



INSTRUCTIONS BOOK

HYDRAULIC FORGING PRESS

PV21

NS: 2024-100



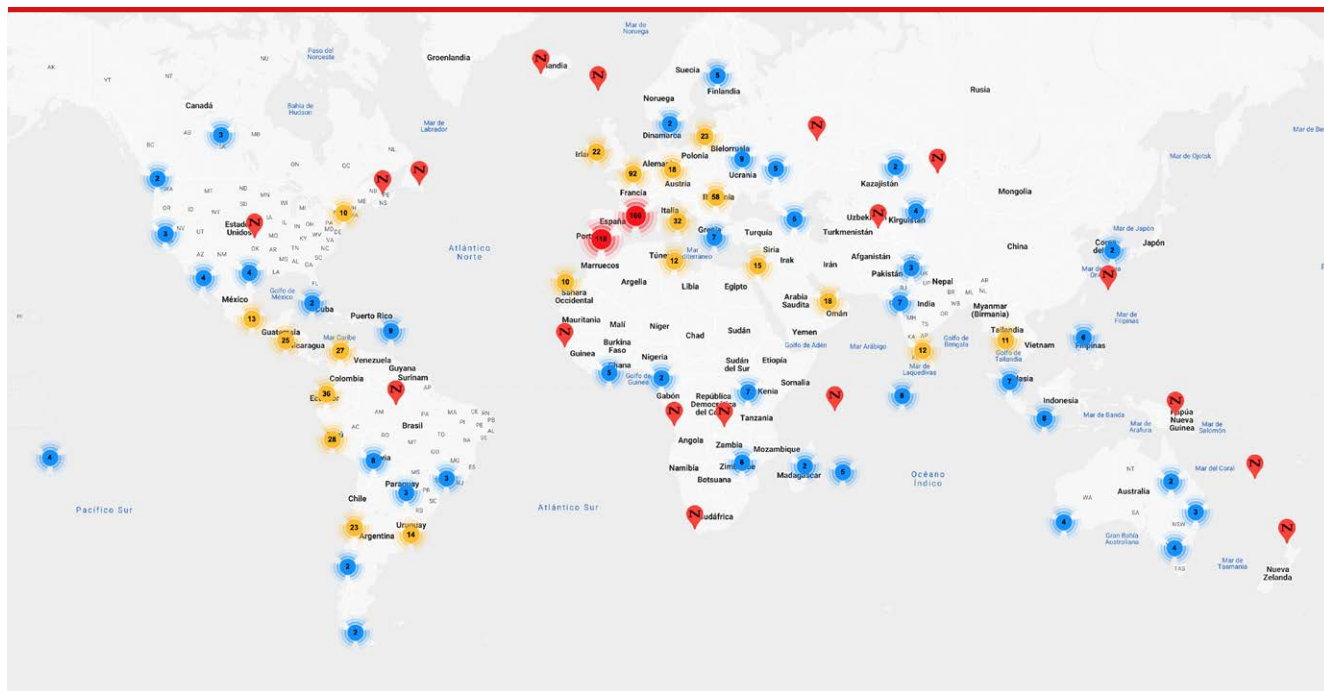
PRADA NARGESA, S.L.

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NARGESA CLIENTS

Prada Nargesa has more than 8.000 customers around the world. Some of our clients, those who offer service to third parties with the Nargesa machinery in their workshops, have been pleased to be part of this network that aims to connect them with possible future clients. In this way, all those people or companies that have a need for any part or tool that can be manufactured by using the Nargesa range of machinery, will be able to find a solution in their area to be able to satisfy their production requirements by hiring their services.



We have more than 8.500 customers in 150 different countries around the world

Discover its location on the interactive map on our website!

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Send an email to nargesa@nargesa.com, include the following information and we will add you to this list.

We want to encourage all those who haven't participated yet in this great comercial network!

1. Company name
2. CIF/Tax Code
3. City
4. Country
5. Machine or machines

PRADA NARGESA

Prada Nargesa S.L. is a family business founded in 1970 located near Barcelona, Spain, with more than 50 years of experience in the sector of manufacturing of industrial machinery, and more than 10.000m² of facilities. Nargesa is a symbol of quality, reliability, warranty and innovation.

Our whole range of machines and accessories is manufactured entirely in Nargesa. We have a constant stock of 400 machines, and we have more than 16.800 machines sold all over the world.



OUR RANGE OF MACHINERY

Ironworker Machines
Ring Roller Bender and Pipe Bender
Non-mandrel Tube and Pipe Bender
Twisting / Scroll Bending Machines
Horizontal Press Brakes
End Wrought Iron Machines
Gas Forges

Iron Embossing Machines
Hydraulic Shear Machines
Hydraulic Press Brakes
Presses for Locks
Broaching Machines
Power Hammers

CERTIFICATES

Prada Nargesa has several certifications that backup both, the design and manufacturing processes, as well as the journey through exporting our products around the world and the quality of the manufacturing components we use for our machines. These facts turn into real advantages for our customers:



AUTHORIZED EXPORTER

- Faster customs procedures
- Reduction of tariff documentation
- Tariff preferences according to geographical location



INNOVATIVE SME

- Development in innovation, design and manufacturing technologies
- Certification and audit of efficiency in product and service
- Ability to foresee customer needs

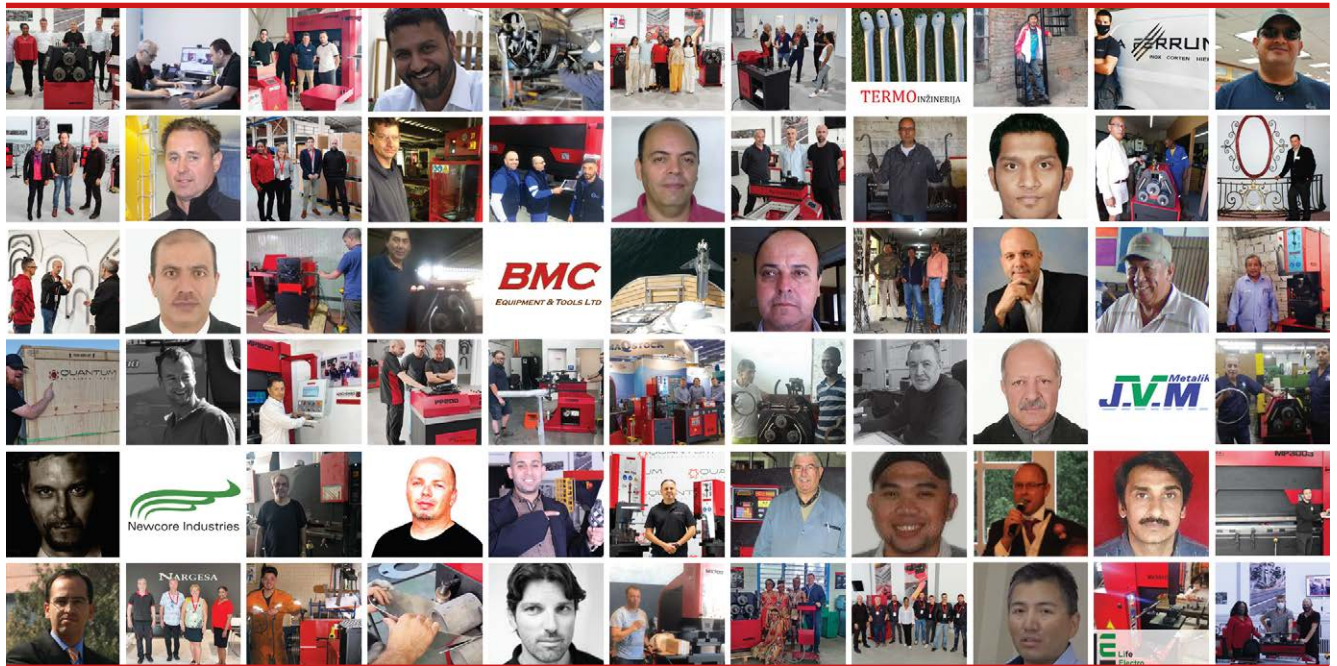


R+D+I MANAGEMENT

- Manufacturing based on the R+D+I process
- Technological surveillance system

SUCCESS STORIES

At Prada Nargesa we believe that the testimony of our clients is our best guarantee, and that is why we like to expose some of the success stories that we have witnessed around the world:



Discover its location on the interactive map on our website!

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Send an email to nargesa@nargesa.com including the following information and we will add you to our website:

Company name
Testimonial name
Post in the Company
Country
Descriptive text
Photography with the machine

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1. MACHINE FEATURES

Make	Narges
Type	Hot Forging Press
Model	PV21

1.1 General Dimensions

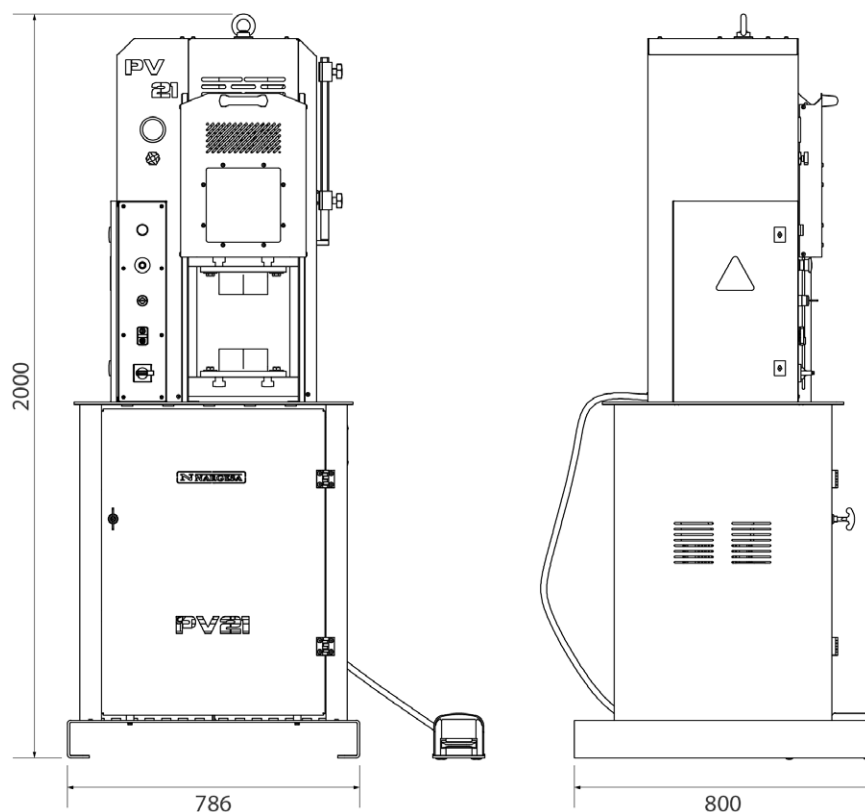


Figure 1. Outside dimensions for the PV21 Hydraulic forging press

1.2 Machine Description

The PV21 press is specially designed for material forming. The versatility is even greater with the possibility of using various molds, tools and accessories, always supplied by the manufacturer or an official distributor in order to guarantee optimal machine operation. Following the manufacturer's instructions when using the machine and all accessories is fundamental.

The PV21 is adapted to European machinery manufacturing standards and directives.

PRADA NARGESA S.L. is not liable for any damages that may be caused due to improper use or a breach of the safety rules by users.

1.3 Identifying the Machine Parts

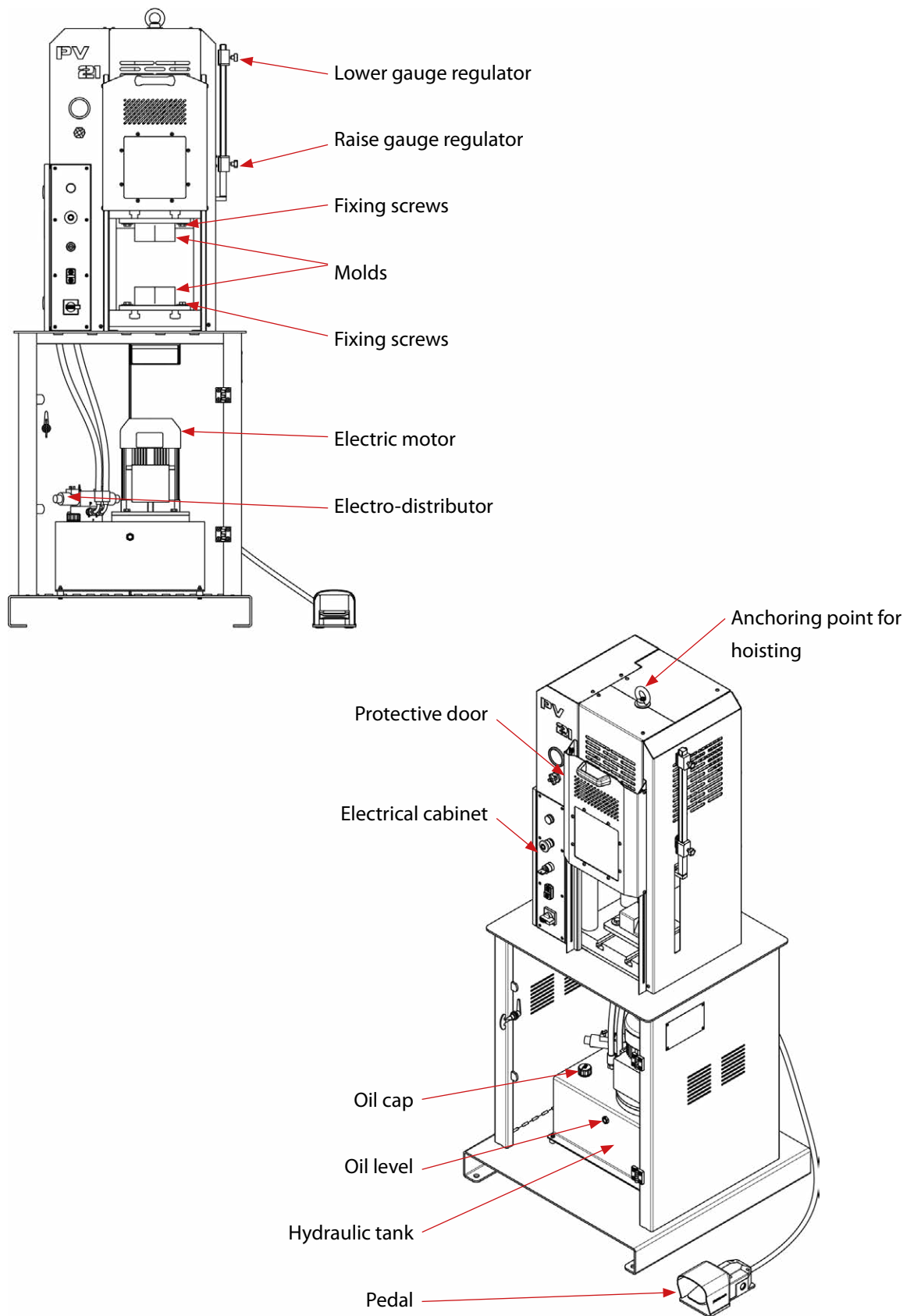


Figure 2. Machine nomenclature and components

1.4. General Characteristics

Motor power	2.2 kW / 3 HP at 1460 rpm
Voltage	230/400 V Three-phase 230 V Single-phase
Intensity	9/5 A
Pump	7.5 l/m
Tank	27 liters
Double rotor	21 Tn
Hydraulic pressure	200 kg/cm ² (20 MPa)
Structure material	Sheet metal
Total weight	460 kg

1.5. Description of the Guards

All the moving components in the PV21 vertical press are embedded in the structure itself. These components are protected from impurities and any involuntary handling, as well as entrapment with different side, front and back covers.

All of these protectors are designed for easy removal in order to do all installation and maintenance work required with comfortable access.

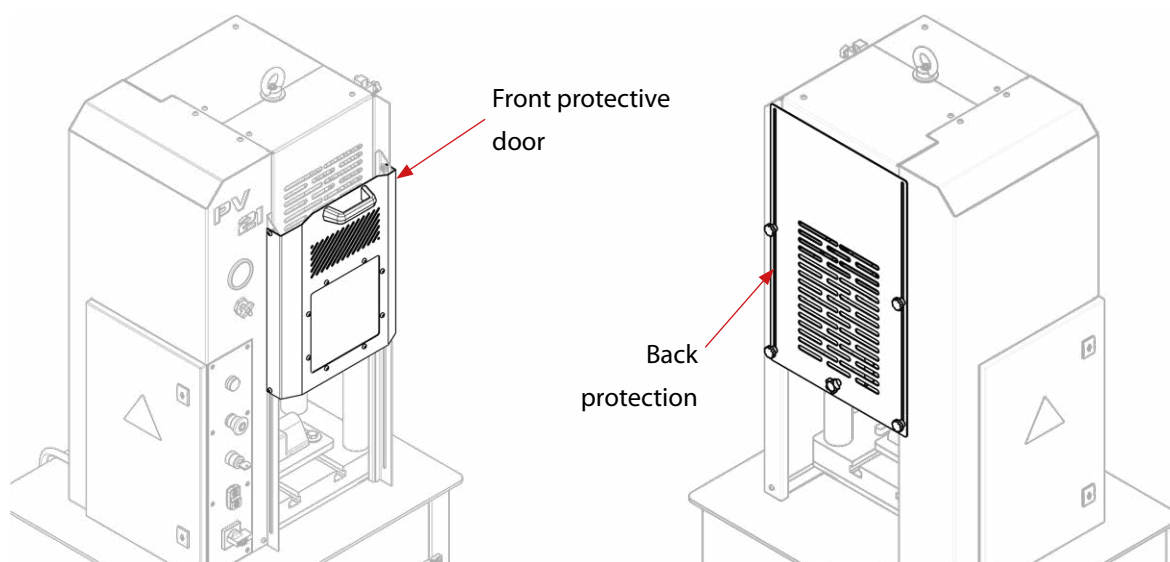


Figure 3. Press protection guards

Working without the protectors on is ABSOLUTELY PROHIBITED.

They may only be removed for maintenance or to repair a breakdown, as necessary, and always when the machine is completely off.

2. MOVEMENT AND STORAGE

2.1 Movement

Movement without hoisting shall be done using a pallet jack. If hoisting is necessary, it shall be done using a crane connected to the anchoring point marked for such purpose. To prevent overtipping, it should never be hoisted more than 300 mm.

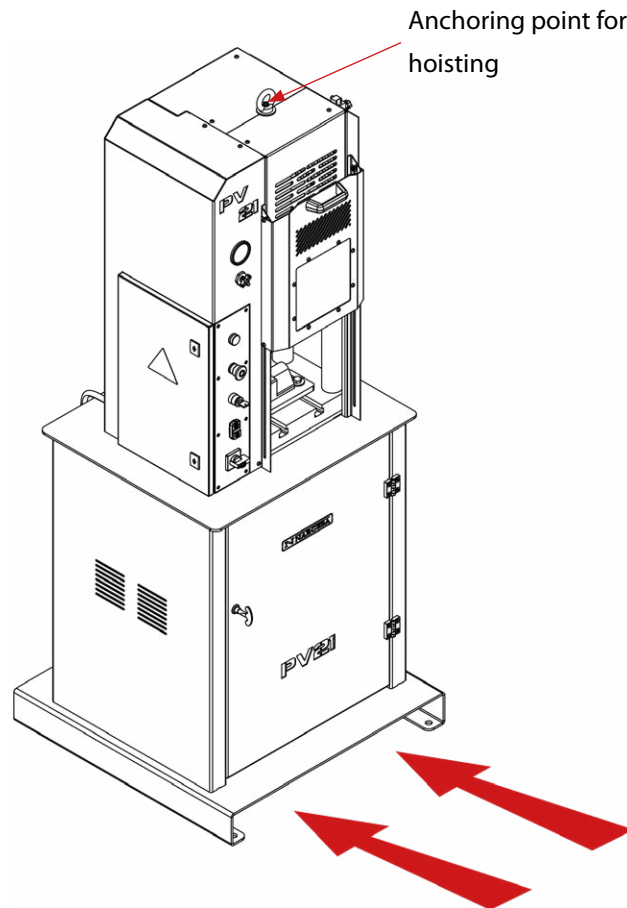


Figure 4. Moving the machine

2.2. Storage Conditions

The press may not be stored anywhere that does not meet the following requirements:

- * Moisture between 30 and 95% without water condensation.
- * A temperature of -25°C to 55°C or 75°C over periods not to exceed 24 hours (please remember these temperatures are for storage conditions).
- * Do not pile machines or place any heavy objects on top.
- * Do not dismantle for storage.

3. MAINTENANCE

3.1 General Maintenance

- Check the oil level in the tank every 500 hours of operation. The oil cap is at the front of the tank. If the oil level is low, fill until 3/4 full in the sight glass. (Figure 5)

- Replace the hydraulic oil in the tank every 5000 operating hours or every 5 years.

Type: CEP SA HYDRAULIC HM 68

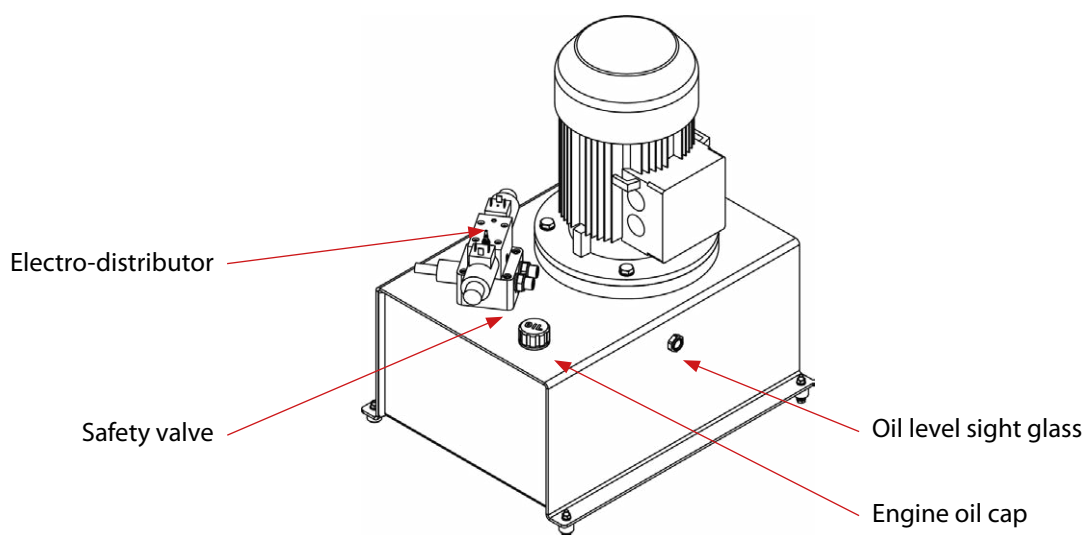


Figure 5. Identifying the hydraulic tank components

ATTENTION: Stop the machine and press the emergency stop button to change the oil. (Figure 6) Once the oil has been changed, start the machine and press the pedal intermittently to gradually increase the pressure time until the circuit fills. You'll see how the machine engages in the normal operation run.

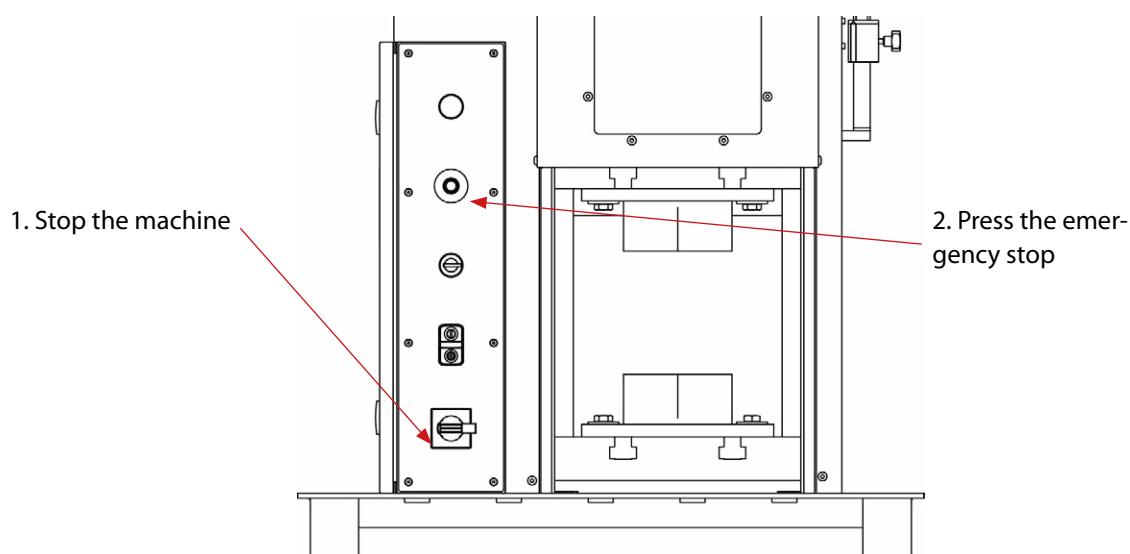


Figure 6. Machine stop and emergency stop

4. INSTALLATION AND START UP

4.1. Machine Location

Try to position the machine in the proper location so that it does not have to be moved; otherwise, follow the steps described in Section 2 Movement. Position over a smooth, level surface to prevent vibrations and movements during operation. The machine can be secured with bolts as it comes with a base or pedestal on the bottom with four holes as shown in figure 7.

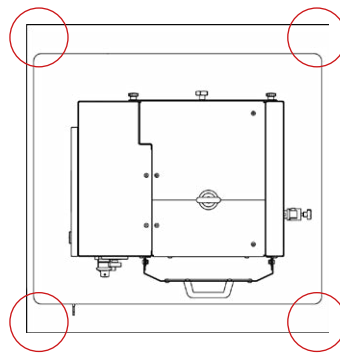


Figure 7. Location of the holes used to secure the machine

4.2. Dimensions and Work Area

Take the dimensions, operator work area and the lengths of any pieces to be worked into consideration when positioning the machine. The press may be used by a single operator, who must stand facing the machine—never to the side—as the operator must control the entire machine, not to mention the fact the main protective mechanisms are designed for frontal use.

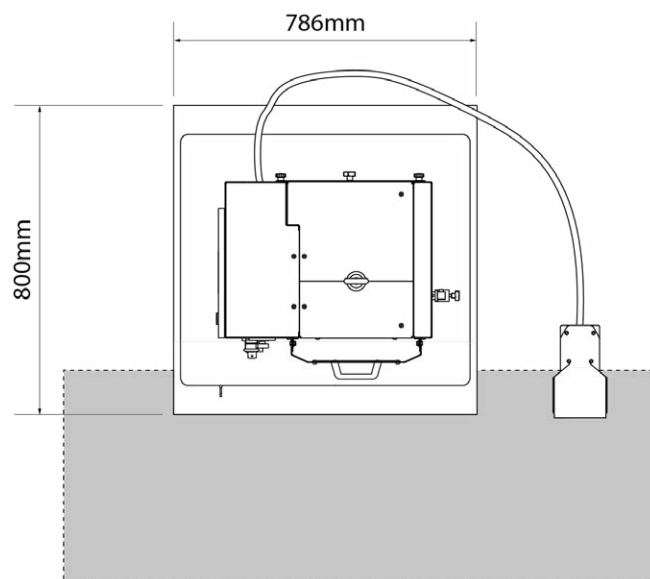


Figure 8. Location of the holes used to secure the machine

4.3. Acceptable External Conditions

- A room temperature of between +5°C and +40°C without exceeding an average temperature of +35°C over 24 hours.
- Moisture between 30 and 90% without water condensation.

4.4. Connection to a Power Source

IMPORTANT

This machine must be connected to a grounded socket.

The PV21 vertical press is equipped with a three-phase 230 V / 400 V 2.2 kW wye-wired motor to be connected to a 400 V power source. It must be connected to a single power source and to the socket type indicated. The wiring of the motor coils and transformer shall be changed as indicated in the following figures if the voltage is not as indicated:

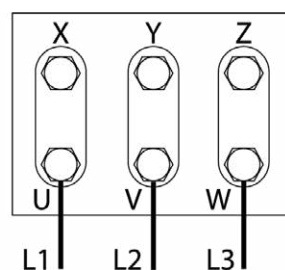
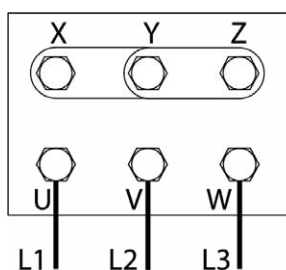


Figure 9. Wye configuration for 400 V voltage (pre-set) Figure 10. Delta configuration for 230 V voltage

If there is a voltage change from 400 V to 230 V, switch from 400 V to 230 V in terminal 6.

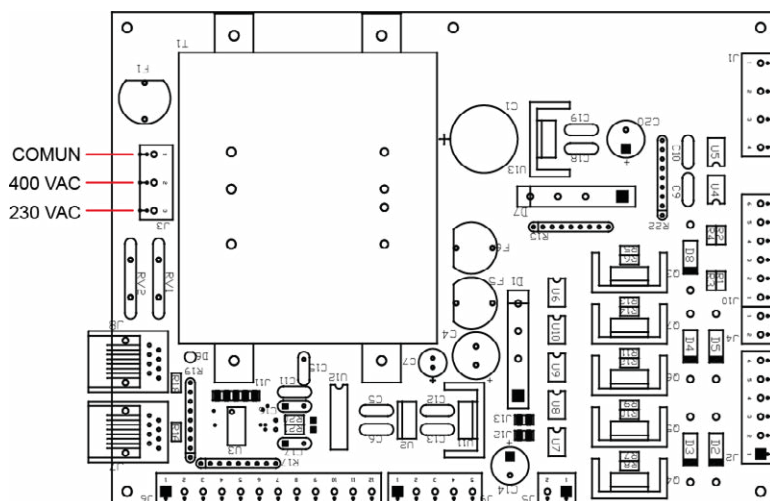


Figure 11. Location of terminal 6 on the electric plate

5. OPERATION MANUAL

5.1 Introduction

This manual was designed to help those using the PV21 vertical press as it has important information on the use and unique characteristics of this machine. For this reason, following all the items detailed in this manual step-by-step is recommended in order to understand how the machine operates properly.



Figure 12. Control panel

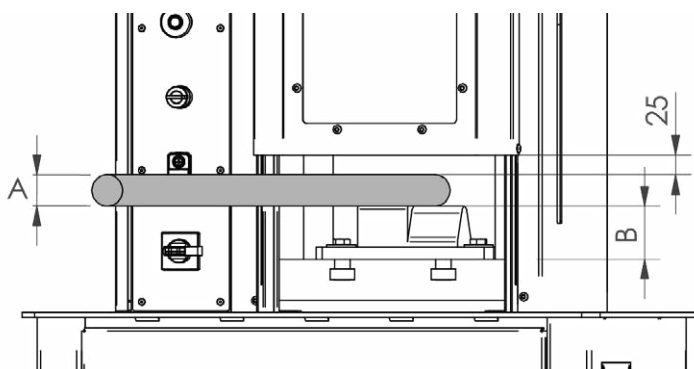
5.2. Machine Power Supply

To turn on the machine, place the Start switch in the Connected position. The white pilot light will turn on showing the machine is connected to the power supply with voltage on.

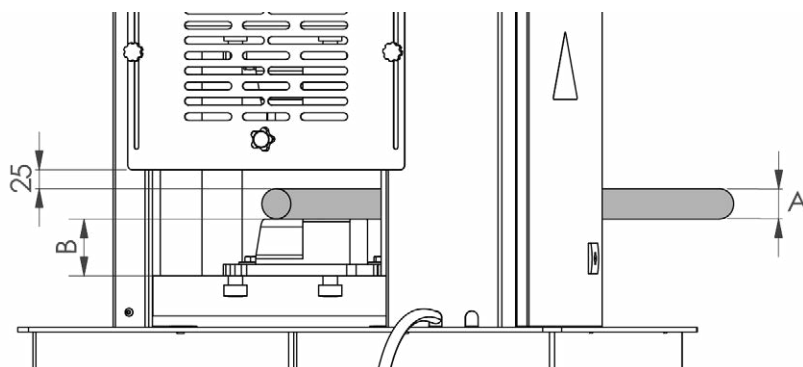
The vertical press is now in StandBy; in other words, the machine is active yet at rest waiting for any operation order.

Before activating the press, adjust the front and back protective doors (section 1.5 Description of the Guards). Do so by adding the thickness of the material (A) you will be working with to the height of the bottom mold (B) you will be using + 25 mm.

Adjust the front protective door



Adjust the back protective door




5.3. Activating the Vertical Press


With the press started up and in StandBy mode, you can activate it to work by following the steps detailed below. To proceed correctly, press the Stop / On button. Upon doing so, the hydraulic unit will begin operating.

5.4. Working in Manual Mode


Turn the Manual / Automatic selector key on the control panel to choose one operational mode or another.

In Manual operating mode  , proceed as follows. Turn the key counter-clockwise. Remember that this operational mode allows you to bring the piston rod down little by little as you press the pedal more or less time. As soon as you lift your foot from the pedal, the piston rod will stop.

In this operational mode, you can adjust the Lower Limit Switch to graduate the piston rod drop while pressing the pedal and go about seeing how the machine drops to activate the Limit Switch.

Finally, it is important to remember that the piston rod on the PV21 press in this operational mode never moves up. If you need it to move up, you must turn the Selector key and choose automatic operation .

5.5. Working in Automatic Mode

To move from Manual operating mode to Automatic operating mode, just turn the key clockwise. Upon doing so, the machine will enter Automatic mode  and the piston rod will begin moving up. This movement will not end until the machine has reached the Upper Limit Switch.

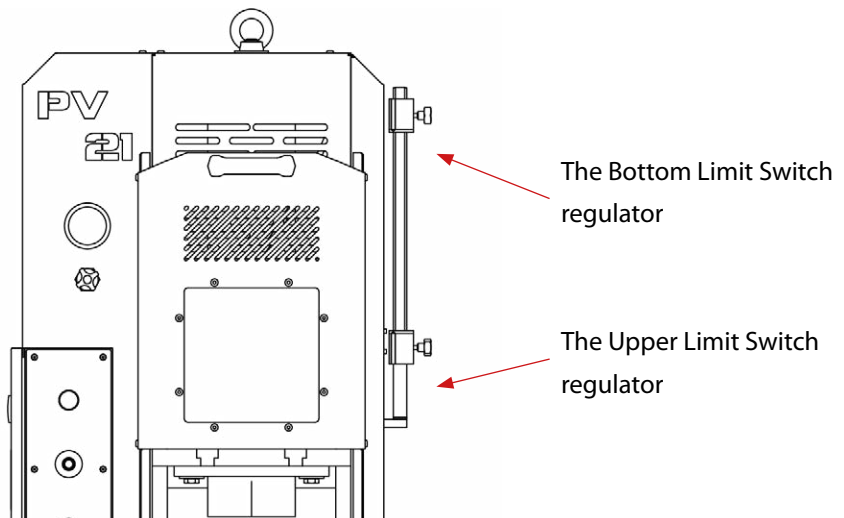
In this operational mode, unlike the other, the piston rod will again return to the rest position when you stop pressing the pedal or reach the Bottom Limit Switch, and ascend until the Upper Limit Switch is activated.

Remember that this operational mode also allows you to bring the piston rod down little by little to adjust the descent by positioning the Bottom Limit Switch. As long as you have the pedal pressed down, the piston rod will drop and only be interrupted when the Limit Switch is activated. When you lift your foot from the pedal, the movement of the piston rod reverses and the ascent begins.

5.6. Adjusting the Rotor Stop Regulators

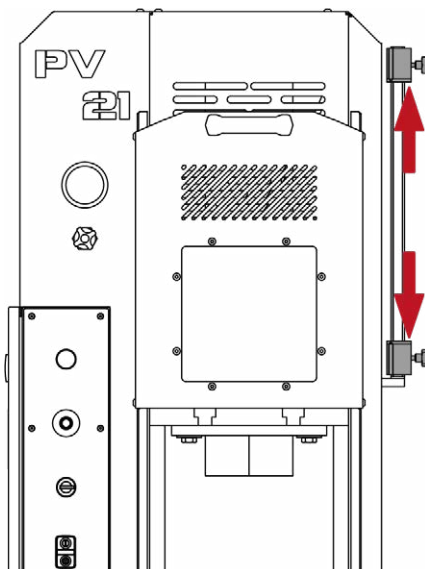
Before proceeding to adjust the rotor stop regulators, you must understand which Limit Switch manages each Regulator.

- The upper regulator adjusts the bottom limit switch.
- The bottom regulator adjusts the upper limit switch.

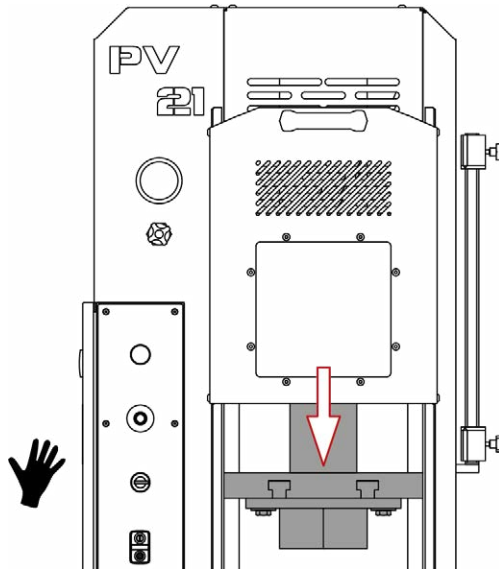


To adjust the piston track, follow these steps:

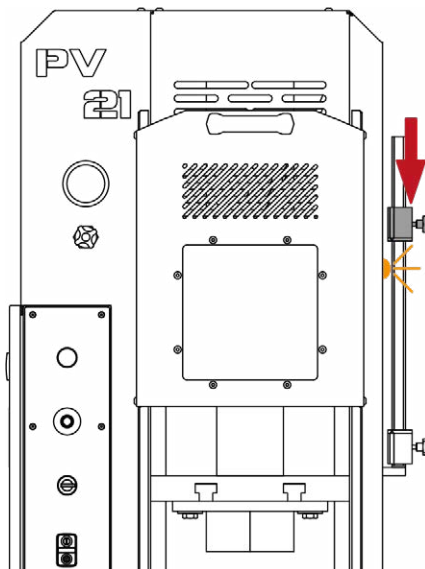
1. Move the upper regulator as far up as it can go and the bottom regulator as far down as it can go.



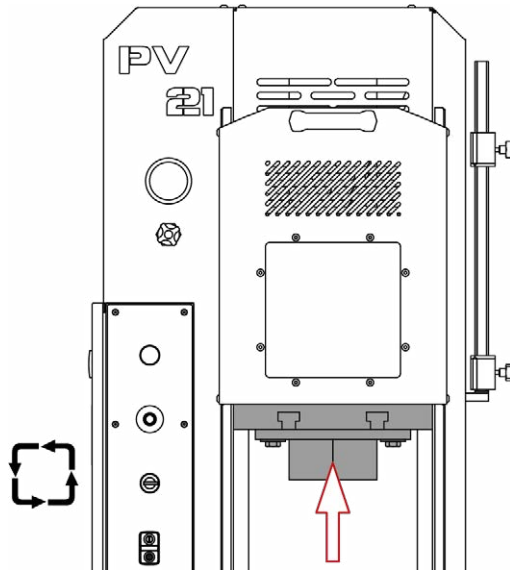
2. Once here, put the machine in manual mode as explained above and use the pedal to lower the rotor to the desired bottom position.



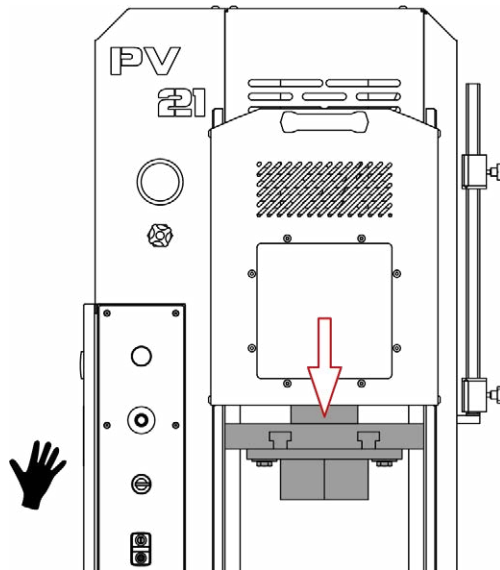
3. With the rotor in the desired position, lower the upper regulator until the upper inductive sensor LED turns on.



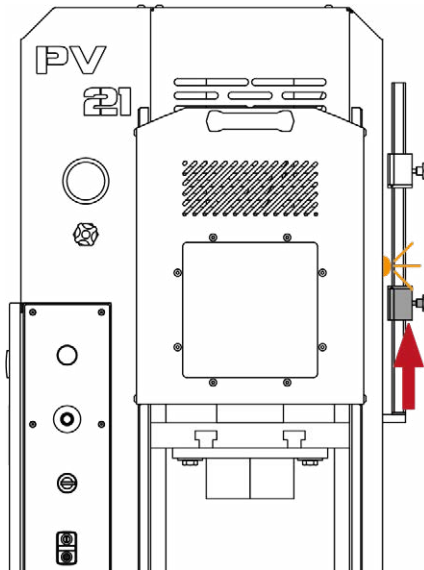
4. Once this is done, the bottom rotor limit will be adjusted and you should then do the same for the top limit. Move the rotor up by activating automatic mode.



5. With manual mode activated, drop the rotor to the desired top position.



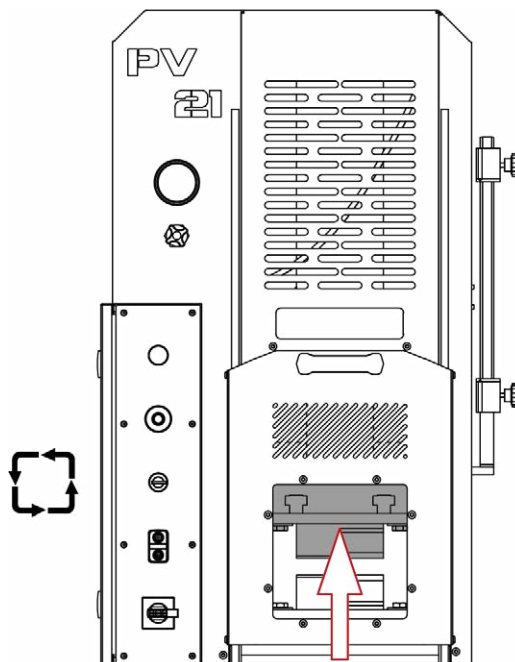
6. Adjust the lower regulator until the bottom inductive sensor LED turns on. Once that's done, the end-of-run switch on the machine will be adjusted.



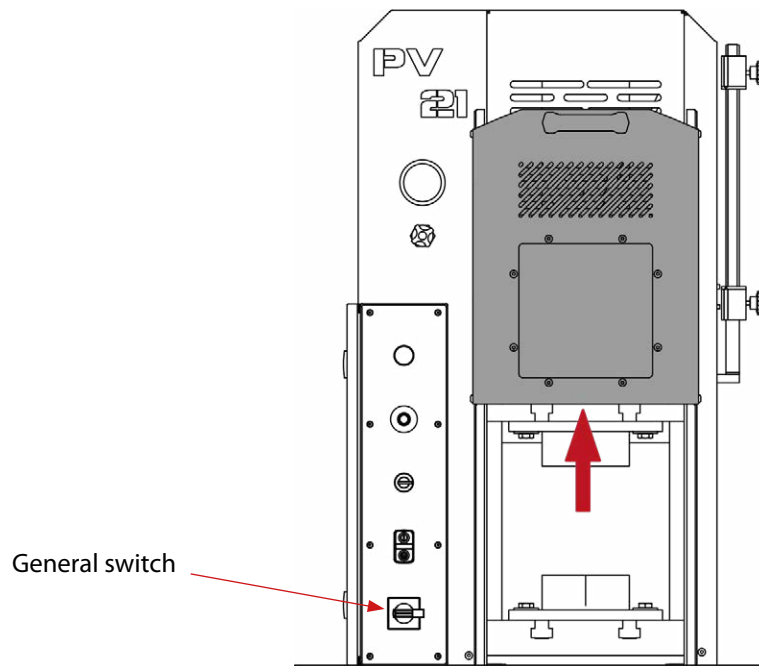
5.7. Switching Molds

To switch molds, do so in this order:

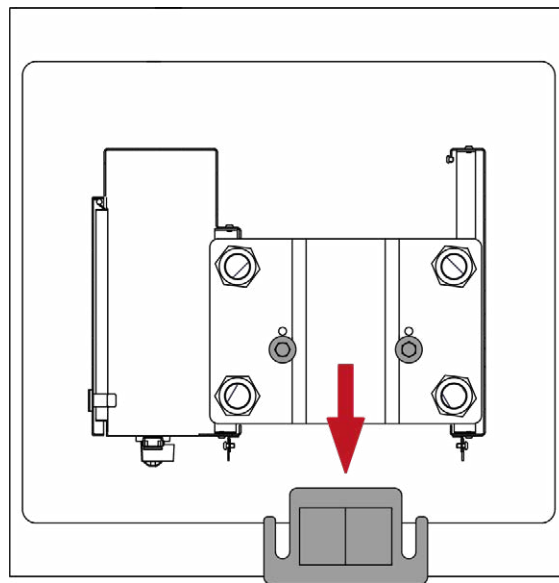
1. With the machine on, move the rotor to the top position in automatic mode.



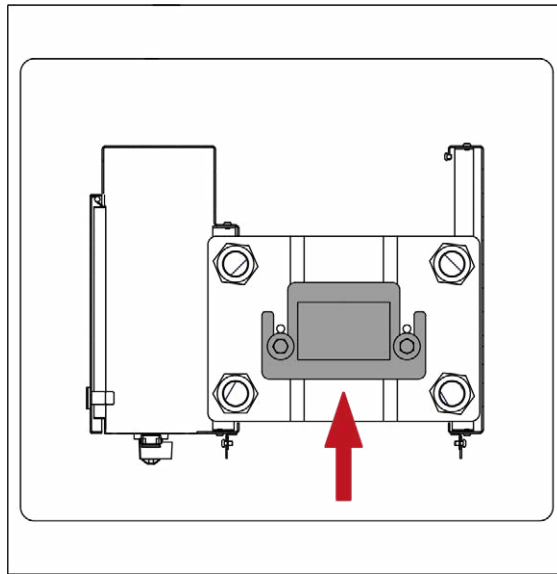
2. Once the rotor is in the desired position, turn off the machine with the general switch.
Put the front protective device in the upper position.



3. Loosen the 4 screws (2 in the upper mold and 2 in the bottom mold) and remove the two molds.



4. Slide the desired molds until the end of the mold guides make contact with the screws.



5. Once the molds are in the correct position, tighten the screws.

5.8. Disabling the Press

You may disable the machine at any time when it is activated yet in standby. If you wish to do so, press the STOP button and the PV21 press will be disabled, moving into StandBy (see section 5.2).

5.9. Troubleshooting

Operational anomalies may occur at any time, which means the operation will stop. Operational anomalies can be divided into two major groups: Emergency Situations and Error Situations. The specific situations that lead to each of these two major groups are detailed below.

Emergency Situations:

Press the Emergency Stop button.

Error Situations:

Error in the Upper Limit Switch on the press.


Error in the Bottom Limit Switch on the press.


Error in the drive system Pedal.

Problem	Cause	Solution
Does not start up	Motor thermal system	Reset the thermal system in the electric panel
	The emergency stop is enabled	Reset the emergency stop
The rotor does not move	There is a problem with the pedal	Check the pedal and replace if necessary
	The machine is in StandBy mode	Press the On switch (Section 4.3)
The rotor does not stop	Failure in one of the Limit Switches	Check whether the limit switches activate
The rotor does not move up	Failure in the upper Limit Switch	Check whether it activates and replace if necessary
	The machine is in Manual mode	Turn the key to enable Automatic mode (Section 4.2)

If one of these situations occur, the PV21 press will move into a status where any operation being done will be aborted. For safety reasons, the press cannot be re-activated until the anomalous situation is resolved. For Emergency Situations, the anomalous situation may be resolved by resetting the Emergency Stop button. Once the corresponding anomalous situation is resolved, the PV21 press will enter StandBy mode (to activate it, see section 5.3. Activating the Press). Nonetheless, contact Technical Service for any error situations so the problem can be solved as quickly as possible.

If the problem persists, contact the Nargesä technical service

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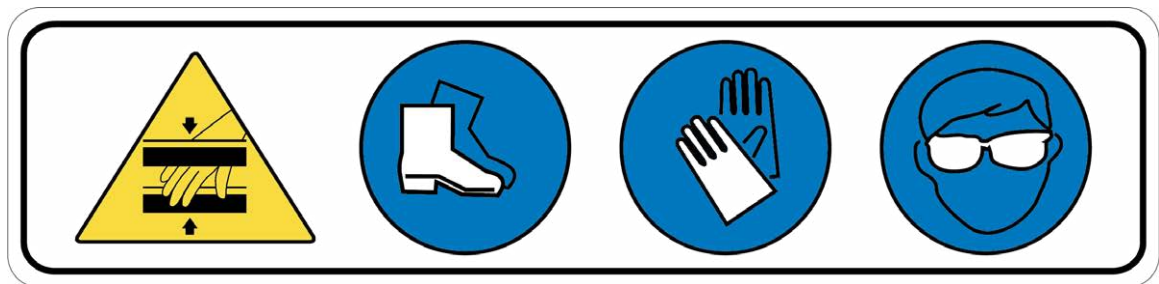
 **+34 620446827**

 **sat2@nargesä.com**

 **sat2.nargesä**

6. WARNINGS

- Do not handle any component when the machine is on.
- Do not use the machine for any purposes not described in the manual.
- Use gloves to work on the machine and during all bending processes.
- Use goggles and safety boots approved by EC certification.
- Secure the material on the ends; never by the bending area.
- Do not work without the protective mechanisms installed on the machine. (Never bend anything without the door on)
- Keep a safe distance between your body and the machine.
- Do not use punches or tools not supplied by Nargesa or an authorized distributor.
- The tools that can be coupled to the machine must always be fixed to the base and rotor.
- NARGESA S.L. will not be held liable for any accident due to operator negligence, and not following the instructions for use and safety indicated in the manual.



7. ACCESSORIES

All Nargesa presses are equipped with a bending tool comprised of a set of standard 20 molds and four base ensembles. All other molds are optional. Each machine can be equipped as the customer needs.

20 bending mold



REF: 140-18-01-00020

>Molds with two work areas to stretch and flatten material. Highly versatile.

> Molds manufactured and tempered in 1.2344 steel / AFNOR: Z40CDV5 / DIN: X40CrMoV5-1 / UNE: F5318 / AISI: SAE H13 / SKD61 / 45Cr5MoSiV1 to withstand major effort and high temperatures. This material maintains its mechanical properties at high temperatures.

Standard tooling



Mold dimensions	Total weight
130x80x67 mm	6.60 kg

PV21 single base



REF: 140-18-01-00001

>Two bases to be able to weld or screw together any mold manufactured by the customer, as per the work needs.

Bases made of F-111 steel.

Standard tooling

Mold dimensions	Weight
230x135x15 mm	6.10 kg

PV21 base with hole in the middle



REF: 140-18-01-00004

>Two bases to be able to weld or screw together any mold manufactured by the customer, as per the work needs.

These bases were designed for hot punching.

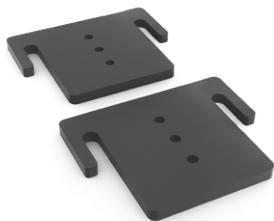
Bases made of F-111 steel.

Standard tooling



Mold dimensions	Weight
230x135x15 mm	6.00 kg

PV21 front assembly base



REF: 140-18-01-00005

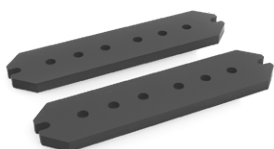
> Two bases to be able to screw any of the molds we manufacture together, perpendicular to their original position.

Bases made of F-111 steel.

Standard tooling

Mold dimensions	Weight
230x185x15 mm	7.60 kg

PV21 double base

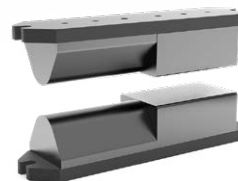


REF: 140-18-01-00006

> Two bases to be able to screw any of the molds we manufacture together, one next to the other.

Bases made of F-111 steel.

Standard tooling



Mold dimensions	Weight
325x80x15 mm	5.60 kg

21 bending mold



REF: 140-18-01-00021

> Pyramid-shaped molds to form the material and stretch it faster.

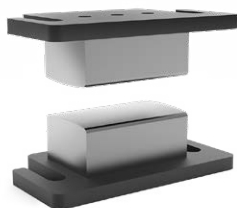
> Molds manufactured and tempered in 1.2344 steel / AFNOR: Z40CDV5 / DIN: X40CrMoV5-1 / UNE: F5318 / AISI: SAE H13 / SKD61 / 45Cr5MoSiV1 to withstand major effort and high temperatures. This material maintains its mechanical properties at high temperatures.

Optional tooling



Mold dimensions	Weight
130x80x67 mm	6.10 kg

22 bending mold



REF: 140-18-01-00022

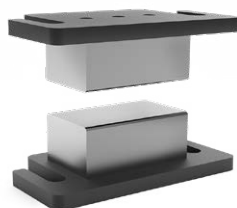
- > Molds with a rounded surface to stretch material without excessive deformation.
- > Molds manufactured and tempered in 1.2344 steel / AFNOR: Z40CDV5 / DIN: X40CrMoV5-1 / UNE: F5318 / AISI: SAE H13 / SKD61 / 45Cr5MoSiV1 to withstand major effort and high temperatures. This material maintains its mechanical properties at high temperatures.

Optional tooling



Mold dimensions	Weight
130x80x67 mm	7.20 kg

23 bending mold



REF: 140-18-01-00023

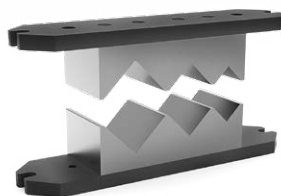
- > Flat molds to flatten material with small radius edges, to create steps.
- > Molds manufactured and tempered in 1.2344 steel / AFNOR: Z40CDV5 / DIN: X40CrMoV5-1 / UNE: F5318 / AISI: SAE H13 / SKD61 / 45Cr5MoSiV1 to withstand major effort and high temperatures. This material maintains its mechanical properties at high temperatures.

Optional tooling



Mold dimensions	Weight
130x80x67 mm	7.30 kg

24 bending mold



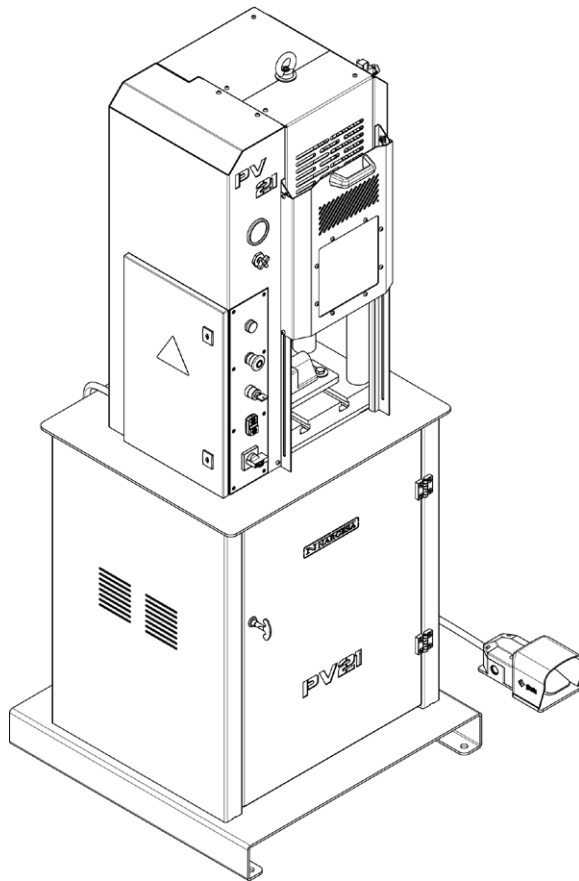
REF: 140-18-01-00024

- > Dies with three V-shaped slots (2", 1" 1/2 and 1") for pressing steel. Specially designed to avoid changing tools by unifying three sizes in the same tool. Ideal for manufacturing parts with Damascus steel.
- > Molds manufactured and tempered in 1.2344 steel / AFNOR: Z40CDV5 / DIN: X40CrMoV5-1 / UNE: F5318 / AISI: SAE H13 / SKD61 / 45Cr5MoSiV1 to withstand major effort and high temperatures. This material maintains its mechanical properties at high temperatures.

Optional tooling



Mold dimensions	Weight
325x80x67mm	14,5 kg



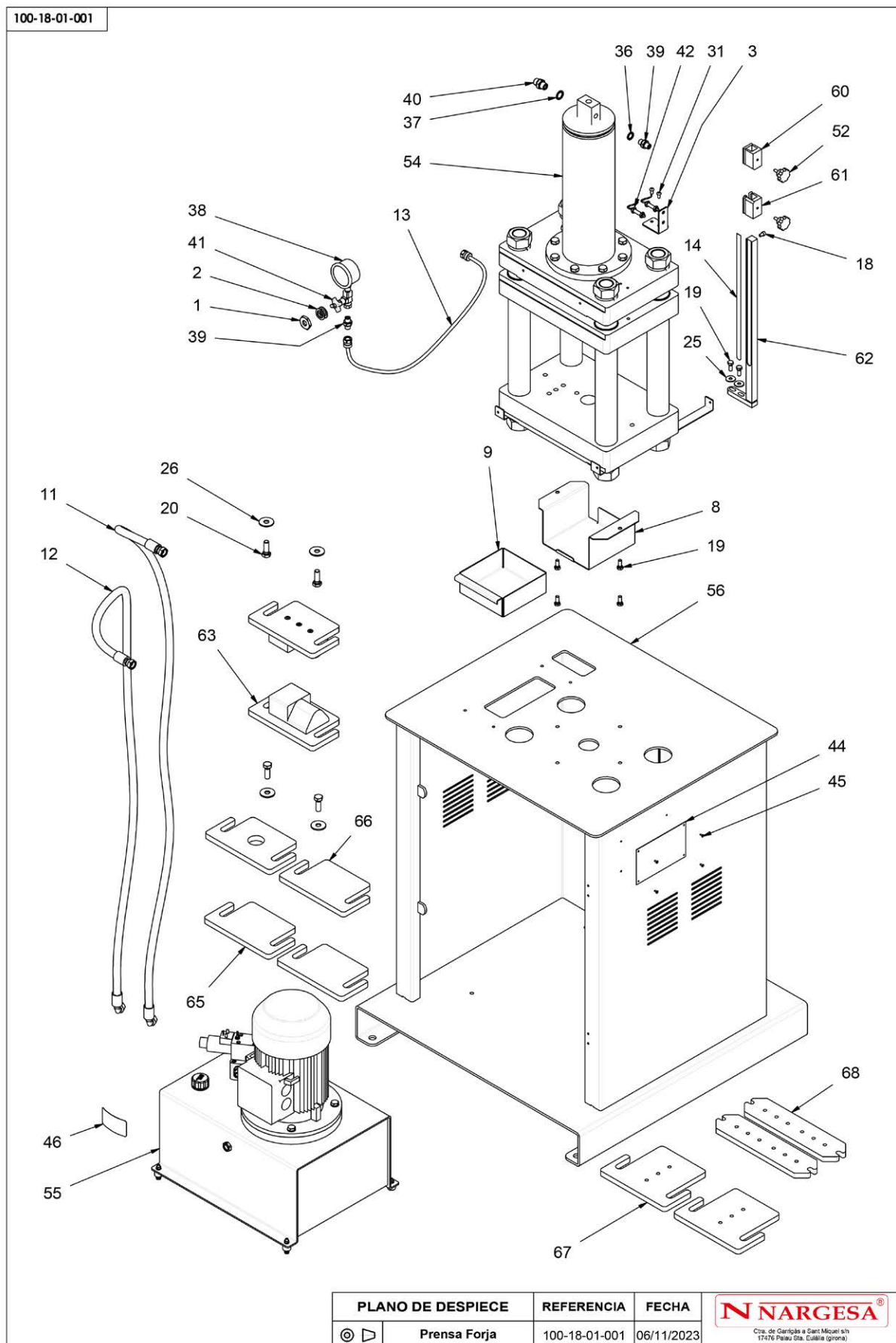
TECHNICAL ANNEX

PV21 Hydraulic Press

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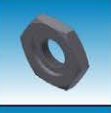
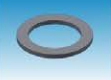



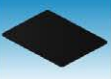
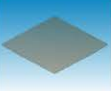

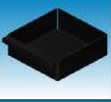





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100-18-01-001



PLANO DE DESPIECE	REFERENCIA	FECHA	 <small>Ctra. de Garrigón s/n. San Miguel s/n. 17476 Palau de la Ribera (Girona) www.nargesa.com</small>
  Prensa Forja	100-18-01-001	06/11/2023	

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Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
1		120-09-01-00126	Tuerca Sujeción	1
2		120-09-01-00127	Arandela Grifo	2
3		120-18-01-00014	Soporte Sensores	1
4		120-18-01-00031	Proteccion Frontal	1
5		120-18-01-00034	Puerta PV 21	1
6		120-18-01-00041	Metacrilato Letras	1
7		120-18-01-00043	Policarbonato Transparente Puerta 3mm	1
8		120-18-01-00047	Soporte Cajon	1
9		120-18-01-00048	Cajon PV21	1
10		120-18-01-00056	Unión Lateral Izquierdo	1
11		120-18-01-00061	MANGUERA HIDRÁULICA 3/8 " - TG 3/8 " BSP CONO 60º - CODO 90º TG 3/8" BSP CONO 60º - 250 BARS - L= 1800 mm	1
12		120-18-01-00062	MANGUERA HIDRÁULICA 3/8 " - TG 3/8 " BSP CONO 60º - CODO 90º TG 3/8" BSP CONO 60º - 250 BARS - L= 1650 mm	1
13		120-18-01-00063	Manguera Minimex 1/12 - Terminales Minimex Tuerca BSP 1/4 - L=600 mm	1
14		122-18-01-002	Regle 0-300 PV21	1

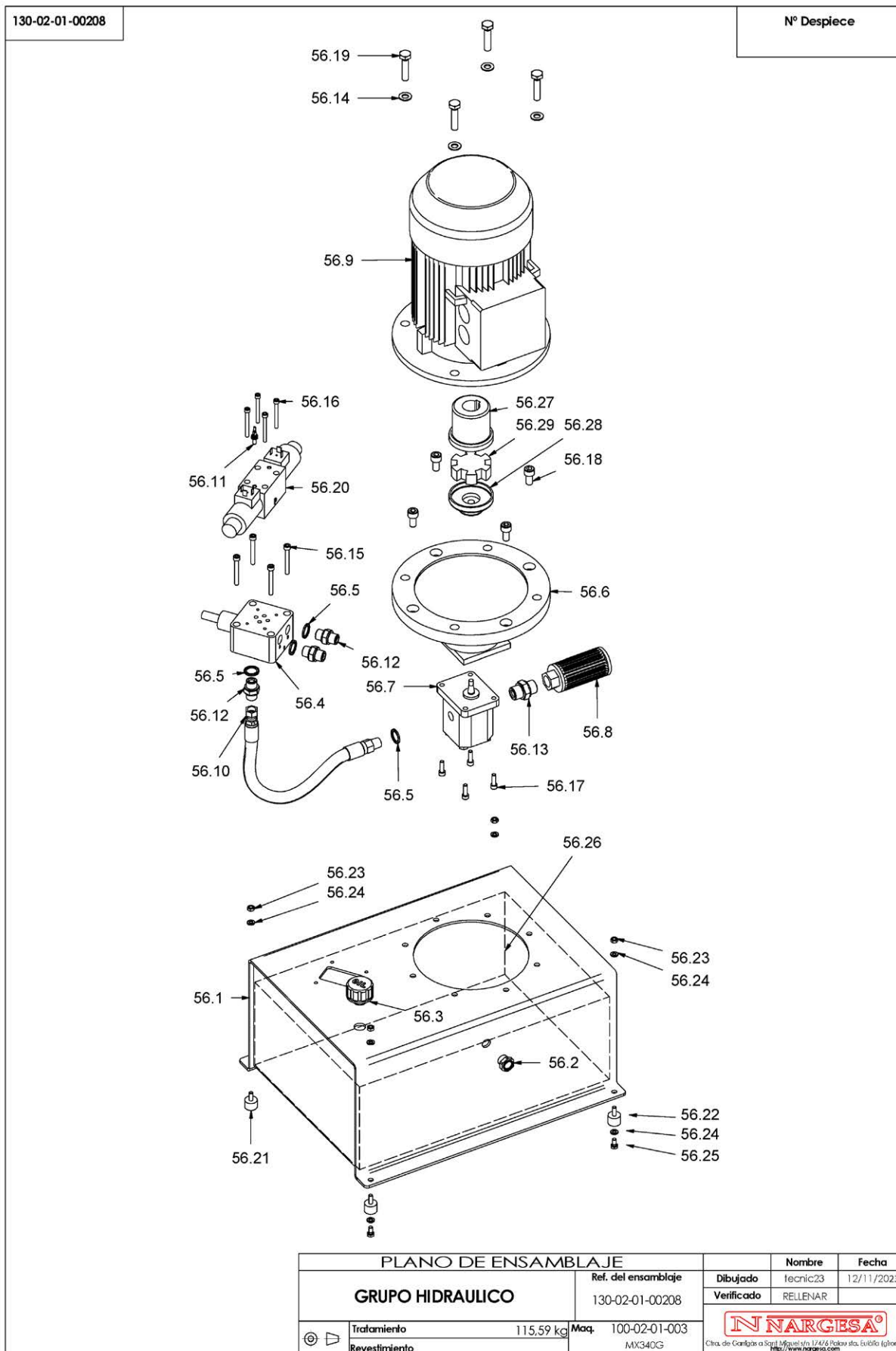
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
15		122-ADH-00005	Adhesivo Triangulo 400V De 110mmx90mm	1
16		122-CAL-0602-002	Calca PP200, C2006 i C3006	1
17		020-D582-M16-ZN	Cáncamo Hembra M16x2 Zincado	1
18		020-D912-M6X10	Tornillo Allen DIN912 M6X10	1
19		020-D933-M8X20	TORNILLO HEXAGONAL DIN 933 M8X20	6
20		020-D933-M12X35	Tornillo Hexagonal DIN 933 M12X35	20
21		020-D934-M6	Tuerca Hexagonal DIN 934 M6	8
22		020-D985-M6	Tuerca Autoblocante DIN 985 M6	4
23		020-D7991-M6X16	Tornillo Allen DIN 7991 M6X16	8
24		020-D9021-M6	Arandela Ancha DIN9021 Para M6	4
25		020-D9021-M8	Arandela Ancha DIN9021 Para M8	2
26		020-D9021-M12	Arandela Ancha DIN9021 Para M12	4
27		020-D9021-M16	Arandela Ancha DIN 9021 M16	1
28		020-D125B-M6	Arandela Biselada DIN 125B M6	10


Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
29		020-D913-M16X40	Tornillo de ajuste de boquilla hexagonal	1
30		020-I7380-M6X6	Tornillo Allen Abombado ISO 7380 M6X6	20
31		020-I7380-M6X12	Tornillo Allen Abombado ISO 7380 M6X12	9
32		020-I7380-M6X25	TORNILLO ALLEN ABOMBADO ISO7380 M6X25	2
33		031-APM-00006	Asa Puente 109 M6	1
34		031-CLT-00001	Cierre De Lengüeta Con Triangulo 8 M20	1
35		031-LLT-00001	Llave Para Cierre Triangulo De 8 Flotante Niquelada	1
36		040-JMG-00002	Junta Metal Goma 1/4' Gas	1
37		040-JMG-00004	Junta Metal Goma 3/8' Gas	5
38		040-MAN-00003	Manómetro 0-300 bar D63 1/4 Inferior	1
39		040-RMM-00002	Racor 1/4" Macho Macho	2
40		040-RMM-00003	Racor 3/8" Macho Macho	4
41		040-VDP-00002	Grifo Manometro 1/4" Salida Superior Linea Recto Ref. FT290-01-14	1
42		050-IND-00003	Detector Inductivo Diell M8 NO PNP-10-30 M12	2

Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
43		050-PED-00019	Pedal Pizzato PX 10111-M2	1
44		122-PLC-0000-001	Placa Características General	1
45		020-D7337-3X8	Remache De Clavo DIN7337 De Al D3X8	4
46		122-ADH-00007	Calca Sentido de Giro	1
47		120-18-01-00070	Chapa Interior Cuadro PV21	1
48		020-D9317-M6	Tuerca Remachable DIN 9317 M6	4
49		120-18-01-00071	Protección Trasera	1
50		031-POMH-00007	Pomo Ondulado Hembra D28 M6	1
51		031-POMM-00014	Pomo Estrella Ø25 M6x20	4
52		031-POMM-00016	Pomo 8 puntas D35 Macho M6x16	2
53		031-BP-00001	Bisagra De Plástico 30 Entre Centros	2
54		130-18-01-00003	Conjunto Pistón	1
55		130-02-01-00208	GRUPO HIDRÁULICO	1
56		130-18-01-00004	Armario PV21	1

Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
57		130-18-01-00005	Conjunto Chapas Central	1
58		130-18-01-00006	Conjunto Chapas Derecho	1
59		130-18-01-00007	Conjunto Tapas Izquierdo	1
60		130-18-01-00009	Guia Superior Sensores	1
61		130-18-01-00010	Guia Sensores Inferior	1
62		130-18-01-00012	Soporte Guia Sensores	1
63		140-18-01-00020	Conjunto Estándar	1
64		050-KIE-1801-001	Kit Instalación Eléctrica PV 21	1
65		140-18-01-00001	Base Virgen Matriz	1
66		140-18-01-00004	Base Agujero Central	1
67		140-18-01-00005	Base Montaje Frontal	1
68		140-18-01-00006	Base Duo	1

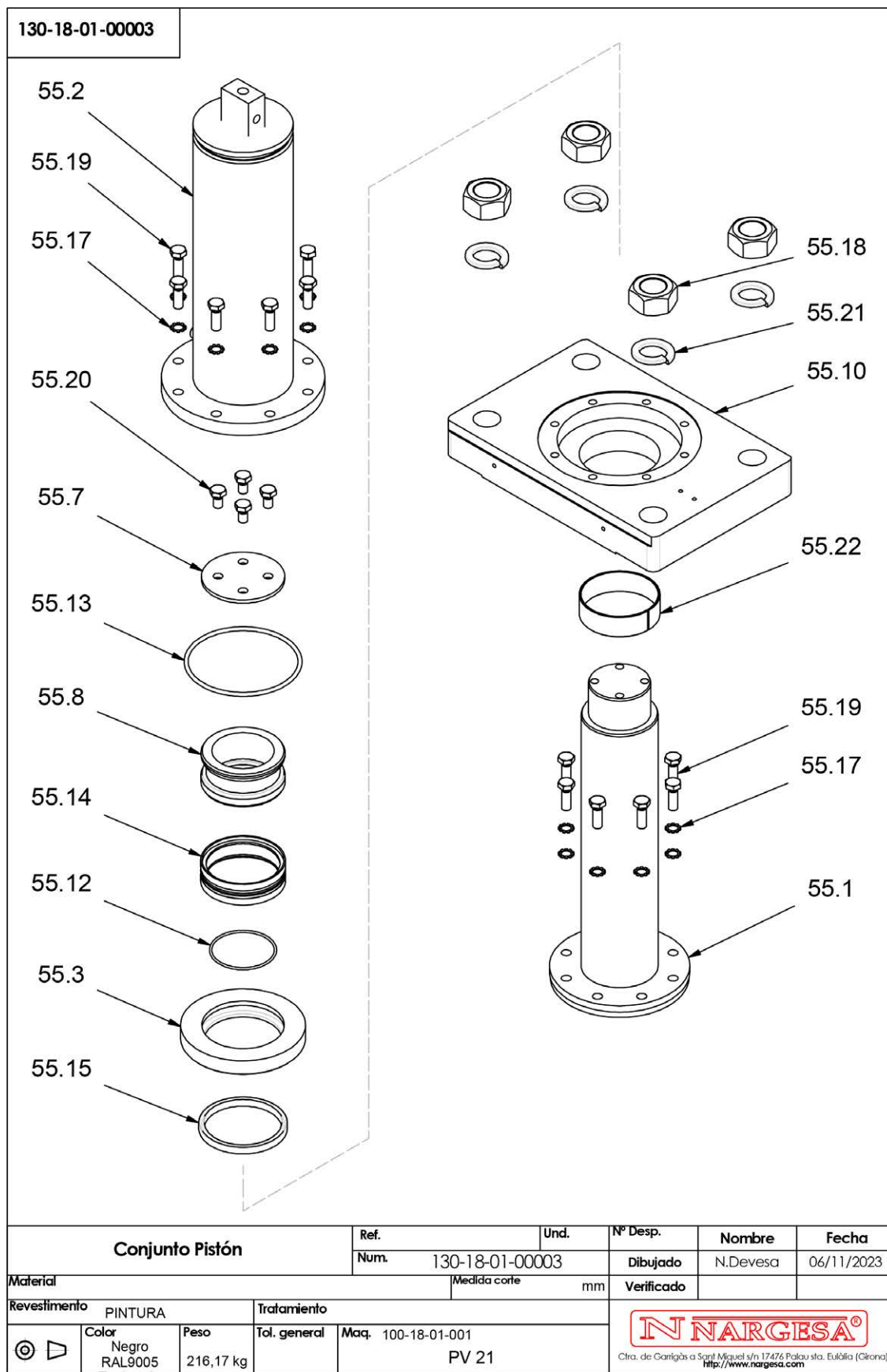
A2. Hydraulic unit blow-up view



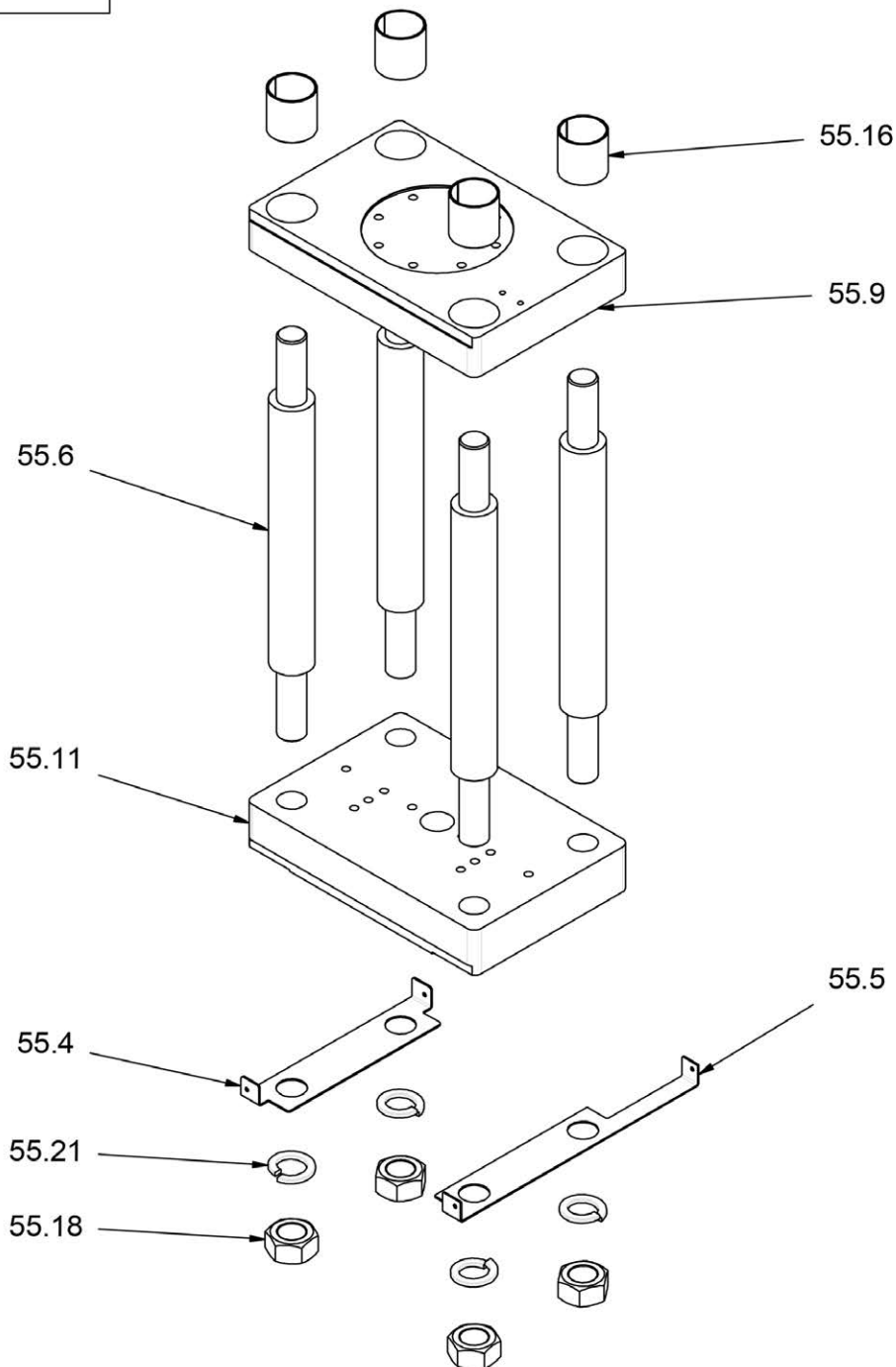
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
56.1		130-02-01-00201	DEPOSITO HIDRAULICO MX340G	1
56.2		040-NA-00001	Visor Nivel Aceite De 3/8" Gas	1
56.3		040-TLL-00003	Tapon Llenado De 1/2" Doble Respiradero Y Filtro	1
56.4		040-VLP-00002	Valvula Limitadora Presion 5R1102P2F/03 -T210 tarada a 210 Bares	1
56.5		040-JMG-00004	Junta Metal Goma 3/8" Gas	4
56.6		040-CA-00002	Campana Acoplamiento Bomba Tipo Lo Motor 3/4/5.5 CV	1
56.7		040-BH-00002	Bomba Hidraulica De Aluminio De 7.5 L 1107.5DE10R	1
56.8		040-FL-00002	Filtro De Aspiracion 1/2" REF 2FA15R125N	1
56.9		050-ME-00003	Motor Eléctrico 2.2Kw 1500RPM 50-60Hz B5 220/380V	1
56.10		040-MF-00007	Manguera Hidraulica macho - hembra con tuerca giratoria 3/8" Gas long:450mm	1
56.11		050-IND-00002	Detector Inductivo M5 100 Bars Pnp Na	1
56.12		040-RMM-00003	Racor 3/8" Macho Macho	3
56.13		040-RMM-00004	Racor 1/2" Macho Macho	1
56.14		020-D125B-M10	Arandela Biselada DIN125B Para M10	4
56.15		020-D912-M6X50	TORNILLO ALLEN DIN912 M6X50	4




Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
56.16		020-D912-M5X50	Tornillo Allen DIN912 M5X50	4
56.17		020-D912-M6X20	TORNILLO ALLEN DIN912 M6X20	4
56.18		020-D912-M10X20	Tornillo Allen DIN912 M10X20	4
56.19		020-D933-M10X45	Tornillo Hexagonal DIN933 M10X45	4
56.20		040-ELV-00012	Electrovalvula Doble Bobina 5EVP3D1C02D24	1
56.21		031-SIB-00001	Silentblock D20x15 Macho M6	2
56.22		031-SIB-00005	SILENT BLOCK D20X15 M6 ESPARRAGO Y ROSCA	2
56.23		020-D934-M6	Tuerca Hexagonal DIN934 M6	4
56.24		020-D125B-M6	ARANDELA BISELADA DIN125B PARA M6	6
56.25		020-D933-M6X12	TORNILLO HEXAGONAL DIN 933 M6X12	2
56.26		120-02-01-00164	Aceite Hidráulico HM68 25 Litros	1
56.27		040-AE-00007	Acoplamiento Lado Motor 3/4 / 5.5Cv	1
56.28		040-AE-00008	Acoplamiento Lado Bomba Lo Para Motor 3/4 / 5.5 Cv	1
56.29		040-AE-00009	Estrella Acoplamiento Para Motor 3/4 / 5.5 Cv	1

A3. Rotor blow-up view






130-18-01-00003



Conjunto Pistón			Ref.	Und.	Nº Desp.	Nombre	Fecha
			Num.	130-18-01-00003	Dibujado	N.Devesa	06/11/2023
Material			Medida corte mm		Verificado		
Revestimiento PINTURA			Tratamiento		 <small>Ctra. de Garrigàs a Sant Miquel s/n 17476 Palau de la Bisbal (Girona) http://www.nargesa.com</small>		
 	Color	Peso	Tol. general	Maq.			
	Negro RAL9005 Texturado	216,17 kg		100-18-01-001 PV 21			

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Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
55.1		130-18-01-00011	Eje Piston	1
55.2		130-18-01-00001	Cuerpo Piston	1
55.3		120-18-01-00042	Postizo Reten Piston	1
55.4		120-18-01-00020	Soporte Inferior D	1
55.5		120-18-01-00019	Soporte Inferior I	1
55.6		120-18-01-00012	Columna	4
55.7		120-18-01-00011	Tapa Embolo	1
55.8		120-18-01-00009	Embolo	1
55.9		120-18-01-00003	Mesa Movil	1
55.10		120-18-01-00002	Mesa Superior	1
55.11		120-18-01-00001	Mesa Trabajo	1

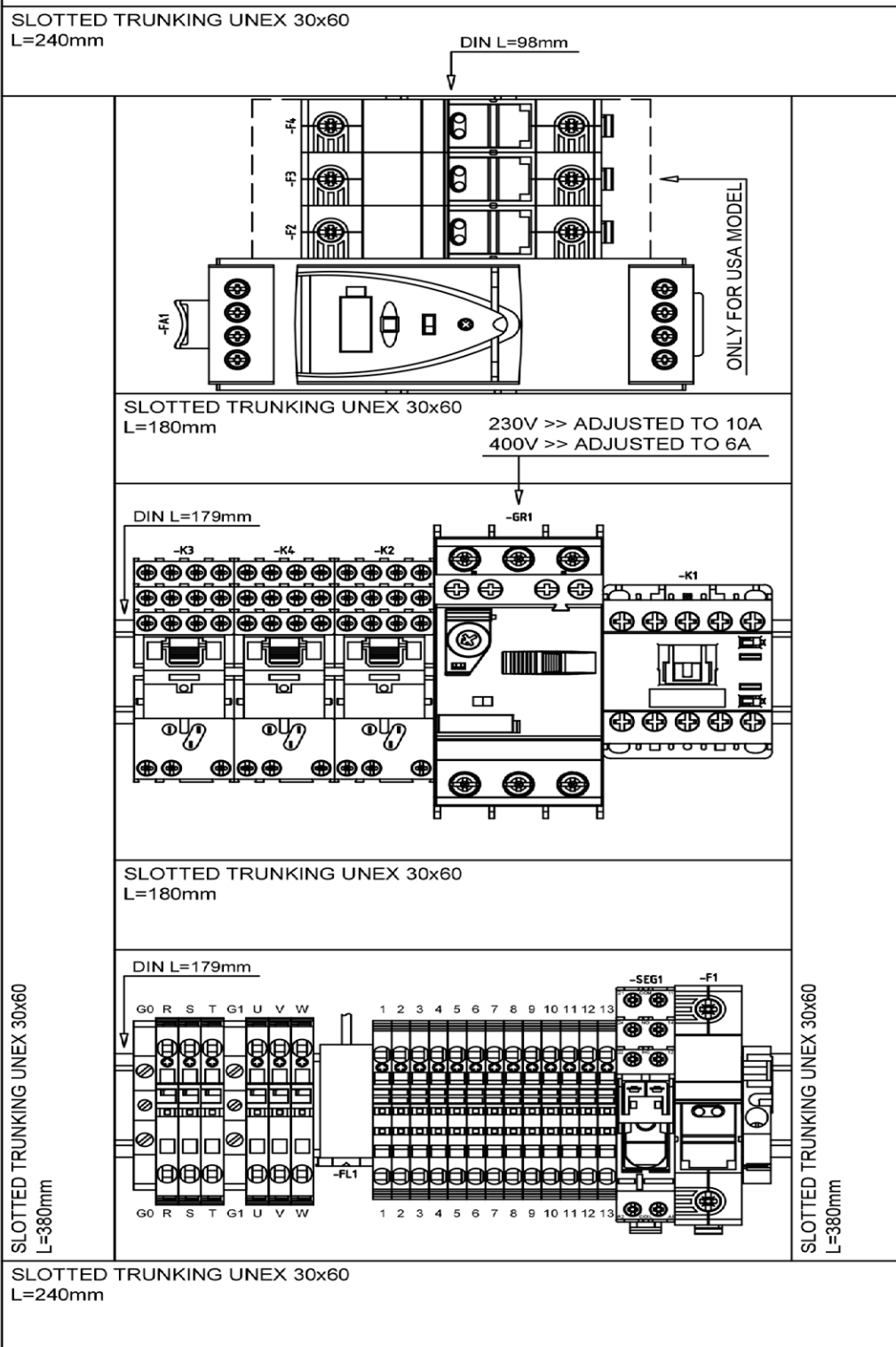
55.12		040-JT-00054	JUNTA TORICA Ø81X3 90Shore	1
55.13		040-JT-00098	JUNTA TORICA Ø142.24X5.33 90Shore	1
55.14		040-DPS-00007	Junta DPS D110XD96X22.5X33	1
55.15		040-BA-00020	Collarin BA D100X115X10 T20	1
55.16		030-DP-00067	Dolla Partida D55X60X60	4
55.17		020-D6797-M12	Arandela de seguridad dentada DIN 6797-A M12	16
55.18		020-D934-M36X2	Tuerca M36x2 Pavonada	8
55.19		020-D933-M12X35	Tornillo Hexagonal DIN 933 M12X35	16
55.20		020-D933-M12X20	Tornillo Hexagonal DIN 933 M12X20	4
55.21		020-D127-M36	Arandela Glowler DIN127 Para M36	8
55.22		120-18-01-00072	Dolla 100x105x32	1

A4. Electrical cabinet · THREEPHASE MACHINE

ONLY FOR:

3 PHASE MODEL

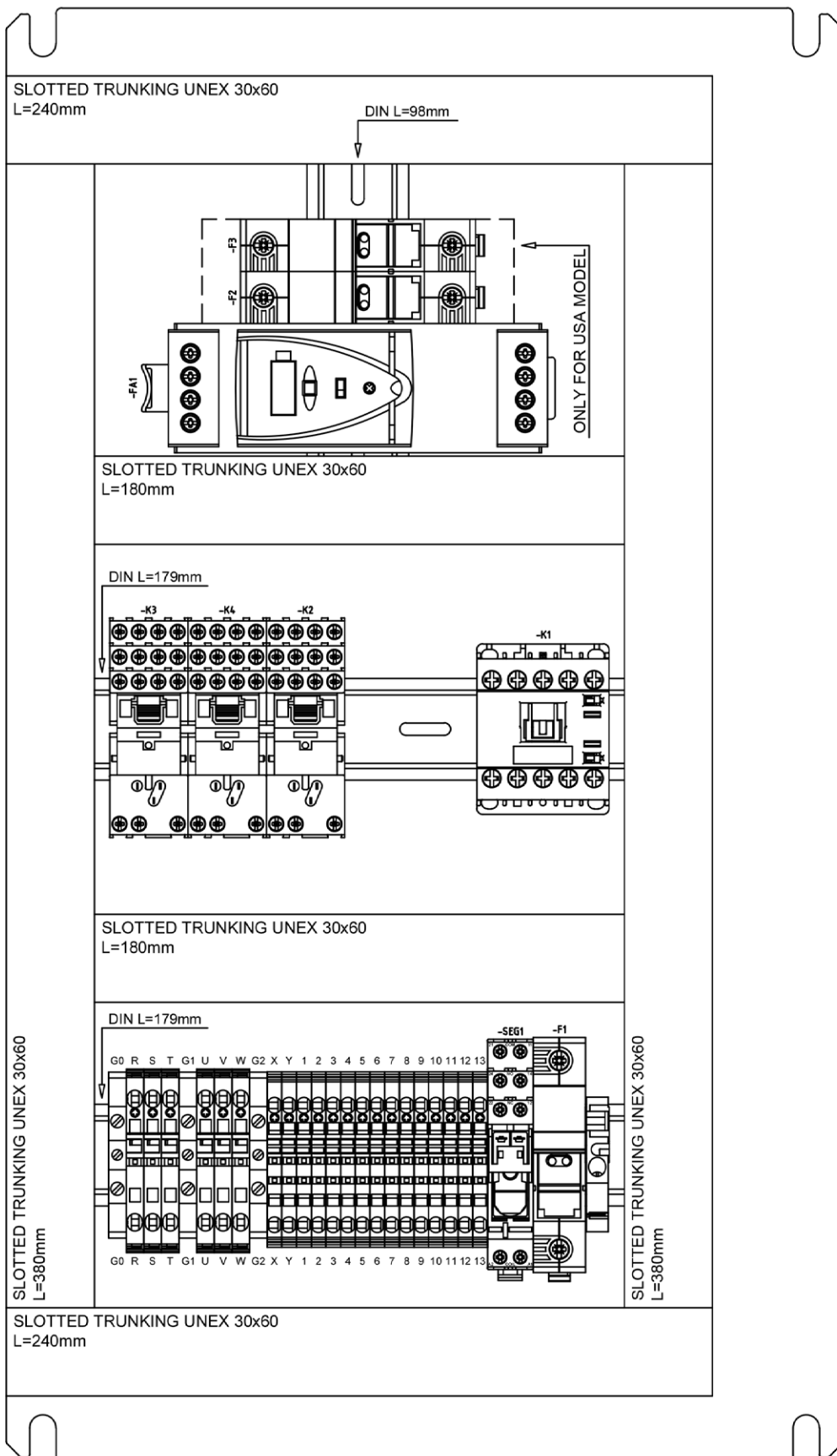
PLACE THE LABELS ON THE TOP OF THE TERMINALS.
PLACE THE TERMINALS WITH THE OPEN SIDE TO THE LEFT.



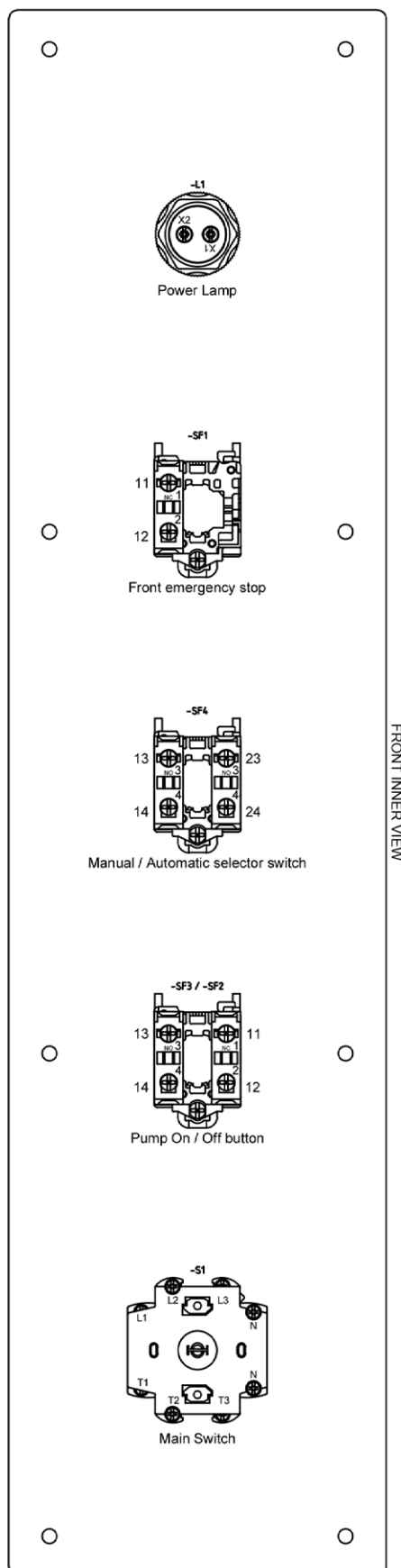
A5. Electrical cabinet · SINGLE-PHASE MACHINE

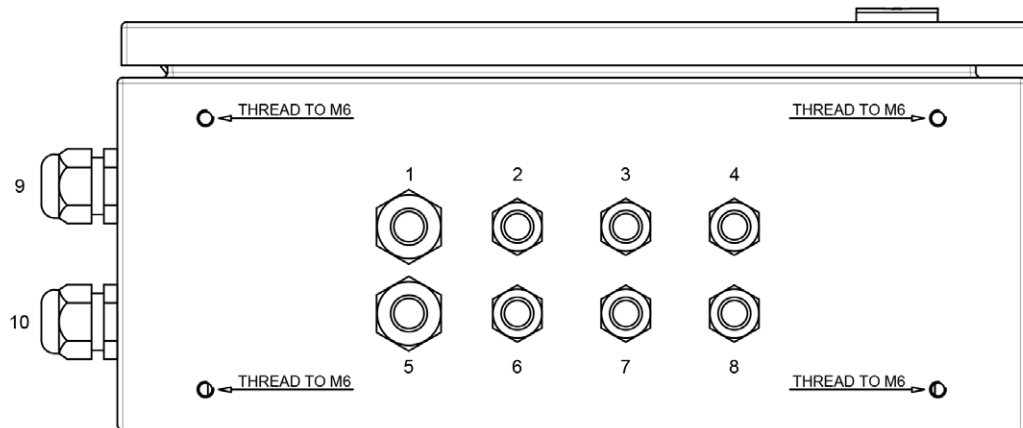
ONLY FOR:
SINGLE PHASE MODEL

PLACE THE LABELS ON THE TOP OF THE TERMINALS.
PLACE THE TERMINALS WITH THE OPEN SIDE TO THE LEFT.



A6. Electrical cabinets

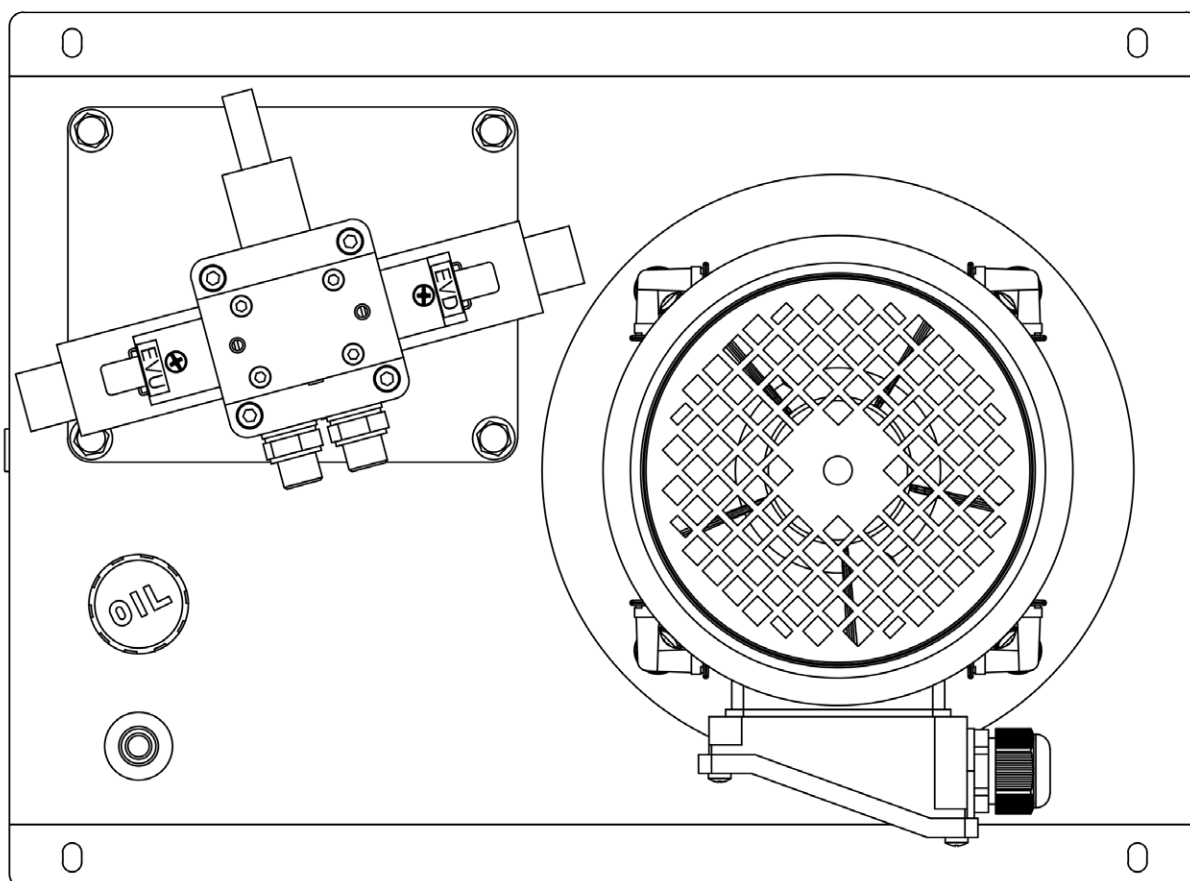




3 PHASE MODEL			
PLATE HOLE NUMBER	PLASTIC CABLE GLAND	ELECTRIC WIRE	DESCRIPTION
1	PG13.5	UNUSED	---
2	PG9	MG4	DOWN LIMIT INDUCTIVE (ID)
3	PG9	MG6	UP ELECTROVALVE (EVU)
4	PG9	UNUSED	---
5	PG13.5	MG2	PUMP MOTOR (M1)
6	PG9	MG3	UP LIMIT INDUCTIVE (IU)
7	PG9	MG7	DOWN ELECTROVALVE (EVD)
8	PG9	UNUSED	---
9	PG13.5	MG5	PEDAL (SF5)
10	PG13.5	MG1	POWER INPUT

SINGLE PHASE MODEL			
PLATE HOLE NUMBER	PLASTIC CABLE GLAND	ELECTRIC WIRE	DESCRIPTION
1	PG13.5	UNUSED	---
2	PG9	MG4	DOWN LIMIT INDUCTIVE (ID)
3	PG9	MG6	UP ELECTROVALVE (EVU)
4	PG9	UNUSED	---
5	PG13.5	MG8	VF1 POWER INPUT
6	PG9	MG3	UP LIMIT INDUCTIVE (IU)
7	PG9	MG7	DOWN ELECTROVALVE (EVD)
8	PG9	MG9	VF1 FORWARD CONTROL
9	PG13.5	MG5	PEDAL (SF5)
10	PG13.5	MG1	POWER INPUT

MOUNTING DIRECTION FOR ALL VALVES



Before mounting the inner metal plate, thread the four holes labeled H1 to M6. Next, thread an M6x20 allen domed head pavoned screw into each of the H1 threaded holes.

[illegible]

Technical drawing of a rectangular plate. The plate has a width of 1000 and a height of 500. There are four mounting points, one in each corner, indicated by small circles. A dimension line indicates a distance of 125 from the left edge to the first mounting point. A dimension line indicates a distance of 6g from the top edge to the first mounting point. The text 'M8x1,25 - 6g' is written vertically next to the 6g dimension line.

Technical drawing of a rectangular table. The overall dimensions are 1800 (width) by 800 (depth). The table has a top rail, a bottom rail, and a central support rail. There are four vertical support posts, one at each corner and one in the center of each long side. The table is shown with a top view and a side view. The top view shows the table with a width of 1800 and a depth of 800. The side view shows the table with a height of 800. The table is shown with a top view and a side view. The top view shows the table with a width of 1800 and a depth of 800. The side view shows the table with a height of 800. The table is shown with a top view and a side view. The top view shows the table with a width of 1800 and a depth of 800. The side view shows the table with a height of 800.

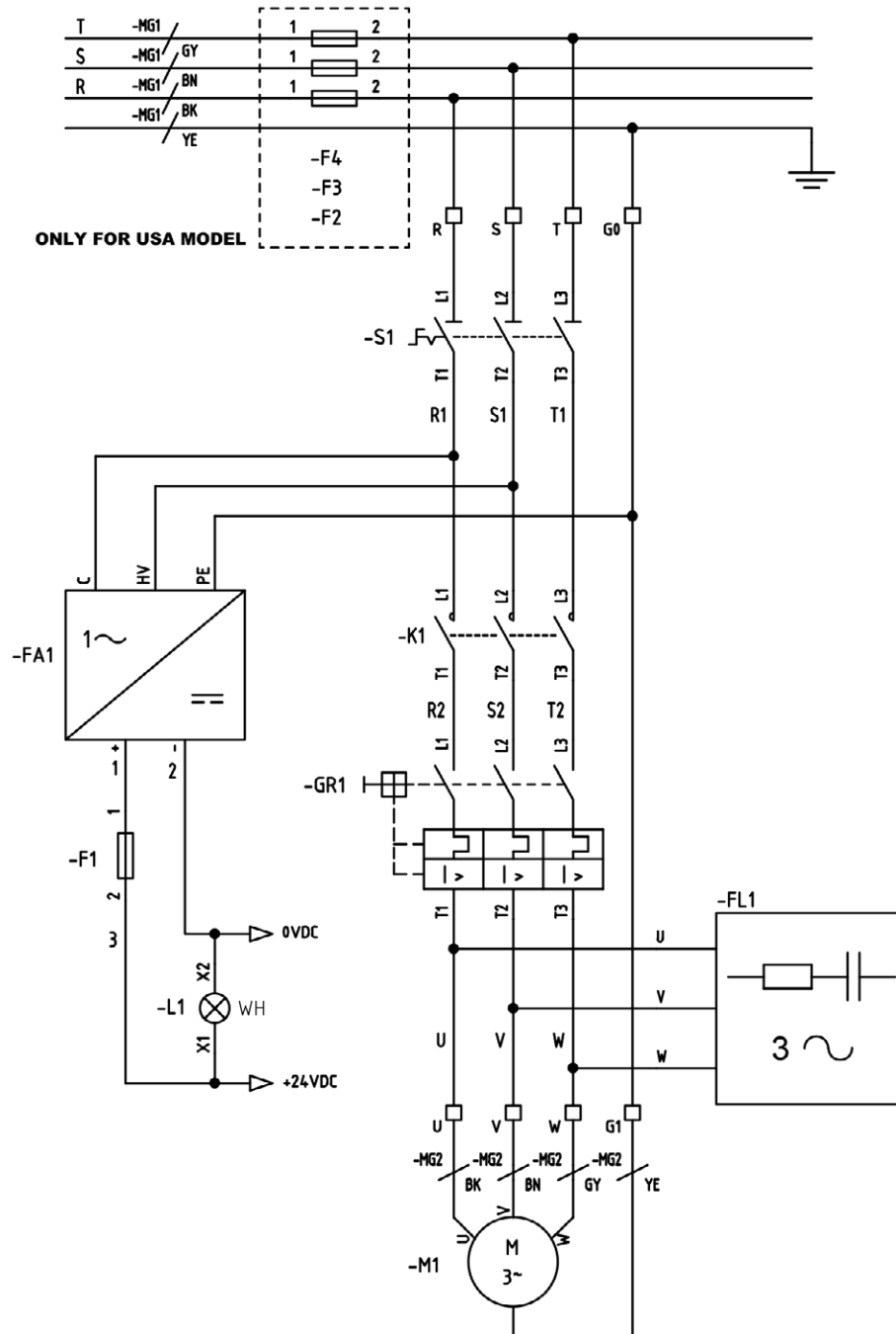
The diagram illustrates the dimensions and components of a metallic box. It is divided into three main sections:

- Top View:** The top surface of the box, labeled "METALLIC BOX TOP" on the left. It shows two circular components, likely hinges or fasteners, positioned at the top corners. The width of this section is labeled "300" on the left.
- Bottom View:** The bottom surface of the box, labeled "METALLIC BOX BOTTOM" on the right. It shows two circular components, likely hinges or fasteners, positioned at the bottom corners. The width of this section is labeled "300" on the right.
- Side View:** The side of the box, labeled "METALLIC BOX HINGES SIDE" at the bottom. It shows the profile of the box with two circular components, likely hinges, positioned at the top corners. The height of this section is labeled "100" on the right.

Technical drawing of a rectangular plate. The plate has a total width of 100 and a total height of 100. It is subjected to a downward force A at each end. The plate is divided into three horizontal sections: a top section of height 10, a middle section of height 40, and a bottom section of height 50. The middle section contains two circular holes, each with a diameter of 10, spaced 20 units apart. The bottom section contains two circular holes, each with a diameter of 10, spaced 20 units apart. The plate is supported by a base of height 10.

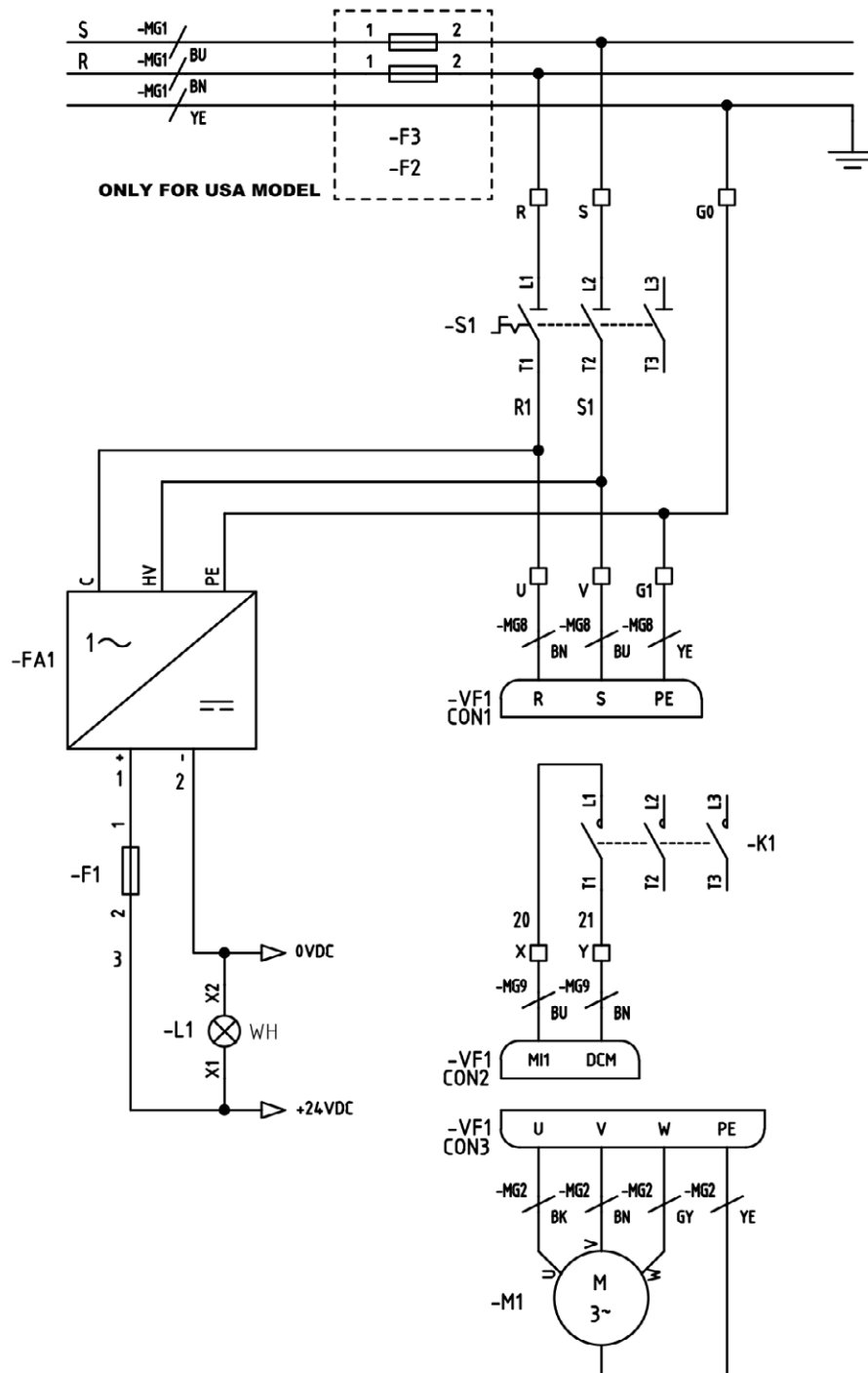
A7. Electrical diagram · THREEPHASE MACHINE

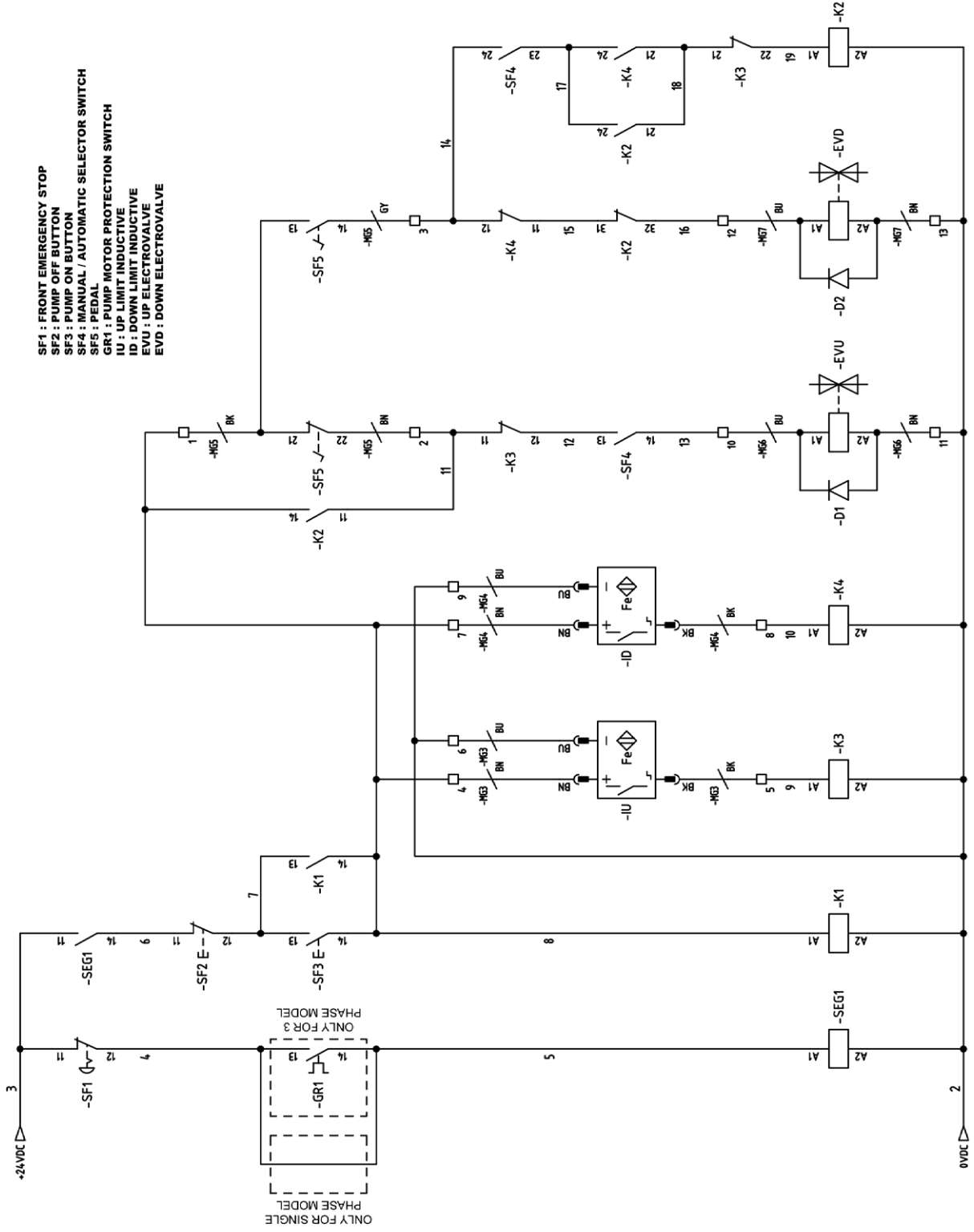
3 PHASE MODEL



A8. Electrical diagram · SINGLEPHASE MACHINE

SINGLE PHASE MODEL





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IRON WORKERS



SECTION BENDING MACHINES



NON-MANDREL PIPE BENDER



HORIZONTAL PRESS BRAKES



HYDRAULIC PRESS BRAKES



HYDRAULIC SHEAR MACHINES



BROACHING MACHINES



POWER HAMMERS



HOT FORGING PRESSES



GAS FORGES



END WROUGHT IRON MACHINES



IRON EMBOSSING MACHINES



TWISTING/SCROLL BENDING
MACHINES