ED. 12- 10/2023

Manuale Cod. 150093

INSTRUCTION MANUALL

SAMOA®

LEADING THROUGH INNOVATION

EN

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GHIBLI 26:1 EXT

Pneumatic pump

for extrusion

IT	https://www.larius.com/wp-content/uploads/GHIBLI26_I.pdf
EN	https://www.larius.com/wp-content/uploads/GHIBLI26_UK.pdf
ES	https://www.larius.com/wp-content/uploads/GHIBLI26_E.pdf
RU	https://www.larius.com/wp-content/uploads/GHIBLI26_RU.pdf

This manual is to be considered as an English language translation of the original manual in Italian. The manufacturer shall bear no responsibility for any damages or inconveniences that may arise due to the incorrect translation of the instructions contained within the original manual in Italian.

Due to a constant product improvement programme, the factory reserves the right to modify technical details mentioned in this manual without prior notice.

GHIBLI 26:1 EXT

Pneumatic pump for extrusion

INDEX

WE ADVISE THE USE OF THIS EQUIPMENT ONLY BY PROFESSIONAL OPERATORS.
ONLY USE THIS MACHINE FOR USAGE SPECIFICALLY MENTIONED IN THIS MANUAL.

Thank you for choosing a **SAMOA** product.
As well as the product purchased, you will receive a range of support services enabling you to achieve the results desired, quickly and professionally.

A WARNINGS

The table below provides the meaning of the symbols used in this manual in relation to using, earthing, operating, maintaining, and repairing of this equipment.

- Read this operator's manual carefully before using the equipment.
- An improper use of this machine can cause injuries to people or things.
- Do not use this machine when under the influence of drugs or alcohol.
- Do not modify the equipment under any circumstances.
- Use products and solvents that are compatible with the various parts of the equipment, and read the manufacturer's warnings carefully.
- See the Technical Details for the equipment given in the Manual.
- Check the equipment for worn parts once a day. If any worn parts are found, replace them using ONLY original spare parts.
- Keep children and animals away from work area.
- Comply with all safety standards.

- It indicates an accident risk or serious damage to equipment if this warning is not followed.

FIRE AND EXPLOSION HAZARD
- Solvent and paint fumes in work area can ignite or explode.
- **To help prevent fire and explosion:**
  - Use equipment ONLY in well ventilated area.
  - Eliminate all ignition sources, such as pilot lights, cigarettes and plastic drop cloths (potential static arc).
  - Ground equipment and conductive objects.
  - Use only grounded hoses.
  - Do not use trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in pressurized aluminium equipment. Such use can cause serious chemical reaction and equipment rupture, and result in death, serious injury, and property damage.
  - Do not form connections or switch light switches on or off if the air contains inflammable fumes.
- If electrical shocks or discharges are encountered the operation being carried out using the equipment **must be stopped immediately**.
- Keep a fire extinguisher at hand in the immediate vicinity of the work area.

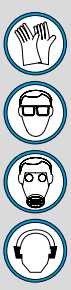
- It indicates wound and finger squashing risk due to movable parts in the equipment.
- Tenersi lontano dalle parti in movimento.
- Do not use the equipment without the proper protection.
- Before any inspection or maintenance of the equipment, carry out the decompression procedure explained in this manual, and prevent any risk of the equipment starting unexpectedly.

- Report any risk of chemical reaction or explosion if this warning has not been given.
- (IF PROVIDED) There is a risk of injury or serious lesion related to contact with the jet from the spray gun. If this should occur, IMMEDIATELY contact a doctor, indicating the type of product injected.
- (IF PROVIDED) Do not spray before the guard has been placed over the nozzle and the trigger on the spray gun.
- (IF PROVIDED) Do not put your fingers in the spray gun nozzle.
- Once work has been completed, before carrying out any maintenance, complete the decompression procedure.

- It indicates important recommendations about disposal and recycling process of products in accordance with the environmental regulations.

- Mark any clamps attached to earth cables.
- Use ONLY 3-wire extension cords and grounded electrical outlets.
- Before starting work make sure that the electrical system is grounded and that it complies with safety standards.
- High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin.
- **To help prevent injection, always:**
  - (IF PROVIDED) Engage trigger lock when not spraying.
  - (IF PROVIDED) Do not put your hand over the spray tip. Do not stop or deflect leaks with your hand, body or other.
  - (IF PROVIDED) Do not point gun at anyone or at any part of the body.
  - (IF PROVIDED) Never spray without tip guard.
  - Do pressure relief if you stop spraying or being servicing sprayer and before any maintenance operations.
  - Do not use components rated less than sprayer Maximum Working Pressure.
  - Never allow children to use this unit
  - (IF PROVIDED) Brace yourself; gun may recoil when triggered.

If high pressure fluid pierces your skin, the injury might look like "just a cut", but it is a serious wound!
Get immediate medical attention.



- It is obligatory to wear suitable clothing as gloves, goggles and face shield.
- Wear clothing that complies with the safety standards in force in the country in which the equipment is used.
- Do not wear bracelets, earrings, rings, chains, or anything else that may hinder the operator's work.
- Do not wear clothing with wide sleeves, scarves, ties, or any other piece of clothing that could get tangled up in moving parts of the equipment during the work, inspection, or maintenance cycles.

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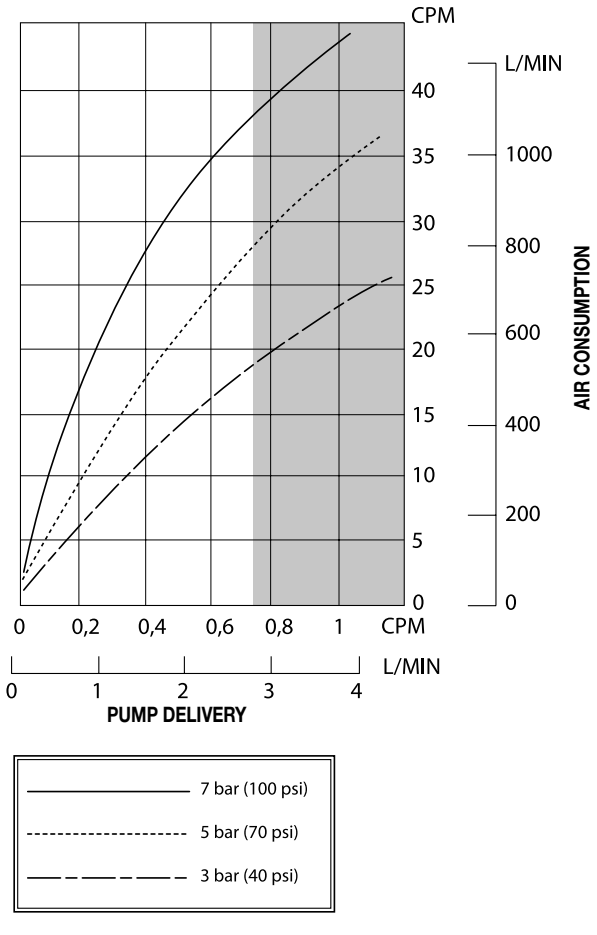
B WORKING PRINCIPLE

GHIBLI 26:1 EXT is a high pressure pneumatic pump used for extrusion and transferring of high viscosity products.
The pump is essentially constituted of an air motor and of a structure called "material pumping group" or simply "pumping group".
In the pneumatic motor, compressed air causes the vertical reciprocating movement of the motor piston; this movement is transmitted through a connecting rod to the material pumping piston ending with a shovel plate alowing to suck very viscous products.
The ratio 26:1 means that the outlet pressure of material is 26 times higher than the pump feed air pressure.

C TECHNICAL DATA

	GHIBLI 26:1
Air pressure range	3-8 bar / 40-120 psi
MAximum fluid outlet pressure	208 bar / 3.120 psi
Delivery per cycle	60 cm^3
Delivery at 60 cycles per minute	3,6 l/min
Air inlet thread	1/2" BSPP (F)
Fluid outlet thread	1/2" BSPP (M)
Lower pump material	Galvanized steel
	INOX AISI 303
Plunger material	INOX AISI 420B
Seals material	PTFE+PE 1000
Air motor diameter and stroke	Ø 4 1/4"-4" / Ø 110mm - 110mm



Always observe these instructions carefully when evaluating the product compatibility and in case of disposal of some parts of the pump no more usable, in order to meet the environmental regulations on recycling process.

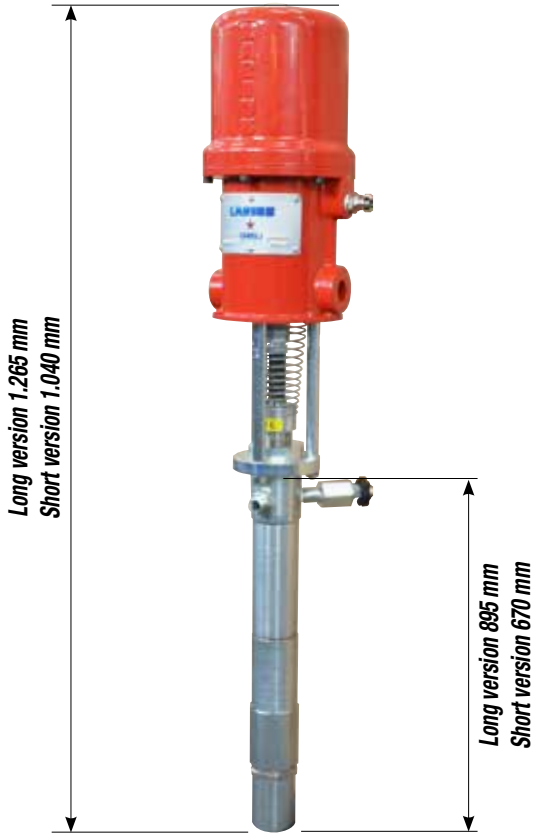


Fig. 1C

COD.	DESCRIPTION
96991	GHIBLI 26:1 extrusion pump, long
96990	GHIBLI 26:1 extrusion pump, short
98991	GHIBLI 26:1 stainless steel extrusion pump, long
98990	GHIBLI 26:1 stainless steel extrusion pump, short

D DESCRIPTION OF THE EQUIPMENT

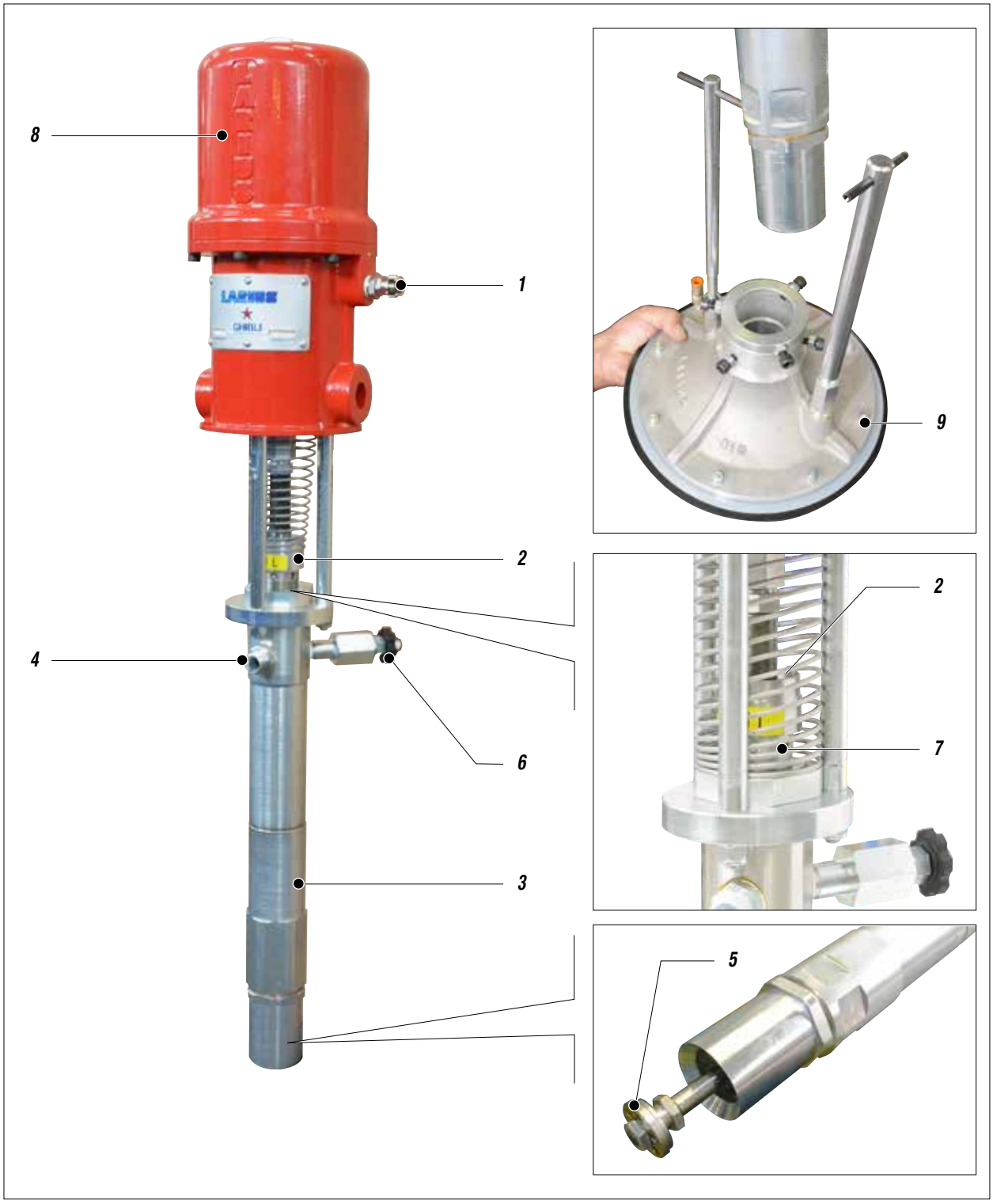


Fig. 1D

Pos.	Description
1	Pump feed air inlet
2	Wet cup
3	Material pumping group
4	Material outlet
5	Material shovel plate

Pos.	Description
6	Bleeder valve
7	Upper packing nut
8	Pneumatic motor
9	Shovel plate

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E TRANSPORT AND UNPACKING

- The packed parts should be handled as indicated in the symbols and markings on the outside of the packing.
- Before installing the equipment, ensure that the area to be used is large enough for such purposes, is properly lit and has a clean, smooth floor surface.
- The user is responsible for the operations of unloading and handling and should use the maximum care so as not to damage the individual parts or injure anyone.
  To perform the unloading operation, use only qualified and trained personnel (*truck and crane operators, etc.*) and also suitable hoisting equipment for the weight of the installation or its parts.
  Follow carefully all the safety rules.
  The personnel must be equipped with the necessary safety clothing.
- The manufacturer will not be responsible for the unloading operations and transport to the workplace of the machine.
- Check the packing is undamaged on receipt of the equipment. Unpack the machine and verify if there has been any damage due to transportation.
  In case of damage, call immediately **the manufacturer** and the Shipping Agent. All the notices about possible damage or anomalies must arrive timely within 8 days at least from the date of receipt of the plant through Registered Letter to the Shipping Agent and to **the manufacturer**.
- The disposal of packaging materials is a customer's competence and must be performed in accordance with the regulations in force in the country where the plant is installed and used.It is nevertheless sound practice to recycle packaging materials in an environment-friendly manner as much as possible.

F CONDITIONS OF GUARANTEE

The conditions of guarantee do not apply in the following situations:
- improper washing and cleaning of components causing malfunction, wear or damage to the equipment or any of its parts;
- improper use of the equipment;
- use that does not conform with applicable national legislation;
- incorrect or faulty installation;
- modifications, interventions and maintenance that have not been authorised by the manufacturer;
- use of non-original spare parts or parts that do not correspond to the specific model;
- total or partial non-compliance with the instructions provided.

G SAFETY RULES

- THE EMPLOYER SHALL TRAIN ITS EMPLOYEES ABOUT ALL THOSE RISKS STEMMING FROM ACCIDENTS, ABOUT THE USE OF SAFETY DEVICES FOR THEIR OWN SAFETY AND ABOUT THE GENERAL RULES FOR ACCIDENT PREVENTION IN COMPLIANCE WITH INTERNATIONAL REGULATIONS AND WITH THE LAWS OF THE COUNTRY WHERE THE PLANT IS USED.
- THE BEHAVIOUR OF THE EMPLOYEES SHALL STRICTLY COMPLY WITH THE ACCIDENT PREVENTION AND ALSO ENVIRONMENTAL REGULATIONS IN FORCE IN THE COUNTRY WHERE THE PLANT IS INSTALLED AND USED.

Read carefully and entirely the following instructions before using the product. Please save these instructions in a safe place.

The unauthorised tampering/replacement of one or more parts composing the machine, the use of accessories, tools, expendable materials other than those recommended by the Manufacturer can be a danger of accident.
The Manufacturer will be relieved from tort and criminal liability.

- KEEP YOUR WORK PLACE CLEAN AND TIDY. DISORDER WHERE YOU ARE WORKING CREATES A POTENTIAL RISK OF ACCIDENTS.
- ALWAYS KEEP PROPER BALANCE AVOIDING UNUSUAL STANCE.
- BEFORE USING THE TOOL, ENSURE THERE ARE NOT DAMAGED PARTS AND THE MACHINE CAN WORK PROPERLY.
- ALWAYS FOLLOW THE INSTRUCTIONS ABOUT SAFETY AND THE REGULATIONS IN FORCE.
- KEEP THOSE WHO ARE NOT RESPONSIBLE FOR THE EQUIPMENT OUT OF THE WORK AREA.
- **NEVER** EXCEED THE MAXIMUM WORKING PRESSURE INDICATED.
- **NEVER** POINT THE SPRAY GUN AT YOURSELVES OR AT OTHER PEOPLE. THE CONTACT WITH THE CASTING CAN CAUSE SERIOUS INJURIES.
- IN CASE OF INJURIES CAUSED BY THE GUN CASTING, SEEK IMMEDIATE MEDICAL ADVICE SPECIFYING THE TYPE OF THE PRODUCT INJECTED. **NEVER** UNDERVALUE A WOUND CAUSED BY THE INJECTION OF A FLUID.
- ALWAYS DISCONNECT THE SUPPLY AND RELEASE THE PRESSURE IN THE CIRCUIT BEFORE PERFORMING ANY CHECK OR PART REPLACEMENT OF THE EQUIPMENT.
- **NEVER** MODIFY ANY PART IN THE EQUIPMENT. CHECK REGULARLY THE COMPONENTS OF THE SYSTEM.
  REPLACE THE PARTS DAMAGED OR WORN.

- TIGHTEN AND CHECK ALL THE FITTINGS FOR CONNECTION BETWEEN PUMP, FLEXIBLE HOSE AND SPRAY GUN BEFORE USING THE EQUIPMENT.
- ALWAYS USE THE FLEXIBLE HOSE SUPPLIED WITH STANDARD KIT. THE USE OF ANY ACCESSORIES OR TOOLING OTHER THAN THOSE RECOMMENDED IN THIS MANUAL, MAY CAUSE DAMAGE OR INJURE THE OPERATOR.
- THE FLUID CONTAINED IN THE FLEXIBLE HOSE CAN BE VERY DANGEROUS. HANDLE THE FLEXIBLE HOSE CAREFULLY. DO NOT PULL THE FLEXIBLE HOSE TO MOVE THE EQUIPMENT. **NEVER** USE A DAMAGED OR A REPAIRED FLEXIBLE HOSE.

The high speed of travel of the product in the hose can create static electricity through discharges and sparks. It is suggested to earth the equipment. The pump is earthed through the earth cable of the supply. The gun is earthed through the high pressure flexible hose.All the conductors near the work area must be earthed.

- NEVER SPRAY OVER FLAMMABLE PRODUCTS OR SOLVENTS IN CLOSED PLACES.
- NEVER USE THE TOOLING IN PRESENCE OF POTENTIALLY EXPLOSIVE GAS.

Always check that the product is compatible with the materials composing the equipment *(pump, spray gun, flexible hose and accessories)* with which it can come into contact. Never use paints or solvents containing Halogen Hydrocarbons *(as the Methylene Chloride)*. If these products come into contact with aluminium parts can provoke dangerous chemical reactions with risk of corrosion and explosion.
Avoid approaching too much to the pump piston rod when the pump is working or under pressure. A sudden movement of the piston rod can cause wounds or finger squashing.

If the product to be used is toxic, avoid inhalation and contact by using protection gloves, goggles and proper face shields.

Take proper safety measures for the protection of hearing in case of work near the plant.

H TYPICAL INSTALLATION

GHIBLI PUMP 26 :1 is usually supplied complete with shovel plate and fastened on a double post ram (see illustration). The double post ram allows to suck the product directly from the drum and to replace the drum quickly. The shovel plate, fastened at the base of the pump, compresses the material ensuring a constant flow of product. In addition, it protects the material not yet sucked in against powder and moisture and also against drying which is caused by the contact with air.

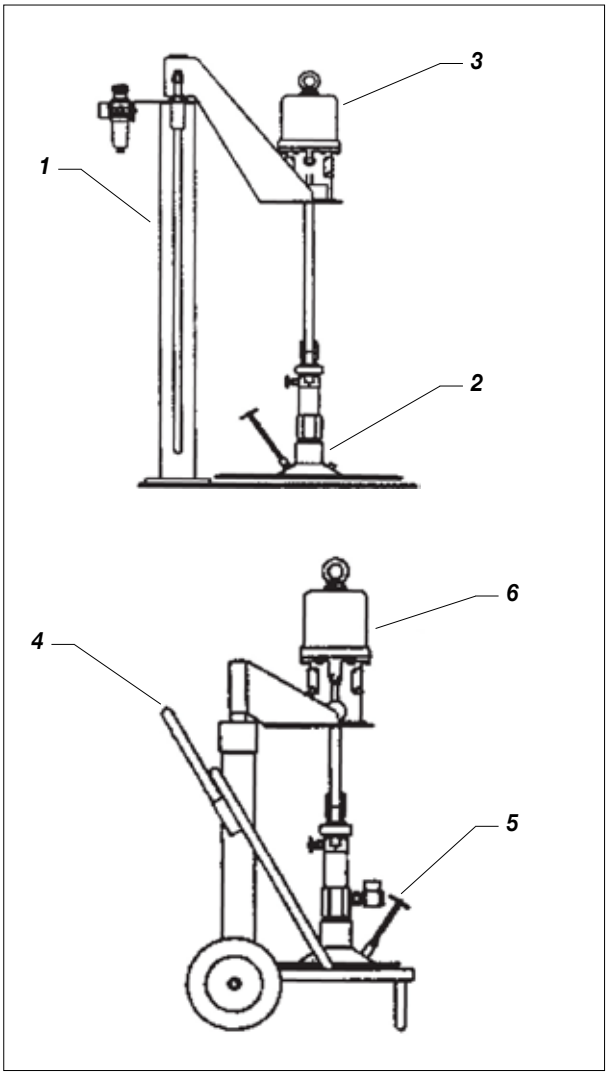

Fig. 1H

Pos.	Code	Description
1	510500	Double post ram
2	510776	Shovel plate for 200 litres drums
3	96870	Long GHIBLI Pump 26:1
4	510600	Double post ram mounted on trolley
5	510770	Shovel plate for 30 litres drums
6	96805	GHIBLI Pump 26:1

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I SETTING-UP

PUMP FASTENING ON THE RAM

For the correct fastening of the pump on the ram, use the holes placed on the base of the pneumatic motor.

CONNECTION TO THE FEED AIR

For pump feed use a hose with an internal diameter no lower than 10 mm.

Install at the pump inlet an air pressure regulator (*it is suggested complete with condensate filter and lubricator*). The outlet pressure of the material is 24 times the inlet pressure of the pump feed air. Therefore, it is extremely important to adjust the value of the feed air pressure.

CONNECTION OF THE MATERIAL OUTLET HOSE

Connect the high pressure hose at the outlet of the pump.
It is recommended to tighten the fittings.

J WORKING

- Use the machine after carrying out all the setting-up operations described in the previous paragraph.

Check all the fittings for connection of the different components (*pump, flexible hose, spray gun, etc.*) before using the equipment.

- Use the supplied lubricant (**J1**) to facilitate the sliding of the piston inside the seal packing and to interpose the oil within the air.

- Dip the material pumping hose into the product tank (*if the pump is fixed on the double post ram, follow the procedure described in the manual of use and maintenance of the double post ram*).

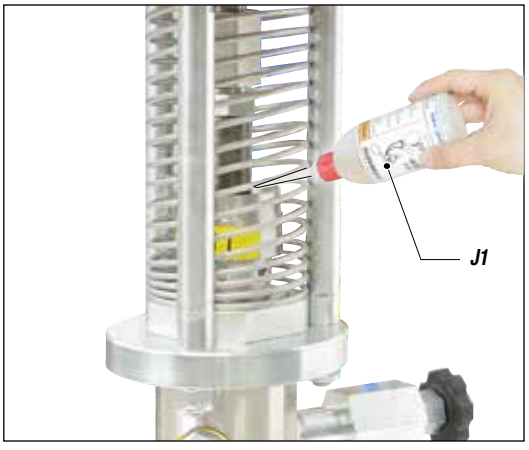

Fig. 1J

At the start of each working day, make sure that the ring nut is filled with hydraulic oil (*ref. 16340*); the oil facilitates the sliding of the piston and prevents any material which may have leaked out of the seals from drying once the equipment has been shut off.

- Make the compressed air flow into the pump. It is advisable to adjust air pressure to minimum necessary for its continuous working.

- When the product chamber is full, pump will start working and then will stop. Pump will start working again any time the trigger of the spray gun is pressed or the delivery valve is open.
- In case of difficult suction of the pump, slowly open the bleeder valve and close it when some material comes out.

- The pump has been adjusted at our factory with light mineral oil and a part of it could be left inside the pumping element. Point the spray gun (**J1**) or the delivery valve at the tank (**J2**) and drain the product left inside the pump till the material to be used has come out.

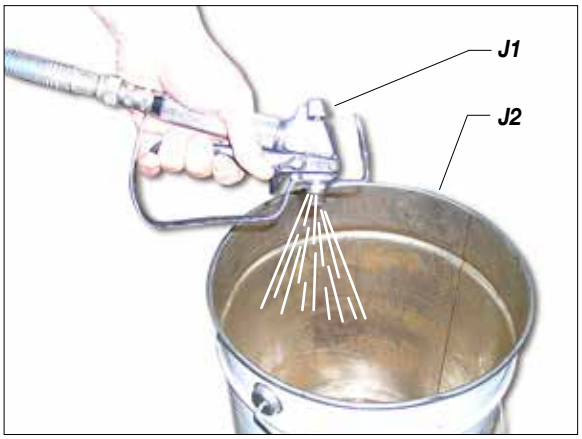

Fig. 2J

Always avoid working the machine with the vacuum pump: this operation could damage the pneumatic motor and the seals.

- In case of long inactivity during the use with the plant (*for example, all night long at the end of the working day*), ensure the product you are using can be left inside the pump and the different pipes without drying.
  In this case, it is enough to stop the air supply to the pump and drain the residual pressure in the circuit acting on the delivery valve or on the pump bleeder valve.

K CLEANING AT THE END OF THE WORK

By "cleaning at the end of the work" is meant the cleaning to carry out in case of use with a different product or if a long period of storage is foreseen.

- Stop the air supply to the pump.
- Dip the material pumping hose into the washing solvent tank (check its chemical compatibility with the product being used).
- Make compressed air flow into the pump. It is advisable to adjust the air pressure to the minimum value necessary to its continuous working.
- Point the spray gun or the delivery valve at a container and drain all the product left inside the pump till a clean solvent comes out.
- Now, stop the air supply to the pump and drain the residual pressure.
- In case of long inactivity, the operations of sucking and leaving light mineral oil inside the pumping element are suggested.

Store possible dangerous fluids in proper containers. Their disposal must be performed in accordance with the regulations in force about the industrial waste goods.

L ROUTINE MAINTENANCE

Always close the compressed air supply and release the pressure in the plant before performing any check or maintenance of the pump.

- Check periodically (*and every time the pump is operated after a long storage)* the packing nut is not loosened, causing otherwise the coming out of the product.
- To tighten the packing nut use wrench supplied (*code. 16135*).

The packing nut must be tightened so as to avoid wastes of product, but not excessively to avoid the seizure of the pumping piston and the wear of seals. In case of persistent coming out of product, replace the seals.

- To prevent the product from drying up on the piston rod, refill the packing nut with lubricant.
- Check periodically the air supply to the pump. Ensure the air is always clean and lubricated.

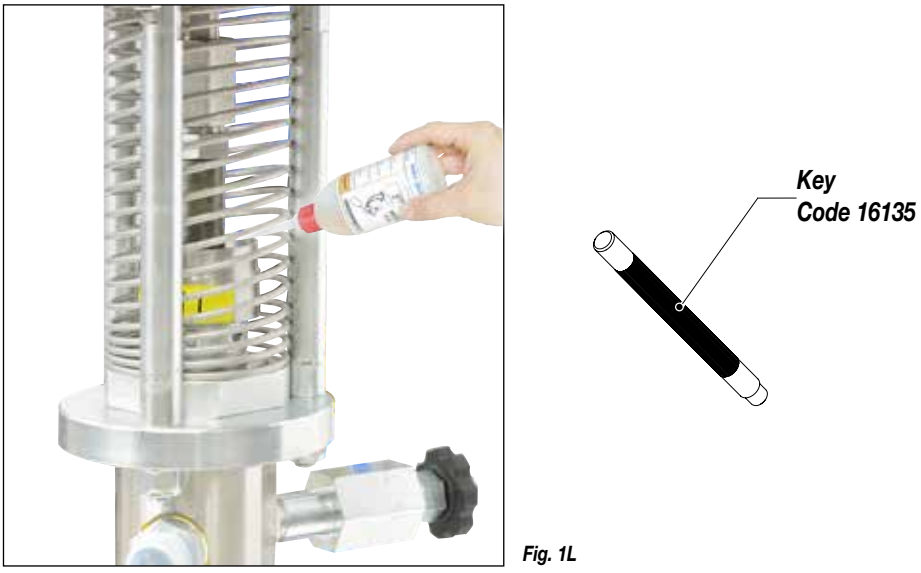

Fig. 1L

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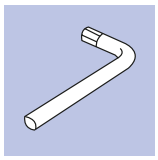
M DISASSEMBLY AND REASSEMBLY OF THE PUMPING UNIT

Always close the compressed air supply and release the pressure in the plant beforecarrying out the disassembly of the pumping group. In case the product being used is toxic, follow the procedure of cleaning described on page 8 to avoid the contact with the product during the disassembly of the pumping group.

1

Necessary tools and equipment

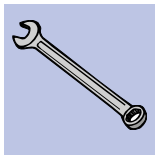


Procedure

1.1 Remove the shovel plate

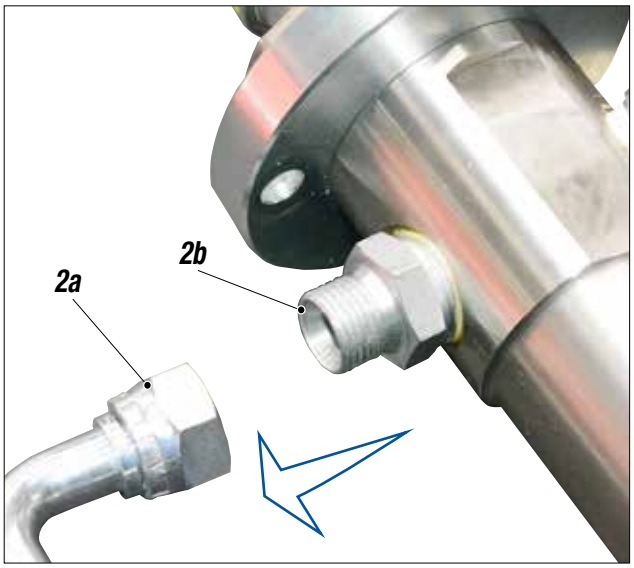
2

Necessary tools and equipment



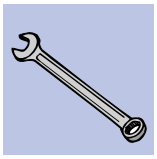
Procedure

2.1 Disconnect the components (**2a**) of the pump (**2b**)



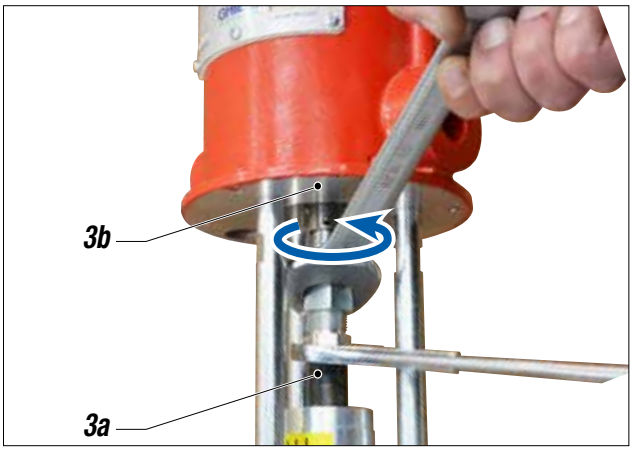
3

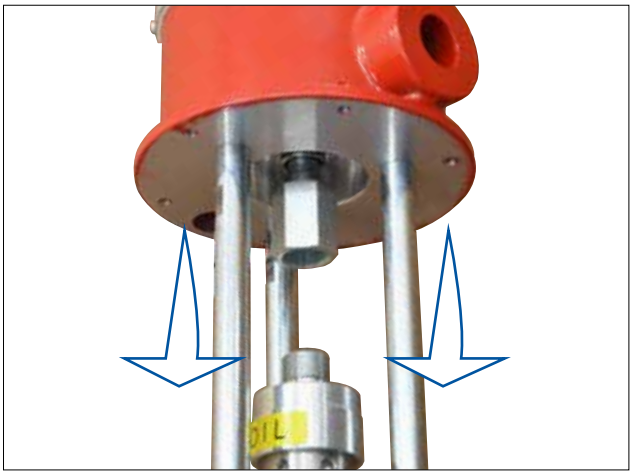
Necessary tools and equipment



Procedure

3.1 Disconnect the pumping group (**3a**) from the motor (**3b**)





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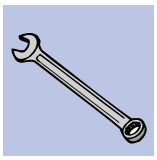
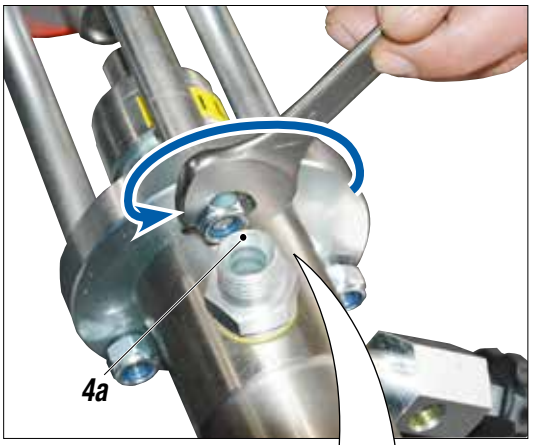
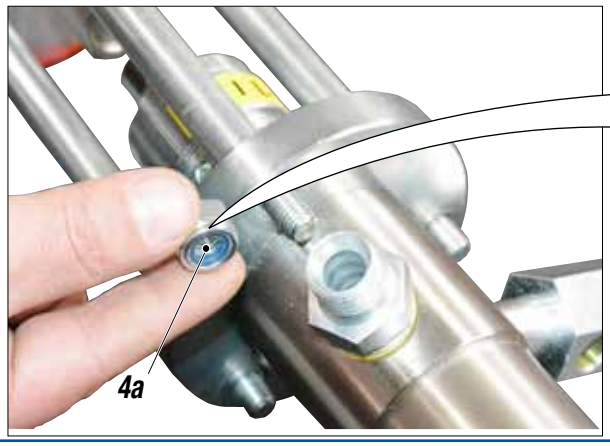
Necessary tools and equipment

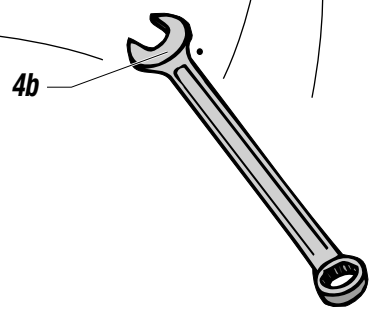


Procedure

4.1 Unscrew the nuts (**4a**) using a wrench (**4b**)







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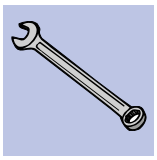
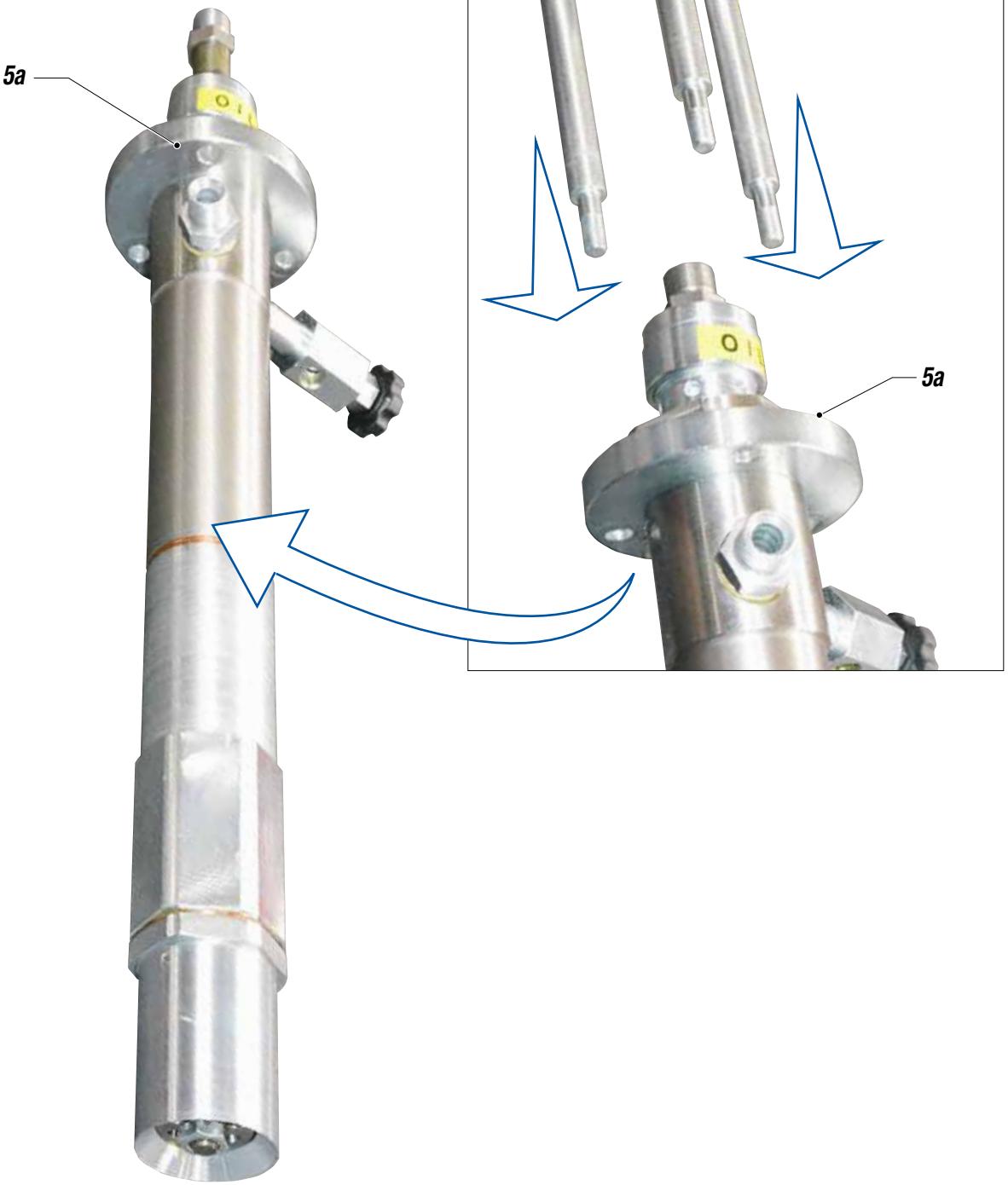
5 Necessary tools and equipment



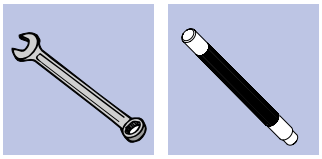
Procedure

5.1 Slide the complete pumping group (**5a**)



6

Necessary tools and equipment



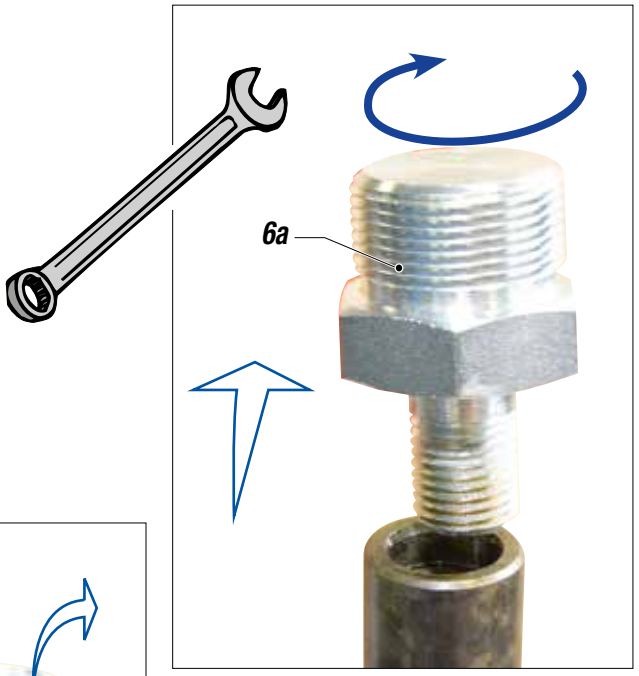
Procedure

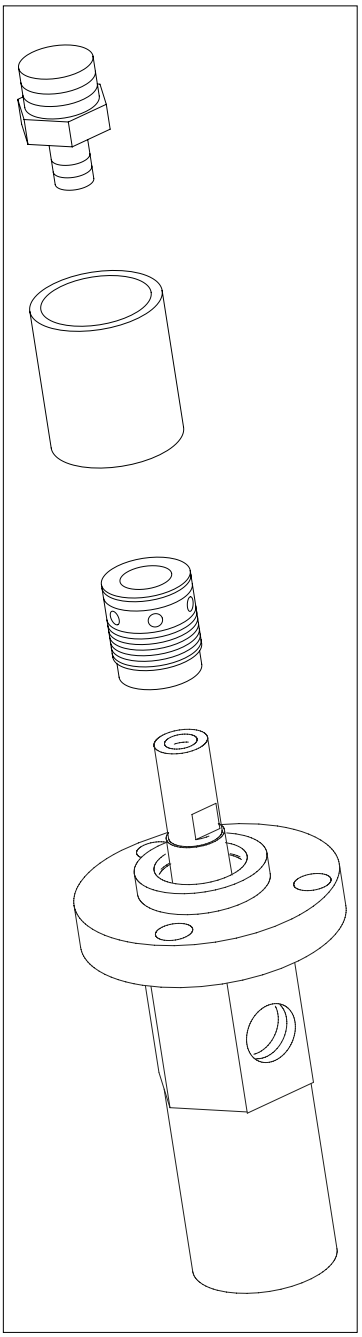
6.1 Remove the component (**6a**)

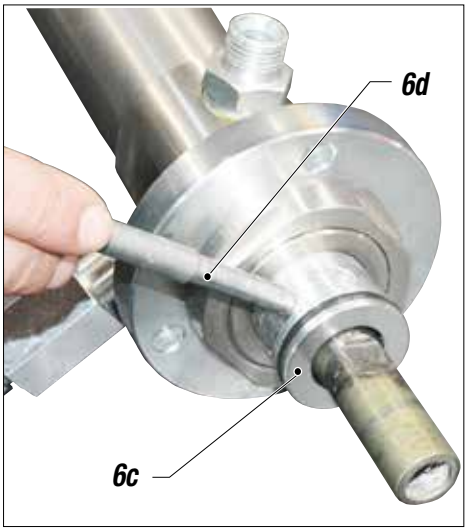
6.2 Slide off the component (**6b**)

6.3 Loosen the ring nut (**6c**) with pin (**6d**)

6.4 Unscrew and remove the ring nut (**6e**)







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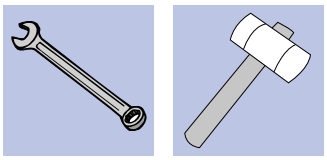
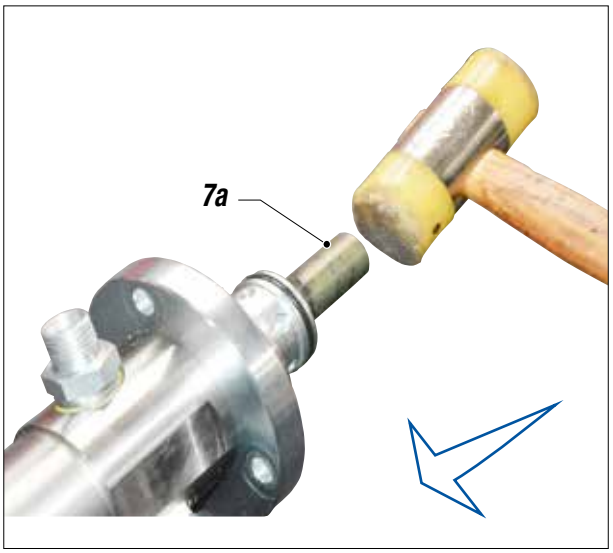
7

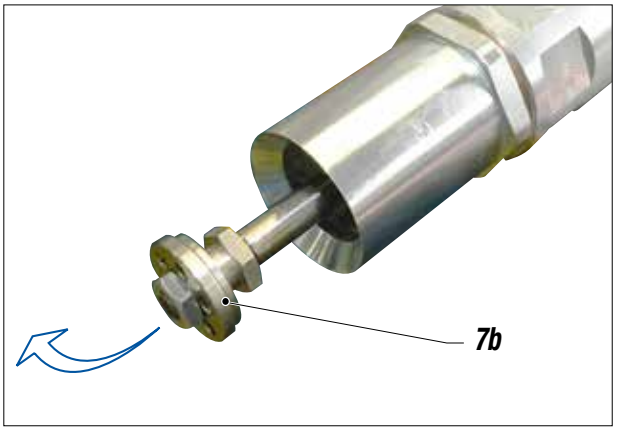
Necessary tools and equipment



Procedure

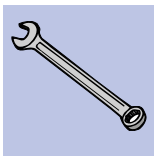
7.1 Push downwards the motor piston rod (**7a**) till the shovel plate comes out of the housing (**7b**)





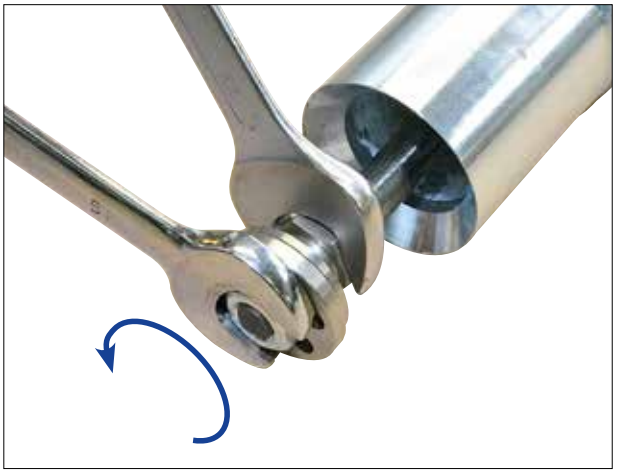
8

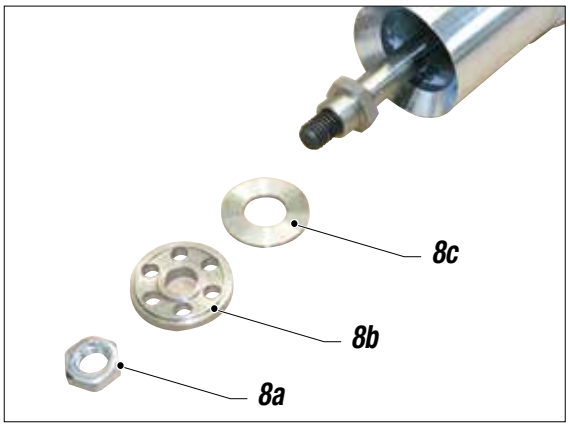
Necessary tools and equipment



Procedure

8.1 Unscrew and remove the components (**8a**), (**8b**) e (**8c**)

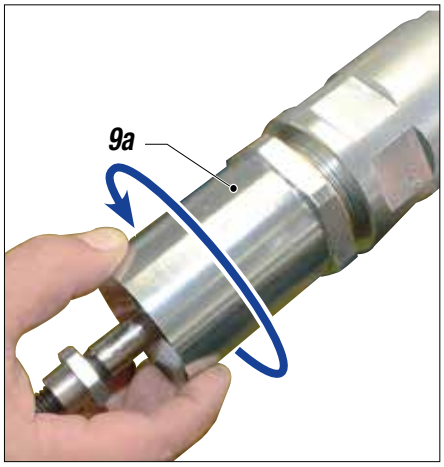


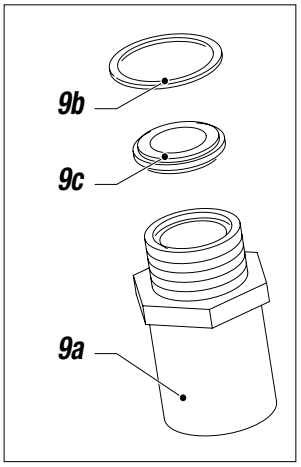


9

Procedure

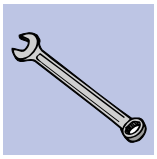
9.1 Unscrew the cylinder (**9a**), remove the **washer** (**9b**) and the shutter housing (**9c**)





10

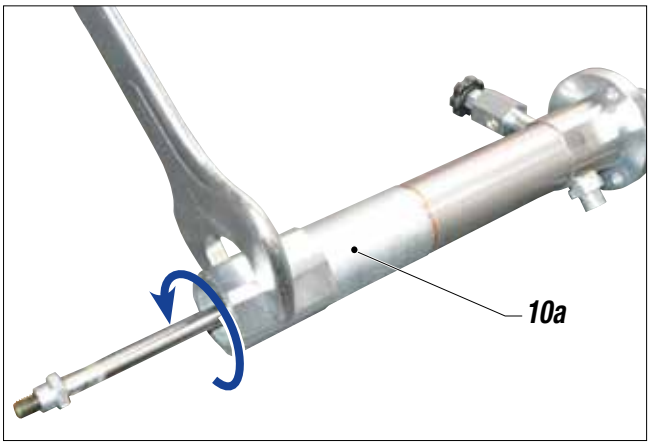
Necessary tools and equipment

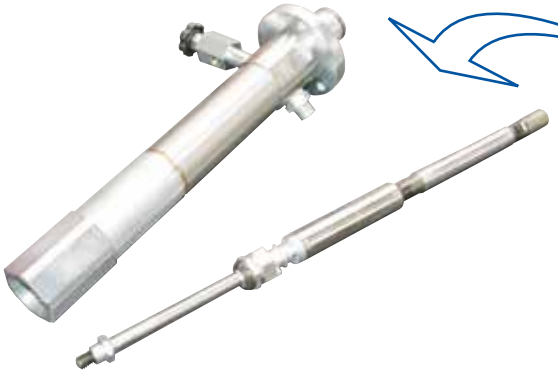


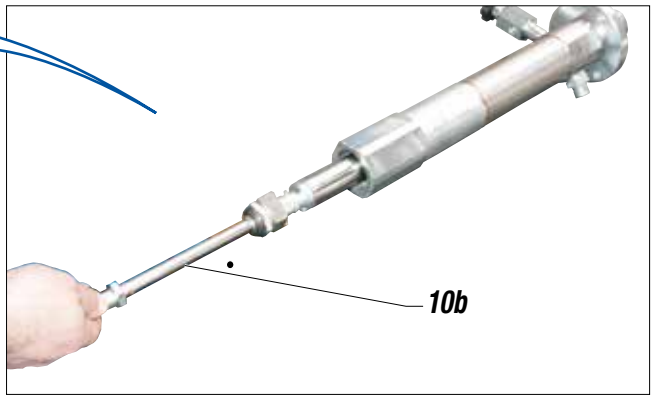
Procedure

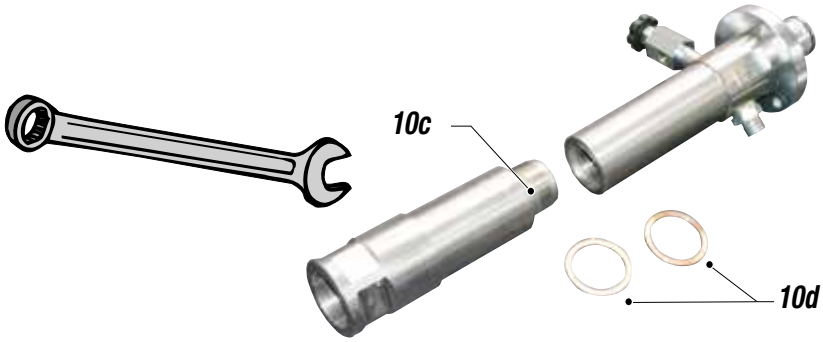
10.1 Unscrew the component (**10a**) and slide the rod (**10b**)

10.2 Unscrew the component **10c**) and remove the copper rings (**10d**)









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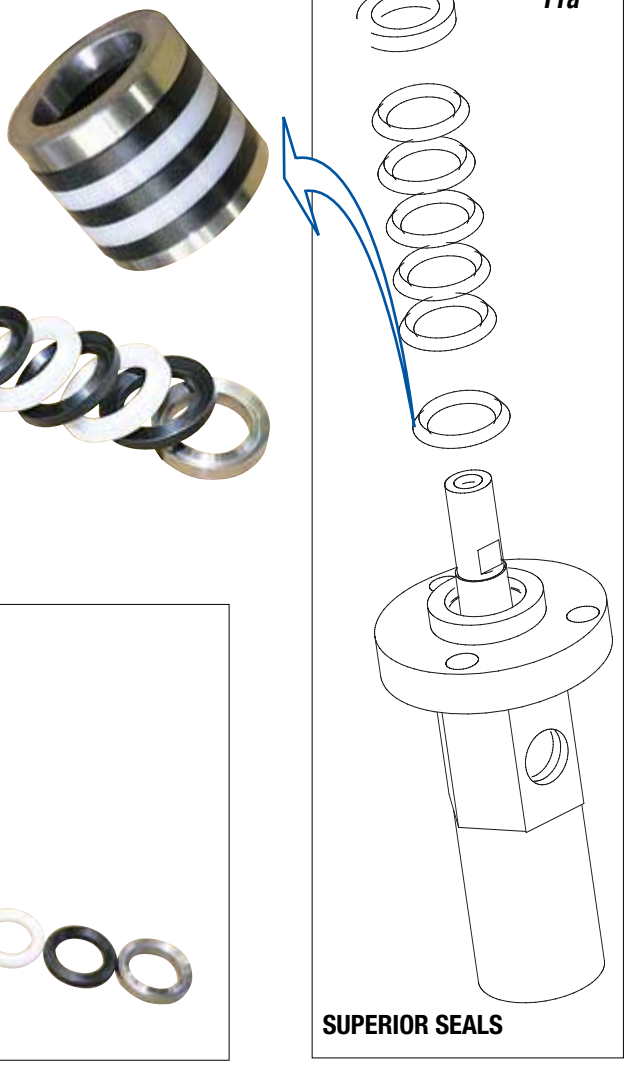
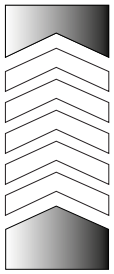
11 Necessary tools and equipment

Procedure

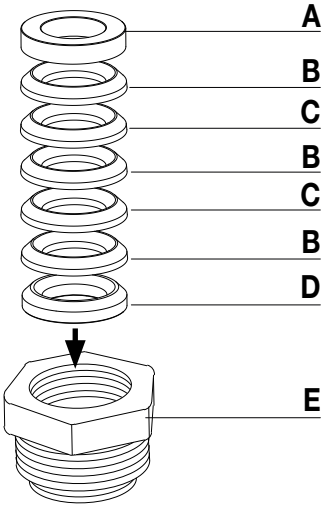
11.1 Remove the superior seals

11.2 Clean and lubricate the gasket housing and replace it with the new spare parts (**11a**)





Direction of assembly



NOTE

Follow the direction of rotation of gaskets

A: *Female STEEL ring cod. 96984*
B: *White gasket cod. 96982/1*
C: *Black gasket cod. 96982*
D: *Male STEEL ring cod. 96983*
E: *Gasket housing*

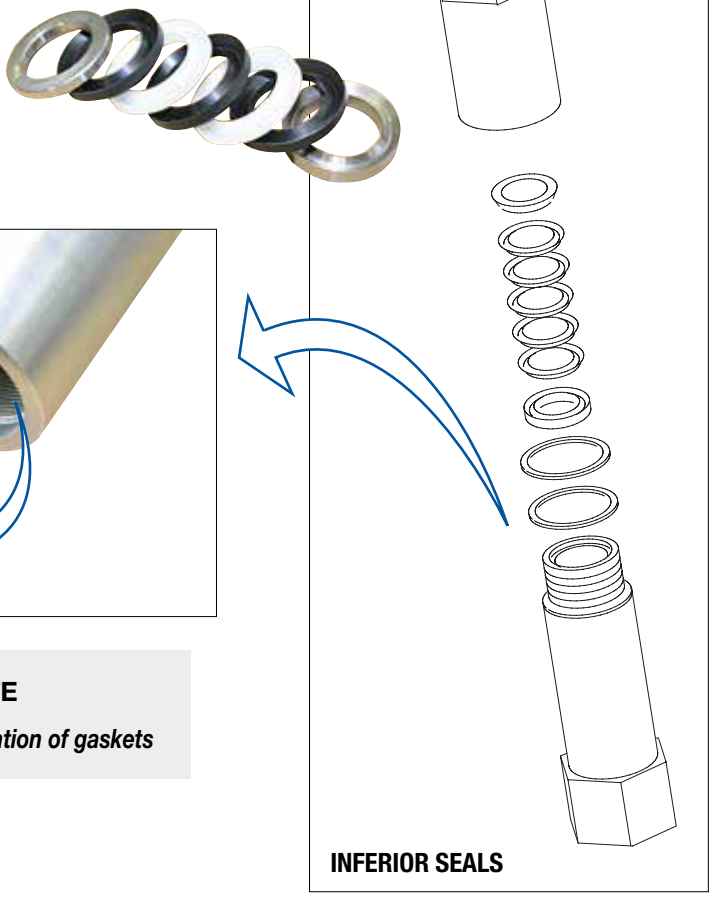
12

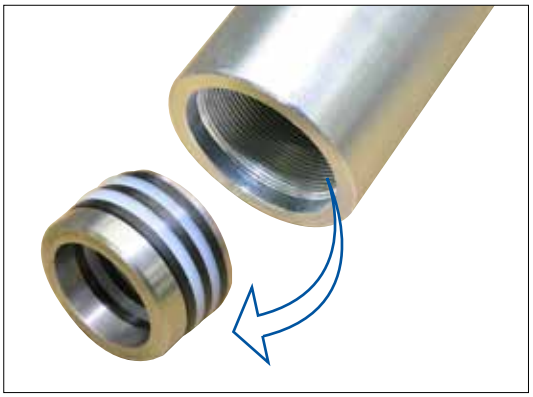
Necessary tools and equipment

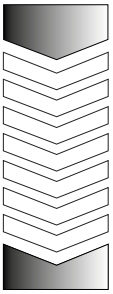
Procedure

12.1 Remove the inferior seals

12.1 Clean and lubricate the gasket housing and replace it with the new spare parts (**12a**)







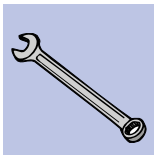
Direction of assembly

NOTE

Follow the direction of rotation of gaskets

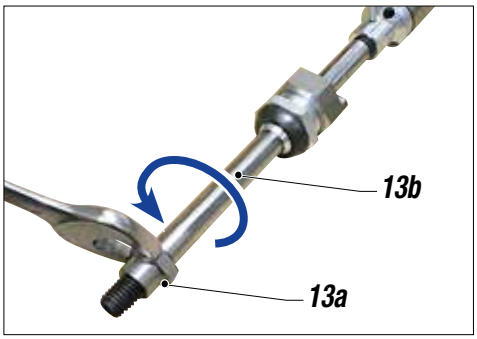
13

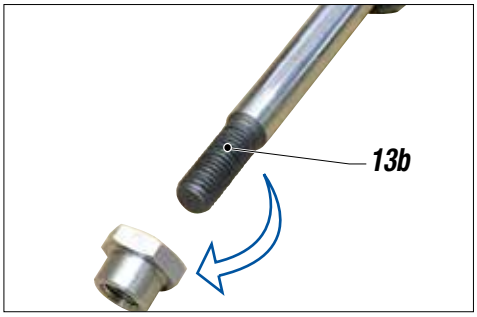
Necessary tools and equipment



Procedure

13.1 Unscrew the component (**13a**) and slide the rod (**13b**)





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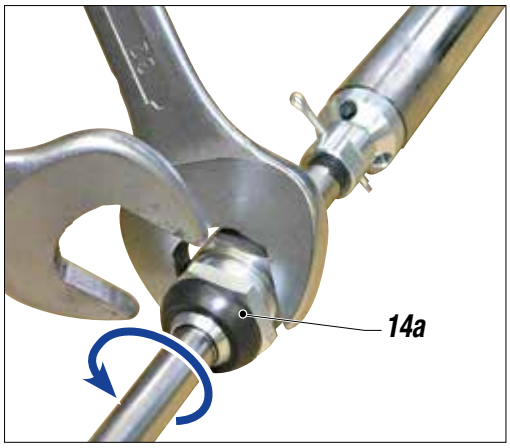
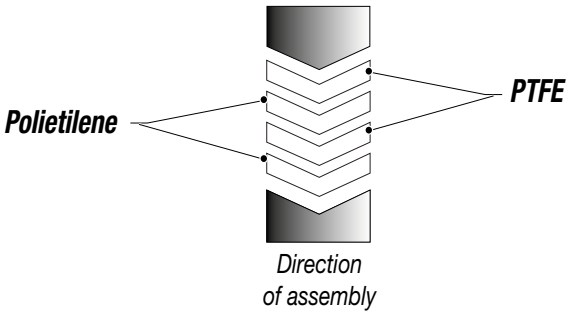
14 Necessary tools and equipment

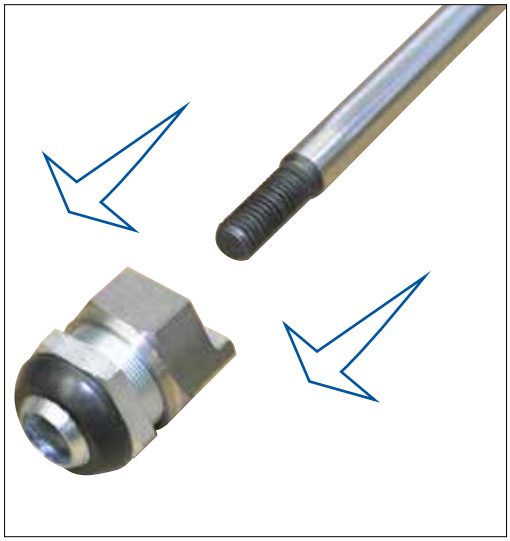


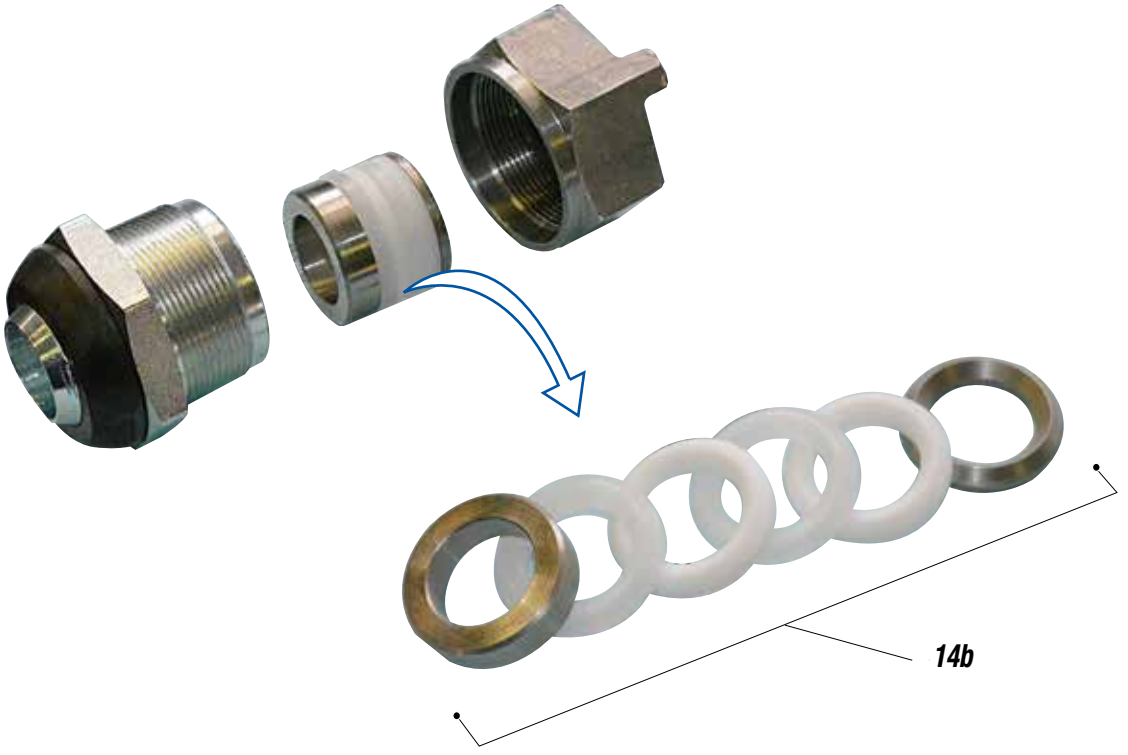
Procedure

14.1 Unscrew the component (**14a**) and slide the rod

14.2 Clean and lubricate the gasket housing and replace it with the new spare parts (**14b**)

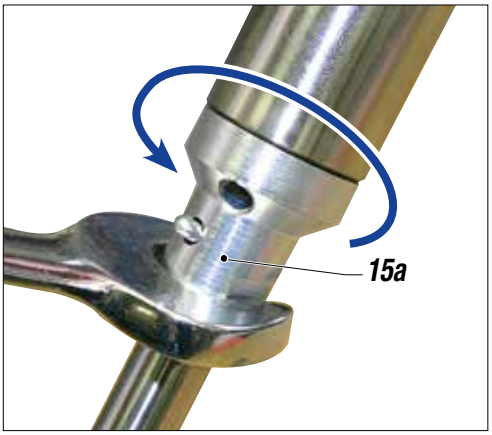






15

Necessary tools and equipment

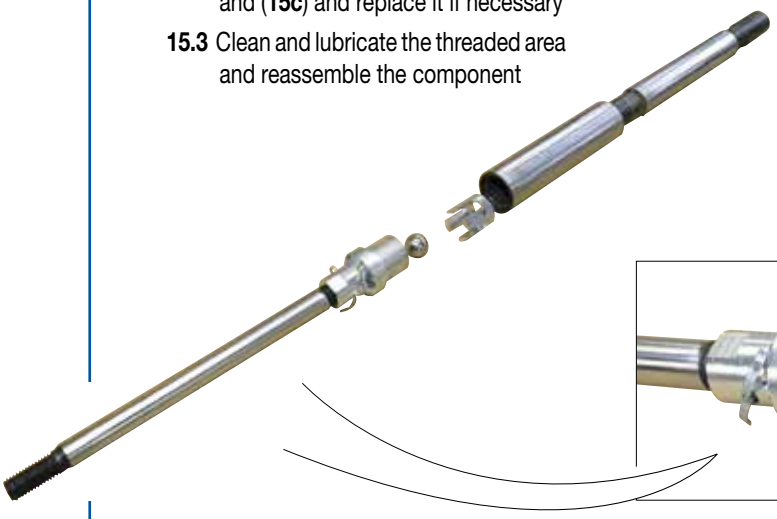


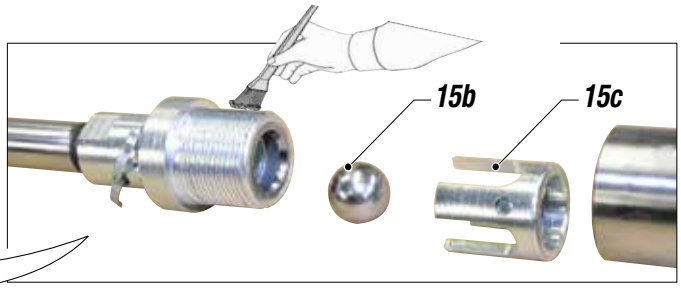
Procedure

15.1 Unscrew the component (**15a**) and slide the rod

15.2 Check the wear of components (**15b**) and (**15c**) and replace it if necessary

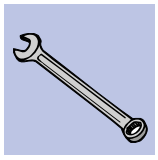
15.3 Clean and lubricate the threaded area and reassemble the component





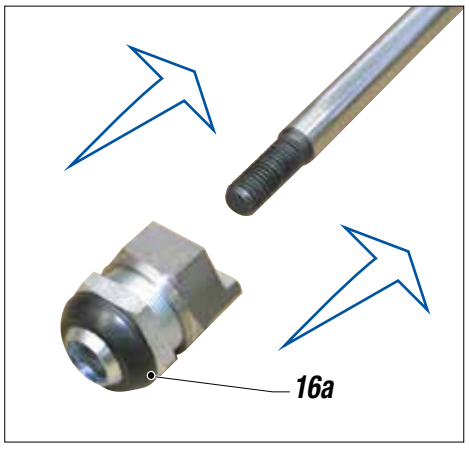
16

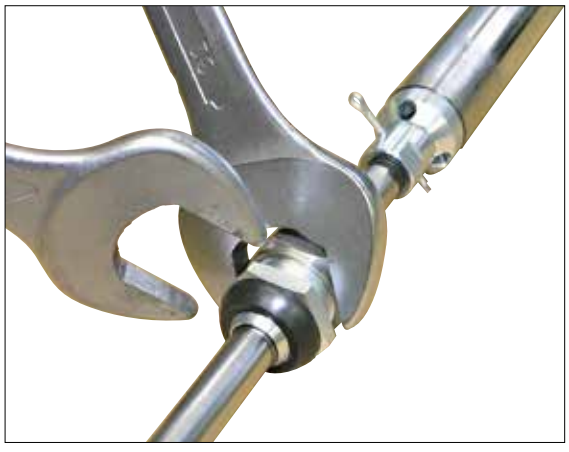
Necessary tools and equipment



Procedure

16.1 Insert the component (**16a**) and screw with the wrench





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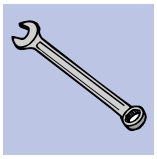
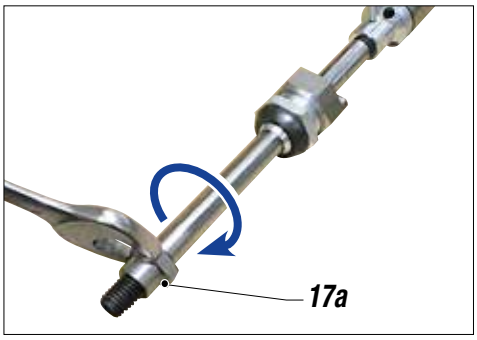
17 Necessary tools and equipment



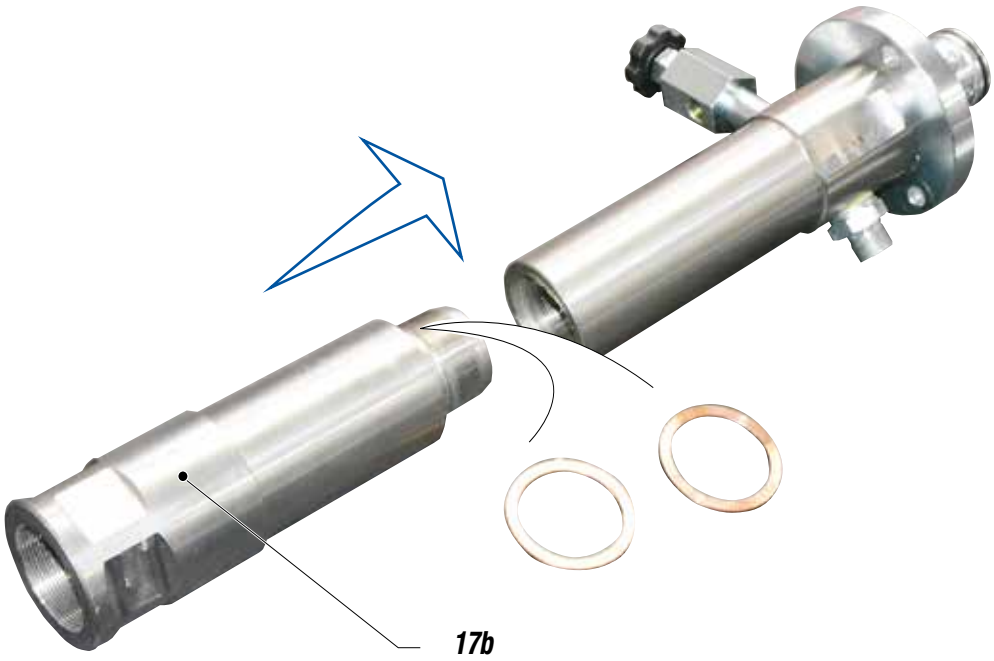


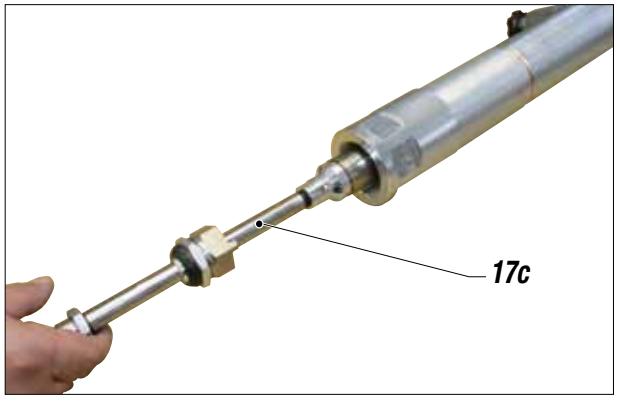
Procedure

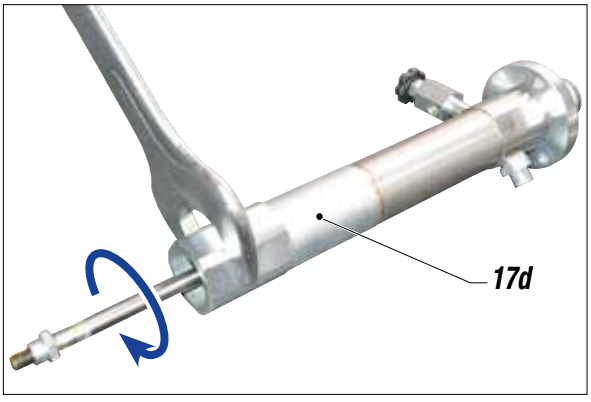
17.1 Insert the component (**17a**) and screw the rod

17.2 Insert the copper rings , reassemble the component (**17b**) and insert the rod (**17c**)

17.3 Screw the component (**17d**)

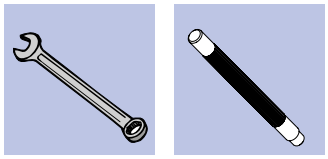


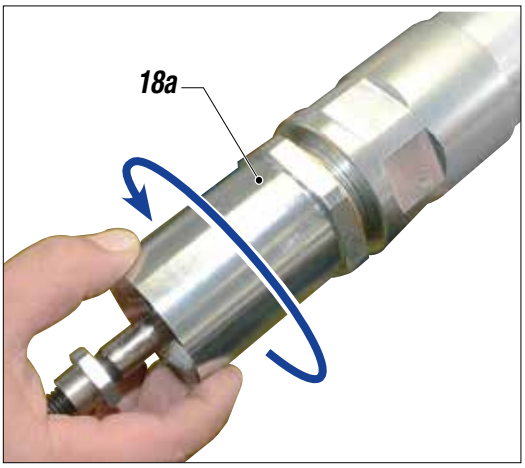


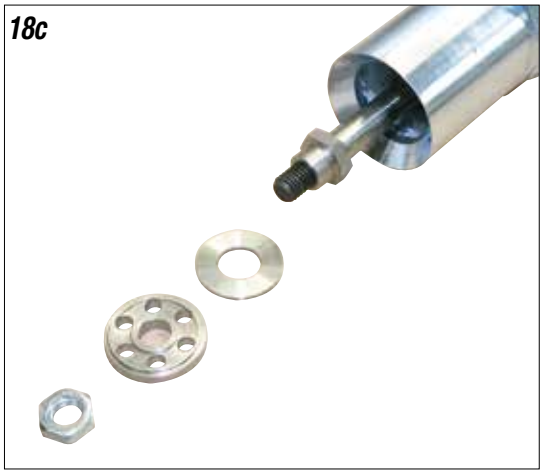


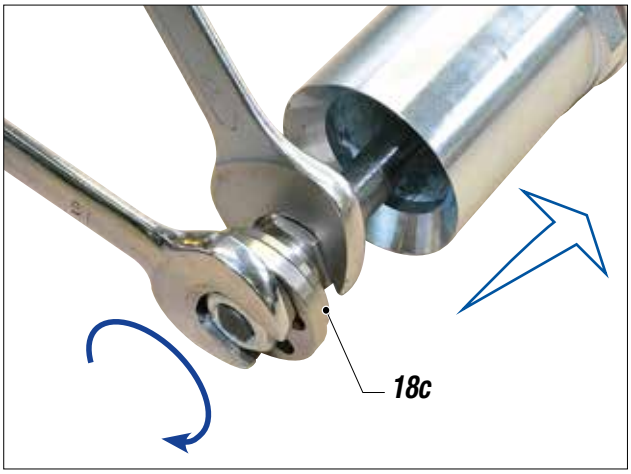
18

Necessary tools and equipment



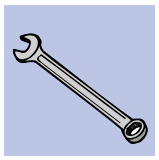






19

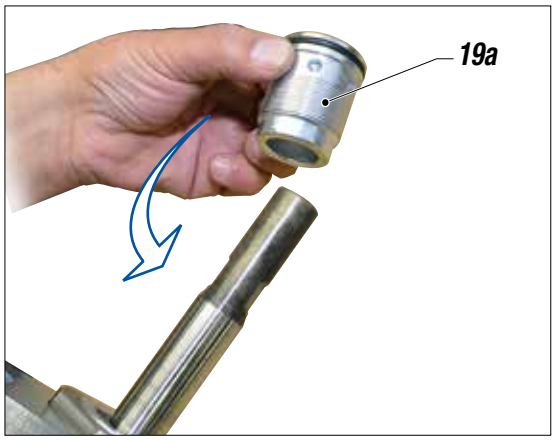
Necessary tools and equipment

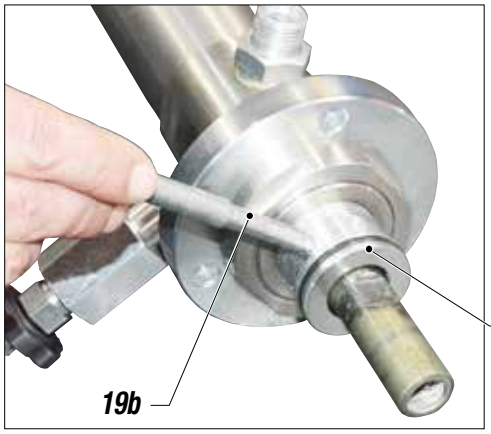


Procedure

19.1 Insert e screw the ring nut (**19a**)

19.2 Fix the ring nut (**19a**) with the pin (**19b**)





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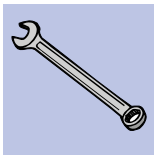
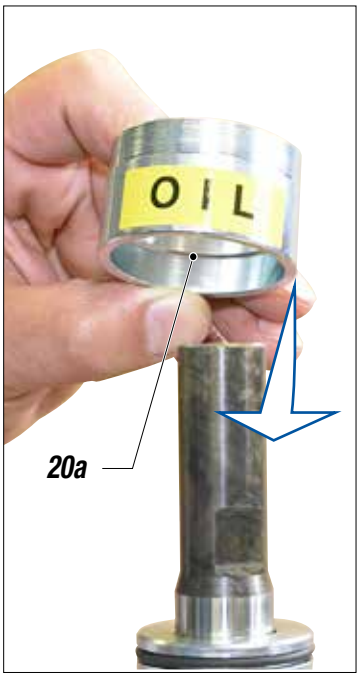
20 Necessary tools and equipment

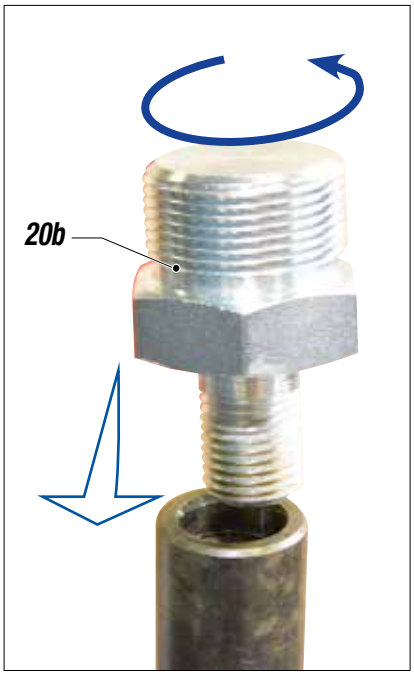


Procedure

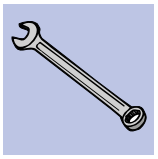
20.1 Insert the component (20a)

20.2 Insert the component (20b) and and screw with the wrench





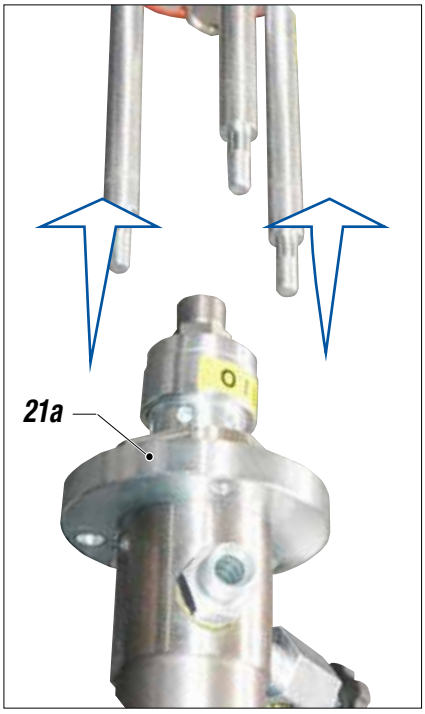
21 Necessary tools and equipment

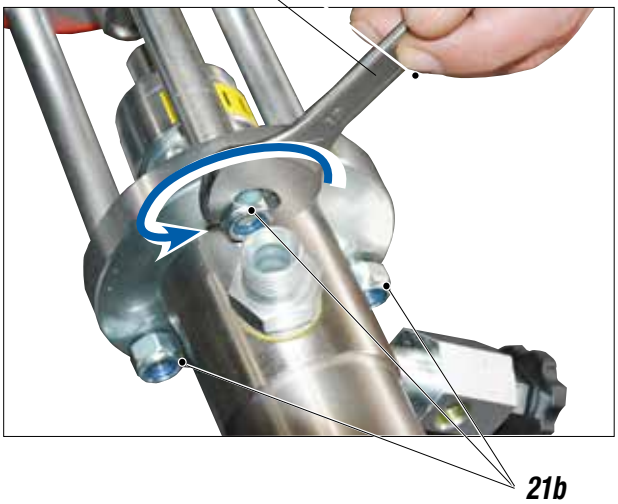


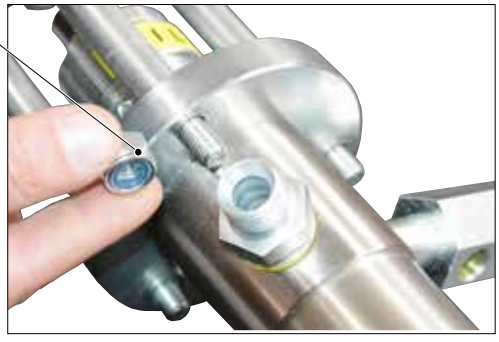
Procedure

21.1 Insert the complete pumping group (**21a**)

21.2 Screw the two nuts (**21b**) and (**21c**) using two wrench (**21d**) and (**21e**)

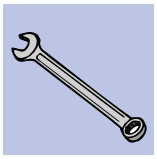






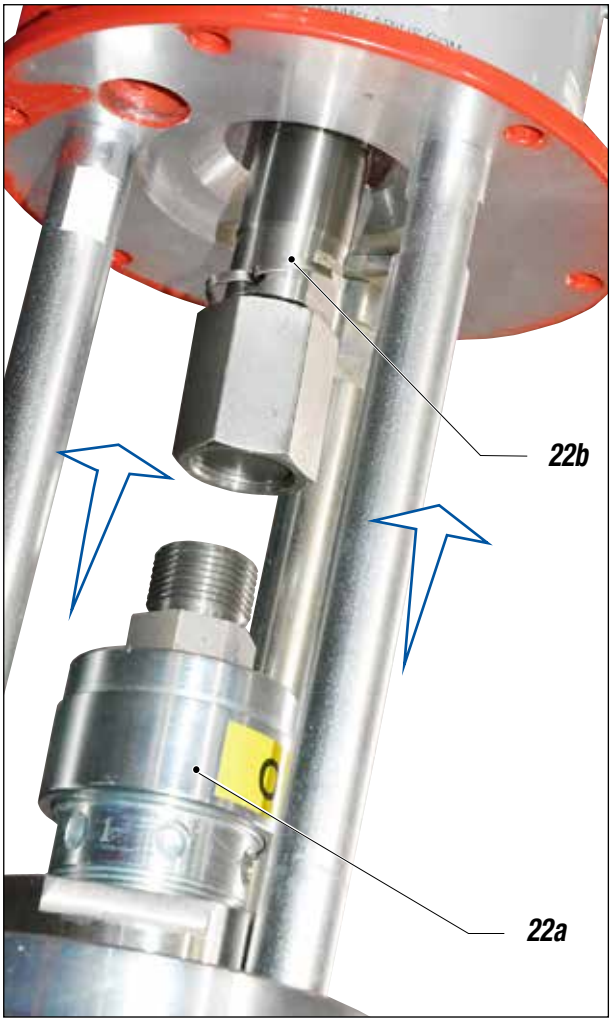
22

Necessary tools and equipment



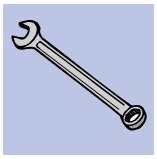
Procedure

22.1 Connect the pumping group (**22a**) to motor (**22b**)



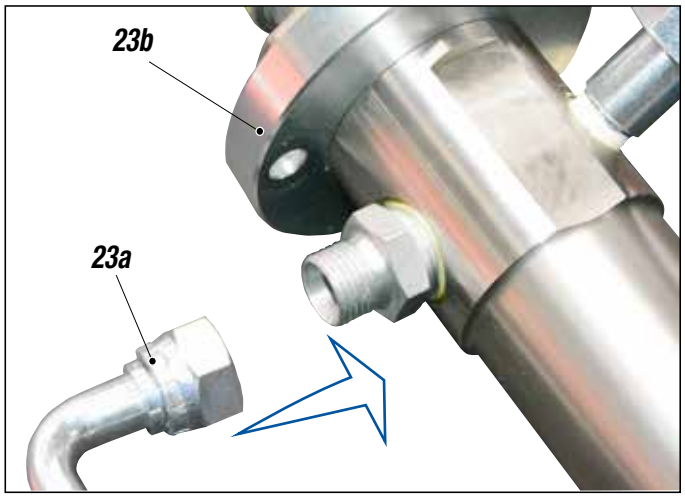
23

Necessary tools and equipment



Procedure

23.1 Connect the component (**23a**) to pump (**23b**)



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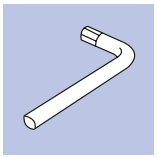
Necessary tools and equipment



Procedure

24.1 Reassemble the shovel plate

N MANUAL RESET OF THE PNEUMATIC MOTOR

- The feed air pressure of the pump must never be higher than the maximum value indicated in the technical data. Exceed this value can block the valves of the pneumatic motor in the intermediate position of the cycle reversal.
- To start again a blocked motor, close the air supply and release pressure in the plant. This operation should allow the recovery of the valves.
- In case the motor is blocked, proceed as follows:

Close the air supply to the pump and release the residual pressure in the plant.

- unscrew the motor cap (**N1**) and pull it upward along with the guide rod (**N2**) so as to manually trigger the stroke inversion unit;
- screw again the plug.

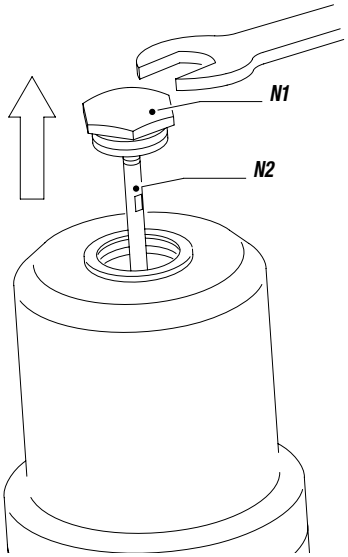
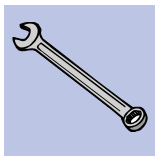


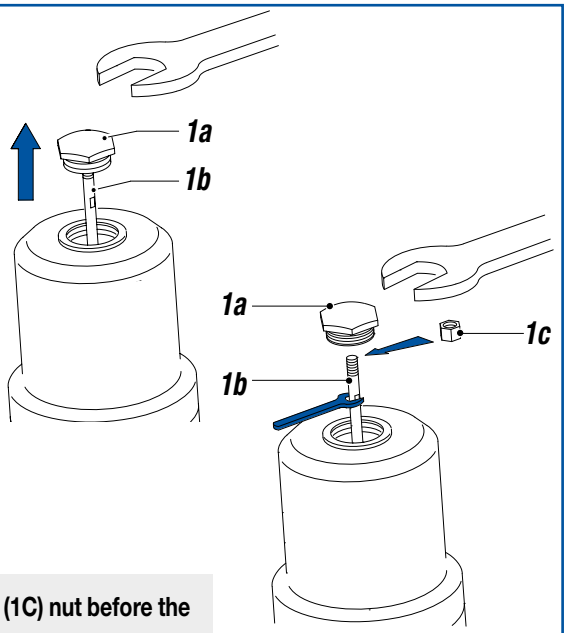
Fig. 1N

0 DISASSEMBLY AND REASSEMBLY OF THE PNEUMATIC MOTOR

1

Necessary tools and equipment





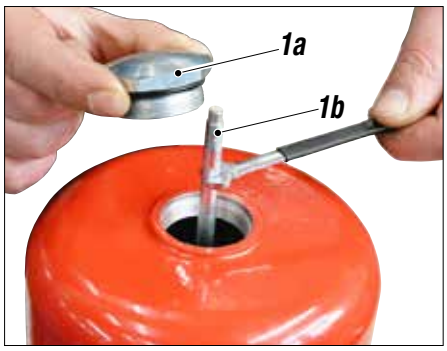
Procedure

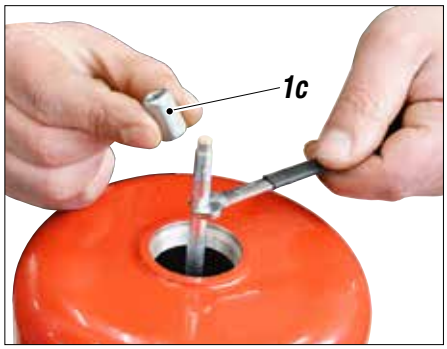
1.1 Close the compressed air supply to the pump and release the residual pressure in the plant.

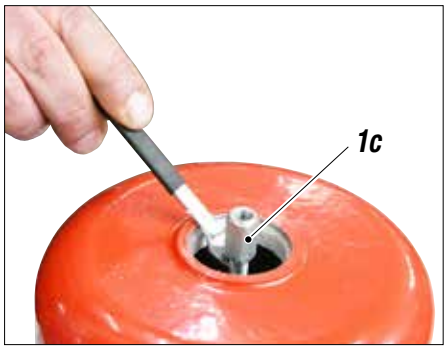
1.2 Unscrew the motor cap (**1a**) and pull it upwards together with the guide rod (**1b**) (**1e**)

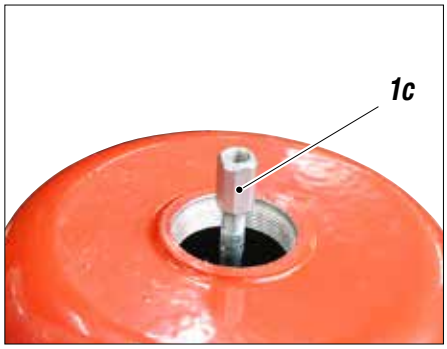
1.3 Hold the guide rod (**1b**) and remove the plug (**1a**) (using two wrenches).

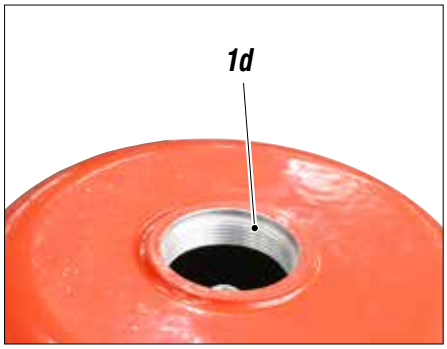
1.4 Replace immediately the plug with a usual M8 (1C) nut before the guide rod (1B) slides into the cylinder (1D).





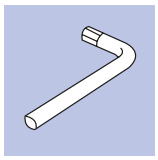


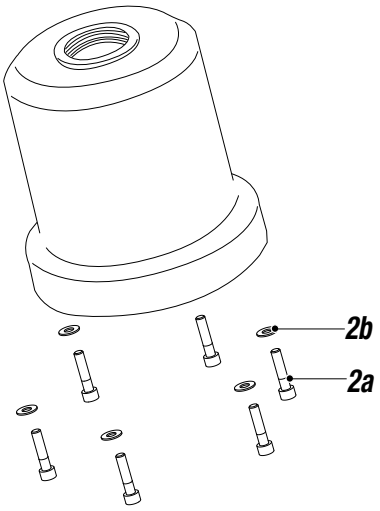




2

Necessary tools and equipment





Procedure

2.1 Remove the screws (**2a**) and the washers (**2b**). (**2c**)(**2d**)

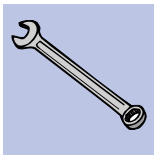
3

Procedure

3.1 Carefully extract the motor cylinder (**3a**) fom the pump.

4

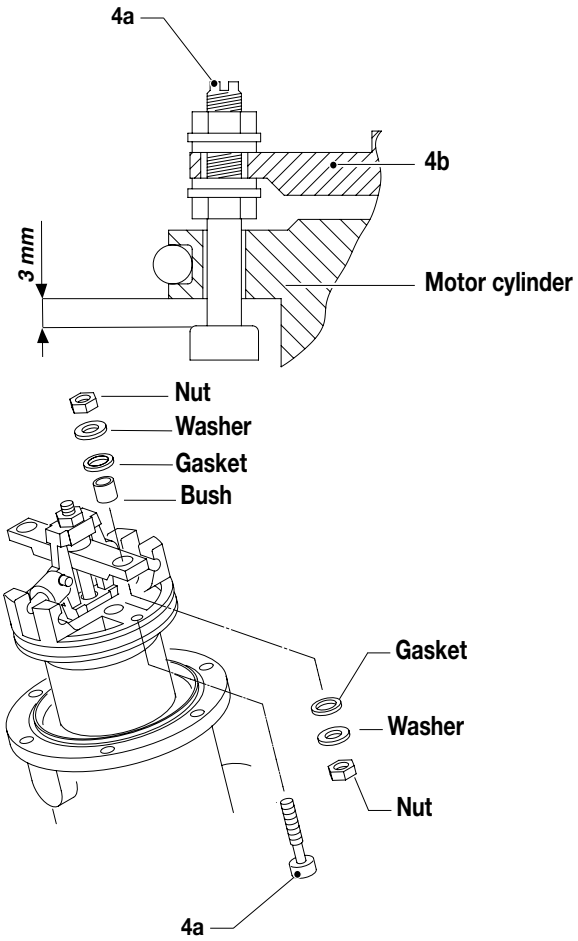
Necessary tools and equipment



Procedure

4.1 Check the condition of each part of the motor.

4.2 For any eventual replacement of the screws (**4a**) of the traverse (**4b**), for their reassembly and correct adjustment see the drawing to the side



ED. 12 - 10/2023 - Cod. 150093

P PROBLEMS AND SOLUTION

Problem	Possible cause	Solution
The pump does not start	Feed air not sufficient	Check on the air supply line. Increase the diameter of the feed hose
	Outlet product line clogged	Clean. Disconnect the outlet hose of the product, feed the pump at the minimum pressure and verity if the pump starts without the outlet hose
	Dried product inside the pumping element	Disassemble the pumping group and clean
	Pneumatic motor blocked in the cycle reversal position	• Reduce feed air pressure • Manually reset the pneumatic motor
	Parts failure of the pneumatic motor	Disassemble the motor and verify
Accelerate working and no pressure of the pump	There is no product	Add the product
	The pump sucks air	Open the bleeder valve. For the ram version, read the instructions contained in the relevant manual
	Feed air not sufficient	Increase feed air pressure
	Gaskets of the pumping rod worn	Replace the lower gaskets
	Suction valve worn or partially clogged	Disassemble the suction valve. Clean and/or replace, if possible, the parts worn
	Outlet valve worn or partially clogged	Disassemble the outlet valve. Clean and/or replace, if possibile, the parts worn
The pump works, but the flow of product is not sufficient	Suction valve worn or partially clogged	Disassemble the suction valve. Clean and/or replace, if possible, the parts worn
	Outlet product line clogged	Clean. Disconnect the outlet hose of the product, feed the pump at the minimum pressure and verity if delivery increases without the outlet hose
	The feed air pressure is too low	Increase air pressure
Waste of product from the wet cup	Upper gaskets worn	Tighten the packing nut. In case of persistent waste of product, replace the upper gaskets of the pumping element.

Always close the compressed air supply and release the pressure in the plant before performing any check or replacement of parts of the pump.

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SPARE PARTS

Q Complete pumping motor
pag. 30

R Spare part list pump group
pag. 32

S Spare part list pump group stainless steel
pag. 34

Q EXPLODED VIEW OF PNEUMATIC MOTOR

WARNING: always indicate code and quantity for each part required.

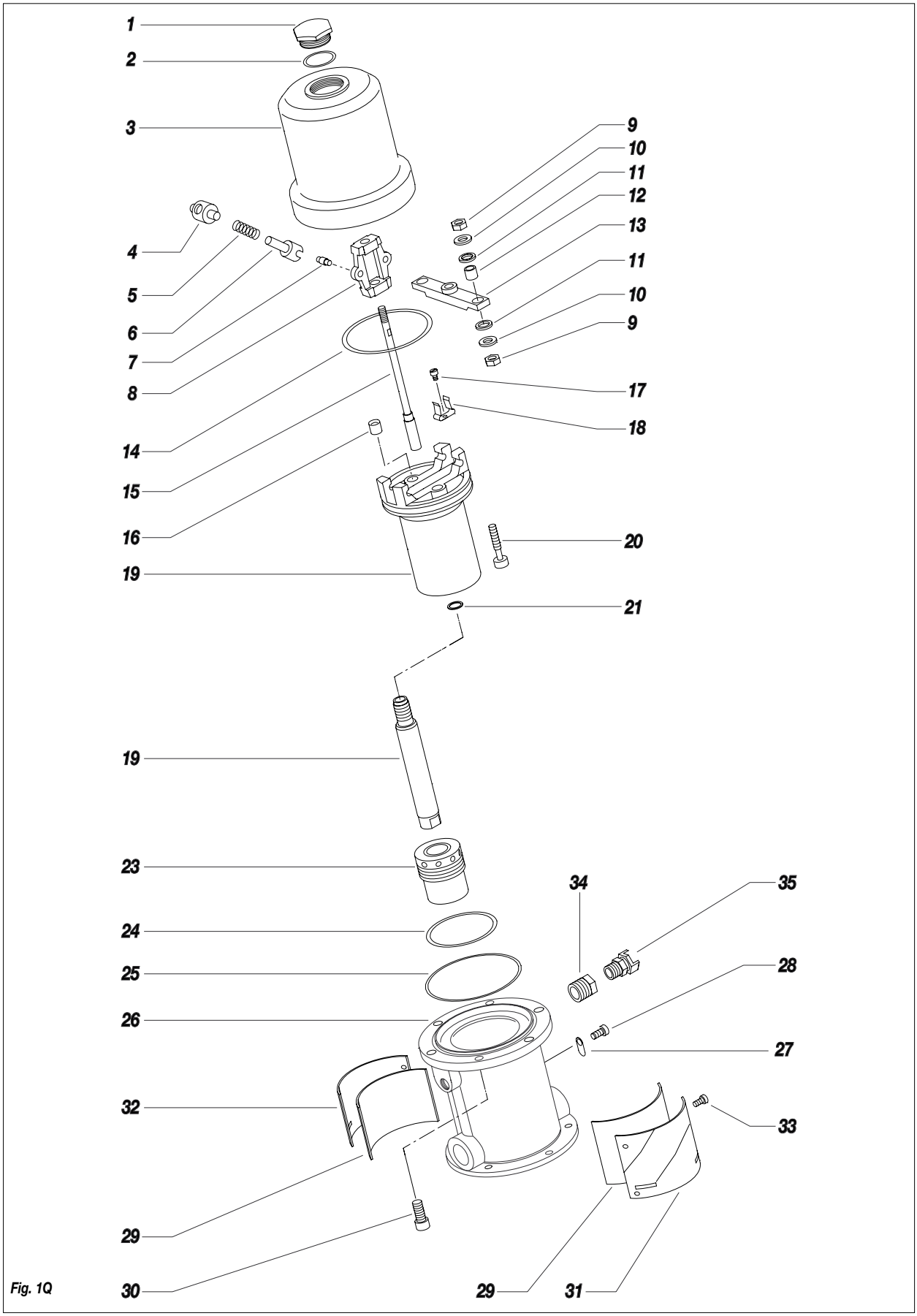

Fig. 1Q

ED. 12 - 10/2023 - Cod. 150093

Pos.	Code	Description	Q.ty
	96811	Complete motor	-
1	96001	Cup	1
2	95075	O-Ring	1
3	96003	Motor cylinder	1
4	96005	Roller	2
5	96006	Spring	2
6	96007	Fork	2
7	96024	Fork pin	2
8	96008	Rocker	1
9	4108	Nut	4
10	32024	Washer	4
11	96111	Gasket	4
12	96112	Bush	2
13	96110	Traverse	1
14	96012	O-Ring	1
15	96010	Guide rod	1
16	96009	Rubber valve	2
17	96025	Screw	2
18	96011	Traverse guide spring	2
19	96013	Motor piston	1

Pos.	Code	Description	Q.ty
20	96027	Complete valve screw	2
21	33031	Washer	1
22	96016	Piston rod	1
23	96017	Complete bush	1
24	96020	O-Ring	1
25	96018	O-Ring	1
26	96021	Motor support	1
27	96210	Ground plate	1
28	96211	Screw	2
29	96022/1	Felt gasket	2
30	96031	Screw	6
31	96022	Front name plate	1
32	96898/1	Back name plate	1
33	56444	Screw	12
34	96261	Reduction	1
35	10103	Bayonet connection 3/8"	1
36	8045	Label warnings	1
37	19556	ATEX label	1
38	5010	Grounding cable	1

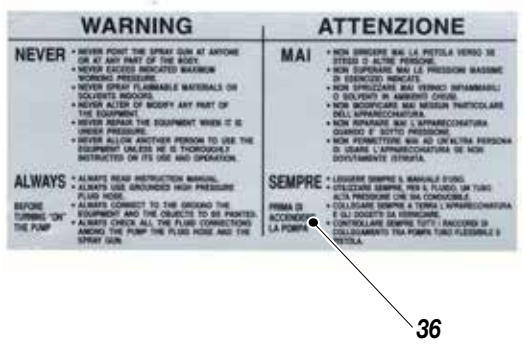

Fig. 2Q

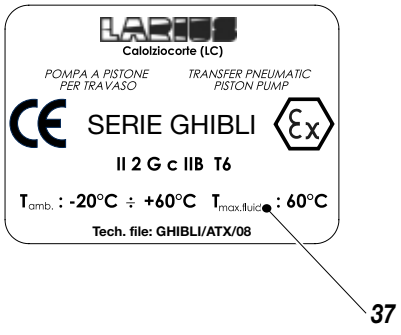

Fig. 3Q

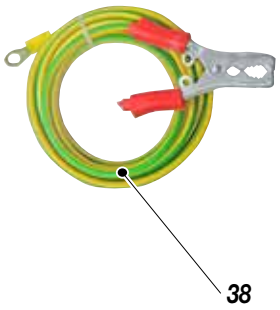

Fig. 4Q

MOTOR GASKET KIT - COD. 40050

Pos.	Description	Q. ty
2	O-Ring	1
10	Washer	4
11	Gasket	4
14	O-Ring	1
16	Rubber valve	2
20	Complete screw valve	2
24	O-Ring	1
25	O-Ring	1

MOTOR MOVEMENT INVERSION DEVICE VEGA-GHIBLI - CODE 40401

Pos.	Description	Q. ty
5	Spring	2
6	Fork	2
7	Fork pin	2

FELT GASKET KIT - CODE 40052

Pos.	Description	Q. ty
29	Felt gasket	2

R EXPLODED VIEW OF PUMPING STANDARD GROUP 96916 - PUMPING LONG 96917

WARNING: always indicate code and quantity for each part required.

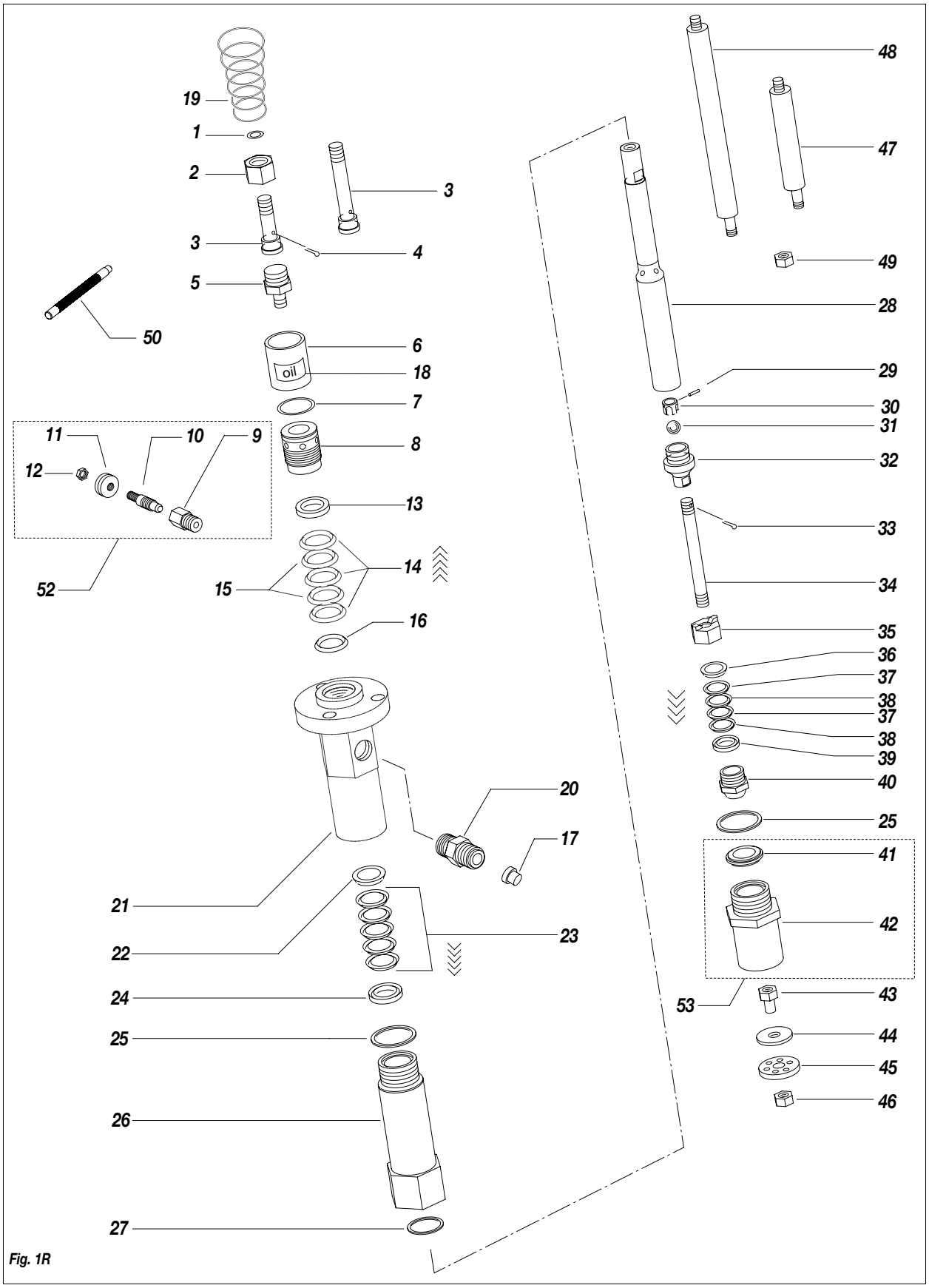

Fig. 1R

ED. 12 - 10/2023 - Cod. 150093

Pos.	Code	Description	Q.ty
1	96073	O-ring	1
2	91810	Connection sleeve	1
3	91814	Standard joining extension cable	1
	91816	Long joining extension cable	1
4	3323	Split pin	1
5	91809	Connection part for the motor	1
6	91001/1	Lubricant container cup	1
7	3429	O-Ring	1
8	96864	Packing nut	1
9	95721/2	Bushing for discharge cap	1
10	95721/1	Drainage plug	1
11	95721/4	Knob	1
12	3637	Nut M8	1
13	96984	Female ring for upper gaskets	1
14	96982/2	PTFE seals	3
15	96982/1	PE seals	2
16	96983	Male ring for upper gaskets	1
17	107	Plug	1
18	96233	"OIL" label	1
19	96023/1	Spring	1
20	3144	Material outlet pipe fitting 1/2"	1
21	96834	Housing for upper gaskets	1
22	96876	Male ring for middle gaskets	1
23	96877	Package of middle gaskets	1
24	96878	Female ring for middle gaskets	1
25	96883	Copper gaskets	2
26	96897	Housing for lower gaskets	1

Pos.	Code	Description	Q.ty
27	96889	Seal	1
28	96988	Piston rod	1
29	96880	Ball clamp pin	1
30	96879	Ball guide	1
31	4060	Ball	1
32	96045	Connector for suction valve	1
33	96882	Split pin	1
34	96885	Stem for material injection	1
35	96845/1	Gasket blocking nut	1
36	98460	Man ring	1
37	91022	PTFE gasket	2
38	91049	Polietilene gasket	2
39	98462	Female ring	1
40	96887	Suction valve	1
41	96853	Suction valve seat	1
42	96894	Material entry cylinder	1
43	95939	Follower plate guide bush	1
44	96891	Follower plate end stop	1
45	96892	Follower plate	1
46	96893	Closing nut	1
47	91812	Tie-rod for standard pump	3
48	91815	Tie-rod for long pump	3
49	96080	Tie-rod nut	3
50	16135	Wrench	1
51	16340	Oil bottle	1
52	95721	Complete valve	1
53	96833	Complete suction valve	1

Fig. 2R

GASKET KIT CODE 40274

Pos.	Code	Description	Q.ty
13	96984	Female ring for upper gaskets	1
14	96982/2	PTFE seals	3
15	96982/1	PE seals	2
16	96983	Male ring for upper gaskets	1
22	96876	Male ring for middle gaskets	1
23	96877	Package of middle gaskets	1
24	96878	Female ring for middle gaskets	1

Pos.	Code	Description	Q.ty
25	96883	Copper gaskets	2
27	96889	Seal	1
33	96882	Split pin	1
36	98460	Man ring	1
37	91022	PTFE gasket	2
38	91049	Polietilene gasket	2
39	98462	Female ring	1

S EXPLODED VIEW OF STAINLESS STEEL PUMPING STANDARD GROUP 99916 - STAINLESS STEEL PUMPING LONG 99917

WARNING: always indicate code and quantity for each part required.

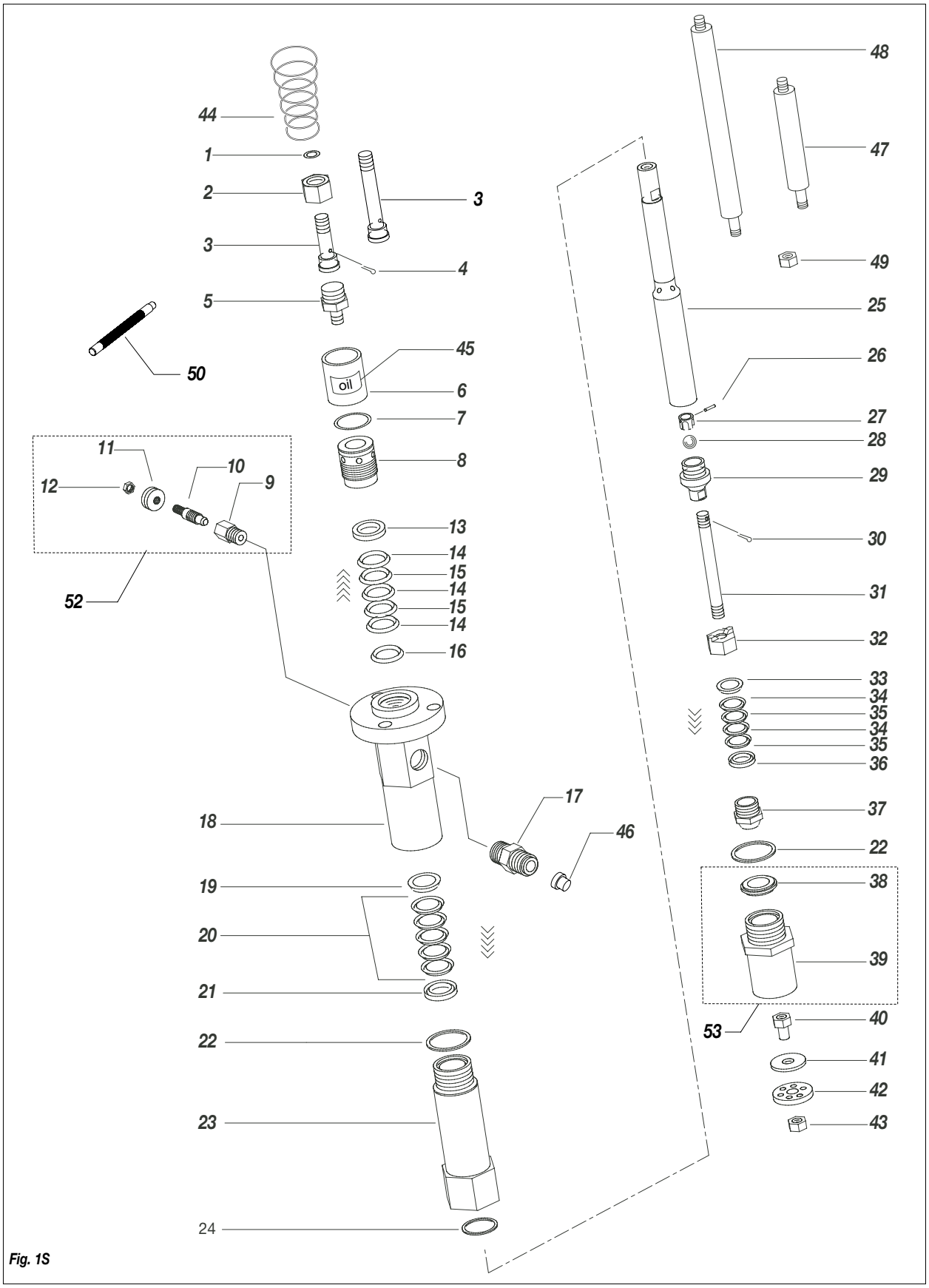

Fig. 1S

ED. 12 - 10/2023 - Cod. 150093

Pos.	Code	Description	Q.ty
1	96073	O-ring	1
2	91810	Connection sleeve	1
3	91814	Standard joining extension cable	1
	91816	Long joining extension cable	1
4	3323	Split pin	1
5	91809	Connection part for the motor	1
6	91001/1	Lubricant container cup	1
7	3429	O-Ring	1
8	96864/1	Packing nut	1
9	95721/2	Bushing for discharge cap	1
10	95721/1	Drainage plug	1
11	95721/4	Knob	1
12	3637	Nut	1
13	96984	Female ring for upper gaskets	1
14	96982/2	Seals	3
15	96982/1	Seals	2
16	96983	Male ring for upper gaskets	1
17	3844	Material outlet pipe fitting 1/2"	1
18	98834	Housing for upper gaskets	1
19	96876	Male ring for middle gaskets	1
20	96877	Package of middle gaskets	1
21	96878	Female ring for middle gaskets	1
22	96883	Copper gaskets	2
23	98897	Housing for lower gaskets	1
24	96889	Seal	1
25	96988	Piston rod	1
26	96880/1	Ball clamp pin	1

Pos.	Code	Description	Q.ty
27	96879	Ball guide	1
28	4060	Ball	1
29	96045/1	Connector for suction valve	1
30	95882/1	Split pin	1
31	96885	Stem for material injection	1
32	96845/1	Gasket blocking nut	1
33	98460	Man ring	1
34	91022	PTFE gasket	2
35	91049	Polietilene gasket	2
36	98462	Female ring	1
37	96887/1	Suction valve	1
38	96853	Suction valve seat	1
39	98894	Material entry cylinder	1
40	98939	Follower plate guide bush	1
41	98891	Follower plate end stop	1
42	98892	Follower plate	1
43	3806	Closing nut	1
44	96023/1	Spring	1
45	96233	"OIL" label	1
46	107	Plug	1
47	91813	Tie-rod for standard pump	3
48	91815	Tie-rod for long pump	3
49	96080	Tie-rod nut	3
50	16135	Wrench	1
51	16340	Oil bottle	1
52	95721	Complete valve	1
53	98833	Complete suction valve	1

Fig. 2S

GASKET KIT CODE 40274

Pos.	Code	Description	Q.ty
19	96876	Male ring for middle gaskets	1
20	96877	Package of middle gaskets	1
21	96878	Female ring for middle gaskets	1
22	96883	Copper gaskets	2
24	96889	Seal	1

Pos.	Code	Description	Q.ty
30	95882/1	Split pin	1
33	98460	Man ring	1
34	91022	PTFE gasket	2
35	91049	Polietilene gasket	2
36	98462	Female ring	1

T ATEX CERTIFICATE

Safety instructions for using GHIBLI series pneumatic piston transfer pumps in high risk environments where potentially explosive gasses or vapours are present.

DESCRIPTION

These safety instructions refer to the installation, use and maintenance of **GHIBLI** series pneumatic piston transfer pumps in high risk environments where potentially explosive gasses or vapours are present.

These instructions, along with the indications provided in the user and maintenance manual, must be fully respected.

GHIBLI series pneumatic piston pumps are group II mechanical devices for use in areas where gasses classified as iib (*category 2 g*) are present. They are designed and built in accordance with the 94/9/Ec ATEX Directive, based on the following european standards: EN 1127-1, EN 13463-1 and EN 13463-5.

TECHNICAL CHARATERISTICS

The main characteristics of the GHIBLI series pneumatic piston pumps are provided in the table below:

Type		Rapport	Pressure alimentation	Ø Air Inlet	Input material	Ø Output material	Max. working pressure	Max. flow
Standard	INOX							
96700	96710	3:1	3÷7 bar	GC 1/2”	Ball	GJ 1”	21 bar	45 l/min
96701	96755	3:1	3÷7 bar	GC 1/2”	Ball	GJ 1”	21 bar	45 l/min
96705	96715	3:1	3÷7 bar	GC 1/2”	Ball	GJ 1”	21 bar	45 l/min
96660	96661	10:1	3÷7 bar	GC 1/2”	Ball	GJ 3/4”	70 bar	12 l/min
96665	96666	10:1	3÷7 bar	GC 1/2”	Ball	GJ 3/4”	70 bar	12 l/min
96668	96667	10:1	3÷7 bar	GC 1/2”	Ball	GJ 3/4”	70 bar	12 l/min
96870	-	24:1	3÷7 bar	GC 1/2”	shovel plate	GJ 3/4”	168 bar	4 l/min
96805	-	24:1	3÷7 bar	GC 1/2”	shovel plate	GJ 3/4”	168 bar	4 l/min
96050	96056	30:1	3÷7 bar	GC 3/4”	Ball	GJ 3/8”	210 bar	3,8 l/min
96055	96057	40:1	3÷7 bar	GC 3/4”	Ball	GJ 3/8”	280 bar	3 l/min

Maximum number of cycles per minute: 60

Room temperature: -20°C to +60°C
Maximum fluid temperature [°C]: 60°C

MARKINGS

CE ⟨Ex⟩ **II 2 G c IIB T6 T_{amb}: -20°C ÷ + 60°C $T_{max.}$ fluido: 60°C Tech. File: GHIBLI/ATX/08**

II =	Group II (surfaces)
2 =	Category 2 (zone 1)
G =	Explosive atmosphere containing gasses, vapours or mists
c =	Design safety “c”
T6 =	Temperature class T6
- 20°C ÷ + 60°C	Room temperature
60°C	Maximum process fluid temperature
xxxx/AA	Serial number or lot number (xxxxx = PROGRESSIVE / year = AA)

Correspondence between hazardous areas, substances and categories

HAZARDOUS AREAS		CATEGORIES ACCORDING TO THE 94/9/CE DIRECTIVE
Gas, vapori o nebbie	Zona 0	1G
Gas, vapori o nebbie	Zona 1	2G oppure 1G
Gas, vapori o nebbie	Zona 2	3G, 2G oppure 1G

SAFETY INSTRUCTIONS FOR INSTALLATION IN HAZARDOUS AREAS

Read the indications provided in the user and maintenance manual carefully prior to installation. All of the maintenance operations must be performed according to the indications provided in the manual.

- The grounding wire for the pumps indicated above must be grounded using an appropriate anti-loosening connection.
- The tubes used to connect the delivery and suction lines must be either metallic, plastic with metallic braid, or plastic with fabric braid and a suitable grounding conductor.
- The pumps must be installed on properly grounded metallic or antistatic drums.
- The gases or vapours of any flammable liquids present must belong to group IIB.
- Based on the type of use and the substances employed, the user must periodically check for any encrustations and must verify the cleanliness, the wear status and the correct functionality of the pump on a regular basis.
- The user must periodically clean the suction filter in order to prevent any solid materials from entering the pump. The air used to power the pump must be filtered and must come from a SAFE AREA.

GHIBLI series pneumatic piston transfer pump cannot work without material.

All of the installation and maintenance operations must be performed by qualified personnel.

We Larius S.r.l.
Via Stoppani, 21
23801 Calolziocorte (LC)

declare under our sole responsability that the product:

GHIBLI series pneumatic piston transfer pump.

to which this declaration relates complies with the following directives:

- Directive 94/9/EC (ATEX)

The conformity are under observance of the following standards or standards documents:

- EN 1127-1
- EN 13463-1
- EN 13463-5

Markings

CE Ex II 2 G c IIB T6 Tamb.: - 20°C ÷ 60°C Tmax. fluid: 60°C

Tech. File: **GHIBLI/ATX/08**
Technical dossier kept on file c/o: **INERIS (0080)**

Calolziocorte- LC, 15/12/2008 **Signature (LARIUS)**

Appareil non électrique destiné à être utilisé en atmosphères explosibles
Non electrical equipment intended for use in potentially explosive atmospheres
Apparecchi destinati ad essere utilizzati in atmosfera potenzialmente esplosiva

Directive 2014/34/UE
Directive 2014/34/EU / Direttiva 2014/34/UE

ACCUSÉ DE RECEPTION D'UN DOSSIER TECHNIQUE
ACKNOWLEDGE RECEIPT OF TECHNICAL DOCUMENTATION
AVVISO DI RICEVIMENTO DEL FASCICOLO TECNICO

Appareil / Equipment / Apparecchiatura :

PNEUMATIC TRANSFER & EXTRUSION PUMPS

Type(s)/ Type(s) / Tipo(i) : Series GHIBLI

Marquage/ Marking / Marcatura : Ex II 2G

Dépositaire / Applicant / Richiedente : LARIUS S.r.l.
Via Stoppani, 21

I- 23801 Calziocorte (LC)

L'INERIS, organisme notifié et identifié sous le numéro 0080, conformément aux articles 17 et 21 de la Directive du Conseil 2014/34/UE du 26 février 2014, accuse réception du dossier conformément à la procédure décrite au chapitre 3, article 13 1) b) ii) de la Directive.

INERIS, notified body and identified under number 0080, in accordance with articles 17 and 21 of Council Directive 2014/34/EU of the 26 february 2014, acknowledges receipt of file according to the procedure described chapiter 3, article 13 1) b) ii) of the Directive.

L'INERIS, organismo notificato e identificato con il n.0080 conformemente agli articoli 17 e 21 della Direttiva 2014/34/UE del Consiglio dell'Unione Europea del 26 febbraio 2014, conferma il ricevimento del fascicolo in conformità alla procedura prevista nella rubrica 3, articolo 13 1) b) ii) della Direttiva.

La documentation technique référencée : GHIBLI/ATX/08 dated 2008-12-15 est consignée sous le numéro d'enregistrement :

The technical documentation referenced : GHIBLI/ATX/08 dated 2008-12-15 is consigned under the reference :

La documentazione tecnica di riferimento : GHIBLI/ATX/08 dated 2008-12-15 è depositata con il numero di registrazione :

n° INERIS-EQEN 021761/19.

no INERIS-EQEN 021761/19.

n° INERIS-EQEN 021761/19.

Dans le cadre de cet enregistrement, l'INERIS n'a pas examiné le contenu de la documentation technique.

Within the scope of the recording, INERIS did not examine the contain of the technical documentation.

Nel quadro di questa registrazione, INERIS non ha examinato il contenuto della documentazione tecnica.

Date de fin de validité : **2029.03.11**

Validity completion date : **2029.03.11**

Data di fine di validità : **2029.03.11**

Verneuil-en-Halatte, le 2019.03.11

ATMOSPHERES EXPLOSIVES ORGANISME NOTIFIE INERIS NOTIFIED BODY EXPLOSIVE ATMOSPHERES

Le Directeur Général de l'INERIS, Par délégation,

The Chief Executive Officer of INERIS, By delegation,

Il Direttore generale dell' INERIS, Per Delega,

Thierry HOUEIX
Délégué Certification ATEX
Ex Certification Officer

IM-1-423AD - Mise en application : 20/04/2016

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tél +33(0)3 44 55 66 77 fax +33(0)3 44 55 66 99 internet www.ineris.fr
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Etablissement public à caractère industriel et commercial - RCS Compiègne B 381 984 924 - Siret 381 984 921 00019 - APE 7120B - TVA intracom FR 73 381 984 921

CE DECLARATION OF CONFORMITY

Company

LARIUS srl
Via Antonio Stoppani 21 - 23801 Calolziocorte (LC) ITALY
Tel: +39 0341 621152
Fax: +39 0341 621243

E-mail: larius@larius.com

Declares under his owns resonsibility that the product:

GHIBLI 26:1 EXT
Pneumatic pump for extrusion

complies with the directives:

- **EC Directive 2006/42 Machinery Directive**
- **EU Directive 2014/30 Electromagnetic Compatibility (EMC)**
- **EU Directive 2014/35 Low Voltage (LVD)**

furthermore to the harmonized standards:

- **UNI EN ISO 12100-1/-2**
  Machinery safety, basic concepts, general principles of design. Basic terminology, methodology. Technical principles.

This declaration relates exclusevely to the product in the state in which it was placed on the market, and excludes components or modifications which are added or carried out subsequently by end user.

Signature

Location / Date

Pierangelo Castagna
Managing Director

SAMOA
LEADING THROUGH INNOVATION

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SAMOA Industrial, S.A. is an ISO 9001, ISO 14001 and ISO 45001 certified company.

Contact us today!
Visit **www.samoaindustrial.com** for more information.

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