

AST24

Instruction manual

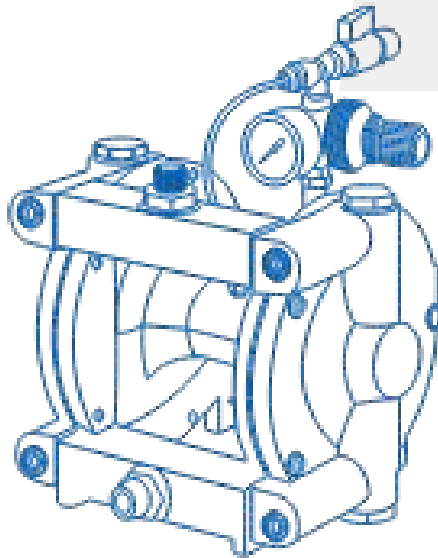


mod. AST24

AVAILABLE MODELS

mod. AST24

Double diaphragm pump with
flow rate of 24 l/min



Index

Instruction manual

<i>Packing</i>	<i>.04</i>
<i>Description</i>	<i>.05</i>
<i>Technical features</i>	<i>.06</i>
<i>Products and dimensions</i>	<i>.07</i>
<i>Usage</i>	<i>.08</i>
<i>Pipes connection</i>	<i>.09</i>
<i>Start Work</i>	<i>.10</i>
<i>Safety</i>	<i>.12</i>
<i>Painting cycle</i>	<i>.13</i>
<i>Pressure discharge</i>	<i>.14</i>
<i>Maintenance</i>	<i>.15</i>
<i>Cleaning</i>	<i>.16</i>
<i>Filter replacement</i>	<i>.17</i>
<i>Anomaly resolution</i>	<i>.18</i>
<i>Scheduled maintenance</i>	<i>.19</i>
<i>Spare parts and components</i>	<i>.20</i>
<i>Disposal and Support</i>	<i>.26</i>



WARNINGS!

Carefully read and follow all instructions and safety precautions before using the product.



MANUALS

Our manuals are available at aircom.it/en/support/manuals/
Or, by scanning the QR Code on this page.

PACKING

The pump is packed in a cardboard box. All components supplied as standard are placed in the same package.
The weight of the equipment plus the packaging is ~22 Kg.

STORAGE

During transport and storage, make sure that temperatures between -15°C and 40°C or 50°C for short periods not exceeding 24 hours are not exceeded, which could damage the unit itself.
If the unit is to be stored, make sure it is stored in places with humidity between 30% and 80%.

PLATE DATA

On the front plate, the equipment bears the manufacturer's identification plate and the 2006/42/CE STANDARDS compliance plate, also represented below.

The plate must not, under any circumstances, be removed, even if the equipment is resold. For any communication with the manufacturer, always quote the serial number (shown on the plate itself). On the body of the pump there are some pictograms indicating safety warnings which must be carefully observed by anyone preparing to use the painting unit. Failure to comply with the provisions relieves the manufacturer from any damage or injury to people or things that could derive from it and makes the operator himself solely responsible towards the competent bodies. Replace the nameplate and any removed, damaged or illegible stickers.

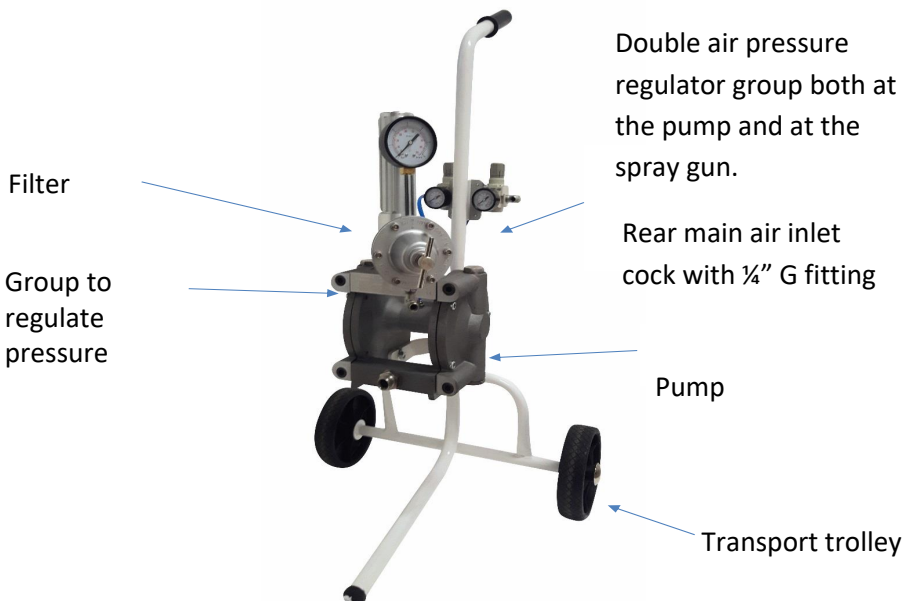


DESCRIPTION

The equipment dealt with in this manual is a low pressure painting unit which allows the use of any type of water-based or solvent-based paint.

Characterized by considerable practicality, versatility and ease of use, the AST24 employs a pneumatically operated double diaphragm pump unit. The spray system (usually a manual or automatic airbrush is used), allows the delivery of special paints, textured, embossed, multicolored. It is possible to paint small and medium-sized items, and to use them in applications where a high level of surface finish is required.

The modularity of the equipment allows you to purchase only the pump unit and then customize it with a considerable number of accessories (conventional or HVLP spray gun, pump trolley, gravity tank, wall fixing system, suction systems, etc.) see drawing below:



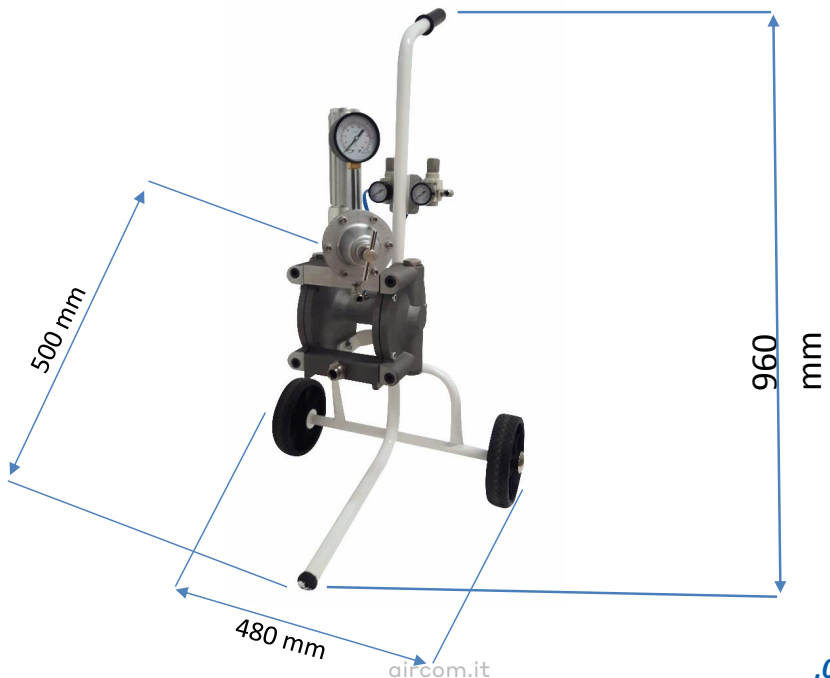
TECHNICAL FEATURES

The painting unit uses a pneumatic system that can be fed at a pressure between 2 and 8 bar (from 28 to 114 psi). Compressed air is used to obtain the movement of the two paint pumping membranes. All gaskets are of a special type with high quality and high resistance; the valves are in stainless steel, the seats are in stainless steel.

FEATURE	AST24
CAPACITY	24 Lt/min. (6 gal/min)
PRESSURE RATIO	1:1
OPERATING PRESSURE	1 ÷ 8 bar (28 ÷ 114 psi)
NOMINAL PRESSURE	6 ÷ 8 bar (85 ÷ 114 psi)
DROP TANK	5 Lt. (1,25 gal)
PREVALENCE	15 metri
AIR OUTLET FITTING	¼" M
PAINT INLET FITTING	F 1/2"
NOZZLE	0,5 – 5,0
WEIGHT	15 Kg. (33 lb.)
SOUND PRESSURE LEVEL	L _{aeq} =68,70 dB (A)
PEAK VALUE	99,7 dB

PRODUCTS AND DIMENSIONS

The AST24 series painting units are designed for painting ferrous material in general, wood, plastics, fabrics, leathers. The products that can be supplied are: paints, textured, embossed, multicolour paints, solvents, inks, oils, resins. For the use of the equipment with particular products, the approval of the manufacturer must be obtained, and the adaptation of the technical characteristics of the unit for the processing of such products. Solvents such as trichloromethane and chloromethylene (dichloromethane) can chemically react with the aluminum which makes up most of the pump, leading to dangerous explosions. We advise you to always read the technical data sheet of the product you intend to apply very carefully, avoiding the use of materials that contain this type of solvent. Do not use regenerated solvents (cleaning thinners), make sure they are free from acids (caused by regeneration); these acids are responsible for the corrosion of the gun.



USAGE

Before using the paint pump, check that it has not suffered damage due to transport or storage conditions.

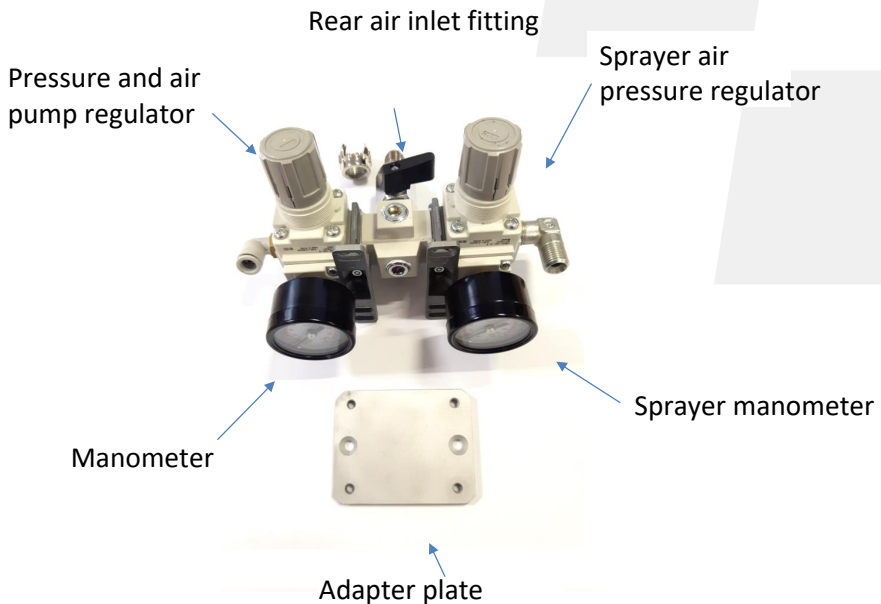
Also check that all the optionals ordered and all the components supplied as standard are contained in the packaging.

Always wear the prescribed PPE; gloves, mask, goggles, in compliance with workplace safety regulations. As a first step, it is necessary to make sure that the lines are able to correctly feed the pump, in compliance with the safety standards.

The unit is supplied with a double pressure regulator, it is recommended to supply with a pressure of 6÷8 bar Max.

It is recommended to use dry compressed air for best painting results.

The drawing indicates the connection points of the equipment to the pneumatic network.



PIPES CONNECTION

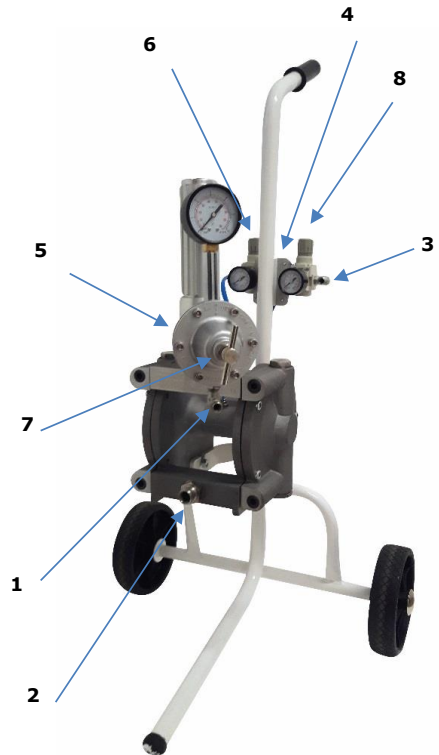
The pump must be placed in an easily accessible position but in such a way that it does not hinder the operator and that it is not exposed to jets of paint.

- Connect the twin hose to both the pump and the gun. The twin tube is of two colors; (WHITE) for product, and (BLUE) for atomizing air.

Important: pay close attention to the connection, as the fittings of the blue hose are identical to the fittings of the white hose.

Do not reverse the pipes. Connect the product passage pipe (WHITE) to the product delivery pipe connection (Pos. 1). Connect the atomizing air hose (BLUE) to the atomizing air connection (Pos. 3).

- Connect the air supply pipe (minimum internal diameter of the pipe 8 mm) to the pump air connection fitting (Pos. 4).
- Connect the suction pipe (tightening tightly) to the paint suction pipe fitting (Pos. 2). If you have a gravity tank, screw the tank to the paint suction pipe connection using the 90° extension supplied with the tank.
- Connect the return pipe (tightening tightly) to the connection of the return cock (Pos. 5). If you have a gravity tank, recirculation takes place through a rilsan tube (to be screwed to the return tap fitting) and a curved end to be inserted into the hole in the tank lid



START WORK

SUCTION SYSTEM

- All our pumps are tested with chemical water, therefore a light film of oil is deposited in the product passages. When starting for the first time, it is recommended to circulate the solvent in the pump before starting work.
- Immerse the vacuum system in a container of solvent.
- Make sure that the return cock (Pos. 5) is open.
- Open the line cock. Turn the engine air regulator knob to the right (Pos. 6). Adjust the pressure to two bars (28 psi).

The pump begins to draw solvent from the container through the dip tube and puts it back into the container through the return tube, washing the pump body.

- During the washing phase of the pump body, the supply air to the gun must be closed. Turn the atomizing air pressure regulator handwheel to the left (until the end of the stroke). Let the solvent circulate for a few seconds.
- Close the return cock; the solvent is sent to the gun through the delivery tube. Adjust the thrust pressure of the product to 1 bar by turning the handwheel of the paint pressure regulator to the right (Pos. 7).
- Rest the spray gun on a container, pull the spray gun control lever, letting the solvent flow out for a few moments, then release the control lever.
- Open the return cock and lift the suction system from the solvent container, the pump empties through the recirculation pipe. Shut off the pump supply air as soon as the system has completely emptied.

START WORK

GRAVITY TANK SYSTEM

- Fill the tank with solvent and open the return valve.
- Feed the system by opening the line cock. Adjust the air pressure to 2 bar. The pump begins to suck in solvent and put it back into the tank through the return tube.
- Close the return tap, the solvent is sent to the spray gun through the delivery tube. Adjust the thrust pressure of the product to 1 bar by turning the handwheel of the paint pressure regulator to the right).
- Rest the spray gun on a container, pull the spray gun control lever, letting the solvent flow out for a few moments, then release the control lever.
- Disconnect the metal end of the return tube from the tank and place it in the solvent container. Open the return valve and let the gravity tank empty completely. Once the operation has been completed, close the pump supply air.

SAFETY OF LOW PRESSURE HOSES:

Pressurized material circulates in the pipes, pay close attention to breakages, cuts or slight leaks, which can cause solvent absorption in the epidermis or other serious physical injuries.

- Check the connections before activating the system.
- Do not bend the pipes near the fittings and do not use damaged pipes or worn out.
- Do not try to repair any leaks.
- Pay close attention to the writing on the pipes.
- Never exceed the maximum pressure indicated by the manufacturer.
- The tube marked with the maximum pressure value must be used for the product, the other for the gun supply air.

SAFETY

The painting **MUST** preferably take place in a special painting booth equipped with a suction hood. Do not use the unit if the vacuum system is not running. Wear protective gloves, goggles and a mask with filters for breathing with activated carbon and clothing suitable for body protection. The pneumatic diaphragm pump must only be used by competent and trained personnel for its safe and correct use. Make sure that the personnel assigned to use it have received adequate training and have fully understood this user manual. To use the spray gun, **COMPLY STRICTLY** with the prescriptions and safety criteria indicated below.

- Always work on the equipment protected by the prescribed PPE; gloves, protective masks, breathing filters with activated carbon, clothing suitable for body protection.
- The pump is used with paint products or solvents, bear in mind that these are highly flammable, therefore use the system in well-ventilated environments and avoid any action that could cause fires (example: smoking, high temperature slag or shavings, sparks or any electrical risk).
- **CHECK** the chemical compatibility of the products to be used from their safety data sheets.
- The use of products containing organic solvents can cause poisoning due to the emission of toxic vapours.
- **DO NOT USE** with food or medicines.
- **DO NOT EXCEED** the maximum operating pressures indicated (see paragraph 2.3). **BEFORE** any disassembly, cleaning, maintenance and reassembly operation **RELEASE** the pressure in the pipes
- Never point the paint gun at the human body or at animals.
- Do not modify or alter the equipment as supplied; in addition to being able to cause malfunctions, or worse, even dangerous failures, you would invalidate the guarantee.

PAINTING CYCLE

Prepare the paint following the manufacturer's instructions. Immerse the intake system (or fill the gravity tank) in the prepared paint.

Open the system supply air (Pos.4) open the return cock (Pos.5). Slowly turn the handwheel of the engine air pressure regulator to the right until the product comes out of the recirculation pipe, at the minimum operating pressure of the machine. Close the return tap, the paint is pushed to the spray gun filling the circuit. Adjust the paint thrust pressure to the spray gun at 1 bar, using the paint pressure regulator handwheel (Pos. 7). Pull the control lever and discharge the solvent contained in the paint tube. Release the lever when paint appears.

Adjust the atomizing air pressure to the spray gun by turning the knob of the atomizing air pressure regulator to the right

(pos. 8).
Adjust the pressure between 3 and 5 bar (42-70 psi).

Test the adjustments just made on a smooth surface. Depending on the density of the paint used, the air pressure at the pump motor must be modified. For fluid paints, the recommended pressure is between 3 – 4 bar. When using dense paints, increase the air pressure to the pump motor (do not exceed 8 bar). Use the fluid pressure regulator to dose the desired amount of product. Said device works up to a max. operating pressure. of 3 Bar. Act on the fluid pressure regulator (7) to adjust the quantity of paint dispensed.

END OF THE WORK SESSION

When the supply air to the system is removed, residual pressure remains in the product passage pipes which can cause serious physical injury, spraying large quantities of harmful substances on the body. First, release the residual pressure

Remove air from the system.

Almost completely screw the handwheel to adjust the needle stroke of the spray gun. Close the atomizing air of the gun by directing the jet into the paint container.

Open the pump return cock.

Thoroughly clean the unit.

PRESSURE DISCHARGE

When the supply air is removed, residual pressure remains in the product passage pipes which can cause serious injury. First, release the residual pressure:

- Remove air from the system.
- Screw the needle stroke regulating handwheel on the spray gun almost completely.
- Close the atomizing air of the gun.
- Pull the control lever of the gun, directing the jet into the paint container.
- Open the pump return cock.
- Without disconnecting the spray gun from the pump, clean the system:
- Lift the suction system out of the paint container and let it drain well. If using the gravity tank, remove the return tube and place it in the paint container.
- Regulate the supply air to the system at 1 bar and empty the paint from the pump.
- Immerse the suction system in the solvent (or fill the gravity tank). Let the solvent circulate inside the pump body for a few minutes.
- Close the return cock. The solvent arrives at the airbrush.
- Close the paint supply tap, pull the lever and discharge the paint into the product can. Release the lever when the solvent appears.
- Pull the control lever discharging the solvent into the appropriate can, through the airbrush for a few minutes. Open the return cock and close the general supply air.

EMERGENCY SITUATIONS

FIRE: Use powder extinguishers, which must be located near the equipment as required by LAW (Legislative Decree 81/08 safety in the company) **DO NOT USE WATER.** Personnel must be trained to know how to operate under such conditions.

MAINTENANCE

Adequate maintenance is a decisive factor for a longer life of the equipment in optimal operating and performance conditions, and ensures functional safety over time. It is recommended to have the maintenance operations carried out by trained personnel. Personnel must be provided with personal protective equipment commonly used for similar operations, and follow the safety procedures prescribed in the following chapter.

To keep the AST24 system in perfect working order, it is necessary to clean it at each end of work and periodically check the filters, fittings and coupled hose, replacing them if worn or damaged. It is necessary to prevent paint residues from drying inside the system, compromising the functionality of the system itself.

PERFORM MAINTENANCE ONLY WITH THE PUMP STOPPED AND ISOLATED FROM THE POWER SUPPLY.

To isolate the machine from the power supply, close the pump air connection cock POS.4 and disconnect the general supply pipe.

The main warnings to adopt when performing maintenance on the machine are:

- Disconnect the air supply before removing any part of the unit or making any replacement of components.
- Do not wear rings, watches, chains, bracelets, etc. during maintenance operations.
- Always use personal protective equipment (gloves, goggles, safety shoes).
- Use only original spare parts.
- Do not use open flames, sharp points or pins for cleaning.
- Not smoking.

CLEANING

The external surfaces of the unit must be cleaned at the end of each working day or in any case at the end of each work. This allows you to keep the unit in good condition. For external cleaning, the use of a soft cloth soaked in thinner or a detergent solution is sufficient.

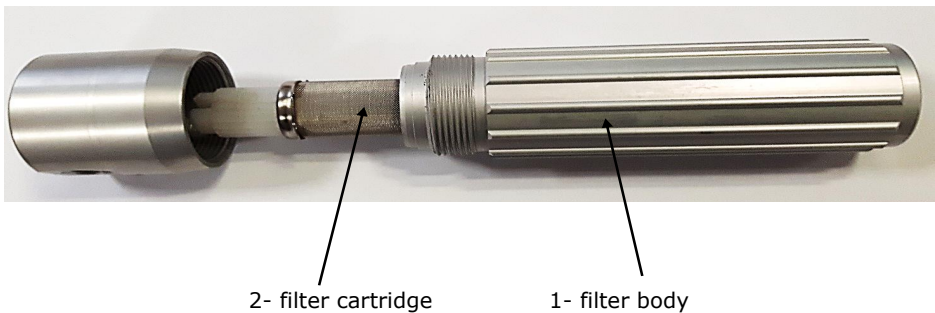
To ensure flawless operation of the equipment over time, the paint circuit must be cleaned daily or in any case at the end of each job to prevent product residues from drying inside the equipment. Cleaning must be extended to the entire system, gun and hoses included. The entire cleaning takes place without disassembling its components.

1. Lift the suction and recirculation pipes out of the product canister, making them to drain.
2. Carry out the pressure relief procedure.
3. Immerse the tubes in a can containing clean solvent and let the solvent circulate inside the pump for a few minutes, opening the supply air (regulated at 2 bar) and the recirculation valve.
4. Close the circulation valve.
5. Release the lever safety catch and discharge the paint residues left in the gun high pressure hose into the solvent can (continue the operation until clean solvent appears).
6. Close the air supply, carefully open the recirculation valve and discharge the cleaning solvent into the can. The recirculation cock must remain open until the system is used again.
7. Clean the line filter by disassembling and washing it, paying particular attention to the filter sieve and the gun.
8. Carefully clean the inside of the product passage gun head.

FILTER REPLACEMENT

After about 100 hours of operation, it is necessary to clean or, if necessary, replace the steel filtering element (sieve) of the filter. The efficiency of the filter cartridge depends exclusively on the type of paint used. To replace it, unscrew the cylinder (1) then remove the filter element (2), see figure below.

Replace or clean the filter element, then reassemble everything.
Before opening the filter unit, release the pressure it contains by opening the recirculation cock.



ANOMALY RESOLUTION

PROBLEMS	POSSIBLE CAUSES	SOLUTIONS
The pump doesn't work	<ul style="list-style-type: none"> No pressure inside 	<ul style="list-style-type: none"> Check that there is pressure in the supply air circuit, open the air ball valve and the pump pressure regulator. Press alternately the starter buttons located on the sides of the exchanger.
The pump running very well but there is no paint to the spray gun	<ul style="list-style-type: none"> No pressure in the pump 	<ul style="list-style-type: none"> Check that there is pressure in the supply air circuit, open the air ball valve and the pump pressure regulator. Check that the suction pipe or the suction valves are not blocked by hardened paint residues.
The paint flow is insufficient and does not vary by increasing the supply pressure.	<ul style="list-style-type: none"> Check that the suction filter is not partially blocked. The paint has too high viscosity. Spray gun nozzle hole blocked by dry paint. 	<ul style="list-style-type: none"> Clean tube and filter. Dilute the paint according to the manufacturer's instructions. Clean tube and filter. Clean the nozzle needle and cap without using metal objects.

SCHEDULED MAINTENANCE

After about 100 hours of operation, it is necessary to clean or, if necessary, replace the steel filtering element (sieve) of the filter. The efficiency of the filter cartridge depends exclusively on the type of paint used. To replace it, unscrew the cylinder (1) then remove the filter element (2), see figure below.

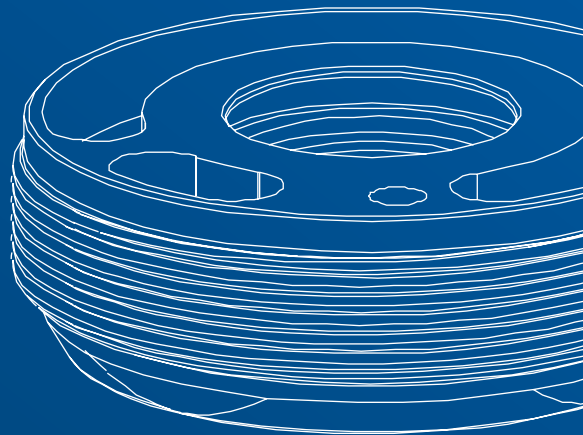
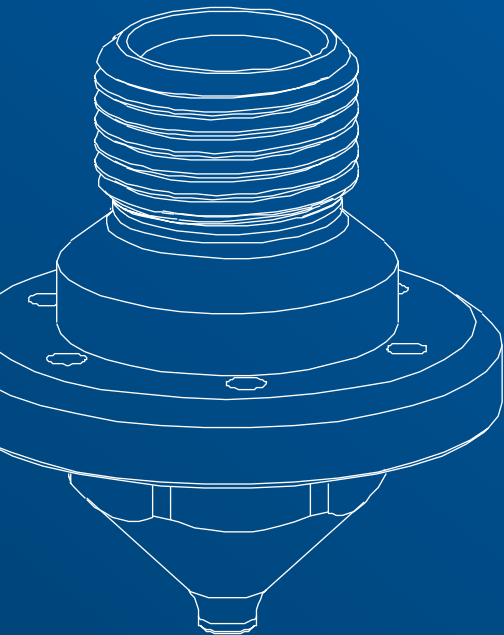
Replace or clean the filter element, then reassemble everything.

Before opening the filter unit, release the pressure it contains by opening the recirculation cock.

OPERATIONS	FREQUENCY				CONDITIONS
	Daily	Weekly	Monthly*	Half yearly*	
Cleaning the complete unit	X				Operations to be performed with the equipment stationary without carrying out work activities
Check the hoses integrity	X				
Check the ball valve working	X				
Check the presence condensation	X				
Check the clogging of the paint		X			Operations to be performed with the equipment stationary without carrying out work activities
Check the clogging of the air filter		X			
Check if the screws are fixed very well			X		
Check pneumatic connection's			X		
Check pump membrane wear			X		
Check pump shaft wear				X	

(*) Operation to be performed just from trained and professional operators

Spare parts and components

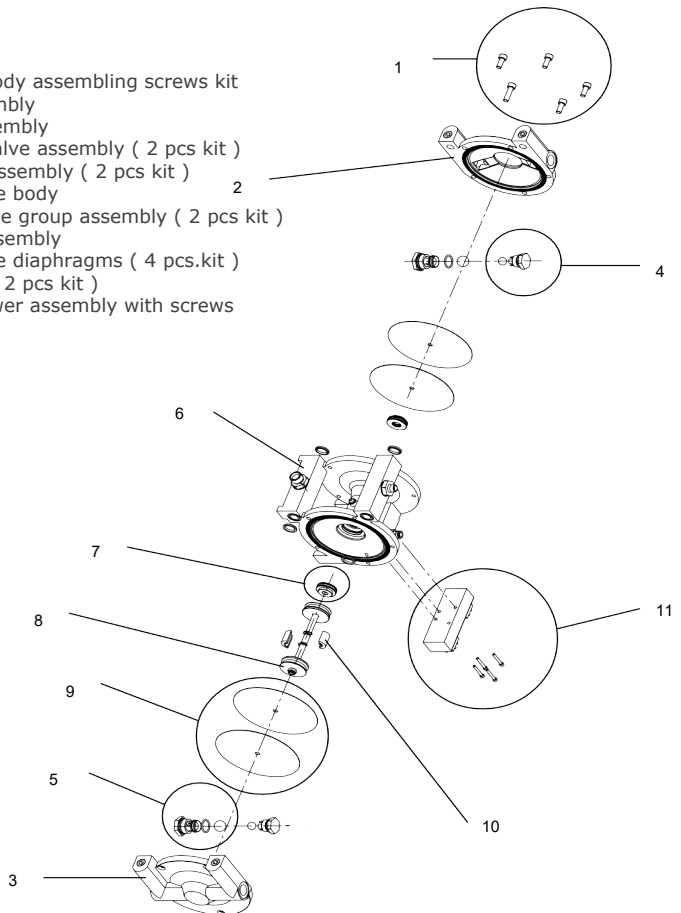


SPARE PARTS

COMPONENTS LIST

COMPLETE PUMP

- 1** AST24 pump body assembling screws kit
- 2** Left head assembly
- 3** Right head assembly
- 4** Compression valve assembly (2 pcs kit)
- 5** Suction valve assembly (2 pcs kit)
- 6** AST24 complete body
- 7** 2005 shaft guide group assembly (2 pcs kit)
- 8** AST24 shaft assembly
- 9** AST24 complete diaphragms (4 pcs.kit)
- 10** Half - bearing (2 pcs kit)
- 11** Exchanger drawer assembly with screws

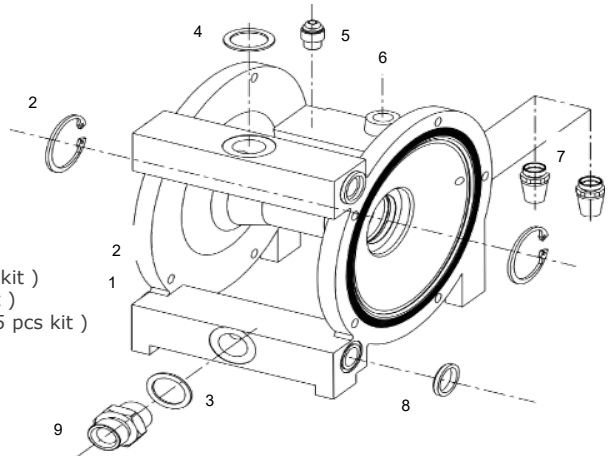


SPARE PARTS

COMPONENTS LIST

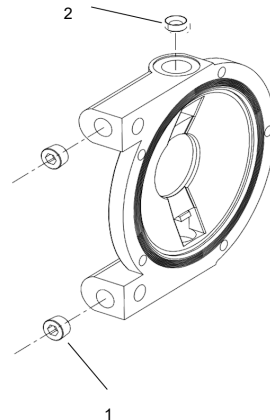
PUMP BODY

- 1 Machined AST24 body
- 2 Seeger internal ring (4 pcs kit)
- 3 Copper washer (10 pcs kit)
- 4 1/2" 1/4" stainless steel nipple (5 pcs kit)
- 5 Fast connector with 1/8" pin (5 pcs kit)
- 6 Fast connector with 1/4" 8 mm pipe (5 pcs kit)
- 7 1/4" silencer (4 pcs kit)
- 8 AST24 teflon pump ring (12 pcs kit)
- 9 St. steel 1/2" -1/2" nipple (5 pcs kit)



COMPLETE HEAD

- 1 3/8" plug (8 pcs kit)
- 2 Stainless steel ball seating (4 pcs kit)

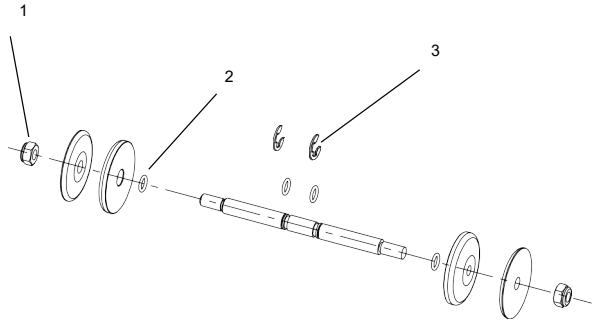


SPARE PARTS

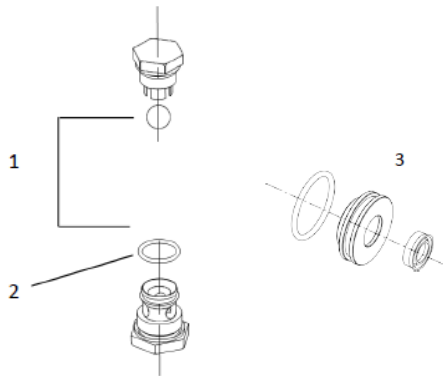
COMPONENTS LIST

SHAFT

- 1** M8 self -locking nut (4 pcs kit)
- 2** OR 2031 (20 pcs kit)
- 3** Seeger external ring (10 pcs kit)



- 1** M8 self -locking nut (4 pcs kit)
- 2** OR 2031 (20 pcs kit)
- 3** Seeger external ring (10 pcs kit)

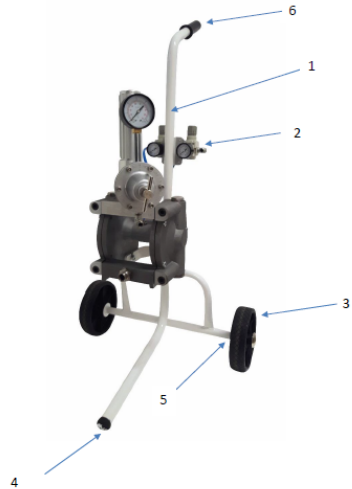


SPARE PARTS

COMPONENTS LIST

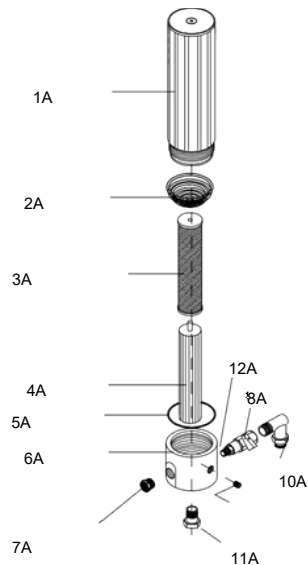
CART

- 1** AST24 Cart assembly
- 2** AST24 pressure regulation kit
- 3** AST24 Wheel (2 pcs kit)
- 4** AST24 cart plug kit (3 pcs kit)
- 5** AST24 cart pin kit (8 pcs kit)
- 6** AST24 cart handle kit (3 pcs kit)



FILTER

- 1A** Superior line filter part with 3/8" plug
- 2A** Stainless steel spring
- 3A** 60 Mesh sifter filter (10 pcs Kit)
- 4A** Filter support
- 5A** Teflon packing for line filter (5 pcs Kit)
- 6A** Filter body
- 7A** St. steel M3/8" - FG 1/4" gas adapter (4 pcs kit)
- 8A** MF 1/4" ball cock
- 9A** M1/4" G Plug (4 pcs kit)
- 10A** M 1/4" G L joint (4 pcs kit)
- 11A** MF 1/4"-1/4" G adapter (4 pcs kit)
- 12A** Copper washer 1/4" (10 pcs kit)

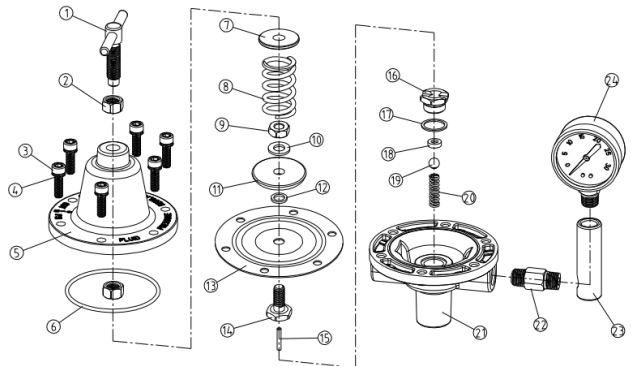


SPARE PARTS

COMPONENTS LIST

PRESSURE REGULATOR

- 1 Adjusting Handle
- 2 Hexagon Nut M10
- 3 Inner Hexagon Screw M6x20
- 4 Spring Washer
- 5 Upper Valve Cover
- 6 O-ring
- 7 Spring Seat
- 8 Adjusting Spring
- 9 Hexagon Nut M8
- 10 Spring Washer
- 11 Aluminum Round Plate
- 12 PE O-ring
- 13 Membrane
- 14 Thimble Seat
- 15 Cross Thimble
- 16 Valve Seat
- 17 O-ring 15*1.8
- 18 Packing
- 19 S.S. Ball
- 20 Regulating Spring
- 21 Lower Valve Cover
- 22 Nipple
- 23 Gauge Seat
- 24 Pressure Gauge



DISPOSAL

If you intend, for any reason, to put the painting unit out of service, it is necessary to observe some fundamental rules aimed at safeguarding the environment as per the provisions of the law currently in force.

Sheaths, flexible ducts, plastic or non-metallic components must be dismantled and disposed of separately at the appropriate separate collection centers. The machine **DOES NOT CONTAIN POLLUTING OILS** but the waste paints must in any case be disposed of by authorized consortia.

Do not throw in common waste.
Do not disperse in the environment.

SUPPORT

DO YOU NEED HELP?

We are at your disposal.



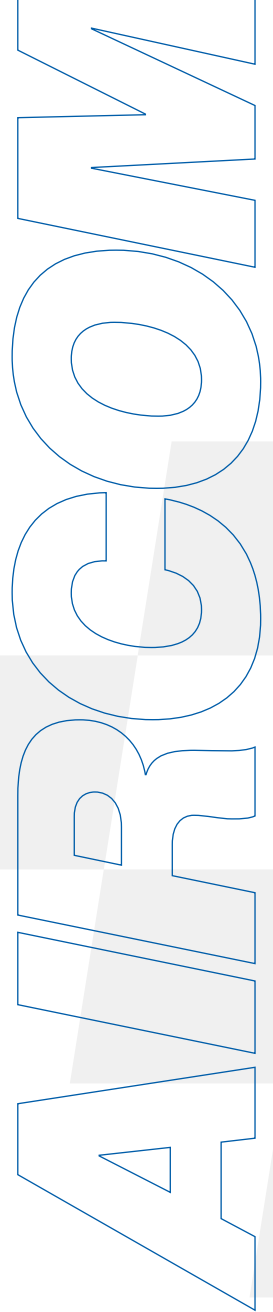
+39 0124 5154 44



aircom@aircom.it



[Online support](#)

The logo for AIRCOM features the word "AIRCOM" in a large, blue, outlined, sans-serif font. The letters are arranged vertically, with "AIR" on the left and "COM" on the right. The background consists of a light gray and white checkerboard pattern that is slightly offset and tilted, creating a dynamic, three-dimensional effect behind the text.

AIRCOM



DISCOVER ALL PRODUCTS



Follow us



aircom.it