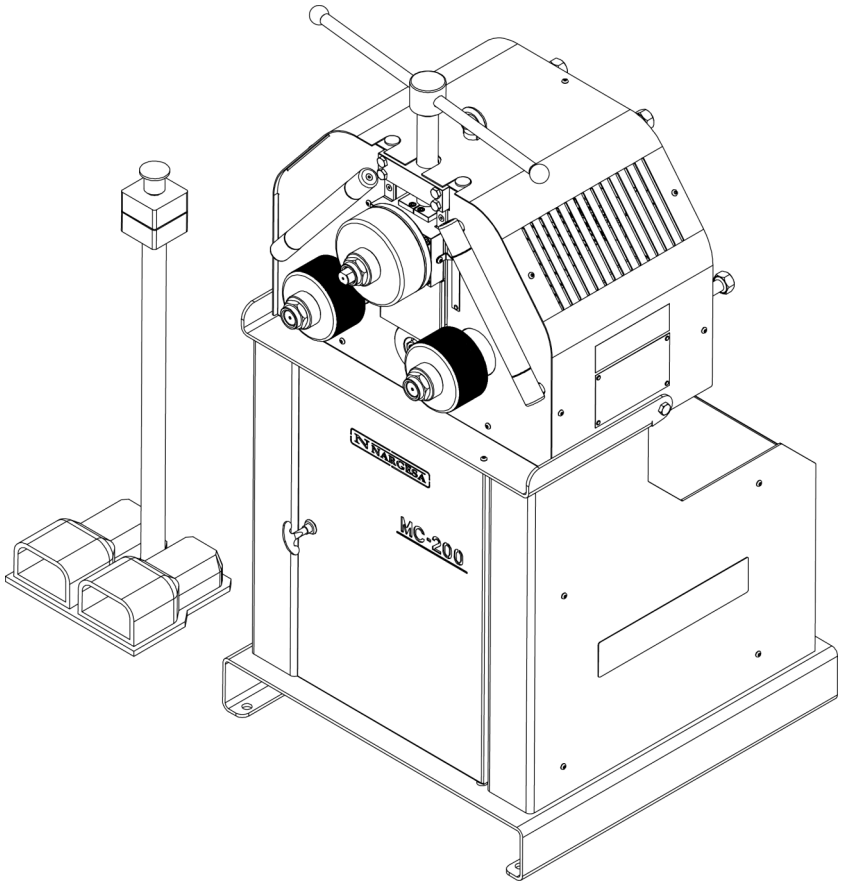
SECTION BENDING MACHINE

MC200

NS: 2022-518



INSTRUCTIONS BOOK

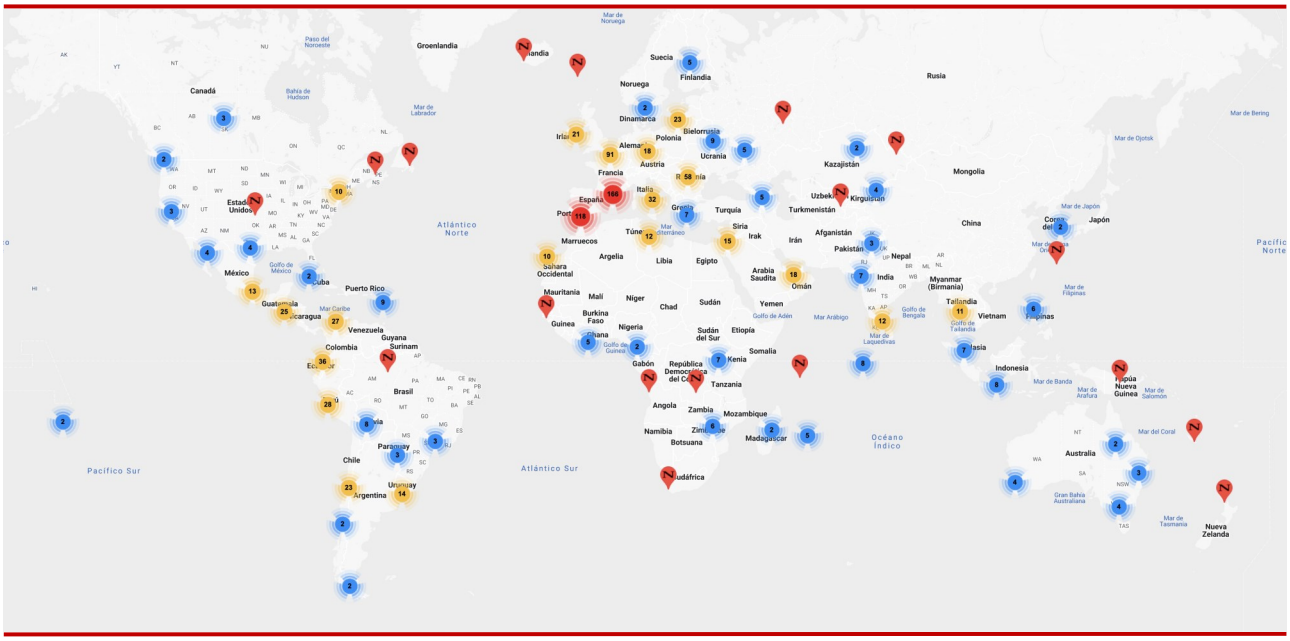
PRADA NARGESA, S.L

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Descriptive text

Photography with the machine

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TECHNICAL ANNEX

1. MACHINE DETAILS

1.1. Machine identification details

Trademark: NARGESA

Type: Hydraulic bending machine

Model: MC 200

1.2. Dimensions

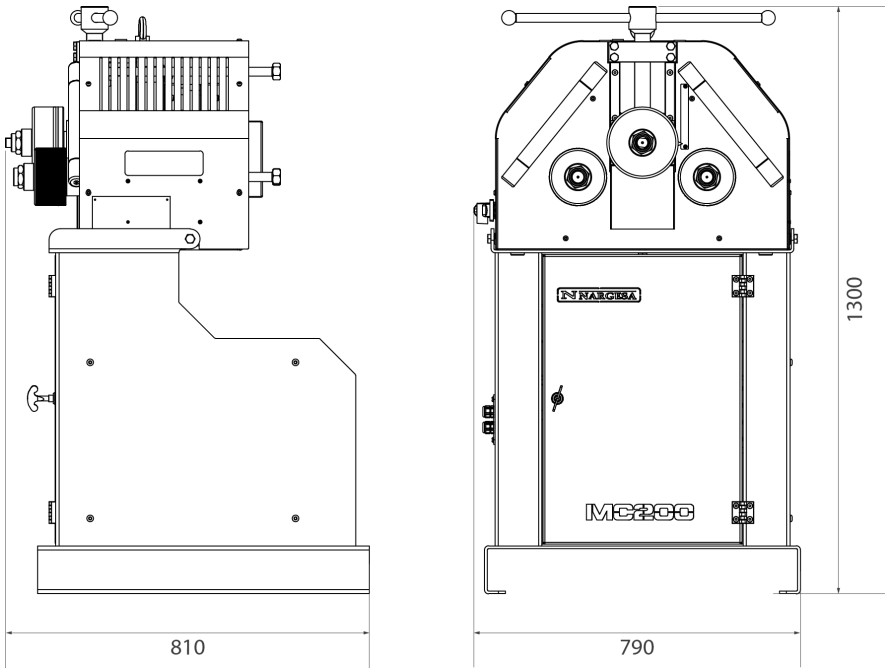


Figure 1. External dimensions of the MC200 bending machine

1.3. Description of the machine

The MC200 bending machine is a machine specifically designed for bending profiles, the majority of which are metal, with different thicknesses and configurations, such as solid profiles, pipes, T-profiles, angles...

The bending machine offers a set of standard tools, rollers, to allow the bending of profiles in a range of shapes and sizes.

Apart from the standard rollers, the manufacturer also offers different types of additional rollers to produce other types of bending, according to the configuration of the material to be handled, as well as specific rollers for work with stainless steel or aluminium, manufactured with **Sustarin,* that prevents scratches and damage on the surfaces.

** Sustarín: Polyoxymethylene, high resistance and high rigid crystalline thermoplastic, low friction and excellent dimensional stability*

PRADA NARGESA S. L is not liable for any damage that might occur due to misuse or failure by users to comply with the safety standards.

1.4. Machine part identification

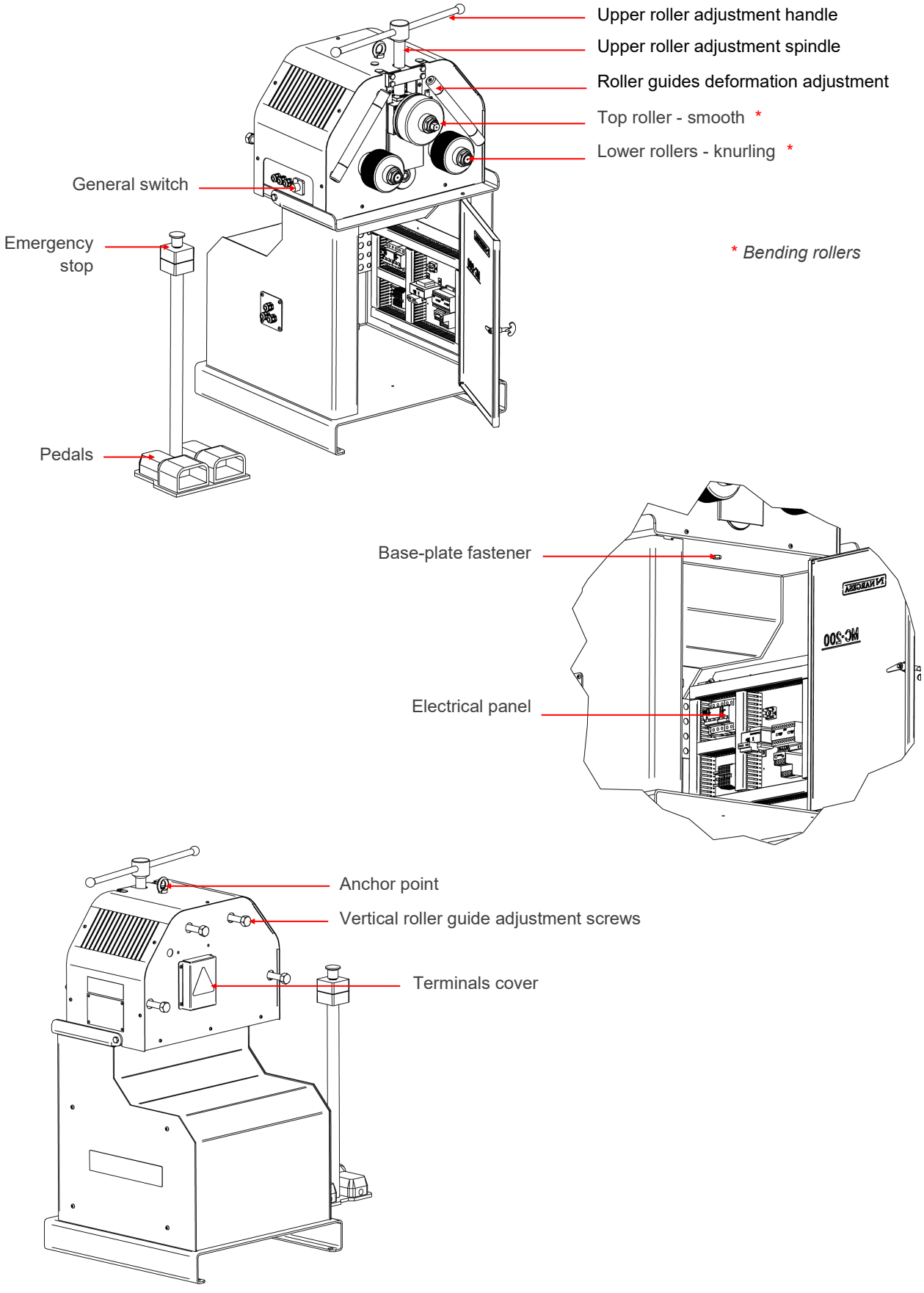




Figure 2. Nameplate

1.5. General characteristics

Motor power	1.1Kw/1.5 CV a 900 r.p.m.
Intensity	5.2 / 2.6 A
Tension	230/400V Three-Phase 50/60 Hz 230V Single-Phase 50/60 Hz
Type of pull	Two rollers
Roller speed	8 r.p.m.
Rollers diameter	127 mm
Axis diameter	40 mm
Center distance of lower axis	286 mm
Maximum vending capacity in round tube	2’1/2’ inches or 63.5 mm
Axis useful length	74 mm
Structure material	Plate
Weight	320 Kg
Dimensions	790x810x1300 mm

1.6. Description of the guards

The gear motor and all the gears that allow the operation of the machine are located under the main upper cover that protects the mechanisms.

Although the major mobile elements are protected by the upper cover, it is necessary to take special precautions during bending operations in order to avoid entrapment between the rollers and the piece being bent.

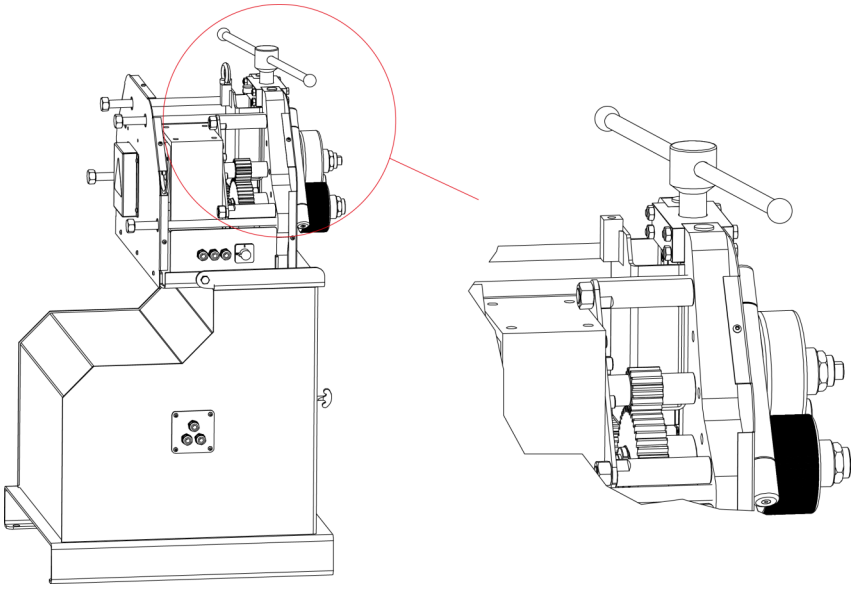


Figure 3. Mechanism protection guards

2. TRANSPORT AND STORAGE

2.1. Transport

There are two ways of carrying out the transportation of the machine:

- From the bottom, through the base of the machine, using a pallet jack or forklift as shown in the illustration. Never raise the machine more than 200 mm from the surface in order to prevent the risk of tipping
- From the top of the machine, from the anchor point designed for this purpose defined in figure 4, using a crane or forklift .

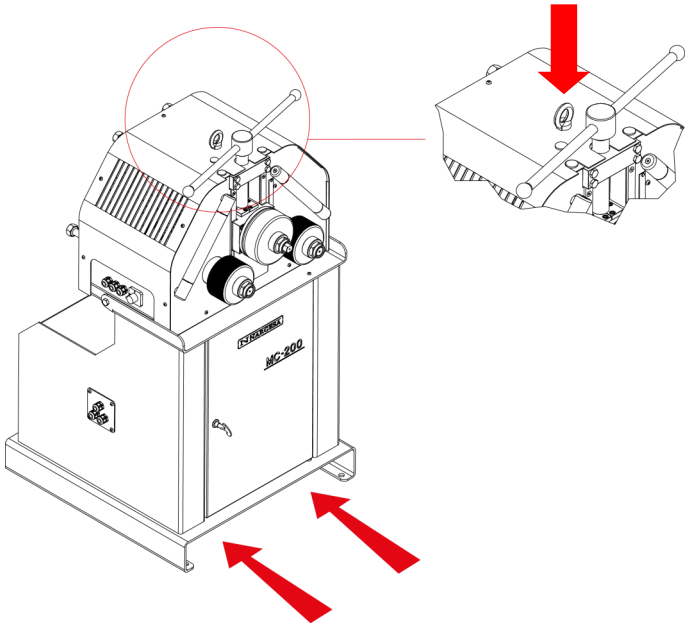


Figure 4. Transportation of the machine

CAUTION:

Before moving the machine, it is essential to check that the screw located in the interior of the cabinet, at it's top, is properly secured. This ensures the work of the machine in vertical position without it moving. If the machine is moved while it is in upright position without the screw being correctly secured, there is danger that the machine could tip over, damaging its structure or harming users handling it .

2.2. Storage Conditions

The bending machine shouldn't be stored in a place that does not meet the following requirements:

- Humidity between 30% and 95%
- Temperature of -25 °C to 55 °C or 75 °C for periods not exceeding 24hrs (remember that these temperatures are in storage conditions)
- Machines or heavy objects should not be stacked on top
- Do not take apart for storage

3. MAINTENANCE

3.1. General maintenance

- It is recommended to keep greased the upper roller adjustment spindle, to ensure proper operation, prevent stiffness, and to extend its useful life.
- It is advisable to keep the friction rule lubricated along which the upper roller support slides. It is also necessary to ensure a minimum lubrication of the inner walls along which the upper roller support slides.

CAUTION:

The "Emergency Stop" push button must be pressed and the machine brought to a stop in order to lubricate the machine".

In order to lubricate the moving parts of the machine that require lubrication, it's recommended to follow the next instructions:

- Clean the surface to be lubricated with a cotton cloth or a soft rag that does not release any threads. To remove the accumulated grease and any possible residues that have become stuck to it.
- After cleaning, reapply grease onto the surface with the help of a rag or a spatula.
- Spread the grease evenly without creating excesses or clumps.
- Once the machine is lubricated, using the upper roller adjustment handle that controls the height of the upper roller, raise this until it reaches its highest point.
- When the upper roller comes to its highest point, reverse the direction of the adjustment handle, to lower the roller to its lowest point.
- Repeat the operation to ensure that the friction rule is lubricated.
- Lubricate the machine on a regular basis according to its use.

** It is recommended that you use lithium grease type: N.850 EP-2 for bearings.*

4. INSTALLATION AND START UP

4.1. Positioning the machine

Locate the machine properly in order to avoid moving it; otherwise, follow the guidelines described in the paragraph transport (no. 2). Must be placed on a flat, level surface to prevent it vibrating and moving during bending operations.

It is possible to fix the machine using bolts due to the fact that it already comes with a lower base with four holes as shown in figure 5.

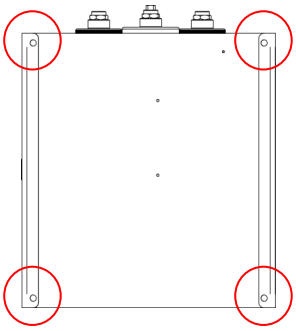


Figure 5. Anchor points of the machine

4.2. Dimensions and work area

The dimensions must be considered when the machine is being placed, the working area for the operator and the possible lengths of the parts to be worked.

The bending machine can be used by a single operator, who must be directly in the front of the machine to be able to handle the piece being bend with safety, and never on the side.

Prior to commencing the bending operation, with the machine shut down, the operator must adjust the bending rollers, adapting them to the material and the profile to be bent, as shown in paragraph *7, figure 12* .

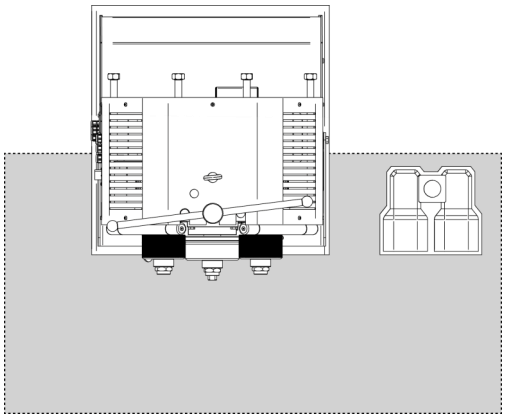


Figure 6. Operator's working area

4.3. External permissible conditions

- Room temperature between +5 °C and +40 ºC without exceeding an average temperature of +35 °C within 24 hrs.
- Humidity between 30% and 90% without water condensation .

4.4 Instructions for connecting to the power supply

IMPORTANT: This machine must be connected to an electrical outlet with earthing contact.

The MC200 bending machine comes equipped with a 230V/ 400V 1.1Kw three-phase motor prepared to be connected to a 400V power supply. It must be connected through the connector to a compatible source with the specified requirements.

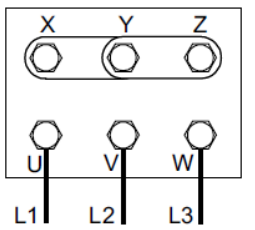
If you want to connect the machine to a 230V three-phase voltage, a series of changes must be made to the electrical panel. These are the following:

- Change of the main motor coil connections
- Change of the transformer connections
- Adjustment of the intensity range of the engine guard contactor

Change of the motor connections:

When the power supply voltage is 400V three-phase, we perform the connection in a Star shape (default setting in the machine). In the case of 230V three-phase, we perform the connection in a Triangle shape. As shown in the figure.

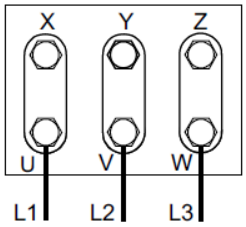
The modification of the connection must be made through the motor terminal box located in the rear of the machine, changing the configuration of the flats according to the power voltage.



Star figure

(Default)

For voltage 400V



Triangle figure

For voltage 230V

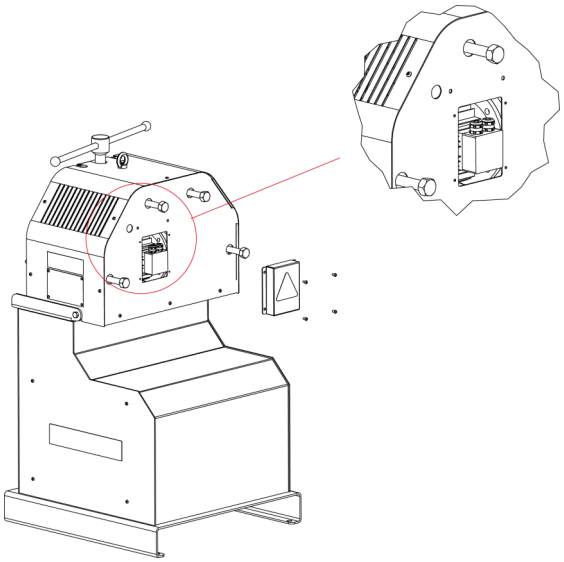


Figure 7. Change of engine connections

A check must be carried out to ensure that the machine is not connected to the power supply prior to making any modification to the connection or the electrical panel.

Changing the transformer connections:

Depending on the operation voltage required, the connections will also have to be changed in the transformer. This is located secured to the electrical panel inside the machine cabinet as shown in section A3. *Electrical cabinet*

This is like the one shown in the diagram below. In order for the machine to operate at 400V, the inlet terminals connected are identified as “0v” and “415v”. To modify the operation voltage to 230V, all you have to do is release terminal “415v” using a star screwdriver and connect the released cable to the “230v” inlet and tighten it with the screwdriver .

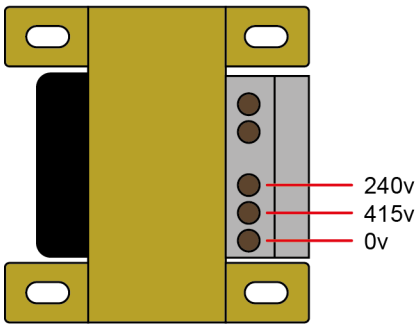


Figure 8. Changing the transformer connections

Adjust the range of intensities of the motor guard contactor:

Depending on the power voltage, the working intensity also varies, and it is therefore necessary to also modify the working range of the engine protection devices. The motor guard contactor is secured to the electrical panel as shown in section A3. *Electrical cabinet*

The motor guard contactor has a structure like the one shown in the diagram below and allows a rapid adjustment through the regulator located at the front.

The regulator indication arrow must be around “5A” for 230V three-phase connection. In the case of a 400V three-phase connection, this must be around “2.6A”.

**If the motor guard contactor installed cannot assume the intensity range required, this must be replaced with one with a greater range.*

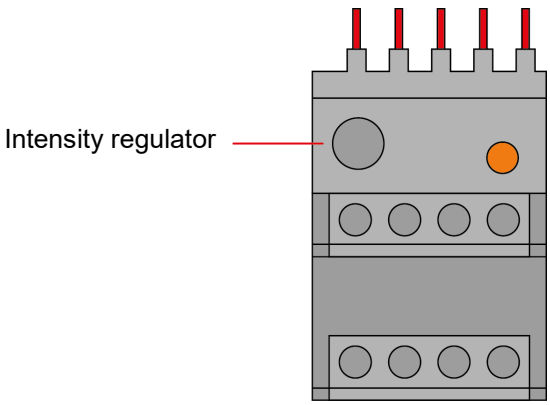


Figure 9. Intensity range adjustment

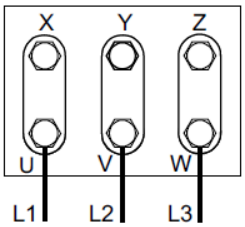
The MC200 section bending machine, is equipped with an electric set to be able to be connected to a single phased 230V.

The machine can be connected to two different power:

1. A single-phase 230V connection is 230V phase + neutral
2. A two-phase 230V connection is two phases ie 115V

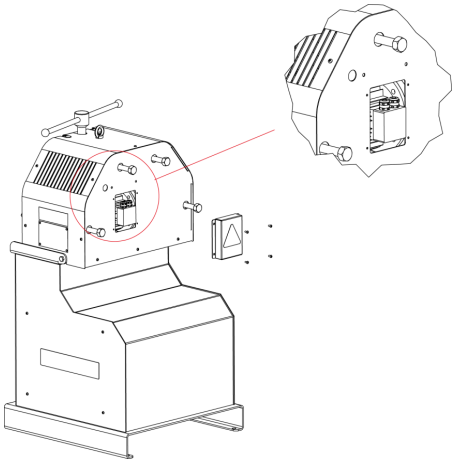
Conversion will not be possible to connect the machine to a three-phase network as long as the installation of the machine is not replaced by a three-phase network installation.

The configuration of the plates located inside the terminal box will always be specified as follows:



Triangle figure

For votage 230V



With the machine the manual of the frequency converter is supplied, this will be useful in case of failure to identify the same and to inform the technical service.

The frequency converter is located inside the electrical cabinet, as specified in the technical annex.

5. INSTRUCTIONS FOR USE

5.1. Bending principles

- The bending machine motor is started up using two pedals without interlocking, one for the clockwise rotation and the other for the anti-clockwise rotation.
- To set the radius of curvature, adjust the height of the upper roller through the adjustment handler located on the top side of the machine.
- For emergency stop just press the emergency button located at the top of the turning drive pedals.
- You can place the material in the machine on both sides. Use the upper handle to adjust the height of the upper roller and thereby adjust the material input. Use the millimetre scale to recognize the position.
- The distance between the deformation adjustment roller guide and the work surface must be modified in order to adjust the alignment of the material. This task will be performed by tightening the adjusting screws located at the rear of the machine. These roller guides guide the material to minimise lateral deformation. (The support roller guides must gently press against the profile to be bent)
- It is recommended to cut the tip into a wedge shape in order to obtain optimum bending in the profile to be worked, to facilitate its entry.
- In the event of not obtaining the proper results, the position of the guide rollers for deformation must be adjust.
- The roller mounting nuts must be tightened by manual force only .

5.2. Assembly of the rollers

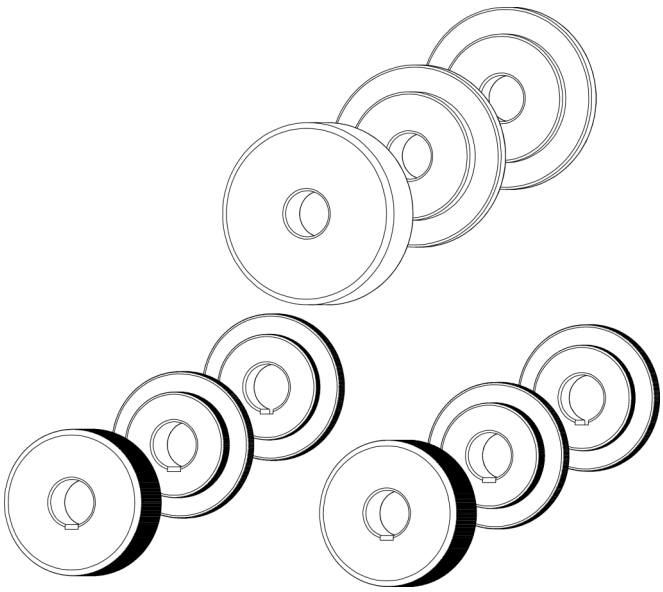


Figure 10. Position of the rollers in relation to the machine axes

5.3. Positioning the base-plate

The MC 200 can be worked with the base-plate in the horizontal or vertical position according to what is deemed necessary, depending on the tasks to be performed.

In order to place the bending machine in horizontal position:

- Open the cabinet and loosen the clamping screw located in the interior, in the top of the cabinet, as specified in paragraph 1.4 *Machine identification details.*
- Once the screw is loosened, tilt the base-plate backwards that houses the rollers and the gear motor with the help of another operator.
- Be careful, while slope, the bench must be held by the top handle and by its back part. Never handle the base-plate via the horizontal base that supports the work area, owing to the risk of entrapment.
- The machine will be supported on top of the cabinet that holds it, allowing the horizontal work.

To return the machine to its vertical configuration:

- With the help of another operator, handling the base-plate through the rear (now located in horizontal) and the top handle, reposition the base-plate in an upright position.
- Once positioned in vertical, screw the clamping screw, located in the inside of the cabinet, to prevent the base-plate from returning to its horizontal position.

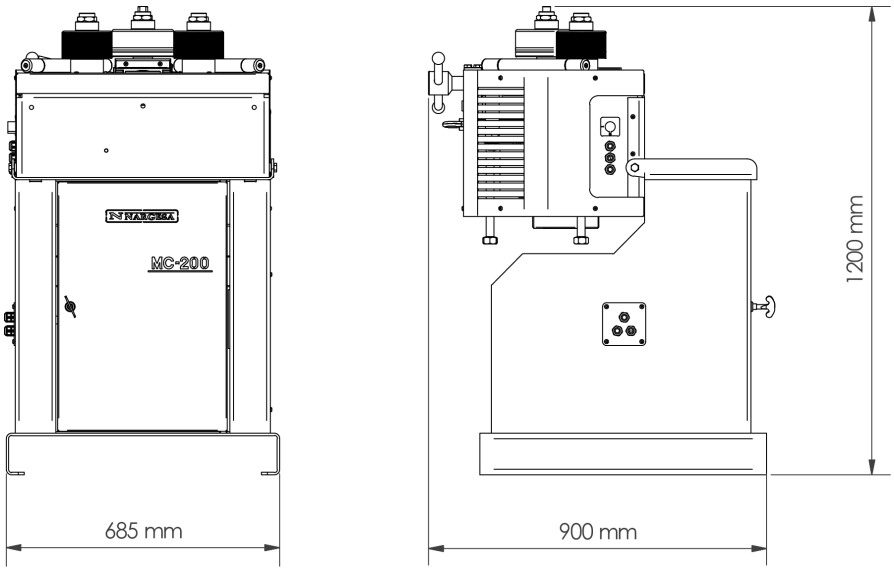


Figure 11. Machine dimensions with the base-plate in a horizontal position

CAUTION:

To change the configuration of the machine from vertical to horizontal or vice versa, the machine must be stopped and the "Emergency Stop" push button pressed.

Never handle the machine around the axes or the rollers while changing configuration.

Before using the bending machine in a vertical position, and after the configuration change, ensure that the fixing screw has a proper torque and the machine is stable.

6. WARNINGS

The MC200 bending machine is designed and assembled to allow the operator to handle the machine and bend the necessary parts in a completely safe manner. Any change to the machine's structure or characteristics could modify the safety offered by the machine, breaching the EC certificate of conformity and could endanger the operator.

6.1. Residual hazards

Hazardous conditions may occur during the bending of materials that must be analysed and prevented. Attention should be paid to the movements of the piece to be bent and the roller while the material is being introduced into the machine as well as during its shaping. Despite the fact that the forward speed of the rollers is slow, there is a risk of entrapment in the extremities between the rollers and the part.

Users of the machine are recommended to handle the part to be bent firmly with one hand and to move the hand according to the progress of the bending operation in order to maintain a safe distance from the rollers.

It is also necessary to prepare the work area to prevent other operators from injuring themselves during operation of the machine.

6.2. Counter-productive methods

Tools or rollers that are not supplied by the manufacturer of the machine, NARGESA S.L., and which have not been specially designed for the MC200 bending machine should never be used .

6.3. Other recommendations

- Use gloves for handling the machine and during the bending processes.
- Wear EC-approved goggles and protective boots
- Handle the material at the ends, and never around the area being bent
- Do not work without the protection devices that the machine is fitted with
- Ensure that there is a safe distance between the machine and the operator

7. ASSEMBLING OF THE ROLLERS

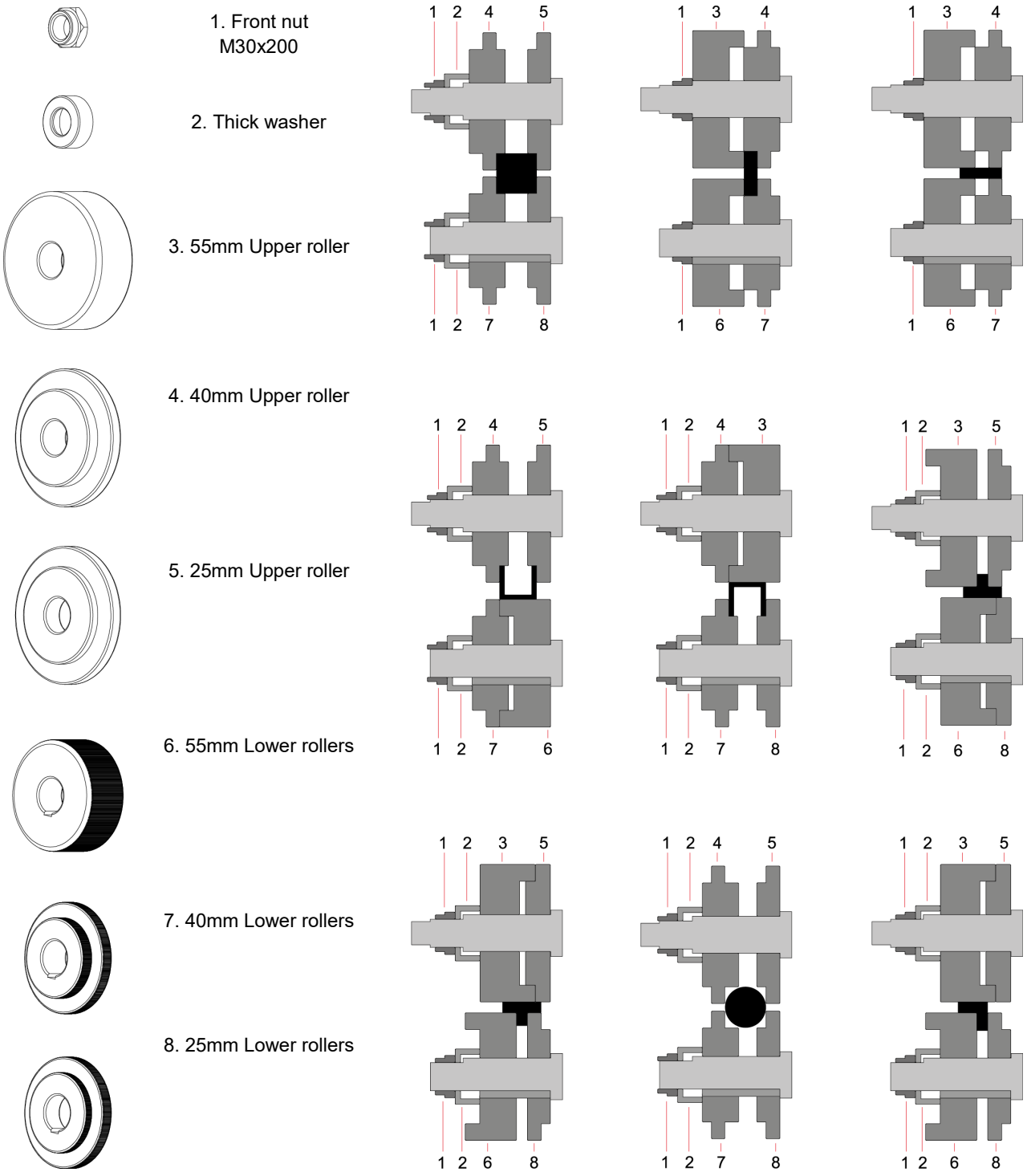


Figure 12. Nomenclature of the rollers and assembly

IMPORTANT NOTE:

The clamping nut of the rollers should never be tightened with a wrench and only by hand. If pipe rollers are being used, the nuts must be loose.

7.1. Bending capacity






	MC150B		MC200		MC400		MC200H	
Profile	Measures	Min. radius	Measures	Min. radius	Measures	Min. radius	Measures	Min. radius
	50 x 10	300	50 x 10	300	50 x 10	250	60 x 10	200
	60 x 20	200	80 x 20	150	80 x 20	150	80 x 20	150
	25 x 25	200	30 x 30	200	30 x 30	150	30 x 30	150
	50 x 50 x 3 40 x 40 x 3	700 350	50 x 50 x 3 40 x 40 x 3	600 300	50 x 50 x 3 40 x 40 x 3	600 300	50 x 50 x 3 40 x 40 x 3	450 300
	40	200	40	200	40	150	40	200
	40	250	40	250	40	200	40	250
	40	300	40	300	40	250	40	250
	50	200	60	300	60	225	60	225
	50	250	60	300	60	225	60	225
	40	500	40	420	40	200	40	300
	25	180	30	150	30	150	30	150
*	40 x 2 * 50,8 x 3 * = 2” x 3 *	300 600 600	40 x 2 * 63,5 x 3 * = 2”1/2 x 3 *	250 500 500	40 x 2 * 63,5 x 3 * =2”1/2 x 3 *	200 450 450	40 x 2 * 63,5 x 3 * =2”1/2 x 3 *	200 450 450





	MC550 · MC550CNC		MC650 · MC650CNC	
Profile	Measures	Min. radius	Measures	Min. radius
	60x15 60x8 50x15 50x10 40x8 30x5 25x5	400 200 350 175 150 110 105	100x15 80x20 60x15 50x15 20x10●	1250 450 300 155 140
	100x20 80x20 80x15	250 200 180	120x20 100x25 80x20	250 350 200
	35x35 30x30 25x25 20x20 15x15 15x15	400 200 175 150 150	45x45 40x40 25x25● 20x20●	300 280 200 150
	60x60x3 50x50x3 35x35x3	800 600 200	70x70x4 60x60x3 40x40x3	750 750 300
	70x30x3 60x30x3 50x30x3	500 400 250	80x40x3 60x30x3 50x30x3	500 300 250
	60x60x7 50x50x6 40x40x5	300 250 200	80* 70 60 40	500 400 200 150
	60x60x7 50x50x6 40x40x5	500 400 300	80* 60 40	500 400 150
	60x60x7 50x50x6 40x40x5	350 300 250	60x8 40x6	450 250





	MC550 · MC550CNC		MC650 · MC650CNC	
Profile	Measures	Min. radius	Measures	Min. radius
	40x20x5 60x30x6 80x45x6	160 200 400	120* 100* 80	600 600 350
	80x45x6 60x30x6 40x20x5	600 250 200	120* 100* 80	700 700 400
	50x5 40x5	550 400	70x7 60x5 50x5 40x4	600 400 300 250
	50x5* 40x4*	750 500	50x5* 40x4*	750 500
	40 35 30 20	300 250 200 130	50 40 25	300 200 175
	76,2x3* (3”x3) 40x2 20x2	500 180 100	101,6x3,5* (=4”x3) 100x3* 88,9x4* (=3”SCH) 35x2* 20x1,5*	500 500 700 120 115

* Optional rollers

• Consulting with manufacturer

8. OPTIONAL ACCESSORIES

The bending machine has been designed for bending all kinds of profiles irrespective of their shape.

The standard rolls included as standard on the bending machine allow the configuration of all kinds of handrails, angles, square, round pipes, etc., thanks to their multiple configurations.

In order to facilitate the bending of certain more delicate materials that require a very good surface finish or to facilitate the bending of more common sections, NARGESA has designed a series of rollers that can be purchased at an official dealership or by directly by contacting NARGESA S.L.

Besides the accessories shown below, NARGESA also designs special rollers upon specific request for customers .

Set of treated steel rollers



Set of 3 treated steel rollers for steel round pipe or stainless steel, thickness bigger than 2 mm.
When pipe sizes are smaller, two sizes are included in the same roller.
Eg. (25 + 30) o (1/2" + 1"1/4")
Always clean up the rollers well before using stainless steel not to get the pipe contaminated.

Tube size in mm		
Reference	**Dimensions**	**Weight**
140-08-01-RHT0007	(25 + 30)	17,00 Kg
140-08-01-RHT0006	(20 + 35)	16,50 Kg
140-08-01-RHT0001	40	16,60 Kg
140-08-01-RHT0002	50	14,25 Kg
140-08-01-RHT0003	60	11,10 Kg
For Schedule pipe		
140-08-01-RHISOT0006	(3/4" + 1/2") = (26,9 + 21,3 mm)	17,70 Kg
140-08-01-RHISOT0007	(1" + 3/8") = (33,7 + 17,2 mm)	17,00 Kg
140-08-01-RHISOT0002	1" 1/4 = 42,4 mm	16,00 Kg
140-08-01-RHISOT0003	1" 1/2 = 48,3 mm	14,40 Kg
140-08-01-RHISOT0004	2" = 60,3 mm	11,15 Kg
For inches pipe		
140-08-01-RHWT-00001	(1/2" + 1"1/4") = (12,700 + 31,751 mm)	18,00 Kg
140-08-01-RHWT-00002	(1" + 3/4") = (25,401 + 19,051 mm)	18,50 Kg
140-08-01-RHWT-00003	1"1/2 = 38,101 mm	17,25 Kg
140-08-01-RHWT-00004	2" = 50,802 mm	13,60 Kg
140-08-01-RHWT-00005	2"1/2 = 63,502 mm	9,75 Kg

Set of Sustarín rollers



Set of 3 Sustarin rollers for stainless steel pipes, aluminium and delicate materials for thickness smaller than 2.5 mm.

When pipe sizes are smaller, two sizes are included in the same roller.

Eg. (25 + 30)

Tube size in mm		
Reference	**Dimensions**	**Weight**
140-08-01-RI0007	(25 + 30)	1,40 Kg
140-08-01-RI0001	(20 + 35)	1,40 Kg
140-08-01-RI0010	33	1,50 Kg
140-08-01-RI0004	40	1,40 Kg
140-08-01-RI0003	43	1,30 Kg
140-08-01-RI0006	50	1,20 Kg
140-08-01-RI0008	60	0,90 Kg
For Schedule pipe		
140-08-01-RIISO0001	(3/4” + 1/2”) = (26,9 + 21,3 mm)	1,70 Kg
140-08-01-RIISO0002	(1” + 3/8”) = (33,7 + 17,2 mm)	1,60 Kg
140-08-01-RIISO0003	1” 1/4 = 42,4 mm	1,30 Kg
140-08-01-RIISO0004	1” 1/2 = 48,3 mm	1,20 Kg
140-08-01-RIISO0005	2” = 60,3 mm	0,90 Kg
For inches pipe		
140-08-01-RIW-00001	(1/2” + 1”1/4”) = (12,700 + 31,751 mm)	1,80 Kg
140-08-01-RIW-00002	(1” + 3/4”) = (25,401 + 19,051 mm)	1,50 Kg
140-08-01-RIW-00003	1”1/2 = 38,101 mm	1,40 Kg
140-08-01-RIW-00004	2” = 50,802 mm	1,20 Kg
140-08-01-RIW-00005	2”1/2 = 63,502 mm	0,90 Kg

Technical annex

MC200 Bending Machine

General Parts Diagram

Pedal Diagram

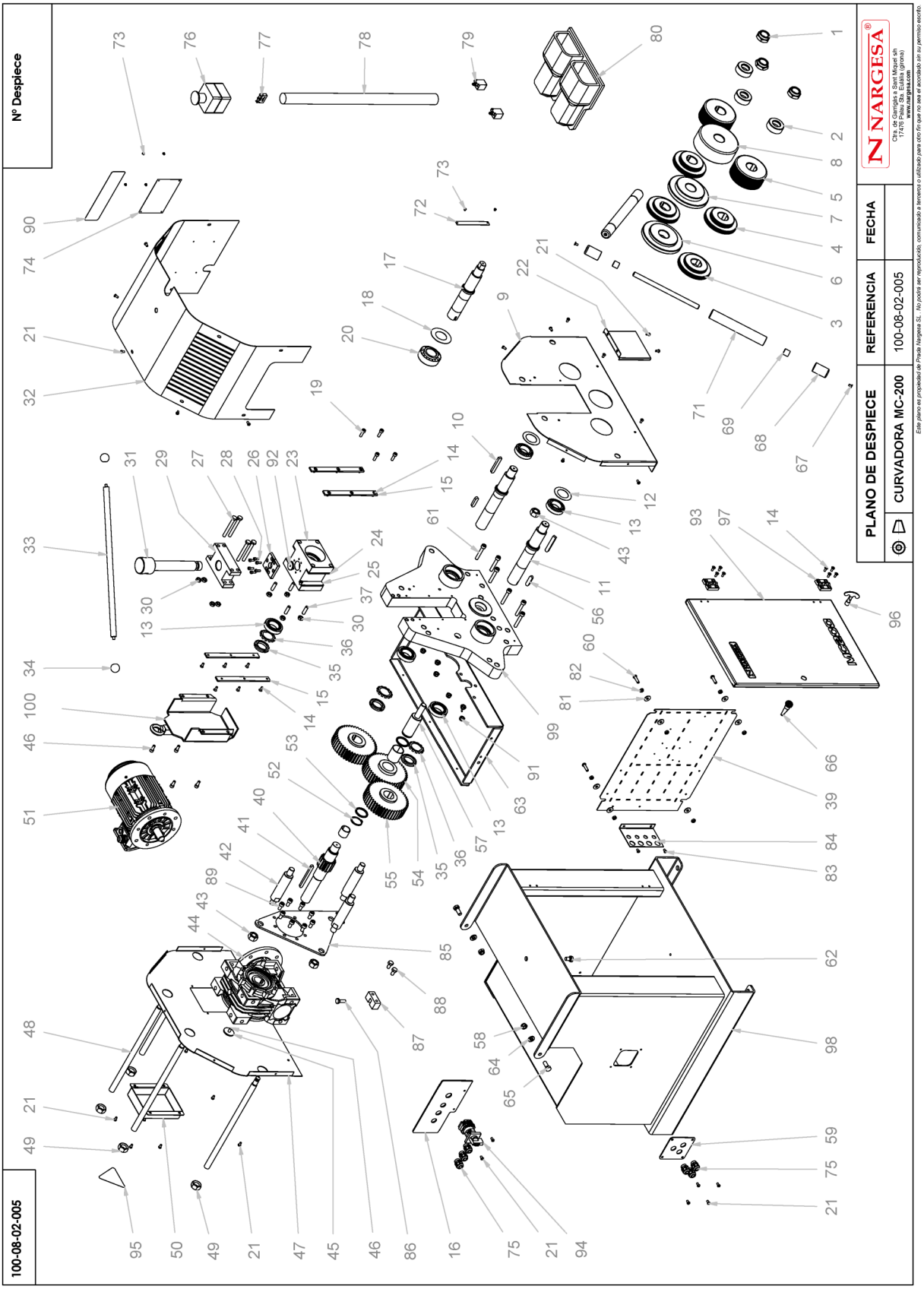
Electric maps · THREEPHASE MACHINE

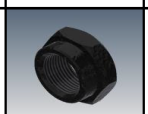
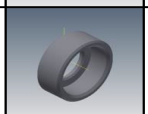
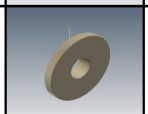
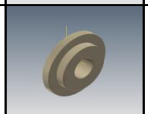
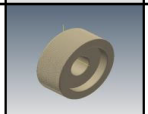
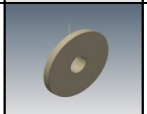
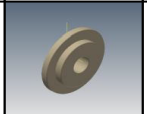
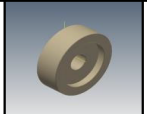
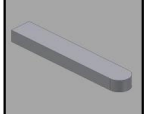
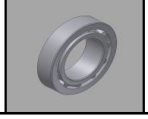
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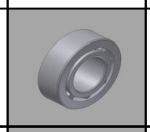
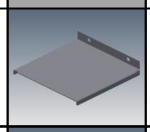
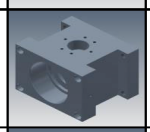
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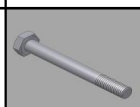
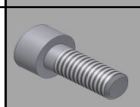
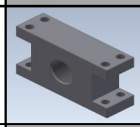
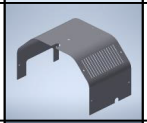
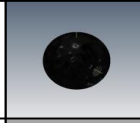
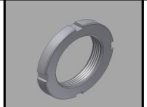
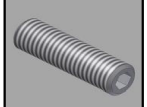
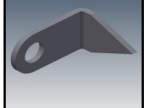
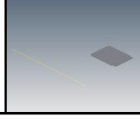
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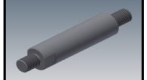
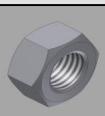
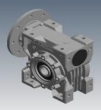
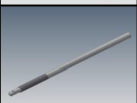
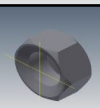
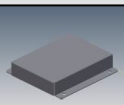
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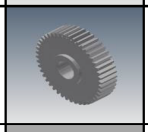
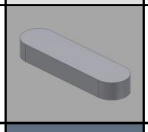
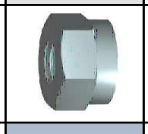
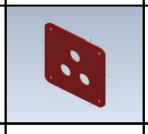
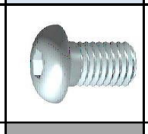
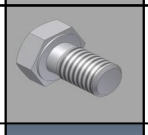
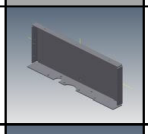
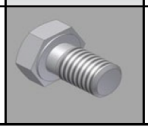


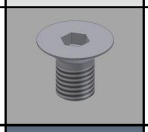
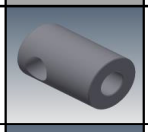
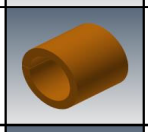
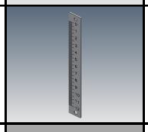
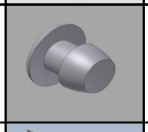
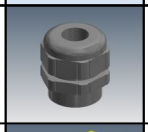
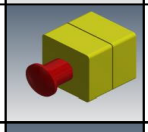
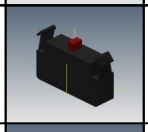
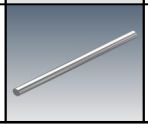
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3		120-08-02-00160	RODILLO INFERIOR DE 25	2
4		120-08-02-00161	RODILLO INFERIOR DE 40	2
5		120-08-02-00162	RODILLO INFERIOR DE 55	2
6		120-08-02-00165	RODILLO SUPERIOR DE 25	1
7		120-08-02-00164	RODILLO SUPERIOR DE 40	1
8		120-08-02-00163	RODILLO SUPERIOR DE 55	1
9		120-08-02-00183	TAPA FRONTAL	1
10		030-D6885AB-00001	CHAVETA PARALELA DIN 6885AB 12X8X75	2
11		120-08-02-00008	EJE TRACCION	2
12		120-08-02-00167	PROTECCION COJINETE DELANTERO EJES MOTRICES MC200	2
13		030-CJ-00002	Rodamiento de rodillos cónico 32008 40x68x19	5

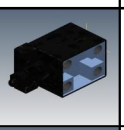
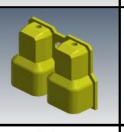
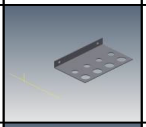
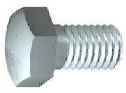
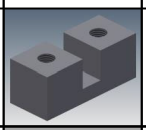
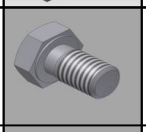
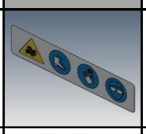
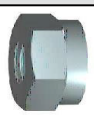
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
14		020-D7991-M6X16	TORNILLO ALLEN DIN 7991 M6X16	20
15		120-08-02-00026	REGLA DE FRICCION	4
16		120-08-02-00171	SOPORTE INTERRUPTOR GENERAL	1
17		120-08-02-00011	EJE BUJE MOVIL	1
18		120-08-02-00168	PROTECCION COJINETE DELANTERO EJE CENTRAL MC200	1
19		020-D912-M8X25	TORNILLO ALLEN DIN 912 M8 x25	4
20		030-CJ-00007	Rodamiento de rodillos cónico 33208 40X80X32	1
21		020-I7380-M6X12	TORNILLO ALLEN ABOMBADO ISO7380 M6X12	29
22		120-08-02-00071	TAPA PROTECCION DELANTERA	1
23		120-08-02-00010	BUJE MOVIL	1
24		120-08-02-00012	PASAMANO FRICCION BUJE MOVIL	2
25		120-08-02-00013	PASAMANO FRICCION AJUSTE BUJE MOVIL	2
26		120-08-02-00021	PASAMANO FIJACION	2

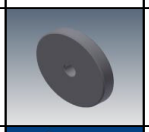
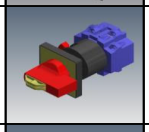
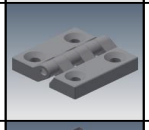
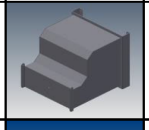
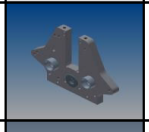
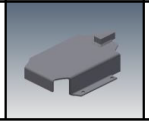
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
27		020-D931-M10X90	Tornillo Hex. Media Rosca DIN931 M10X90	4
28		020-D912-M6X16	Tornillo Allen DIN912 M6X16	6
29		120-08-02-00005	REFUERZO ESCOTE	1
30		020-D934-M10	Tuerca Hexagonal DIN934 M10	8
31		120-08-02-00006	TORNILLO DE AJUSTE	1
32		120-08-02-00185	TAPA PRINCIPAL	1
33		120-08-02-00073	PALANCA ACCIONAMIENTO	1
34		031-POMH-00004	Pomo Esfera Ranurada Ø32 M8 Con Inserto Metalico	2
35		020-D981-KM8	Tuerca Ranurada KM8 M40x150	3
36		020-D5406-MB8	Arandela de bloqueo MB8 D40	3
37		020-D913-M10X35	ESPIGA ALLEN DIN 913 M10X35	4
38		120-08-02-00060	FLECHA INDICADORA	1
39		120-08-02-00152	Placa Montaje electrico - MC200	1

Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
40		120-08-02-00033-01	EJE PRINCIPAL Z15	1
41		030-D6885A-00001	CHAVETA PARALELA DIN 6885A 10X8X110	1
42		120-08-02-00038	SEPARADOR REDUCTOR	3
43		020-D934-M20	Tuerca DIN 934 M20	4
44		050-RT-00002	Reductor MRT85 B3 1:40 G6/35	1
45		120-08-02-00035	ARANDELA FIJACION REDUCTOR	1
46		020-D912-M8X20	TORNILLO ALLEN DIN912 M8X20	5
47		120-08-02-00182	TAPA TRASERA	1
48		120-08-02-00027	VARILLA REGULACION RULINA	4
49		120-08-01-00045	Hexagono Varilla Niveladora Rulina	4
50		120-08-02-00062	TAPA CAJA DE BORNES	1
51		050-ME-00002	Motor Eléctrico 1.1 Kw a 900 rpm Brida B5	1
52		030-D471-00005	Circlip de Eje DIN 471 D40	1

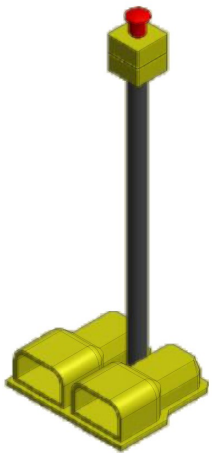
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
53		120-08-01-00090	GRUESO BRONCE PIÑON CENTRAL	2
54		120-08-01-00092	ENGRANAJE Z45 REENVIO	1
55		120-08-02-00032	ENGRANAJE Z45	2
56		030-D6885A-00004	CHAVETA PARALELA DIN 6885A 12X8X45	2
57		120-08-02-00041	EJE REENVIO	1
58		020-D985-M12	Tuerca Autoblocante DIN 985 M12	2
59		120-08-02-00153	TAPA INSTALACION	1
60		020-I7380-M8X30	TORNILLO ALLEN CABEZA REDONDA ISO 7380 M8X30	4
61		020-D912-M10X60	Tornillo Allen DIN 912 M10 X60	6
62		020-D933-M12X20	TORNILLO HEXAGONAL DIN 933 M12X20	1
63		120-08-02-00169	PLACA BASE	1
64		120-08-02-00117	ARANDELAS DE GRUESO - Ø24xØ12.5x4	2
65		020-D933-M12X30	Tornillo Hexagonal DIN 933 M12x30	2

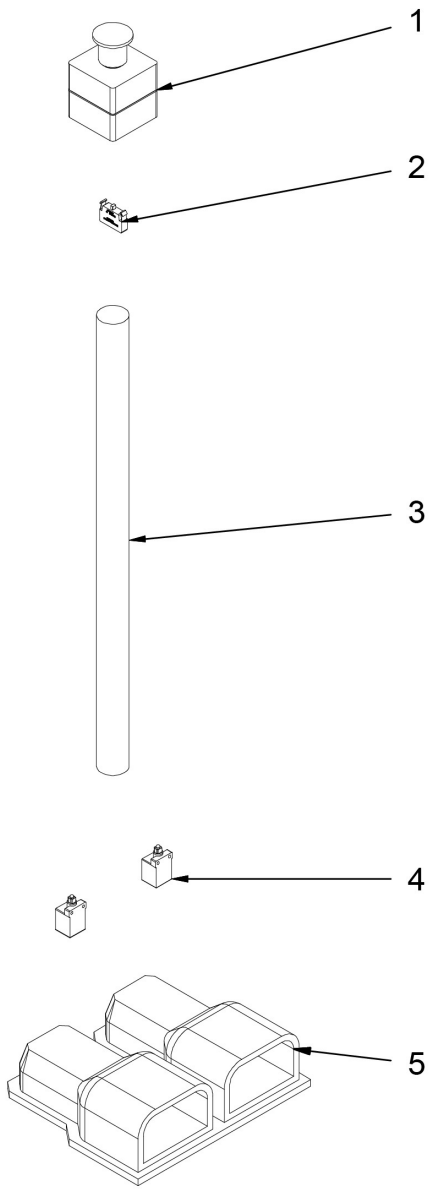
Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
66		031-CLT-00001	CIERRE DE LENGÜETA CON TRIANGULO 8 M20	1
67		020-D7991-M6X12	Tornillo Allen Avellanado DIN7991 M6X12	4
68		120-08-01-00016	CABEZA RULINA VERTICAL	4
69		030-DP-00010	Casquillo Bronce D16xD22x20	4
70		120-08-01-00019	EJE RULINA VERTICAL	2
71		120-08-01-00018	RODILLO	2
72		120-08-02-00072	Regla Aluminio Serigrafiada Milimetrada 0 - 12 MC200	1
73		020-D7337-4X10	REMACHE DE CLAVO DIN 7337 Ø4X10 ALUMINIO	6
74		122-PLC-0000-001	Placa Caracteristicas General	1
75		050-PE-00003	Prensaestopa GFPT 212 50043 M20X150 PG13.5	6
76		050-PED-00011	KIT 32 (PARO DE EMERGENCIA)	1
77		050-PEMG-00001	BLOQUE DE CONTACTOS (KIT 32)	1
78		050-PED-00012	Barra Pedal (KIT 31)	1

Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
79		050-PPED-00001	Bloque de Contactos Pedal (VBF501)	2
80		050-PED-00013	Pedal Doble (PX10110)	1
81		020-D9021-M8	ARANDELA ANCHA DIN9021 PARA M8	8
82		020-D934-M8	TUERCA HEXAGONALI DIN934 M8	8
83		020-I7380-M6X10	TORNILLO ALLEN ABOMBADO ISO 7380 M6X10	2
84		120-08-02-00151	Posicionador Prens-estopes - MC200	1
85		120-08-02-00184	PLACA REDUCTOR	1
86		020-D933-M10X30	TORNILLO HEXAGONAL DIN 933 M10X30	1
87		120-08-02-00178	SOPORTE INFERIOR PLACA REDUCTOR MC200	1
88		020-D933-M10X20	TORNILLO HEXAGONAL DIN 933 M10X20	2
89		020-D912-M10X20	Tornillo Allen DIN912 M10X20	8
90		122-CAL-1101-002	Calca MC, CC i NOA	1
91		020-D985-M10	TUERCA AUTOBLOCANTE DIN 985 M10	6

Elemento	Miniatura	Nº de pieza	Descripción	CTDAD
92		120-08-02-00128	DISCO DE APOYO	1
93		120-08-02-00173	PUERTA ARMARIO	1
94		050-IG-00001	Interruptor General Kg10Ak300	1
95		122-ADH-00005	Adhesivo Triangulo 400V De 110mmx90mm	1
96		031-LLT-00001	LLAVE PARA CIERRE TRIANGULO DE 8 FLOTANTE NIQUELADA	1
97		031-BP-00001	BISAGRA DE PLASTICO 30 ENTRE CENTROS	2
98		130-08-02-00040	ESTRUCTURA PIE	1
99		130-08-02-00044	CONJUNTO PLACA PRINCIPAL	1
100		130-08-02-00003	PLACA ELEVACION	1

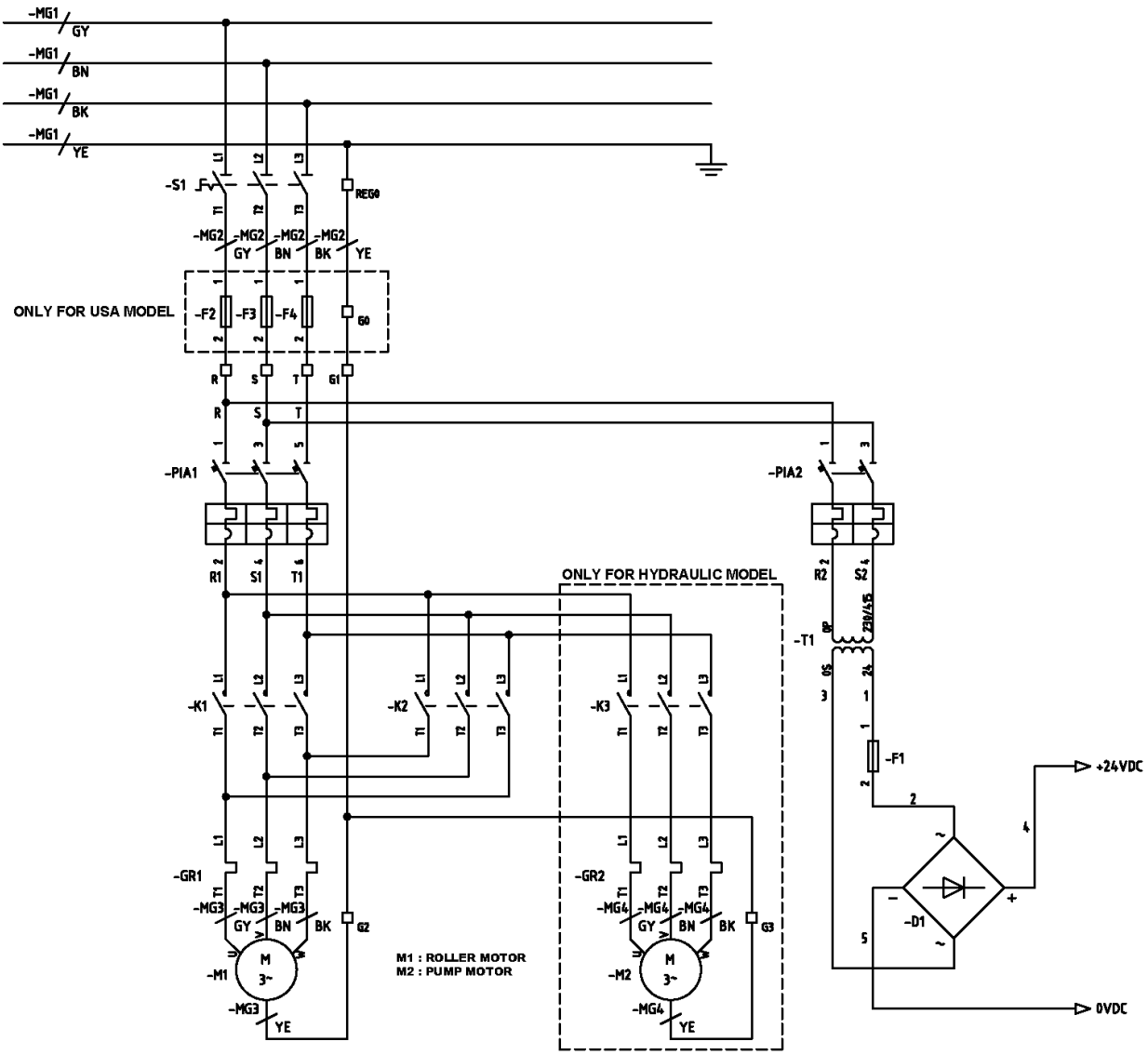
A2. Pedal diagram

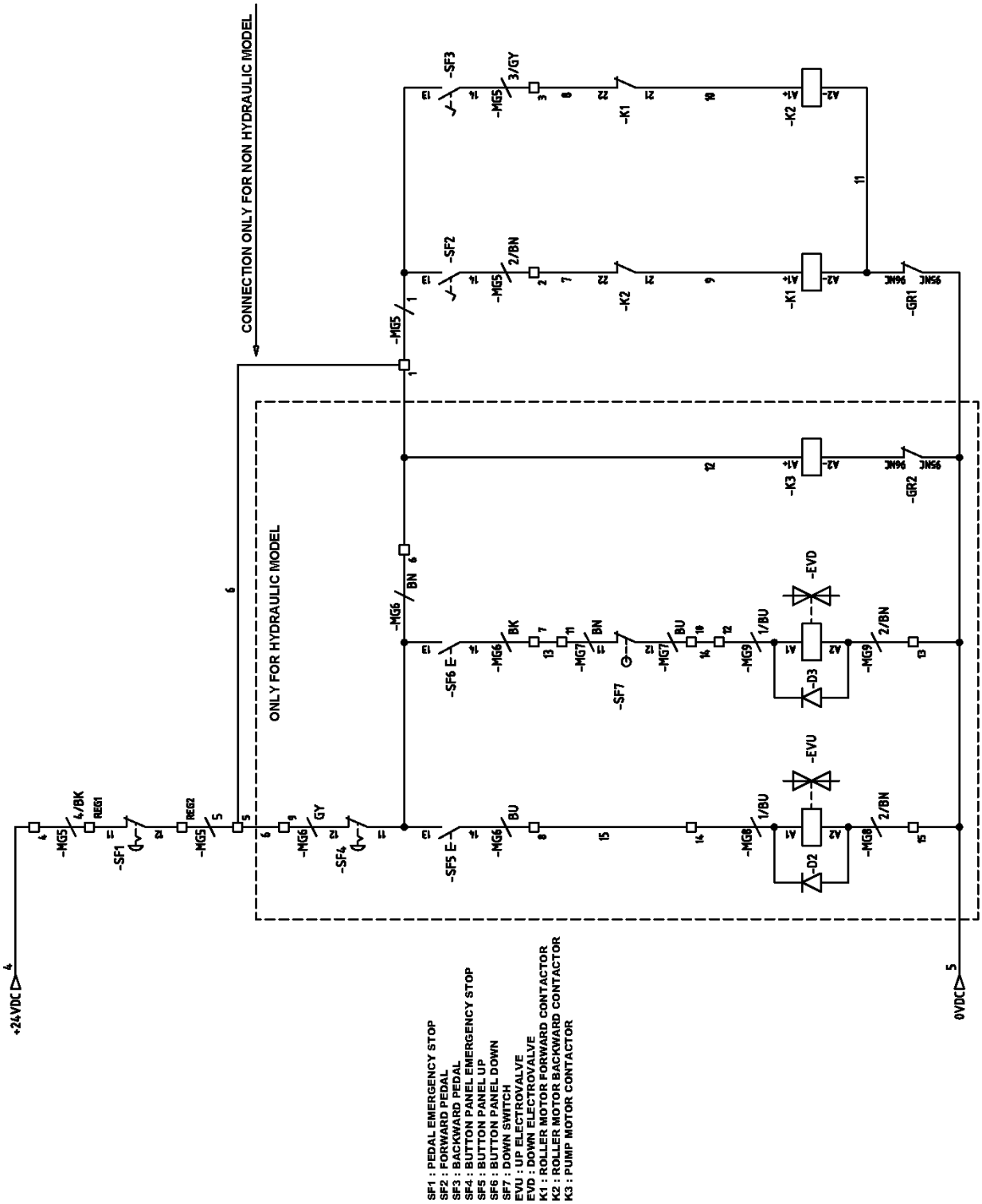




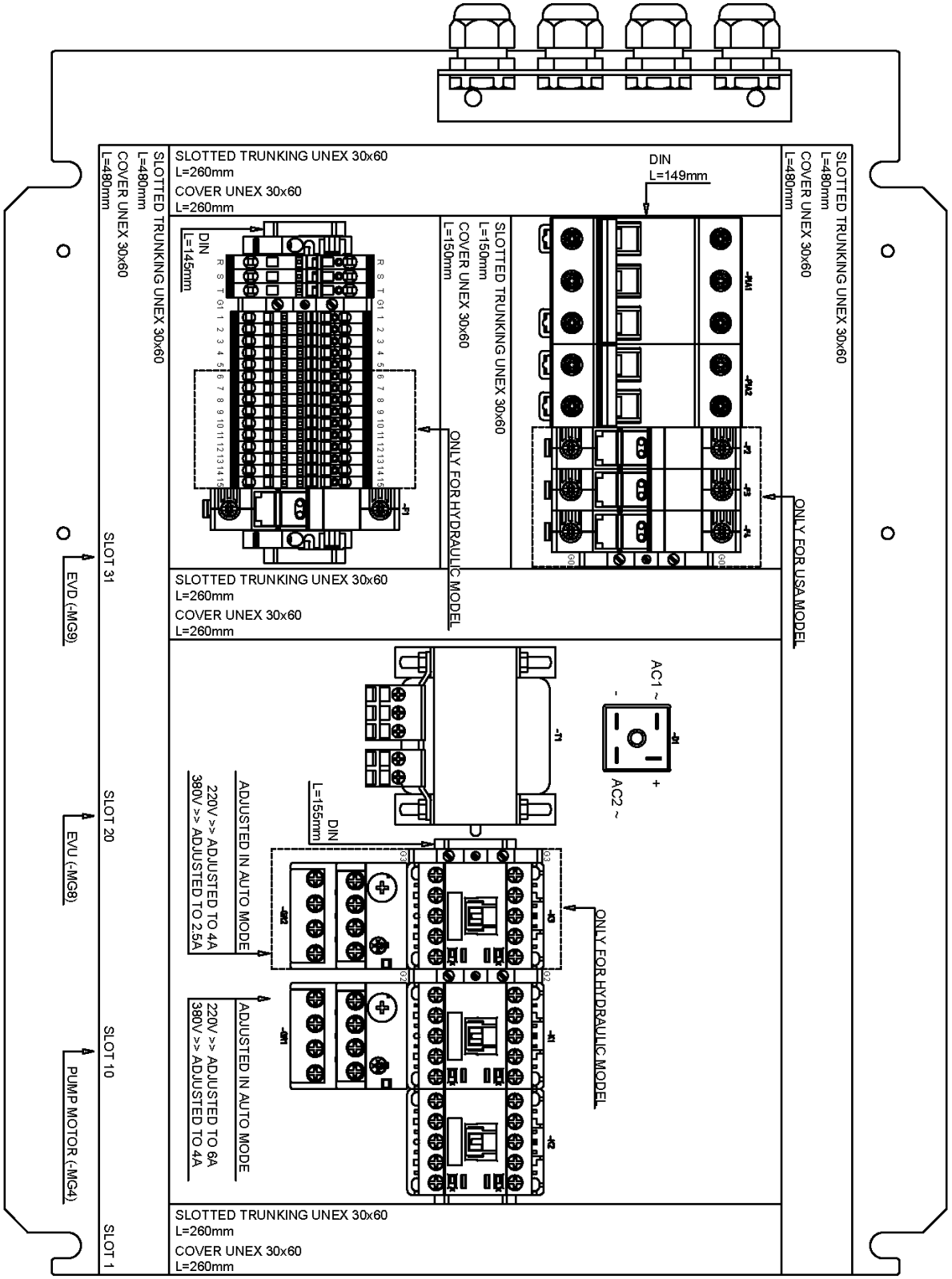
1	Kit 32
2	Contact Block (kit 32)
3	Pedal bar (kit 31)
4	Pedal contact block (VFBS01)
5	Double pedal (PX10110)

A3. Electric maps · THREEPHASE MACHINE

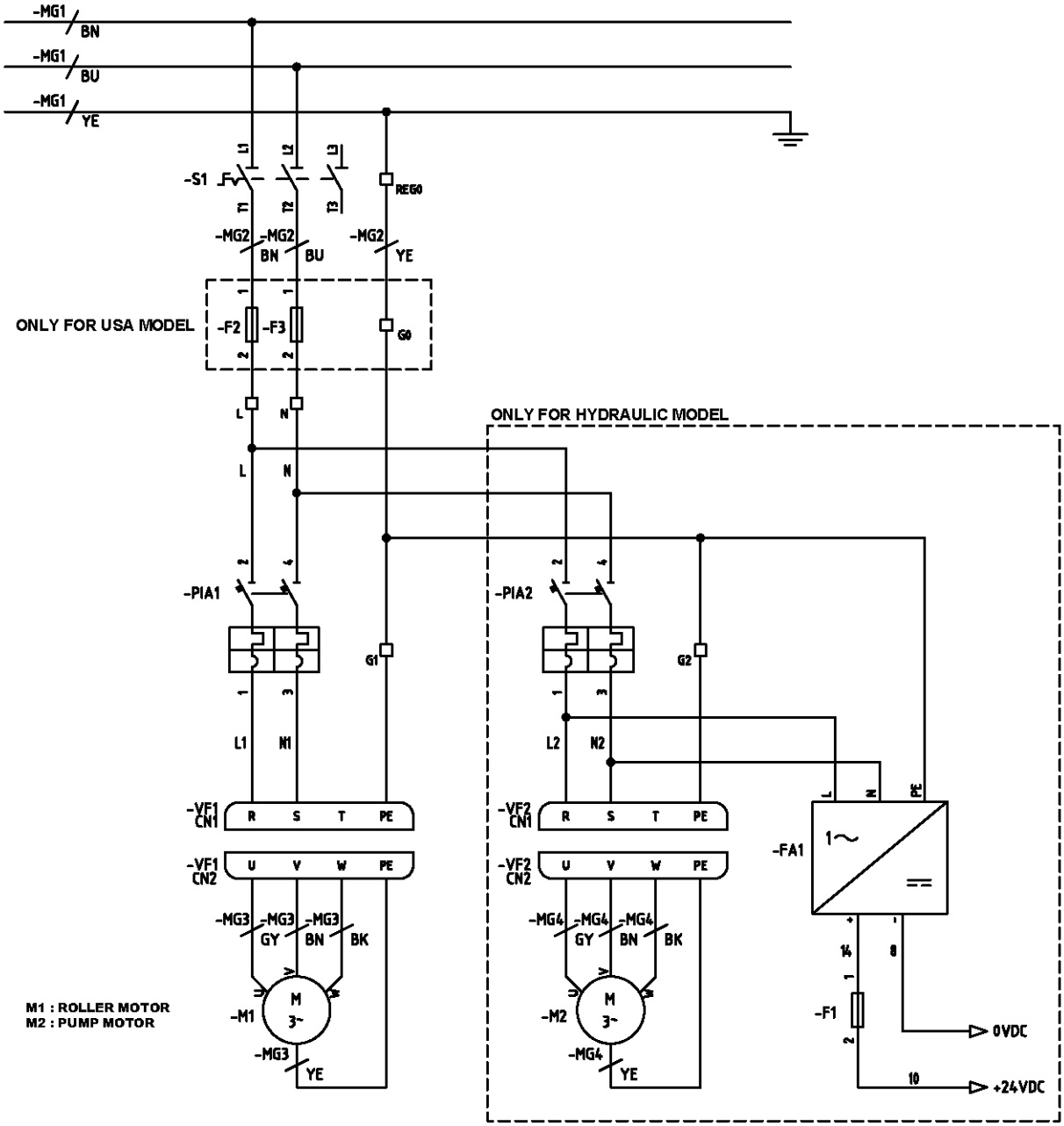


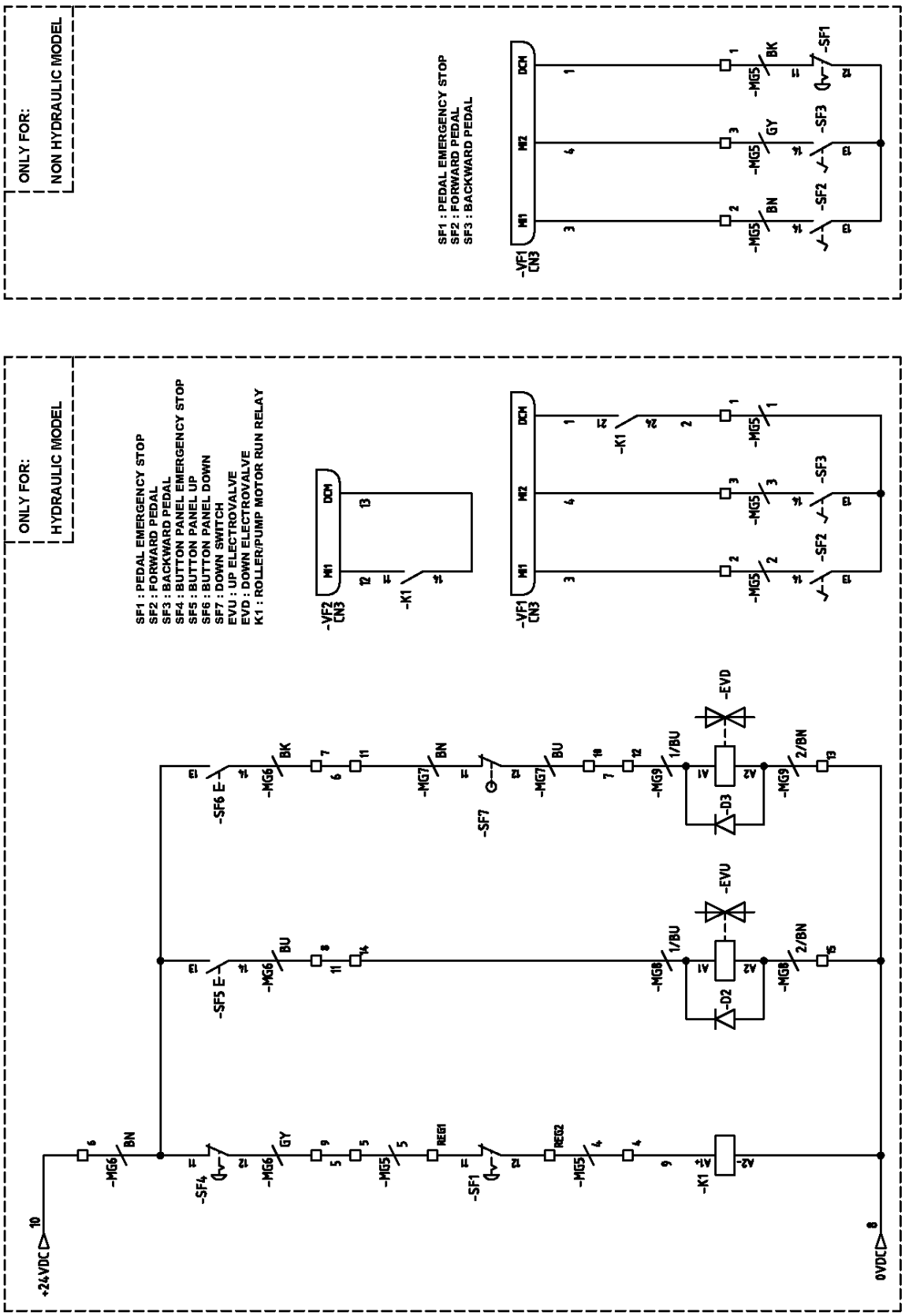

CONNECTION ONLY FOR NON HYDRAULIC MODEL
ONLY FOR HYDRAULIC MODEL
+24VDC
0VDC
-MG5
-MG6
-MG7
-MG8
-MG9
-SF1
-SF2
-SF3
-SF4
-SF5 E-
-SF6 E-
-SF7
-K1
-K2
-K3
-GR1
-GR2
-EVU
-EVD
-D2
-D3
4/BK
5
GY
BU
2/BN
3/GY
BN
BK
1/BU
SF1 : PEDAL EMERGENCY STOP
SF2 : FORWARD PEDAL
SF3 : BACKWARD PEDAL
SF4 : BUTTON PANEL EMERGENCY STOP
SF5 : BUTTON PANEL UP
SF6 : BUTTON PANEL DOWN
SF7 : DOWN SWITCH
EVU : UP ELECTROVALVE
EVD : DOWN ELECTROVALVE
K1 : ROLLER MOTOR FORWARD CONTACTOR
K2 : ROLLER MOTOR BACKWARD CONTACTOR
K3 : PUMP MOTOR CONTACTOR

A4. Electric box · THREEPHASE MACHINE

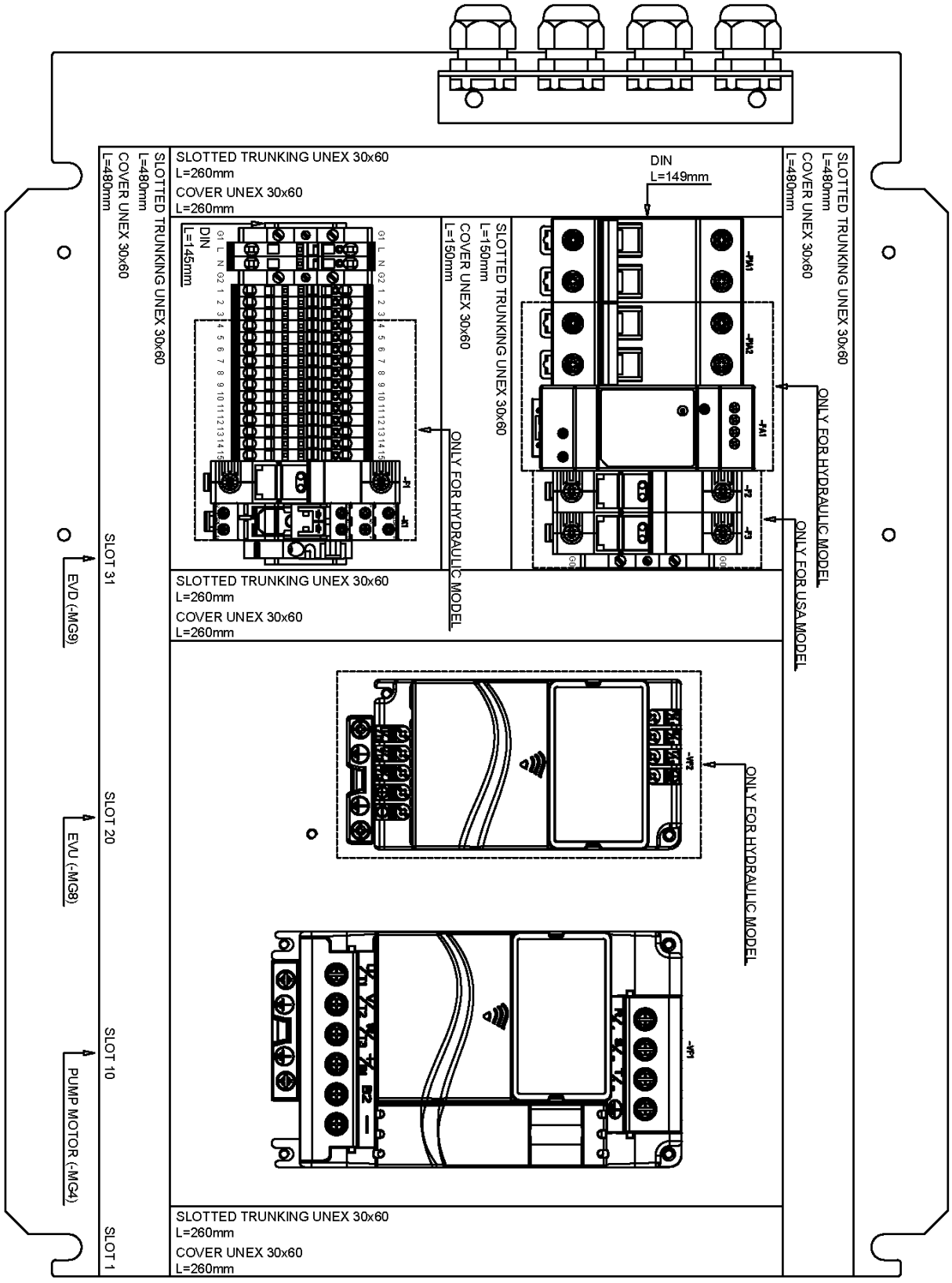


A5. Electric maps · SINGLEPHASE MACHINE




ONLY FOR:
NON HYDRAULIC MODEL
SF1 : PEDAL EMERGENCY STOP
SF2 : FORWARD PEDAL
SF3 : BACKWARD PEDAL
-VF1 CN3
-MG5
-SF1
-SF2
-SF3
ONLY FOR:
HYDRAULIC MODEL
SF1 : PEDAL EMERGENCY STOP
SF2 : FORWARD PEDAL
SF3 : BACKWARD PEDAL
SF4 : BUTTON PANEL EMERGENCY STOP
SF5 : BUTTON PANEL UP
SF6 : BUTTON PANEL DOWN
SF7 : DOWN SWITCH
EVU : UP ELECTROVALVE
EVD : DOWN ELECTROVALVE
K1 : ROLLER/PUMP MOTOR RUN RELAY
-VF2 CN3
-K1
-VF1 CN3
-MG5
-SF1
-SF2
-SF3
-SF6
-MG6
-MG7
-SF7
-MG9
-EVD
-D3
-SF5
-MG8
-EVU
-D2
-SF4
-MG6
-MG5
-K1
+24VDC
0VDC

A6. Electric box · SINGLEPHASE MACHINE



OUR RANGE OF MACHINERY



IRON WORKERS



SECTION BENDING MACHINES



NON-MANDREL PIPE BENDER



HORIZONTAL PRESS BRAKE



TWISTING/SCROLL BENDING MACHINES



HYDRAULIC PRESS BRAKES



HYDRAULIC SHEAR MACHINES



GAS FORGES



IRON EMBOSSING MACHINES



END WROUGHT IRON MACHINES



BROACHING MACHINES



POWER HAMMERS



PRESSES FOR LOCKS