



INSTRUCTIONS BOOK

HORIZONTAL PRESS BRAKE

PP200CNC

NS: 2024-731/830



PRADA NARGESA, S.L

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NARGESA CLIENTS

Prada Nargesa has more than 10.500 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 10.500 customers in 150 different countries around the world

Discover its location on the interactive map on our website!

DO YOU WANT TO PARTICIPATE?

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!

DO YOU WANT TO PARTICIPATE?

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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TECHNICAL ANNEX

TECHNICAL FEATURES - TOOLING

1. CHARACTERISTICS OF THE MACHINE

1.1. Machine Identification

| | |
|-----------|------------------------|
| Trademark | Nargesa |
| Type | Horizontal Press Brake |
| Model | PP200CNC |

1.2. General Dimension

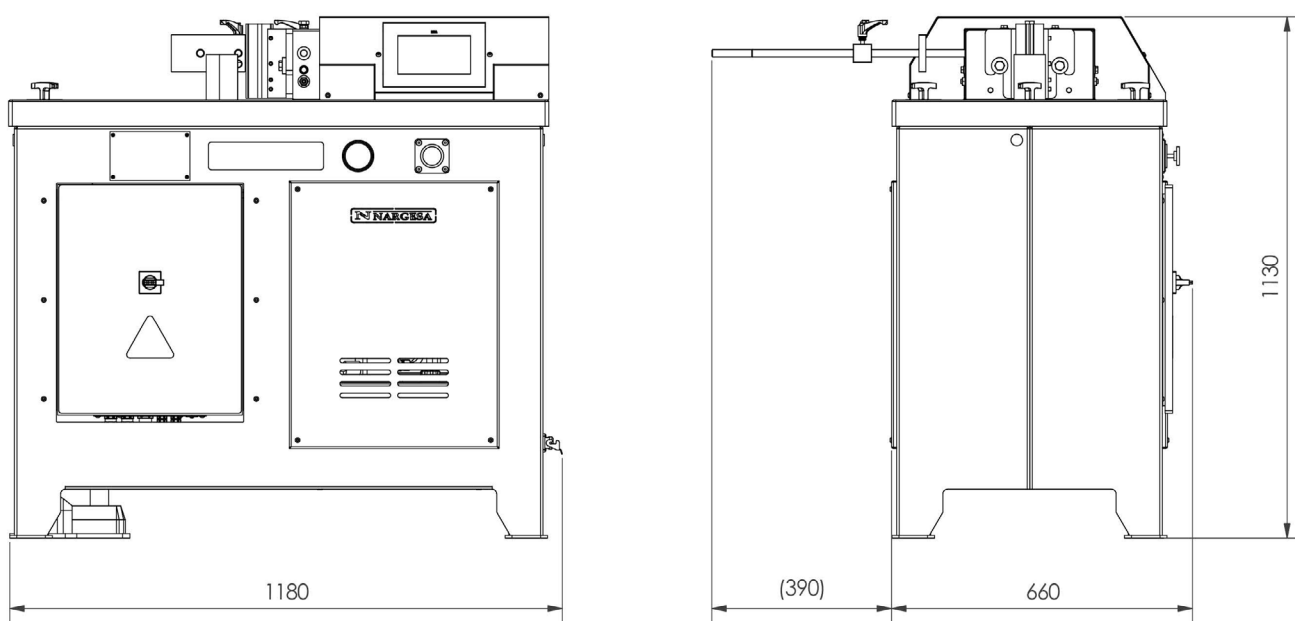


Figure 1. External Dimensions of the Horizontal Press Brake

1.3. Machine description

The versatility of the Horizontal Press Brake NARGESA PP200CNC allows us to carry out a large number of forging parts and operations depending on the need. This machine curves, cuts, shapes etc... depending on the type of accessory used.

A sample of the different types of accessories that can be applied is listed at the end of this manual.

1.4. Identification of Components

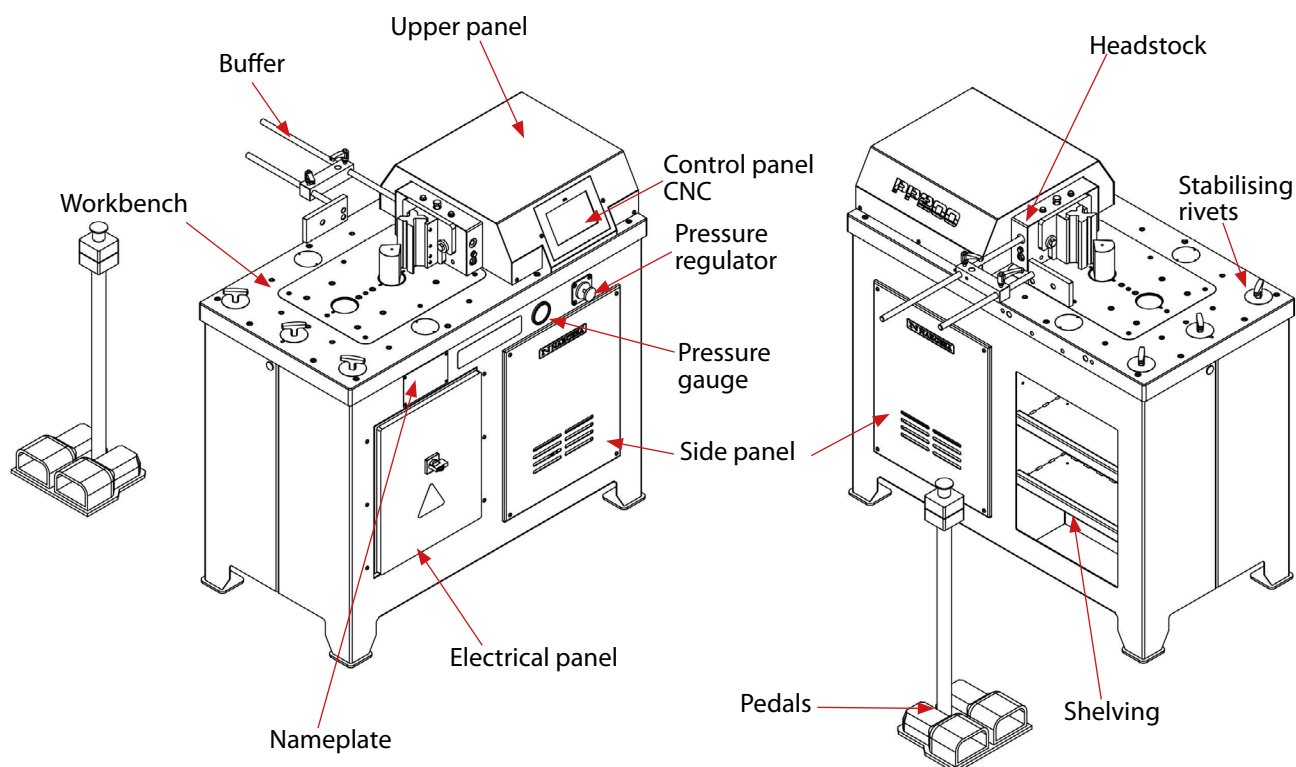


Figure 2.Parts identification

| | | | | | |
|---|-----|-----------------|-------------|------------|-------------|
| N NARGESA® | | www.nargesa.com | | CE | |
| PRADA NARGESA, S.L. - CTRA. DE GARRIGAS A SANT MIQUEL S/N 17476 PALAU DE STA. EULALIA (GIRONA) SPAIN - TEL.(+34) 972568085 | | | | | |
| TRADEMARK NARGESA | | | MODEL PP200 | | |
| YEAR OF MANUFACTURE | | | SERIAL N° | | |
| DIMENSIONS 660x1180x1130 | | | mm. | WEIGHT 665 | Kg. |
| POWER 2,2 | Kw. | INTENSITY 9/5 | A. | VOLTAGE | V. Hz 50/60 |
| | | | | | |
| | | | | | |
| | | | | | |

Figure 3. Nameplate

1.5. General characteristics

| | |
|----------------------|---|
| Electric motor | 2.2 Kw / 3CV at 1400 r.p.m. |
| Electrical power | 230/400V Three-Phase 50/60 Hz 230V Single-Phase 50/60 Hz |
| Intensity | 9/5 A |
| Hydraulic pressure | 215 Kg/cm ² (21,5 MPa) |
| Hydraulic pump | 7.5 litres/minute |
| Tank | 27 litres |
| Maximum displacement | 250 mm |
| Working strength | 20.000 Kg (200 KN) |
| Dimensions | 660x1180x1130 mm |
| Weight | 665 Kg. |

1.6. Identification of Protective panels

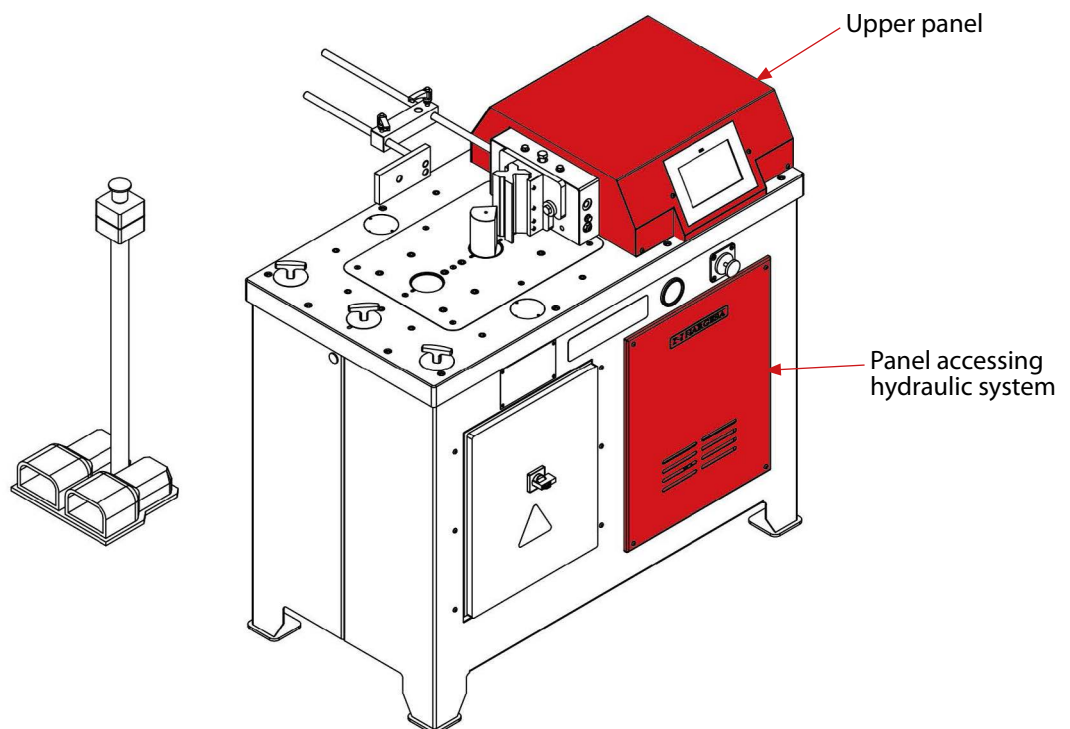


Figure 4. Position of security panels

It is PROHIBITED to work without the protective panels in place and should only be removed in case of a breakdown (if necessary) and always with the machine in the OFF position.

2. TRANSPORT AND STORAGE

2.1. Transport

The machine must be transported in an upright position using a forklift or a pallet jack fixed to the base of the machine (pre-designed for this purpose).

Please take into account the risk of the machine tipping over.

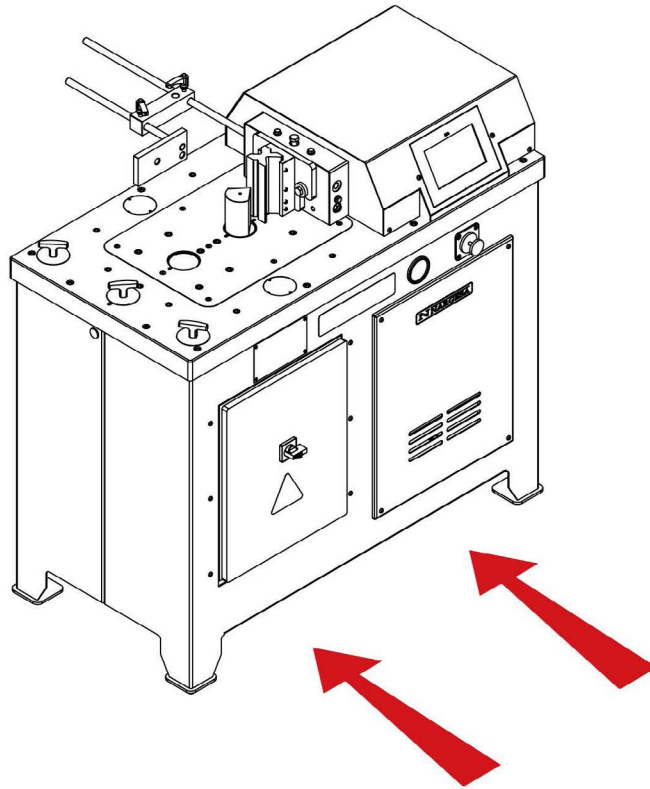


Figure 5. Transport of the machine

2.2. Storage conditions

- Humidity between 30% and 95% without condensation.
- Temperature between 15°C and 55°C.
- Don not place articles on top of the machine.
- Do not disassemble the machine for storing.

3. MAINTENANCE AND CLEANING

There are two aspects to take in to account with respect to the maintenance and cleaning of the Horizontal Press Brake NARGESA PP200CNC, these are:

- Hydraulic Maintenance
- Cleaning maintenance

3.1. Hydraulic maintenance

As the Horizontal Press Brake NARGESA PP200CNC possesses a hydraulic mechanism, it is necessary to periodically check the oil level tank. The machine is equipped with a low oil indicator (1) which permits us to observe the level of oil. This should be carried out with the machine on the standby and off position.

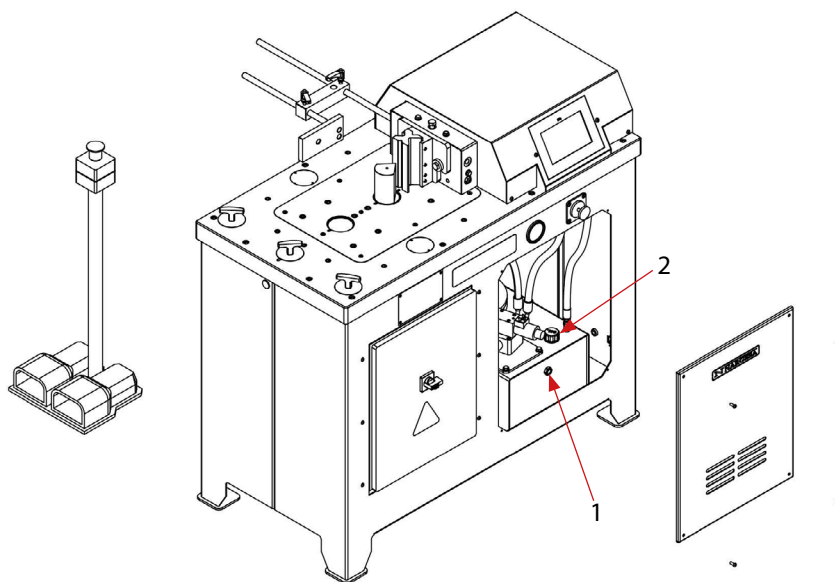


Figure 6. Positions of the Hydraulic maintenance elements

If the level is low it should be filled with hydraulic oil HM68 through the tank cap (2) until it is visible in the low oil indicator (1) (approximately half way up the indicator). This level should be checked once every three months.

3.2. Maintenance de nettoyage

The daily usage of the Horizontal Press Brake NARGESA PP200CNC can generate metallic waste such as (slag, shavings, etc.) which can damage the running of the machine. We recommend that the machine be cleaned, especially the work area, at the end of each day.

4. INSTALLATION AND START UP

4.1. Placement

The Horizontal Press Brake NARGESA PP200CNC should be placed on a flat, level surface. It is possible to secure it to the floor using the pre-made holes on the base of the machine for this purpose.

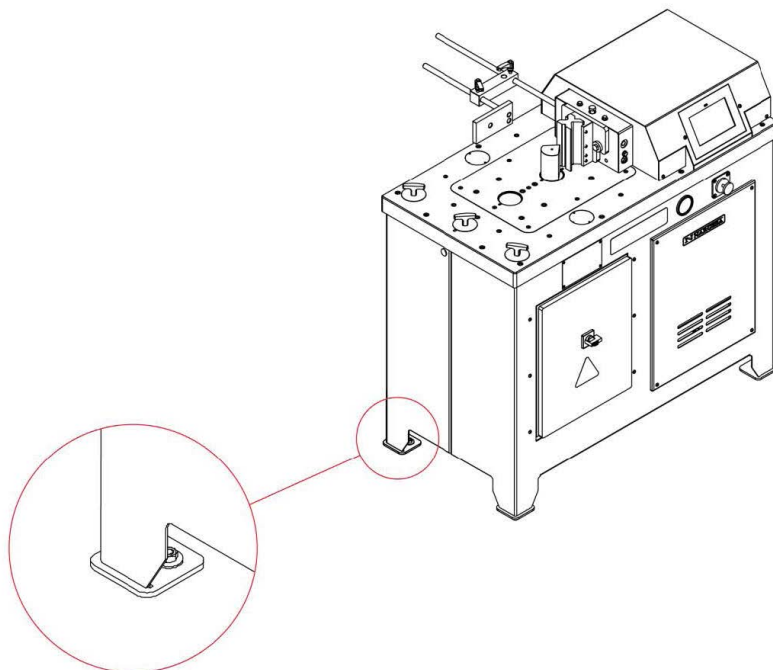


Figure 7. Anchor points

4.2. Work Area

Given the versatility of the Horizontal Press Brake NARGESA PP200CNC it is important to have the necessary working space, especially at the perimeters of the machine, taking into account that the maximum or minimum limitations will depend on the accessory used. The operator should stand behind the machine together with the pedals.

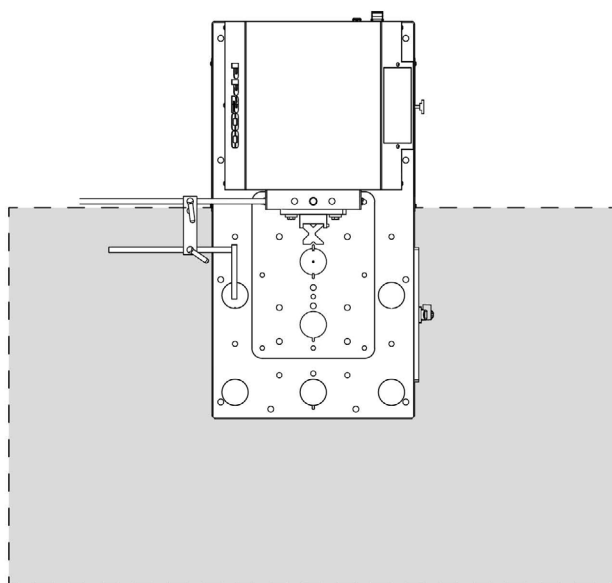


Figure 8. Work area

4.3. Acceptable external conditions

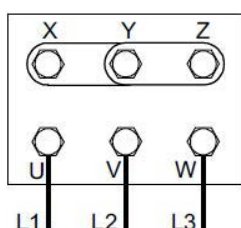
The working conditions of the machine can fluctuate between +5°C and +50°C being the maximum temperature and not exceeding an average temperature of +45° in a 24 hour period.

The humidity can fluctuate between 30% and 90% without condensation.

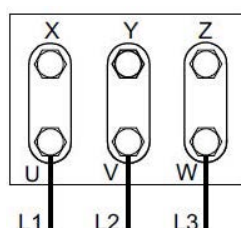
4.4. Electrical connection

The Horizontal Press Brake NARGESA PP200CNC is designed to be connected to a three-phase power supply of 230/400 volts at 50/60Hz.

Once connected ensure that the electric motor is turning in the correct direction (the direction indicated on the sticker placed on the motor) if this is not so, one of the phases must be relocated.



Star figure
(predetermined)
for 400V



Triangular figure
for 230V

NOTE: If there is a change in voltage it will be necessary to modify the protectors of the electric motor following the table below:

| VOLTAGE | MOTOR GUARD CONTACTOR |
|---------|-----------------------|
| 230 V | 7 - 10 A |
| 400 V | 4 - 6 A |

5. START MENU

To supply power to the machine, we must put the Start Switch in the “Connected” position. The initial interface or Start Menu shows up on the screen:



At this moment the machine is in Standby, that is to say, the machine is ON, but it remains in StandBy waiting to perform any function:



Punching



Folding



Shearing



Manual positioning mode

It is of utmost importance to remember at this point that PP200 press is delivered in “eco” mode. Why is this so important? Well, the reason is that the machine features an energy saving mode which firstly allows us to align ourselves with the necessary measures to slow down irreversible climate change (we’re an environmentally-aware company). And, secondly but not least importantly, it allows you as the customer to save the most energy when working so your end product is more price-competitive.

This “eco” mode basically turns off all tasks that consume the most energy if it detects a relatively long period of inactivity. Nonetheless and in order to avoid having to re-enable all the tasks you wish to work with, they will automatically turn on when you simply press the pedal.

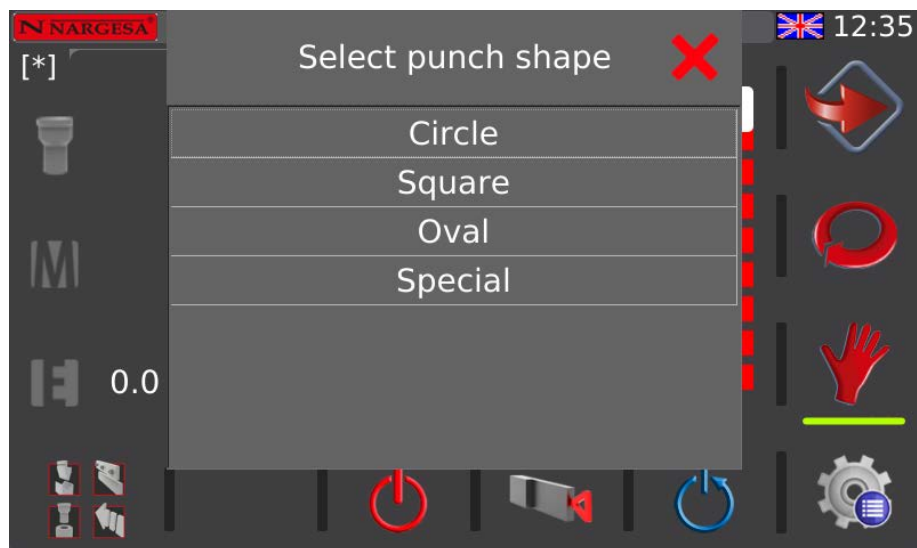
6. PUNCHING

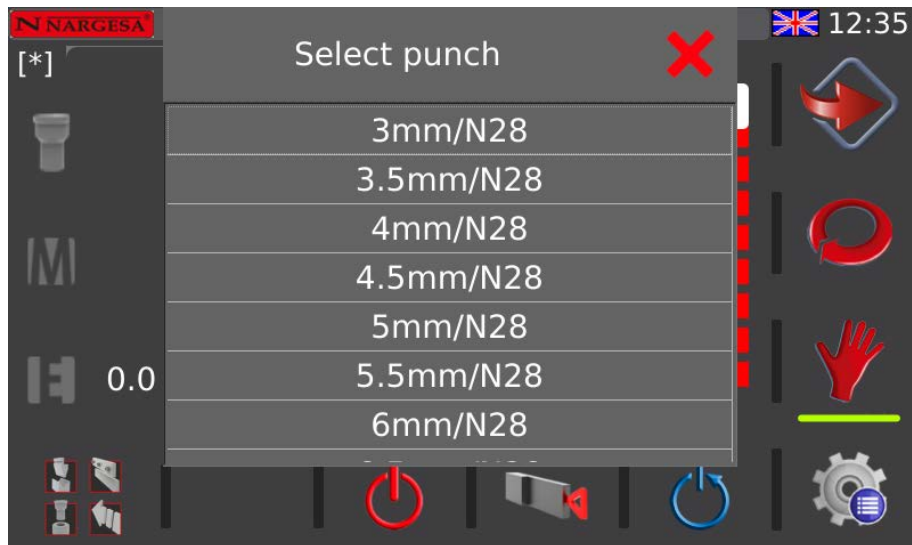
The following screen shows up when acceding to the Punching function:

To perform the punching function we must enter the following parameters in the CNC. In order to do this, we will press each of the following icons to select each parameter:



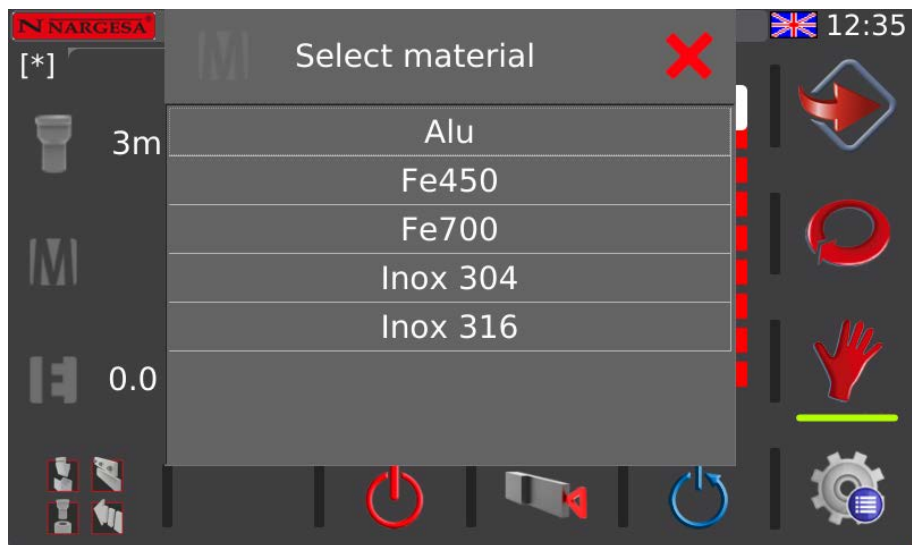
We press the key  to select the punch from the library




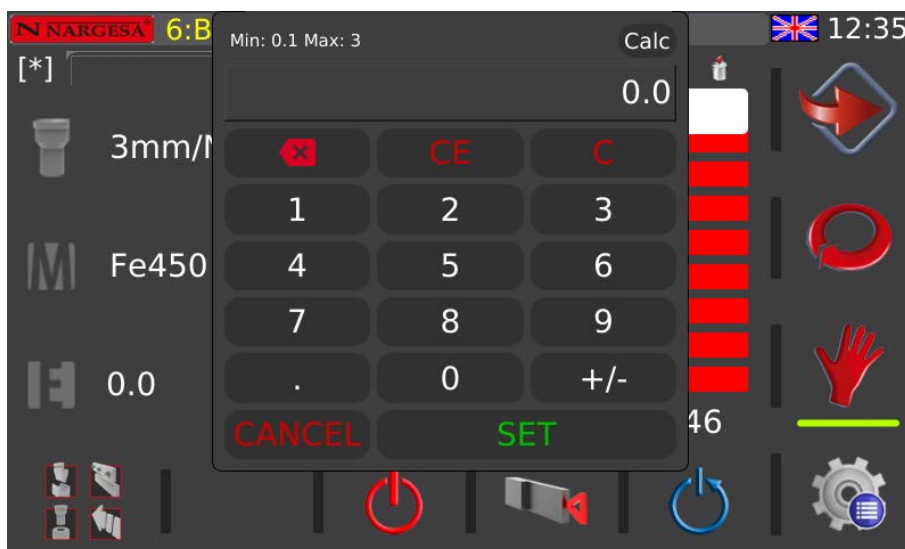


We note that the CNC automatically selects one or the other based on our choice. It means that, if when we select a punch, the CNC selects the appropriate die for that punch.

We press the key  to select the material



We press the  key to insert the material thickness in millimeters or inches, depending on the settings:




Once we enter the numerical value, we press the **SET** key to validate.


To the right of the **P** icon is the value of power required for punching. This value does not usually need to be changed. However, it can be done to reduce or increase the power you wish to use for work operations.


Finally, we will use the progress bar or the numerical field that is located at the bottom of it to regulate the end of the stroke of the punch.

Note: It is important to regulate the stroke of the piston so that it doesn't go further than what it should, unnecessarily increasing the time of each punch.



Once we complete these parameters, we press the button  to start the machine. We will introduce the material in the punching area and press the pedal to carry out the operation.

If you look at the vertical menu at the right side of the screen, you'll see the  icon is selected. This indicates you're in "Manual operating mode" mode; in other words, the piston is moved forward with the forward pedal but you need to switch pedals and press the reverse pedal in order to reverse the piston.

You can switch to "Automatic operating mode" by pressing the  icon. In this mode, reversing the piston does not require operator intervention; therefore, it does not require alternating between the two physical pedals on the machine to do the work.


It is important to remember that we can alternate between these sub-modes whenever necessary just by pressing the corresponding icon.

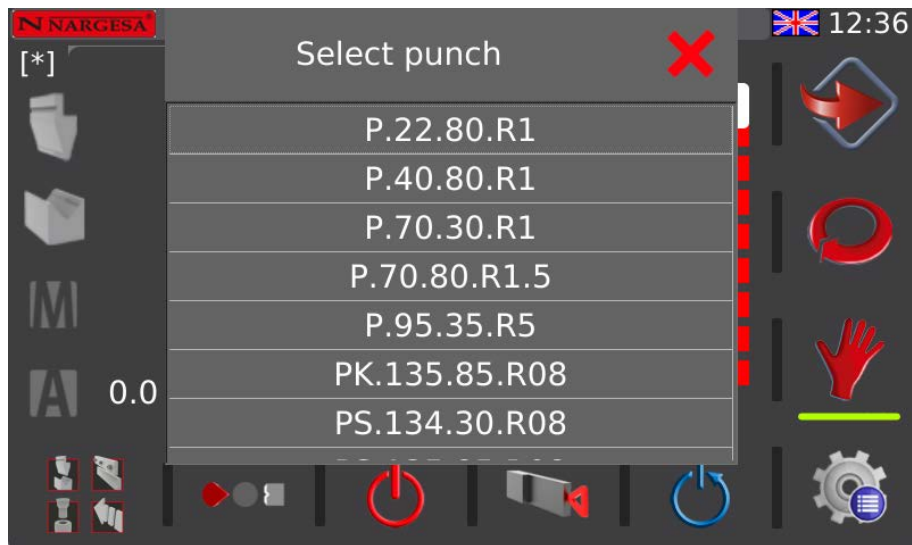
7. FOLDING


When accessing the Folding function, this screen shows up:




To perform the bending function we must enter the following parameters in the CNC.

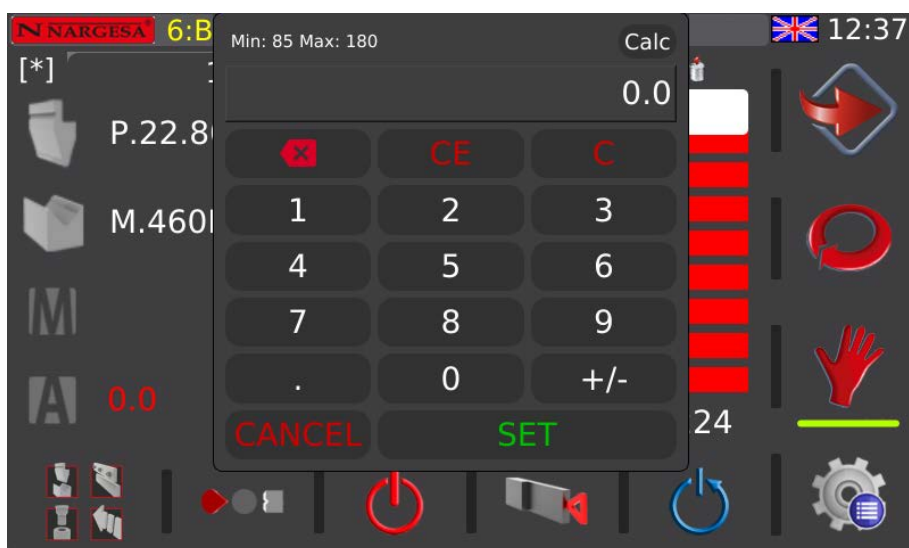
We'll press the  to select the punch from the library:



We press the key  to select the die from the library:





We press the key  to indicate the folding angle:



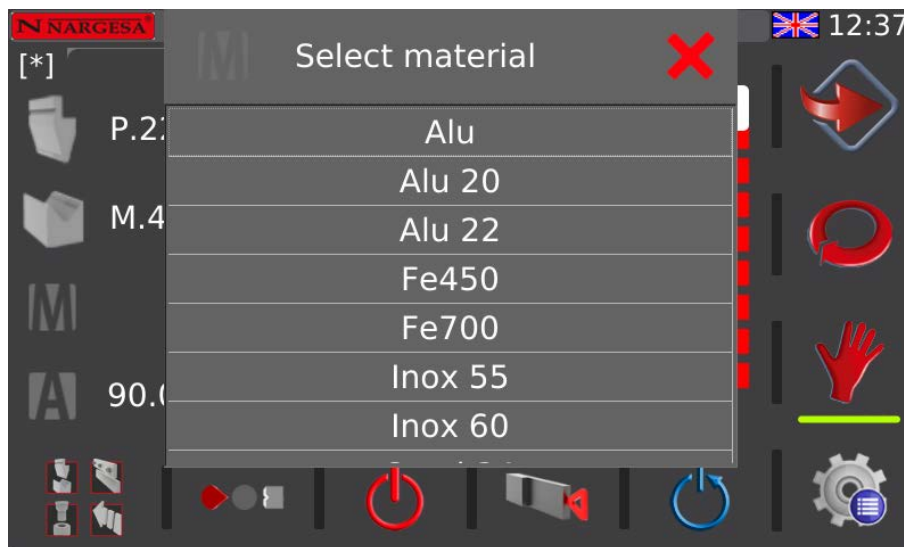
Once we enter the numerical value, we press the **SET** key to validate.

Then we indicate the position of the punch by pressing the following image, to indicate that:

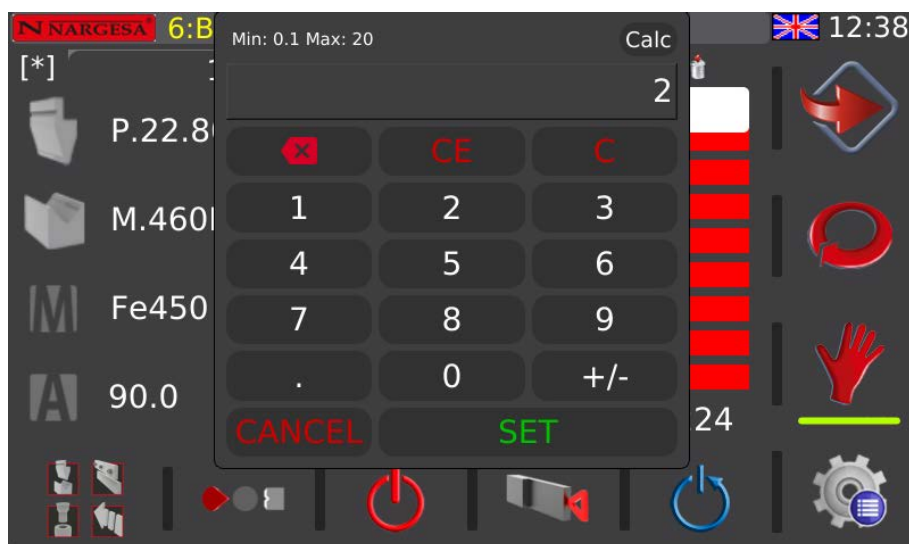
 The punch is in position 1

 The punch is in position 2

We press the key **M** to select the material from the library:



We press the key **F** to introduce the material thickness:




We press the **SET** key to validate the information.


Finally, we will use the progress bar or the numerical field that is located at the bottom of it to regulate the end of the stroke of the punch.

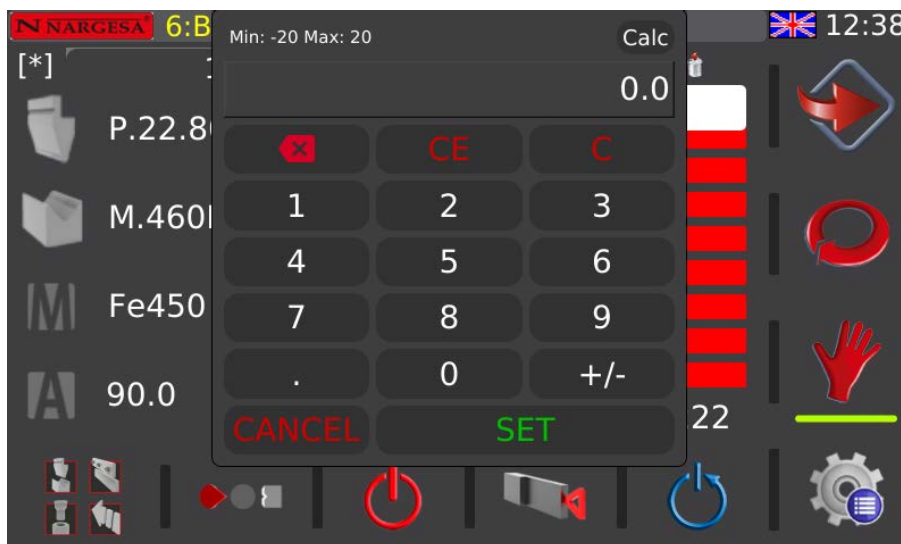


Note:: It is important to regulate the stroke of the piston so that it does not go further than needed, unnecessarily increasing the time of each bend.

Once these parameters are completed, we will press the button  to start running the machine. Introduciremos el material en la zona de plegado y presionaremos el pedal para realizar la operación.


7.1. Folding correction


If we need a correction in the folding angle, we must stop the folding process and indicate the necessary correction. We press the  icon and introduce the number of degrees to correct.



By pressing the **SET** key, we confirm and proceed with another folding.

7.2. Automatic Mode and Manual Mode

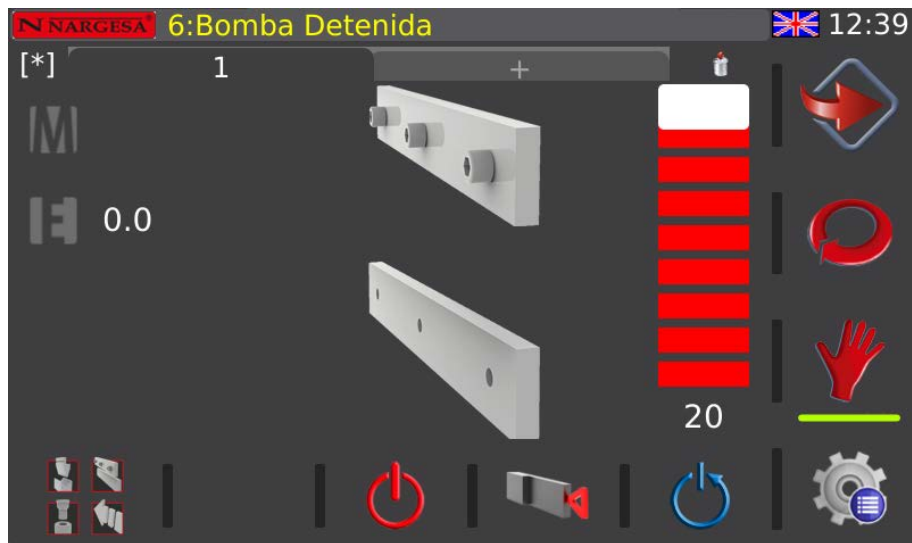
Up to now, all bending operations have been done in manual mode (the mode indicated on the vertical menu at the right with the  icon). In this mode, the piston is moved forward and backward by pressing the corresponding pedals which means the operator must do an action to forward or reverse it.

However, when creating many parts, it may be uncomfortable to have to constantly switch pedals. If this is the case, you can use the automatic bending mode. To select it, you simply need to press the  icon located to the right of the screen.

Now, after finishing each bend, look at how the piston automatically reverses to the position indicated along the vertical bar. Upon pressing the bend pedal again, the piston will move forward and backward again after finishing the operation. Thus, the operator does not need to constantly switch pedals which speeds up and simplifies the work.

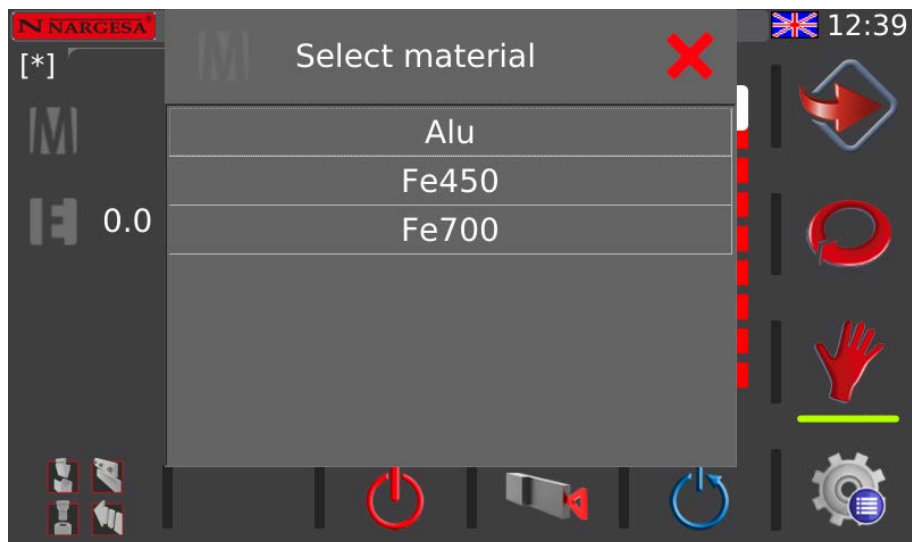
8. SHEARING

When accessing the function SHEARING, this screen shows up:

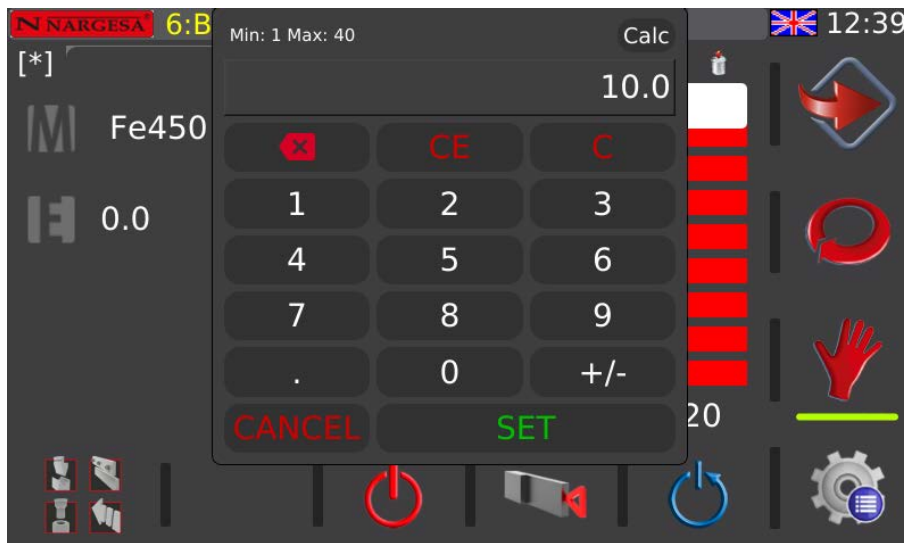


To carry out the Shearing function, we must enter the following parameters in the CNC.

Press the **M** key to select the material:



Press the **T** key to insert the material thickness in millimeters or inches depending on the settings:




Once we introduce the numerical value, we press the **SET** key to validate it.

Finally, we will use the progress bar or the numerical field at the bottom of it to regulate the end of the blade.

Note: *It is important to regulate the stroke of the piston so that it does not go further than what it requires, unnecessarily increasing the time of each cut.*



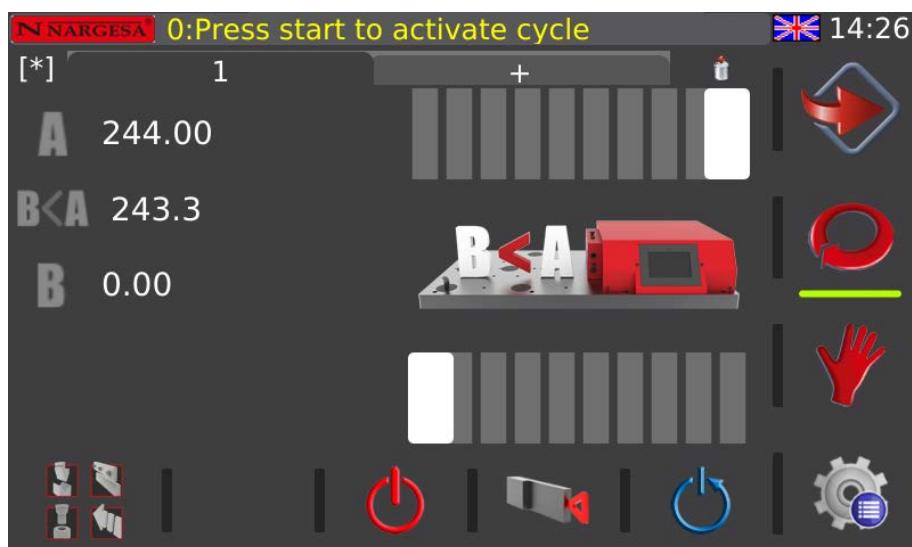
Once we complete these parameters, we press the  button to start running the machine.

We introduce the material in the cutting area and press the pedal to make the operation.

Remember that when doing the cutting operation, the sub-modes are the same as already explained for bending. These sub-modes are "Manual" and "Automatic" and they work in the same way. Manual mode requires the forward pedal and reverse pedal to operate. And automatic mode does not require any reverse pedal as such action is done autonomously at the end of each operation.

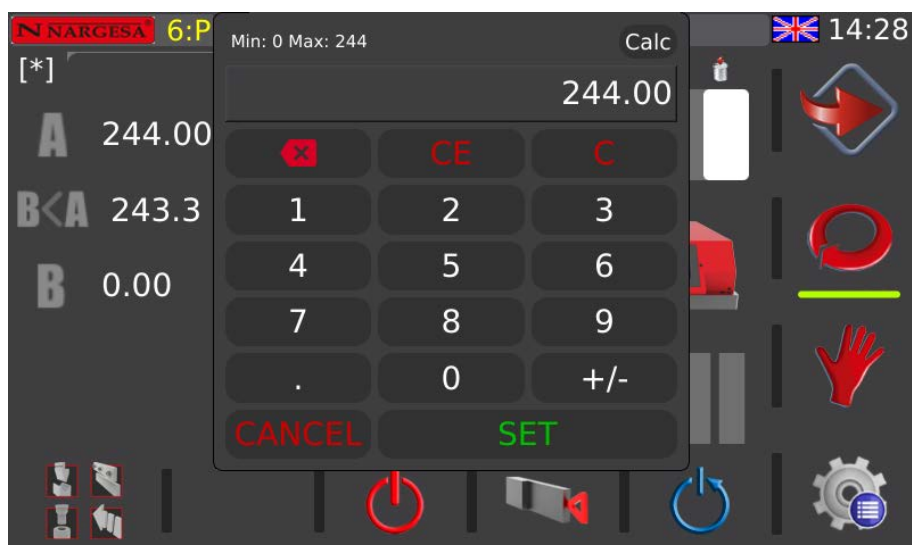
9. MANUAL POSITIONING MODE

Upon accessing “Manual positioning mode”, this screen appears:



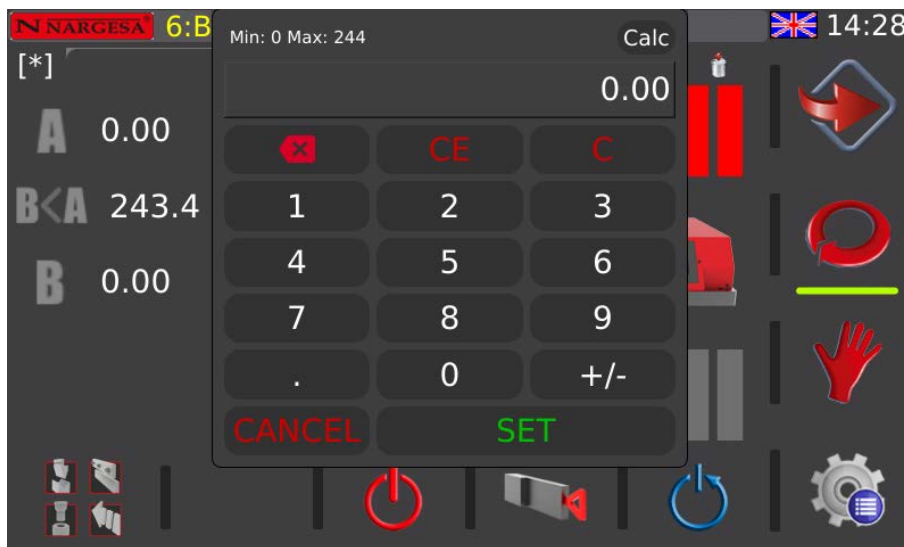
To carry out any function in Manual Mode, we must enter the following parameters in the CNC.

We press the **A** key to introduce the starting dimension of the piston:



After we have introduced the numerical value, we press the **SET** key to confirm

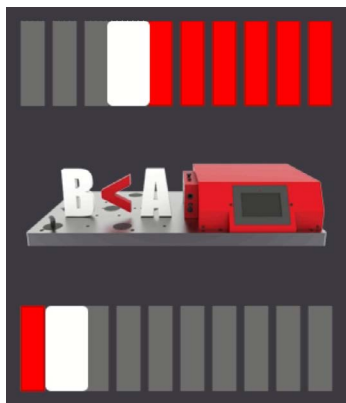
Press the **B** key to introduce the final piston dimension:



Once we have introduced the numerical value, we press the **SET** key to validate.

In the same way, we can regulate these two dimensions with the progress bars.

Note: It is important to regulate the piston stroke so that it does not go further than what it's required, unnecessarily increasing the time of each operation.



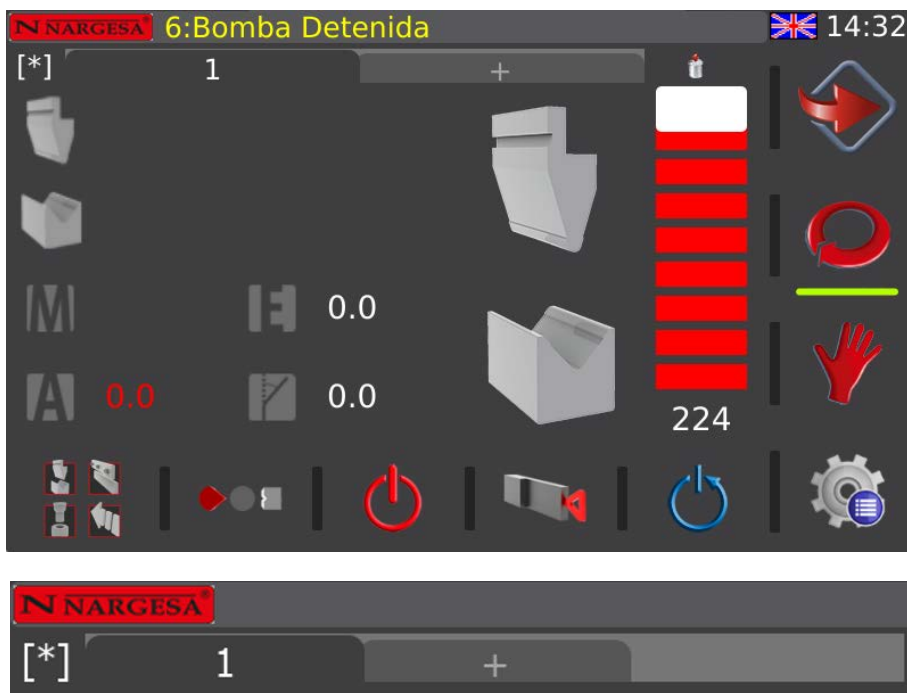
Once these parameters are completed, we will press the  button to start running the machine.

We introduce the material in the working area and we press the pedal to make the operation.

Just like with the other modes (punching, bending and cutting), you can work with a manual or automatic sub-mode which eases and speeds up the operator's work managing the machine when required.

10. SAVING PROGRAMS

Now we're going to explain the following screen area (to the top):



The aim of this area is to allow multiple punching, bending, cutting or operations in Manual mode.

So, you should then use the program step bar. This way, you can add new bends to a single piece. So, in line with the example given (one part with two bends), you must press the tab with the "+" symbol after having completed all the data mentioned to operate.

Upon doing that, you'll see how a new step is added with the same data as before except the angle and angle correction. With this new step, you only have to enter the degrees of the following folding.

At this point, you can continue creating new bends for the same part or you can do the bending operations already. It's important to note that if you change any data other than the angle or angle correction in any of the steps, that change will be made to all steps; in other words, it will be considered general program data.

It's now time to physically produce your part. To do so, follow the same steps as explained previously. The only difference you'll see is that after completing each bend, the software will automatically move to the next bend. This way, you can produce your part (with two bends) very easily.


Now, you may need to produce a new part. So, what happens with the data already on screen? Are they lost?

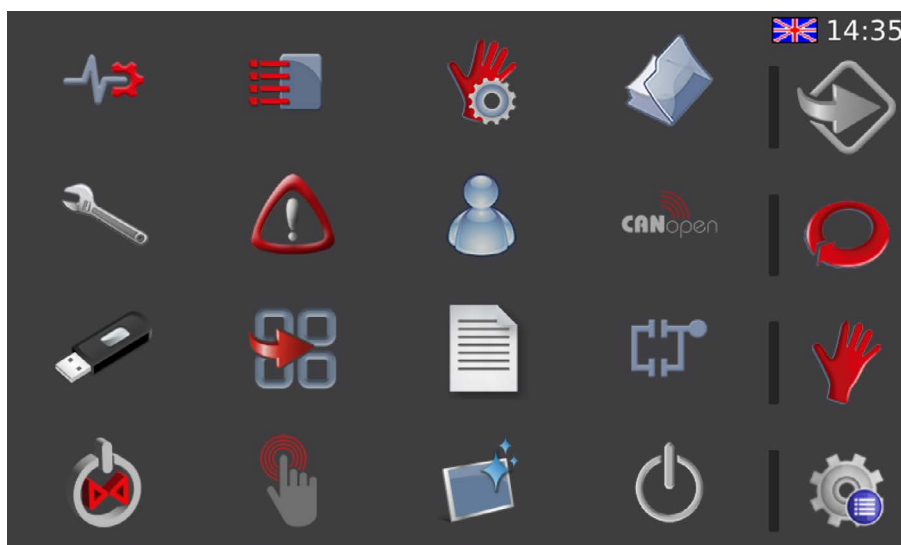
The answer is no as you can save all the data to produce your part, later upload it and continue making the same type of parts. To do so, just press the “[*]” text that appears at the top left of the screen.


When you do so, a screen will appear to insert the name under which you want to save this program. Using a descriptive name is recommended as it will be easier later on to know what features are included in each of the programs saved.

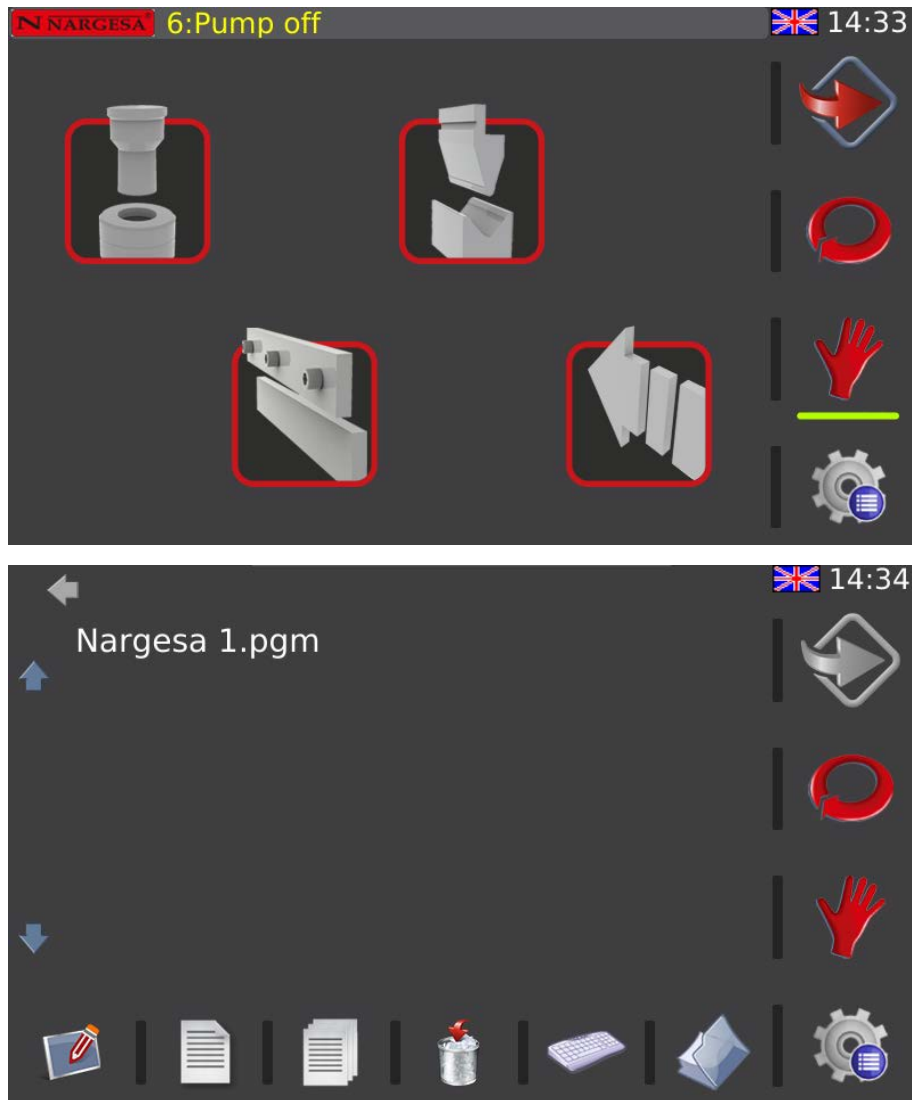
After you do this, the “[*]” text will change to the program name entered. It’s important to remember at this point that it’s still possible to change the data for your program. If you do so, an asterisk will appear after the program name to remind you that your program again has data not yet saved. To save it, just press the program name again.

At this point, it’s time to talk about program management. In other words, until now, you’ve only saved your program. But what about creating a new program? Or how to upload a previous one?







Press the  icon in the menu at the bottom right of the screen. This icon gives you access to the next screen.



We click on the following icon  now and it allows us to access the program management screen of the technology that we want to use in this folding operation:



You can do the following operations using this interface:

- | | |
|--|--|
|  New program |  Rename a program |
|  Upload or edit a program |  Delete a program |
|  Copy a program |  Folder mode |

The operations you can do only require the operator press the corresponding icon. We must mention how “Folder mode” works though.

This mode allows you to do the same operations using the same icons already mentioned yet this time from folders saved on the digital control internal hard drive. This is an advanced operation which is rarely used. But, if you’re able to take advantage of this feature, you can organize programs in a very customized man-ner.

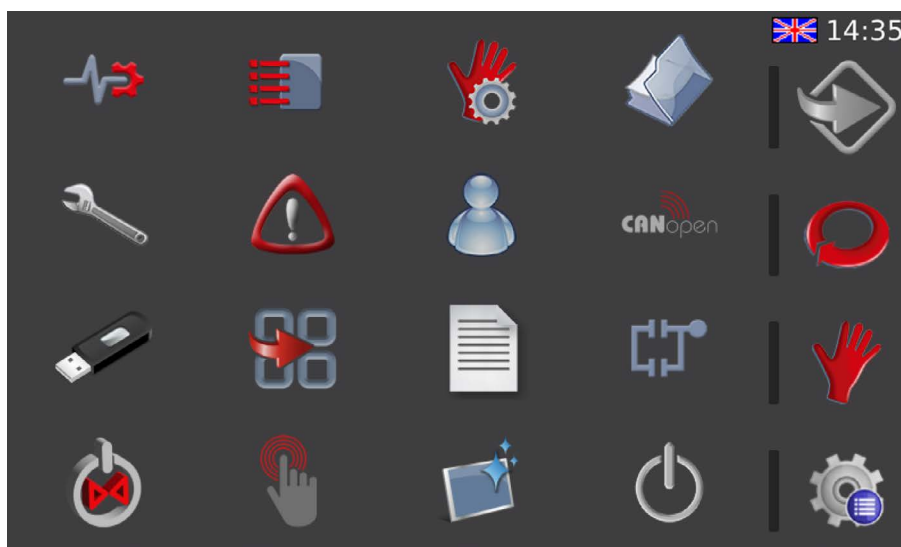
NOTE : This process can be carried out for all four technologies



11. MENU







11.1. Remote assistance

The Press is prepared to connect to Ethernet through the cable supplied for this purpose. Within the local area network, your IP address is 10.10.51.110, and is already set at the factory. Moreover, this opens up the possibility of allowing remote servicing of the machine.

This service allows Nargesa, as the manufacturer of the Press, to connect remotely to the machine to solve technical incidents and carry out remote training for the end user.



To enable the remote service, press the  key to access the menus window and then the  icon..

| | | | | |
|----------------------|---------------------|----------------|-----------|---|
| Model | S 625.123V | Serial | 202216732 |  14:35 |
| Module | | | Version |  |
| BSP | | | 1.4.2 | |
| SqCom | | | 2.0 |  |
| Plc | | | 2.0 | |
| Plc User | | | 0.0 | |
| SqEasy | | | 2.4 | |
| IronWorker | | | 1.6 |  |
| | | | | |
| Start Remote Service | Stop Remote Service | Network Config | Options |  |
| | | | |  |



The information shown in the previous picture refers to the model and serial number of the Press control, as well as the versions of the different computer libraries used in the user's interface.


To activate the remote service, so that the Nargesa technical assistance department can connect to the machine to solve out incidents and/or carry out remote training, we must press the **START REMOTE SERVICE** key. However, this mode is already enabled by default on all our machines.

11.2. Importing/exporting parameters, materials and programs

All Press setup parameters, as well as defined materials and created programs, can be imported and exported for backup purposes.





To access the window shown in the previous picture, we must press the key. Once we accede the menu, we must press the  key. When we are in the menus screen, we must press the key .

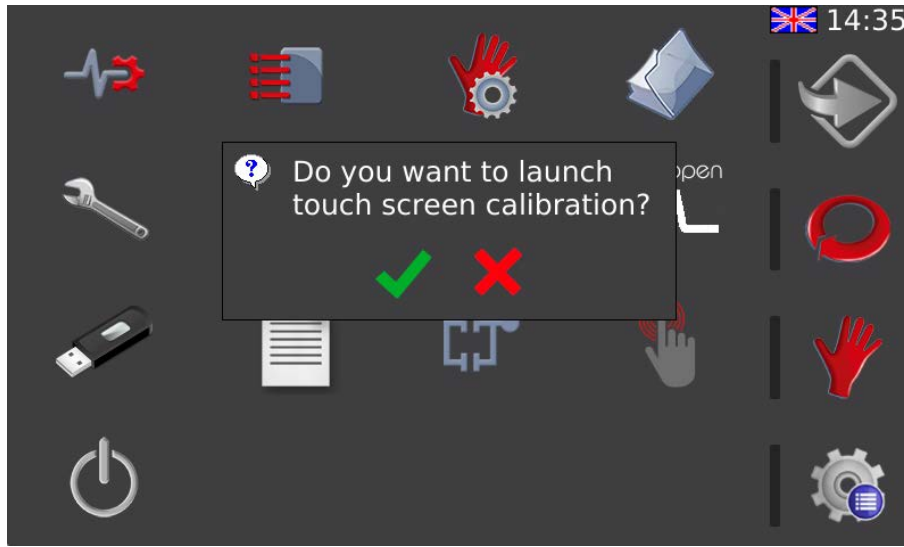
By default, all filters are activated, as well as the internal memory option. So if we press the  key now, all parameters, materials and tools will be save in the internal memory of the control of the bending Horizontal press brake, making a backup copy. Besides, if we want to make a backup copy on a removable item such as an external USB device, we just have to check the USB option and press again.


It is important to make backup copies frequently to have a backup of the parameters, material and tools created. If at any time it is necessary to recover all or part of this information, we only have to select the origin of the data (internal memory or external USB).

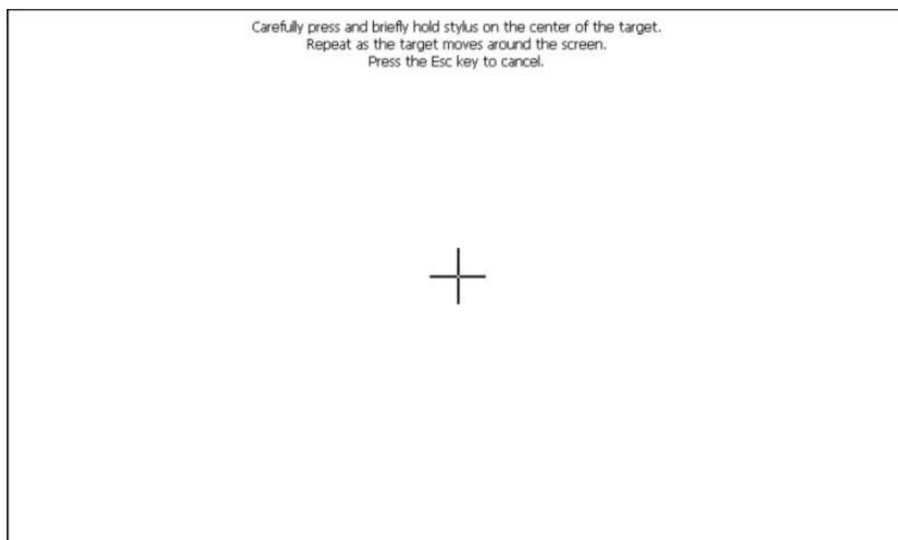
11.3. Touch screen calibration

The touch screen leaves the factory correctly calibrated for its use. However, it may be necessary to calibrate it if the user notes that it does not respond accurately to the actions he commands.

To proceed properly, you must first press the  key to accede the menus window. Once here, you must press the .key. When you do it, the screen displays the message we show below:



If we accept, pressing on  , it starts the calibration process on the touch screen. It is then when the information showed on screen changes into this other one:




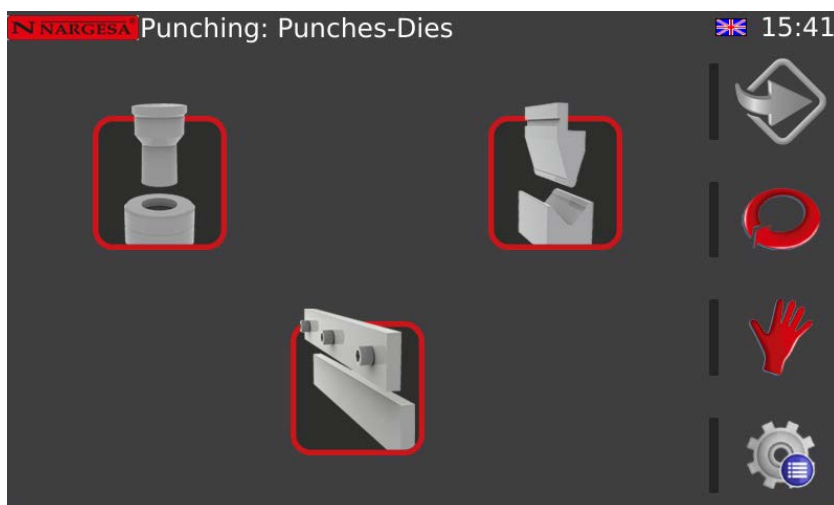
In the center of the window appears a cross that the user has to press for a few seconds until it find itself in a new position. The user should repeat this process at different points on the screen until the touch calibration is finished.

11.4. Tool Management

The flat press is supplied with a complete library of all the tools you can work with. However, at times, the user may need a specific tool for a specific job that isn't in the original library. Under these circumstances, contact us so we can manufacture that tool or you can create it yourself.

However you do it, the question is now how do you tell the software you're using this new tool? The answer is by creating your new tool and adding it to the already existing library.

To do so, you must press the  icon in the general menu. The following screen will appear upon doing this:



Using this interface, select the type of tool; in other words, if the tool is to be used for punching, bending or cutting. The icons and features are shown below:



Punching tolos



Bending tolos




Cutting tolos


11.4.1. Punching Tools


Upon accessing the punching tool screen, you'll see the following interface which corresponds to the materials defined for this work mode.

The following operations are possible if you press the icons in the horizontal menu at the bottom of the screen: définis pour ce mode de travail.

| N NARGESA® Punching: Materials | | | | 15:41 | |
|--------------------------------|----------|-----------|-----------|-------|--|
| Name | Hardness | Min Thick | Max Thick | | |
| Alu | 22.0 | 0.1 | 20.0 | | |
| Fe450 | 45.0 | 0.1 | 20.0 | | |
| Fe700 | 70.0 | 0.1 | 10.0 | | |
| Inox 304 | 50.0 | 0.1 | 20.0 | | |
| Inox 316 | 55.0 | 0.1 | 20.0 | | |
| | | | | | |
| | | | | | |

 Create new material


 Edit existing material

 Delete existing material

It's necessary to mention at this point that upon creating or editing material, you'll see the following screen. Here you must enter all the data shown below, which physically define the characteristics of the material.






| | |
|-----------|----------------------|
| Name | <input type="text"/> |
| Hardness | <input type="text"/> |
| Min Thick | <input type="text"/> |
| Max Thick | <input type="text"/> |



Now, you're going to create the actual tool. To do so, press the  icon at the right of the horizontal me-nu on the bottom. Having done this, the punch-die window appears for punching.

NARGESA Punching: Punches-Dies 15:42

| Name | Len | Per | Pen | T | Shape | Pos |
|--------|-------|-------|------|-----|---------|-----|
| 3m... | 58.00 | 9.42 | 1.00 | 3.0 | Circle | 100 |
| 3... | 58.00 | 10.99 | 1.00 | 3.5 | Circle | 99 |
| 4m... | 58.00 | 12.56 | 1.00 | 4.0 | Circle | 98 |
| 4... | 58.00 | 14.13 | 1.00 | 4.5 | Circle | 97 |
| 4X4... | 58.00 | 16.00 | 1.00 | 4.0 | Squa... | 96 |
| 5m... | 58.00 | 15.70 | 1.00 | 5.0 | Circle | 94 |
| 5... | 58.00 | 17.27 | 1.00 | 5.5 | Circle | 93 |
| 5X5... | 58.00 | 20.00 | 1.00 | 5.0 | Squa... | 92 |
| 6m... | 58.00 | 18.84 | 1.00 | 6.0 | Circle | 91 |
| 6... | 58.00 | 20.42 | 1.00 | 6.5 | Circle | 90 |

Bottom icons:     

Just like with the material management screen, the bottom icons are the ones used to do the operations. In any case, the features of each one of the icons in the bottom menu will not be repeated here as they always do the same actions (new part, part edition, part deletion, etc.).

To create or edit a tool, you must enter the following data defining the real situation. An example is provided below showing the data for an already-existing tool. However, you must enter the actual data defining it if you want to create a new tool.

| | |
|---------------|--------|
| Name | |
| Punch Length | |
| Perimeter | |
| Penetration | |
| Max thickness | |
| Shape | Circle |
| Position | 0 |


11.4.2. Bending Tools

Just as occurred with the punching tools, upon accessing the bending tool screen, the first thing you'll see are the materials defined for this work mode. If necessary, you can create, edit or delete materials using this interface. These operations (as explained above) are done using the icons in the horizontal menu at the bottom.

N NARGESA Horizontal pressBrake: Materials 15:42

| Name | Hardness |
|----------|----------|
| Alu | 11.0 |
| Alu 20 | 20.0 |
| Alu 22 | 24.0 |
| Fe450 | 51.0 |
| Fe700 | 71.3 |
| Inox 55 | 55.0 |
| Inox 60 | 60.0 |
| Steel 34 | 34.0 |
| Steel 42 | 42.0 |
| Steel 48 | 48.0 |

Bottom menu icons: Add, List, Delete, Bending, Alert, Settings

Given that the bending feature is the most complicated of the operations that can be done using the flat press, note that the materials are even more important here. In other words, after defining the material, you can define certain corrections for certain thicknesses and angles to finish correcting the machine behavior during the bending process. This is done by pressing the  icon in the bottom menu.

The following screen will appear upon doing this:

N NARGESA Horizontal Pressbrake: Thicknesses 15:42

Alu

Thick: 0.10 New Modify Delete

| Angle | Correction |
|-------|------------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Bottom menu icons: Back, Add, List, Delete, Bending, Settings


Once inside this window, you can create, change or delete thicknesses by pressing the text on the horizontal line at the height of the thickness.




Plus, you can define a correction for each angle for each thickness. This means these corrections will be applied generally when choosing a specific thickness and angle for the bending feature.

This explanation can seem difficult to understand, but it's an advanced feature that allows you to correct the behavior of the bending process without needing to enter the same corrections again and again for the same angles.

As always, creating, editing and deleting corrections is done using the icons in the menu at the bottom.

To exit this mode and return to the materials screen, just press the  icon also found in the horizontal menu at the bottom.



Again on the materials screen, press the  icon in the menu at the bottom to access the bending punches. The window that appears is as follows:

| NARGESA Horizontal pressBrake: Punches | | | | | | | 15:43 |
|--|--------|------|------|-------|---------|-----|---|
| Name | H | Ang | Rad | Pr | Type | Pos | |
| P.... | 45.00 | 80.0 | 0.80 | 20.0 | Defa... | 35 |  |
| P.... | 55.00 | 80.0 | 0.80 | 40.0 | Defa... | 35 | |
| P.... | 70.00 | 30.0 | 0.80 | 50.0 | Defa... | 35 | |
| P.... | 68.50 | 80.0 | 0.80 | 100.0 | Defa... | 35 |  |
| P.... | 65.00 | 35.0 | 5.00 | 100.0 | Pro... | 35 | |
| PK.... | 105.00 | 85.0 | 0.80 | 60.0 | Pro... | 35 | |
| PS.... | 104.00 | 30.0 | 0.80 | 70.0 | Pro... | 35 |  |
| PS.... | 105.00 | 85.0 | 0.80 | 100.0 | Pro... | 35 | |
| PU.... | 71.73 | 90.0 | 3.00 | 80.0 | Pro... | 34 | |
| PU.... | 72.81 | 90.0 | 3.50 | 80.0 | Pro... | 33 | |




Following the same process, you can create, change and delete punches. The data physically defining a punch is shown below. Remember that this data is for a punch that exists in the library. If you need to create a new tool, you must enter the data defining the real situation.




| | |
|----------|---------|
| Name | |
| Height | |
| Angle | |
| Radius | |
| Pressure | |
| Type | Default |
| Position | |










Having reached this point and to sum up, you access the materials screen upon entering and you can manage the bending punches by pressing the icon.

If you press the same icon  again, you'll access the die management screen:

N NARGESA Horizontal pressBrake: Dies 15:43

| Name | H | W | Ang | L | Rad | Pos | |
|--------|--------|--------|------|--------|-------|-----|---|
| M... | 60.00 | 60.00 | 85.0 | 16.00 | 2.00 | 100 |  |
| M... | 60.00 | 60.00 | 85.0 | 22.00 | 2.00 | 100 | |
| M... | 60.00 | 60.00 | 85.0 | 35.00 | 2.00 | 100 | |
| M... | 60.00 | 60.00 | 85.0 | 50.00 | 3.00 | 100 | |
| T... | 80.00 | 60.00 | 30.0 | 25.00 | 2.00 | 99 |  |
| M80... | 80.00 | 60.00 | 45.0 | 40.00 | 4.00 | 98 | |
| M... | 75.00 | 60.00 | 85.0 | 63.00 | 6.00 | 0 |  |
| M... | 80.00 | 60.00 | 85.0 | 80.00 | 6.00 | 0 | |
| M... | 95.00 | 60.00 | 80.0 | 100.00 | 8.00 | 0 | |
| MK1... | 103.00 | 154.00 | 80.0 | 125.00 | 15.00 | 0 | |

Just like always, the menu at the bottom is where you can manage the tasks (creation, edition and deletion). The data physically defining a die is as follows:

| | |
|----------|--|
| Name | |
| Height | |
| Width | |
| Angle | |
| L | |
| Radius | |
| Position | |

✓
✗

Again, if you need to create your own tool, in this case a die, enter the correct data defining that task in the actual situation and not the values shown here.

11.4.3 Cutting Tools

Upon accessing the cutting tools screen, you'll see the following:

| Name | Hardness | Min Thick | Max Thick |
|-------|----------|-----------|-----------|
| Alu | 10.0 | 1.0 | 10.0 |
| Fe450 | 50.0 | 1.0 | 40.0 |
| Fe700 | 70.0 | 1.0 | 60.0 |

To be more exact, you could say no tool in particular is defined for the cutting mode. You just define the characteristics defining the specific materials you're using. In the end, this data defines the cutting behavior and not anything others.

Ainsi, la création, l'édition et la suppression de matériaux se refont avec les icônes qui apparaissent dans le menu situé dans la partie du bas de la fenêtre.

So, you create, edit and delete materials again using the icons that appear in the menu at the bottom of the window.

The physical data defining a material is as follows:

| | |
|-----------|--|
| Name | <input type="text"/> |
| Hardness | <input type="text"/> |
| Min Thick | <input type="text"/> |
| Max Thick | <input type="text"/> |
| | <div></div> |

As always, the data shown as the example corresponds to material that already exists in the library supplied with the machine. If you need to create new materials, you must enter the data defining the real situation.

12. ADJUSTMENT OF THE WORKING STRENGTH

The Horizontal Press Brake NARGESA PP200CNC supplies 20,000Kg of strength.

This amount of power may be excessive depending on the type of work to be carried out. The PP200CNC incorporates a pressure regulatory system to allow us to decrease the strength of the machine.



Figure 9. Elements for the regulation of strength.

Pressure gauge

Pressure regulator

To decrease the strength of the PP200CNC follow the procedure described below:

1. Place a resistant object over the headstock to act as a buffer.
2. Loosen the screw which blocks the pressure regulator.
3. Press the pedal so that the PP200CNC buffers the resistant object.
4. When buffered turn the pressure regulator towards the minus symbol $-$. The pressure gauge, situated to its right, will indicate a decrease in pressure value. When the ideal pressure is obtained release the pedal.
5. Tighten the screw on the pressure regulator.

À ce moment, la PP200CNC est réglée pour exercer moins de force. Déplacez la tête de travail vers l'arrière et enlevez l'objet résistant.

Pour augmenter la force, réalisez la même opération mais au lieu de tourner le bouton du régulateur de pression dans le sens $-$ il faut le tourner vers le sens $+$.

Note: Remember after decreasing the strength the PP200CNC will not be using its maximum power.

13. FAULT FINDING

13.1. Electrical faults

Due to the daily usage of the Horizontal Press Brake NARGESA PP200CNC faults may arise. The following list of occurrences and their remedies should help you identify and solve most problems.

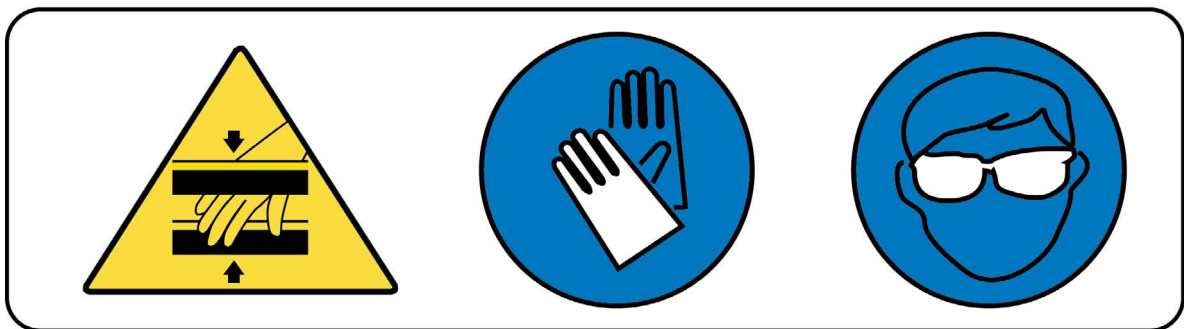
| Problem | Cause | Solution |
|----------------------------------|---|--|
| Indicators lamps do not light up | No electrical supply | Ensure that the machine is connected to the main electrical supply |
| | Insufficient power | Verify that there is sufficient power |
| | The breaker switch of the control panel is disactivated | Restart breaker switch on the control panel |
| | The protection fuse is blown | Replace the fuse |
| Electric Motor malfunction | The breaker switch of the motor is disactivated | Restart breaker switch of the motor |
| | Insufficient power | Verify the power input |
| | Emergency stop button activated | Rotate emergency stop button and restart machine |
| | Fault in motor guard contactor | Contact technical services |

NOTE: In case of repeated problems please contact our technical services at NARGESA.

14. CAUTION

- Do not manipulate any components of the machine while functioning.
- Do not use the machine for any other purpose than those described in this manual.
- Use gloves to manipulate the components of the machine during the process of work.
- Use officially approved protective glasses and boots.
- Firmly hold the material during manipulation.
- Do not work the machine without the protective panels in place.

**NARGESA SL does not take responsibility for any accidents caused
by the negligence of the operator.**



15. TOOLING

PP200CNC Automated Gauge

The automated gauge is an accessory specifically designed to get the most out of the PP200CNC Horizontal Press Brake, offering the possibility to get, automatically, the positioning of the "X" axis for the different operations programmed and calculated with the ESA S625 CNC control, thus improving the performance of operation and quality of work with this machine.

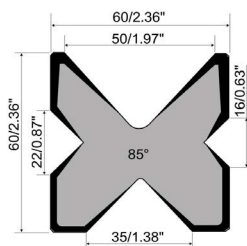
The automated gauge of the PP200CNC enables the user to make single or mass produced parts with top accuracy, speed and repeatability compared to the previous manual system. These are its main features and functions:

- Drive by ESA servomotor and HTD crowned belts that allow automatic positioning of the "X" axis with a precision of $\pm 0.02\text{mm}$.
- Manual adjustment of the cross slide, "Z" axis to cover all the operation possibilities offered by the PP200CNC horizontal press, folding, punching, bending...
- Longitudinal movements of both carriages using high-precision linear guides and recirculating ball runners.
- Automatic anti-collision control managed by the software itself.
- Easy mechanical and electrical installation for quick set up and run.

| | |
|--------------------------------|---|
| Reference | 140-16-01-50000 |
| Electrical motor | Servomotor 0,9Nm, 0,520kW 5000rpm |
| Electrical tension | 480V, 400V, 220V Three-phase 220V Single-phase |
| X axis stroke length | 1210 mm |
| Z axis stroke length | 300 mm |
| Displacement speed | 1000mm /s |
| Positioning accuracy | ± 0.02 mm |
| Repeatability | ± 0.02 mm |
| Maximum structural load | 2.000 Kg |
| Dimensions | 1496x1041x426 mm |
| Weight | 115 Kg |



Folding die at 161 mm. • V16, 22 35 50 mm PP200CNC



Folding or bending die up to 161mm with 4 openings (16, 22, 35, 50mm). This multi-V die allows 1mm up to 8mm sheet to be folded.

Reference: 125-16-01-00006

V 16: Sheet from 1 to 3mm • M.460.R/16

V 22: Sheet from 2 to 4mm • M.460.R/22

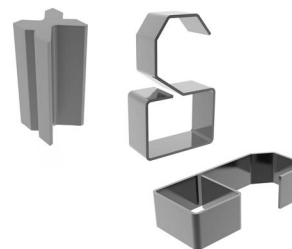
V 35: Sheet from 3 to 6mm • M.460.R/35

V 50: Sheet from 4 to 8mm • M.460.R/50

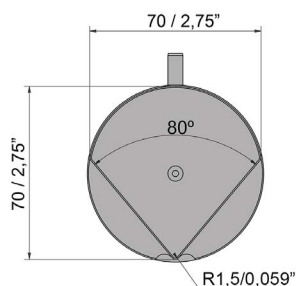
Max. Folding length: 161mm

Max. Folding thickness: 8mm

Standard tooling provided along with the machine.



Bending punch at 100 mm and 80°



80° bending punch. The punch with an outer diameter of 70 mm allows for creating completely closed shapes with a minimum inner wing of 75 mm.

Reference: 131-16-01-00041 • P.70.80.R1.5

Max. Folding length: 100mm

Standard tooling provided along with the machine.

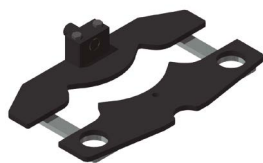


| Ton/m | | | | | | | | | | | |
|-----------------------------------|------|------|-----|------|-----|------|------|------|------|------|-----|
| E = mm 42 - 48 kg/mm ² | | | | | | | | | | | |
| V | H | R | i | 0.5 | 0.8 | 1 | 1.2 | 1.5 | 1.8 | 2 | 2.5 |
| 4 | 2.6 | 0.7 | 4 | 10.5 | | | | | | | |
| 6 | 3.9 | 0.9 | 2.5 | 6.5 | 10 | | | | | | |
| 8 | 5.2 | 1.5 | 2 | 5.5 | 8 | 11.5 | 18 | | | | |
| 10 | 6.5 | 1.7 | | 4.1 | 6.5 | 9.5 | 14.5 | 21 | 26 | | |
| 12 | 7.8 | 2 | | | 5.5 | 8 | 12 | 17.5 | 21.5 | 33.5 | |
| 16 | 10.4 | 2.7 | | | | 6 | 9 | 13 | 16 | 25 | 36 |
| 20 | 13 | 3.4 | | | | | 7.5 | 10.5 | 13 | 20 | 29 |
| 26 | 18 | 4.2 | | | | | | 8.5 | 10.5 | 16 | 23 |
| 30 | 20 | 5 | | | | | | | 14 | 19 | 34 |
| 35 | 23 | 6 | | | | | | | | 17 | 30 |
| 42 | 27 | 6.7 | | | | | | | | | 15 |
| 45 | 29 | 7.5 | | | | | | | | | |
| 50 | 32 | 8.5 | | | | | | | | | |
| 60 | 39 | 10 | | | | | | | | | |
| 70 | 45 | 11.7 | | | | | | | | | |
| 80 | 52 | 13.5 | | | | | | | | | |
| 90 | 58 | 15 | | | | | | | | | |
| 100 | 65 | 17 | | | | | | | | | |
| 110 | 71 | 18.5 | | | | | | | | | |
| 120 | 78 | 20 | | | | | | | | | |
| 140 | 91 | 24 | | | | | | | | | |
| 170 | 110 | 29 | | | | | | | | | |
| 200 | 130 | 35 | | | | | | | | | |

N NARGESA®
www.nargesa.com

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Baluster forming die 01



Reference: 140-16-01-00001

Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer.



| Max. width | Thickness | Die length | Weight |
|------------|--------------|------------|--------|
| 20mm | 4, 5, 6, 8mm | 656mm | 21Kg |

Ring forming



Reference: 140-16-01-00003

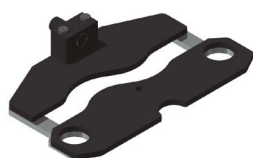
Die to form rings or English banister railing, used as ornamental piece in forging railings, gates, fences... for bars bonding.

For other sizes and applications consult the manufacturer



| Max. width | Thickness | Outer sizes | Weight |
|------------|-----------|-------------|--------|
| 50mm | 6mm | 90mm | 9,3Kg |

Baluster forming die 4



Reference: 140-16-01-00004

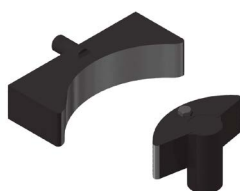
Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer.



| Square sizes | Die length | Weight |
|-------------------------------|------------|---------|
| 5, 6, 8, 10, 12, 14, 16, 18mm | 600mm | 20,5 Kg |

Bending tool for big radius PP200CNC



Reference: 140-16-01-00006

Die to form curves in flat bars, pipes, bars or profiles at big radius. It's perfect for bending small series or special parts without requiring a specific custom mold.



| Max. bar capacity | Max. pipe capacity | Min. diameter | Max. diameter | Weight |
|-------------------|--------------------|---------------|---------------------|--------|
| 40mm or 1 1/2" | 80x80 mm or 3" | 300mm | There is no maximum | 35 Kg |

Baluster forming die 08



Reference: 140-16-01-00008

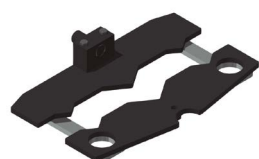
Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer



| Max. width | Thickness | Die length | Weight |
|------------|--------------|------------|--------|
| 20mm | 4, 5, 6, 8mm | 650mm | 19,5Kg |

Baluster forming die 09



Reference: 140-16-01-00009

Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer.



| Flat bar size | Die length | Weight |
|-------------------|------------|--------|
| 5, 6, 8, 10, 12mm | 522mm | 22Kg |

Baluster forming die 10



Reference: 140-16-01-00010

Die to form cold forging balusters shaped parts for grills, so called "belly top railing".

For other shapes or capacities, please consult the manufacturer.



| Flat bar size | Die length | Weight |
|---------------|------------|--------|
| 12mm | 1165mm | 50Kg |

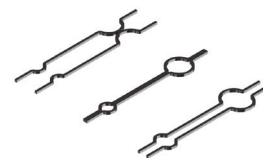
Baluster forming die 11



Reference: 140-16-01-00011

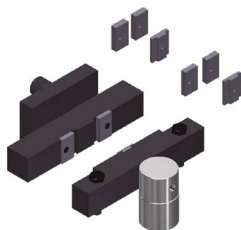
Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer.



| Flat bar size | Die length | Weight |
|----------------|------------|--------|
| 6, 8, 10, 12mm | 760mm | 32,5Kg |

Twisted bars forming die



Reference: 140-16-01-00013

Die to bend metal plate, flat bar or square bar to obtain a nice braid twisted effect. It's very used to make fences and grills. For flat bar from 6, 12 and 14mm.

For different sizes, please ask the manufacturer



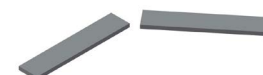
| Max. capacity | Min. capacity | Weight |
|---------------|---------------------|--------|
| Square 14 mm | 2x40 mm metal sheet | 18Kg |

Flat bar cutting tooling 100x10 mm.



Reference: 140-16-01-00014

Flat bar and metal sheet cutting die up to 100mm through a maximum thickness of 10mm in mild steel.



| Max. Cutting length | Max. Cutting thickness | Weight |
|---------------------|------------------------|--------|
| 100mm | 10mm | 23Kg |

Tool to shape pipe ends PP200CNC

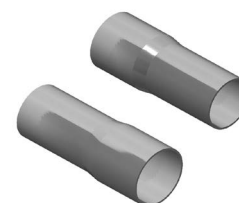


Reference: 140-16-01-00016

Basic die to modify the ends of the tubes for their assembly. You can make all kinds of shapes and flaps according to the customer needs.

For special forms consult the manufacturer.

Weight: 110 Kg aprox.



Diameter reduction tools for PP200CNC

PP200CNC reduction cone



Reference: 140-16-01-RE001

This accessory is adapted to the **Tooling to shape pipe ends**, to perform the operation of reducing the ends of the tubes.

This accessory is used in all tube sizes, that is to say, it is not necessary to buy more than one since it is adaptable to all diameters.

Weight: 12,7 Kg.

Reducing clamp holder PP200CNC



Reference: 140-16-01-RE002

Accessory to set the **Reducing Clamps** of different diameters.

This accessory is used in all tube sizes, that is to say, it is not necessary to buy more than one since it is adaptable to all diameters.

Weight: 4,6 Kg.

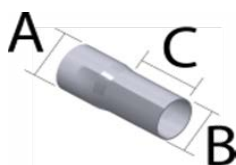
PP200CNC reducer clamp



This accessory attaches to the **Reducing clamp holder**, to carry out the operation of reducing the ends of the tubes.

It is necessary to buy one specific reducing clamp for each tube according to its initial diameter and the final diameter that we want to achieve.

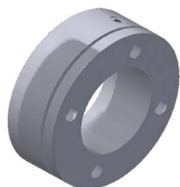
See the following table of Reducing Clamps:



| ØA max. | ØB min. | C max. | Reference | Description |
|---------|---------|--------|-------------------|---|
| 16mm | 10mm | 76mm | 140-16-01-RE16-10 | Tube Reducer Clamp 16-10 Length Max. 76mm |
| 19mm | 13mm | 76mm | 140-16-01-RE19-13 | Tube Reducer Clamp 19-13 Length Max. 76mm |
| 22mm | 16mm | 76mm | 140-16-01-RE22-16 | Tube Reducer Clamp 22-16 Length Max. 76mm |
| 25mm | 19mm | 76mm | 140-16-01-RE25-19 | Tube Reducer Clamp 25-19 Length Max. 76mm |
| 28mm | 22mm | 76mm | 140-16-01-RE28-22 | Tube Reducer Clamp 28-22 Length Max. 76mm |
| 32mm | 26mm | 76mm | 140-16-01-RE32-26 | Tube Reducer Clamp 32-26 Length Max. 76mm |
| 35mm | 29mm | 76mm | 140-16-01-RE35-29 | Tube Reducer Clamp 35-29 Length Max. 76mm |
| 38mm | 32mm | 76mm | 140-16-01-RE38-32 | Tube Reducer Clamp 38-32 Length Max. 76mm |
| 42mm | 36mm | 76mm | 140-16-01-RE42-36 | Tube Reducer Clamp 42-36 Length Max. 76mm |
| 45mm | 39mm | 76mm | 140-16-01-RE45-39 | Tube Reducer Clamp 45-39 Length Max. 76mm |
| 48mm | 42mm | 76mm | 140-16-01-RE48-42 | Tube Reducer Clamp 48-42 Length Max. 76mm |
| 51mm | 45mm | 76mm | 140-16-01-RE51-45 | Tube Reducer Clamp 51-45 Length Max. 76mm |
| 54mm | 48mm | 76mm | 140-16-01-RE54-48 | Tube Reducer Clamp 54-48 Length Max. 76mm |
| 57mm | 51mm | 76mm | 140-16-01-RE57-51 | Tube Reducer Clamp 57-51 Length Max. 76mm |
| 60mm | 54mm | 76mm | 140-16-01-RE60-54 | Tube Reducer Clamp 60-54 Length Max. 76mm |
| 63mm | 57mm | 76mm | 140-16-01-RE63-57 | Tube Reducer Clamp 63-57 Length Max. 76mm |
| 66mm | 60mm | 76mm | 140-16-01-RE66-60 | Tube Reducer Clamp 66-60 Length Max. 76mm |
| 69mm | 63mm | 76mm | 140-16-01-RE69-63 | Tube Reducer Clamp 69-63 Length Max. 76mm |
| 73mm | 67mm | 76mm | 140-16-01-RE73-67 | Tube Reducer Clamp 73-67 Length Max. 76mm |

Diameter expansion tools PP200CNC

Clamp Holder to Expand Tube PP200CNC



Reference: 140-16-01-EX001

This accessory is adapted to the **Tooling to shape pipe ends**, to perform the operation of expanding the ends of the tubes.

This accessory is used in all tube sizes, that is to say, it is not necessary to buy more than one since it is adaptable to all diameters.

Expansion Mandrel PP200CNC



Reference: 140-16-01-EX002

This accessory is adapted to the **Tooling to shape pipe ends**, to perform the operation of expanding the ends of the tubes.

This accessory is used in all tube sizes, that is to say, it is not necessary to buy more than one since it is adaptable to all diameters.

Tube Expander Clamp PP200CNC



This accessory is adapted to the **Tooling to shape pipe ends**, to perform the operation of expanding the ends of the tubes.

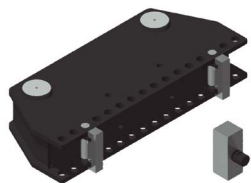
It is necessary to buy one specific expanding clamp for each tube according to its initial diameter and the final diameter that we want to achieve.

See the following table of Expanding Clamps:



| ØA min. | ØB max. | C max. | Reference | Description |
|---------|---------|--------|-------------------|--|
| 22mm | 28mm | 40mm | 140-16-01-EX22-28 | Tube Expander Clamp 22-28 Length Max. 40mm |
| 25mm | 31mm | 40mm | 140-16-01-EX25-31 | Tube Expander Clamp 25-31 Length Max. 40mm |
| 28mm | 34mm | 50mm | 140-16-01-EX28-34 | Tube Expander Clamp 28-34 Length Max. 50mm |
| 31mm | 37mm | 60mm | 140-16-01-EX31-37 | Tube Expander Clamp 31-37 Length Max. 60mm |
| 35mm | 41mm | 60mm | 140-16-01-EX35-41 | Tube Expander Clamp 35-41 Length Max. 60mm |
| 38mm | 44mm | 65mm | 140-16-01-EX38-44 | Tube Expander Clamp 38-44 Length Max. 65mm |
| 41mm | 47mm | 65mm | 140-16-01-EX41-47 | Tube Expander Clamp 41-47 Length Max. 65mm |
| 44mm | 50mm | 80mm | 140-16-01-EX44-50 | Tube Expander Clamp 44-50 Length Max. 80mm |
| 47mm | 53mm | 80mm | 140-16-01-EX47-53 | Tube Expander Clamp 47-53 Length Max. 80mm |
| 51mm | 57mm | 80mm | 140-16-01-EX51-57 | Tube Expander Clamp 51-57 Length Max. 80mm |
| 54mm | 60mm | 80mm | 140-16-01-EX54-60 | Tube Expander Clamp 54-60 Length Max. 80mm |
| 60mm | 66mm | 80mm | 140-16-01-EX60-66 | Tube Expander Clamp 60-66 Length Max. 80mm |

Die to straighten out profiles



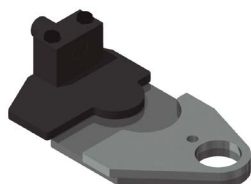
Reference: 140-16-01-00017

Tool used to bend straight profiles or parts. It is adjustable to different capacities according to the profiles.



| Maximum capacity | Weight |
|------------------|--------|
| H 150 mm | 72 Kg |

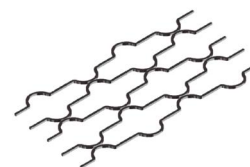
Baluster forming die 20



Reference: 140-16-01-00020

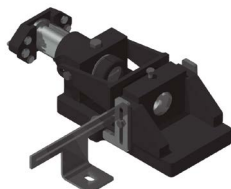
Die to form cold forging balusters for grills, gates, fences, handrails...

For other shapes or capacities, request the manufacturer.



| Square sizes | Circumference size | Weight |
|--------------|--------------------|--------|
| 12x12mm | 90mm | 11 Kg |

Punching die

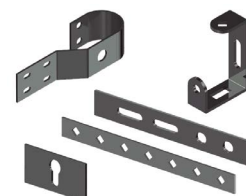


Reference: 140-16-01-00022

Punch-holder die, compatible with our Nargesa brand punches.

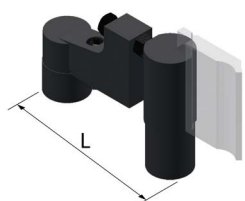
Gooseneck: 54 mm

Free distance of tooling: 95 mm



| | Round | Square | Rectangular | Oval | Weight |
|------------------------|-------|--------|-------------|---------|--------|
| Max. Punching capacity | 43mm | 35mm | 20x34mm | 21x40mm | 52 Kg |

Promecam punch holder



Reference: 140-16-01-00023

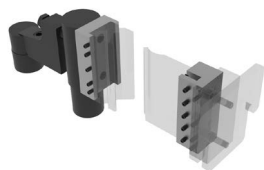
Punch holder for all kind of punches for Promecam bending or folding press.

Compatible with any Promecam punch.



| Max. Folding length | L Length | Weight |
|---------------------|----------|--------|
| 161mm | 276 mm | 14kg |

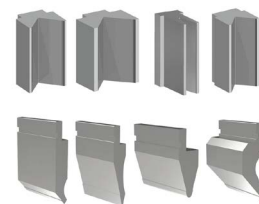
Inverted Promecam-holder PP200CNC



Reference: 140-16-01-00039

Punch holder for all kind of punches for Promecam bending or folding press with inverted position.

Compatible with any Promecam punch.



| Max. Folding length | Weight |
|---------------------|--------|
| 161mm | 19,8kg |

Clamp forming die PP200CNC



Reference: 140-16-01-00024

Die to form all kinds of clamps. This tooling is manufactured according to the user's needs thus it is required to have a technical drawing or a sample piece.

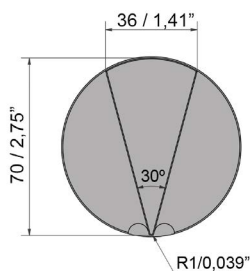
Maximum capacity: 100x4 mm



Special punches

Folding punches to bend special pieces of small sizes or folded up to 30°.

Folding Punch P.70.30.R1



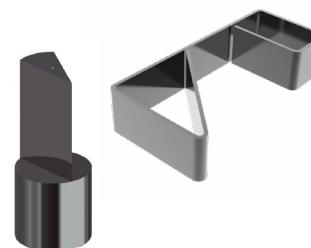
Reference: 140-16-01-00025

Max. Folding length: 100mm

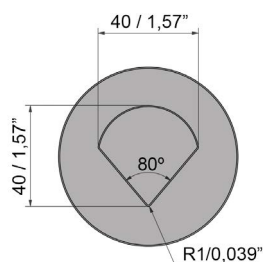
Punch degrees: 30°

Punch diameter: 70mm

Weight: 3 Kg.



Folding Punch P.40.80.R1



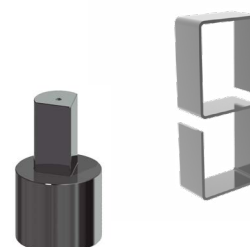
Reference: 140-16-01-00026

Max. Folding length: 60mm

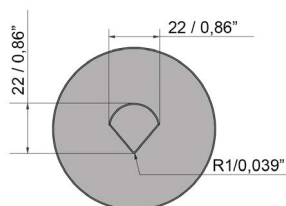
Punch degrees: 80°

Punch diameter: 40mm

Weight: 3 Kg.



Folding Punch P.22.80.R1



Reference: 140-16-01-00027

Max. Folding length: 60mm

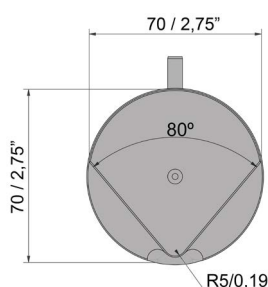
Punch degrees: 80°

Punch diameter: 22mm

Weight: 3 Kg.



Folding Punch P.70.80.R5



Reference: 140-16-01-00080

Max. Folding length: 100 mm

Punch degrees: 80°

Punch diameter: 70 mm

Weight: 3 Kg.

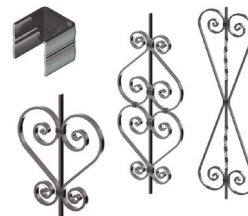


Bar clamps forming die



Reference: 140-16-01-00028

Clamp forming die, used to manufacture the clamps used to join different forging bars with no need to get them welded.



Max. capacity

25x5mm

Weight

9Kg

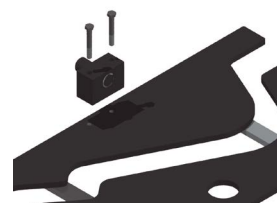
Forming die adaptor



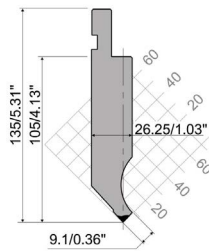
Reference: 140-16-01-00029

It is an exchangeable fitting device for the forming dies, suitable for each of the different baluster forming tools. It is advisable to get one in order to work with the specified dies.

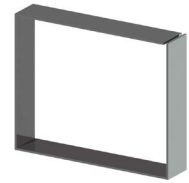
Weight: 3,1 Kg.



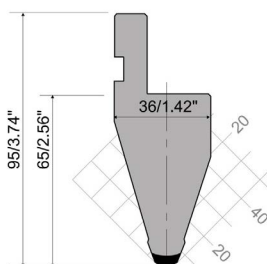
Punch Promecam PS.135.85.R08



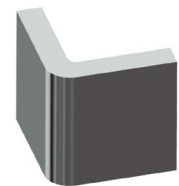
Reference: 140-16-01-00030
Folding length: 161 mm
Weight: 3,2 Kg.



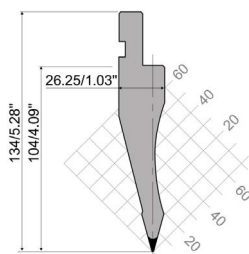
Punch Promecam P.95.35.R5



Referencia: 140-16-01-00031
Folding length: 161 mm
Weight: 2,3 Kg.



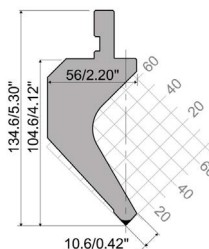
Punch Promecam PS.134.30.R08



Reference: 140-16-01-00032
Folding length: 161 mm
Weight: 2,7 Kg.



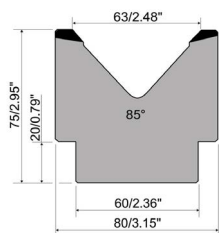
Punch Promecam PK.135.85.R08



Reference: 140-16-01-00038
Folding length: 161 mm
Weight: 4,4 Kg.



Folding die M75.85.63

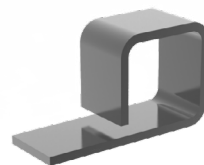


Reference: 140-16-01-00033

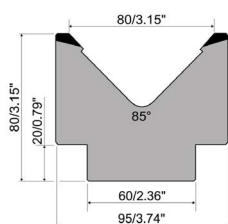
Folding length: 161 mm Max. 85°

V63: From 5 to 10 mm sheet

Weight: 5 Kg.



Folding die M80.85.80

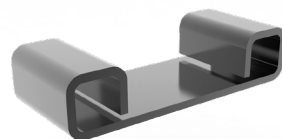


Reference: 140-16-01-00034

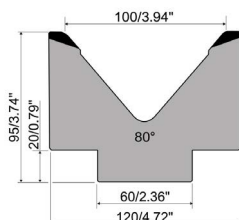
Folding length: 161 mm Max. 85°

V80: From 6 to 12 mm sheet

Weight: 6 Kg.



Folding die M95.80.100

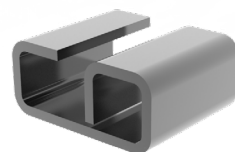


Reference: 140-16-01-00035

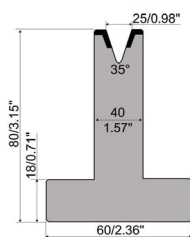
Folding length: 161 mm Max. 80°

V100: From 8 to 15 mm sheet

Weight: 9 Kg.



Folding die T80.25.35

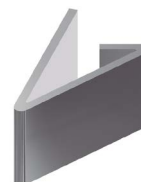


Reference: 140-16-01-00036

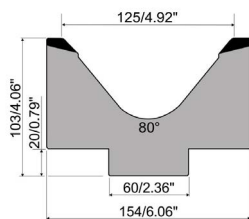
Folding length: 161 mm Max. 35°

V25: From 1,5 to 5 mm sheet

Weight: 4 Kg.



Folding die MK103.80.125



Reference: 140-16-01-00040

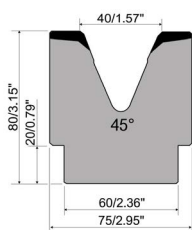
Folding length: 161 mm Max. 80°

V125: From 12 to 20 mm sheet

Weight: 12,4 Kg.



Folding die M80.45.40

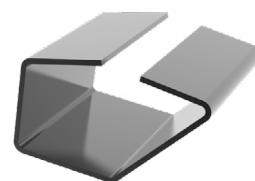


Reference: 140-16-01-00041

Folding length: 161 mm Max. 45°

V40: From 3 to 8 mm sheet

Weight: 6,2 Kg.



Small radii holder PU.67.14-S

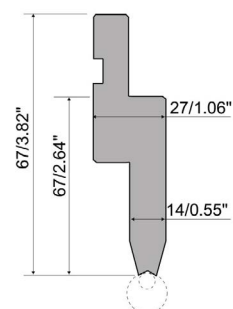


Reference: 140-16-01-00042

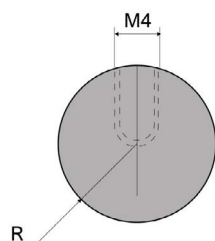
European style R1 bending tool holder. (For radii from 3 to 7,5 mm)

Folding length: 161 mm

Weight: 2 Kg.



Radius elements for small radii holders PU.67.14-S

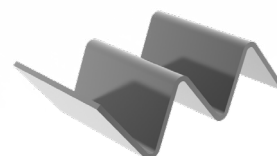


Radius elements to fold. Made of C45, a high quality, medium grade steel, with constant mechanical properties and good external chrome resistance.

Maximum capacity: 400kN/m.

Tonnage: 400 kN/m max.

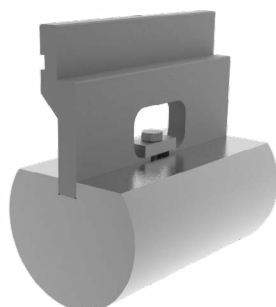
For its use it requires the PU.67.14-S Small radius holder.



Please refer to the following radius chart:

| Small Radius | | | | |
|--------------|-----------------|-----------------|--------|----------|
| Type | Code | Reference | Radius | Weight |
| C3 | PU.67.14-S-C3 | 140-16-01-00044 | 3 mm | 0,04 Kg. |
| C3.5 | PU.67.14-S-C3.5 | 140-16-01-00045 | 3,5 mm | 0,04 Kg. |
| C4 | PU.67.14-S-C4 | 140-16-01-00046 | 4 mm | 0,07 Kg. |
| C4.5 | PU.67.14-S-C4.5 | 140-16-01-00047 | 4,5 mm | 0,10 Kg. |
| C5 | PU.67.14-S-C5 | 140-16-01-00048 | 5 mm | 0,12 Kg. |
| C5.5 | PU.67.14-S-C5.5 | 140-16-01-00049 | 5,5 mm | 0,14 Kg. |
| C6 | PU.67.14-S-C6 | 140-16-01-00050 | 6 mm | 0,16 Kg. |
| C6.5 | PU.67.14-S-C6.5 | 140-16-01-00051 | 6,5 mm | 0,20 Kg. |
| C7 | PU.67.14-S-C7 | 140-16-01-00052 | 7 mm | 0,16 Kg. |
| C7.5 | PU.67.14-S-C7.5 | 140-16-01-00053 | 7,5 mm | 0,20 Kg. |

Big radii holder PU.67.14

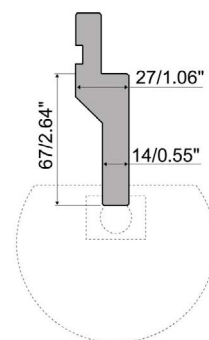


Reference: 140-16-01-00043

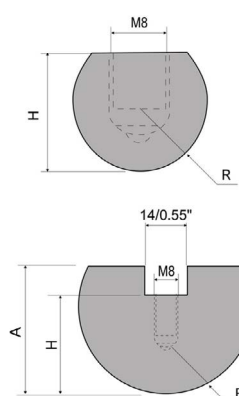
European style R1 bending tool holder. (For radii from 8 to 50 mm)

Folding length: 161 mm

Weight: 1,80 Kg.



Radius elements for large radii holders PU.67.14

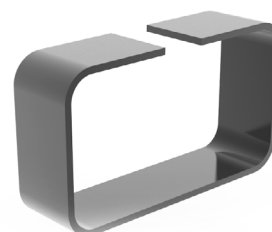


Radius elements to fold. Made of C45, a high quality, medium grade steel, with constant mechanical properties and good external chrome resistance.

Tonnage: 800 kN/m max.

For its use it requires the PU67.14 large radius holder.

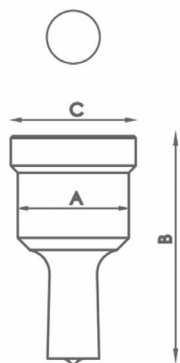
Please refer to the following radius chart:



| Big Radius | | | | | |
|----------------|-----------------|--------|--------|--------|----------|
| Code | Reference | R (mm) | H (mm) | A (mm) | Weight |
| PU.67.14.R8 | 140-16-01-00054 | 8 | 13 | - | 0,04 Kg. |
| PU.67.14.R9 | 140-16-01-00055 | 9 | 16 | - | 0,04 Kg. |
| PU.67.14.R10 | 140-16-01-00056 | 10 | 16 | - | 0,04 Kg. |
| PU.67.14.R12,5 | 140-16-01-00057 | 12,5 | 17 | 22 | 0,50 Kg. |
| PU.67.14.R15 | 140-16-01-00058 | 15 | 20 | 27 | 0,75 Kg. |
| PU.67.14.R17,5 | 140-16-01-00059 | 17,5 | 22 | 32 | 1,00 Kg. |
| PU.67.14.R20 | 140-16-01-00060 | 20 | 24 | 34 | 1,40 Kg. |
| PU.67.14.R22,5 | 140-16-01-00061 | 22,5 | 25 | 35 | 1,50 Kg. |
| PU.67.14.R25 | 140-16-01-00062 | 25 | 29 | 39 | 2,00 Kg. |
| PU.67.14.R27,5 | 140-16-01-00063 | 27,5 | 34 | 44 | 2,50 Kg. |
| PU.67.14.R30 | 140-16-01-00064 | 30 | 34 | 44 | 2,70 Kg. |
| PU.67.14.R32,5 | 140-16-01-00065 | 32,5 | 37 | 47 | 3,20 Kg. |
| PU.67.14.R35 | 140-16-01-00066 | 35 | 45 | 55 | 4,10 Kg. |
| PU.67.14.R37,5 | 140-16-01-00067 | 37,5 | 42 | 52 | 4,10 Kg. |
| PU.67.14.R40 | 140-16-01-00068 | 40 | 45 | 55 | 4,60 Kg. |
| PU.67.14.R45 | 140-16-01-00069 | 45 | 60 | 70 | 6,80 Kg. |
| PU.67.14.R50 | 140-16-01-00070 | 50 | 70 | 80 | 8,70 Kg. |

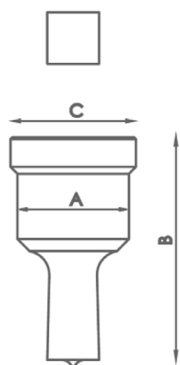
Punches and dies

Standard round punches



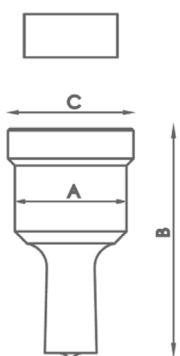
| Type | Available sizes in mm Ø | A | B | C |
|---|---|-------|-------|---------|
| N28 | 3/3'5/4/4'5/5/5'5/6/6'5/7/7'5/8/8'5 up to 28mm from 0'5 in 0'5mm | 28 mm | 58 mm | 31,5 mm |
| N40 | 29/30/31/32/33/34/35/36/37/38/39/40mm | 40 mm | 64 mm | 43,5 mm |
| N50 | 41/42/43mm | 50 mm | 58 mm | 54 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | | |

Standard square punches



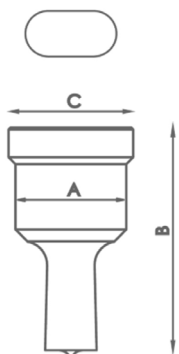
| Type | Available sizes in mm | A | B | C |
|---|---|-------|-------|---------|
| N28 | 4/5/6/7/8/9/10/11/12/13/14/15/16/17 18/19/20mm | 28 mm | 58 mm | 31,5 mm |
| N40 | 21/22/24/26/28mm | 40 mm | 64 mm | 43,5 mm |
| N50 | 31/33/35mm | 50 mm | 58 mm | 54 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | | |

Standard rectangular punches



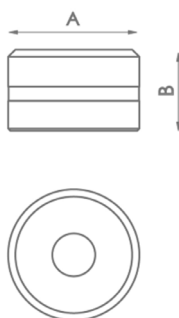
| Type | Available sizes in mm | A | B | C |
|---|--|-------|-------|---------|
| N28 | 7x10/7x15/9x13/9x19/11x17/11x23 13x19/15x21mm | 28 mm | 58 mm | 31,5 mm |
| N40 | 13x25/15x27/17x25/19x30/20x34mm | 40 mm | 64 mm | 43,5 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | | |

Standard oval punches



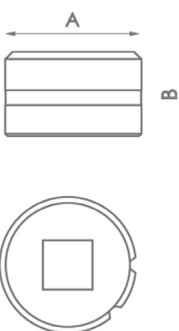
| Type | Available sizes in mm | A | B | C |
|---|---|-------|-------|---------|
| N28 | 7x10/7x15/7x20/9x13/9x19/11x17/11x23 11x27/13x18 /13x22/13x27/15x20/15x24 15x27/17x22/17x26 19x26/21x27mm | 28 mm | 58 mm | 31,5 mm |
| N40 | 13x31/15x31/17x31/17x40/19x31 19x40/21x31/21x40mm | 40 mm | 64 mm | 43,5 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | | |

Standard round dies



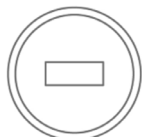
| Type | Available sizes in mm Ø | A | B |
|---|---|-------|---------|
| N46 | 3/3,5/4/4,5/5/5,5/6/6,5/7/7,5/8/8,5 9mm up to 28mm from 0,5 in 0,5mm | 46 mm | 28,5 mm |
| N60 | 29/30/31/32/33/34/35/36/37/38/39/40mm | 60 mm | 32 mm |
| N78 | 41/42/43mm | 78 mm | 28,5 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Standard square dies



| Type | Available sizes in mm | A | B |
|---|---|-------|---------|
| N46 | 4/5/6/7/8/9/10/11/12/13/14/15/16 17/18/19/20mm | 46 mm | 28,5 mm |
| N60 | 21/22/24/26/28mm | 60 mm | 32 mm |
| N78 | 31/33/35mm | 78 mm | 28,5 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Standard rectangular dies



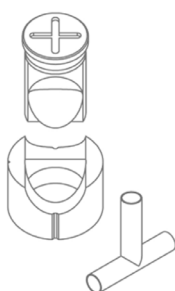
| Type | Available sizes in mm | A | B |
|---|--|-------|---------|
| N46 | 7x10/7x15/9x13/9x19/11x17/11x23/ 13x19/13x25/ 15x21mm | 46 mm | 28,5 mm |
| N60 | 15x27/17x25/19x30/20x34mm | 60 mm | 32 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Oval dies



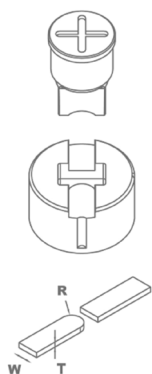
| Type | Available sizes in mm | A | B |
|---|--|-------|---------|
| N46 | 7x10/7x15/7x20/9x13/9x19/11x17/11x23 11x27/13x18/13x22/13x27/15x20/15x24/15x27 17x22/17x26/19x26/21x27mm | 46 mm | 28,5 mm |
| N60 | 13x31/15x31/17x31/17x40/19x31 19x40/21x31/21x40mm | 60 mm | 32 mm |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Tube notching tooling

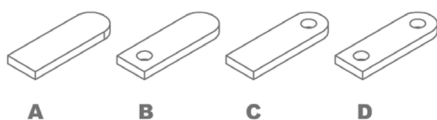


| Reference | Available sizes in mm | Required fitting | |
|---|------------------------|------------------|--------|
| MAN28 | Tube from 16 to 28mm | TAP 28 | CAB 46 |
| MAN40 | Tube from 28,5 to 40mm | TAP 40 | CAB 60 |
| MAN50 | Tube from 40,5 to 50mm | TAP 50 | CAB 78 |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Flat bar round end tooling R1



| Reference | Model | Width size | Required fitting |
|-----------|-------|-----------------|-------------------------|
| MOR1-35A | A | From 20 to 35mm | TAP28 / TAP40 |
| MOR1-35B | B | From 20 to 35mm | TAP28 / TAP40 |
| MOR1-35C | C | From 20 to 35mm | TAP28 / TAP40 |
| MOR1-35D | D | From 20 to 35mm | TAP28 / TAP40 |
| MOR1-50A | A | From 40 to 50mm | TAP50 / TAP60 with ATAP |
| MOR1-50B | B | From 40 to 50mm | TAP50 / TAP60 with ATAP |
| MOR1-50C | C | From 40 to 50mm | TAP50 / TAP60 with ATAP |
| MOR1-50D | D | From 40 to 50mm | TAP50 / TAP60 with ATAP |



For different sizes, please ask the manufacturer.

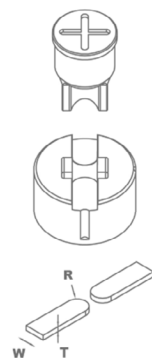
When placing order it must be specified the REFERENCE, MODEL, R (radius), W (flat bar width), T (flat bar thickness)

In models B, C and D specify diameter of the hole.

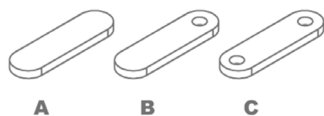
The ear shaped legth is always adjustable.

Production capacity: 450 to 600 parts per hour.

Flat bar round end tooling R2



| Reference | Model | Width size | Required fitting |
|-----------|-------|-----------------|-------------------------|
| MOR2-35A | A | From 20 to 35mm | TAP28 / TAP40 |
| MOR2-35B | B | From 20 to 35mm | TAP28 / TAP40 |
| MOR2-35C | C | From 20 to 35mm | TAP28 / TAP40 |
| MOR2-50A | A | From 40 to 50mm | TAP50 / TAP60 with ATAP |
| MOR2-50B | B | From 40 to 50mm | TAP50 / TAP60 with ATAP |
| MOR2-50C | C | From 40 to 50mm | TAP50 / TAP60 with ATAP |



For different sizes, please ask the manufacturer.

When placing order it must be specified the REFERENCE, MODEL, R (radius), W (flat bar width), T (flat bar thickness)

In models B and C specify hole diameter.

The ear shaped legth is always adjustable.

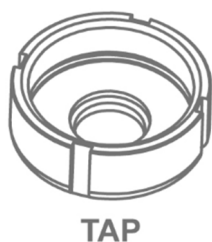
Production capacity: 450 to 600 parts per hour.

Corner rounding tooling



| Reference | Available sizes in mm | Required fitting | |
|---|--------------------------|------------------|--------|
| MRE28 | Radius from 3 to 15mm | TAP 28 | CAB 46 |
| MRE40 | Radius from 16 to 26mm | TAP 40 | CAB 60 |
| MRE50 | Radius from 26,5 to 32mm | TAP 50 | CAB 78 |
| <i>For different sizes, please ask the manufacturer</i> | | | |

Fitting nuts for punches



| Reference | Type | Fitting nuts for punches |
|------------------------|-------|------------------------------|
| 120-02-01-00011 | TAP28 | Fitting nuts for punches N28 |
| 140-02-01-00019 | TAP40 | Fitting nuts for punches N40 |
| 140-02-01-00020 | TAP50 | Fitting nuts for punches N50 |
| 140-02-01-00021 | TAP60 | Fitting nuts for punches N60 |

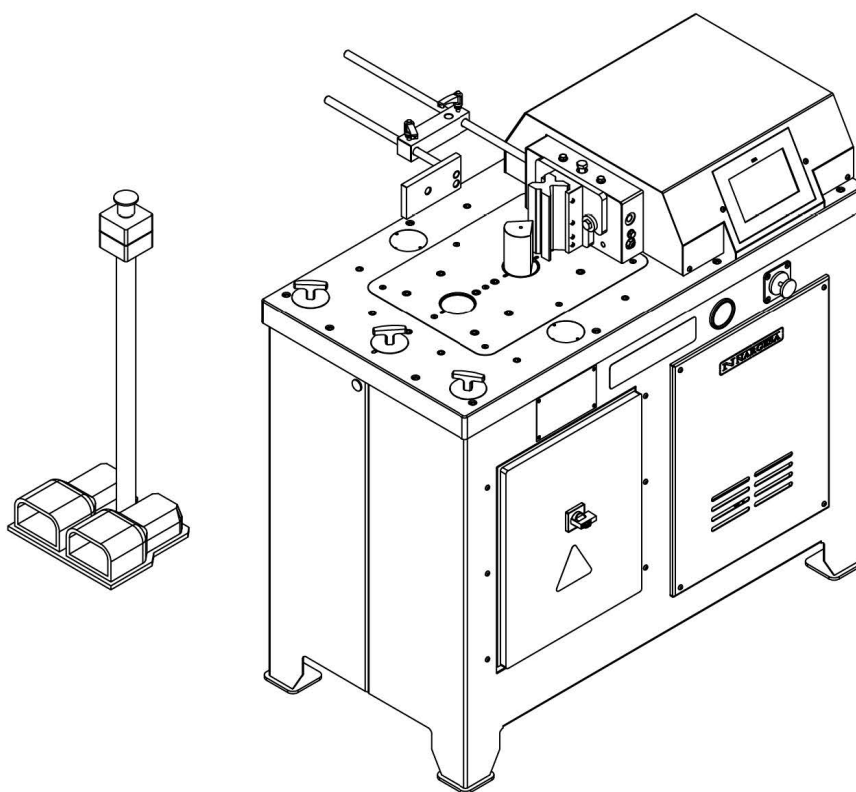
Fitting for dies



| Reference | Type | Fitting for dies |
|------------------------|------|----------------------|
| 120-02-01-00012 | N46 | Fitting for dies N46 |
| 140-02-01-00024 | N60 | Fitting for dies N60 |
| 140-02-01-00025 | N78 | Fitting for dies N78 |

TECHNICAL ANNEX

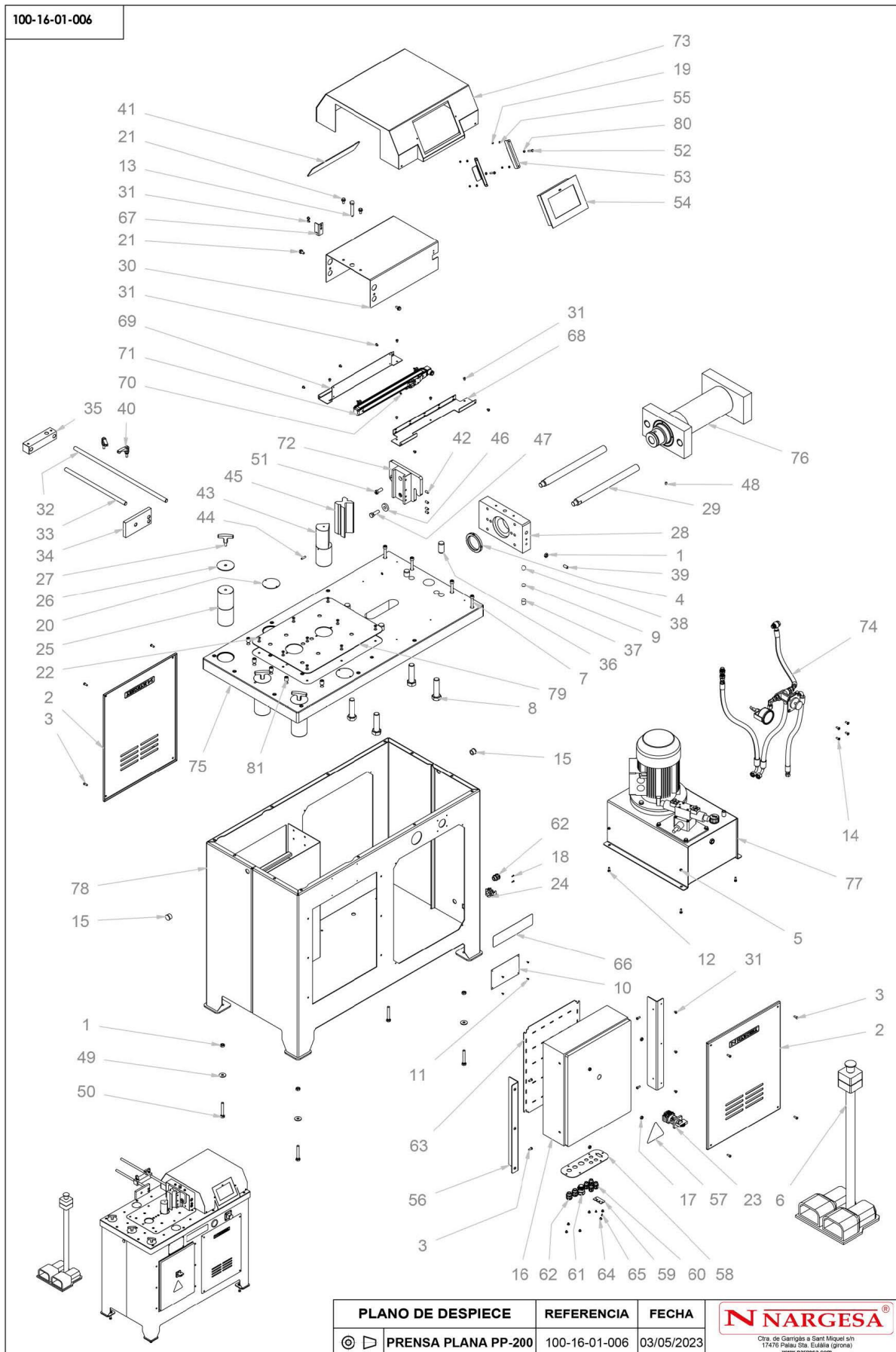
Horizontal Hydraulic Press Brake PP200CNC



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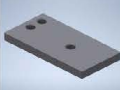


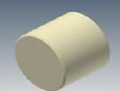









A1. List of parts





| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|------------------|---|-------|
| 1 |  | 020-D934-M10 | Tuerca Hexagonal DIN934 M10 | 18 |
| 2 |  | 120-16-01-00210 | Puerta PP-200 | 2 |
| 3 |  | 020-I7380-M6X16 | Tornillo Allen Abombado ISO7380 M6X16 | 8 |
| 4 |  | 020-D981-KM14 | Tuerca Ranurada DIN 981 KM14 | 1 |
| 5 |  | 020-D934-M6 | Tuerca Hexagonal DIN934 M6 | 4 |
| 6 |  | 050-PED-00002 | Pedal Doble Con Paro De Emergencia | 1 |
| 7 |  | 020-D912-M10X60 | Tornillo Allen DIN 912 M10 X60 | 12 |
| 8 |  | 020-D931-M24X90 | Tornillo Hex. Media Rosca DIN931 M24X90 | 4 |
| 9 |  | 120-16-01-00220 | Arandela D19.5X1 Antigiro | 2 |
| 10 |  | 122-PLC-0000-001 | Placa Características General | 1 |
| 11 |  | 020-D7337-3X8 | Remache De Clavo DIN7337 De Al D3X8 | 4 |
| 12 |  | 020-D933-M6X16 | Tornillo Hexagonal DIN 933 M6X16 | 4 |
| 13 |  | 120-16-01-00122 | Tornillo Fijacion Utiles PP-200 | 1 |
| 14 |  | 020-D7991-M6X16 | Tornillo Allen DIN 7991 M6X16 | 4 |
| 15 |  | 031-TAP-00005 | Tapon De Plastico Para Tubo Redondo D25 | 2 |
| 16 |  | 050-COAL-00018 | Armario Coalsa 500X400X150 PP-200 | 1 |

HORIZONTAL HYDRAULIC PRESS BRAKE PP200CNC

| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|--|-------|
| 17 |  | 020-D934-M8 | Tuerca Hexagonal DIN934 M8 | 4 |
| 18 |  | 020-D7985-M3X10 | Tornillo DIN7985 M3X10 Zincado | 2 |
| 19 |  | 020-D934-M4 | Tuerca Hexagonal DIN934 M4 | 4 |
| 20 |  | 120-16-01-00264 | Tapa Agujeros D70 | 3 |
| 21 |  | 020-D6921-M8X16 | Tornillo Hexagonal Embridado Din6921 M8X16 | 8 |
| 22 |  | 020-D7991-M6X12 | Tornillo Allen Avellanado DIN7991 M6X12 | 9 |
| 23 |  | 050-IG-00001 | Interruptor General Kg10Ak300 | 1 |
| 24 |  | 050-BE-00003 | Zocalo Recto Ck03I | 1 |
| 25 |  | 120-16-01-00284 | Bulón PP200 | 3 |
| 26 |  | 120-16-01-00285 | Arandela Apoyo Bulones PP200 | 3 |
| 27 |  | 031-MANT-00001 | Maneta en T - M10X20 L68 | 3 |
| 28 |  | 120-16-01-00290 | Tapa Frontal Movil PP-200 | 1 |
| 29 |  | 120-16-01-00291 | Barra Guía Cilindro PP200 | 2 |
| 30 |  | 120-16-01-00289 | Chapa Movil PP-200 | 1 |
| 31 |  | 020-I7380-M6X8 | Tornillo Allen Abombado ISO7380 M6X8 | 18 |
| 32 |  | 120-16-01-00118 | Barra Principal Tope PP-200 | 1 |

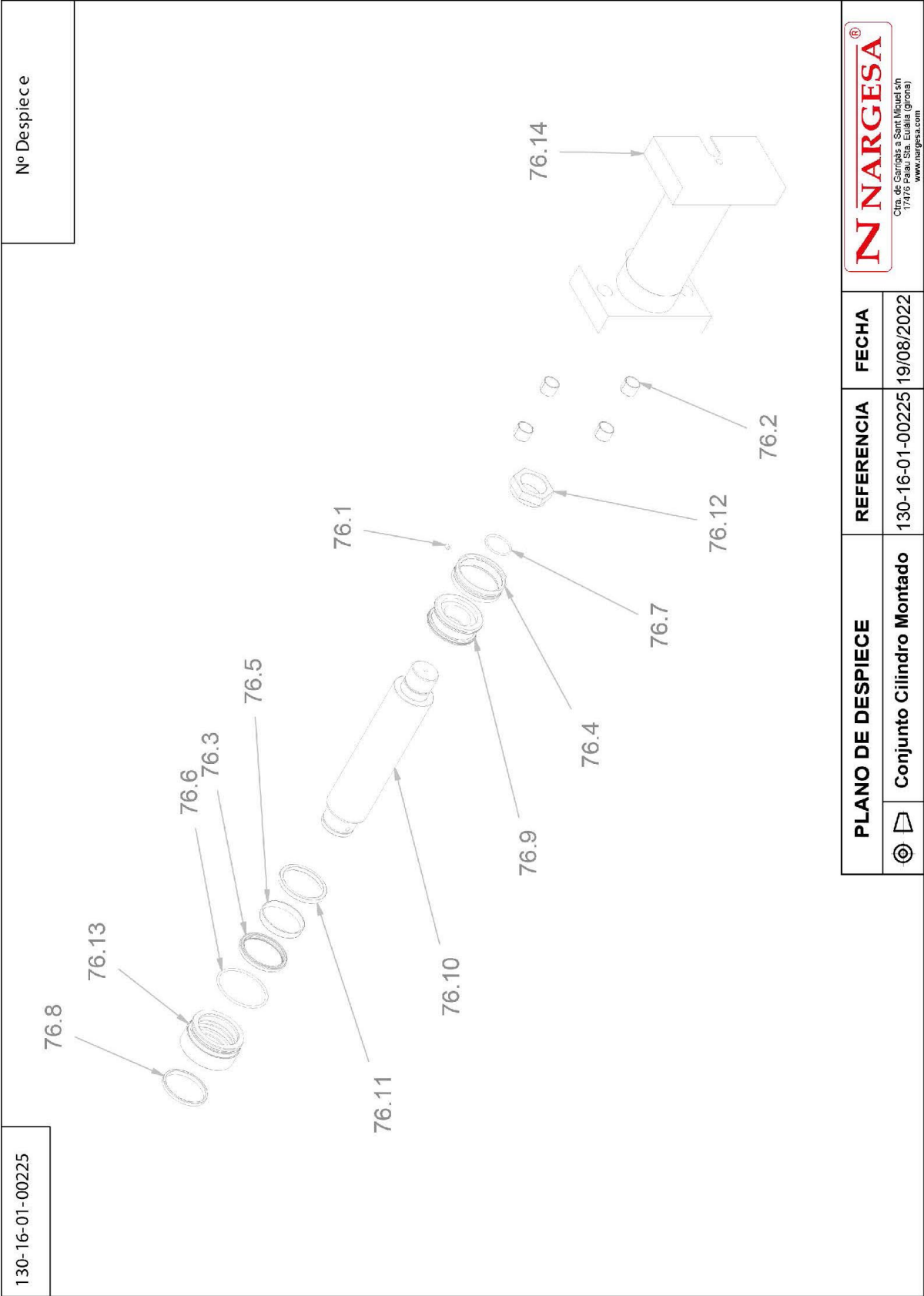

| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|--|-------|
| 33 |  | 120-16-01-00119 | Barra Auxiliar Tope PP-200 | 1 |
| 34 |  | 120-16-01-00305 | Pasamano Del Tope PP-200 | 1 |
| 35 |  | 120-16-01-00304 | Union Barras Tope | 1 |
| 36 |  | 030-D6325-00011 | Pasador Cilindrico DIN 6325 D25x50 | 4 |
| 37 |  | 120-16-01-00306 | Guia Antigiro PP200 | 2 |
| 38 |  | 030-BOL-00001 | Bola Diametro 20 | 2 |
| 39 |  | 020-D914-M10X25 | Esparrago Allen Con Punta DIN 914 M10x25 | 2 |
| 40 |  | 031-MAG-00005 | Empuñadura Graduable Macho M8X20 Negra con Boton Naranja | 2 |
| 41 |  | 120-16-01-00302 | Metacrilato Negro Tapa Superior PP200 | 1 |
| 42 |  | 020-D913-M8X16 | ESPARRAGO ALLEN DIN 913 M8X16 | 4 |
| 43 |  | 125-16-01-00016 | Punzón Matriz De Plegar Serie PP-200 | 1 |
| 44 |  | 020-D913-M6X25 | Esparrago Allen DIN913 M6X25 | 1 |
| 46 |  | 120-02-01-00017 | Arandela D35XD13X8 | 2 |
| 47 |  | 020-D933-M12X40 | TORNILLO HEXAGONAL DIN 933 M12x40 | 2 |
| 48 |  | 020-D914-M8x12 | Esparrago Allen Con Punta DIN914 M8X12 | 1 |
| 49 |  | 020-D9021-M10 | ARANDELA DIN 9021 M10 | 4 |





HORIZONTAL HYDRAULIC PRESS BRAKE PP200CNC



| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|------------------|---|-------|
| 50 |  | 020-D933-M10X70 | Tornillo Hexagonal DIN 933 M10x70 | 4 |
| 51 |  | 020-D6912-M12X30 | Tornillo Allen Cabeza Reducida Din6912 M12X30 | 2 |
| 52 |  | 020-I7380-M6X30 | TORNILLO ALLEN ABOMBADO ISO7380 M6X30 | 2 |
| 53 |  | 120-17-01-00042 | CHAPA SOPORTE PANTALLA ESA S625 | 2 |
| 54 |  | 050-CNC-00003 | Pantalla ESA S625 | 1 |
| 55 |  | 020-D125B-M4 | Arandela Biselada DIN125B Para M4 | 4 |
| 56 |  | 120-16-01-00317 | Soporte Cuadro Electrico PP200 | 2 |
| 57 |  | 122-ADH-00003 | Adhesivo Triangulo 400Vac De 100 Mm | 1 |
| 58 |  | 120-16-01-00318 | Chapa Prensaestopas | 1 |
| 59 |  | 120-02-04-00169 | Tapa Pasacables | 1 |
| 60 |  | 050-PE-00002 | Prensaestopa PG9 Negro | 4 |
| 61 |  | 050-PE-00008 | PRENSAESTOPA M25 | 1 |
| 62 |  | 050-PE-00006 | Prensaestopa M20X1.5 | 3 |
| 63 |  | 120-16-01-00319 | Chapa Montaje | 1 |
| 64 |  | 020-I7380-M6X6 | Tornillo Allen Abombado ISO7380 M6X6 | 6 |
| 65 |  | 020-I7380-M4X6 | Tornillo Allen Abombado ISO7380 M4X6 | 2 |

| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|--------------------|--|-------|
| 66 |  | 122-CAL-0602-002 | Calca PP200, C2006 i C3006 | 1 |
| 67 |  | 120-16-01-00349 | Chapa Seguidor Potenciómetro PP200 | 1 |
| 68 |  | 120-16-01-00350 | Chapa Soporte Tapa superior PP200 | 1 |
| 69 |  | 120-16-01-00351 | Chapa Soporte Potenciómetro Lineal PP200 | 1 |
| 70 |  | 020-D125B-M5 | Arandela DIN 125 B M5 | 2 |
| 71 |  | 050-ENC-00011 | Potenciómetro RPH 275 5K C | 1 |
| 72 |  | 131-16-01-00040 | Conjunto Base Matriz De Plegar PP-200 | 1 |
| 73 |  | 130-16-01-00240 | Tapa Superior PP200 | 1 |
| 74 |  | 130-16-01-00228 | Montaje Instalacion Hidraulica PP-200 | 1 |
| 75 |  | 130-16-01-00227 | Conjunto Mesa Trabajo PP-200 | 1 |
| 76 |  | 130-16-01-00225 | Conjunto Cilindro Montado | 1 |
| 77 |  | 130-16-01-00220 | Grupo Hidraulico PP-200 | 1 |
| 78 |  | 130-16-01-00218 | Conjunto Estructura Pie PP-200 | 1 |
| 79 |  | 120-16-01-00355 | Chapa Antidesgaste Mesa PP200 | 1 |
| 80 |  | 020-AET-M6 | Arandela Especial para DIN912 AET - M6 | 2 |
| 81 |  | DIN 913 - M16 x 20 | Tornillo de ajuste de boquilla hexagonal | 15 |

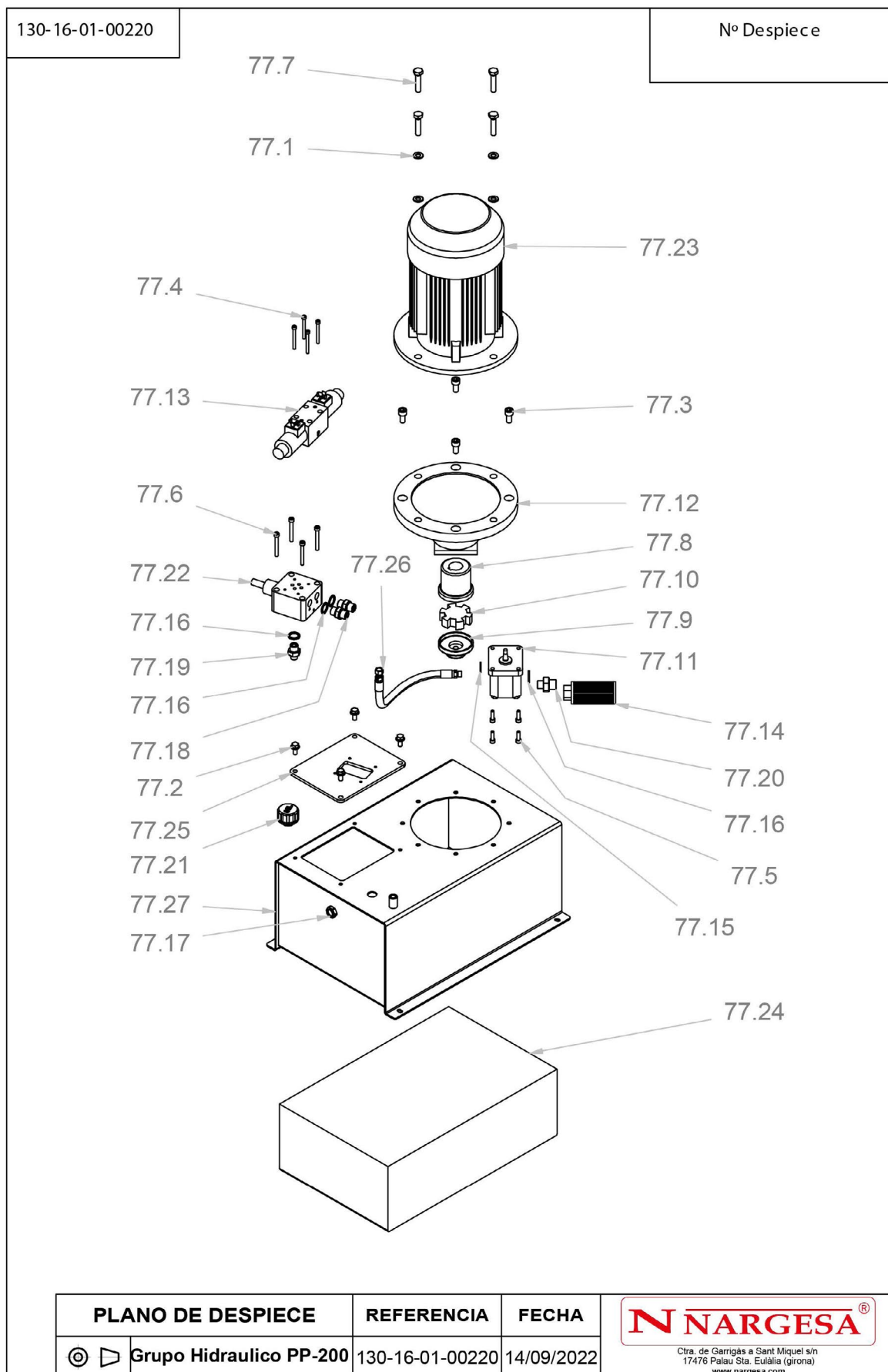
A2. Piston assembly

| | | | | | | | | | |
|---|-------------|-------------------|------------|------------|-------|---------------------------|--|-----------------|------------|
| 130-16-01-00225 | Nº Despiece | | | | | | | | |
|  | | | | | | | | | |
| <table><tr><td colspan="2">PLANO DE DESPIECE</td><td>REFERENCIA</td><td>FECHA</td></tr><tr><td colspan="2">Conjunto Cilindro Montado</td><td>130-16-01-00225</td><td>19/08/2022</td></tr></table> | | PLANO DE DESPIECE | | REFERENCIA | FECHA | Conjunto Cilindro Montado | | 130-16-01-00225 | 19/08/2022 |
| PLANO DE DESPIECE | | REFERENCIA | FECHA | | | | | | |
| Conjunto Cilindro Montado | | 130-16-01-00225 | 19/08/2022 | | | | | | |
| <div><p>Ctra. de Garrigás a Sant Miquel s/n 17470 Palafrugell (Girona) www.nargesa.com</p></div> <p>Este plano es propiedad de Frades Nargesa SL. No podrá ser reproducido, comunicado a terceros o utilizado para otro fin que no sea el acordado sin su permiso escrito.</p> | | | | | | | | | |

| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|--|-------|
| 76.1 |  | 020-D914-M8x12 | Esparrago Allen Con Punta DIN914 M8X12 | 1 |
| 76.2 |  | 030-DP-00012 | Dolla Partida D30XD34X25 | 4 |
| 76.3 |  | 040-BA-00015 | Collarin Ba D90XD105X11.4 | 1 |
| 76.4 |  | 040-DPS-00007 | Junta DPS D110XD96X22.5X33 | 1 |
| 76.5 |  | 040-GSF-00001 | GUIA SF D90XD95X15 | 1 |
| 76.6 |  | 040-JT-00026 | JUNTA TORICA Ø105X5 90 Shore | 1 |
| 76.7 |  | 040-JT-00027 | JUNTA TORICA D52X4 90 Shore | 1 |
| 76.8 |  | 040-RAS-00008 | Rascador D90XD100X7/10 | 1 |
| 76.9 |  | 120-16-01-00223 | Empaquetadura Cilindro PP-200 D110xD90 | 1 |
| 76.10 |  | 120-16-01-00225 | Vastago Cilindro D110xD90 PP-200 | 1 |
| 76.11 |  | 120-16-01-00229 | Aro Separador Cilindro D110xD90 PP-200 | 1 |
| 76.12 |  | 120-16-01-00230 | Tuerca Trasera Cilindro PP-200 | 1 |






| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|--|-------|
| 76.13 |  | 120-16-01-00282 | Dolla De Bronce Cilindro PP-200 D110xD90 | 1 |
| 76.14 |  | 130-16-01-00226 | Conjunto Camisa Cilindro D110XD90 PP-200 | 1 |

A3. Hydraulic group



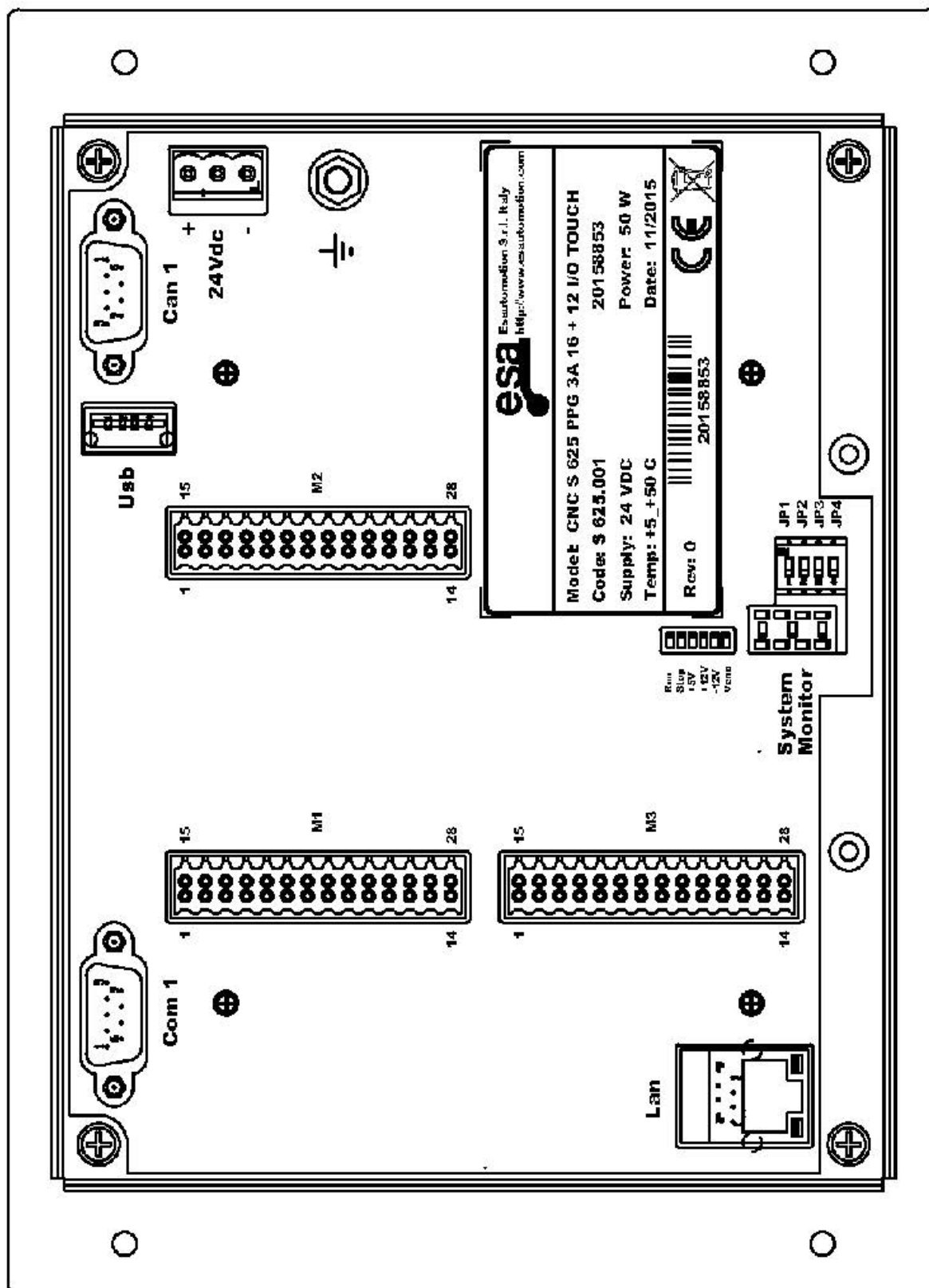
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| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|---|-------|
| 77.1 |  | 020-D125B-M10 | Arandela Biselada DIN125B Para M10 | 4 |
| 77.2 |  | 020-D6921-M8X16 | Tornillo Hexagonal Embridado Din6921 M8X16 | 4 |
| 77.3 |  | 020-D912-M10X20 | Tornillo Allen DIN912 M10X20 | 4 |
| 77.4 |  | 020-D912-M5X50 | Tornillo Allen DIN912 M5X50 | 4 |
| 77.5 |  | 020-D912-M6X20 | TORNILLO ALLEN DIN912 M6X20 | 4 |
| 77.6 |  | 020-D912-M6X50 | TORNILLO ALLEN DIN912 M6X50 | 4 |
| 77.7 |  | 020-D933-M10X45 | Tornillo Hexagonal DIN933 M10X45 | 4 |
| 77.8 |  | 040-AE-00007 | Acoplamiento Lado Motor 3/4 / 5.5Cv | 1 |
| 77.9 |  | 040-AE-00008 | Acoplamiento Lado Bomba Lo Para Motor 3/4 / 5.5 Cv | 1 |
| 77.10 |  | 040-AE-00009 | Estrella Acoplamiento Para Motor 3/4 / 5.5 Cv | 1 |
| 77.11 |  | 040-BH-00006 | Bomba Hidraulica De Aluminio De 5 L 1LO5DE10R | 1 |
| 77.12 |  | 040-CA-00002 | Campana Acoplamiento Bomba Tipo Lo Motor 3/4/5.5 CV | 1 |
| 77.13 |  | 040-ELV-00012 | Electrovalvula Doble Bobina 5EVP3D1C02D24 | 1 |
| 77.14 |  | 040-FL-00002 | Filtro De Aspiracion 1/2" REF 2FA15R125N | 1 |
| 77.15 |  | 040-JMG-00002 | Junta Metal Goma 1/4" Gas | 1 |

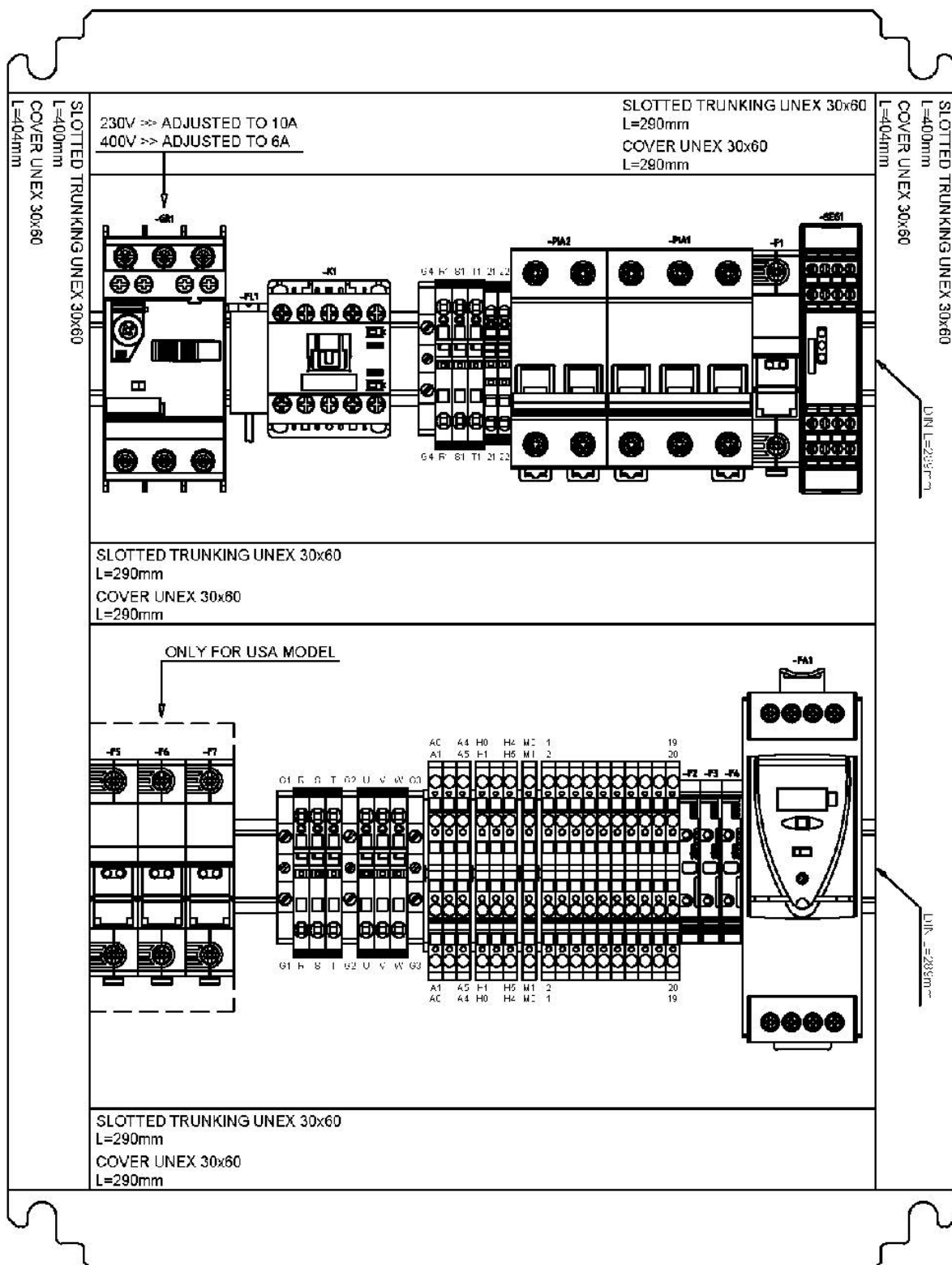
| Elemento | Miniatura | Nº de pieza | Descripción | CTDAD |
|----------|---|-----------------|---|-------|
| 77.16 |  | 040-JMG-00004 | Junta Metal Goma 3/8' Gas | 4 |
| 77.17 |  | 040-NA-00001 | Visor Nivel Aceite De 3/8' Gas | 1 |
| 77.18 |  | 040-RMM-00003 | Racor 3/8" Macho Macho | 2 |
| 77.19 |  | 040-RRMM-00002 | Racor Reducido 3/8'-1/4' Macho Macho | 1 |
| 77.20 |  | 040-RRMM-00004 | Racor Reducido 1/2-3/8 Macho Macho | 1 |
| 77.21 |  | 040-TLL-00003 | Tapon Llenado De 1/2' Doble Respiradero Y Filtro | 1 |
| 77.22 |  | 040-VLP-00002 | Valvula Limitadora Presion 5R1102P2F/03 -T210 tarada a 210 Bares | 1 |
| 77.23 |  | 050-ME-00003 | Motor Electrico 2.2Kw 1500Rpm 50-60Hz B5 220/380V | 1 |
| 77.24 |  | 120-16-01-00251 | Aceite Hidraulico HM68 25 Litros | 1 |
| 77.25 |  | 120-16-01-00275 | Placa Componentes Hidraulicos PP-200 | 1 |
| 77.26 |  | 120-16-01-00281 | Manguera Flexible 1/4' Macho 1/4'-Tg 1/4' L= 430 mm Presion De Trabajo 250 Bars | 1 |
| 77.27 |  | 130-16-01-00215 | Desposito Hidráulico PP-200 | 1 |

A4. Control panel

-CONTROL I

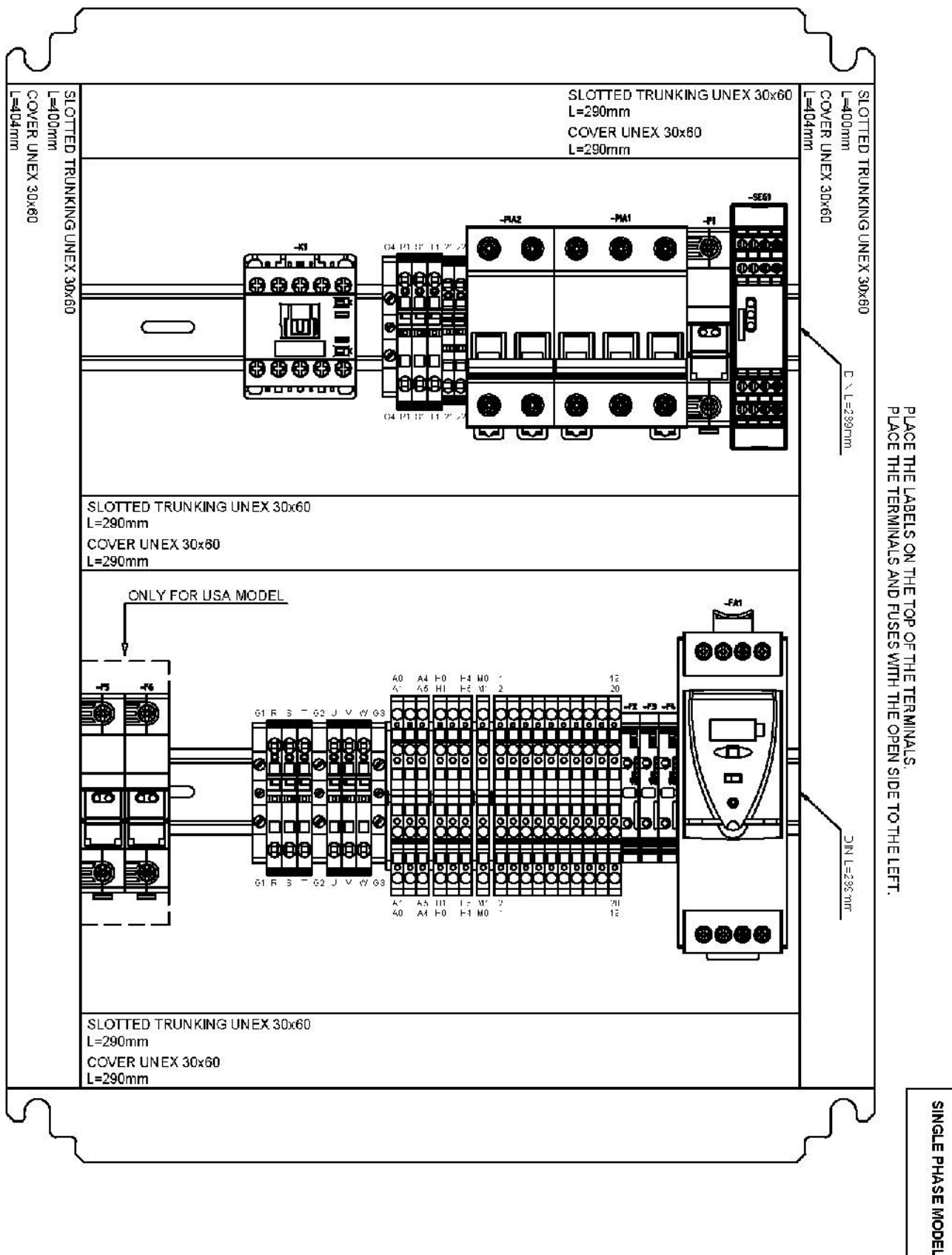


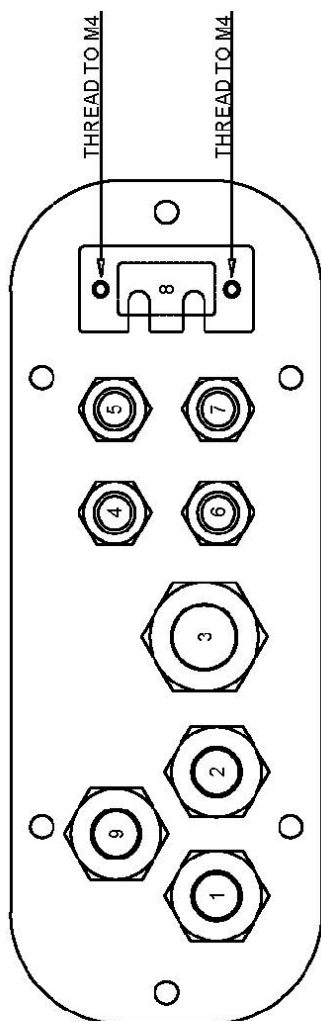
A5. Electric map · THREEPHASE MACHINE



3 PHASE MODEL

A6. Electric map · SINGLEPHASE MACHINE

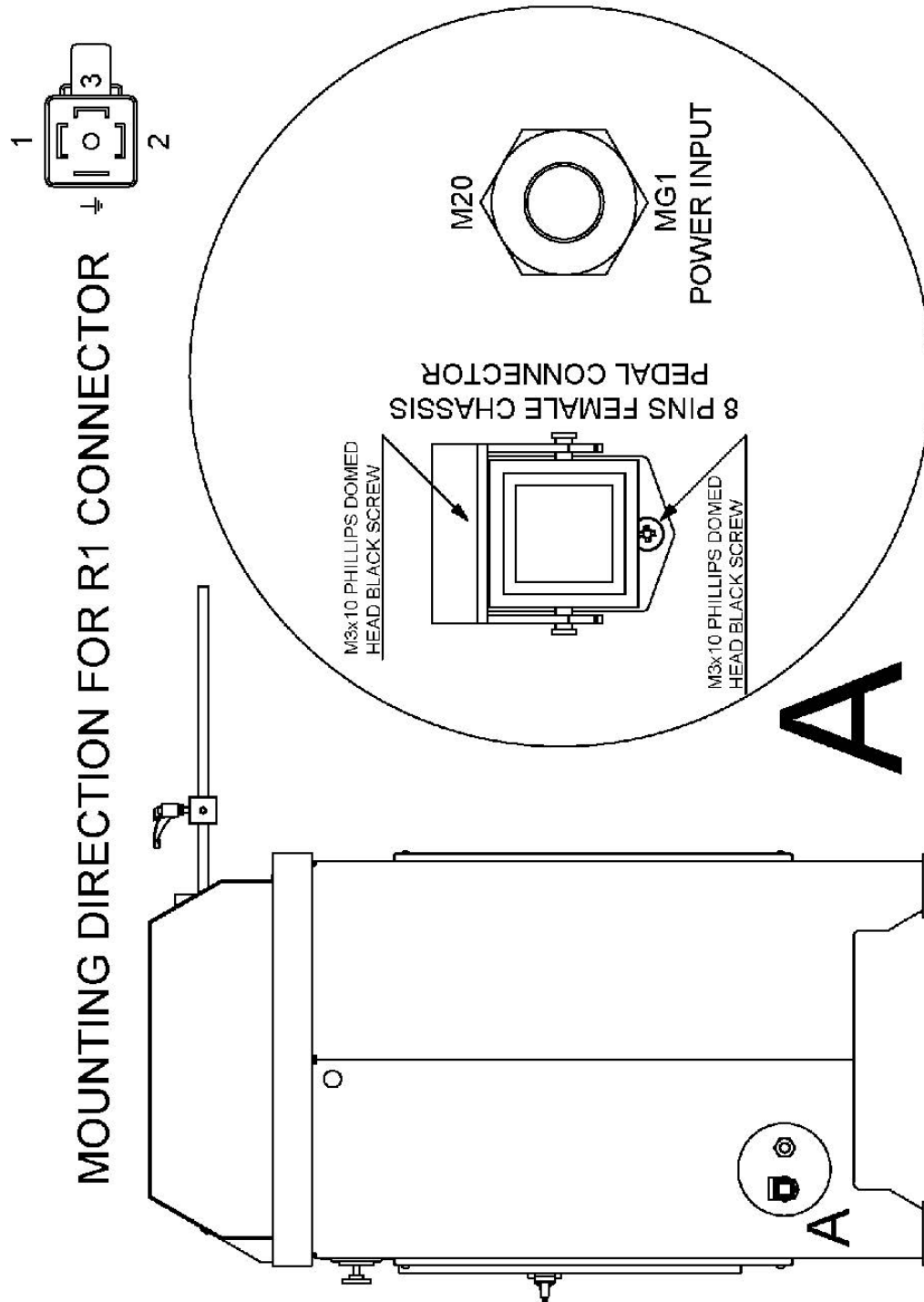




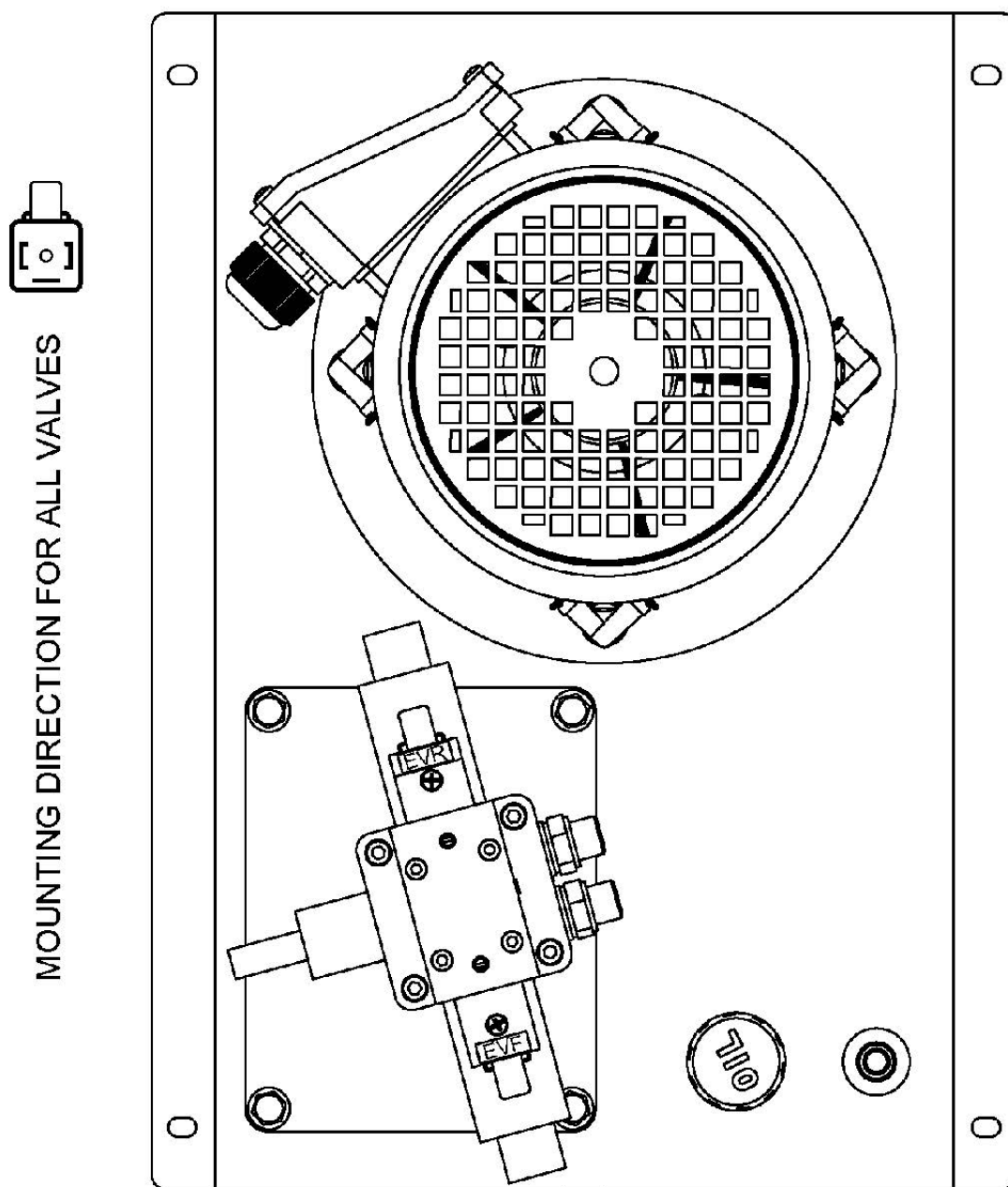
| 3 PHASE MODEL | | | |
|-------------------|---------------------|---------------|----------------------------------|
| PLATE HOLE NUMBER | PLASTIC CABLE GLAND | ELECTRIC WIRE | DESCRIPTION |
| 1 | M20 | MG1 | POWER INPUT |
| 2 | M20 | MG2 | PUMP MOTOR |
| 3 | M25 | --- | MESH WITH SIGNAL WIRES |
| 4 | PG9 | --- | --- |
| 5 | PG9 | MG6 | EVR (REVERSE ELECTROVALVE) |
| 6 | PG9 | MG3 | PEDAL |
| 7 | PG9 | MG5 | EVF (FORWARD ELECTROVALVE) |
| 8 | --- | MG8 | ETHERNET |
| 9 | M20 | --- | MESH TO THE BACK GAUGE CONNECTOR |

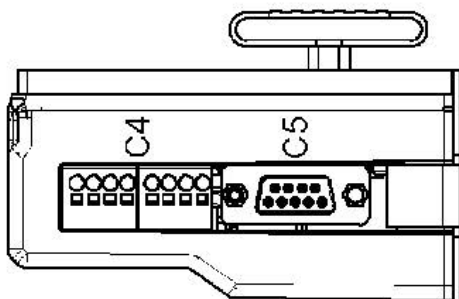
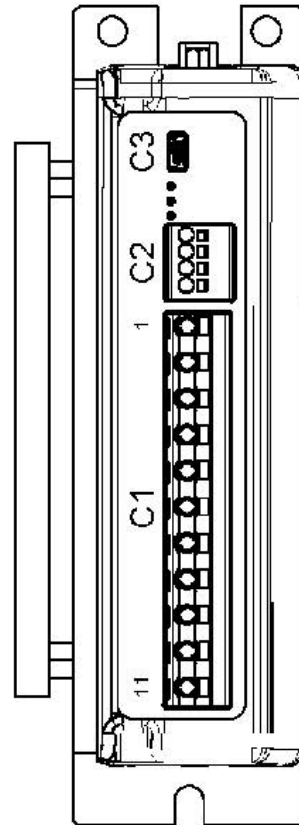
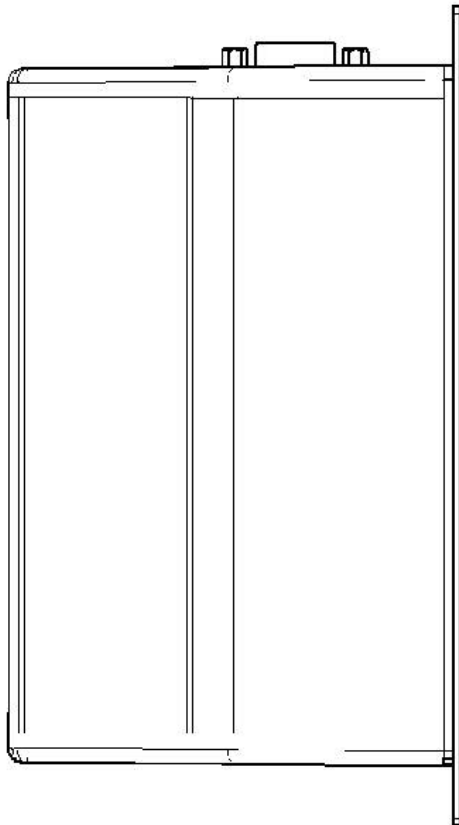
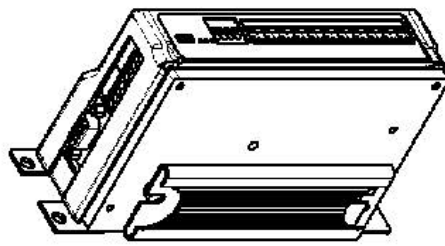
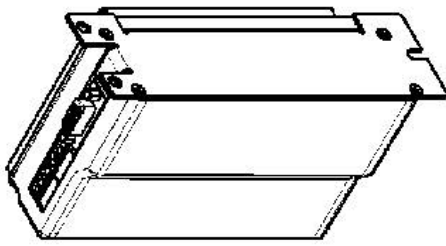
| SINGLE PHASE MODEL | | | |
|--------------------|---------------------|---------------|----------------------------------|
| PLATE HOLE NUMBER | PLASTIC CABLE GLAND | ELECTRIC WIRE | DESCRIPTION |
| 1 | M20 | MG1 | POWER INPUT |
| 2 | M20 | MG10 | VF POWER INPUT |
| 3 | M25 | --- | MESH WITH SIGNAL WIRES |
| 4 | PG9 | MG9 | VF FORWARD CONTROL |
| 5 | PG9 | MG6 | EVR (REVERSE ELECTROVALVE) |
| 6 | PG9 | MG3 | PEDAL |
| 7 | PG9 | MG5 | EVF (FORWARD ELECTROVALVE) |
| 8 | --- | MG8 | ETHERNET |
| 9 | M20 | --- | MESH TO THE BACK GAUGE CONNECTOR |

A7. Pedal connection

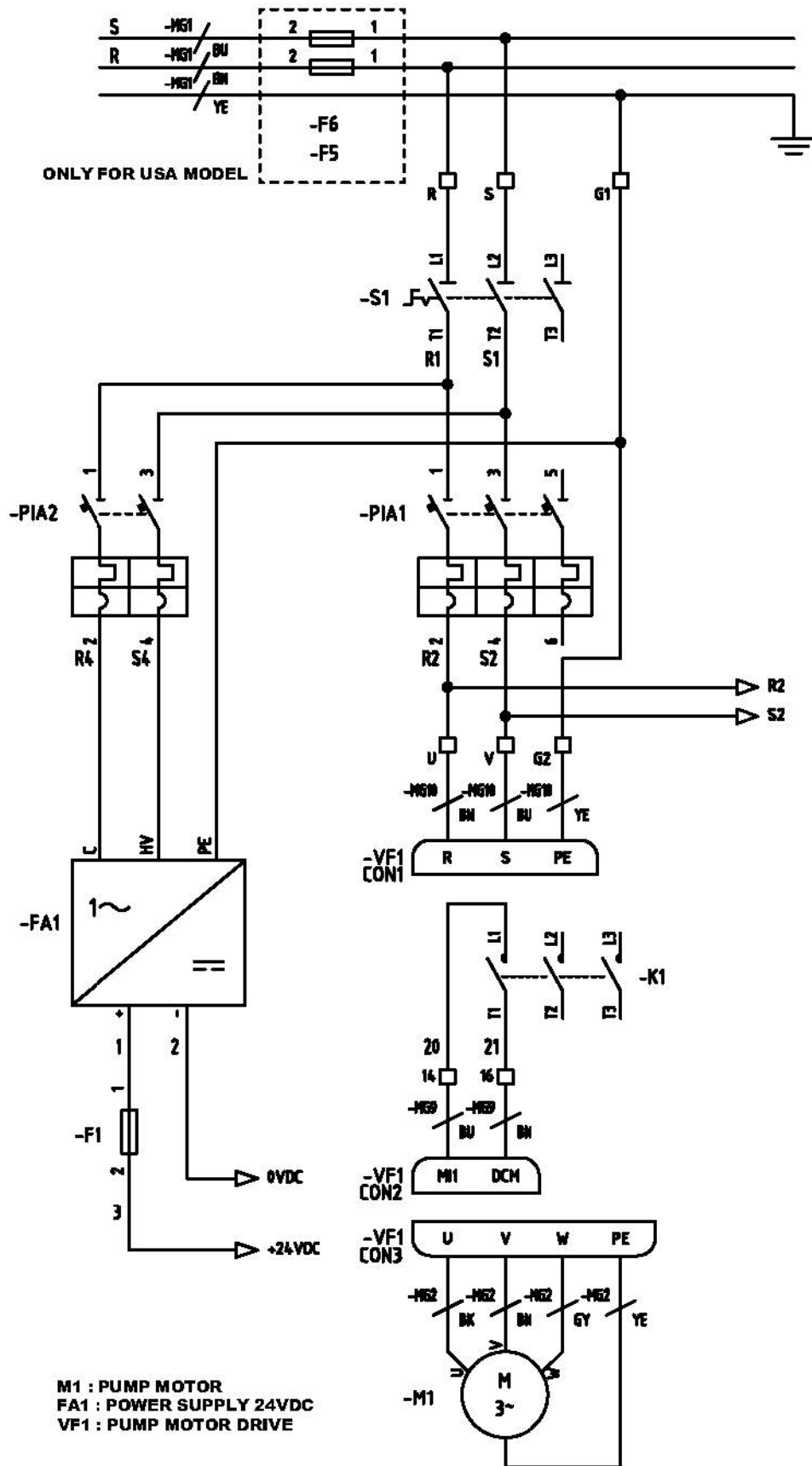


A8. Hydraulic group

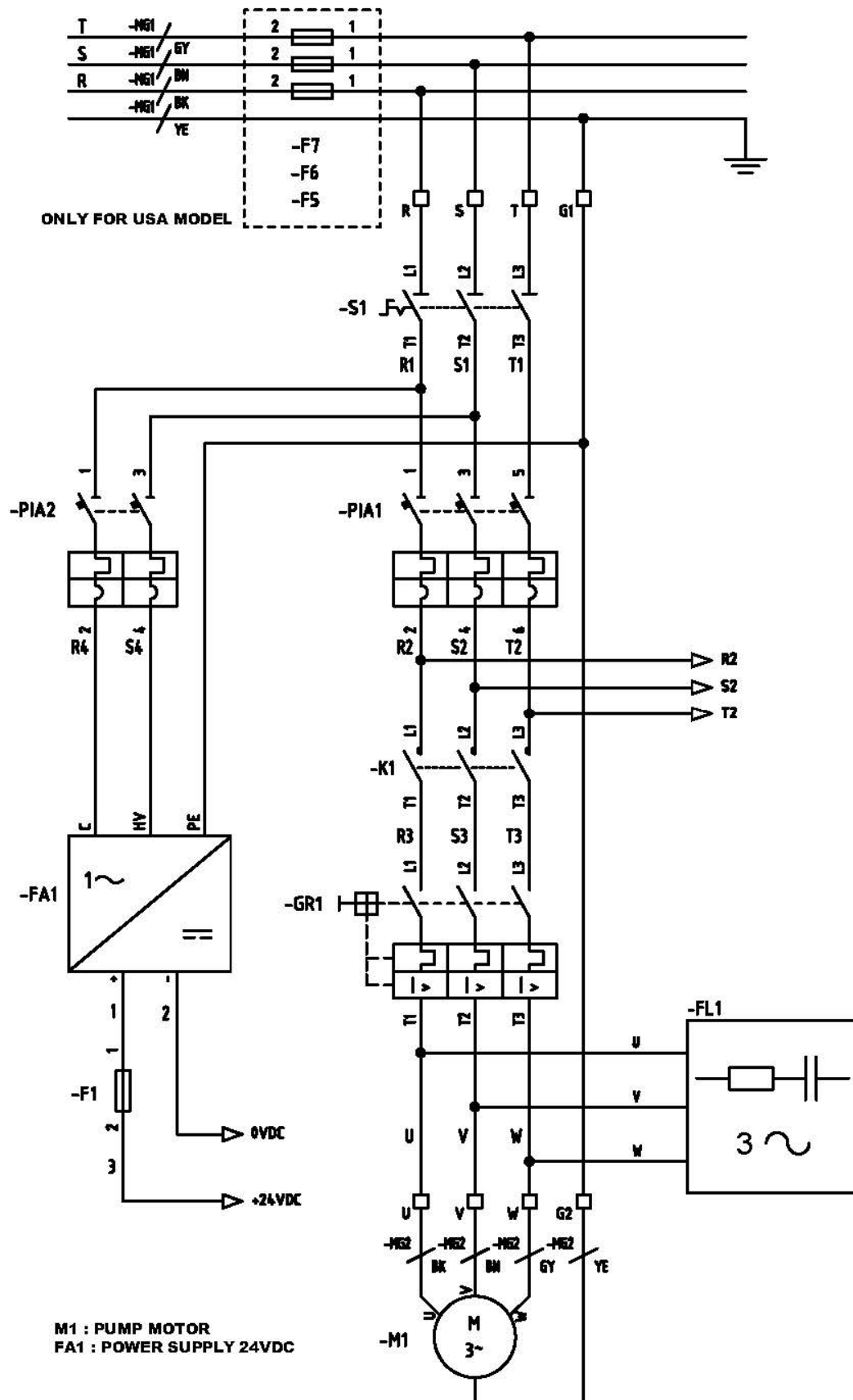


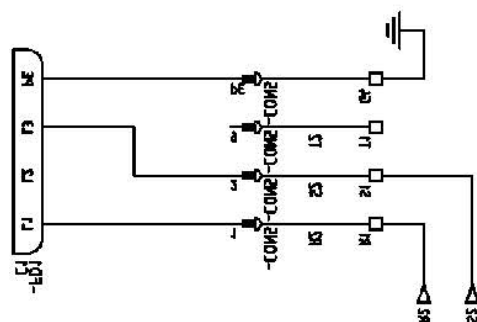
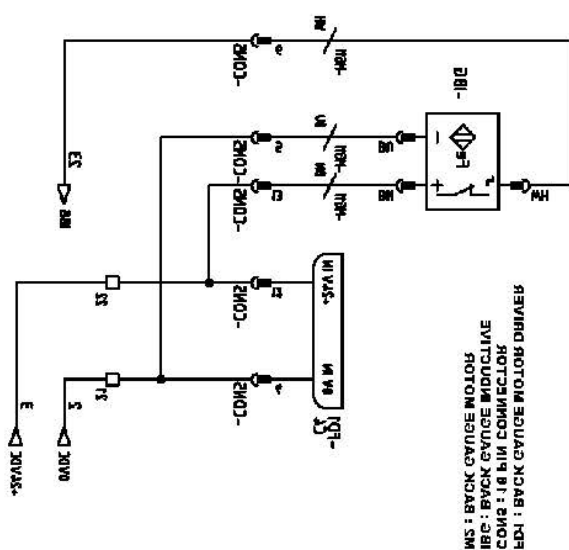
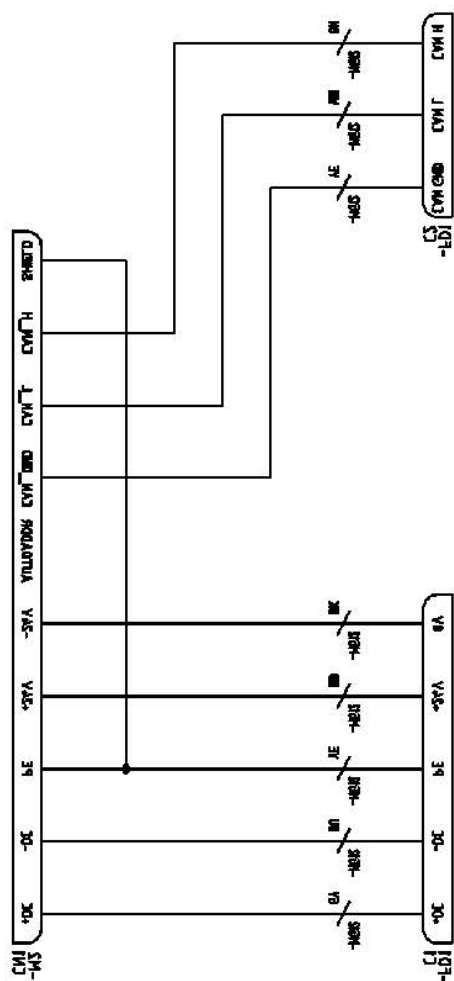


A9. Electric map · THREEPHASE MACHINE

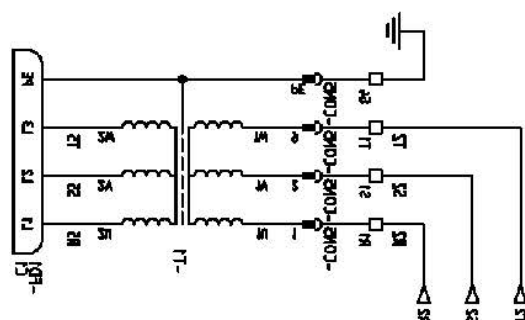


A10. Electric map · SINGLEPHASE MACHINE





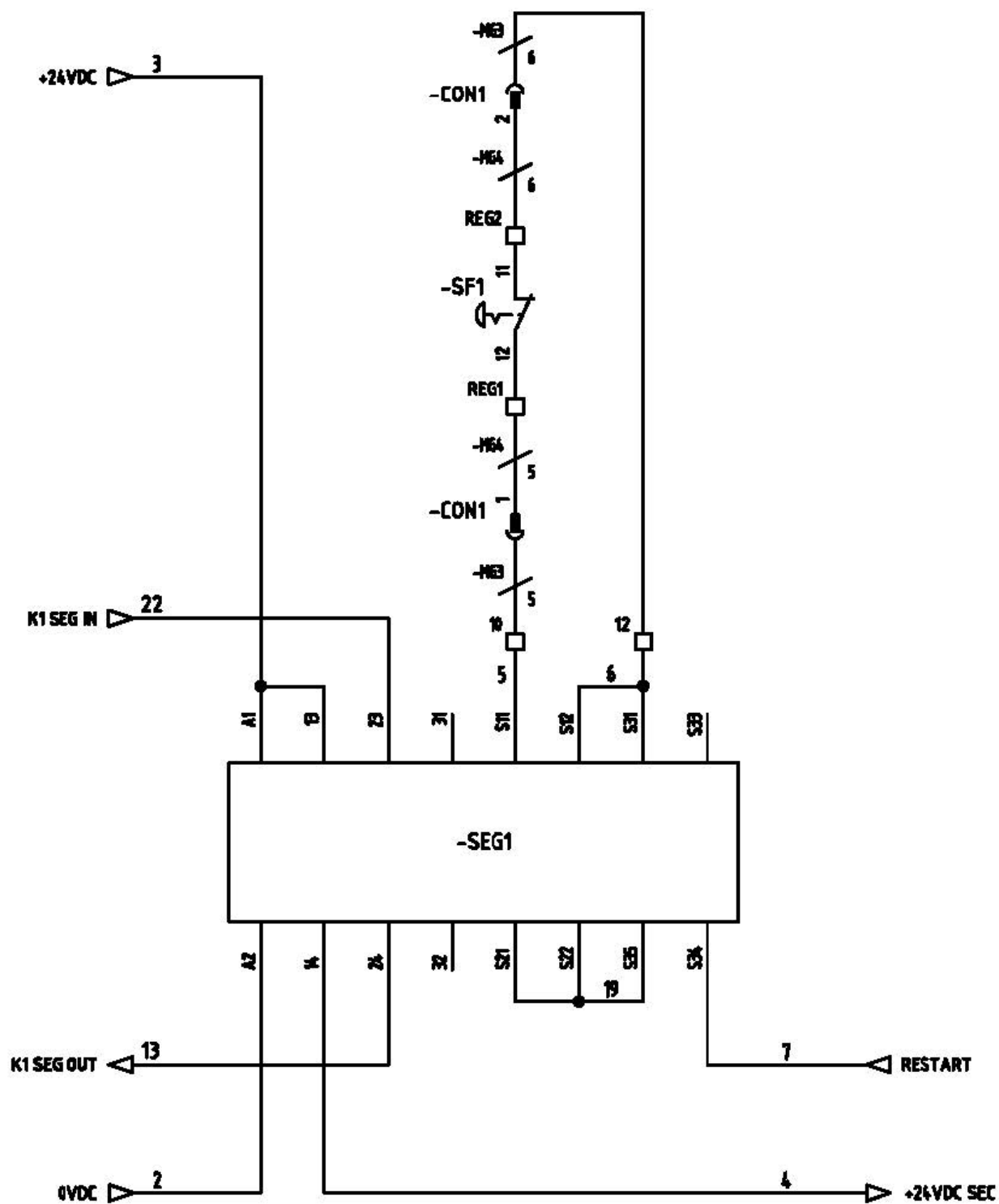
РЕВЕРС РОТОМ ВРАЩАЯ: ПО
РОТЦИННИ И Р: СНОС



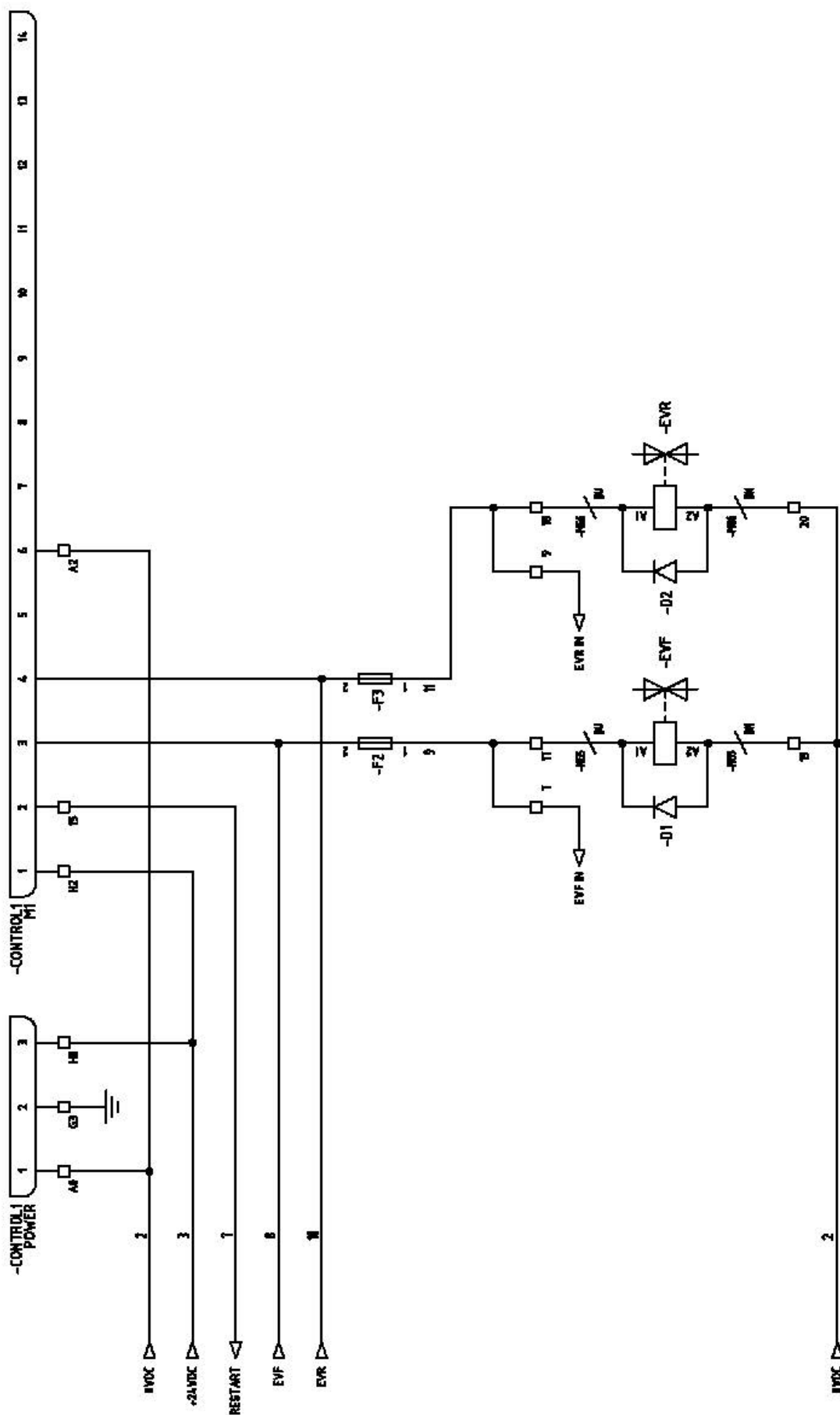
REVIEW ROOM QUALITY: HIGH
ROTTEN TOMATOES: 92%

SINGLE PHASE MODEL

3 PHASE MODEL

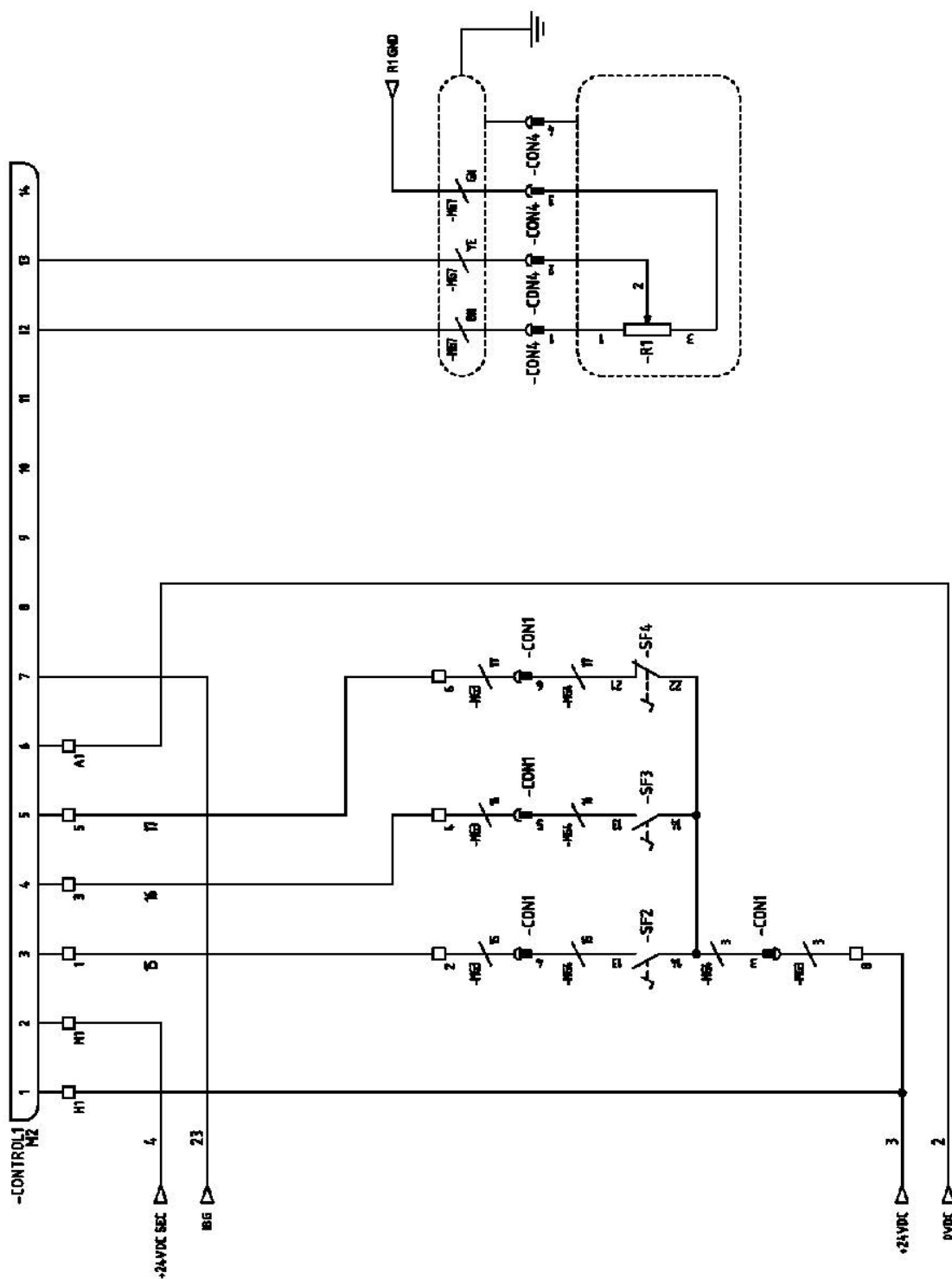


SF1 : PEDAL EMERGENCY STOP

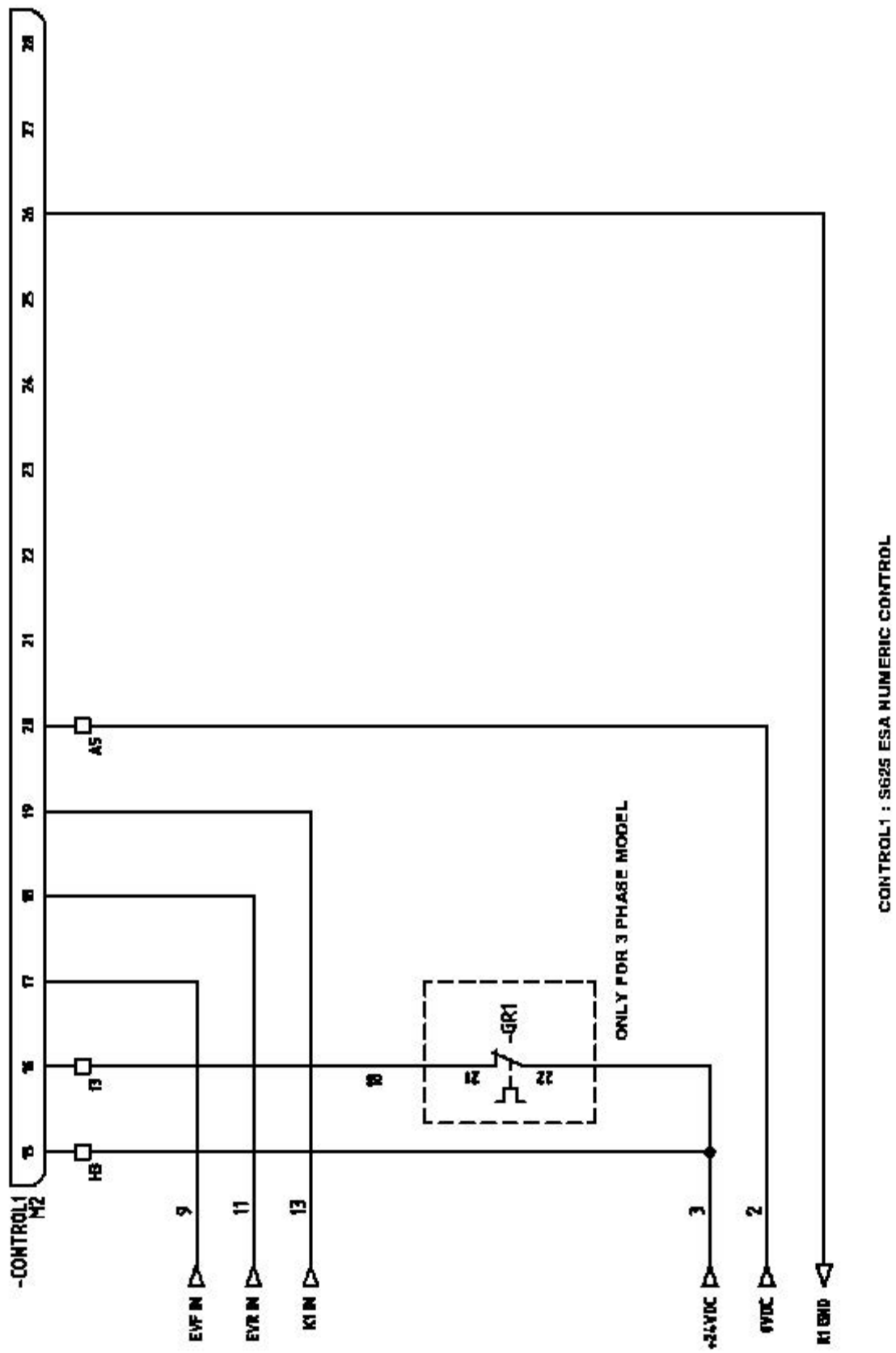


CONTROL1 : SG25 ESA NUMERIC CONTROL
 EVF : FORWARD ELECTROVALVE
 EVR : REVERSE ELECTROVALVE

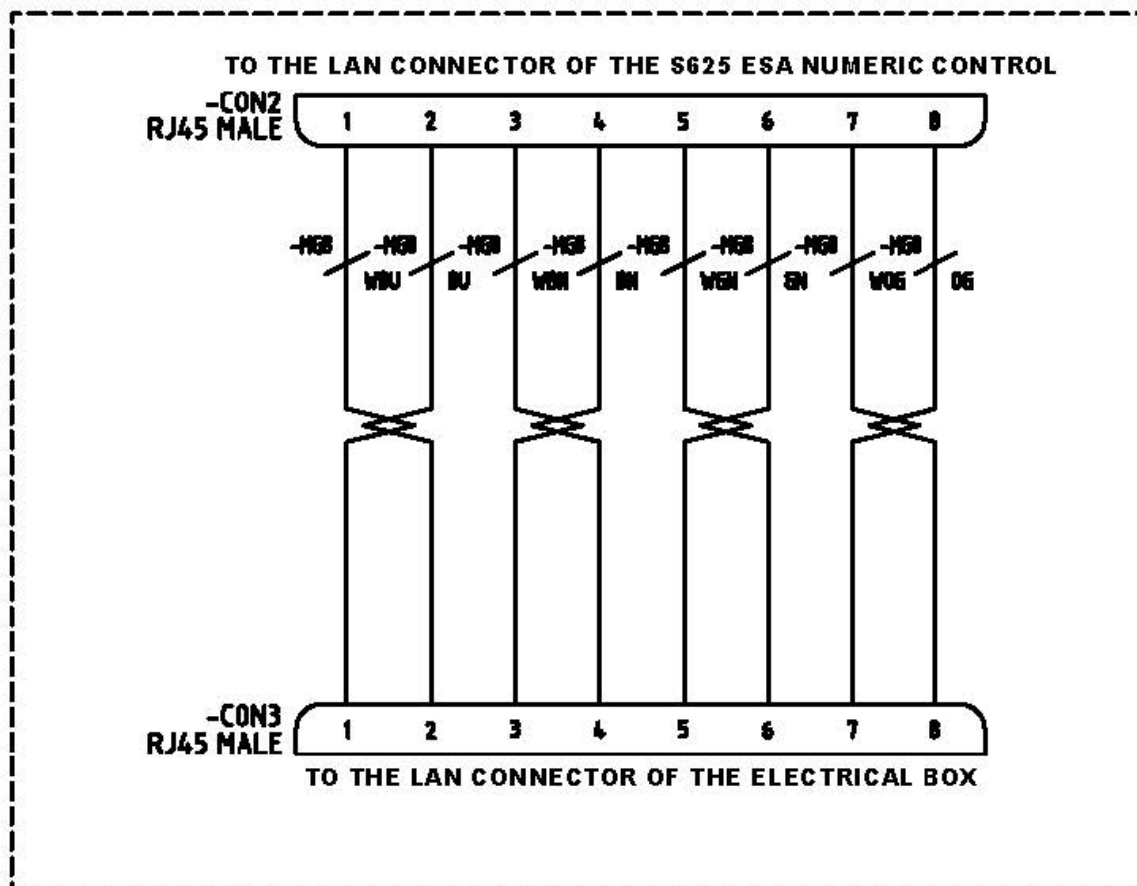




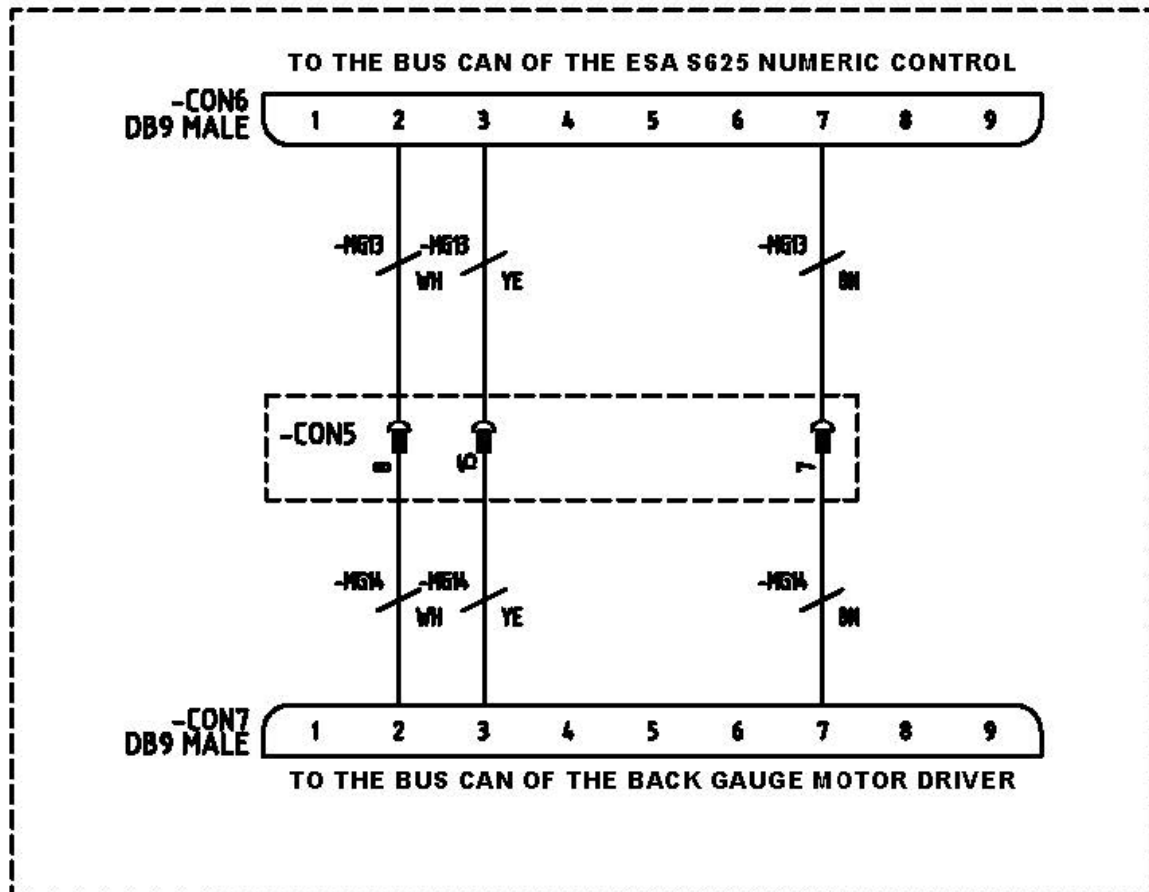
CONTROL 1 : S825 ESA NUMERIC CONTROL
SF2 : FORWARD PEDAL
SF3 : REVERSE PEDAL
SF4 : DEAD MAN PEDAL
R1 : SK LINEAR POTENTIOMETER



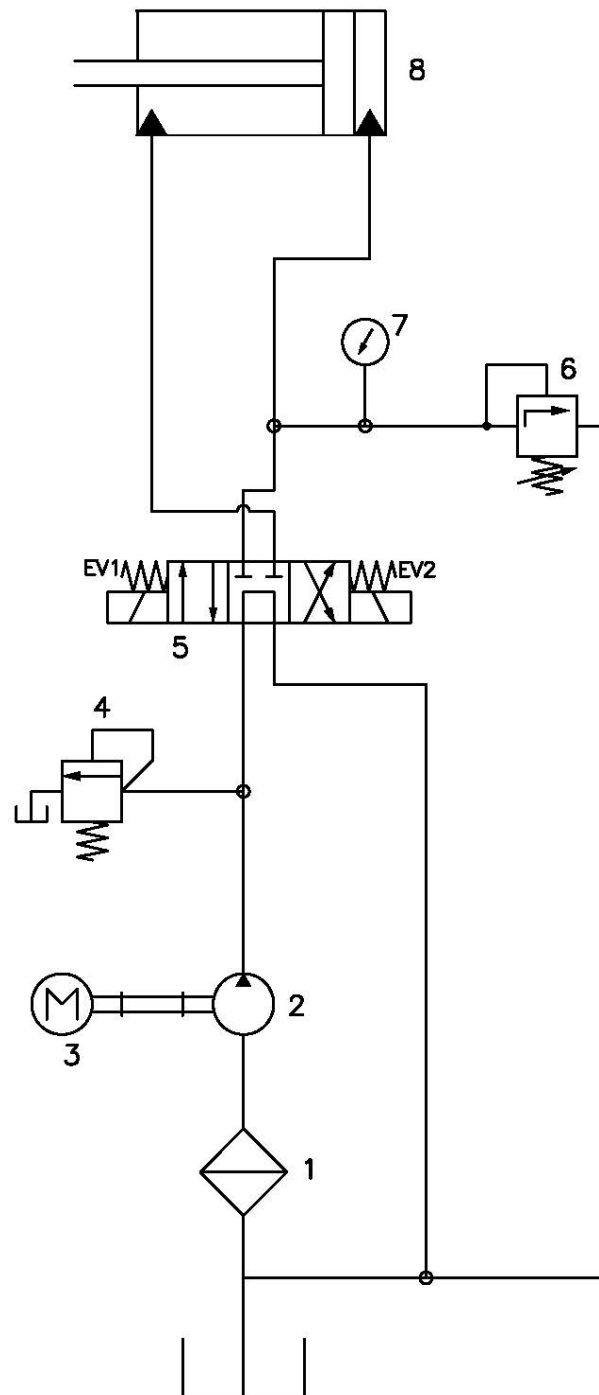
ETHERNET EXTENSION CABLE



CAN BUS CABLE



A11. Hydraulic map



- 1. Filter
- 2. Hydraulic pump
- 3. Electric engine
- 4. Pressure limiter
- 5. Main solenoid valve
- 6. Adjustable pressure limiter

Technical features - Tooling

Folding die at 161 mm. V16, 22, 35, 50 mm.

Ring forming die

REF: 140-16-01-00003

Twisted bars forming die

REF: 140-16-01-00013

Promecampunch holder

REF: 140-16-01-00023

Bar clamps forming die

REF: 140-16-01-00028

Folding die at 161 mm V 16, 22, 35, 50 mm

Description

Folding or bending die up to 161mm with 4 openings (16, 22, 35, 50mm) and a punch of 88°. This multi-V die allows 1mm up to 8mm sheet to be folded. The 70mm outer die diameter punch allows to make completely closed shapes to a minimum of 75mm inner wing.



V 16: Chapa de 1 a 3mm · **M.460.R/16**

V 22: Chapa de 2 a 4mm · **M.460.R/22**

V 35: Chapa de 3 a 6mm · **M.460.R/35**

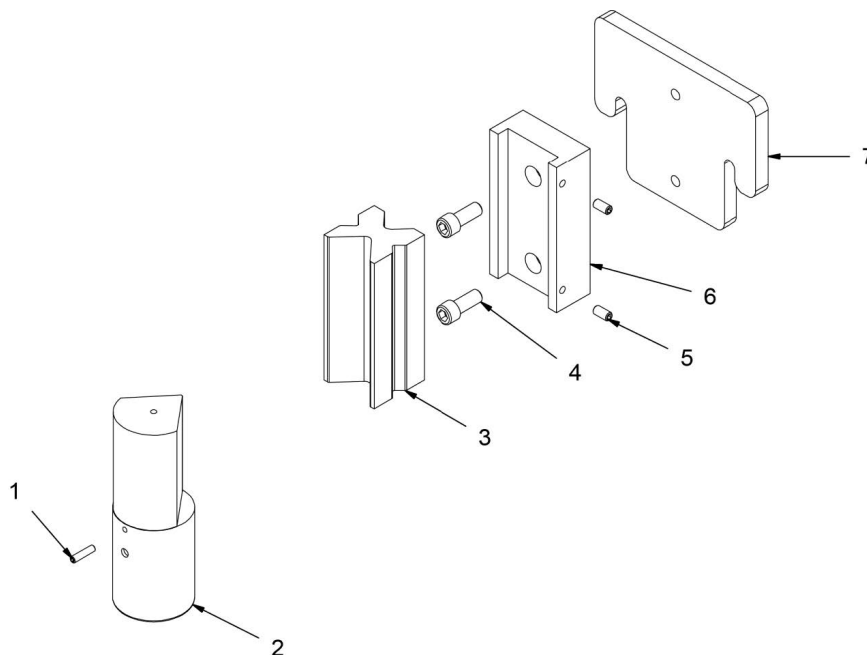
V 50: Chapa de 4 a 8mm · **M.460.R/50**

Max. Folding length: 161mm

Max. Folding thickness: 8mm

**For other measures, request the manufacturer.*

Part list

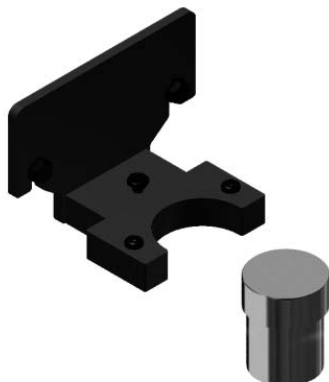


| Nº | REF | Description | Quant. |
|----|-----------------|--------------------------------------|--------|
| 1 | 020-D913-M6X25 | ESPARRAGO ALLEN DIN 913 M6X25 | 1 |
| 2 | 125-16-01-00016 | PUNZON MATRIZ DE PLEGAR SERIE PP-200 | 1 |
| 3 | 125-16-01-00006 | MATRIZ DE PLEGADO 20.09X150 | 1 |
| 4 | 020-D912-M12X30 | TORNILLO ALLEN DIN 912 M12x30 | 2 |
| 5 | 020-D913-M8X16 | ESPARRAGO ALLEN DIN 913 M8X16 | 2 |
| 6 | 125-16-01-00005 | GUIA REGLA PLEGADO | 1 |
| 7 | 125-16-01-00004 | BASE MATRIZ PLEGAR SERIE PP-200 | 1 |

Ring forming die · REF: 140-16-01-00003

Description

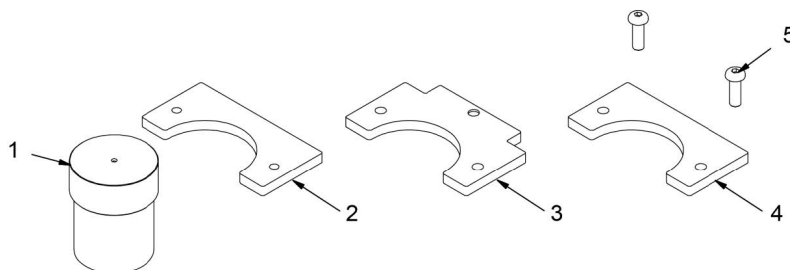
Die to form rings or English banister railing, used as ornamental piece in forging railings, gates, fences... for bars bonding. For other sizes and applications consult the manufacturer.



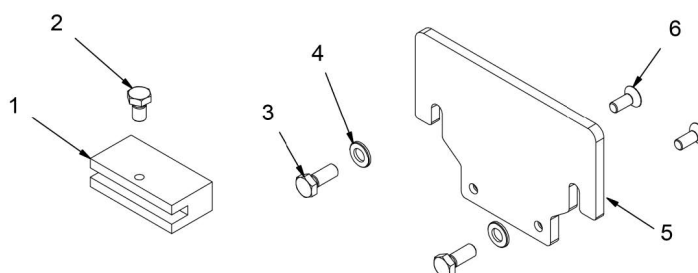
| Max. width | Thickness | Outer sizes | Weight |
|------------|-----------|-------------|--------|
| 50mm | 6mm | 90mm | 9,3 Kg |

**For other measures, request the manufacturer.*

Part list



| Nº | REF | Description | Quant. |
|----|------------------|---|--------|
| 1 | 125-16-01-00166 | EJE CONFORMAR ANILLAS D90 | 1 |
| 2 | 125-16-01-00012 | PLETINA ANILLA D90 INFERIOR | 1 |
| 3 | 125-16-01-00013 | PLETINA ANILLA D90 INTERMEDIO | 1 |
| 4 | 125-16-01-00014 | PLETINA ANILLA D90 SUPERIOR | 1 |
| 5 | 020-I7380-M10X30 | TORNILLO ALLEN ABOMBADO ISO 7380 M10x30 | 2 |

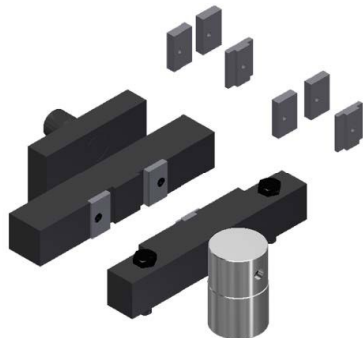


| Nº | REF | Description | Quant. |
|----|-------------------|--|--------|
| 1 | 125-16-01-00017 | SOPORTE MATRIZ CONFORMAR ANILLAS PP200 | 1 |
| 2 | 020-DIN933-M10X20 | TORNILLO HEXAGONAL DIN 933 M10X20 | 1 |
| 3 | 020-DIN933-M12X30 | TORNILLO HEXAGONAL DIN 933 M12X30 | 2 |
| 4 | 020-DIN125B-M12 | ARANDELA DIN 125 B M12 | 2 |
| 5 | 125-16-01-00015 | BASE MATRIZ CONFORMAR ANILLAS PP200 | 1 |
| 6 | 020-D7991-M10X25 | TORNILLO ALLEN AVELLANADO DIN7991 M10X25 | 2 |

Twisted bars forming die · REF: 140-16-01-00013

Description

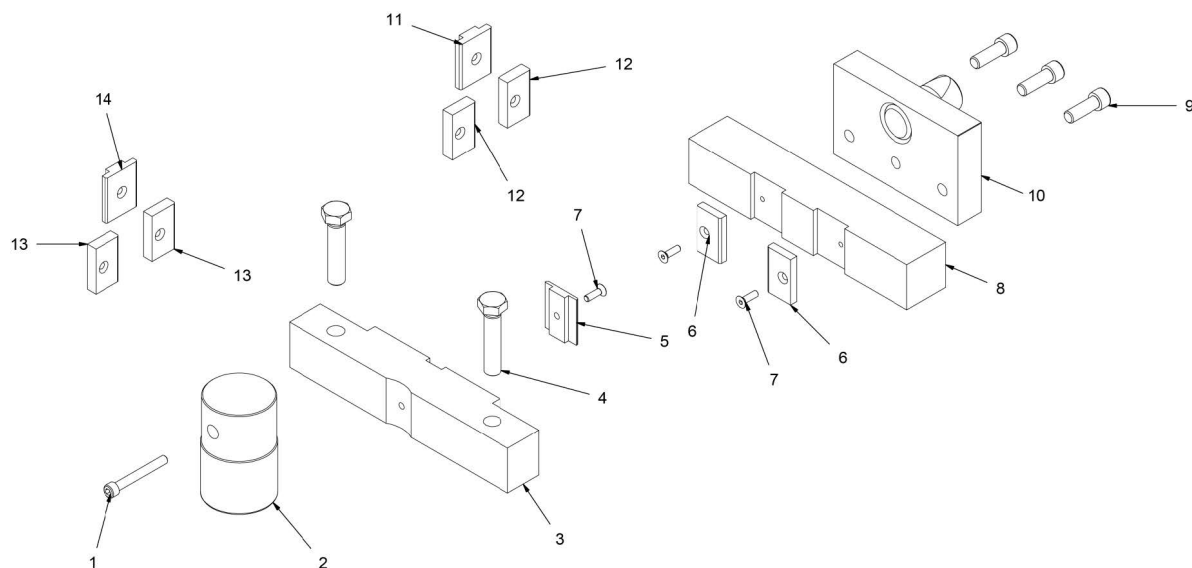
Die to bend metal plate, flat bar or square bar to obtain a braid twisted effect. It's very used to make fences and grills
For flat bars from 6, 12 and 14mm. (For different sizes, please ask the manufacturer).



| | |
|---------------|--------------------|
| Max. capacity | 14mm square bar |
| Min. capacity | 2x40mm metal sheet |
| Weight | 18Kg |

**Para medidas distintas consultar con el fabricante*

Parts list

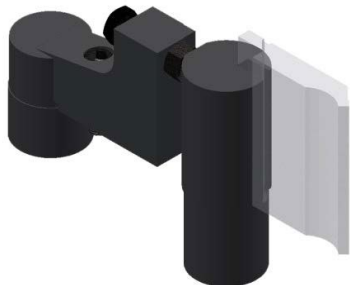


| Nº | REF | Description | Quant. |
|----|------------------|------------------------------------|--------|
| 1 | 020-D912-M8X65 | TORNILLO ALLEN DIN 912 M8X65 | 1 |
| 2 | 125-16-01-00074 | CENTRAJE FIJO | 1 |
| 3 | 125-16-01-00073 | SOPORTE FIJO 50X50 | 1 |
| 4 | 020-D933-M16X70 | TORNILLO HEXAGONAL DIN 933 M16X70 | 2 |
| 5 | 125-16-01-00072 | POSTIZO CENTRAL PARA PLETINA 6 | 1 |
| 6 | 125-16-01-00071 | POSTIZOS LATERALES PARA PLETINA 6 | 2 |
| 7 | 020-D7991-M6X20 | TORNILLO ALLEN DIN 7991 M6X20 | 3 |
| 8 | 125-16-01-00070 | SOPORTE MOVIL 50X50 | 1 |
| 9 | 020-D912-M12X35 | TORNILLO ALLEN DIN 912 M12X35 | 3 |
| 10 | 131-16-01-00023 | ANCLAJE POSTERIOR | 1 |
| 11 | 125-16-01-00125 | POSTIZO CENTRAL PARA PLETINA 14 | 1 |
| 12 | 125-16-01-00126 | POSTIZOS LATERALES PARA PLETINA 14 | 2 |
| 13 | 125-16-01-00124 | POSTIZOS LATERALES PARA PLETINA 12 | 2 |
| 14 | 020-I7380-M10X30 | POSTIZO CENTRAL PARA PLETINA 12 | 1 |

Promecam punch holder · REF: 140-16-01-00023

Description

Punch holder for all kind of punches for Promecam bending or folding press.



Max. Folding lenght

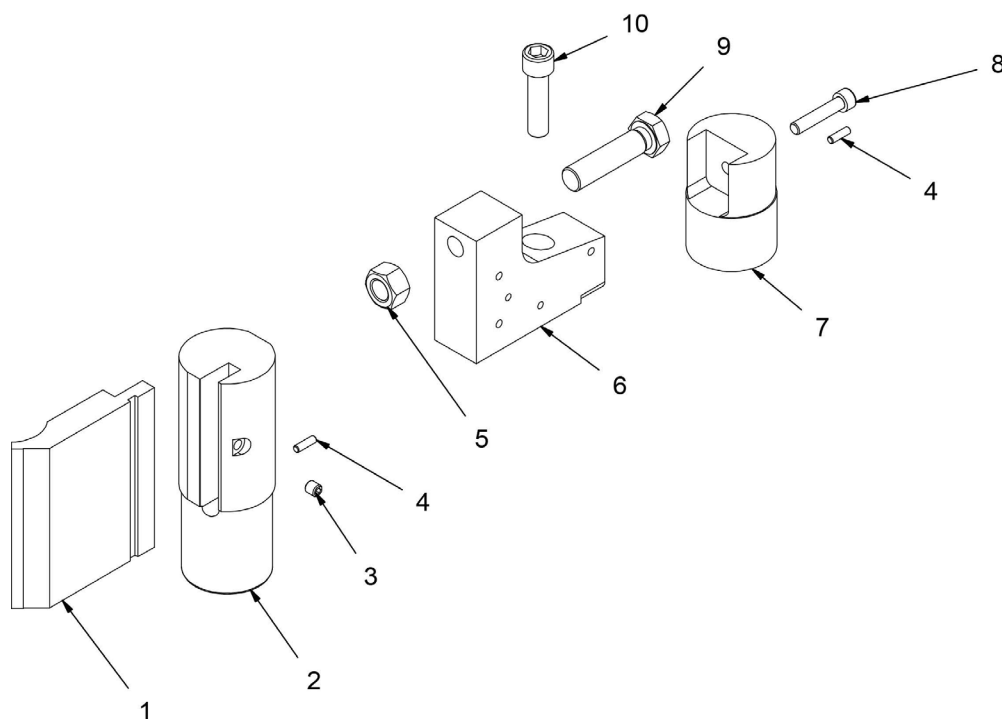
150 mm

Weight

14Kg

Compatible with any Promecam punch

Parts list

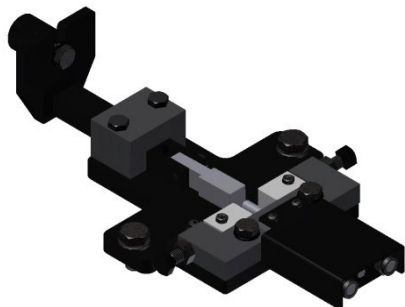


| Nº | REF | Description | Quant. |
|----|-----------------|--------------------------------|--------|
| 1 | PUNZON 120 | PUNZON PROMECAM 10_00 88 835 | 1 |
| 2 | 125-16-01-00021 | PORTAPUNZONES PROMECAM | 1 |
| 3 | 020-D913-M10X10 | ESPARRAGO ALLEN DIN 913 M10X10 | 1 |
| 4 | 020-D913-M6X20 | ESPARRAGO ALLEN DIN 913 M6X20 | 2 |
| 5 | 020-D934-M20 | TUERCA DIN 934 M20 | 1 |
| 6 | 125-16-01-00131 | SOPORTE POSTERIOR | 2 |
| 7 | 125-16-01-00130 | GUIA D70 SOPORTE POSTERIOR | 3 |
| 8 | 020-D912-M10X50 | TORNILLO ALLEN DIN 912 M10X50 | 1 |
| 9 | 125-16-01-00132 | TORNILLO REGULADOR REFRENTADO | 3 |
| 10 | 020-D912-M16X60 | TORNILLO ALLEN DIN 912 M16X60 | 1 |

Bar clamps forming die · REF: 140-16-01-00028

Description

Matriz para fabricar las grapas utilizadas para unir diferentes barrotes de forja sin necesidad de soldadura.



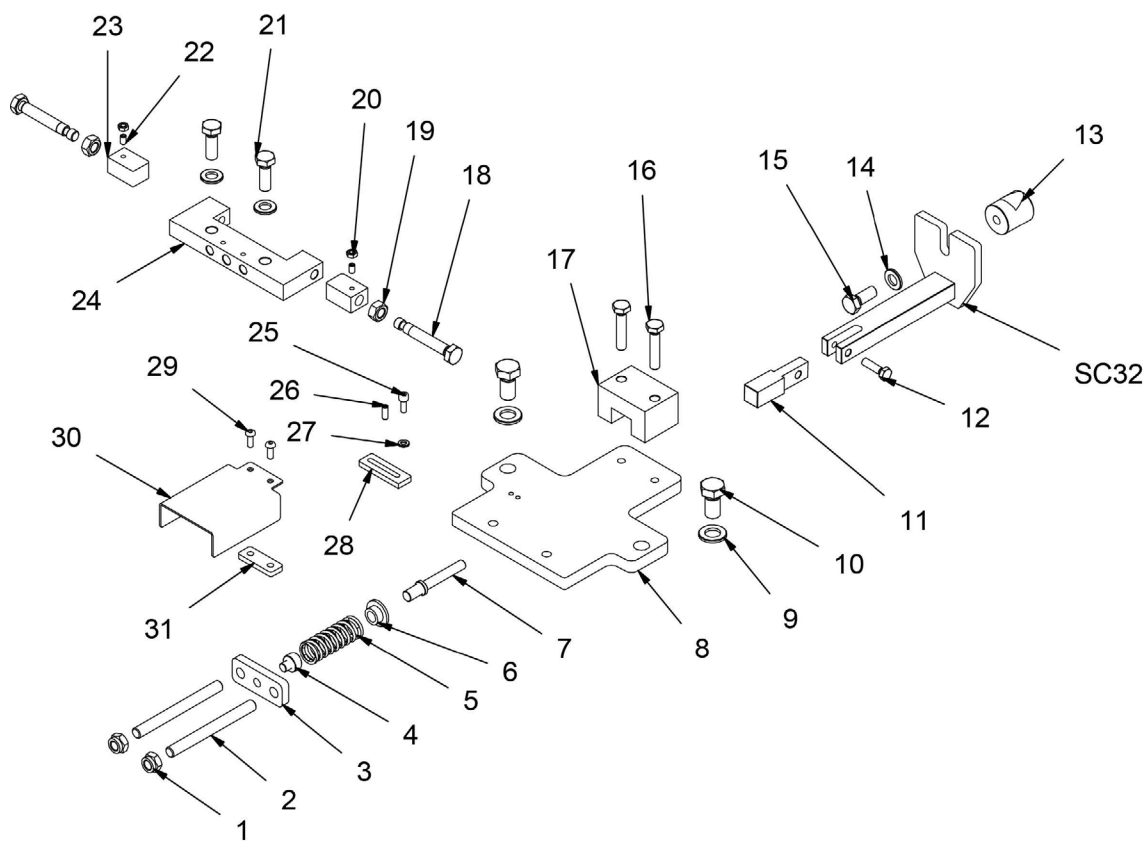
Max. capacity

25x5 mm

Weight

9 Kg

Parts list



| Nº | REF | Description | Quant. |
|------|-----------------|---|--------|
| 1 | 020-D985-M12 | TUERCA AUTOBLOCANTE DIN 985 M12 | 2 |
| 2 | 125-16-01-00144 | VARILLA ROSCADA MUELLE | 2 |
| 3 | 125-16-01-00143 | SOPORTE TRASERO MUELLE | 1 |
| 4 | 125-16-01-00146 | CENTRAJE MUELLE | 1 |
| 5 | 125-16-01-00145 | MUELLE COMPRESION DI20XDE26 PASO 9MM 9 ESPIRAS FINALES PLANOS | 1 |
| 6 | 125-16-01-00136 | ARANDELA MUELLE | 1 |
| 7 | 125-16-01-00135 | EJE EXTRACTOR | 1 |
| 8 | 125-16-01-00132 | PLACA BASE UTIL | 1 |
| 9 | 020-D125B-M16 | ARANDELA BISELADA DIN125B PARA M16 | 2 |
| 10 | 020-D933-M16X30 | TORNILLO HEXAGONAL DIN 933 M16X30 | 2 |
| 11 | 125-16-01-00137 | CUADRADO EMPUJE 20X20 | 1 |
| 12 | 020-D933-M8X30 | TORNILLO HEXAGONAL DIN 933 M8X30 | 1 |
| 13 | 125-16-01-00141 | EJE CENTRADOR | 1 |
| 14 | 020-D125B-M12 | ARANDELA DIN 125 B M12 | 3 |
| 15 | 020-D933-M12X30 | TORNILLO HEXAGONAL DIN 933 M12X30 | 1 |
| 16 | 020-D933-M10X50 | TORNILLO HEXAGONAL DIN 933 M10X50 | 2 |
| 17 | 125-16-01-00138 | CUADRADO GUIA ENTRADA | 1 |
| 18 | 125-16-01-00147 | TORNILLO REGULACION | 2 |
| 19 | 020-D934-M12 | TUERCA DIN 934 M12 | 2 |
| 20 | 020-D934-M6 | TUERCA DIN 934 M6 | 2 |
| 21 | 020-D933-M12X35 | TORNILLO HEXAGONAL DIN 933 M12X35 | 2 |
| 22 | 020-D913-M6X10 | ESPARRAGO DIN 913 M6X10 | 2 |
| 23 | 125-16-01-00134 | GRAPA MOVIL | 2 |
| 24 | 125-16-01-00133 | CUERPO UTIL GRAPAS | 1 |
| 25 | 020-D912-M6X16 | TORNILLO ALLEN DIN 912 M6X16 | 1 |
| 26 | 020-D913-M6X16 | ESPARRAGO ALLEN DIN 913 M6X16 | 1 |
| 27 | 020-D125B-M6 | ARANDELA BISELADA DIN125B PARA M6 | 1 |
| 28 | 125-16-01-00142 | TOPE LATERAL UTIL | 1 |
| 29 | 020-I7380-M6X16 | TORNILLO ALLEN ISO 7380 M6X16 8.8 PAVONADO | 2 |
| 30 | 125-16-01-00148 | TAPA TRASERA | 1 |
| 31 | 125-16-01-00149 | SEPADOR TAPA TRASERA | 1 |
| SC32 | 131-16-01-00043 | CONJUNTO ARRASTRE UTIL GRAPAS | 1 |

OUR RANGE OF MACHINERY



IRON WORKERS



NON-MANDREL PIPE BENDER



SECTION BENDING MACHINES



CNC PIPE BENDERS



HORIZONTAL PRESS BRAKES



TWISTING/SCROLL BENDING
MACHINES



HYDRAULIC PRESS BRAKES



HYDRAULIC SHEAR MACHINES



GAS FORGES



IRON EMBOSSING MACHINES



END WROUGHT IRON MACHINES



BROACHING MACHINES



POWER HAMMERS



BLACKSMITH FORGING PRESS