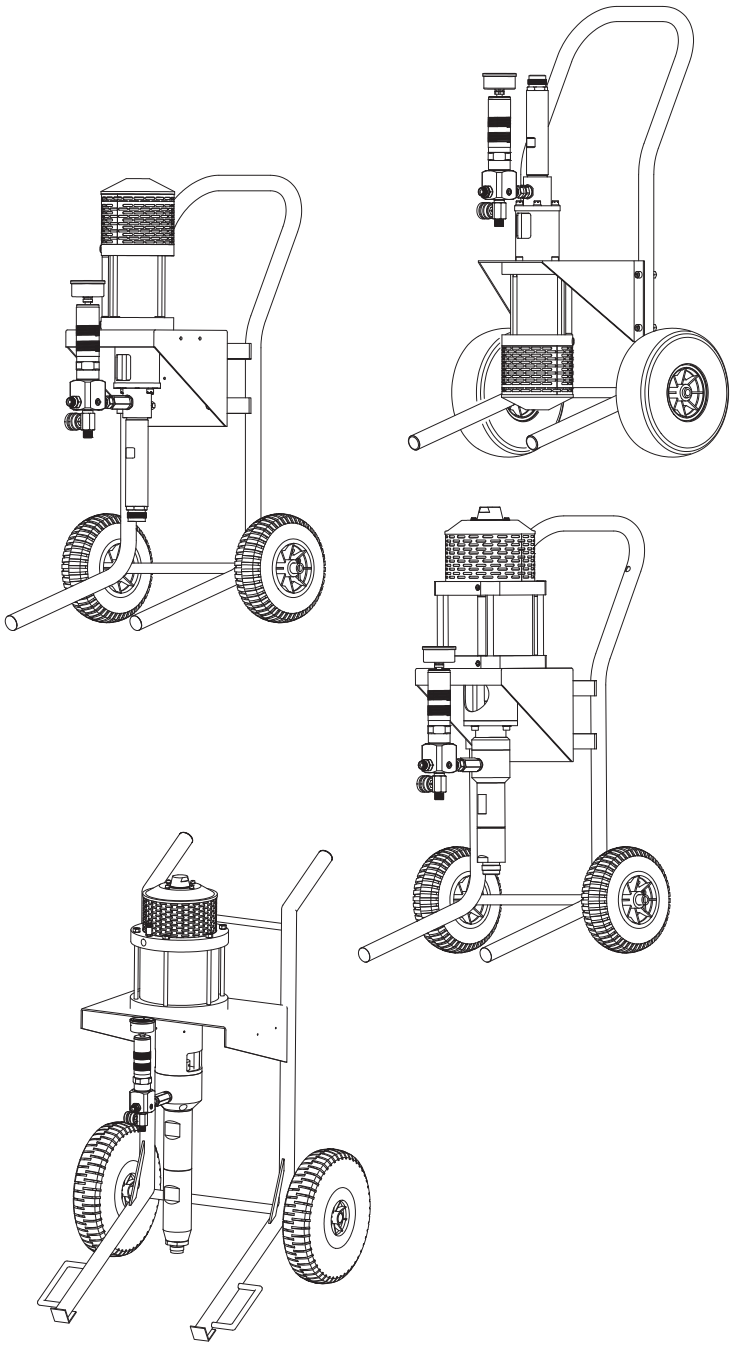
PP-Series

Pneumatic Piston Pump

Mod.

MASPRA PP-30
MASPRA PP-30 UP
MASPRA PP-40
MASPRA PP-48



Product Certified

CE Ex II 2 G T6 X

WARNING!!! Read all instructions carefully before assembling components and operating sprayer. Incorrect procedure could result in damage to the unit, severe personal injury and/or property damage. When spraying flammable materials, sprayer must be placed at least 20 feet from target in a well-ventilated area. Vapours can be ignited by static discharge or electrical sparks and result in severe personal injury. Airless sprayers generate high fluid pressure. Improper use could result in an injection injury.

CE

INDEX

1. General Information

The following use and maintenance manual is an integral part of the machine and must always be available to the personnel responsible for its use and maintenance. The operator and the personnel responsible for handling the machine must know the contents of the manual. The descriptions and illustrations contained in the manual are not to be considered binding. Although the main characteristics of the machine described in this manual are not subject to modifications, Gemini GmbH reserves the right to modify at any time those components, details and accessories that it deems necessary to improve the machine or to satisfy construction or commercial needs without update this manual immediately.

WARNING

 The contents of this manual may be modified without notice. Great care has been taken in collecting and checking the documentation contained in this manual in order to make it as complete and understandable as possible. Gemini GmbH equipment is not designed to operate in areas at risk of fire and/or explosion. For problems or information call the Gemini GmbH technical service or your local retailer.

TECHNICAL SERVICE

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WARNING:
The original configuration of the machine must not be modified in any way.
Upon receiving the machine, make sure that:

- The packaging is intact and undamaged.
- The supply corresponds to what was ordered.
- In case of damage, contact Gemini GmbH

1.2 Inspection of the purchased product

Inspect the equipment before using it for damage caused by transportation or improper storage. Make sure all standard and optional components have been delivered.

1.3 Installation conditions

The equipment does not require any particular installation procedures; just read the following warnings carefully.

WARNING
Do not place the equipment near flammable products.

WARNING
The material container must be placed near the machine.

WARNING
Solvent and paint vapors can explode or ignite. To reduce the risk of fire and explosion, connect the ground wire to a true ground during all stationary or indoor operations

1.4 Equipment and conditions necessary for working

- The system must have a fixed location and sufficient space to ensure safe operation. Access to safety devices must not be blocked.
- Keep the work area clean, especially all areas around the equipment. Immediately remove buckets of paint or solvent when finished using them.
- Ensure sufficient ventilation in the workplace to avoid damage to health and property. Always observe the manufacturer's processing instructions.
- Protect any nearby objects from damage caused by possible overspray.
- Only authorized and experienced operators can work with the equipment.
- The operator must wear all necessary and mandatory protection to prevent injuries that may occur during operation of the equipment.
- Scrupulously comply with current accident prevention regulations
- Static electricity can develop through spray painting. Ground the equipment and the object to be sprayed.

2. Description of symbols

The signs and symbols used in this manual have the following meaning:

NOTE
marks a section of text which is especially relevant to safety. Special attention should be paid to this section and its contents strictly observed.

ATTENTION
signals a situation that could be dangerous. Failure to comply may result in death or very serious injury. Warning regarding electrostatic charging when spraying into metal containers. Be careful to ground the airbrush through contact with the container to avoid strong static discharge.

INJECTION HAZARD
marks a situation, where pressure is in the system. Do not point the gun at anyone or any part of your body

EXPLOSION DANGER
signals a situation in which there is a risk of explosion. The observance of this information is absolutely essential.

USE BREATHING PROTECTION
For health reasons, it is very important to heed this warning.

WEAR PROTECTIVE GLOVES
To avoid burns, wear protective gloves with lower arm protection. Compliance with this information is essential.

WEAR PROTECTIVE FOOTWEAR
To avoid foot injuries, wear protective footwear
Compliance with this information is essential.

WEAR NOISE ANTI-NOISE HEADPHONES
To prevent hearing from being damaged by noise.
Compliance with this information is essential.

WEAR EYE PROTECTION
To prevent injury. Compliance with this information is essential.

WEAR PROTECTIVE CLOTHING
To prevent injury. Compliance with this information is essential

GROUNDING
To prevent the risk of fire and explosion the equipment must be earthed. Compliance with this information is essential.

3. Safety precautions

WHEN USING the painting equipment, OBSERVE THE following precautions and safety criteria CAREFULLY. Gemini GmbH declines all responsibility in the event that the operator does not observe these precautions and safety criteria; Furthermore, it is not responsible for any type of negligence during the use of the equipment.

1. **Injection hazard:** Airless Painting Equipment can cause serious injury if the spray penetrates the skin. Do not point the gun at anyone or any part of the body. The tip guard provides some protection against accidental injection injuries, but is mostly a warning device. Never put your hand, fingers or body over the spray tip. Gloves and clothing do not necessarily offer any protection either. Keep the gun trigger safety lever in locked position when not spraying. Always have the tip guard in place while spraying. In case of penetration seek medical aid immediately!
   Note to physician: ***Injection into skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable. Be prepared to tell the doctor what fluid was injected.***
2. This system is capable of producing high pressure (see technical data sheet of each pump). To avoid rupture and injury, do not operate this pump with components rated less than 220 bar (3200 PSI) working pressure (including but not limited to spray guns, hose and hose connections).
3. Do not spray paints or other inflammable fluids indoors which have a flash point below 21 degree, 70 degree F. Keep spray area well ventilated. Before spraying, turn off all pilot lights and open flames.
4. Wear a respirator which is approved for the product being sprayed.
5. Do not use halogenated hydrocarbon solvents in this system; it contains aluminium parts and may explode. Cleaning agents, coatings, paints, and adhesives may contain halogenated hydrocarbon solvents. Don't take chances, consult your material supplier to be sure. (ex: methylene chloride and 1,1,1 - Trichlorethane)
6. **Caution**: When a flammable liquid is sprayed there maybe danger of fire or explosion especially in a closed area.
7. **Caution**: Arcing parts. Keep the pump at least 5 mt away from explosive vapors.
8. **Caution**: Static electricity can be developed by airless spraying. Ground unit and object to be sprayed. On electric units, unit power cord must be connected to a grounded outlet. Use only three wire extension cords. Static explosion can occur with ungrounded unit.
9. Flush system with spray tip removed. Always use lowest pressure possible.
10. Always follow safety precautions and warnings printed on paint container.
11. Only use spray guns and hoses supplied by Gemini. User assumes all risk and liability when using spray guns or hoses not complying with minimum specification and safety devices of Gemini
12. Inspect hoses before each use. Never use a damaged hose. High pressure in hoses with wear, leaks or splits may cause the hose to rupture and cause serious personal injury. Never try to stop or deflect leaks with any part of your body.
13. Use extreme caution when cleaning spray tip guard. DO NOT try to wipe off build up around the spray tip before following shut down procedure. Follow the Shutdown Procedure, then follow the spray tip manufacturer's instructions for removing and cleaning the spray tip.
14. Never attempt to change spray tip or leave the unit unattended without first shutting off pump, releasing fluid pressure, and locking the trigger safety lock.
15. For your own safety, it is essential to wear personal protective equipment when using the equipment.

16. Do not pull on hoses to move equipment, DO NOT kink or bend the hose sharply.
17. Keep children or anyone not familiar with airless spray systems away from equipment and work area.
18. Conductive metal containers must be used when flushing flammable fluids through the system. Always flush at low pressure with spray tip removed. A metal partof the spray gun must be held firmly against the grounded metal pail when flushing or relieving pressure from the gun.
19. Trigger guard helps reduce the risk of accidentally triggering the gun if dropped or bumped. Do not use a spray gun without a trigger guard.

3.1 Shut Down Procedures

WARNING: Always follow Shut Down Procedure before starting any troubleshooting, servicing or cleaning.

1. Engage the trigger safety lock in the locked position. Test the trigger safety lock to ensure the lock is working properly.
2. Reduce pressure to 0
3. Open the dump valve to relieve pressure. Leave open until ready to spray or test or clean.
4. Remove the spray tip.
5. Disengage the trigger safety lock.
6. Trigger the gun into a metal pail to relieve any remaining pressure. A metal part of the spray gun should be held firmly against the grounded metal pail when relieving the pressure from the gun. (A grounded metal pail is not required for non-flammables such as latex.)
7. Reset the trigger safety lock to locked position.

****** WARNING ******

COMPRESSED AIR SETUP
The system is compressed air driven. Even though the design of the motor does not require it necessarily, it is advisable to utilize compressed air, properly fitered and free from humidity. In this way the sealing joints of the air motor will have a longer life.

ICE FORMATION
The great advantage of the system is the considerable reduction of ice formation on air purging. Nevertheless, at very low temperatures, it is necessary to use lubricated air with antifreeze, for safety's sake

LUBRICATION CHAMBER
The paint pump, a compact construction, is screwed to the air motor. The space between the air motor and the paint pump works as a lubrication chamber. Oil coming into this chamber rinses and lubricates the pumping piston on every stroke. Consequently, it is impossible to get incrustations in the piston rod.Packings result protected and avoid the problem of seizing.

4. Introduction

We appreciate your decision to purchase a high quality professional spraying system and believe you will find it to be the best sprayer you ever owned. Your Gemini airless paint machine is capable of spraying a wide variety of latex, oil-based and alkyd paints, as well as stains, preservatives and other architectural coatings. The material you are spraying will have a direct effect on the amount of pressure required for the optimum pattern and coverage to be obtained. We recommend that before actually beginning your job, you carefully read this manual and practice with the sprayer until you feel comfortable using it.
Gemini pneumatic sprayers are powerful and versatile enough to be used with a variety of accessories to make them even more versatile (extra lengths of hose, extensions, pressure feed rollers, etc.). Ask your supplier about the recommended accessories for your particular job.

PUMP TYPE:
These units are airless pneumatic piston. The air motor is ruggedly built in order to keep maintenance to a minimum.
All paint valves are made of tungsten carbide for extra long abrasion resistance. The advantages of this type of pump is:
- Accurate spray pattern with minimal overspray
- Minimal or no thinning of paint products
- Pumps straight out of original paint container
- Variable pressure
- Various nozzles are available for slow to fast spraying
- Light weight, compact and portable
- Quiet running and low power consumption
- Steady spraying pressure
- no fan fluctuations
- Compact paint pump
- quick cleaning, less parts to wear

HOW PNEUMATIC AIRLESS PUMPS OPERATE:
Gemini pneumatic airless pumps are double effect, which is based on a system called “double shaft”; i.e. the piston is in movement between two packing fixed or mobile. The paint piston is covered by special treatment in hard chrome in order to obtain the best resisteance and less wear. The two valves are made in tungsten carbide. The packings set can be composed in serveral ways, the mostly used are mixed: polyetilene-PTFE.
The results are minimal power draw, excellent trigger paint pressure response, no fan fluctuations, and minimal all-around wear.

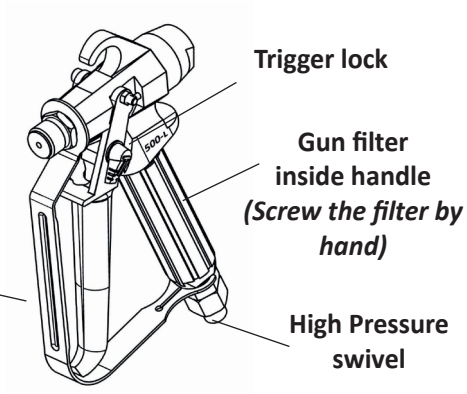
5. Technical Specification

	PP-30	PP-40	PP-48
Free flow volume ltr/min.	7	9	18
Ratio	30:1	40:1	48:1
Pump Capacity per cycle (cm3)	40	70	130
Piston Diameter of air motor (mm)	100	150	200
Piston Stroke of air motor	100	80	100
Max. air pressure Bar (psi)	240 (3480)	320 (4640)	384 (5569)
Max. Air Inlet Pressure Bar (psi)	8 (116)	8 (116)	8 (116)
Weight (pump on trolley) - bare Kg.	20	28	64

Capability: All conventional coatings, ie: latex, stain, lacquer, varnish, ink, primer, preservatives and many other architectural coatings such as block fillers and some elastomerics and glues.

6. Pump Components

SPRAY GUN (for spraying set-up)
The spray gun is designed specifically for airless spraying. Since there is no compressed air to atomize the paint, atomization is accomplished by forcing the paint at a very high pressure through a very small hole (~.017" diameter). Because of this high pressure, the spray tip and gun valve are made of tungsten carbide for maximum wear resistance. The gun body is made of forged alloy and anodized for chemical resistance. As a safety feature, the spray gun can be locked with the trigger safety lever when you are not spraying. Be sure to read all warnings concerning the high pressures of airless spraying on page 6&7

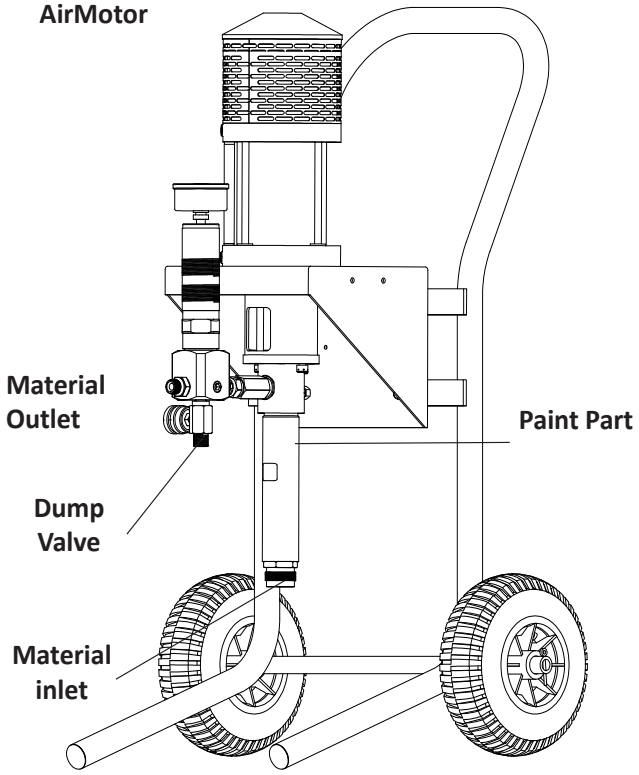


WARNING: INJECTION HAZARD POSSIBLE. DO NOT SPRAY WITHOUT TIP IN PLACE. ALWAYS ENGAGE TRIGGER LOCK BEFORE REMOVING, REPLACING OR CLEANING TIP. NEVER TRY TO CLEAN THE TIP WITH YOUR FINGERS.
To disengage your trigger lock: Your spray gun is shipped from the factory with the trigger lock in the engaged position (horizontal). To disengage, turn the trigger lock down until it is in a vertical position. To engage the trigger lock, turn it back to a horizontal position.

PRESSURE CONTROL VALVE:
All units are equipped with a pressure control valve, assembled on pump's inlet. Increase pressure by turning the handle clockwise.
Reduce pressure viceversa.

PAINT PART
Paint part is composed by a cylinder connected to a air motor. The paint cylinder, to its turn, is composed by a piston, upper and lower packings and inlet and outlet valves. These valves regulate the flow of the paint through the pump during priming and spraying. The inlet and outlet valves are made of tungsten carbide.

DUMP VALVE:
The dump valve is located on the side of the paint pump. When turned to "open" it circulates paint to vent the air trapped in the paint pump out the return hose. It will continue to recirculate the paint until the knob is manually turned to the "close" position. When the dump valve is turned to "close", flow is shut off through the return hose and is routed to the paint hose for spraying.The dump valve also serves to relieve pressure on the system during shutdown and cleanup. The pressure is relieved by turning the prime valve to "dump".



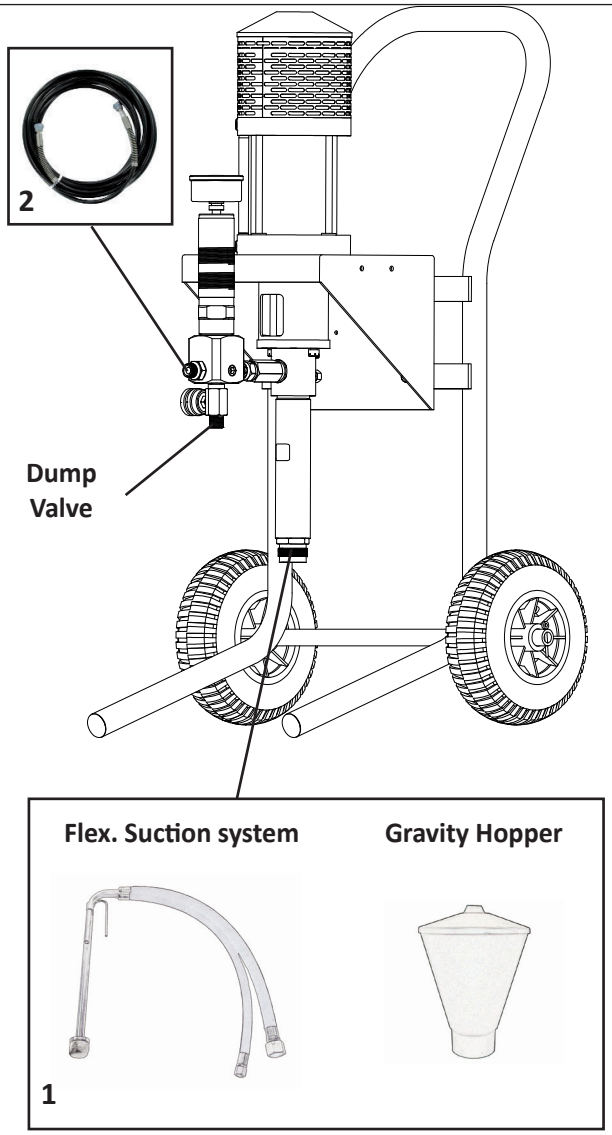
7. Setting up of unit

Airless Spraying

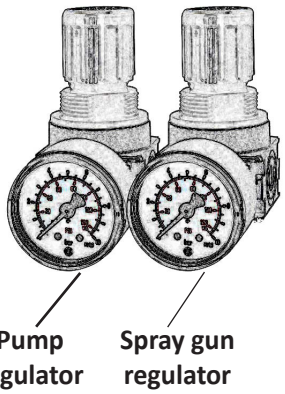
1. Remove all system components from the box for assembly.
2. Remove all protective caps from inlet and outlet connections of pump.
3. Connect a flexible suction hose or hopper (1) to the suction valve.
4. Attach return hose or return tube to the dump valve.
5. Connect high pressure airless paint hose (2) to pump outlet. Tighten.
6. Attach the tip assembly to the spray gun.
7. Connect the paint hose to the swivel connection of the spray gun. Tighten. Ensure the gun handle is securely hand tightened to the gun.
8. Connect the compressed air hose to the air inlet located on the pressure regulator
9. Double check all connections, the unit is now ready for flushing.
   Note: The pump contains a preservative oil when you receive it, that may drip from the various connections when the protective caps are removed.

AirCombi Spraying

1. Remove all system components from the box for assembly.
2. Remove all protective caps from inlet and outlet connections of pump.
3. Connect a flexible suction hose or hopper (1) to the suction valve.
4. Connect the return hose to the dump valve
5. Connect the high pressure hose to the pump outlet. Tighten well.
6. Connect the other end of the high pressure hose to the swivel fitting on the spray gun.
7. Connect the gun regulator air hose to the air fitting on the gun.
8. Connect the compressed air hose to the air inlet located on the pressure regulator
9. Recheck all connections, the equipment is ready to work.



AIRCOMBI
PRESSURE REGULATING VALVES



8. How to select tip and proper filter

Tip and filter table with specifications concerning capacity at different pressures (lt. minute) with water.
Notice: For each tip size please choose between the following fan corners:

NOZZLES		CAPACITY MEASURED IN LT/MIN. AT FOLLOWING PRESSURES:				SUGGESTED FILTER
Inches (mm)	**Spray corner**	**35 Bar**	**70 Bar**	**105 Bar**	**140 Bar**	
0,007 (0,18)	20 °	0,10	0,14	0,17	0,19	
0,007 (0,18)	40 °	0,10	0,14	0,17	0,19	
0,007 (0,18)	60 °	0,10	0,14	0,17	0,19	
0,009 (0,23)	20 °	0,14	0,20	0,25	0,29	
0,009 (0,23)	40 °	0,14	0,20	0,25	0,29	
0,009 (0,23)	60 °	0,14	0,20	0,25	0,29	**200 Mesh**
0,011 (0,28)	20 °	0,22	0,3	0,38	0,45	
0,011 (0,28)	40 °	0,22	0,3	0,38	0,45	
0,011 (0,28)	60 °	0,22	0,3	0,38	0,45	
0,013 (0,33)	20 °	0,34	0,45	0,56	0,64	
0,013 (0,33)	40 °	0,34	0,45	0,56	0,64	
0,013 (0,33)	60 °	0,34	0,45	0,56	0,64	
0,015 (0,38)	20 °	0,45	0,60	0,75	0,85	
0,015 (0,38)	40 °	0,45	0,60	0,75	0,85	
0,015 (0,38)	60 °	0,45	0,60	0,75	0,85	**150 Mesh**
0,018 (0,44)	20 °	0,65	0,88	1,10	1,26	
0,018 (0,44)	40 °	0,65	0,88	1,10	1,26	
0,018 (0,44)	60 °	0,65	0,88	1,10	1,26	**100 Mesh**
0,021 (0,53)	20 °	0,90	1,25	1,55	1,75	
0,021 (0,53)	40 °	0,90	1,25	1,55	1,75	
0,021 (0,53)	60 °	0,90	1,25	1,55	1,75	
0,023 (0,58)	20 °	1,05	1,52	1,85	2,15	
0,023 (0,58)	40 °	1,05	1,52	1,85	2,15	
0,023 (0,58)	60 °	1,05	1,52	1,85	2,15	
0,026 (0,66)	20 °	1,30	1,98	2,30	2,73	
0,026 (0,66)	40 °	1,30	1,98	2,30	2,73	
0,026 (0,66)	60 °	1,30	1,98	2,30	2,73	
0,031 (0,79)	20 °	2,00	2,80	3,45	4,15	
0,031 (0,79)	40 °	2,00	2,80	3,45	4,15	
0,031 (0,79)	60 °	2,00	2,80	3,45	4,15	**50 Mesh**
0,036 (0,91)	20 °	2,65	3,50	3,82	4,55	
0,036 (0,91)	40 °	2,65	3,50	3,82	4,55	
0,036 (0,91)	60 °	2,65	3,50	3,82	4,55	**not reccomended**

9. Startup procedures

Whenever the pump is to be used, it must be prepared for the type of paint to be used. This requires the unit to be flushed out with an appropriate solvent (water for latex, mineral spirits for oil base, etc.). Incorrect flushing can cause gumming of the valves and priming problems.

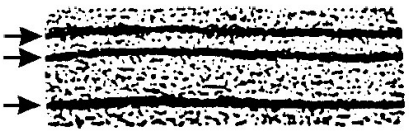
Unit priming and fluishing

1. Check that all hoses, gun handle and tip connections (or injection lance) are tight.
2. Place trigger lock in "LOCK" position. Connect the air compression hose to the pressure regulating valve fixed on the air motor. Switch on the compressor, adjust the air pressure at about 2 bar.
3. Place dump valve into open or "PRIME" position.
4. Place suction/return tube in correct solvent, or add about one liter of solvent to hopper.
5. Unit will begin pumping and solvent will flow from return tube. Prime for 30 seconds with hopperunits, 2 minutes for suction units. If it will not prime, see "inspecting inlet valve."
6. Turn pressure control back to MINIMUM. Close dump valve.
7. Increase pressure to 1/6 of turn. This allows to have a low pressure, ideal for cleaning procedures.
8. Turn pressure control to minimum and open dump valve to release pressure.
9. For suction units, lift both hoses above the level of solvent and turn up pressure two turns to pump out solvent from pump. With hopper units, place return hose into empty solvent container, turn up pressure two turns and allow pump to empty hopper.
10. Disconnect air compressed hose and turn pressure control to minimum. Unit is now flushed out.

Priming Unit in Paint

Follow same procedure as steps 1 - 8 of "Priming and Flushing", but instead using paint. Then continue with the remaining steps as outlined below.

11. Remove tip from gun. Unlock trigger. Aim gun into solvent pail and hold trigger open until solvent flow changes to paint. Release and lock trigger. Re-install tip.
12. Before to work with the unit, test spray pattern on cardboard. Increase or decrease pressure as required for best pattern.



Streaks:
Tip is too small, or paint is too thick

Heavy tailing:
Pressure is too low, or tip is too large. (some tailing is normal)

Even fan:
Correct tip and pressure adjustment.(some tailing is normal)

10. Hints for Airless & AirCombi Sprayer

WARNING: DO NOT BEGIN SPRAYING BEFORE READING THIS SECTION AND ALL PREVIOUS SAFETY INFORMATION.

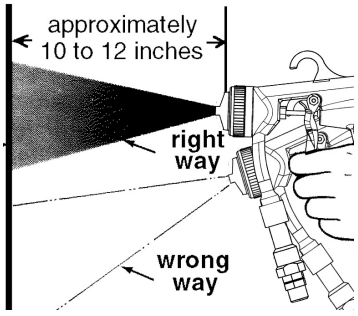
Painting and Tip Selection

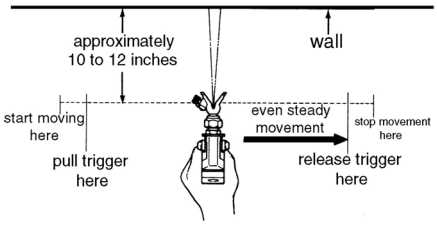
Correct adjustment of pressure and proper tip selection are crucial to the best spray pattern....

1. In any situation, the lowest pressure that gives an adequate spray pattern is the best pressure to use. It will give maximum pump and tip life and produce minimum overspray.
2. Typically, thicker materials require larger tips and higher pressures than thinner paints do. Some very thick paints may require slight thinning (5-10%) depending upon pump and tip size and application. Generally, thinning is performed when a good spray pattern cannot be obtained with an appropriate tip size at maximum pressure.

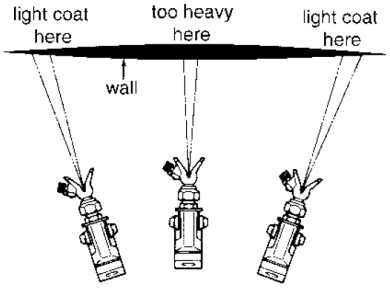
Spray Painting Method

1. Keep the gun perpendicular to the surface. Always hold the gun perpendicular to the surface with the tip approximately 12" from the surface. If held at an angle (up and down or side to side) paint will build up unevenly and leave the work splotchy.
2. Move with a smooth arm stroke. Move the gun at a steady even pace while keeping the gun perpendicular to the surface. Do not move the gun by flexing your wrist. Fanning the gun will cause excessive overspray and uneven coverage





Proper way to trigger spray gun



Result of flexing wrist while spraying

3. **Start moving the gun before triggering.** To get smooth overlap and prevent initial paint buildup, start our stroke movement before pulling the trigger. At the end of the stroke release the trigger before stopping. *NOTE*: To assure uniform paint coverage, overlap each stroke by 40% - 50%.

4. **Intermittent use.** If you are spraying and decide to stop for several minutes, lock the spray gun trigger and submerge the tip in a container of the appropriate solvent. This will prevent paint from hardening in the tiny spray opening and clogging the tip. Be sure to release the pressure by opening dump valve and turn off pump.

11. Helpful hints for trouble free painting

Sprayer

1. Flush before each use with a solvent that is correct for the paint you will be spraying. ie: Water for latex paints.
2. Clean unit well after each use. A clean unit works better and lasts longer.
3. Flush with mineral spirits when storing the unit for more than 3 or 4 days.

Paint:

1. Prepare paint according to manufacturer's recommendations.
2. Remove all skins on paint.
3. Stir paint thoroughly.
4. Strain paint through a fine mesh strainer bag to avoid clogging of pump and filters.

Spray Tips:

1. Use minimum pressure that gives a good spray pattern to reduce tip and pump wear and cut down overspray.
2. Replace tips before they become too worn. Worn tips waste paint and overwork the sprayer.

Filters:

1. Clean the filters after each use of sprayer.
2. Use correct filter for the tip size and paint type. See tip chart.

Paint Hose:

1. **CHECK THE HOSE PERIODICALLY, DO NOT USE WORN OR DAMAGED HOSES.**
2. Use only hoses produced for high pressure and Airless equipment. Airless equipment generates a working pressure of 3,200 PSI (220 Bar) or higher. Make sure the hose has been earthed and is a textile or metal braided static dispersion hose.
3. Protect both the paint hose and the electrical wire from moving equipment and from pointed or sharp objects.
4. For better performance, the maximum hose length is 100 m. dia. 1/4". The maximum length depends largely on the size of the nozzle and the density of the paint.

Compressed Air Set-UP

The system is compressed air driven. Even though the design of the motor does not require it necessarily, it is advisable to utilize compressed air, properly fitered and free from humidity. In this way the sealing joints of the air motor will have a longer life.

Ice Formation

The great advantage of the system is the considerable reduction of ice formation on air purging. Nevertheless, at very low temperatures, it is necessary to use lubricated air with antifreeze, for safety's sake

Lubrication Chamber

The paint pump, a compact construction, is screwed to the air motor. The space between the air motor and the paint pump works as a lubrication chamber. Oil coming into this chamber rinses and lubricates the pumping piston on every stroke. Consequently, it is impossible to get incrustations in the piston rod. Packings result protected and avoid the problem of seizing.

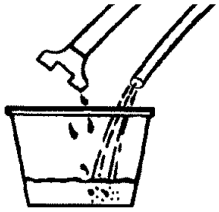
12. Cleaning instructions

As with all spray equipment, your sprayer must be cleaned properly or it will not operate properly. Clogged valves and filters are the most common
causes of problems. If followed, these guidelines will insure trouble free performance from your sprayer.

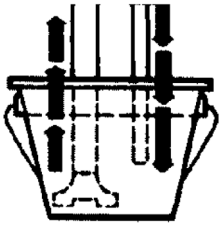
CAUTION: Clean with water if latex is used. Clean with paint thinners for oil based paints. Both water and paint thinner will be referred to as “solvent” from here on in.

CLEAN-UP:
To get the best use and longest life from your sprayer, it is very important to clean it out properly. The procedure is simple and is very similar to the flushing procedure performed earlier. Cleaning and flushing would also be required when changing color, or type of paint, ie: latex changing to oil base.

1. Lock gun trigger, turn pressure control to minimum, open dump valve to release all system pressure.
2. Turn tip to halfway position and remove from gun. (if so equipped).
3. For suction models, lift both suction and return hose above the level of paint in the pail and turn pressure about two turns. Allow unit to pump out paint. (For hopper models, place return hose into paint container and turn up pressure about two turns. Allow unit to pump out remaining paint in the hopper. Place return tube back into hopper).

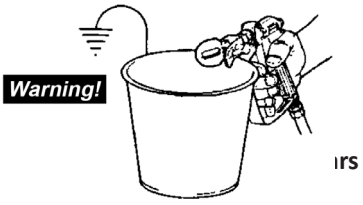


4. Place suction/return hose into pail with proper solvent to flush out paint and allow unit to prime in the solvent. Clean the outside of metal suction tube. (For hopper units, add about one liter of solvent into the hopper and allow unit to prime. While unit is priming, wipe or brush inside of hopper to dissolve paint).



Clea lvent

5. Turn pressure control to minimum and close dump valve.
6. Unlock trigger, and with spray tip still removed and starting with minimum pressure, aim gun into paint container and hold trigger open until paint flow stops
and solvent flow just begins. Release trigger. Aim gun into solvent pail/hopper and circulate solvent for about two minutes. To reduce splashing, direct the fluid stream along inside of bucket at a side angle and well above the fluid level (or submerge the tip in the solvent). Release trigger. Point spray gun into an empty waste bucket and spray at least 1 liter of fluid into it.



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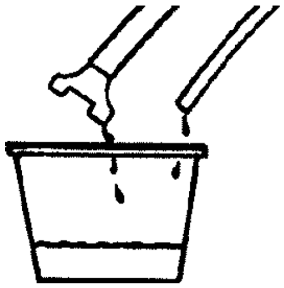
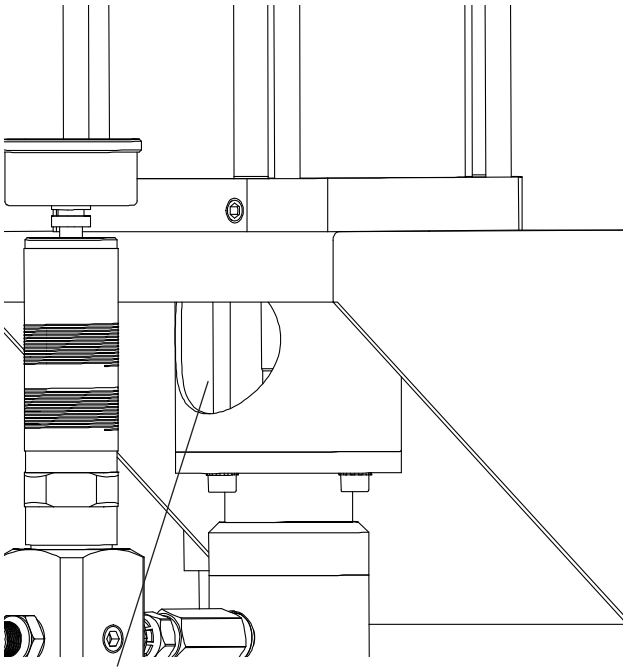
Warning: conductive metal containers must be used when flushing flammable fluids through the system. Always flush at low pressure with spray tip removed.
A metal part of the spray gun must be held firmly against the grounded metal pail when flushing or relieving pressure from the gun.

7. Pump solvent out by lifting both suction and return hose out of the solvent. Turn pressure control to minimum and open dump valve to release system pressure and turn motor off. Lock trigger and clean spray tip before installing back onto gun.



8. Follow above steps 1-7 using clean solvent to completely flush unit. You may at this time, if you wish, blow compressed air into the tip (dump valve open and motor off) to push the solvent all the way out the return hose.
9. If changing paint types, ie: latex (water base) to oil base, you would have to flush unit with clean mineral spirits using above steps 1-7. This would prepare the pump for the oil base paint. Water would have to be used as a last flush if changing from oil base paints to latex.

10. Ensure pressure control is turned to minimum and all pressure is released. Open dump valve. Disconnect the pump.
11. Unthread gun handle from gun body to access gun filter. Remove filter and brush clean with appropriate solvent. Inspect filter for pin holes, plugging, or other damage. Replace if required. Re-install with “double lip” end pointing up into gun. Lightly grease handle threads (petroleum jelly, auto grease) and re-install firm hand tight. Brush exterior of gun clean.
12. Remove intake screen on metal suction tube or hopper and brush clean, re-install.
13. Storing unit for more than 3 days. If unit was cleaned with an oily paint thinner, the unit is now ready for storage (after step 14). If unit was cleaned with water or a strong thinner (ie. lacquer thinner) pump mineral spirits through the entire system by repeating step 8. If it is not available, drain all the solvent out of the hose, gun, and pump. (Tungsten carbide parts in the valves will corrode if left in water for long periods of time). With the pump running in the prime mode, oil the suction valve. Let the pump run until it spits oil drops out the return fittings.This will displace any remaining solvent and lubricate the valves for storage.



Oil valves before storing

14. Coil up electrical cord and spray hose, inspecting both for signs of damage. Suggested minimum coil size for 1/4” paint hose is 18 inches.
    DO NOT COIL PAINT HOSE TOO TIGHTLY. THIS MAY CAUSE KINKS, WHICH WEAKEN THE HOSE. A PAINT HOSE WITH KINKS OR OTHER DAMAGE SHOULD BE CONSIDERED UNSAFE AND BE REPLACED IMMEDIATELY.

    WARNING: DO NOT CLEAN THE SPRAY GUN UNLESS THE PRESSURE HAS BEEN RELEASED FROM THE SYSTEM.

13. Maintenance

PAINT HOSE:
Periodically inspect the paint hose. If the hose is kinked, cut, or worn, it must be replaced . It cannot be repaired. A hose bursting at 220 bar (3200 psi) can cause significant damage to property AND cause a serious injury if the spray injects the skin. Replace with a grounded or conductive airless paint hose that is rated for at least 220 bar (3200 psi) working pressure.

DUMP VALVE:
If the dump valve is not properly cleaned after each use, It will wear prematurely. When worn, the paint will flow through the return hose while the valve is turned to"spray". Spraying pressure will progressively drop as the valve continues to wear. A new valve (or repair kit) should be installed immediately to prevent over working the unit.
Hint... to get maximum use out of the dump valve:
a. Always reduce pressure before turning the handle.

SPRAY GUN:
The filter should be cleaned or replaced after each use to minimize tip clogging problems. If the gun valve becomes worn and begins to leak, it should be replaced. See page 9 for overhaul details.

SPRAY TIP:
The spray tip is one of the most important elements in producing a quality spray job. It requires periodic replacement (every 200-800 ltr) to maintain performance and to prevent overworking the pump (see pages 9-10 for details).

WARNING: BEFORE PERFORMING ANY SERVICE OPERATIONS, DISCONNECT SPRAYER, RELEASE PRESSURE BY OPENING DUMP VALVE

MAIN INSTRUCTION
Pneumatic airless pumps should receive routine servicing after approximately 1.000 hours of use or earlier if there is excessive leakage from the top packing, or if the pump strokes become faster on one stroke or the other. The use of Lubrisolv is recommended as an upper packing lubricant. Do not substitute oil, water, or solvent for an upper packing lubricant.

INLET AND OUTLET VALVES:
The inlet and outlet valves are wearing parts. The rate of wear depends on the type and quality of paint you use. Average life expectancy is about 2000 ltr.
A simple way to determinate the wear of the valves is:

1. With the unit ON and in "spraying position", pull the trigger.
2. During the upper stroke of the piston, release the trigger. If the piston movement do not stop, but it continues up to the end of its stroke, it means that the outlet valve have wear.
3. Viceversa, During the lower stroke of the piston, release the trigger. If the piston movement do not stop, but it continues up to the end of its stroke, it means that the inet valve have wear.

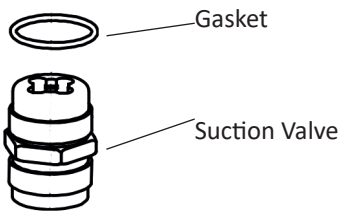
LOWER PACKINGS:
No regular service required.
The lower packings of these units are mobile or fixed. The lower packing are self-adjusted by the lower conical spring. Wear can be manifested through a drop of pressure. Attention: first be sure that the tip is not worn; this can cause a drop in spraying pressure as well.

UPPER PACKINGS:
Lubricate daily with oil.
The upper packings are self-adjusted by the upper conical spring or manually by screwing the proper nut (PP-48). Wear can be manifested
through a loss of material from the upper part of central body.
IMPORTANT NOTE: Both packings are included in the upper & lower packing kit, and should be changed together for best reliability and performance.

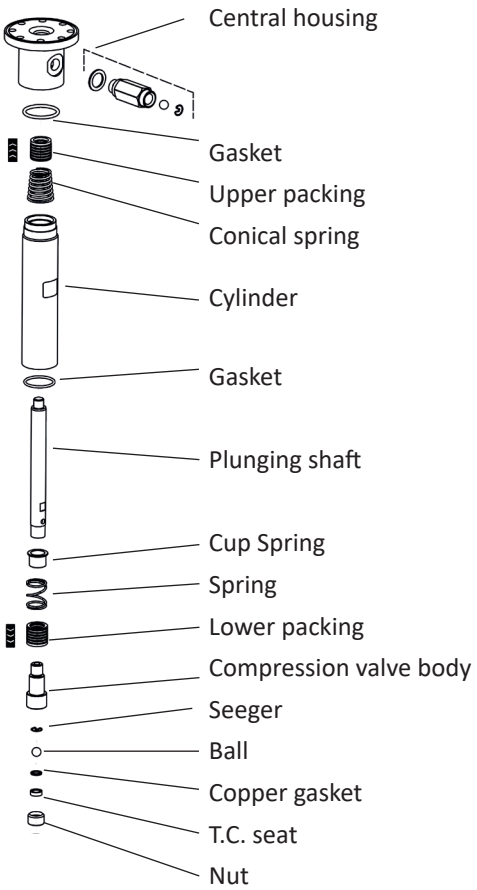
MAINTENANCE PP-30

INLET VALVE

1. Disconnect unit and release pressure from the system



2. With an appropriate wrench disassamble, from the cylinder the suction valve complete with gasket.
3. Check is suction valve is worn
4. Check all parts. Clean or replace if necessary.



OUTLET VALVE, LOWER AND UPPER PACKING:

1. Disconnect unit and release pressure from the system
2. With the proper wrench unscrew from the central body the cylinder complete with suction valve. ATTENTION: Check the condition of OR inside the central body.
3. Disassemble from air motor axle, the plunging shaft complete.
4. Disassemble the compressione valve with an hexagonal wrench n°24.
5. With a wrench n°10, unscrew the comression valve nut and check the condition of ball, gasket and insert. Clean or replace if necessary.
6. Remove the spring and cup spring from plunging shaft.
7. Remove the lower packing from the compression valve body. Check it and replace if necessary.
8. Remove from central housing the conical spring. Check it and replace if necessary.
9. With a hooked tool remove the upper packing. Check it and replace if necessary.

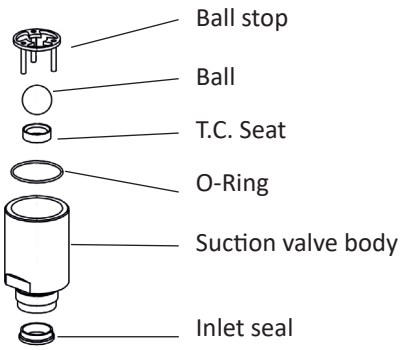
ASSEMBLING

1. Assemble the ball, gasket, insert and nut on compression valve body.
2. Fit the lower packing on compression valve body, keeping attention to maintain the proper (V) toward. Grease lower packing
3. Assemble on compression valve the spring and cup spring.
4. Assemble the compression valve complete on the plunging shaft.
5. Fit in the central housing the upper packing one by one, keeping attention to maintain the proper (^) toward. Grease the upper packing
6. Assemble the plunging shaft complete on the air motor axle.
7. Fit the conical spring. **ATTENTION: the narrow side is towards the top.**
8. Screw the cylinder complete of suction valve on central housing.

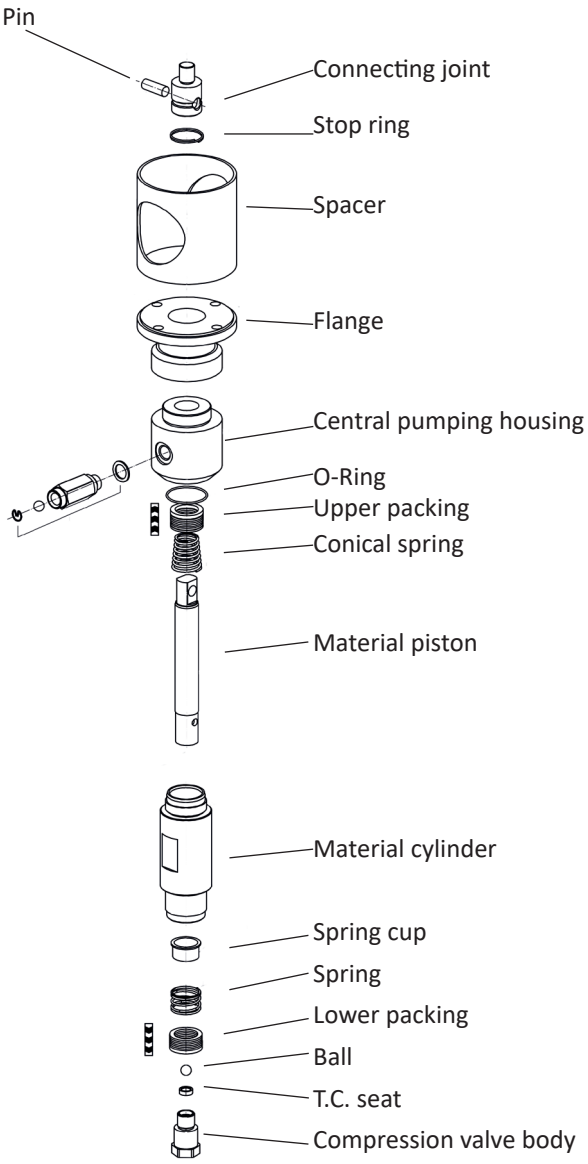
MAINTENANCE PP-40

INLET VALVE

1. Disconnect unit and release pressure from the system



2. With an appropriate wrench disassamble, from the material cylinder the suction valve complete.
3. Disassemble all parts inside suction valve body. Clean or replace if necessary. ATTENTION: the ball seat **must be pressed** in the suction valve body and fixed with Locktite



OUTLET VALVE, LOWER AND UPPER PACKING:

1. With the proper wrench unscrew the material cylinder complete with suction valve, from central pumping housing. ATTENTION: Check the condition of the OR inside the central pumping housing
2. With the proper wrench disassemble from the material piston, the compression valve complete with lower packing, spring and spring cup. Check all parts. Clean and replace it if necessary. ATTENTION: the ball seat **must be pressed** in the suction valve body and fixed with Locktite.
3. Remove the ring and pin from connecting joint.
4. Remove the piston complete.
5. With a hooked tool, remove one by one the upper packing from central pumping housing. Check, clean and replace it if necessary.

ASSEMBLING

1. Grease and fit one by one the upper packing on the material piston from the upper side, keeping attention to maintain the proper (^) toward. Grease packing.
2. Assemble the material piston on the connecting joint Insert the pin and stop pin
3. Insert the ball in the compression valve body.
4. Grease and fit one by one the lower packing on the compression valve body, keeping attention to maintain the proper (V) toward. Grease packing.
5. Fit the spring cup on the material piston.
6. Fit the spring on the material piston
7. With the proper wrench assemble on the material piston, the compression valve complete with lower packing.
8. Assemble the cylinder complete with suction valve on central pumping housing.

MAINTENANCE PP-48

INLET VALVE

1. Disconnect unit and release pressure from the system

Ball stop

Ball

Washer

T.C. seat

Suction valve body

Inlet seal

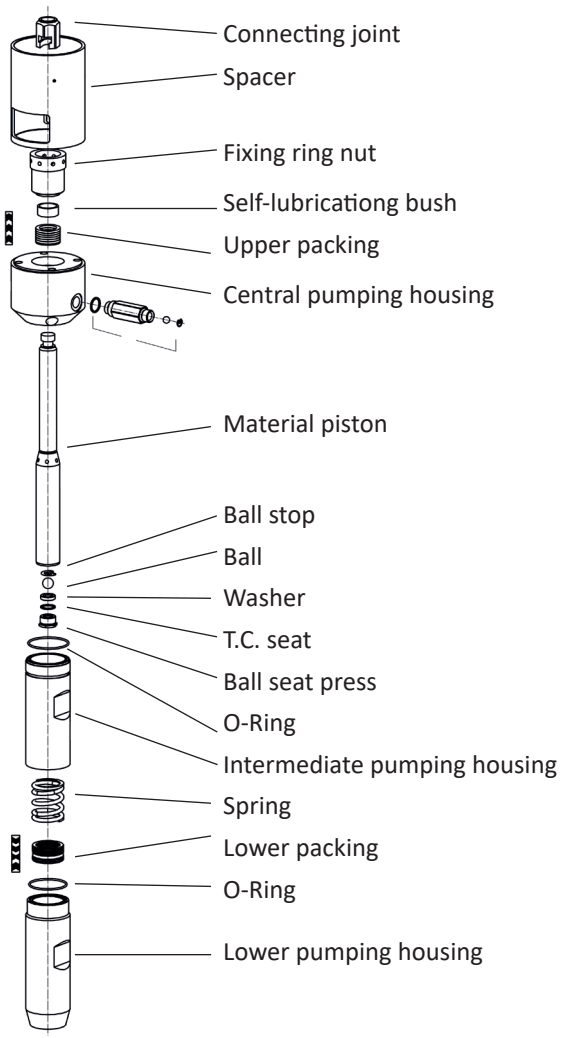
2. WIth the proper wrench disassemble the suction valve body.
3. Remove from the lower body the ball seat, washer, ball and ball stop.
4. Check all parts. Clean or replace if necessary.
5. Reassemble on the lower housing the ball stop, ball, washer, ball seat, suction valve body and inlet seal.

OUTLET VALVE, LOWER AND UPPER PACKING:
ATTENTION: For the disassembling and assembling procedures, make sure that the piston is as much as possible towards the lower cycle.

1. With the proper wrench, remove from the intermediate body, the lower pumping housing complete with suction valve.
2. With a hooked tool, remove the lower packing from the lower pumping housing. Check it and replace if necessary.
3. Remove the material pistone with the proper wrench, ball seat press, ball seat, washer and ball. Check all parts. Clean or replace if necessary
4. With a proper wrench, disassemble the intermediate pumping housing
5. Renove the 4x screws from the central pumping housing.
6. With the proper wrench, loosen the connecting joint.
7. Remove the central body complete of material piston.
8. Remove from the cenral body the fixing ring nut.
9. With a hooked tool, remove the upper packing. Check it and replace or clean if necessary.

ASSEMBLING

1. Grase and fit one by one the upper packing in the central body, keeping attention to maintain the proper (^) toward.
2. Assemble the fixing ring nut. No tighten too much.
3. Assemble the compression valve complete of ball, washer, ball seat and ball seat press, inside the material piston.
4. Fit in the central pumping housing the material piston complete.



5. Assemble the central body complete of material piston on the connecting joint. Tighten well.
6. Screw the 4x scews on the central body.
7. Reassemble the intermediate housing on the central body, keeping attention to the condition of OR in teflon. Replace it if necessary.
8. Grease and fit one by one the lower packing on the lower body, keeping attention to maintain the proper toward (attention: the lower packing is double effect)
9. Fit the spring in the intermediate housing
10. Assemble the lower body on the intermediate housing with the proper wrench, keeping attention to the condition of OR. Replace it if necessary.
11. Assemble the lower body to the intermediate body with the proper wrench. Tighten well.
12. With a sharped tool tighten the fixing ring nut through the safety window placed on the spacer.

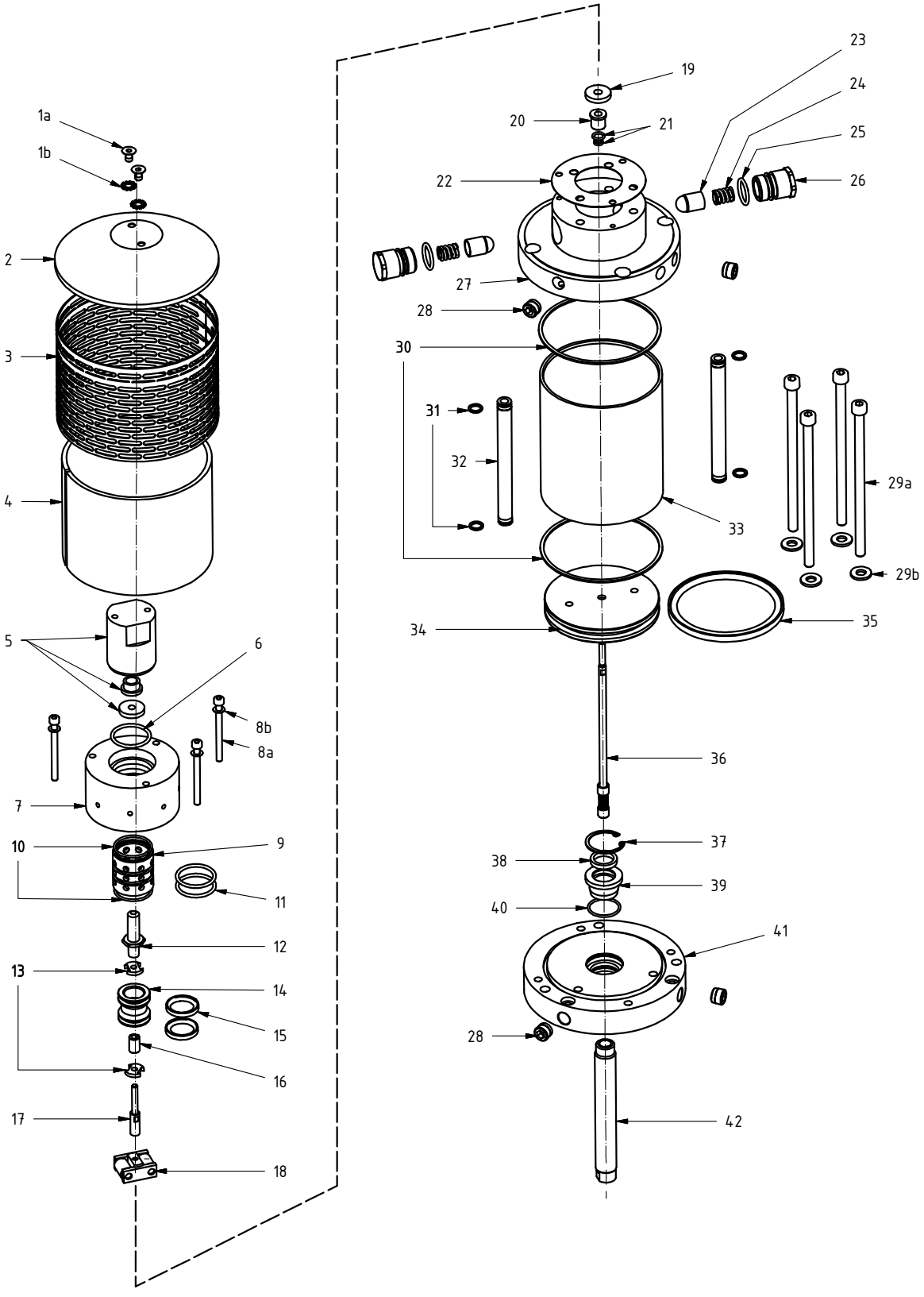
14. Troubleshooting

Provided you have followed the instructions, the sprayer will operate efficiently and give trouble-free service. Should any unexpected problem arise you can, in most cases, remedy the problem by following the chart below. If you find that you cannot correct the problem, then take the sprayer to your nearest authorized service agency. Many of the "causes" listed are unlikely to happen. However, all are included in an attempt to cover every possibility.

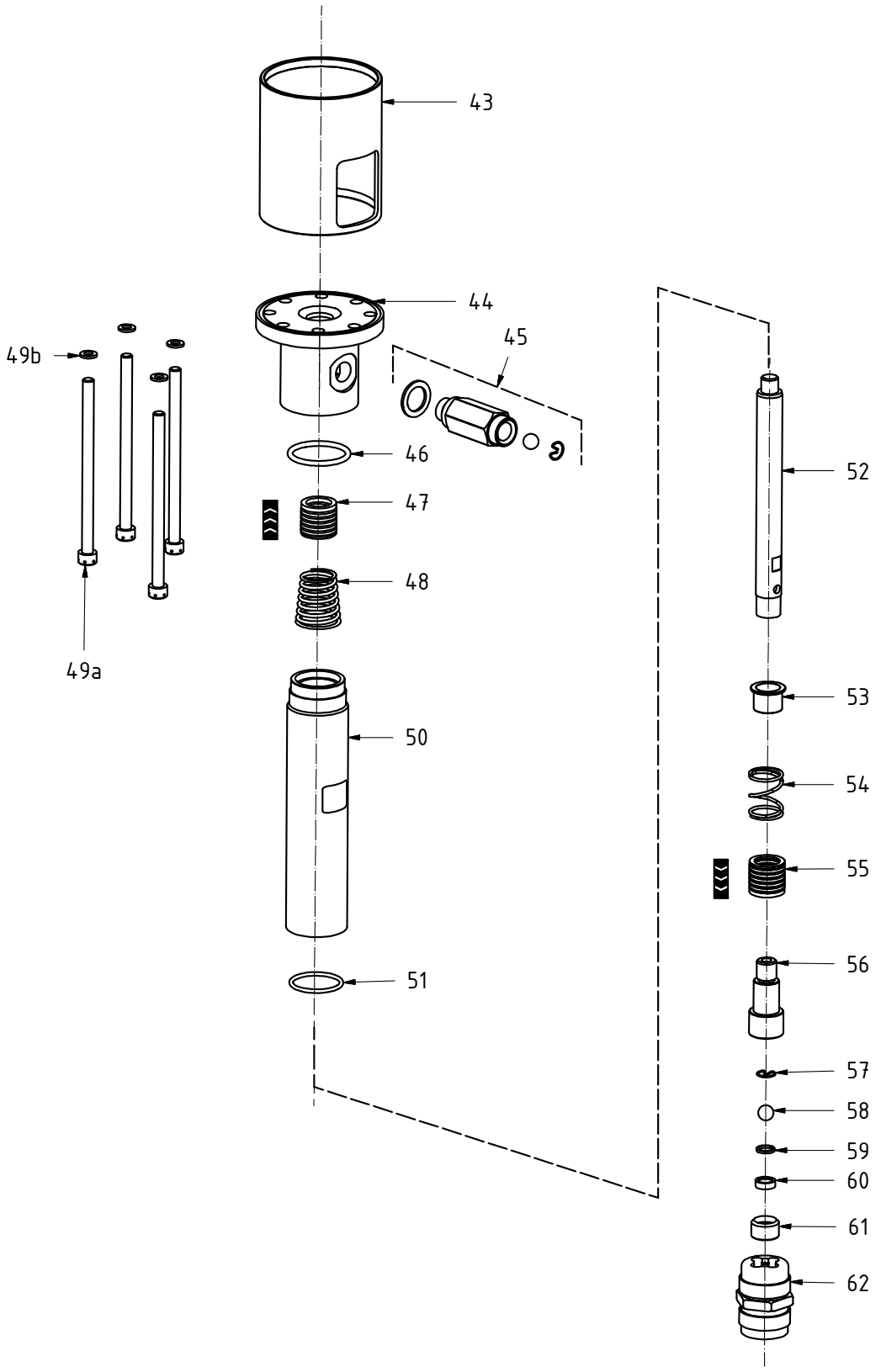
IT IS ABSOLUTELY ESSENTIAL FOR TROUBLE-FREE OPERATION THAT YOUR AIRLESS SPRAYER BE KEPT CLEAN AND FREE OF RESIDUAL PAINT BUILD-UP ON THE INTERNAL PARTS. IT MUST BE CLEANED AND LUBRICATED AFTER EVERY USE.

PROBLEMS	CAUSES	REMEDIS
Pump does not prime	a. Plugged tip b. Gun/line filter clogged c. Suction valve stuck d. Pneumatic motor jammed	a. Clean according to instructions b. Clean filters, rinse out and use thinner materials c. Poke valve free d. Apply to Gemini service
Paint pressure drop	a. Foreign matters inside suction valve b. Suction filter clogged c. Gun filter clogged d. Worn-out packings e. Too high viscosity f. Tip too large, not suitable for the pump capacity	a. Clean b. Clean c. Clean d. Replace e. Dilute material f. Replace with a smaller tip
Pump does not work constantly. Variable spray angle	a. Worn valves, packing and piston b. Non-backflow valve stuck c. Paint pressure insufficient d. Too high viscosity	a. Replace b. Clean c. Increase air pressure d. Dilute material
Pump works regularly, but does not suck material	a .Suction valve stuck b. Air infiltration from suction system c. Suction filter is out of material level d. Dirty suction filter	a. Poke valve free b. Check seal c. Add material d. Clean
Pump works, while gun is shut off	a. Worn valves, packings and piston	a. Replace Apply to Gemini service
Pneumatic motor has frozen	a. The large number of piston slaps may cause frost formation b. Large amount of condensate water inside air circuit c. Temperature approaching freeze	a. Use a smaller tip and reduce air pressure b. Install a proper condensate separatore c. Lubricate air using anti-freeze oil

MASPRA PP-30 / MASPRA PP-30 UP



MASPRA PP-30

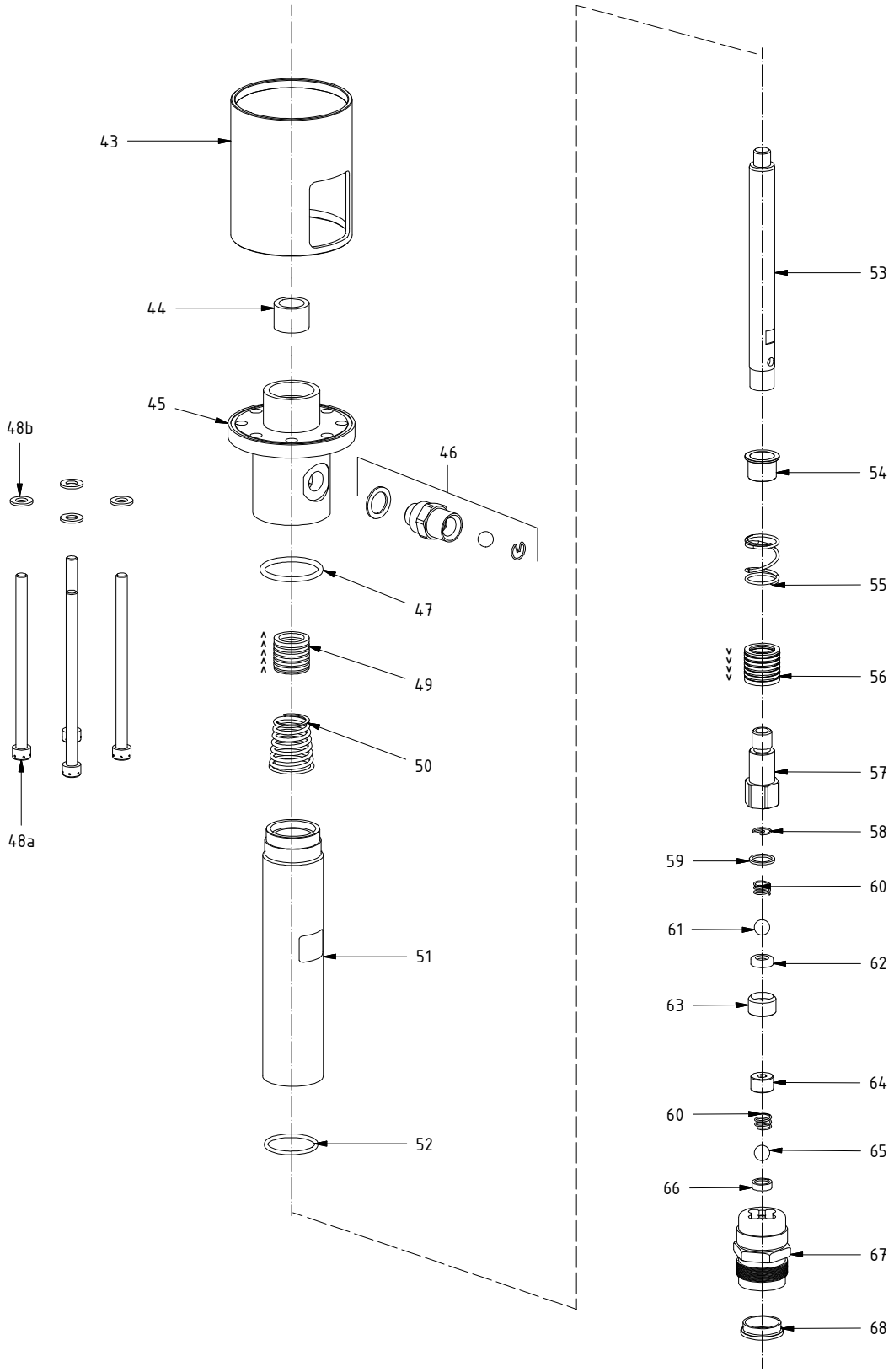


MASPRA PP-30

Air Motor			
Pos.	**Ref.**	**Description**	**Qty**
1a	MA-PP30#1a	Screw	2
1b	MA-PP30#1b	Washer	2
2	MA-PP30#2	Cover	1
3	MA-PP30#3	Filter screen	1
4	MA-PP30#4	Porous Baffle	1
5	MA-PP30#5	Cover cpl.	1
6	MA-PP30#6	O-Ring	1
7	MA-PP30#7	Intermediate body	1
8a	MA-PP30#8a	Bolt	3
8b	MA-PP30#8b	Washer	3
9	MA-PP30#9	Seal Fuse	1
10	MA-PP30#10	O-Ring	2
11	MA-PP30#11	O-Ring	2
12	MA-PP30#12	Small shaft	1
13	MA-PP30#13	Spacer	2
14	MA-PP30#14	Fuse	1
15	MA-PP30#15	Lubroring	2
16	MA-PP30#16	Central bush	1
17	MA-PP30#17	Small shaft	1
18	MA-PP30#18	Pilot valve block	1
19	MA-PP30#19	Lower buffer	1
20	MA-PP30#20	Self-lubricating bush	1
21	MA-PP30#21	Lubroring	1
22	MA-PP30#22	Gasket	1
23	MA-PP30#23	Tracer point	2
24	MA-PP30#24	Spring	2
25	MA-PP30#25	O-Ring	2
26	MA-PP30#26	Body, tracer point	2
27	MA-PP30#27	Upper flange	1
28	MA-PP30#28	Conical plug	4
29a	MA-PP30#29a	Socket screw	4
29b	MA-PP30#29b	Washer	4
30	MA-PP30#30	Seal gasket	2
31	MA-PP30#31	O-Ring	4
32	MA-PP30#32	Tube air	2
33	MA-PP30#33	Air cylinder	1
34	MA-PP30#34	Air motor piston	1
35	MA-PP30#35	Lubroring	1
36	MA-PP30#36	Pilot valve rod	1
37	MA-PP30#37	Seeger ring	1
38	MA-PP30#38	Macma	1
39	MA-PP30#39	Bush PTFE	1
40	MA-PP30#40	O-Ring	1
41	MA-PP30#41	Lower flange	1
42	MA-PP30#42	Air motor shaft	1

Pump housing			
Pos.	**Ref.**	**Description**	**Qty**
43	MA-PP30#43	Spacer	1
44	MA-PP30#44	Central body	1
45	MA-PP30#45	Non-return valve	1
46	MA-PP30#46	OR PTFE	1
47***	MA-PP30#47	Upper packing	1
48	MA-PP30#48	Conical spring	1
49a	MA-PP30#49a	Tie rod	4
49b	MA-PP30#49b	Schnoor washer	4
50	MA-PP30#50	Cylinder	1
51	MA-PP30#51	Seal OR	1
52	MA-PP30#52	Plunging shaft	1
53	MA-PP30#53	Cup spring	1
54	MA-PP30#54	Spring	1
55***	MA-PP30#55	Lower packing	1
56	MA-PP30#56	Compression valve body	1
57**	MA-PP30#57	Ball stop	1
58**	MA-PP30#58	Ball d. 11, s.s.	1
59**	MA-PP30#59	Copper Gasket 1/4”	1
60**	MA-PP30#60	Ball seat insert	1
61**	MA-PP30#61	Ball seat body	1
62*	MA-PP30#62	Suction valve complete	1
*		Suction valve complete	
**		Compression valve guide	
***		Kit upper & lower packing	

MASPRA PP-30 UP

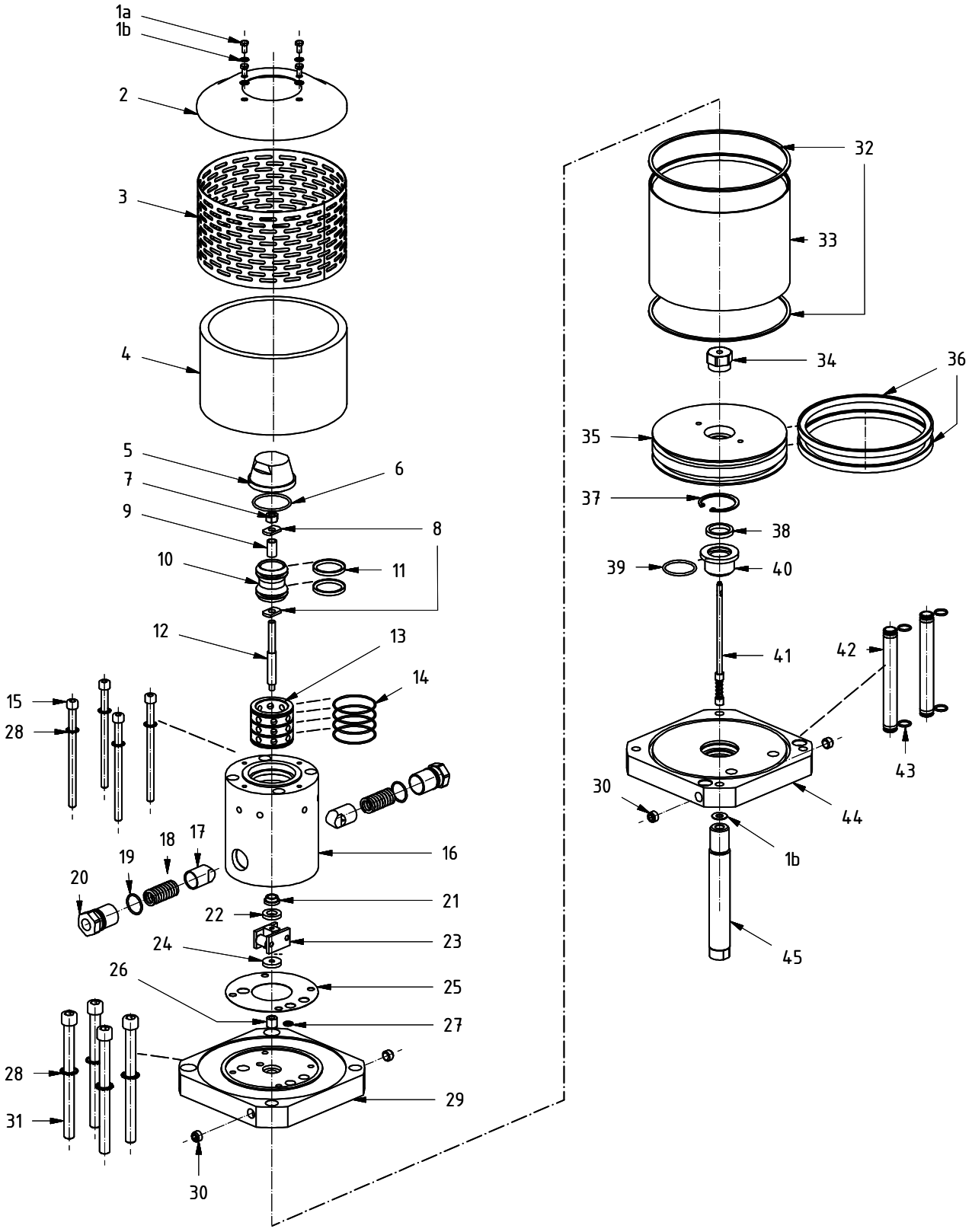


MASPRA PP-30 UP

Air Motor			
Pos.	**Ref.**	**Description**	**Qty**
1a	MA-PP30-UP#1a	Screw	2
1b	MA-PP30-UP#1b	Washer	2
2	MA-PP30-UP#2	Cover	1
3	MA-PP30-UP#3	Filter screen	1
4	MA-PP30-UP#4	Porous Baffle	1
5	MA-PP30-UP#5	Cover cpl.	1
6	MA-PP30-UP#6	O-Ring	1
7	MA-PP30-UP#7	Intermediate body	1
7a	MA-PP30-UP#7a	Internal bush	1
7b	MA-PP30-UP#7b	Spacer	1
8a	MA-PP30-UP#8a	Bolt	3
8b	MA-PP30-UP#8b	Washer	3
9	MA-PP30-UP#9	Seal Fuse	1
10	MA-PP30-UP#10	O-Ring	2
11	MA-PP30-UP#11	O-Ring	2
12	MA-PP30-UP#12	Self-locking nut	1
13	MA-PP30-UP#13	Spacer	2
14	MA-PP30-UP#14	Fuse	1
15	MA-PP30-UP#15	Lubroring	2
16	MA-PP30-UP#16	Central bush	1
17	MA-PP30-UP#17	Small shaft	1
18	MA-PP30-UP#18	Pilot valve block	1
19	MA-PP30-UP#19	Lower buffer	1
20	MA-PP30-UP#20	Self-lubricating bush	1
21	MA-PP30-UP#21	Lubroring	1
22	MA-PP30-UP#22	Gasket	1
23	MA-PP30-UP#23	Tracer point	2
24	MA-PP30-UP#24	Spring	2
25	MA-PP30-UP#25	O-Ring	2
26	MA-PP30-UP#26	Body, tracer point	2
27	MA-PP30-UP#27	Upper flange	1
28	MA-PP30-UP#28	Conical plug	4
29a	MA-PP30-UP#29a	Socket screw	4
29b	MA-PP30-UP#29b	Washer	4
30	MA-PP30-UP#30	Seal gasket	2
31	MA-PP30-UP#31	O-Ring	4
32	MA-PP30-UP#32	Air tube	2
33	MA-PP30-UP#33	Air cylinder	1
34	MA-PP30-UP#34	Air motor piston	1
35	MA-PP30-UP#35	Lubroring	1
36	MA-PP30-UP#36	Pilot valve rod	1
37	MA-PP30-UP#37	Seeger ring	1
38	MA-PP30-UP#38	Macma	1
39	MA-PP30-UP#39	Bush PTFE	1
40	MA-PP30-UP#40	O-Ring	1
41	MA-PP30-UP#41	Lower flange	1
42	MA-PP30-UP#42	Air motor shaft	1

Pump housing			
Pos.	**Ref.**	**Description**	**Qty**
43	MA-PP30-UP#43	Spacer	1
44	MA-PP30-UP#44	Bush	1
45	MA-PP30-UP#45	Central body	1
46	MA-PP30-UP#46	Non-return valve	1
47	MA-PP30-UP#47	O-Ring	1
48a	MA-PP30-UP#48a	Schnoor washer	4
48b	MA-PP30-UP#48b	Bolt	4
49***	MA-PP30-UP#49a	Upper Packing	1
50	MA-PP30-UP#50	Spring	1
51	MA-PP30-UP#51	Cylinder	1
52	MA-PP30-UP#52	O-Ring	1
53	MA-PP30-UP#53	Material piston	1
54	MA-PP30-UP#54	Cup spring	1
55	MA-PP30-UP#55	Spring	1
56***	MA-PP30-UP#56	Lower packing	1
57*	MA-PP30-UP#57	Body, Compression valve	1
58*	MA-PP30-UP#58	Ball stop	1
59*	MA-PP30-UP#59	Copper gasket	1
60*/**	MA-PP30-UP#60	Spring	2
61*	MA-PP30-UP#61	Ball d.11 s.s.	1
62*	MA-PP30-UP#62	T.C. seat	1
63*	MA-PP30-UP#63	Plug	1
64**	MA-PP30-UP#64	Plug	1
65**	MA-PP30-UP#65	Ball d.14 s.s.	1
66**	MA-PP30-UP#66	T.C. seat	1
67**	MA-PP30-UP#67	Body, suction valve	1
68**	MA-PP30-UP#68	Inlet seal	1
*		Compression valve kit	
**		Suction valve kit	
***		Upper & lower packing kit	

MASPRA PP-40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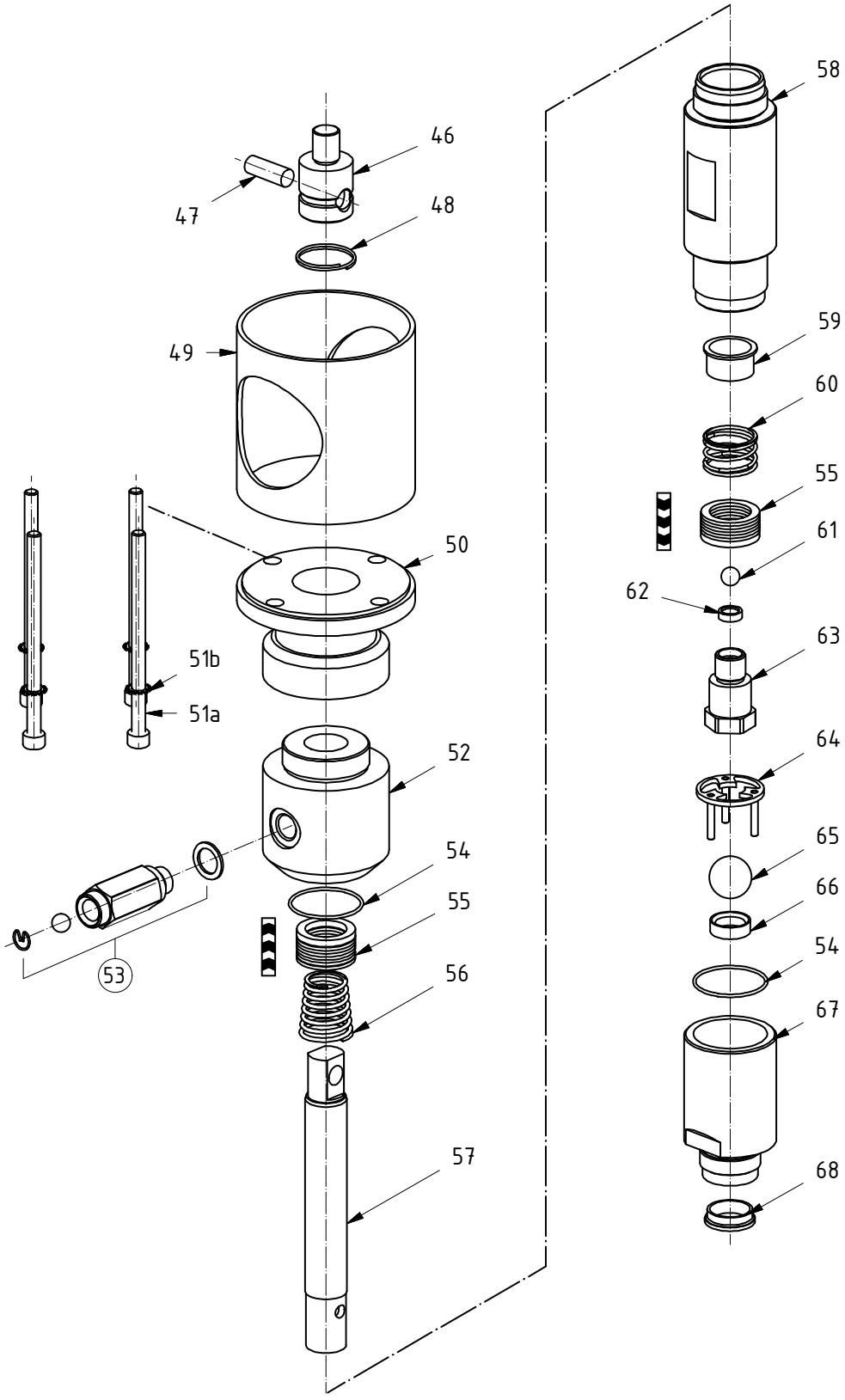
MASPRA PP-40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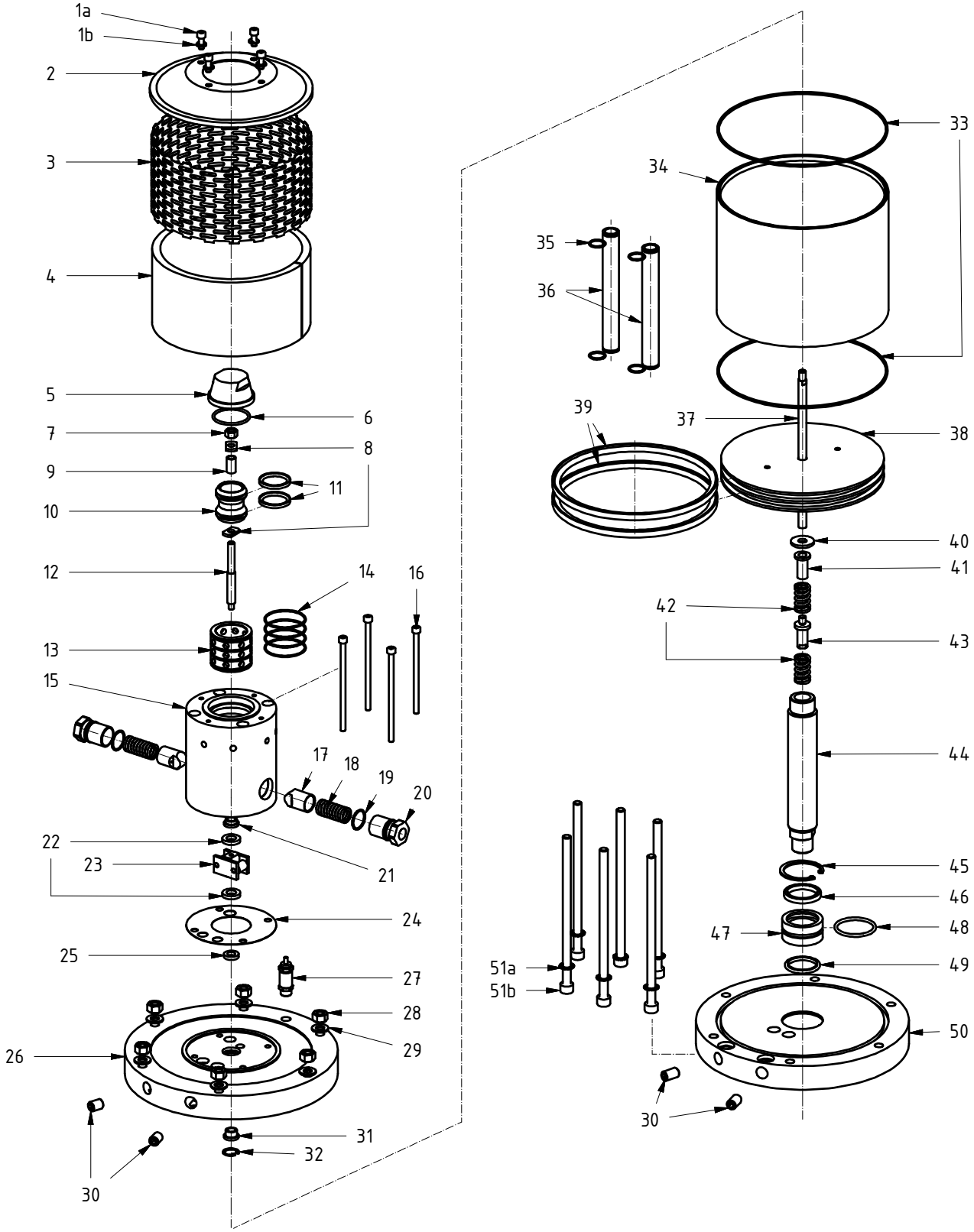
MASPRA PP-40

Air Motor			
Pos.	**Ref.**	**Description**	**Qty**
1a	MA-PP40#1a	Fixing cover screw	4
1b	MA-PP40#1b	Washer schnoor	5
2	MA-PP40#2	Cover, motor silencer	1
3	MA-PP40#3	Filter screen	1
4	MA-PP40#4	Silencer	1
5	MA-PP40#5	Cap	1
6	MA-PP40#6	OR cap	1
7	MA-PP40#7	Bolt	1
8	MA-PP40#8	Upper washer	2
9	MA-PP40#9	Spacer reversal	1
10	MA-PP40#10	Fuse delrin	1
11	MA-PP40#11	Lubroring fuse	2
12	MA-PP40#12	Pilot spindle	1
13	MA-PP40#13	Seal, fuse	1
14	MA-PP40#14	OR seal	4
15	MA-PP40#15	Tie-rod for distributor	4
16	MA-PP40#16	Distributor body	1
17	MA-PP40#17	Trace point	2
18	MA-PP40#18	Spring	2
19	MA-PP40#19	OR tracer point body	2
20	MA-PP40#20	Body, tracer point	2
21	MA-PP40#21	Bushing	1
22	MA-PP40#22	Spacer	1
23	MA-PP40#23	Reversal control system	1
24	MA-PP40#24	Spacer	1
25	MA-PP40#25	Flexoid gasket	1
26	MA-PP40#26	Self-lubricating bush	1
27	MA-PP40#27	Lubroring	1
28	MA-PP40#28	Washer	8
29	MA-PP40#29	Upper flange	1
30	MA-PP40#30	Conical plug 1/4”	4
31	MA-PP40#31	Socket screw + washers	4
32	MA-PP40#32	Cylinder gasket	2
33	MA-PP40#33	Air cylinder	1
34	MA-PP40#34	Piston fixing nut	1
35	MA-PP40#35	Air motor piston	1
36	MA-PP40#36	Lubroring air piston	2
37	MA-PP40#37	Seeger lower flange	1
38	MA-PP40#38	Ring MAD	1
39	MA-PP40#39	PTFE bush	1
40	MA-PP40#40	OR bushing	1
41	MA-PP40#41	Rod	1
42	MA-PP40#42	Air connection hose	2
43	MA-PP40#43	OR air connection hose	4
44	MA-PP40#44	Lower flange	1
45	MA-PP40#45	Motor piston shaft	1

Paint part			
Pos.	**Ref.**	**Description**	**Qty**
46	MA-PP40#46	Connection joint	1
47	MA-PP40#47	Pin Ø12	1
48	MA-PP40#48	Stop ring	1
49	MA-PP40#49	Spacer cylinder	1
50	MA-PP40#50	Flange	1
51a	MA-PP40#51a	Tie-rod	4
51b	MA-PP40#51b	Washer	4
52	MA-PP40#52	Pumping housing central	1
53	MA-PP40#53	No backflow valve complete	1
54	MA-PP40#54	O-ring	2
55*	MA-PP40#55	Upper and lower packing	2
56	MA-PP40#56	Spring, upper packing	1
57	MA-PP40#57	Material piston	1
58	MA-PP40#58	Cylinder	1
59	MA-PP40#59	Cup spring	1
60	MA-PP40#60	Spring	1
61**	MA-PP40#61	SS ball Ø11	1
62**	MA-PP40#62	Seat for ball Ø11	1
63**	MA-PP40#63	Compression valve body	1
64***	MA-PP40#64	Ball stop	1
65***	MA-PP40#65	SS ball Ø1”	1
66***	MA-PP40#66	Seat for ball Ø1”	1
67***	MA-PP40#67	Suction body	1
68	MA-PP40#68	Inlet sleeve	1
*		Upper and lower packing complete	
**		Compression valve	
***		Suction valve	

MASPRA PP-48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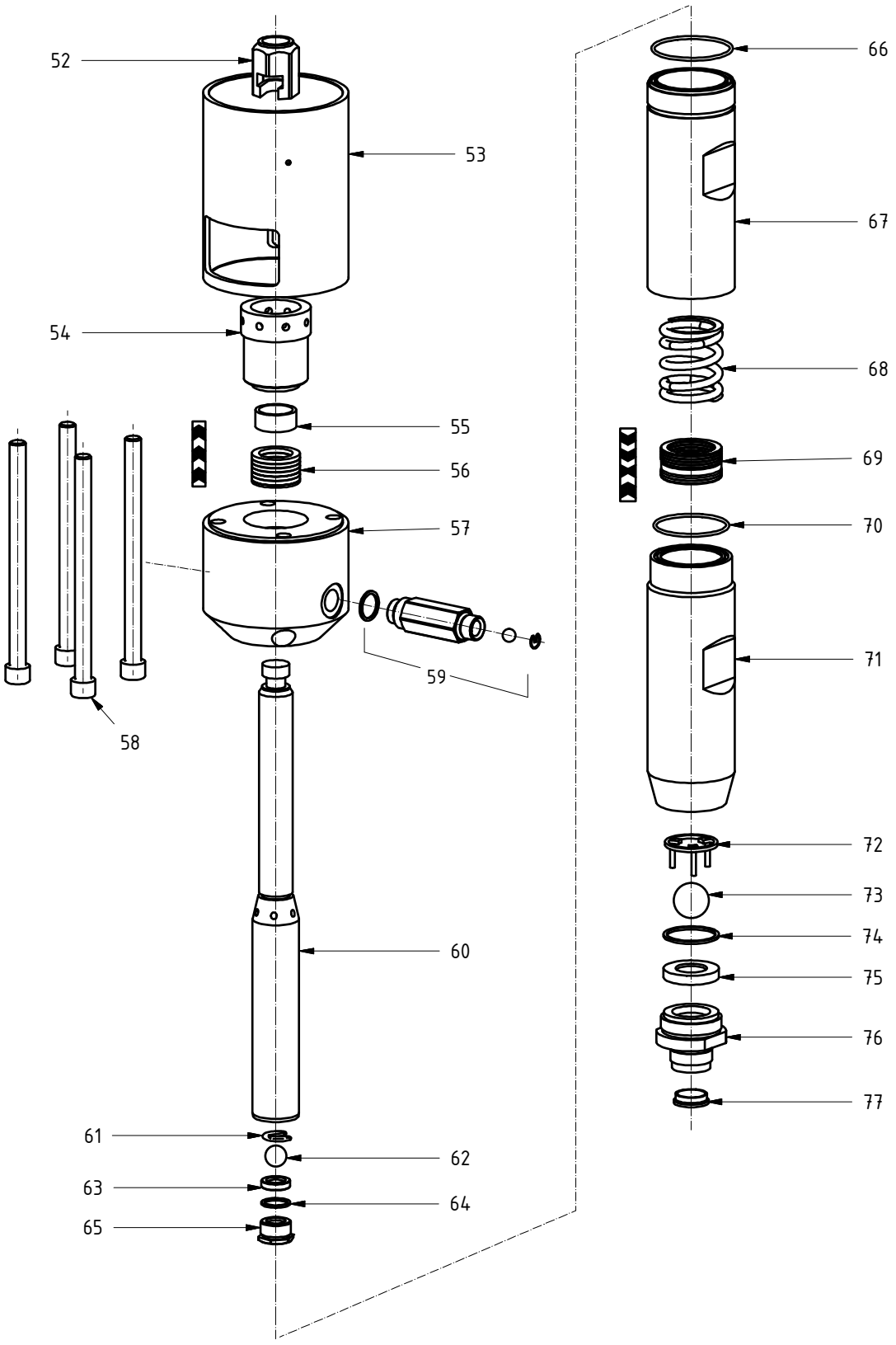
MASPRA PP-48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MASPRA PP-48

Air Motor			
Pos.	**Ref.**	**Description**	**Qty**
1a	MA-PP48#1a	Fixing bolt	1
1b	MA-PP48#1b	Washer	1
2	MA-PP48#2	Cover	1
3	MA-PP48#3	Filter net	1
4	MA-PP48#4	Cartridge	1
5	MA-PP48#5	Cap	1
6**	MA-PP48#6	O-ring	1
7	MA-PP48#7	Bolt	1
8**	MA-PP48#8	Upper washer	2
9	MA-PP48#9	Spacer reversal	1
10	MA-PP48#10	Fuse	1
11**	MA-PP48#11	Lubroring	2
12	MA-PP48#12	Pilot spindle	1
13	MA-PP48#13	Seal, fuse	1
14**	MA-PP48#14	OR seal	4
15	MA-PP48#15	Distributor body	1
16	MA-PP48#16	Tie-rod for distributor	4
17	MA-PP48#17	Trace point	2
18	MA-PP48#18	Spring	2
19	MA-PP48#19	OR tracer point body	2
20	MA-PP48#20	Body, tracer point	2
21	MA-PP48#21	Bushing	1
22	MA-PP48#22	Spacer	2
23	MA-PP48#23	Reversal control system	1
24	MA-PP48#24	Gasket	1
25	MA-PP48#25	Seal ring	1
26	MA-PP48#26	Upper flange	1
27	MA-PP48#27	Pneumatic safety valve	1
28	MA-PP48#28	Fixing nut, motor	6
29	MA-PP48#29	Washer	6
30	MA-PP48#30	Plug	4
31	MA-PP48#31	Bush	1
32	MA-PP48#32	Seeger ring	1
33	MA-PP48#33	O-ring	2
34	MA-PP48#34	Air cylinder	1
35	MA-PP48#35	OR, air hose	4
36	MA-PP48#36	Air hose	2
37*	MA-PP48#37	Small shaft	1
38	MA-PP48#38	Air piston	1
39	MA-PP48#39	Seal gasket	2
40	MA-PP48#40	Washer	1
41*	MA-PP48#41	Bush for spring	1
42*	MA-PP48#42	Inversion spring	2
43*	MA-PP48#43	Final sprindle	1
44	MA-PP48#44	Shaft	1
45	MA-PP48#45	Stop-seeger	1

Paint part			
Pos.	**Ref.**	**Description**	**Qty**
46	MA-PP48#46	Seal gasket	1
47	MA-PP48#47	Bush	1
48	MA-PP48#48	Lubroring, bush	1
49	MA-PP48#49	O-ring, bush	1
50	MA-PP48#50	Lower flange	1
51a	MA-PP48#51a	Schnoor washer	4
51b	MA-PP48#51b	Tie-rod	4
52	MA-PP48#52	Joint	1
53	MA-PP48#53	Spacer	1
54	MA-PP48#54	Pressure washer	2
55	MA-PP48#55	Bush, nut	2
56***	MA-PP48#56	Upper packing	1
57	MA-PP48#57	Central body	1
58	MA-PP48#58	Tie-rod	1
59	MA-PP48#59	Non return valve	1
60	MA-PP48#60	Piston 48:1	1
61	MA-PP48#61	Ball-stop	1
62****	MA-PP48#62	Ball	1
63****	MA-PP48#63	Seat carbide	1
64	MA-PP48#64	Washer	1
65	MA-PP48#65	Seat-Press carbide	1
66	MA-PP48#66	O-ring PTFE, upper	1
67	MA-PP48#67	Intermediate body	1
68	MA-PP48#68	Spring	1
69***	MA-PP48#69	Lower packing	1
70	MA-PP48#70	O-ring PTFE, lower	1
71	MA-PP48#71	Lower body	1
72	MA-PP48#72	Ball-stop	1
73*****	MA-PP48#73	Ball	1
74	MA-PP48#74	Washer	1
75*****	MA-PP48#75	Seat carbide	1
76	MA-PP48#76	Suction body	1
77	MA-PP48#77	Inlet seal	1
*		Inversion system kit	1
**		Seal kit PP-48	1
***		Upper and lower packing kit	1
****		Ball Ø18 s.s	1
		Ball Seat	1
*****		Ball Ø30 s.s	1
		Ball seat	1

WARRANTY

All Gemini GmbH appliances are guaranteed for a period of 12 months from the date written on the invoice, unless otherwise stated in writing. The warranty covers all manufacturing faults and material defects. Replacements and repair operations are covered only if carried out by our company and at our servicing shops.
The faulty parts must be sent CARRIAGE FREE.
Once the components have been repaired they will be sent CARRIAGE PAID to the customer.
The warranty does not cover our company personnel aid during installation or dismantling operations. If for practical purposes one of our employee is sent to the premises, a charge will be made for the time plus extra for travelling and expenses.
Our warranty does not cover direct or indirect damage, to people or property, caused by our appliances and it does not cover repair operations carried out by the owner or by a third party.
The following are not covered by our warranty:

- failure caused by incorrect use or assembly.
- failure caused by external agents.
- failure caused by lack of maintenance or negligence.

WARRANTY FORFEITURE:

If the form attached below is not filled out and returned.
In case of delayed payment or other contract defaults.
All repair operations carried out under warranty do not interrupt its duration.
Whenever changes or repairs are carried out on our machinery without prior authorization.
Whenever the unit seems tampered with, dismantled or previously repaired in unauthorized servicing shops.
Whenever the serial number is damaged or removed.
When the damage is caused by improper use or functioning, or if the machine falls, is bumped or by other causes of malfunctioning not due to normal working conditions

NAME

_____

ADDRESS

_____

V.A.T. NR.

_____

EQUIPMENT TYPE:

_____

SERIAL N°

_____

DATE

_____

STAMP AND SIGNATURE

_____

To be send, completed in all parts (in capital letters), to: Gemini GmbH, Rheinstrasse 7, DE - 88046 Friedrichshafen

Gemini GmbH

Rheinstraße 7

D-88046 Friedrichshafen

Tel.: +49 7541 9815615

Fax: +49 7541 9815625

E-Mail: info@gemini-airless.de

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