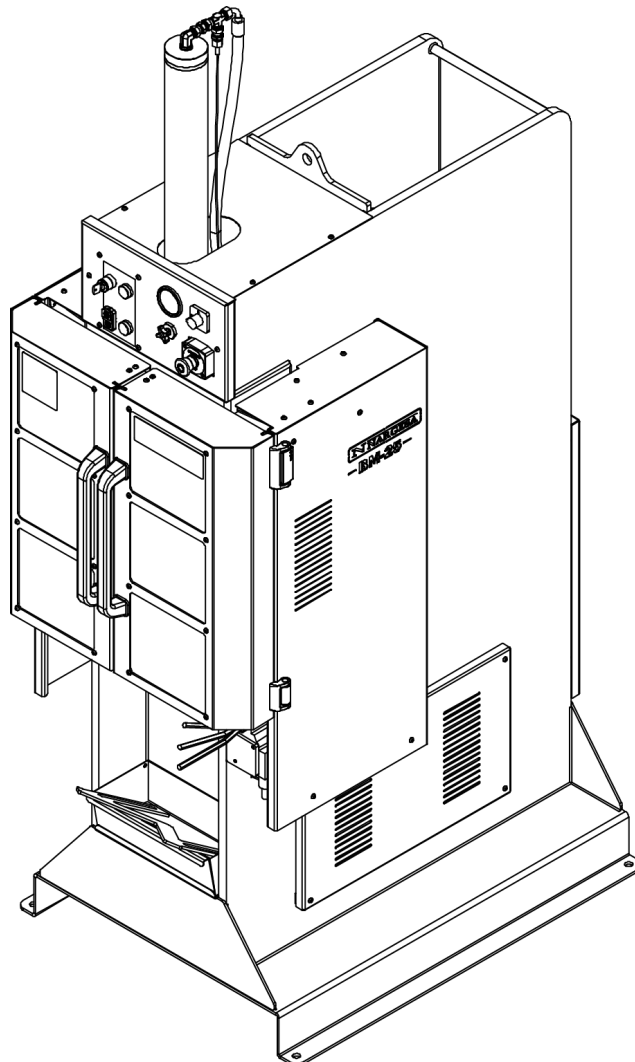


BROACHING MACHINE

BM25



INSTRUCTIONS BOOK

PRADA NARGESA, S.L

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Thank you for choosing our machines



www.narges.com

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TECHNICAL ANNEX

IMPORTANT

This manual offers all performance and technical instructions required for the proper knowledge of the safety systems of the machine and for its correct use, keeping in mind the operative safety.

Therefore it is very important to read and understand carefully the instructions contained in this book before starting up and work with the machine.

SAFETY

Broaching machines BM25, have been designed and manufactured according to the applicable European regulations, adding up the following safety devices:

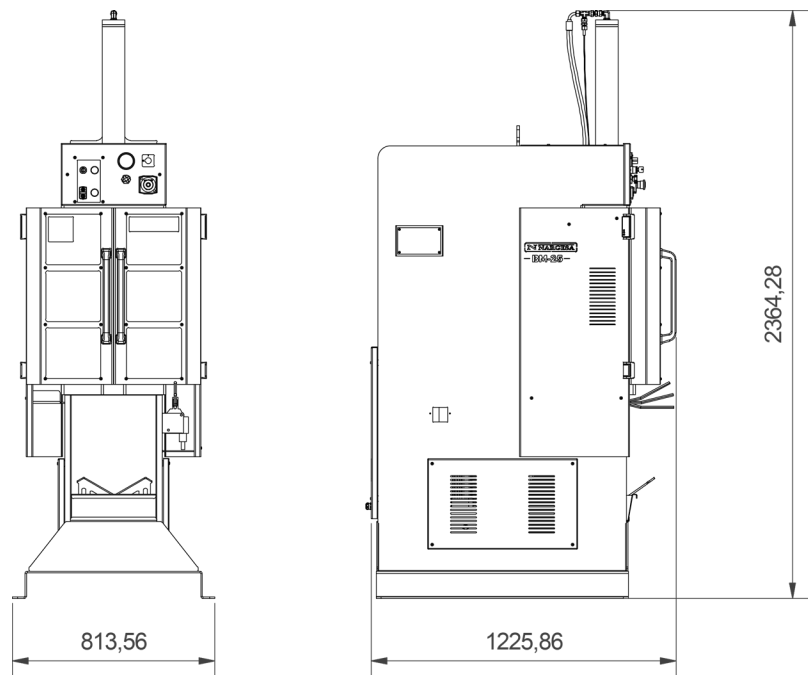
- * Fixed safety devices for which opening it is necessary the use of a tooling for them to be open just by authorized staff for any repair or maintenance task.
- * Risk signs warning.
- * Emergency button in the control electrical box.
- * Connection and disconnection button in the electrical box to regulate the supply energy.

All these safety devices are integrated in the machine as a part of it. Modification, removal or lack of maintenance of any device on the machine will raise up the risk of breakdown and accident at the same time that it transgresses the Usage Regulation 89/655/CEE.

The manufacturer will not take any responsibility out of the damage caused by the use of the machine with any kind of modification, removal or lack of maintenance of any of its components, carried out without any previous and expressed authorization by the manufacturer.

1. GENERAL INFORMATION

1.1. General dimensions



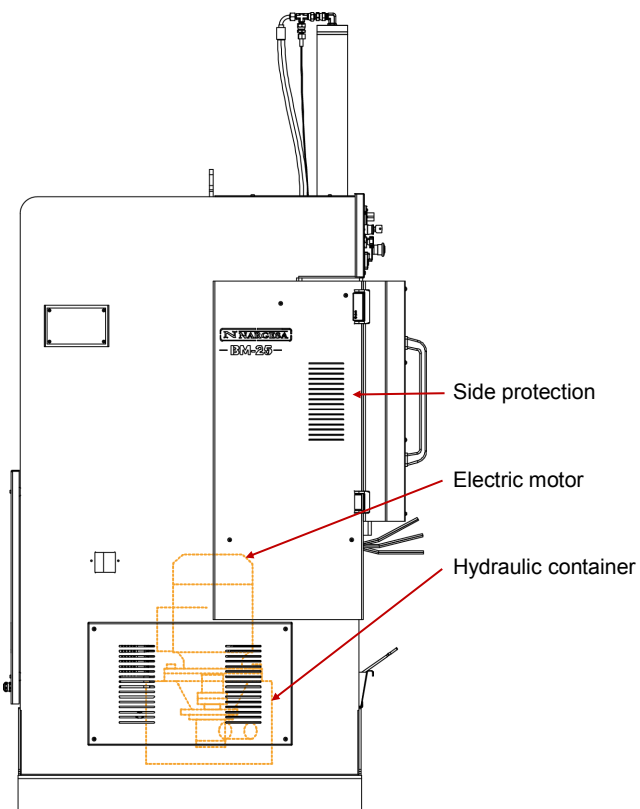
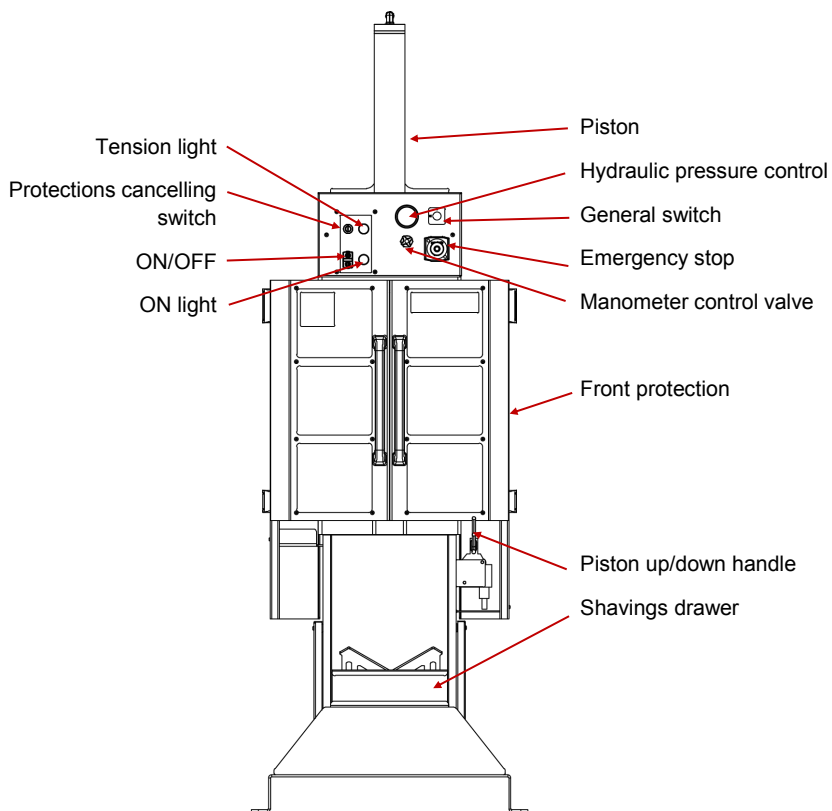
1.2. Description of the machine

Hydraulic Broaching machine BM25 NARGESA has been fabricated in a welded and mechanized steel monoblock. It's a machine useful for making notches and keyways in all kinds of pieces: sprockets, pulleys, gears, etc...

It is also used like a press to unbolt oxidated parts, assembling and dismantling bearings, etc...

BM25 is made according to the European regulations for the manufacturing of industrial machinery

1.3. Identification of the machine



1.4. General characteristics

Motor power	2,2 KW / 3 HP
3-phased tensión	230 / 400 V
Hydraulic power	10 Tm
Working speed	24 mm/s
Return speed	54 mm/s
Pump Flow	7,5 L
Shank displacement	600 mm
Goosneck	300 mm
Maximum diameter of the piece	600 mm*
Bench dimensions	420x420 mm
Dimensions	820x1270x2365 mm
Weight	790 Kg

** For different sizes, please ask the manufacturer*

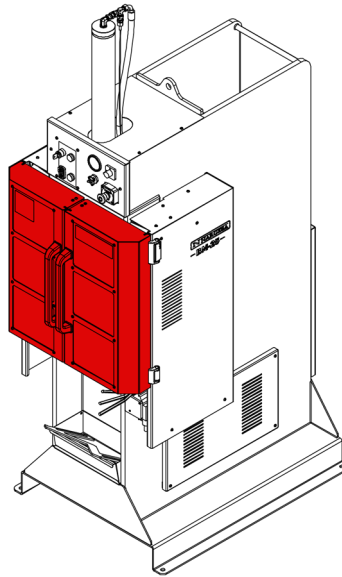
The machine has got an identification plate on one of the sides where it is printed the information about the manufacturer and the main characteristics of the machine. The plate has got the information detailed below:



1.5. Description of safety devices

The safety devices the broaching machine has got are the ones listed below:

- The door is located at the front part of the machine to prevent from any projected part could injure the operator. This door has a safety system which only allows any movement of the machine when the door is closed. Likewise, the machine has a key that activates a Danger light sign when turned and cancels this device; this option could be used in exceptional cases and under the operator's responsibility.



1.6. Normal use of the machine

The broaching machine will be basically used for the elaboration of all kind of inner slots by snatching steel wools.

1.7. Contraindications for the machine usage

Never fit elements that are not recommended by the manufacturer.

1.8. Noise caused by the machine

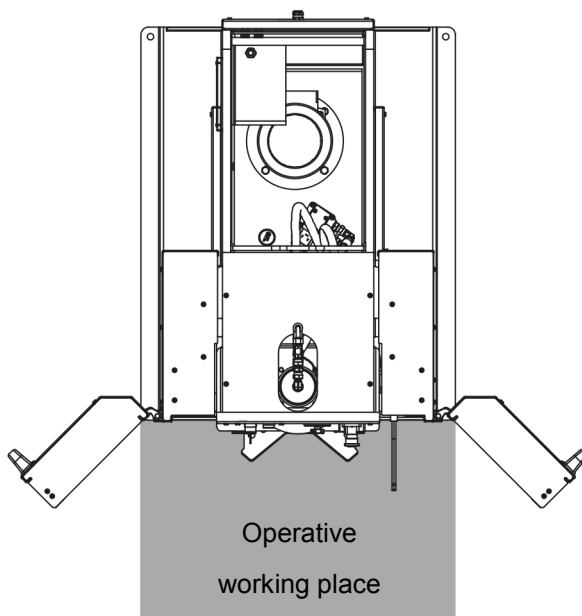
In this machine noise could be considered non-existent, the noise is almost non-existent under a normal working system. The pump is inside the container which is at the time inside the box that serves as the stand for the machine. All this minimizes noise and vibrations so the machine has a steady acoustic pressure level lower than 70dB at the working site.

1.9. Vibrations

Vibrations are almost non-existent, as it has been stated before. The hydraulic pump which is the element that could have a bit higher level of vibrations, is submerged inside an oil container so vibrations are minimized. At the same time the oil container is located on silent rubber blocks that produce a higher muffling of vibrations.

1.10. Operative working place

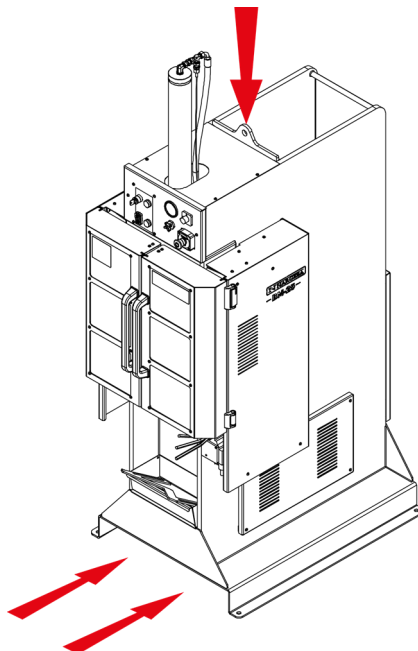
The broaching machine will only be used by an operative at the time who will be placed in front of the machine, never at a lateral of it because he ought to control the whole set of the machine. Moreover the machine main protection devices are thought for the frontal use of the machine.



2. TRANSPORT AND STORAGE

2.1. Transport

Transport without lifting will be carried out by a forklift truck. Lifting will be carried out by a crane using the clamping spots for it.



2.2. Storage conditions

The broaching machine could never be stored in a place that does not fulfil the following requirements:

- * Humidity between 30% and 95% without water condensation.
- * Temperature from -25°C to 55°C or 75°C for periods of time no longer than 24h (Bear in mind that this temperatures are just for storage conditions. Performance temperatures are described in chapter 4.3)
- * Do not pile up machines or heavy objects above.
- * Do not dismantle for its storage.

3. MAINTENANCE

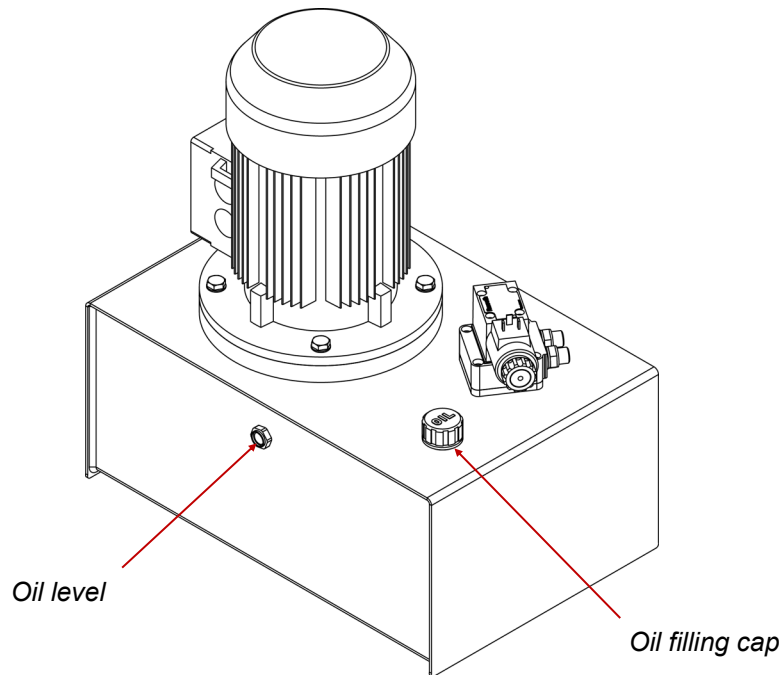
3.1. General maintenance

- Every 500 hours of use, check the oil level in the tank.

In the front of tank is oil level. In the absence of oil, fill until the level cap show 3/4 full.

- Replace every 2000 hours or every 3 years the hydraulic oil tank

Type: CEPESA HIDRAULICO HM 68



4. INSTALMENT AND STARTING UP

4.1 Instructions to fix it

When the machine is put down by a crane it is necessary to place it down correctly so it doesn't have to be moved once it is on the floor. In case it is not possible, then a moveable base must be placed below always caring for its inclination to avoid any possible turn over.

4.2 Assembling to reduce noise and vibrations

The machine will be fixed on the floor due to its own weight, therefore it needs to be located in a flat and leveled surface so any possible vibration could be also reduced.

4.3. Admissible outer conditions

* Environment temperature: between +5°C and +40°C without exceeding +35°C as average temperature within 24 hours.

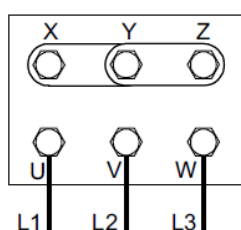
* Humidity: Between 30% and 90% without water condensation.

4.4. Connection to power supply

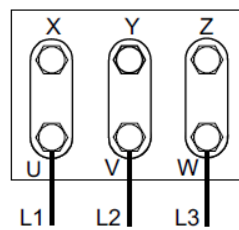
In order to carry out the electrical connections of the machine, first make sure it is not plugged to the electrical supply and that there is no tension in any of its pieces. The machine should be connected to only one source as well as to a proper ground socket to avoid possible accident and keep the equipment saved from any possible power leaking.

The standard machine is prepared to be connected to a 400V three phased system. In case the supply three phase tension was 230V a change must be carried out in the connections inside the machine to adapt it to that tension.

The machine has a 230/400V three-phased engine that comes star like connected. If the three phase line tension is 230V it must be connected triangularly. The engine is inside the box that serves as stand for the machine. The lateral of the machine must be opened and the cover of the engine connection box must be removed. The engine bobins will be accessible then and it will be possible to carry out the change from triangle to star connections as it is indicated in the following pictures:



Star picture
(preset)
For tension 400V



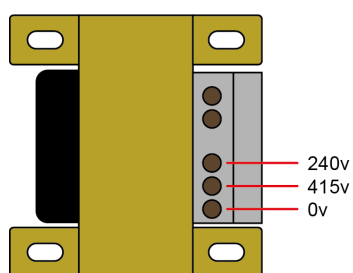
Triangle picture
For tension 230V

Once the engine bobins connection is finished, the cover of the box connections must be closed as well as the lateral door by fastening the screws.

4.4.1. Changing connection of the converter primary

Depending on the voltage available at the outlet it will be also required to change the connection of the converter primary which is fixed to the electrical panel inside the the machine box.

If the machine is connected to a 400V three-phased power supply it is necessary that the power connection of the transformer primary is made between terminals labeled "0V" and "415V". In case of having a 230V outlet drive, then disconnect the power cord from the terminal "415V" of the transformer primary using a screwdriver and connect it to terminal "230", right afterwards tighten the clamping screw with the screwdriver.



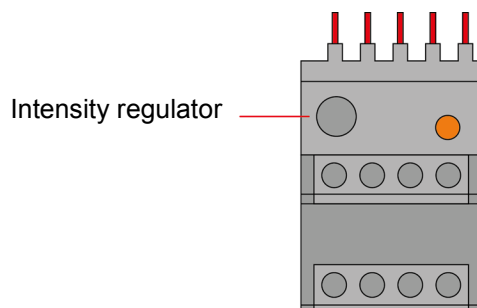
4.4.2. Adjusting Intensity of engine-keeper

Depending on the line voltage the current consumption varies the of the machine. It is therefore necessary to adjust the labor intensity of thermal motor protection. The rangers engine is fixed to the electrical panel inside the cabinet of the machine.

To adjust the intensity of the engine-keeper simply turn the knob located on the front, using a Phillip screwdriver, positioning the indicator arrow at the correct intensity.

In case of having a three-phased outlet 400V drive the engine-keeper must be set at an intensity of "2.6A". On the contrary, in case of having a three-phased outlet 230V drive the engine-keeper at an intensity of "5A".

If the engine-keeper installed can not be adjusted to the required intensity, it must be replaced by one with a higher amperage.



5. OPERATION MANUAL

5.1. Methods and stop systems of the machine

5.1.1. Pump stop

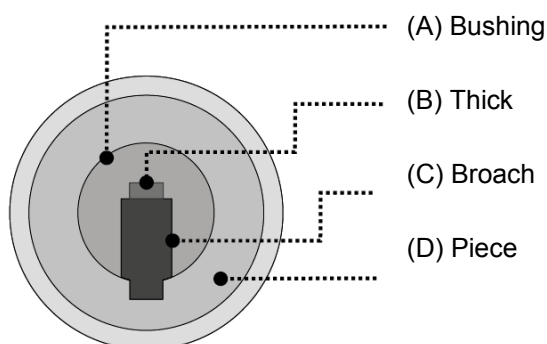
In order to stop only the pump, press the red button "PARO". With the pump stopped, the piston movement is cancelled.

5.1.2. Emergency stop

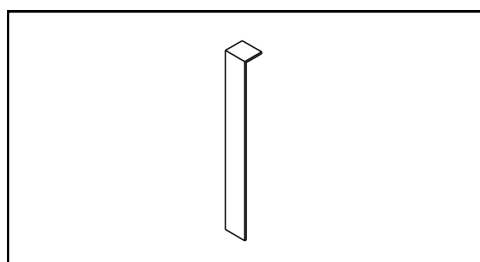
The machine is provided with an EMERGENCIA stop, located in the frontal part. All functions are neutralized by pressing the EMERGENCY button and so the machine is stopped as well.

5.2. Samples to make a correct broaching operation

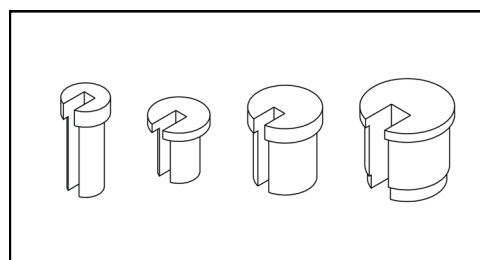
- 1 - Place the piece in the middle of the table.
- 2 - Insert the bushing.
- 3 - Place the broach in the bushing, lubricate abundantly in order to achieve a perfect broaching operation, especially during the first operation.
- 4 - Get the piston down from 20 to 40 mm until having the broach inserted in the bushing, then slightly raise up the piston so the broach recovers its vertical position and then repeat the same procedure 2 or 3 times until the broach overtakes the piece and it could be taken by the down part of the piece.
- 5 - It will be necessary to gradually insert 1, 2 or 3 thick parts depending on the broachs since these are the ones that give the exact depth. **(NEVER PUT THE THREE OF THEM AT THE TIME)**
- 6 - Clean up all steel wool from the broach once the broaching operation is finished (it is very important for the broach not to be broken).
- 7 - Causes of an incorrect broaching.
 - The use of oil in bad conditions.
 - Do not place the broach in vertical position.
 - Do not intercalate the piston thrust.



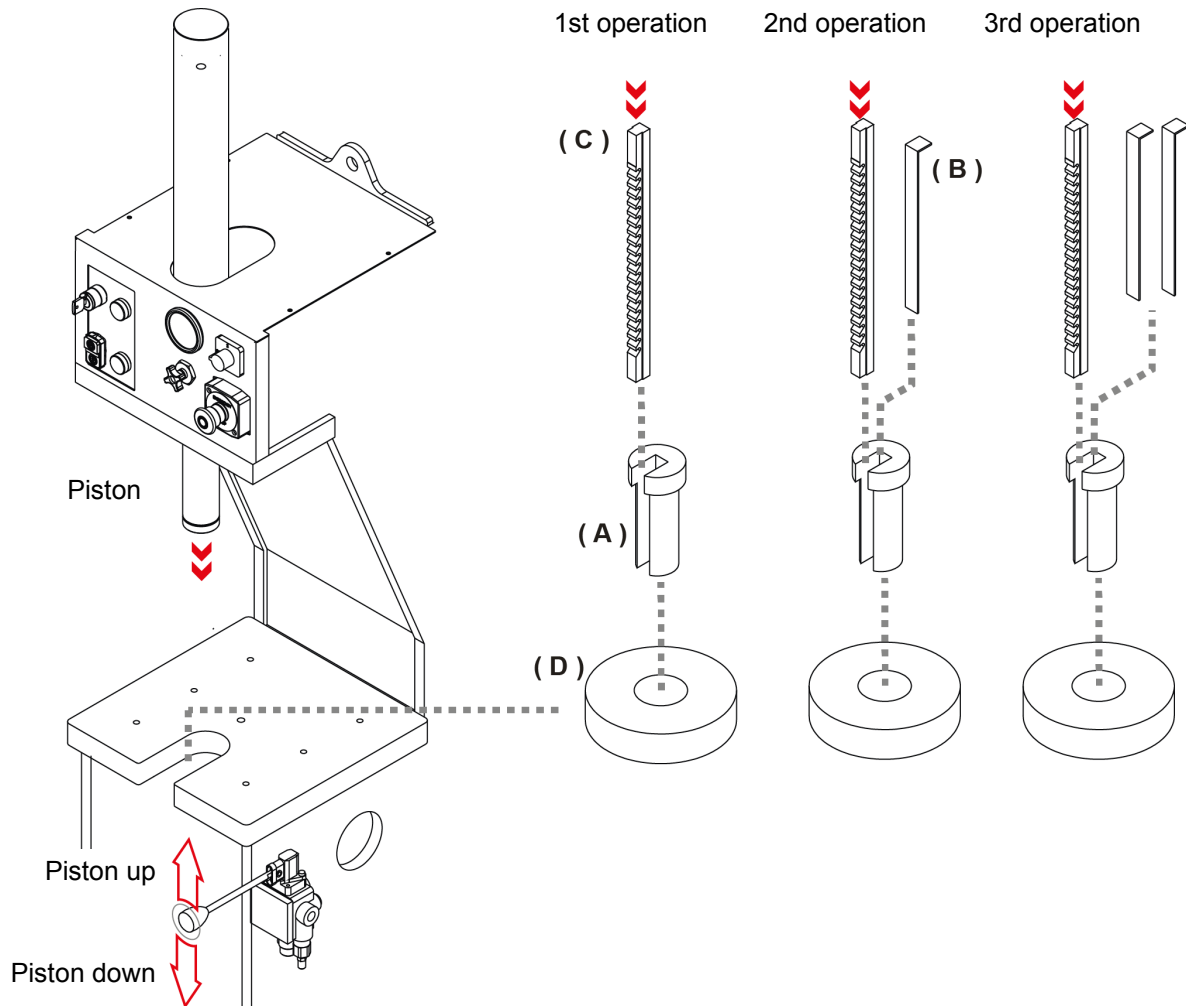
Thick part



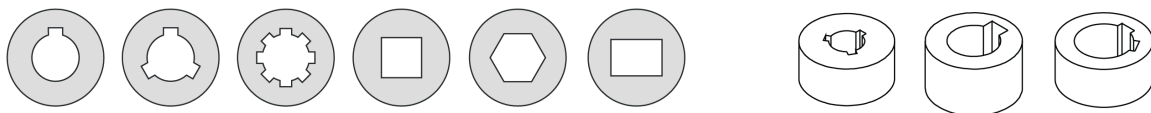
Bushing



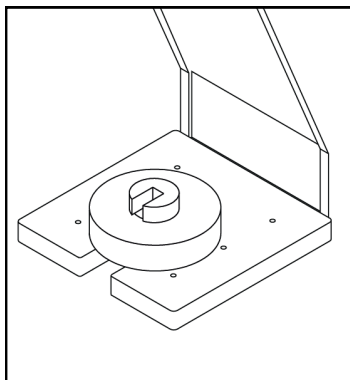
Depending on the carve depth, request 6. TABLE OF CHARACTERISTICS OF BRUSHES



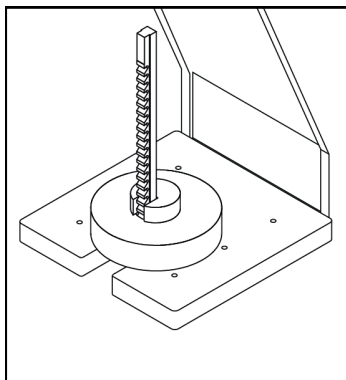
Examples of works



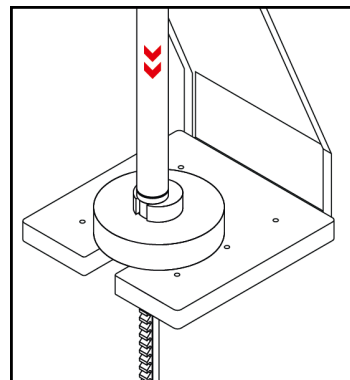
5.3. Samples to make cotter slots



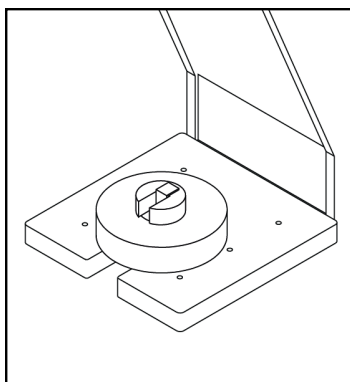
1. Place the bushing on the part



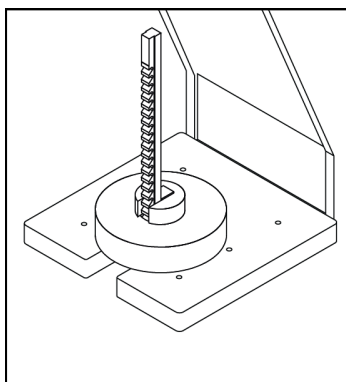
2. Place the broach. First pass With just the broach



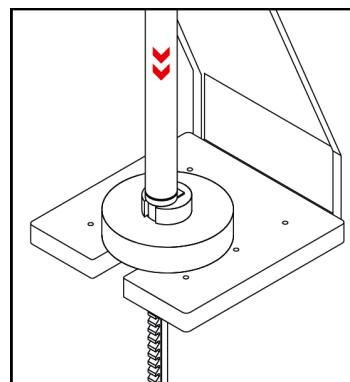
3. Get the piston down



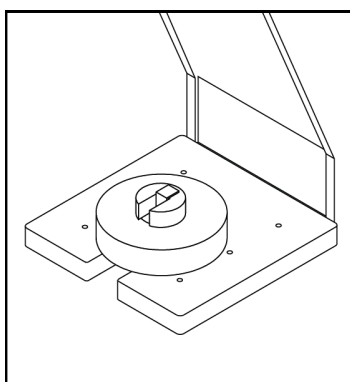
4. Place the thick part



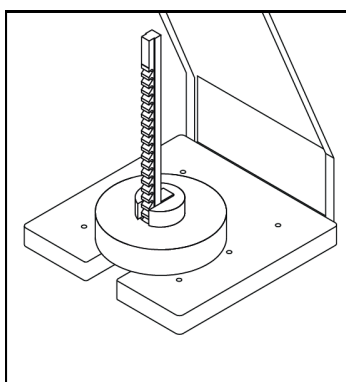
5. Place the broach



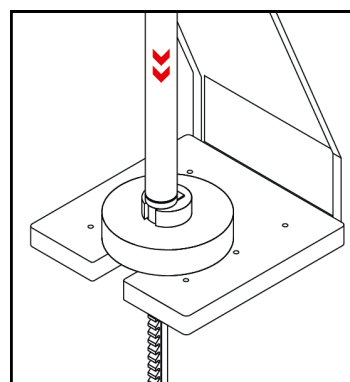
6. Get the piston down



7. Place the thick part



8. Place the broach



9. Get the piston down

Follow the steps 7, 8 and 9 until achieving the Desired size for the slot.

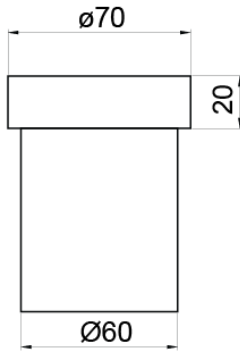
6. TABLE OF CHARACTERISTICS OF BRUSHES

Width	Measures	Wedges	Nº wedges	Cut min.	Cut máx.
2 mm	3.175 mm x 133.35 mm	2 mm x 2 mm	0	5.15 mm	28.57 mm
3 mm	3.175 mm x 133.35 mm	3 mm x 3 mm	1	5.15 mm	28.57 mm
4 mm	6.35 mm x 177.8 mm	4 mm x 4 mm	1	7.54 mm	42.86 mm
5 mm	6.35 mm x 177.8 mm	5 mm x 5 mm	1	7.54 mm	42.86 mm
5 mm	9.525 mm x 301.25 mm	5 mm x 5 mm	1	10.31 mm	63.50 mm
6 mm	9.525 mm x 301.25 mm	6 mm x 6 mm	1	10.31 mm	63.50 mm
7 mm	9.525 mm x 301.25 mm	7 mm x 7 mm	1	10.31 mm	63.50 mm
8 mm	9.525 mm x 301.25 mm	8 mm x 7 mm	1	10.31 mm	63.54 mm
10 mm	14.28 mm x 359.22 mm	10 mm x 8 mm	2	19.05 mm	152.40 mm
12 mm	14.28 mm x 359.22 mm	12 mm x 8 mm	2	19.05 mm	152.40 mm
14 mm	14.28 mm x 359.22 mm	14 mm x 9 mm	2	19.05 mm	152.40 mm
16 mm	19.05 mm x 387.35 mm	16 mm x 10 mm	3	19.05 mm	152.40 mm
18 mm	19.05 mm x 387.35 mm	18 mm x 11 mm	3	19.05 mm	152.40 mm
20 mm	25.4 mm x 488.95 mm	20 mm x 12 mm	3	19.05 mm	152.40 mm
22 mm	25.4 mm x 488.95 mm	22 mm x 14 mm	4	19.05 mm	152.40 mm
24 mm	25.4 mm x 488.95 mm	24 mm x 14 mm	4	19.05 mm	152.40 mm
25 mm	25.4 mm x 488.95 mm	25 mm x 14 mm	4	19.05 mm	152.40 mm

7. FORMULES FOR BROACHING

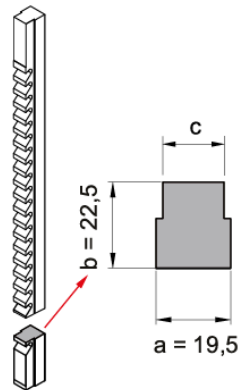
Picture 1

Bushing Ø60



Picture 2

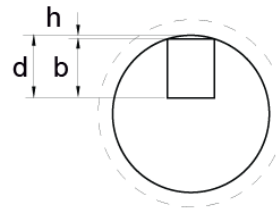
Broach 18mm



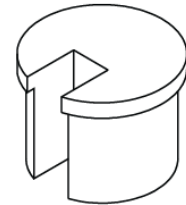
Picture 3

Height to mill

$$d = b + h$$

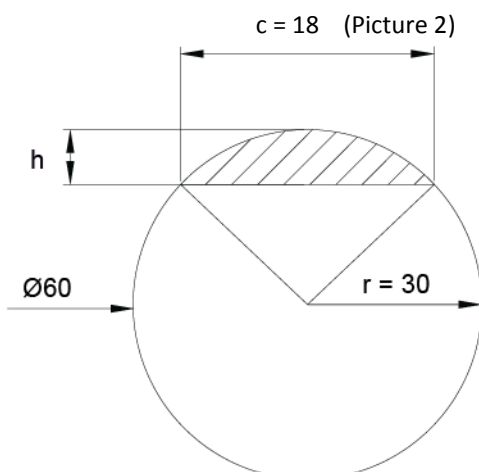


Finished part



1. Mechanize bushing (Picture 1)
2. Take the measurement of the tooth bottom of the brush. In this case the 18mm broach. (Picture 2)
3. Next step: to reduce the bushing in the milling center. Milling height "d" will be obtained from summing up the constante "h" and "b" (Picture 3)
4. The milling cutter to use in this case is the constante "a", that is to say, 19,5 mm (Picture 2)

Height "h" will be obtained from applying the following formula



$$h = r - \frac{1}{2} \sqrt{4r^2 - c^2}$$

$$h = 30 - \frac{1}{2} \sqrt{4 \times 30^2 - 18^2}$$

$$h = 30 - \frac{1}{2} \sqrt{3600 - 324}$$

$$h = 30 - 0,5 \sqrt{3276} = 57,236$$

$$h = 0,5 \times 57,236 = 28,618$$

$$h = 30 - 28,618 = 1,381$$

$$h = 1,38$$

8. ACCESSOIRES

Broaches 2mm and 3mm



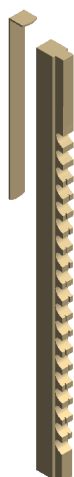
REF. Broaches 2mm	125-09-01-BR-00001
REF. Broaches 3mm	125-09-01-BR-00002
Tolerance	JS9
Sizes	Width 3,175 mm Length 133,35 mm
Model	I
Keyway number	0 units
Min. Cutting length	5,15 mm
Max. Cutting length	28,57 mm
For holes of:	6 mm a 10 mm
Weight	0,020 Kg aprox.

Broaches 4mm and 5mm short



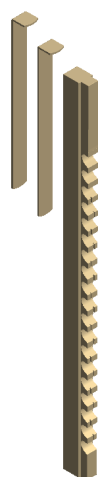
REF. Broaches 4mm	125-09-01-BR-00003
REF. Broaches 5 mm short	125-09-01-BR-00004
Tolerance	JS9
Sizes	Width 6,35 mm Length 177,8 mm
Model	II
Keyway number	1 units
Min. Cutting length	7,54 mm
Max. Cutting length	42,86 mm
For holes of:	11 mm a 19 mm
Weight	0,100 Kg aprox.

Broaches 5 Long, 6 and 8mm



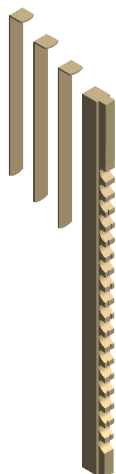
REF. Broaches 5 mm Long	125-09-01-BR-00005
REF. Broaches 6 mm	125-09-01-BR-00006
REF. Broaches 8 mm	125-09-01-BR-00008
Tolerance	JS9
Sizes	Width 9,52 mm Length 301,25 mm
Model	III
Keyway number	1 units
Min. Cutting length	10,31 mm
Max. Cutting length	63,54 mm
For holes of:	17 mm a 36 mm
Weight	0,350 Kg aprox.

Broaches 10, 12 and 14mm



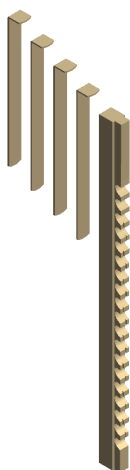
REF. Broaches 10 mm	125-09-01-BR-00009
REF. Broaches 12 mm	125-09-01-BR-00010
REF. Broaches 14 mm	125-09-01-BR-00011
Tolerance	JS9
Sizes	Width 14,29 mm Length 352,42 mm
Model	IV
Keyway number	2 units
Min. Cutting length	19,05 mm
Max. Cutting length	152,40 mm
For holes of:	32 mm a 56 mm
Weight	1 Kg aprox.

Broaches 16 and 18mm



REF. Broaches 16 mm	125-09-01-BR-00012
REF. Broaches 18 mm	125-09-01-BR-00013
Tolerance	JS9
Sizes	Width 19,05 mm Length 387,35 mm
Model	V
Keyway number	3 units
Min. Cutting length	19,05 mm
Max. Cutting length	152,40 mm
For holes of:	52 mm a 72 mm
Weight	1,5 Kg aprox.

Broaches 20, 22, 24 and 25mm



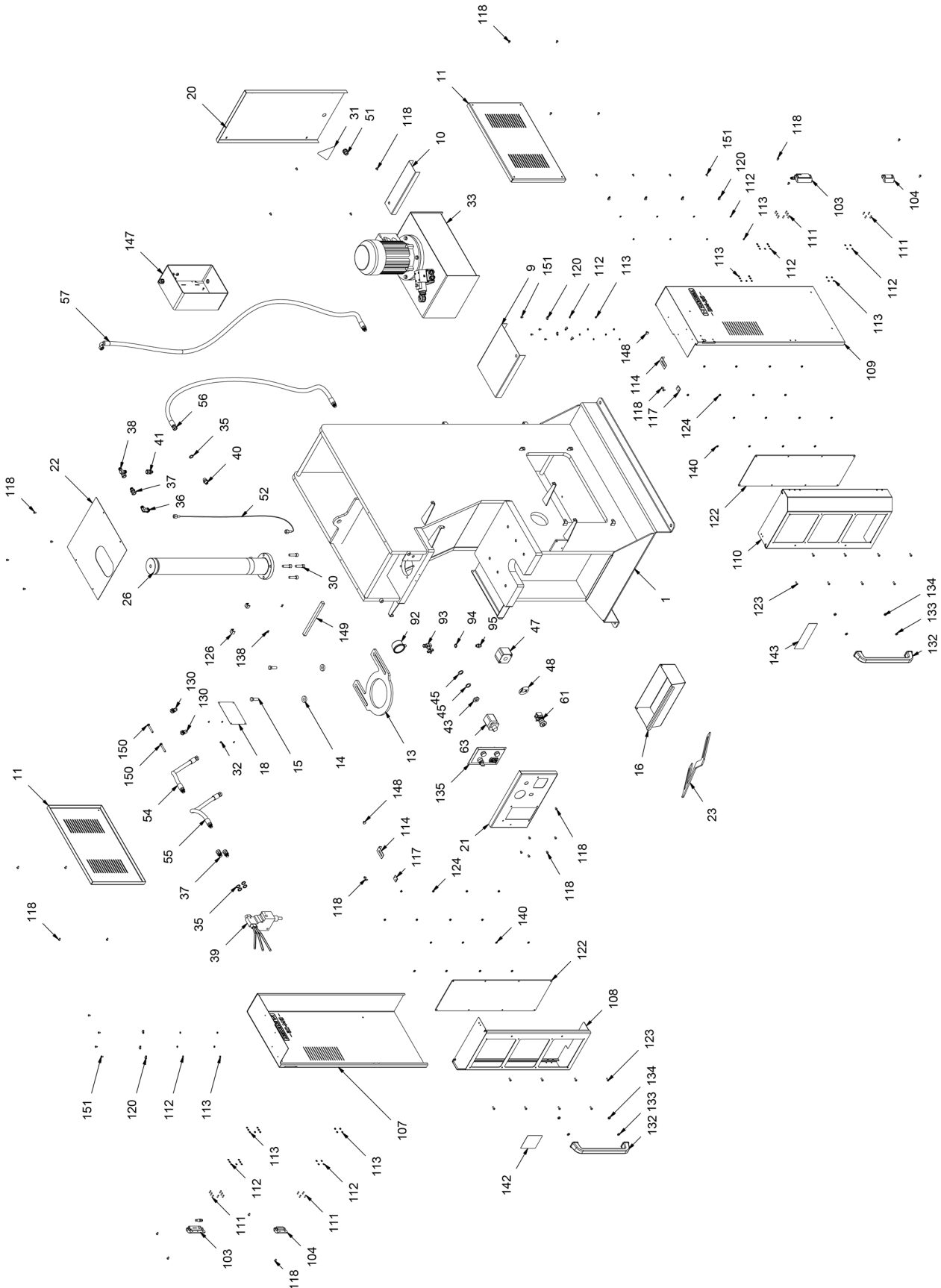
REF. Broaches 20 mm	125-09-01-BR-00014
REF. Broaches 22 mm	125-09-01-BR-00015
REF. Broaches 24 mm	125-09-01-BR-00016
REF. Broaches 25 mm	125-09-01-BR-00017
Tolerance	JS9
Sizes	Width 25,40 mm Length 488,95 mm
Model	VI
Keyway number	4 units
Min. Cutting length	19,05 mm
Max. Cutting length	152,40 mm
For holes of:	75 mm a 115 mm
Weight	3,5 Kg aprox.

Technical annex






Vertical broacher BM25

List of parts
Piston assembly
Hydraulic group
Electric map
Hydraulic map

A1. List of parts

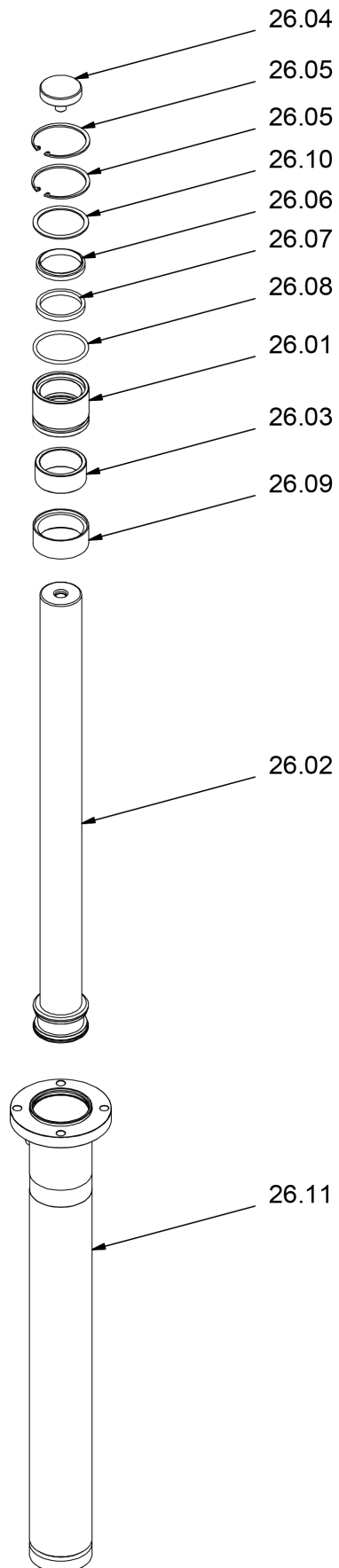













ELEMENTO	DIBUJO	REFERENCIA	DESCRIPCION	CANTIDAD
1		130-09-01-00140	Conjunto Soldado Estructura	1
9		120-09-01-00136	SEPARADOR DEPOSITO	1
10		120-09-01-00137	SEPARADOR DEPOSITO POSTERIOR	1
11		120-09-01-00021	Tapa Ventilación	2
13		120-09-01-00116	UTILLAJE 01	1
14		120-09-01-00113	Arandela Utillaje	2
15		020-D933-M12X40	TORNILLO HEXAGONAL DIN 933 M12x40	2
16		130-09-01-00082	Conjunto Soldado Cajón	1
18		122-PLC-0000-001	Placa Características General	1
20		120-09-01-00026	Puerta Trasera	1
21		120-09-01-00074	Tapa Frontal Comandos	1
22		120-09-01-00079	Tapa Superior Plana	1
23		120-09-01-00114	Utillaje M	1
26		130-09-01-00125	Conjunto Pistón	1
30		020-D912-M12X45	TORNILLO ALLEN DIN912 M12X45	4
31		122-ADH-00003	Adhesivo Triangulo 400Vac De 100 Mm	1
32		020-D7337-3X8	REMACHE DE CLAVO DIN 7337 De Al Ø3x8	4
33		130-09-01-00130	Grupo Hidraulico BM25	1
35		040-JMG-00004	JUNTA METAL GOMA 3/8"	5
36		040-CGMM-00002	CODO ORIENTABLE MACHO MACHO 3/8"	1
37		040-RG-00003	RACOR GIRATORIO MACHO HEMBRA 3/8"	3
38		040-TGL-00001	Figura 'T' Giratoria Lateral 3/8"	1
39		040-DISM-00001	DISTRIBUIDOR MANUAL 102N1PA12D	1

40		040-RMM-00003	RACOR MACHO MACHO 3/8"	1
41		040-RMTG-00007	REDUCCION MACHO 1/4" TG 3/8"	1
43		120-09-01-00126	Tuerca Sujeción	1
45		120-09-01-00127	Arandela Grifo	2
47		050-CSB-00001	CAJA DE SUPERFICIE PARA BOTON	1
48		050-APE-00001	PLACA SEÑALIZACION PARO EMERGENCIA	1
51		050-PE-00006	PRENSAESTOPA M20x1.5	1
52		120-09-01-00138	MANGUERA MINIMEX - TG1/4 CONO GAS - TG 1/4 CONO GAS - L=1000mm	1
54		120-09-01-00130	MANGUERA 3/8" - TG 3/8" - MACHO 3/8" L=750 mm	1
55		120-09-01-00131	MANGUERA 3/8" - TG 3/8" - MACHO 3/8" L=750 mm	1
56		120-09-01-00133	MANGUERA 3/8" - TG 3/8"-MACHO 3/8" L=1500 mm	1
57		120-09-01-00132	MANGUERA 3/8"-CODO 90º TG 3/8"-MACHO 3/8" L=2300 mm	1
61		050-PEM-22	PARO EMERGENCIA Ø22	1
63		050-IG-00001	INTERRUPTOR GENERAL KG10AK300	1
92		040-MAN-00003	MANOMETRO 0-300 BARS D63 1/4 INFERIOR	1
93		040-VDP-00002	GRIFO DE MANOMETRO 1/4" ROSCA GAS 1/4" HEMBRA	1
94		040-JMG-00002	JUNTA METAL GOMA 1/4"	1
95		040-RMM-00002	RACOR MACHO MACHO 1/4"	1
103		050-BIS-00001	BISAGRA DE SEGURIDAD	2
104		050-BIS-00002	BISAGRA	2
107		130-09-01-00141	CHAPA LATERAL IZQUIERDA BM25	1
108		130-09-01-00142	CONJUNTO PUERTA IZQUIERDA BM25	1
109		130-09-01-00143	CONJUNTO TAPA LATERAL DERECHA BM25	1
110		130-09-01-00144	CONJUNTO PUERTA DERECHA BM25	1

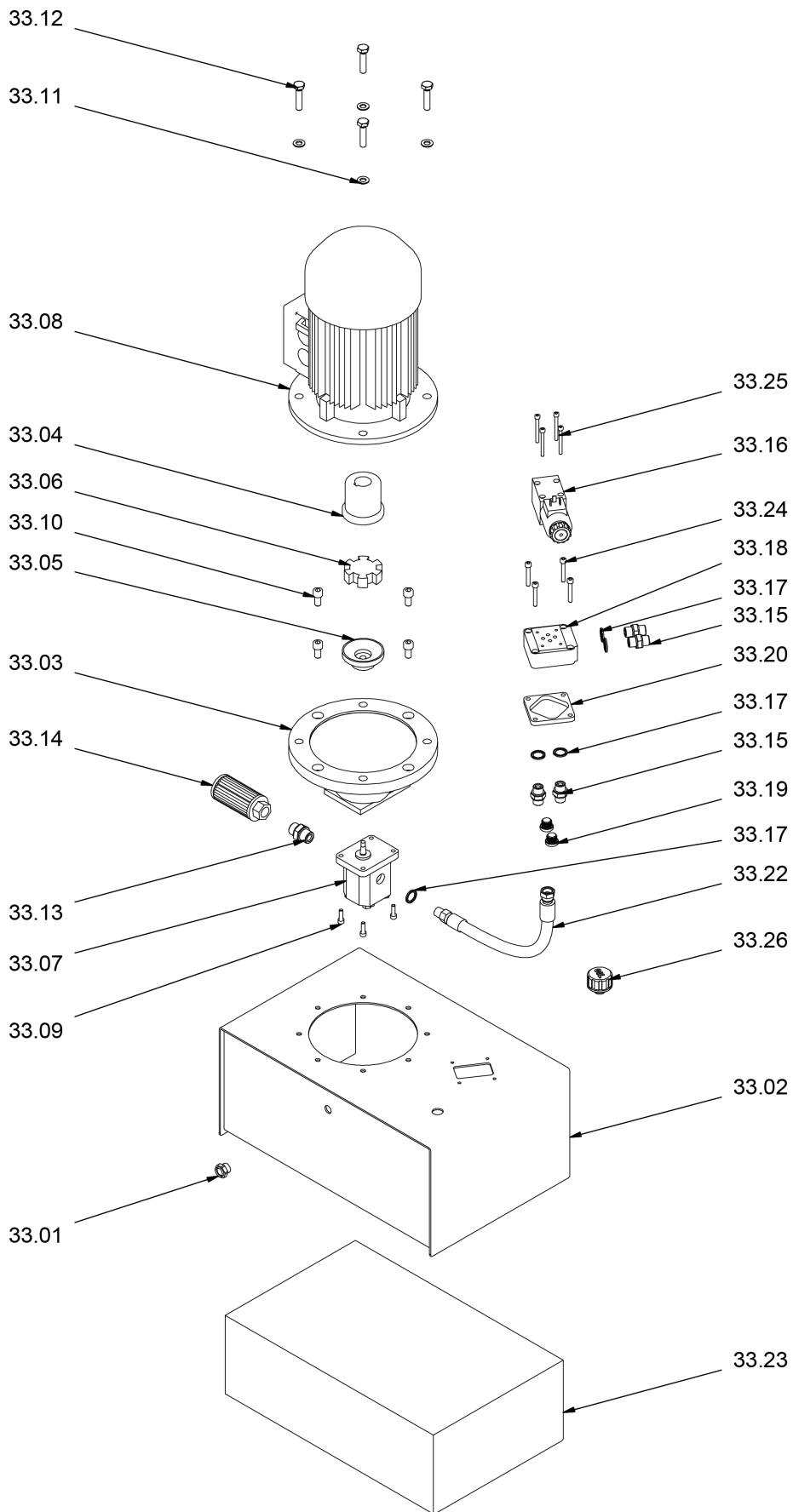
111		020-D913-M5X16	ESPARRAGO ALLEN DIN 913 M5X16	22
112		020-D125B-M5	ARANDELA DIN 125 B M5	33
113		020-D934-M5	TUERCA DIN 934 M5	33
114		120-09-01-00150	REGULACION CIERRE PUERTAS BM25	2
117		120-09-01-00151	CHAPA ROSCADA FIJACION CIERRE PUERTA BM25	2
118		020-I7380-M6X10	TORNILLO ISO 7380 M6X10	34
120		031-APC-00001	ABRAZADERA PARA CABLE DE 6	11
122		120-09-01-00152	POLICARBONATO PUERTAS BM25	2
123		020-I7380-M6X16	TORNILLO ISO 7380 M6X16	16
124		020-D934-M6	TUERCA DIN 934 M6	16
126		050-GEN-0022	Soporte Perfil Led	2
130		040-CMH-00002	CODO 90° MACHO HEMBRA 3/8"	2
132		031-APM-00004	ASA PUENTE 342	2
133		020-D125B-M8	ARANDELA DIN 125 B M8	4
134		020-D934-M8	TUERCA DIN 934 M8	4
135		130-09-01-00145	CONJUNTO CUADRO DE MANDOS	1
138		020-D7991-M3x8	TORNILLO ALLEN DIN 7991 M3X8	4
140		020-D125B-M6	ARANDELA DIN 125 B M6	16
142		122-CAL-0901-001	CALCA CIERRE PUERTA	1
143		122-CAL-0901-002	PICTOGRAMAS BM25	1
147		050-KIE-09-01-002	KIT ELECTRICO	1
148		031-BM-00005	BASE MAGNETICA Ø16X4,5 CON ESPIGA M6	2
149		120-09-01-00157	Tira led 250mm	1
150		020-D933-M8X55	Tornillo Cabeza Hexagonal DIN 933 M8x55	2
151		020-I7380-M5x10	Tornillo ISO 7380 M5X10	12










A2. Piston assembly








Elemento	Dibujo	Nº de pieza	Descripción	Cantidad
26.01		120-09-01-00031	Dolla Bronce	1
26.02		130-09-01-00034	Vástago Pistón	1
26.03		120-09-01-00035	Arandela Separadora Pistón	1
26.04		120-09-01-00033	Suplemento Vástago	1
26.05		030-DIN472-80X2C5	CIRCLIP DIN 472 AGUJERO Ø80	2
26.06		040-RAS-60X70X10	RASCADOR 60x70x7/10	1
26.07		040-BA-60x70x7C3	JUNTA COLLARIN BA Ø80XØ90X11.4	1
26.08		040-JT-70X5-90	JUNTA TORICA Ø70X5 90 Shore	1
26.09		040-DPS-80X66X16X32	JUNTA DPS 80X66X16X32	1
26.10		120-09-01-00016	Arandela Dolla Guia Vastago	1
26.11		130-09-01-00039	Conjunto Soldado Pistón	1

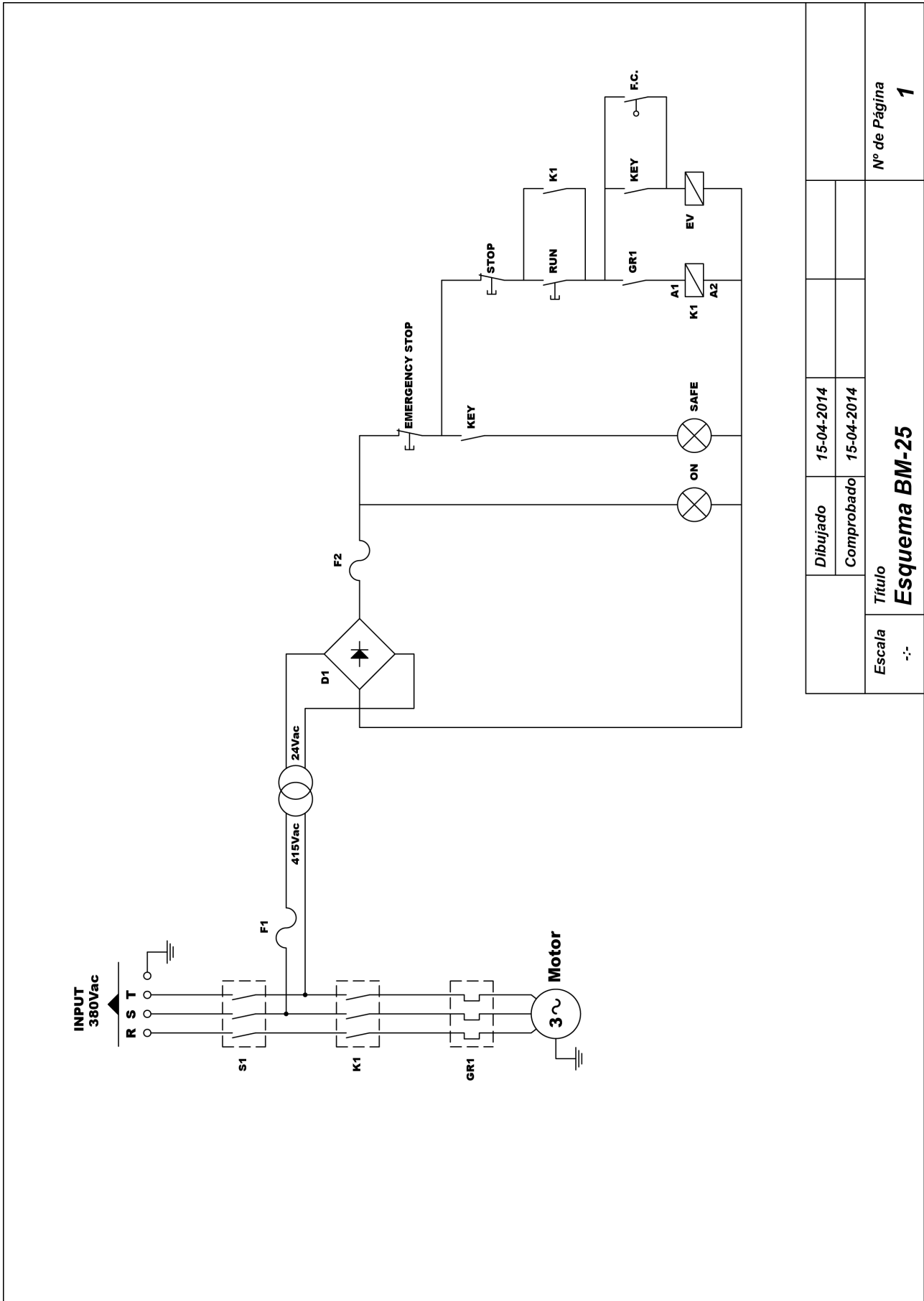
A3. Hydraulic group



Elemento	Dibujo	Nº de pieza	Descripción	Cantidad
33.01		040-NA-00001	NIVEL DE ACEITE 3/8"	1
33.02		130-09-01-00103	Conjunto Soldado Deposito BM25	1
33.03		040-CA-00002	Campana Acoplamiento Bomba Tipo Lo Motor 3/4/5.5 C.V.	1
33.04		040-AE-00007	Acoplamiento Lado Motor 3/4 / 5.5Cv	1
33.05		040-AE-00008	Acoplamiento Lado Bomba Lo Para Motor 3/4 / 5.5 Cv	1
33.06		040-AE-00009	Estrella Acoplamiento Para Motor 3/4 / 5.5 Cv	1
33.07		040-BH-00002	Bomba Hidraulica De Aluminio De 7.5 L 1107.5DE10R	1
33.08		050-ME-00003	Motor Electrico 2.2Kw 1500Rpm 50-60Hz B5 220/380V	1
33.09		020-D912-M6X20	TORNILLO ALLEN DIN 912 M6X20	4
33.10		020-D912-M10X20	Tornillo Allen DIN 912 M10X20	4
33.11		020-D125B-M10	ARANDELA DIN 125 B M10	4
33.12		020-D933-M10X45	TORNILLO HEXAGONAL DIN 933 M10X45	4
33.13		040-RMM-00004	RACOR MACHO MACHO 1/2"	1
33.14		040-FL-00002	Filtro De Aspiracion 1/2' REF 2FA15R125N	1
33.15		040-RMM-00003	RACOR MACHO MACHO 3/8"	4
33.16		040-ELV-00003	Electrovalvula 5Evp12D4C02D24	1
33.17		040-JMG-00004	JUNTA METAL GOMA 3/8"	5
33.18		040-BAS-00002	BASE ELECTROVALVULA ROQUET REF. 321002	1
33.19		040-TVA-00004	TAPON DE VACIADO ALLEN 3/8" GAS	2
33.20		120-09-01-00125	CHAPA GRUESO BASE ELECTROVALVULA	1

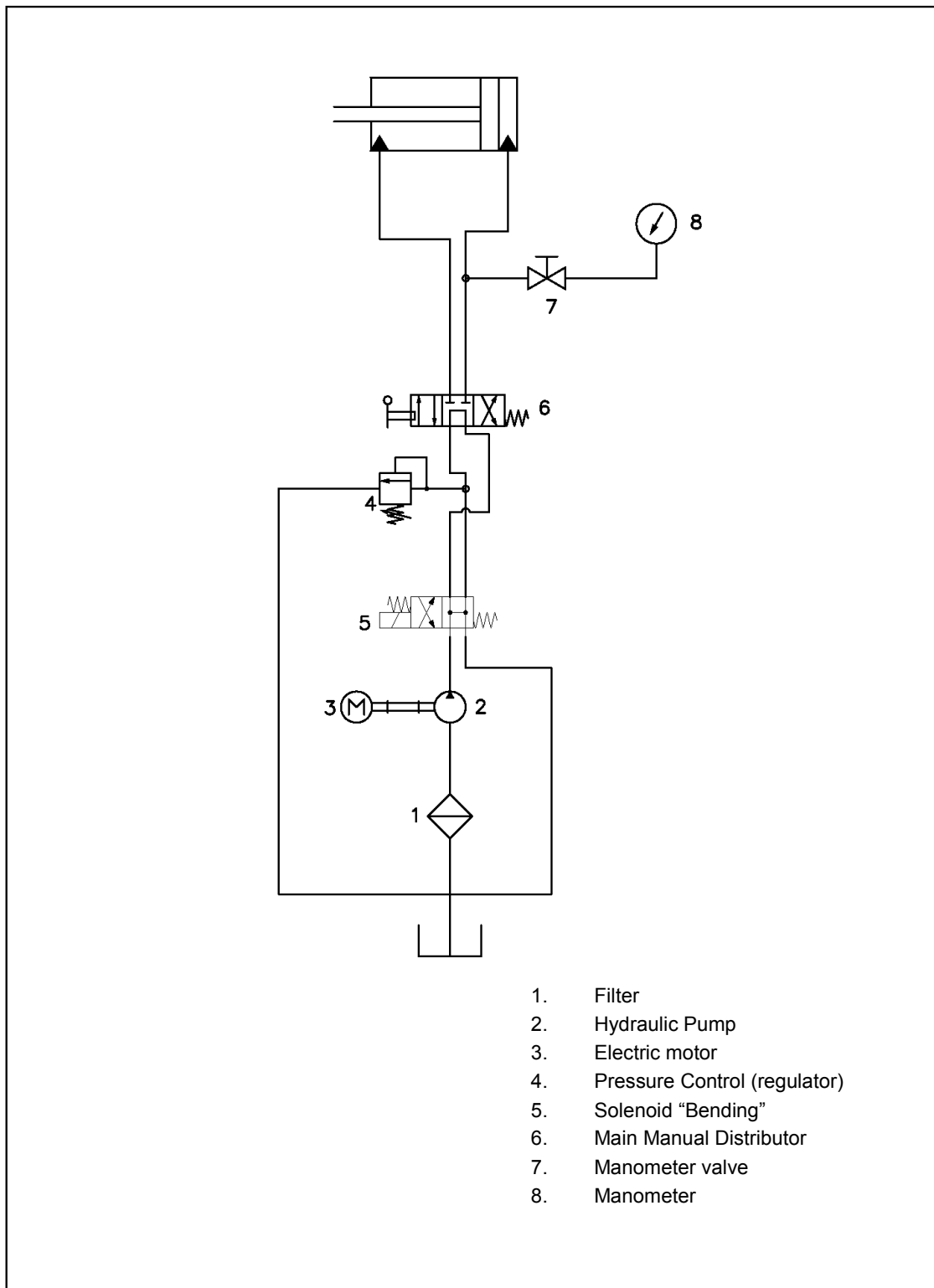
33.22		120-09-01-00128	Manguera Flexible 3/8" TL3/8-MF3/8 L=400 mm Presion 250 Bars	1
33.23		ACEITE BM25	ACEITE HIDRAULICO HM-68 25 LITROS	1
33.24		020-D912-M6X40	TORNILLO ALLEN DIN 912 M6X40	4
33.25		020-D912-M5X50	TORNILLO ALLEN DIN 912 M5x50	4
33.26		040-TLL-00003	Tapon Llenado De 1/2" Doble Respiradero Y Filtro	1

A4. Electric map





Dibujado	15-04-2014			
Comprobado	15-04-2014			
Escala	-:-	Título		Nº de Página
		Esquema BM-25		1

A5. Hydraulic map



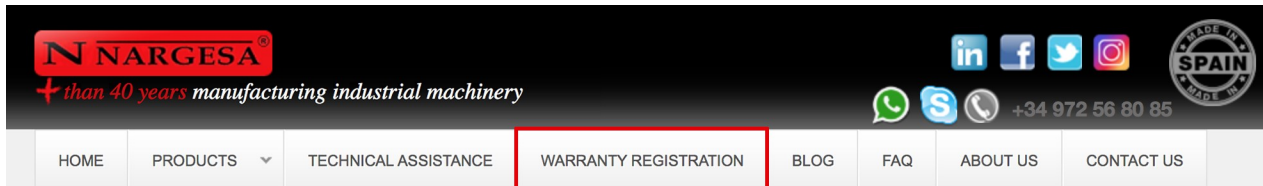
- 1. Filter
- 2. Hydraulic Pump
- 3. Electric motor
- 4. Pressure Control (regulator)
- 5. Solenoid "Bending"
- 6. Main Manual Distributor
- 7. Manometer valve
- 8. Manometer

ESQUEMA HIDRAULICO BM25		Ref.	Und.	Nº Desp.	Nombre	Fecha
		Num.		Dibujado	Tecnico 20	05-05-2014
Material			Medida corte	mm	Verificado	
Revestimiento		Tratamiento		 <small>Ciudad de Gurreñaga y San Martín de Ibañeta (7476) País Vasco. España (Girona) http://www.nargesa.com</small>		
	Color	Peso	Tol. general			

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1. Among www.nargesa.com on our site
2. Select the menu [Warranty Registration](#)



3. Complete the form with your details and press

Submit

4. **Message Sent:** confirms your data has been successfully sent to Prada Nargesa SL. Your machine has been registered and has a warranty of three years in total.

Your request has been sent correctly. We will contact you right away to confirm that your warranty has been extended up to three years