



WARNING - HIGH PRESSURE DEVICE

Please read these instructions before using this equipment



MODELS AND SPECIFICATIONS

- 81-500 Automatic airless spray gun with diffuser tip, 4mm air inlet 1/4" NPS(M) single fluid inlet.
- 81-502 Automatic airless spray gun with diffuser tip, 4mm air inlet 1/4" BSP(M) single fluid inlet.

The maximum working pressure of these guns is 250 Bar (3625 psi). Users must ensure that all accessories in use are suitable for use at these pressures and that the supply pressure cannot exceed the maximum pressure rating of the gun.

WARNINGS

Halogenated Hydrocarbon Solvents - for example 1.1.1-TRICHLOROETHANE AND METHYLENE CHLORIDE can chemically react with aluminium and galvanised or zinc coated parts and cause an explosion hazard. Read the label or data sheet for the material you intend to spray for your own safety.

Do not use spray materials containing these solvents with this equipment.

DESCRIPTION

These AP-81 automatic airless spray guns are designed for continuous use on automatic spray stations with high pressure airless spraying pumps and feature a diffuser tip, pneumatic operation, a tip guard and the choice of single inlet BSP or NPS connections.

IMPORTANT

To ensure the gun reaches you in first class condition protective coatings have been used. Flush thoroughly with compatible solvent before use.

Whilst these guns may be used with the most common coating and finishing materials they are not designed for use with highly corrosive or highly abrasive materials.

If the guns are used with materials which are corrosive or abrasive you should expect to have to frequently and thoroughly clean and lubricate and where necessary replace worn parts.

WARNING- FLUID INJECTION HAZARD

The pressures in use in airless spraying equipment frequently up to 7250 PSI can penetrate the skin and inject potentially large quantities of toxic fluid into the body.

Such an injection, at its worst, could cause the loss of a limb or other permanent disability. Extreme caution must be exercised when using any airless spray equipment. Any injection must be treated seriously and promptly. Only trained personnel should use airless spray equipment.

- NEVER** use the gun without a tip guard.
- NEVER** aim the gun at any part of the body, or at any person, under any circumstances.
- NEVER** permit any part of the body to come in contact with the fluid stream at any point.
- NEVER** dismantle the equipment without first shutting off all air and fluid supplies and then, not before releasing all the pressure in the system.
- NEVER** leave the gun unattended or unlocked when not in use. Always apply the trigger lock.
- NEVER** attempt to back flush the gun by holding a rag in front like you can with a conventional spray gun. You cannot back flush an airless gun. Don't attempt it.
- ALWAYS** release the pressure before trying to remove a blocked tip which has failed to clear on reversal.
- NEVER** remove a blocked tip when the system is pressurised.

CAUTION Because it is possible to generate static electricity with airless systems which could in an extreme case result in an electrical spark and potential explosion, be sure to ground your equipment and where possible earth the equipment being sprayed. Always use conductive hoses to ensure any static can run to ground.

SAFETY FEATURES

TIP SPRAY GUARD

Never use the gun without a guard fitted.

DIFFUSER TIP

This is to reduce the risk of injury by liquid injection when the spray tip has been removed.

NEVER leave the spray gun unattended whilst adjustments or maintenance is in progress and when the gun is under pressure.

NEVER dismantle the spray gun whilst it is under pressure.

ALWAYS release the air and fluid pressure before any major work is due on the spray gun.

ALWAYS screw in fully clockwise the spring cap which will lock the gun when changing spray tips. Return it to operating mode to recommence spraying.

INSTALLATION

Simply connect the correct pressure rated hose with the correct threaded connection to the spray gun fluid inlet (7).

Where required, and prior to connecting the fluid hose, ensure that any line filter accessory is securely fastened with the correct screen size fitted at inlet (7).

Mount the gun on a suitable mounting bar of 8mm diameter and secure at the required angle with locking screw (8).

A 4mm OD nylon air supply tube should be pushed into the gun inlet to provide actuating air.

OPERATION

The performance of the gun is affected by a number of factors. The spray tip type, orifice and angle, the material pump volume and pressure and all pressure to the triggering cylinder, the supply hose bore and length and the filter mesh.

Be sure to choose the required correct combination of these items to get the best from your spray gun.

Correctly prepare the material to be sprayed in accordance with the manufacturers recommendations.

Prime the pump and set it ready to work in accordance with the makers recommendations.

Test spray a small area, adjust the pump pressure or change the spray tip as necessary, to achieve the result required.

Always use your system at the lowest practical pressure achievable without 'tails' in the spray pattern.

Correct use of the gun gives the best and cleanest result. Keep the gun perpendicular to the surface being sprayed and do not arc the gun at the end of the spray stroke, this causes excessive overspray and an uneven finish.

Correct recommended gun to target distance is 300-380mm (12-15").

Various types of tip are available, the most commonly used are of a reversible type. These can produce vertical or horizontal spray patterns according to how they are mounted on the gun. Choose the configuration you prefer and mount accordingly.

SPEEDY MkV can be rotated from vertical to horizontal without tools and without dismantling in any way. SPEEDY MkV is recommended as your first choice for use with your AP-81 gun.

CAUTION

The operating details for SPEEDY MkV are included with the units when supplied in the service bulletin provided. Always follow the instructions provided.

PREVENTIVE MAINTENANCE

Clean the fluid passages of the gun whilst cleaning the material pump and hoses.

NEVER attempt to back flush the gun by holding a rag over the front of the gun then pulling the trigger. It is not possible with airless guns to back flush and it is very dangerous to attempt to do so.

Wash the exterior of the gun with a suitable solvent and a brush or rag. Dry off afterwards before storing. Do not immerse the gun in solvents as this destroys any lubricant on the parts.

Clean the spray tip whilst flushing the system with solvent. Afterwards rinse the tip again in clean solvent. If the orifice is blocked use an EXITFLEX 36-701 or 36-703 Tip Cleaning Needle to clear, never use hard blunt instruments which can damage the tip orifice and render the tip useless.

LUBRICATION

Upon assembly lightly grease the cylinder wall before mounting piston (16). In use, place a few drops daily of lubricating oil at the needle packing gland (13).

REPLACEMENT OF PARTS

Never dismantle a gun whilst it is attached to the pump and hose.

Relieve all pressure from the system and remove the gun for repair or service.

Spray tips may be removed from the gun without removing the gun from the system.

Turn the Cylinder Screw Cap (21) fully clockwise to the lock position.

1. Unscrew the airless spray guard.
2. Remove the spray tip (2) or cylinder tip or other (not illustrated), then gasket or seal or other (not illustrated).
3. Replace any worn or damaged or different sized part then re-install in reverse order.

NEVER dismantle the gun when it is under pressure.

1. To remove the diffuser tip. Remove items (1), (2) and (3) first then remove the diffuser tip (4) by unscrewing anticlockwise from the body (10). There is no seal to remove or replace.
2. To remove the needle. First remove the diffuser tip (4) then ensure the compressed air line to the cylinder is depressurized and isolated from the air supply. Next step is to remove the Cylinder Spring Cap (21). Before proceeding further note and measure the the setting of the needle by measuring the distance from the tip of the needle (5) to the front face of the gun body (10). This is important. Failure to set the needle can result in incorrect seating and leaks at the diffuser tip (4).

Now release the the lock nut (19) and remove it, keeping it safe for reassembly. Unscrew the needle anticlockwise from the piston. When the piston end of the needle is still engaged in the piston you may remove the piston at this point by pushing the front of the needle (5) back towards the gun body (10) and the piston (16) will come free of the gun body (10).

3. To remove the piston. First remove the diffuser tip (4), then the needle (5). When the needle is close to disengagement, push it towards the gun body. This action will release the piston (16) from the body (10).
4. To replace the piston seals. When piston (16) is free from the body (10) it is an easy matter to replace the piston 'O' ring and lubricating seal. **Always** replace both. Prise off the old parts and replace with new. First the 'O' ring (17) into the piston groove then the lubricating seal (18). When fitting, the fit is very close.

Now prise out lubricating seal (15) then the 'O' ring (14) from the front groove inside the gun body. Replace carefully in reverse order.

5. To replace the needle packings. Remove items (4), (5), (19) and (16). You can now get to the needle packing screw (13). Remove by turning anticlockwise. Prise out needle packing seal (12) then pressure washer (11). Clean the assembly and replace with new parts in reverse order.

Re assemble all in reverse order.

Before reinstalling the needle (5) add a light lubricant to needle seal (12).

Before reinstalling piston (16) add a light grease to the seals and cylinder walls.

Adjust the needle (5) to the previously noted measurements. Lock the nut (19) to the piston. Push the piston fully home then install the diffuser tip (4) to the body (10). It should seat with the needle and push the needle backwards approx. 1mm leaving a gap of approx. 1mm between the piston (16) and the needle packing screw (13).

Once the seating is satisfactory the spring (20) and cylinder spring cap (21) may be assembled to the gun body (10).

To adjust needle (5) for engagement with the diffuser tip (4), release lock nut (19), remove diffuser tip (4), turn needle (5) anti-clockwise to increase engagement or clockwise to to decrease engagement. Failure to adjust correctly will adversely affect gun performance.

Pressure test tip seal at the bench before reinstalling on any machine. Pressure test operating cylinder for correct function before reinstalling on any machine.

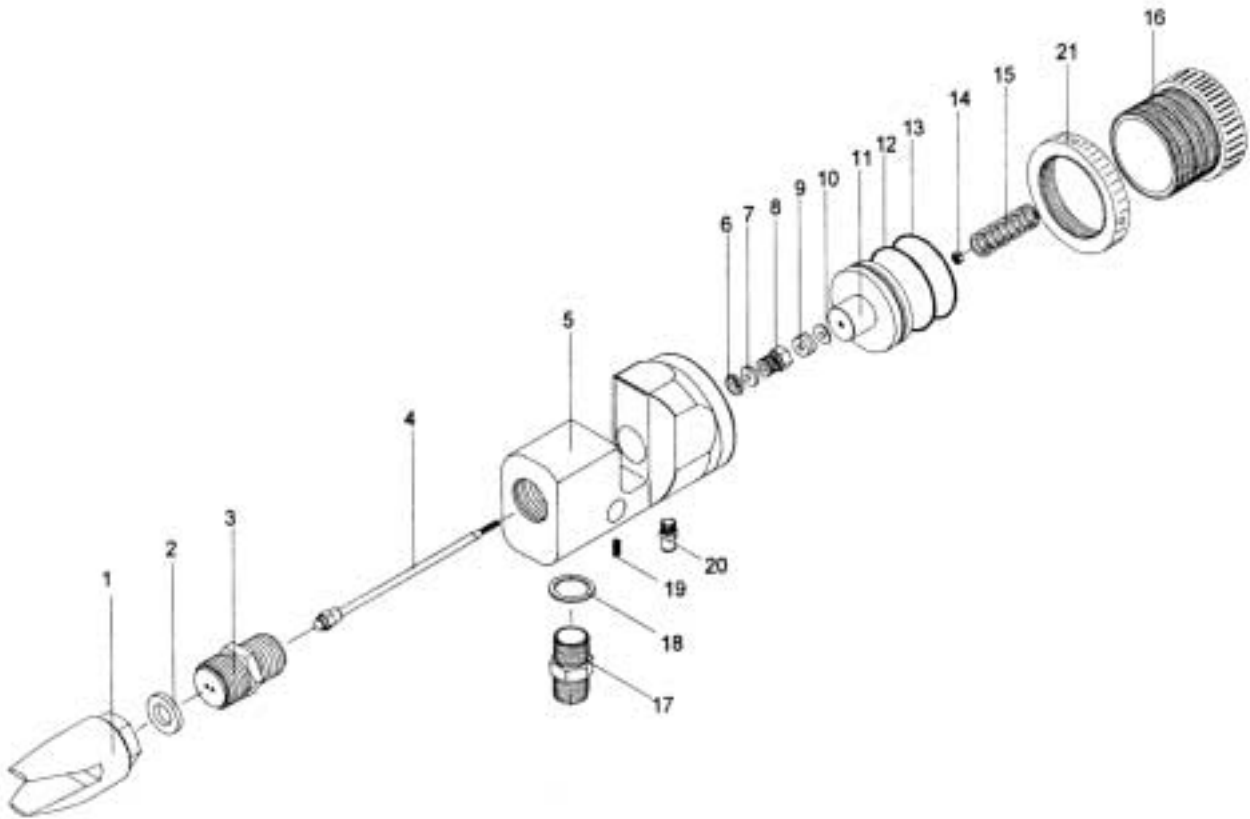
NB. When needles and tips are worn out it is recommended they are replaced and not re-lapped.

FILTER REPLACEMENT

After releasing system pressure and if and when an accessory line filter is fitted (72-100 & 72-220) the disc filter may be changed without removing the entire unit from the fluid inlet. Slacken the hose connection then release the lower portion of the housing. Change the filter and retighten the housing then the hose connection.

ACCESSORY ITEMS

36 - 701	Tip cleaning needles (up to orifice size 0.011")	Not illustrated
36 - 703	Tip cleaning needles (above orifice size 0.012")	Not illustrated
88 - 557	MkV Speedy reversible tip base unit (1 ¹ / ₁₆ UNF) 517Bar	Not illustrated
88 - 552	MkV Speedy reversible tip base unit (7 ⁷ / ₈ UNF) 517Bar	Not illustrated
88 - 591/0(xxx)	MkV Speedy tip (state size)	Not illustrated
72 - 100	Line filter (includes filter screen) 1/4BSP (m/f)	Not illustrated
72 - 220	Line filter (includes filter screen) 1/4NPSM (m/f)	Not illustrated
36 - 005 - K10	100 mesh disc tip filter (pack 10)	Not illustrated
36 - 009 - K10	60 mesh disc tip filter (pack 10)	Not illustrated



SPARE PARTS

Position	Part No.	Code	Description	Position	Part No.	Code	Description
1	90 - 401	201500	Guard and Nut	11	81 - 416	108116R	Piston
2	201 - 008	100030	Gasket	12	81 - 417	108117R	O Ring
3	90 - 404 - 7	100031R	Fluid Tip Diffuser 1 ¹ / ₁₆ " UNEF	13	81 - 418	108118R	Lubricating Seal
3	90 - 404 - 2	-	Fluid Tip Diffuser 7 ⁷ / ₈ " UNF	14	81 - 419	100039R	Needle Lock Nut
4	81 - 405	105813R	Needle	15	81 - 420	108119R	Gun Spring
5	81 - 410	108134R	Gun Body	16	81 - 421	108120R	Fluid Regulator
6	81 - 411	108956R	Pressure Washer	17	81 - 407	151414	Fluid Inlet Nipple
7	81 - 412	108955R	Packing Seal	18	81 - 406	121418R	Gasket
8	81 - 413	108957R	Packing Screw	19	81 - 408	108112R	Locking Screw
9	81 - 414	26063R	O Ring	20	81 - 409	190018	Push in Fitting 4mm
10	81 - 415	108115R	Lubricating Seal	21	81 - 421/A	108113R	Locking Ring

A full range of MKV Speedy base units is produced to suit most popular airless spray guns. For full details please refer to Speedy MkV published data.

N.B. Irrespective of an accessory pressure rating the maximum pressure rating of the AP-81 in use is 250Bar.



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AP.81 AIRLESS SPRAY GUNS DIMENSIONS

Dimensions	maximum (over guard)	155mm long
	maximum	50mm wide
	maximum (over inlet)	70mm high
Weight (excluding tip)		360 grams
Mounting Bar Dia.		8mm
Max. working pressure (3625psi)		250Bar
Max. air input pressure (60psi)		4Bar
Diffuser Tip thread. Standard UNEF		1 ¹ / ₁₆ -16
Normal operating setting for back Cylinder Screw Cap		2 full turns back from the fully closed position
Fluid Inlet	model 81-500 & 81-550	1/4nps(m)
	model 81502 & 81-552	1/4bsp(m)
Air Input Connection for nylon tube		4mm push in

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