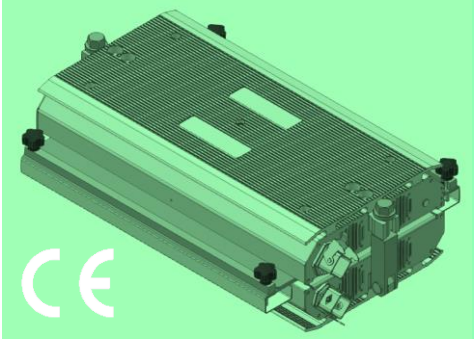
# User and maintenance manual

Translation of the original instructions



## Hot pressing device

**Models** PML-100 / PML-200 / PML-300 / PML-600

**Serial number** ____

**Year of manufacture** 2019

**Review / date** 0.0 / 08.05.2019

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# 1 General index



***WARNING! READ THIS USER AND MAINTENANCE MANUAL CAREFULLY AND COMPLETELY BEFORE INSTALLATION, USE OR ANY OTHER OPERATION TO BE CARRIED OUT ON THE MACHINE!***

***HABASIT ITALIANA S.p.A. SHALL NOT BE HELD RESPONSIBLE UNDER ANY CIRCUMSTANCES FOR DAMAGE CAUSED BY NEGLIGENCE OR THE FAILURE TO COMPLY WITH THESE INSTRUCTIONS.***

# 2 Warranty and Liability

## 2.1 Duration

The warranty duration is 12 months.

## 2.2 Beginning

The warranty period offered to the Branches (12 months) starts from the month of delivery ex works mentioned on shipment documents with the exception of machines/equipment that require an on-site installation by HABASIT ITALIANA S.p.A. or authorised technicians; in this case the warranty starts after testing and satisfactory inspection, as resulting from a specific report (see the attached report model).

If HABASIT ITALIANA S.p.A. does not receive the report, the warranty terms will anyhow become active after 30 days from the installation.

## 2.3 Exclusions

The warranty does not apply in case of:

a) Inappropriate use of the device;
b) Improper or inadequate maintenance;
c) Extraordinary working conditions and/or workloads;
d) Power supply for electrical devices not compliant with current regulations and official industrial standards;
e) Unauthorised alterations.

The warranty does not include:

f) Consumables and parts subject to normal wear.;
g) Software;
h) Ordinary or programmed maintenance;
i) Set-up.

## 2.4 Product-related responsibility, application-related considerations

The customer is responsible for the correct choice and application of Habasit products, including the safety-related aspects of the product.

All the instructions and information are recommendations and are to be considered reliable; however, no type of assertion, guarantee or promise is given as regards the accuracy or the suitability of such information in the event of particular applications.

The data provided here is based on laboratory tests carried out using equipment suitable for performing small-scale tests under standard conditions and these do not necessarily reflect the performance of the product used for industrial purposes.

New skills and experience may cause modifications and changes to be made to the product in a short time and without prior notice.

***SINCE THE CONDITIONS OF USE ARE BEYOND THE CONTROL OF HABASIT ITALIANA S.P.A. OR ITS AFFILIATES, WE CANNOT BE HELD RESPONSIBLE IN ANY WAY WHATSOEVER FOR THE SUITABILITY AND RELIABILITY OF THE PRODUCTS SPECIFIED HERE. THIS IS ALSO EXTENDED TO THE RESULTS OF MANUFACTURING PROCESSES AND TO THE CHARACTERISTICS OF THE FINISHED PRODUCT, AS WELL AS TO ANY DEFECTS, DAMAGE AND ANY OTHER CONSEQUENCES THAT MAY DERIVE FROM SUCH.***

# 3 Use of the manual

## 3.1 Use of the manual

This manual has been prepared by the Manufacturer and it is an integral part of the machine supplied.

The information contained in the manual of the machine in question is intended for personnel in charge of the operation and the maintenance of the machine itself.

The manual provides a series of compulsory information that must be known by qualified personnel, and that allows them to be able to use the machine under safety conditions.

This manual must be used by:

- Personnel in charge of transport;
- Authorised installers;
- Installers, personnel in charge of driving force connections (electric, pneumatic, etc.) to the supply networks;
- Qualified personnel in charge of the operation and surveillance of the machine;
- Qualified personnel in charge of maintenance;

Qualified personnel in charge of the demolition and disposal of machine.

### 3.1.1 Definitions

- **Hazard**: a potential source of harm or damage to one's health;
- **Hazardous area**: any area inside and/or near machinery where the presence of a person causes a risk to the health and safety of said person;
- **Exposed person**: any person who find him/herself totally or partially in a hazardous area;
- **Operator**: a person (or people) in charge of installing, or starting up, adjusting cleaning, repairing and moving machinery or carrying out maintenance;
- **Risk**: a combination of the probability and the seriousness of an injury or damage to health that can develop into a hazardous situation;
- **Residual risk**: remaining risk after protection measures have been implemented;
- **Safety component**: a component or a device used to ensure a safety function and the failure or malfunction of which may jeopardise the safety and/or health of exposed people (e.g. a fixed or mobile guard, an electronic safety device, etc.);
- **Guard**: a machine element used specifically in order to guarantee protection by means of creating a material barrier;
- **Protection device**: a device (other than a guard) that reduces risk, on its own or together with a guard;
- **Foreseen use**: the use of machinery that is in compliance with information provided in the instructions for use;
- **Reasonably foreseeable use:** the use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour;
- **Stop Category 0** of the machine or an uncontrolled shutdown: this indicates the immediate interruption of the power supply of the machine actuators;
- **Stop Category 1** of the machine or an uncontrolled shutdown: this indicates the controlled deceleration of the machine actuators until they come to a complete stop, with the guarantee of an automatic interruption of power once the machine has stopped;
- **Partly-completed machine**: a set that almost forms a machine, yet, which, alone, is not able to guarantee a well-defined application. The partly-completed machine is solely intended to be incorporated or assembled to other machinery or other partly-assembled machinery in order to form a complete machine.

## 3.2 Structure of the manual

### 3.2.1 Subdivision of the manual

This manual is divided into chapters. Each chapter can, in turn, be divided into paragraphs. The page number and the total number of pages of which the manual consists are stated as a footnote on each page (at the bottom).

At the end of the manual there is a general summary for quick reference.

### 3.2.2 Illustrations and tables

The illustrations and the tables are usually found next to the text. In case this is not possible, these are linked to the page and are referred to as an associated illustration or table. All tables and illustrations are numbered and are accompanied by a brief description (Tab. 2.2-1, Fig. 2.2-1, etc.).

### 3.2.3 Attachments

Attachments refer to all those technical documents that form an integral part of the user and maintenance manual, electrical wiring and pneumatic diagrams, declarations of conformity, technical specifications etc. These can be found at the end of the manual (after the summary and the figure index).

## 3.3 Units of measurement

Inside this manual, the following units of measurement have been used, as defined by the International System of Units (S.I.), in compliance with the ISO 80000-1 standard. The units of measurement that are normally used are as follows:

- **Linear dimensions –** In order to measure length, the metre, symbol **[m],** or its submultiples (centimetres and millimetres, or rather **[cm]** and **[mm])** have been used as a unit of measurement. In some cases, the inch can be used;
- **Time –** The unit of measurement of time is the second **[s].** Where considered convenient, minutes **[min]** and/or hours have been used;
- **Mass –** As for mass, the unit of measurement used is the kilogram **[Kg];**
- **Current intensity** – Current intensity is measured in Amperes [**A**];
- **Thermo-dynamic temperature** – The fundamental unit of measurement for thermo-dynamic temperature, in the International System of Units (SI), is the degree Kelvin [**°K**]. Generally, the unit of temperature used, is the degree Celsius [**°C**]. Only in particular circumstances relating to parts when the manufacturer provides technical specifications has the measurement been kept in degrees Fahrenheit [**°F**];
- **Light intensity** – Light intensity is expressed in [**lux**];
- **Plane angle** – Plane angles, according to the relative standard, must be expressed in radians [**rad**]. Inside this manual, they have been expressed in sexagesimal degrees according to the relation: 360° = 2p [**rad**].

## 3.4 Derived units of measurement

Derived units of measurement are all based on the fundamental units that have been mentioned so far. Apart from the fundamental derived metric units of measurement, in certain cases, some fundamental Anglo-Saxon units of measurement and their derivations have been used.

## 3.5 Keeping of the manual

### 3.5.1 How to keep the manual?

The present manual should be carefully conserved for the entire life span of the machine, including the dismantling phase.

### 3.5.2 Where to keep the manual?

The manual should be kept in a dry place near the machine and, in any case, it must be always at the disposal of the qualified personnel in charge of operational and surveillance activities..

### 3.5.3 How to reproduce the manual

Photocopying of this manual can only be made from the original, since reproduction from copies reduces the clarity of images and therefore information.

***PROHIBITION!: The reproduction of this manual is only permitted for the purpose of making a backup copy.***

***The company HABASIT ITALIANA S.p.A. reserves, in compliance with the law, ownership of the present manual, prohibiting its sale to third parties and/or unauthorized reproductions.***

### 3.5.4 What to do in case of loss or damage?

In the case in which the present manual is damaged or lost, customers may request a compliant copy. When requesting a copy, please indicate the code and version of the manual. These data can be found in the top left part of each page (Fig. 3-1).

Revision: 0.0
Date: 08.05.2019

INSTRUCTION MANUAL

Fig. 3-1 – Manual identification data

### 3.5.5 What to do in case of transfer of the machine to third parties?

In the case in which the machine is sold to a third party, the manual (and all annexed documentation) must be delivered to the new owner.

### 3.5.6 What to do in the case of modifications to the machine?

Before making any changes on the machine, contact the manufacturer to receive **prior approval** and the necessary clarifications on the feasibility without altering the characteristics or safety conditions.

If substantial modifications are carried out on the machine or on the control elements, the machine certification and consequently the present manual **cannot be considered valid**.

# 4 General instructions

## 4.1 Working in full safety

The safety instructions contained in the user and maintenance manual refer to operations that can be carried out on the machine.

Safety symbols are introduced into the text at points that require particular attention to be paid. It is extremely important that these safety instructions are always followed. The non-compliance with these could cause injury to people and/or damage to the machine or to other equipment.

Taking all this into consideration, here are some fundamental safety instructions:

- ***Read, and pay maximum attention to, this section of the safety instructions before installing, operating, maintenance or repair of the machine;***
- ***Read and follow the safety warnings contained in the text referring to specific operations;***
- ***When necessary, wear Personal Protective Equipment (P.P.E.), such as safety goggles, gloves and safety footwear;***
- ***Acknowledge and observe the safety instructions indicated by HABASIT ITALIANA S.p.A., the general regulations for preventing injuries and legal norms regarding safety.***

## 4.2 Safety signs

The following symbols are used (if pertinent) in the use and maintenance manual. These symbols have been included to warn personnel about hazards or possible sources of danger. **Make them your own**.

Failure to pay attention to the symbols could result in personal injury, death and/or damage to the machine or equipment.

The signs are generally of three different types (Tab. 4.2-1):

| | | | |
|---|---|---|---|
|  | Framed triangular shape | **Hazard signs** | These indicate instructions relating to actual or potential danger |
|  | Barred circular frame | **Prohibition signs** | These indicate instructions relating to actions that must be avoided |
|  | Filled circle | **Mandatory sign** | These indicate information that is important to read and comply with |

Tab. 4.2-1

Depending on the information to be transmitted, symbols can be contained within the signs which, by association of ideas, help to understand the type of danger, prohibition or obligation.

### 4.2.1 Hazard signs

***General hazard***

*This sign is used to highlight dangerous situations that can cause damage to people, animals and property. Failure to comply with the requirements associated with the sign can cause hazards.*

***Danger due to the presence of voltage***

*This sign is used to highlight the danger of direct or indirect contact, shock-electrocution due to the presence of live parts of the machine. Failure to comply with the requirements associated with the sign can cause serious injury or death.*

***Crushing hazard***

*This sign is used to highlight the hazard of hand or upper limb crushing by moving machine parts or components. Failure to comply with the instructions associated with the sign may cause the risk of hand or upper limb crushing.*

***Entanglement and crushing hazard***

*This sign is used to highlight the hazard of entanglement-crushing of the hands or upper limbs in moving transmission parts. Failure to comply with the instructions associated with the sign may cause the risk of hand or upper limb crushing.*

***Burn injury hazard***

*This sign is used to highlight the hazard of burns due to contact with hot surfaces (>60 °C). Failure to comply with the instructions associated with the sign may cause the risk of hand or upper limb burns.*

### 4.2.2 Prohibition signs

***Generic prohibition***

*This sign is used to highlight the prohibition to perform certain maneuvers, operations or the prohibition of maintaining particular behavior. Failure to comply with the prohibitions associated with the sign can cause damage to property, animals and people.*

***Do not touch***

*This sign is used to highlight the prohibition for the operator to touch a certain part of the machine. Failure to comply with the prohibitions associated with the sign can cause damage to the hands.*

***Do not introduce hands***

*This sign is used to highlight the prohibition for the operator to introduce hands in a given area. Failure to comply with the prohibitions associated with the sign may cause damage to the hands and/or upper limbs.*

***Do not remove guards or safety devices***

*This sign is used to highlight the prohibition for the operator to remove or tamper with any guard, protection or safety device. Failure to comply with the prohibitions associated with the sign can cause damage to property, animals and people.*

### 4.2.3 Mandatory signs

***Generic obligation***

*This sign is used to highlight the obligation by the operator to follow the instructions. Failure to comply with the instructions associated with the sign can cause damage to property, animals and people.*


***Obligation to follow the sequence***

*This sign is used to highlight the obligation for the operator to perform the operations described observing the sequence. Failure to comply with the instructions associated with the sign can cause damage to property, animals and people.*

***Obligation to use particular P.P.E.***

*This sign is used in order to highlight the obligation to use particular Personal Protective Equipment while carrying out operations. Failure to comply with the information associated with this sign may cause serious injury to the operator or even death.*

***Personnel-related obligation***

*This sign is used in order to highlight the obligation to comply with all the instructions relating to personnel (operators), and their requirements. Failure to comply with the information associated with this sign may cause damage to objects, animals and people.*

***Voltage-related obligation***

*This sign is used in order to highlight the obligation to connect the machine to an efficient grounding system. Failure to comply with the information associated with this sign may cause damage to objects, animals and people.*

***Disconnect mains plug from electrical outlet***

*This sign is used in order to highlight the obligation to pull out the mains plug from the power supply before carrying out any further operation. Failure to comply with the information associated with this sign may cause damage to objects, animals and people.*

***Disconnect before carrying out maintenance or repair***

*This sign is used in order to highlight the obligation to disconnect the equipment before carrying out any kind of maintenance operation Failure to comply with the information associated with this sign may cause damage to objects, animals and people.*

***Obligation to read instructions***

*This sign is used in order to highlight the obligation to read instructions (user and maintenance manual, technical data sheets, etc.), prior to the installation, the use or any other operation to be carried out on the machine!*

## 4.3 Graphic signs and written warnings

The following are the graphic signs and written warnings on the machine. The signs were included in order to warn the operator against the dangers or possible residual sources of danger. Next to each exclusively graphic sign is a written comment with the meaning of the sign. **Make them your own**.

***CAUTION! Failure to know or to pay attention to signals and warnings could result in personal injury, death and / or damage to the machine or equipment.***

### 4.3.1 Graphic hazard signs


Fig. 4-1 – Hazard pictogram

This sign highlights the **hazard** (residual risk) deriving from the presence of voltage.
The sign is placed on the regulator unit.

Fig. 4-2 - Hazard pictogram

This signal highlights the **hazard** (residual risk) of getting burnt due to coming into contact with hot material and/or surfaces.
The sign is placed on the upper press beam unit..

Fig. 4-3 – Hazard pictogram

This sign highlights the **hazard** (residual risk) of hand crushin.
The sign is placed on the upper press beam unit..

### 4.3.2 Graphic mandatory signs

Fig. 4-4 – Mandatory pictogram

This sign highlights the **obligation**, for the operator and the maintenance technician, to use Personal Protective Equipment (P.P.E) to protect their hands. Gloves must be able to protect the operator's hands from contact with **hot surfaces**.

The sign is placed on the upper press beam unit.

Fig. 4-5 – Mandatory pictogram

This signal highlights the **obligation** for the operator and the maintenance technician, to use Personal Protective Equipment (P.P.E) for the protection of the feet.

The sign is placed on the upper press beam unit.

## 4.4 Physical and intellectual requirements of qualified personnel

Qualified personnel must be capable, even physically, to carry out the necessary operations and to familiarise themselves with the safety instructions and standards. Such personnel has been trained in order to be capable of using and maintaining the interchangeable equipment under safety conditions.


***WARNING! It is the PRODUCTION MANAGER's responsibility to make sure that the personnel is in compliance with this professional profile.***

***WARNING! Qualified personnel should not use the system if they are taking substances that reduce their reaction time.***

Qualified personnel must be divided into the following categories:

- Personnel in charge of transport, installation, dismantling and commissioning;
- Personnel in charge of set-up activities;
- Personnel in charge of maintenance and repair activities;
- Personnel in charge of operational activities.

Each professional profile is characterised by specific skills described as follows.

## 4.5 Personnel in charge of transport, installation, dismantling and commissioning

A work group must be established and co-ordinated consisting of all personnel, working inside or outside the company, aimed at carrying out all the necessary duties in order to fulfil the necessary stages described in the relative chapters of this manual. All personnel must be co-ordinated by a works supervisor, in order to be able to co-operate and work in perfect harmony so as to achieve the desired result.

## 4.6 Personnel in charge of set-up

Apart from setting up and operating the machine, personnel in charge of set-up activities must be capable of:

- Carrying out tests with the same machine with the aim of checking that the intervention has been carried out correctly;
- Identifying any malfunctioning that could be dealt with by the operators who carry out maintenance and repairs;
- Training the appointed operators as of set-up activity details;
- Substituting tools and any other part subject to wear and tear associated with manufacturing processes, such as equipment, that is not part of the ordinary maintenance of the machine.

Personnel in charge of set-up activities must intervene each time there is a change in the usage parameters. If the adaptation to the new usage parameters requires a different system set-up, this must be carried out in concert with the manufacturer.

## 4.7 Personnel in charge of ordinary maintenance and repairs

Personnel in charge of these duties must be capable of:

- Diagnosing machine efficiency conditions;
- Identifying any faults;
- Directly finding solutions to conditions that have caused the faulty situation, as long as this does not refer to a problem associated with programming or set-up activities, in which case the personnel in charge of these activities will intervene;
- Maintaining the efficiency of the machine by correctly carrying out periodic maintenance;
- Carrying out the lubrication of the machine, when necessary;
- Cleaning the machine, when necessary.

He must be the custodian of all tools relating to the adjustment or set-up of all the guards installed on the machine.

***WARNING! Considering the particular conditions in which the machine could be found when the intervention of maintenance and repair technicians is requested, these latter figures must have a thorough knowledge of the machine and of all necessary safety regulations. They must safeguard not only themselves, but also all the operators that are within the workplace where the machine is situated***

These operators can be divided according to their specific duties, within the field of maintenance activities, depending on their role, preparation, skills or past experience.

***PROHIBITION! Operators in charge of maintenance activities must never avail of the services of personnel carrying out other roles or with different qualifications, due to the fact that these latter figures may not have adequate preparation to deal with the situation without jeopardising their own safety and that of others.***

***OBLIGATION! If the type of intervention causes particular risks, for example in case of operations to be carried out on the electrical system, personnel in charge of maintenance must be specialised in the intervention to be carried out in these particular situations.***

## 4.8 Personnel in charge of operational activities

The machine must be operated by only one operator at a time. This must be in charge of loading and unloading the pieces to be processed/ processed pieces and to supervise all operations carried out by the machine; moreover, he/she must control and use all control and signalling devices.

His/her work position is therefore in close proximity to the machine, and from this position he/she must be also able to access the regulator unit.

The operator must never intervene with the aim of carrying out interventions other than the operational activities described later in this manual: all maintenance, repair, set-up or any other interventions other than operational activities should be left to the relative personnel in charge.

***PROHIBITION! Never intervene upon personal initiative in order to solve machine breakdowns that are not strictly associated with operational duties.***

***It is absolutely prohibited to assist personnel in charge of maintenance and set-up activities.***

***OBLIGATION! When the machine does not work correctly or in any case it malfunctions, only the personnel in charge of maintenance can repair the relative fault.***

## 4.9 Personnel training

The machine can only be used by qualified personnel that has successfully passed the period of training established at the sales contract phase and due to such are authorised to carry out these activities. The use of the machine is, in any case, prohibited to personnel not adequately trained as regards the correct operation of the same as well as that of safety devices.

HABASIT ITALIANA S.p.A. is available to train operators upon the premises of their own plants.

***WARNING!: HABASIT ITALIANA S.p.A. will not be held responsible for improper use carried out by personnel that has not been trained to use the machine as well as the non-compliance with basic safety and protection standards at work.***

## 4.10 Improper use

The machine has been designed for use only for the purposes described in the appropriate section of the manual (paragraph 5.4). Uses other than those described in this manual are to be considered improper and therefore not in compliance with safety standards.

***WARNING! The improper use of the machine can cause personal injury, death and/or damage to the machine and other equipment.***

A series of improper uses that can cause personal injury or damage to the machine or other equipment, for which HABASIT ITALIANA S.p.A. will not be held responsible in any way whatsoever is listed as follows:

- ***Modifications or substitutions of unauthorised machine parts;***
- ***The non-compliance with safety instructions;***
- ***The non-compliance with instructions relating to installation, use, operation, maintenance, repair or when these operations have been carried out by unqualified personnel;***
- ***The use of improper, incompatible material or the use of auxiliary equipment;***
- ***The non-compliance of safety regulations within the workplace or current legislation on this subject.***

# 5 Characteristics and technical data

## 5.1 Description of the machine

The Hot pressing device (Fig. 5-1), PML-100 / PML-200 / PML-300 / PML-600 model, is a machine which has been designed and manufactured in order to enable the hot joining of Fabric belts and HabaSYNC Timing belts.

The Hot pressing device is not a machine designed for continuous production, but for the repair of toothed belts and belts and destined therefore to industrial-craft environments and not permanently installed.

The machine consists of the following elements:

- Lower plate unit;
- Upper plate unit;
- Equalizing plate;
- Regulator unit;

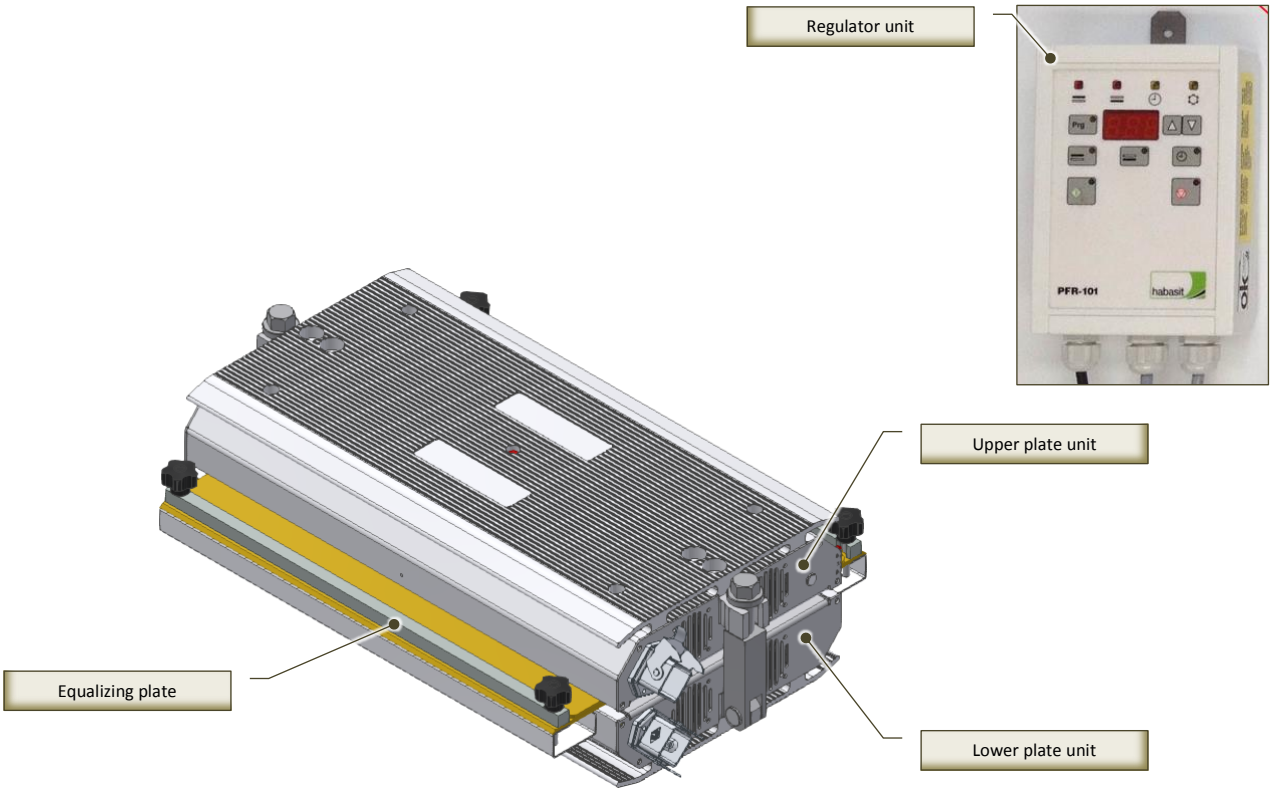



Fig. 5-1 - Hot pressing device

***N.B. THE ILLUSTRATIONS USED BELOW AND THROUGHOUT THIS MANUAL REFER TO THE PML-300 MODEL PRESS (unless otherwise specified); THE OTHER MODELS (PML-100, PML-200, PML-600) DIFFER FOR THE DIMENSIONS, BUT THEY ALL ARE EQUIPABLE FROM THE FUNCTIONAL POINT OF VIEW.***

## 5.2 Operating kit configuration

### 5.2.1 Operating kit composition

The Hot pressing device della serie PML-x00must be connected to some accessories to be used. The press body is not, in fact, capable of operating independently but requires connection to a control unit and some auxiliary devices.

***WARNING!: HABASIT ITALIANA S.p.A. guarantees the correct operation of the machine only if it is equipped with original and recommended accessories.***

The operating kit consists of the following parts:

- N° 1 hot pressing device (Fig. 5-1) with user manual;
- N° 1 regulator unit (Fig. 5-6) with an automatic process management function;
- Equalizing plate (and -optional- joining plates);
- N° 1 ratchet wrench;
- N° 1 flight case to transport the operating unit.

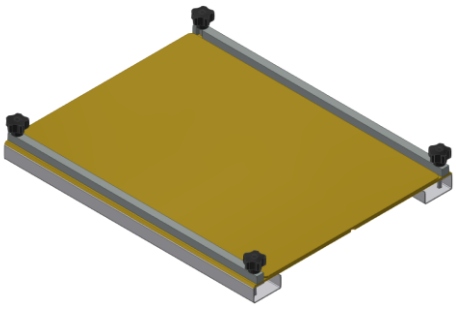


Fig. 5-2 – Equalizing plate

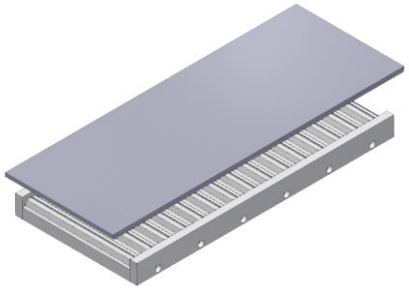


Fig. 5-3 - Joining plates (optional)

Fig. 5-4 – Ratchet wrench

Fig. 5-5 - Flight case

### 5.2.2 PML-x00 serie designation system

PML-x00 serie presses may be ordered in different combinations, depending on the purpose for which they are used.

So as to place a correct order, please refer to the following designation table (Tab. 5.2-1).

| *Part code* | *Description* | |
|---|---|---|
| ***P*** | Hot pressing device for joining | |
| ***M*** | Multi-system (Flexproof + Thermofix) welding process | |
| ***L*** | Lightweight | |
| **-** | Interruption sign | |
| ***100, 200, 300, 600*** | Fabric belt maximum width:<br>• 100: 100 mm (3,93”)<br>• 200: 200 mm (7,87”)<br>• 300: 300 mm (11,81”)<br>• 600: 600 mm (23,62”) | Timing belt maximum width:<br>• 100: 150 mm (5,91”)<br>• 200: 160 mm (6,30”)<br>• 300: -<br>• 600: - |
| ***/*** | Interruption sign | |
| ***6, 8*** | • 6: 120V single-phase with neutral and ground connections<br>• 8: 230V single-phase with neutral and ground connections | |

Tab. 5.2-1

### 5.2.3 Regulator unit

The machine, in order to be able to work, needs to be connected to a regulator unit.

The press unit cannot work without this accessory.

In the following table (Tab. 5.2-2), the different units available and their relative product codes are specified.

| *Press unit* | *Regulator Unit* | *Product codes* |
|---|---|---|
| **PML-100**<br>**PML-200**<br>**PML-300**<br>**PML-600** |  <br>Fig. 5-6 - PFR-101 Regulator Unit | **PFR-101/6 1x120V – art No. H080709574**<br>**PFR-101/8 1x230V – art No. H080709575** |

Tab. 5.2-2

### 5.2.4 Available versions

The following table (Tab. 5.2-3) describes the versions available with their reference product codes.

| *Habasit code* | *ZHAB* | *Product code* | *Power supply* | *Workable products* |
|---|---|---|---|---|
| H0880000630 | 50022374 | PML-100/6 | 1 x 120 V | Fabric belts and Timing belts |
| H0880000631 | 50022375 | PML-100/8 | 1F x 230 V | Fabric belts and Timing belts |
| H0880000632 | 50022376 | PML-200/6 | 1F x 120 V | Fabric belts and Timing belts |
| H0880000633 | 50022377 | PML-200/8 | 1F x 230 V | Fabric belts and Timing belts |
| H0880000634 | 50022378 | PML-300/6 | 1F x 120 V | Fabric belts |
| H0880000635 | 50022379 | PML-300/8 | 1F x 230 V | Fabric belts |
| H0880000636 | 50022380 | PML-600/6 | 1F x 120 V | Fabric belts |
| H0880000637 | 50022381 | PML-600/8 | 1F x 230 V | Fabric belts |

Tab. 5.2-3

## 5.3 Technical standards and statutory provisions applied

The machine has been designed in compliance with machinery safety standards:

- EN 349:1993+A1:2008 Machinery safety – Minimum space to avoid crushing parts of the body;
- EN 614-1:2006+A1:2009 Machinery safety – Ergonomic design principles - Part 1: Terminology and general principles;
- EN 614-2:2000+A1:2008 Machinery safety – Ergonomic design principles - Part 2: Interactions between machinery design and operational tasks;
- EN 1005-1:2001+A1:2008 Machinery safety – Human physical performance - Part 1: Terms and definitions;
- EN 1005-2:2003+A1:2008 Machinery safety – Human physical performance – Part 2: Manual handling of machinery and component parts of the machinery;
- EN 1005-3:2002+A1:2008 Machinery safety - Human physical performance - Part 3: Recommended force limits for machinery operation;
- EN 1005-4:2005+A1:2008 Machinery safety – Human physical performance – Part 4: Evaluation of working postures and movements in relation to machinery;
- EN ISO 14118:2018 Sicurezza del macchinario - Prevenzione dell'avviamento inatteso;
- EN ISO 12100:2010 Machinery safety – General design principles – Risk assessment and reduction;;
- EN ISO 13732-1:2008 Ergonomia degli ambienti termici - Metodi per la valutazione della risposta dell'uomo al contatto con le superfici - Parte 1: Superfici calde;
- EN ISO 13857:2008 Machinery safety – Safety distances to prevent hazard zones from being reached by upper and lower limbs;
- EN ISO 14120:2015 Machinery safety - Guards – General requirements for the design and construction of fixed and mobile guards;
- EN 60204-1:2006/A1:2009+AC:2010 Machinery safety Electric machine equipment – Part 1: General rules IEC 60204-1:2005+A1:2008).

Moreover, all the current safety laws have been complied with, in particular:

- Legislative Decree dated 27th January 2010, n°17 – Implementation of Directive 2006/42/CE, relating to machinery and which modifies Directive 95/16/CE relating to lifts;
- Legislative Decree dated 18th May 2016, n. 80 – Amendments made to Legislative Decree dated 6th November 2007, n. 194, implementing directive 2014/30/EU of the European Parliament and Council, dated 26th February 2014, regarding the harmonisation of the State member legislation relating to electromagnetic compatibility;
- Legislative Decree dated 19th May 2016, n. 86 – Implementation of directive 2014/35/EU concerning the harmonisation of State member legislation regarding the marketing of electrical equipment intended for use within certain voltage limits;

## 5.4 Foreseen conditions of use

The machine in question has been designed to exclusively perform the functions described in paragraph 5.1 of the manual.

The machine must operate in environmental conditions complying with

those described in paragraph 5.6.9.

The product processed by the machine must comply, both in terms of type and as regards dimensional characteristics, with the requirements stated in paragraph 5.7.

## 5.5 Residual risks

The machine, *under normal working condition*, if used correctly by qualified personnel and if kept clean, does not present particular residual risks.

This condition is satisfied only if the qualified personnel, in charge of operating and maintaining the machine, in their respective tasks, performs the operations described in this instruction manual and if the protections are efficient[1].

The machine provides the following work station:

- **Near the machine**: n° 1 operator.

In any case, residual risks are always present in normal working conditions only ***inside*** the *hazardous areas* highlighted in red in Fig. 5-7.

The residual risks present on the machine are identified and described as follows:

- **Risk of burning:** in the event that the operator voluntarily touches the heating plates or the product just worked, without taking the required precautions (e.g. without wearing gloves or waiting the required time for the plates to cool down);
- **Risk of electrocution:** the machine uses electricity, and therefore it is necessary that only the technical personnel in charge must operate live or disconnected parts (Qualified person, trained person and ordinary person) and that the necessary precautions should be taken (EN 50110-1:2014);
- **Risk of crushing**: during lifting, moving and tooling operations, the machine, the press unit or one of the accessories may accidentally fall.

Hazardous area

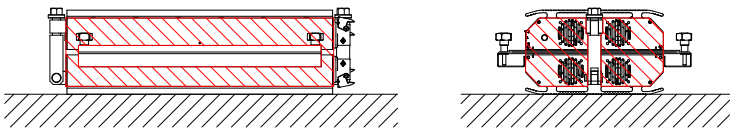


Fig. 5-7 – Hazardous areas of the machine

[1] The protection devices (interlocking fixed and mobile devices) can be considered efficient only if they are: intact, installed properly and in a perfect state of maintenance.

## 5.6 Machine technical data

### 5.6.1 Minimum installation area

The machine requires a suitable installation space, which must consider not only the size of the machine itself but also the operating spaces (compatibly with the purpose of using the product itself)

The machine must be positioned above a work bench, at an ergonomic height (between 850 and 1150 mm), and, around it, sufficient space must be guaranteed for the movement of the operator, for the manipulation of the parts of the machine and for positioning the product to be processed (600 mm wide both laterally and above the machine).

### 5.6.2 Dimensions

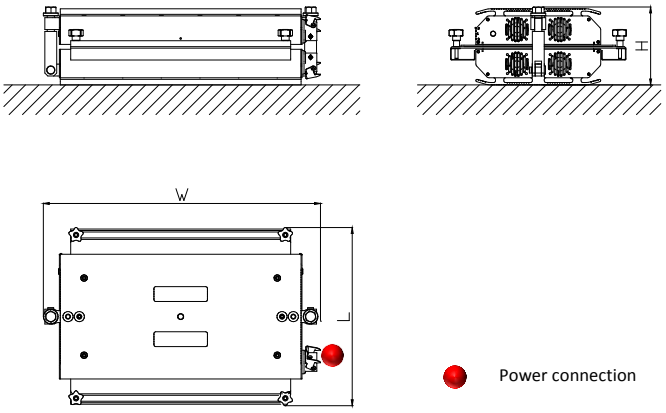



Fig. 5-8 – Machine dimensions

| *Dimension* | *Code* | *PML-100* | *PML-200* | *PML-300* | *PML-600* |
|---|---|---|---|---|---|
| Max. machine length | L | ***300 mm*** *(11,81")* | ***300 mm*** *(11,81")* | ***300 mm*** *(11,81")* | ***300 mm*** *(11,81")* |
| Max. machine width | W | ***260 mm*** *(9,14")* | ***350 mm*** *(13,08")* | ***475 mm*** *(18,00")* | ***775 mm*** *(29,81")* |
| Max. machine height | H | ***150 mm*** *(5,19")* | ***150 mm*** *(5,19")* | ***150 mm*** *(5,19")* | ***150 mm*** *(5,19")* |

Tab. 5.6-1

### 5.6.3 Mass

| *Mass* | *PML-100* | *PML-200* | *PML-300* | *PML-600* |
|---|---|---|---|---|
| Total weight | ***6,5 kg*** *(14,33 lbs)* | ***9,5 kg*** *(20,95 lbs)* | ***13 kg*** *(28,66 lbs)* | ***23 kg*** *(50,71 lbs)* |
| PFR-101 Regulator unit | ***1,9 Kg*** | | | |

Tab. 5.6-2

### 5.6.4 Power supply

| *Electricity* | |
|---|---|
| Power supply voltage of electrical equipment | ***See Tab. 5.2-3*** |
| Number of phases | ***1F/N/PE*** |
| Power supply frequency | ***50 Hz*** |

Tab. 5.6-3

### 5.6.5 Consumption

The machine, used under the foreseen conditions of use, has the following consumption values:

| ***Electricity consumption*** | ***PML-100*** | ***PML-200*** | ***PML-300*** | ***PML-600*** |
|---|---|---|---|---|
| Power | ***2x500 W*** | ***2x600 W*** | ***2x800 W*** | ***2x800 W*** |

Tab. 5.6-4

### 5.6.6 Noise

The machine equipment has been designed and produced to reduce the level of noise emitted at the source. Under normal conditions of use, the level of sound power of the machine is as follows:

| ***Sound Pressure*** | |
|---|---|
| Equivalent continuous weighted sound pressure (a)<br>*(value detected on empty machine is empty)* | ***< 70 dB*** |
| Instantaneous weighted sound pressure | ***< 130 dB*** |

Tab. 5.6-5

The values of noise indicated are emission levels measured under normal conditions of use according to indications given in standards UNI EN ISO 3744, 3745, 3746 and 11200-11204. In case modifications are made to the machine, the abovementioned values could change, and they should therefore be determined on the same system.

The values of noise indicated, are emission levels and they do not necessarily represent safe working levels.

Despite the fact that there is a relation between emission levels and exposure levels, this cannot be relied on in order to establish whether or not further precautions should be taken. The factors that determine the level of exposure which workers are subjected to include the duration of the exposure, the characteristics of the work premises and other sources of noise (number of machines, adjacent processes, etc.). Moreover, also the permitted exposure levels may vary from one country to another. In any case, the information given will allow the machine user to better assess the hazard and risk to which he/she is exposed.


***WARNING! The impact of noise on the surrounding environment produced by the machine in question under test conditions can be considered unimportant.***

***In any case, it should be taken into consideration that, in compliance with what is stated in Legislative Decree dated 10th April 2006 n°195 (in Italy), The exposure to noise on behalf of the operator in charge of such machinery must be assessed under the real working conditions in which the machinery has to work.***

According to Legislative Decree dated 10th April 2006 n°195, considering that the sound pressure produced by the machine in question, under test conditions, does not cause the worker, situated appropriately and continuously in the installation area to be subjected to a personal daily exposure equal to or exceeding 80 dB (A), the system manufacturer is not obliged to provide information relating to the noise produced.

### 5.6.7 Vibrations

The vibrations produced are minimal and therefore cannot be considered a source of hazard for the operator.

Nevertheless, the levels have been measured in conformity with standard ISO 5349 for vibrations transmitted to the hand/arm (HAV).

| ***Vibrations emitted*** | |
|---|---|
| Hand/arm vibrations | ***≤ 2,5 m/s²*** |

Tab. 5.6-6

***OBLIGATION! No particular measures should be taken in order to protect the operator from the effects of the vibrations produced.***

***However, should any abnormal vibrations occur, the operator must shut down the machine immediately and report the event to the personnel in charge of maintenance.***

### 5.6.8 Machine performance

Machine performance values in relation to the relative, different models are stated in the table below (Tab. 5.6-7).

| ***Machine performance*** | ***PML-100*** | ***PML-200*** | ***PML-300*** | ***PML-600*** |
|---|---|---|---|---|
| Max. working pressure | ***2 bar / 29 psi*** | | | |
| Max. working temperature | ***199 °C*** *(390 °F)* | | | |
| Temperature range | ***+2 −4 °C*** *(+3,6 −7,2 °F)* | | | |
| Max. temperature deviation from nominal value | ***± 3 °C*** *(± 3,6 °F)* | | | |
| Mean heating time up to 180°C | ***4 min (120 V)***<br>***3 min (230 V)*** | ***4 min (120 V)***<br>***3 min (230 V)*** | ***4 min (120 V)***<br>***3 min (230 V)*** | ***5 min (120 V)***<br>***4 min (230 V)*** |
| Cooling time from 180°C to 60°C | ***20 min*** | | | |

Tab. 5.6-7

### 5.6.9 Admissible environmental values

| **Admissible environmental values** | |
|---|---|
| Working temperature | ***+5 °C ÷ +40 °C*** [2] |
| Ambient temperature variations | ***max. 1.1°C / Min*** |
| Average temperature | ***Not exceeding +35°C in 24 h*** |
| Relative Humidity Range (UR) | ***75 % or less*** |
| Vibrations | ***≤ 0,5 G*** |
| Altitude | ***Up to 1000 m above sea level*** |

Tab. 5.6-8

[2] The electric equipment is capable of working properly when relative humidity value does not exceed 50% at a maximum temperature of +40 °C. Higher relative humidity values can be permitted at lower temperatures (e.g. 90% at +20 °C).

## 5.7 Characteristics of the product to be processed

### 5.7.1 Technical characteristics

The machine has been specifically designed to hot join fabric belts (Fig. 5-9) or HabaSYNC timing belts (Fig. 5-10). In the latter case the machine must be equipped with the appropriate joining plate (optional) depending on the timing belt to be joined.

Fig. 5-9 – Examples of fabric belts

| ***Dimensional characteristics of fabric belts*** | ***PML-100*** | ***PML-200*** | ***PML-300*** | ***PML-600*** |
|---|---|---|---|---|
| Maximum belt width | ***100 mm*** (3,93”) | ***200 mm*** (7,87”) | ***300 mm*** (11,81”) | ***600 mm*** (23,62”) |
| Maximum belt thickness | ***8 mm*** (0,31”) | | | |

Tab. 5.7-1

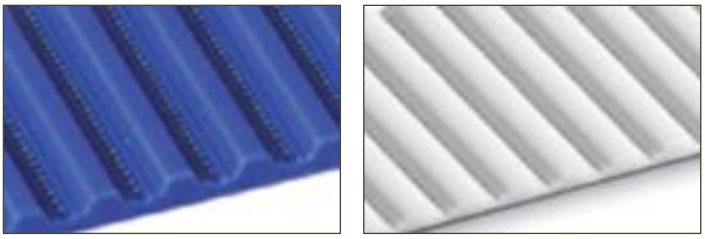


Fig. 5-10 – Examples of HabaSYNC timing belts

| ***Dimensional characteristics of timing belts*** | ***PML-100*** | ***PML-200*** | ***PML-300*** | ***PML-600*** |
|---|---|---|---|---|
| Maximum belt width | ***150 mm*** (5,90”) | ***160 mm*** (6,29”) | - | - |
| Maximum belt thickness | ***tipo AT20*** | | - | - |

Tab. 5.7-2

***WARNING! Do not load product types or with dimensions other than those permitted.***

# 6 Transport and installation

## 6.1 Transport

The machine is supplied assembled and packed in a dedicated flight case for easy handling.

The various parts of press kit are placed inside the flight case, protected by sheets of foam material.

## 6.2 Handling

***WARNING! Please comply with the following instructions.***

Once the hot press has been taken out of the flight case, it can be lifted and handled manually, as a single block, holding it by the aluminum body ends.

Before moving the press unit, make sure that the upper beam is well-fastened to the lower welding plate: uniformly tighten the locking screws at both ends, by acting on the respective knobs (for all machine version).

Follow the operating instructions stated below:

- Make sure that during transport, the press has not been damaged and that it works properly from a mechanical point of view;
- Before moving the press unit, make sure that all connections to the regulator unit are disconnected.
- Before lifting the press unit, make sure that it is closed and the closing screws at both ends are evenly tightened (without there being a compression of the press).
- Use the ends of the aluminum body of the press to firmly grab it and move it.
- Perform the movements slowly, avoiding abrupt movements or shocks, in order to avoid damage to
- Eseguire i movimenti lentamente, evitando bruschi movimenti o urti, al fine di evitare danni a persone e cose.

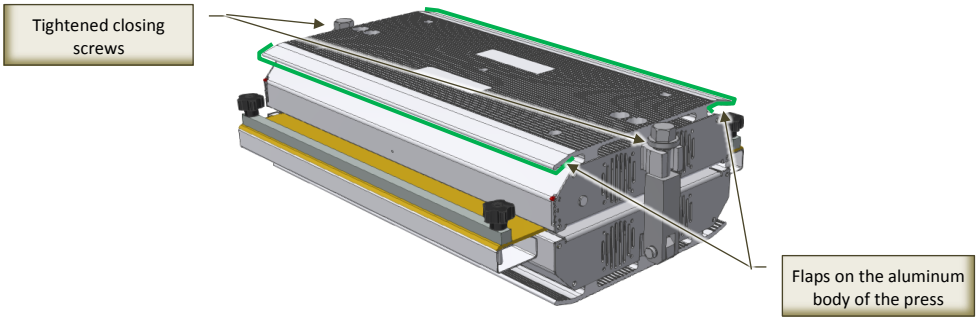



Fig. 6-1 - Gripping points for manual movement of the machine

***OBLIGATION !: When handling the machine, always wear safety shoes and gloves.***

***OBLIGATION !: The hot press must be moved as a single block, disconnected from the control unit. Before moving the hot press unit, make sure that the upper plate is integral with the lower plate: insert the side closing screws and tighten the locking nuts evenly. Otherwise, the parts of the press could separate and fall, causing a risk of crushing the operator and damaging the machine.***

***WARNING! In the event that the weight of a single part exceeds that which can be lifted by a person (see references to Leg. Decree 81/2008), use appropriate lifting devices so as to avoid risks of dorso-lumbar injuries (see also paragraph 6.3).***

***PROHIBITION! Do not manually lift products with a weight that exceeds the permitted limit!***

***See Tab. 5.6-1 which specifies the weight of the various parts with reference to the different press unit models.***

## 6.3 Manual handling of loads

The manual handling of loads (MHL) must be carried out under safety conditions in order to avoid overloading of the dorso-lumbar tract of the spine.

Some safety instructions relating to the manual handling of loads are stated below.

***WARNING! Lifting and handling operations must be carried out in accordance with the maximum weight that can be lifted by a person [3]; use appropriate lifting devices so as to avoid risks of dorso-lumbar injuries.***

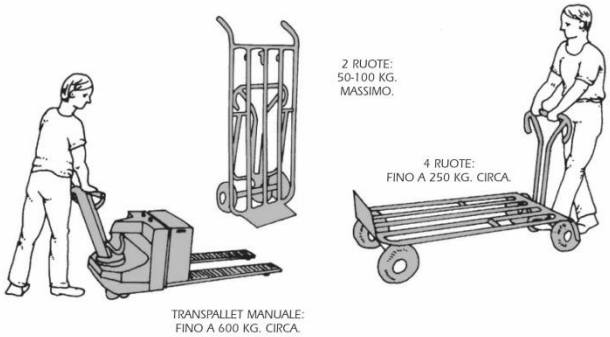
***PROHIBITION! Do not manually lift products with a weight that exceeds the permitted limit!***

In any case, it is important to remember that during manual handling activities, operators are subjected to the following risks:

- Falling loads;
- Foot/feet being crushed.

So as to prevent risks deriving from the incorrect handling of loads, please respect the following general instructions:

- Ensure that the floor is stable and without rough areas;
- If possible, make use of suitable transport devices (e.g. hand trolley, forklift trucks or cranes);




[3] 25 kg for men and 15 kg for women, according to attachment XXXIII of Italian Legislative Decree 81/2008 and standard ISO 11228.

Fig. 6-2 - Transport devices

- Find a stable position;
- Bend your knees (at a 90° angle) and use your leg muscles to lift the weight. Slowly lift the weight keeping your back straight;

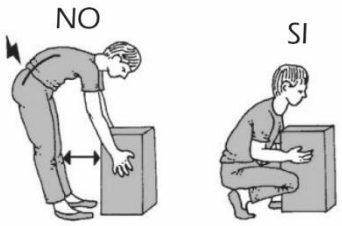



Fig. 6-3 - A lifting technique

- Avoid twisting your torso;

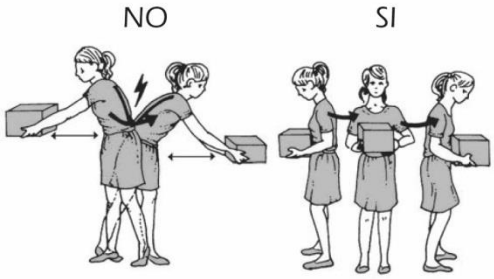



Fig. 6-4 - A lifting technique

- Keep the load as close as possible to your body;
- Distribute the load equally on both sides;
- Keep your field of view free from obstacles;
- At least two operators should be used to lift bulky loads;
- Respect maximum limits of weight that can be that can be lifted by a person;
- If the load is too heavy or requires considerable effort to lift, it is opportune to adopt one of the following solutions:
  - Use auxiliary means of transport;
  - Divide the load in several parts that are easier to transport;
  - Use two people to move the load.

In case it is necessary to move components using the pulling or pushing technique, please respect the following general instructions:

- Always work in a stable position;
- If possible, put the load on a wheeled device;
- Push with your back against the load and keep your arms parallel to your body, if you push with the load in front of your, pay attention to keep your back straight;
- Remember that it is always better to push than to pull;
- In case it is necessary to pull the load, always use safe grip points (that will not break when you pull).

## 6.4 Installation

***WARNING! Before carrying out the installation procedure, read the following warnings.***

***If the following warnings are not complied with, injury, death or damage to equipment may be caused.***

***HABASIT ITALIANA S.p.A. shall not be held responsible for any damage caused to people and object due to installation carried out in an environment described in one of the following situations.***

Once the product is received, it must be unpacked. During the unpacking operations check that no small parts remain in the flightcase and perform a detailed check of the general condition of the machine.

***OBBLIGO!: Lo smaltimento dei materiali di imballaggio dovrà essere eseguito in conformità alle normative vigenti del Paese di utilizzo.***

Upon receipt, the machine must be inspected to detect any damage that may have occurred during transport due to incorrect handling.

Any damage detected on the machine upon receipt must be promptly notified to the carrier and to the machine supplier.

### 6.4.1 Installation limits

***PROHIBITION! The machine cannot be installed in environments with an explosive atmosphere as defined by standard EN 60079-10 (CEI 31-30) "Electric constructions for explosive atmospheres due to the presence of gas - Part 10: the classification of hazardous environments". Machinery and relative components and equipment suitable for operating in explosive atmospheres, must display the (ex) (ATEX) trademark as established by standard EN 60079-14 (CEI 31-33) "Electric constructions for explosive atmospheres due to the presence of gas - Part 14: Electric systems situated in environments where there is the hazard of explosion due to the presence of gas (other than mines)".***

## 6.5 Installation site preparation

The machine can only be installed in an indoor area, covered and equipped with autonomous lighting and ventilation systems (natural or artificial).

The machine must be positioned in a stable way, on a flat work bench, of adequate dimensions, and at an ergonomic height. Around it must be guaranteed a sufficient space for the movement of the operator, for the handling of the parts of the machine and for the positioning of the product to be processed. The space around the press must be completely clear of objects, such as rags, tools, etc., and clean. Refer also to the paragraph 5.6.1.

The customer must arrange for the installation of the power supply network. Such network must be appropriately designed and adequately sized so as to guarantee the correct operation of the machine as well as compliance with safety regulations.

***WARNING!: HABASIT ITALIANA S.p.A. shall not be held responsible for any damage caused to people and object due to installation carried out in inappropriate sites.***

## 6.6 Assembly

The machine is delivered in a single part.

The only operations to be carried out to put the machine into service are limited to its positioning on a work bench and to the electrical connection (see par. 6.8).

Depending on the intended production, the equalizing plate may need to be replaced (see par. 7.4.2 and 7.4.2.2).

***ATTENZIONE!: Il posizionamento della macchina deve essere fatto personale tecnico qualificato in grado di effettuare l'installazione e il collegamento della macchina e di accertarsi del corretto posizionamento nel rispetto delle norme di sicurezza vigenti:***

- ***Intorno alla macchina deve esserci uno spazio operativo sufficiente a lavorare sulla pressa;***
- ***La pressa deve essere posizionata in modo stabile;***
- ***La pressa e lo spazio intorno ad essa devono essere sgombri da materiali e oggetti estranei.***

## 6.7 Lighting

***WARNING! For the purpose of use and maintenance, sufficient lighting must be guaranteed on the installed premises (in Italy according to what has been prescribed by Legislative Decree dated 9th April 2008 n° 81).***

An optimal level of lighting obviously varies according to the type of activity that is carried out; by way of example, as follows, the average lighting levels recommended by standard UNI EN 12464-1 are stated for some types of activities (the middle value represents lighting under normal conditions while the highest and the lowest values respectively indicate the recommended lighting when greater or lesser visual acuity is required):

| ***Optimal levels of lighting*** | |
|---|---|
| Leather industry and processing (General working environments) | ***200-300-500 Lux*** |
| Textile industries (unpacking, carding, drawing) | ***200-300-500 Lux*** |
| Shops and warehouses (display of goods) | ***300-500-750 Lux*** |
| Offices (general offices, typing activities, computer rooms) | ***300-500-750 Lux*** |
| Dressmaking | ***500-750-1000 Lux*** |
| Mechanical and assembly workshop (workbenches for detailed processes) | ***500-750-1000 Lux*** |
| Electro-technical and electronic industries (Precision and electronic component assemblies) | ***1000-1500-2000 Lux*** |

Tab. 6.7-1

## 6.8 Power supply connection

### 6.8.1 Prescriptions


***WARNING! The machine must be protected by a residual current device with an adequate capacity. The residual circuit device is an electro-technical device capable of breaking a circuit in case of a ground fault (electrical leakage). In order to also offer protection against overcurrent surges (phase-to-phase or phase-neutral) this is generally installed together with a circuit-breaker.***

***PROHIBITION! It is prohibited to connect the machine to a power line that has not been protected by means of a residual current device.***


***WARNING! If the following safety instructions are not complied with, injury, death or damage to equipment may be caused.***

- ***All electric connections of the machine must be carried out by authorised personnel (as for Italy, authorisation according to Decree dated 22nd January 2008 n°37);***
- ***Power supply network operations must be carried out when disconnected from the power supply;***
- ***The conductors of the wires that connect the machine to its electric control panel must have a section which is suitable for use with the power supply;***
- ***In order to comply with current safety standards, it is necessary for the machine to be connected to an efficient grounding system (identified by the ⏚ symbol);***
- ***The machine must be equipped with compatible protection fuses, with a nominal energy consumption value corresponding to those requested (see electric wiring diagram attached);***
- ***The wires situated on the outside of the machine must be regularly inspected in order to check for attrition, wear and tear or damage;***
- ***Wires must never be compressed or crushed. Position them in a way so as to avoid that an operator could trip over or walk over them.***


***WARNING! The machine must be connected to a grounding system and the continuity of the grounding of all the electric equipment must be checked. For this purpose, the user must provide the necessary connection points for the plant grounding system, taking care to check that this complies with the requirements established by current legislation.***

### 6.8.2 Connection method

Before making the connection, check that the mains voltage and frequency are compatible with the values required by the machine (see paragraph 5.6.4). The power supply line to which the machine will be connected must be protected by a differential switch of adequate capacity.

To make the connection proceed as follows:

- Connect the connection cables between the PFR-101 Control Unit and the press:
  - The cable "**B**" of the PFR-101 regulator unit must be connected to the black connector of the upper plate of the press (Fig. 6-5);
  - The cable "**C**" of the PFR-101 regulator unit must be connected to the gray connector of the lower plate of the press (Fig. 6-5).
- Connect the IEC type F electrical plug of the PFR-101 control unit to the power supply socket.

***NOTE: Connecting the PFR-101 regulator unit electrical plug to the power supply socket, it will light up.***

For further information, refer to the attached wiring diagrams.

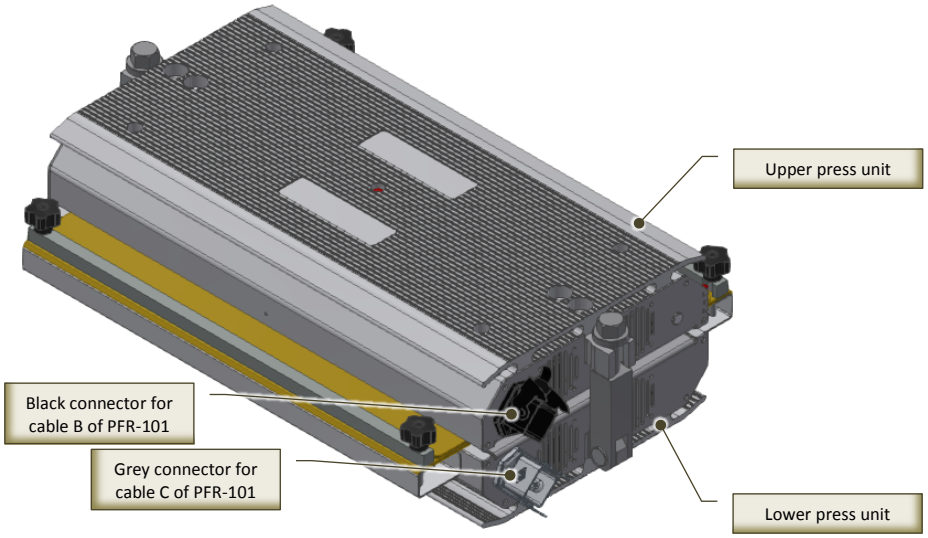



Fig. 6-5 – Press connectors

***ATTENTION !: Before supplying power to the machine, make sure that the Press-Control Unit connection cables are correctly connected and correspond to the upper and lower plate assignment (Fig. 6-5).***

***ATTENTION !: The electrical cables connecting the Control Unit and the power supply unit must be positioned so that they cannot be pulled or crushed and that they do not hinder the free movement of personnel or vehicles.***

# 7 Operation

## 7.1 Machine operation

The Hot pressing device (Fig. 7-1), PML-100 / PML-200 / PML-300 / PML-600 model, is a machine which has been designed and manufactured in order to enable the hot joining of Fabric belts and HabaSYNC timing belts.

The Hot pressing device is not a machine designed for continuous production, but for the repair of fabric and timing belts and is therefore intended for industrial and artisan environments and not permanently installed.

The machine consists of the following elements:

- Lower plate unit;
- Upper plate unit;
- Equalizing plate;
- Regulator unit.

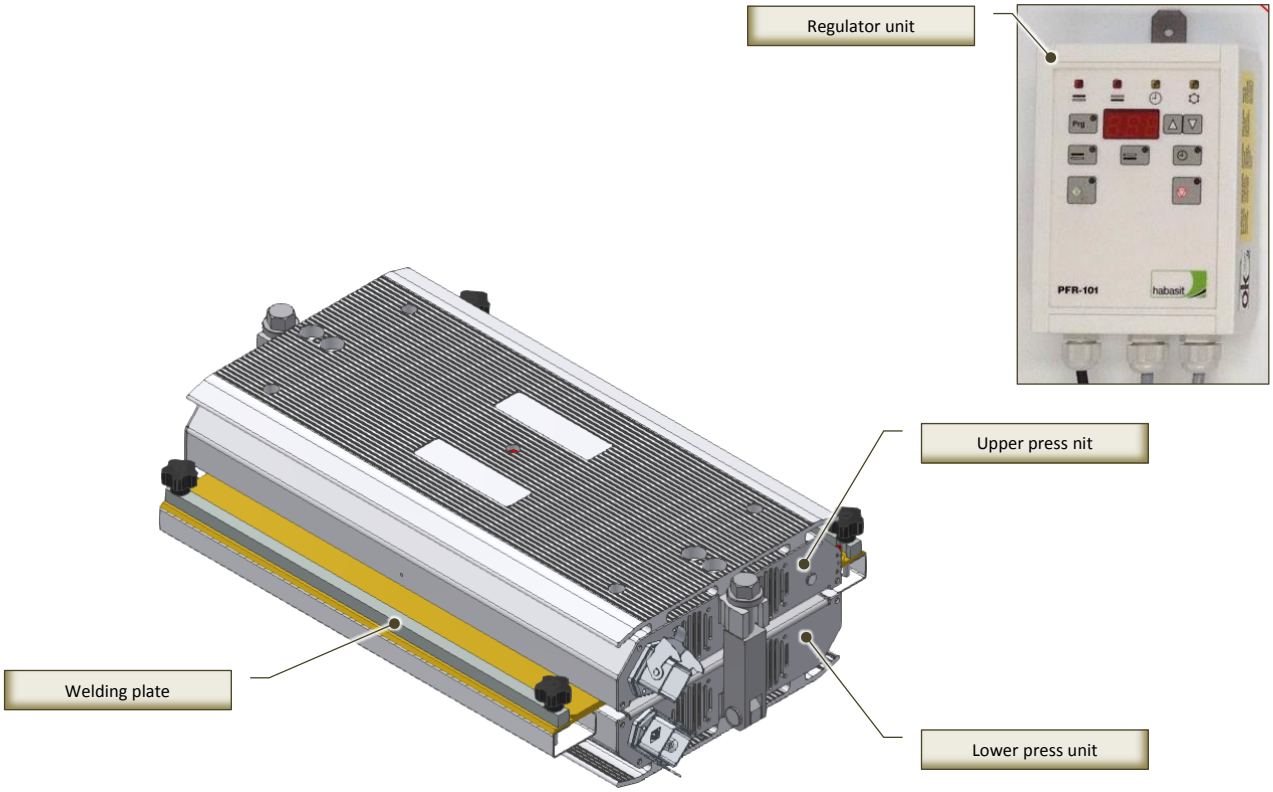



Fig. 7-1 - Hot pressing device

### 7.1.1 Operating principle

Each of the heating plates, upper and lower, are heated by an electrical heating element. Each heating plate is fitted with a temperature sensor (NTC sensor) which measures the temperature of the plate and transmits the relative value to the PFR-101 regulator unit.

By means of the two nuts on the sides of the press, the pressure system determines a uniform distribution of pressure over the entire area of the press.

The cooling cycle of the press takes place by means of a heat exchange mechanism using a heat sink, which, in turn is cooled by fans, positioned on the side of the heat sinks.

### 7.1.2 Lower plate unit

The lower press unit (Fig. 7-2) consists of an aluminium casing (Fig. 7-2) suitably shaped to contain the operating elements of the press and to be easily grasped by the hands of an operator.

On two opposite sides of the lower plate are the screws (Fig. 7-2) for locking the upper plate with the nuts to ensure the necessary pressure for a correct juction of the belts, and the guards with ventilation grilles for the cooling fans (Fig. 7-2).

On one of these two ends is also located the connector socket for the control unit (Fig. 7-2).

On the other two opposite sides there are the references (Fig. 7-2) for the positioning and centering of the welding plate.

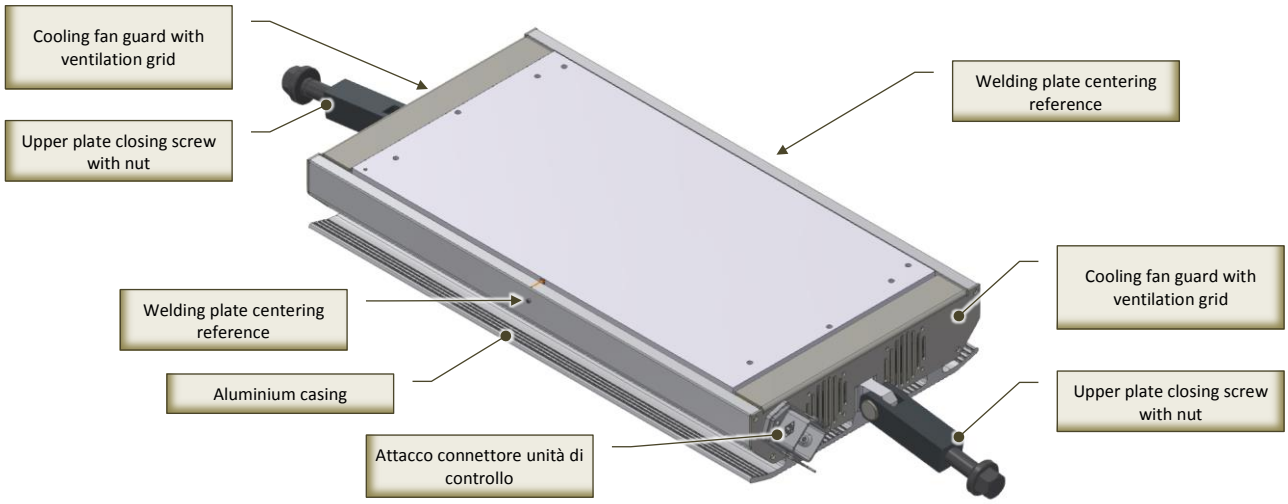



Fig. 7-2 – Lower press unit

Inside the aluminum casing are placed (Fig. 7-3):

- The cooling fans (powered by the control unit);
- The pressure bars that, by acting on the locking nuts, keep the parts at the right pressure during the welding phases of the product;
- The manual reset thermostat and the temperature probe.

They are attached to the aluminium casing, in the order (Fig. 7-3):

- The heating plate for joining the belt;
- The silicone heating element, powered by the regulator unit, which make it possible to join the product by means of the heat they produce;
- The silicone mat;
- The finned heat sink.

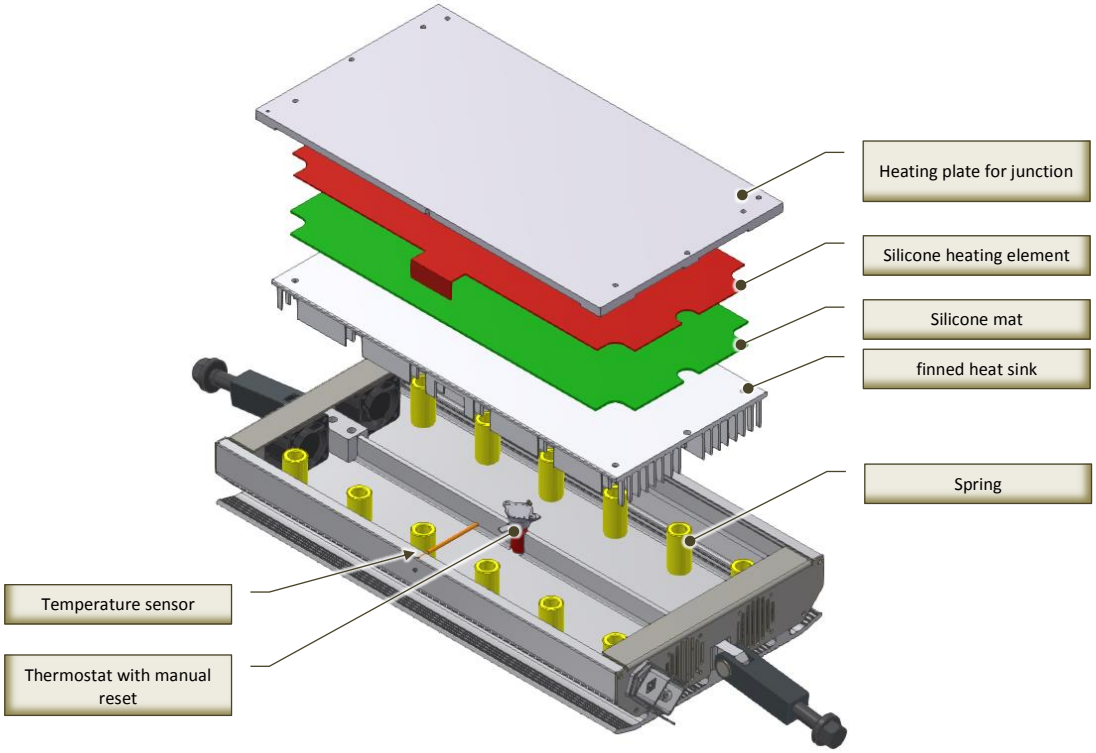



Fig. 7-3 - Exploded lower press unit

### 7.1.3 Upper plate unit

The upper press unit (Fig. 7-4) is identical to the lower plate, except for some parts.

The upper press unit is identical to the lower plate, except for some parts (Fig. 7-4), suitably shaped to contain the operating elements of the press and to be easily grasped by the hands of an operator.

On two opposite sides of the lower plate are the housing (Fig. 7-4) for the insertion of the closing screw placed on the lower plate, the guards with ventilation grilles for the cooling fans (Fig. 7-4) and the pressure indicator (Fig. 7-4) and the pressure indicator.

On one of these two ends is also located the connector socket for the control unit (Fig. 7-4).

Inside the aluminium casing of the upper press unit are placed the same elements of the lower press unit (see Fig. 7-3).

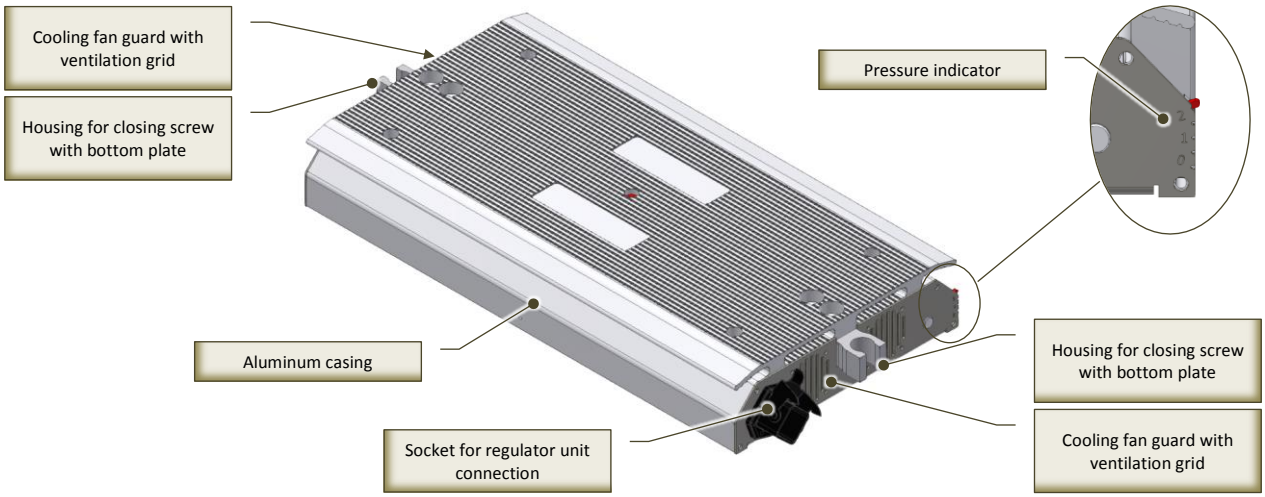



Fig. 7-4 – Upper press unit

### 7.1.4 Equalizing plate

The welding plate (Fig. 7-6), made of fibreglass, allows the positioning and equalization of the Fabric belt, which must be shutted by hot welding. The belt is held in place by the bar pressers with locking knobs.

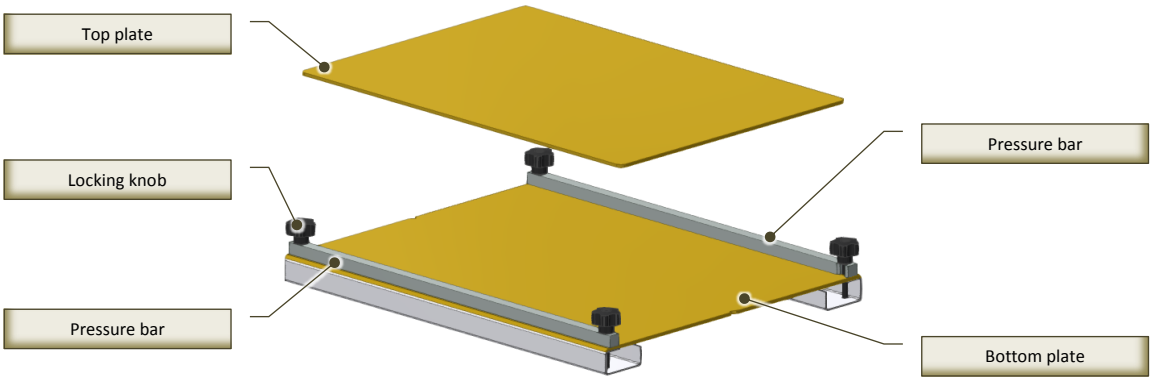



Fig. 7-5 – Welding plate

### 7.1.5 Regulator unit

The Control unit, model PFR-101 (Fig. 7-6), allows the power supply of the press body and guarantees the automatic execution of the welding cycle.

The supply voltage of this controller determines the supply voltage of the machine (120 V or 230 V).

For more information see section 5.2.3

For adjustment and operating modes, see section 7.2.1.


Fig. 7-6 - Control unit PFR-101

## 7.2 Control and signalling devices

The following tables describe the control and signalling devices associated with each illustration..

### 7.2.1 PFR-101 Regulator unit

The following describes the control and signalling devices of the PFR-101 Control Unit.

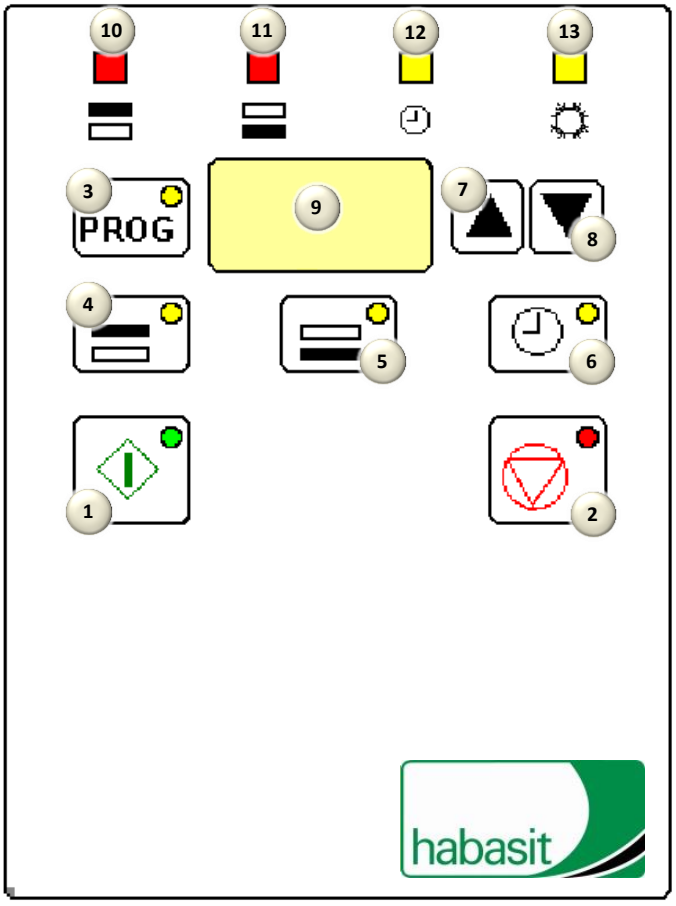



Fig. 7-7 – PFR-101 Regulator unit controlling devices

| *N°* | *Name* | *Function* |
|---|---|---|
| **1** | **[START]** | Starts the welding cycle.<br>The respective green indicator light is lit while the welding cycle is in progress.<br>The respective red indicator light flashes when the cycle is interrupted and the regulator unit waits for the operator's decision. |
| **2** | **[STOP]** | Interrupts the welding cycle.<br>The respective red indicator light flashes when the cycle is interrupted and the regulator unit waits for the operator's decision.<br>The indicator light is constantly lit when in the stand-by mode (when the cycle has been completed or the regulator unit is waiting for data to be entered). |
| **3** | **[PROG]** | The machine in stand-by mode switches to the programming mode (during which it is possible to enter parameter values).<br>During the welding cycle, the machine temporarily switches to the display showing the set value.<br>The respective yellow indicator light is lit when the machine is in the programming mode. |
| **4, 5, 6** | **[TOP TEMPERATURE]**<br>**[BOTTOM TEMPERATURE]**<br>**[PRESSING TIME]** | These three switches are used to select the method of entering or displaying the respective parameter.<br>The yellow indicator light of the active parameter is lit. |
| **7, 8** | **[UP]**<br>**[DOWN]** | In programming or parameterisation modes: to increase or decrease the value of the current parameter.<br>With the welding cycle interrupted: select the cycle phase to be continued. |
| **9** | **[DISPLAY]** | A 3-digit multifunction display. |
| **10, 11** | **<TOP HEATER ON > indicator light**<br>**<BOTTOM HEATER ON > indicator light** | These are lit when the respective heater receives power [they are constantly lit during the heating process, when a cycle is started after the appropriate temperature has been reached (the heating unit maintains the right temperature)]. |
| **12** | **<PRESSING TIME ON> indicator light** | This is lit as soon as the welding time countdown has started (as soon as both plates have reached the respective set temperature values). |
| **13** | **<COOLING PHASE> indicator light** | This is lit during the cooling cycle (at the end of the welding time countdown). |

Tab. 7.2-1

## 7.3 Safety devices

The machine is equipped with the safety devices described in the following paragraphs.

### 7.3.1 Guards

Guards are parts of a machine that are specifically used to provide protection by means of a physical barrier. Depending on their construction, the guards can be called a cap, cover, screen, door, total segregation guard, etc..

A guard can act alone and is therefore effective only when it is closed or associated with an interlocking device with or without locking the guard; in this case the protection is ensured whatever the position of the guard.

The following describes the type of guards used on the machine:

- **Fixed guard** - guard held in position (i.e. closed) permanently (by welding, etc.) or by means of fasteners (screws, nuts, etc.) that make it impossible to remove/open without the aid of tools (Fig. 7-8).

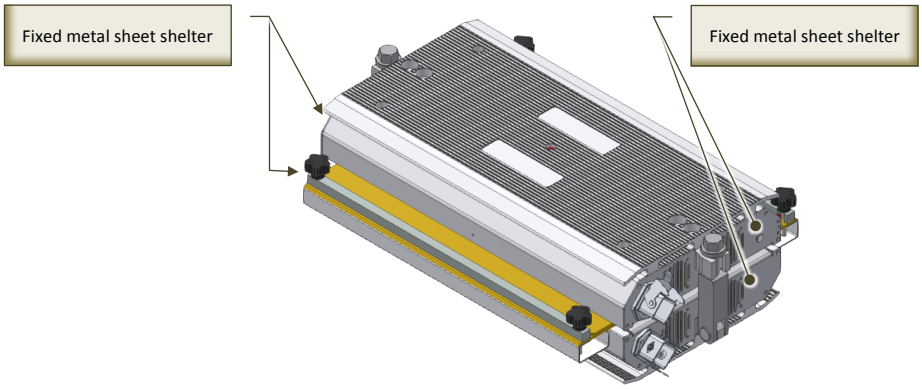



Fig. 7-8 - Fixed protection guards for cooling fans

### 7.3.2 Safety thermostat with manual reset and temperature sensor

The thermostat with temperature sensor is a control instrument that allows to manage the on-off state of a heating system.

The manual reset safety thermostat switches off the machine if the heating temperature set and detected by the sensor is exceeded and, in this case, it is necessary to carry out the manual reset to repeat the work cycle.

This device is mounted on both heating plates of the press.

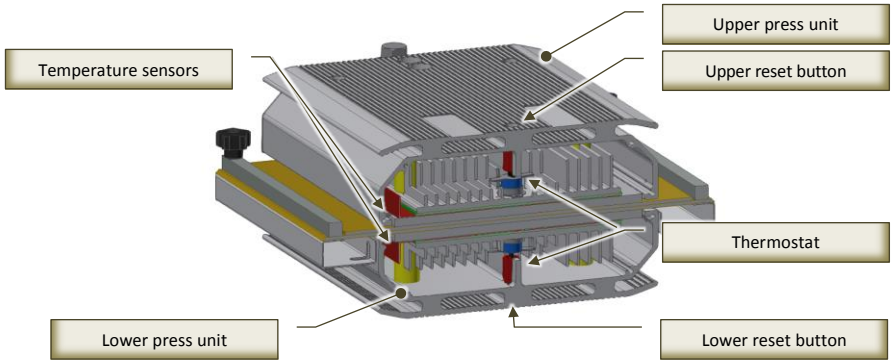



Fig. 7-9 - Safety thermostat with manual reset and temperature sensor (section view)

## 7.4 Preliminary operations

### 7.4.1 Parameterisation of the PFR-101 Regulator unit

Some of the parameters which determine the behaviour of the regulator unit can be set by the user in the following way:

- With the control unit in standby mode, press (and hold) the [PROG] key for 5 seconds.
  - The display shows: **PAS**;
- Press the [PROG] key again.
  - The display shows: **0**;
- Use the direction keys [UP] and [DOWN] to select the value **55**;
- Press [PROG] again.
  - The display shows the ID of the first parameter: **SPR** (value set for cooling stop). Refer to the

| Order ▪ | *Welding data /parameters* | PROGRAMMING From | To | Resolution/ Unit of measurement | *CONFIGURATION* ID Cod. | From | To | *Default* | Resolution/ Unit of measurement |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | Upper plate set temperature | dn1 | UP1 | 1 / °C | - | | | | |
| | Lower plate set temperature | dn2 | UP2 | 1 / °C | - | | | | |
| | Pre-set welding time | 0 | 999 | 1 / sec (Unt=1) | - | | | | |
| | | | | 1 / min (Unt=60) | | | | | |
| **Password to access configuration parameters** | | | | | PAS | - | - | ***55*** | 1 / unit |
| 1 | Cooling stop set value | | | | SPr | 20 | 70 | ***65*** | 1 / °C |
| 2 | Welding time range (sec = 1; minutes = 60) | | | | Unt | 1 | 60 | ***1*** | |
| 3 | Upper plate NTC Off-Set | | | | OF1 | -20 | 20 | ***0*** | 0.5 / °C |
| 4 | Lower plate NTC Off-Set | | | | OF2 | -20 | 20 | ***0*** | 0,5 / °C |
| 5 | Upper plate: Max. set temp. | | | | UP1 | 100 | 200 | ***200*** | 1 / °C |
| 6 | Upper plate: Min. set temp. | | | | dn1 | 20 | 50 | ***50*** | 1 / °C |
| 7 | Lower plate: Max. set temp. | | | | UP2 | 100 | 200 | ***200*** | 1 / °C |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 | Lower plate: Min. set temp. | | | | dn2 | 20 | 50 | ***50*** | 1 / °C |

- Tab. 7.4-1 for the ID parameters and their meanings;

- Press [PROG] again to see the value of this parameter.
  - The current value of this parameter is displayed: **50** (this is the default value, but a different number can also be displayed). Refer to the

| ***Order*** | | **PROGRAMMING** | | | ***CONFIGURATION*** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ▪ | ***Welding data /parameters*** | **From** | **To** | **Resolution/ Unit of measurement** | **ID Cod.** | **From** | **To** | ***Default*** | **Resolution/ Unit of measurement** |
| | | | | | | | | | |
| | Upper plate set temperature | dn1 | UP1 | 1 / °C | - | | | | |
| | Lower plate set temperature | dn2 | UP2 | 1 / °C | - | | | | |
| | Pre-set welding time | 0 | 999 | 1 / sec (Unt=1) | - | | | | |
| | | | | 1 / min (Unt=60) | | | | | |
| **Password to access configuration parameters** | | | | | PAS | - | - | ***55*** | 1 / unit |
| 1 | Cooling stop set value | | | | SPr | 20 | 70 | ***65*** | 1 / °C |
| 2 | Welding time range (sec = 1; minutes = 60) | | | | Unt | 1 | 60 | ***1*** | |
| 3 | Upper plate NTC Off-Set | | | | OF1 | -20 | 20 | ***0*** | 0.5 / °C |
| 4 | Lower plate NTC Off-Set | | | | OF2 | -20 | 20 | ***0*** | 0,5 / °C |
| 5 | Upper plate: Max. set temp. | | | | UP1 | 100 | 200 | ***200*** | 1 / °C |
| 6 | Upper plate: Min. set temp. | | | | dn1 | 20 | 50 | ***50*** | 1 / °C |
| 7 | Lower plate: Max. set temp. | | | | UP2 | 100 | 200 | ***200*** | 1 / °C |
| 8 | Lower plate: Min. set temp. | | | | dn2 | 20 | 50 | ***50*** | 1 / °C |

- Tab. 7.4-1 to interpret these values;

- You can change the value with the direction keys [UP] and [DOWN];

- Scroll down the list with the [PROG] key. The display sequence is:
  - Parameter ID;
  - Parameter value;
  - Next Parameter ID;
  - Parameter value.
- At each display of a value, you can set it using the [UP] and [DOWN] direction keys;
- To exit the setting mode:
  - Use the [PROG] key to scroll through the list of parameters to the end or
  - Do not make any settings for 30 seconds: The control unit automatically returns to standby mode.

The following table (

| *Order of* | | PROGRAMMING | | | *CONFIGURATION* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | ***Welding data /parameters*** | **From** | **To** | **Resolution/ Unit of measurement** | **ID Cod.** | **From** | **To** | ***Default*** | **Resolution/ Unit of measurement** |
| | | | | | | | | | |
| | Upper plate set temperature | dn1 | UP1 | 1 / °C | - | | | | |
| | Lower plate set temperature | dn2 | UP2 | 1 / °C | - | | | | |
| | Pre-set welding time | 0 | 999 | 1 / sec (Unt=1) | - | | | | |
| | | | | 1 / min (Unt=60) | | | | | |
| **Password to access configuration parameters** | | | | | PAS | - | - | ***55*** | 1 / unit |
| 1 | Cooling stop set value | | | | SPr | 20 | 70 | ***65*** | 1 / °C |
| 2 | Welding time range (sec = 1; minutes = 60) | | | | Unt | 1 | 60 | ***1*** | |
| 3 | Upper plate NTC Off-Set | | | | OF1 | -20 | 20 | ***0*** | 0.5 / °C |
| 4 | Lower plate NTC Off-Set | | | | OF2 | -20 | 20 | ***0*** | 0,5 / °C |
| 5 | Upper plate: Max. set temp. | | | | UP1 | 100 | 200 | ***200*** | 1 / °C |
| 6 | Upper plate: Min. set temp. | | | | dn1 | 20 | 50 | ***50*** | 1 / °C |
| 7 | Lower plate: Max. set temp. | | | | UP2 | 100 | 200 | ***200*** | 1 / °C |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 8 | Lower plate: Min. set temp. | | | | dn2 | 20 | 50 | ***50*** | 1 / °C |

Tab. 7.4-1) lists all the programming parameters of the PFR-101 Control Unit.

***Avoid changing these parameters.***

| Order of display | Welding data /parameters | PROGRAMMING | | | CONFIGURATION | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | From | To | Resolution/ Unit of measurement | ID Cod. | From | To | Default | Resolution/ Unit of measurement |
| | | | | | | | | | |
| | Upper plate set temperature | dn1 | UP1 | 1 / °C | - | | | | |
| | Lower plate set temperature | dn2 | UP2 | 1 / °C | - | | | | |
| | Pre-set welding time | 0 | 999 | 1 / sec (Unt=1) | - | | | | |
| | | | | 1 / min (Unt=60) | | | | | |
| **Password to access configuration parameters** | | | | | PAS | - | - | ***55*** | 1 / unit |
| 1 | Cooling stop set value | | | | SPr | 20 | 70 | ***65*** | 1 / °C |
| 2 | Welding time range (sec = 1; minutes = 60) | | | | Unt | 1 | 60 | ***1*** | |
| 3 | Upper plate NTC Off-Set | | | | OF1 | -20 | 20 | ***0*** | 0.5 / °C |
| 4 | Lower plate NTC Off-Set | | | | OF2 | -20 | 20 | ***0*** | 0,5 / °C |
| 5 | Upper plate: Max. set temp. | | | | UP1 | 100 | 200 | ***200*** | 1 / °C |
| 6 | Upper plate: Min. set temp. | | | | dn1 | 20 | 50 | ***50*** | 1 / °C |
| 7 | Lower plate: Max. set temp. | | | | UP2 | 100 | 200 | ***200*** | 1 / °C |
| 8 | Lower plate: Min. set temp. | | | | dn2 | 20 | 50 | ***50*** | 1 / °C |

Tab. 7.4-1

### 7.4.2 Replacing equalizing plate

The machine is supplied with a joint plate for the repair of Fabric belts. If necessary, this accessory can be replaced with another one, depending on the machine model supplied.

The PML-100 or PML-200 can also be used to join HabaSYNC timing belts. In this case, the machine must be equipped with a suitable joining plate (optional).

***OBLIGATION: The setting up of the machine with an equalizing plate must be performed when the Press is disconnected from the Control unit.***

***WARNING: When moving the upper plate of the press, always hold the part tightly to prevent it from falling, resulting in the risk of crushing.***

#### 7.4.2.1 Machine setup with equalizing plate for fabric belts

Generally, this operation must be performed to replace a broken splice plate or after the machine has been used with a joining plate (optional).

- Open the press (see point 1 of section. 8.4);
- Remove the equalizing plate in use;
- Place the junction plate on the bottom plate of the press (Fig. 7-10): the slots of the junction plate must fit perfectly into the references of the bottom plate of the press;
- Close the press (see section 4 of section. 8.4).

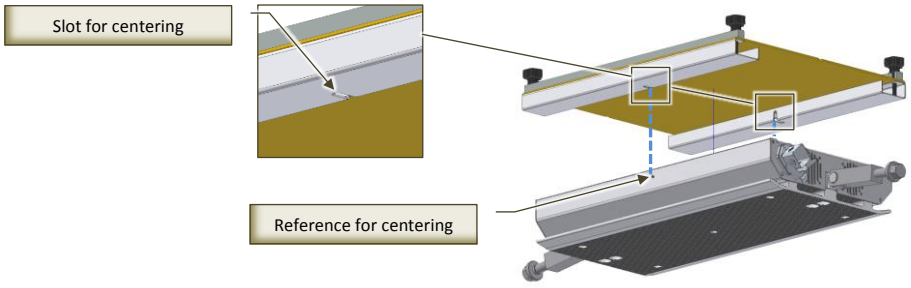



Fig. 7-10 - Positioning of the junction plate on the lower press unit

#### 7.4.2.2 Machine setup with joining plate for HabaSYNC timing belts (only for PML-100 and PML-200)

This operation is reserved for the PML-100 and PML-200 models.

Use only compatible joining plates: refer to the complete list on the website of the manufacturer HABASIT ITALIANA S.p.A. to find and order the right one.

- Open the press (see point 1 of section 8.4);
- Remove the fibreglass splice plate;
- Place the joining plates on the bottom plate of the press in such a way that it is perfectly centered and does not overflow from the perimeter of the press;
- Close the press (see section 4 of section 8.4).

***NOTE: The equalizing plate that is removed must be stored in the plastic flight case used to transport the machine, so that the accessory is not accidentally damaged.***

# 8 Operating instructions

## 8.1 Safety instructions


***WARNING! Failure to comply with the following safety instructions could cause injury, death or damage to the machine.***

The machine must be started by "**qualified personnel**" based on the relative instructions stated in this manual.

***Inspection procedures to carry out before and after machine starting are listed below.***

### 8.1.1 Inspections to carry out before machine starting

- ***Check that the operator's clothing is suitable. The operator must not wear loose clothing, wristwatches, rings, necklaces or similar objects. Long hair must be tied back;***
- ***Check that there are no unauthorised people in the operational area of the machine;***
- ***Check that there are no foreign bodies (tools, cloths, etc.) inside the machine;***
- ***Check and, if necessary, do not start up the machine if there is faulty equipment or indicator lights;***
- ***Should the use of Personal Protection Equipment be foreseen, check that these meet with the requirements of the relative current law (in Italy – Legislative Decree n°81 dated 9th April 2008).***

### 8.1.2 Inspections and behavioural rules after machine starting

- ***Stop the machine immediately should strange noises be heard. Re-start the machine only after having removed the cause of the noise;***
- ***Stop the machine immediately should the indicator lights on the control panel give abnormal signs. Re-start the machine only after having identified and removed the fault;***
- ***Stand only in the operator's area of intervention;***
- ***Keep well away from moving parts;***
- ***Never abandon the machine by leaving it unattended when it is operational;***
- ***Do not allow people to come near the machine during working hours;***
- ***Monitor the correct performance of the machine work cycle, stopping the same immediately in case of malfunctioning;***
- ***Do not use tools, equipment, etc. near the machine in movement.***

### 8.1.3 Prohibited operations

***PROHIBITION! It is prohibited to carry out work on electric equipment when there are live parts in the control panel.***

***PROHIBITION! It is prohibited to carry out adjustment and/or lubrication operations with the machine in operation.***

***PROHIBITION! It is prohibited to carry out inspections on the product being processed before the machine has completely stopped.***

***It is forbidden to remove protective screens or guards.***

### 8.1.4 Hidden dangers

***WARNING: Both the qualified operator and the technical staff of the company HABASIT ITALIANA S.p.A. working on a machine, must keep in mind other less evident dangers, which are often underestimated on the production sites:***

- ***Protruding parts of the machine;***
- ***Parts of the machine that may have sharp and/or sharp-edged surfaces due to functional requirements;***
- ***Electrostatic charges present even after switching off;***
- ***Hot car parts.***

## 8.2 Preparation for start-up

Before powering-up the machine, it is necessary to make sure that the electric wiring system of the building where it will be installed, has been activated. In order to power-up such system, it is necessary to comply with the instructions provided by the respective manufacturer-installer.

## 8.3 Power-up stage

After having switched on (powered-up) the machine, it is necessary to enable the same to perform automatic operation. In order to enable to the machine to perform automatically, follow the instructions below:

- Turn on the PFR-101 Control Unit by connecting its plug to a suitable power outlet (see section 6.8.2);
- Check that all the preliminary adjustments have been carried out (paragraph 7.4);
- Proceed with the phases described in the following paragraph.

## 8.4 Working cycle

1. Open the press:
   - Using the supplied ratchet wrench, loosen the press lock nuts, one on each side (ref. 1, Fig. 8-1);
   - Remove the pins from the seat (ref. 2, Fig. 8-1);
   - Lift the upper plate of the press (ref. 3, Fig. 8-1);

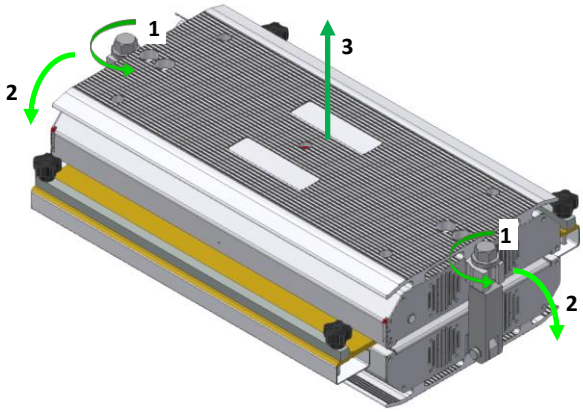



Fig. 8-1 – Opening the press

***NOTE: The upper plate of the press must be gripped by the side fins of the aluminium body and placed on a clean surface, with the heating plate facing upwards.***

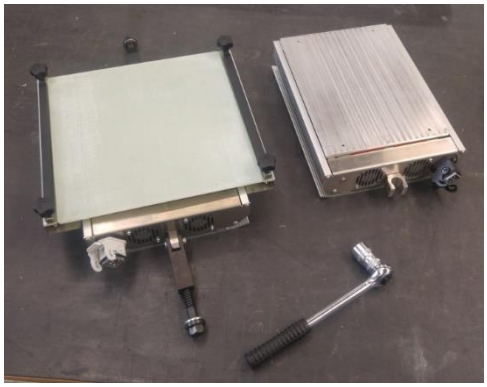


Fig. 8-2 – Open press

***WARNING: When moving the upper plate of the press, always hold the part tightly to prevent it from falling, resulting in the risk of crushing.***

2. If you want to join a Fabric belt, load it into the equalizing plate (Fig. 8-3 and Fig. 8-4):
   - Remove the top fiberglass plate from the splice plate;
   - Loosen the locking knobs of the pressure bars;
   - Open the pressure bar;
   - Place the belt to be joined on the fiberglass bottom plate so that the ends are perfectly aligned and the welding line is aligned with the references on the fiberglass bottom plate

     ***NOTE: The ends of the belt to be joined must be perfectly aligned and matching.***
   - Reposition the pressure bars above the belt and tighten the locking knobs so that the belt is locked and is level. Do not overtighten the locking knobs;
   - Replace the fiberglass top plate;

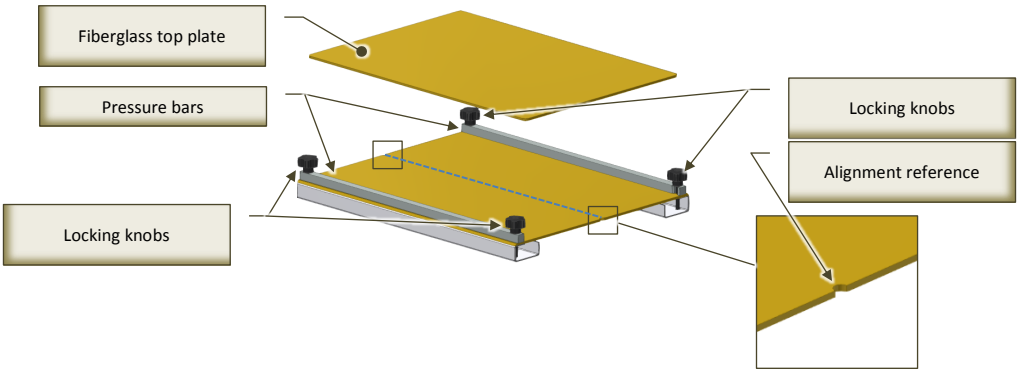



Fig. 8-3 - Positioning of a fabric belt on the equalizing plate (parts)

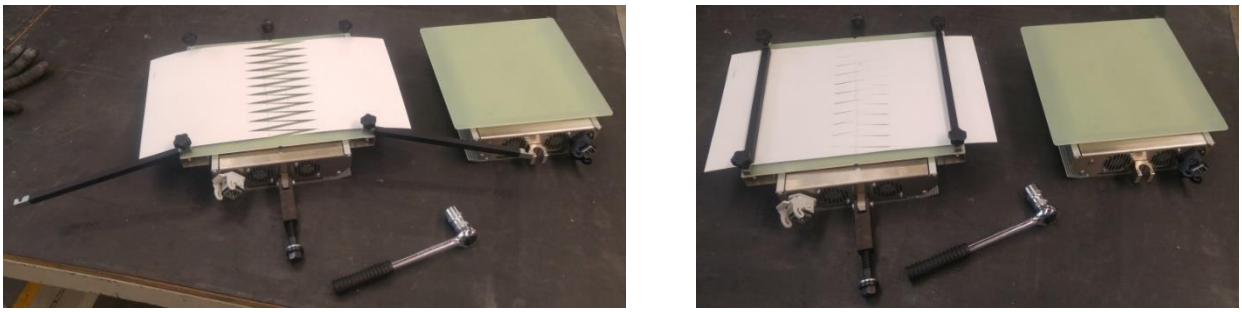


Fig. 8-4 – Positioning of a fabric belt on the equalizing plate

3. If you want to join a HabaSYNC timing belt, load it into the joining plates (Fig. 8-5):
   - Remove the top plate;
   - Insert the ends of the belt to be joined into the lower plate so that the teeth of the belt are perfectly seated in the grooves of the lower plate and the ends are placed close together in the centre of the plate

     ***NOTE: The ends of the toothed belt to be joined must be positioned in the middle of the joining plates.***

     ***OBLIGATION: Only use the joining plates corresponding to the type of HabaSYNC timing belt you wish to join. Refer to the list of joining plates that can be supplied with the machine.***
   - Reposition the top plate;

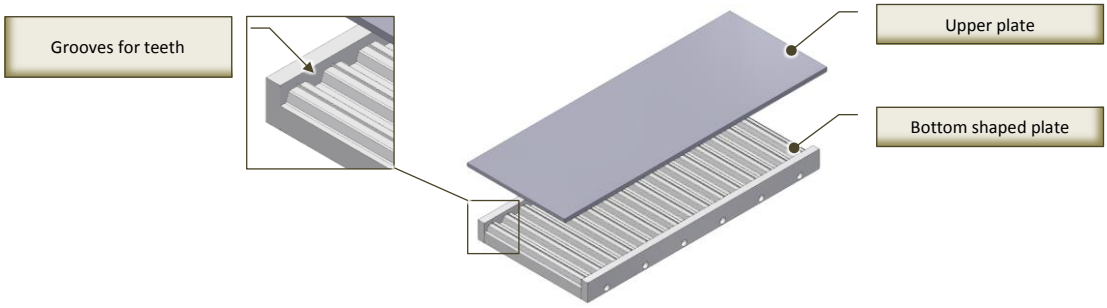



Fig. 8-5 – Positioning of the HabaSYNC timing belt on joining plate

4. Close the press:
   - Positioning of the HabaSYNC timing belt on joining plate Fig. 8-6);
   - Insert the pins of the lower plate into the seats of the upper plate (ref. 2 Fig. 8-6)
   - Tighten the press lock nuts with the supplied ratchet wrench, without any compression of the press;

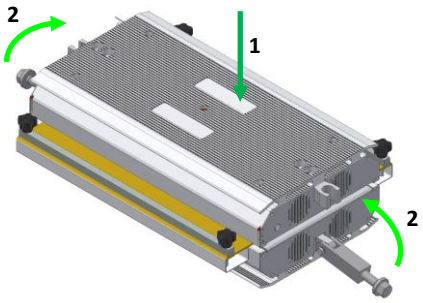



Fig. 8-6 – Press closing

***WARNING: When moving the upper plate of the press, always hold the part tightly to prevent it from falling, resulting in the risk of crushing.***

5. Alternately tighten the locking nuts (Fig. 8-7) using the supplied ratchet wrench until the pressure required to join the product is reached. The pressure applied to the product is indicated by the position of the red levers. To know the optimal pressure for the repair of the product, refer to the technical data sheet of the product itself.

***CAUTION: The two red levers, one on each side, must indicate the same pressure. Do not exceed the maximum permissible pressure of 2 bar / 29 psi.***

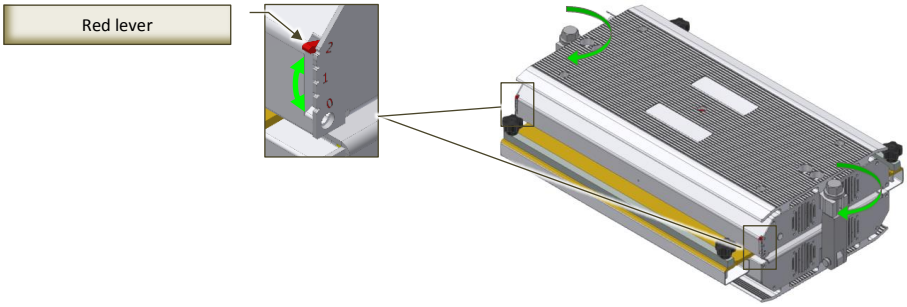



Fig. 8-7 - Applying the necessary pressure to the product to be joined

6. Set the working cycle parameters on the Control Unit:
   - Set the temperature of the upper and lower heating elements (see section8.5.1), as indicated in the technical data sheet of the product to be joined;
   - Set the welding and cooling time (see section 8.5.1);
7. Start the automatic heating, welding and cooling cycle (see section 8.5.2);
8. Once the cooling temperature is reached and the fans stop, loosen the locking nuts to open the two sides of the press, using protective gloves. Carefully remove the joining plate with the freshly welded product;
9. Once completely cooled, open the joining plate and remove the processed product;
10. Allow the processed product to cool to room temperature before handling.

***NOTE: If it is necessary to interrupt the welding cycle, proceed as described in paragraph 8.5.3.***

***WARNING: The parts of the press and the product being processed may be hot. Do not touch surfaces without protective gloves.***

***MANDATORY: Use the appropriate PPE (heat insulating gloves).***

***MANDATORY: Once a work cycle has been carried out, it is necessary to check that the joining plates are perfectly clean and that there are no residues from the work. If necessary, clean the parts.***

***NOTE: Before performing a new work cycle it is necessary to wait for a certain period of time so that the machine has completely cooled down.***

***The temperature of the welding plates should drop to 40°C before the welding cycle is restarted.***

## 8.5 PFR-101 Regulator unit operation

### 8.5.1 Entering joining parameters

- Make sure that the regulator unit is in the stand-by mode (red indicator light [STOP] lit);
- Enter the programming mode by pressing [PROG]:
  - The yellow indicator light switches on [PROG],
  - The display shows the set values;
- Select the parameter to be set [TOP TEMPERATURE], [BOTTOM, TEMPERATURE] or [PRESSING TIME]. The respective yellow indicator light switches on.
- By means of the [UP] and [DOWN] arrow keys it is possible to set the respective parameters. The pressing time is defined by a parameter that can be set either in seconds (no decimal point is shown on the display) or in minutes (the decimal point is shown at the far right of the display).
- Exit the programming mode by pressing [PROG] again:
  - The yellow indicator light switches off [PROG],
  - The display shows the actual values.

### 8.5.2 Performance of the welding cycle

Start the welding cycle by pressing [START]:

- The green [START] indicator light switches on,
- The red [STOP] indicator light switches off,
- The <TOP HEATER ON>, <BOTTOM HEATER ON>, <PRESSING TIME ON> and the <COOLING PHASE> indicator lights all show the progress of the welding cycle.

The sequence of operations to be carried out is the following:

- Both the <HEATER ON> indicator lights switch on and the heating plates heat up to the set temperature (phases 1 and 2);
- When the temperature is at approximately 75% of the set value, the regulator unit reduces its power for a short period of time (the red <HEATER ON> indicator lights show that a cycle is in progress) in order to check the system response and to optimise the regulation parameters;
- Once the set temperature values have been reached, the power input is reduced (the red <HEATER ON> indicator lights show the performance of a cycle in the ON/OFF mode in order to maintain the set temperature), the yellow <PRESSING TIME ON> indicator light switches on and the [PRESSING TIME] countdown begins (phase 3);
- At the end of the [PRESSING TIME] countdown, the yellow <COOLING PHASE> indicator light switches on. The cooling fans start working, the heat press cools down to a set temperature pre-defined by an adjustment parameter (phase 4).

During the welding cycle, the display shows the temperature or the time according to the active button shown by the relative led indicator light. It is possible to carry out the following operations without interrupting the cycle:

- Switching on the display to show the parameters desired by pressing [TOP TEMPERATURE], [BOTTOM TEMPERATURE], [PRESSING TIME] respectively;
- Temporary switching to the display showing the set value (rather than the actual value) by keeping the [PROG] button pressed down.

***WARNING! Once the welding cycle has been started, the parameters CANNOT be changed. Interrupt the cycle, change the parameters and re-start the cycle when required.***

### 8.5.3 Interruption of the welding cycle

Once the welding cycle has been interrupted by pressing the [STOP] button, several options can be chosen from.

The permitted options depend on the current phase of the welding cycle (Fig. 8-8).

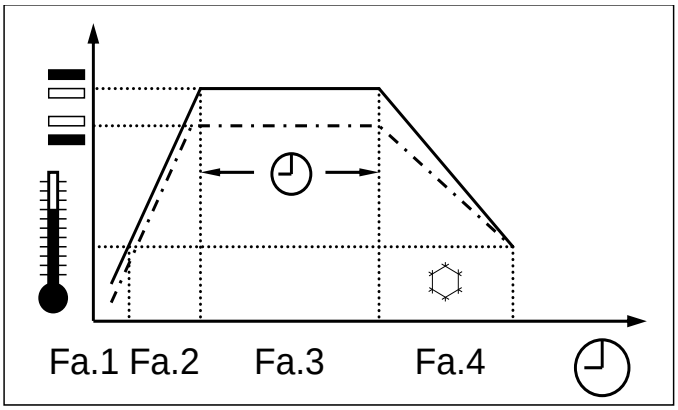



Fig. 8-8 - Welding cycle phases

- Press [STOP] to interrupt the welding cycle
  - The red [STOP] and green [START] indicator lights flash.
  - Disconnect all the heat press components from the power supply [no cooling, no heating].
  - The display shows the phase of the welding cycle during which the regulator unit will start working by pressing [START];
- Select the desired phase using the [UP] and [DOWN] arrow keys;
- Re-start the cycle in the selected phase by pressing [START];

Or

- Exit the welding cycle by pressing [STOP] again. In this case, the press has to cool down autonomously.

At this point, depending on the phase, the following exit pathways are possible (Fig. 8-8):

- From phase 1 (cooling, below the final cooling temperature) switching to the stand-by mode;
- From phase 2 (cooling, above the final cooling temperature) switching to phase 4 or to the stand-by mode;
- From phase 3 (pressing time countdown) switching to phase 4 or to the stand-by mode;
- From phase 4 (cooling) switching to the stand-by mode.

## 8.6 Turn off

To turn off the machine simply disconnect the plug of the PFR-101 Control Unit from the power outlet.

# 9 Ordinary maintenance

## 9.1 Glossary and terminology

Some recurrent terms that can be found in the manual are described below so that their meaning can be univocally understood:

- **Ordinary maintenance:** a series of operations necessary to maintain the functionality and the efficiency of the component/part. Normally these operations are programmed by the Manufacturer, who defines the necessary requirements and intervention methods;
- **Extraordinary maintenance:** a series of operations necessary to maintain the functionality and efficiency of the component/part. These operations are not programmed by the Manufacturer and they must be carried out by an expert maintenance technician;
- **Expert maintenance technician:** A qualified technician that is chosen among those who have the necessary requirements, skills and mechanical and electrical know-how to carry out extraordinary maintenance and repairs on the component(s);
- **Review:** This consists in substituting mechanical components that show signs of wear and tear that can jeopardise the operation of such component/part. Moreover, a review includes the inspection of all components (couplings, seals, contacts, etc.). In case these are damaged they must be substituted and the relative cause of such damage must be identified.

## 9.2 Maintenance operation safety regulations

***WARNING! If the following safety instructions are not complied with, injury, death or damage to the machine can be caused.***




***WARNING! Each maintenance procedure must be carried out when the machine is not operational, after having disconnected the machine components from all power supply networks (electric, pneumatic, hydraulic, etc.) and with the emergency stop button activated (pressed). Only in this way can one be certain that an unexpected machine starting cannot take place while maintenance personnel is at work.***

***When it is necessary, for certain operations, to switch on the electricity, check that the appropriate safety devices are working. Switch on the electricity only for the time that is strictly necessary to carry out the maintenance procedure.***

The procedures must be carried out by qualified personnel that must have all the technical know-how in order to carry out such operations under conditions of utmost safety and fully respecting the legal requirements on such subject. During each maintenance operation, the following warnings must be complied with:

- ***Affix a warning sign (see example Fig. 9-1) on the main isolating device power source(s);***
- ***After having disconnected the power supply source(s), prevent that the power supply could be accidentally switched on by putting a padlock on each main isolating device;***
- ***After having disconnected the power supply source(s), prevent that the power supply could be accidentally switched on by putting a padlock on each main isolating device (Fig. 9-2);***
- ***Ensure that there is an efficient earthing system and that any live system parts are out of reach;***
- ***Do not allow any unauthorised personnel to come near the system;***


Fig. 9-1 - Example: A warning sign

Fig. 9-2 - An electrical plug lockout box

***WARNING: Before working on the machine, always make sure that its parts are at room temperature. During operation, the machine parts reach high temperatures. If work is to be carried out immediately after the machine has been used, it is therefore necessary to wait for the time necessary for them to cool down completely.***

## 9.3 Cleaning operation safety regulations




***WARNING! Each cleaning operation must be carried out when the machine is not operational, after having disconnected the system components from all power supply networks Only in this way can one be certain that an unexpected machine starting cannot take place while cleaning personnel is at work.***

As for the cleaning of the machine or some of its parts, the following warnings must be complied with:

- ***Do not clean electric equipment using water or other fluids. To remove dust, use only a clean paintbrush or a dry cloth;***
- ***In case jets of water are used to clean the machine, ensure that the electrically-powered components and equipment are sufficiently protected. Before starting the machine up, ensure that there is no water on the electrically-powered components and equipment. Do not direct jets of water towards other people;***
- ***Do not use compressed air to clean the machine. Use a vacuum cleaner instead;***
- ***Do not clean plastic surfaces with alcohol or solvents. Use only specific detergents;***
- ***Dispose of cleaning materials by complying with the current law on this subject. Do not dispose of used material or cleaning residues in the environment.***





***OBLIGATION! During cleaning procedures, it is compulsory to wear the Personal Protective Equipment provided.***

***WARNING: Before working on the machine, always make sure that its parts are at room temperature. During operation, the machine parts reach high temperatures. If work is to be carried out immediately after the machine has been used, it is therefore necessary to wait for the time necessary for them to cool down completely.***

## 9.4 Repair operation safety regulations




***WARNING! Each repair operation must be carried out when the machine is not operational, after having disconnected the system components from all power supply networks. Only in this way can one be certain that an unexpected machine starting cannot take place while personnel in charge of repair procedures is at work.***

***When it is necessary to switch on the electricity for certain operations, check that the appropriate safety devices are working. Switch on the electricity only for the time that is strictly necessary to carry out the maintenance procedure.***

The procedures must be carried out by qualified personnel that must have all the technical know-how in order to carry out such operations under conditions of utmost safety and fully respecting the legal requirements on such subject. During each maintenance operation, the following warnings must be complied with:

- ***Affix a warning sign (see example Fig. 9-1) on the main isolating device power source(s);***
- ***After having disconnected the power supply source(s), prevent that the power supply could be accidentally switched on by putting a padlock on each main isolating device (Fig. 9-2);***
- ***Ensure that there is an efficient earthing system and that any live system parts are out of reach;***
- ***Do not allow any unauthorised personnel to come near the system;***

***WARNING: Before working on the machine, always make sure that its parts are at room temperature. During operation, the machine parts reach high temperatures. If work is to be carried out immediately after the machine has been used, it is therefore necessary to wait for the time necessary for them to cool down completely.***

***WARNING! It is the Customer's responsibility to check that only original spare parts have been used during repair procedures, as these are the only ones capable of not jeopardising the safety of the machine.***

## 9.5 Safety sign inspection

***Every six months*** inspect all safety signs affixed on the machine as regards the relative integrity and readability (as for foreseen locations, see paragraph 4.3).

Should labels and signalling signs be damaged, these must be substituted.

***WARNING! The absence of safety signs can expose the worker to hazard due to the fact that residual risks may not be perceived.***

## 9.6 Safety device inspection and maintenance

***WARNING! Upon completion of maintenance or repair operations, before re-starting the machine, the Maintenance manager must make sure that all work has been completed, that the safety devices have been restored and inspected and that in the operational machine area there are no unauthorised individuals operating it.***

### 9.6.1 Guards

Guards must be inspected at least ***every 6 months.***

In particular, it is necessary to inspect the following:

- The loss or damage of any part of the guard, in particular if this causes the reduction of the safety functions, for example, a reduction in resistance due to impact or scratches on glass parts;
- Parts subject to wear and tear (coverings, joints and hinges, gas pistons, locks, etc.) must be substituted;
- The operability of the interlocking systems;
- The wear and tear of joints and fixing points;
- Deterioration caused by corrosion, changes in temperature, , chemical effects;
- The efficiency of the sliding action of mobile parts and carry out lubrication if necessary;
- Safety distances (especially as regards perimeter guards);
- The efficiency of noise reduction and carry out substitution of soundproofing materials if necessary

### 9.6.2 Manual reset safety thermostat with temperature sensor

The safety thermostat with manual reset with temperature sensor must be checked ***at least every 3 months.***

If it does not work properly, it must be replaced.

## 9.7 Electrical system maintenance

### 9.7.1 Installation, operating and maintenance conditions

Each electrical system requires proper and adequate maintenance, carried out by expert and qualified personnel, which contributes towards maintaining the level of reliability as well as the degree of safety of each electrical system constant over time. The many objectives that the electrical maintenance technicians must pose themselves include:

- Limiting the deterioration of circuits and equipment;
- Preventing accidents;
- Reducing costs caused by accidental faults;
- Limiting the number and duration of maintenance operations;
- Carrying out maintenance by integrating it with maintenance operations of a more general nature foreseen for the entire system itself.

In order to achieve such objectives, the following are necessary:

- The presence of maintenance technicians during the system installation phase;
- Scrupulous compliance with the maintenance instructions provided;
- Rigorous compliance with Safety Laws and Regulations;
- The organisation of an archive with maintenance and repair records;
- The constant updating of personnel in charge of maintenance operations.

A fault is a probabilistic-type event and therefore its occurrence cannot be foreseen. This statement contradicts one of the main purposes of maintenance which is, in fact, the prevention of machine failures. The optimisation of such prevention activities is facilitated by the knowledge of experimental data regarding system component(s) which have similar characteristics.

Such prevention is necessary in the case of components which guarantee people's safety. Therefore, it is always useful and in some cases necessary, to make sure that the following data is recorded:

- Characteristic electrical parameters of the system during normal operation;
- Electrical parameters due to abnormal machine operation;
- Information provided by the manufacturer relating to maintenance methods and frequency.

The proper knowledge of all the above-mentioned factors makes it possible to prepare a maintenance programme which reduces the occurrence of inconveniences to an absolute minimum, it ensures system safety and it optimises the cost/benefit ratio, associated with maintenance. The automatic switches as well as the main system equipment are provided by the most qualified manufacturers, who have already passed the "running-in" phase and, therefore, are capable of ensuring the regular operation of such throughout their lifecycles.

### 9.7.2 Periodic maintenance

The maintenance of the electrical system of the machine ***must be carried out every six months***.

***WARNING! The maintenance of the electrical system could require operations to be carried out on live machinery (for example the carrying out of electrical measurements). It is therefore necessary that personnel in charge of maintenance activities are qualified to carry out electrical work on live parts (according to Standard CEI 11-27).***

Periodic maintenance foresees:

- Cleaning of internal and external parts using a vacuum cleaner and possibly a paintbrush with hard bristles);
- The inspection of the tightening torque of the screws, terminal boards and nuts and bolts of the control panel (a thermo-graphic camera makes it easier to identify loose terminals which normally overheat);
- The inspection and possible management of the cables of the electrical system in particular the equipment incoming and outgoing housing (tightening of cable glands and the positioning of gaskets);
- Checking the phase and phase to earth isolations;

Following maintenance, before starting the system up:

- Check that there no foreign bodies have been left inside the machine;
- Check the voltage available for auxiliary services;
- Check the state of isolation of auxiliary circuits;

Check the press's electrical cables ***every month***, checking for defects in the cables and connectors.

## 9.8 Heating plate temperature measurement

***Once every three months*** measure the temperature of the heating plates as follows:

- Put some heat-resistant silicone foam rubber onto the lower heating plate unit;
- Insert the precision thermometer sensor, even better if it can be inserted flush between the silicone foam rubber and the lower heating plate, at the centre of the heating plate unit, on top of the Teflon strip;
- Place the upper beam onto the silicon pad **without tightening the closure knobs**. This is to avoid ruining the material the welding plate is made of;
- Switch on the regulator unit and set the nominal value at **160** °C for both heating plates (see paragraph 8.5.1);
- 5 minutes after having reached the 160°C set point, read the temperature shown on the precision thermometer.

Repeat the same process for the upper heating plate (insert the sensor underneath the silicon foam rubber, at the centre of the heating plate).

The temperature measured must be 160°C ± 3°C (thermometer precision max. ± 1°C included).

## 9.9 Machine cleaning

The machine must be cleaned every day after use, removing any processing residues, using a suitable vacuum cleaner or a clean rag.

Furthermore, in order to keep the machine in good condition it is necessary to provide for periodic cleaning.

As for cleaning metal surfaces, it is necessary to use non-corrosive detergents.

***OBBLIGATION! It is compulsory to wear adequate Personal Protection Equipment to protect eyes during all cleaning operations.***

***WARNING! Do not use compressed air to clean the machine. Use an industrial vacuum cleaner instead.***

## 9.10 Recommended spare parts

The following table (Tab. 9.10-1), lists the machine parts subject to wear and tear and which require replacement.

| *Pressa* | *ID* | *N° parte* | *Descrizione* |
|---|---|---|---|
| **PML-100** | Res1, Res2 120/230 V | H08D016664 | Silicone heater 148x150mm **120/230V** 500W |
| **PML-200** | Res1, Res2 120/230V | H08D016662 | Silicone heater 248x150mm **120/230V** 600W |
| **PML-300** | Res1, Res2 120/230V | H08D016661 | Silicone heater 348x150mm **120/230V** 800W |
| **PML-600** | Res1, Res2 120/230V | H08D016668 | Silicone heater 648x150mm **120/230V** 800W |
| **PML-100**<br>**PML-200**<br>**PML-300**<br>**PML-600** | NTC | H080709547 | NTC Temperature sensor |
| **PML-100**<br>**PML-200**<br>**PML-300**<br>**PML-600** | TC1, TC2 | H08N040578 | Thermostat |
| **PML-100**<br>**PML-200**<br>**PML-300**<br>**PML-600** | VNT1, VNT2 | H08N040570 | Fan 40x40x20 12Vdc 1W |
| ***As for other spare parts, see Attachment A4*** | | ***Spare parts and machine wiring diagrams*** | |

Tab. 9.10-1

# 10 Problems, causes and solutions

## 10.1 Troubleshooting

The following table (

| ***Problem*** | ***Probable cause*** |
|---|---|
| The temperature of a heating plate shown on the regulator unit display differs more than 3°C when compared to the set nominal value. | OFFSET calibration to be carried out<br>Regulator unit fault<br>Thermocouple cable fault<br>Heating element fault |
| ***Troubleshooting*** | |
| Invert the connection cables between the regulator unit and the press body.<br>If the display shows a contrasting value for the same heating plate, the regulator unit is faulty.<br>If the display shows an abnormal value on the other heating plate, either the heating element or the thermocouple cable is faulty. | |
| ***Solution*** | |
| If the fault refers to an offset value between the temperature measured and the one shown on the regulator unit, it is necessary to carry out the calibration of the OFFSET parameters. As regards the operations to be performed, please see paragraph 7.4.1 for the PFR-101 unit.<br>In the event of faults of this or any other nature, it is necessary to contact the manufacturer. The faulty heating plates and regulator units can be repaired or replaced by the manufacturer.<br>In the event of a faulty regulator unit, always check the automatic switches by following the procedure stated in the regulator unit manual.<br>N.B.: In any case, measure the temperature of the heating plate in case there is a contrasting value (see paragraph 9.8). | |

Tab. 10.1-1) identifies the main problems which that can occur during machine operation, the relative causes and the solutions to adopt.

| ***Problem*** | ***Probable cause*** |
|---|---|
| The temperature of a heating plate shown on the regulator unit display differs more than 3°C when compared to the set nominal value. | OFFSET calibration to be carried out<br>Regulator unit fault<br>Thermocouple cable fault<br>Heating element fault |
| ***Troubleshooting*** | |
| Invert the connection cables between the regulator unit and the press body.<br>If the display shows a contrasting value for the same heating plate, the regulator unit is faulty.<br>If the display shows an abnormal value on the other heating plate, either the heating element or the thermocouple cable is faulty. | |
| ***Solution*** | |
| If the fault refers to an offset value between the temperature measured and the one shown on the regulator unit, it is necessary to carry out the calibration of the OFFSET parameters. As regards the operations to be performed, please see paragraph 7.4.1 for the PFR-101 unit.<br>In the event of faults of this or any other nature, it is necessary to contact the manufacturer. The faulty heating plates and regulator | |

| ***Problem*** | ***Probable cause*** |
|---|---|
| units can be repaired or replaced by the manufacturer.<br>In the event of a faulty regulator unit, always check the automatic switches by following the procedure stated in the regulator unit manual.<br>N.B.: In any case, measure the temperature of the heating plate in case there is a contrasting value (see paragraph 9.8). | |

Tab. 10.1-1

# 11 Machine storage conditions

## 11.1 Temporary shutdown

In case it is necessary to put the machine out of operation for a short period of time, it will be enough:

- Disconnect the connection to the mains;
- Disconnect the connection cables between the PFR-101 Control Unit and the press;
- Put all the parts that make up the machine kit, protected by sheets of foam material, inside the plastic case (flight case), with which the machine is supplied.

Before putting them out of service, always check that all parts of the machine are clean.

Provide for storage in a covered, dry and dust-free place.

## 11.2 Long-term shutdown

In case it is necessary to put the machine out of operation for a particularly long period of time, a thorough cleaning of the machine is recommended. Following this, it is necessary to repeat the operations stated in paragraph 11.1.

Once these operations have been completed, seal the machine inside an opaque multi-layer bag (black) inside which an appropriate desiccant has been previously inserted (silica gel).

***All power supply system connection or disconnection operations must be carried out by authorised personnel (in Italy according to Decree n°37 dated 22nd January 2008).***

# 12 Machine dismantling

## 12.1 Machine dismantling

The machine must be dismantled upon the premises of a demolishing company which has the specific authorisation to carry out such activity. In any case it is important to remember that there are some compulsory operations that must be carried out prior to dismantling and in any case following de-commissioning.

This machine has been designed and manufactured with materials and parts which can be re-used.

The WEEE must be collected separately and disposed of in accordance with Art. 6 of directive 2012/19/EU.

***PROHIBITION! It is absolutely forbidden to dispose of the system or system parts by means of the normal waste collection service (even if in compliance with differentiated waste collection).***

***Remove the identification plates and any other documents relating to the (manuals, diagrams, etc.) from the machine and subsequently destroy them.***

## 12.2 Industrial waste disposal - general rules

Due to the fact that different methods of conformity methods are in force in each individual country, the provisions imposed by law and the relative authorities within each of these Countries must be complied with. The following information is valid for the Italian territory.

The following notes for the dismantling of the system are in compliance with current law:

- Directive 91/156/EEC relating to waste;
- Directive 91/689/EEC relating to hazardous waste;
- Directive 94/62/EC relating to packaging and packaging waste;
- Legislative Decree dated 8th November 1997, n. 389 (in Italy);
- Legislative Decree dated 3rd April 2006, n. 152 and subsequent modifications and integrations. (in Italy).

According to current legislation, once the system has been industrially decommissioned it is classified as *special waste*.

***The waste holder is responsible for dismantling activities, he/she must deliver the waste to an authorised waste collection company or private demolisher who carries out the operations mentioned in Attachment B - Part four, Title I, of the Legislative Decree n° 152/2006 (in Italy).***

***The waste holder cannot be held responsible for the proper waste recovery or disposal should he/she have handed the waste over to the public waste collection service and in the case of hazardous waste, to individuals authorised to carry out waste recovery and disposal operations, on the condition that the waste holder is in possession of a form according to Art. 193 of Legislative Decree n° 152/2006 (in Italy).***

## 12.3 Company waste management

***WARNING! The following provisions are not applicable in the case in which the waste holder is a private individual.***

In Italy, according to Legislative Decree n° 152/2006, it is compulsory for companies and industrial authorities to annually communicate, using the methods foreseen by law, the quantities and qualitative characteristics of hazardous waste relating to the abovementioned activity.

There is the obligation to keep a waste loading/unloading register containing numbered pages endorsed by the Registry Office, upon which the information relating to the quantitative and qualitative characteristics of waste are to be written, (waste loading/unloading registers).

This information will be entered on a weekly basis and must state:

- The origin, quantity, characteristics and the specific destination of the waste;
- The date of loading/unloading the waste as well as the means of transport used;
- The waste treatment method used.

The registers, with numbered pages, endorsed by the Registry Office, must be kept in the waste production, storage, recovery and disposal plants.

The registers together with the *forms* relating to the transport of waste will be kept for five years as from the date of the last register entry.

If the annual production of waste does not exceed 5 tons of non-hazardous waste and 1 ton of hazardous waste, the companies can fulfil the obligation of entrusting such duties relating to the keeping the waste loading/unloading registers also by means of trade organisations or their service providers that take care of entering the foreseen data on a monthly basis, keeping a copy of the data transmitted upon company premises.

The following data must be stated in the *Sub form*:

- Name and address of the waste producer and the waste holder;
- The origin, type and quantity of waste;
- Waste plant destination;
- Date and route taken to the plant location;
- Name and address of the consignee.

The *form* must be prepared in 4 copies signed by the waste holder and countersigned by the carrier.

A copy must be kept by the waste holder; of the other three copies, one must be kept by the consignee and two are kept by the carrier.

The copies of the *form* must be kept for 5 years.

During transport and collection, hazardous waste must be packaged and labelled in conformity with the current legislation on this subject.

As regards the system *packaging* or spare parts, it is compulsory to comply with the rules imposed by CONAI (Italian National Packaging Consortium), which explain in detail how to carry out the recovery and disposal of packaging throughout the territory.

As for the management of oil disposal, the law foresees the establishment of the compulsory national consortium for the collection and treatment of used vegetable and animal oils and fats, which ensures the transport, storage, treatment and re-use of used vegetable and animal oils and fats.

***WARNING! Whoever is in possession of used vegetable and animal oils and fats, due to the professional activity carried out and while waiting for the consortium to be established, is obliged to store these substances in appropriate containers in conformity with current legal provisions on the subject of waste disposal.***

# 13 Periodic maintenance summary table

The following table (Tab. 12.3-1) gives a summary of the frequency of maintenance operations, divided by type.

See chapter 9 for detailed information regarding the operations to be carried out..

| Parts \ Frequency[4] | Each day (8 hours) | Every week (40 hours) | Every fortnight (80 hours) | Every month (170 hours) | Every three months (510 hours) | Every six months (1020 hours) | Every year (2040 hours) | Other |
|---|---|---|---|---|---|---|---|---|
| **SAFETY SIGNS AND DEVICES** | | | | | | | | |
| Safety sign inspection par.9.5, page 60 | | | | | | ☑ | | |
| Guards par. 9.6.1 page 60 | | | | | | ☑ | | |
| Manual reset safety thermostat with temperature sensor par.9.6.2, page 60 | | | | | ☑ | | | |
| **ELECTRICAL SYSTEM** | | | | | | | | |
| Electrical system maintenance par. 9.7, page 61 | | | | ☑ Connectors and cables | | ☑ | | |
| **OTHER PROCEDURES** | | | | | | | | |
| Heating plate temperature measurement par. 9.8, page 63 | | | | | ☑ | | | |
| Machine cleaning par. 9.9, page 63 | ☑ | | | | | | | See relative paragraph |

Tab. 12.3-1

[4] Referring to 1 work shift per day lasting 8 hours.

# 14 Technical assistance

In order to request the intervention of the technical support service or to order spare parts, it is necessary to specify the following information that is specified on the CE data plates fixed on the interchangeable equipment:

- The interchangeable equipment MODEL;
- The serial NUMBER;
- YEAR of manufacture.

Each request must be addressed to:

**HABASIT Italiana S.p.A. – Machine Division**
Via del Lavoro, 50
31016 Cordignano (Treviso, Italy)
Tel + 39 0438 9113
Fax + 39 0438 912374

*Habasit Italiana S.p.A. Customer Care will provide you with all the necessary information regarding the work kits available.*

# 15 Summary and index of illustrations

## 15.1 Summary

## 15.2 Index of illustrations

## A1 Copy of the CE Declaration of Conformity

### DICHIARAZIONE DI CONFORMITÀ

*DECLARATION OF CONFORMITY*

**2006/42/CE – Allegato II - A**

Noi *We*

**HABASIT ITALIANA S.p.A.**
**Via del Lavoro, 50**
**31016 Cordignano (TV) - ITALY**

dichiariamo sotto la nostra esclusiva responsabilità che la macchina tipo: — *declare under our sole responsibility that the machine type:*

***Pressa a caldo*** ***Hot press***

Modello: *Series:*

**PML-x00/x**

Matricola: *Serial Number:*

Anno di fabbricazione: *Year of construction*

***2019***

è conforme alle seguenti direttive: *is in conformance with the following directives:*

**2006/42/CE**

Direttiva Macchine *Machinery Directive*

**2014/35/UE**

Direttiva Bassa Tensione *Low Voltage Directive*

**2014/30/UE**

Direttiva Compatibilità Elettromagnetica *Electromagnetic Compatibility Directive*

e soddisfa, ove pertinenti, i requisiti delle seguenti norme armonizzate: — *and is in conformance with the rules of the following harmonized standard:*

**EN 349 - EN 614-1 - EN 614-2 - EN 1005-1 - EN 1005-2 - EN 1005-3 - EN 1005-4 - EN ISO14118 - EN ISO 12100 - EN ISO 13732-1 - EN ISO 13857 - EN ISO 14120 - EN 60204-1**

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**HABASIT ITALIANA S.p.A.**
**Via del Lavoro, 50**
**31016 Cordignano (TV) - ITALY**

Cordignano, _____

Il Direttore Generale
*General Manager*

Ugo Passadore

.....

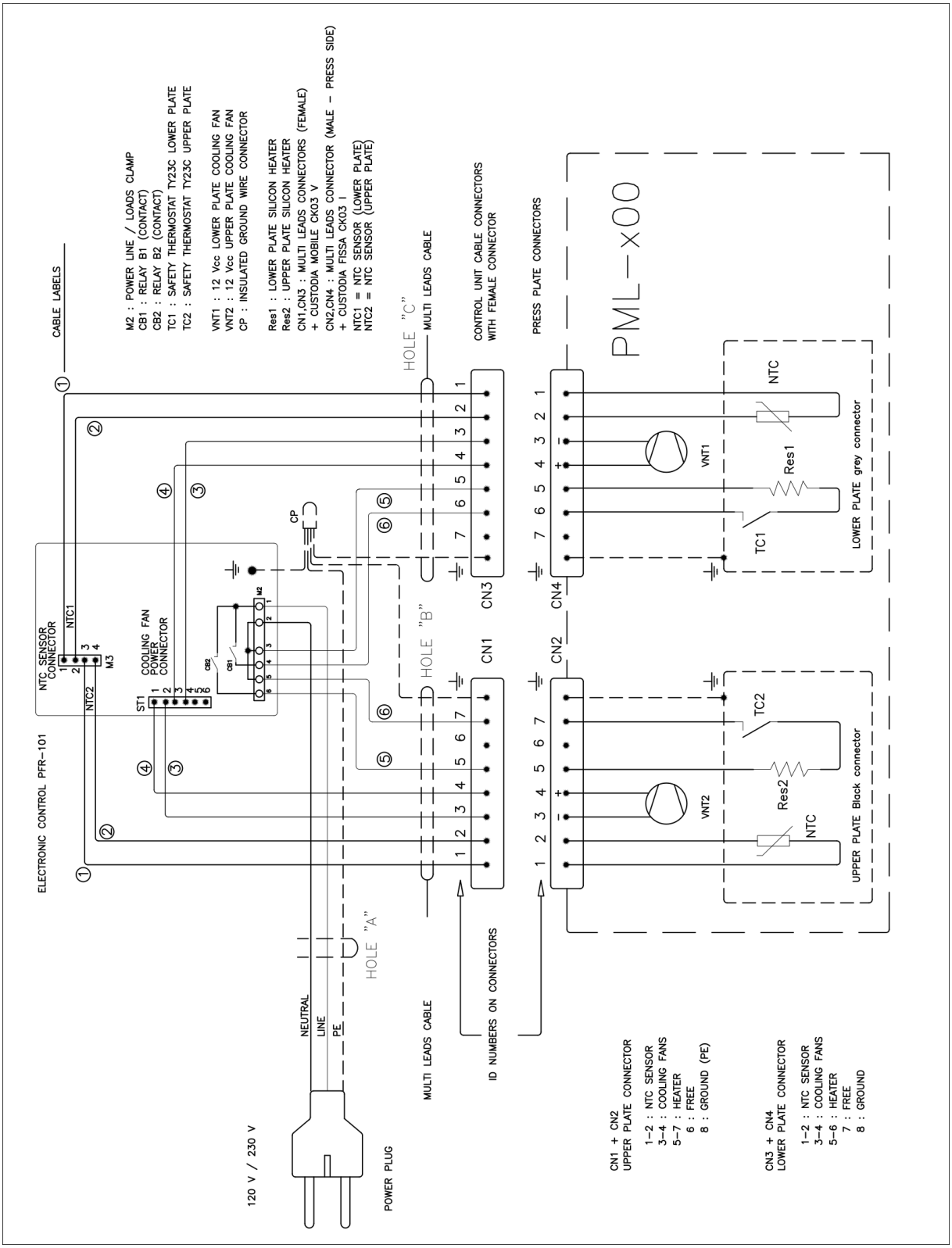
Il Responsabile del Fascicolo Tecnico
*Technical File Manager*

Matteo Mapelli

.....

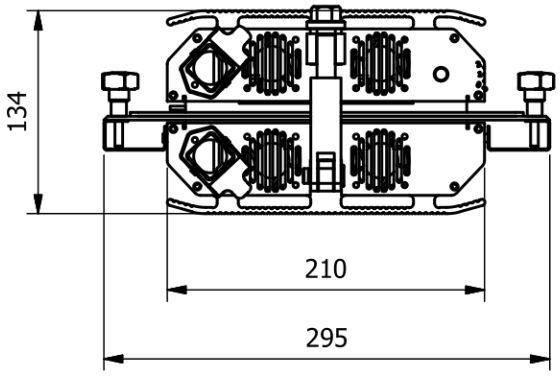
## A2 Copy of the CE data plates

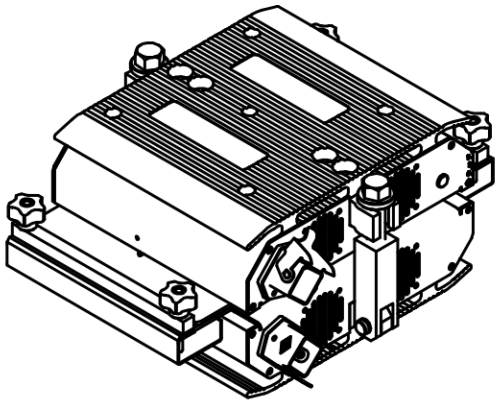
## A3 Wiring diagrams

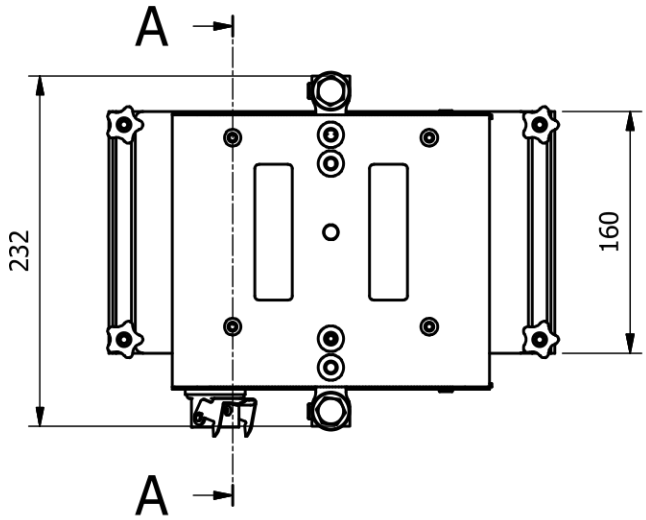


## A4 Spare parts and machine wiring diagrams

### Hot press PML-100



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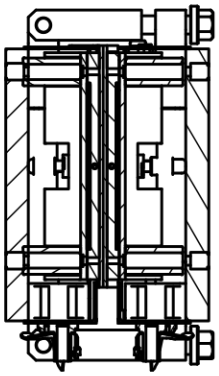


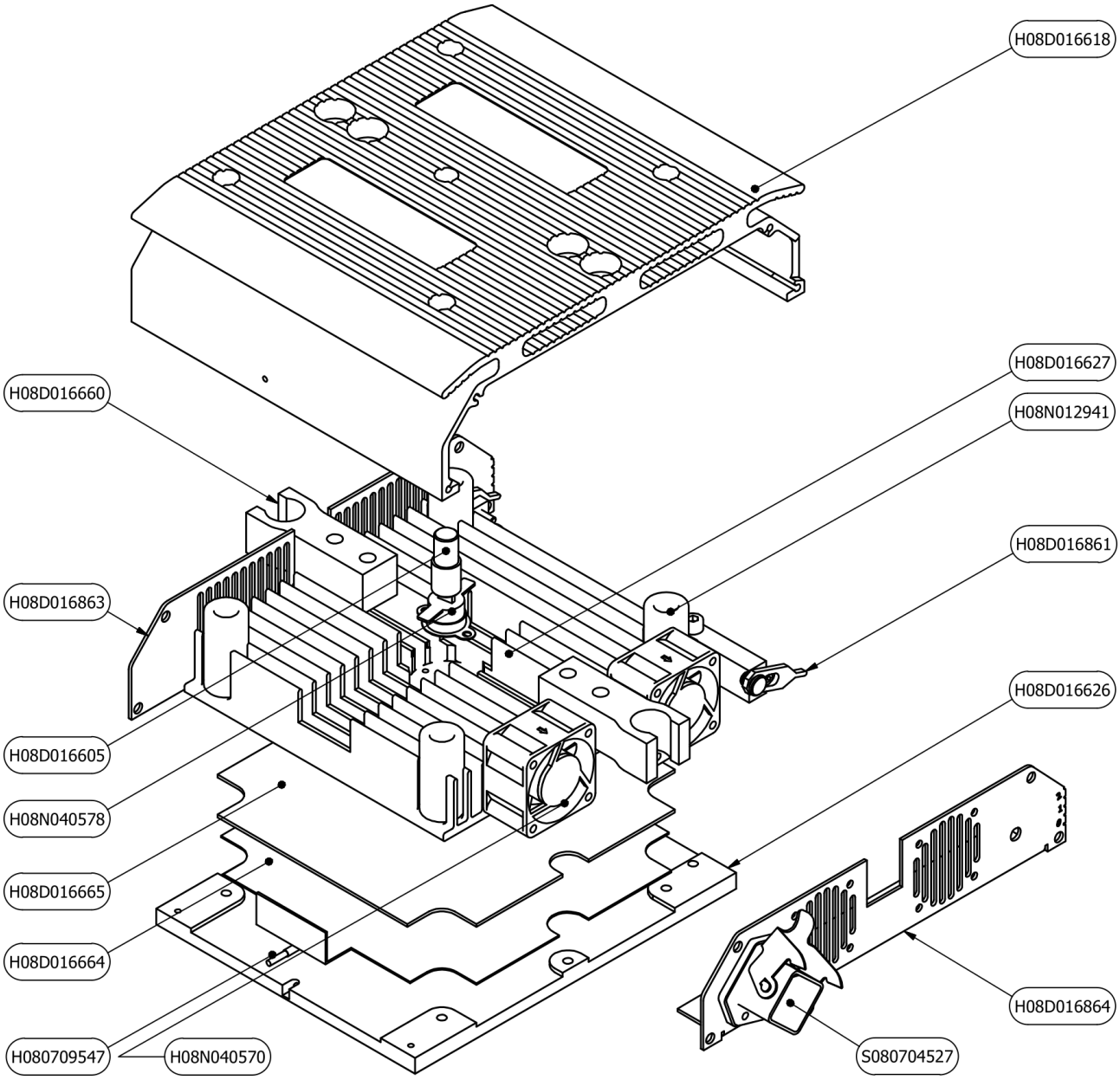



Fig. 15-1 – H08D016625 Upper press unit PML-100

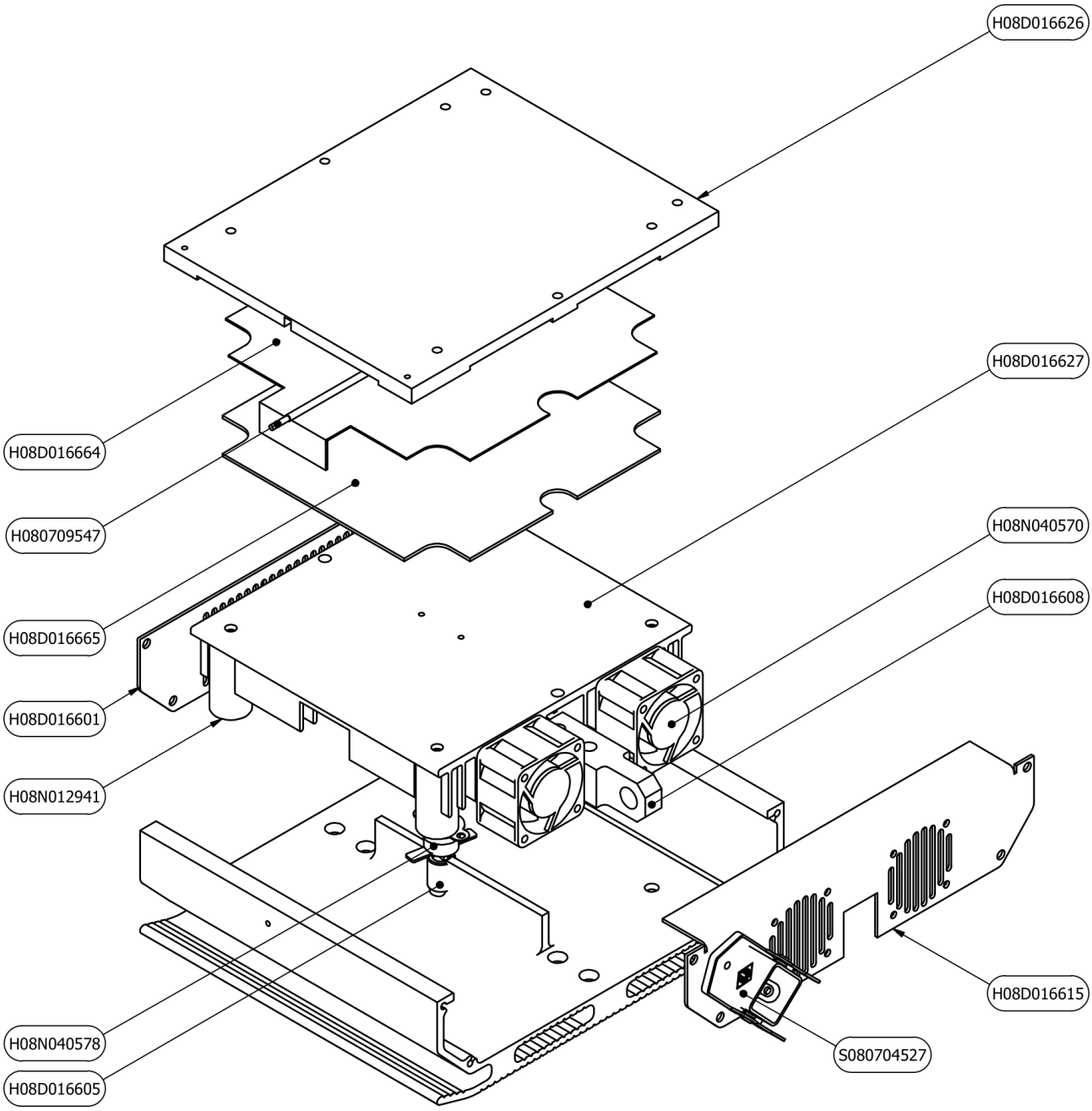



Fig. 15-2 – H08D016628 Lower press unit PML-100

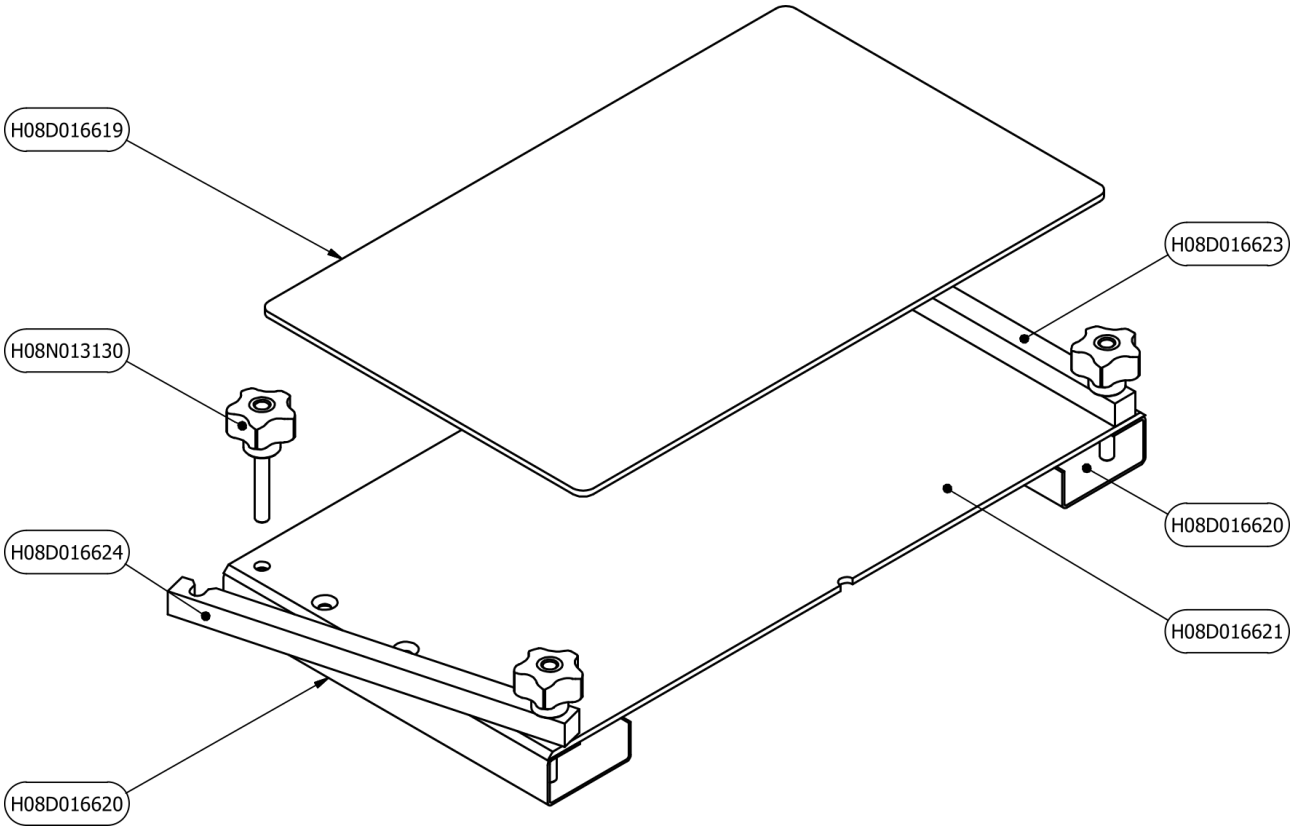
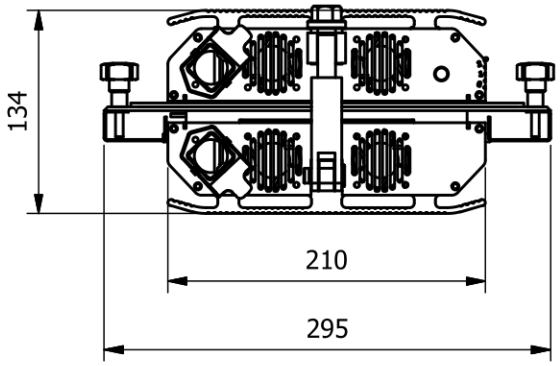
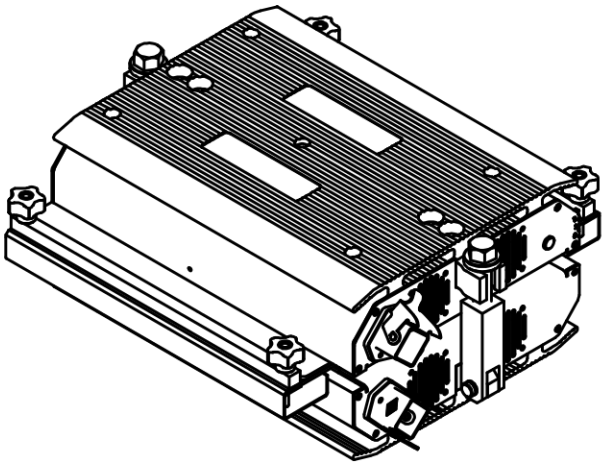
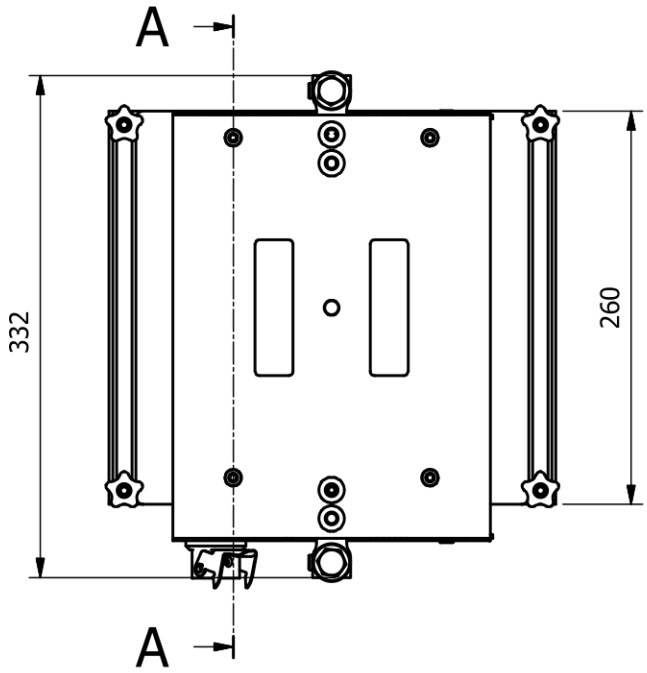



Fig. 15-3- H08D016622 Welding plate PML-100

**Hot press PML-200**



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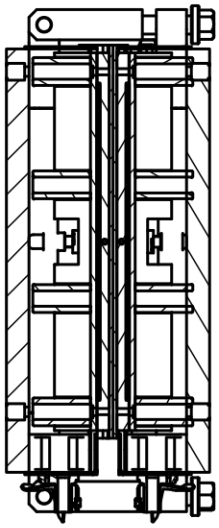


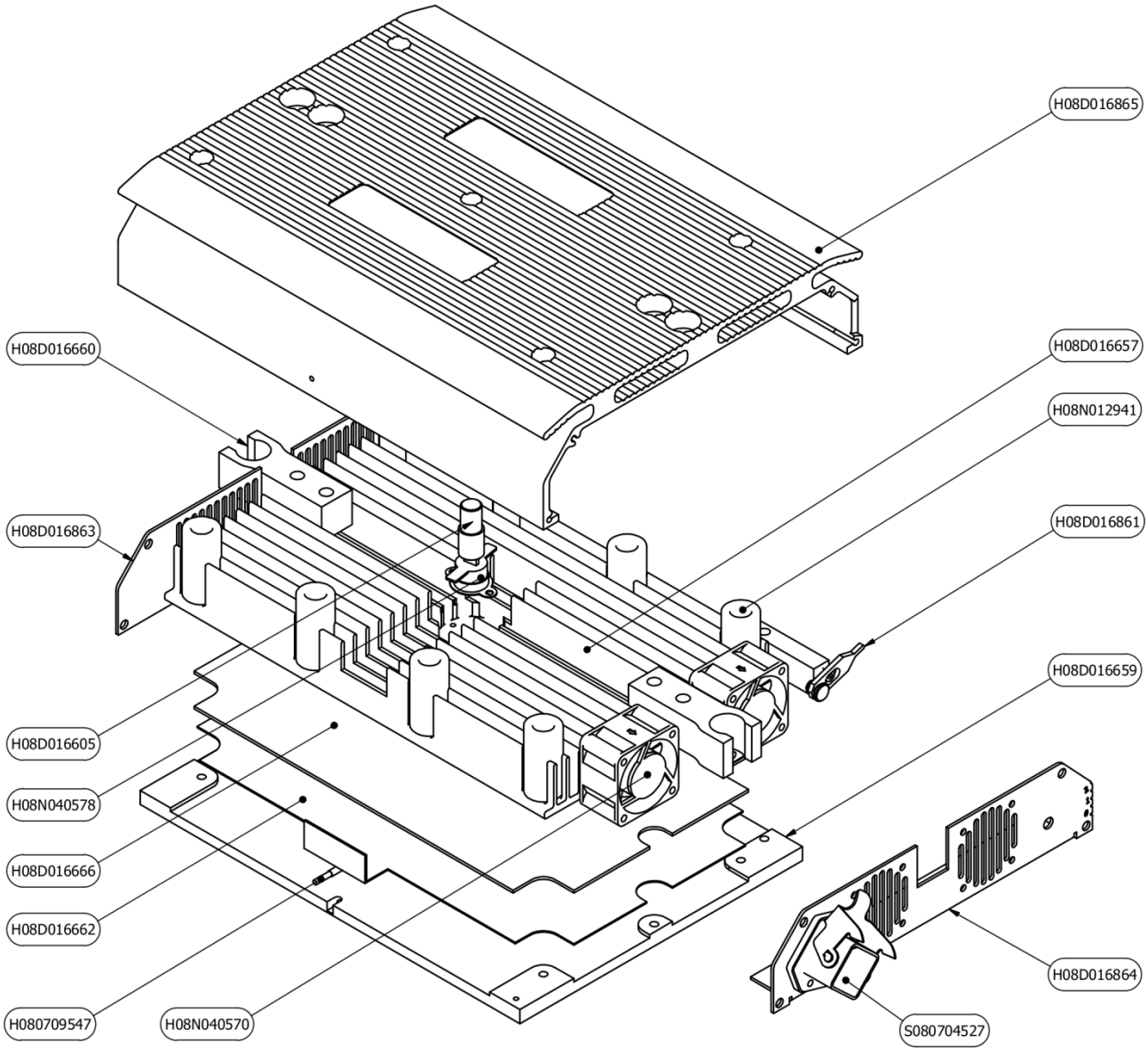



Fig. 15-4 – H08D016656 Upper press unit PML-200

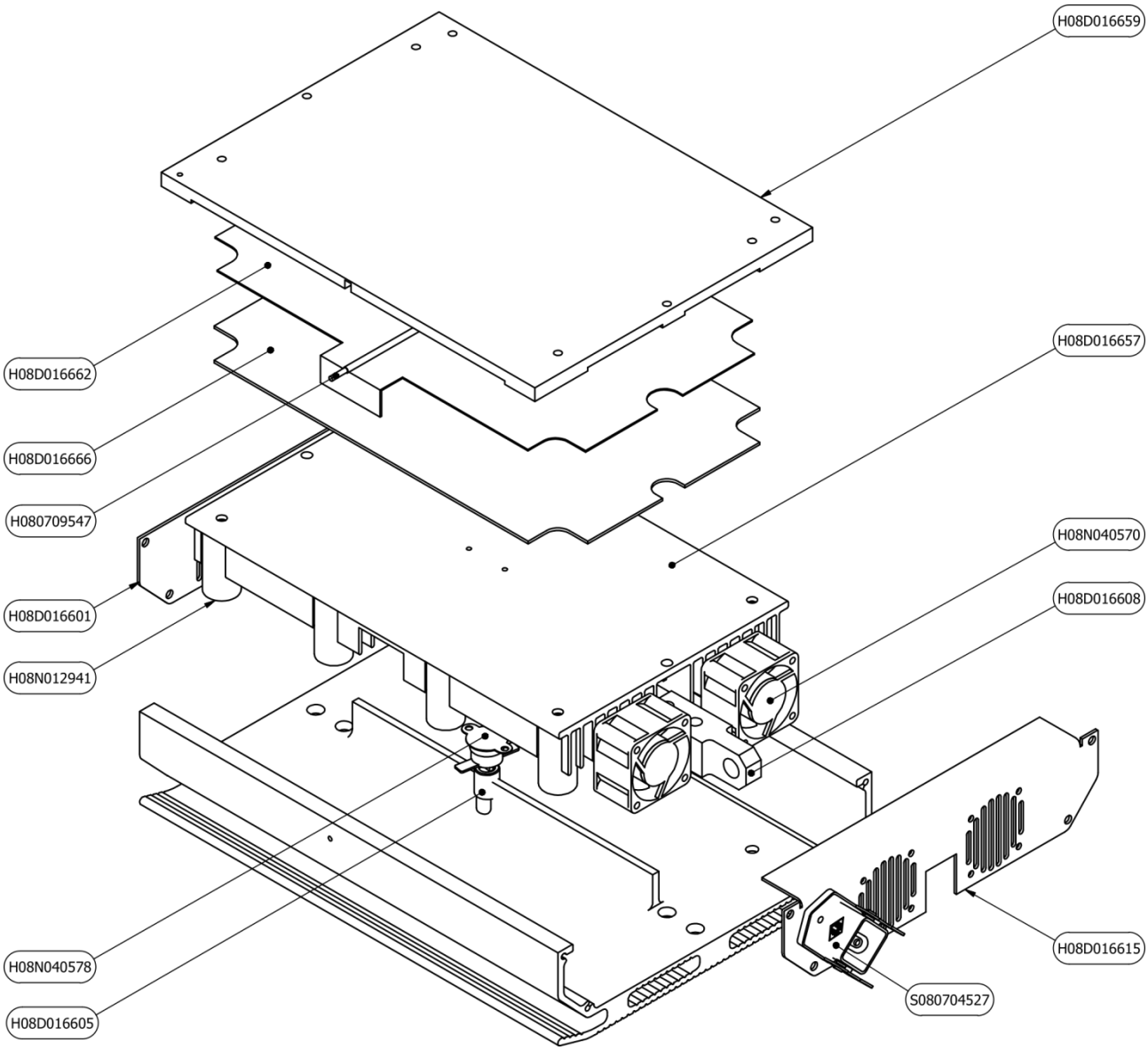



Fig. 15-5 - H08D016658 Lower press unit PML-200

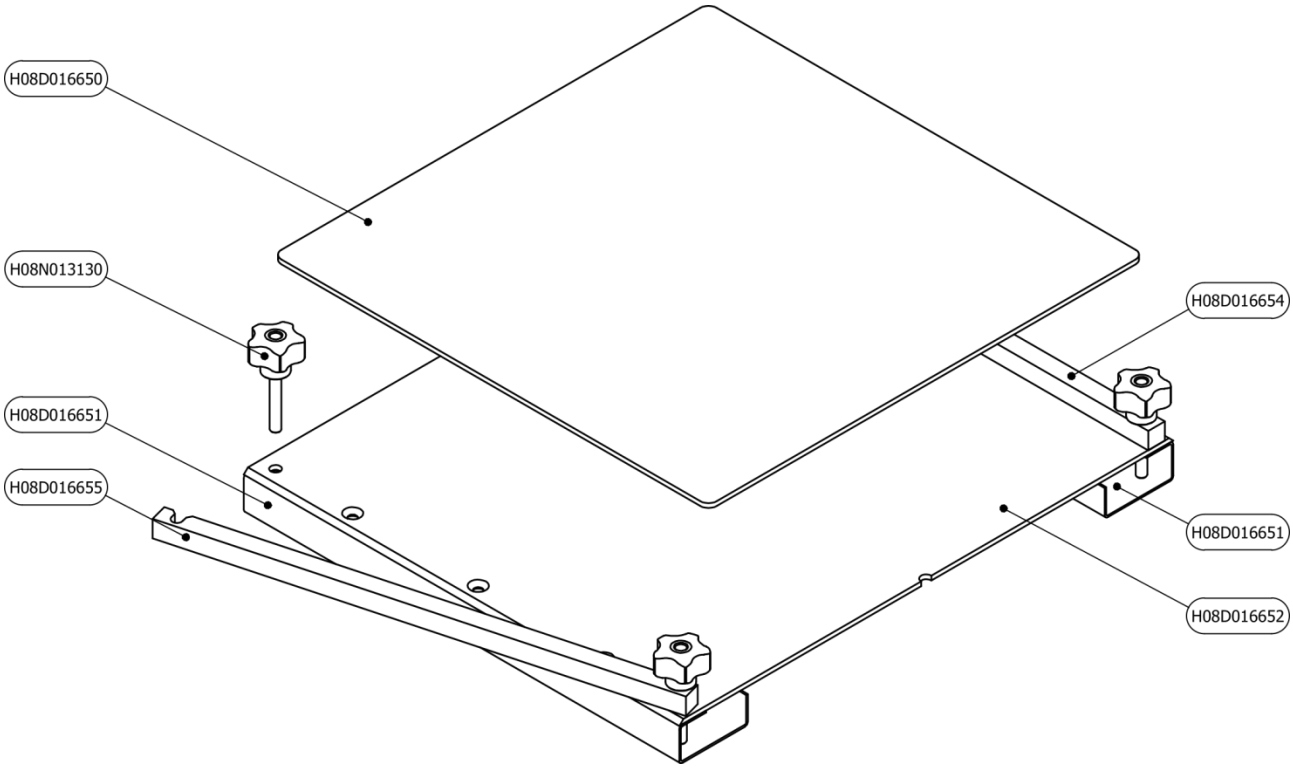
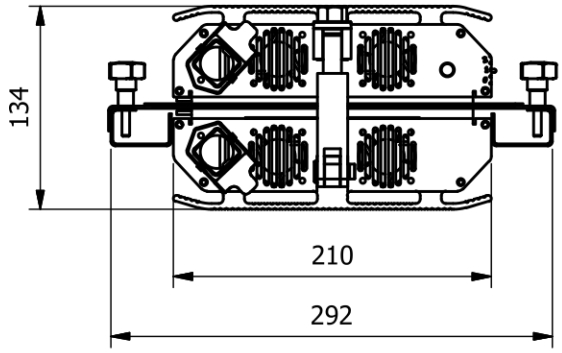
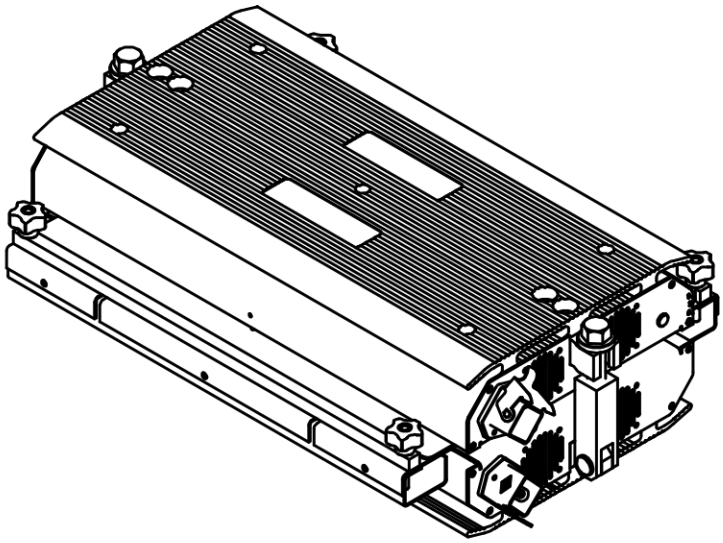
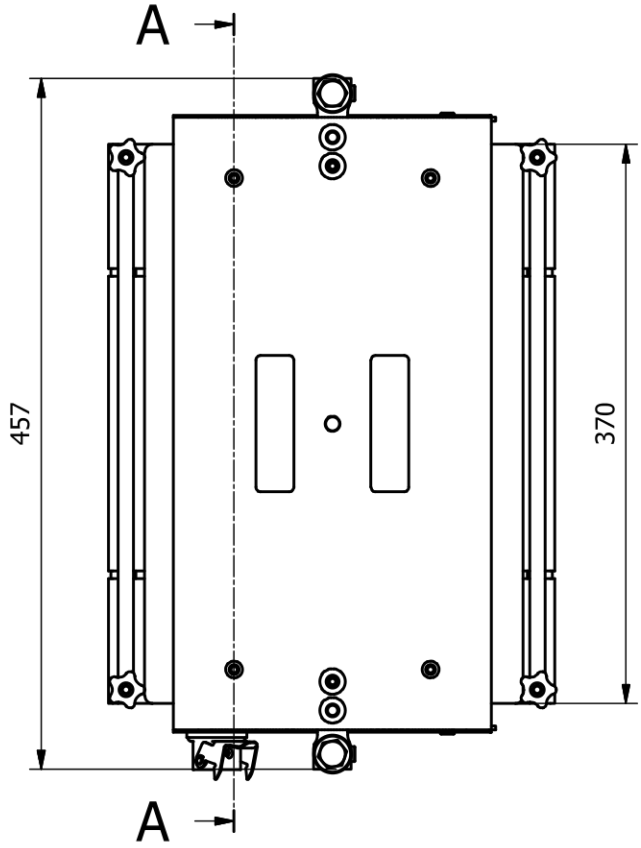



Fig. 15-6 - H08D016653 Welding plate PML-200

**Hot press PML-300**



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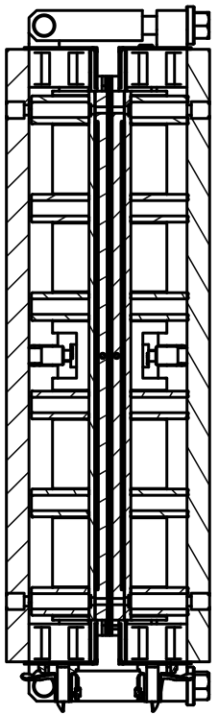


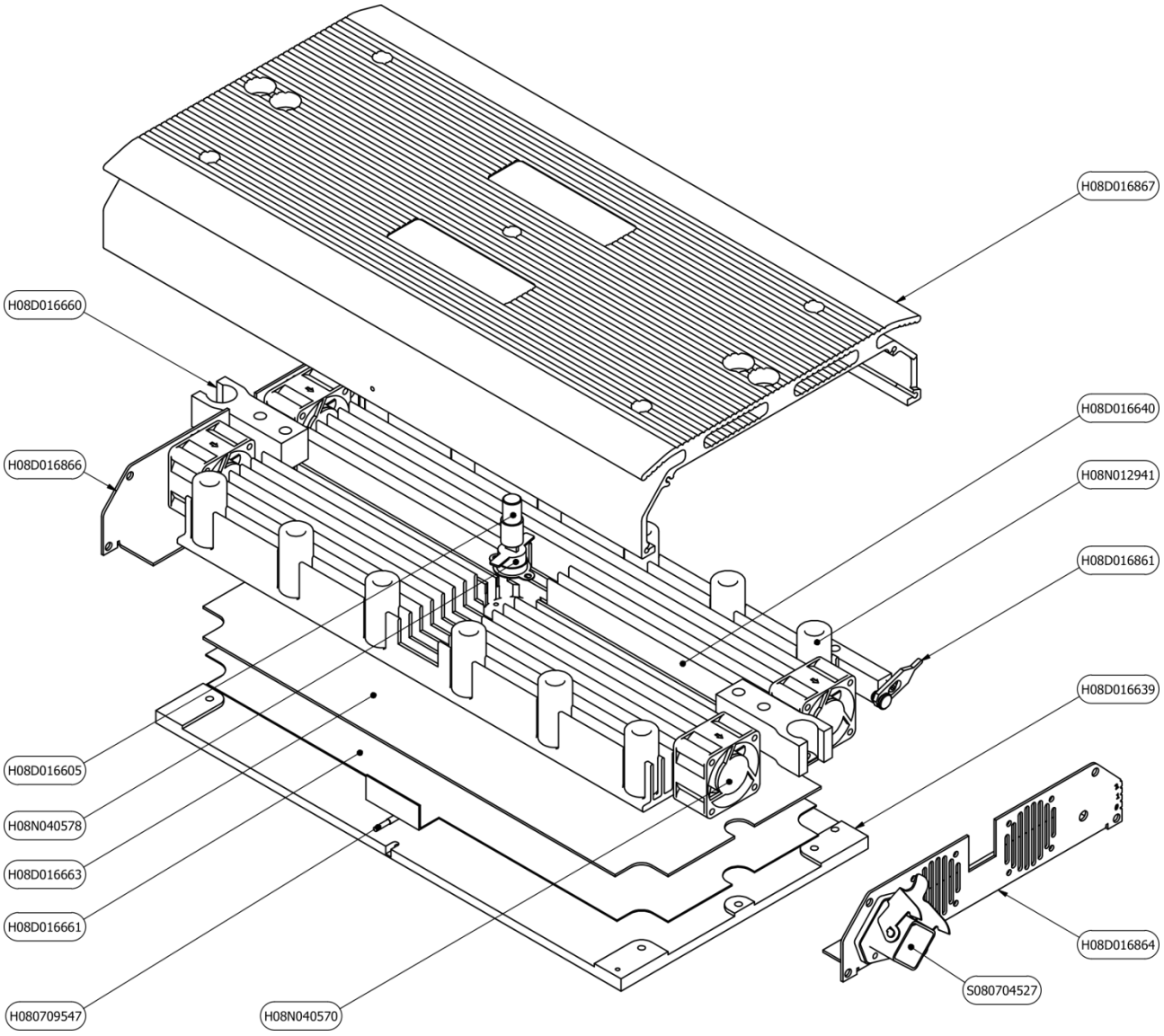



Fig. 15-7 - H08D016638 Upper press unit PML-300

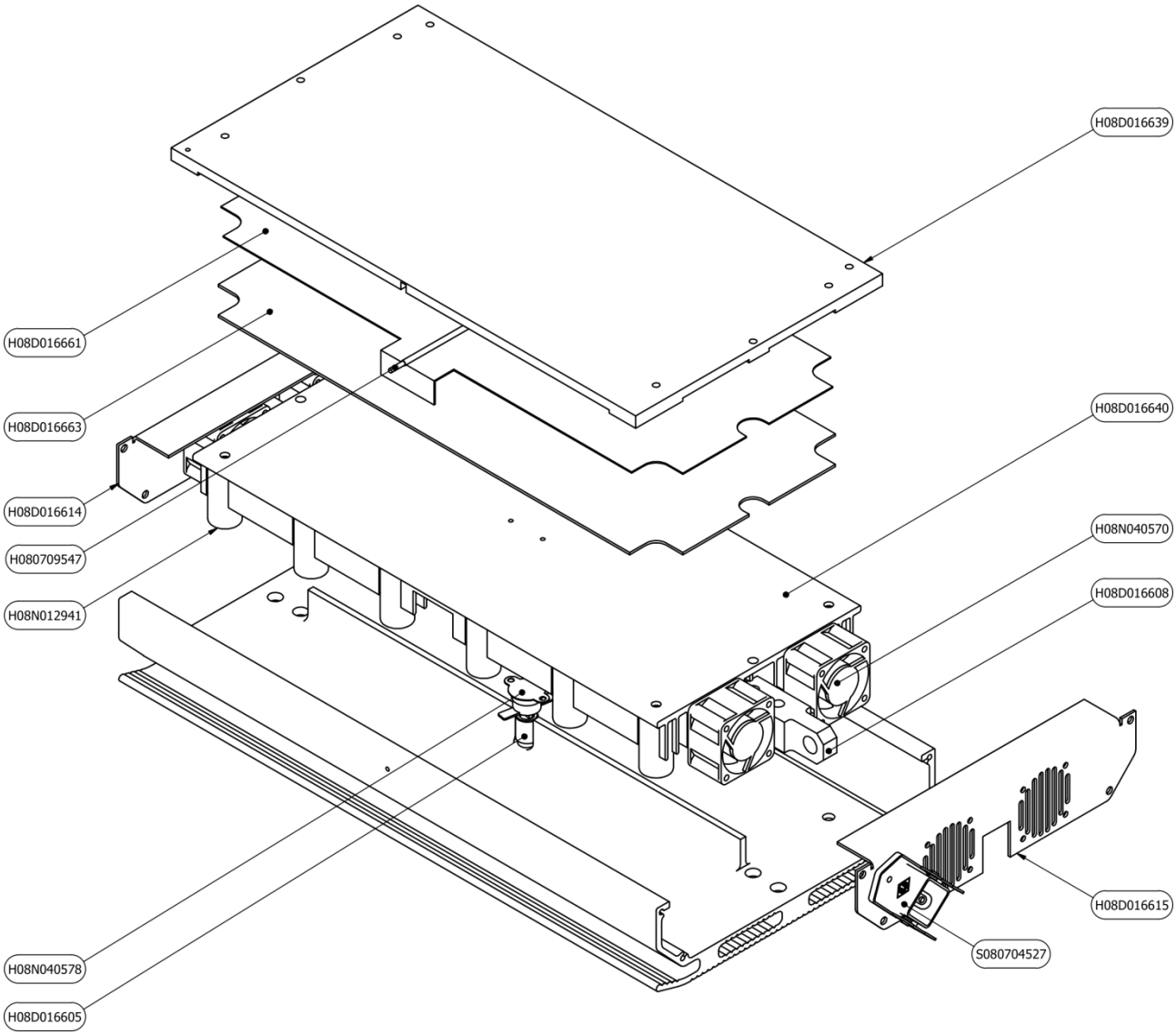



Fig. 15-8 - H08D016641 Lower press unit PML-300

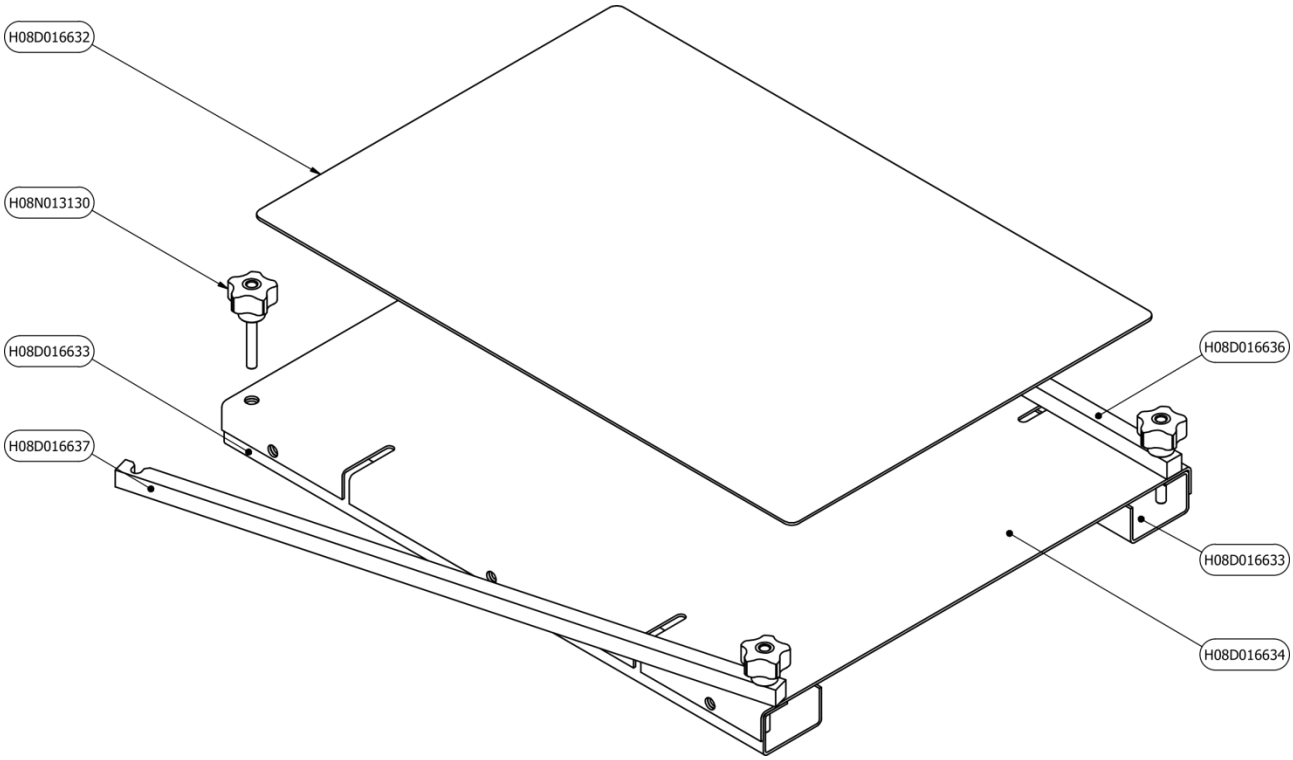
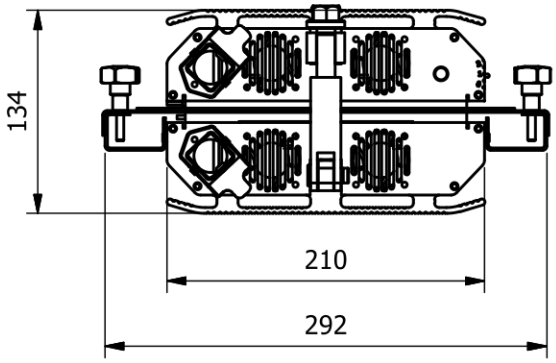
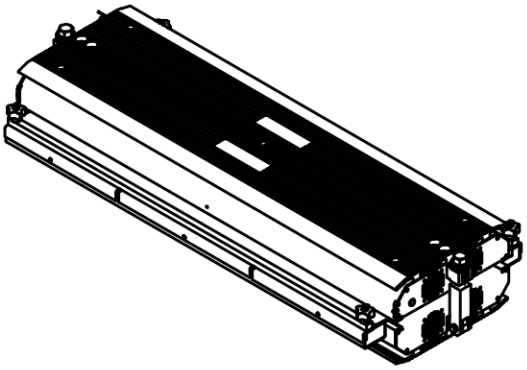



Fig. 15-9 - H08D016635 Welding plate PML-300

**Hot press PML-600**



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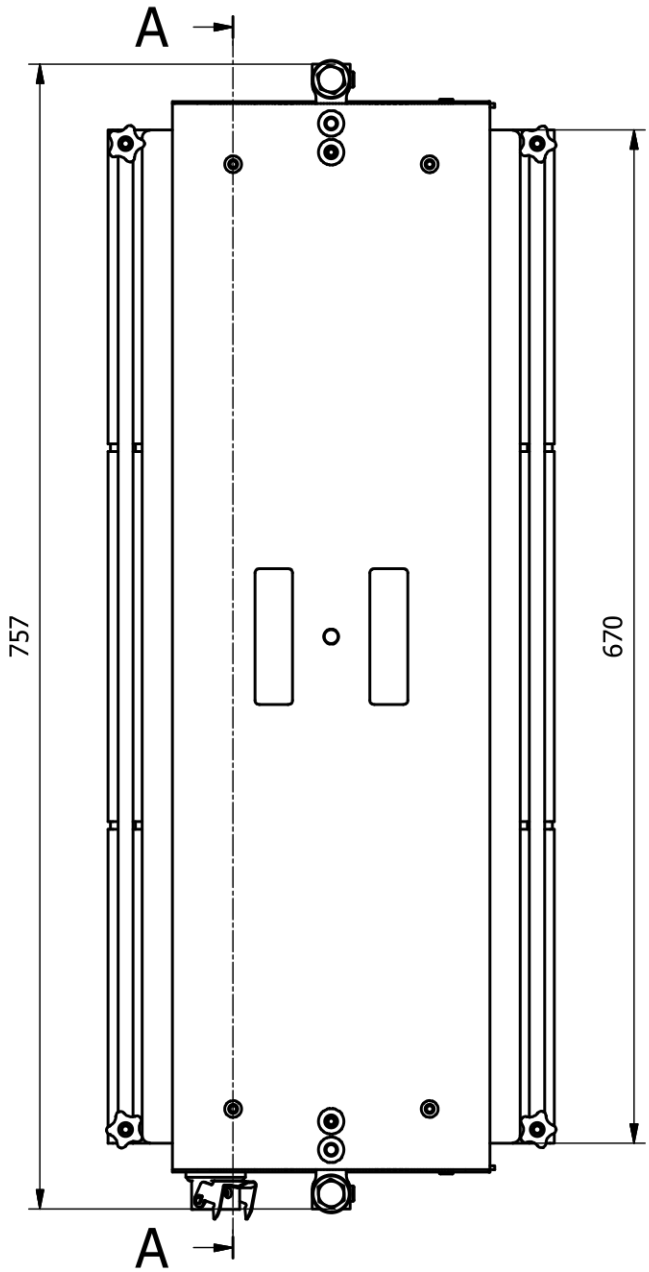


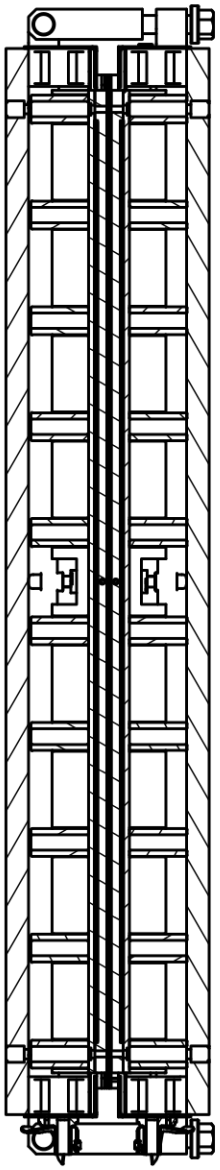

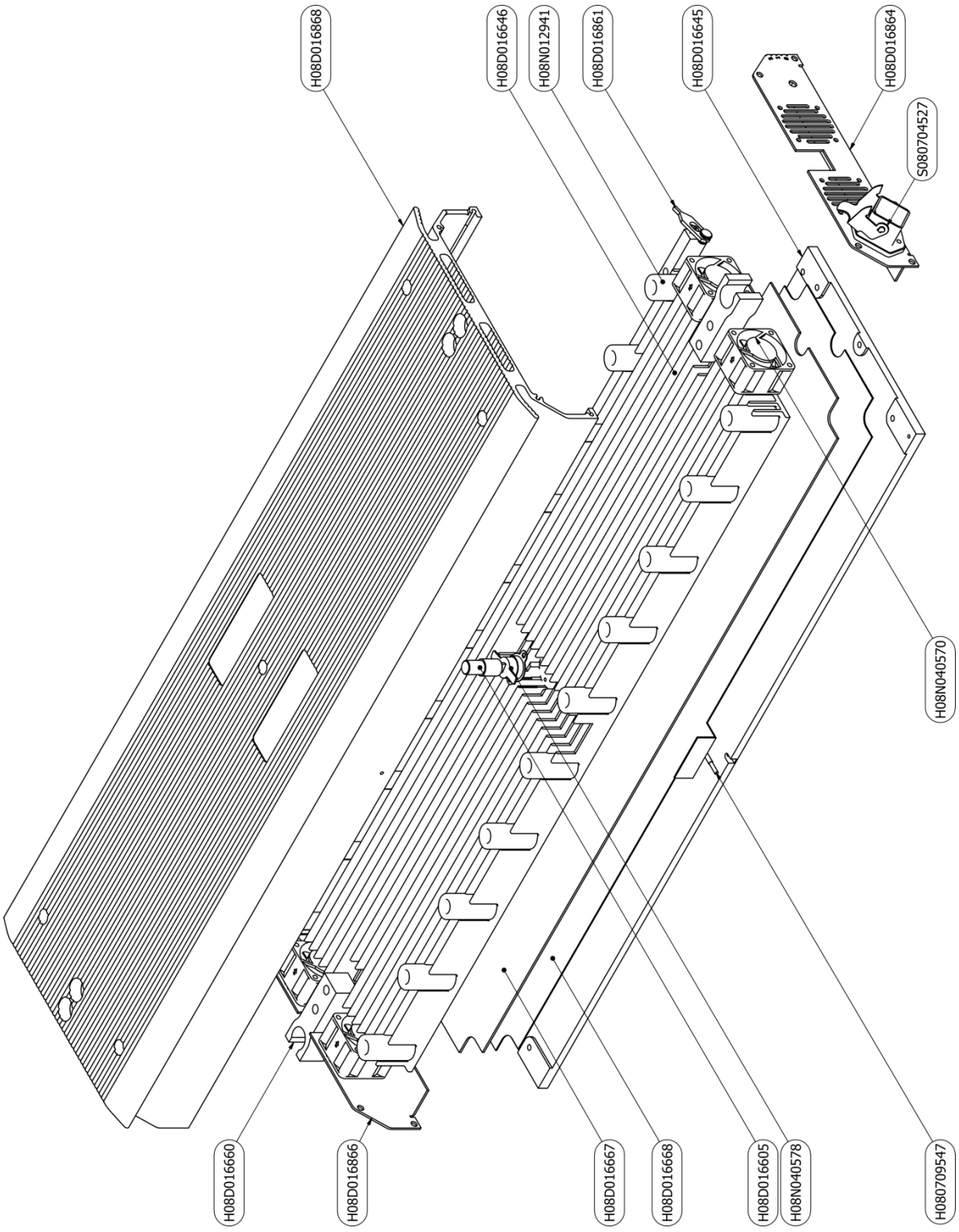


Fig. 15-10 - H08D016644 Upper press unit PML-600

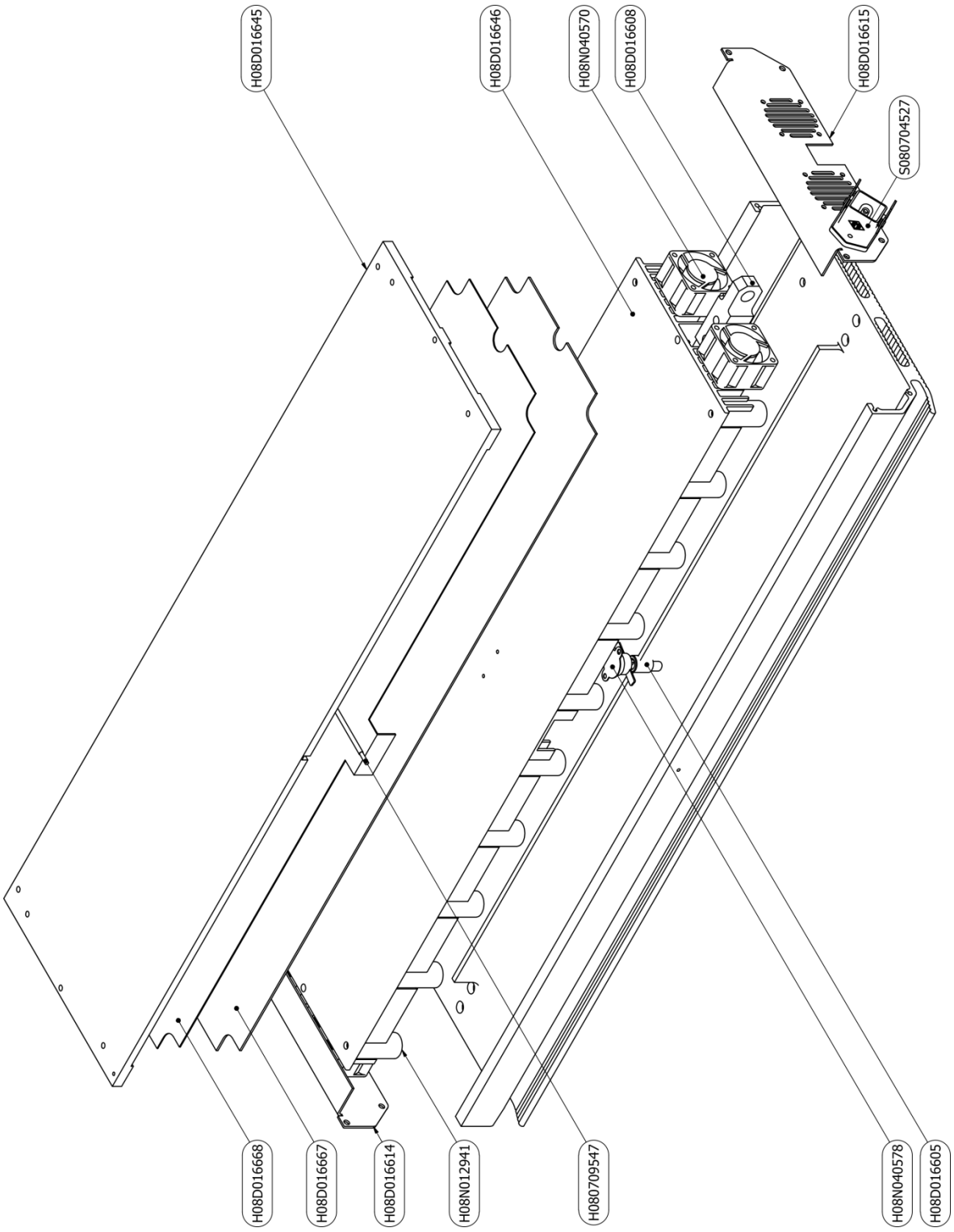


Fig. 15-11 - H08D016647 Lower press unit PML-600

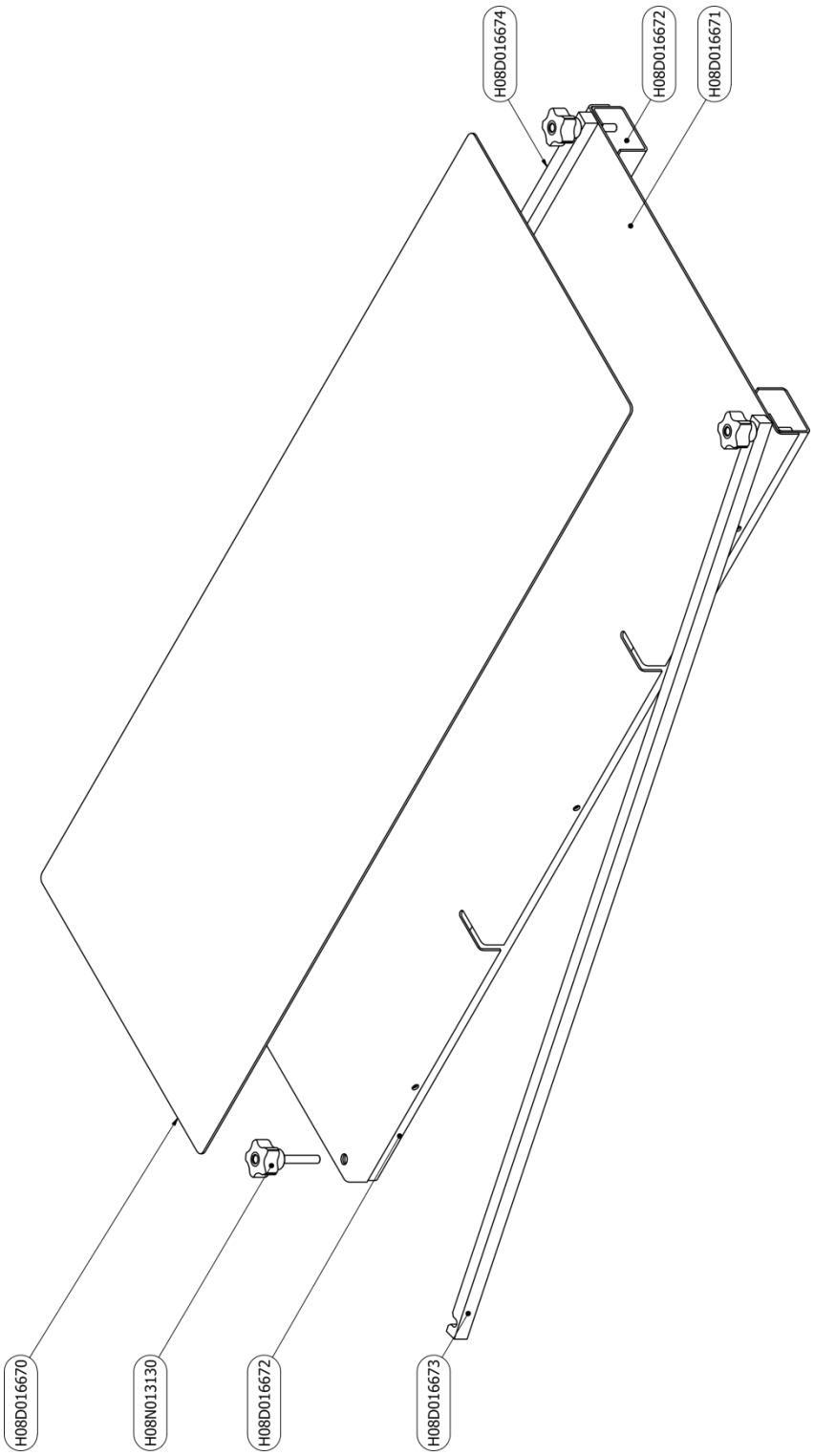


Fig. 15-12 – H08D016669 Welding plate PML-600

## A5 PFR-101 Regulator unit documentation