

OPERATOR'S MANUAL

613117-B

INCLUDING: SERVICE KITS, GENERAL DESCRIPTION & TROUBLE SHOOTING

INCLUDE MANUALS: 613112-X-C PUMP (PN 97999-886), 651728 MANIFOLD (PN 97999-419), 66554-X CART (PN 97999-574) & 641523-X CONTROL HANDLE (PN 97999-230).

RELEASED: 3-10-88

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(REV. D)

8" AIR MOTOR
10:1 RATIO
6" STROKE

PUMP & CART ASSEMBLY



**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.
- 66614 for repair of 66523 air motor section.
- 637211-K33 for repair of 66942-K3F lower pump end.

GENERAL DESCRIPTION

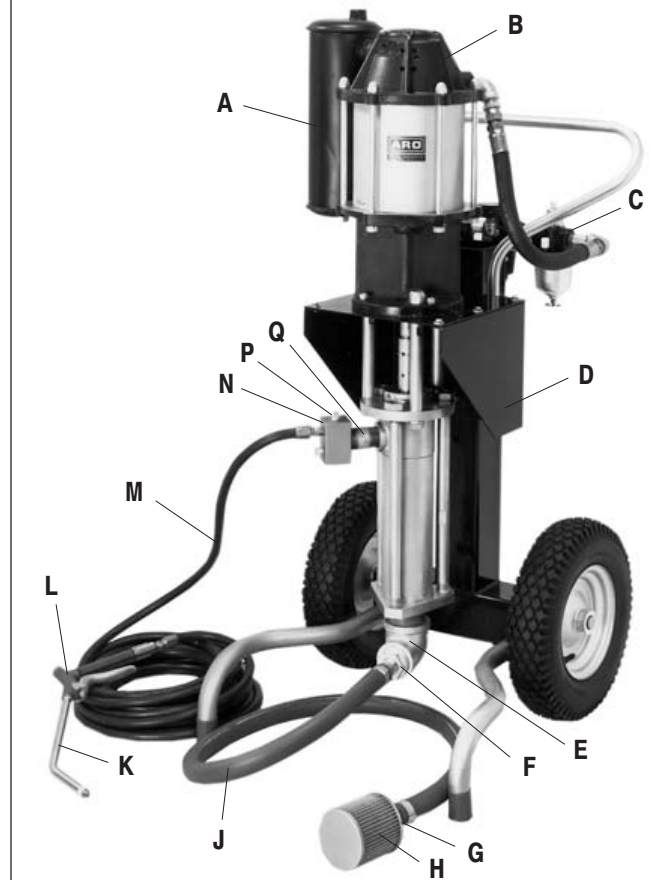
The ARO model 613117-B Pump and Cart Assembly is designed to provide portability to a pump that is primarily used for cleaning with detergents, caustics and diluted acid type cleaners. Materials such as paint, undercoating material, gel coat material and other light to medium viscosity materials are test suited for the unit.

MAJOR COMPONENTS

Item	Description (size)	Qty	Part No.
A	Exhaust Muffler	(1)	92460-ZZ
B	Pump (see Operator's Manual)	(1)	613112-K3F-C
C	Manifold (see Operator's Manual)	(1)	651728
D	Cart (see Operator's Manual)	(1)	66554-2
E	90° Elbow (2 - 11-1/2 N.P.T.F.)	(1)	79208
F	Reducing Bushing (2 - 11-1/2 N.P.T. male x 1 - 11-1/2 N.P.T. female)	(1)	79209
G	Lock Nut (1" N.P.S.)	(1)	79203
H	Material Strainer	(1)	79198
J	Hose Assembly (1 - 11-1/2 N.P.T. male x 10')	(1)	622702-10
K	Pipe Assembly	(1)	61133-1
L	Control Handle (see Operator's Manual)	(1)	641523
M	Hose Assembly (3/8 - 18 N.P.T.F. male x 40')	(1)	622427-40
N	Manifold Block	(1)	79196
P	Pipe Plug (3/8 - 18 N.P.T. x 0.48")	(3)	Y17-52-S
Q	Nipple (1-1/4 - 11-1/2 N.P.T. x 3")	(1)	Y44-163-T

PUMP DATA

613117-B PUMP & CART ASSEMBLY



OPERATING AND SAFETY PRECAUTIONS

DO NOT EXCEED MAXIMUM WORKING PRESSURE OF 1,200 P.S.I. (83 BAR) AT 120 P.S.I. (8.3 BAR) AIR INLET PRESSURE.

- Use ARO replacement parts to assure compatible pressure rating.
- HEED ALL WARNINGS.
- WARNING: HIGH PRESSURE DEVICE. Improper usage of this equipment could result in serious injury. The possibility of injection into the flesh is a potential hazard. Never allow any part of the human body to come in front of or in direct contact with the material outlet. An injection injury can be serious. If injection should occur, contact a qualified physician for immediate treatment of such injuries.
- COMPONENT RUPTURE. This pump is capable of producing high material pressure as stated on pump model plate.
- Do not operate pump continuously at speeds in excess of 75 cycles per minute.
- Disconnect air line from pump air motor when system sits idle for long periods of time.
- Materials and solvents being pumped by this pump must be compatible with the parts of this pump that come in contact with the material and solvent.
- SERVICING. Before servicing or cleaning pump, or removing fluid hose or gun from a unit that has been used, be sure to disconnect air lines and carefully bleed pressure off of the system.
- WARNING: PREVENT STATIC SPARKING. If static sparking occurs, fire or explosion could result. Pump, dispensing valve, and containers must be grounded when handling inflammable fluids such as petroleum products, paints, lacquers, etc. and whatever discharge of static electricity is hazard.
- Check continuity (a good static wire connection) with an ohmmeter. Place one probe on one hose fitting and the other probe on other hose fitting, continuity or proper grounding through hose is good when a reading is obtained on the ohmmeter.
- PREVENT FIRES. When pumping, flushing or recirculating volatile solvents, the area must be adequately ventilated.
- Keep solvents away from heat, sparks and open flames. Keep containers closed when not in use.
- CAUTION: Do not allow pump to operate when out of material.

AIR AND LUBE REQUIREMENTS

- Excessive air pressure will shorten the life of the pump. DO NOT OPERATE PUMP ABOVE RECOMMENDED MAXIMUM AIR PRESSURE.
- For maximum operating efficiency, the following air supply specification should be maintained to this pump.
 - AIR PRESSURE - up to 120 p.s.i. (8.2 bar)
 - AIR FILTERATION - 50 micron
 - LUBRICATED AIR SUPPLY
 - Air inlet size - 3/4 - 14 N.P.T.
- Filtered and oiled air will allow the pump to operate more efficiently and yield a longer life to operating parts and mechanisms.
- Lack of or an excessive amount of lubrication will affect the performance and life of this pump. Use only recommended lubricants.
- DAILY - Fill air line lubricator reservoir with a good grade of S.A.E. No. 90W non-detergent gear oil.
- If pump is to be inoperative for more than a few hours at a time, disconnect air supply and relieve all pressure from the system.

INSTALLATION

The unit comes completely assembled except for a muffler that is to be connected to the air motor outlet.

Control handle and hoses are included with this unit.

These items must be capable of withstanding 1,200 p.s.i. (83 bar) working pressure.

Be sure material hoses are rated for fluid pressures equal to or greater than the pressures developed by this pump.

Connect hose (furnished by customer) to 79196 manifold block. This unit can accommodate 4 control handles and hoses.

OPERATING INSTRUCTIONS

See pump manual installation for flushing instructions.

After the pump has been flushed with a compatible solvent and is ready to operate:

1. Place 622702-10 suction hose assembly into material.
2. Connect air line to 651728 Filter-Regulator-Lubricator.
3. Turn knob, on air regulator, clockwise, to start pump.
4. Allow pump to cycle slowly and prime with material. This will bleed all trapped air from the system.

MAINTENANCE

The basic pump consists of two major components: 1. Air Motor, 2. Lower Pump End. The air motor is connected to the lower pump end by spacer rods - this allows access for lubricating the upper packing gland in the lower pump end, and to prevent air motor contamination because of normal wear and eventual leakage through material packing gland. The air motor is removable and is to be serviced separately. Refer to air motor manual for service and parts.

- Periodically flush entire pump system with a solvent that is compatible with the material being pumped.
- Keep solvent cup filled with this compatible solvent. This will keep material from drying on the piston rod, which would drag thru the packings, ruin them and eventually scour the piston rod.
- Refer to Disassembly Procedures of air motor and lower pump end for correct breakdown.
- Disassembly should be done on a clean work bench with clean cloths to keep parts clean.
- If replacement parts are necessary, consult drawing containing parts for identification.
- Before assembling, lubricate parts where required. When assembling "O" rings or parts adjacent to "O" rings, care must be exercised to prevent damage to "O" rings and "O" ring groove surfaces.

The air line lubricator should be filled at all times.

TROUBLE SHOOTING

No material (stalled pump)

- Check for obstructed spray tip.
- Check for obstructed hose assembly.
- Check for obstructed material supply.

No material (pump continuously cycles)

- Check for empty material supply.

For other trouble shooting tips, refer to 613112-X-C Operator's Manual.

Listed above are the most common causes for pump malfunctions. Malfunctions beyond the scope of this manual should be brought to the attention of your ARO representative or pump returned to the factory for repair.

613112 WASH PUMP ASSEMBLY 10:1 RATIO

QUANTITY	ORIFICE DIAMETER (INCHES)	AIR PRESSURE (P.S.I.G.)	AIR CONSUMPTION (C.F.M.)	PUMP SPEED (C.P.M.)	FLOW RATE (G.P.M.)	BACK PRESSURE (P.S.I.G.)
1	.042	60	8	4	.990	565
1	.052	60	14	6	1.4	560
1	.062	60	16	8	1.98	540
1	.080	60	30	14	3.6	520
2	.042	60	16	8	1.98	540
2	.052	60	32	11	2.8	535
2	.062	60	38	15	3.96	520
2	.080	60	51	26	6.4	470
3	.042	60	24	12	2.97	530
3	.052	60	36	16	4.2	510
3	.062	60	46	23	5.94	480
3	.080	60	67	36	9.	430
4	.042	60	32	16	3.96	520
4	.052	60	46	23	5.6	490
4	.062	60	58	30	7.92	460
4	.080	60	86	50	12.6	340
1	.042	90	14	5	1.3	830
1	.052	90	26	7	1.75	805
1	.062	90	27	10	2.45	800
1	.080	90	49	18	4.4	760
2	.042	90	30	11	2.6	800
2	.052	90	42	15	3.5	770
2	.062	90	53	20	4.9	750
2	.080	90	83	32	7.9	680
3	.042	90	42	15	3.6	770
3	.052	90	58	22	5.3	740
3	.062	90	76	29	7.35	680
3	.080	90	115	46	11.5	600
4	.042	90	52	19	4.8	750
4	.052	90	74	28	7.	720
4	.062	90	99	39	9.8	640
4	.080	90	134	56	14.1	520
1	.042	110	24	6	1.5	1115
1	.052	110	32	8	1.9	1100
1	.062	110	41	11	2.7	1095
1	.080	110	83	23	5.8	1060
2	.042	110	46	12	3.	1110
2	.052	110	56	15	3.8	1090
2	.062	110	79	22	5.4	1060
2	.080	110	130	39	9.8	910
3	.042	110	62	17	4.2	1090
3	.052	110	83	23	5.7	1050
3	.062	110	112	21	8.1	970
3	.080	110	162	51	12.8	760
4	.042	110	82	22	5.6	1060
4	.052	110	101	29	7.2	980
4	.062	110	140	43	10.8	900
4	.080	110	188	63	15.8	640

P.S.I.G. = POUNDS PER SQUARE INCH GAGE

C.P.M. = CYCLES PER MINUTE

C.F.M. = CUBIC FEET PER MINUTE

G.P.M. = GALLONS PER MINUTE

NOTE: PUMP SHOULD NOT BE OPERATED CONTINUOUSLY AT SPEEDS IN EXCESS OF 75 CYCLES PER MINUTE.

