



Airless Spray Pump 63:1 by GritSablare

TECHNICAL DETAILS

Section 1. Product Features

- Portable design and rugged frame.
- HP Spray Gun good for use up to 500 bar (7,250 psi).
- Four Finger Spray Gun good for use up to 700 bar (10,150 psi).
- Standard flat tips or RAC switch tips.

Section 2. Common Applications

- On site industrial and commercial coating.
- Blast and paint contractor yard work.
- Painting room applications.
- In situ coating in shipyards and slipways.

Section 3. Package (included)

63:1 Airless Spray Pump Package consisting of the following items:

1. Paint Hose: 1 x 15M-3/8" with fittings
2. Whip end Paint Hose: 1 x -2M-1/4" with fittings
3. Hose Swivel: 1/4"(F) x 3/8"(F)
4. Gun Swivel: 1/4"(F) x 3/8"(M)
5. High Pressure Spray Gun
6. Spray Tip – Your Choice of Tip Size



BONUS: Head Protection Equipment Included

Section 4. Specifications

Stock code	BPE-SE-MD-631-000	Unit
Fluid Pressure	63:1	
Delivery (Max Capacity)	2.6 (10)	gpm (L/min)
Cycle Per Gallon	19	cycle
Cycle Per Litre	5	cycle
Max. Recommended Pump Speed	50	cycl/min
Air Motor Effective Dia	10 (254)	inch (mm)
Stroke (Air Motor)	5 (120)	inch (mm)
App. Air Consumption (5 bar)	4600	Liter/min
Air Operating Pressure Range	40-90 (3-6)	pasg (bar)
Noise Level	95	dBa
Max Discharges Pressure	5841 (378)	pasg (bar)
Packing	Leather/Teflon	
Air Inlet	3/4"	in.NPT (F)
Fluid Outlet	3/8"	in.NPT (F)

Section 5. Service Kit

Air Motor Service Kit	Stock Code	BPE-SA-MD-631-700
	Description	63:1 Air Motor Repair Kit
Displacement Pump Service Kit	Stock Code	BPE-SA-MD-631-800
	Description	63:1 Displacement Pump Repair Kit

Section 6. Spray guns



HP Spray Gun

HP Spray Gun for use with low and medium viscosity coatings up to 500 bar (7,250 psi)



Four Finger Spray Gun

Four Finger Spray Gun for use with medium and high viscosity coatings up to 700 bar (10,150 psi)

Section 7. Airless Hoses

- Top quality high-pressure air and paint supply hoses for use with Airless Spray Pumps



1/4" X 2 M

Paint Hose Whip Line 430 Bar



3/8" X 15 M

Airless Paint Hose Whip Line 430 Bar



1/4" X 15 M

Airless Paint Hose



3/8" X 15 M

Airless Paint Hose

Section 8. Spray Tips

- Standard flat tips or RAC switch tips



Contractor Flat Tip Range



Standard Flat Tip Range



RAC X Switch Tip Range



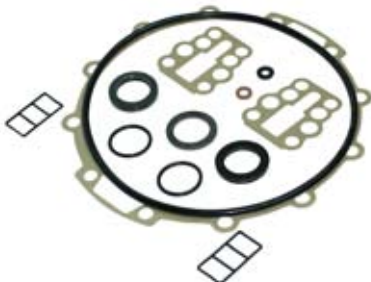
RAC 5 Switch Tip Range



XHD Switch Tip Range

Section 9. Service Kits

- For easy plug-and-play replacement of common wear items



Air Motor Repair Kit

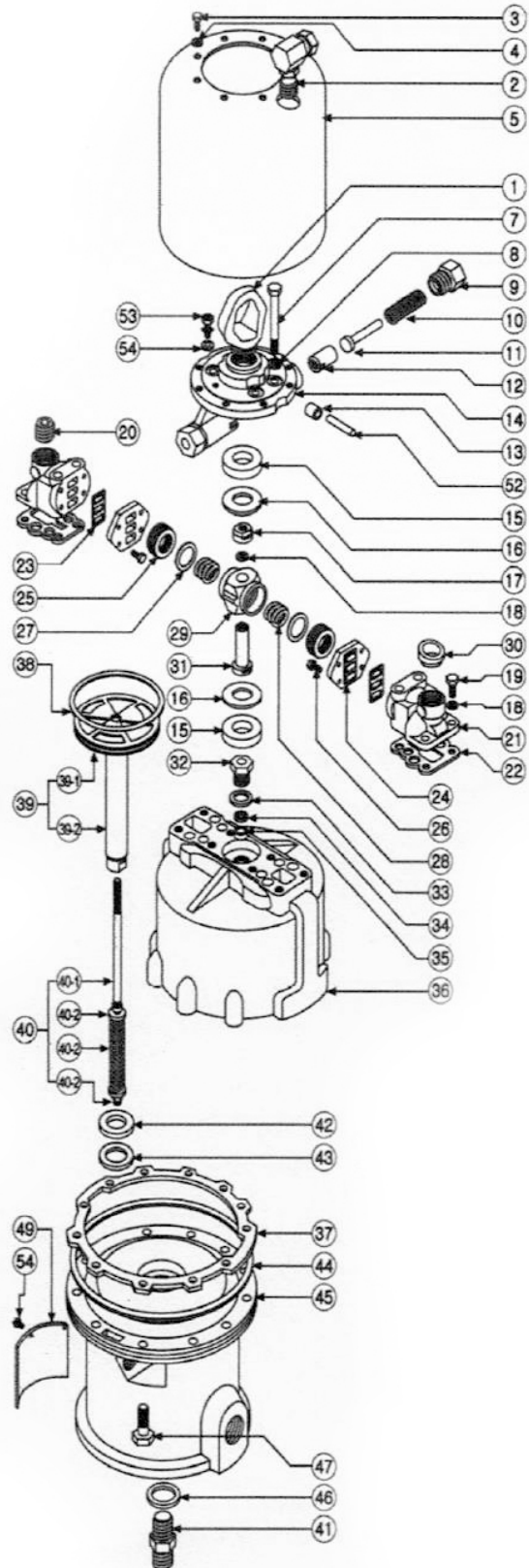


Displacement Pump Repair Kit

Section 10. Air Motor Parts Drawing

No.	Part. No.	Description	Quantity
1	MD 631-10101	Ring	1
1	MD 631-10102	Ring Nut	1
2	MD 631-102	Nipple 3/4"	1
3	MD 631-103	Screw	8
4	MD 631-104	Lock washer	8
5	MD 631-105	Shield	1
6	MD 631-106	Emblem	1
7	MD 631-107	Screw	4
8	MD 631-108	Lock washer	4
9	MD 631-109	Retainer	2
10	MD 631-110	Spring	2
11	MD 631-111	Guide	2
12	MD 631-112	Plunger	2
13	MD 631-113	Roller	2
14	MD 631-114	Housing	1
15	MD 631-115	Pad	2
16	MD 631-116	Washer	2
17	MD 631-117	Nut	1
18	MD 631-118	Lock washer	4
19	MD 631-119	Screw	4
20	MD 631-120	Plug	1
21	MD 631-121	Manifold	2
22	MD 631-122	Gasket	2
23	MD 631-123	Seal	2
24	MD 631-124	Plate	2
25	MD 631-125	Valve	2
26	MD 631-126	Screw	8
27	MD 631-127	Seal	2
28	MD 631-128	Spring	2
29	MD 631-129	Housing	1
30	MD 631-130	Grommet	1
31	MD 631-131	Hub	1
32	MD 631-132	Bearing	1
33	MD 631-133	Gasket	1
34	MD 631-134	Washer	1
35	MD 631-135	U-Packing	1
36	MD 631-136	Cylinder	1
37	MD 631-137	Gasket	1
38	MD 631-138	Seal (O-Ring)	1
39	MD 631-139	Piston Set	1
39-1	MD 631-13901	Piston	1
39-2	MD 631-13902	Piston Rod	1
40	MD 631-140	Trip Rod Set	1
40-1	MD 631-14001	Trip Rod	1
40-2	MD 631-14002	Guide	2
40-3	MD 631-14003	Spring	1
40-4	MD 631-14004	Nut	2
41	MD 631-141	Stud	1
42	MD 631-142	Packing	1
43	MD 631-143	Washer	1
44	MD 631-144	Seal	1
45	MD 631-145	Base	1
46	MD 631-146	Seal	1
47	MD 631-147	Screw	12
48	MD 631-148	Washer	12
49	MD 631-149	Plate	1
52	MD 631-152	Axle	2

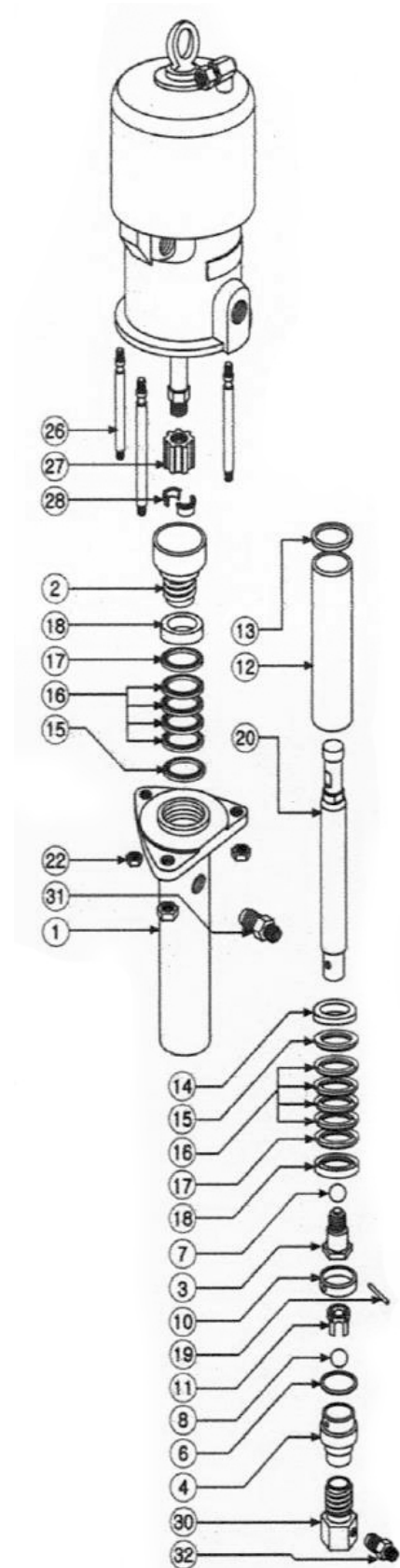
MD 631-700 63:1 Air Motor Repair Kit #22, 23, 27, 34, 35, 37, 38, 42, 43, 46



Section II. Displacement Pump Parts Drawing

No.	Part. No.	Description	Quantity
1	MD 631-201	Pump Housing	1
2	MD 631-202	Packing Nut	1
3	MD 631-203	Piston	1
4	MD 631-204	Intake Housing	1
6	MD 631-206	O-Ring	1
7	MD 631-207	Ball (7/8")	1
8	MD 631-208	Ball (1 1/4")	1
10	MD 631-210	Retainer	1
11	MD 631-211	Ball Guide	1
12	MD 631-212	Sleeve	1
13	MD 631-213	Gasket (Teflon)	1
14	MD 631-214	Washer	1
15	MD 631-215	Gland (Male)	2
16	MD 631-216	V-Packing (L)	8
17	MD 631-217	V-Packing (T)	2
18	MD 631-218	Gland (Female)	2
19	MD 631-219	Pin	1
20	MD 631-220	Displacement Rod	1
22	MD 631-222	Lock Nut	3
26	MD 631-226	Tie Rod	3
27	MD 631-227	Coupling Nut	1
28	MD 631-228	Coupler	2
30	MD 631-230	Tube	1
31	MD 631-231	Nipple (PT3/4" x PF3/4")	1
32	MD 631-232	Nipple (PT1" x PF1")	1
	MD 631-216-1	V-Packing	2

MD 631-800 63:1 Displacement Repair Kit #6, 7, 8, 13, 14, 15, 16, 17, 18





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SAFETY WARNING

General Safety Warning

- High pressure equipment can cause serious injury, professional use only.
- Operating & safety manual should be clearly understood before operating this equipment.
- Never put your hands, fingers or any part of the body over the spray tip.
- Even after shutting off the pump, there is high pressure remained. Pressure Clearance Procedure must be followed before cleaning and removing the spray tip/nozzle.
- Any misuse of spray pump or it's accessories, such as over pressurizing, modifying parts, using incompatible chemicals, fluids or damaged parts can cause rupture and result in serious bodily injury, fire, explosion or property damage.
- Keep checking all spray equipment if any repairs or replacements are necessary.

Spray Gun Safety Warning

- High fluid pressure can penetrate the fluid into your skin or splash into your eyes. Never point the spray gun at yourself or anyone else.
- Safety latch: Engage trigger safety latch in the closed or "safe position" whenever you stop spraying, even for a moment. Failure to set the gun position may result in spraying accidentally.
- Trigger safeguard this prevents the gun from triggering accidentally when it is dropped or bumped. Always operate gun with the trigger safeguard.
- Tip guard: Always have the tip guard in place while spraying, which reduces the risk of placing your fingers or any part of your body close to the spray tip.
- If the spray tip clogs while spraying, engage trigger safety latch in "safe position" immediately.
- Never wipe off around of the spray tip until pressure is fully cleaned and safety latch is in "safe position".

Hose Safety

Because of the pressure fluid in the hose, if the hose develops a leak, split, rupture or damage they can cause serious bodily injury or property damage.

- Never use a damaged hose. Check the entire hose for cut, leak, abrasion, damage or bulging cover before using. If any type of damage is founded replace the hose immediately.
- Spring guard: Must have spring guards on both ends which protect the hose against bends or kinks.
- Tighten all fluid connections carefully before use. High pressure fluid can dislodge loose coupling.
- Do not pull on hoses to move equipment. Check if the fluids or solvents are compatible with the hose cover and the inner tube.
- The hoses should not be exposed to temperatures above 180°F(82°C) or below -40°F(-40°C)

Pressure Clearance Procedure

Must always follow the "Pressure Clearance Procedure" before servicing, cleaning, checking any part of this equipment, especially removing the spray tip or wherever you stop your spraying job to avoid serious bodily accident.

1. Engage the spray gun safety latch in "safe position".
2. Shut off the air supply valve to the pump.
3. Close the on-air valve.
4. Disengage the spray gun safety latch and the air valve then aim the spray gun into the side of grounded metal pail and trigger the gun to relieve pressure.
5. Reengage the spray gun safety latch.
6. Open the drain valve to release pressure. Leave drain valve open during all service operations.
7. Keep leaving drain valve open until you are ready to spray again.

If you feel that the spray tip or hose is completely clogged or has not been fully cleaned after following the procedures mentioned above, must loosen the tip retaining nut or hose end coupling and release pressure gradually.

Fire or Explosion Earning

- The flow of fluid through the inside of pump and hose can give occasion to static electricity by the high velocity. Be sure to ground properly every part of the spray equipment.
- Sparking could occur and the system may become hazardous. It may also occur when plugging in or out a power supply cord.
- Sparking can ignite fumes from solvents and fluid being sprayed, dust particles and other flammable substances, whether you are spraying indoor or outdoor, can cause serious bodily injury or property damage.
- Never plug in or out any power cords in the spray area when there is any change of igniting fumes still in the air.
- If you experience any static sparking or even a slight shock while using this equipment, stop spraying immediately and check the entire system for the grounding situation.
- Do not use again until the trouble has been identified and corrected.

Equipment Pressure

The MD 63:1 pump develops 6.350 P.S.I. (440 bar), the MD 45:1 pump 4.500 P.S.I. (315 bar) and the MD 30:1 pump 3.000 P.S.I. (210 bar). Maximum working pressure of pumps is at 105 P.S.I. (7 bar) air pressure. Never exceed this maximum working pressure of any component or accessory used in the system. For more details see our catalogue.



Grounding Safety

Check your local electrical code for detailed grounding instructions for your area and type of equipment and be sure to ground all of this spray equipment as the follows:

1. PUMP: Use a ground wire and clamp to prevent the pump from static electricity.
2. Air hose & fluid hoses: Use only grounded hoses with a maximum of 500FT (150M)
3. Air compressor: Follow air compressor manufacturer's instructions.
4. Spray gun: Connect to a properly grounded fluid hose and pump.
5. Object being sprayed & fluid supply tank: Follow local code.
6. Solvent pail: Use only metal pails not such as paper or cardboard which is non-conductive surface.

Moving Parts Safety Warning

NOTE:

Reference numbers in the text refer to part drawing, see page 4.

- Moving parts can pinch or amputate your fingers or other body parts.
- The air motor valve /25 moves when air is supplied to the motor so never operate the motor without the air motor plate /24.
- Keep clear of moving parts when starting or operating the pump and be sure to follow the "Pressure Clearance Procedure" to prevent the pump starting accidentally.

Airless-Spray Technique

Good airless-spray technique is much like conventional air spray, except that you hold the gun further from the work surface, you get more coating thickness, which result in less pattern overlapping, and you must use a more positive action when triggering gun. Hold the gun 350-400 mm from the work, the distance varies with the covering ability of the paint, type of surface to be sprayed and spray pattern.

Preparing Paint for Use

This probably the important step for trouble-free spray painting.

- Prepare the part or other coating according to the manufacturer's instructions.
- If the paint was exposed to the air before using, remove the surface that has formed.
- Stir paint through to dissolve hard pigments.
- Strain the paint through a fine nylon mesh bag (available at most paint dealers) to remove particles that might clog filters or spray tip.
- New paint seldom needs thinning, but old and remixed paint, lost some solvent through evaporation, needs to be thinned properly.
- Follow the paint manufacturer's recommendation on thinning.
- Be careful not to add too much solvent, as thin paint is hard to control and does not cover very well.
- Workman and assistant must always wear protective eyeglasses, gloves, clothing and respirator as recommended by the fluid solvent manufacturer.

Spray starting and adjusting

Allows follow the "Pressure Clearance procedure", right before cleaning, replacing, operating, removing the equipment or servicing any part of system equipment.

- Immerse the pump intake or suction tube in paint. Make sure drain valve is closed.
- Close the on-off air valve /D then open the master air valve /G and set the air regulator at about 40 P.S.I. (3 bar)
- Squeeze the gun trigger and open the on-off air valve /D gradually at first to let the pump run slowly until it is primed.
- Run the pump until paint flows smoothly from the gun, without spitting, release the trigger and open the pump runaway valve /B fully.
- Release pressure-stop pump, trigger gun and open the drain valve /J, and engage trigger safe position and install the tip and gasket or nozzle.
- Tighten the tip retainer nut with moderate tension only.
- Set the air regulator /E at a trial setting of about 60 P.S.I. (4 bar) and spray on a test panel, holding the gun about 350 mm away.
- If the spray pattern is not fully atomized, gradually increase the pressure with the air regulator.
- Adjust the pump to the minimum pressure required to obtain the desired spray pattern of paint. If atomization is not possible on thick paints, thin with compatible solvent.
- Use the lowest pressure setting possible.
- If the pump accelerates quickly or is running too fast, stop the pump immediately and check the material supply tank.
- Don't leave a pump shut off if the material supply has been exhausted and air has been pumped into the lines.
- Prime the pump and lines with material or flush and leave filled with solvent, with pressure relieved.

NOTA: Reference keys in the text refer to the installation plan drawing, see page 19.



Maintenance

DAILY SHUTDOWN

Always follow the "Pressure Clearance Procedure".

- Close the on-off air valve /D to the pump.
- Always be sure to stop the pump at the bottom of the stroke to prevent paint from drying on the displacement rod and damaging the throat packing.
- Always bleed off paint pressure in the system by triggering the gun open and opening the drain valve /J and have a container ready to catch the paint draining from the drain valve.
- Remove the tip from the gun and clean and leave it in solvent until ready to use again.
- Do not disconnect the gun or hoses and keep the unit filled with coating to reduce the need for flushing.

NOTE:

When using fast drying paints, immerse the suction tube in a container of solvent during shutdown periods.

Clean the pump's intake screen, if necessary.

SHUTDOWN FOR STORAGE

Always follow the "Pressure Clearance Procedure" and when storing the unit procedure is as follows:

- Flush the unit clean, as instructed above. Sometimes it takes several flushings, each with solvent, to clean thoroughly.
- Flush the pump, hoses and gun with full of solvent unless the flushing solvent is water or ketone solvent, to remove water or ketone solvent, fill the system with mineral spirits solvent or light oil for long periods storage, and wipe all external wetted parts with oil. Also remove water or ketone solvent used, from exposed part of pump displacement rod.

TROUBLE-SHOOTING FOR AIR MOTOR

Check chart

Check air leaks, following the checking methods listed hereunder. Reference numbers in the text refer to the parts drawing. See pages 4.

Stroke Position	Check up	Checking Method	Causes	Trouble shooting
STROKE UP ONLY	21	By feel	Worn air manifold /21	Replace
	37	By feel	Worn air cylinder gaskets /37	Replace
	46	Squirt oil around wiper seal /46	Worn throat packing /46	Replace
STROKE DOWN ONLY	22	By feel	Worn air manifold gaskets /22	Replace
	32/35	Squirt oil around bearing /32	Worn trip rod packing /35	Replace
	32/33	Squirt oil around bearing /32	Worn trip rod bearing gasket /33	Replace
STROKE UP & DOWN	25/27	Squirt oil around valve /25	Worn valve ring /27	Replace
	38	Hold a paper over exhaust holes	Worn air piston packing /38	Replace
	23/24	Squirt oil valve plate /24	Worn valve plate seal /23	Replace

WARNING

- To restart the air motor, always follow the "Pressure Clearance Procedure" and then close the on-off air valve, make clear remained air in the line then reopen the on-off air valve.
- To reduce the risk of the fire or explosion hazard, check safely grounded.
- To reduce the risk of pinching or amputating, keep fingers out of the detent housing.

Check Air Leaks

Air leaks occur usually due to worn gasket or sealing.

- Shut off the air supply and disconnect the hose to check an air leaks.
- Screw the inlet union, remove the shield then screw the union back.
- Connect the air hose supply the air about 0.7-1.0 kg/cm².

NOTE:

The pump will stay out (stop) against pressure without damage to it.

WARNING

If there are leaks, shut off the pump immediately and release system pressure, following the "Pressure Clearance Procedure" then tighten connections, start the pump again and check to be sure leaking has stopped.

Always use the lowest possible air pressure to get the desired results, higher pressure wastes fluid and causes premature wear of the pump packing and spray tip.

Never operate the pump to run dry of the fluid being pumped because a dry pump will quickly accelerate to a high speed, possibly damage itself.

If the pump accelerates quickly or run too fast, shut off immediately and check the fluid supply.



Parts Service for Air Motor

- To reduce the risk of serious bodily injury, including fluid injection, splashing in the eyes or on the skin, always follow the "Pressure Clearance Procedure" before servicing the air motor.
- Service in Disconnect/Connect order.
- Inspect whole parts for wear or damage, and replace parts if necessary to protect against the risk.
- Disconnect all hoses, rods, tubes, controls, etc. from the air motor as necessary to service with ease.
- Clamp the base /45 safely, remove the union and screws /3, lock washers /4 and shield /5.
- Remove detent spring retainer /9, spring /10, guide pin /11, and plunger /12.

WARNING

Be careful to handle the spring /10, scratches or nicks will cause early spring failure.

NOTE:

Reference keys at page 15.

- Remove four screws /7, lockwasher /8, to the air manifold /21.
- Lift the housing off the manifolds, do not drop the roller pin /13 and check the rollers and axle /52 for damage.
- Remove the rubber pad /15, washer /16 and check for damage.
- Pull the valve housing /29 up and remove the valve /25, spring /28.
- Take the nut /004, washer /18 off the trip rod /001.
- Pull the valve housing /29 off the hub /31, grip the trip rod below the housing hub /31 with padded pliers, and screw the hub off the trip rod.
- Tack special care to avoid damaging the plated surface of the trip rod /001 and remove the two mounting screw /19 of one manifold /21 only, and remove the manifold.

WARNING

When attaching a new valve plate to the manifold, be sure the mating surfaces of the plate to the manifold are completely clean. Handle the plate /24 carefully. The opening in the valve plate /24 are razor sharp! Be sure carefully not to cut yourself when checking or handling them.

- From the cylinder /36, remove the washer /16, rubber pad /15.
- Screw the trip rod bearing /32 and carefully pull it up off trip rod /001.
- Check the packing /35, washer /34, gasket /33 and replace them if necessary.
- Grease the packings before installing them in the cylinder.
- Remove the twelve screws /47 holding the air cylinder /36 to the base /45.
- Pull the cylinder straight up off the piston.



WARNING

Be careful the inner cylinder /36 well for damage or do not force.

- Make sure the air inlet is in line with the fluid outlet and before bolting the cylinder /36, make sure the floating O-ring seal is in place.

- Install the screw /47 in the base /45 with thread sealer and torque 20-25ft-1b (27-33 N.m.)

- Install the gasket /33 with the trip rod /40.

- Install the rubber pad /15 & washer /16 on the cylinder top.

- Install the valve housing hub /31, valve housing /29, lockwasher /18 & nut /17 in the trip rod /001.

- Until the rod projects is 0.8 mm (0.031 inch), adjust the valve housing hub /31, nut /17.

- Screw the trip rod bearing /32 torque 14-18ft-ib (19-24 N.m.)

- Connect the O-ring /27, spring /28, and valve /25 inside of the valve housing /29.

- Install the manifold /21 to the gasket /22 and screw /19 to the cylinder /36.

- Line up the plunger slot /12 & roller /13, axle /52, grease then reassemble the detent spring retainer /9, spring /10 and guide /11.

- Install all remaining air motor parts in the reverse order of disassembly and connect the air motor to the displacement pump.

- Remount the pump and connect the air and fluid lines and reassemble including all grounding wire was disconnected before serving.

- Test the pump a low pressure about 1-2kg/cm².

WARNING

If the cylinder /36 is stuck to the base, use a rubber hammer to break it loose and be careful not to tilt the cylinder since this could damage the smooth Inner surface.

Check the piston O-ring /38 for wear or damage and replace if necessary.

WARNING

If replacement is necessary, remove the old packing and back-up washer, and carefully tuck a new back-up washer and packing into the throat cavity. The lips of the V-packing /42 must face up towards the piston. Pack light, waterproof grease into the cavity above the wiper seal /46 and thoroughly lubricate the packing before reassembling.

WARNING

Whenever replace a new trip rod /001, check to make sure the length between the inside shoulders of the spring /003 is 139.7 mm (5.5 inch). If the length of spring /003 is not exactly settled or any part of the trip rod /40 is damaged, the entire rod set /40 must be replaced.

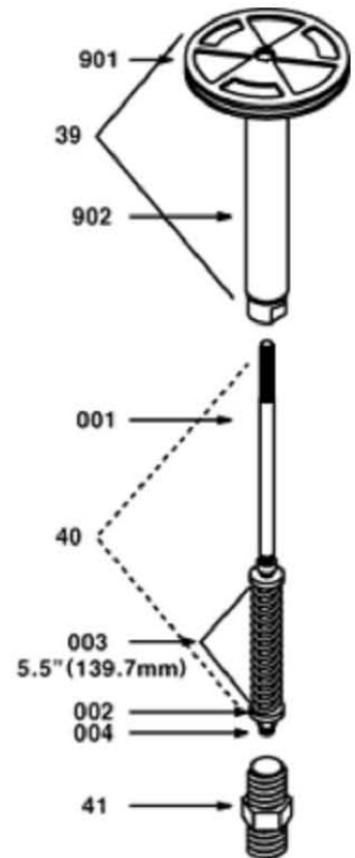
- Remove the piston rod up /902 from base /45 and check the V-packing /42 and washer /43.

- To inspect or replace the trip rod /001, clamp the piston rod /902 in a vise and unscrew the stud /41 from the piston rod /902: Be careful not to damage the polished surface of the rod.

- Grease the trip rod /001, spring /003, piston rod /902 properly.

- Use thread sealer on the threads of the stud /41 and torque to minimum of 150ft-1b (203 N.m.).

- Check if the trip rod bearing /32 is removed from the cylinder top and gasket /37 is in place and carefully place the cylinder /36 over the piston rod /902.





TROUBLE-SHOOTING FOR DISPLACEMENT PUMP

Check Chart

TROUBLE	PROBABLE CAUSE	TROUBLE SHOOTING
PUMP NOT WORKING PROPERLY	<ul style="list-style-type: none"> • Restricted line or air supply. • Closed air valve or restricted. • Too low pump pressure setting. • Restricted air filter. • Dried material seizure of pump displacement rod. • Worn packing or clogged pump part. • Inoperative air motor. • Restricted hose or gun. • Fluid stucked piston rod. 	<ul style="list-style-type: none"> • Increase air / Clean. • Clean air valve/air regulator. • Adjust pump pressure. • Clean/Service. • Fill wet-cup/packing nut, clean the rod. • Clean/Service. • Service. • Clean/Open. • After air relieved then flush.
NOT ENOUGH PRESSURE OR VOLUME WITH PUMP RUNNING	<ul style="list-style-type: none"> • Restricted line/air supply. • Air capacity insufficient. • Closed / Clogged air restricted. • Low pressure. • Closed Filter/Spline upside down. • Packing nut too loose/tight. • Throat packing worn/valve closed. • Closed hose or gun. • Piston rod dried with material. • Closed suction & piston valve. • Remained air pump & hose. 	<ul style="list-style-type: none"> • Increase air / Clean. • Check for leaks. • Open / Clean. • Adjust pressure. • Clean. • Adjust. • Service / Clean. Open. • Clean. • After clean air then refill. • Adjust/service. • Exhaust / Clean.
GUN NOT SPRAY OR STOP SPRAYING	<ul style="list-style-type: none"> • Restricted hose/line. • Air insufficient/worn tip. • High flow rate. 	<ul style="list-style-type: none"> • Clean/service. • Increase air / replace tip. • Adjust tip calibre.
STATIC SPARKING OF GUN	<ul style="list-style-type: none"> • Unit & work not grounded properly. 	<ul style="list-style-type: none"> • Check grounding.
ACCELERATED OPERATION	<ul style="list-style-type: none"> • Coating supply low/empty. • Tighten packing nut. • Worn suction, packing piston's all valve. 	<ul style="list-style-type: none"> • Adjust / refill. • Adjust. • Replace / Service.

NOTE: If the fluid hose or spray gun is obstructed by dust, always follow the "Pressure Clearance Procedure", then disconnect the fluid hose and turn on air just enough to start the pump about 20-40 P.S.I. (1.4-2.8 bar).



Parts Disassembly & Reassembly for Displacement Pump (45200. 63200)

DISCONNECTING THE PUMP

1. Locate the stroke at the bottom position and flush the pump.
2. Always follow the "Pressure Clearance Procedure".
3. Disconnect the fluid hose & air hoses; remove the pump from the mounting.
4. Unscrew the coupling nut /27 and the tie rod lock nuts /22.
5. Disconnect the pump from air motor.

NOTE:

Reference numbers in the text refer to parts drawing, see page 5.

For more detail for service, refer to the "Parts service for displacement pump".

RECONNECTING THE PUMP

1. Line the pump fluid outlet up with the optional fluid outlet.
2. Locate the pump on the tie rod /26.
3. Install the coupling nut /27 & the stud /41 of the air motor. (see page 4)
4. Screw the coupling nut /27 and the lock nut /22.
5. Mount the pump and reconnect all hoses.
6. Reassemble all grounding wire that was disconnected during repairs.
7. Screw the lock nut /22 and torque 40-50ft-1b (54-68 N.m.)
8. Screw the coupling nut /27 & torque to 145-155ft-1b (195-210 N.m.)
9. Operate slowly the pump about 40 P.S.I. (2.8 bar) and check tie rod for binding.
10. Tighten the packing nut /2 snugly, no tighter and then fill packing nut /2 with half full oil.

NOTE:

Be sure the couplers /28 are in place inside the coupling nut /27.



Parts Service for Displacement Pump

NOTE:

Upper holes allow you more delivery.

WARNING

If the cylinder sleeve /12 cannot be easily removed for replacement, contact the nearest our head office or branch agency office for kind assistance and be sure to install the new sleeve with the internally tapered end down, also when replacing the sleeve be sure to install a new gasket /13.

- Always follow the "Pressure Clearance Procedure".
- Disconnect it from the air motor.
- From the pump housing /1, unscrew the intake housing /4.
- From the intake housing /4, unscrew the tube /30.
- Disconnect the ball /8 & the intake housing /4.
- Disconnect the pin /19 from the intake housing /4, check where the pin /19 is in and remember.
- Disconnect the throat packing nut /2, pull the connecting rod /29 until you can catch the piston /3.
- Pull the piston /3 and displacement rod /20 out through the bottom of the pump housing /1.
- If the connecting rod /29 was not installed, apply some sealant and screw it into the displacement rod /20, torque to 100-110ft-1b (135-150 N.m.)
- Grease the gland /15, /18, the packing stack /16, /17 and install the piston /3. Be sure to install with the lips of the V-packing facing up never disassemble the stack.
- Install the washer /14 on top of the gland /15, /18, packing stack /16, /17.
- Place the ball /7 on the piston /3 and screw the stud into the displacement rod /20, torque to 165-185ft-1b (225-250 N.m.)
- Remove the packing nut /2, the packing stack /16, 17 & the gland /15, /18 from the pump housing /1 and make them clean.
- Grease the gland /15, 18, the packing stack /16, /17 then install into the throat with the lips of the V-packing facing down. Never disassemble the stack.
- Install the packing nut /2 loosely.
- Carefully insert the displacement rod /20 up through the bottom of the pump housing /1 and push it all the way up until connecting rod /29 protrudes from the packing nut /2.
- Insert the new O-ring /6 on the housing /4 and install the pin /19 in the intake housing /4 that you marked.
- Screw the intake housing /4 into the pump housing /1, torque to 90-100ft-1b (122-136 N.m.)
- Tighten the packing nut /2 just only enough to stop leakage, but no tighter.
- Reconnect the displacement pump to the air motor.

WARNING

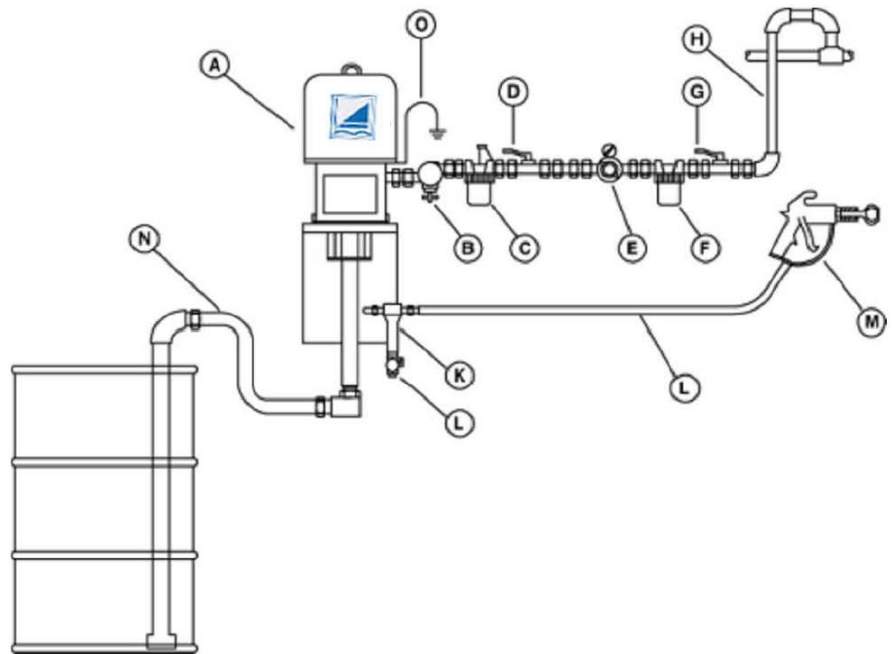
Grease the nipple /31, reinstall into the pump housing /1, torque to 325ft-1b (440 N.m.)

- Secure the flats of the displacement rod /20 in a vise and screw the piston stud /3.
- Remove the packing stack /16, /17, gland /15, /18, washer /14 & ball /7.
- Check the cylinder sleeve /12 inner and the displacement rod /20 outer surface. If there are any parts of damaged, replace them.
- Do not remove the connecting rod /29 unless the displacement rod /20 is being replaced. If necessary, save the connection rod /29 for use with the new displacement rod /20.

INSTALLATION PLAN

KEY DESCRIPTION

KEY	DESCRIPTION
A	PUMP
B	PUMP RUNAWAY VALVE
C	AIR LINE LUBRICATOR
D	ON-OFF VALVE
E	AIR REGULATOR
F	AIR LINE FILTER
G	MASTER AIR VALVE
H	AIR SUPPLY HOSE
J	DRAIN VALVE
K	FLUID FILTER
L	FLUID SUPPLY HOSE
M	SPRAY GUN
N	FLUID SUCTION HOSE
O	GROUND WIRE



INSTALLATION

1. Mount the pump /A and the air/fluid hoses /H, /L, /N.

- Mount the pump /A to suit the type of installation planned.
- All air/fluid hoses /H, /L, /N must be properly sized and pressure rated for this equipment.
- Use only grounded air and hoses.
- Connect a grounded fluid supply hose /L to the pump's 1" npt (f) fluid outlet, using a suitable adapter.
- Connect a fluid suction hose /N to the pump's 101/2" npt (f) fluid intake.
- Use a grounded 1/2" I.D at minimum air hose /H to supply air line.



2. A pump runaway valve /B.

- This valve senses when the pump is running too fast and shuts off the air to the motor automatically.
- Pump running too fast can give occasion to serious damage.
- Engage close to the pump air inlet.

3. Air line lubricator /C

- This provides automatic air motor lubrication.

4. On-off air valve /D

- This is required the system to release air trapped between it and the air motor when the valve is closed.
- Install downstream from the air regulator /E and be sure it is easily accessible from the pump.

5. Air regulator /E

- This controls pump speed and outlet pressure by adjusting the air pressure to the pump.
- Install close to the pump but upstream from the on-off air valve /D.

6. Air line filter /F

- Removes harmful dirt and moisture from the compressed air supply.

7. Master air valve /G

- Cut off all other air line accessories for servicing and install it on the top of them.

8. Drain valve /J

- Release fluid pressure in the hoses and gun.
- Install it pointing down but the handle points up when the valve is opened.

KEY POINT EQUIPMENT BEFORE STARTING TO SPRAY(& PROCEDURE)

- Check the grounding of the system to prevent pump and hose from static sparking.
- Flush the system and test for leaks.
- Lubricate the pump and spray gun.
- Fill the wet-cup on the pump with a compatible lubricant.
- Remove and check gun nozzle filter, if used, to see if it is clean.
- Close the drain valve.
- Check the level of paint in the supply container and see that the paint has been thoroughly mixed, and if necessary, thinned.
- Keep the pump, hose and gun clean inside and outside.



NOTE:

FLUSH THE PUMP BEFORE USING

Flush the pump with compatible solvent, using the lowest possible fluid pressure to remove dirt or oil, especially when the pump is being used to supply a circulation system make sure the pump is thoroughly flushed.

OPERATION

Follow the "Pressure Clearance Procedure" before operating.

1. Check air regulator /E and the master air valve /G are closed. (*Do not install the spray tip yet!)
2. Connect a suction hose /N to the pump's fluid inlet or put in a metal pail containing a gallon of compatible solvents.
3. Close the drain valve /J.
4. Hold a metal part of the spray gun /M firm to the side of a grounded metal pail and hold the trigger open.
5. Open the on-off air valve /D.
6. Must slowly open the air regulator /E until the pump starts about 40 P.S.I. (2.B bar).
7. Cycle slow until all air is pushed out, and fluid is flowing in a steady stream.
8. Release the spray gun trigger and engage the safety latch "SAFE" position and carefully check all connections in the system for leaks.
9. Follow the "Pressure Clearance Procedure" then install the spray tip in the gun.

Section 13. Product Identification

Product name

Airless Spray Pump 63:1 by GritSablare

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