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VEGA 13:1

Pneumatic pump for extrusion



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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.

VEGA 13:1

Pneumatic pump for extrusion

INDEX




















A	WARNINGS	2
B	WORKING PRINCIPLE	3
C	TECHNICAL DATA	3
D	DESCRIPTION OF THE EQUIPMENT	4
E	TRANSPORT AND UNPACKING	5
F	CONDITIONS OF GUARANTEE	5
G	SAFETY REGULATIONS.....	5
H	TYPICAL INSTALLATION.....	6
I	SETTING-UP	7
J	WORKING	7
K	CLEANING AT THE END OF THE WORK	8
L	ROUTINE MAINTENANCE	8
M	MANUAL SERVICING OF THE PNEUMATIC MOTOR	9
N	DISASSEMBLING THE MOTOR	10
O	DISASSEMBLY AND REASSEMBLY OF THE PUMPING UNIT	13
P	PROBLEMS AND SOLUTION	28
	<u>SPARE PARTS</u>	
Q	EXPLODED VIEW OF PNEUMATIC MOTOR.....	30
R	EXPLODED VIEW OF PUMPING - COMPLETE PUMPING UNIT.....	32
S	ATEX CERTIFICATION.....	34
	DECLARATION OF CONFORMITY	37

**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.

	<ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> • It indicates an accident risk or serious damage to equipment if this warning is not followed.
   	<p>FIRE AND EXPLOSION HAZARD</p> <ul style="list-style-type: none"> • Solvent and paint fumes in work area can ignite or explode. • To help prevent fire and explosion: <ul style="list-style-type: none"> - 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.
	<ul style="list-style-type: none"> • 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.
 	<ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> • It indicates important recommendations about disposal and recycling process of products in accordance with the environmental regulations.
    	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> - (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. <p>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.</p>
   	<ul style="list-style-type: none"> • 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.

B WORKING PRINCIPLE

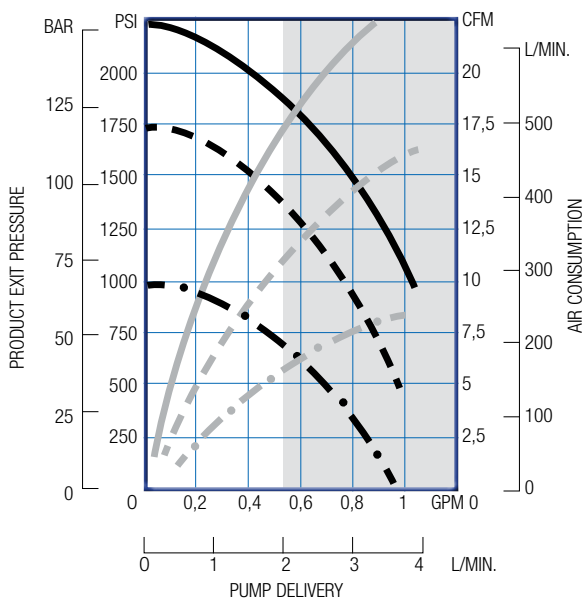
VEGA 13:1 is a medium pressure pneumatic pump used for extrusion and transferring of high viscosity products. The pump is essentially constituted of an air motor and of a structure called "material pumping group" or simply "pumping group". In the pneumatic motor, compressed air causes the vertical reciprocating movement of the motor piston; this movement is transmitted through a connecting rod to the material pumping piston ending with a shovel plate allowing to suck very viscous products. The ratio 13:1 means that the outlet pressure of material is 13 times higher than the pump feed air pressure.

C TECHNICAL DATA

	VEGA 13:1
Air pressure range	3-8 bar / 40-120 psi
Maximum fluid outlet pressure	104 bar / 1560 psi
Delivery per cycle	43 cm ³
Delivery at 60 cycles per minute	2,6 l/min
Air inlet thread	3/8" BSPP (F)
Fluid outlet thread	1/2" BSPP (M)
Lower pump material	Galvanized steel
Plunger material	INOX AISI 420B
Seals material	PTFE+PE 1000
Air motor piston diameter and stroke	Ø 3" - 3" / Ø 75mm - 75mm



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.



BLACK CURVE: PRODUCT EXIT PRESSURE

GREY CURVE: AIR CONSUMPTION

— 7 bar (100 psi) - - - 5 bar (70 psi) ···· 3 bar (40 psi)

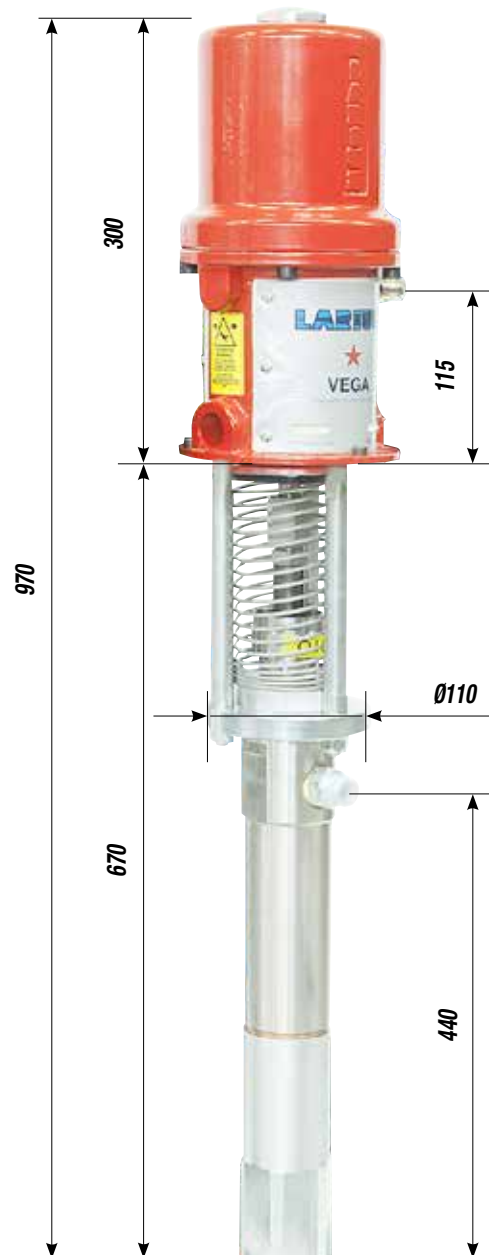


Fig. 1C

COD.	DESCRIPTION
91800	VEGA 13:1 extrusion pump, stubby

D DESCRIPTION OF THE EQUIPMENT

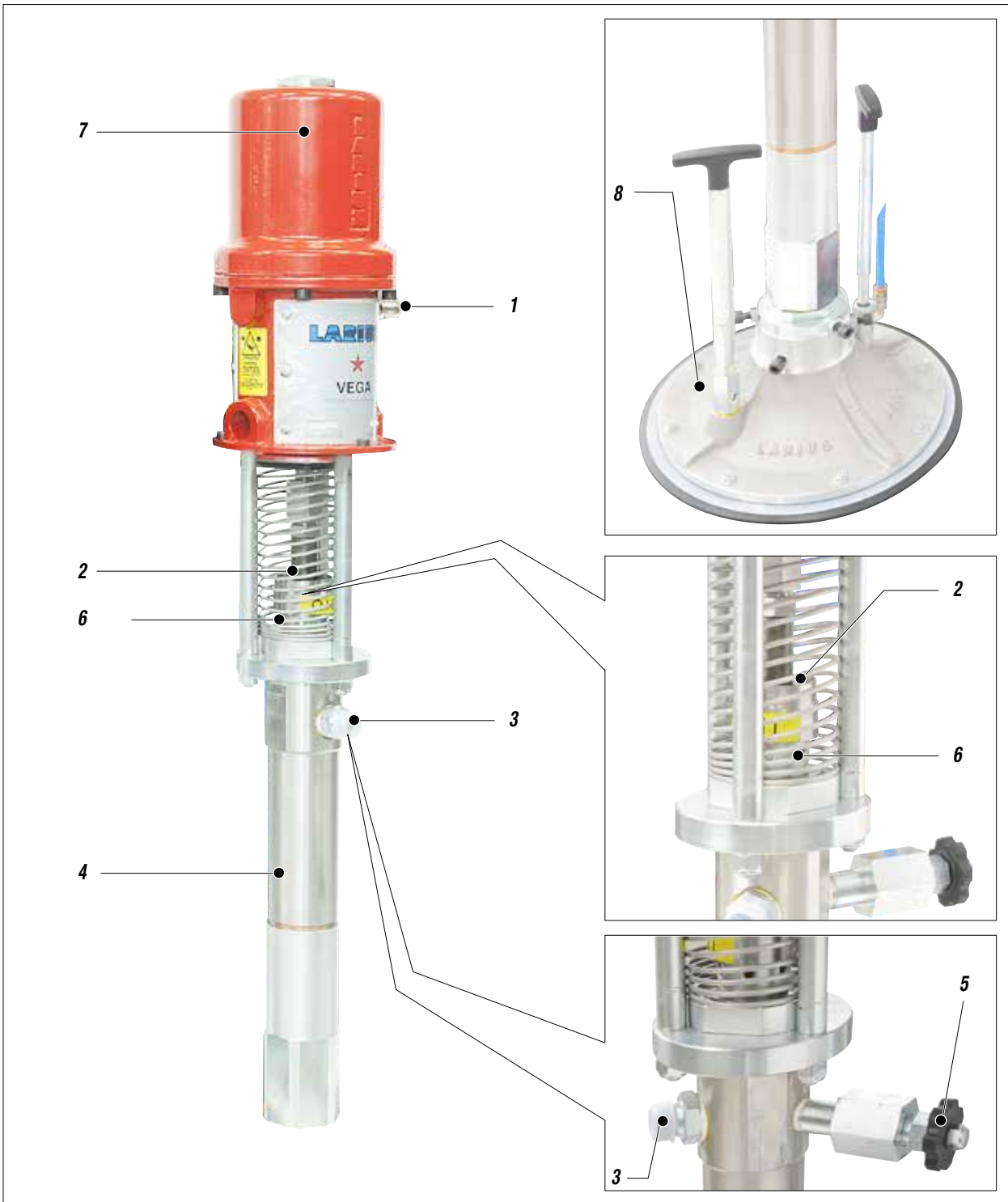


Fig. 1D

Pos.	Description
1	Pump motor air inlet
2	Wet cup
3	Material outlet
4	Material pumping group

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

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



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.

- 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.
- 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.
- (IF PROVIDED) **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.
- (IF PROVIDED) 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

VEGA PUMP 13:1 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.	Description
1	Double post ram
2	Shovel plate for 30 litres drums
3	VEGA Pump 13:1

E 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.

CONNECTION OF THE MATERIAL OUTLET HOSE

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



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 13 times the inlet pressure of the pump feed air. Therefore, it is extremely important to adjust the value of the feed air pressure.

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 or the delivery valve at the tank and drain the product left inside the pump till the material to be used has come out.



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.

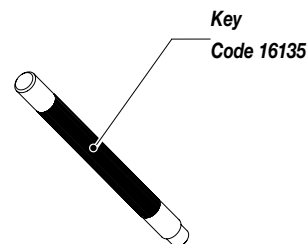


Fig. 1L

M MANUAL SERVICING OF THE PNEUMATIC MOTOR

- The pump feeding air pressure shall never be higher than the maximum value provided by the technical data sheet. Failure in respecting this value could cause the blocking of the valves of the pneumatic motor in the cycle inversion position.
- In order to restart a blocked motor, close the air feeding valve and release the air pressure in the circuit. This should allow the return of the valves in the correct position.

- Should the motor be blocked, proceed as follows:



close the air supply to the pump and discharge the residual pressure in the circuit

- unscrew the plug (**M1**) and pull it upwards together with the guide rod (**M2**), by making thus manually trig the run inversion group.
- screw the plug.



Fig. 1M

N DISASSEMBLING THE MOTOR

- Place the piston to the upper point of its run and unscrew the plug (N1). Block the guide rod (N2) with clamping pliers and replace the plug (N1) with a M8 nut (N3).
- Remove the screws (N4).



Fig. 1N

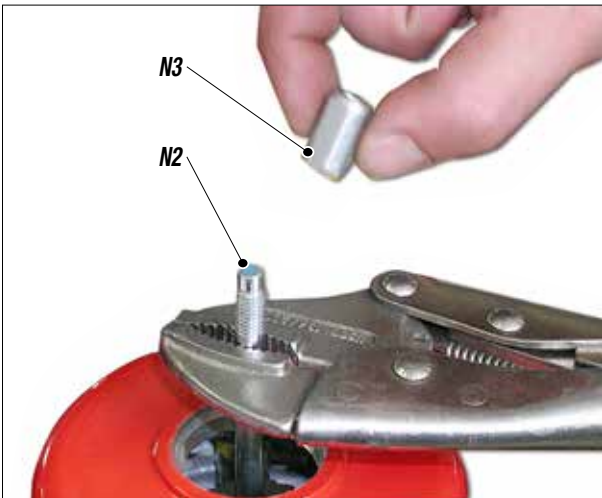


Fig. 2N



Fig. 3N

- Take out the cylinder (N5) with the utmost care from the piston, without inclining it in order to avoid damages to the inner walls of the same.



Fig. 4N

- By keeping the hands far from the cross piece (N6), press on the rocker arm (N7) so that the cross piece (N6) trigs downwards (*drain valves closed*).

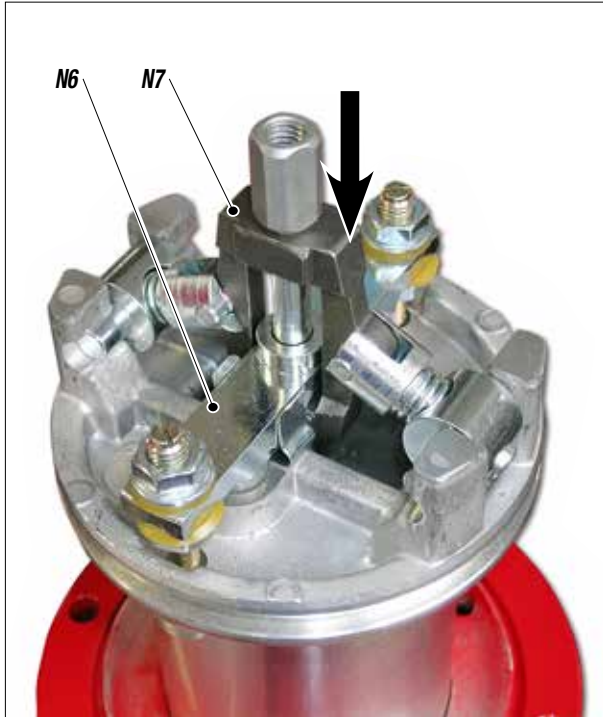


Fig. 5N

- Unscrew the two counternuts (N8) which block the valve screws.



Fig. 6N

- Remove the valve screws (N9) and check the wear condition of the gaskets (N10).

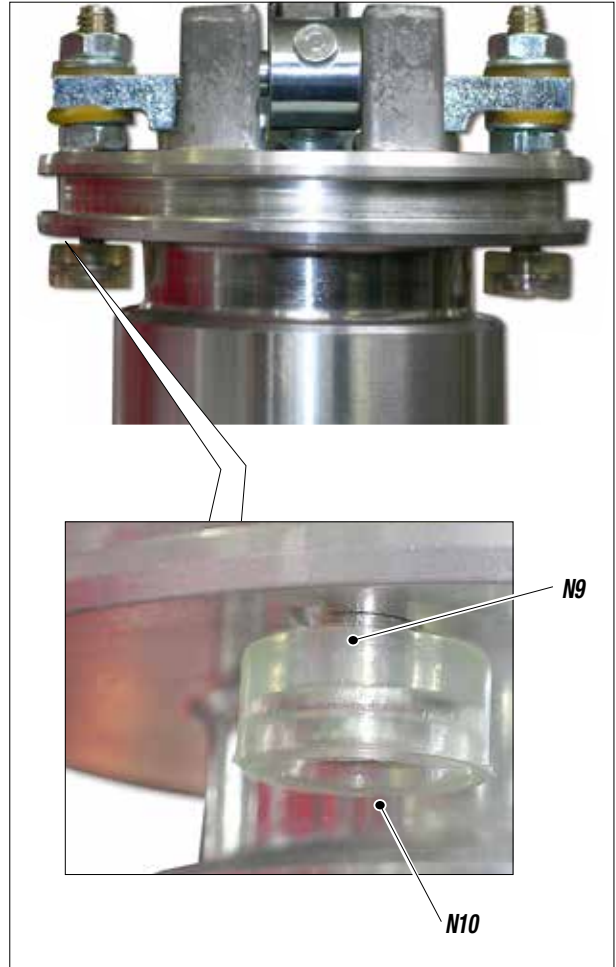


Fig. 7N

- Block the roller (N11) with the pliers and by pressing on the spring (N12), remove it from its seat. In this way, it will be possible to remove all the run inversion group.

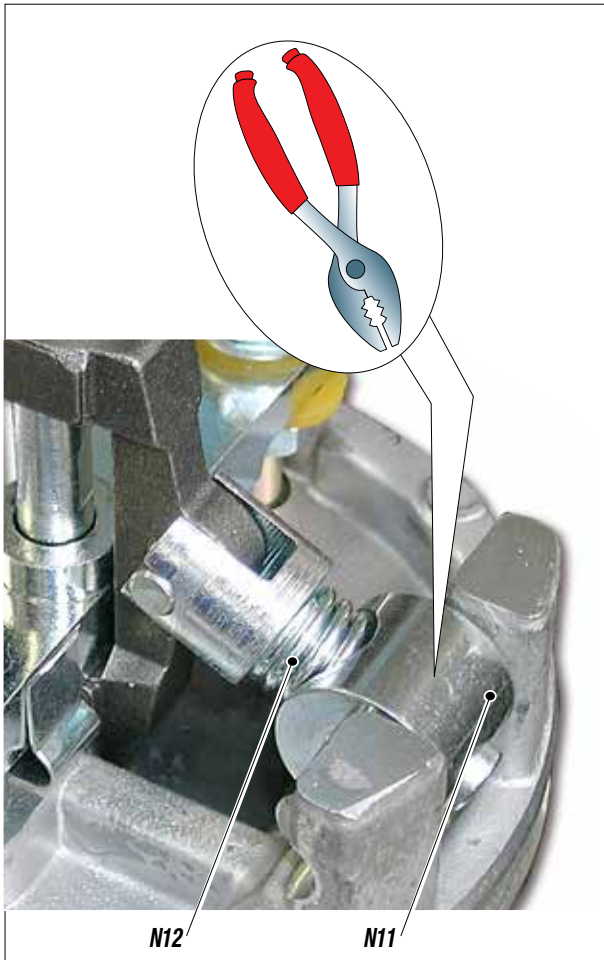


Fig. 8N

- Check the condition of each piece, in particular of the gaskets (N13) and the O-ring (N14), (N15) and (N16). Control that the inner walls of the cylinder (N5) are not scratched. Before reassembling all parts, lubricate them with light and water proof grease.



Fig. 9N

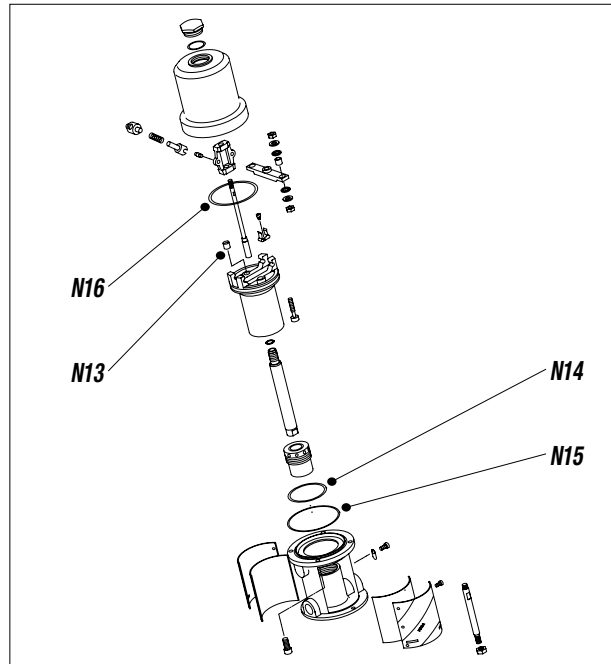


Fig. 10N

- Adjust then the distance (A) between the gaskets and the surface of the piston. This adjustment shall be done with the cross piece (N7) down and it can be better done by using our special metering device.

After having reassembled all parts, before connecting the group to the pump, test it by feeding a small quantity of air (3-4 bar).

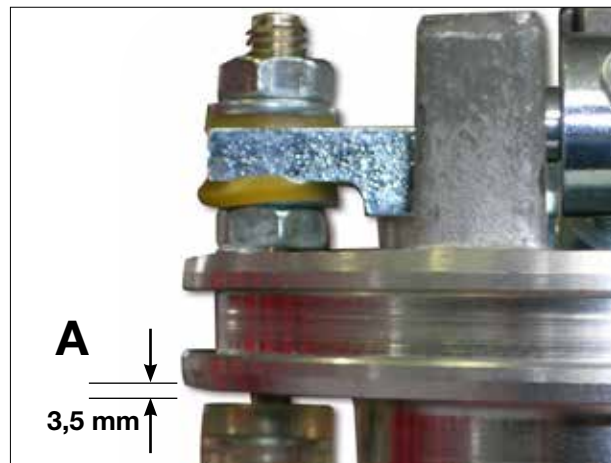
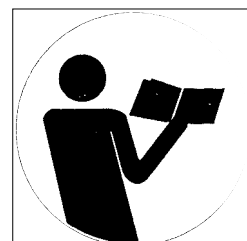


Fig. 11N

- For a correct reassembly, refer to the pumping group detailed drawing, by following the disassembly instructions in reverse order.



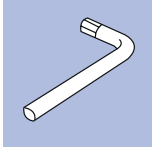
0 DISASSEMBLY AND REASSEMBLY OF THE PUMPING UNIT



Always close the compressed air supply and release the pressure in the plant before carrying out the disassembly of the pumping group. In case the product being used is toxic, follow the procedure of cleaning indicated in the specific chapter, on to avoid the contact with the product during the disassembly of the pumping group.

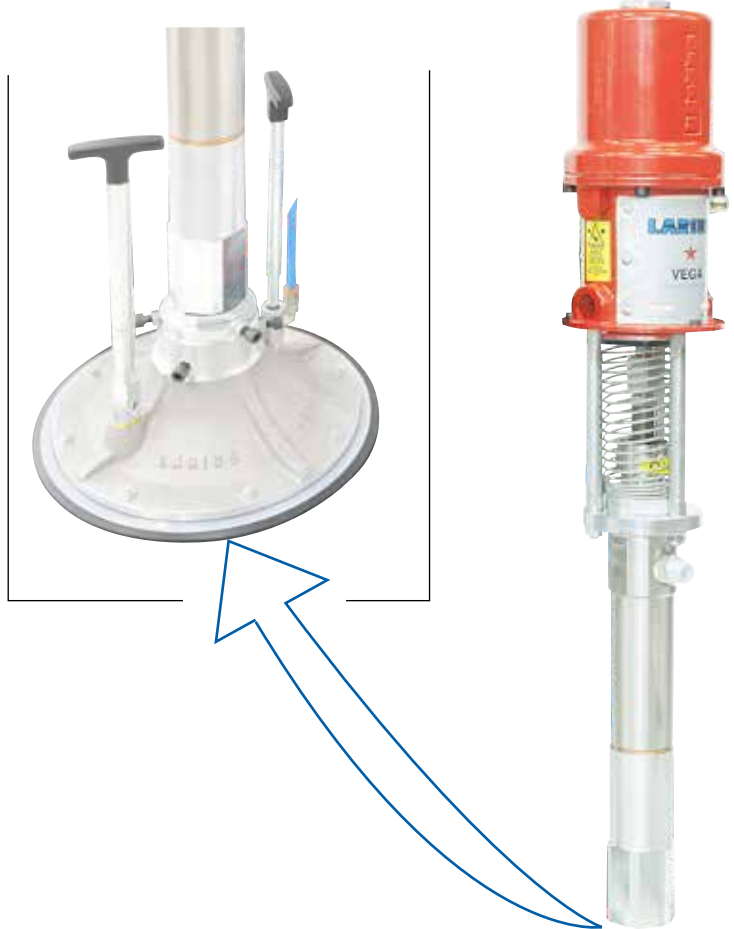
1

Necessary tools and equipment



Procedure

1.1 Remove the shovel plate
(if installed)



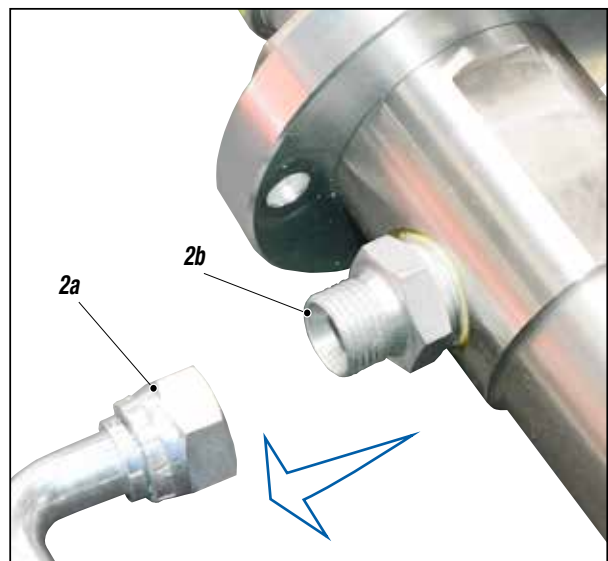
2

Necessary tools and equipment



Procedure

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



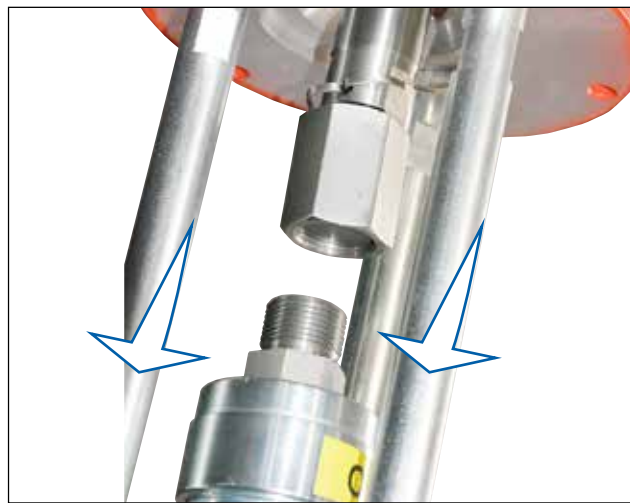
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Necessary tools and equipment



Procedure

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



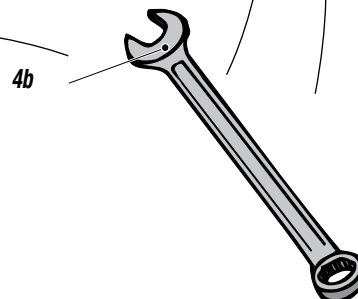
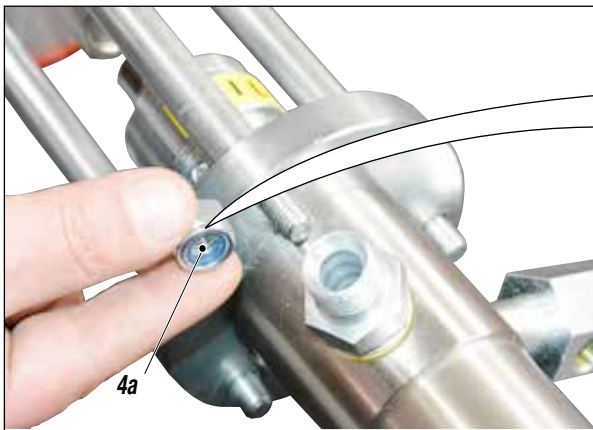
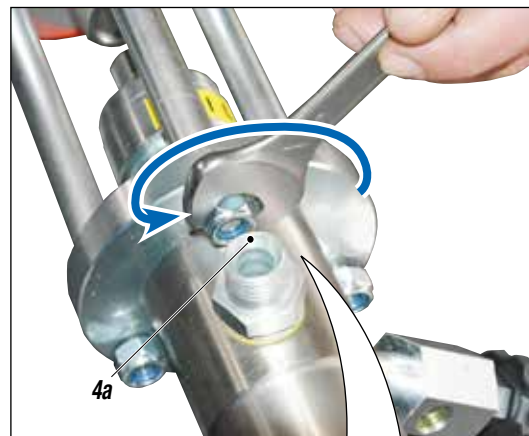
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Necessary tools and equipment



Procedure

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



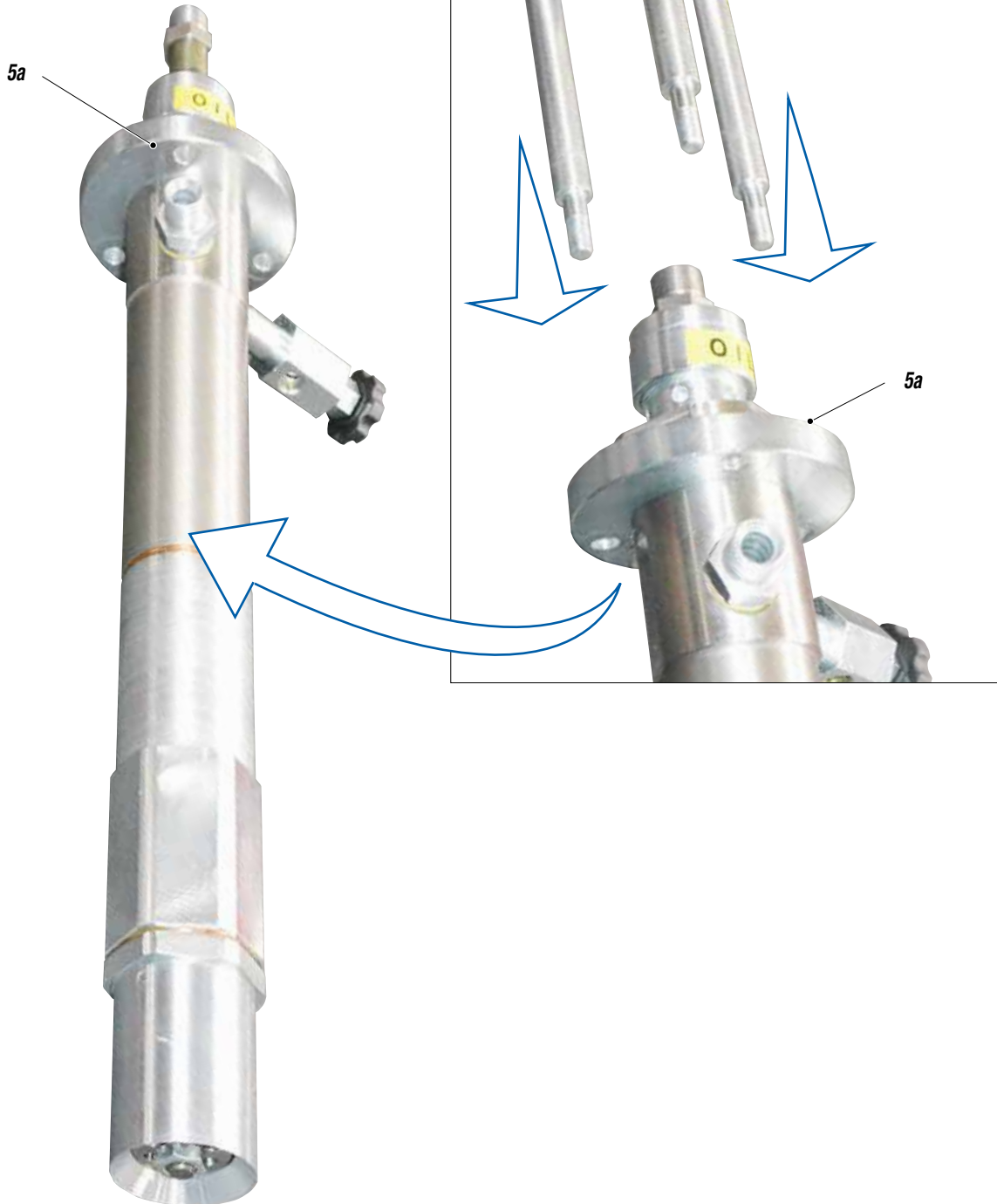
5

Necessary tools and equipment



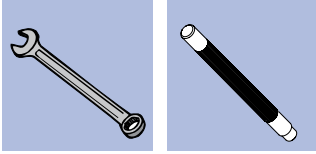
Procedure

5.1 Slide the complete pumping group (5a)



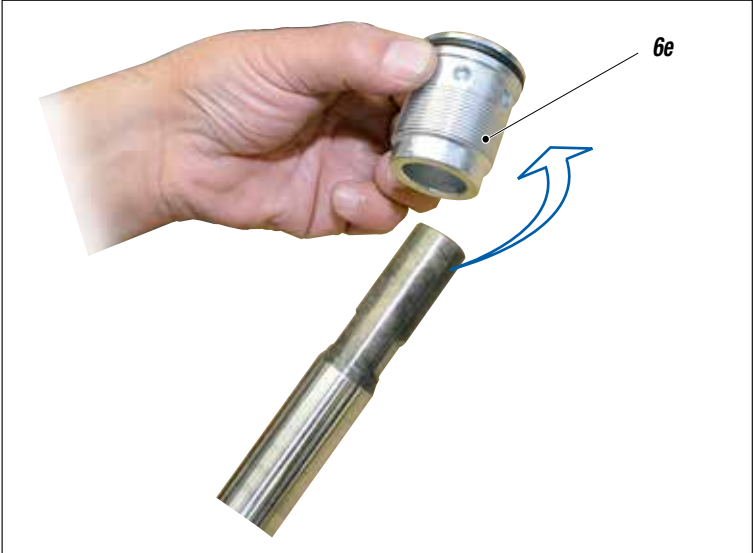
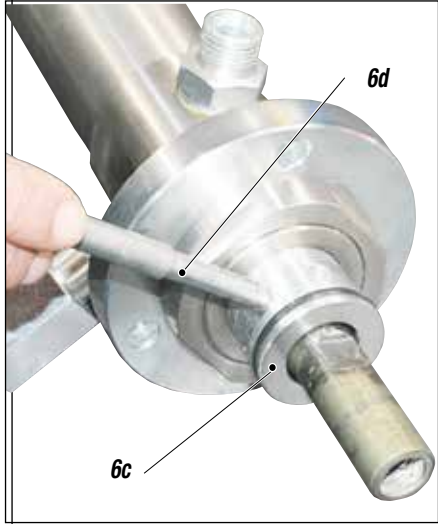
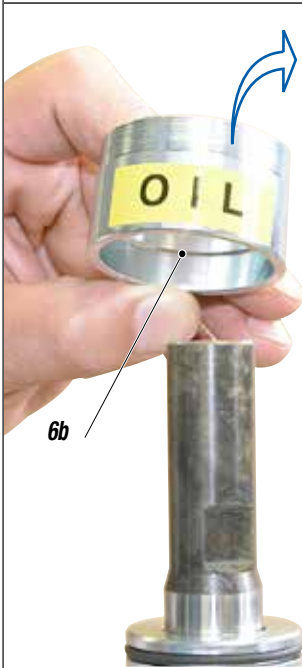
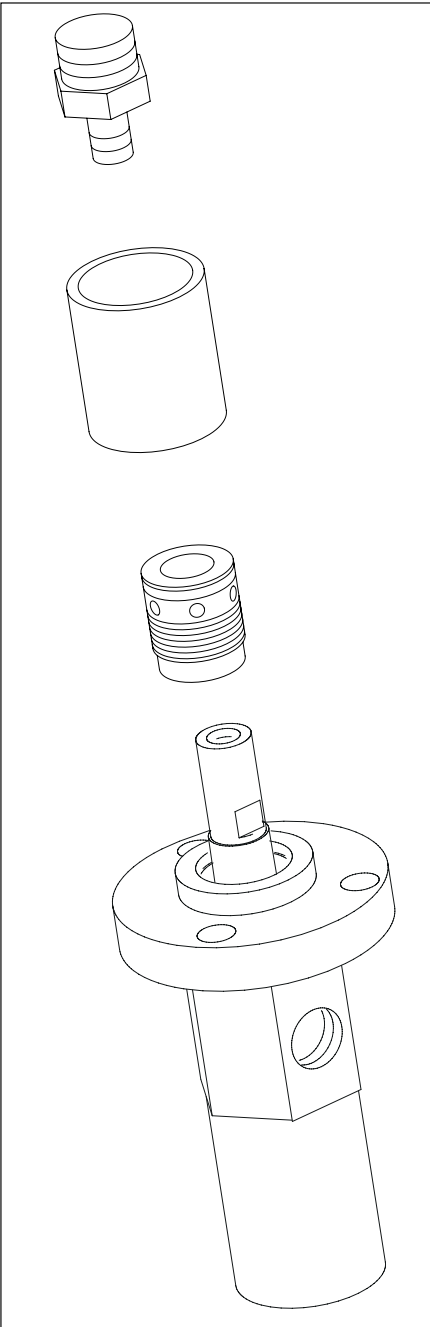
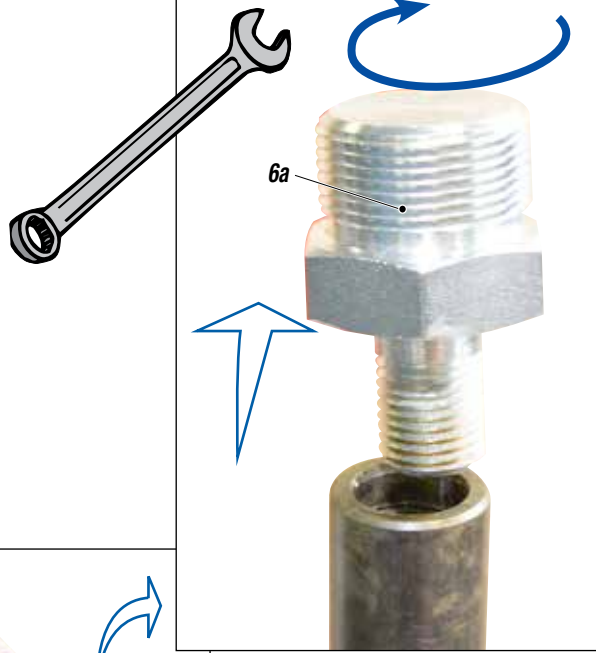
6

Necessary tools and equipment



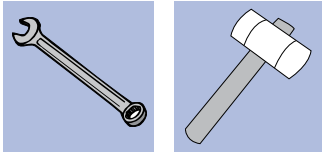
Procedure

- 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)



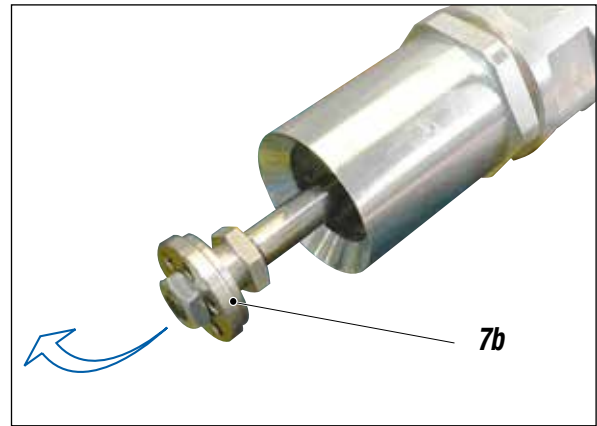
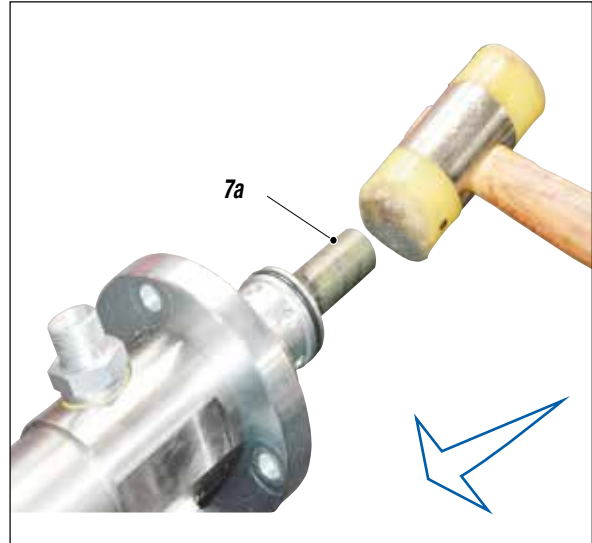
7

Necessary tools and equipment



Procedure

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



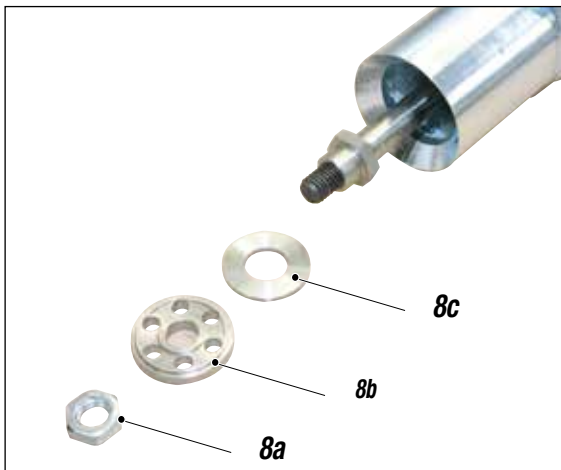
8

Necessary tools and equipment



Procedure

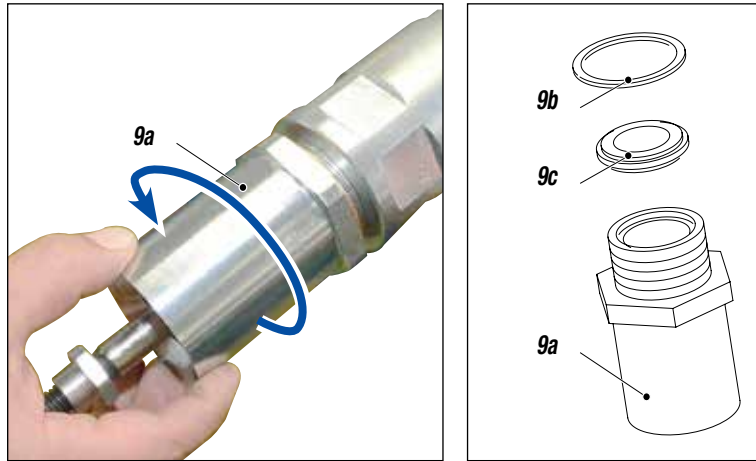
- 8.1** Unscrew and remove the components (8a), (8b) e (8c)



9

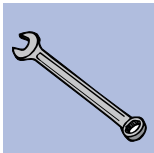
Procedure

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



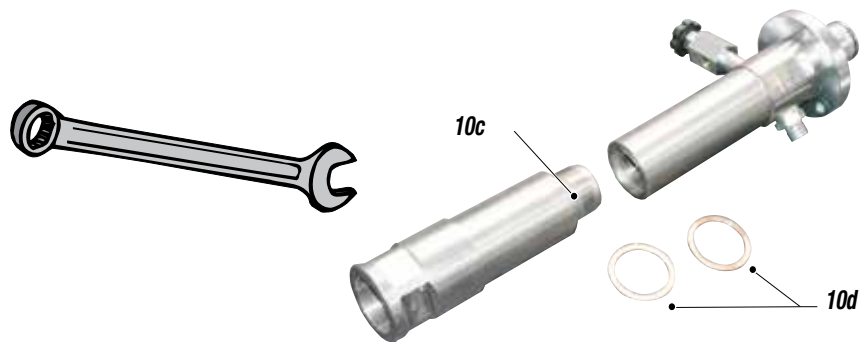
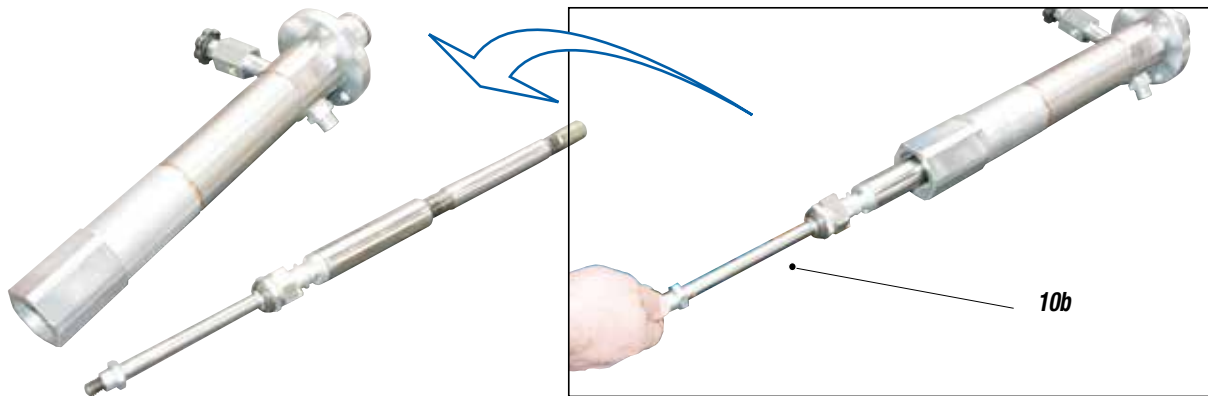
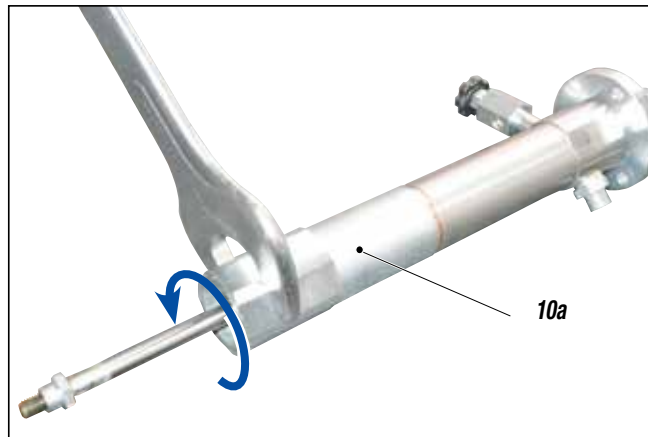
10

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)



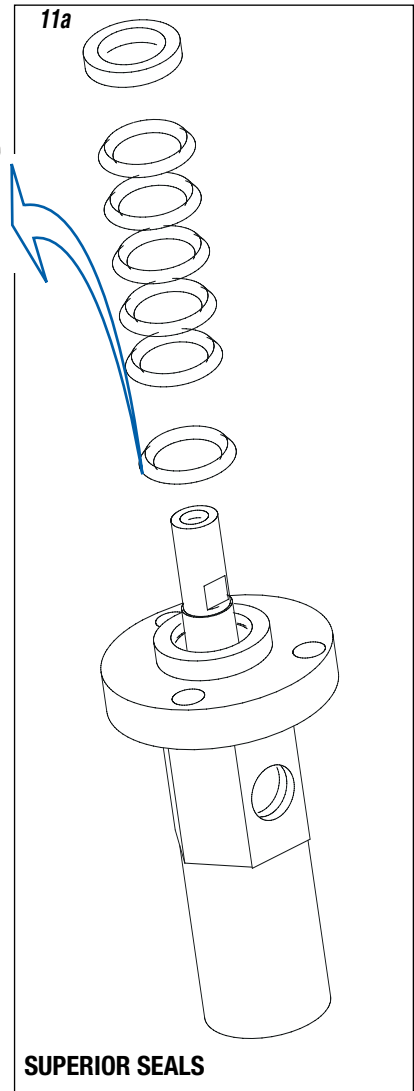
11

Necessary tools and equipment



Procedure

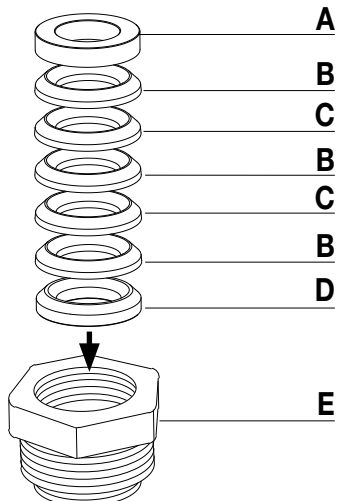
- 11.1** Remove the superior seals
- 11.2** Clean and lubricate the gasket housing and replace it with the new spare parts (**11a**)



SUPERIOR SEALS



Direction of assembly



NOTE
Follow the direction of rotation of gaskets

- A:** Female STEEL ring cod. 96984
- B:** Gasket cod. 96982/2
- C:** Gasket cod. 96982/1
- D:** Male STEEL ring cod. 96983
- E:** Gasket housing

12

Necessary tools and equipment

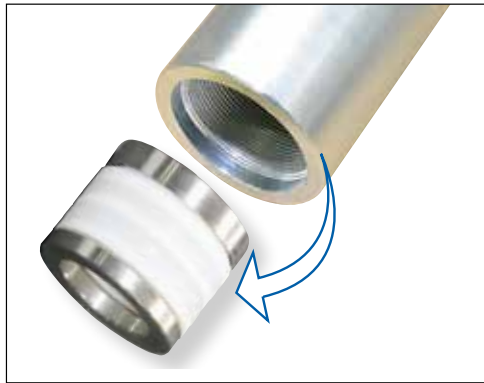


Procedure

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

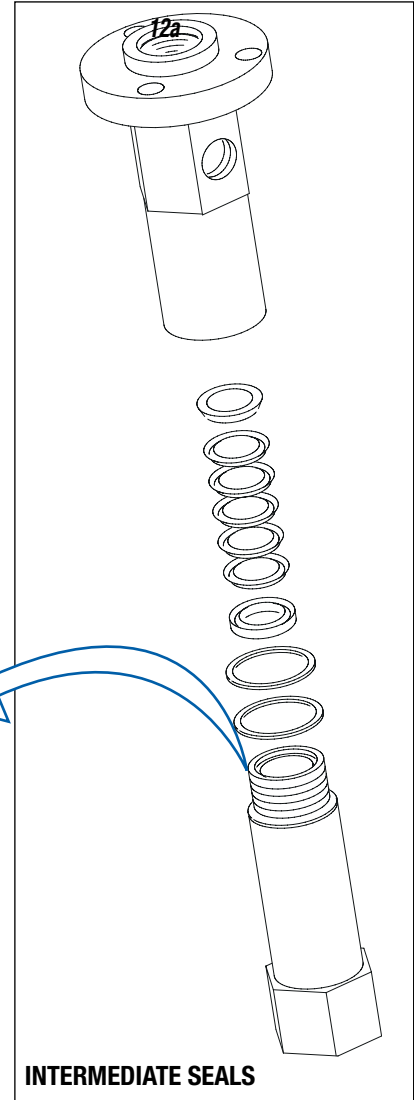


Direction of assembly



NOTE

Follow the direction of rotation of gaskets



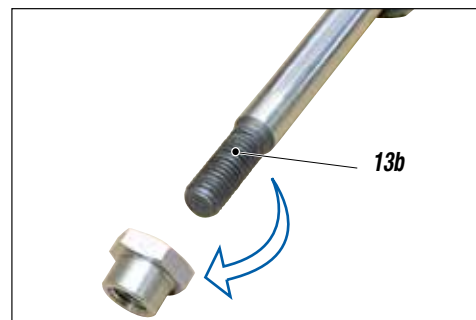
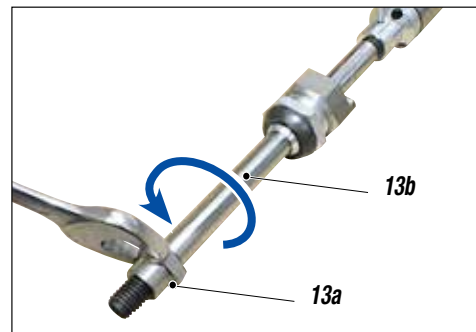
13

Necessary tools and equipment



Procedure

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



14

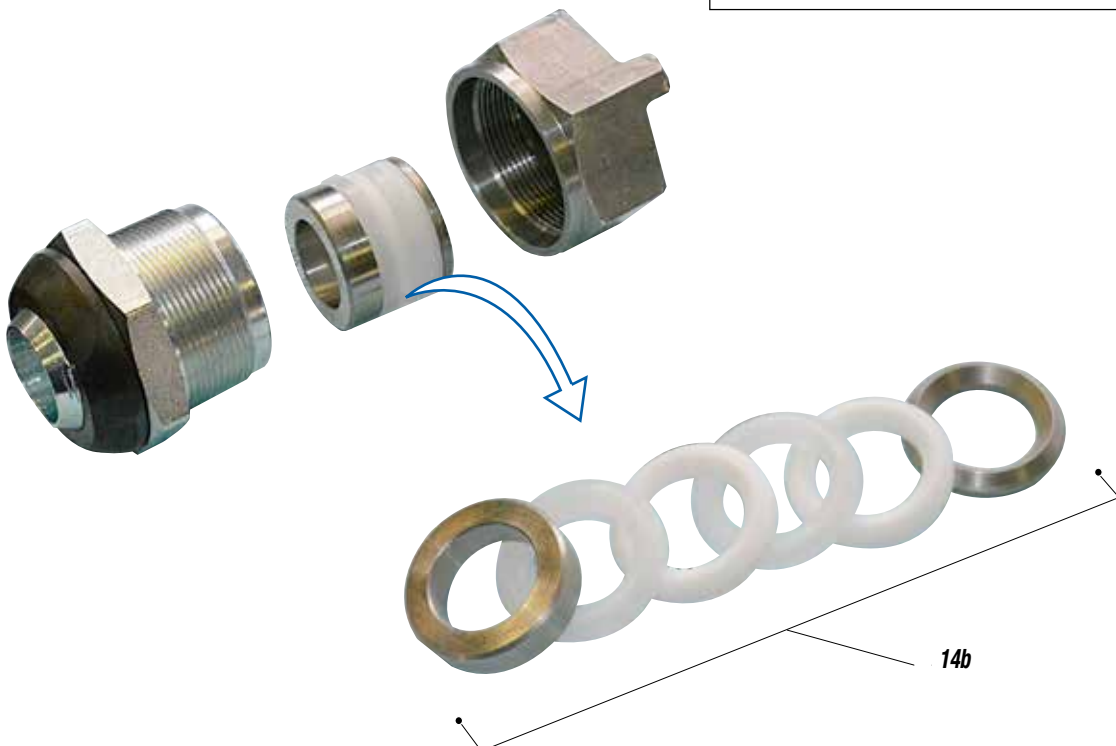
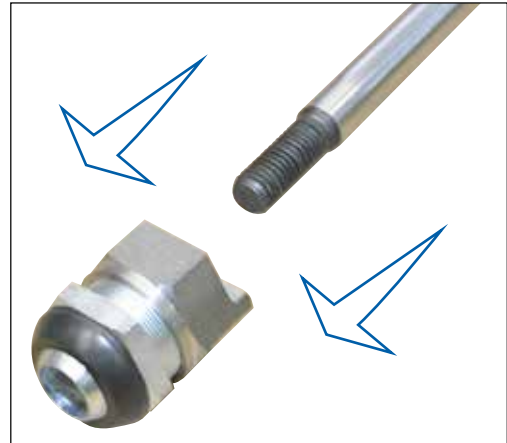
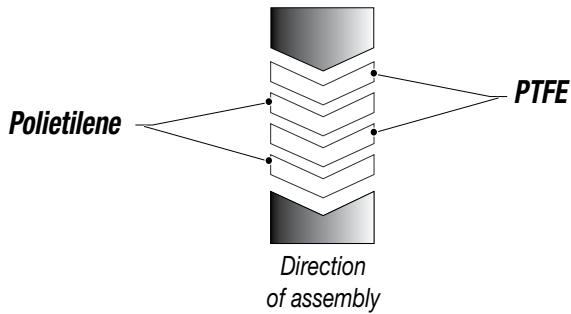
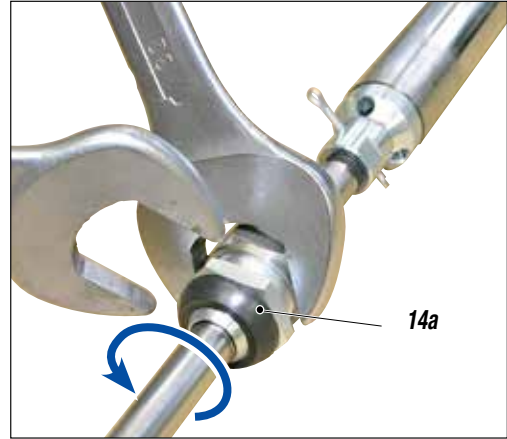
Necessary tools and equipment



Procedure

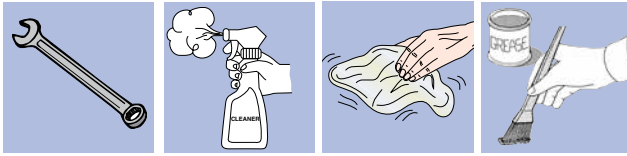
14.1 Unscrew the component (14a) and slide the rod

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



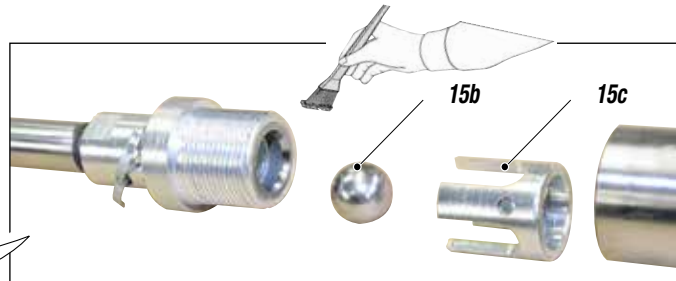
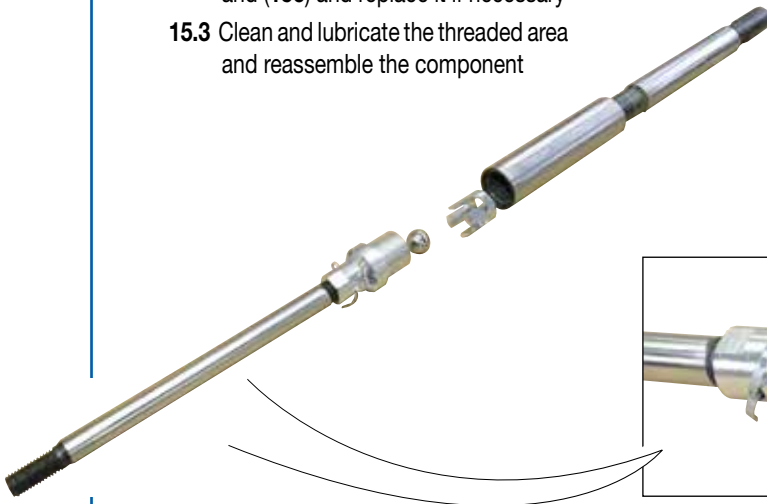
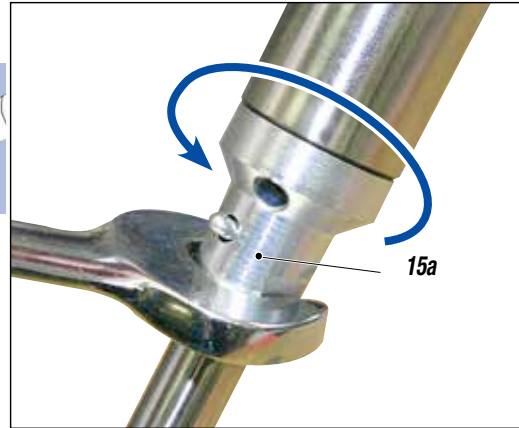
15

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



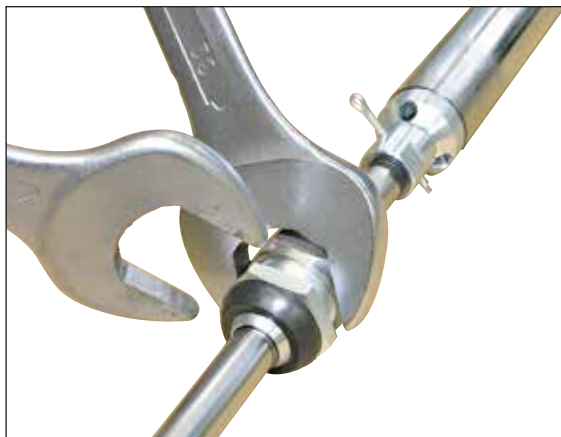
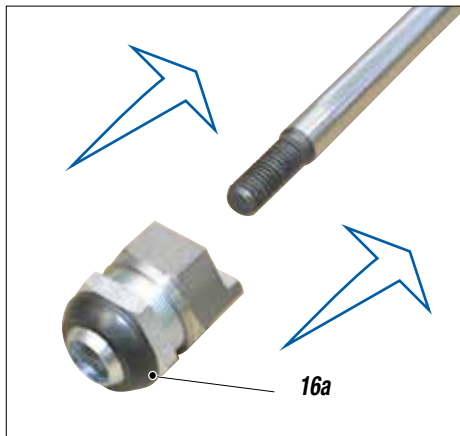
16

Necessary tools and equipment



Procedure

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



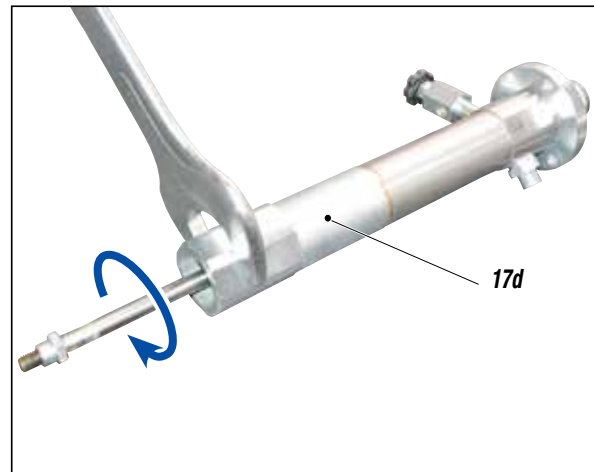
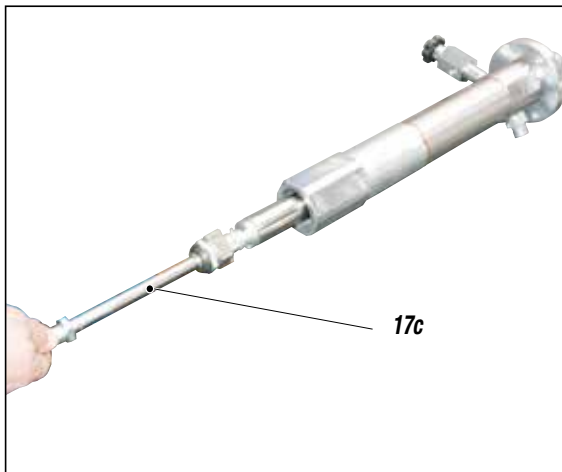
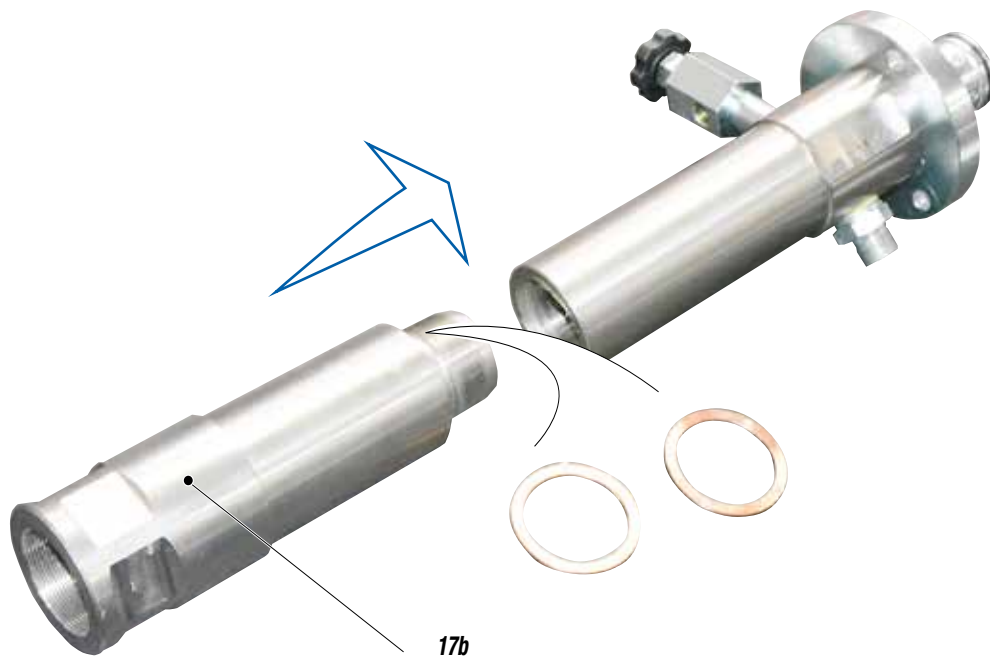
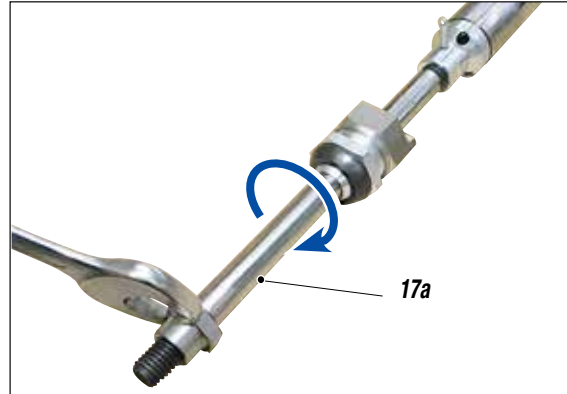
17

Necessary tools and equipment

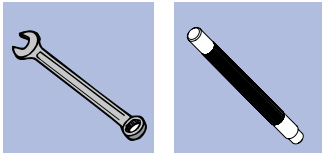


Procedure

- 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)



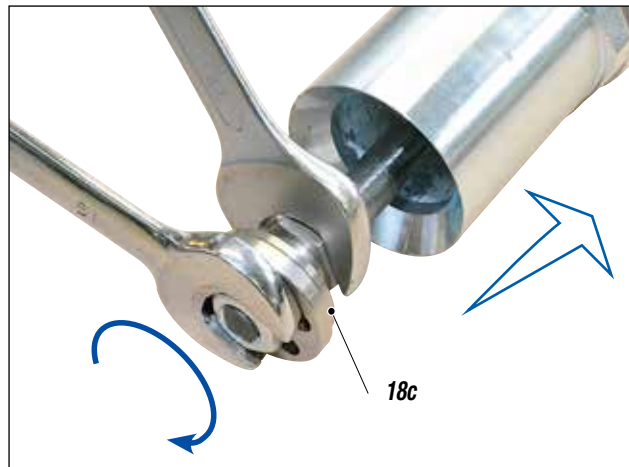
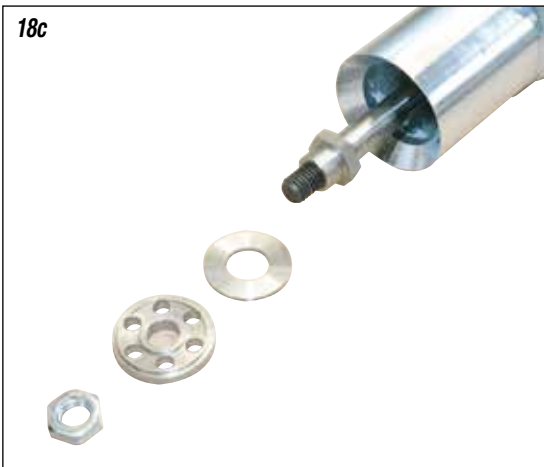
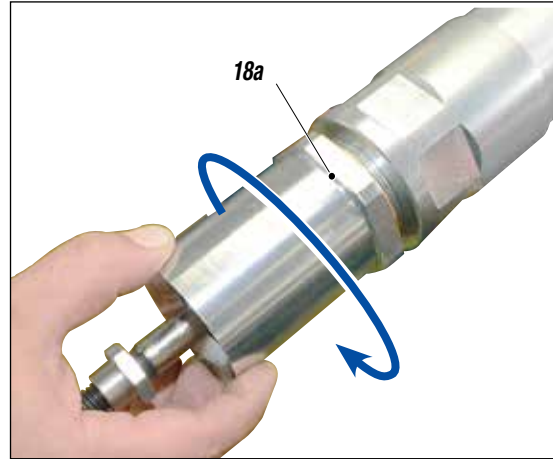
18 Necessary tools and equipment



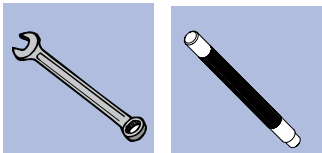
Procedure

18.1 Reassemble the washer and the shutter housing and screw the cylinder (18a)

18.2 Reassemble shovel plate (18c) and insert the motor piston



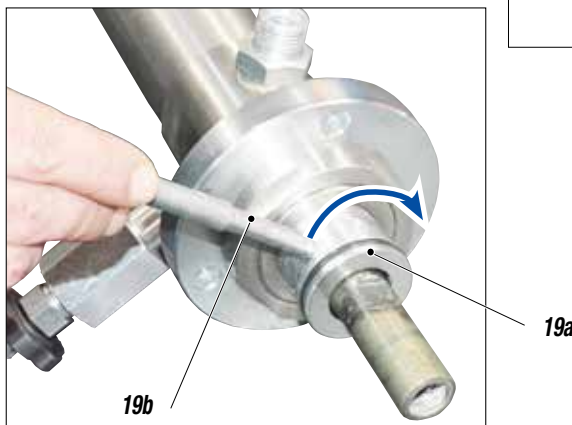
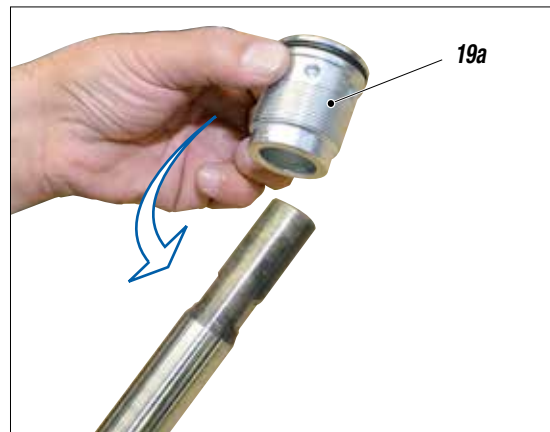
19 Necessary tools and equipment



Procedure

19.1 Insert e screw the ring nut (19a)

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



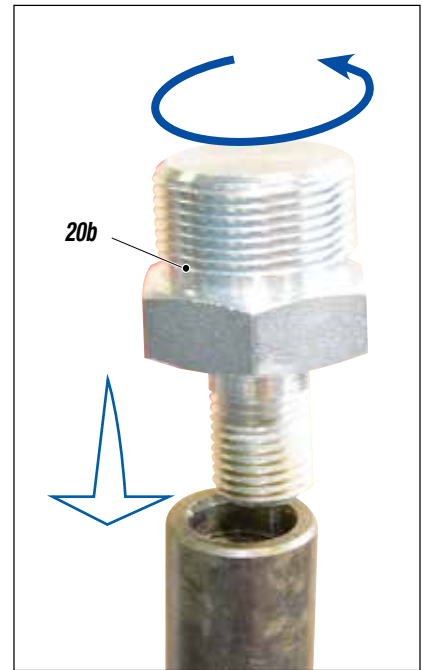
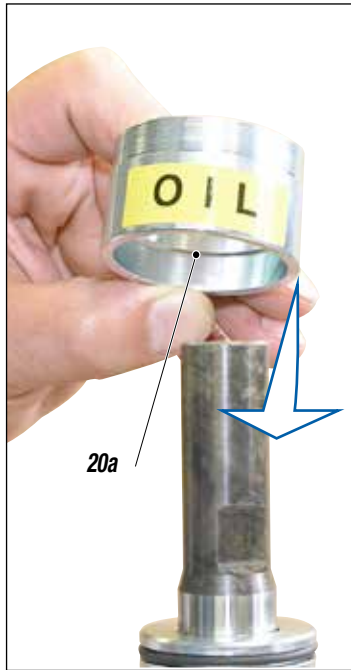
20

Necessary tools and equipment



Procedure

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



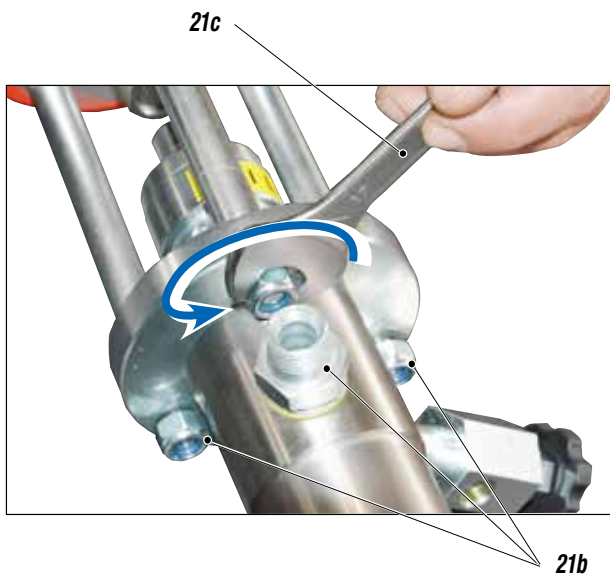
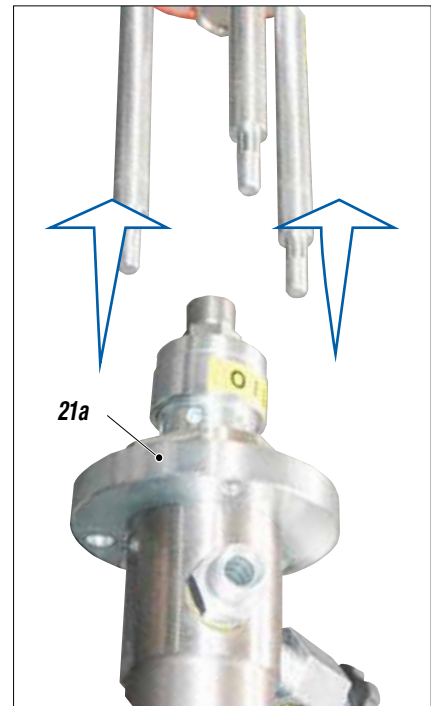
21

Necessary tools and equipment



Procedure

- 20.1 Insert the complete pumping group (21a)
- 20.2 Screw the nuts (21b) using the wrench (21c)

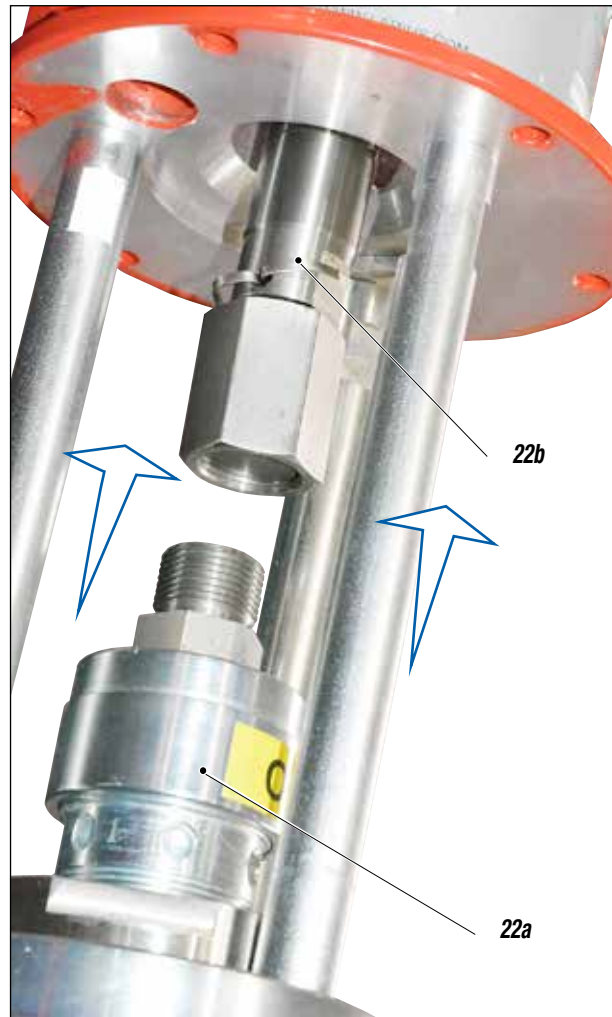


22 Necessary tools and equipment



Procedure

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

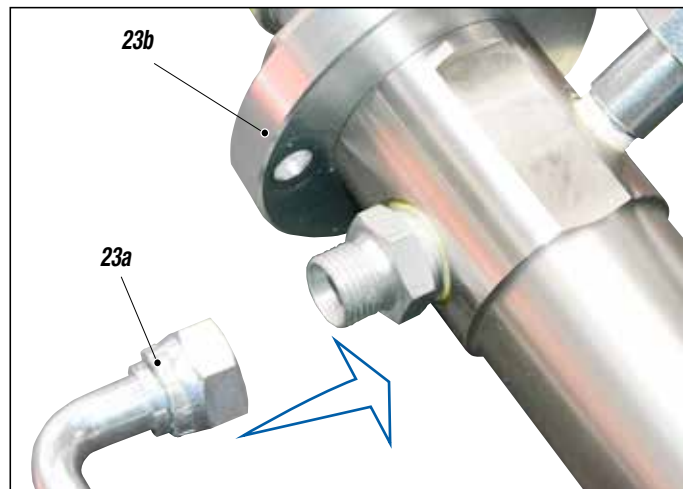


23 Necessary tools and equipment



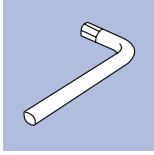
Procedure

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



24

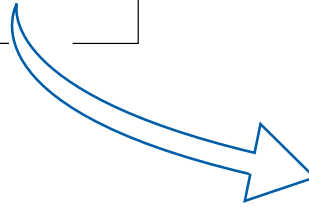
Necessary tools and equipment



Procedure

24.1 Reassemble the shovel plate (**24a**)
(if provided)

24a



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 verify 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	<ul style="list-style-type: none"> 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 possible, 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 verify 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.

SPARE PARTS



Q Complete pumping motor
pag. 32

R Spare part list pump group
pag. 34

Q VEGA PUMP 13:1 RIF. 91805 EXPLODED VIEW OF PNEUMATIC MOTOR

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

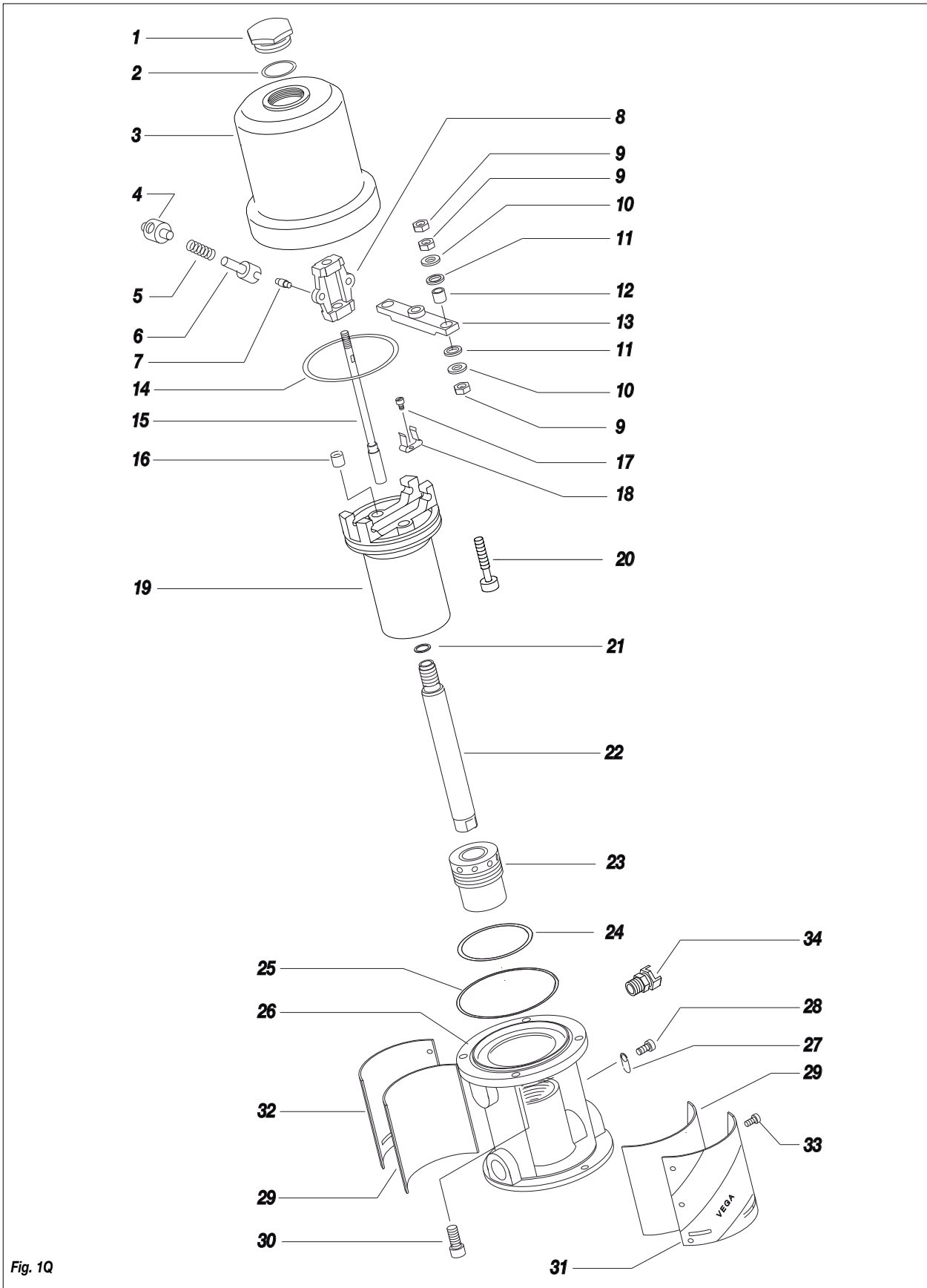


Fig. 1Q

Pos.	Code	Description	Q.ty
	91805	Complete pneumatic motor pump	-
1	96001	Cup	1
2	95075	O-Ring	1
3	91028	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 M8	6
10	32024	Washer	4
11	96111	Gasket	4
12	96112	Bush	2
13	91029	Traverse	1
14	91034	O-Ring	1
15	91033	Guide rod	1
16	96009	Rubber valve	2
17	91030	Screw M3	2

Pos.	Code	Description	Q.ty
18	91032	Traverse guide spring	2
19	91035	Motor piston	1
20	96027	Complete valve screw	1
21	91036	Washer	1
22	91043	Piston rod	1
23	96017	Complete bush	1
24	91037	O-Ring	1
25	91038	O-Ring	1
26	91042	Motor support	1
27	96210	Ground plate	1
28	96211	Screw M6	1
29	96340	Felt gasket	2
30	34008	Screw M8	4
31	91039	Front plate	1
32	91813	Technical data plate	1
33	56444	Screw	12
34	10103	Bayonet connection BSPP 3/8"	1

MOTOR GASKET KIT - CODE 40040

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

FELT GASKET KIT - CODE 40042

Pos.	Description	Q. ty
29	Felt gasket	2



Fig. 2Q

35

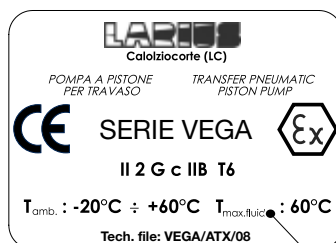


Fig. 3Q

36



Fig. 4Q

37

Pos.	Code	Description	Q.ty
35	8045	WARNING Label	1
36	19557	ATEX label	1

Pos.	Code	Description	Q.ty
37	5010	Grounding cable	1

R VEGA PUMP 13:1 EXT EXPLODED VIEW OF PUMPING - COMPLETE PUMPING UNIT CODE 91806

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

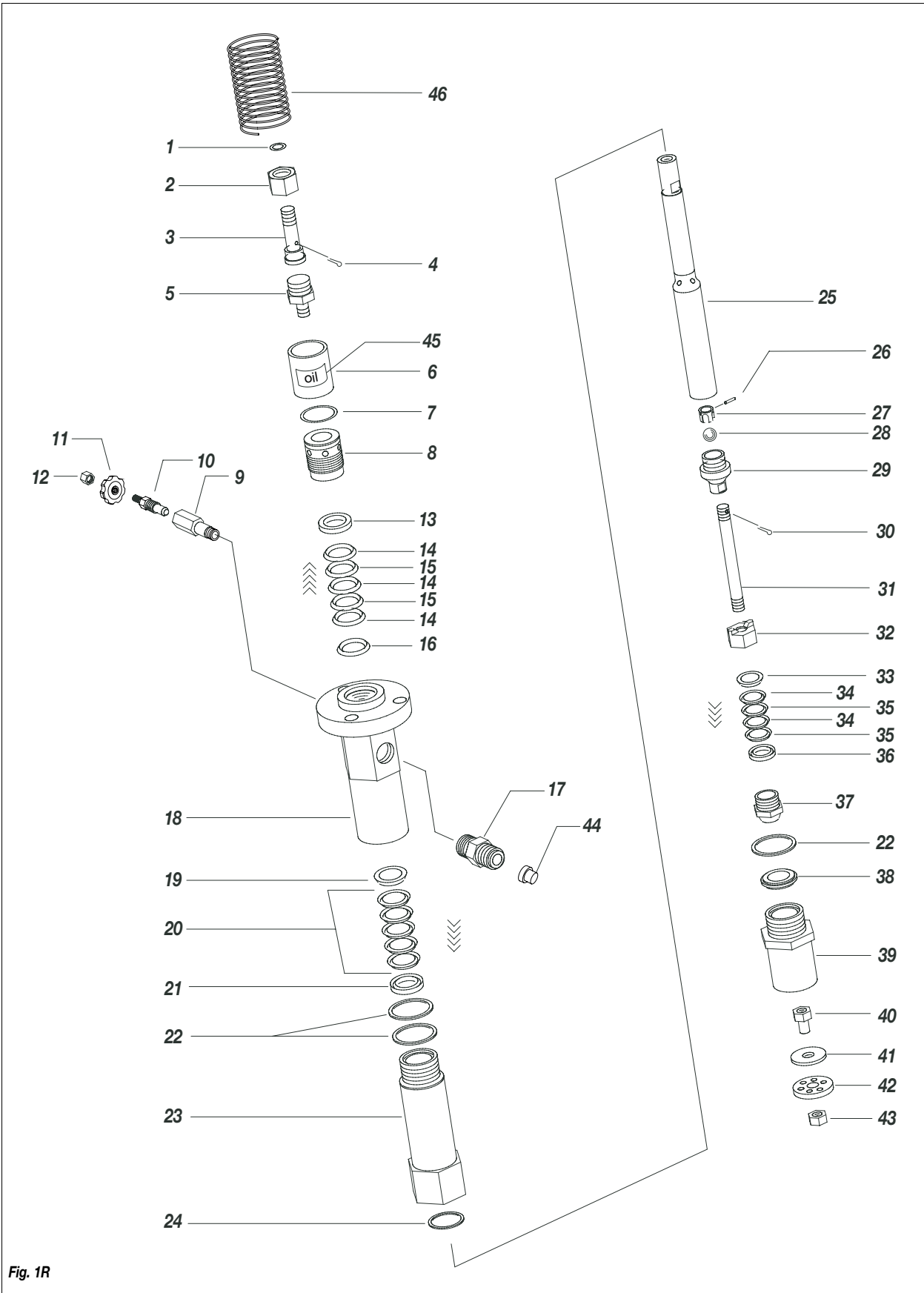


Fig. 1R

Pos.	Code	Description	Q.ty
1	96073	O-ring	1
2	91810	Connection sleeve	1
3	91808	Standard 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	Seals	3
15	96982/1	Seals	2
16	96983	Male ring for upper gaskets	1
17	3144	Material outlet pipe fitting 1/2"	1
18	96834	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	3
23	96897	Housing for lower gaskets	1

Pos.	Code	Description	Q.ty
24	96889	Seal	1
25	96988	Piston rod	1
26	96880	Ball clamp pin	1
27	96879	Ball guide	1
28	4060	Ball	1
29	96045	Connector for suction valve	1
30	96882	Split pin	1
31	96885/1	Stem for material injection	1
32	96845	Gasket blocking nut	1
33	98460	Male ring	1
34	91022	PTFE gasket	2
35	91049	Polietilene gasket	2
36	98462	Female ring	1
37	96887	Suction valve	1
38	96853	Suction valve seat	1
39	96894	Material entry cylinder	1
40	95939	Follower plate guide bush	1
41	96891	Follower plate end stop	1
42	96892	Follower plate	1
43	96893	Closing nut	1
44	107	Plug	1
45	96233	OIL label	1
46	96023/1	Spring	1

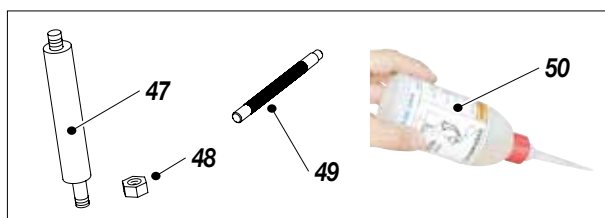


Fig. 2R

Pos.	Code	Description	Q.ty
47	91812	Tie-rod for standard pump	3
48	96080	Tie-rod nut	3
49	16135	Wrench	1
50	16340	Oil bottle	1

COMPLETE VALVE CODE 95721 Recommended complete spare - To be bought already assembled

Pos.	Description	Q.ty
9	Bushing for discharge cap	1
10	Drainage plug	1

Pos.	Description	Q.ty
11	Knob	1
12	Nut M8	1

GASKET KIT CODE 40274

Pos.	Description
13	Female ring for upper gaskets
14	Seals
15	Seals
16	Male ring for upper gaskets
19	Male ring for middle gaskets
20	Package of middle gaskets
21	Female ring for middle gaskets

Pos.	Description
22	Copper gaskets
24	Seal
30	Split pin
33	Male ring
34	PTFE gasket
35	Polietilene gasket
36	Female ring

S ATEX CERTIFICATION

DESCRIPTION

These safety instructions refer to the installation, use and maintenance of **VEGA** series piston pneumatic transfer pumps for the use in potentially explosive areas in presence of gas or vapours.



VEGA series piston pneumatic transfer pumps are mechanical equipment belonging to group II, for the use in areas in presence of gas which are classified as IIB (category 2 G). They have been designed and manufactured in compliance with the directive ATEX 94/9/CE, according to european standards EN 1127-1, EN 13463-1ed EN 13463-5.



These instructions should be followed in addition to the instructions provided in the use and maintenance manual.

TECHNICAL FEATURES

The main characteristics of piston pneumatic transfer pumps **VEGA** serie are indicated in the table below:

Type		Ratio	Supplied pressure	Ø Air inlet	Ø Product feeding	Ø Product outlet	Max operation pressure	Max rate
Standard	St. steel							
91360	91362	5:1	3 ÷ 8 bar	GC 3/8"	Ball valve	GC 3/4"	40 bar	10 l/min
91365	91361	5:1	3 ÷ 8 bar	GC 3/8"	Ball valve	GC 3/4"	40 bar	10 l/min
91368	91363	5:1	3 ÷ 8 bar	GC 3/8"	Ball valve	GC 3/4"	40 bar	10 l/min
91501	91503	23:1	3 ÷ 8 bar	GC 3/8"	Ball valve	GC 3/8"	184 bar	2,6 l/min
91910	-	45:1	3 ÷ 8 bar	GC 3/8"	Washer	GC 3/8"	360 bar	1 l/min
91911	-	45:1	3 ÷ 8 bar	GC 3/8"	Washer	GC 3/8"	360 bar	1 l/min
91912	-	45:1	3 ÷ 8 bar	GC 3/8"	Washer	GC 3/8"	360 bar	1 l/min

Max number of cycles per minute: 60

Room temperature: -20°C ÷ +60°C

Fluid max temperature: [°C]: 60°C

MARKINGS

CE  II 2 G c IIB T6 Tamb: -20°C ÷ + 60°C Tmax. fluid: 60°C Tech. File: VEGA/ATX/08

II	Group II (surface)
2	Grade 2 (zone 1)
G	Explosive environment with gas, vapour or mist
c	Constructive safety "c"
T6	Class of temperature T6
- 20°C ÷ + 60°C	Room temperature
60°C	Max temperature of process fluid
xxxxx/AA	Series number or lot number (xxxxx = PROGRESSIVE / year = AA)

Correspondence between dangerous areas, substances and grade

DANGEROUS AREA		GRADE ACCORDING TO DIRECTIVE 94/9/CE
Gas, vapour or mist	Area 0	1G
Gas, vapour or mist	Area 1	2G or 1G
Gas, vapori or mist	Area 2	3G, 2G or 1G

SAFETY INSTRUCTIONS FOR THE INSTALLATION IN DANGEROUS AREAS


Before installation please read carefully the use and maintenance manual. All maintenance operations must be carried out as reported in the manual.

- The grounding cable of these pumps must be connected by means of suitable electrical connector.
- The feeding and suction hoses should be metal pipes, or plastic pipes with metal braid or plastic pipes with textile braid equipped with a suitable grounding conductor.
- Pumps must be installed on containers made of metal or antistatic material, duly grounded.
- Gas or vapour rising from flammable liquids shall belong to the group IIB.
- The user must periodically control the presence of foulings, the cleaning and wear conditions and the proper operation of the pump, according to the type and use of the product
- The user should periodically clean the suction filter in order to prevent foreign matters entering into the pump. The air used to supply power to the pump must be filtered and come from a safe area (*SAFE AREA*).



**The pneumatic piston pumps VEGA series must not run dry.
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 responsibility that the product:

VEGA 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 13463-5
- EN 13463-1

Markings

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

Tech. File: **VEGA/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 VEGA**

Marquage / Marking / Marcatura : **II 2G**

Dépositaire / Applicant / Richiedente : **LARIUS S.r.l.**
 Via Stoppani, 21
 I- 23801 Calozziocorte (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 chapter 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.
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La documentation technique référencée : VEGA/ATX/08 dated 2008-12-15 est consignée sous le numéro d'enregistrement : n° INERIS-EQEN 021760/19. Dans le cadre de cet enregistrement, l'INERIS n'a pas examiné le contenu de la documentation technique.	The technical documentation referenced : VEGA/ATX/08 dated 2008-12-15 is consigned under the reference : no INERIS-EQEN 021760/19. Within the scope of the recording, INERIS did not examine the content of the technical documentation.	La documentazione tecnica di riferimento : VEGA/ATX/08 dated 2008-12-15 è depositata con il numero di registrazione : n° INERIS-EQEN 021760/19. Nel quadro di questa registrazione, INERIS non ha esaminato il contenuto della documentazione tecnica.
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Date de fin de validité : 2029.03.11	Validity completion date : 2029.03.11	Data di fine di validità : 2029.03.11
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Le Directeur Général de l'INERIS, Par délégation, Thierry HOUËIX Délégué Certification ATE Ex Certification Of ---	The Chief Executive Officer of INERIS, By delegation, ---	Il Direttore generale dell' INERIS, Per Delega, ---
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IM-1-02148 - Mise en application : 20/04/2016

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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 responsibility that the product:

VEGA 13:1 **Pneumatic pump for extrusion**

complies with the directives: | - EC Directive 2006/42 Machinery Directive

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 exclusively 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

Pierangelo Castagna
Managing Director

Location / Date



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