

OPERATOR'S MANUAL

650502-X-B

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

ALSO INCLUDE MANUALS: 66605X-X DIAPHRAGM PUMP (PN 97999-099), 650789-X DIAPHRAGM PUMP (PN 97999-818), 2752X-X MATERIAL REGULATOR (PN 97999-674), P292X1-XXX PIGGYBACK FILTER / REGULATOR (PN 100400-8), P291XX-XXX MODULAR FILTER / REGULATOR (PN 100400-24).

RELEASED: 4-16-99
REVISED: 5-28-10
(REV. E)

650502-B, 650502-1-B

LOW PRESSURE DELIVERY SYSTEM

1/2" DIAPHRAGM PUMP, 1:1 RATIO, 5 GALLON CONTAINER
FOR USE WITH CONVENTIONAL HVLP / AIR SPRAY SYSTEMS
(SPRAY GUN NOT INCLUDED)



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

SERVICE KITS

Use only genuine ARO replacement parts to assure compatible pressure rating and longest service life.

- Fluid Section Repair Kit 637140-A4.
- Air Section Repair Kit 637141.

Refer to the 66605X-X Operator's Manual for parts / repair and service information.

PUMP SYSTEM DATA

Model	650502-X-B Low Pressure Delivery System
Pump Model	650789-2A4
Pump Type	Non-Metallic Air Operated Double Diaphragm with stainless steel seats
Material	Groundable Acetal
Weight	19.4 lbs (8.8 kg) (650502-B) 23.57 lbs. (10.7 kg) (650502-1-B)
Air Inlet	1/4" - 18 n.p.t.f.
Air Consumption	1 c.f.m. per gallon (approx.)
Maximum Air Inlet Pressure	100 p.s.i.g. (6.9 bar)
Maximum Material Inlet Pressure	10 p.s.i.g. (0.69 bar)
Maximum Outlet Pressure	100 p.s.i.g. (6.9 bar)
Maximum Flow Rate	13 g.p.m. (49 l/m)
Maximum Particle Size	3/32" (2.4 mm)
Maximum Output Per Cycle	.039 gallons (148 cc's)
Maximum Temp. Limits	10° to 180°F (-12° to 82°C)
Dimensional Data	See page 3
Noise Level @ 70 psi, 60 C.P.M.	71.1 db(A)

□ The pump sound pressure levels published here have been updated to an Equivalent Continuous Sound Level (L_{Aeq}) to meet the intent of ANSI S1.13-1971, CAGI-PNEUROP S5.1 using four microphone locations.

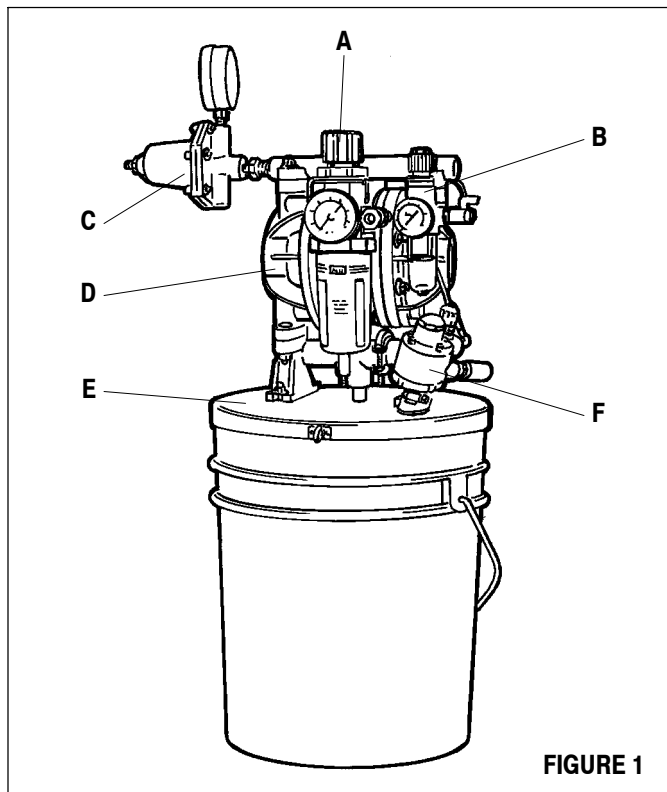


FIGURE 1

MAJOR COMPONENTS LIST

* Operator's Manuals are provided, which cover parts and service information.

Item	Description	Qty	Part No.	Item	Description	Qty	Part No.
A	Modular Piggyback*	(1)	P29221-210	D	1/2" Diaphragm Pump*	(1)	650789-2A4
B	Modular Filter / Regulator*	(1)	P29122-100	E	Cover Assembly	(1)	66971
C	1/4 Sst / Carbide Regulator*	(1)	27520-400	F	Agitator Asm. (650502-1-B only)	(1)	See parts list

GENERAL DESCRIPTION

The 650502-X-B Portable Pumping System includes fittings, drum cover, regulators, siphon tube, gauges and hardware. It is intended to be used in conventional HVLP (High Volume Low Pressure) spray systems. These systems generally operate using low material pressure (less than 30 p.s.i.), and when complimented with the proper gun, it produces a "soft spray".

Read the information included with the spray gun for system settings and operation information.

The diaphragm pump uses stainless steel balls and seats, and PTFE diaphragms and is designed to be used with waterborne paints. The gun and low pressure air and material hoses are not included. (Continued)

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PARTS LIST / 650502-B, -1-B

Item	Description (Size in inches)	Qty	Part No.
1	Plug (Agitator) (models 650502-B)(not shown)	(1)	91143
2	Bracket	(1)	94825
3	Fitting (3/8" - 18 n.p.t.f. - 1 x 1/4" - 18 n.p.t.f. - 1)	(1)	90538
4	Adapter (1/4" - 18 n.p.t.f. - 1)	(2)	1950
6	Gauge (0 - 160 p.s.i.)	(1)	100091
7	Coupling (1/4" - 18 n.p.t.f. - 1)(models 650502-B)	(1)	Y43-42-C
8	Tee (1/4" - 18 n.p.t.f. - 1 male)	(1)	94039
9	Gauge (0 - 30 p.s.i.)	(1)	93769
10	Thumb Screw	(3)	94078
11	Nut	(1)	104173
13	Elbow (1/4" - 18 n.p.t.f. - 1)	(1)	3383
14	5 Gallon Pail	(1)	93184
15	Fitting (1/2" - 14 n.p.t.f. - 1 x 1/4" - 18 n.p.t.f. - 1)	(1)	94041
○ 16	Tubing (5/16" o.d. x 9" long)	(1)	94980-XXX-X
17	Siphon Tube	(1)	93773
18	Hex Cap Screw (1/4" - 20 x 1")	(4)	Y6-45-T
19	Washer (.281" i.d. x .625" o.d.)	(4)	93096
20	Nut (1/4" - 20)	(4)	Y12-4-S
21	Screw (5/16" - 18 x 5/8")(not shown)	(1)	Y8-58-S

Item	Description (Size in inches)	Qty	Part No.
22	Nut (5/16" - 18)(not shown)	(1)	Y12-5-S
23	Gauge (0 - 160 p.s.i.)	(1)	29850
24	Shut-Off Valve (1/4" - 18 n.p.t.f. - 1)	(1)	Y28-1
25	Male Connector (5/16" o.d. tube - 1/4" - 18 n.p.t.f. thd)	(1)	59474-158
26	Male Elbow (5/16" o.d. tube - 1/4" - 18 n.p.t.f. thd)	(1)	59756-158
27	Valve Assembly (1/4" - 18 n.p.t.f. - 1)	(1)	104174-2
28	Ground Kit Assembly (not shown)	(1)	66885-1
★ 650502-1-B Agitator Components			
○★ 29	Tube (1/4" o.d. x 6" long)	(1)	59675-XXX-X
★ 30	Male Elbow (1/4" o.d. tube - 1/8" - 27 n.p.t.f. thd)	(2)	59756-56
★ 31	Regulator	(1)	104104-N01
★ 32	Nipple (1/8" - 27 n.p.t.f. - 1)	(1)	Y237-2
★ 33	Agitator Motor	(1)	650252
★ 34	Hose Clamp	(1)	75923
★ 35	Stirring Rod (12")	(1)	92094-4
★ 36	Adapter	(1)	75895
★ 37	Set Screw (1/4" - 20 x 1/4")	(4)	Y29-42-S
★ 38	Propeller	(1)	94783-1

○ Tube is available in bulk quantities only.

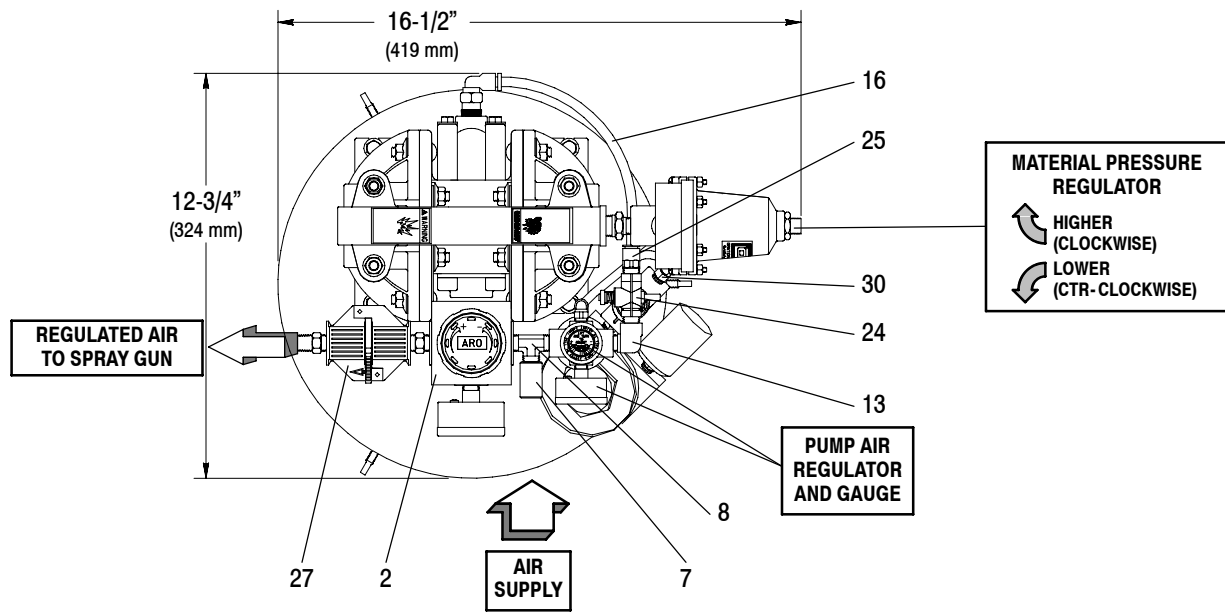
GENERAL DESCRIPTION (CONTINUED)

Consult your sales representative for the proper low pressure gun and other accessories which will best match the application. The drum cover features a mount for locating an agitator (pn 651100), which is available separately.

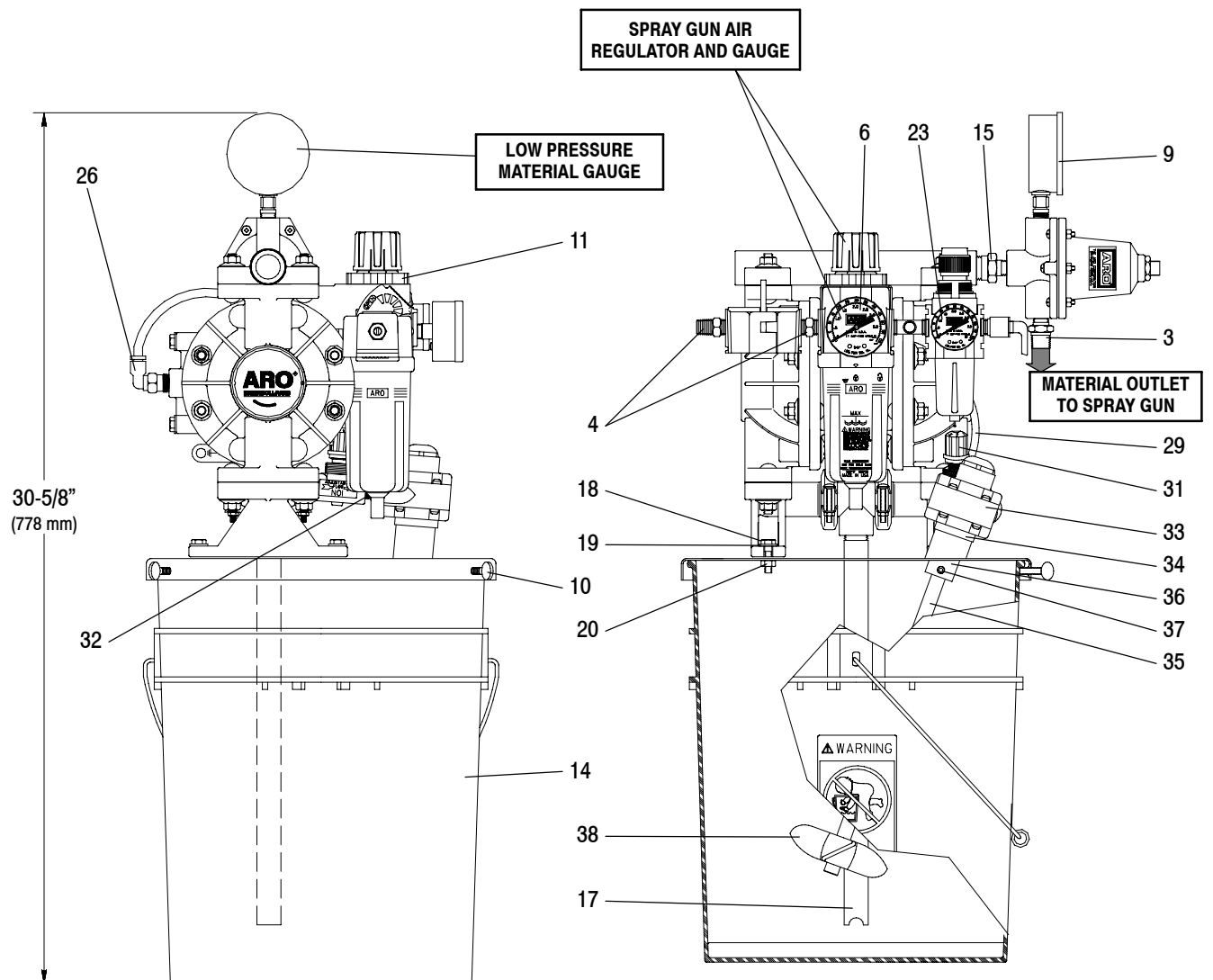
Theory of operation:

HVLP (High Volume, Low Pressure) is a spray process which uses a high volume of air (15 - 22 c.f.m.) at a low pressure (10 p.s.i. or less) to

atomize the material, producing both high transfer efficiency (the total percent of material that actually stays on the intended surface) and a quality finish. The air cap of the HVLP gun injects air into the fluid after it passes through the orifice restriction. The low velocity of the material being sprayed minimizes the over-spray and bounce-back that is associated with conventional air spray.



REFER TO INSTRUCTIONS INCLUDED WITH SPRAY GUN



OPERATING INSTRUCTIONS

⚠ WARNING DO NOT EXCEED MAXIMUM OPERATING PRESSURE OF 100 P.S.I. (6.9 BAR) AT 100 P.S.I. (6.9 BAR) AIR INLET PRESSURE.

⚠ WARNING READ THE PUMP MANUAL FOR ADDITIONAL OPERATING AND SAFETY PRECAUTIONS AND OTHER IMPORTANT INFORMATION.

INITIAL SETUP PROCEDURE

NOTICE

REFER TO THE INFORMATION INCLUDED WITH THE LOW PRESSURE HVLP GUN FOR SYSTEM SETUP INFORMATION. THE SYSTEM IS INTENDED FOR LOW PRESSURE APPLICATION ONLY.

- Attach air supply hose, gun and low pressure material hose.
- Install the connector to the air supply hose.
- Attach (28) ground kit to ground tab, securing with (21) screw and (22) nut.
- Attach the ground wire to a suitable ground.
- The gun air supply hose must be 5/16" i.d. minimum.
- Keep containers covered to prevent contamination.
- When using an agitator, install a "T" at the air inlet or use a separate air supply source.

Nominal system settings:

- Pump Outlet Material Pressure - 15 p.s.i. maximum.
- Spray Gun Air Pressure - 60 p.s.i. maximum. Note: At 30 p.s.i. nominal setting it will deliver approximately 8 p.s.i. at the air cap when using 5/16" i.d. x 15' long air hose.
- Set air pressure to the pump at approximately 2x (two times) the operating material pressure.
For example: If 15 p.s.i. material pressure is required, adjust the pump air regulator / gauge pressure to approximately 30 p.s.i. Use the material pressure regulator to adjust. Control the spray gun air volume using the air regulator.

START-UP

1. Turn the knob on the air regulator counterclockwise to zero p.s.i.
2. Place pump and cover (with gun and hose attached) onto the container of material.
3. The operating pressure should be set at the lowest needed to atomize and deliver the paint. Start with the gun material pressure about the same as the air supply and adjust up or down to set the pattern.
4. Start the pump to cycle by turning the air regulator knob clockwise. The pump will cycle several strokes until pressure is built up in the system, at which time it will stop. Check for any loose fittings or leakage.