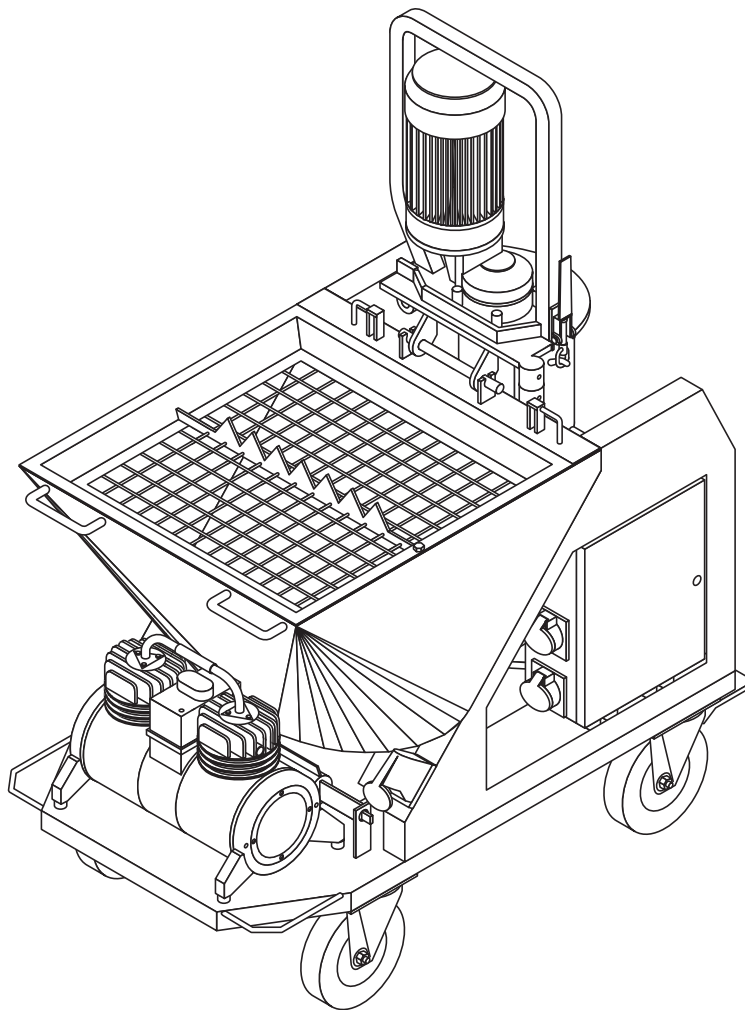




GIOTTO

IS12/02 - 561197



Serial number

								/		
--	--	--	--	--	--	--	--	---	--	--



**READ THIS MANUAL CAREFULLY BEFORE USING THE MACHINE.
THIS MANUAL IS AN INTEGRAL PART OF THE MACHINE AND MUST BE KEPT FOR FUTURE REFERENCE
UNTIL THE MACHINE IS DISPOSED OF**

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1.1 CE DECLARATION OF CONFORMITY

Dichiarazione CE di conformità - *EC declaration of Conformity* - EG – Konformitätserklärung -
 Déclaration CE de conformité - Declaración de Conformidad CE - *Declaração CE de conformidade*

Il fabbricante - *The manufacturer* - Le fabricant - *Der Hersteller* - El fabricante - *O fabricante*

TURBOSOL
 PRODUZIONE S.p.A.
 Via A. Volta, 1
 31030 Pero di Breda
 TREVISO – ITALIA

dichiara che la seguente macchina:
declares that the machinery:
 déclare que la machine:
 erklärt, dass die Maschine:
 declara que la máquina:
 declara que a máquina:

Intonacatrice
Plaster sprayer
 Machine à projeter les enduits
Putzmaschine
 Enlucidora
Rebocadora

Modello - *Model* - Modèle - *Modell* - Modelo - *Modelo* **MODELLO**
 Versione - *Version* - Version - *Version* - Versión - *Versão* **VERSIONE**
 Matricola numero - *Serial number* - Numéro de matricule -
Seriennummer - Número de matricula - *Número de matrícula* **XXX.XXX**
 Anno di fabbricazione - *Year of manufacture* - Année de fabrication -
Herstellungsjahr - Año de fabricación - *Ano de fabrico* **ANNO**

è conforme alle disposizioni della direttiva 98/37/CE e alle disposizioni nazionali di attuazione;
 è anche conforme alle disposizioni delle seguenti direttive europee: 2000/14/CE, 2006/95/CE, 2004/108/CE;
 è conforme alle disposizioni delle seguenti norme armonizzate: EN 12100-1/2:2005, EN 294:1993, EN 60204:2006.


fulfils all the relevant provisions of the Directive 98/37/EC;
also fulfils all the relevant provisions of the following European Directives: 2000/14/EC, 2006/95/EC, 2004/108/EC;
fulfils the provisions of the following harmonised standards: EN 12100-1/2:2005, EN 294:1993, EN 60204:2006.

est conforme aux dispositions de la directive 98/37/CE;
 est également conforme aux dispositions des directives européennes suivantes: 2000/14/CE, 2006/95/CE, 2004/108/CE;
 est conforme aux dispositions des normes harmonisées suivantes: EN 12100-1/2:2005, EN 294:1993, EN 60204:2006.

den Bestimmungen der Richtlinie 98/37/EG;
ebenso den Bestimmungen der folgenden europäischen Richtlinien entspricht: 2000/14/EG, 2006/95/EG, 2004/108/EG;
den Bestimmungen der folgenden harmonisierten Normen entspricht: EN 12100-1/2:2005, EN 294:1993,
EN 60204:2006.

es conforme a las disposiciones de la directiva 98/37/CE ;
 también es conforme a las disposiciones de las siguientes directivas europeas: 2000/14/CE, 2006/95/CE, 2004/108/CE;
 es conforme a las disposiciones de las siguientes normativas armonizadas: EN 12100-1/2:2005, EN 294:1993,
 EN 60204:2006.

é conforme às disposições da directiva 98/37/CE;
também é conforme às disposições das seguintes directivas europeias: 2000/14/CE, 2006/95/CE, 2004/108/CE;
é conforme às disposições das seguintes normas harmonizadas: EN 12100-1/2:2005, EN 294:1993, EN 60204:2006.




An original copy of the CE Declaration of Conformity is supplied separately from the manual.

2.1 IMPORTANCE OF THE MANUAL

This "Use and Maintenance Manual" has been drawn up following the guidelines envisioned in the relevant European Directives in order to guarantee simple and full understanding of the subjects by the operators authorised to operate and perform maintenance on the machine in question. The manufacturer has prepared this manual with the greatest care. However, should any operators find any part of the manual difficult to understand, they should contact the manufacturer immediately and request explanations and/or further information in order to avoid misunderstandings that might compromise the user's safety. Before using the machine, authorised operators must read and understand this "Use and Maintenance Manual" in every part and strictly follow the Standards herein, in order to ensure their own safety and that of others, to make the machine work at its full potential and to ensure a long-lasting and efficient service life to all the machine parts. This manual should be safely stored and kept close to the machine at all times for immediate consultation by operators.

Only specifically trained and authorised staff can operate and perform maintenance on the machine.

Operators must follow all the instructions regarding the prevention of accidents and the regulations on workplace safety in force in the country of use.

The Manufacturer shall not be responsible for any damages resulting from changes made arbitrarily to the machine.

Users are advised to take note of the machine's serial number; it must be presented along with every request for technical assistance or for spare parts, and will facilitate processing such requests.

This manual reflects the latest information available at the time of marketing the appliance and should not be considered inadequate only because it may be successively updated on the basis of newly acquired information.

Reprinting or reproducing this manual, in whole or in part, is not allowed unless authorized by ourselves in writing.

THE MANUFACTURER DECLINES ANY RESPONSIBILITY FOR DAMAGES TO PERSONS, ANIMALS OR PROPERTY CAUSED BY FAILURE TO OBSERVE THE STANDARDS AND RECOMMENDATIONS CONTAINED HEREIN.

2.2 ABBREVIATIONS

ca.	around	min	minutes
cap.	chapter	N.	number
DPI	device of individual protection	pag.	page
DX	right	par.	paragraph
h	times	pos.	position
EN	European Norm	RIF.	reference
Es.	example	s	second
FIG.	figure	SX	left
max.	maximum	TAB.	table
min.	minimum	v.	see

TAB.01

2.3 INFORMATION FOR CONSULTING THE MANUAL

Boldface:

Highlights important parts in the text.

2.4 DESCRIPTION OF THE SYMBOLS

Information and recommendations that are particularly important are indicated in this manual by the following symbols:



ATTENTION: *this symbol indicates safety regulations regarding the operator.*



PRECAUTION: *this symbol indicates the possibility of causing damage to the machine and/or its parts.*



DANGER: this symbol indicates the presence of electrical energy.



IMPORTANT NOTE: this symbol supplies useful information.

2.5 MACHINE OFF

Before performing any type of maintenance and/or regulation on the machine, it is mandatory to isolate the electric power supply. Disconnect the electric cable, make sure that the machine is effectively off, make sure that there is no residual pressure in the piping (On trampling the pipes must go limp) and that the line manometer indicates zero bar.

2.6 GENERAL AND CONTACT INFORMATION

The GIOTTO ready/mixed plastering machine can be supplied in different set-ups and with different accessories, therefore it is not said that all components described in this manual are mounted on your machine.

The Customer Service department of Turbosol Produzione S.p.A. will be glad to provide any information you may need.



Turbosol Produzione S.p.A.

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website: www.turbosol.it
e-mail: info@turbosol.it

TURBOSOL MACHINES

They are the result of years of experience and constant research. The "know how" acquired in this way, along with great attention to quality, constitutes the fundamental guarantee for the manufacturing of machines with long duration, great reliability and reduced management costs.

MAINTENANCE AND CARE

Proper maintenance and care are essential for the machine to work as designed. It is therefore extremely important that users respect the recommended maintenance intervals and carry out any maintenance required, both to keep the machine in perfect running order and to preserve the validity of the warranty.

SAFETY

All service staff must be informed of the Safety Standards. The general Standards relative to safety and accident prevention envisioned by local legislation must also be complied with.

OPERATOR TRAINING

The operator must receive specific training regarding the operations to be carried out. Turbosol periodically carries out training courses, also on specific request of the customer.

TURBOSOL SERVICE

Please contact your TURBOSOL dealer for any information regarding machine malfunctions or requests for spare parts.

Turbosol Produzione S.p.A. reserves the right to make any technical modification for machine improvement, even if not contemplated in this manual. Some drawings and representations may be indicative.

3.1 NAME OF MACHINE

CE mark plate

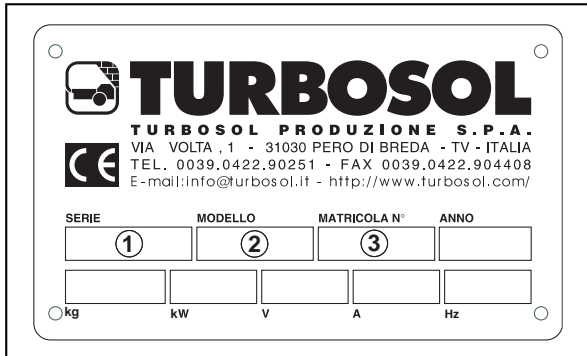


FIG.01

The machine's series (1), model (2) and serial number (3) are engraved on the nameplate, as well as its power rating. The meaning of the symbols used are as follows.

- (1) = Machine series:
- (2) = Machine model:
- (3) = Machine serial number.

Position of the CE mark plate

The CE mark plate (FIG. 02-REF. 1) is affixed to the mixer chamber.

Position of the machine serial number

The machine's serial number (FIG. 02-REF. 2) is punched onto the mixer chamber as well as on the nameplate.

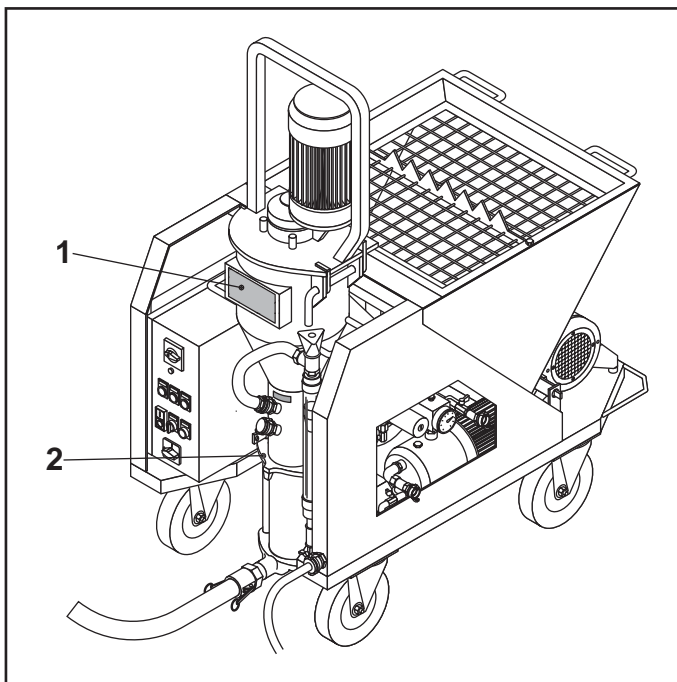


FIG.02

3.2 DIMENSIONS OF MACHINE

The following are the machine's overall dimensions and gross weight (in working conditions).

LENGTH	WIDTH	HEIGHT	WEIGHT*
1.150 mm	650 mm	1.470 mm	253 kg

TAB.02

3.3 TECHNICAL DATA

Type of electric power supply	-	Three-phase
Power supply voltage	V	400
Power supply frequency	Hz	50
Command circuit power supply	V	24 AC
Input power	kW	7.7
Short circuit current	kA	6
Pneumatic circuit calibration pressure	bar	2
Hydraulic circuit pressure reducer calibration pressure	bar	2
Flow rate	l/h	1800
Maximum particle size that can be elaborated	mm	3 ÷ 5
Useful distance (indicative)	m	15
Hopper capacity	l	110
Acceptable environmental temperature	°C	0° ÷ 35°
Guaranteed sound power level LwA	dB	101*
Guaranteed sound pressure level LpA	dB	78

Mortar pump motor reducer		
Power	kW	5.5
Number of rpm (at the mixer)	rpm	400

Dispenser motor reducer		
Power	kW	0.5
Number of rpm (at the mixer)	rpm	25

Water pump		
Power	kW	0.8
Flow rate	l/min	60
Static pressure	m	46
Pressure switch calibration pressure	bar	1.6

Compressor		
Power	kW	0.82
Flow rate	l/min	250
Maximum pressure	bar	4

TAB.03

* The operator must use Individual Protection Devices (IPD) for hearing.

3.4 INTENDED USES

The machine has been designed and built for the following use:

FIELD OF USE: construction sector.

DECLARED USE: conveying and spraying ready-mixed plasters.

3.5 PRODUCTS USED FOR WORKING

Dry ready-mixed products with cement or gypsum base. GIOTTO is not suitable to work traditional mortars.

3.6 NAME OF THE COMPONENTS

FIG. 03 shows and names the main components that make up the machine.

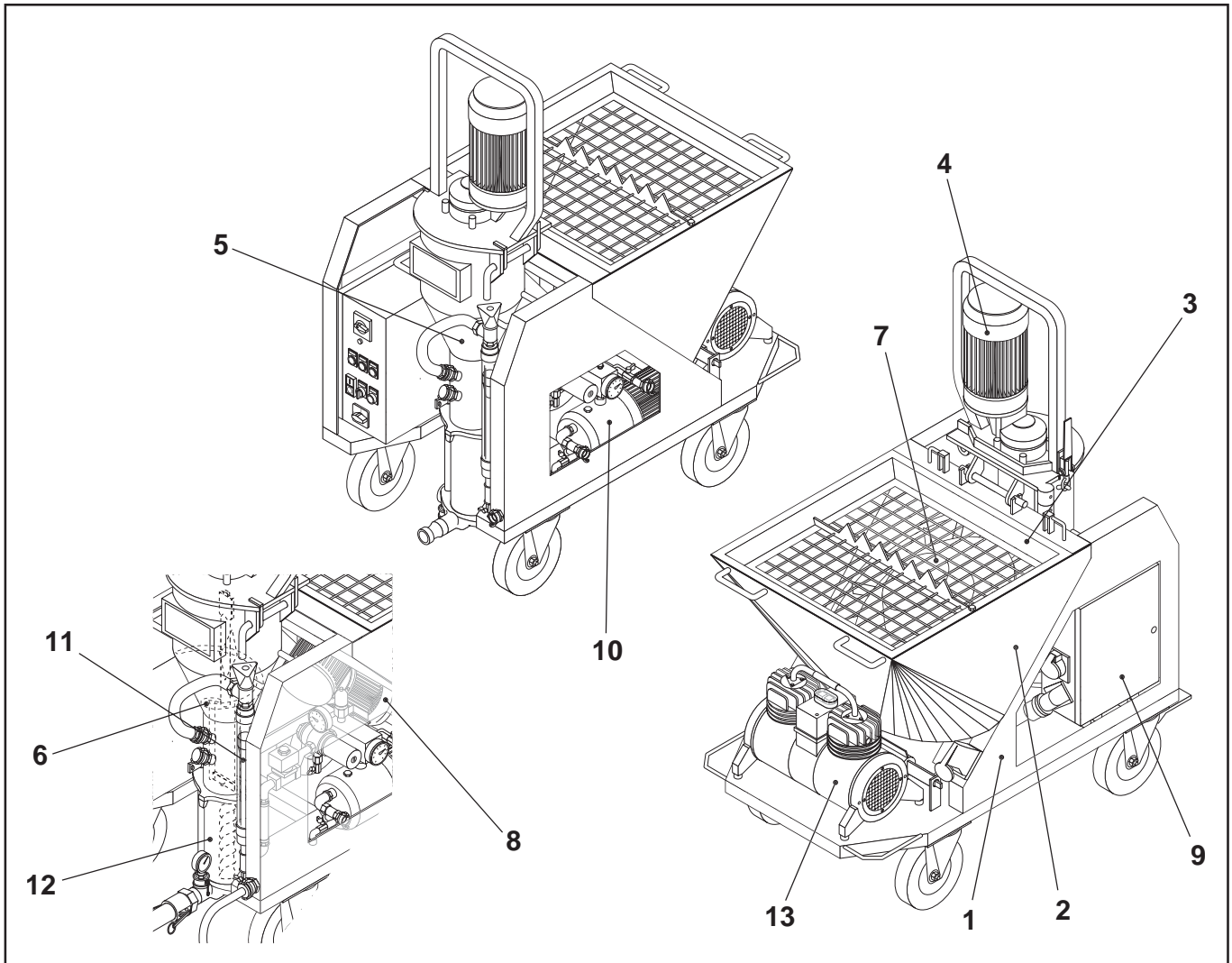


FIG.03

KEY:

- 1) Frame
- 2) Hopper
- 3) Protection grill
- 4) Main motor reducer
- 5) Mixing chamber
- 6) Mixer
- 7) Dispenser
- 8) Dispenser motor reducer
- 9) Electro-mechanical control board
- 10) Water pump
- 11) Flow meter
- 12) Pump (stator + auger)
- 13) Compressor

4.1 TRANSPORT

GIOTTO has four swivelling wheels, one with a brake, for movement inside the work area. The frame/hopper has two removable handles (FIG.04 REF.1) that make manual lifting easier.

GIOTTO has a total weight of 253 kg and can be divided into 4 separately transportable parts. Below find a list of the weights of the parts (indicative):

- motor reducer-mixer (49 kg)
- mixing chamber unit (30 kg)
- compressor (25 kg)
- frame with hopper (149 kg)

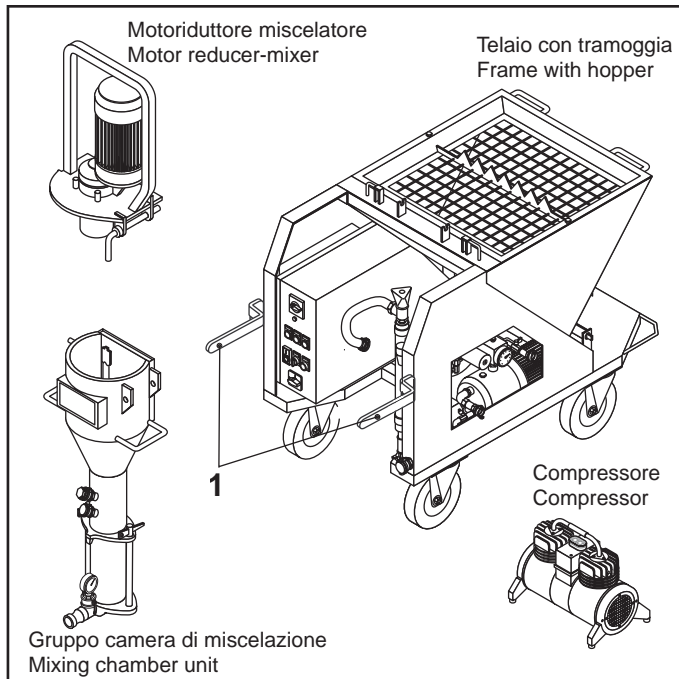


FIG.04

GIOTTO cannot be towed on roads. The loading, organisation and transport of GIOTTO on a vehicle must respect the Highway Code in force.

4.2 LIFTING



GIOTTO cannot be lifted using devices such as cranes as it does not have suitable hooks.

5.1 POSITIONING THE MACHINE

Place the machine on a horizontal surface; the maximum gradient allowed is 5° both lengthwise and crosswise (FIG.05).

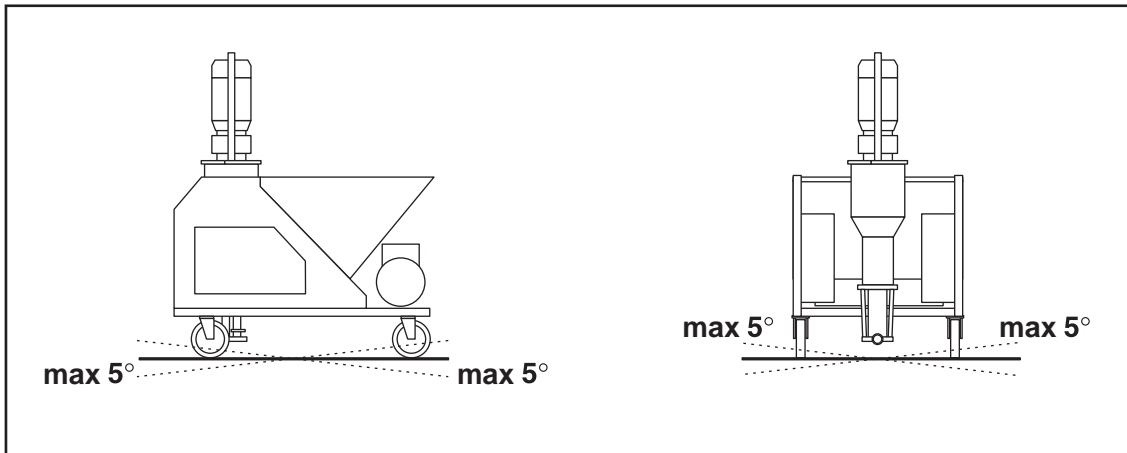


FIG.05

Before start-up, make sure that the wheel with brake has been locked.



Be sure to leave a passageway all around the machine (FIG.06) clear of any obstacles and with no holes or hazardous projections.

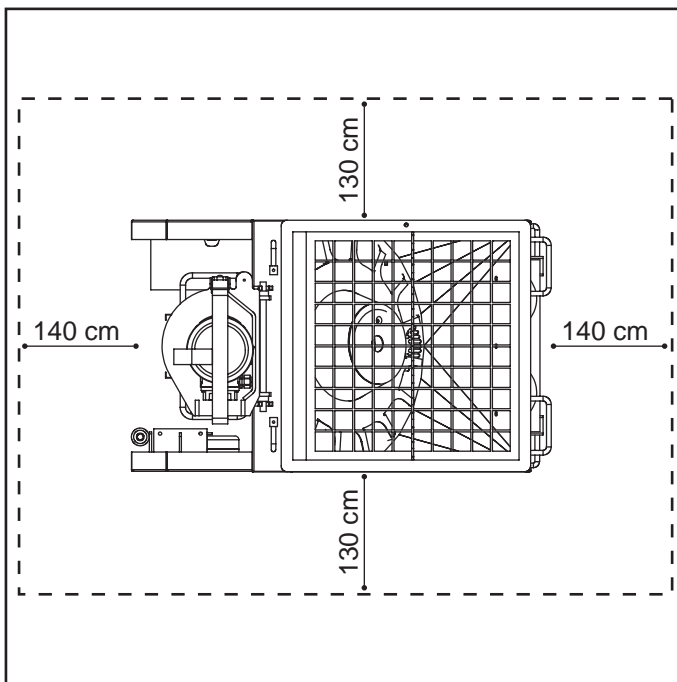


FIG.06

5.2 PIPING

Lay out the piping optimising their length (to reduce transport time and limit wear) and make sure the pipes are in good condition.



Use only original pipes and fittings.

The pipes must be fitted by TURBOSOL PRODUZIONE S.p.A. or by companies expressly authorised by TURBOSOL.

TURBOSOL PRODUZIONE S.p.A. shall not be held responsible for injury/damage to persons or property caused by using non-original piping or fittings.

5.3 FITTINGS



Make sure the fittings are clean and in good order at all times.

Camlock Fittings

Connect the pipes checking for the presence of the rubber gasket (FIG.07-REF.1); tighten the levers completely (FIG.07-REF.2).

The pipes must be connected to each other with the longer ones connected to the machine and the shorter ones towards the gun.

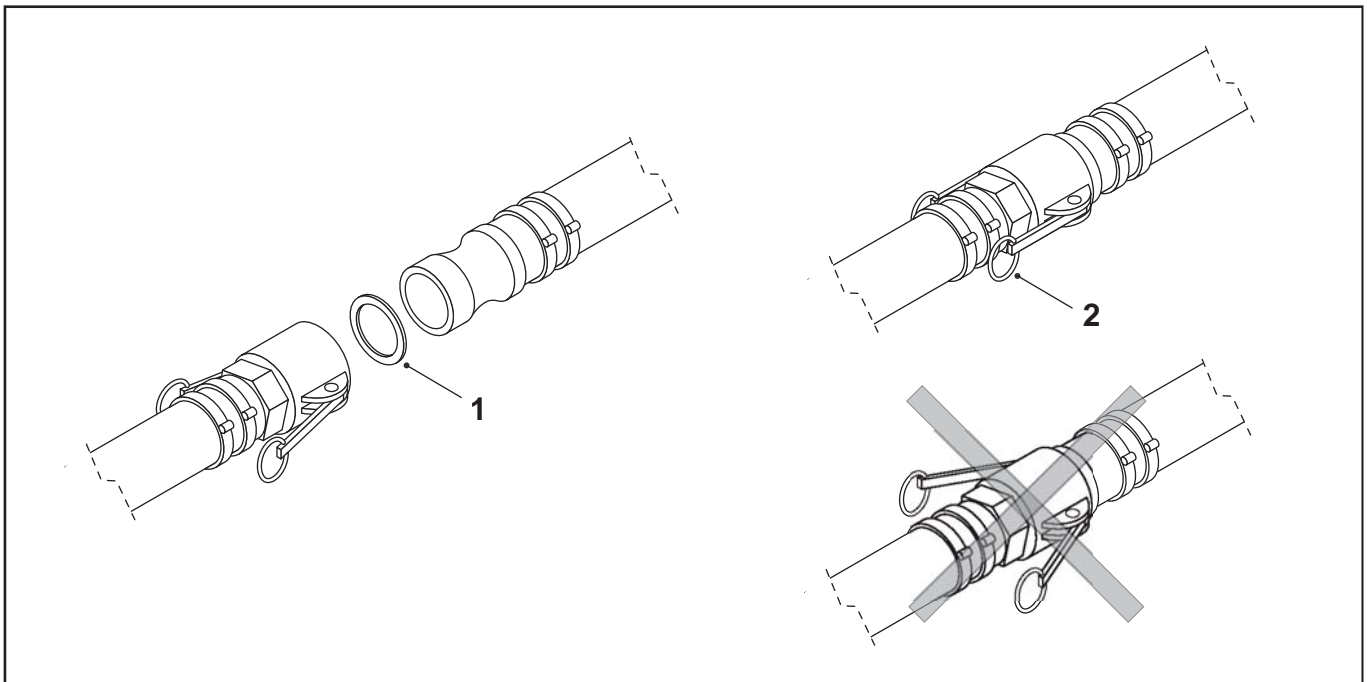


FIG.07

5.4 CONNECTIONS

Electric connection

- Connect the mixer motor reducer power supply plug to the socket (FIG.08-REF.1) and connect the compressor power supply plug to the socket (FIG.08-REF.2).

Before connecting GIOTTO to the site control board, check that it complies with the Directives and Standards in force regarding safety.

The site electric control board must respect the Standards in force and have:

- sufficient power to feed the machine,
- suitable earthing,
- suitable protection fuses,
- high sensitivity differential switch.

Connect GIOTTO to the site electric control board using a cable (3P+T) with neoprene covering, marked H07RN-F , with minimum section:

4 mm² for distances up to 20 mt.

6 mm² for distances up to 50 mt.

10 mm² for distances up to 100 mt.

The use of a cable with unsuitable section jeopardises the functioning of the machine.

- Connect the power supply cable to the socket (FIG.08-REF.3).

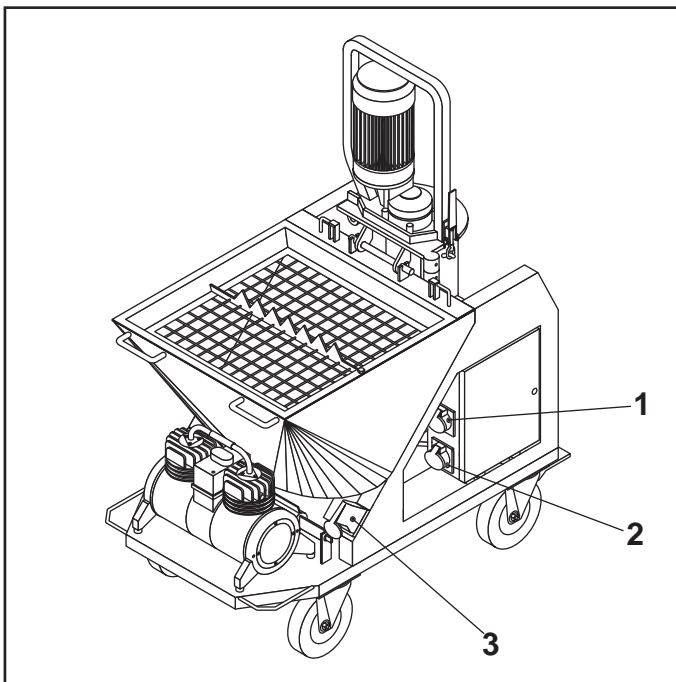


FIG.08

Other connections

- Connect the material pipe (FIG. 09-REF.1) to the flow flange (FIG. 09-REF.2).
- Connect the water pipe to the quick-release coupling (FIG. 09-REF.3) present on the mixer chamber. It is normally connected to the upper connection.
- Connect the compressor air pipe (FIG. 10-REF.1) to the compressor.
- Connect the gun air pipe to the attachment (FIG. 10-REF.2).
- Connect the gun (FIG. 10-REF.3) to the end parts of the material (FIG. 10-REF.4) and air (FIG. 10-REF.5) piping.

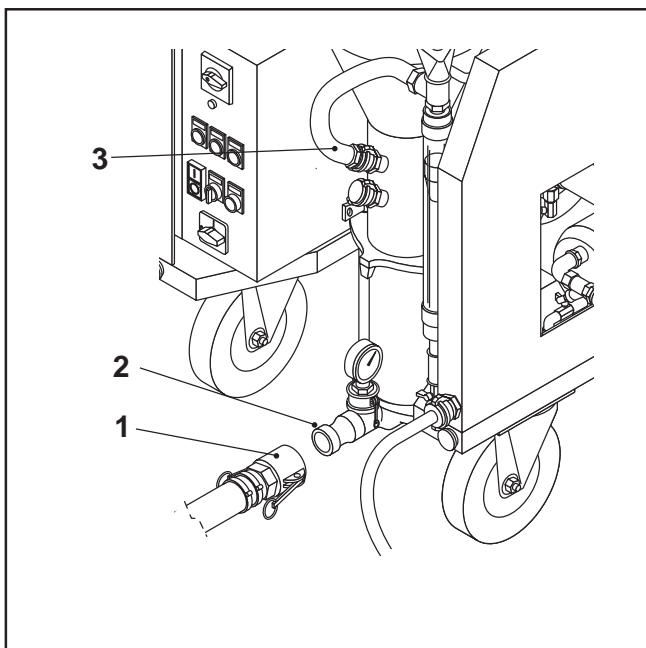


FIG.09

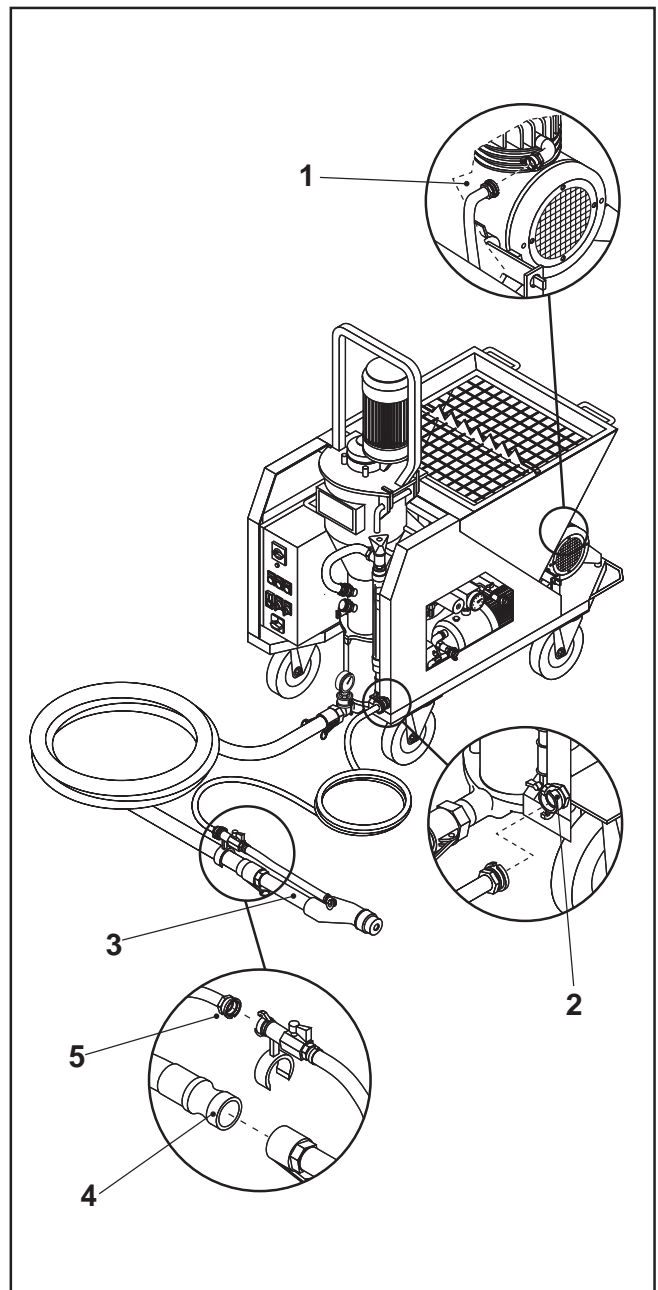


FIG.10

- Connect the water supply pipe to the water pump quick-release coupling (FIG.11-REF.1).

When the water pump is connected to a container for the first time (and after every time the hydraulic system is emptied or after an extended standstill) the pump is previously engaged, to prevent damage to the mechanical seals.

To check that the pump is engaged, when the cock is opened (FIG.11-REF.2) water should escape.

Different materials require different percentages of water; as an indication for GIOTTO:

- at least 600 l/h with cement-based materials,
- 1,000 l/h with gypsum-based materials.

The water flow rate used may shift from the indications given above in relation to the length of the piping line, wear of the pump (auger and stator) and the experience of the user.

The water entering the water pump must be clear and free from impurities. If the water network does not guarantee the necessary flow of water, obtain a container with suitable capacity (200 litres) with compensation function. The container must have a cock with float, must be positioned high with respect to the parking surface of the machine and water must be withdrawn at least 50 cm above the connection (FIG.11-REF.1).

Draw the water from it using the pipe with filter (supplied).

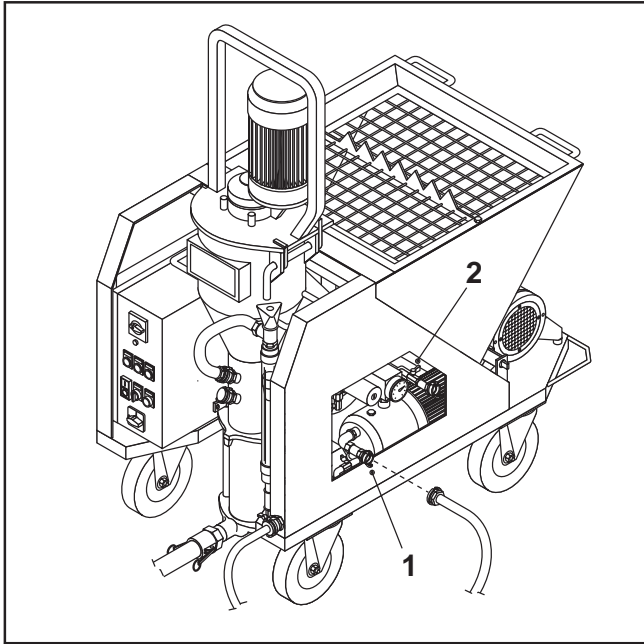


FIG.11

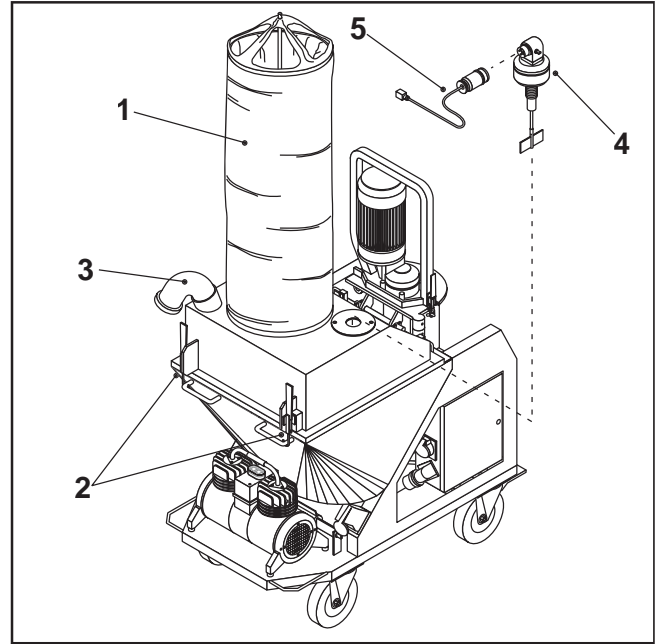


FIG.13

Cover (on request)

If the dry ready-mixed material is introduced into the hopper automatically by a pneumatic transfer system, an appropriate cover must be used (FIG. 13-REF.1), which is fixed onto the hopper in the following way:

- Put the machine in "machine off" mode.
- Remove the protection grill (FIG. 03-REF.3).
- Position the cover complete with lid as indicated by the drawing and block it with the relevant hooks (FIG. 13-REF.2).
- Connect the pipe that takes the material from the pneumatic plant to the relative connection (FIG. 13-REF.3).
- Insert the mechanical probe (FIG. 13-REF.4) into the relevant housing and connect the power supply cable (FIG. 13-REF.5) to the probe and to the electric control board of the pneumatic transfer plant.

6.1 SAFETY DEVICES USED

HOPPER PROTECTION GRILL

It is a perforated sheet steel grill fixed to the hopper using screws.

COMPONENT LOCKING NUTS

They are nuts used to lock components. The relative components must be locked and opened with the aid of spanners.

MAIN MOTOR REDUCER SUPPORT OPENING SENSOR

Sensor that is used to isolate the electric power supply when the motor reducer support opens accidentally when the machine is running.

MAIN MOTOR REDUCER SUPPORT CLOSURE HOOK WITH INTERLOCK

To prevent undesired openings, the motor reducer mount hook can only be opened after the interlock has been pressed.

SHEET STEEL PROTECTION OF THE TRANSMISSION JOINT OF MOTION BETWEEN THE MAIN MOTOR REDUCER AND MIXER

It is made up from a cylindrical protection that prevents the contact with the joint whenever the motor reducer mount is opened accidentally with the machine running.

MOTOR REDUCERS ELECTRIC PROTECTION

It is made up of a magnet circuit breaker switch installed in the electric control board. It is used to isolate the electric power supply with consequent shutdown of the motor reducer in the case of overload and/or short circuit.

COMPRESSOR ELECTRIC CONNECTION

It is made up of a magnet circuit breaker switch installed on the compressor. It is used to isolate the electric power supply with consequent shutdown of the compressor in the case of overload and/or short circuit.

WATER PUMP ELECTRIC PROTECTION

It is made up of a magnet circuit breaker switch installed in the electric control board. It is used to isolate the electric power supply with consequent shutdown of the water pump in the case of overload and/or short circuit.

TIE-ROD FIXING CHOCKS FOR STATOR

They are metal chocks that guarantee fixing of the stator to the mixing chamber. They are used to guarantee complete closure, preventing access to the dangerous area of the auger.

MATERIAL CONVEYOR PIPING LINE MANOMETER

The manometer is positioned between the machine flow and the first tract of flow piping. It is used to indicate the pressure in the piping.

PARKING BRAKE

A brake is applied to one of the wheels to prevent undesired machine movements.



IT IS PROHIBITED TO TAMPER WITH, EXCLUDE AND/OR REMOVE ANY SAFETY DEVICES FROM THE MACHINE.



IT IS PROHIBITED TO REPLACE ANY SAFETY DEVICES OR COMPONENTS OF A SAFETY DEVICE WITH NON-ORIGINAL SPARE PARTS.



IT IS MANDATORY TO CONSTANTLY CHECK THE GOOD WORKING ORDER OF ALL THE SAFETY DEVICES INSTALLED ON THE MACHINE.



IT IS MANDATORY TO REPLACE ANY MALFUNCTIONING OR DAMAGED SAFETY DEVICES IMMEDIATELY.

6.2 SAFETY SIGNS

The safety signs are adhesive labels affixed to the machine.





The safety signs must be kept clean and clearly visible at all times.



Damaged signs must be replaced immediately with new ones obtained from the manufacturer.



It is prohibited to remove or damage the safety signs affixed on the machine.

REF.	LABEL	DESCRIPTION
A		Danger electric shocks.
B		It is mandatory to read the instruction manual before starting to operate.

TAB.04

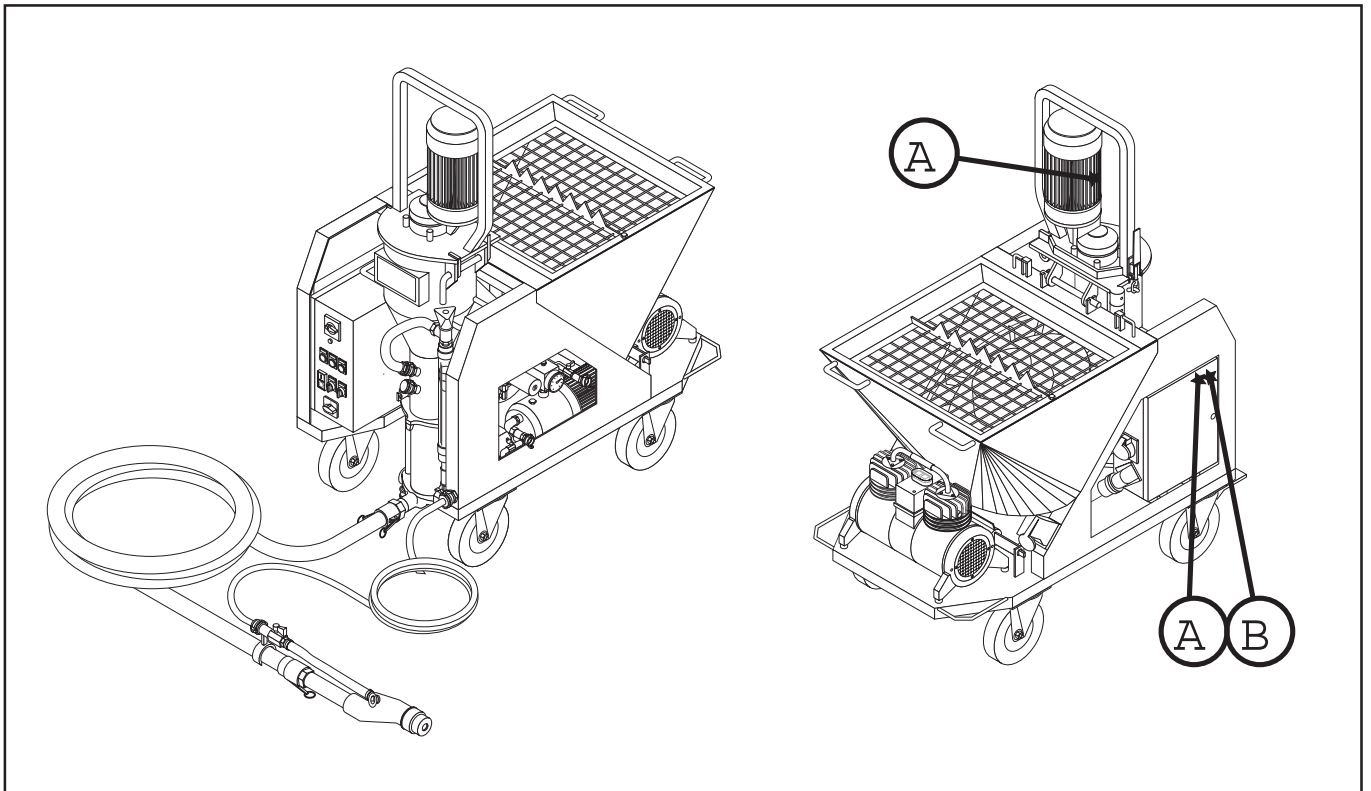


FIG.14





6.3 INDIVIDUAL PROTECTION DEVICES

Wearing individual protective devices is mandatory, in compliance with the Standards regarding health and safety in the workplace in force in the country of use.

The employers, staff in charge and operators must be aware of and apply these Standards.



IT IS MANDATORY TO USE THE PROTECTION DEVICES INDICATED BY THE MANUFACTURER (TAB.05).

MANDATORY SIGNS	DESCRIPTION
	IT IS MANDATORY TO PROTECT THE EYES.
	IT IS MANDATORY TO PROTECT HEARING.
	IT IS MANDATORY TO PROTECT THE HANDS.
	IT IS MANDATORY TO PROTECT THE FEET.

TAB.05

6.4 RESIDUAL RISKS

Following the instructions and recommendations contained in this manual will allow you to use the machine correctly and reduce any residual risks.

IN PARTICULAR:

Read the use and maintenance manual before starting the machine.

The operators at the machine and in the material delivery area must be trained to carry out their work following the instructions contained in this manual.

All maintenance must be carried out with the machine switched off.

PRESSURISED PARTS:

Check and guarantee the piping and make sure there are no signs of damage.

Make sure all the quick-release couplings and pipe joints are tight.

Do not release the fittings when the pipe is pressurised.

HOT PARTS:

Do not touch the motor reducer, the compressor or the water pump when GIOTTO is functioning or less than an hour from switch-off of the same.

MOVING PARTS:

Do not insert foreign bodies through the protection grill when the dispenser is moving.

Do not use the machine without the flow flange and the pump installed correctly.

Do not open the motor reducer support while the machine is operating.

Do not use the machine without the protection grill or the cover correctly mounted and fixed.

ELECTRIC PARTS:

Never operate with the electric control board open.

Do not direct water jets onto the electric control board and onto the electric sockets.

6.5 SAFETY RECOMMENDATIONS

- The machine must never operate if the piping is not connected to the flow connector and to the spray gun.
 - Follow the instructions for machine positioning before start-up of the same.
 - Check the state of wear of the pipes and relative joints every day, due to the danger of explosion, projection of the mixture and cutting, in the case of breakage and disconnection from the joints.
 - Do not introduce any objects through the protection grill with the electric power supply connected, due to the risk of a violent blow.
 - Do not use the machine with inflammable materials or in explosive zones.
 - Move with extreme caution in proximity of the conveyor pipe, due to the possibility of unexpected movements, risk of blows and falling.
 - If the material should block in the conveyor pipe, follow the relative instructions given in the manual.
- The machine operator must pay constant attention to what is happening in the work area in order to intervene immediately and stop the machine in the case of an emergency.

7.1 OPERATING PRINCIPLE

The bags of dry ready-mixed product are placed on the protection grill, which has a bag breaking device. When the bag is broken, the powder falls inside the hopper.

The dispenser conveys the material from the hopper to the mixing chamber, where it is mixed with the water by the mixing device. The water flow rate is adjusted by the cock positioned on the flow meter. The flow rate is displayed on the graduated scale of the flow meter.

The pump, connected to the mixer, sends the mixture to the gun through the pipe.

Compressed air coming from the compressor also flows to the gun; the mixture (formed from air and mixture) escapes as a jet from the gun. The peak divergence of the jet can be adjusted by axial shift of the nozzle (FIG.15-REF.1) for the air inside the gun and/or by the replacement of the deflector (FIG.15-REF.2).

A cock (FIG.15-REF.3) is present on the gun that intercepts the flow of air. Opening and closing the cock controls machine start-up/switch-off.

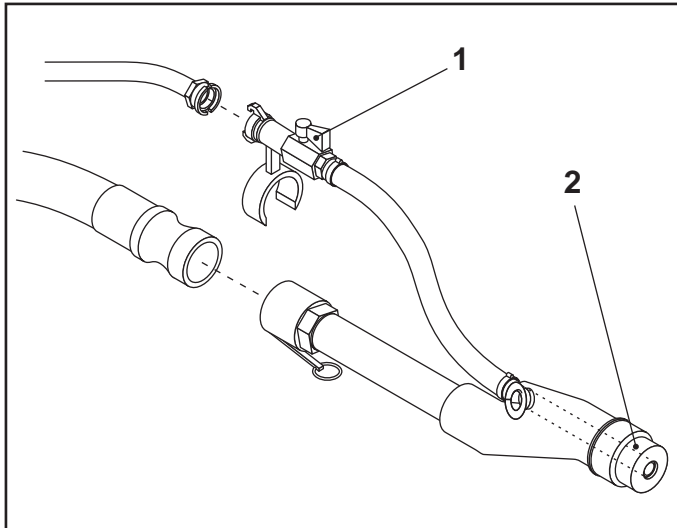


FIG.15

7.2 PUMPABLE MATERIALS

GIOTTO works cement and gypsum-based dry ready-mixed products, as long as their particle size is compatible with the pump (see later in this paragraph).

The performance and the quality of the product worked depend on the combination of the following factors:

- type of pump used
- type of ready-mixed product
- quality of the ready-mixed product
- percentage of water in the mixture
- length of the piping
- configuration of the spray gun (type of deflector, position of the air nozzle...).

Choice of pump

Standard pump:

- Pump D6-3 with pre-registered stator, indicated for gypsum and cement-based ready-mixed plasters, with particle size of 3 mm;

Optional pumps:

- D4-MV pump
with pre-registered stator, indicated for mortars and ready-mixed cement-based plasters with particle size of 5 mm;
- D7-2.5 pump
with pre-registered stator, indicated for mortars and ready-mixed cement-based plasters with particle size of 5 mm;
- D8-1.5 pump
with pre-registered stator, indicated for ready-mixed plasters and self-levelling screeds, with particle size of 5 mm;
- D8-1.5 pump
with pre-registered stator, indicated for mortars and light plasters to be used with the turbo mixer;
- D8-2 pump
with pre-registered stator, indicated for mortars, plasters and light self-levelling screeds, with particle size of 5 mm;

TAB.06 summarises the main technical features of the pumps available for GIOTTO.

Type of pump		D6-3 (standard)	D4-MV (optional)	D7-2.5 (optional)	D8-1.5 (optional)	D8-2 (optional)
Theoretical flow rate	l/min	30	36	40	50	50
Maximum pressure	bar	30	30	30	30	30
Maximum particle size	mm	3	5	5	5	5
Useful distance (indicative)	m	15	15	15	15	15
Minimum auger diameter	mm	50-51	46	50-51	44-45	51
Transport pipe	-			DN25		

TAB.06

To determine the minimum diameter of the auger, place it on a horizontal surface and check that the distance of the crests of the blade from the surface itself is not lower than the value stated in TAB.06 (see also FIG.35).

7.3 CHECKS BEFORE START-UP

Perform the following checks:

- Check that the protection grill on the hopper is regularly fixed using the screw indicated in the figure (FIG.16-REF.1).

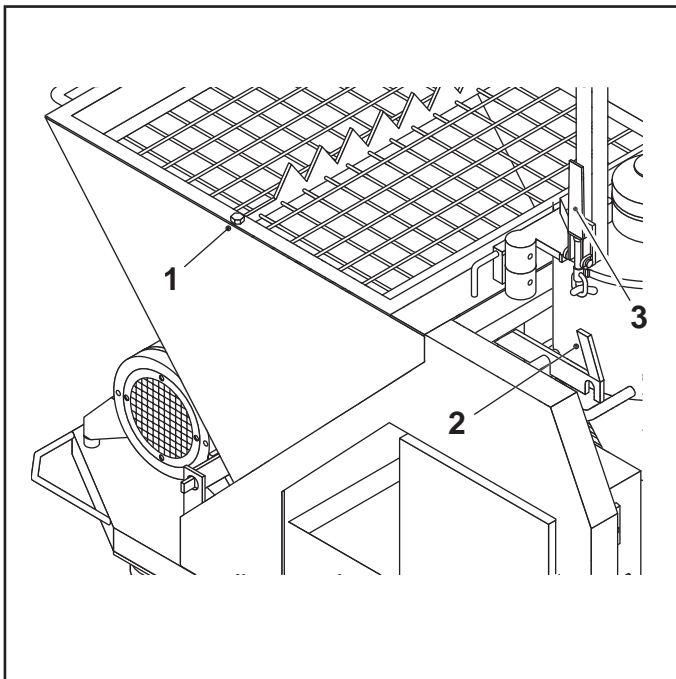


FIG.16

- Check that the mixer unit is regularly blocked (FIG.16-REF.2) and the motor reducer mount closure hook (FIG.16-REF.3) is closed well.
- Check that the air cock (FIG.17-REF.1) to the gun is open and the water utility cock (FIG.17-REF.2) is closed.
- Check that the dispenser switch (FIG.18-REF.4), the master switch (FIG.18-REF.1) and the water pump switch (FIG.18-REF.3) are in position zero.

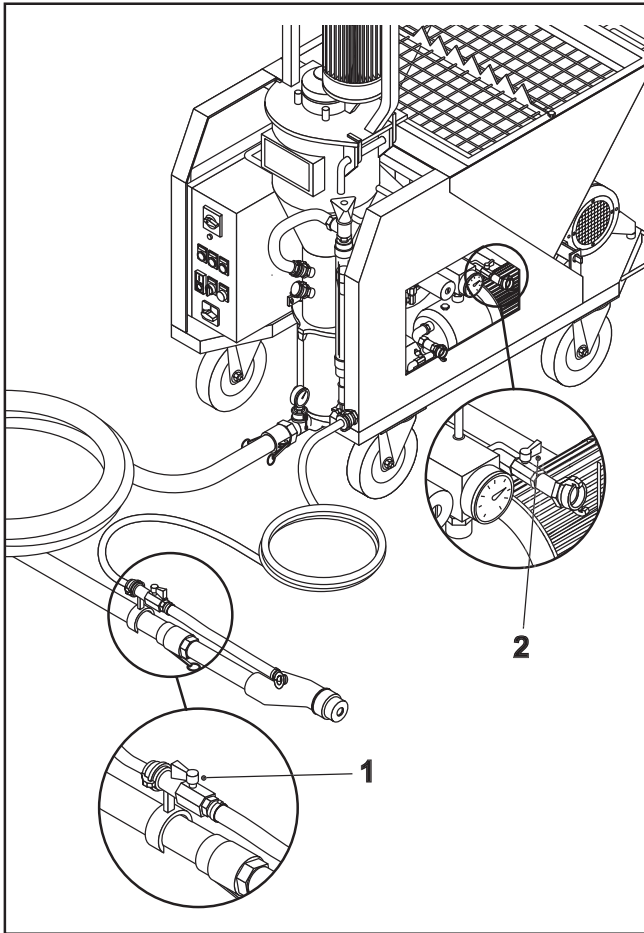


FIG.17

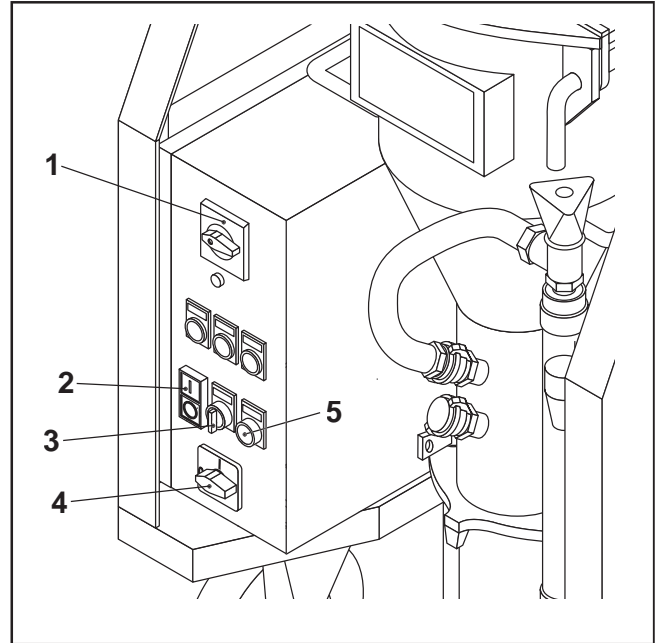


FIG.18

- Connect the power supply cable to the socket (FIG.19-REF.1) positioned on the machine frame.

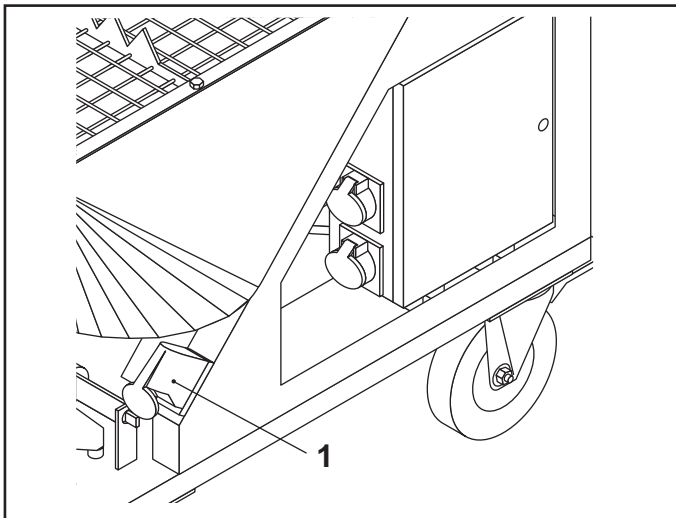


FIG.19



After repairs or maintenance make sure that all protection devices have been re-mounted and that no tool has been forgotten inside the machine.

7.4 CONTROLS

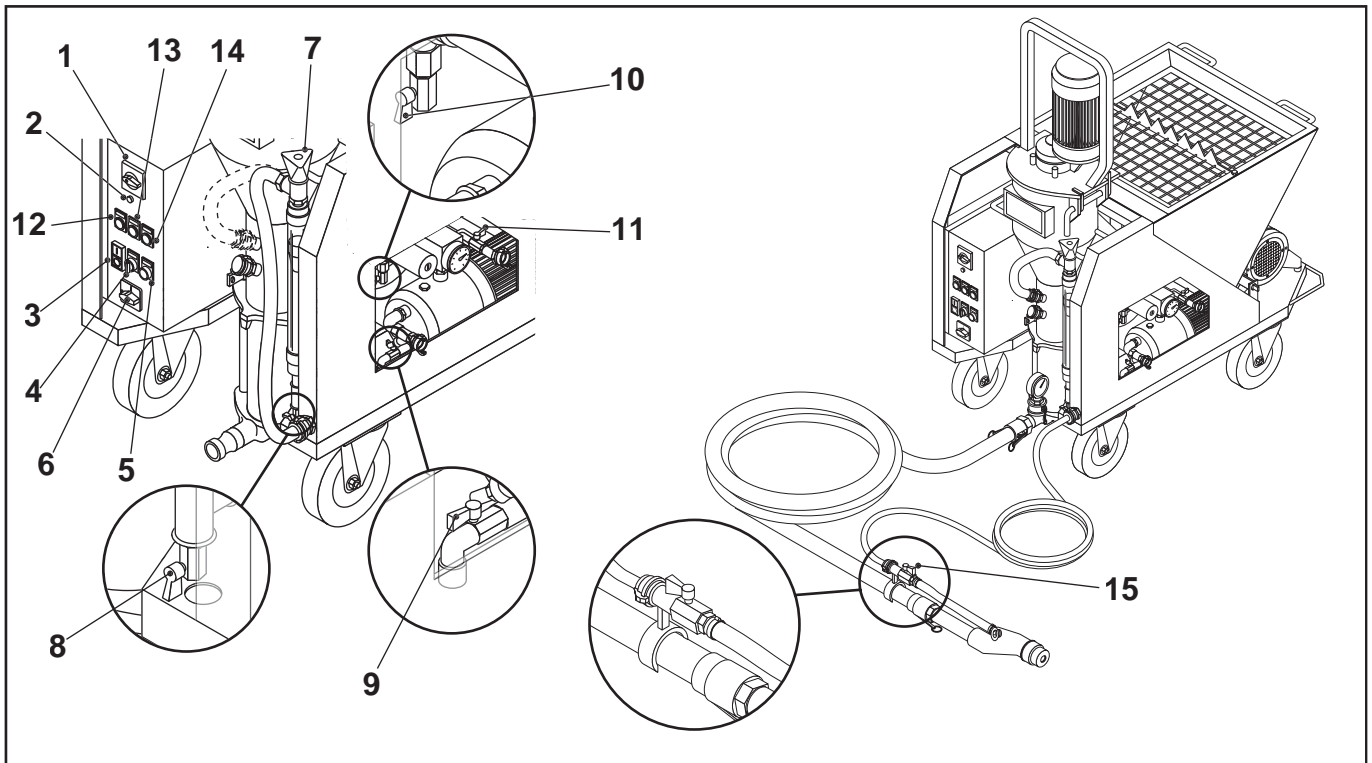


FIG.20

FIG.	REF.	DESCRIPTION
20	1	Master switch/motion reverser
20	2	Motion reverse consent button
20	3	Mortar pump start/stop
20	4	Water pump insertion/disconnection
20	5	Water supplement
20	6	Dispenser insertion/disconnection
20	7	Flow meter cock
20	8	Bleed cock
20	9	Bleed cock
20	10	Bleed cock
20	11	Auxiliary cock
20	15	Start/stop pneumatic control

INDICATORS

FIG.	REF.	COLOUR	DESCRIPTION
20	12	Blue	Correct voltage
20	13	Red	Motor-protector/safety device intervention
20	14	Green	Sufficient water pressure

TAB.07

7.5 STARTING THE MACHINE



Use gloves for protection against cuts and abrasions and goggles that offer total protection for the eyes, with shatter-proof anti-misting lenses.



The gun must never be aimed at the operator and towards third parties.

Start the machine by turning the master switch (FIG.21-REF.1) to position 1: the BLUE indicator switches on (FIG.21-REF.3). This indicates the correct power supply voltage: with correct voltage the indicator stays on. If the indicator light should switch off on start-up, it means that the voltage is not sufficient. Check that the power supply line has been made correctly (cable section and site electric control board power supply).

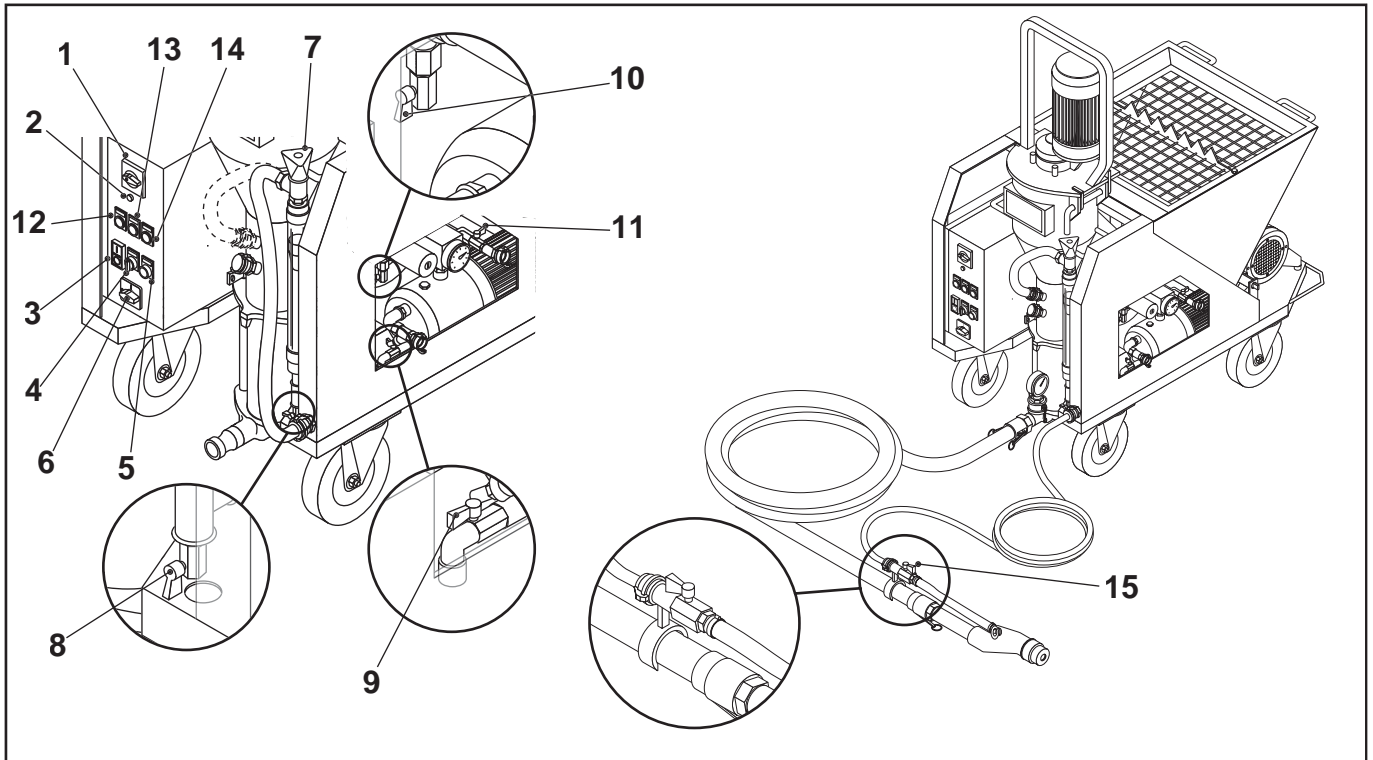


FIG.21

Press key 1 on the compressor switch (FIG.22-REF.1).

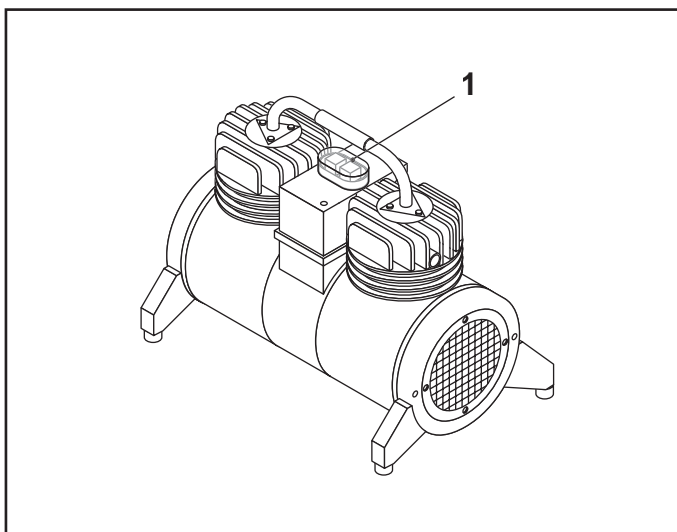


FIG.22

By positioning the master switch at 1 or 2 (FIG.21-REF.1) the following switch on:

- the red indicator light (FIG.21-REF.13) (anomalies signal),
- the blue indicator light (FIG.21-REF.12) for line presence if the line voltage is sufficient,
- the compressor starts up.
- the green indicator light (FIG.21-REF.14) for water pressure presence switches on when there is sufficient pressure in the water system. If the water is supplied from a barrel the green indicator light (FIG.21-REF.14) only switches on with the water pump inserted.

NOTE: Operate as follows to find the correct direction of rotation of the pump:

- put the master switch in position 1 (FIG.21-REF.1) and the water pump switch in position (FIG.21-REF.4) then observe the pressure indicated by the manometer (FIG.23-REF.5),
- Press the button (FIG.21-REF.2) and then turn the master switch to position 2 (FIG.21-REF.1), keeping the water pump switch in position 1 (FIG.21-REF.4) then observe the pressure indicated by the manometer again (FIG.23-REF.5).
- The correct direction of rotation is obtained in the position in which the most substantial increase of pressure occurred, normally about 4 bar.
- To change the position from 1 to 2 or vice versa on the reverser master switch (FIG.21-REF.1) press the red button at the same time (FIG.21-REF.2).

- Pour the content of a bag of ready-mixed plaster into the hopper in order to perform the first spraying adjustments.
- Disconnect the pipe (FIG.23-REF.2) that takes the water into the mixing chamber by holding the water supplement button down (FIG.21-REF.8).
- Adjust the flow meter (FIG.23-REF.4) to 800 l/h via the cock (FIG.23-REF.1) and then re-connect the pipe (FIG.23-REF.2).
- Press the water supplement button for about 3 seconds (FIG.21-REF.5).
- By pressing the start switch green button (FIG.21-REF.3) the material pump is activated and the red indicator switches off (FIG.21-REF.13).

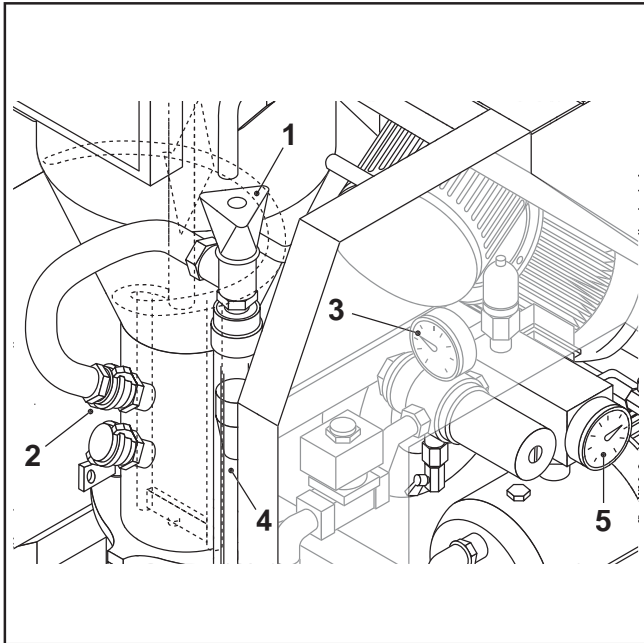


FIG.23

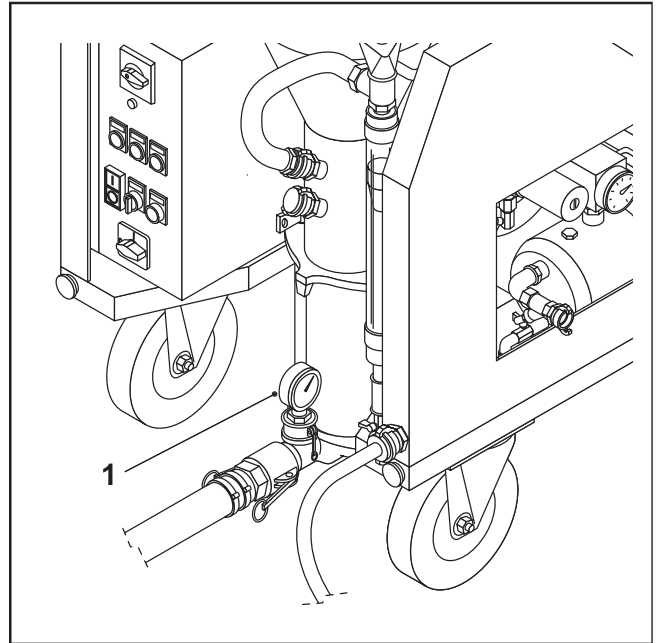


FIG.24

If the blue indicator light should switch off on start-up, it means that the voltage is not sufficient. Check that the power supply line has been made correctly (cable section and site electric control board power supply).

- Insert and disconnect the material dispenser switch (FIG.21-REF.6) with the following sequence:
 - 2 seconds on,
 - 2 seconds off, 2 seconds on,
 - 2 seconds off, on definitively.
- Adjust the flow of water using the cock (FIG.21-REF.7) until the desired consistency of the mixture is desired.
- Keep the hopper constantly fed with material.

NOTE: the "normal work pressure" displayed on the manometer (FIG.24-REF.1) depends on the material and the length of the piping used: it is a good idea to regularly check the pressure value in order to identify any anomalies immediately.

At this point, start to operate normally: the opening and closing of the pneumatic control (FIG.21-REF.15) to the gun determines starting and stopping of the machine.

7.6 CLEANING AND THE END OF A WORK SESSION



The operator must have been specifically trained to perform this operation.

In particular, before opening a fitting make sure there is no residual pressure in the piping using the flow flange manometer. In all cases, on trampling the pipes must go limp. Make sure no-one is in the vicinity.

This operation is potentially dangerous and should always be performed with caution and by qualified staff only.

- Always disconnect the machine power supply, positioning the master switch (FIG.25-REF.2) at position 0 (zero), before removing or re-mounting any component or accessory of the machine itself.
- Stop the dispenser using the material dispenser switch (FIG.25-REF.1) and continue to pump until only water escapes from the gun.
- Stop the material pump (FIG.26-REF.3).

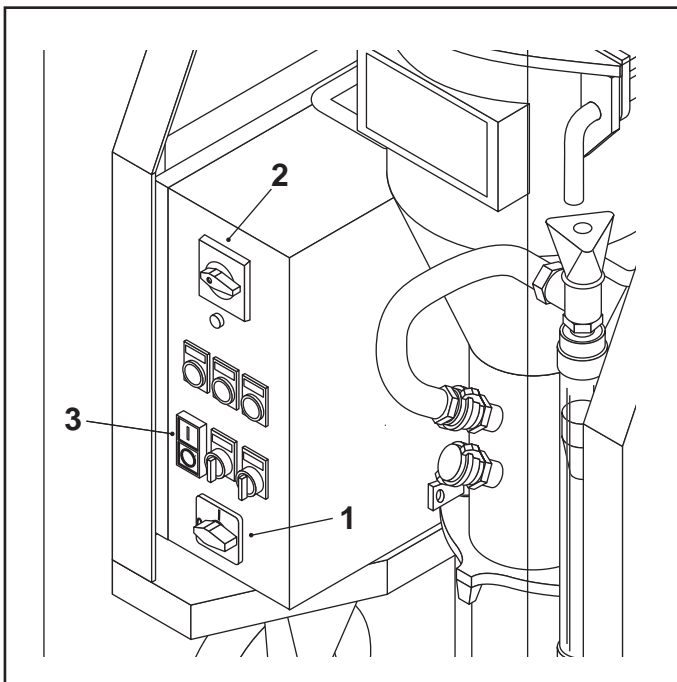


FIG.25

- Remove the gun and wash it carefully, disassembling the deflector (FIG.26-REF.2).
- Check that the hole in the nozzle (FIG.26-REF.1) is free (if necessary, clean it using the relevant cleaning device).
- Disconnect the pipes from GIOTTO and insert a washing sponge into the piping (FIG.27).
- Connect the water-mortar fitting (FIG.28-REF.3) to the quick-release coupling (FIG.28-REF.2) of the auxiliary cock connecting the pipe to it (FIG.28-REF.1).
- open the auxiliary cock (FIG. 28-REF. 1)
- Re-start GIOTTO using the master switch (FIG.31-REF.1).
- Wash the piping.
- If the pressure is not sufficient to wash the pipes, turn the water pump on - switch (FIG.31-REF.3).
- Clean the flow flange carefully (FIG.30-REF.4) eliminating any deposits that could jeopardise correct functioning.

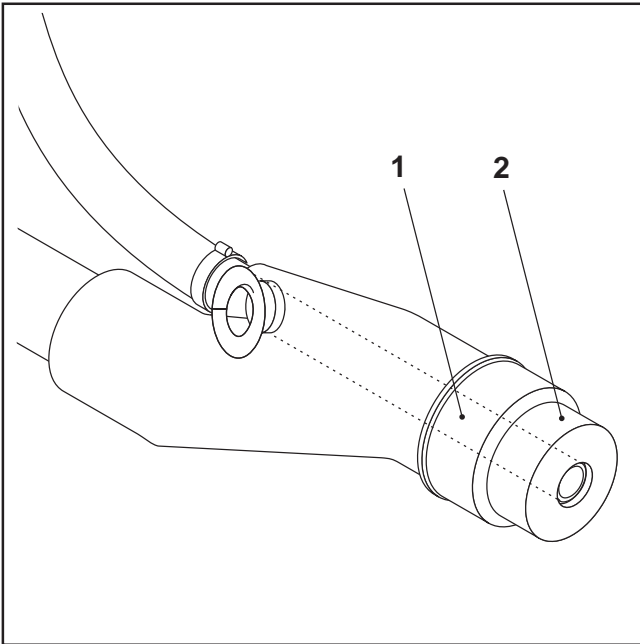


FIG.26

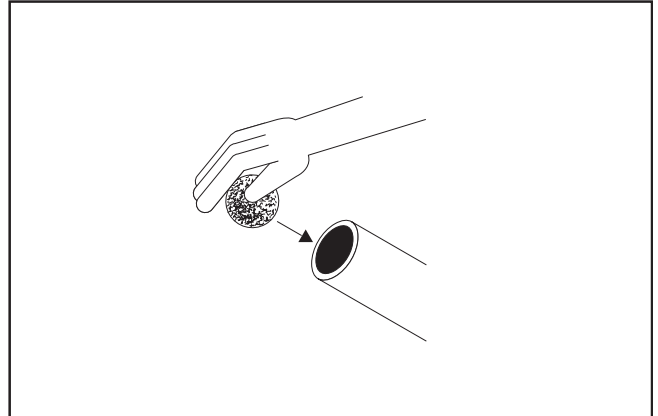


FIG.27

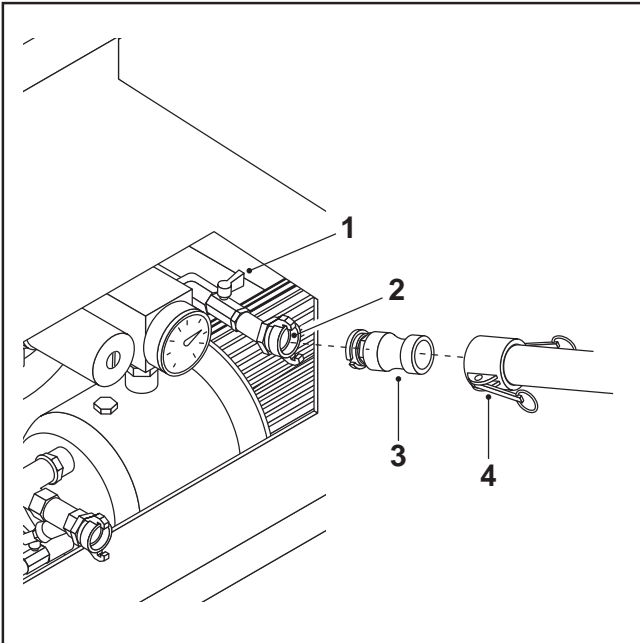


FIG.28

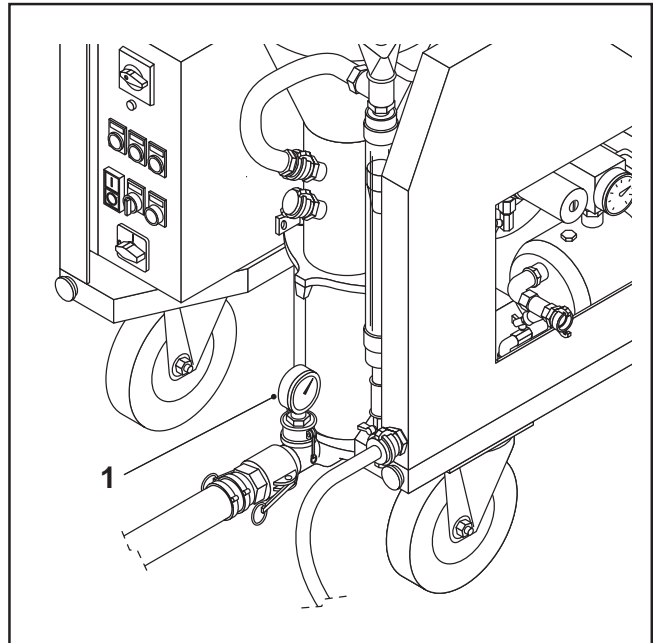


FIG.29

- Disconnect the machine power supply positioning the master switch (FIG.31-REF.1) in position 0 (zero).
- Open the mixer unit (FIG.30-REF.3).
- Remove the mixer (FIG.30-REF.2) and wash it.

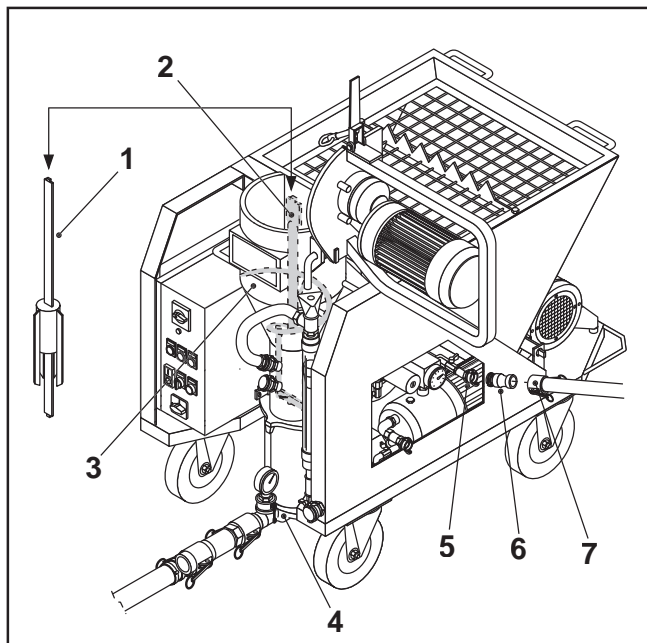


FIG.30

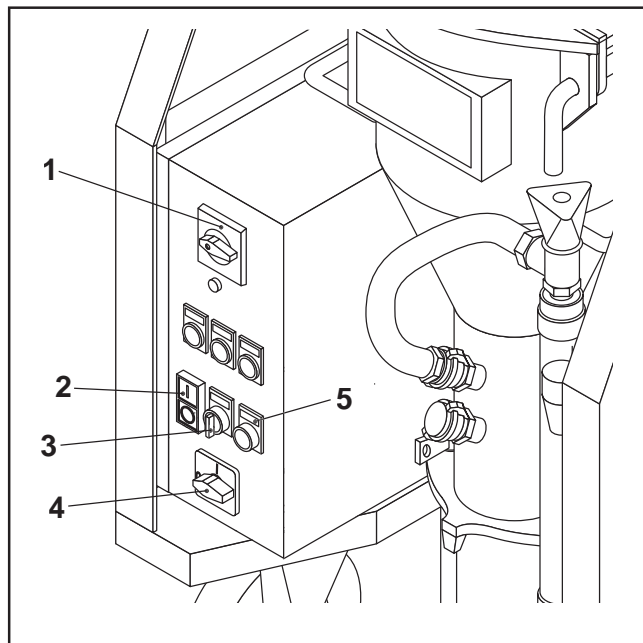


FIG.31

- Insert the scraper (FIG.30-REF.1) at the mixer, close the mixing unit and with the dispenser at a standstill, start the pump by activating the button (FIG.31-REF.1) until clean water escapes.
- Stop the material pump after a few seconds, positioning the master switch (FIG.32-REF.1) in position 0 (zero).
- Remove the scraper (FIG.30-REF.1) and clean the inside of the mixer unit (FIG.30-REF.3) using a cloth.
- Re-insert the mixer.

NOTE: If there is a danger of freezing, empty the water plant completely.

Proceed as follows:

- Position the switch (FIG.31-REF.1) in position 0 (zero).
- Disconnect the water pump by activating the switch (FIG.31-REF.3).
- Disconnect the pipe (FIG.32-REF.2) from the mixing chamber.
- Connect the air pipe (FIG.32-REF.6) to the quick-release coupling (FIG.32-REF.7) or (FIG.32-REF.5).
- Open the bleed cocks (FIG.32-REF.1-3-4).
- Start the machine for a couple of minutes by pressing the water supplement button (FIG.31-REF.5) until no more water is seen in the flow meter.
- Re-establish the initial configuration of GIOTTO.

If the machine is not to be used for a long period, clean all parts covered in dust well using compressed air (not water as deposits would form)

The electric motors support sprays of water but not violent jets.

The well-cleaned pipes must be rolled without forming folds and kept in a dark, dry place.

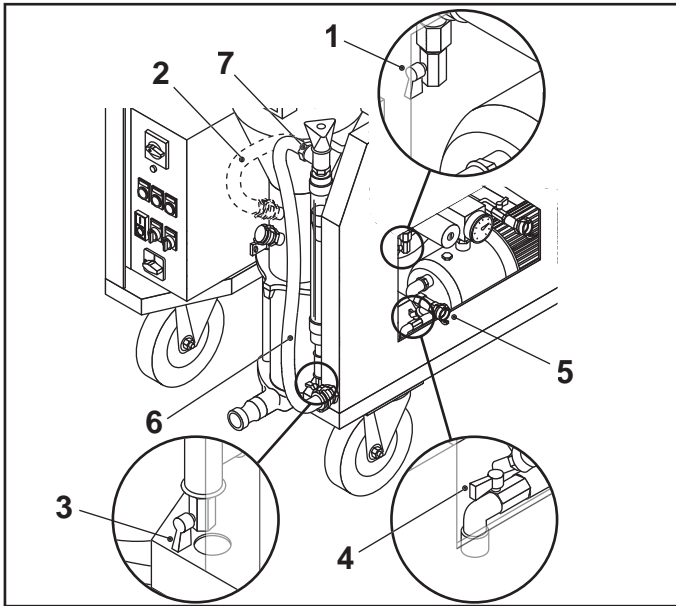


FIG.32



Read the recommendations in paragraph 6.5. before performing cleaning operations.

7.7 REPLACING THE PUMPING UNIT

Before carrying out this operation, stop the material pump by activating the switch (FIG.31-REF.1) and then disconnect the power supply socket.



The operator must have been specifically trained to perform this operation.

In particular, before opening a fitting make sure there is no residual pressure in the piping using the flow flange manometer. In all cases, on trampling the pipes must go limp. Make sure no-one is in the vicinity.

This operation is potentially dangerous and should always be performed with caution and by qualified staff only.

Proceed as follows to replace the pumping unit:

- Incline and block the mixing chamber unit in this position (FIG.33).

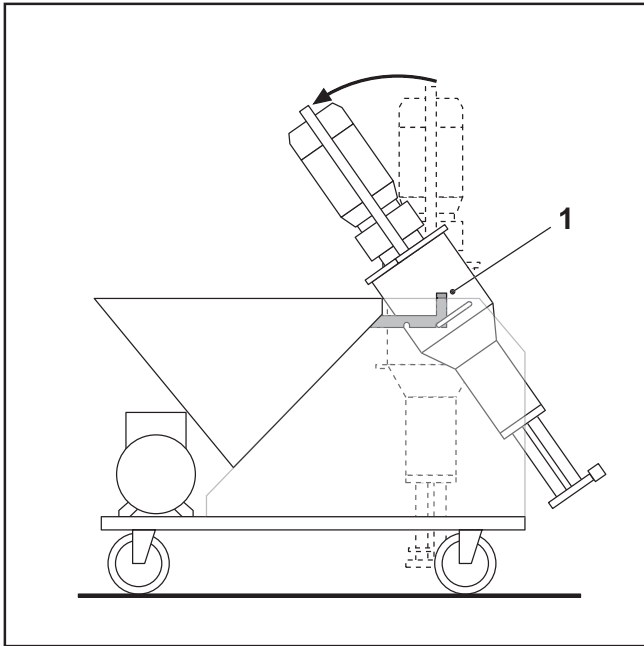


FIG.33

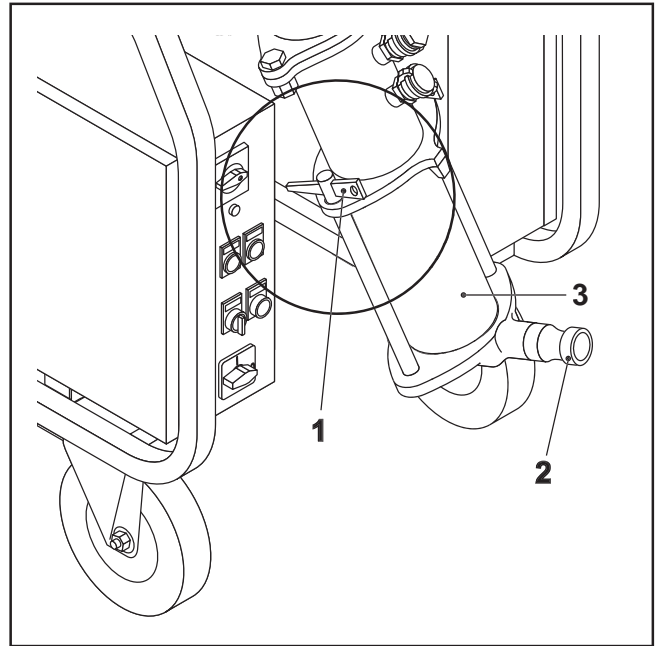


FIG.34

- Remove the material flow flange (FIG.34-REF.2) and the pump (FIG.34-REF.3) sliding out the tie-rod chocks (FIG.34-REF.1).
- Mount a new pump
- Take the mixing unit back to the original position and block it.

Mounting the auger in the stator

The stator usually works at half the rate of the auger.

- Uninstall the pump from the machine (see paragraph above).
- Put the pump in a vice and remove the auger (FIG. 83-REF. A).
- Lubricate the auger and the opening in the stator with Vaseline (DO NOT USE OIL OR GREASE, USE VASELINE ONLY).
- Partially introduce the auger inside the countersunk opening.
- Tap the pump (stator + auger partially inserted) repeatedly against an object that will not damage the stator (e.g., a block of wood) (FIG. 36).

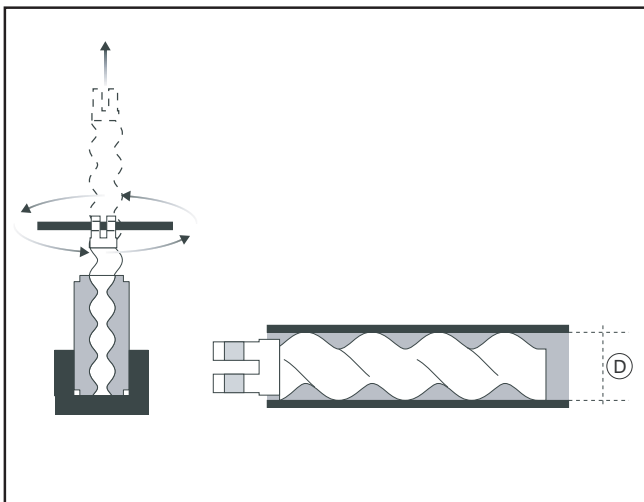


FIG.35

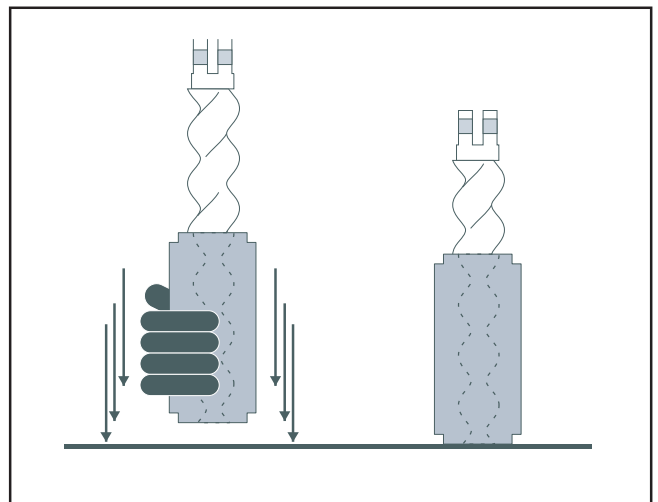


FIG.36

7.8 IMPORTANT WARNING



The operator must have been specifically trained to perform this operation.

In particular, before opening a fitting make sure there is no residual pressure in the piping using the flow flange manometer. In all cases, on trampling the pipes must go limp. Make sure no-one is in the vicinity.

This operation is potentially dangerous and should always be performed with caution and by qualified staff only.

DISASSEMBLY OF THE PIPING LINE

Before disconnecting the segments of the piping line, make sure that the master switch (FIG.37-REF.1) is in position 0 (zero) and that the flow flange manometer indicates nil pressure: on trampling the piping must go limp. If the manometer should not indicate a pressure at nil, the line must be depressurised before it is disassembled.

To depressurise the piping line:

- Stop GIOTTO by positioning the switch (FIG.37-REF.1) in position 0.
- Disconnect the water pipe (FIG.37-REF.7) from the mixing chamber.
- Holding the button down (FIG.37-REF.6), position the switch (FIG.37-REF.1) in the position opposite to pumping.
- Stop GIOTTO (position the switch (FIG.37-REF.1) in position 0) when the pressure on the flow flange manometer indicates zero bar.
- Holding the button down (FIG.37-REF.2), re-position the switch (FIG.37-REF.1) in the pumping position.
- Reduce the insertion time for depressurisation of the piping line to a minimum.

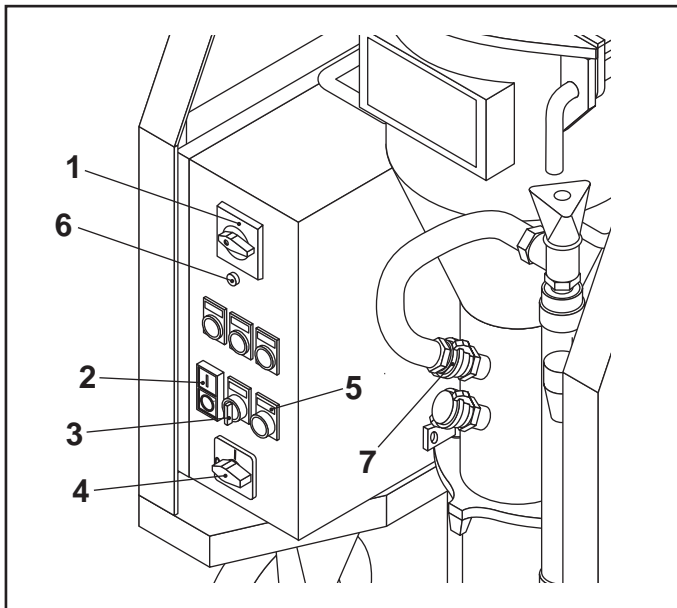


FIG.37

8.1 TO BE CARRIED OUT BY OPERATOR

The following are the basic instructions for performing proper maintenance on the machine.



Switch the machine off before carrying out any maintenance intervention that leads to the opening, removal or mounting of any component or accessory of the machine itself.

Operations to be performed daily

at the start of work

- Check that the water filter (FIG.38-REF.2) is clean.
- Check the efficiency and cleanliness of the flow flange pressure measuring device.

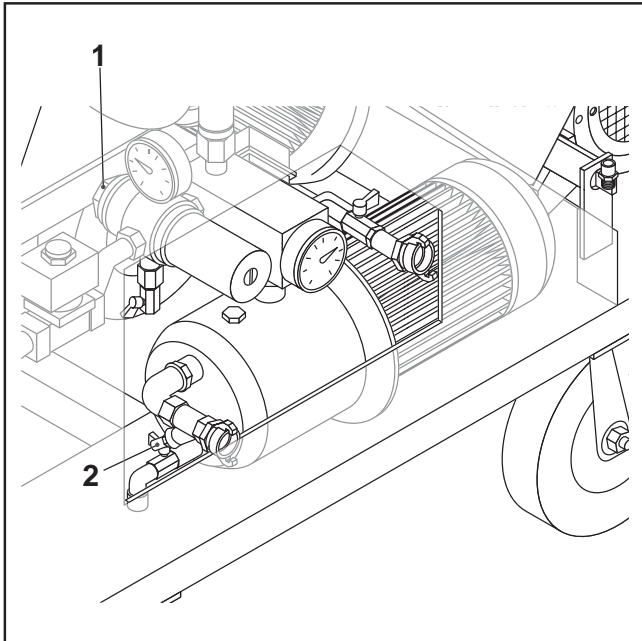


FIG.38

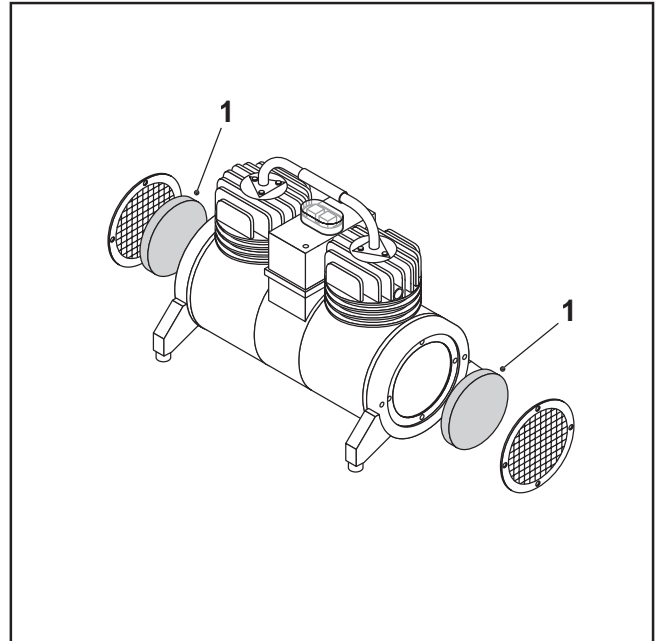


FIG.39

Operations to be performed weekly or every 25 hours

- Check that the compressor air filters (FIG.39-REF.1) are clean.
- Check that the sealing rings of the motor reducer unit are integral, there must be no trace of grease.

Operations to be performed monthly or every 100 hours

- Replace the compressor air filters (FIG.39-REF.1).
- Use compressed air to carefully clean the mixer main motor reducer, dispenser motor reducer, compressor and water pump.

8.2 TO BE CARRIED BY QUALIFIED STAFF

Operations to be performed every 6 months or every 500 hours

- Check the flexible air pipes.
- Check the material piping.
- Servicing must be performed by specialised TURBOSOL PRODUZIONE S.p.A. staff or by TURBOSOL PRODUZIONE S.p.A. after-sales centres.

9.1 GENERAL RECOMMENDATIONS

Follow the local regulations in the country of use when scrapping the machine.

Separate the machine parts according to the type of material (plastic, rubber, iron, etc.).

The oils must be consigned to companies that are authorised and specialised for disposal of these products.

10.1 MATERIAL DOES NOT ESCAPE FROM THE GUN



The operator must have been specifically trained to perform the following operations. In particular, before opening a joint make sure there is no residual pressure inside the piping using the flow flange manometer and that no one is standing nearby.

This operation is potentially dangerous and should always be performed with caution and by qualified staff only.



The "normal working pressure" shown on the flow flange manometer depends on the quality and consistency of the material and the length of the piping used: it is a good idea to check this pressure value regularly in order to identify and anomalies immediately.

"Normal working pressure" is considered a pressure between 15 and 20 bar (with 15 metres of piping), with instantaneous peaks at about 25 bar. A constant working pressure exceeding 20 bar or below 10 bar is to be considered anomalous.

A) Material pipe blocked

Prolonged standstill can determine blockage of the material flow pipe: material does not escape from the gun and the mortar pipe pressure manometer indicates a pressure that exceeds normal working pressure.

In this case:

- Depressurise the piping by acting as described in paragraph 7.8.
- Put the machine in "machine off" mode.
- Check that the pressure manometer positioned on the flow flange indicates a pressure of zero.
- Check that the material flow pipe is not hard and rigid at any part along its length. If this is the case, disconnect it to release the blockage.
- Identify where the material flow line is blocked: the pipe is hard and rigid in this point. The most critical points are in correspondence with the fittings.
- Disconnect the blocked pipe.
- Tap with a mallet in correspondence with the rigid part of the pipe to break the obstruction (FIG.26)
- Make the hardened material escape.
- Start the pump for a few seconds and make sure that the pipe has been freed from the obstruction: the material must escape regularly.
- Re-connect the piping line and re-start.

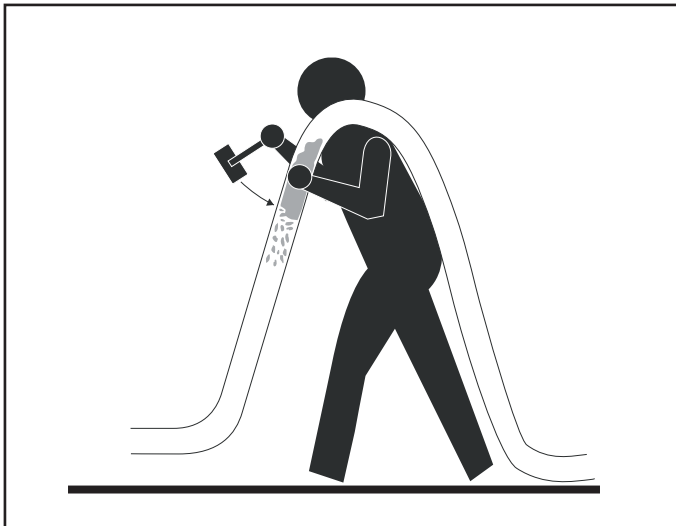


FIG.26

B) Gun blockage.

An incorrect mixture, an obstruction (hardened material) or a deflector with hole that is too small in relationship to the material used, can cause the gun to become blocked.

- Depressurise the piping by acting as described in paragraph 7.8.
- Put the machine in "machine off" mode.
- Disassemble the deflector and the gun if necessary.
- Remove the cause of the blockage.

- Before re-mounting the deflector or the gun, make sure that the nozzle (FIG.XX-REF.Y) is free (clean it if necessary) and that the material escapes freely from the pipe.

C) Worn pump

A worn stator can give rise to the escape of material with irregular features or cause a blockage at the start of the piping due to overheating of the material.

- The auger-stator unit must be replaced.

10.2 PUMP BLOCKAGE

If the pump material is blocked, intervene as follows:

- Put the machine in "machine off" mode.
- Open the mixer unit.
- Insert the key to release the auger in place of the mixer.
- Move the material pump, turning the auger release key.
- Close and block the mixing unit using the lever.
- Re-start the machine.

10.3 ENGINE PROTECTOR/FUSES INTERVENTION

A red indicator light switches-on on the electric control board on the intervention of an engine protector.

The electric control board does not function on the intervention of a fuse.

- Put the machine in "machine off" mode.
- Open the electric control board and:
re-arm the engine protector that has intervened,
or replace the fuse that has intervened making reference to the wiring diagram present in the manual for the successive actions of this paragraph.
- Close the electric control board, re-connect the power supply and start the machine.

10.4 OTHER PROBLEMS

If the material tends to drip from the gun during operation, try and replace the deflector and/or the nozzle with one that has a smaller hole.

If during the work session the material reaches the pistol in an irregular manner, check that the air pipe is not bent or that the air nozzle is not blocked.

10.5 OPERATOR INTERVENTION

PROBLEMS	CAUSES	SOLUTIONS
THE MACHINE DOES NOT START-UP	No water pressure.	<ul style="list-style-type: none"> • Check that water arrives from the supply pipe. • Check that the water filter (FIG.38-REF.1/2) are clean • If the manometer (FIG.23-REF.5) indicates a pressure lower than 3 bar on machine start-up with water pump inserted, envision a container with 200 litre capacity from where the pump can aspirate.
	No electric power supply.	<ul style="list-style-type: none"> • Check that the electric power supply cable is connected.
	Insufficient electric power supply (blue light off).	<ul style="list-style-type: none"> • Check that the electric cable has the specified features (see Par. 5.4) and that the electric power requested is effectively available.
THE MATERIAL PUMP DOES NOT START-UP.	Pump blocked: the motor-protector intervenes and the red indicator light switches on.	<ul style="list-style-type: none"> • Open the electric control board and re-arm the motor-protector*. Re-start. If the motor-protector intervenes again, check for blocks. <p>Release the pump and replace it if necessary (see Par.10.2 and 7.7). Do not insist with repeated start-up attempts: this can damage the electric appliances.</p> <ul style="list-style-type: none"> • Check that the electric cable has the correct features (see Par. 5.4) and that the electric connection has been made correctly.
THE MATERIAL PUMP DOES NOT START-UP OR STOPS DURING SPRAYING.	Air system partially blocked.	<ul style="list-style-type: none"> • Check that the air pipe is not bent. • Clean the gun nozzle.
	Water does not reach the mixing chamber (motor-protector intervention indicated by switch-on of the red indicator light [FIG.19-REF.13]).	<ul style="list-style-type: none"> • Check that the flow meter cock is not completely closed. • Check that the water supply pipe to the mixing chamber is not bent.
THE GUN SPRAYS WEAKLY.	Air leak in line.	<ul style="list-style-type: none"> • Check the air line and particularly all fittings.
	Compressor filter blocked.	<ul style="list-style-type: none"> • Clean and replace if necessary.
THE MATERIAL REACHES THE GUN WITH NON-CONSTANT FEATURES.	Auger-stator torque worn.	<ul style="list-style-type: none"> • Check the state of wear and replace if necessary (see TAB.06 and Par 7.7).
	Deteriorated or un-mixed ready-mixed product.	<ul style="list-style-type: none"> • Change material.
	Mixer scaled.	<ul style="list-style-type: none"> • Clean the mixer.
THE COMPRESSOR OR WATER PUMP DO NOT START-UP	Motor-protector intervention indicated by the switch-on of the red indicator light (TAB.07-REF.13)	<ul style="list-style-type: none"> • Open the electric control board and re-arm the motor-protector*. Re-start. If the motor-protector intervenes again, check the current absorption of the compressor or the water pump. • Try to re-start. Do not insist with repeated start-up attempts, this can damage the electric appliances. <p>If the problem is not solved, request authorised after-sales assistance.</p>

THE DISPENSER DOES NOT START-UP	Motor-protector intervention indicated by the switch-on of the red indicator light (TAB.07-REF.13)	<ul style="list-style-type: none">• Open the electric control board and re-arm the motor-protector*. Re-start. If the motor-protector intervenes again, empty the hopper and clean it completely. Do not insist with repeated start-up attempts, this can damage the electric appliances.• If the problem is not solved, request authorised after-sales assistance.
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* This is the only operation on the electric control board that the operator is allowed to perform.



For problems different to those listed above, contact the authorised after-sales service.

11.1 RESPONSIBILITY

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

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 _____

Signature of the operator _____

Read and approved _____

11.2 WARRANTY

The machinery manufactured by Turbosol Produzione S.p.A. is guaranteed for a period of twelve (12) months or one thousand (1,000) hours of operation - whichever comes first - from the date said machinery is delivered to the end consumer, and in any event not more than eighteen (18) months from its shipment. The date upon which these products are delivered to the end consumer must be entered on the special warranty certificate which comes with all new machinery leaving the factory.

This warranty shall be valid only if the Manufacturer receives the attached warranty certificate card within thirty (30) days of delivery of the machinery in question. This card must be filled out completely and signed by the Purchaser.

This guarantee is to be understood as covering any defect in manufacturing or in the materials employed in said manufacture.

Component parts supplied by Turbosol Productions S.p.A. by third parties shall be covered by the guarantee said parties have provided Turbosol and which Turbosol in turn shall make available to the end consumer.

In the event that anomalies should appear during the period covered by the warranty, the right to intervene to correct said anomalies shall be limited to the Manufacturer itself or to parties specially authorised by the Manufacturer. The end consumer shall be responsible for having the defective machinery brought to the designated repair facility during regular working hours. Defective parts must be sent free port to the Manufacturer, which shall either repair said parts or replace them free of charge when and if, in the final judgement of the Manufacturer, said parts show defects in quality. The replacement parts shall remain the exclusive property at the Manufacturer.

The Purchaser shall be responsible for those expenses related to shipping the materials in question as well as for the costs of possible intervention on the part of the Manufacturer's personnel.

Repairs or replacements shall in no way extend the life of the overall warranty period. The warranty does not cover normal wear of parts or their deterioration through improper use, said parts to include: valve housings and spherical valves made of rubber, piston liners, rubber stators and pump screws, axle boxes, deflectors, stirring blades, wear protection for vessel, wear plates and cones, filters, etc

The Purchaser shall forfeit his rights under this warranty when and if he fails even on but one single occasion, to comply with the payment terms and/or if the breakdowns reported prove to have originated: from circumstances introduced by the Purchaser himself, by his employees or by third parties, when the damage is due to incorrect use, poor installation, or utilization that is improper or in conflict with the instructions given in the use and maintenance manuals provided with the machinery.

This warranty shall no longer be valid if the injection systems are damaged by unsuitable or polluted fuel, if the electrical systems break down due to an improper feed or because of such components as relays, condensers, remote control devices, etc., the latter of which are covered by warranties issued by the supplier.

The warranty shall likewise no longer be valid following questionable tampering and/or the use of non-original spare parts or rubber hosing different from that furnished by the Manufacturer.

The Manufacturer shall rightfully decline all responsibility arising from an impossibility to utilise the product or from damages due to interruption in work, or loss of direct or indirect profits, or for damages likewise caused by removal of the cowling or protective carters; on moving parts and safety devices.

Imperfections and defects must be reported in writing to the Manufacturer as indicated by law.

In the case of disputes arising from interpretation of the clauses above, the original Italian text shall apply.