

Instruction Use and Maintenance Manual

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(€ DIAPHRAGM PUMP SET

DPS 90 F Series DPS 90 FN Series



This ANEST-IWATA diaphragm paint pump complies to ATEX regulations 94/9/EC. Protection level: II 2 GX Suitable for use in Zones 1 and 2. X marking:

Any static electricity discharge from the pump is to be diverted to the ground through the grounding wire which is included in this product.



Dear Customer,

We thank you for the preference you gave us and we are glad to count you among our customers. We hope the use of this equipment will satisfy you and your staff.

We have first of all designed our products by focusing not only on our experience, but also on the latest mechanical innovations. The products have then been manufactured with first-rate materials and techniques and tested by considering your requirements.

We thank you once again and remember that all our technical services are at your disposal for any present and future requirement.

ANEST IWATA EUROPE TORINO - ITALY

The company ANEST IWATA EUROPE Srl mission is to supply all their product and spray painting equipment users and distributors with the STATE-OF-THE-ART of technology and with continuous innovations, to obtain the best finish at the lowest cost.

Our product range must offer the perfect balance between the energy use and its consequences, to help to safeguard and improve the environment.

All Anest Iwata Europe Srl staff members use their knowledge and skills to provide their customers with an excellent service to satisfy them with high quality and reliability and with continuous innovation.

Our activities, as those of many other companies, are in compliance with several European Directives (Safety and Environment) and International Standards (ISO - Quality and Environment).

As to SAFETY, the standards our products refer to are the CE 89/382 Directive and subsequent; all our items of this type have the CE marking, are supplied with a Technical File which can be consulted on request and are accompanied by a use manual (standardized by the European standards EN 292) available in different languages.

There are also some specific safety standards, that is EN 1953 standard as to spray guns, and **EN-809** pumps and units for liquids,common safety requirements , **prEN 12621** as to pressure pumping circuits.

As to **QUALITY** standards **(ISO 9000)**, ANEST IWATA EUROPE is provided with the ISO 9001 certification. Our company philosophy gives all our partners, distributors and users any possible information, which is very useful for our product use, for the environment safeguard and for the operators' safety.

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Use of
the manualThe use and maintenance manual is the document accompanying the equipment from its manufactu-
re till its dismantling. Therefore, it is an integral part of the equipment.

The manual must be read before starting ANY ACTIVITY involving the equipment including its handling.

For a better consultation the instruction manual is divided into the following sections:

SECTION 1

Transport, packaging, handling and check on the purchased product.

SECTION 2

Description of the equipment and of its field of application. It also describes all the technical features of the equipment. This information can be compared to that of an illustrative leaflet.

SECTION 3

Equipment installation.

SECTION 4 Description of the controls to use the equipment.

SECTION 5 Ordinary and extraordinary maintenance.

ENCLOSURES

Exploded view and list of components.



Symbols used

The operations which can be dangerous if they are not carried out correctly, are indicated with the symbol:



The operations requiring a qualified or specialised staff, to avoid any danger, are indicated with the symbol:



It is advisable to train the staff who have to use the equipment and to check if everything is understood and carried out.



The prescriptions given by these symbols refer exclusively to the equipment in compliance with Directive "ATEX" 94/9/EC.



Informative This use and maintenance manual is an integral part of the equipment and it must be easily available to the staff in charge of its use and maintenance.

The user and the maintenance man must know the content of this manual. All the descriptions and pictures contained in this manual are not binding.

Although the main features of this equipment are not subject to change, the manufacturing Company reserves itself the right to change those components, details and accessories it deems necessary to improve the machine or to meet manufacturing or commercial requirements, at any time and without updating this manual immediately.

COMPLIANCE WITH THE STANDARD



All the units are conceived in compliance with the applicable Essential Safety Requirements of the Machinery Directive 98/37/EC.

The units are also designed and manufactured in compliance with the Essential Safety Requirements (ESR) of Annex II of Directive "ATEX" 94/9/EC and they comply with the following classification:



- Equipment group: II
- Category: Gas **2G**.(suitable for use in zones 1 and 2)
- Maximum superficial temperature: temperature class T6.
- X marking. Any static electricity discharge from the pump is to be diverted to the ground through the grounding wire which is included in this product.



WARNING

TO ENSURE THE GOOD WORKING OF THE EQUIPMENT AND OF ITS SAFETY DEVICES, THE PUMP MUST BE INSTALLED BY A QUALIFIED STAFF.



WARNING

ALL RIGHTS ARE RESERVED. THE REPRODUCTION OF ANY PART OF THIS MANUAL, IN ANY FORM, IS STRICTLY FORBIDDEN WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE MANUFACTURING COMPANY.

THE CONTENT OF THIS MANUAL CAN BE MODIFIED WITHOUT NOTICE. GREAT CARE HAS BEEN TAKEN IN COLLECTING AND CHECKING THE DOCUMENTATION CONTAINED IN THIS MANUAL TO MAKE IT AS COMPLETE AND COMPREHENSIBLE AS POSSIBLE.





WARNING In case of breakdown or malfunction, apply to the Customer Car Service.

CUSTOMER SERVICE

ANEST IWATA EUROPE s.r.l. C.so Vigevano, 46 - 10155 Torino Telephone +39 011.24.80.868 Telefax +39 011.85.19.44 E-mail: info@anest-iwataeu.com

WARNING

THE ORIGINAL CONFIGURATION OF THE EQUIPMENT MUST NOT BE CHANGED AT ALL.



On receiving the equipment check that:

- The supply corresponds to the order specifications (for example checking model name plate).
- In case of non-compliance, inform immediately our Technical Services. (for example: problems during first connection or starter).



Warranty All **ANEST IWATA** S.r.l. products have a one-year guarantee from the invoice date, unless otherwise stated in writing. The warranty covers all manufacturing faults and material defects. Any spare part replacement or repair operations are covered only if they are carried out by our technicians at our servicing shops.

The faulty parts must be sent CARRIAGE PAID. Once the components have been repaired, they will be sent CARRIAGE FORWARD to the customer.

The warranty covers no intervention of our technicians during installation or dismantling operations. If for practical purposes one of our technicians is sent on site, 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 equipment. It covers no repair operations carried out by the customer or by a third party, either.

THE WARRANTY DOES NOT COVER:

- Damage or breakdown caused by improper use or assembly.
- Damage or breakdown caused by the use of spare parts that are different from the original or recommended ones.
- Damage or breakdown caused by a bad preservation.
- Components subject to wear (described in the spare part list).

WARRANTY FORFEITURE:

- In case of delayed payment or other contractual defaults.
- Whenever changes or repairs are carried out on our equipment without prior authorization.
- Whenever the serial number is damaged or removed.
- When the damage is caused by improper use or functioning, or if the equipment falls, is bumped or by other causes not due to the normal working conditions.
- Whenever the unit is disassembled, tampered with or repaired without the authorization of **ANEST IWATA S.r.I.**

All repair interventions carried out under warranty do not interrupt its duration.

All disputes will be settled in the court of justice of Turin.



- Be sure to read and understand this instruction manual. The operator shall be fully conversant with the requirements stated within this instruction manual including important warnings, cautions and operations.
- Wrong operation (mishandling) can cause serious bodily injury, death, fire or explosion.

SAFETY FACTOR

• Pay special attention to items which are shown by the below marks and symbols.



MARKS OF WARNINGS AND CAUTIONS

Be sure to observe warnings and cautions in this instruction manual.

If not, it can cause paint ejection and serious bodily injury by drawing organic solvent.

Be sure to observe following / marked items which are especially important.

- WARNING A Indicates a potentially hazardous situation which, if not avoided, may result in serious injury or loss of life.
- **CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.
- **IMPORTANT** Indicates notes which we ask you to observe. The safety precautions in this instruction manual are the minimum necessary conditions. Follow national and local regulations regarding fire prevention, electricity and safety as well as your own company regulations.

Examples of symbols



Indicates [you must be careful]. We will explain briefly in or near the symbol. (The example on the left is [be careful about ventilation].)



Indicates [you must not do]. We will explain briefly in or near the symbol. (The example on the left is [Do not touch]).



Indicates [you must do]. We will explain briefly in or near the symbol. (The example on the left is [Be sure to wear protective mask].)

* We shall not be responsible for any injury or damage caused by disregard of warnings, cautions or instructions.





WEAR PROTECTIVE GEAR

During painting, be sure to wear protective gear such as glasses, mask or gloves to avoid serious injury caused by paints or solvents which might enter your eyes or you might inhale.





BE CAREFUL ABOUT VENTILATION

Use it in a well-ventilated area. Painting or cleaning in a narrow area with insufficient ventilation can cause organic solvent intoxication by sprayed mist of paint or volatile solvent. If you feel any abnormality during operation, consult a medical doctor immediately.



CONTACT IS FORBIDDEN

When paint leaks, never try to stop it by hand. In that case, close 3-way ball valve (for air) immediately, and open 2-way ball valve (to drain) and reduce paint pressure down to (0 bar / 0 MPa).



BE CAREFUL ABOUT BODILY INJURY

Never point gun towards a person or animal. Never pull trigger of gun when human body or fingers come near tip of air cap of gun.

Paint can enter human body directly through eyes, mouth or skin. It is very dangerous. If you feel any abnormality or receive any injury, consult a medical doctor immediately.

LIMIT OF FLUID TO BE USED

Do not use it for food products. As pump parts are not suitable for food products, foreign matter entering through parts can cause health problems.



KEEP AWAY FROM ORIGINS OF EXPLOSIONS OR FIRES

Never use near sparks or open fire. Especially the following will cause fire

- Open flames such as cigarettes, pipes.
- Electric goods such as stoves, lamps or heates.



BE CAREFUL ABOUT VENTILATION

Use it in a well-ventilated area. Painting or cleaning in a narrow area with insufficient ventilation can cause fire or explosion due to sprayed mist of paint or solvent which catches fire.



CONNECT GROUNDING

Securely ground pump, spray gun, workpieces and containers containing paint or solvent. Be sure to use ground wire set supplied with pump set. Connect it to ground to have continuous grounding.

Insufficient grounding will cause explosion or fire if exposed to a spark of electricity.



WARNING!



BE CAREFUL ABOUT EXPLOSION

Be sure to use paint pump at less than max. air inlet pressure (check section 3. specifications). Use at more than max. air operating pressure can cause explosion of pump resulting in great danger.

Be sure to use paint pump at less than max. fluid working pressure (check section 3.specification). Use at more than max. fluid operating pressure can cause explosion of pump resulting in great danger.

Never bend hose with a radius of less than 50mm. Never put heavy things on it (in order not to damage the hose). If done, hose can explode causing great danger.

Securely connect hose to avoid leak and looseness. If hose is disconnected during operation, hazardous hose movement and paint ejection will cause severe bodily injury.

Never use cracked, damaged, bent, crushed or distorted hose. Never use cracked, damaged, bent, crushed or distorted hose. Leakages from such a hose can cause great danger during operation.



IMPORTANT

Never alter the equipment When you replace parts, be sure to use our genuine parts. If not done, it can cause insufficient performance or failure.

Never use the following halogenated hydrocarbon solvents :

methyl chloride, dichloromethane, 1.2-dichloroethane, carbon tetrachloride, trichloroethylene, 1.1.1-trichloroethane which can cause cracks or dissolution on gun body (aluminum) by chemical reactions. (Be sure that all fluids and solvents are compatible with gun parts. We are ready to supply a material list used in the gun on request.)

Do not use with corrosive liquids (except for PH6-8)

Install or keep pump free from rain or splashes. If not done, it can cause pump failure Install pump on a horizontal surface Install pump free of paint mist. Attached paint mist etc., can cause pump failure Use clean air filtered through dryer and filter (finer than 50 microns). If not done, it can cause pump failure.



2.1 TRANSPORT

To transport the equipment only the systems described below can be used. In any case make sure that the transport and lifting device can bear the weight of the equipment with its packaging.



WARNING

ALWAYS KEEP THE PACKAGING IN VERTICAL POSITION.



WARNING

IT IS ADVISABLE THAT THE STAFF IN CHARGE OF HANDLING THE EQUIPMENT WEAR PROTEC-TIVE GLOVES AND SAFETY SHOES.



WARNING

WHILE LIFTING OR HANDLING THE EQUIPMENT OR ANY OF ITS COMPONENTS CLEAR THE WORKING AREA. LEAVE ALSO A SUFFICIENT SAFETY AREA AROUND THE EQUIPMENT TO AVOID DAMAGING PEOPLE OR OBJECTS WHICH COULD BE THERE.

2.2 TRANSPORT WITH CARDBOARD PACKAGING

The equipment is put inside a cardboard packaging and wrapped with some shockproof material.





2.3 HANDLING

To handle the cardboard packaging use a trolley.



WARNING

FOLLOW THE INSTRUCTIONS ON THE PACKAGING BEFORE HANDLING AND OPENING IT.

HANDLING BY MEANS OF HANDLE

HANDLING BY MEANS OF TROLLEY





2.4 TEMPORARY STORAGE

During transport and storage make sure the temperatures between 0 and 40° C are not exceeded.

In case of storage, make sure the equipment is not put in places with an excessive humidity.



3.1 PLATE DATA

The manufacturer's identification plate is applied on the diaphragm pump (see picture below).

It must not be removed at all, even if the equipment is resold. For any communication with the manufacturer always mention the serial number written on the plate itself.





- Equipment group : II
- Category: Gas2G (Suitable for use in zones 1 and 2)
- Max. surface temperature: temperature class T6
- X marking : Any static electricity discharge from the pump is to be diverted to the ground through the grounding wire which is included in this product.



3.2 MODELS

The following pump models are available:

SOLVENT-BASED PAINT MODELS Base Model: Pump casing type DDP 90F

SIPHON MODELS:

- **DPS 901 F:** Pump type DDP 90 F mounted on a stand with PR-5L paint pressure regulator, 2 air pressure reducers (for pump and gun), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).
- **DPS 901 FG:** Pump type DDP 90 F mounted on a stand with air pressure reducer (for pump), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).
- **DPS 902 F:** Pump type DDP 90 F mounted on a 20 I. tank with PR-5L paint pressure regulator, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve), 2 air pressure reducers (for pump and gun).
- **DPS 903 F:** Trailer-mounted pump type DDP 90 F with PR-5L paint pressure regulator, air pressure reducing filter (forgun), air pressure reducer (for pump), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).
- **DPS 904 F:** Pump type DDP 90 F on wall mounting bracket with PR-5L paint pressure regulator, air pressure reducing filter (for gun), air pressure reducer (for pump), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).

GRAVITY MODELS:

DPS 9036 F: Trailer-mounted pump type DDP 90 F with plastic hopper (6 litres with 50 mesh filter), PR-5L paint pressure regulator, air pressure reducing filter (for gun), air pressure reducer (for pump), paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).

WATER-BASED PAINT MODELS

Base Model: Pump casing type DDP 90F N

SIPHON MODELS:

- **DPS 901 FN:** Pump type DDP 90F N mounted on a stand with PR-5L N paint pressure regulator, 2 air pressure reducers (for pump and gun), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).
- **DPS 903 FN:** Trailer-mounted pump type DDP 90F N with PR-5L N paint pressure regulator, air pressure reducing filter (forgun), air pressure reducer (for pump), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).
- **DPS 904 FN:** Pump type DDP 90F N on wall mounting bracket with PR-5L N paint pressure regulator, air pressure reducing filter (for gun), air pressure reducer (for pump), dip tube with filter, paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).

GRAVITY MODELS:

DPS 9036 FN: Trailer-mounted pump type DDP 90F N with plastic hopper (6 litres with 50 mesh filter), PR-5L N paint pressure regulator, air pressure reducing filter (for gun), air pressure reducer (for pump), paint filter unit, fluid recirculation, 2 safety devices (1 overpressure valve, 1 ball valve).



TECHNICAL SPECIFICATIONS

3.3

MODEL	DIMENSIONS [mm]	WEIGHT [Kg]
DPS 901 F	500x430x1015	11.9
DPS 901 FG	500x430x1015	11.05
DPS 902 F	360x335x760	11.12
DPS 903 F	500x500x1055	15.9
DPS 904 F	360x260x600	11.4
DPS 9036 F	535x500x1055	16.6
DPS 901 FN	500x430x1015	11.9
DPS 903 FN	500x500x1055	15.9
DPS 904 FN	360x260x600	11.4
DPS 9036 FN	535x500x1055	16.6

Min. air working pressure:	1.5 Bar (0.15bar/22psi)
Max air working pressure:	6.8 Bar (0.68Mpa/98psi)
Fluid outlet:	G 3/8"
Fluid inlet:	G 1/2"
Air inlet:	G 1/4"
Suction fluid filter:	50 mesh
Fluid delivery filter:	100 mesh
Compression ratio:	1:1
Max fluid working pressure:	6.8 Bar (0.68Mpa/98psi)
Max fluid viscosity (solvent base paint):	85 sec/Ford #4 (100sec./NK-2)
Delivery per cycle:	50 cc/cycle
Max No. of cycles per minute:	200 cycles/min
Max delivery:	10 liters / min
Working temperature:	from 5 to 40°C
Compressor:	(required power only for pump) from 0.4 to 0.75 kW
Compressor:	(gun and pump required power) from 2.2 to 3.7 kW
Paint regulator:	PR-5L / PR-5LN
Noise Level:	75.3 dB(A) (This noise level has been measured in compliance
	with Machinery Directive 89/392 and with ISO 3744 standards.)

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3.4 SAFETY SYSTEMS

Several safety systems have been conceived during the diaphragm pump design and manufacture to safeguard the operator, in compliance with pr EN 12621 Directive about paint.



SAFETY INFORMATION

In case of units that are to be used in areas with potentially explosive atmospheres, before starting working the operators must disable the unit power supply, by putting it "out of order". They also must ensure that the unit cannot be restarted unintentionally.



All further necessary environmental safety measures must be adopted (such as the elimination of gas or residual dusts, etc.).

SAFETY VALVE

A 8 bar calibrated safety valve is installed to ensure the pump working pressure does not exceed the limits inside the feeding circuit.

If the calibration pressure is exceeded, the valve opens by releasing the excess of air.





WARNING

DO NOT REMOVE THE VALVE PLASTIC PROTECTION. ANY TAMPERING WITH COULD BE DANGEROUS FOR THE OPERATOR AND COMPROMISE THE EQUIPMENT GOOD WORKING.

BALL VALVE

In case of anomalies during working, turn 90° the ball valve lever. In this way the air supply will be interrupted and the residual pressure inside the pump will be released.





3.5 SAFETY INDICATIONS

Some indications can be found on the pump with the safety warnings to follow by anyone who is going to use it.

WARNING







3.6 WORKABLE PRODUCTS

All ANEST IWATA DPS units are conceived to paint ferrous material in general, wood and plastic. The products that can be delivered are: solvent-based paints for all DPS-90 F models with a maximum viscosity of 85 sec/Ford # 4 (100 sec/NK-2) and water based paint for all DPS-90 FN models.

To use the pump with special products ask for the manufacturer's approval. Moreover, the pump technical features will have to be adapted to the special product working.

The Company ANEST IWATA is not to be held responsible for any accident due to the pump use by an UNAUTHORIZED and non qualified staff using it for purposes that are different from the above mentioned ones.



WARNING

DO NOT USE:

- ANY HALOGENATED HYDROCARBON SOLVENTS, SUCH AS TRICHLOROETHANE, METHY-LENE CHLORIDE OR SOMETHING LIKE THAT;
- ANY INFLAMMABLE OR VERY TOXIC PRODUCTS SUCH AS PETROL, KEROSENE, INFLAM-MABLE SOLVENTS OR COMBUSTIBLE GASES;
- ANY HERBICIDE OR PESTICIDE
- ANY RADIOACTIVE FLUID



4.1 OPERATION DESCRIPTION

Based on a simple manufacture, the operation consists in two diaphragm movement, which are both fixed at the end of a rod, pressurizing and sending the paint.

The compressed air enters the air chamber from side A in picture 1. The diaphragm is moved to the left, by pushing the paint.

At the same time, the diaphragm on the opposite end (side B) moves to the left by sucking the paint.

When the rod is completely on the left, the double pneumatic valve reverses the operations.

The compressed air enters the air chamber from side B in picture 2. The diaphragm is moved to the right, by pushing the paint.

At the same time, the diaphragm on side A end sucks the paint.

The pump repeats the above-mentioned suction and delivery movements. The result is a steady and pulsation-free material flow.

The main feature is the action of two pneumatic valves: the first one is a power valve feeding the pump, and the other one a control valve always ensuring the movement.





5.1 CHECK ON THE PURCHASED PRODUCT

Before using the pump, make sure it has not been damaged during transport or storage. Also check that all standard components are inside the packaging.

5.2 CONDITIONS FOR INSTALLATION



The installer must know the ATEX classification of the installation area, as well as the risks coming from a potentially explosive atmosphere, by paying attention to the explosion and fire risks so as to adopt the most suitable protections.



All maintenance, assembly and disassembly operations must be carried out by a qualified staff out side the area at risk of explosion.

Also check that the accessories comply with the essential safety requirements of the ATEX directives. Handle them with great care to avoid changing their features.

Once installed, clean the unit.

The equipment must be installed by a **specialized and authorized staff.** In any case, follow the instructions below.



BE CAREFUL ABOUT VENTILATION

USE IT IN A WELL-VENTILATED AREA. PAINTING OR CLEANING IN A NARROW AREA WITH INSUFFICIENT VENTILATION CAN CAUSE FIRE OR EXPLOSION DUE TO SPRAYED MIST OF PAINT OR SOLVENT WHICH CATCHES FIRE.



WARNING

IF PAINTING IS CARRIED OUT OUTSIDE THE SPRAY BOOTH, ALWAYS OPERATE IN A PLACE WITH A RIGHT VENTILATION TO AVOID CONCENTRATING INFLAMMABLE VAPOURS COMING FROM SOLVENTS OR PAINTS.



5.3

INSTALLATION OF MODELS:

 Support the pump and unscrew the two M8x12 screws by means of a 6 mm Allen wrench. (For DPS 901 F/FN; 903 F/FN; 904 F/FN; 9036 F/FN)



3. By means of a spanner connect the PR-5L material pressure regulator to the swivel connector (1- 22 on page 44) on the paint filter. (For all DPS 90F/FN series excluding FG Model)



Place the pump in the right direction and screw again the M8x12 screws. (For DPS 901 F/FN; 903 F/FN; 904 F/FN; 9036 F/FN)



 Connect the feed pipe to the pump supply connection (1-38 on page 44). (For all DPS 90F/FN series)





 Connect the suction pipe to the suction connector (1-47 on page 44). (For DPS 901 F/FN; 903 F/FN; 904 F/FN; 9036 F/FN)



 Connect the recirculation pipe to the two-way valve for paint recirculation. (For DPS 901 F/FN; 903 F/FN; 904 F/FN; 9036 F/FN)



- For gravity models, fasten the hopper by means of the two M6x10 screws. (For DPS - 9036F/FN)
- 8. Connect the pipe connecting the hopper to the pump. Connect the recirculation pipe to the two-way valve for paint recirculation. (For DPS - 9036F/FN)





 Connect the recirculation pipe to the two way valve for paint recirculation. (For DPS - 9036F/FN)



- **10.** For the models with wall mounting bracket the pump is already in the right position. After fastening the pump, just connect the suction pipe. (For DPS - 904F/FN)
- The model with tank requires no installation operation. (For DPS - 902F/FN)

12. Make sure the PR-5L regulator is not under pressure, otherwise turn the adjusting screw counterclockwise till the pressure is completely released.



13. Connect the air and fluid pipes to the fluid outlet connector and to the air connector (Pump and Gun).(For all DPS 90 F/FN series excluding FG Model, without air outlet joint for gun)





- Connect the air supply coming from the compressor to the inlet connector. (For all DPS - 90 F/FN series)
- Fasten the pump to the ground by means of the bracket welded on the trailer or on the stand. (For DPS - 903 F/FN; 901 F/FN)







Connect ground wire set to ground. (Ground wire technical spec.: cable section Ø 3.5mm ; length 150 cm).





6.1 USE

This section describes the DPS unit use in compliance with the safety standards in force. Read this section carefully.



LIMITS AND CONDITIONS OF USE

Any modification to the constructive shape or to the assembling position is allowed only after asking for ANEST IWATA EUROPE technical service authorization. If there is no authorization the ATEX approval in no longer valid.



Environmental conditions

-Room temperature: min. + 5°C; max. +40°C

The plate data of the maximum superficial temperatures refer to measures taken in normal environmental conditions and to a normal installation. Any minimum variation of these conditions can greatly affect the heat development.

6.2 SAFETY RULES DURING USE



TO USE the DPS unit COMPLY WITH the safety precautions and rules described below.

The manufacturing company declines all responsibility if the operator does not comply with them. It is not to be held responsible for any carelessness during the pump use, either.

If the system is used improperly, it could be broken by causing serious damage.

Do not change the system; use only Anest Iwata original spare parts.

Check the system daily: repair or replace immediately all worn or damaged parts.

Never exceed the maximum working pressure: 6.8 bar.

IT IS FORBIDDEN to use the equipment for purposes that are different from the ones it is destined to which are described in the use and maintenance manual. If in doubt, apply to your Anest Iwata reseller.

Use paints and solvents compatible with the system parts they come in touch with.

Refer to the paint and solvent features mentioned by the manufacturer.

Wear the protective clothes described in section 6.3.

Comply with all the local standards on electric safety and fire risks.

6.3 Clothes

Wear some protective gloves and goggles, an oxygen mask and some ear protections during working. Always follow the laws in force (Ex. LAW 626/94).





6.4 PREWASH

- 1. Make sure the pump is installed correctly (see section 5.3).
- 2. Soak the dip tube into the washing liquid, or fill the hopper or the tank according to the model used.
- 3. Put the ball valve in the right position.
- 4. Adjust the inlet pressure between 2.0 and 6.8 bar.
- 5. Open gradually the two-way valve for paint recirculation (B on page 29). The washing liquid will have to circulate through the dip tube recirculation pipe.
 - If the DPS-902 F model is used, the washing liquid will circulate through the paint handling system (JET STREAM).
 - The DPS-9036 F model recirculation pipe is directly connected to the hopper.
- 6. Close the two-way valve for paint recirculation and adjust the fluid pressure by means of PR-5L regulator (Recommended pressure for washing 3.0 bar)
- 7. Press the gun trigger (or supply the automatic gun opening control with some air), without spraying air and let the washing fluid circulate for some minutes.
- 8. Make sure the washing has been done and then discharge the pump residual liquid and stop it.



WARNING

THE PUMP MUST BE WASHED BEFORE USING IT FOR THE FIRST TIME, IF IT IS NOT USED FOR A LONG TIME AND AFTER ANY COLOUR CHANGE.

6.5

STARTING

Before beginning working, start the pump by following the instructions below:

- 1. Connect ground wire set to ground.
- For all models with suction pipe, dip it into the product tank to be pumped. For the model with hopper, fill it with the product to be pumped. For the models on tank, fill the product tank to be pumped.
- 3. Open the two-way valve for paint recirculation (Pos. B on page 29).
- 4. Lift and turn gradually the pressure reducer knob (Pos. H on page 29). Adjust it at a pressure slightly higher than 2.0 bar, to enable the pump to release the air.
- 5. Close the two-way valve for paint recirculation (Pos. B on page 29) and release the air through the gun, too.
- 6. Increase the pressure of the reducer connected to the pump (Recommended pressure about 5.0 bar).



- 7. Adjust the PR-5L paint pressure regulator as required (from 0 to 3.0 bar).
- 8. Adjust the spraying air by means of the reducer (Pos. F on page 29) and test the gun on a panel before using it.



PRECAUTIONS

- a) Use the gun under pressure.
- b) When the paint level inside the tank decreases, the pump can suck some air. Increase the paint level.
- c) Do not drag the pump by pulling it by the pipes.

PRECAUTIONS: EMERGENCY STOP

When the pump must be stopped because of the following reasons:

- a) The material does not stop coming out of the gun.
- b) Fluid discharge through the connectors or the damaged pipe. CLOSE THE BALL VALVE WITH EXHAUST HOLE A



IMPORTANT

- Do not keep pump idling for long time. Idle operation may cause pump malfunction.
- Do not use the following paints which can cause pump failure:paint containing large solid matter
 - paint containing solid matter of sharp pieces
 - corrosive paint (except for PH6-8)
- There are small rectangular holes on the front and back of air operating valve. As they are exhaust holes, do not allow paint or solvent to adhere. If done, it can cause pump failure.
- When air operating valve does not operate (stall position), push reset button of air operating valve.





6.6 DAILY INTERRUPTIONS

1. When the pump is stopped:

- The air supply must not be disconnected if the interruption is short.

- If the interruption is long, turn the Ball valve A discharge the air from the circuit and open the recirculation valve B , to release the residual fluid pressure.

2. When the pump is stopped at the end of the working day:

- Wash the fluid passages.
- Remove the dip tube filter and the filter inside the paint filter and clean it.



29



6.7

WRONG AND DANGEROUS USES



A wrong earthing, an insufficient ventilation, a naked flame or a spark can cause a fire or an explosion and provoke some serious injuries.



WARNING

IF SOME SPARKS OR AN ELECTRIC DISCHARGE WERE PERCEIVED, INTERRUPT IMMEDIA-TELY ALL PAINTING OPERATIONS. DO NOT USE THE SYSTEM UNTIL THE PROBLEM CAUSE IS IDENTIFIED.

Keep away from the working area all kinds of waste, of solvent container, of solvent or petrol soaked rags or clothes.

Before starting the system disconnect all the electrical connections inside the working area.

Before using the system switch off all the naked flames and pilot lights inside the working area.

Do not smoke inside the working area.

During painting operations, or if there are some vapours in the air, do not switch on or off the lights inside the working area.

Do not use any petrol engine inside the working area.

Some organic solvents or discharged toxic vapours can enter the eyes or the skin, be swallowed or inhaled, by provoking serious injuries.

When the air engine is running, keep the face away from the exhaust.



6.8

$\underline{\land}$

PRESSURE RELEASE PROCESS

WARNING

- 1. Close the air to the gun.
- 2. Close the air to the pump (BallValve).
- 3. Make sure the recirculation pipe is not clogged. Then open gradually the recirculation two-way valve and leave it open.
- 4. Hold the gun tightly and lean it on the earthed metal container, pull the trigger to release the pressure. If an automatic gun is used, supply the rod opening control with some air under pressure.



PRECAUTIONS

- 1. To operate the pump, use some filtered air by means of an air filter with filtering section lower than 50 μ m. We recommend using a filter with condensate automatic discharge.
- 2. If possible, avoid using lubricated air which could damage the change-over valve.

If the air is lubricated, it is advisable to use turbine oil ISO VG 32 or VG 46. Other types of oil could damage the air unit rubber gaskets.

If the pump has already been used with lubricated air, go on using it.

- 3. Do not make the pump idle.
- 4. Do not spray any paint or solvent towards the pump.
- 5. Do not install the pump near heat sources or in the sun. Put it far from sprinklings of water.
- 6. To avoid any problem after using bi-component paints, wash the pump immediately after using it otherwise all fluid passages could be clogged and the whole installation will have to be disassembled.



7.1 GENERAL NOTES



- Comply with the inspection and ordinary maintenance intervals so as to ensure suitable working conditions and explosion-proof protection.
- Before carrying out any maintenance operation or repair on the internal parts, discharge completely air and fluid pressure inside the pump set.
- After the maintenance intervention, make sure that all the safety measures are completely and correctly restored.
- Once the maintenance operations/repairs have come to an end, clean the whole unit.
- Use only original spare parts for repairs.



A suitable maintenance is important for a longer duration of the equipment in good working conditions and efficiency ensuring functional safety as time goes by. All maintenance operations must be carried out by a qualified staff. The pump design and the materials used to manufacture it limit the maintenance interventions to a simple periodic cleaning.

The staff must be provided with the individual protections that are generally used for similar operations. They also must follow the safety rules described in section 7.2.

7.2 SAFETY RULES DURING MAINTENANCE

The main rules to follow during maintenance interventions on the unit are:

- 1. Disconnect the pneumatic supply before replacing any component.
- 2. Do not wear rings, watches, chains, bracelets, etc. during maintenance operations.
- 3. Always use the individual protections (gloves, safety shoes, etc.).
- 4. Do not use naked flames, points or pins for cleaning.
- 5. Do not smoke.

7.3 RECOMMENDED SCHEDULED OPERATIONS

Daily	1. 2.	Clean fluid passage of pump and filters. Check for worn, damaged or broken parts.
Every 50 hours working hours	1. 2.	Clean fluid passage of pump and filters, if fluid contains lots of pigments and pump is run continuously. Check grounding.
Every 2.000	1.	Overhaul the whole pump.

working hours 2. Inspect and replace consumable parts



7.4



DIAPHRAGM PUMP DISASSEMBLY FROM ITS BASE SUPPORT

PRECAUTIONS

Before disassembling the pump, follow carefully the instructions below:

- a) While disassembling the pump, avoid damaging the sealing rings, the diaphragms and the gaskets
- b) To disassemble and reassemble the adaptors 1-45 1-46 and the pump lids 1-24 use a 5 mm Allen wrench and a 10 mm spanner.
- c) Disassemble, in this order, the lower adaptor 1-46, the upper adaptor 1-45, the side lids 1-24, by unscrewing the socket head screw by means of the suitable spanners.
- 1. Refer to the PRECAUTIONS FOR THE OPERATOR about the pressure release process on page 31.
- 2. Disconnect the pump from the compressed air supply.
- 3. Disassemble the suction filter system from the pump.
- 4. Remove the recirculation pipe.
- 5. Disassemble the paint regulator from the pump.
- 6. Disassemble the pump casing from the support base by removing the four special screws.
- 7. Remove the lower adaptor, the upper adaptor and the lid by following this order.



PRECAUTIONS

Some paint residues could remain inside the regulator: discharge them into the paint tank by overturning the pressure regulator itself.





7.5

LID AND CONNECTOR DISASSEMBLY



Use a 5mm Hex. Bar spanner.

- 1. Loosen the four bolts and remove upper adaptor.
- 2. Loosen the four bolts and remove lower adaptor.
- 3. Remove the four packings.
- 4. Loosen the six bolts and remove lid each side.

7.6 AIR OPERATING VALVE AND PLATE DISASSEMBLY



- 1. Loosen the two bolts with a 5mm Hex. Bar spanner and remove the plate.
- 2. Loosen the bolts(a) with a 4mm Hex. Bar spanner.
- 3. Remove the air operating valve and the four o-rings from pump body.

7.7

DIAPHRAGM SET DISASSEMBLY



1. Loosen the two nuts with a 13mm spanner.







3. Push the rod through the opposite side of the pump.



- 4. Hold flat face of center of the rod with a 12mm spanner, and loosen the nut with a 13mm spanner.
- 5. Remove the following parts from the rod.
 - Nut
- Spring washer
- Diaphragm holder (outside)
- O-ring
- Diaphragm set (White: outside, Black: inside)
- Diaphragm holder (inside)

NOTE: during assembling . Tightening pressure of nuts => 8.83Nm



7.8 ROD DISASSEMBLY

IMPORTANT



- 1. Do not damage or bend rod and be sure to check the rod is free of foreign matter. It can cause pump malfunction.
- 2. Do not damage or scratch the guide inside the main body. It can cause pump malfunction.
- 3. Be sure to set Y shaped packing and o-ring correct way. If not, it can cause pump malfunction.
- 4. Lubricate the Y packing; the sealing ring and the slots with some lithium grease.



1. Place the two Y shaped packings and two o-rings to the rod

7.9 INTAKE AND EXHAUST VALVE DISASSEMBLY



- 1. Press down the ball with a screwdriver by using stopper of the lid to remove the intake valve and the ball.
- 2. Remove the o-ring. Do not use any metal tool to avoid scratching the pump.
- 3. Remove the ball on the exhaust valve and pull the exhaust valve up with finger.
- Remove the o-ring. Do not use any metal tool to avoid scratching the pump.



7.10

PR-5L - PR-5L N PAINT REGULATOR MAINTENANCE, DISASSEMBLY AND ASSEMBLY



MODEL	PR-5L
Weight	850 g
Max. flow	2.0 l/min
Max. primary pressure	25.0 bar
Pressure range	3.0 bar
Connection IN	G 3/8"
Connection OUT	G 1/4"

PR-5L : aluminium body (for DPS series) **PR-5LN** : stainless steel body (for DPS FN series)



IMPORTANT



When you disassemble main body, rising pipe and pressure gauge, apply sealing agent to each threaded section to keep airtightness.



Whenever disassembling ball and seat of tungsten carbide, you have be sure to confirm that there is no wear or damage. If there is any wear or damage, replace with new one.

DISASSEMBLING

- 1. Fully loosen handle set (22), and remove bolt with hex. hole (17), diaphragm cap (19), spring stopper (20), adjusting spring (18) and diaphragm.
- 2. Loosen jam nut (7), and remove joint (1), valve spring (2), ball (3), seat (5) and packing (6).
- 3. Fix hex. section of diaphragm bolt (10), and remove hex. nut (16), spring washer (15), diaphragm stopper (13), O ring (14), diaphragm (12) and diaphragm holder (11).
- 4. If O ring placed into joint is damaged or deformed, remove O ring from joint.





ASSEMBLING

- 1. Check on each section if there are damage and foreign matter .
- 2. Fit diaphragm holder (11), diaphragm (12), O ring (14), diaphragm holder (13) and spring washer (15) into diaphragm bolt (10) and tighten hex. nut (16).Tightening torque of hex. nut 9.8N-m
- 3. Mount diaphragm section, adjusting spring (18), spring stopper (20), and diaphragm cap (19) on main body (8), and evenly tighten bolts with hex. bolt (17) diagonally.
- 4. Fit O ring (4) to joint (1).
- 5. Fit packing (6) and tungsten carbide seat (5) to body (8).
- 6. Fit valve spring (2) and ball (3) to joint (1), and then fit joint (1) to body (8). Tightening torque of joint 14.7N-m
- 7. Fix joint (1) with jam nut (7).





IMPORTANT



Fit tungsten carbide seat to main body so that tungsten carbide ball can be fitted on tapered side. Do not forget to fit packing.

Wrong assembling can cause wrong movement of pointer of pressure gauge due to leakage from seat, failing performance.



Pay attention to tightening torque when fitting joint (1). Too much tightening can damage main body. Tightening torque of joint 14.7 N-m When fitting joint, pay attention that tungsten carbide ball does not slip out of the seat.



7.11 PAINT FILTER MAINTENANCE

If the pump is used correctly (that is it is washed carefully each time it is used), the paint filter needs no special maintenance, with the exception of cleaning and filter replacement.

If there are some solidified paints inside the filter itself or inside the paint passages, disassemble it completely, clean it carefully and reassemble it.





IMPORTANT

Spare parts marked by [#] must be ANEST IWATA original items. If not, it can cause failure.

PROBLEMS	CAUSES	REMEDIES
	 a) The compressed air does not reach the pump air inlet 	a) Connect the compressed air.
	b) The air pressure is too low to start the pump	b) Supply a sufficient air pressure restart (minimum 2.0 bar)
	c) The ball valve (3-1) is in discharging position	c) Turn the valve in the right position.
	d) The air regulator is closed	d) Open the air regulator.
The pump does	e) The PR-5L/PR-5L N paint regulator closed	e) Open the PR-5L/PR-5L N paint regulator
not work, it stops	f) The silencer (1-37) is clogged	f) Replace the silencer.
or does not		
restart	The following parts are clogged because of	
	solidified paint inside them?	
	a) Fluid filter inside the paint filter	a) Clean and replace the fluid filter.
	b) Every pump fluid passage	b) Remove the clogging material.
	c) Every paint regulator fluid passage	c) Remove the clogging material.
		Disassemble the pump and
		check the following parts which
		will be replaced if damaged:
		a) PTFE diaphragm (1-31) [#]
		b) Rubber diaphragm (1-32) [#]
		c) Y packings (1-34) [#]
	The pump does not run when the reset push	d) O ring. [#]
	button on the double pneumatic valve is pressed	e) Rod (any strange deformation, scratches or
		burrs). [#]
		f) Self-lubricating bushings. [#]
		g) Main casing inside diameters (Ø 15) damaged
		(scratched or with burrs).
		Replace the double pneumatic valve.



PROBLEMS	CAUSES	REMEDIES
	The following parts are unscrewed or damaged	
	a) The pump suction connector (1-47)	a) Check if some tightening are loosened
	with the suction pipe	and tighten them.
	b) The suction connector (1-47)	b) Put some adhesive and tighten.
	c) The lower adaptor (1-46)	c) Tighten.
	d) The suction hose set	d) If the suction hose set is damaged (it sucks
		air), replace it.
	The pressure regulator, the recirculation two-way	Open the pressure regulator and then the gun
	valve and the gun are closed?	and the recirculation two-way valve
The pump works,	The following parts are clogged with some	
but the fluid	solidified paint residues?	
does not	a) The paint filter fluid filter	a) Clean and replace the filter.
come out	b) The suction filter	b) Clean and replace the filter.
	c) The suction hose set	c) Remove the solidified part.
	d) All the pump fluid passages	d) Remove the solidified part.
	e) All the paint regulator fluid passages	e) Remove the solidified part. [#]
	The upper and lower balls are stuck?	Clean the surfaces and release them. [#]
	The following parts are damaged or worn	
	a) The ball seats (delivery and suction valves)	a) Replace them. [#]
	b) The balls (1-19)	b) Replace them. [#]
	c) The O rings of each ball seat	c) Replace them. [#]
	d) The PTFE diaphragms	d) Replace them. [#]
	The following parts are unscrewed or damaged?	
	a) The pump suction connector (1-47)	a) Check the loosened tightening and tighten
	with the suction pump	them.
	b) The suction connector (1-47)	b) Put some adhesive and tighten.
The outgoing	c) The lower adaptor	c) Tighten.
paint contains	d) The suction hose set	d) If the suction hose set is damaged (it sucks
some air.		air), it must be replaced.
	The nuts at the rod ends are loosened?	Tighten them. [#]
	The following parts are damaged?	
	a) Diaphragms	a) Replace them. [#]
	b) The O rings (1-30) between the	b) Replace them. [#]
	PTFE diaphragm and the diaphragm seat	



PROBLEMS	CAUSES	REMEDIES
	The paint regulator is closed?	Open the paint regulator
	Check air sources.	a) Restore the air pipe
	a) The air flow is interrupted by the air pipe bending	a) Restore the air pipe
	b) The air pressure is too low to start the pump	b) Supply a sufficient air pressure
		(minimum 2,0 bar).
	c) The air regulator is closed	c) Open the air regulator.
The fluid	The silencer (1-37) is clogged	Replace it.
discharge	The following parts are clogged with some	
decreases	solidified paint?	
	a) The filter inside the paint filter	a) Clean and replace the filter.
	b) The suction filter	b) Clean and replace the filter.
	c) The suction hose set	c) Remove the solidified part.
	d) All the pump material passages	d) Remove the solidified part.
	e) All the paint regulator material passages	e) Remove the solidified part.
	The following parts are damaged or worn?	
	a) The ball seats	a) Replace them.
	b) The balls (1-19)	b) Replace them.
	c) The PTFE diaphragms	c) Replace them.

PR-5L, PR-5LN PAINT REGULATOR

PROBLEMS	CAUSES	REMEDIES
The pointer of	a) Not properly seated, or foreign matter	a) Clean and assemble again.
pressure gauge	b) Wear or damage on seat	b) Replace tungsten carbide seat(5) [#]
surpasses	c) Wear and damage on ball	c) Replace tungsten carbide ball(3) [#]
max. pressure.	d) Seat packing (6) damaged	d) Replace packing (6) [#]
	a) Loose joint (1)	a) Tighten
Paint leaks	b) Loose bolt with hex. Hole (17)	b) Tighten
outside	c) Loose nut (16)	c) Tighten
	d) Diaphragm damaged (12)	d) Replace diaphragm [#]
	e) O ring damaged (4)	e) Replace O ring [#]
Secondary	a) Primary pressure is too low	a) Raise primary side pressure
pressure	b) Failure of pressure gauge (24)	b) Replace pressure gauge
does not rise	c) Paint hardened in rising pipe (23)	c) Clean paint out
Pressure is unstable	a) Damage to valve spring (2)	a) Replace valve spring (2) [#]



9.1 DIAPHRAGM PUMP

Ref.	Description	Qt.	
1-1	Cylinder	1	
1-2	Сар	1	
1-3	Filter screw	1	
1-4	Filter #	1	
1-5	Filter bolt nut	1	
1-6	Handle(DPS-902F;903F;904F;9036F)	1	
1-7	Packing #	1	
1-8	Packing #	1	
1-9	Nipple	1	
1-10	Two way valve	1	
1-11	Hose elbow joint	1	
1-12	Spring pin	1	
1-13	Body	1	
1-14	Eilter plug (DPS 901E/DPS 901EG)	1	
1-14a	Filter plug(DPS-902E-903E-904E-9036E) 1	
1-14h	Handle (DPS-902E'903E'904E'9036E)	1	
1-15	Hex Socket bolt with washer	8	
1-17	Plug	5	
1.10	Packing #	1	-
1.10	Packing #	4	
1-19	Expansion #	4	
1-20		2	
1-21	O-ring	4	
1-22	Swivel connector	1	•
1-23	Hex.socket bolt with washer	12	
1-24	Lid	2	•
1-27	Hex. nut	2	
1-28	Spring washer	2	
1-29	Diaphragm holder outer	2	
1-30	O'ring #	2	
1-31/32	Diaphragm set #	2	
1-33	Diaphragm holder inner #	2	
1-34	Y packing #	2	
1-35	O-Ring #	2	
1-36	Rod	1	
1-37	Muffler	2	
1-38	Quick joint	1	
1-39	Plate	1	
1-40	Hex. Socket bolt	2	
1-41	Cover	1	
1-42	Tapping screw	2	
1-43	Main body	1	
1-45	Upper adaptor	1	•
1-46	Lower adaptor	1	•
1-47	Joint	1	•
1-49	O-ring #	4	
1-50	Intake valve #	2	
1-51	Air operating valve set	1	
1-52	Ground wire set	1	



For DPS 90F N models: the components signed with • have a different code

Parts subjects to wear: #



9.2 PR-5L , PR-5L N PAINT REGULATOR

Ref.	Description	Qt.	
1	Joint G3/8" M	1	
2	Valve spring	1	
3	Carbide ball	1	#
4	O-ring	1	
5	Carbide seat	1	#
6	Packing	1	
7	Hex. Nut	1	
8	Body (PR5L)	1	
8	Body in PTFE (PR5L N)	1	
9	Joint Rc1/4"-G3/8"	1	
9	Joint Rc1/4"-G3/8"		
	stainless steel (PR5L N)	1	
10	Diaphragm bolt	1	
11	Diaphragm holder	1	
12	Diaphragm	1	#
13	Diaphragm stopper	1	
14	O-ring	1	#
15	Spring washer	1	
16	Hexagon nut	1	
17	Hex. Socket bolt	1	
18	Adjusting spring	1	
19	Diaphragm cap	1	
20	Spring stopper	1	
21	Hexagon nut	1	
22	Handle set	1	
23	Rising pipe	1	
24	Pressure gauge	1	
25	"L" Joint 1/4"MF (PR5L)	1	
25	"L" Joint 1/4"MF stainless steel	1	
	(PR5L N)		

PR5L FOR MODELS :

- DPS 901 F
- DPS 902 F
- DPS 903 F
- DPS 904 F
- DPS 9036 F

PR5L N FOR MODELS :

- DPS 901F N
- DPS 903F N
- DPS 904F N
- DPS 9036F N

Parts subjects to wear:





9.3 AIR REGULATOR FOR DPS-901F/ 901FN

Ref.	Description	Qt.
3-1	Joint Rc. 1/4"-G1/4"	2
3-2	Air regulator 1/4"	2
3-3	"T" joint 1/4" MFM	2
3-5	Ball Valve with	1
	Exhaust Hole G1/4" FF	
3-6	Safety valve G1/4"-8 Bar	1
3-7	Quick joint 90° 1/4" MF	1
3-10	Joint B.P. 1/4" M 90°	1
3-14	Pressure gauge (optional)	2

AIR REGULATOR FOR DPS-901 FG

Ref.	Description	Qt.
3-1	Joint Rc. 1/4"-G1/4"	1
3-2	Air regulator 1/4"	1
3-5	Ball valve with exhaust	1
	hole G1/4" FF	
3-6	Safety valve G1/4"- 8 Bar	1
3-8	"T" Joint F/M/F	1
3-9	Joint G 1/4" MM	1
3-12	Quick joint 1/4" M ø10	1
3-14	Pressure gauge (optional)	1

AIR REGULATOR FOR PER DPS 902F

Ref.	Description	Qt.
3-1	Joint Rc. 1/4"-G1/4"	2
3-2	Air regulator 1/4"	2
3-3	"T" joint 1/4" MFM	1
3-5	Ball Valve with	1
	Exhaust Hole G1/4" FF	
3-6	Safety valve G1/4"-8 Bar	1
3-8	"T" Joint 1/4" FMF	1
3-9	Joint G1/4" MM	1
3-10	Joint B.P. 1/4" M 90°	1
3-14	Pressure gauge (optional)	2







AIR REGULATOR FOR DPS-903F/FN- DPS-904F/FN- DPS-9036F/FN

Ref.	Description	Qt.
3-1	Joint Rc. 1/4"-G1/4"	2
3-2	Air regulator 1/4"	1
3-3	"T" Joint 1/4" MFM	2
3-4	Air regulator with filter	1
3-5	Ball Valve with	1
	Exhaust Hole G1/4" FF	
3-6	Safety valve G1/4"-8 Bar	1
3-7	Quick joint 90° 1/4" MF	1
3-10	Joint B.P. 1/4" M 90°	1
3-14	Pressure gauge (optional)	2





9.4 SUCTION HOSE SET

Ref.	Description	Qt.
Pic.1	Suction hose set (DPS 901F/903F/904F)	1
Pic.2	Suction hose set (DPS 902F)	1
	Pic.3	1
4-1	Cover	1
4-2	50 mesh filter	1
4-2	100 mesh filter (OPTIONAL)	1
4-3	Spring	1
4-4	Complete filter set	1

NOTE: Stainless steel suction hose set used for DPS 90 FN series

9.5 ACCESSORIES

LOW PRESSURE AI	R AND PAINT TW	IN	HOSE	
Air and paint twin hose	m 2.0 with nipples	air	1/4"-1/4"	paint 1/4" (14"-3/8")
Air and paint twin hose	m 5.0 with nipples	air	1/4"-1/4"	paint 1/4" (14"-3/8")
Air and paint twin hose	m 7.5 with nipples	air	1/4"-1/4"	paint 1/4" (14"-3/8")
Air and paint twin hose	m 10 with nipples	air	1/4"-1/4"	paint 1/4" (14"-3/8")



Ref.	Description
1	Wall mounting bracket
2	Y shaped fluid nipple
3	Stand set
4	Wheel cart set
5	Tank (20 litres)
6	Plastic hopper set













10.1 Equipment storage

If the diaphragm pump is to be stored for a certain period, the following operations are recommended:

Disconnect the equipment from the energy sources.

Remove all residues and deposits from the pump.

Cover the equipment with a waterproof tarpaulin.

10.2 Dismantling

If for any reason the pump is to be dismantled, some important rules have to be followed to safeguard the environment.

All sheaths, flexible ducts and plastic or non metal components will have to be disposed of separately.





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