



**PS-110**

**15:1**

MAX. WORKING  
PRESSURE: 150 bar

MAX. AIR INLET  
PRESSURE: 10 bar



**WARNING**

This equipment is designed to be used only for pumping non-corrosive and non-abrasive lubricants and greases. Any other use of the machine may result in unsafe operation.

**I.MANUAL**



**DECLARACION DE CONFORMIDAD “CE”  
“EC” DECLARATION OF CONFORMITY**

**MODELO / MODEL PS-110 15:1**

Este producto cumple con la siguiente directiva de la Comunidad Europea.

This Product complies with the following European Community Directive.

Directivas 2006/42/CE, 2014/34/EU Atex sobre máquinas.

(Ex II 2G c T6 X)

Machinery Directive 2006/42/CE, 2014/34/EU Atex Directive.

(Ex II 2G c T6 X)

APROBADO POR /

APPROVED BY

AITOR ORTIZ

FECHA / DATE

MBP, S.L. figura inscrita en el Registro Industrial del País Vasco con el N° 01/8030 y cumple los requisitos para el desarrollo de su actividad comercial.

MBP, S.L. is registered in the Industrial Register of the Basque Country with the N° 01/8030.

## INDEX

---

|                                |    |
|--------------------------------|----|
| SYMBOLS .....                  | 2  |
| INSTALLATION .....             | 4  |
| OPERATION .....                | 5  |
| START-UP .....                 | 6  |
| TROUBLESHOOTING GUIDE .....    | 7  |
| PARTS LIST .....               | 8  |
| MAINTENANCE .....              | 10 |
| DISPLACEMENT PUMP PARTS.....   | 11 |
| MAINTENANCE AIR MOTOR .....    | 12 |
| AIR MOTOR PARTS .....          | 13 |
| PNEUMATIC ELEVATOR PARTS ..... | 14 |
| PNEUMATIC CONNECTIONS .....    | 15 |
| TECHNICAL DATA.....            | 16 |

**WARNING**

THIS SYMBOL ALERTS YOU ABOUT THE POSSIBILITY OF SERIOUS INJURIES OR DEATH IF INSTRUCTIONS ARE NOT FOLLOWED.

**CAUTION**

THIS SYMBOL WARNS OF THE POSSIBILITY OF DAMAGE OR DESTRUCTION OF EQUIPMENT IF YOU DO NOT FOLLOW INSTRUCTIONS.

**WARNING**

INSTRUCCIONES

**DANGER DUE TO MISUSE OF THE MACHINE**

- Incorrect use can cause equipment to malfunction or even shatter and cause accidents.
- Consult the instruction's handbook before using the equipment.
- Use the equipment for its intended purpose.
- Check periodically the equipment and replace the damaged parts.
- Do not exceed the maximum pressure in the equipment.
- No strangle neither hoses nor nipple.
- No move or lift the equipment with pressure.
- Bear in mind all the local procedure of safety.

**TOXIC FLUID OR FUMES HAZARD**

- Toxic fluids or fumes can cause serious injury if splashed in the eyes or on skin, inhaled, or swallowed.
- Know the specific hazards of the fluids you are using.



### **TOXIC FLUID OR FUMES HAZARD**

- Store hazardous fluid in approved containers.
- Use always gloves, mask, glasses and clothes to be protected from the possible hurts.



### **FIRE AND EXPLOSION HAZARD**

- Poor ventilation, poor grounding or a spark can create a dangerous situation, causing fires or explosions.
- Ground equipment and conductive objects in work area. See grounding instructions.
- If there is static sparking or you feel a shock, stop operation and do not use the equipment again until you identify and correct the cause.
- Use the equipment in well ventilated area.
- Keep the work area free of debris, including solvent, rags and gasoline.
- Do not smoke in the work area
- Keep a fire extinguisher in the work area.



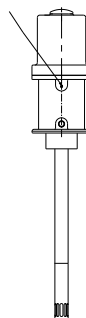
### **MOVING PARTS HAZARD**

- Moving parts can pinch or amputate fingers and other body parts.
- Keep clear of moving parts
- Do not operate equipment without protective guards or covers removed.
- Before checking, moving, or servicing equipment, follow the pressure relief procedure.

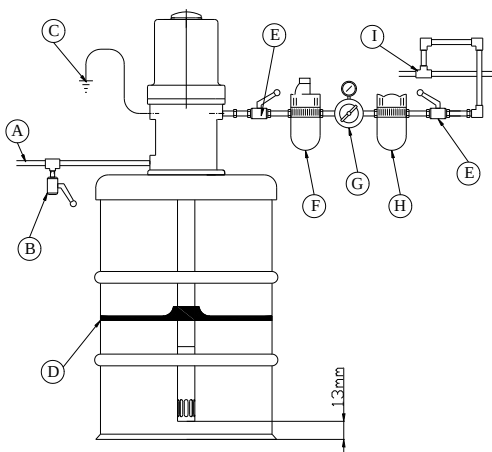
## GROUND CONNECTION

It is essential to ground the equipment to maintain safety in the installation. This reduces the risk of sparks caused by static electricity. Ensure that you obtain a true 'GROUND' and use electrically conductive hoses. The product container must comply with current regulations.

Grounding point



(fig.1)



(fig.2)

Recommended air pipe route to reduce humidity in the pump unit.

## DESCRIPTION

- A.- PRODUCT OUTLET PIPE
- B.- PURGE VALVE (PRODUCT)
- C.- GROUND CONNECTION
- D.- FOLLOWER PLATE
- E.- THREE-WAY VALVE (AIR PURGE)
- F.- AIR LUBRICATOR
- G.- AIR REGULATOR WITH PRESSURE GAUGE
- H.- AIR PURIFIER
- I.- AIR INSTALLATION



### WARNING

Install the pump securely so that it cannot move during operation.

1.- During installation, ensure that the operator has easy access to the air regulators for the pump and lift. Check that there is enough space above the pump and lift when they are in their highest position.

2.- Use wedges to level the base of the lift.



### WARNING

Your system requires three accessories:

- 1.- A three-way air inlet valve.
- 2.- A three-way valve for product purging.
- 3.- A grounding cable is required.

By incorporating these three elements, you can significantly reduce the risk of accidents.

The valves are designed to decompress the equipment.



## OPERATION PRESSURE RELIEF PROCEDURE



### WARNING



#### INJECTION DANGER

The equipment is pressurized until the pressure inside is manually released. To reduce the risk of accidents and serious damage caused by liquid escaping from the dispensing gun, you must depressurize the equipment whenever:

- A- Finish dispensing the product.
- B- When I change the drum.
- C- When servicing any part of the installation or equipment.
- D- Review, inspect, or install new items.



### WARNING



#### MOVING PARTS HAZARD.

The working pressure may not be the same for all components of the installation, so to reduce the risk of accidents, you should find out the recommended pressure for each element.

Do not exceed the working pressure of the component that supports the lowest pressure.

The pump creates a pressure 15 times greater than that of the air inlet. Knowing which components can withstand lower pressure, multiply the indicated inlet pressure by 60 to allow for a safety margin.

- 1- Close the pump air regulator until it reads "0" bar.
- 2- Close the air passage of the three-way air valve. This is near the pump. This will release pressure from the motor.
- 3- Place a metal part of the gun in physical contact with a grounded metal waste container and squeeze the trigger until no more product comes out.
- 4- Open the product's purge valve "B" (fig. 2).

## START-UP

- 1.- Keep both regulators n°11 and n°12 set to '0' pressure (see Fig. 3).
- 2.- Feed line air into point n°10 of the air unit.
- 3.- Ensure that valves n°8 and n°9 are in the closed position.
- 4.- Apply pressure to regulator n°11 and move valve n°6 (see Fig. 3) upwards so that the pump begins to rise; it will stop automatically when it reaches the highest point. ("CAUTION": do not release the air pressure).
- 5.- Place the container on the platform, removing the lid and resting it against the stops.
- 6.- Move valve n°6 downwards to lower the pump slowly until the follower plate is positioned over the drum.

Open valve n°9.

- 7.- Once the follower plate is pushing the product, adjust the pressure of the plate on the product using regulator n°11.
  - a) If the pressure is too high at regulator n°11, the product will leak out from around the edges of the follower plate and through valve n°9.
  - b) If the pressure is too low at regulator n°11, the pump will fail to prime or will lose its prime whilst in operation.

- 8.- Apply pressure directly to the pump via regulator n°12, starting to absorb the grease from the drum. Keep the nozzle open for a short while, until the grease flows out of the nozzle continuously.
- 9.- Close valve n°9. This valve is designed to allow air to escape between the follower plate and the grease.

## DRUM CHANGE

- 1- Set regulator n°12 to "0" pressure.
- 2- Open valve n°8.
- 3- Move valve n°6 upward.
- 4- When you do this, the pump and its follower plate will rise and the cylinder will remain on the platform.
- 5- Close valve n°8.





## WARNING

Follow the pressure relief procedure before servicing or installing the equipment to reduce the risk of accidents.

Release the pressure from the equipment before servicing any part of the installation.



## WARNING

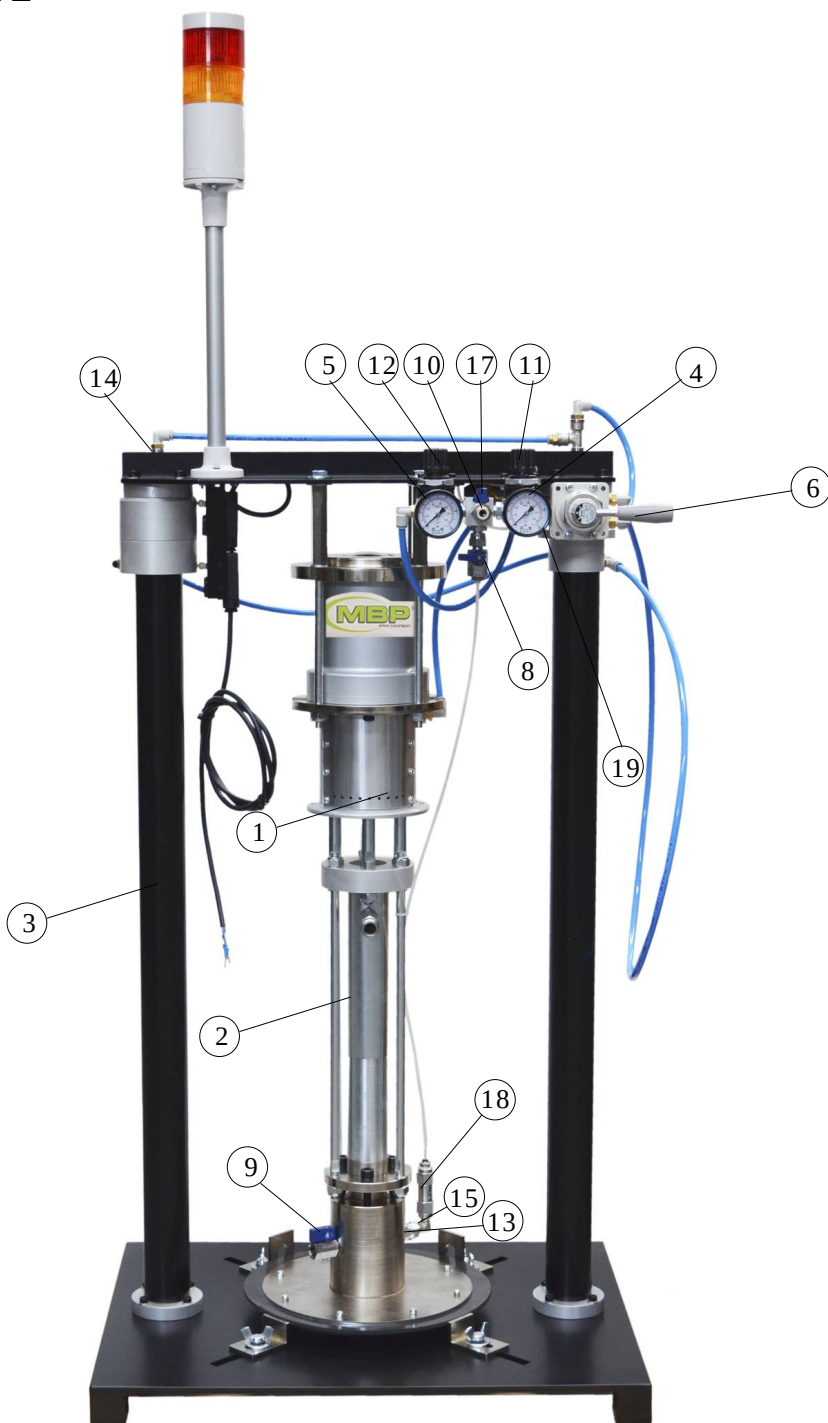


**MOVING PARTS  
HAZARD.**

Never operate the pump without the protective plates on the air motor.

These plates protect the fingers from cuts or amputations.

| PROBLEM                                                                       | CAUSE                                                  | SOLUTION                 |
|-------------------------------------------------------------------------------|--------------------------------------------------------|--------------------------|
| The follower plate does not go up or down.                                    | The air valve is closed or the air line is blocked.    | Open or clean.           |
|                                                                               | Insufficient pneumatic pressure.                       | Increase.                |
| The follower plate moves up or down too quickly.                              | Pressure too high.                                     | Reduce the pressure.     |
| Air loss in pneumatic cylinders.                                              | The guide is for loose pneumatic axles or worn joints. | Replace.                 |
| Product loss.                                                                 | Pressure is too high.                                  | Decrease.                |
|                                                                               | Worn or damaged joints                                 | Replace.                 |
| The pump is pumping air, or it is not priming correctly.                      | Insufficient pressure.                                 | Increase the pressure.   |
|                                                                               | There are worn or damaged gaskets.                     | Replace.                 |
|                                                                               | The control valve is closed or blocked.                | Open, clean, or replace. |
| The air valve does not keep the reservoir down or push the follower plate up. | Air valve closed.                                      | Open.                    |
|                                                                               | The air line is blocked.                               | Clean.                   |
|                                                                               | Insufficient pneumatic pressure.                       | Increase.                |



(fig.3)



- 1.- AIR MOTOR ( 110.100.00)
- 2.- LOWER PUMP (112.200.00)
- 3.- PNEUMATIC ELEVATOR ( 110.301.00)
- 4.- AIR REGULATORS ASSEMBLY (110.400.00)
- 5.- GAUGE (CNB.001)
- 6.- VALVE (UP-DOWN) (CNC.020)
- 8.- VALVE (CNC.003)
- 9.- VALVE (CNC.004)
- 10.- AIR INLET (CNA.106)
- 11.- PRESSURE REGULATOR FOLLOWER PLATE (CNB.051)
- 12.- AIR REGULATOR PUMPING (CNB.051)
- 13.- NIPPLE (CNA.140)
- 14.- NIPPLE (CNA.065)
- 15.- NIPPLE (CNA.080)
- 17.- DISTRIBUTOR (110.300.08)
- 18.- NON-RETURN VALVE (CNA.028)
- 19.- LIMIT SWITCH (CNA.029)



## WARNING

Before starting any maintenance work on the equipment or installation, follow the **PRESSURE RELIEF PROCEDURE**.

- 1.- Wash the pump, hose, and gun using a degreaser compatible with the product and with the wetted parts of the equipment.
- 2.- Depressurize the equipment following the **SAFETY RULES**.
- 3.- Disconnect the hose from the pump, always using two wrenches.
- 4.- Loosen screws n°28 (fig. 4) and remove the follower plate.
- 5.- Loosen nuts n°11 (fig.7).
- 6.- Move the base downward to get access to pin n°16 (fig.4). Remove pin n°16. Then, unscrew rod n°18 along with the entire motor base.
- 7.- Once the motor base is loose, proceed to disassemble it. To do it, following steps:
- 8.- Loosen ties n°48 by removing nuts n°49 (fig. 4).
- 9.- Remove support n°27 (fig. 4) and loose the tie parts n°26, valve n°29, bushing n°42, and valve body n°25 (fig. 4).
- 10.- Remove the shaft-piston assembly n°18 and n°23 by striking the end where pin n°16 is located with a mallet
- 11.- Loosen piston n°23 and disassemble tie n°26 by removing pin n°22.

12.- Clean the components and replace any necessary parts.

13.- Assemble in the reverse order of disassembly. When installing packings, note that they are interleaved: polyethylene, teflon, polyethylene...

When assembling piston n°23 onto rod n°18, use Loctite 542 and allow it to dry before installation.



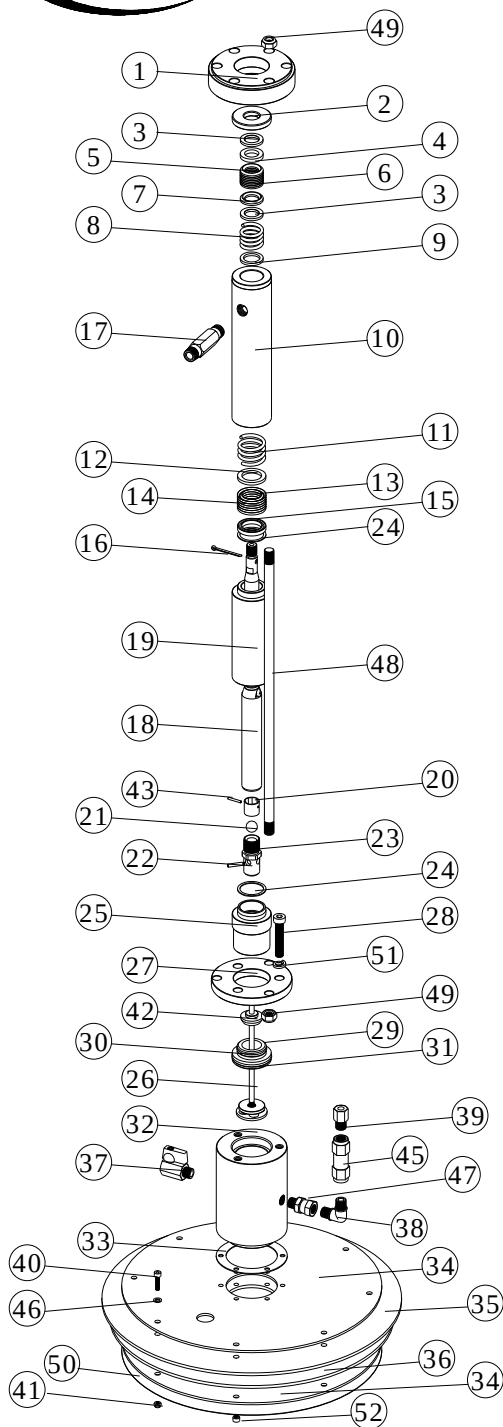
## WARNING

If you have any problems, please contact technical support. Do this before disassembling anything.

**NOTE:** See figure n° 4 on page 11

We have different sizes of extrusion plates available.

|        |            |       |      |
|--------|------------|-------|------|
| +++34: | 110.260.03 | PLATE | Ø329 |
|        | 110.261.03 | PLATE | Ø250 |
|        | 110.265.03 | PLATE | Ø205 |
| +++35: | 110.260.04 | JOINT | Ø379 |
|        | 110.261.04 | JOINT | Ø295 |
|        | 110.265.04 | JOINT | Ø245 |
|        | 110.266.04 | JOINT | Ø310 |
|        | 110.267.04 | JOINT | Ø317 |
| +++36: | 110.260.05 | JOINT | Ø360 |
|        | 110.261.05 | JOINT | Ø275 |
|        | 110.265.05 | JOINT | Ø225 |
|        | 110.266.05 | JOINT | Ø290 |
|        | 110.261.04 | JOINT | Ø295 |
| +++50: | 110.260.06 | NYLON | Ø329 |
|        | 110.261.06 | NYLON | Ø250 |
|        | 110.265.06 | NYLON | Ø205 |



(fig.4)

| N°  | REF.       | DESCRIPTION        | Q  |
|-----|------------|--------------------|----|
| 1   | 112.200.01 | SUPPORT PUMP       | 1  |
| 2   | 110.200.02 | STOP               | 1  |
| *3  | 110.230.03 | WASHER             | 2  |
| *4  | 110.230.01 | FEMALE GLAND       | 1  |
| *5  | 110.230.04 | PACKING            | 4  |
| *6  | 110.230.05 | PACKING            | 4  |
| *7  | 110.230.02 | MALE GLAND         | 1  |
| *8  | 110.230.07 | SPRING             | 1  |
| *9  | 110.230.06 | WASHER             | 1  |
| 10  | 110.200.03 | CYLINDER           | 1  |
| *11 | 110.240.05 | SPRING             | 1  |
| *12 | 110.240.02 | MALE GLAND         | 1  |
| *13 | 110.240.03 | PACKING            | 3  |
| *14 | 110.240.04 | PACKING            | 3  |
| *15 | 110.240.01 | FEMALE GLAND       | 1  |
| 16  | CPA.101    | PIN                | 1  |
| 17  | 110.200.05 | NIPPLE             | 1  |
| 18  | 110.210.01 | ROD                | 1  |
| 19  | 110.200.04 | CYLINDER           | 1  |
| 20  | 110.210.03 | BUSHING            | 1  |
| 21  | CBO.111    | BALL               | 1  |
| 22  | CPA.012    | PIN                | 1  |
| 23  | 110.210.02 | PISTON             | 1  |
| *24 | 110.220.04 | JOINT              | 2  |
| 25  | 110.220.01 | VALVE              | 1  |
| 26  | 110.250.00 | TIE                | 1  |
| 27  | 112.220.02 | SUPPORT            | 1  |
| 28  | CTB.038    | SCREW              | 3  |
| 29  | 110.220.03 | SHUT-OFF VALVE     | 1  |
| *30 | CJT.169    | O-RING             | 1  |
| *31 | CJT.170    | O-RING             | 1  |
| 32  | 110.260.01 | CYLINDER           | 1  |
| 33  | 110.260.02 | JOINT              | 1  |
| 34  | ++++       | PLATE (SEE PAGE10) | 2  |
| 35  | ++++       | JOINT (SEE PAGE10) | 1  |
| 36  | ++++       | JOINT (SEE PAGE10) | 1  |
| 37  | CNC.004    | VALVE              | 1  |
| 38  | CNA.080    | NIPPLE             | 1  |
| 39  | CNA.135    | NIPPLE             | 1  |
| 40  | CTB.003    | SCREW              | 8  |
| 41  | CTU.103    | NUT                | 8  |
| 42  | 110.251.00 | BUSHING            | 1  |
| 43  | 110.210.04 | PIN                | 1  |
| 45  | CNA.028    | NON RETURN VALVE   | 1  |
| 46  | CAR.001    | WASHER             | 14 |
| 47  | CNA.140    | NIPPLE             | 1  |
| 48  | 112.200.02 | TIE                | 3  |
| 49  | CTU.108    | NUT                | 6  |
| 50  | ++++       | JOINT (SEE PAGE10) | 1  |
| 51  | CAR.053    | WASHER             | 3  |
| 52  | CTB.021    | SCREW              | 6  |

\* Included in KIT.052



## WARNING

Before starting any maintenance work on the equipment or installation, follow the **PRESSURE RELIEF PROCEDURE**.

- 1- Wash the pump, hose, and spray gun using a degreaser that is compatible with the product and with the wet parts of the equipment.
- 2- Depressurize the equipment following the **SAFETY RULES**.
- 3- It is essential that you disconnect the pump hose.
- 4- Unscrew the pneumatic motor from the base by turning it to the left and, once the cylinder is loose from the base, pull the motor until the pin connecting the motor shaft and the base shaft appears. Use a punch and hammer to remove the pin and unscrew the shafts.
- 5- Loosen the plug n°1 with a spanners and remove the screws n°19. Finish removing plug n°1 and, using a spanner with a padded jaw to avoid marking shaft n°7, remove it from plug n°1, placing a nut on the thread of shaft n°7 to prevent it from falling inside the mechanism.



## CAUTION

To perform step 5, it is essential to use a padded spanner so as not to damage the surface of shaft n°7, as failure to do so may result in distorted motor movement.



## CAUTION

When removing cylinder n°3, ensure that you do so vertically to avoid scratching the surface and causing leaks.



## WARNING

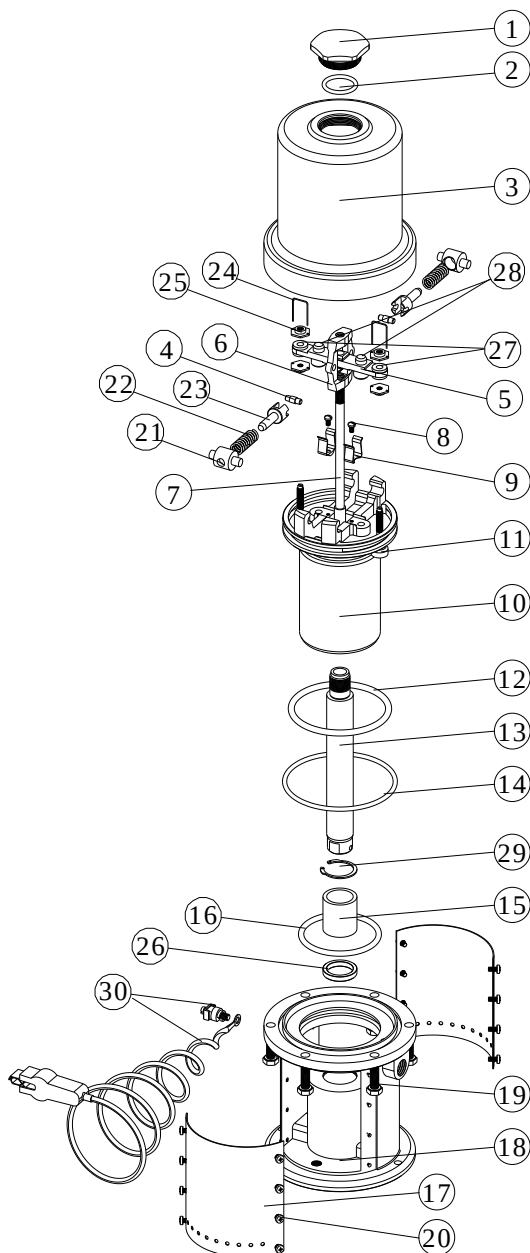
To reduce the risk of accidents, keep your fingers away from the tilting mechanism and when you need to operate it, do so sensibly.

- 6- Remove cylinder n°3 vertically to the pump's natural position, taking care not to scratch the inside. All the seals are now exposed so that their condition can be examined.

**NOTE:** If you have to remove parts n°11 because they are damaged, when reassembling them, check that the clearance must be exactly the same on both sides and that the measurement is between 4.1 and 4.2 mm.

- 7- Replace the defective parts.

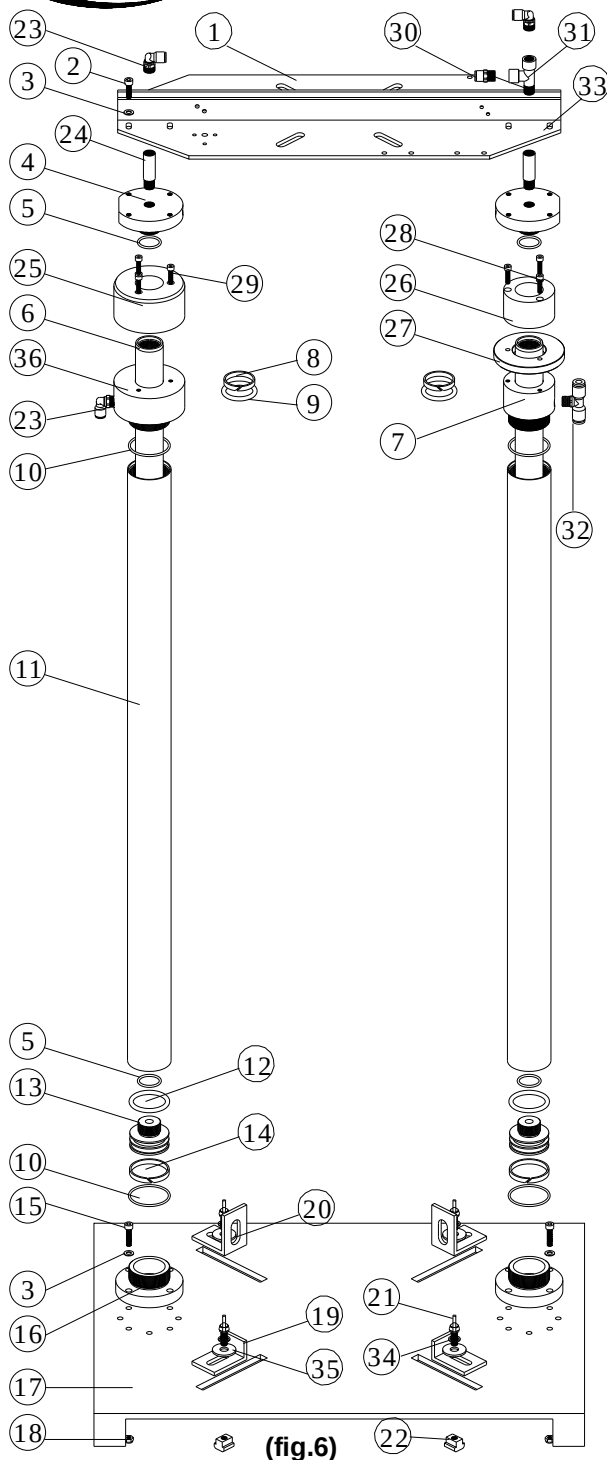
Pneumatic part of the equipment. It is very important that the air flows into the machine clean. The maximum inlet pressure is 6 bar.



(fig.5)

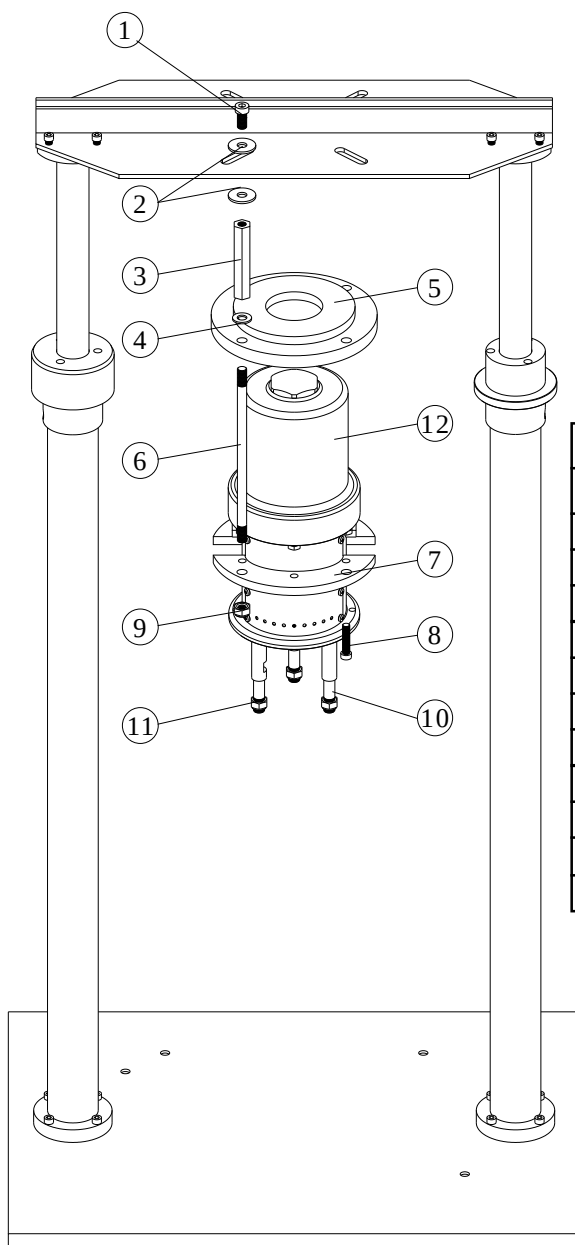
| N°  | REF.     | DESCRIPTION | Q  |
|-----|----------|-------------|----|
| 1   | A.110.02 | CAP         | 1  |
| 2   | CJT.001  | JOINT       | 1  |
| 3   | A.110.01 | CYLINDER    | 1  |
| 4   | A.120.04 | ROD         | 2  |
| 5   | A.120.07 | SUPPORT     | 1  |
| 6   | A.120.08 | YOKE        | 1  |
| 7   | A.121.00 | ROD         | 1  |
| 8   | CTH.008  | SCREW       | 2  |
| 9   | A.140.02 | CLIP        | 2  |
| 10  | A.140.01 | PISTON      | 1  |
| *11 | A.122.00 | STEM        | 2  |
| *12 | CJT.002  | JOINT       | 1  |
| 13  | A.120.11 | ROD         | 1  |
| *14 | CJT.003  | JOINT       | 1  |
| 15  | CB2.015  | SLEEVE      | 1  |
| *16 | CJT.004  | JOINT       | 1  |
| 17  | A.130.02 | PLATE       | 2  |
| 18  | A.150.01 | BASE        | 1  |
| 19  | CTA.001  | SCREW       | 6  |
| 20  | CTC.001  | SCREW       | 16 |
| 21  | A.120.01 | ROCKER      | 2  |
| 22  | A.120.02 | SPRING      | 2  |
| 23  | A.120.03 | ROD         | 2  |
| *24 | A.120.05 | CLIP        | 2  |
| 25  | A.120.06 | NUT         | 4  |
| 26  | A.150.02 | JOINT       | 1  |
| *27 | A.120.10 | JOINT       | 2  |
| *28 | A.120.09 | JOINT       | 2  |
| 29  | CAR.125  | RETAINER    | 1  |
| 30  | TIE.GR   | GROUND      | 1  |

\* Included in KIT.058



| N° | REF.        | DESCRIPTION       | Q  |
|----|-------------|-------------------|----|
| 1  | 110.300.01B | SUPPORT           | 1  |
| 2  | CTB.001     | SCREW             | 8  |
| 3  | CAR.021     | WASHER            | 24 |
| 4  | 110.320.02  | SUPPORT           | 2  |
| 5  | CJT.174     | O-RING            | 4  |
| 6  | 110.320.05  | HOSE              | 2  |
| 7  | 110.320.04  | GUIDE ROD         | 1  |
| 8  | 110.320.08  | JOINT             | 2  |
| 9  | CJT.173     | O-RING            | 2  |
| 10 | CJT.172     | O-RING            | 4  |
| 11 | 110.320.03  | HOSE              | 2  |
| 12 | CJT.171     | O-RING            | 2  |
| 13 | 110.320.06  | PISTON            | 2  |
| 14 | 110.320.07  | JOINT             | 2  |
| 15 | CTB.011     | SCREW             | 8  |
| 16 | 110.320.01  | SUPPORT           | 2  |
| 17 | 110.310.00  | SUPPORT           | 1  |
| 18 | CTU.105     | NUT               | 8  |
| 19 | 110.300.02  | STOP              | 2  |
| 20 | 110.300.03  | STOP              | 2  |
| 21 | CTA.025     | SCREW             | 4  |
| 22 | CTU.145     | NUT               | 4  |
| 23 | CNA.065     | NIPPLE            | 3  |
| 24 | 110.300.06  | NIPPLE            | 2  |
| 25 | 110.320.12  | TIE               | 1  |
| 26 | 110.320.10  | TIE               | 1  |
| 27 | 110.320.11  | SUPPLEMENT        | 1  |
| 28 | CTB.017     | SCREW             | 3  |
| 29 | CTB.003     | SCREW             | 3  |
| 30 | CNA.066     | NIPPLE            | 1  |
| 31 | CNA.059     | T                 | 1  |
| 32 | CNA.133     | T                 | 1  |
| 33 | 110.300.01A | SUPPORT AIR MOTOR | 1  |
| 34 | CAR.256     | WASHER            | 4  |
| 35 | CAR.252     | WASHER            | 4  |
| 36 | 110.321.04  | GUIDE ROD         | 1  |





| N° | REF.       | DESCRIPTION | Q |
|----|------------|-------------|---|
| 1  | CTA.017    | SCREW       | 4 |
| 2  | CAR.252    | WASHER      | 8 |
| 3  | 110.100.04 | TIE         | 4 |
| 4  | CAR.005    | WASHER      | 4 |
| 5  | 110.100.01 | SUPPORT     | 1 |
| 6  | 112.100.05 | TIE         | 4 |
| 7  | 110.100.02 | SUPPORT     | 2 |
| 8  | CTB.039    | SCREW       | 8 |
| 9  | CTU.101    | NUT         | 4 |
| 10 | 110.100.07 | TIE         | 3 |
| 11 | CTU.108    | NUT         | 3 |
| 12 | A.100.00   | AIR MOTOR   | 1 |

(fig.7)

|                                  |             |
|----------------------------------|-------------|
| Pressure ratio .....             | 15:1        |
| Max. Fluid outlet pressure ..... | 150 bar     |
| Max. Air inlet pressure .....    | 10 bar      |
| Air inlet to the pump .....      | 1/4"        |
| Fluid outlet .....               | 1/2"        |
| Flow rate .....                  | 35 cc/cycle |
| Joints plate follower .....      | VITON/EPDM  |
| Weight .....                     | 60 kg       |

**Typical applications:** - Lubricants

- Inks
- Sealants
- Adhesives

# WARRANTY

M.B.P., will any repairs necessary during the first 12 months after purchase of a new unit, with the exceptions shown under 1 and 2 below, and under the conditions shown in item 3.

- 1.- Damage caused by external abuse, customer negligence, or failure to operate the unit in accordance with the instructions supplied with the unit.
- 2.- Normal maintenance items.
- 3.- Within the first 12 months after purchase, M.B.P. will pay 100% of the cost of covered repairs.

In no case will M.B.P. liability extend beyond repair or replacement of the equipment. Such liability is limited to the amount of the original purchase price paid for the unit, minus a reasonable deduction for the time the unit has been in service. It is the responsibility of the purchaser under this warranty to ship or deliver the failed paint sprayer to the authorized service center at the purchaser's expense. Parts or components covered under this warranty may either be repaired or replaced at M.B.P. option.

Equipment not covered by M.B.P. warranty. Accessories or components of equipment sold by M.B.P. that are not manufactured by M.B.P. are subject to the warranty, if any, of their manufacturer. M.B.P. will provide purchaser with reasonable assistance in making such claims.

The Industry Department of The Basque Government, states that all electric and pneumatic airless equipment manufacture by M.B.P. S.L., follows the "CE" standards under the number 83/392/CEE.

