

# NOVA 1:1 2K

30:1 AIRLESS PNEUMATIC 1:1 2 COMPONENT PUMP

**OPERATING AND MAINTENANCE  
INSTRUCTIONS**



**LARIUS**  
PAINT SPRAYING EQUIPMENT

---

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

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.



## AIRLESS PNEUMATIC PUMPS FOR SPRAY PAINTING

INTRODUCTION .....	p.1	<b>N</b> DESCRIPTION FOR EXPLOSIVE AREAS .....	p.9
<b>A</b> WORKING PRINCIPLE .....	p.2	<b>O</b> DISASSEMBLY OF THE PNEUMATIC MOTOR .....	p.12
<b>B</b> TECHNICAL DATA .....	p.2	<b>P</b> DISASSEMBLY OF THE PUMPING GROUP .....	p.17
<b>C</b> DESCRIPTION OF THE EQUIPMENT .....	p.4	<b>Q</b> EXPLODED VIEW FOR 000000 STEEL PUMPING GROUP .....	p.20
<b>D</b> TRANSPORT AND UNPACKING .....	p.5	<b>R</b> EXPLODED VIEW FOR MOTOR GROUP .....	p.22
<b>E</b> SAFETY RULES .....	p.5	<b>S</b> EXPLODED VIEW FOR HIGH PRESSURE LINE FILTER .....	p.26
CONDITIONS OF GUARANTEE .....	p.6	<b>T</b> AIR GROUP COMPLETE .....	p.29
<b>F</b> TYPICAL INSTALLATION .....	p.6	<b>U</b> ACCESSORIES .....	p.30
<b>G</b> SETTING-UP .....	p.7		
<b>H</b> WORKING .....	p.7		
<b>I</b> CLEANING AT THE END OF THE WORK .....	p.8		
<b>L</b> ROUTINE MAINTENANCE .....	p.8		
<b>M</b> PROBLEMS AND SOLUTIONS .....	p.9		

Read this operator's manual carefully before using the equipment. An improper use of this machine can cause injuries to people or things.	It indicates an accident risk or serious damage to equipment if this warning is not followed.	It indicates a fire or explosion risk if this warning is not followed.	It indicates wound and finger squashing risk due to movable parts in the equipment.	It is obligatory to wear suitable clothing as gloves, goggles and face shield.	It indicates important recommendations about disposal and recycling process of products in accordance with the environmental regulations.

**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 **LARIUS S.R.L.** 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 WORKING PRINCIPLE

**NOVA** pump 30:1 2K is a pneumatic pump used in the high pressure painting without air (*Airless*) or for transferring of fluids in case of more stations of usage.

**NOVA** pump is essentially constituted of an air motor and 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.

**IMPORTANT: NEVER USE THE PUMP WITH ONLY ONE PUMPING GROUP: THE TWO PUMPING GROUP MUST ALWAYS WORKING TOGETHER AT THE SAME TIME**

So doing the pump sucks the fluid and pushes it to the outlet.

The ratio 30:1 means that the outlet pressure of fluid is 30 times higher than the pump feed air pressure.

## B TECHNICAL DATA

	"	NOVA ' \$:1 ' &?
PUMP FEED AIR PRESSURE		3-7 bar (40-90 psi)
MAXIMUM PRESSURE OF THE PRODUCT		180 bar (5200 psi)
FEED AIR INLET		3/4" GAS (M)
MAXIMUM DELIVERY (2 PUMPING GROUP)		24 l/min (3,2 gpm)
CYCLES PER LITRE	.	2,5
MAXIMUM CYCLES PER MINUTE	.	60
MATERIAL OUTLET		1" conical GAS (F)
WEIGHT		90 kg
NOISE PRESSURE LEVEL		<90 dB (A)
TOTAL HEIGHT		1110 mm

### Parts of the pump in contact with the material

Pumping group: galvanized carbon steel and cast iron or stainless steel AISI 303 and 420B

Sealing balls: stainless steel AISI 420B

Gaskets: teflon or nitrile or delrin or vulkollan



**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.**

### Other parts of the pump

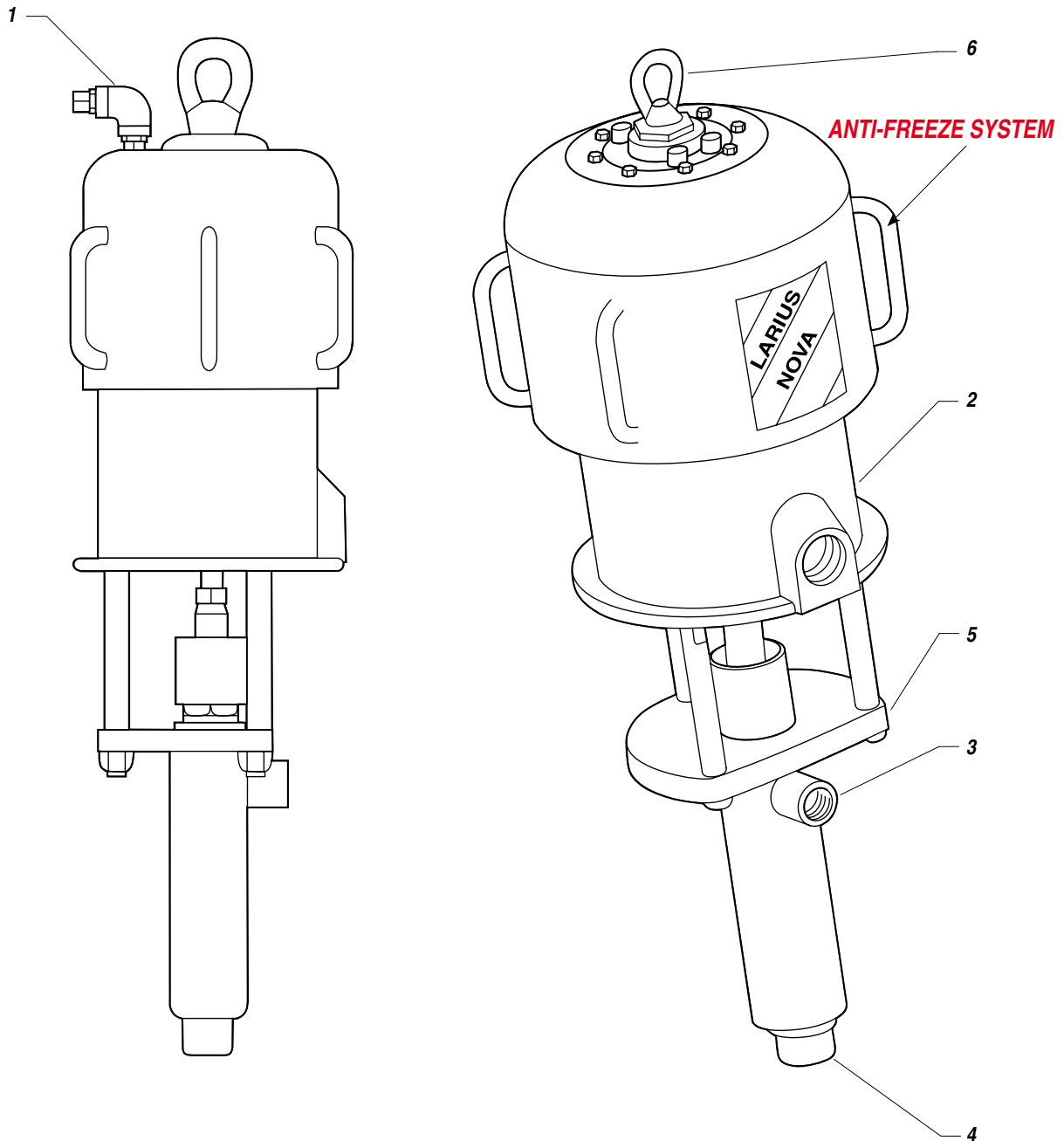
Support and cylinder for pneumatic motor: aluminium

Covering: sheet FE37

Motor piston and roller pushing mount: cast iron

## C DESCRIPTION OF THE EQUIPMENT

BCJ5' \$.%&?' <5 G'HK C'DCI AD-B; ; FCI D"CG9'9LDC@C898'K-9K': CF'89H5=C



POS.	Description
1	Pump feed air inlet
2	Pneumatic motor
3	Material outlet

POS.	Description
4	Fluid inlet
5	Fluid pumping group
6	Eyebolt for pump transport

## D 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 LARIUS 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 LARIUS.
- 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.

## E 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 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.

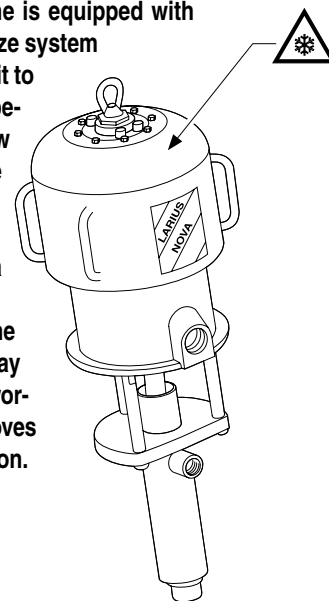


The machine is equipped with an anti-freeze system that allows it to

work even at very low temperatures. However, after a few minutes of operation, the upper metal outer surface cools dramatically.

Avoid touching the area indicated.

Contact of the skin with the low-temperature area may cause frostbite. Common working clothes and leather gloves provide adequate protection.



## CONDITIONS OF GUARANTEE



The conditions of guarantee do not apply in the following situations:

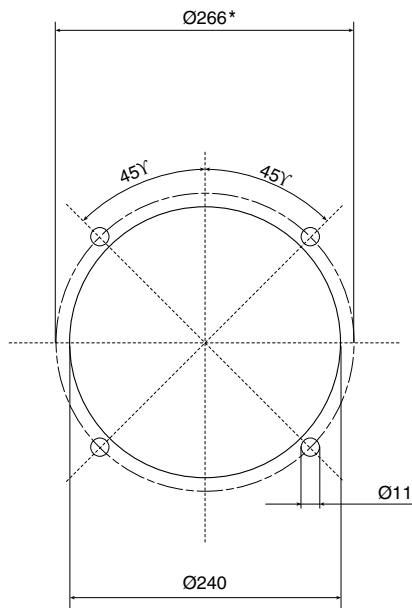
- improper washing and cleaning of components causing malfunction, wear or damage to the equipment or any of its parts;
- improper use of the equipment;
- use that does not conform with applicable national legislation;
- incorrect or faulty installation;
- modifications, interventions and maintenance 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.

## F TYPICAL INSTALLATION

The **NOVA** pump is generally supplied on support for wall fastening or on trolley or on double post ram.

For the correct fastening of the pump on other structures use the 4 holes placed at the base of the pneumatic motor (*see the illustration for dimensions*).





\*Int. holes

## G SETTING-UP

### PUMP FASTENING ON THE HOIST

For the correct fastening of the pump on the ram, follow the procedure described in the manual for use and maintenance of the double post ram.

### CONNECTION TO THE FEED AIR

For pump feed use a hose with an internal diameter no lower than 20 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 45 times (NOVA 45:1) or 60 times (NOVA 60:1) 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

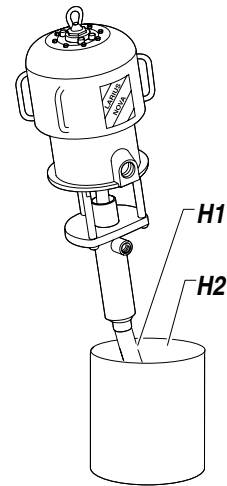
Connect the high pressure hose at the outlet of the pump. It is recommended to tighten the fittings.

## H WORKING

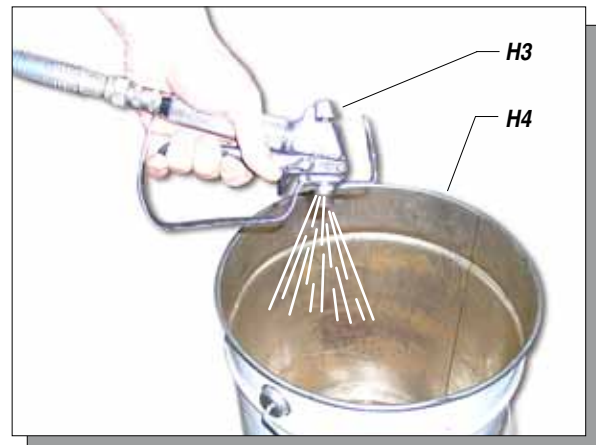


Check all the fittings for connection of the different components (pump, flexible hose, spray gun, etc.) before using the equipment.

- Dip the material pumping hose (H1) into the product tank (H2) (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).



- 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 stopping. Pump will start working again any time the trigger of the spray gun is pressed or the delivery valve is open.
- 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 (H3) or the delivery valve at the tank (H4) and drain the product left inside the pump till the material to be used has come out.



Always avoid pump idling: 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.



## I 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 minimum 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.**

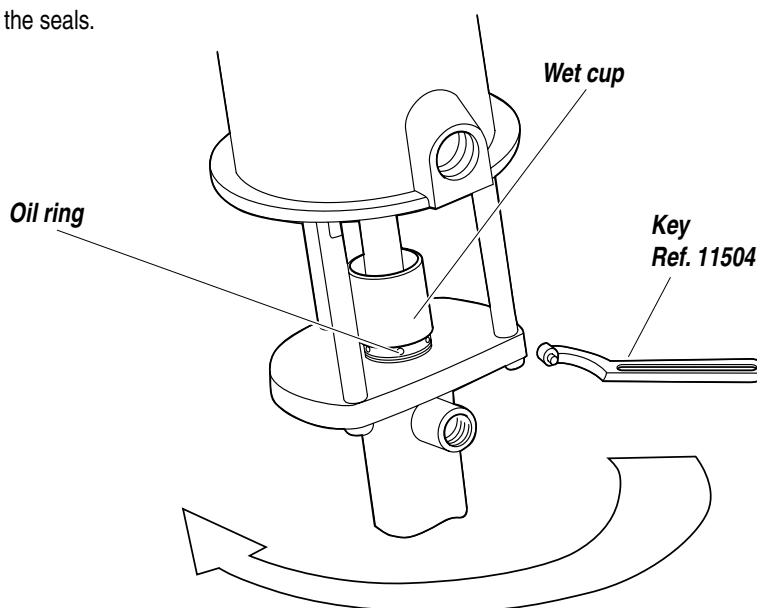
## L ROUTINE MAINTENANCE



**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 each 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, lift the wet cup (*see illustration below*). Use the wrench supply (*ref. 11504*). The packing nut must be tightened so as to avoid wastes of product, but not excessively to provoke pumping piston seizure and seals wear. In case of persistent coming out of product, replace the seals.

- To prevent the product from drying up on the piston rod, refill the cup with lubricant (*compatible with the product used*).
- Check periodically the air supply to the pump. Ensure the air is always clean and lubricated. In case of installation of a lubricator on the air supply to the pump, it is advisable to keep its cup full of a mixture of water and antifreeze liquid (*dilution ratio 4:1*).



## M PROBLEMS AND SOLUTIONS

Problem	Cause	Solution
<ul style="list-style-type: none"> <li>The pump does not start</li> </ul>	<ul style="list-style-type: none"> <li>Feed air not sufficient;</li> <li>Outlet product line clogged;</li> <li>Dried product inside the pumping element;</li> <li>Pneumatic motor blocked in the cycle reversal position;</li> <li>Parts failure of the pneumatic motor;</li> </ul>	<ul style="list-style-type: none"> <li>Check the air supply. Widen the diameter of the feed hose;</li> <li>Clean. Disconnect the outlet product pipe. Feed pump at minimum pressure and check if the pump starts without the outlet pipe;</li> <li>Disassemble the pumping group and clean;</li> <li>Turn the plug counterclockwise and push downwards the valve body. Use a metal rod and a mallet;</li> <li>Disassemble the motor and check;</li> </ul>
<ul style="list-style-type: none"> <li>Accelerated working and no pressure of the pump</li> </ul>	<ul style="list-style-type: none"> <li>There is no product;</li> <li>The pump sucks air;</li> <li>Feed air not sufficient;</li> <li>Suction valve worn or partially clogged;</li> <li>Outlet valve worn or partially clogged;</li> <li>Suction valve worn or partially clogged;</li> </ul>	<ul style="list-style-type: none"> <li>Add product;</li> <li>Open the bleeder valve. For ram version, follow the instructions in the relevant manual;</li> <li>Increase the feed air pressure;</li> <li>Disassemble the suction valve. Clean and/or replace if necessary the worn parts;</li> <li>Disassemble the outlet valve. Clean and/or replace if necessary the worn parts;</li> <li>Disassemble the suction valve. Clean and/or replace the worn parts;</li> </ul>
<ul style="list-style-type: none"> <li>The pump works, but not sufficient flow of product</li> </ul>	<ul style="list-style-type: none"> <li>Outlet product line clogged;</li> <li>The feed air pressure is too low;</li> </ul>	<ul style="list-style-type: none"> <li>Clean. Disconnect the outlet product pipe. Feed pump at minimum pressure and check if delivery increases without the outlet pipe;</li> <li>Increase air pressure;</li> </ul>
<ul style="list-style-type: none"> <li>Leakage of product from the wet cup</li> </ul>	<ul style="list-style-type: none"> <li>Upper gaskets worn.</li> </ul>	<ul style="list-style-type: none"> <li>Tighten the packing nut. In case of persistent waste of product, replace the upper gaskets of the pumping element.</li> </ul>



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

## N DESCRIPTION FOR EXPLOSIVE AREAS

These safety instructions refer to the installation, use and maintenance procedures for **NOVA** series **LARIUS** pneumatic piston pumps for decanting. These pumps are designed for use in potentially explosive areas where gas or vapours are present.



These instructions must be followed in addition to the warnings given in the user and maintenance manual.



**NOVA series LARIUS pneumatic piston pumps are group II mechanical devices for use in the presence of gas in zones classified as IIB (category 2 G). They have been designed and constructed in accordance with ATEX Directive 94/9/EC and the European standards: EN 1127-1, EN 13463-1ed EN 13463-5.**


## TECHNICAL FEATURES

The main characteristics of **NOVA** series pneumatic piston pumps are indicated in the table below:

Ratio	Input pressure	Ø Air intake	Ø Material intake	Ø Material outlet	Ø Max working pressure	Max capacity
30:1 2K	3 ÷ 6 bar	CG 3/4"	Ball valve	CG 1. 1/2"	180 bar	24 l/min
45:1	3 ÷ 6 bar	CG 3/4"	Ball valve	CG 1. 1/2"	270 bar	14 l/min
55:1	3 ÷ 6 bar	CG 3/4"	Plate	CG 1"	330 bar	12 l/min
60:1	3 ÷ 6 bar	CG 3/4"	Ball valve	CG 1"	360 bar	12 l/min
68:1	3 ÷ 6 bar	CG 3/4"	Ball valve	CG 3/4"	410 bar	11 l/min

• Environment temperature: -20°C ÷ +60°C • Max. fluid temperature: 60°C • Maximum number of cycles per minute: 60

## MARKING

CE  II 2 G c IIB T6 • Environment temp.: -20°C ÷ + 60°C • M fluid temperature: 60°C • Tech. File: NOVA/ATX/08

<b>II =</b>	Group II ( surface)
<b>2 =</b>	Category 2 (zone 1)
<b>G =</b>	Explosion hazardous environment with presence of gas, fog and vapour
<b>c =</b>	Manufacturing safety "c"
<b>T6 =</b>	Class of temperature T6
<b>- 20°C ÷ + 60°C</b>	Environment temperature
<b>60°C</b>	Maximum fluid temperature
<b>xxxx/AA</b>	Serial number (xxxx = PROGRESSIVE/ year = AA)

Relation between hazardous areas, products and categories

DANGEROUS AREA		CATEGORIES AS PER RULES 94/9/CE
Gas, vapour or fog	Zone 0	1G
Gas, vapour or fog	Zone 1	2G or 1G
Gas, vapour or fog	Zone 2	3G, 2G or 1G

## SAFETY INSTRUCTIONS FOR ONSTALLATIONS IN HAZARDOUS AREAS



**Before proceeding with the installation carefully read the use and service manual. All the service operations must be carried out as stated in the manual.**

- The M.T. cable of the above mentioned pumps must be grounded by means of an appropriate anti-loosening connection element.
- The pipes used to connect suction and delivery must be metallic, or plastic with metallic braid or plastic with fabric braid with suitable earthing cable.
- The pumps must be installed upon grounded barrels made from metallic or anti-static materials.
- Gas and vapour of flammable liquids must belong to the group IIB.
- According with the nature of the operations and products, the operator must regularly check the presence of deposit, the cleaning, the wearing and the correct pump's functioning.
- The user must periodically clean the filter located upon the suction unit in order to prevent solids from reaching the pump's internal elements. The air feeling the pump needs to be filtered and originated by a safe area. (SAFE AREA).



**The NOVA series pneumatic piston pumps must not be made to run without a proper load.**



**All the operations, installation and service, must be carried out by qualified operators.**

## EXAMPLE OF INSTALLATION



The diagram illustrates a typical installation example of a LARIUS pneumatic piston pump for decanting.

## SAMPLE DECLARATION OF CONFORMITY

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

declare under our sole responsibility that the product

### **NOVA series pneumatic piston pumps for decanting**

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

#### Marking

CE II 2 G c IIB T6 • Eanvironment temp.: -20°C ÷ + 60°C  
• M. fluid temperature: 60°C • Tech. File: NOVA/ATX/08

Technical file: NOVA/ATX /08

Technical file c/o: INERIS (0080)

Calolziocorte- LC

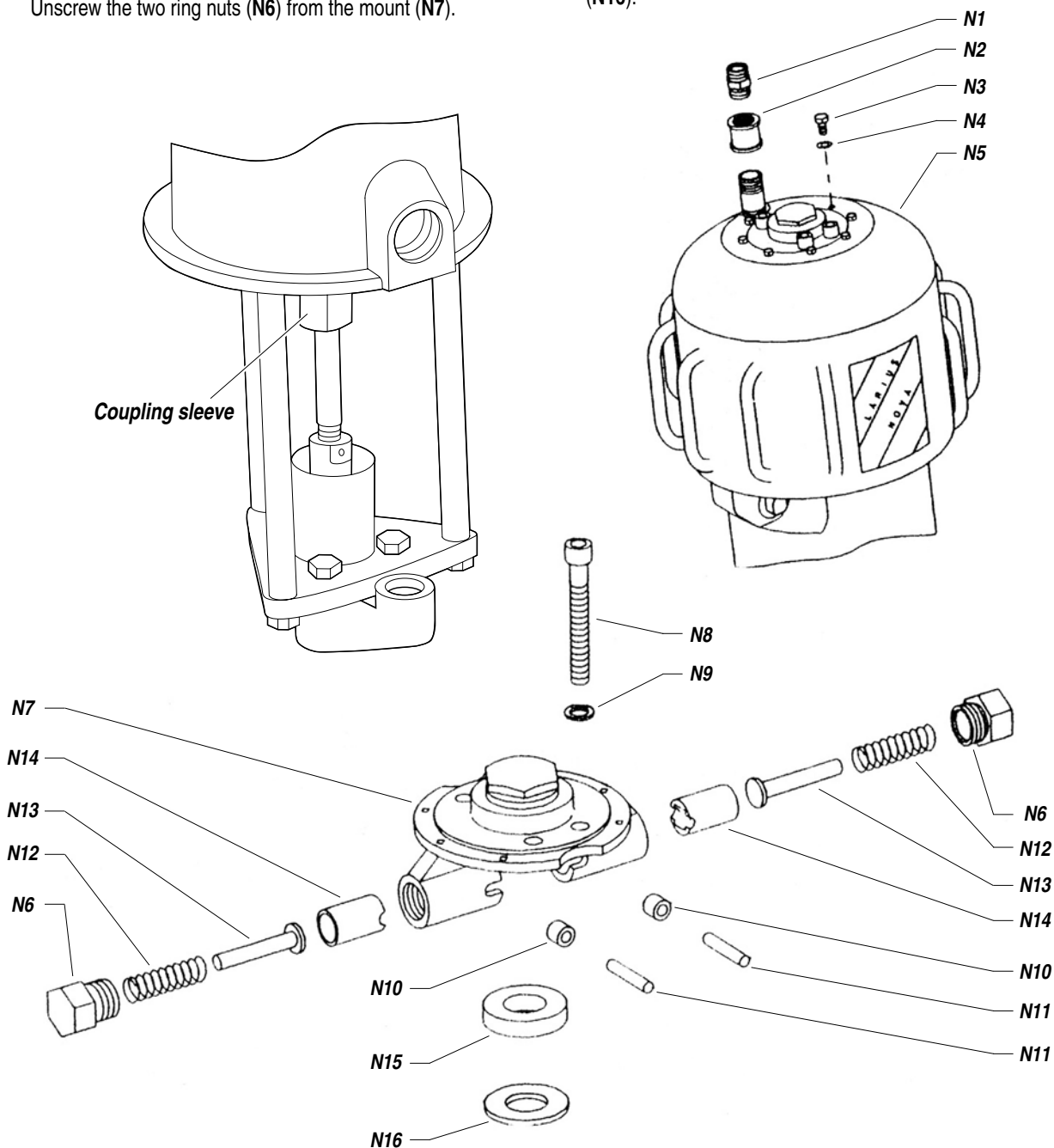
Signature (LARIUS)

## 0 DISASSEMBLY OF THE PNEUMATIC MOTOR

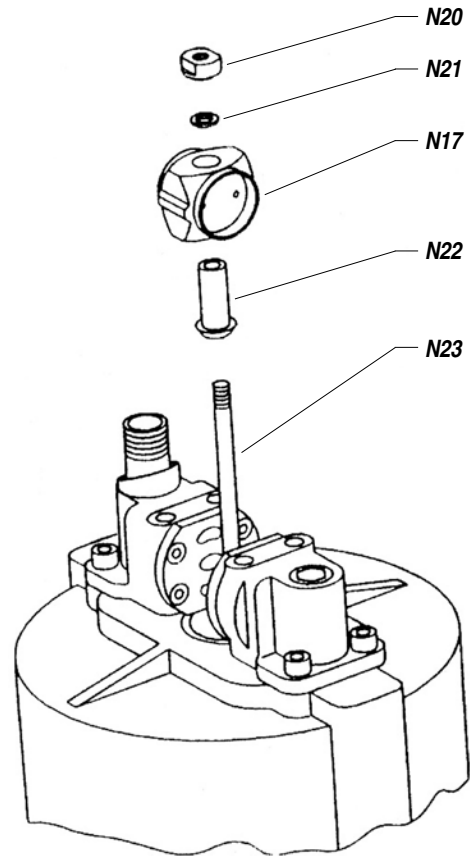
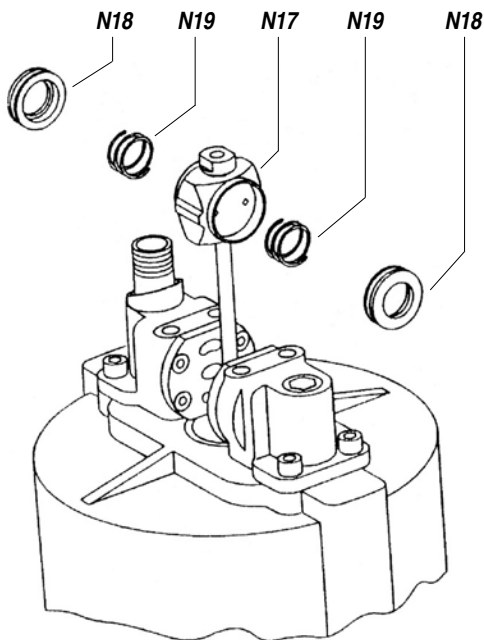


Always close the compressed air supply and release the pressure in the plant before disassembling the pneumatic motor of the pump.

- Unscrew the coupling sleeve so as to disconnect the pumping group from the motor.
- Disconnect the air feed pipe to the pump.
- Unscrew the fitting (N1) and the sleeve (N2).
- Turn counterclockwise the screws (N3) [take care of the washers (N4)] and remove the covering (N5).
- Unscrew the two ring nuts (N6) from the mount (N7).
- Turn counterclockwise the screws (N8) [take care of the washers (N9)] and extract the mount (N7) together with the rollers (N10) and the pins (N11).
- Extract the spring (N12), the spring guide rod (N13) and the roller pushing piston (N14). Ensure the spring slides freely on the guide rod, the guide rod slides into the roller pushing piston and this last slides into the mount hole. Replace possible damaged parts.
- Check the roller (N10) and the pin (N11) are undamaged. Replace them if damaged.
- Remove and check the rubber pad (N15) and the washer (N16).



- Pull upwards the seat (N17) so as to take out the valves (N18) and the springs (N19) (clean and/or replace the worn parts).
- Unscrew the lock nut (N20) [take care of the washer (N21)] by keeping the bush (N22) blocked using a key.
- Extract the seat (N17) from the rod (N23).
- Unscrew the bush (N22) (if necessary, keep the rod (N23) blocked on the threaded part using pliers with the bits wrapped in rags to avoid damage to thread).

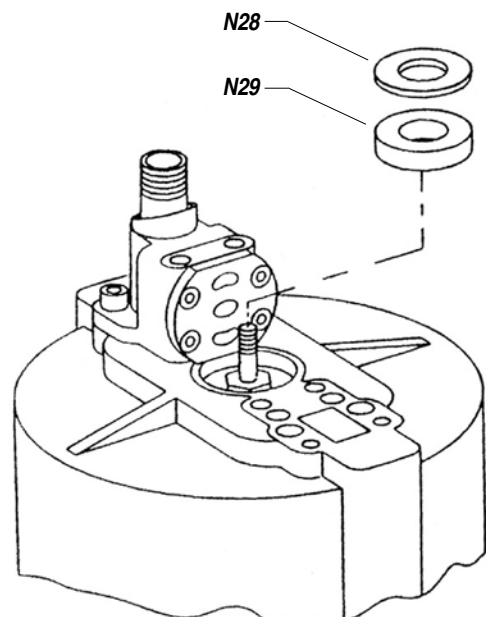
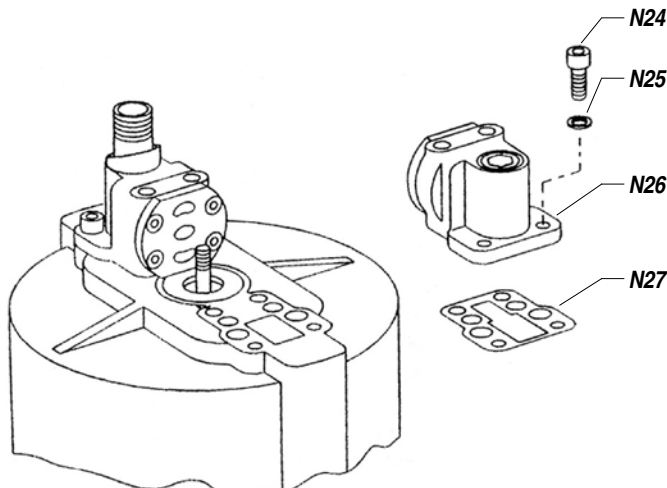


- Remove the screws (N24) [take care of the washers (N25)], a manifold (N26) and the gasket (N27).

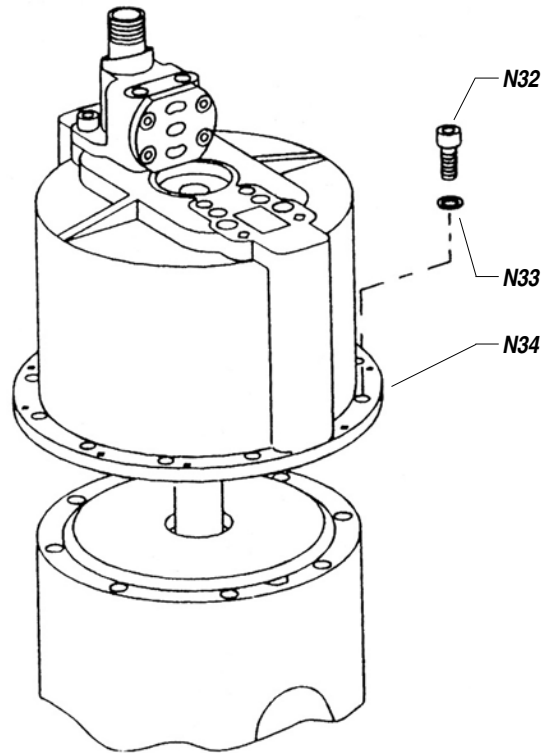
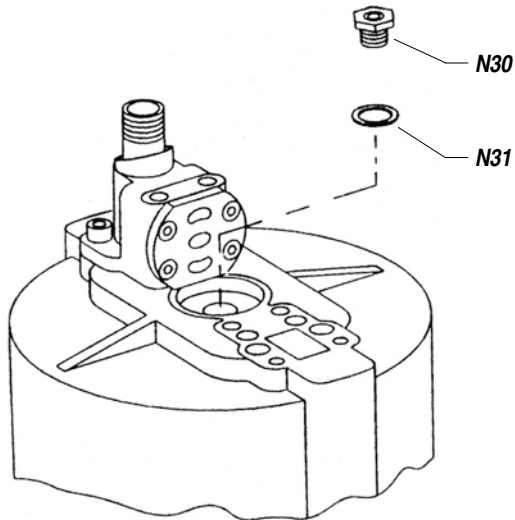


**Handle with care the manifold. The edges of its plate are very sharp.**  
**Important: do not remove the other manifold if not necessary (it will facilitate the fastening of the manifold removed).**

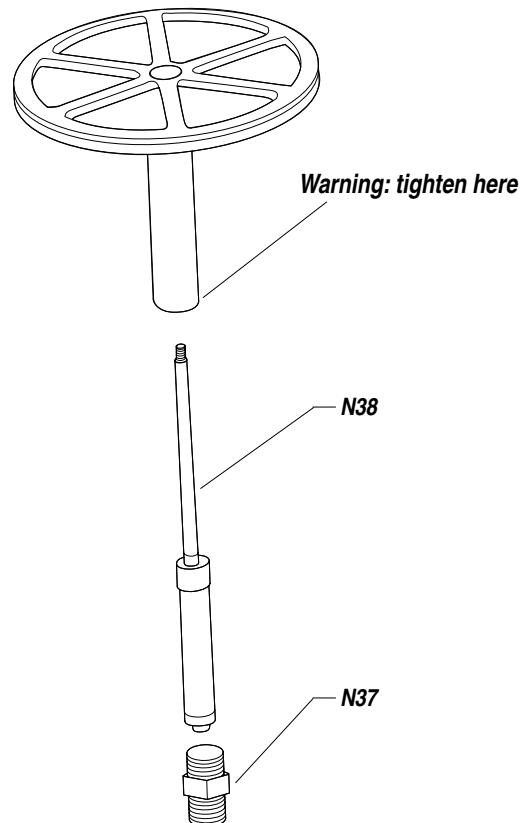
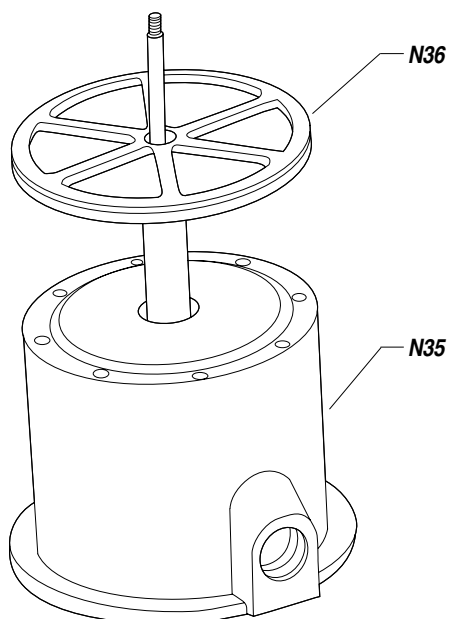
- Using a screwdriver, extract the washer (N28) and the rubber pad (N29).



- Turn counterclockwise the trip rod bearing (N30) [take care of the washer (N31)] and check the seal inside the screw (N30) is undamaged.
- Take out the screws (N32) [take care of the washers (N33)] and remove carefully the cylinder (N34) (do not bend it during extraction in order to avoid that motor piston may damage the internal surface of the cylinder).



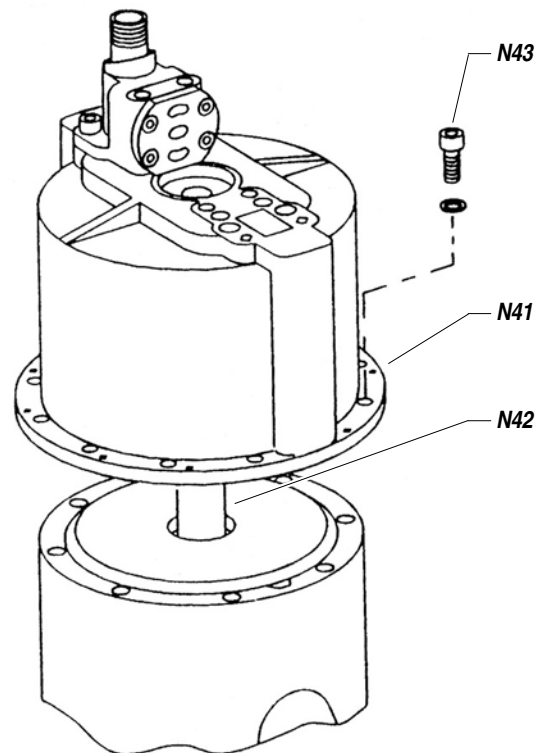
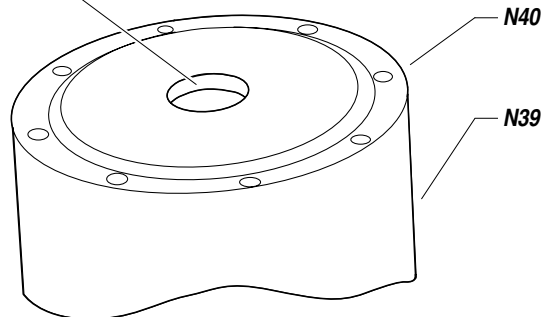
- Extract the motor piston from the motor support (N35).
- Verify the O-ring (N36) is undamaged.
- Tighten the lower edge of the piston rod using pliers (see illustration) and unscrew the fitting (N37) with a key.
- Remove the motor rod (N38) and check it is undamaged.
- Rub the motor rod (N38) with vaseline grease before inserting it into the housing of the piston rod.
- Tighten again with pliers the lower edge of the piston rod and screw the fitting (N37) (application of a sealant on the thread is advisable).





- Check the gas ring inside the support (N39) is undamaged.
- Check the gasket (N40) is undamaged and correctly positioned.
- Coat the inner walls of the cylinder (N41) with a thin layer of vaseline grease.
- Insert the motor piston (N42) into the cylinder (N41) carefully.
- Fasten the cylinder (N41) on the support (N39) (respect the position) and at the same time insert the piston rod into the support.
- Turn clockwise the screws (N43).

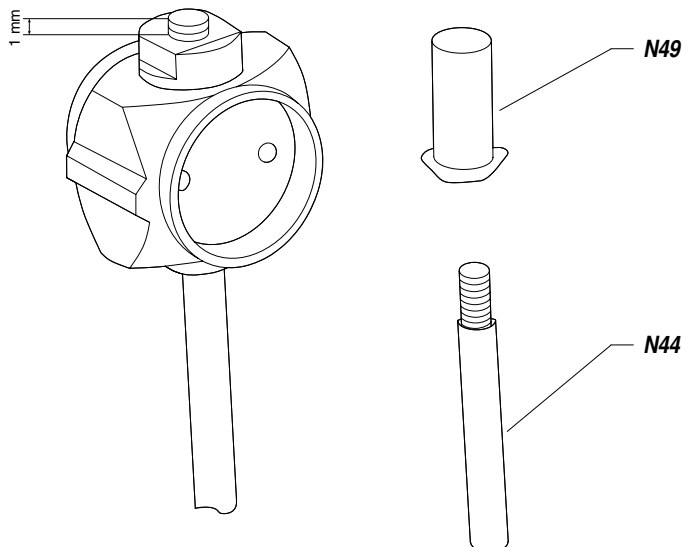
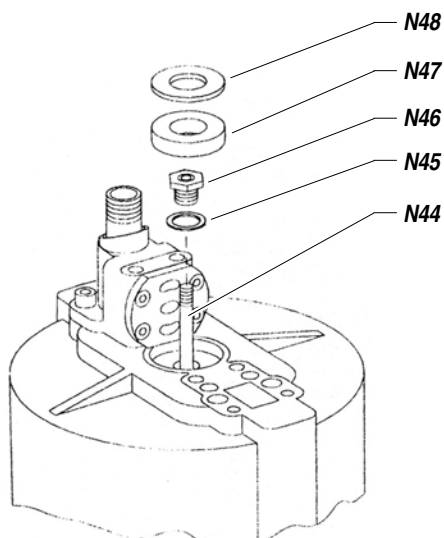
Check gas ring



- Insert into the motor rod (N44) the washer (N45).
- **Carefully insert** the trip rod bearing (N46) into the motor rod (turn it slowly following the direction of the thread) and screw it on the cylinder (N41).
- Insert the rubber pad (N47) and the washer (N48) into the support.
- Screw the bush (N49) on the motor rod (N44). Insert the seat (N50), the washer (N51) and screw the lock nut (N52).

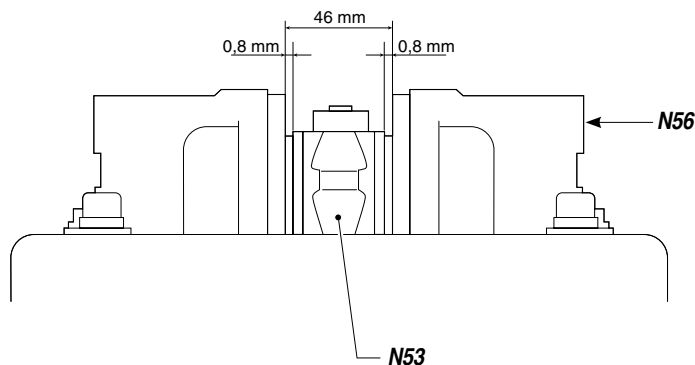
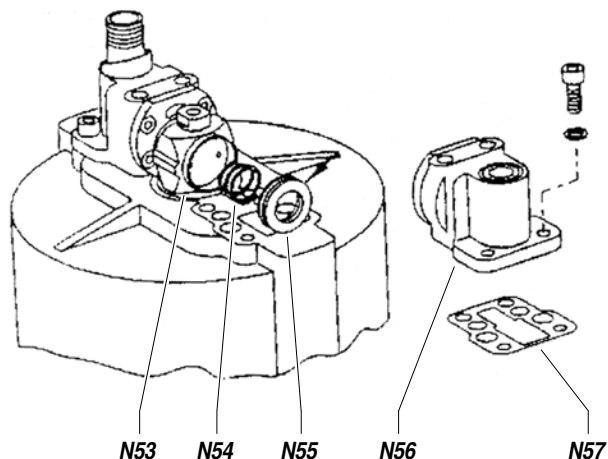


Adjust bush and lock nut so as the rod (N44) just out of about 1 mm from the lock nut (see illustration).

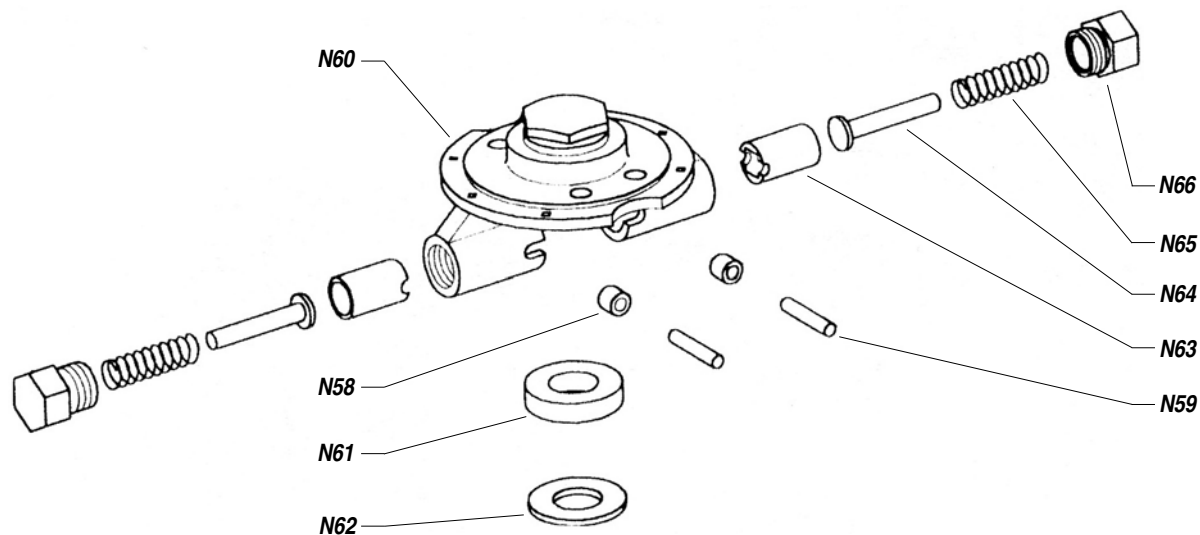
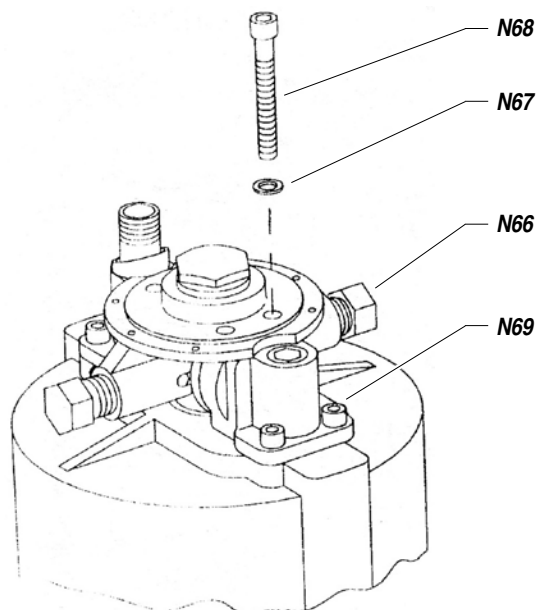


- Insert the springs (N54) and the valves (N55) into the seat (N53). Position the seat on the pump support and lay the manifold (N56) on the seat [do not forget the gasket (N57)].
- Fasten the manifold with screws (*do not tighten*) ensuring it is perfectly parallel to the other manifold and the distance between them is 46 mm (*see illustration*).

The distance between the walls of the manifold and the edge of the seat must be about 0,8 mm.



- Rub the rollers (N58) and the pins (N59) with vaseline grease and insert them into the mount (N60).
- Rub the rubber pad (N61) and the washer (N62) with vaseline grease and insert them into the mount (N60).
- Grease the roller pushing pistons (N63), the spring guide rods (N64), the springs (N65) and insert them into the mount (N60).
- Fasten without tightening the ring nuts (N66) on the mount (N60).
- Fasten the mount on the manifolds and tighten the screws (N68) [do not forget of washer (N67)].
- Tighten the ring nuts (N66) and the screws (N69).
- Assemble again the covering and all the fittings of the air supply line.



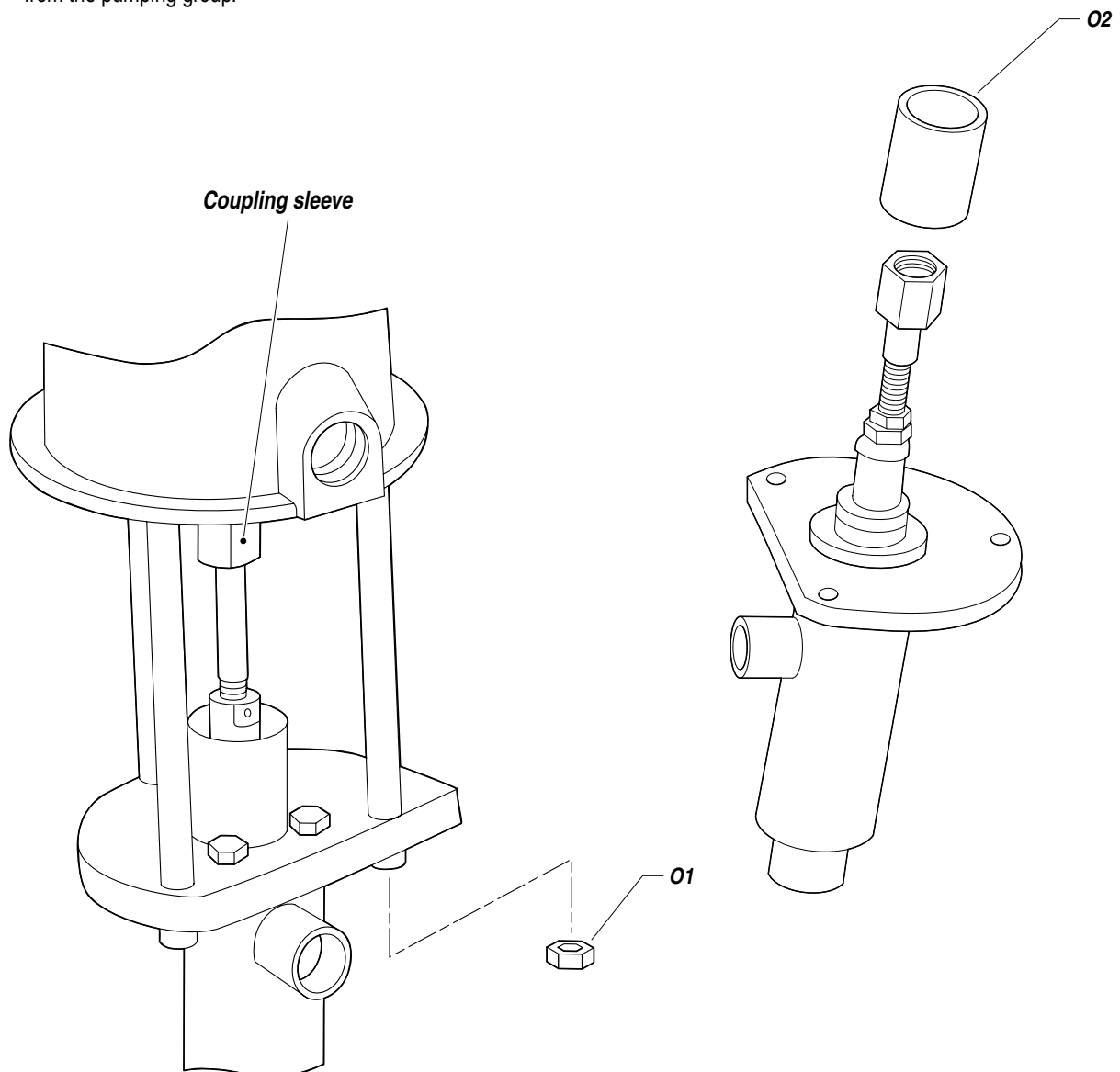
## P DISASSEMBLY OF THE PUMPING GROUP (NOVA 2K HAS TWO PUMPING GROUP)



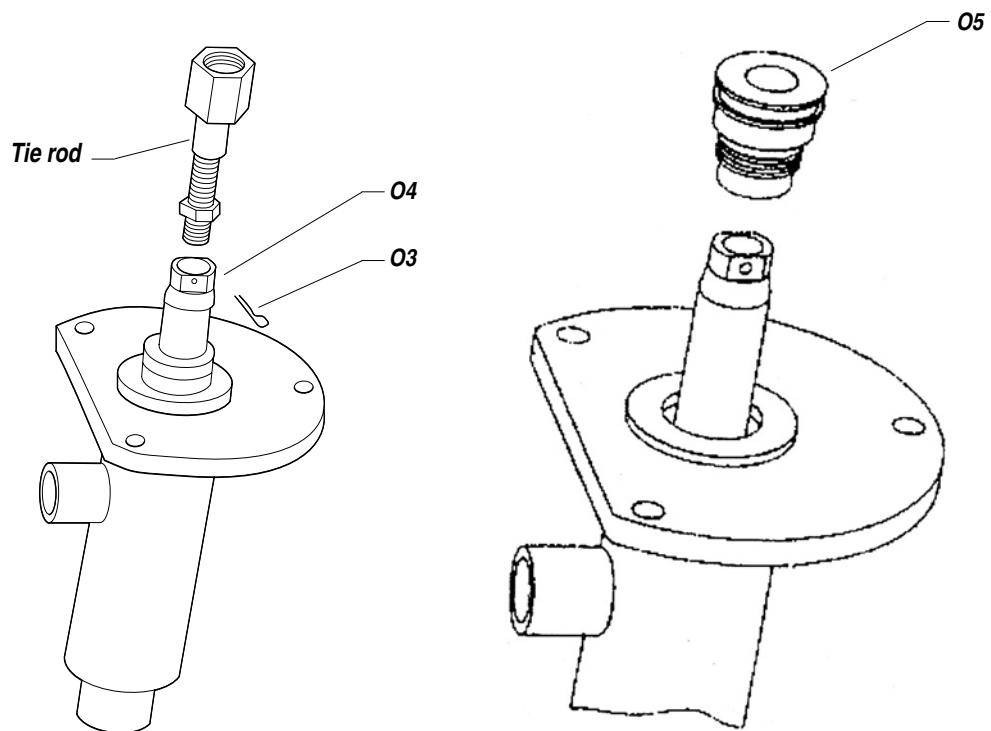
Always close the compressed air supply and release the pressure in the plant before disassembling the pumping group. If the product being used is toxic, it is suggested to follow the cleaning procedure on page 8 to avoid the contact with the product during the disassembling of the pumping element.

- Disconnect the suction pipe and the outlet tube of the product from the pumping group.

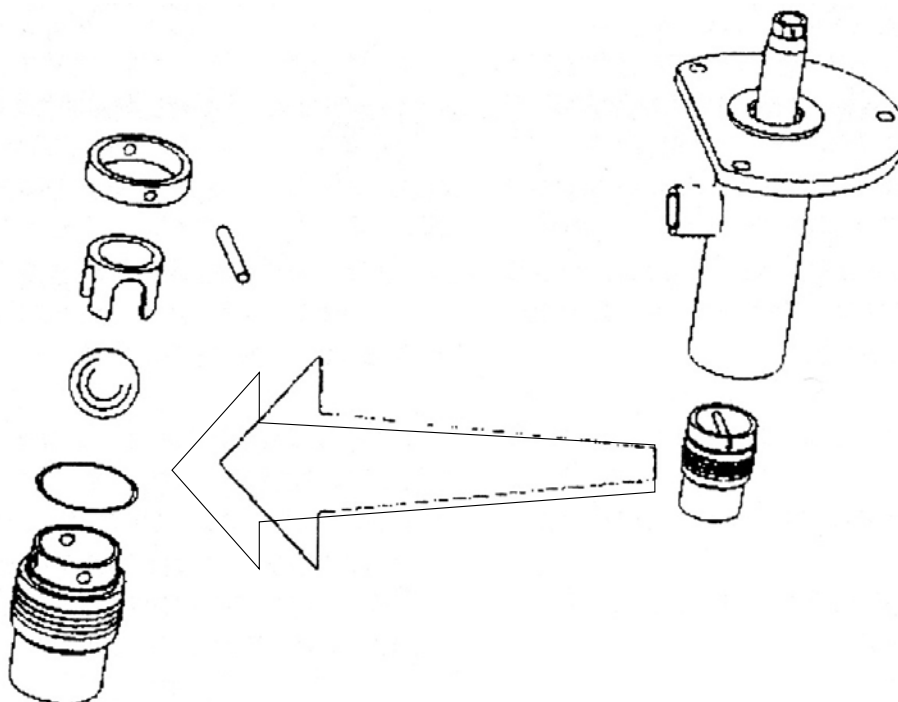
- Unscrew the coupling sleeve so as to disconnect the pumping group from the motor.
- Remove the nuts (O1) and take out the pumping group.
- Remove the wet cup (O2).



- Remove the split pin (03), loosen the nut (04) and unscrew the tie rod from the piston rod.
- Unscrew the packing nut (05).

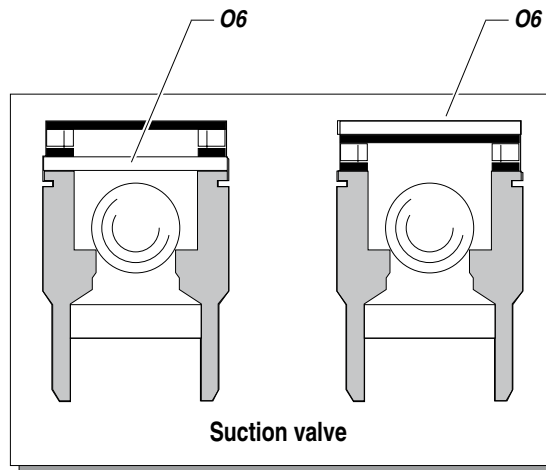


- Unscrew the suction valve. Clean and/or replace its parts, if necessary.

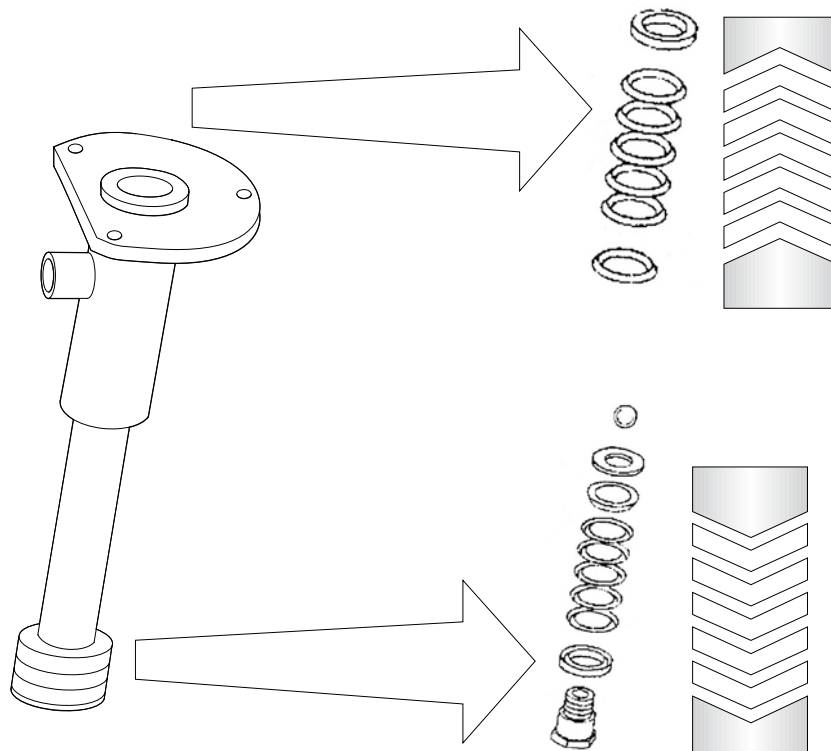




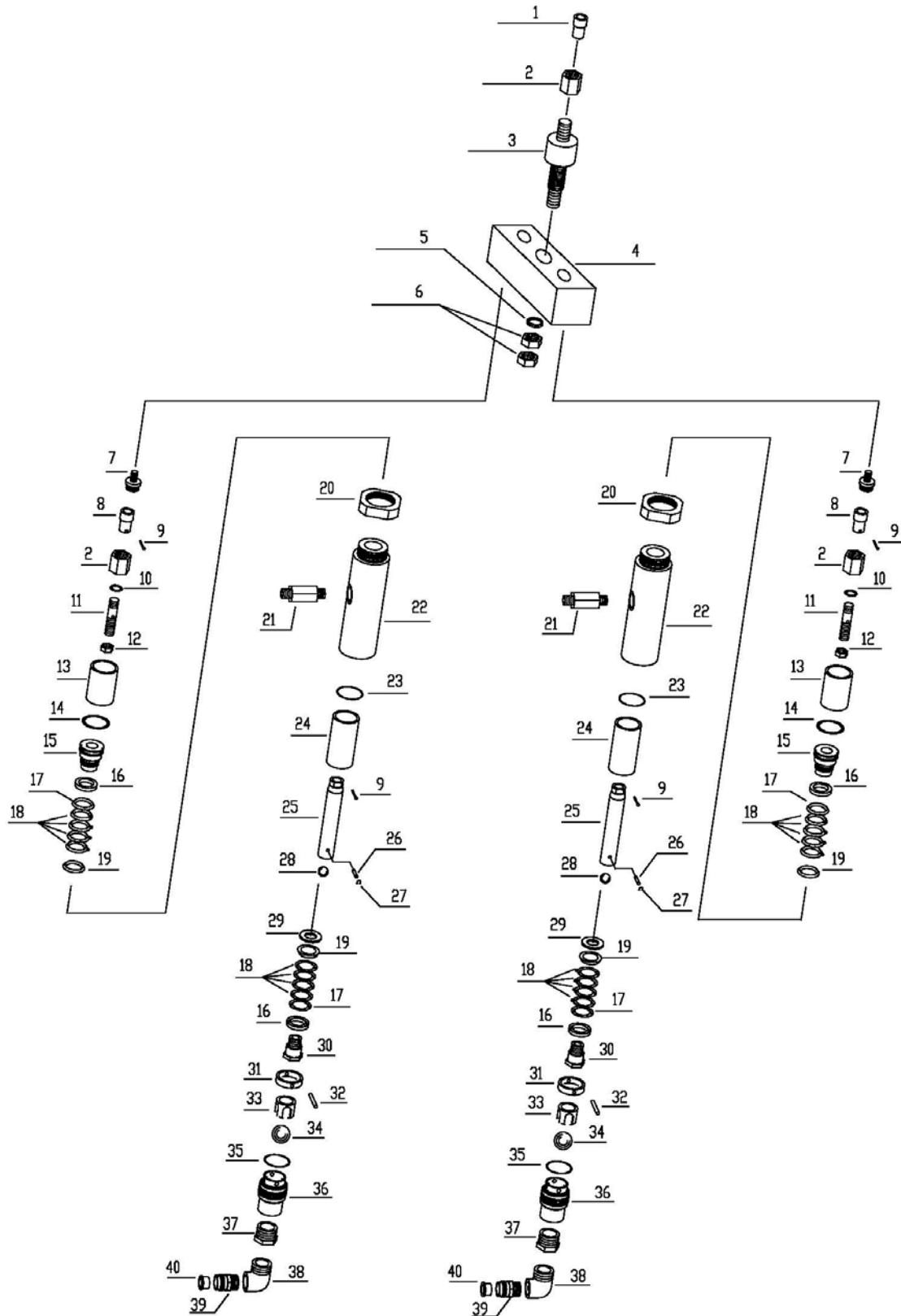
It is possible to increase the suction valve ball stroke placing the stop ball pin (O6) on the upper holes of the suction valve. This modification is suggested in case of very viscous products. The same operation can be performed on the piston rod.



- Extract the piston rod from the bottom.
- Disassemble the piston rod and replace the gaskets worn.
- Remove the upper gaskets, if necessary, to be replaced.
- For the correct reassembling see illustration and the exploded view on page 18.



# EXPLODED VIEW FOR CARBON STEEL PUMPING GROUP



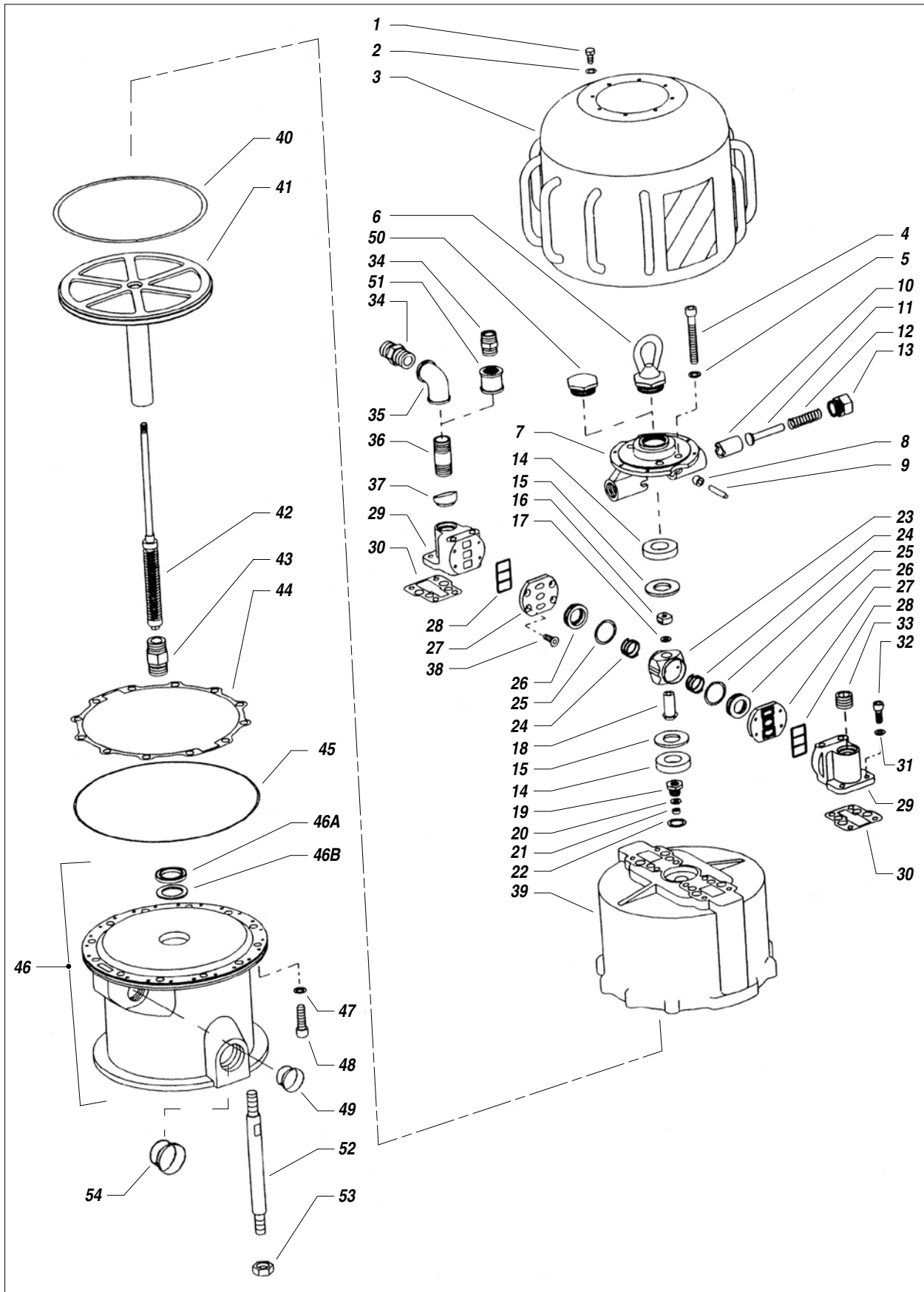
# LIST OF SPARE PARTS FOR 2K POUMPING GROUP

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

POS.	CODICE CODE	Q.TA' Q.TY	DESCRIPTION
1	14-02-013	1	BUSH
2	95004	3	SLEEVE
3	14-02-009	1	TIE ROD
4	14-02-008	1	CROSSPIECE
5	95110	1	WASHER
6	95007	2	NUT
7	14-02-007	2	JOINT
8	95003	2	BUSH
9*	95015	4	SPLIT PIN
10	95005	2	O-RING
11	95006	2	TIE ROD
12	95007	2	NUT
13	95008/1	2	CUP
14	95008/3	2	O-RING
15	95502/1	2	PACKING NUT
16*	98203	4	FEMALE RING
17*	95504	4	PTFE "V" GASKET
18*	95505	16	LEATHER "V" GASKET
19*	98204	4	MALE RING
20	95129	2	NUT
21	95126	2	FILTER FITTING
22	95252	2	HOUSING
23	95016	2	GASKET
24	98208	2	SLEEVE
25	98202	2	PISTON ROD
26	98205	2	PIN
27*	95019	4	ELASTIC RING
28	95021	2	7/8 " BALL
29	98206	2	PACKING NUT
30	98207	2	PISTON VALVE
31	95024	2	RING
32	95025	2	PIN
33	95026	2	BALL GUIDE
34	95027	2	1-1/4 " BALL
35*	95028	2	O-RING
36	95029	2	SUCTION VALVE
37	95030	2	REDUCTION M-F
38	95031	2	ELBOW M-F
39	95032	2	SUCTION PIPE FITTING
40	96099	2	GASKET

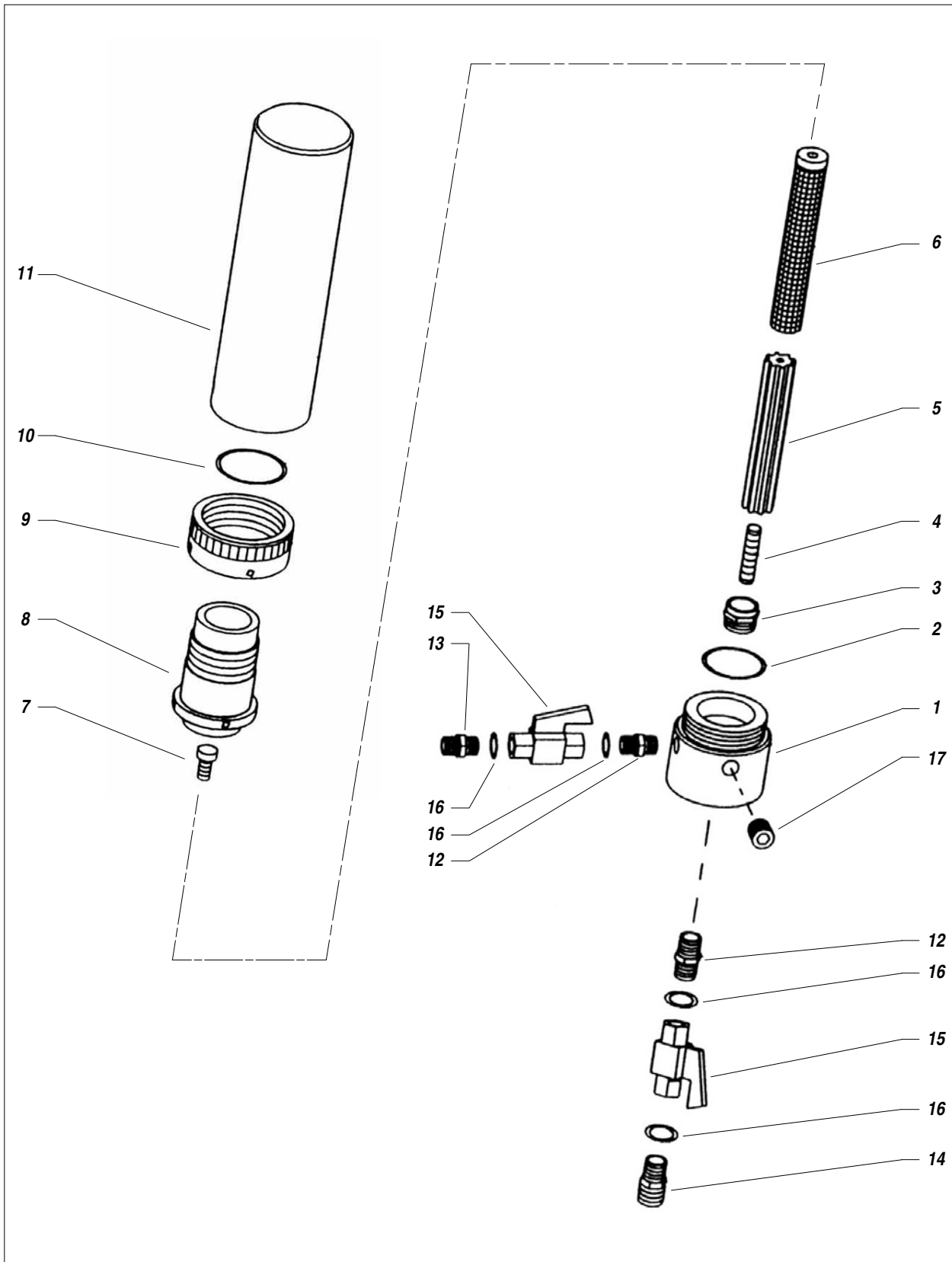
\* 40075 – poumping gasket kit



**R EXPLODED VIEW FOR MOTOR GROUP****WARNING:** always indicate code and quantity for each part required.

Pos.	Code	Description	Pos.	Code	Description
1	95062	Screw	29	95070	Manifold
2	95063	Washer	30*	95072	Manifold gasket
3	95064	Covering	31	95096	Washer
4	95065	Screw	32	95068	Screw
5	95066	Washer	33	95067	Plug 3/4" conical GAS
6	95061	Eyebolt	34	95090	Fitting
7	95109	Support	35	95089	Elbow 3/4" GAS
8	95092	Roller	36	95088	Extension
9	95091	Pin	37	95099	Gas ring
10	95084	Roller piston	38	95074	Screw
11	95085	Spring guide	39	95100	Motor cylinder
12	95086	Spring	40*	95101	O-ring
13	95087	Ring nut	41	95102	Motor piston
14	95093	Shock absorber	42	95103	Motor rod
15	95094	Washer	43	95104	Fitting
16	95095	Lock nut	44	95105	Gasket
17	95096	Washer	45	95106	O-ring
18	95098	Bush	46	95107	Complete motor mount
19	95078	Rod guide screw	46A*	3314	Gas ring
20*	95079	Leather ring	46B*	95082	Leather ring
21*	95080	Seal	47	95114	Washer
22*	33031	Copper washer	48	95083	Screw
23	95097	Valve housing	49	95159	Plug
24	95077	Spring	50	510040	Plug
25*	95075	O-ring	51	95944	Sleeve 3/4" GAS
26	95076	Traverse reverse valve	52	95002	Tie rod
27	95073	Manifold plate	53	95013	Nut
28	95071	Plate gasket	54	95229	Plug

\*Motor gasket kit for NOVA pump Ref. 40065

**G EXPLODED VIEW FOR HIGH PRESSURE FILTER****WARNING:** always indicate code and quantity for each part required.

Nova 30:1 2K / 45:1 / 60:1

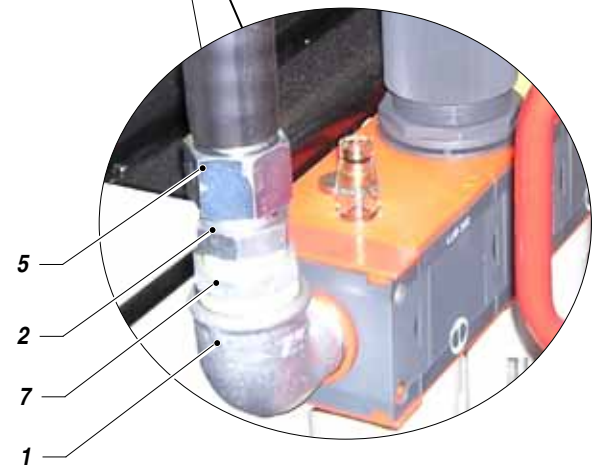
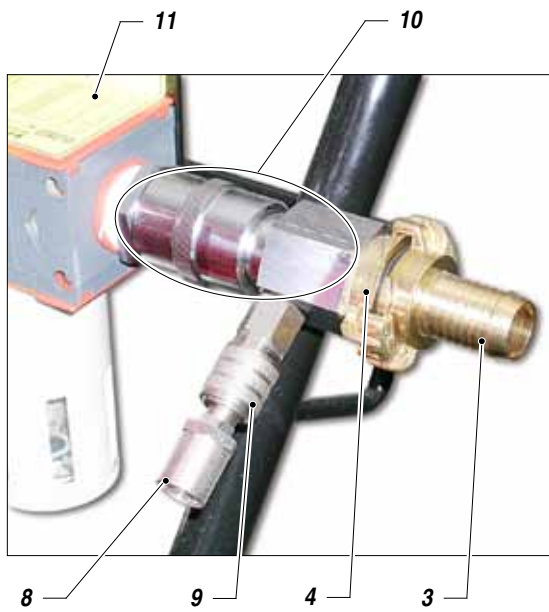
Pos.	Code	Description	Pos.	Code	Description
	<b>95200</b>	<b>Complete line filter</b>	<b>8</b>	95207	Intermediate fitting
<b>1</b>	95201	Filter base	<b>9</b>	95208	Ring nut
<b>2</b>	95202	O-ring	<b>10</b>	95209	O-ring
<b>3</b>	98303	Sieve fitting	<b>11</b>	96115	Filter container
<b>4</b>	95204	Dowel	<b>12</b>	95230	Fitting 3/8" - 3/8"
<b>5</b>	95205	Sieve support	<b>13</b>	95231	Fitting 3/8"" G-M16x1,5
<b>6</b>	95218	Filter sieve 30 MESH	<b>14</b>	3387	Fitting 3/8" G-M20x2
<b>6</b>	95219	Filter sieve 60 MESH	<b>15</b>	33034	High pressure ball valve 3/8"
<b>6</b>	95220	Filter sieve 100 MESH	<b>16</b>	33010	Washer
<b>6</b>	95221	Filter sieve 200 MESH	<b>17</b>	95214	Plug 3/8" GAS
<b>7</b>	95206	Screw			

**Version INOX**

Nova 30:1 2K / 45:1 / 60:1

Pos.	Code	Description	Pos.	Code	Description
	<b>98300</b>	<b>Stainless steel complete line filter</b>	<b>7</b>	98306	Screw
			<b>8</b>	98307	Intermediate fitting
<b>1</b>	98301	Filter base	<b>9</b>	95208	Ring nut
<b>2</b>	95202	O-ring	<b>10</b>	95209	O-ring
<b>3</b>	98303	Sieve fitting	<b>11</b>	98090	Filter container
<b>4</b>	98304	Dowel	<b>12</b>	6149	Fitting 3/8" - 3/8"
<b>5</b>	95205	Sieve support	<b>13</b>	6148	Fitting 3/8"" G-M16x1,5
<b>6</b>	95218	Filter sieve 30 MESH	<b>14</b>	3385	Fitting 3/8" G-M20x2
<b>6</b>	95219	Filter sieve 60 MESH	<b>15</b>	33037	High pressure ball valve 3/8"
<b>6</b>	95220	Filter sieve 100 MESH	<b>16</b>	33010	Washer
<b>6</b>	95221	Filter sieve 200 MESH	<b>17</b>	98385	Plug 3/8" GAS

## H AIR GROUP COMPLETE



Pos.	Code	Description	Pos.	Code	Description
	<b>95145</b>	<b>Air group complete</b>	7	95313	Reduction 1" -3/4" Male Female
1	95031	Elbow Male Female 1" -MF92	8	95318	Rapid coupling 8x17
2	95090	Adapter 3/4 (NGE 3/4)	9	95319	Rapid coupling male da 1/4"
3	95301	Rapid coupling C/for rubber hose skg 25	10	95323	Valve 1"
4	95302	Rapid coupling 1"male	11	95350	Group F.R.L.
5	95308	Female fitting (FB 3/4X19)	12	96259	Manometer
6	95309	Hose tor/20NL 71N 19x29	13	95089	Elbow F-F 3/4"

## I ACCESSORIES



**Code 11250:** AT 250 1/4"  
**Code 11200:** AT 250 M16x1,5



**Code 11000:** AT 300 1/4"  
**Code 11090:** AT 300 M16x1,5



**Code 11180:** L91X 1/4"  
**Code 11120:** L91X M16x1,5



PISTON GUNSTOCK FILTERS  
**Code 11039:** Green (30M) - **Code 11038:** White (60M)  
**Code 11037:** Yellow (100M) - **Code 11019:** Red (200M)



FILTER  
**Code 95218:** SIEVE 30M  
**Code 95219:** SIEVE 60M  
**Code 95220:** SIEVE 100M  
**Code 95221:** SIEVE 200M



FITTING WITH MANOMETER  
**Code 147:** M16x1,5  
**Code 150:** 1/4"



**Code 91044:** PNEUMATIC MIXER



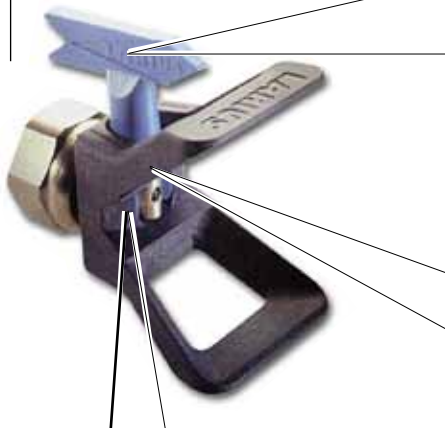
**Code 7030:** HP FLOW REGULATOR



**Code 6099:** HEATER



**FAST-CLEAN**



**FAST-CLEAN TIP**

Nozzles code		
07-20	19-60	29-80
07-40	21-20	31-40
09-20	21-40	31-60
09-40	21-60	31-80
11-20	23-20	33-40
11-40	23-40	33-60
13-20	23-60	33-80
13-40	25-20	39-40
13-60	25-40	39-60
15-20	25-60	39-80
15-40	27-20	43-40
15-60	27-40	43-60
17-20	27-60	43-80
17-40	27-80	51-40
17-60	29-20	51-60
19-20	29-40	51-80
19-40	29-60	

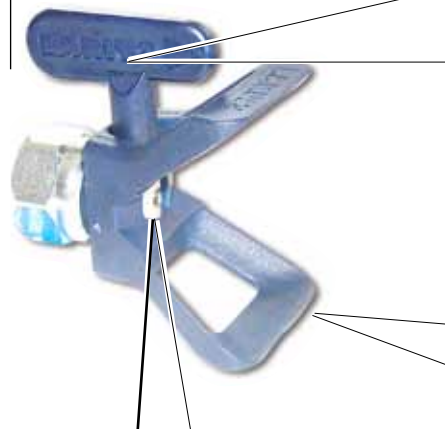


**Code 18280: GASKET**



**Code 300: FAST-CLEAN base UE 11/16x16**

**SUPER FAST-CLEAN**



**SUPER FAST-CLEAN TIP**

Nozzles code		
SFC07-20	SFC19-60	SFC29-80
SFC07-40	SFC21-20	SFC31-40
SFC09-20	SFC21-40	SFC31-60
SFC09-40	SFC21-60	SFC31-80
SFC11-20	SFC23-20	SFC33-40
SFC11-40	SFC23-40	SFC33-60
SFC13-20	SFC23-60	SFC33-80
SFC13-40	SFC25-20	SFC39-40
SFC13-60	SFC25-40	SFC39-60
SFC15-20	SFC25-60	SFC39-80
SFC15-40	SFC27-20	SFC43-40
SFC15-60	SFC27-40	SFC43-60
SFC17-20	SFC27-60	SFC43-80
SFC17-40	SFC27-80	SFC51-40
SFC17-60	SFC29-20	SFC51-60
SFC19-20	SFC29-40	SFC51-80
SFC19-40	SFC29-60	



**Code 18280: GASKET**



**Code 18270: SUPER FAST-CLEAN base UE 11/16x16**





## EXTENTION

Code 153: cm 30

Code 154: cm 40

Code 155: cm 60

Code 156: cm 100



Code 95200: LINE FILTER

Code 98300: LINE FILTER inox



Code 95055: SUCTION SYSTEM

Code 98055: SUCTION SYSTEM inox



ANTISTATIC HOSE 3/16" - M16x1,5

Code 6164: 5 mt

Code 55050: 7,5 mt

Code 35018: 10 mt



HIGH PRESSURE HOSE 3/8" - M16x1,5

Code 18063: 7,5 mt

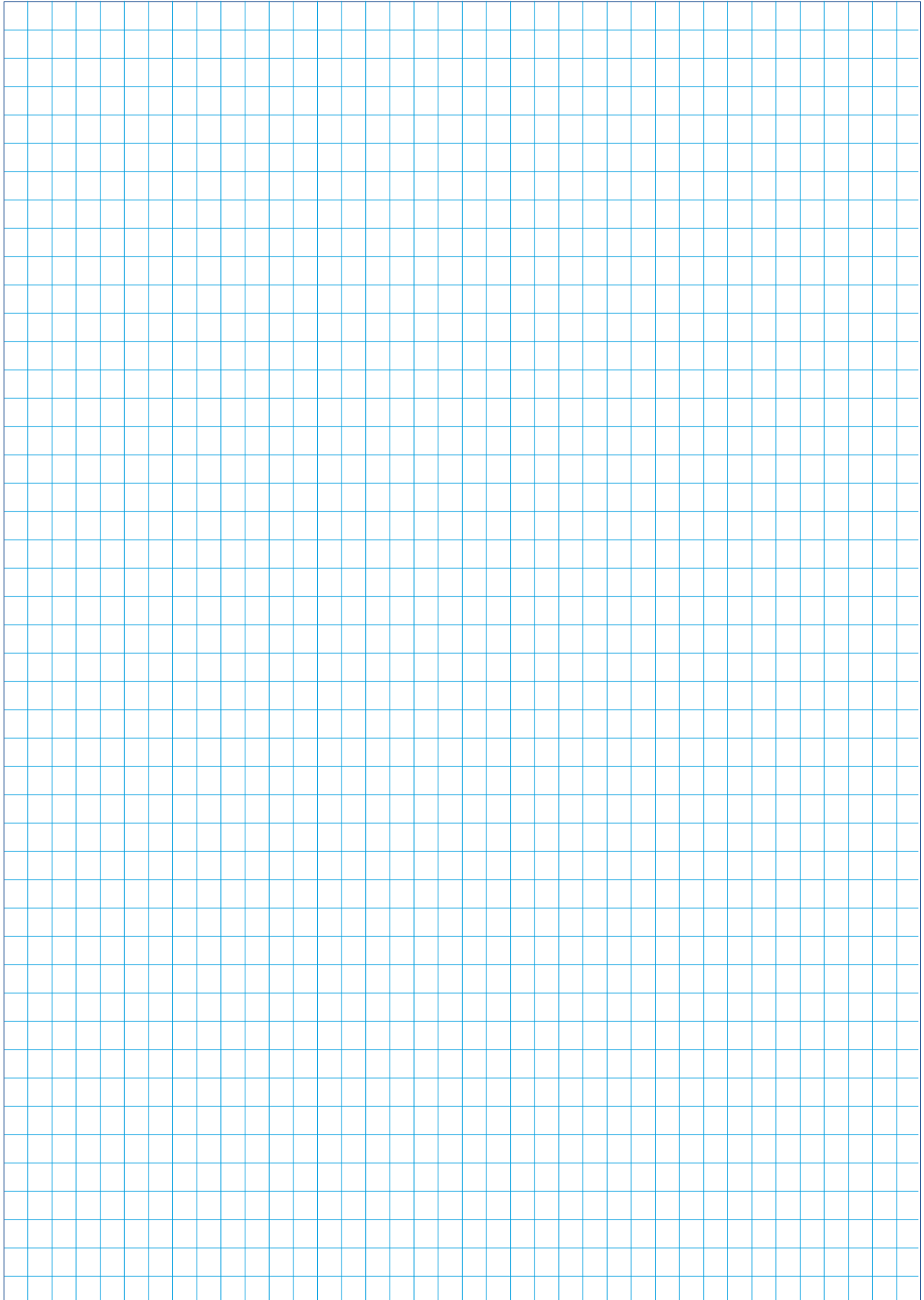
Code 18064: 10 mt

Code 18065: 15 mt

# LARIUS

PAIN T SPRAYING EQUIPMENT

*L'innovazione.  
Quella vera.*



# AIRLESS PNEUMATIC PUMPS

OMEGA AIRLESS Art.-Nr. 7300  
OMEGA MISTLESS Art.-Nr. 7340



OMEGA ZINC Rif. 7430



SUPERNOVA Rif. 65100



VEGA AIRLESS Art.-Nr. 91500  
VEGA MISTLESS Art.-Nr. 91400



GHIBLI ZINC Rif. 96900



GHIBLI 30:1 Art.-Nr. 96000



GHIBLI MIX 2K 40:1 INOX Rif. 24561



MANUFACTURER:

# LARIUS®

23801 CALOLZIOCORTE - LECCO - ITALY - Via Stoppani, 21  
Tel. (39) 0341/62.11.52 - Fax (39) 0341/62.12.43  
E-mail: [larius@larius.com](mailto:larius@larius.com) - Internet <http://www.larius.com>



DIRECT LINE

CUSTOMERS TECHNICAL SERVICE

Tel. (39) 0341/621256  
Fax (39) 0341/621234

