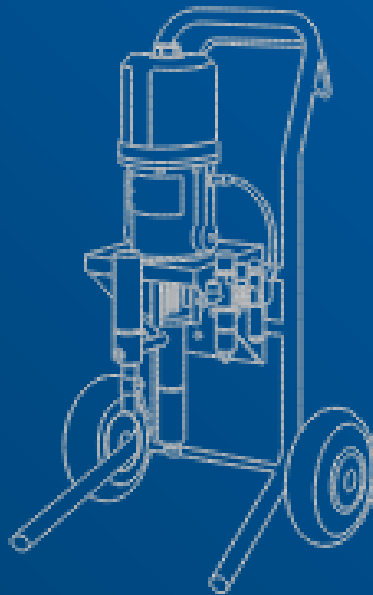


# AST81

# Instruction manual

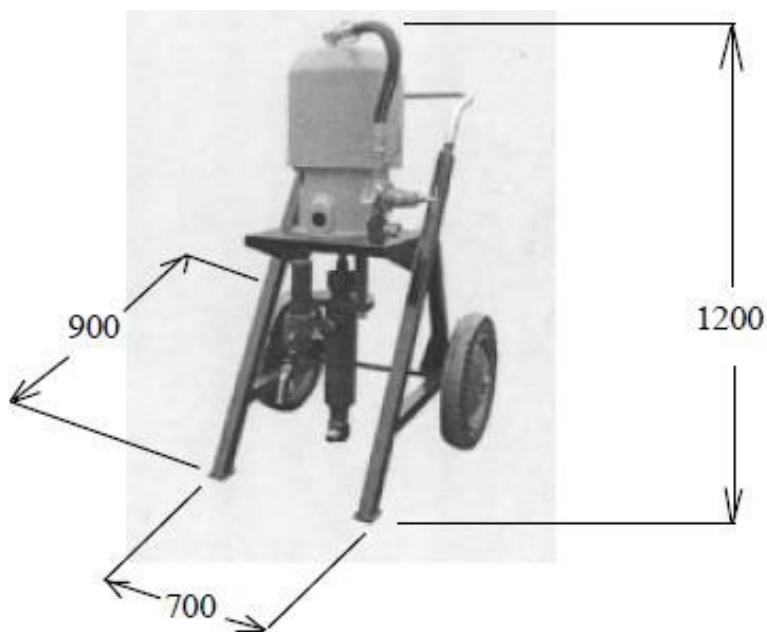


mod. AST81

## AVAILABLE MODELS

### mod. AST81

Airless pump with flow rate of  
11 l/min



# Index

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## *Instruction manual*

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## **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/](https://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 ~27 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.



## DESCRIZIONE

The equipment covered in this manual is a painting unit which allows you to spray paint any type of material. Characterized by a remarkable practicality, versatility and ease of use, the AST81 employs a pneumatically operated high-capacity piston pump unit.

The airless spray system allows to considerably reduce the paint mist and to guarantee a great transfer efficiency (over 80%). The system also makes it possible to obtain perfect micro-atomization with considerable savings in paint and a better surface finish.

The modularity of the equipment allows you to purchase only the pump unit and then customize it with a large number of accessories.



## TECHNICAL FEATURES

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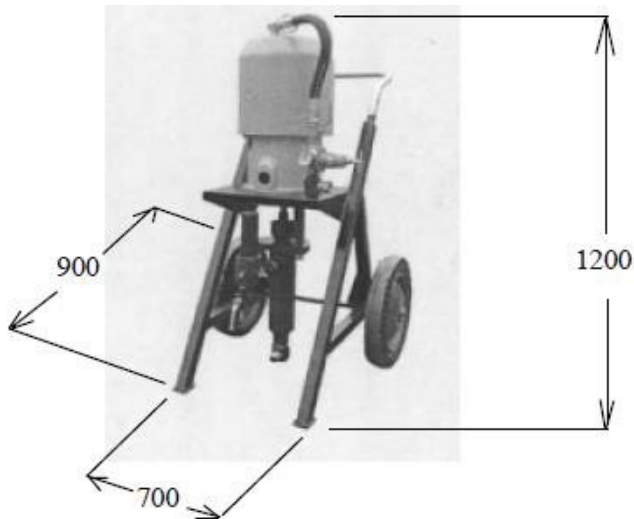
The painting unit uses a pneumatic system that can be fed at a maximum pressure of 6.5 bar. Compressed air is used to obtain the movement of the paint pumping piston and to obtain a high spraying pressure with any type of paint and to obtain a high spraying pressure with any type of paint without the use of air. All gaskets are of a special type with high quality and high resistance; the valves are in stainless steel.

FEATURE	AST81
CAAPCITY	11 lt - 3 gpm
PRESSURE RATIO	68:1
PRODUCT MAX. PRESSURE	440 bar
MAX FEED PRESSURE	6.5 bar

## PRODUCTS AND DIMENSIONS

The AST81 series painting units are designed for painting large surfaces and for uses such as: painting on behalf of third parties, shipyards, large and medium-sized carpentry shops, industrial body shops, mechanical constructions in general. The products that can be supplied are: high solid paints, normal paints, primers and glues. 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 pistol.



## USAGE

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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 condensate filter with regulator, it is recommended to feed with a pressure of 6.5 bar Max.

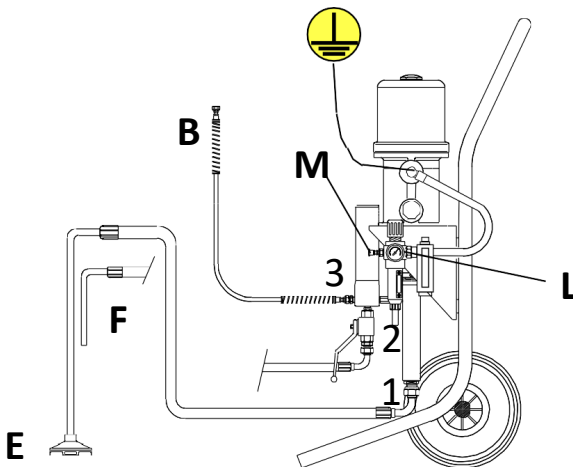
It is recommended to use dry compressed air for best painting results.



# PIPES CONNECTION

The unit is supplied disassembled. To assemble the pipes, proceed as follows (using the following drawing):

- Screw the pipe with the suction filter (E) or the 5 Lt tank to th attachment (1) of the unit.
- Screw the paint return pipe (F) to the connection (2) of the unit
- Connect the compressed air network to the inlet (M) of the pressur regulator (L).
- Connect the paint hose of the gun (B) to the fitting (3) of the unit
- Connect the ground



- Check the connections before activating the system
- Do not kink tubing near fittings, and do not use damaged or wor tubing.
- Do not try to repair any leaks
- Pay close attention to the writing on the pipes
- Do not exceed the maximum pressure indicated by th manufacturer.
- Given the high power of the pump (up to 240bar), we recommen the use of certified and tested guns up to 300 bar.

# SAFETY

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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 piston 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.

# ***PAINING CYCLE***

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- Half fill the lower cup with synthetic machine oil
- Prepare the paint following the manufacturer's instructions
- Immerse only the float (or fill the 5 L gravity tank) with the prepare paint and open the return cock.
- Any hoses used for suction from drums or various containers must be cut obliquely at their ends to prevent them from sticking to the bottom and must be of the type reinforced with a rigid spiral.
- Open the inlet air cock and adjust the air pressure to the desire value, then activate the gun trigger.
- Begin painting operations

## **END OF THE WORK SESSION**

- Close the inlet air valve
- Extract the floater
- Close the paint return cock very slowly
- Discharge the product contained in the pipes by pressing the gun lever.
- Thoroughly clean the unit

NEVER OPEN the return valve before having turned the pressure adjustment handwheel to minimum.

# 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

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Adequate maintenance is a determining factor for a longer life of the equipment in optimal operating conditions and performance, 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. Routine maintenance of the AST30 system is very simple and does not require particular interventions as the mechanical components of the system are lubrication-free. During operation, the friction of the stem on the seals can cause product leakage into the cup (when the system is new this occurs after about 30/40 hours of operation). These leaks are minor at the origin, but, if neglected, they can irreparably damage the pumping element. The leak is due to settling of the gasket pack. It is important to intervene immediately by adjusting the gasket pack with the special key supplied with the system.

## REGISTRATION OF THE GASKETS PACK

The seal pack adjustment must be carried out with the pumping rod in motion, and in the absence of product. Open the recirculation tap, adjust the supply air to 2 bar (the stem begins to move), with the special spanner provided, rotate the cup clockwise. For minor leaks, it is sufficient to give a small amount of pre-charge to the seal pack (**AVOID BLOCKING THE ROD WITH AN EXCESSIVE ROTATION OF THE CUP**).

- 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
- No smoking

# CLEANING

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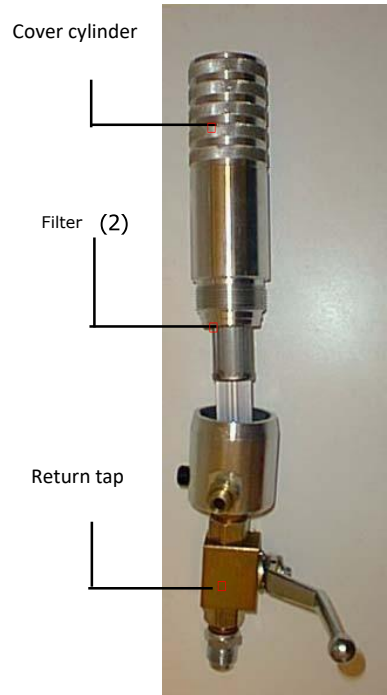
The external surfaces of the unit must be cleaned at the end of each working day or in any case at the end of each work. This allows you to keep the unit in good condition. For external cleaning, the use of a soft cloth soaked in thinner or a detergent solution is sufficient.

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  
Carry out the pressure relief procedure.
2. 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.
3. Close the circulation valve
4. Release the lever safety catch and discharge the paint residues left the gun high pressure hose into the solvent can (continue the operation until clean solvent appears).
5. 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.
6. Clean the line filter by disassembling and washing it, paying particular attention to the filter sieve and the gun.
7. Carefully clean the inside of the product passage gun head

## FILTER REPLACEMENT

After about 100 hours of operation it is necessary to clean or replace the return paint filter. The life of the filter depends exclusively on the type of paint used. To replace it, unscrew the cylinder (1) then remove the filter (2) (see figure). Replace or clean the filter then reassemble everything. Before opening the "tube" containing the filter, release the pressure it contains by opening the recirculation cock.



## GASKETS

After about 30/40 hours of operation (with new equipment) it is necessary to check for leaks from the stem gasket (the leak is due to the settling of the seal pack).

The adjustment must be carried out with the special key supplied and with the pumping stem moving in the absence of product. Then open the paint recirculation cock, bring the supply pressure to 2 bar (check that the stem starts to move), then turn the gasket holder cup clockwise. For slight leaks (usually after 50/80 hours of work) a slight pressure on the gasket holder cup is sufficient. Be very careful not to block the stem.

# ANOMALY RESOLUTION

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



# SCHEDULED MAINTENANCE

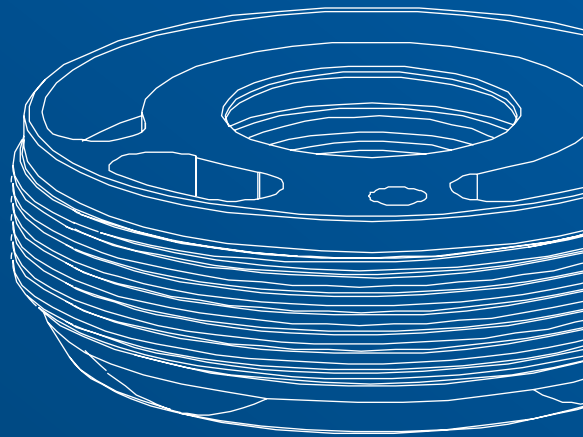
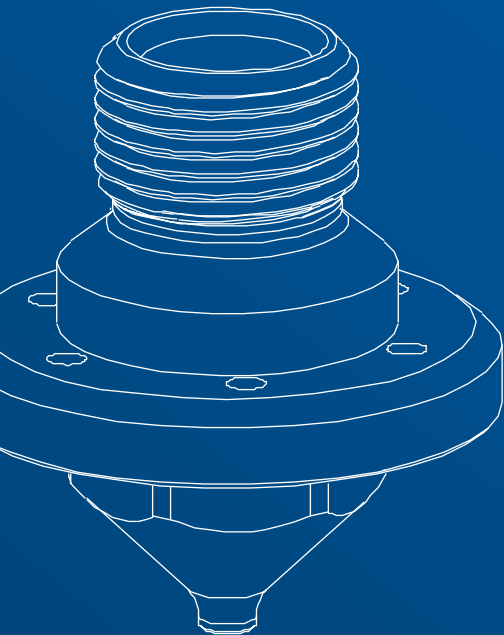
After about 100 hours of operation, it is necessary to clean or, if necessary, replace the steel filtering element (sieve) of the filter. The efficiency of the filter cartridge depends exclusively on the type of paint used. To replace it, unscrew the cylinder (1) then remove the filter element (2), see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

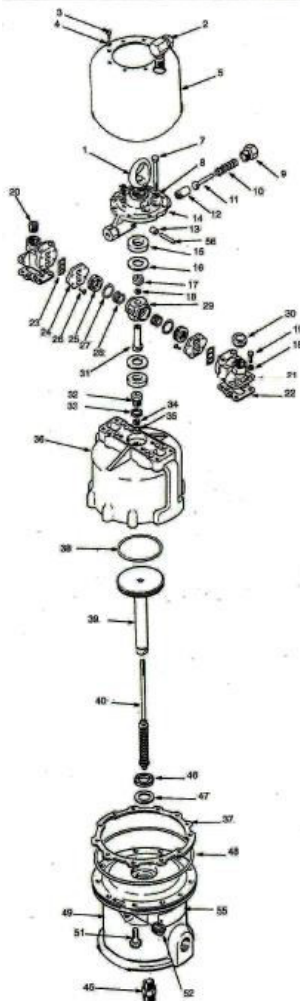
(\*) Operation to be performed just from trained and professional operators

# Spare parts and components



# SPARE PARTS

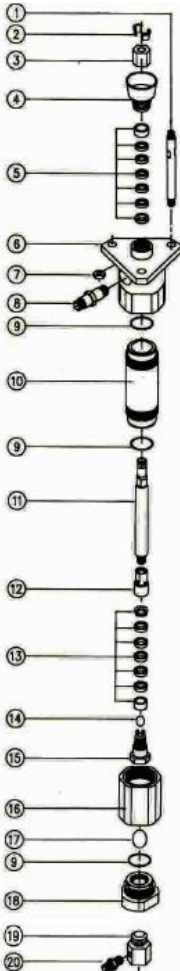
## COMPONENTS LIST



NO	PART NO.	DESCRIPTION	Q'TY
1	780-101	RING	1
2	780-102	UNION	1
3	780-103	SCREW	8
4	780-104	LOCK WASHER	8
5	780-105	SHIELD	1
7	780-107	SCREW	4
8	780-108	LOCK WASHER	4
9	780-109	RETAINER	2
10	780-110	SPRING	2
11	780-111	GUIDE	2
12	780-112	PLUNGER	2
13	780-113	ROLLER	2
14	780-114	HOUSING	1
15	780-115	PAD	2
16	780-116	WASHER	2
17	780-117	NUT	1
18	780-118	LOCK WASHER	5
19	780-119	SCREW	4
20	780-120	PLUG	1
21	780-121	MANIFOLD	2
22	780-122	GASKET	2
23	780-123	SEAL	2
24	780-124	PLATE	2
25	780-125	VALVE	2
26	780-126	SCREW	8
27	780-127	SEAL	2
28	780-128	SPRING	2
29	780-129	HOUSING	1
30	780-130	GROMMET	1
31	780-131	HUB	1
32	780-132	BEARING	1
33	780-133	GASKET	1
34	780-134	WASHER	1
35	780-135	PACKING	1
36	780-136	CYLINDER	1
37	780-137	GASKET	1
38	780-138	SEAL	1
39	780-139	PISTON	1
40	780-140	TRIP ROD	1
45	780-145	STUD	1
46	780-146	V-PACKING	1
47	780-147	WASHER	1
48	780-148	SEAL	1
49	780-149	BASE	1
51	780-151	SCREW	12
53	780-153	PLATE	1
54	780-154	SCREW	6
55	780-155	PLATE	1
56	780-156	AXLE	2

# SPARE PARTS

## COMPONENTS LIST



NO	PART NO.	DESCRIPTION	Q'TY
1	680-101	TIE ROD	3
2	680-102	RING	2
3	680-103	COUPLING NUT	1
4	680-104	PACKING NUT	1
5	680-105	PACKING STACK	1
6	680-106	HOUSING	1
7	680-107	NUT	3
8	680-108	NIPPLE, 1-3/4"	1
9	680-109	O-RING, TEFLON	3
10	680-110	SLEEVE	1
11	680-111	ROD, DISPLACEMENT	1
12	680-112	HOUSING, BALL	1
13	680-113	PACKING STACK	1
14	680-114	BALL	1
15	680-115	PISTON	1
16	680-116	HOUSING	1
17	680-117	BALL, INTAKE	1
18	680-118	INTAKE	1
19	680-120	TUBE	1
20	680-121	NIPPLE, 1"	1

# DISPOSAL

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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

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## DO YOU NEED HELP?

We are at your disposal.



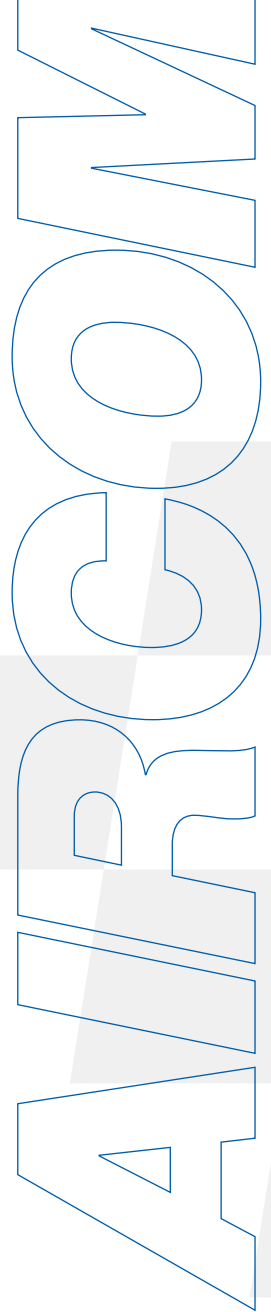
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Online support

The logo for AIRCOM features the company name in a large, blue, outlined, sans-serif font. The letters are arranged vertically, with 'A' at the top, followed by 'I', 'R', 'C', 'O', and 'M' at the bottom. The text is centered horizontally and overlaid on a light gray, semi-transparent checkered pattern that covers the right half of the page.

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