



T7



**INSTRUCTIONS FOR USE AND MAINTENANCE
COMPREHENSIVE CATALOGUE & SPARE PARTS**

CT. 200.344

Serial number

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USE AND MAINTENANCE

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SYMBOL KEY

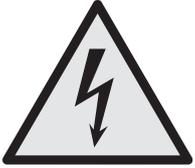
DESCRIPTION



It is compulsory to read the maintenance booklet prior to operating the machine



It is compulsory to read the maintenance booklet for what regards ordinary and general maintenance.



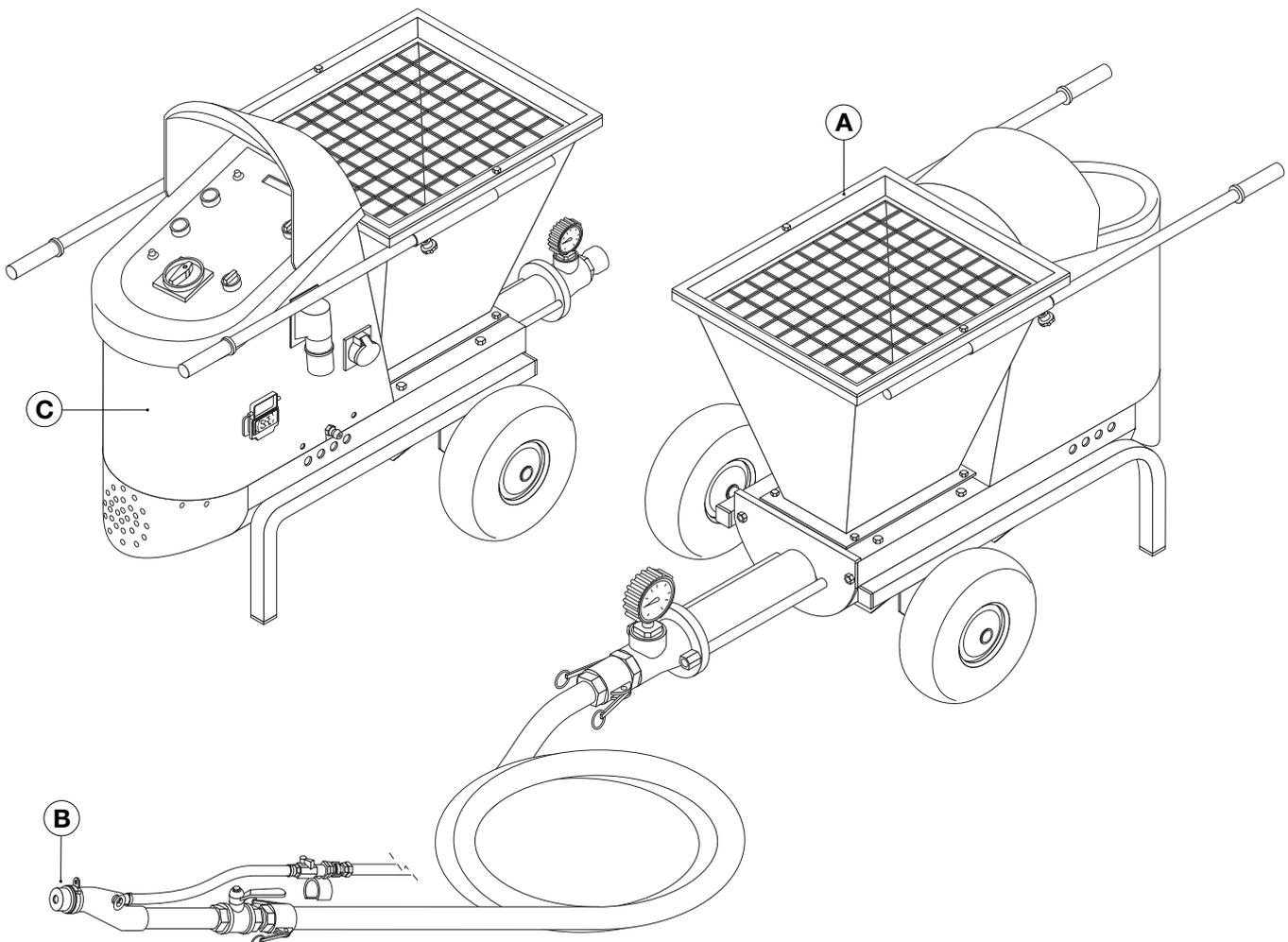
Danger:
electrical shock hazard.

BE CAREFUL!

A - Before working, check that the protection grill is well mounted and fixed on the hopper.

B - The operator must never direct the spray gun towards other persons.

C - Electric parts, that could be under tension, are present inside the canopy.



1 - GENERAL INFORMATION

1.1 - INTRODUCTION

The conveying and spraying machine for ready-mixed mortars and finishing coats model T7 can be supplied in different versions and with a variety of accessories. As a result, some of the components described in this booklet may not be included with your own equipment.

We have taken special care to clearly illustrate the different variations in order to make it easier for you to select the use and maintenance instructions applicable to your own machine.

Please read these instructions carefully prior to turning on your equipment and follow them carefully.

For whatever other information you might require, TURBOSOL PRODUZIONE S.P.A.'s customer service is at your complete service.

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1.2 - GENERAL INFORMATION

TURBOSOL Machinery

This machinery is the product of our lengthy experience and continuous development. The know-how thus acquired, together with our stringent requirements for high quality, constitute the basic guarantee for manufacturing low-wearing machinery which offers total reliability at low service costs.

Precautions to take when the machine is operating

Maintenance or repair work must be carried out only when the machine is turned off. Whatever safety devices that have been removed in order to complete such work must be mounted again after maintenance has been carried out.

Care and maintenance

Care and maintenance are vitally important in making it possible for the machinery to operate as expected. It is therefore essential that all maintenance be performed on schedule and that all required maintenance be carried out with extreme care.

Safety

 This symbol marks every reference to safety in this booklet, and it must be scrupulously observed.

The personnel in charge must be fully informed about all safety regulations. Safety and accident-prevention regulations currently in effect in your area or country must likewise be observed.

Training

 This symbol indicates that the personnel operating this machinery must have received special training in regard to the correct manner in which such operation must take place.

TURBOSOL SERVICE

For any problem related to trouble with this machinery or when you need spare parts, contact your local TURBOSOL dealer.

2 - DESCRIPTION OF THE MACHINE

2.1 - TYPE OF MACHINE

Manufacturer's registration plate

				
TURBOSOL				
TURBOSOL PRODUZIONE S.P.A.				
VIA MARCHE, 50 - 31030 PERO DI BREDA - TV - ITALIA				
TEL. 0039.0422.90251 - FAX 0039.0422.904408				
E-mail:info@turbosol.it - http://www.turbosol.com/				
SERIE	MODELLO	MATRICOLA N°	ANNO	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
KG	KW	V	A	Hz
(A)		(B)		

The type of machine **(A)**, its serial number **(B)**, and data on the machine's operating power are printed on the manufacturer's registration plate.

The meaning of the various symbols used is as follows:

(A) = Type of machine: **T7**

T7 = Worm gear pump for the spraying of finishing coats, for the pumping and for stucco.

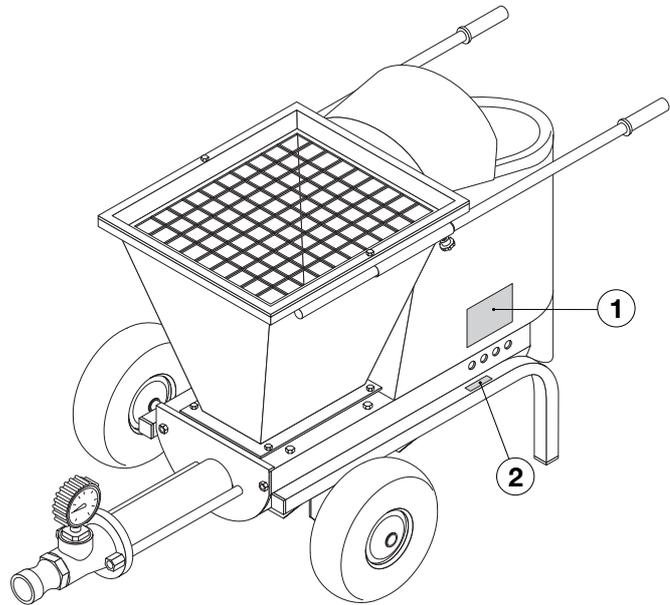
(B) = Machine serial number: **NNNNN/AA**

NNNNN = Machine serial number.

/AA = The year of manufacture

Location of the Manufacturer's registration plate

The manufacturer's registration plate **(1)** is attached to the chassis of the machine.



Location of the machine's serial number

The machine's serial number **(2)** is punched on the chassis as well as on the manufacturer's registration plate.

2.2 - DESCRIPTION OF THE MACHINE

Standard equipment:

- Pump on wheels.
- Stainless steel hopper with cover.
- Electronic output transformer.
- Single-phase electric motor.
- Electric remote control with 33 meter of cable.
- 15 meters (10 + 5) of mortar hose Ø 25 x 37 with cam-lock couplings.
- 16 meters of air hose Ø 13 x 19 with quick couplings.
- Bag with usual accessories.
- Accessory box for ready-mixed plasters
- Technical literature.
- The compressor is not included.

Accessories upon request for hoses DN19 and DN25:

Pressure gauge DN25 and DN19.

Accessory kit for DN19.

Accessory box:

- for ready-mixed DN19
- for finish coats DN19 and DN25
- for pressure pointing without air nozzle DN19 and DN25
- for pressure pointing with air nozzle DN19 and DN25
- for finishing coats DN19.

Delivery tube DN25.

Device for injections at controlled pressure DN19 and DN25.

Accessories upon request:

Three-phase compressor 592 l/m' - 3,0 kW - 400 V.

Single-phase compressor 170 l/m' - 0,75 kW - 230 V.

Bag squeezer.

Vibrating sieve.

Conversion kit into admixture dosing pump.

Control body with 33 meters of cable with output regulation.

20 metres of electric cable 3 x 4 mm² with plug and socket.

Hoses extensions:

10 m of mortar hose complete with couplings Ø 19 x 30

5 m of mortar hose complete with couplings Ø 25 x 37

10 m of mortar hose complete with couplings Ø 25 x 37

10 m of mortar hose complete with couplings Ø 13 x 19

Main components:

The machine is made up primarily of:

a control panel **(3)**,

a gear-box **(4)**,

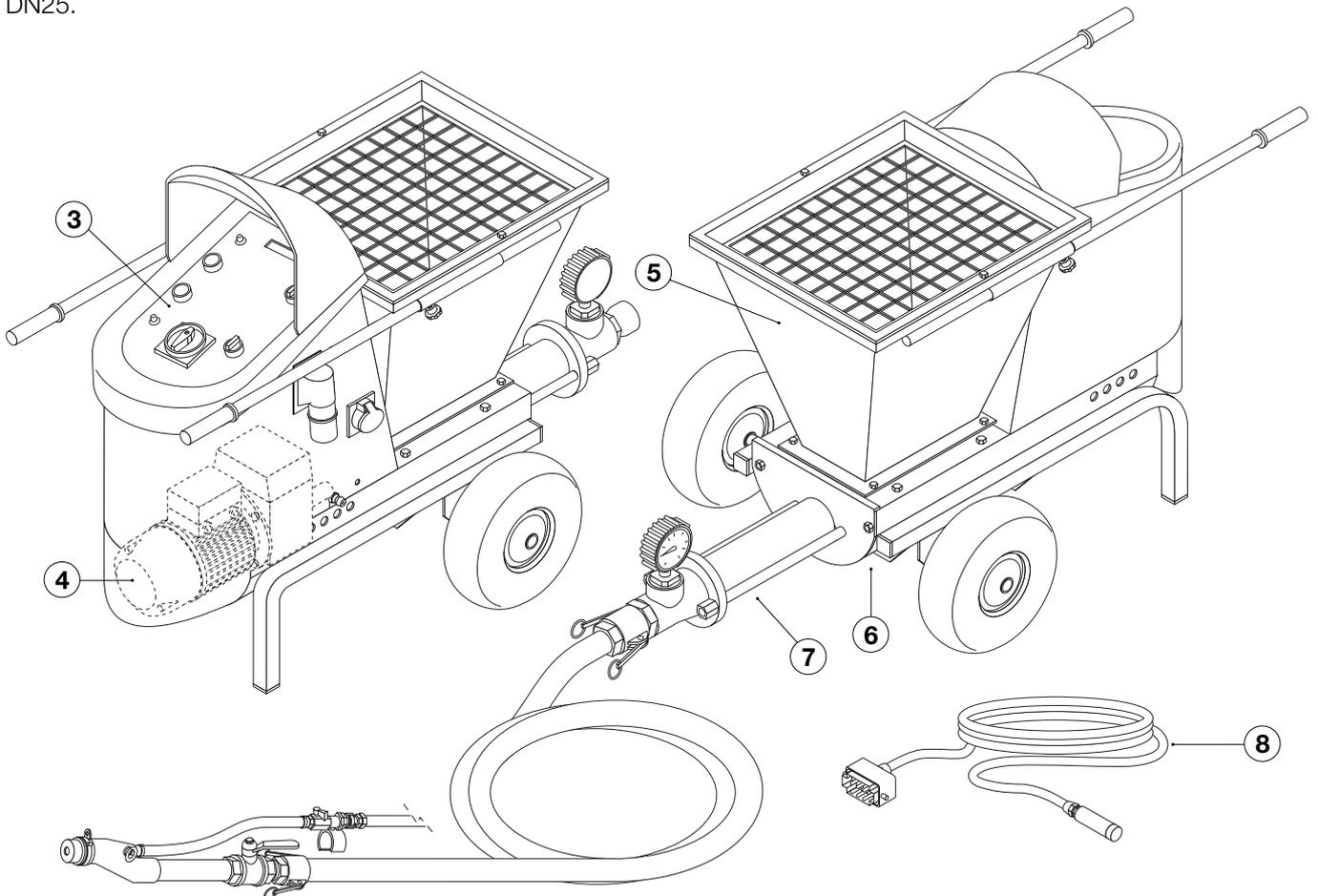
an hopper **(5)**,

an agitator **(6)**,

a pumping group **(7)**,

a push button electric remote control **(8)**.

a electric remote control with 33 meter of cable **(8)**.



2.3 - SIZE OF THE MACHINE

Here are the machine's size and its gross weight (ready for use).

Version T 7

LENGTH	WIDTH	HEIGHT	WEIGHT
1.050 mm	640 mm	820 mm	70 kg

2.4 - TECHNICAL DATA

T 7

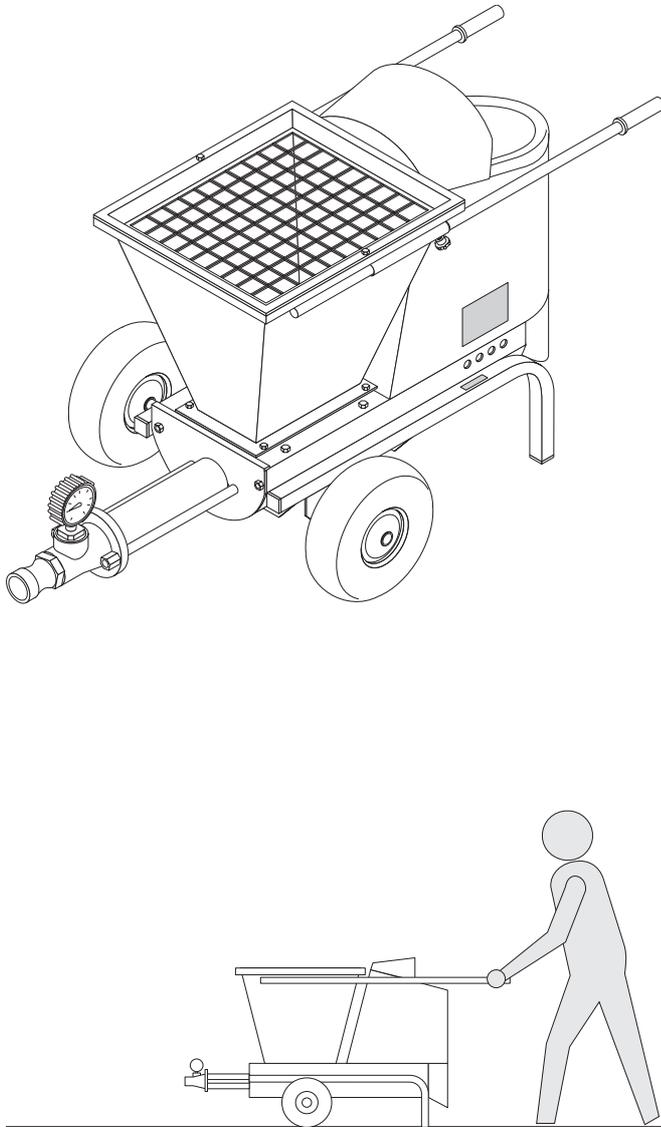
Max. pressure mortar pump		35 bar
Line tension	single phase	230 V \pm 10%
Control tension		24 V
Line frequency		60 Hz \pm 1%
Max. current of circuit breaker		6 kA
Mortar pump electric motor		1,5 kW
Absorbed current	single phase 230 V	5,2 A
Gearbox oil change (IP DEXRON FLUID II - 0,36 kg)		every 1.000 hours
Hopper capacity		50 l
Output		0,5 ÷ 12 l/m'
Altezza di carico		70 cm
Delivery distance (approximate)		20 m
Delivery height (approximate)		10 m
Delivery rubber hose for material		Ø 19 x 30
		Ø 25 x 37
Max. pumpable granulometry	Ø 19 x 30	0 ÷ 2 mm
	Ø 25 x 37	0 ÷ 5 mm
Temperature in the work environment		from -5° to + 35° C

N.B.: # The operator must wear acoustic protection earplugs
which guarantee a reduction of at least 20 dB(A).

3 - TRANSPORTING

3.1 - TRANSPORT

The machine can be only handly transported.

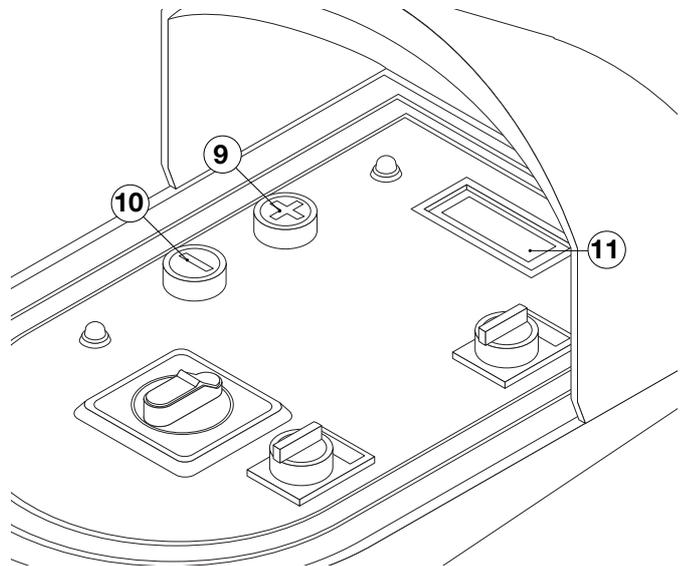


4 - USING THE MACHINE

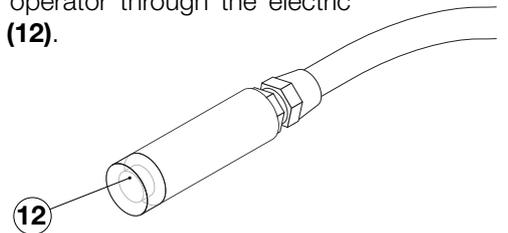
4.1 - OPERATING PRINCIPLES

The T7 is made up primarily of a hopper with built-in agitator that receives the mixed material and of a worm gear pump for conveying that mix to the point of application. It sprays it on the walls by means of a spray gun (which may differ in nature depending on the type of material employed). There the mixture combines with air from an auxiliary compressor.

The pump output is controlled through the two buttons for the output **(9)** and **(10)** which are placed on the control panel; the output is shown on the display **(11)**.

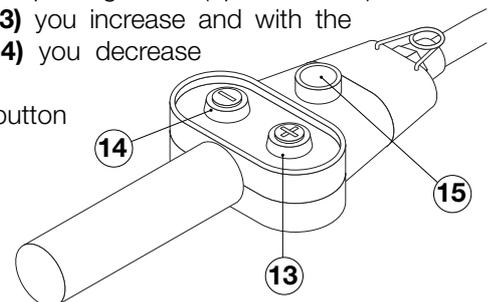


Turning on and off of the machine is controlled directly by the spray gun operator through the electric remote control **(12)**.



Upon request the electric remote control box can be equipped with output regulation (optional extra): with the push-button **(13)** you increase and with the push-button **(14)** you decrease the output.

With the push-button **(15)** you start and stop the machine.



4.2 - PUMPABLE MATERIALS - APPLICATIONS

The **T7** is commonly used for maximum granulometry 5 mm with hoses DN25, and for granulometry 2 mm with hoses DN19.

Suitable for spraying:

- thin layer coats ;
- finishes;
- orange peel finishes;
- reinforced materials;
- finish coats;
- thermal, acoustic, fireproofing insulations;
- quartz plastic finishes;
- marble coats;
- water-proofs materials;
- protective coats;
- finishing coats;
- adhesive mortars.

For stucco and pressure pointing, for injection of cementitious slurries at controlled pressure.

Choosing of the gun

The specific gun should be used according to the material used worked:

DN19

- Gun (code 216.483) for ready-mixed materials (accessory box code 201.116).
- Gun (code 216.491) for finish coats (accessory box code 201.117).
- Gun without air nozzle (code 216.493) for pressure pointing (accessory box code 201.118).
- Gun with air nozzle (code 216.492) for pressure pointing (accessory box code 201.119).
- Gun (code 216.479) for finishing coats (accessory box code 201.120).
- Gun (code 216.495) for injections at controlled pressure (injection device code 216.498).

DN25

- Gun (code 216.241) for ready-mixed materials (accessory box code 201.132).
- Gun (code 216.266) for finish coats (accessory box code 201.136).
- Gun without air nozzle (code 216.256) for pressure pointing (accessory box code 201.137).
- Gun with air nozzle (code 216.496) for pressure pointing (accessory box code 201.142).
- Gun (code 216.299) for injections at controlled pressure (injection device code 216.395).
- Delivery tube (code 251.232).

4.2.1 - CONVERSION KIT into admixture dosing pump

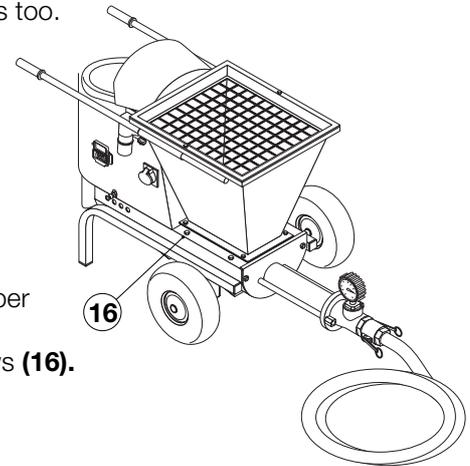
To pump silicate with T7 in conjunction with other machines such as the POLI T, the PRO H, the TSB 215.



Silicate irritates the eyes and the skin. Use appropriate protection equipment for your hands and wear a mask to protect your face.

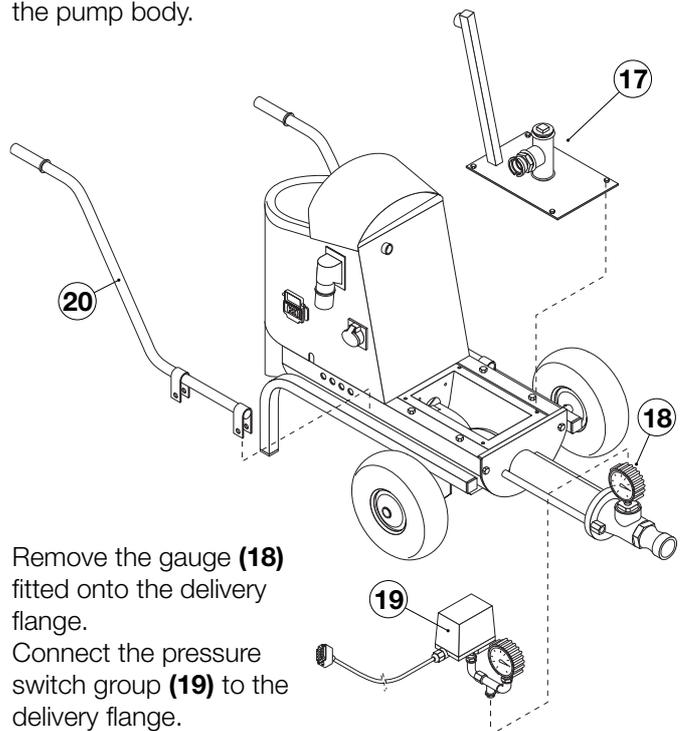
Handle, in any case, these materials with the greatest care and stick to the instructions provided by their manufacturer.

To use the conversion kit into admixture dosing pump it is necessary to remove the hopper with its cover safety grill and lifting handles too.



Remove the hopper by unscrewing the 4 fixing screws **(16)**.

Secure the silicate cover **(17)** complete with couplings to the pump body.

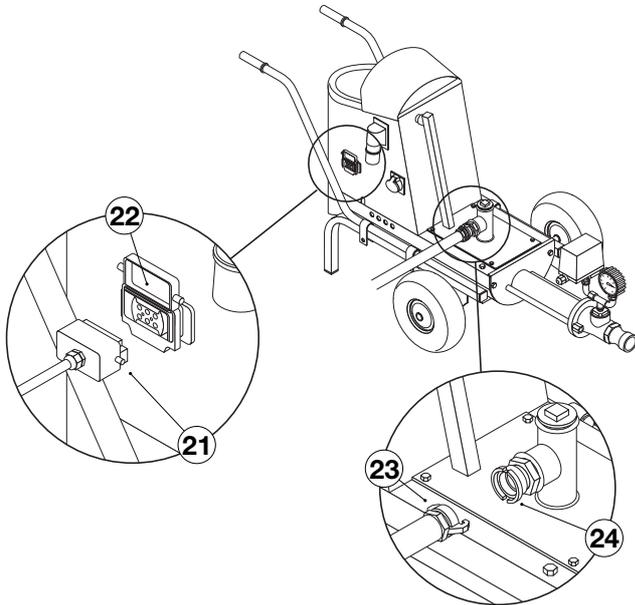


Remove the gauge **(18)** fitted onto the delivery flange.

Connect the pressure switch group **(19)** to the delivery flange.

Secure the lifting handles **(20)**.

Connect the plug box **(21)** of the pressure switch group to the plug **(22)**.



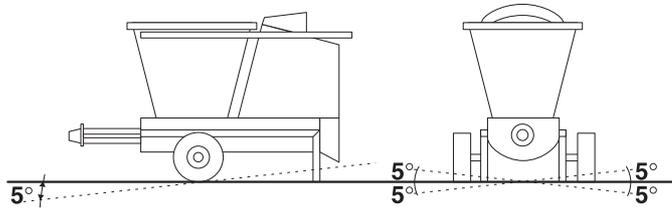
Connect the silicate feeding hose to the quick coupling **(23)**, the other end of the hose must be connected to the vessel containing the silicate

Make sure that height of suction of the silicate is at least 50 cm above the coupling **(24)**.

4.3 - FIRST OPERATIONS

Positioning the Machine

Place the machine in the most horizontal possible position: the maximum gradient allowed is 5° both lengthwise and sidewise.



The machine must be set on the jobsite as close as possible from the place of application.

Prepare the necessary material for cleaning the machine (water hose, washing sponges, a.s.o.)

 Leave at least 80 cm. of clear space around the machine and set up a working area free of holes and dangerously protruding edges..

Electrical connection

Connect the machine to the site electric control panel or a socket of 16 A by means of a neoprene cable (scratch-resistant rubber) labelled HO7 RN-F and having a maximum section:

3 x 4 mm. for distances up to 35 m.

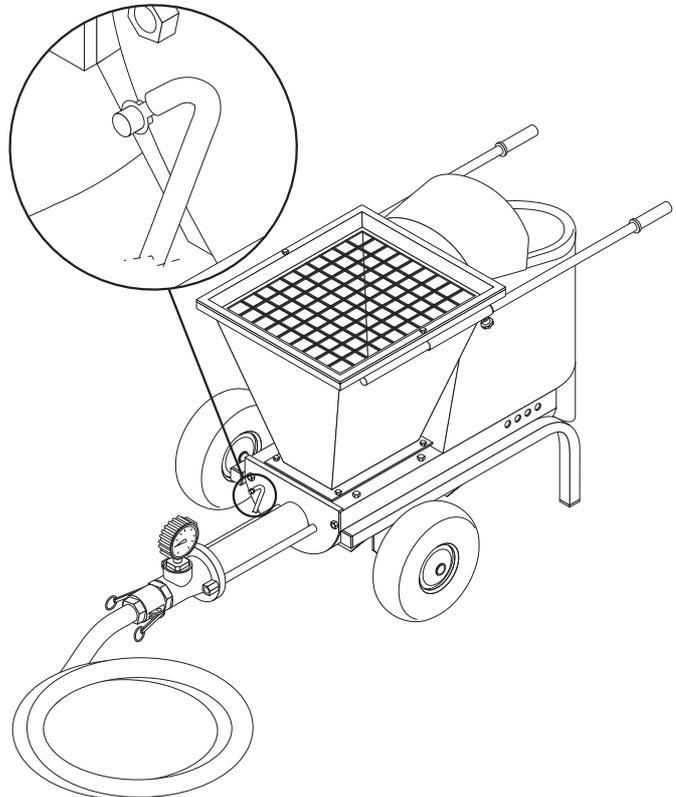


If a cable of inadequate section is used, the machine does not work properly

The jobsite's electrical system must have:

- a minimum operating power of 3,3 kW,
- be properly grounded,
- fuses of 16 A (type aM),
- highly sensitive differentials (of 30 mA),
- must meet all the regulations enforced in the country where the machine is being used.

Connect the machine's ground terminal to the earth leakage device by means of a cable having a section equal to the feeding cable and never lower to 16 mm².



Hoses

Lay the hoses down and at the same time check them to make sure that they are in good conditions.

While pumping is in progress, the first 10 m. of hose will swing back and forth several centimetres: it is best to keep that section of hose raised above the floor in order to avoid having the hose rubbing on edges or abrasive surfaces and to prevent fast wear and tear on the hoses themselves.



Use only those hoses and coupling devices originally supplied with the machine.

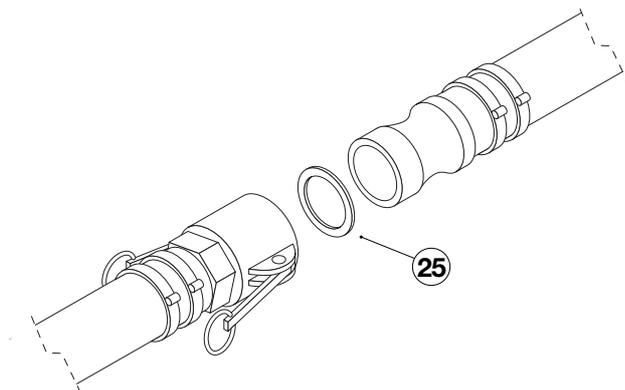
The hoses must be fitted by TURBOSOL PRODUZIONE S.P.A. or by firms explicitly authorized by TURBOSOL. In no case whatsoever shall TURBOSOL PRODUZIONE S.P.A. be held liable for injury or damage to persons or things resulting from the use of non-original hoses or coupling devices.

Couplings

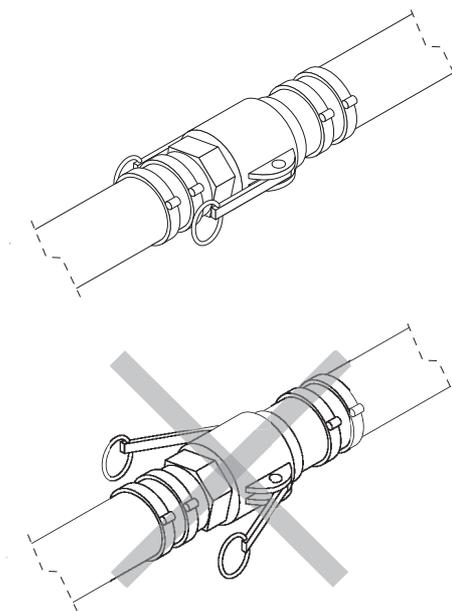
Check to be certain that the coupling devices are clean and in good working order .

• **Cam-lock couplings**

When you connect the hoses, check that there is the rubber ring **(25)**,



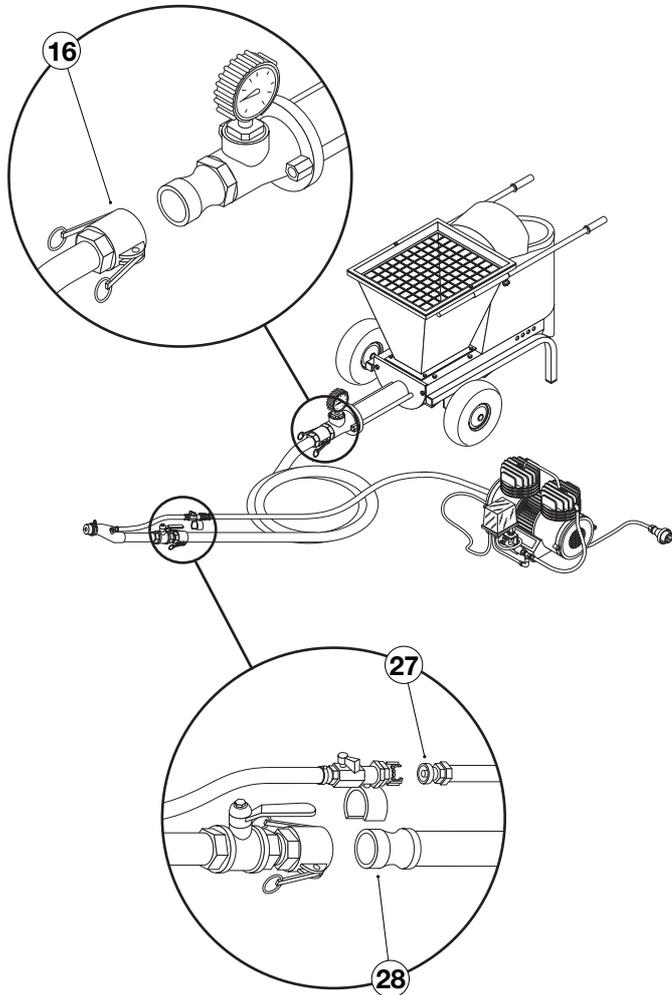
lock the levers tightly.



**Hoses Ø 25 x 37 – length of 15 meters
for a max. pumpable granulometry of 0 - 5 mm.**

Connections

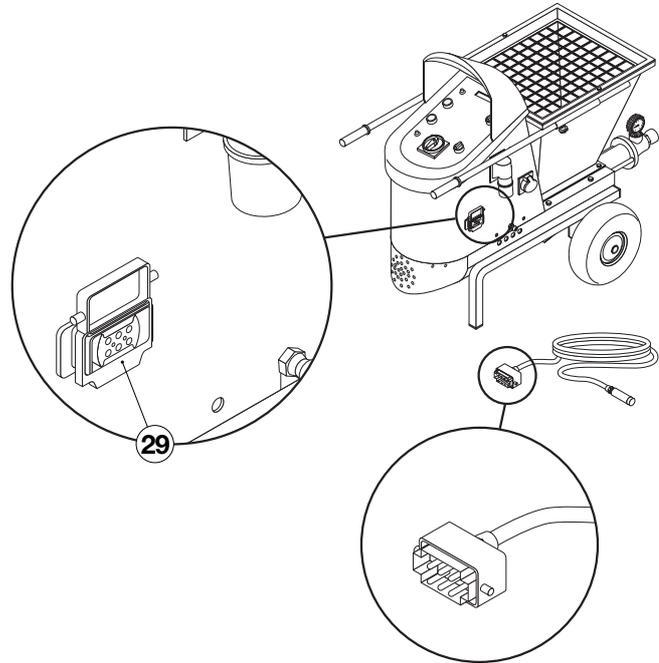
Connect the material hose (26) to the worm gear pump.



Connect the air hose to the auxiliary compressor (27) at the spray gun.

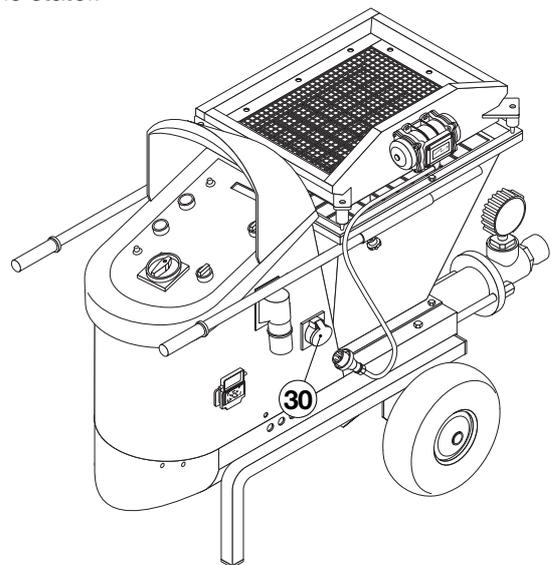
Then connect the spray gun to the final part of the material hose (28).

Connect the remote control cable to the machine connector (29).



The vibrating sieve is not necessary when you use ready-mixed materials.

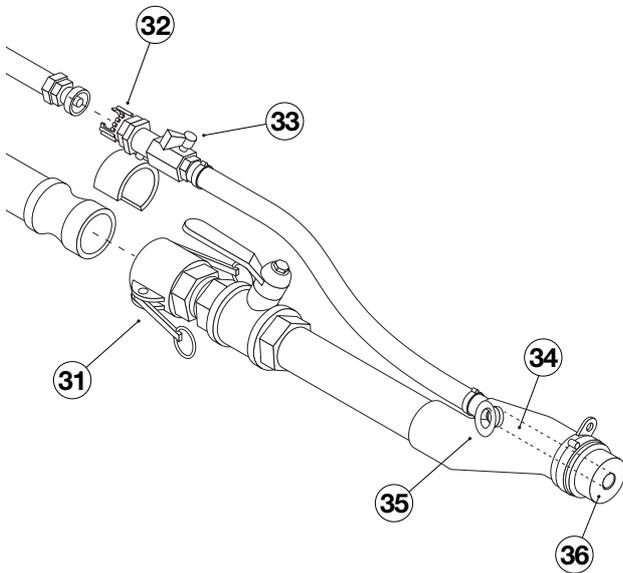
The vibrating sieve is necessary with traditional materials to avoid that aggregates, of non pumpable dimensions, damage the stator.



Connect the plug of the vibrating sieve to the socket (30).

Various types of spray guns are available depending on the material sprayed.

Each spray gun is made of:
a coupling to the material delivery hose **(31)**,
a coupling to the air hose **(32)**,
1 air control valve **(33)**,
an air nozzle **(34)**,
with or without possibility of regulation **(35)**
a deflector **(36)**.



Generally speaking, with deflectors having a smaller diameter the material is sprayed with a wider pattern and vice-versa.

4.4 - OPERATING THE MACHINE

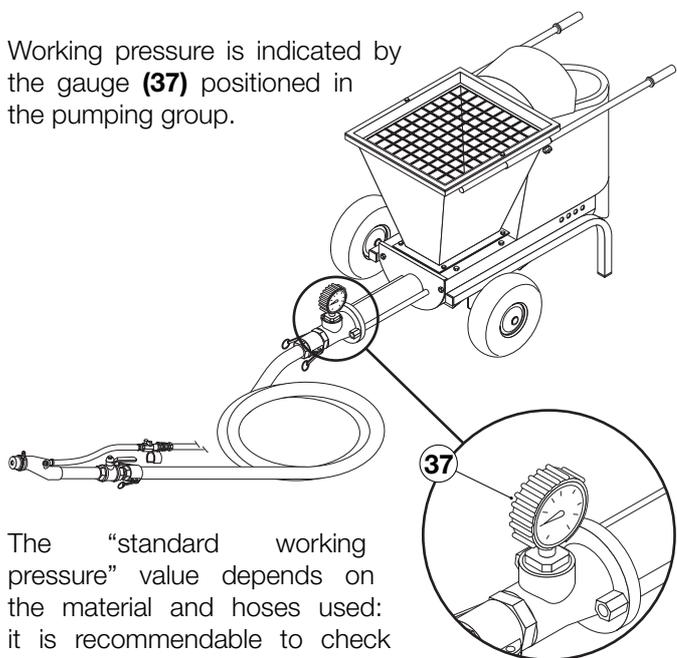
Before starting the machine, pour some water in the hopper to avoid that the worm gear runs dry .

 Check that the protection grill is well mounted and fixed on the hopper.

 Before turning on the machine, be certain that no one, except the operators, is standing too close to it.

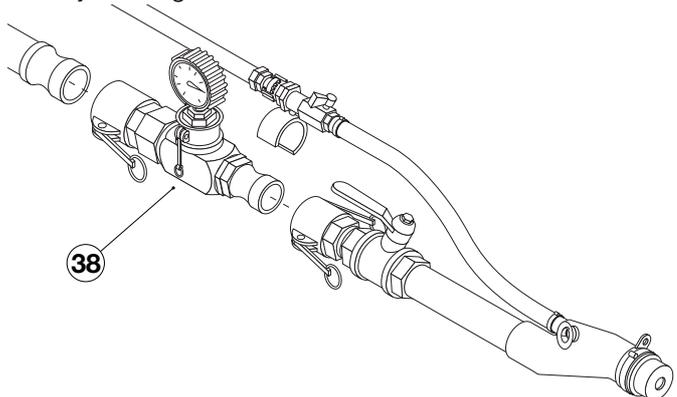
Be careful: the machine must always run with material or water in the hopper. If this is not the case, the pump will wear out quickly.

Working pressure is indicated by the gauge (37) positioned in the pumping group.

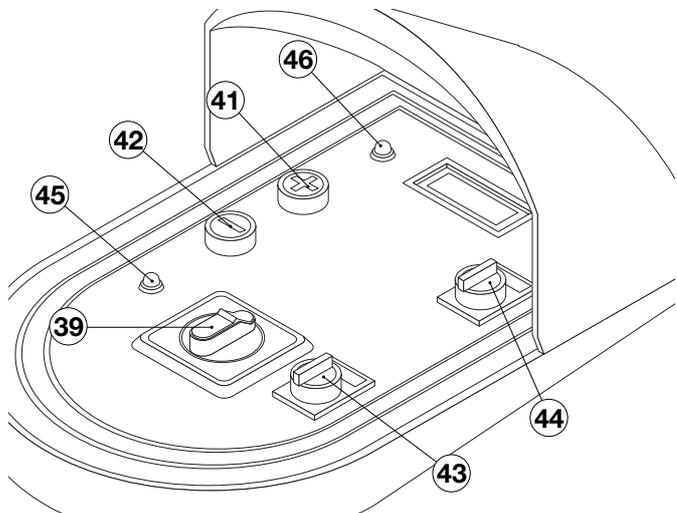


The "standard working pressure" value depends on the material and hoses used: it is recommendable to check out systematically -on the mortar hoses pressure gauge- the value indicated in order to promptly find out any fault.

To ease this procedure, a pressure control device is available (38) (optional extra) which must be coupled directly to the gun.



To start up the machine turn the main switch (39) (red on a yellow background) clockwise to the **I** position.



Turn the selector start/stop/reverse (40) on position **1** and check that the machine is pumping normally and modify the output according to your necessity through the buttons that set the output "plus" (41) and "less" (42). Put the selector (43) on position **2** and check that the rotation direction reverses.

Check that the remote control works properly.

Turn the selector start/stop/reverse (39) and the remote control selector (44) on position **1** and by operating the remote control, check that the machine starts and stops normally.

The lamp (45) lights when the inverter interferes to protect the motor against overload.

If the pilot light (46) is switched on, it shows that the control panel is energized.

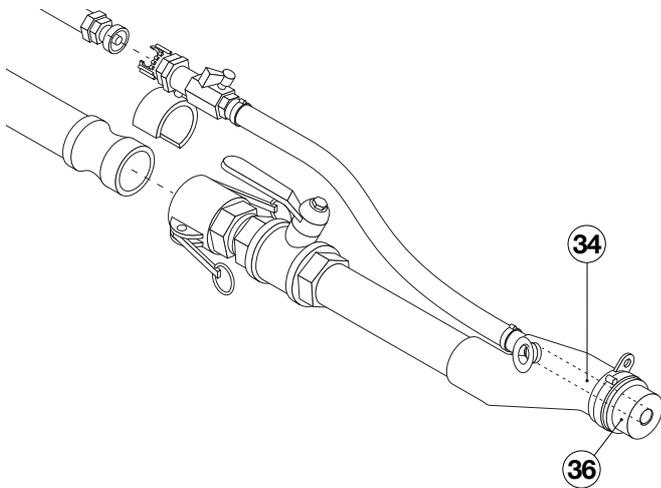
 The line socket must always be disconnected when you operate on the machine and above all on the electric board.

4.5 - WASHING THE MACHINE AND END OF WORK

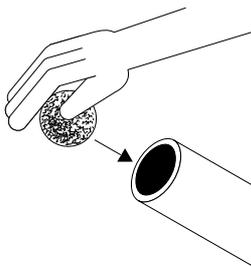
Once you have pumped your last batch which should be a little wetter than usual and you begin to see the bottom of the agitator clearly, stop the pump by using the selector start/stop/reverse (43).

Turn the main switch (39) to the 0 position.

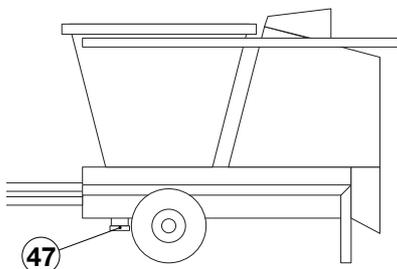
- Remove the spray gun and wash it carefully, dismantling the deflector at the same time (36).
- Check to be sure that the nozzle hole (34) is free (if necessary, clean it).



- Disconnect the hoses from the mortar pump hoses and insert one cleaning sponge into the hose.

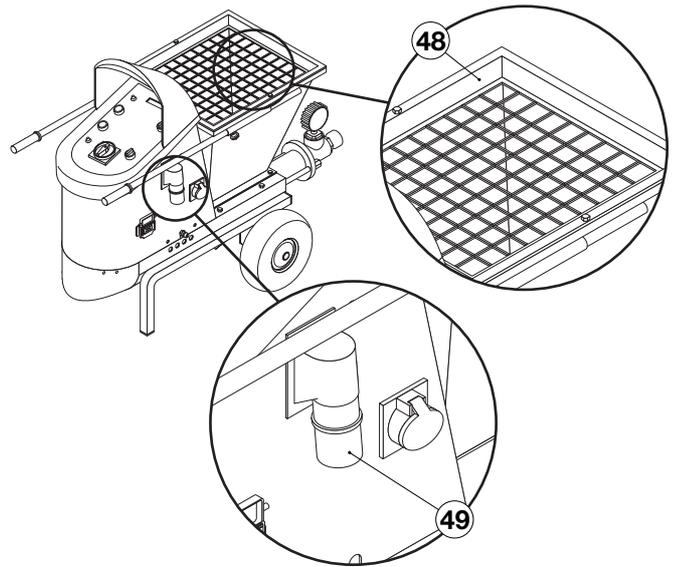


Remove the discharge collector cap (47) on the hopper. Wash carefully the hopper with a stream of water.



! Do not direct the water jet onto the control panel or towards the holes in the lower casing protecting the electric motor, since it could cause damage to the actual motor and the electrical equipment inside the machine.

! If necessary, remove the protection grill (34) in the hopper, to wash carefully, but before removing the grill, disconnect the line socket (35) (with main switch on position 0); then fix it once again correctly, reconnect the line socket.



Put the cap on the hopper discharge collector and fill the hopper with water.

Start the machine:

- main switch (39) and selector start/stop/reverse (43) on position **!**
- pump water until clean water flows out of the pump.
- Reconnect the hose to the pump .
- Start the machine and pump water until the washing sponge goes out.

Stop the machine by turning the selector (43) on position **0** (stop) and turn the main switch (39) (red on yellow background) on position **0**.

! After completing maintenance or repair work, make sure that all the safety devices have been put back in place and that no tools have been left inside the canopy or the hopper.

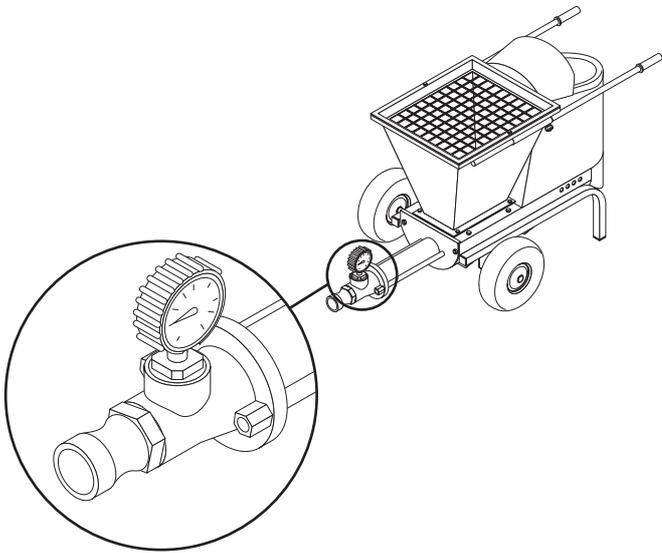
4.6 - PUMPING GROUP

Replacing the pumping group

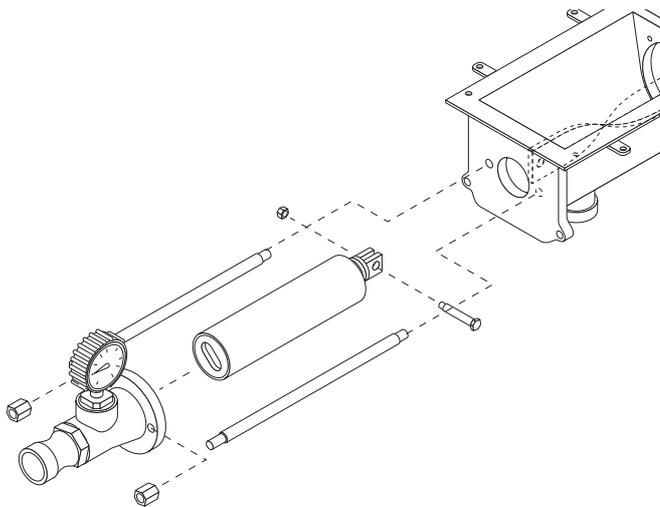
Operate as follows:

 Stop the pump, then turn off the motor by using the main switch (39) before carrying out this operation.

- Raise the protection grill in the hopper;
- Remove the material delivery collector by unscrewing the braces fixing bolts with the key included in the equipment.

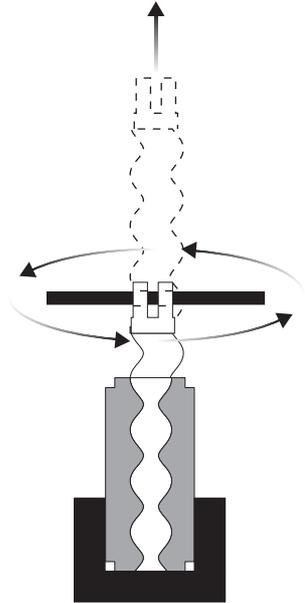


- Replace the pumping group.



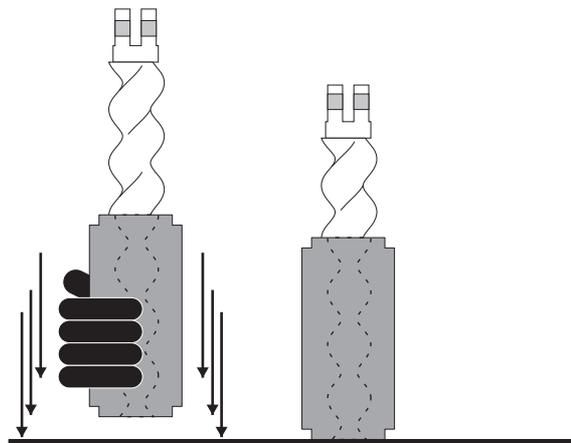
 Put the group stator-worm in a vice, block the stator, unscrew the rotor and remove it;

Check to see if the worm can still be used (its diameter must not be more than 2 mm. smaller than its original diameter). If this is not the case, replace the worm as well as the stator.



To assemble the unit, smear both the worm and the stator with vaseline (**under no circumstances should you use oil or mineral grease! Such products could cause irreparable damage to the stator**). Then screw the worm back into the stator. The stator must be mounted with its countersunk side facing the hopper.

If this procedure makes the re-assembly difficult or even impossible, pick up the unit with the worm partially inserted and bang it on the floor several times.



5 - MAINTENANCE OF THE MACHINE

5.1 - TO BE PERFORMED BY THE OPERATOR

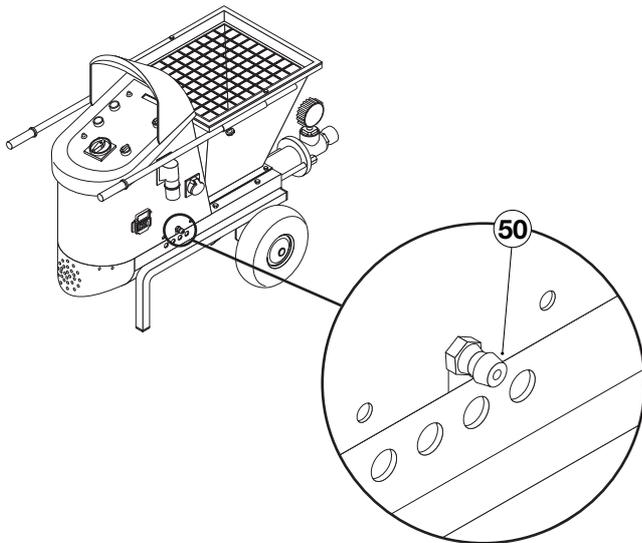


Listed here below is the essential information needed for proper maintenance of this machine. The machine's operator must read those data before beginning to operate the machine.

Operations to be carried out daily

• Lubrication

Grease the agitator support in the hopper through the specific greasing point **(50)**.



In order for this operation to be carried out correctly, the grease must flow in the hopper.

If you forget to perform this operation, the seals and supports will be worn out in just a few days' time.

Read also carefully the instructions booklets about accessories as compressor, injection group

• Preventive care

Spray demoulding liquid on the hopper.

Check that the seal of the hopper gaskets is good.

5.2 - TO BE PERFORMED BY AUTHORIZED PERSONNEL

Operations to be carried out every 6 months or every 500 hours

Check:

- The seal of the hopper gaskets.
- The air and material hoses are in good working order.

6 - PROBLEMS – CAUSES – REMEDIES

6.1 - MORTAR IS NOT FLOWING OUT OF THE SPRAY GUN

The spray gun is blocked

A hardened crust of material, a pebble or a deflector whose orifice is too small for the material being used may cause a clogging-up in the spray gun:

- THE MATERIAL DOES NOT FLOW OUT OF THE SPRAY-GUN

In this case:

- Stop the machine by using the main switch.
- Release pressure in the delivery material hoses by turning the pump reverse for a few seconds.

 *Release always pressure in the hoses by turning the pump reverse for a few seconds (5-10) before disconnecting them.*

- Disassemble the deflector and, if necessary, the spray gun so as to remove the cause for clogging.
- Before mounting the deflector and spray gun once again, be certain that the nozzle is free (and, if necessary, clean it with a piece of wire).

If the mortar is dripping from the spray gun during work, try to replace the deflector and/or nozzle with one having a smaller hole

- Start the machine once again and check that the material flows out normally of the hoses.

Worn out stator

A worn out stator can prevent the material from flowing out of the gun and may even cause blockage due to overheated material at the beginning of the hose.

It is necessary to replace the stator and remove the clogging in case.

Lack of material in the hopper

If, during the work, mortar is flowing in a non-continuous way, check, at first, that there is material in the hopper.

Mortar hose blocked

A faulty mix or an overly prolonged pause may cause a clogging up of the material delivery hose:

- material is not flowing out from the spray-gun.

In this case:

- Stop the machine by using the main switch.
- Release pressure in the delivery material hoses by turning the pump reverse for a few seconds.

 *Release always pressure in the hoses by turning the pump reverse for a few seconds (5-10) before disconnecting them.*

Find out just where the mortar delivery line is blocked: the hose will be hard and stiff at this point.

The worse points are near the couplings.

Disconnect the clogged hose, hit it with a hammer at the clogged point so as to break up the “plug”, and let the hardened mix flow out.



- Turn the machine on for several seconds, and make certain that the hose has been freed of the “plug”: the material will flow normally from the hose.

Pour some slurry into the hose before the point where the blocking occurred (gun direction), connect the hose line once again, and start over again.

Mortar hose bent

Same as for mortar hose blocking.

Find the bend and straighten the hose.

 If the material inside the hopper is not pumpable, empty the hopper by disconnecting the hose from the pump and let the material flow out.

Remove, if necessary, the discharge cap of the hopper and wash out all the material with a stream of water.

Prepare the right mix and start again.

6.2 - OPERATIONS TO BE PERFORMED BY THE OPERATOR

PROBLEMS	CAUSES	REMEDIES
Mortar is not flowing from the spray gun	Mortar hose blocked	<ul style="list-style-type: none"> • Faulty mix, modify it (<i>be careful: granulometry max 5 mm for hoses Ø 25 and 2 mm for hoses Ø 19</i>). • Overly prolonged pause, shorten rest times. • Worn out stator, replace it.
	Crust of material cause a clogging-up	<ul style="list-style-type: none"> • Clean the deflector and the spray-gun, if necessary.
	Worn out stator	<ul style="list-style-type: none"> • Replace the stator.
Mortar is dripping from the spray gun's nozzle	Deflector or nozzle hole too large	<ul style="list-style-type: none"> • Change the deflector and/or the nozzle with one having a smaller hole.
Mortar is flowing in a non-continuous way The protection of the pump inverter occurs, the red lamp on the electric board lights.	Hopper half-empty	<ul style="list-style-type: none"> • Add material in the hopper.
	Worn out stator	<ul style="list-style-type: none"> • Change the stator.
	Too high pressure working	<ul style="list-style-type: none"> • Modify the mix and shorten the hoses length or use hoses having a larger diameter.
	Faulty line tension	<ul style="list-style-type: none"> • Check the feeding cable section (page 12). • Check the line tension.
	Hose blocked	<ul style="list-style-type: none"> • Remove the clogging in the hose.

6.3 - WORK TO BE PERFORMED BY QUALIFIED PERSONNEL

For other problems, please contact the qualified after-sales service.

7 - RESPONSIBILITY OF THE OPERATOR

The **PERSON IN CHARGE** of the machinery is responsible for assuring that whoever operates such machinery is well aware of the instructions contained in this use and maintenance manual, and in particular that said operator has received special training in the proper execution of those operations marked in the manual by the following symbol:



The warranty offered by the manufacturer becomes null and void if this machinery is not used in accordance with the instructions in this manual. In addition, this manual must always accompany the machine.

The machine's operator must be thoroughly taught and trained in regard to the operation and use of the machine itself and must sign this use and maintenance manual on the line reading "read and approved". If this procedure is not complied with, the operator is prohibited from using this machine.

Signature of the **PERSON IN CHARGE**

read and approved _____

read and approved _____

read and approved _____

Signature of the **OPERATOR**

read and approved _____

read and approved _____

read and approved _____