGER SIGNS

	**Attention: DANGER OF ELECTRIC SHOCKS** Indicates the personnel involved that, if the described operation is not performed while observing safety regulations, there is a risk of suffering an electric shock.
	**Attention: DANGER OF CRUSHING OF OR INJURIES TO HANDS AND FINGERS** Indicates the presence of materials which can cause damage to limbs.
	**Attention: HIGH TEMPERATURE PARTS** **Indicates the presence of very hot materials which could cause burns.**
	**Please READ THIS MANUAL** **Operators have to read the machine's manual and take note of proper operating procedures to ensure maximum safety.**

TABLE 2 - PRESCRIPTIVE SIGNS

	**General obligation** An obligation to carry out the operation as described and in accordance with safety rules so as to avoid risks and accidents. This is usually accompanied by notices explaining the obligation.
	**Obligation to use protective gloves** Use of protective gloves by the operator, as the risk of hand injuries is implicit.
	**Obligation to use protective shoes** Use of protective shoes by the operator as the risk of slipping, perforation or crushing of feet is implicit.
	**Maximum usable pressure warning** Indication of maximum pressure that can be applied to the pressure cushion.

TABLE 3 - TERMS AND DEFINITIONS

TERM	DEFINITION
PROTECTION DEVICES	Safety measures involving the use of specific technical means called protection devices (guards, safety devices) to protect persons from dangers that cannot be reasonably eliminated or sufficiently reduced in the design of the machine.
GUARD	A part of the machine specifically used to provide protection by the use of a physical barrier. Depending on how it is made, a guard may be called a cowling, cover, screen, door or fence etc. Note 1 - A guard may act: - alone; in which case it is effective only when closed - associated with a locking device with or without locking the guard; in this case protection is assured whatever the position of the guard. Note 2 - «Closed» means, in the case of a fixed guard, «kept in position».
FIXED GUARD	Guard kept in position (i.e. closed), by means of a fastening (screws, bolts etc.) that make its removal/opening impossible without the use of tools.
MOBILE GUARD	Guard that is generally mechanically connected to the frame of the machine or to nearby fixed element (by means for example of hinges or guides), and that can be opened without the use of tools.
INTERLOCKED MOBILE GUARD	Guard associated with an interlock device so that : The machine's dangerous functions «protected» by the guard cannot be carried out unless the guard has been closed – If the guard is opened during the unfolding of the machine's dangerous functions, a stop command is given – The closure of the guard permits execution of the machine's dangerous functions «protected» by the guard but it does not control the start up.

SAFETY DEVICE	Eliminates or reduces the risk, either alone or in association with a guard.
INTERLOCK DEVICE (INTERBLOCK)	An mechanical or electrical or other kind of device whose aim is to prevent elements of the machine from functioning under specified conditions (generally until the guard is closed).
PROTECTION STRUCTURE	A physical obstacle such as a guard or part of the machine, that limits the movement of the body and/or one of its parts. The safety distances have been determined on the basis of the requisites at point 4.1.1 of the standard UNI EN294.
SAFETY DISTANCE	The minimum distance a protective structure must be positioned with respect to a dangerous area. The safety distances have been determined on the basis of the requisites at point 4.1.1 of the standard UNI EN294.
INDIVIDUAL PROTECTION DEVICE	Safety devices such as gloves, shoes, helmet, visor, earplugs etc. aimed at protecting parts of the body.
CONTROL CIRCUIT	A circuit used to control the working of the machine and protect the power circuits.
CONTROL DEVICE	A device inserted into a control circuit and used to control the working of the machine (e.g. position sensors, manual control switches, relays and electromagnetic valves).

A.6 Safety warnings

When using industrial machines and systems, one should be aware that moving mechanical parts (linear or rotary movement), high voltage electrical parts, and any parts at high temperature, etc, can cause serious damage to persons and materials.

In designing and building the machine, the Manufacturer focused special attention on safety in order to supply a SAFE machine and, therefore, the Manufacturer has provided protective and safety devices considered necessary according to the Risk Analysis carried out by expert personnel. People in charge of system safety must make sure that the following essential safety regulations are observed:

	Do not run the machine with the fixed and mobile protective devices dismantled or disabled.
	Do not run the machine with the fixed and mobile protective devices dismantled or disabled. It is forbidden to switch off safety devices installed on the machine or create by-pass systems to limit switches or micro-switches.
	Operations with reduced safety devices must be carried out strictly observing the instructions in the relevant descriptions, and must be performed by specialized technicians aware of the risk, under the direct supervision of the company person responsible for safety. Active protective devices must be restored as soon as possible, limiting this high risk status to the minimum.
OFF 	Cleaning and maintenance operations must be performed with the electrical and pneumatic cut-out devices switched OFF. To this end, the machine is provided with emergency push-buttons which shut down the system. It is good practice to use them as safety lock-outs to avoid accidental starting during inspections or mechanical jobs.
	Clean covers and control panel with soft, dry cloths lightly dampened in detergent; do not use solvents as they could damage the surfaces.
	Do not modify the machine or its parts. Otherwise, the Manufacturer shall not hold itself responsible for damage to persons and materials. Request any modifications/customizing directly from the Manufacturer.

A.7 Remaining risks

The use of the machine during its operation may give risk to additional risks such as the following:

The possibility of crushing occurring during press closing.

The possibility of burns occurring in the pressing area if the temperature is not first checked or if suitably protective gloves are not worn.

The possibility of scalding or burning occurring by hot liquid or steam in the cooling circuit if the cooling cycle is incorrectly stopped without paying attention to the warnings given in this manual.

The possibility of contact between water and live equipment.

The user is responsible for taking care during transportation and movement of the equipment where the use of extraneous equipment (such as forklift trucks etc.) present dangers from bumping into and crushing persons in the area of these operations.

Ensure during equipping and maintenance operations that the stages in the chapters of the manual are scrupulously adhered to and have these operations carried out only by suitably prepared and qualified persons.

A.8 Qualification of personnel

Each task must be assigned to a person trained in the work to be carried out and trained in correct usage as well as fully aware of any remaining risks and dangers in that work. Personnel must not carry out work outside their area of competence, knowledge and responsibility.

TABLE 4 - QUALIFICATIONS

	**FIRST LEVEL MACHINE CONTROL OPERATOR** Indicates non qualified personnel i.e. without specific competencies and able only to carry out simple tasks, including in practice running the machine with the use of the controls on the push-button panel and loading and unloading materials used during production. Furthermore, this operator can work with the machine while the machine's protective devices are enabled, to carry out simple, ordinary jobs for adjusting, starting or re-starting production following enforced down-time.
	**MECHANICAL MAINTENANCE PERSON** A qualified technician able to run the machine under normal conditions, to intervene on mechanical parts to make all adjustments as well as the necessary mechanical maintenance and repair jobs, also with the protective devices disabled.
	**ELECTRICAL MAINTENANCE PERSON** A qualified technician able to run the machine under normal conditions, and also with the protective devices disabled; s/he is entrusted with all electrical jobs involving adjustment, maintenance and repairs. This operator is able to work while the interior of the cabinets and the connector blocks are electrically live.
	QUALIFIED TECHNICIAN A person who is by training, experience, education and knowledge of accident prevention regulations and procedures able to perceive and avoid possible dangers and who is authorized by the plant's safety officer to carry out all necessary mechanical and electrical intervention.
	SPECIALIZED SUPERVISOR An expert, specialized technician provided by the Manufacturer to carry out complex operations in particular situations, installation, first start-up, instruction of the Customer's personnel, as well as overhauls of and modifications to the machine.

A.9 References and standards

A.9.1 Applicable EU Directives

EU Directive N° 98/37 of 23.07.98 known as the "Machines directive".
EU Directive N° 60/204 known as “Low tension directive”
EU Directive N° 89/336 for the convergence of Member State law on electromagnetic compatibility.

Application of the above directives is formalized through the signing of the MANUFACTURER'S DECLARATION OF CONFORMITY drawn up once the inspection test has been carried out at the place of installation.

This machine has been constructed in a country that is part of the European Community and therefore meets the safety requirements of EU directive 98/37/CE, in force from July 23, 1998.
This conformity is certified and the machine bears the CE mark of compliance (see figure).

A.9.2 EU Directives concerning safety in the workplace

EU Directive N° 89/391 concerning the improvement of the safety and health of workers during work, in addition to the following particular directives EU N° 89/654 and N° 89/655.
EU Directives N° 77/576 and N° 79/640 concerning safety signs in the workplace.

A.9.3 EU Directives concerning personal protection

EU Directive N° 89/656 and N° 89/686 concerning the use of personal protection devices.

A.9.4 EU Directives concerning environmental protection

EU Directive N° 75/442 on the disposal of waste.
EU Directive N° 78/319 on the disposal of toxical and harmful waste.

B. TECHNICAL SPECIFICATIONS

B.1 Purpose of the machine

The PM-304 2+0 press bank has been specifically developed for joining of HABASIT power trans-mission and conveyor belts and machine tapes using the Thermofix and Flexproof process.

The Thermofix process includes all the flat belts and other Habasit conveyor belts with right-angled or oblique-angled joints (for width and thickness details see: TECHNICAL CHARACTERISTICS).
The Flexproof process includes most of the Food and Standard conveyor belts from Habasit as well as the thermoplastic transmission belts (for width and thickness see: TECHNICAL CHARACTERISTICS)
Further details about these processes can be obtained at:

For the **Thermofix** process (see technical manual Thermofix).
For the **Flexproof** process (see technical manual Flexproof).

NOTE

By connecting to the company's IT net H/Net it is possible to access current valid process data.

The PM-304 2+0 press bank has been developed exclusively for the applications described herein. No other or inappropriate applications are permitted.

ATTENTION

ANY USE OF THE MACHINE OTHER THAN FOR WHICH IT WAS DESIGNED MAY BE IMPROPER USE AND RESULT IN NOT BEING SAFE FROM THE POINTS OF VIEW OF THE OPERATOR, MAINTENANCE WORKER AND OF THE MACHINE ITSELF. HABASIT SHALL NOT BE HELD LIABLE FOR THE CONSEQUENCES OF ANY BREACHES OF THESE RULES.

IMPORTANT

All assembly, maintenance and repair work, as well as the operation of the equipment, is expected to be carried out be qualified personnel or staff under the supervision of responsible specialists and experts.
In case of doubt or lack of detailed information, always contact the manufacturer (see HOW THE MANUAL IS ORGANIZED).

B.2 Identification data

A plate fitted to the structure of the machine indicates the device's identification data. These data are shown in the following figure.

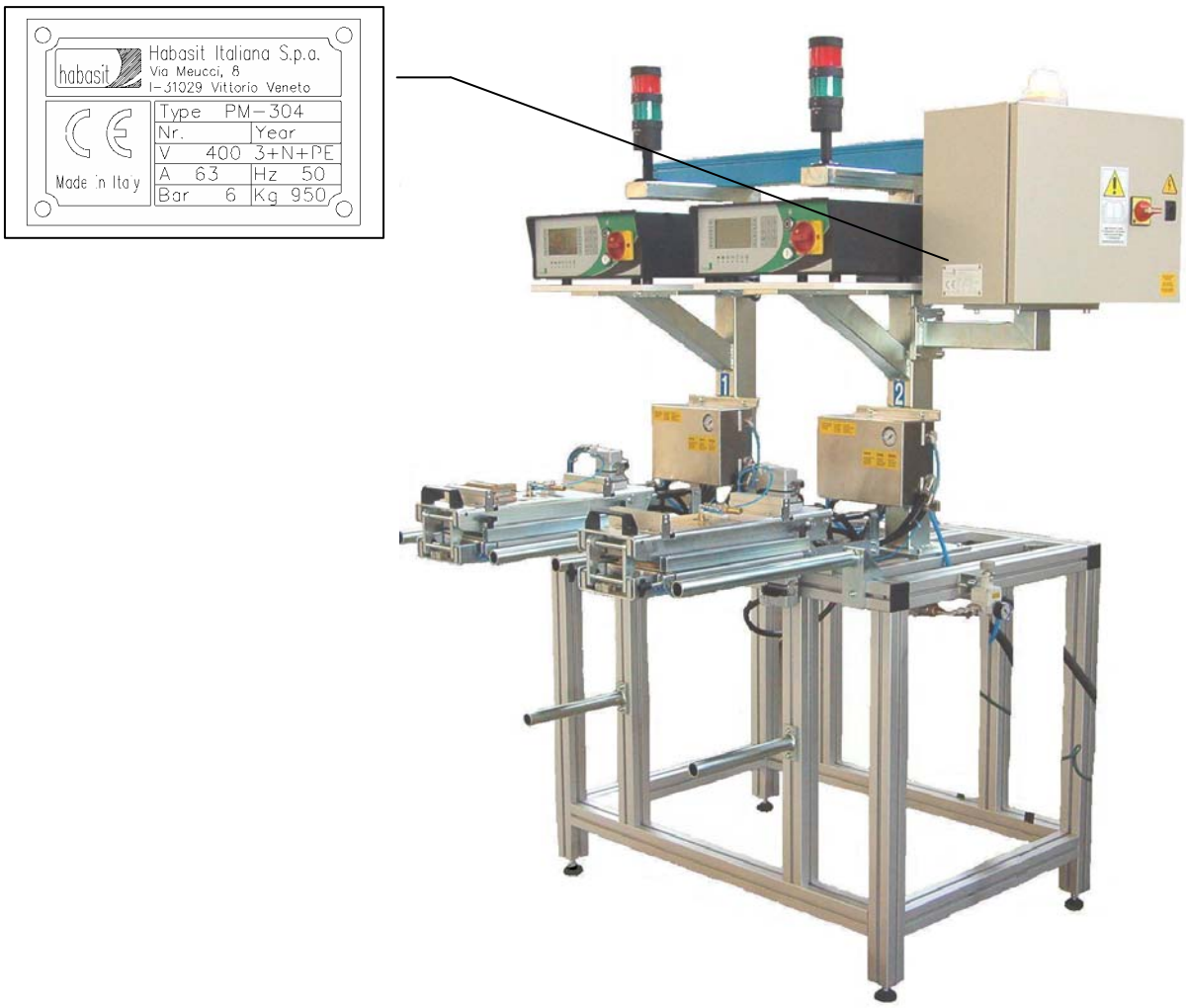

FIGURE 1 - MACHINE IDENTIFICATION PLATE

B.3 Technical characteristics

TABLE 5 - ELECTRICAL CHARACTERISTICS

Output	900 W x 4 = 3600 W max. 12.6 A 7.6 kW total
Supply tension	400 V ~ (3+N+PE)
Frequency	50-60 Hz

TABLE 6 - PNEUMATIC CHARACTERISTICS

Fluid characteristics	Filtered, non-lubricated air
Working pressure	6 bar +/- 0.2 bar
Min. supply diameter	Quick coupler of ¼”

TABLE 7 - WATER CHARACTERISTICS

Fluid characteristics	Demineralized water
Capacity	1 m^3/h
Working temperature	From 10 °C to 35 °C
Min. supply diameter	Quick coupler of ¼”

TABLE 8 - DIMENSIONS AND ENVIRONMENTAL CHARACTERISTICS

Dimensions(Length x Width x Height) (only press bank without chiller)	1500 x 1400 x 2200 mm *60 x 56 x 88 inch*
Total Weight	approx. 250 kg / *550 lbs*
Noise level	<70 db
Working temperature	Between 15 °C – 38 °C
Humidity tolerance	Between 45 – 70%

TABLE 9 - CHARACTERISTICS OF WORKABLE ELEMENTS

Max width of belt	300 mm / *12 in.*
Max thickness of belt	10 mm / *0.4 in.*
Minimum length of belt	640 mm / *25.2 in.*
Heating plate width	140 mm / *5.6 in.*
Maximum presser pressure	3 bar / *43.5 psi*
Max. working temperature	199 °C / *390 °F*
Temperature interval	+ 2°/- 4 °C *+ 3.6° / - 7.2 °F*
Maximum heating plate temperature deviation from nominal value	+/- 2 °C / *3.6 °F*
Mean heating time at 180 °C	7 min
Cooling time from 180 °C to 80 °C (with water at room temperature)	2 min

B.4 Optional accessories

The following are indications for the optional accessories.

TABLE 10 - OPTIONAL ACCESSORIES

Description	Code
Pair of gloves	N-29090
Thermometer	N-28714 or N-28715
Silicone paper, matt	N-28638
Silicone paper, structured	N-28637
Various embossing media, ask our specialists	
Molleton	N-28665

B.5 Ordering of accessories and spare parts

IMPORTANT

To order accessories or spare parts, please do the following:

Quote the name of the machine.
Quote the position of the part.
Quote the description of the part.
Quote the technical code.

When making your request, briefly illustrate the causes of failure of the part being ordered, and provide all information which may be useful for understanding the malfunction. This will make it possible to pinpoint any shortcomings or incorrect procedures which may have caused the damage.

When ordering spare parts, we recommend using the fax and not just placing your order by phone.

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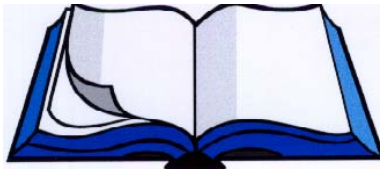


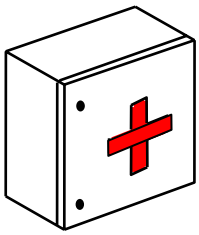
The parts marked P and N are available at the headquarters of Habasit Reinach, Switzerland.

C. INSTALLATION

C.1 Preparation of working area

ATTENTION

The press bank must be placed on a floor or support of suitable size that is able to take the weight and bulk of the equipment.
The machinery must be placed in a room with sufficient lighting, avoiding dazzling and stroboscopic effects. Personnel entrusted to control the machine must be able to work under normal light conditions (usually provided by neon lights fitted on the ceiling). If the lighting level is insufficient, the Customer must provide an additional lighting system since the machinery is not supplied with its own lighting system for the operational zone.
The work area must be well ventilated and/or have an air cycling and emission system compliant with the law of the country of installation, such as to ensure the operator is working under the proper working conditions.
The free space around the machine must be sufficient for work and maintenance operations and permit access all workstations taking account of the size of the pieces to be worked on.
The Customer must provide all the sources of energy required for electrical power and compressed air as indicated in TECHNICAL CHARACTERISTICS.
Ensure there is sufficient operational space around the press.
Make sure that there is a properly stocked first aid box on site nearby.



ATTENTION

The main switch of the electrical panel must be in its «OFF» position when the machine is being connected up.

C.2 Packing and handling

C.2.1 Shipping and delivery

The movement of the packaging and machinery should be carried out by authorized operators.

Suitable equipment must be used to move the machine, with adequate strength to deal with the weight and bulk of the machine.

When unpacking, check that no small parts remain in the case, and carefully check the general conditions.

Always use hooking points indicated in figure 2 when hoisting the press bank and take special care that the weight is properly balanced.

Do not in any case lift the press bank in the area indicated in figure 3. The water connections of the cooling system may be damaged.

Verify that all parts delivered have not been damaged during transport.

IMPORTANT

REPORT ANY DAMAGE NOTED ON THE MACHINE AT DELIVERY TO THE CARRIER AND SUPPLIER.

Packing materials (wood, nails, plastic, barrier bags, etc.) can be sources of danger and should be placed in collection points, especially if polluted or non-biodegradable.
The user must observe the waste disposal legislation in the country of installation when disposing of the packaging.

ATTENTION

ALL HANDLING OPERATIONS OF THE MACHINE MUST BE PERFORMED SLOWLY WITHOUT ANY SUDDEN MOVEMENTS, TO AVOID TO DAMAGE PERSONS AND MATERIALS.

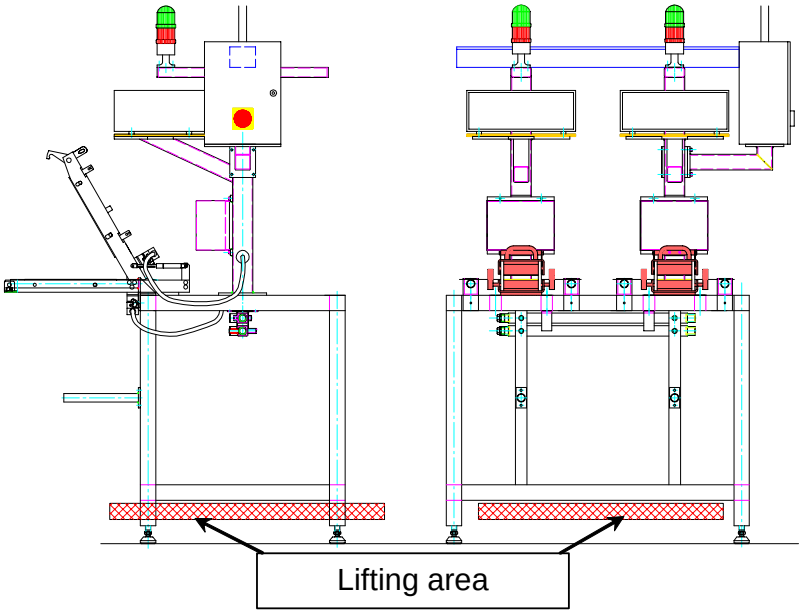


FIGURE 2 - HOISTING POINTS

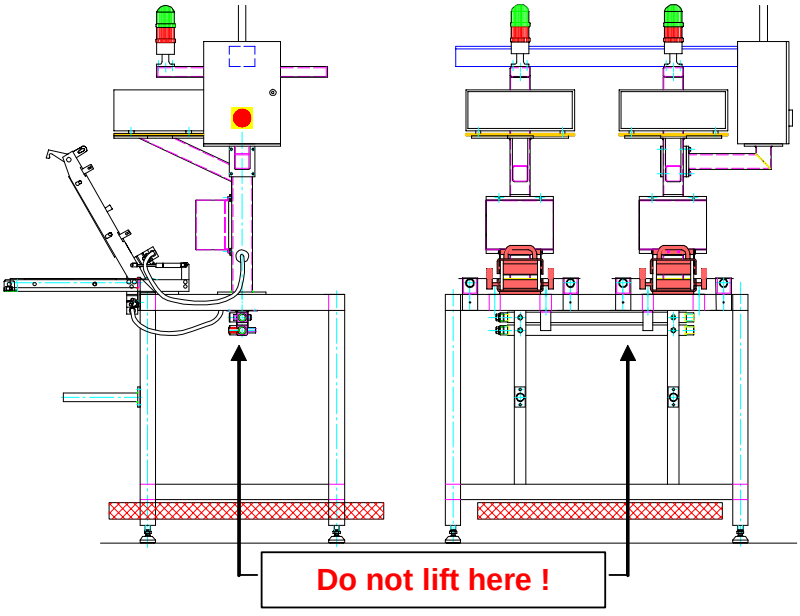


FIGURE 3 - AREA WHERE NOT TO HOIST

C.2.2 Transport and handling

To make transportation of the press bank easier it can be dismantled as indicated:

If connected, disconnect the various electrical, water and air connections.

Disconnect the chiller and empty the cooling water tank.

Always use hooking points indicated in figure 2 when hoisting the press bank and take special care that the weight is properly balanced. *(s.o.)*

Do not in any case lift the press bank in the area indicated in figure 3. The water connections of the cooling system may be damaged. *(s.o.)*

Use suitable handling and transport equipment capable of dealing with the object's weight, while taking care during the transportation itself.

Verify that all parts have not been damaged during transport.

Reconnect the chiller and fill the cooling tank with water.

Ensure that all connections are well sealed and there are no leaks.

Reconnect the power while taking special care when handling electrical power sources close to the water used in the cooling system.

ATTENTION

ALL OPERATIONS MUST BE PERFORMED BY PROPERLY TRAINED AND EXPERT PERSONNEL.

ATTENTION

ALL HANDLING OPERATIONS OF THE MACHINE MUST BE PERFORMED SLOWLY WITHOUT ANY SUDDEN MOVEMENTS, TO AVOID TO DAMAGE PERSONS AND MATERIALS.

C.3 Assembling and installation

Preliminary check
Carry out a visual check on the device's appearance and on any accompanying equipment to see if there are signs of damage or breakage that may have occurred in transit. If such damage and/or failures are noted, contact HABASIT immediately. We advise you to also produce photographic evidence of the damage.

C.3.1 Positioning

IMPORTANT

This operation requires the involvement of a QUALIFIED TECHNICIAN able to carry out and check correct positioning in observance of current safety regulations:

Make sure there is sufficient operational space for working on the press bank.

Adjust the four feet of the base unit to lever the press bank perfecty.

ATTENTION

THE BANK'S CENTRE OF GRAVITY IS SHIFTED TOWARDS THE PRESS OPERATIION SIDE. FOR SAFE INSTALLATION FASTEN THE BASE FRAME TO THE FLOOR.

- Position the PMR-06 regulating units in their brackets above the corresponding presses.

- Connect the cables to the regulating units, taking care they are properly inserted. Cables and PMR-06 are marked with signs to make connection easier.

- Position the chiller (if present) so that it is stable.

- Connect the chiller to the water tank - see Figure 4.

- Check visually that the whole machine is free of any rags, work tools or other objects.

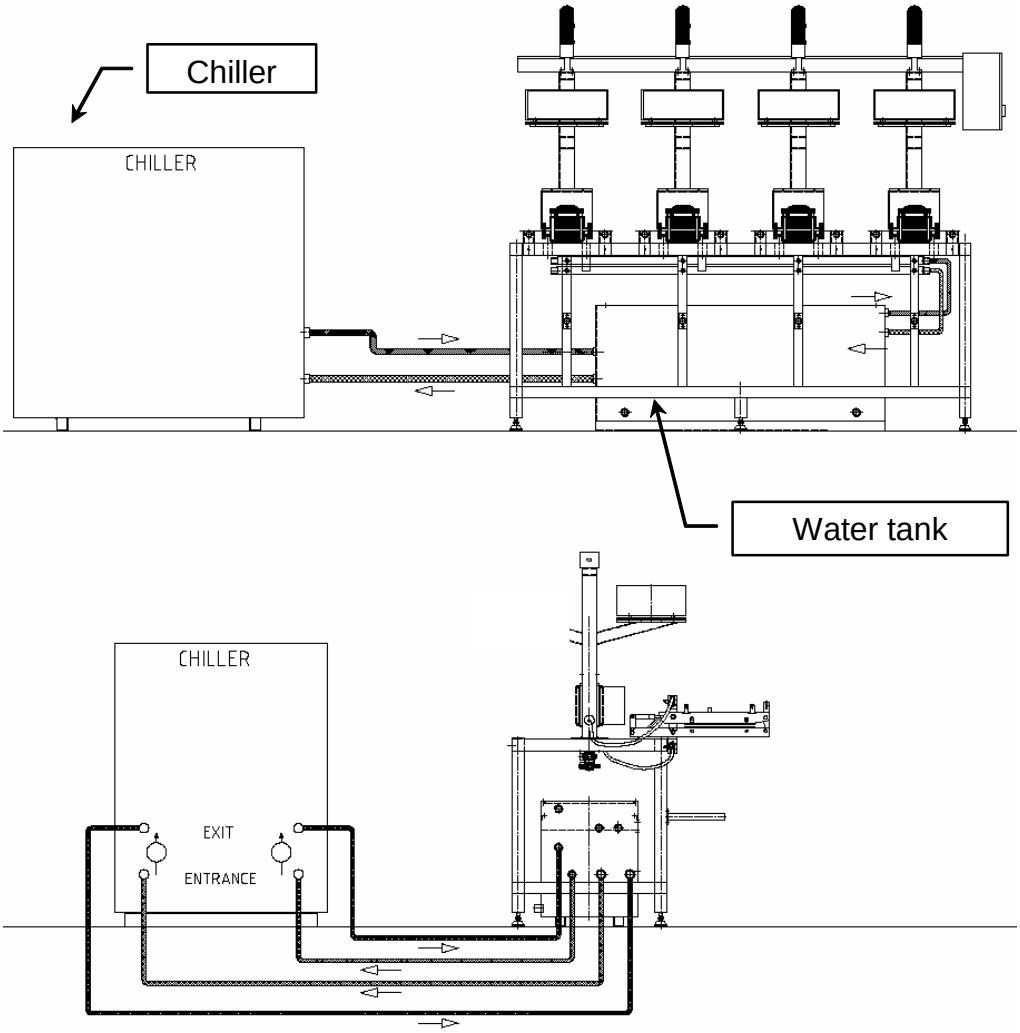


FIGURE 4 - CHILLER AND WATER TANK

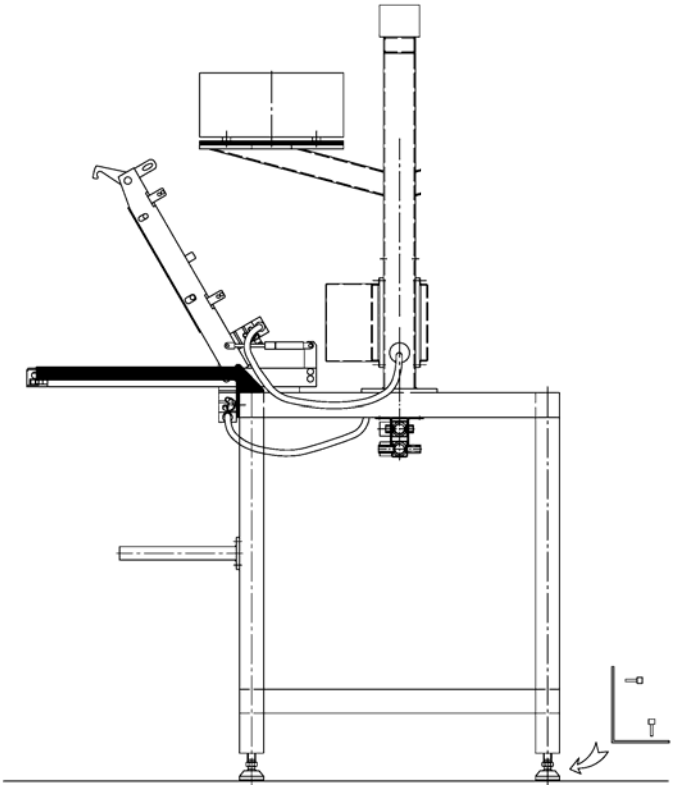


FIGURE 5 - FIXING OF BASE FRAME (1)

FIGURE 6 - FIXING OF BASE FRAME (2)

C.3.2 Connection of air and water supplies

IMPORTANT

This operation requires the involvement of a QUALIFIED TECHNICIAN able to carry out and check correct connection in observance of current safety regulations: *(analog C.3.1)*

Ensure that the whole system is not supplied by electrical, air and water sources.

Ensure all the plant providing the equipment corresponds with its own specifications.

Connect the pneumatic source as shown in Figure 8.

Connect chiller and water tank according to Figure 4. Fill the water tank with water.

If no chiller and water tank (optionals) are used, connect the water source corresponding to Figure 7.

Ensure the water connections are well sealed and that any leaks that could occur do not come into contact with electrical parts.

C.3.3 Electrical connection

IMPORTANT

This operation requires the involvement of a QUALIFIED TECHNICIAN able to carry out and check correct connection in observance of current safety regulations: *(s. oben - analog C.3.1)*

Ensure that the whole system is not supplied by electrical, air and water sources.

Ensure all the plant providing the equipment corresponds with its own specifications.

Connect electrical power to the press bank as shown in Figure 8. The control panel is left to be assembled according the needs (height, arrangement) of the user.

For the connection of the chiller see separate instruction.

Ensure the water connections are well sealed and that any leaks that could occur do not come into contact with electrical parts.

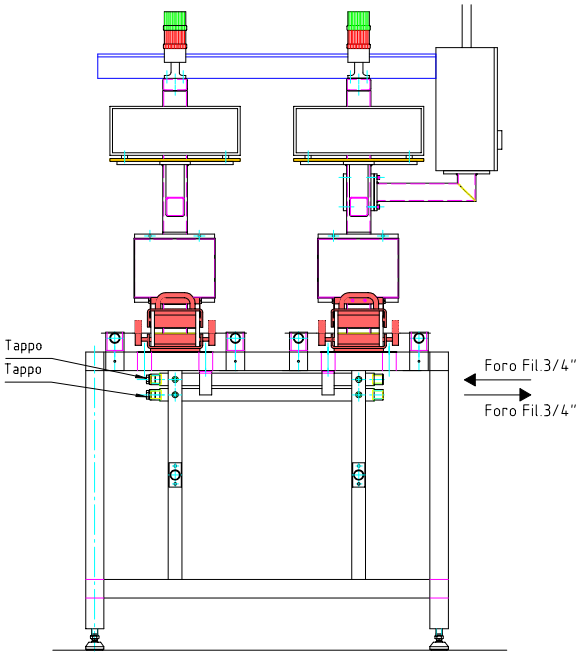


FIGURE 7 - WATER CONNECTIONS WITHOUT USE OF CHILLER AND WATER TANK

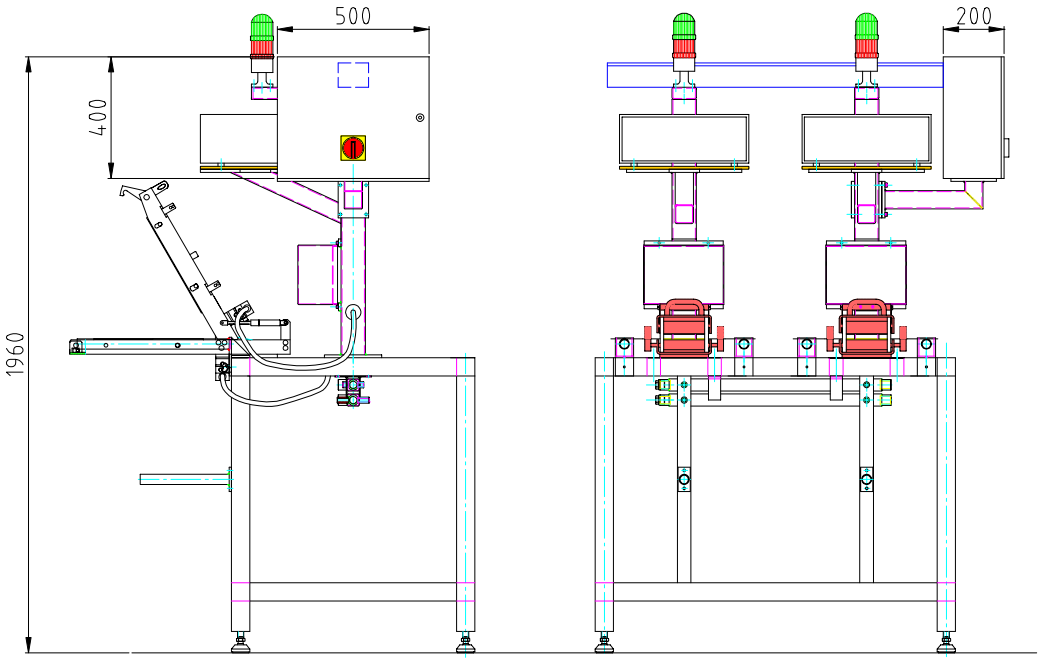


FIGURE 8 - PNEUMATIC AND ELECTRICAL CONNECTIONS

C.4 Disassembling of the machine

Machine dismantling operations must be performed by:

Technicians of HABASIT Assistance Service.
Technicians authorized by HABASIT, with experience of: Machine assembly/disassembly. Assembly/disassembly of the electrical, pneumatic and hydraulic plant, consulting the corresponding diagrams.

ATTENTION

BEFORE CARRYING OUT ANY KIND OF WORK ON THE MACHINE IT IS ESSENTIAL TO ENSURE THAT THE SYSTEMS (ELECTRICAL, PNEUMATIC AND WATER) ARE DISCONNECTED FROM ENERGY SUPPLIES, THAT PNEUMATIC AND WATER IS PROPERLY DEPRESSURISED AND THAT THERE IS NO REMAINING POTENTIAL ENERGY IN THE MOVING PARTS.

ATTENTION

Follow the following disconnection procedure:

Disconnect the electrical circuit.
Disconnect the water circuit.
Disconnect the air circuit.
Carry out mechanical disassembly.

If the machine has to be stored for a certain time, prepare it as indicated in the next section, but if it has to be handled immediately, refer to the appropriate section.

C.5 Storage

IMPORTANT

The machine must be stored in a dry room free from seepage of liquids.

NOTE

Never, on any account, store the machine out of doors! As a general rule, observe the following environmental conditions.

TABLE 11 - STORAGE CONDITIONS

	Environmental conditions for storage
Min/Max ambient temperature of storage	In the range of +5 °C to +40 °C
Relative humidity of place of storage	In the range of 50% to 70%

If the machine, its accessories and spares have to remain in storage for a prolonged period, they must be protected from dust and damp.

We recommend the following:

Clean the machine in general.
Apply PROTECTIVE SILICONE OIL to **un**-painted or **un**-treated parts.
Cover the machine with a sheet to protect it from dust.
Before being oiled or greased for good preservation, some parts can, if necessary, be cleaned with a specific, rustproofing detergent.

C.6 Disposal

IMPORTANT

The press bank PM-304 is built with different types of material. When they have reached the end of their useful life, such materials must be disposed of at specialized centers, according to the prescriptions of the laws in force in the country of destination.

ATTENTION

The materials and substances making up the machine MUST be eliminated according to the Laws/Regulations on disposal of individual waste in force in the country where the machine is installed.

IN ANY EVENT, NO COMPONENT OF THE MACHINE MUST BE LEFT IN THE ENVIRONMENT.

CONTACT AN AUTHORIZED COMPANY TO CARRY OUT THIS TYPE OF OPERATION.

D. OPERATION

D.1 General warnings

The operator and/or the maintenance person has the following responsibilities:

To create on and around the machine the necessary conditions so that the installed protective devices are operational and efficient, as their purpose is to protect the personnel.
To observe the safety regulations described in the use and maintenance manual.

IMPORTANT

THE INFORMATION DEVICES (SIGNS) AND SAFETY NOTICES MUST BE KEPT CLEAN AND LEGIBLE.

ATTENTION

DO NOT IN ANY WAY ALTER THE SAFETY SYSTEM.

ATTENTION

IT IS ABSOLUTELY FORBIDDEN TO REMOVE THE PROTECTIVE DEVICES INSTALLED.

ATTENTION

CARRYING OUT CLEANING AND MAINTENANCE JOBS WHILE THE SYSTEMS ARE LIVE OR UNDER PRESSURE IS ABSOLUTELY FORBIDDEN.

ATTENTION

DO NOT REMOVE THE GUARDS WHICH REQUIRE TOOLS FOR THEIR REMOVAL.

D.2 Guards installed

IMPORTANT

The manufacturer does not provide additional protection devices as the machine is not dangerous for any operator observing the normal caution that should be applied during ordinary use.

The hot-pressing device has a sheet steel guard with holes to prevent the operator coming into contact with hot parts.

Take into account the REMAINING RISKS as described in this manual.

ATTENTION

READ THE ACCIDENT PREVENTION SIGNS WITH CARE, DO NOT COVER THEM FOR ANY REASON AND REPLACE THEM IMMEDIATELY IF THEY GET DAMAGED.

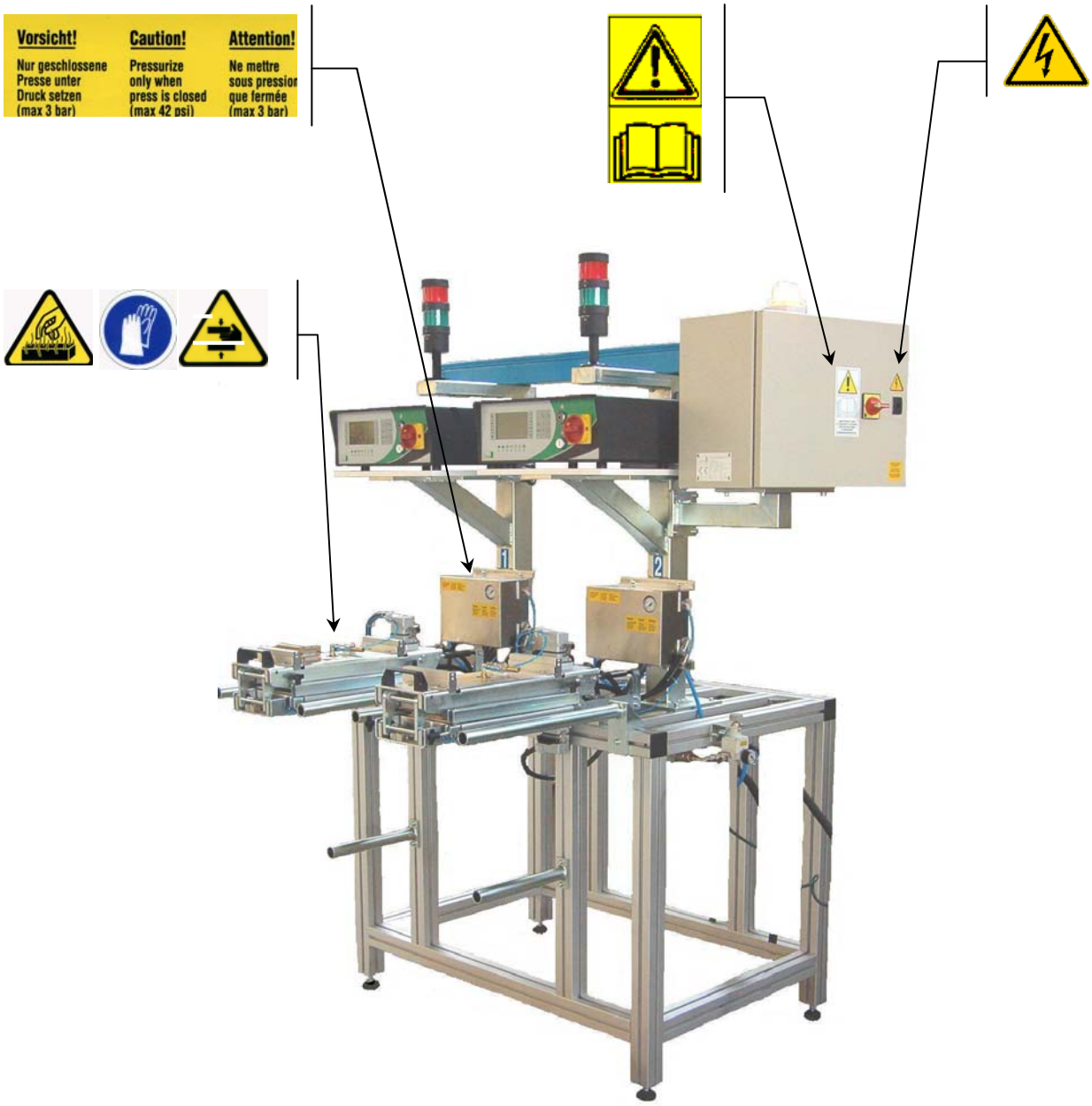


FIGURE 9 - POSITION OF SIGNS

D.3 Identification of press bank parts

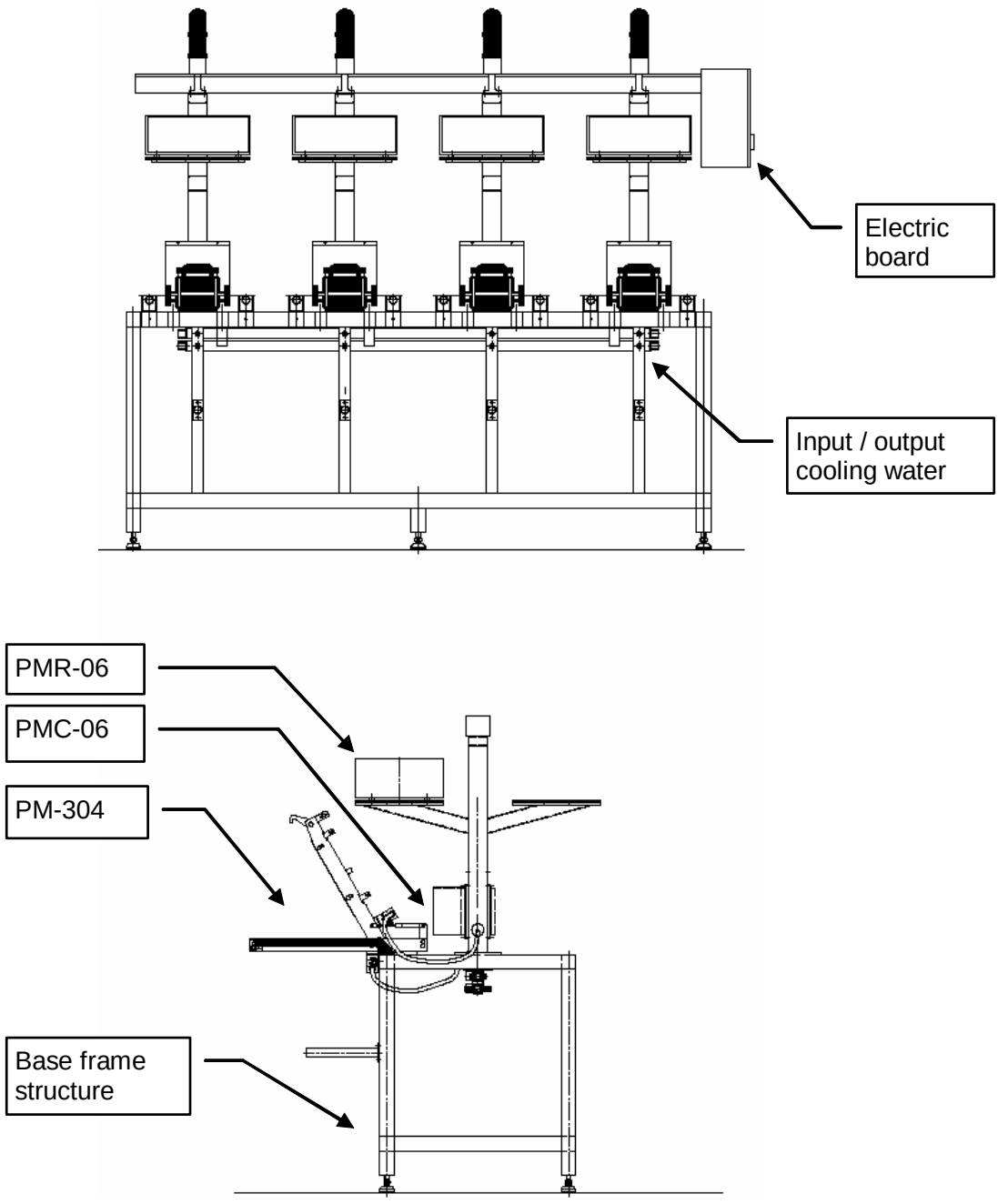


FIGURE 10 - GENERAL VIEW OF THE PRESS BANK

D.3.1 Main elements of the press bank

TABLE 12 - MAIN ELEMENTS OF THE PRESS BANK

Part description	Code
Press bank	ID001972
Hot-pressing device PM-304	0231
Regulating unit PMR-06 1 x 230 V	691023
Cooling unit PMC-06	691060
Water tank (8-10 presses) – optional	042A2000
Chiller – optional	IN06286

D.3.2 Equipment provided

The machine comprises the following parts:

- Base unit
  The base unit is made up of robust frame work
- Hot-pressing devices PM-304
  The PM-304 is a robust, water-cooled hot-pressing device for Thermofix, Flexproof or Step-Flex joining of Habasit belts and tapes up to a width of 300 mm and a thickness of 10 mm. Uniform pressure on the belt is created with a pneumatic air bellows. Pressing temperature is controlled individually on top and bottom heating plates with an electronic temperature regulator; maximum temperature is 199°C / 390°F.
- Regulating units PMR-06
  The regulating unit controls the temperature rising and the cooling unit PMC-06.
- Cooling units PMC-06
  The cooling unit PMC-06 guides the water circulation in the cooling system and subsequently empties the circuit as well as inflating and deflating the pressure cushion (upper and lower).

D.4 Press operation

D.4.1 Initial start-up

To start up at the beginning of the shift, please proceed as follows:

- Make sure there are no cloths or tools etc. on the machine.

- Ensure the pneumatic system's connections are correct and supplied.

- If there is a chiller/water tank, check that the all valves between the chiller and connection tubes are open to permit the normal circulation of fluid.

- If directly connected to another water source, make sure that the cut-off valves are open to permit the normal flow of fluid.

- Use the electrical panel and turn the main switch to “ON”. The white light will then light up to show that the circuit is voltage supplied.

- If the PMR-06 regulators are off, start them up by turning the selector to “ON”. For any other use of the PMR-06, see the specific manual.

D.4.2 Load job program

The joining data can be entered in two ways:

Manually from the screen page “joining cycle” using the function keys and number keyboard, activating the individual fields and entering the data.

Or by recalling a job program from the archive.

NOTE

For further information please refer to the operating instructions of PMR-06 regulting unit.

D.4.3 Working cycle

Assuming that the machine is switched on and correctly set up with PMR-06 regulating unit loaded the right job program proceed as follows:

Open the hot-pressing device.

Check the working procedures for the belt/tape, check technical guidelines of the joining method and the individual Joining Data Sheet of the product.

Position the belt as required on the heat equilazing plate and clamp it, making sure it is flat.

Close the hot-pressing device, taking care that the mechanical restraint closes the press correctly.
This is necessary because there is a pneumatic stop switch on the press that permits the start up of the pressure airbag filling and the heating cycle only when the press is closed.

This arrangement is needed to prevent heating up with the press still open. This would burn the electrical resistors.

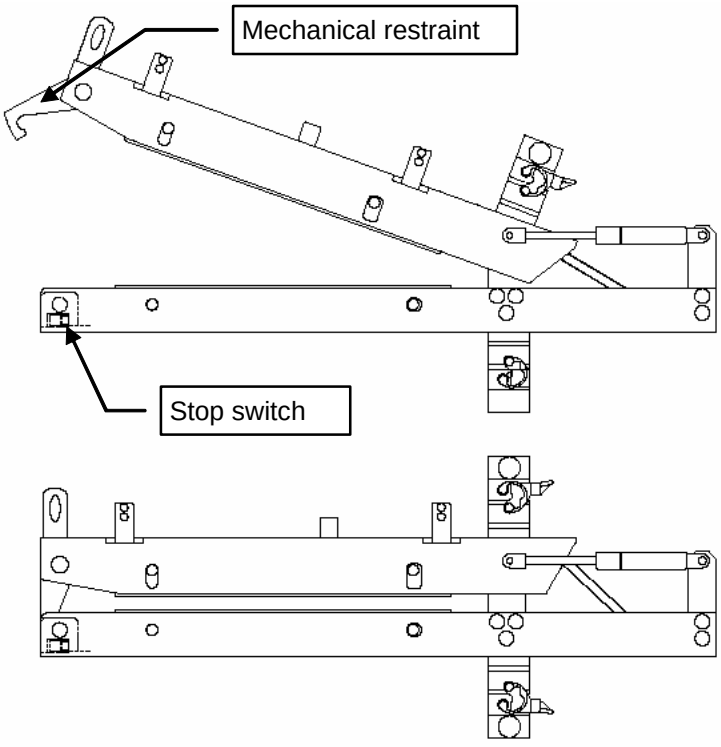


FIGURE 11 - OPENING – CLOSING OF THE PRESS

Push the “Start cycle” button on the regulating unit PMR-06 to start the joining cycle. For further information please refer to the operating instructions of PMR-06 regulting unit.

After the joining and subsequent cooling, open hot-pressing device, carefully take out the belt and allow it to cool at room temperature.

This operation ends an individual working cycle

ATTENTION

When taking out the belt, the press's parts are hot. Use suitable protective GLOVES.

ATTENTION

The heated water can produce steam at 180° at a pressure of about 10 bar.

D.4.4 Work end

When the working cycle has ended, first turn the main switch to “OFF”.

NOTE

Make sure there are no presses still cooling down. Do not interrupt the cycle when there is fluid in the cooling circuit.

NOTE

If the cooling cycle is stopped before the end the circuit, it will not discharge all the water of the system.

This may jeopardize the next joining cycle with resulting defective joints.

D.4.5 Irregular stopping of the joining cycle

NOTE

If the cooling cycle is stopped before the end the circuit, it will not discharge all the water of the system.

This may jeopardize the next joining cycle with resulting defective joints.

In this case it is necessary to act as follows:

Turn the switch on the PMR-06 regulating unit to “ON”.

Push the “START” button to start the joining cycle.

As soon as you have pushed the “START” button press the “STOP JOINING CYCLE” button. This starts the cooling procedure that finally expels the water from the cooling circuit.

Refer to the operating instructions of regulating unit PMR-06 for further details.

D.4.6 Indicator lights

There are indicator lights for each press showing their status.

These lights are green and red and indicate the following:

GREEN continiously	PMR-06/PMC-06/PM-304 in standard working mode
RED continiously	PMR-06/PMC-06/PM-304 in alarm mode; a serious condition stopped the joining cycle
RED and GREEN flashing together	PMR-06/PMC-06/PM-304 in warning mode; there is a problem present but the joining cycle is not stopped

D.4.7 Technical assistance

Our experts will be available for you to consult on the use of the machine. If you have any technical queries regarding the operation and the status of the joining device, contact the manufacturer (see address in How the manual is organized)

D.5 Troubleshooting

ATTENTION

Maintenance, repairs and replacement operations for electrical components must be carried out by an ELECTRICAL MAINTENANCE TECHNICIAN or a QUALIFIED TECHNICIAN able to perform the tasks in accordance with safety regulations.

TABLE 13 - TROUBLESHOOTING

Faults	Solutions
No air	Check for air in the supply line.
No current	Check that the main switch is in "ON" position.
Fault in temperature rise (Probable presence of liquid in the cooling circuit)	- Turn the switch on the PMR-06 regulating unit to “ON”. - Push the “START” button to start the joining cycle. - As soon as you have pushed the “START” button press the “STOP JOINING CYCLE” button. This starts the cooling procedure that finally expels the water from the cooling circuit. - Refer to the operating instructions of regulating unit PMR-06 for further details. **ATTENTION -** When expelling water with compressed air, make sure no water comes into contact with any of the electrical equipment.
Temperature deviation of a heating plate of more than 2 °C with respect to the nominal value	Exchange the two connectors in the rear part of the regulating unit and check whether the regulator always indicates the same anomalous value. In this case the fault can clearly be traced to the regulator in question. If the defect should pass to the other regulator, the fault can be attributed to the corresponding heating plate or the thermocouple signal wire. In any case take a temperature check of the heating plates if there is a discrepancy (see ROUTINE AND SCHEDULED MAINTENANCE). In case of faults of this or any other kind, the manufacturer should be informed. The heating plates and the defective regulators can be repaired or replaced by the manufacturer.
Electrical faults	If a fault develops in the control/regulatory electronic unit, in the first place the automatic switches in the regulating unit should be checked. The automatic switches control output and are accessible from the outside. Supplementary automatic switches to control command current are located inside the regulating unit.

E. ORDINARY MAINTENANCE

E.1 General

ATTENTION

IT IS ESSENTIAL TO CARRY OUT PREVENTIVE MAINTENANCE OF THE MACHINE TO PROTECT THE RELIABILITY OVER TIME OF ITS COMPONENTS AND PARTICULARLY ITS MOVING PARTS. HARMFUL AGENTS SUCH AS DUST, ENCRUSTATION AND LIQUID SEDIMENTS CAN DAMAGE THE DEVICE'S COMPONENTS.

E.2 General warnings

The operator and/or the maintenance person has the following responsibilities:

To create on and around the machine the conditions so that the installed protective guards and devices are operationally effective, as they are there for the purpose of protecting personnel.
To observe the safety regulations described in the use and maintenance manual.

IMPORTANT

THE INFORMATION DEVICES (SIGNS) AND SAFETY NOTICES MUST BE KEPT CLEAN AND LEGIBLE.

ATTENTION

DO NOT IN ANY WAY ALTER THE SAFETY SYSTEM.

IT IS ABSOLUTELY FORBIDDEN TO REMOVE THE PROTECTIVE DEVICES INSTALLED.

CARRYING OUT CLEANING AND MAINTENANCE JOBS WHILE THE SYSTEMS ARE LIVE OR UNDER PRESSURE IS ABSOLUTELY FORBIDDEN.

DO NOT REMOVE THE GUARDS WHICH REQUIRE TOOLS FOR THEIR REMOVAL.

DO NOT WEAR CLOTHES WITH WIDE SLEEVES.

E.3 Routine and scheduled maintenance

IMPORTANT

Maintenance personnel must have a knowledge of at least the following points:

- How the machine is protected.
- Mechanical and electrical safety devices.
- Precautions to observe during maintenance, including how to work under safe conditions.
- Equipment and clothes to be worn to reduce the risks of accidents.
- Maintenance personnel must be authorized and must not wear watches and finger-rings.

E.3.1 Preliminary operations

ATTENTION

MAKE SURE THAT THE ELECTRICAL EQUIPMENT AND THE SYSTEM ARE NOT LIVE.
CHECK IF OTHER SOURCES OF ENERGY ARE DISABLED TOO; I.E., AIR FEEDING.

ATTENTION

BEFORE CARRYING OUT ANY KIND OF WORK ON THE MACHINE IT IS ESSENTIAL TO ENSURE THAT THE SYSTEMS (ELECTRICAL, PNEUMATIC AND WATER) ARE DISCONNECTED FROM ENERGY SUPPLIES, THAT PNEUMATIC AND WATER PL IS PROPERLY DEPRESSURISED AND THAT THERE IS NO REMAINING POTENTIAL ENERGY IN THE MOVING PARTS.

TABLE 14 - PERIODIC MAINTENANCE WORK

Operation	Period	Personnel	Method
General cleaning	Daily	Operator	Clean the press after use. Remove dust and any deposits with a clean cloth without the use of solvents.
Check water connections	Daily	Maintenance worker	Check with your fingers that there are no water leaks. If the situation is overlooked for some time there may be calcium deposits visible.
Checking compressed air connections	Monthly	Maintenance worker	Listen for any air leaks.
Check all electrical cables	Monthly	Maintenance worker	Check for defective insulation or connectors.
Measurement of heating plates temperature	Monthly	Maintenance worker	Position the heat-resistant expanded silicone rubber pad on the lower heating plate. Close the press normally. Submit the pressure chamber to a pressure of maximum 1 bar. Switch the heating on, set the nominal value at 180°C and switch the time relay off. After 40 minutes heating time, open the press, slightly lift the upper heating plate and insert a precision thermometer between the expanded silicone rubber pad and the upper heating plate, exactly in the center of the heating plate. Close the hot press (just under its own weight). Take a temperature reading after about 3 minutes. Repeat the procedure for the lower heating plate (insert the sensor under the expanded silicone rubber pad in the center of the heating plate). The temperature measured must be at 180 °C +/- 2 °C (max. measuring precision +/- 1°C). If the temperature is not yet within the set range it will be necessary to adjust the temperature offset in the PMR-XX unit (see its own manual).

F. EXTRAORDINARY MAINTENANCE

F.1 Extraordinary maintenance

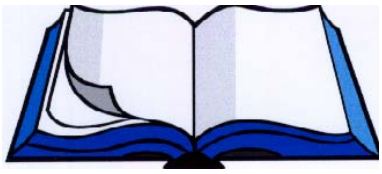
F.1.1 Adjustments, replacements and synchronization

IMPORTANT

All routine and extraordinary maintenance jobs must be done with the machine switched OFF. Take special care with replacements and adjustments.
Maintenance jobs must be done by qualified technicians.

FOR ANY MAINTENANCE WORK THAT DOES NOT COME WITHIN THE CATEGORY OF ORDINARY MAINTENANCE WORK, CONTACT THE TECHNICAL ASSISTANCE OFFICE OF HABASIT.

Habasit Italiana S.p.A.
Via A. Meucci 8
Zona Industriale
I - 31029 Vittorio Veneto
Tel.: 0039. (0) 438.9113
Fax: 0039. (0) 438.200545



G. ELECTRICAL, WATER AND COMPRESSED AIR SYSTEM

G.1 Electrical, water and compressed air system

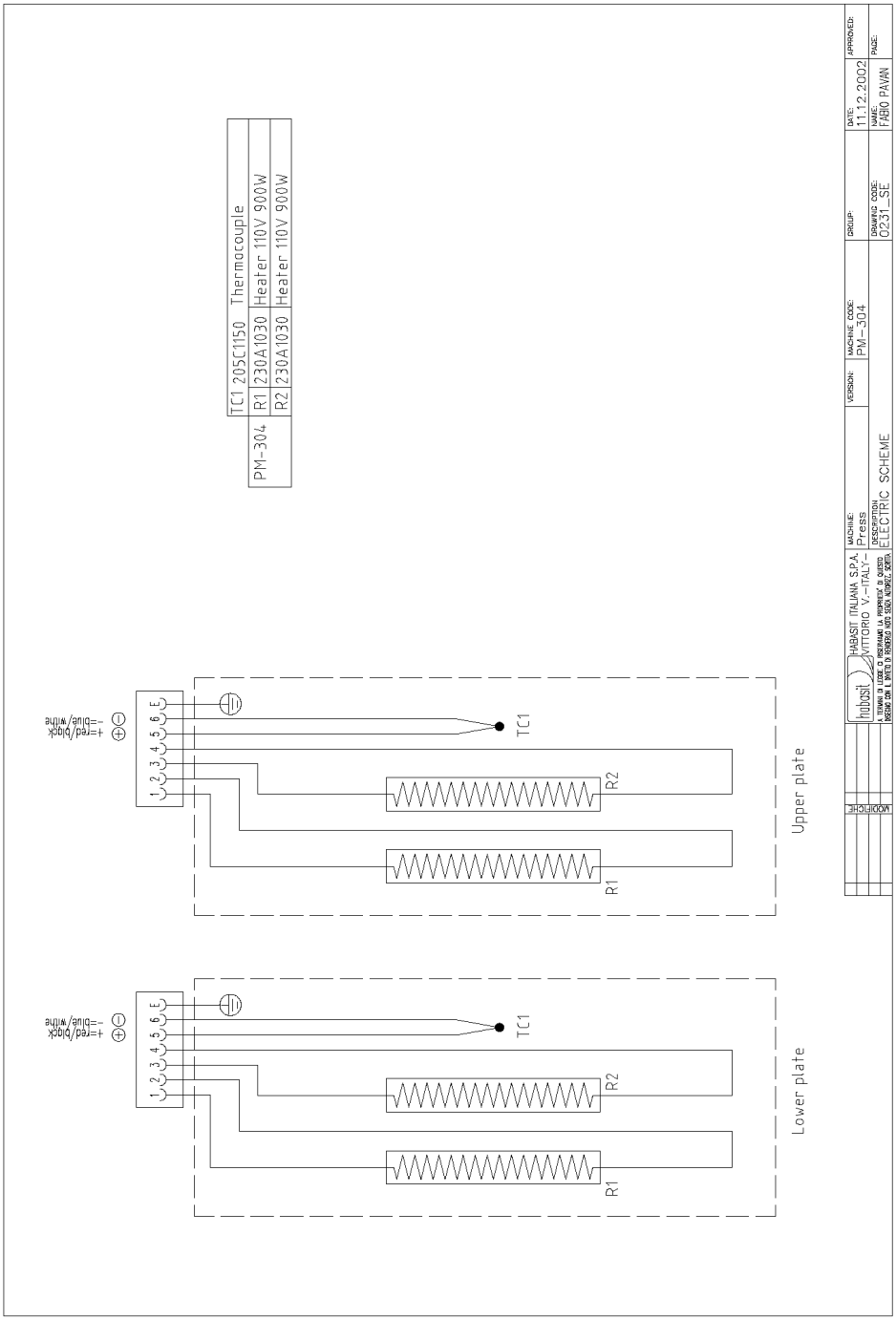


FIGURE 12 - PRESS WIRING LAY-OUT

G.2 Press bank wiring diagram

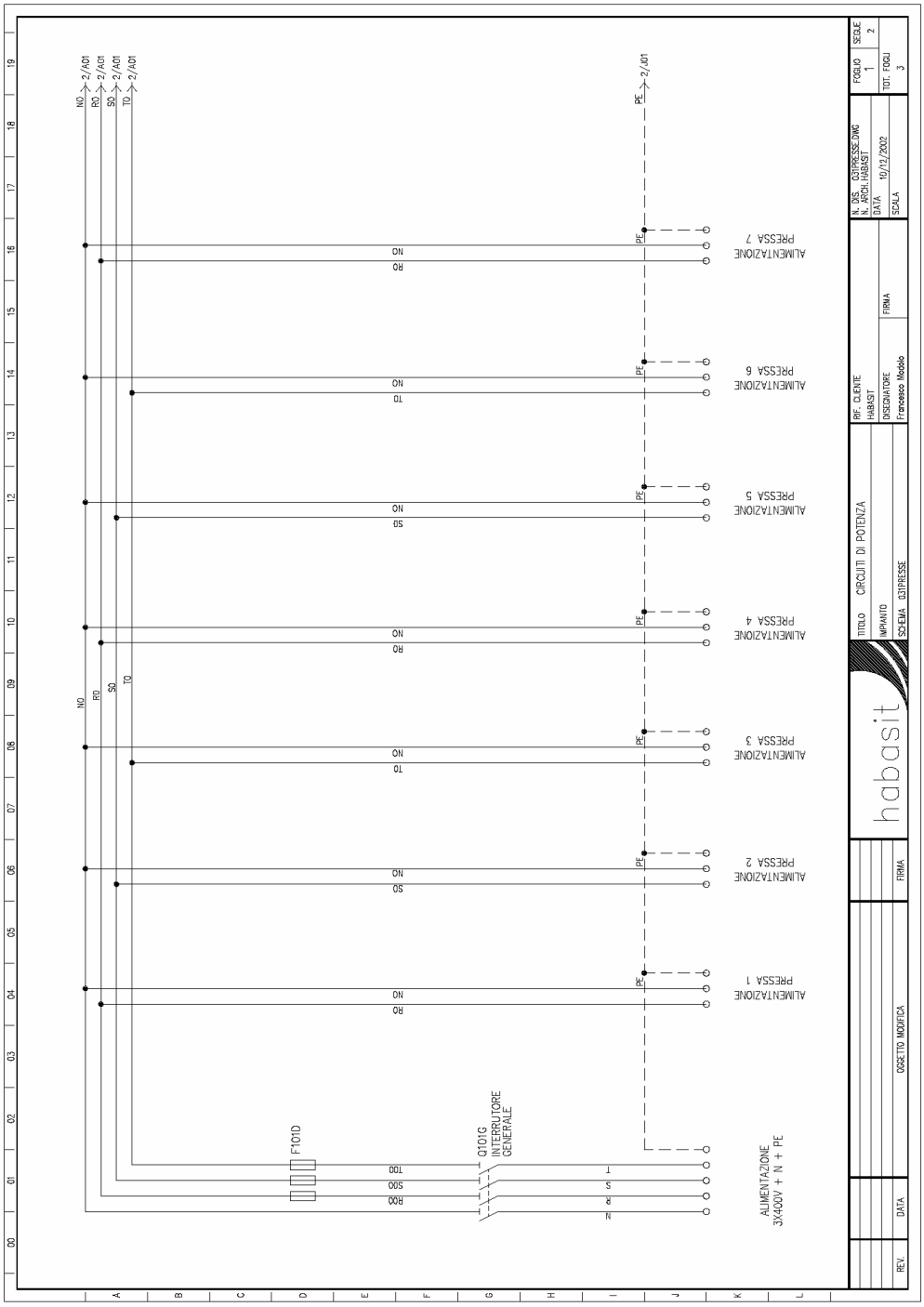


FIGURE 13 - PRESS BANK WIRING LAY-OUT (1/2)

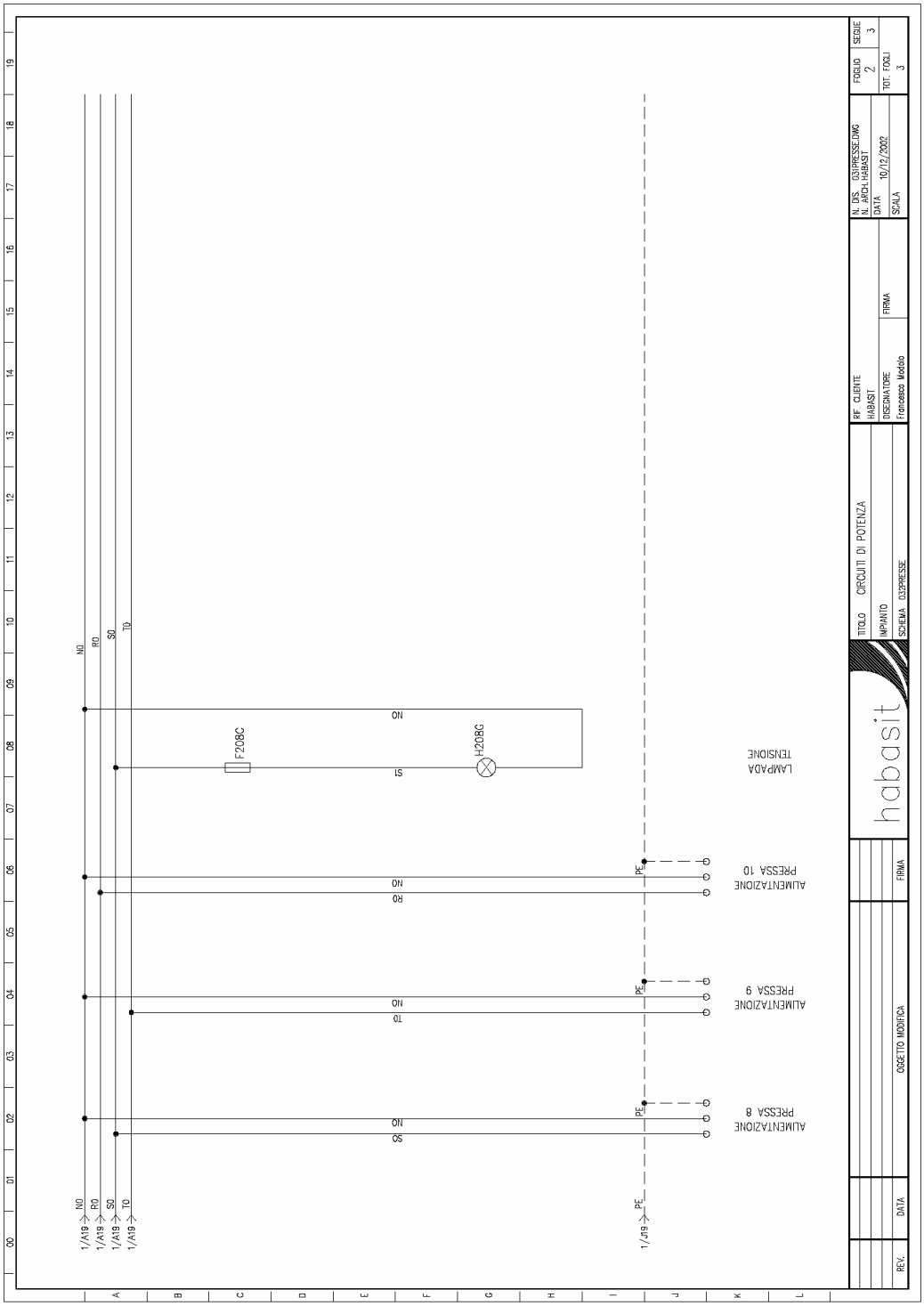


FIGURE 14 - PRESS BANK WIRING LAY-OUT (2/2)

G.3 Layout electrical components

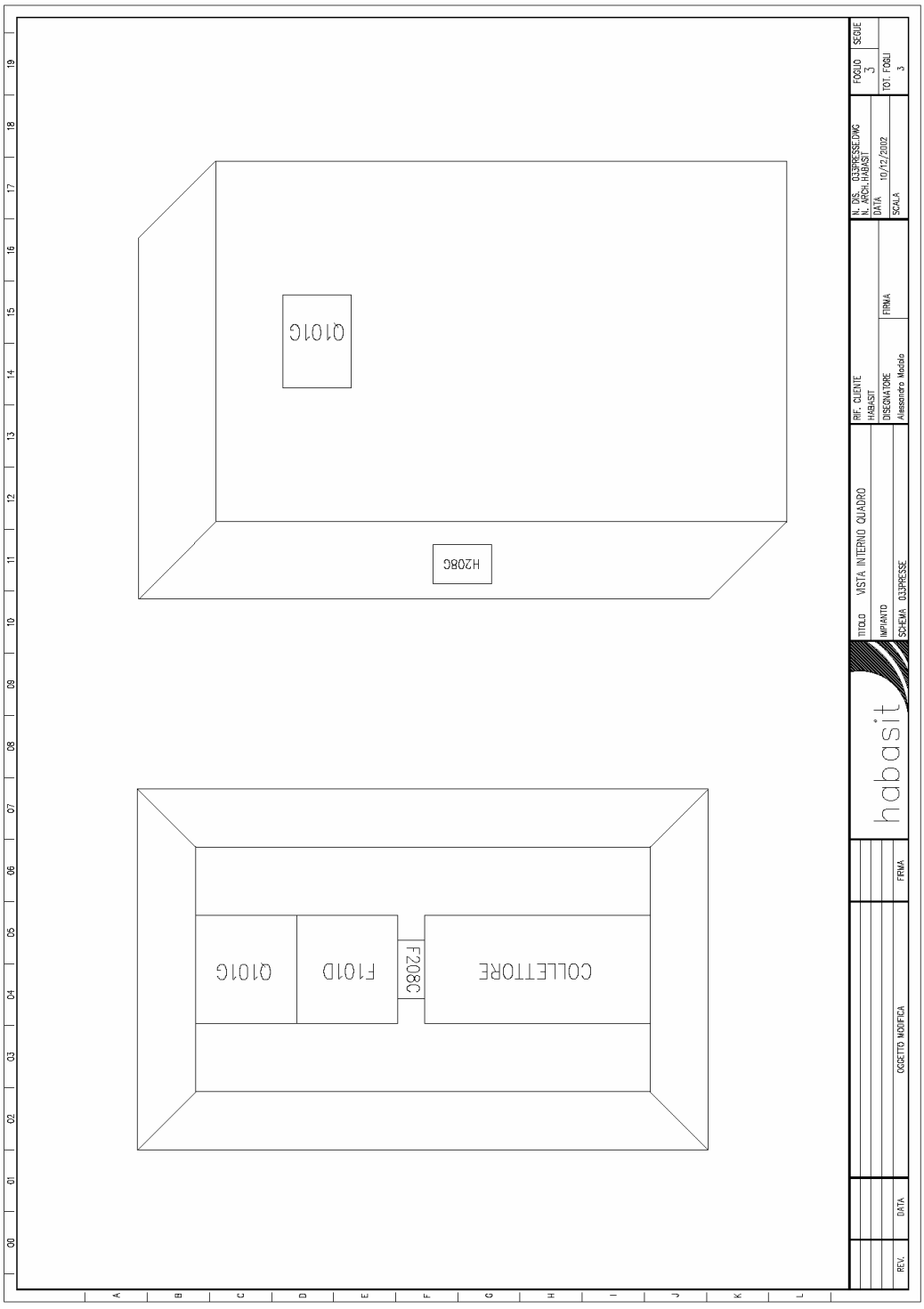


FIGURE 15 - LAY-OUT ELECTRICAL COMPONENTS

TABLE 15 - ELECTRICAL PARTS

Pos.	Code	Description	Brand	U.M.	Qty.
Q101G	V3	MAIN SWITCH 3 x 63 A	TELEMECANIQUE	N°	1
*	VZ12	NEUTRAL POLE	TELEMECANIQUE	N°	1
*	KCF2PZ	RED KNOB 60X60	TELEMECANIQUE	N°	1
*	VZ31	EXTENSION SHAFT	TELEMECANIQUE	N°	1
*	KZ81	SEALING DEVICE	TELEMECANIQUE	N°	1
F101D	GK1EBA50x3	THREE-POLE FUSES 14 x 51 50 A	TELEMECANIQUE	N°	3
*	GK1EB	UNIPOLAR FUSE BOX 14 x 51	TELEMECANIQUE	N°	3
*	1431050	FUSE SET 14 x 50 A	ITALWEBER	N°	3
F208C	047456	ASK 1 TERMINAL BLOCK	WEIDMULLER	N°	1
*	038036	SEPARATOR X ASK 1	WEIDMULLER	N°	1
*	104306	FAST-ACTING FUSE 500 mA 5x20	WEBER	N°	1
H208G	GW26403	SEALED INDICATOR LIGHT	GEWISS	N°	1
*	S.116.220	NEON NYLON LIGHT 220 V	ARTELETA	N°	1
BM	93/18	SIDE BOX 700x500x250	ZANARDO	N°	1
BM	XVBC11	TUBE FASTENING BLOCK	TELEMECANIQUE	N°	10
BM	XVBC21	BASE + LID for indicator light	TELEMECANIQUE	N°	10
BM	XVBC02	ALUMINIUM TUBE (100mm)	TELEMECANIQUE	N°	10
BM	XVBC33	GREEN ELEMENT for indicator light	TELEMECANIQUE	N°	10
BM	XVBC34	RED ELEMENT for indicator light	TELEMECANIQUE	N°	10
BM	BA15D220	220V LIGHT for indicator light	TELEMECANIQUE	N°	20
BM	CHI 06 L	6 POLE RECESSED HOLDER	ILME	N°	10
BM	CHO 06 L13	6 POLE MOBILE HOLDER.	ILME	N°	10
BM	CNM 06	6 POLE PLUG	ILME	N°	10
BM	CNF 06	6 POLE SOCKET	ILME	N°	10
BM	CKA 03 V	MOBILE HOLDER	ILME	N°	10
BM	CKM 03	3-POLE+ PE PLUG	ILME	N°	10

H. GLOSSARY

H.1 Glossary of terms

TABLE 16 - GLOSSARY

Terms	Description
PMR-XX	Equipment for the regulation and control of the temperature rise of the hot-pressing device while managing the device's electrical circuitry. The suffix XX means that a range of different units may be used (PMR-04, PMR-305 etc.) as long as they are compatible with the type of press used.
PMC-XX	Control unit to cool the hot-pressing device and maintain the compressed air circuit management. The suffix XX means that various units can be used (PMC-04, PMC) provided they are compatible with the type of regulating unit used.
Thermofix	Belt joining process (see technical manual Thermofix)
Flexproof	Belt joining process (see technical manual Flexproof)
Heating box	The unit containing the heating plates and pressure cushion, designed to contain the heat and protect the operator
Lower heat equalizing plate	Refers to lower belt support
Upper heat equalizing plate	Refers to upper belt support
Clamping bar	A bar that exerts pressure on the belt being worked on, to keep it in place.
Cushion (or AIRBAG)	Expandable airbag that exerts pressure on the belt/tape
Molleton	Special fabric used as pressure equalization under the belt/tape

I. SPARE PARTS

I.1 Upper parts of press

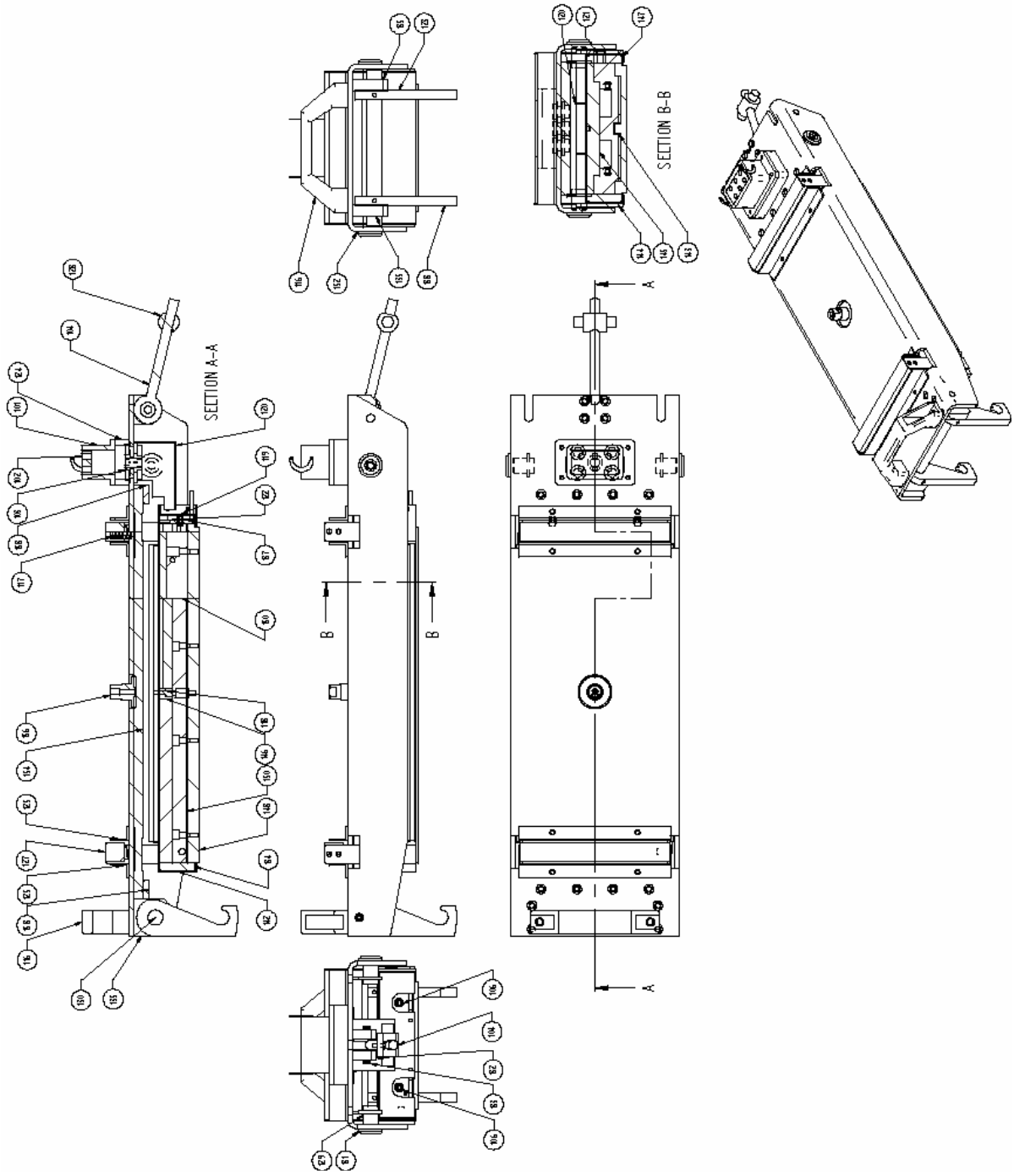


FIGURE 16 - UPPER SPARE PARTS

TABLE 17 - UPPER SPARE PARTS

Pos.	Code	Description	M.U.	Q.ty
101	704503	FIXED HOLDER FOR 1 LEVER 6P+T IP65 ILME	N°	1
102	704510	ILME 6P+T 16A 400V SOCKET	N°	1
103	704513	FAIRLEAD IP67	N°	5
104	IN010870	SCREW EYE M10x130 cod.497	N°	1
105	IN010882	BUSHING GLICODUR De 18 Di 16 L12 GLY.PG161812 F	N°	4
106	IN020703	HOSE-END FITTING 7x1/4" Code 288	N°	2
107	IN020704	FEMALE COUPLING 01 mini 1/8 code 0101001 (code PNEUMAC 307-1/8)	N°	1
108	IN020701	PARTITIONER A "X" 1/8"	N°	1
109	IN020406	SAFETY VALVE F.1/4" SET AT 3 bar ; punched with code 1.441	N°	1
110	IN010423	RECESSED CONICAL PLUGS. LOW TYPE 1/8 gas	N°	1
111	IN020539	KQ2L04-01S UNION ELBOW 4X1/8"	N°	2
112	IN020486	KQ2H-04-01S STRAIGHT UNION D4 x 1/8"	N°	1
113	IN010195	KM3 BURNISHED OR GALVANISED RING NUT	N°	1
114	IN020898	EXTENSION - MALE 1/8 FEMALE 1/4	N°	1
115	IN011154	UNI 6873 ROLL PIN 4x30	N°	2
116	IN060003	M. 443/140 N 37131 HANDLE	N°	1
117	101B1010	BELT PRESSER SPRING	N°	4
118	205C1150	THERMOCOUPLE according to DRAWING code HAB00002	N°	1
119	220A1020	GUARD TERMINAL	N°	1
120	220A1030	UPPER PROTECTION	N°	1
121	220A1060	SIDE PIN	N°	4
122	220A1080	REAR INSULATION	N°	1
123	220A1110	PRESS CLOSING BRACKET	N°	1
124	220A1130	SPACER	N°	1
125	220A1140	PROTECTION DEVICE	N°	4
126	AL_L__EST000	RECTANGULAR PIPE UNI 3569 20x15x2 anticorodal L=6000	mm	160
127	220A1170	SPRING BAR	N°	2
128	220A1180	OSCILLATING PIN	N°	1
129	220A1190	PIN	N°	2
130	220A1200	PIN	N°	1

Pos.	Code	Description	M.U.	Q.ty
131	220A1210	WASHER	N°	2
132	220A1220	BORED PIN COUPLER	N°	2
133	220A1230	PIN	N°	1
134	220A1270	FRONT INSULATION	N°	1
135	220A1280	PRESS COUPLER PLATE	N°	2
136	220A1290	SPACER	N°	4
137	220A1330	RESISTORS BLOCK	N°	1
138	220A1370	PRESS CLOSING BRACKET	N°	1
139	220A1380	SPACER	N°	1
140	220D1080	UPPER WATER PIPE	N°	2
141	IN060690	MANITOBA PIPE D.6x14 L=120 m	m	0,4
142	230A1020	UPPER GUARD	N°	1
143	230A1030	RESISTOR PM-300 CODE 1FZEK612B002 110V 900W	N°	2
144	230A1050	EXTERNAL SIDE INSULATION	N°	2
145	230A1060	TOP INSULATION	N°	1
146	230A1070	TOP INSULATION	N°	1
147	230A1080	INTERNAL SIDE INSULATION	N°	2
148	230A1090	HEATING PLATE	N°	1
149	230A1091	HEATING PLATE 365x144x12 (ROUGH)	N°	1
150	230A1100	UPPER HEATING PLATE	N°	1
151	230A1101	UPPER HEATING PLATE 365x144x25 (ROUGH)	N°	1
152	230A1120	UPPER MOBILE SHELL	N°	1
153	230A1011	SHELL SECTION (ROUGH)	N°	1
154	240A1140	PRESSER AIRBAG	N°	1
155	IN060282	OSLO PIPE 90x96	m	0,45
156	220A1320	AIRBAG COUPLING	N°	1
157	IN010195	KM3 BURNISHED OR GALVANISED RING NUT	N°	1
158	220A1090	AIRBAG CLOSING PLATE	N°	2
159	IN020640	KQ2L04-M5 UNION ELBOW 4xM5 SMC	N°	2

I.2 Lower parts of press

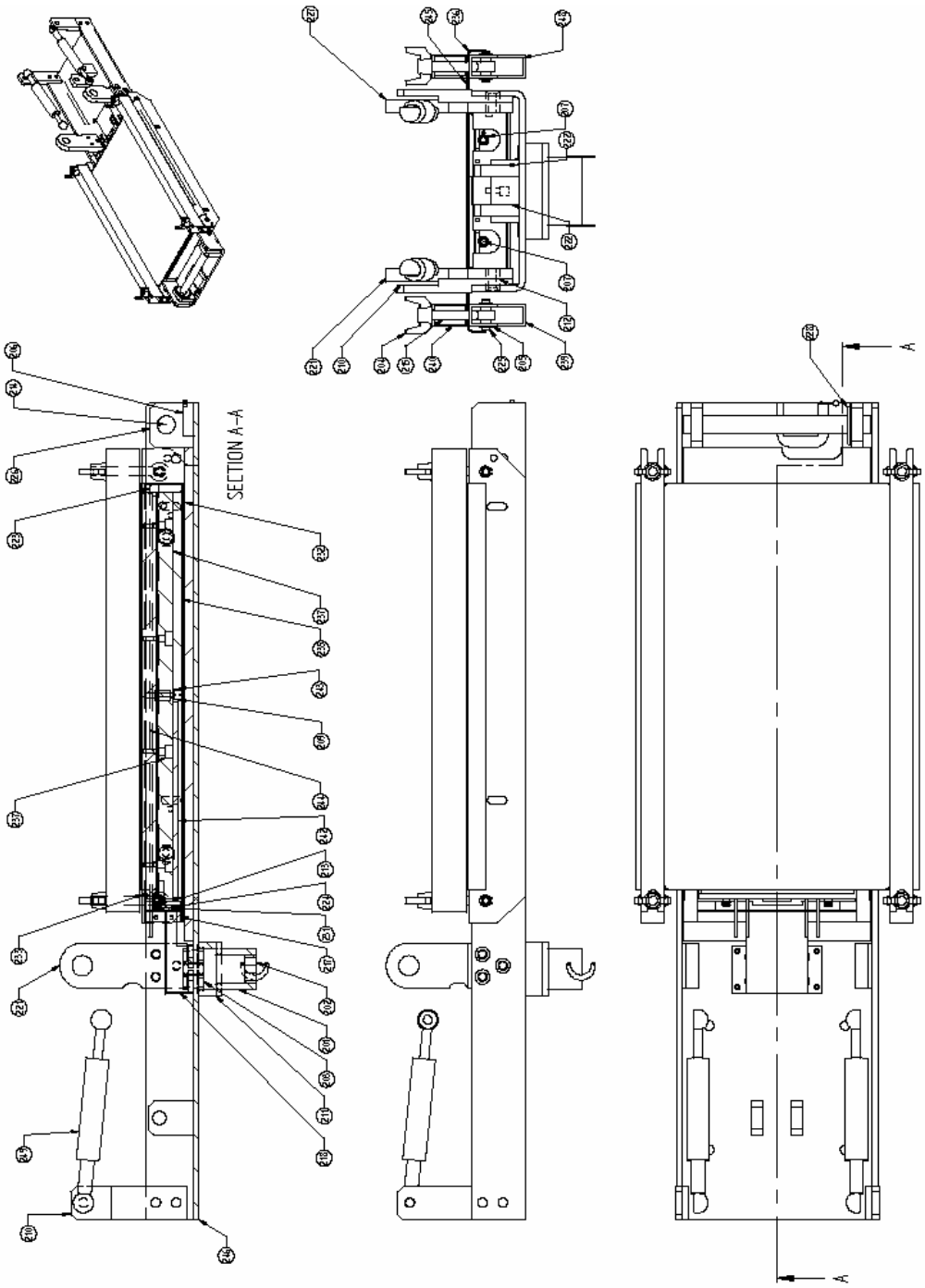


FIGURE 17 - LOWER SPARE PARTS

TABLE 18 - LOWER SPARE PARTS

Pos.	Code	Description	M.U.	Q.ty
201	704503	FIXED HOLDER FOR 1 LEVER 6P+T IP65 ILME	N°	1
202	704510	ILME 6P+T 16A 400V SOCKET	N°	1
203	704513	FAIRLEAD IP67	N°	5
204	IN010884	GBA/40/FP COD.6309700 WING NUT FASTENING	N°	4
205	IN010923	EXTERNAL RETAINING RING E 8	N°	8
206	IN020697	R -3- M5 ROLLER LEVER VALVE code 3629	N°	1
207	IN020703	HOSE-END FITTING 7x1/4" Code 288	N°	2
208	IN010423	RECESSED CONICAL PLUGS - LOW TYPE 1/8 GAS	N°	1
209	205C1150	THERMOCOUPLE according to DRAWING code HAB00002	N°	1
210	220A1100	GAS SPRING COUPLING PLATE	N°	2
211	220A1130	SPACER	N°	1
212	220A1240	PIN	N°	4
213	220A1330	RESISTORS BLOCK	N°	1
214	220A1350	PIN	N°	1
215	220A1390	PRESSER SCREW	N°	4
216	IN010885	GALVANIZED SCREW EYE M8x65	N°	1
217	220B1020	GUARD TERMINAL	N°	1
218	220B1030	LOWER PROTECTION	N°	1
219	220B1070	SPACER WASHER	N°	2
220	220B1080	BASE PLATE	N°	1
221	220B1120	PRESS ROTATION SUPPORT	N°	1
222	220B1130	BORED PIN COUPLER	N°	2
223	220B1160	FRONT INSULATION	N°	1
224	220B1190	REAR INSULATION	N°	1
225	220B1210	SCREW EYE PLUG	N°	4
226	220B1240	PRESS COUPLER PLATE	N°	2
227	220B1260	PRESS ROTATION SUPPORT	N°	1
228	220B1270	SPACER WASHER	N°	1
229	220D1070	LOWER WATER PIPE	N°	2
230	IN060690	MANITOBA PIPE D.6x14 L=120 m	m	0,35

Pos.	Code	Description	M.U.	Q.ty
231	230A1030	RESISTOR PM-300 CODE 1FZEK612B002 110V 900W	N°	2
232	230A1040	BOTTOM INSULATION	N°	1
233	230A1090	HEATING PLATE	N°	1
234	230A1091	HEATING PLATE 365X144X12 (ROUGH)	N°	1
235	230B1020	LOWER GUARD	N°	1
236	230B1030	HEAT EQUALIZING SHEET	N°	1
237	230B1040	LOWER HEATING PLATE	N°	1
238	230B1041	LOWER HEATING PLATE 365X144X18 (ROUGH)	N°	1
239	230B1150	SUPPORT	N°	1
240	230B1060	CLAMPING BAR	N°	2
241	230B1070	EXTERNAL SIDE INSULATION	N°	2
242	230B1080	BOTTOM INSULATION	N°	1
243	230B1090	BOTTOM INSULATION	N°	1
244	230B1100	EXTERNAL SIDE INSULATION	N°	2
245	230B1110	SET-UP PLATE	N°	1
246	230B1120	FIXED LOWER SHELL	N°	1
247	230B1121	LOWER SHELL SECTION (ROUGH)	N°	1
248	230B1140	SUPPORT	N°	1
249	IN060278	GAS SPRING 19.8 195 .27 TS1 with M8 thread - VAPSINT	N°	2

I.3 Spare parts for electrical, water and compressed air connections

TABLE 19 - SPARE PARTS FOR ELECTRICAL, WATER AND PNEUMATIC CONNECTION

Pos.	Code	Description	M.U.	Q.ty
011	IN020378	PRESSURE REDUCER EIR2010-F02	N°	1
012	IN020886	MANOMETER D 40 0-4 bar G 1/8”	N°	1
037	IN060285	MALE COUPLINGG A.316 3/4"G	N°	2
038	IN020910	NON RETURN VALVE SO 47300-8 VITON® SEAL	N°	4
039	IN020921	FEMALE REDUCTION UNIT SO 40030-8-1/4	N°	8
042	ID001314	SUPPORT BENCH	N°	1
043	042A1020	LOADING AND UNLOADING MANIFOLD	N°	1
044	040A1030	REGULATOR SQUARE	N°	1
048	220C1040	SLEEVE 1/4G	N°	8
049	220C1050	SLEEVE 3/4G	N°	4
050	220C1060	SLEEVE 1/4G	N°	8
051	ID001315	COLUMN	N°	3
053	220D1040	BELT ROLL SUPPORT	N°	10
054	ID000845	BELT SUPPORT	N°	8
055	ID000846	MULTILAYER SURFACE	N°	4
056	ID001316	SIDE COLUMN	N°	1
057	ID000850	SUPPORT ELECTRICAL BOARD	N°	1
058	IN040299	PM PRESS AND CONTROL CONNECTION CABLE	N°	8
060	IN021000	KQ2L 10-02S END ELBOW CONNECTOR D10 x ¼” - SMC	N°	4
061	IN020900	KQ2L 10-00 MIDDLE ELBOW CONNECTORS D10 - SMC	N°	1
062	IN020899	KQ2T 10-00 MIDDLE 'T' CONNECTORS - SMC	N°	2
063	IN021016	KQ2U 10-00 'Y' CONNECTOR 1/8”-4 - SMC	N°	1
064	IN020539	KQ2L 04-01S ELBOW CONNECTOR 4x1/8” - SMC	N°	4
065	IN020038	D-1/8I-1/4A REDUCTION NIPPLE Code 3577	N°	4
066	IN020375	'L' – CONNECTOR M.F. ¼” Code 14301	N°	12
067	IN020703	HOSE-END FITTING 7x¼” Code 288	N°	12

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PM-304 Press Bank

APPENDIX

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