

OPERATOR'S MANUAL / SALES AND ENGINEERING DATA

INCLUDING: SPECIFICATIONS, SERVICE KITS, GENERAL INFORMATION, TROUBLESHOOTING.
 INCLUDE MANUALS: AF1060-XX Air Motor (pn 97999-1473), 2094GXXXXXX Lower Pump End (pn 97999-1793)
 and S-632 General Information Manual (pn 97999-624).

RELEASED: 8-18-17
 (REV: B)

10" AIR MOTOR
45:1 RATIO
6" STROKE

AF1045GXXXXXX-XX-X TWO-BALL PUMP SERIES Stainless Steel



**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.
 The original language of this manual is English.

SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- **637489** for repair of air motor section.
- **K2094GXXXXXX** for repair of lower pump end. Refer to the chart on page 2 for description of "XXXXXX" options.

SPECIFICATIONS

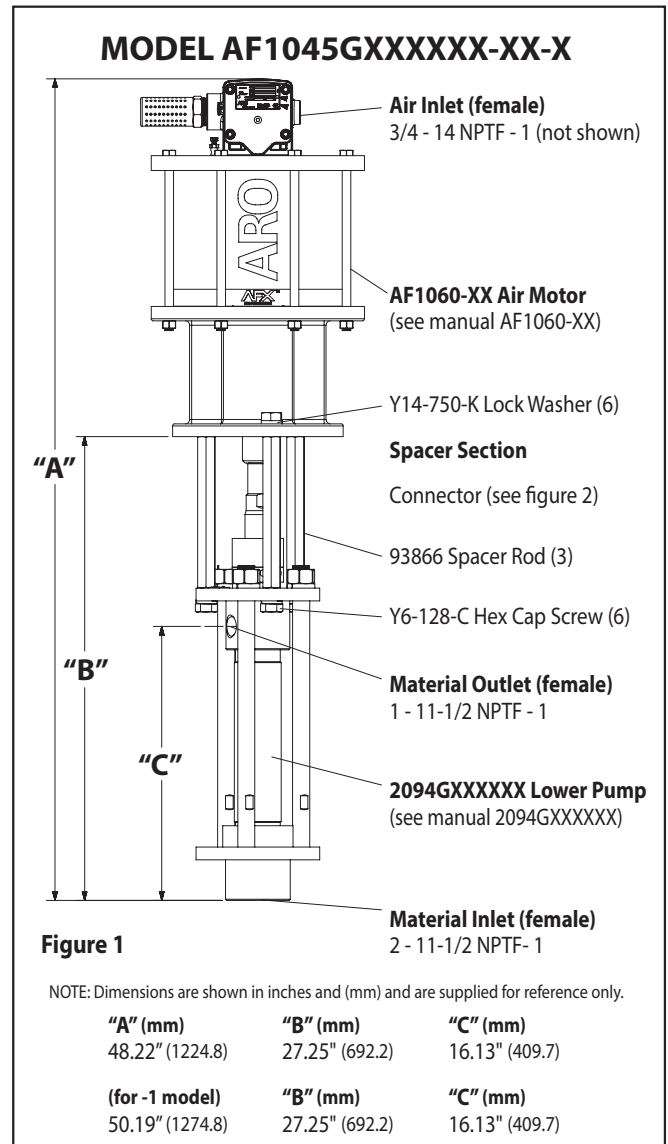
Model Series (refer to option chart)	AF1045GXXXXXX-XX-X
Pump Type	Air Operated, Two-Ball Double Acting Pump
Ratio	45:1
Air Motor	AF1060-XX
Motor Repair Kit	637489
Motor Diameter	10" (25.4 cm)
Stroke (double acting)	6" (15.2 cm)
Air Inlet (female)	3/4 - 14 NPTF - 1
Air Exhaust (female)	1-1/4 - 11-1/2 NPTF - 1
Lower Pump End Series	2094GXXXXXX
Lower Pump Repair Kit	K2094GXXXXXX
Material Inlet (female)	2 - 11-1/2 NPTF - 1
Material Outlet (female)	1 - 11-1/2 NPTF - 1
Weight	141 lbs (64.0 kgs)

PUMP PERFORMANCE

Air Inlet Pressure Range	30 - 90 psig (2.1 - 6.2 bar)
Fluid Pressure Range	1350 - 4050 psig (93.1 - 279.3 bar)
Maximum Rec'd Cycles / Minute	60
Displacement Per Cycle	20.7 in ³ (339 cc)
Cycles Per Gallon	11.2
Flow @ 60 Cycles / Minute	5.38 gpm (20.4 lpm)
Noise Level @ 60 psig - 40 cpm	89.8 dB(A)*

* The pump sound pressure level has been updated to an Equivalent Continuous Sound Level (LAeq) to meet the intent of ANSI S1.13-1971, CAGI-PNEUROP S5.1 using four microphone locations.

PUMP DATA



IMPORTANT

- This is one of four documents which support the pump. Replacement copies of these forms are available upon request.
- AF1045GXXXXXX-XX-X Model Operator's Manual (pn 97999-1813)
 - S-632 General Information - Air / Hydraulic Operated Piston Pumps (pn 97999-624)
 - 2094GXXXXXX Lower Pump End Operator's Manual (pn 97999-1793)
 - AF1060-XX Air Motor Operator's Manual (pn 97999-1473)

MODEL DESCRIPTION CHART

Pump Model	AF1045	G	X	X	X	X	X	X	X	- X	X
Lower End	2094	G	X	X	X	X	X	X	X		
Lower End Service Kit	K2094	G	X	X	X	X	X	X	X		

Check Type / Wetted Material
 G - Two Ball, Stainless Steel, Tungsten Carbide Seats

Container Suitability
 1 - Remote Mounting, SAE

Inlet / Outlet Thread Type
 1 - SAE Thread

Upper Packing
 F - UHMW-PE
 G - UHMW-PE / Filled PTFE Staggered
 H - UHMW-PE / Leather Staggered
 K - Filled PTFE
 L - Leather
 R - Filled PTFE / UHMW-PE Staggered

Lower Packing
 F - UHMW-PE
 G - UHMW-PE / Filled PTFE Staggered
 H - UHMW-PE / Leather Staggered
 K - Filled PTFE
 L - Leather
 R - Filled PTFE / UHMW-PE Staggered

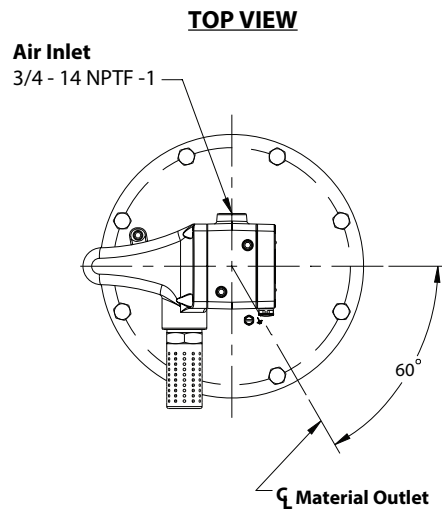
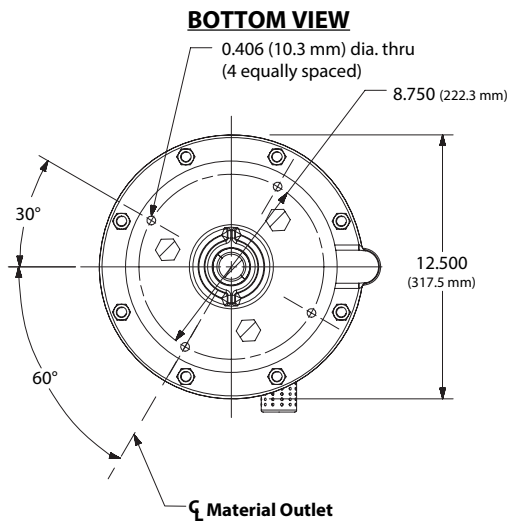
Spring Type / Solvent Cup
 4 - Multiple Wave Spring

Plunger / Tube Type
 7 - Stainless Steel, Hard Chrome Plated
 8 - Stainless Steel, Ceramic Coated

Air Motor Option
 Blank - No Option
 0 - No Option
 1 - Integrated Ball Valve Regulator

Pump Option
 Blank - No Option

DIMENSIONS



GENERAL DESCRIPTION

The two-ball pumps are primarily designed for the high volume transfer of light and medium viscosity fluids compatible with carbon steel. The lower pump is designed for easy priming and the double acting feature is standard in all ARO industrial pumps. Material is delivered to the pump discharge outlet on both the up and down stroke.

The motor is connected to the lower pump end by a spacer section. This allows for lubrication of the upper packing gland and prevents motor contamination because of normal wear and eventual leakage through the material packing gland. Be sure the solvent cup is adequately filled with lubricant to protect the upper packings and insure longest service life.

⚠ WARNING HAZARDOUS PRESSURE. Do not exceed maximum operating pressure of 4050 psig (279.3 bar) at 90 psig (6.2 bar) inlet air pressure.

Pump Ratio X = Maximum Pump Fluid Pressure
Inlet Pressure to Pump Motor

Pump ratio is an expression of the relationship between the pump motor area and the lower pump end area. EXAMPLE: When 150 psig (10.3 bar) inlet pressure is supplied to the motor of a 4:1 ratio pump, it will develop a maximum of 600 psig (41.4 bar) fluid pressure (at no flow) - as the fluid control is opened, the flow rate will increase as the motor cycle rate increases to keep up with the demand.

⚠ WARNING Refer to general information sheet for additional safety precautions and important information.

NOTICE: Thermal expansion can occur when the fluid in the material lines is exposed to elevated temperatures. Example: Material lines located in a non-insulated roof area can warm due to sunlight. Install a pressure relief valve in the pumping system.

Replacement warning label (pn 92325) is available upon request.

TROUBLE SHOOTING

Pump problems can occur in either the air motor section or the lower pump end section. Use these basic guidelines to help determine which section is affected.

Pump will not cycle.

- Be certain to first check for non-pump problems including kinked, restrictive or plugged inlet / outlet hose or dispensing device. Depressurize the pump system and clean out any obstructions in the inlet / outlet material lines.
- Refer to the motor manual for trouble shooting if the pump does not cycle and / or air leaks from the air motor.
- Damaged motor. Service the motor.

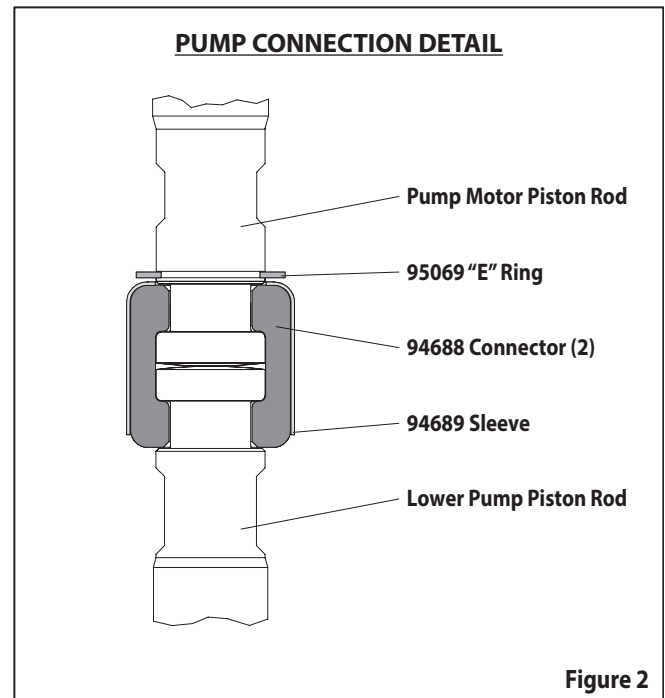
Pump cycles but does not deliver material.

- Refer to the lower pump end manual for further trouble shooting.

PUMP CONNECTION - UPPER / LOWER

NOTE: All threads are right hand.

1. Lay the pump assembly on a work bench.
2. Remove the three (Y6-128-C) cap screws and (Y14-750-K) lock washers from the three spacer rods (see figure 1).
3. Pull the air motor from the lower pump end until the motor piston rod is in the "down" position and the lower pump end rod is in the "up" position.
4. Remove the three spacer rods by removing the three (Y6-128-C) cap screws and (Y14-750-K) lock washers.
5. Using e-ring pliers, slide the "e" ring up far enough to allow the sleeve to move upward and release the two connectors (see figure 2).

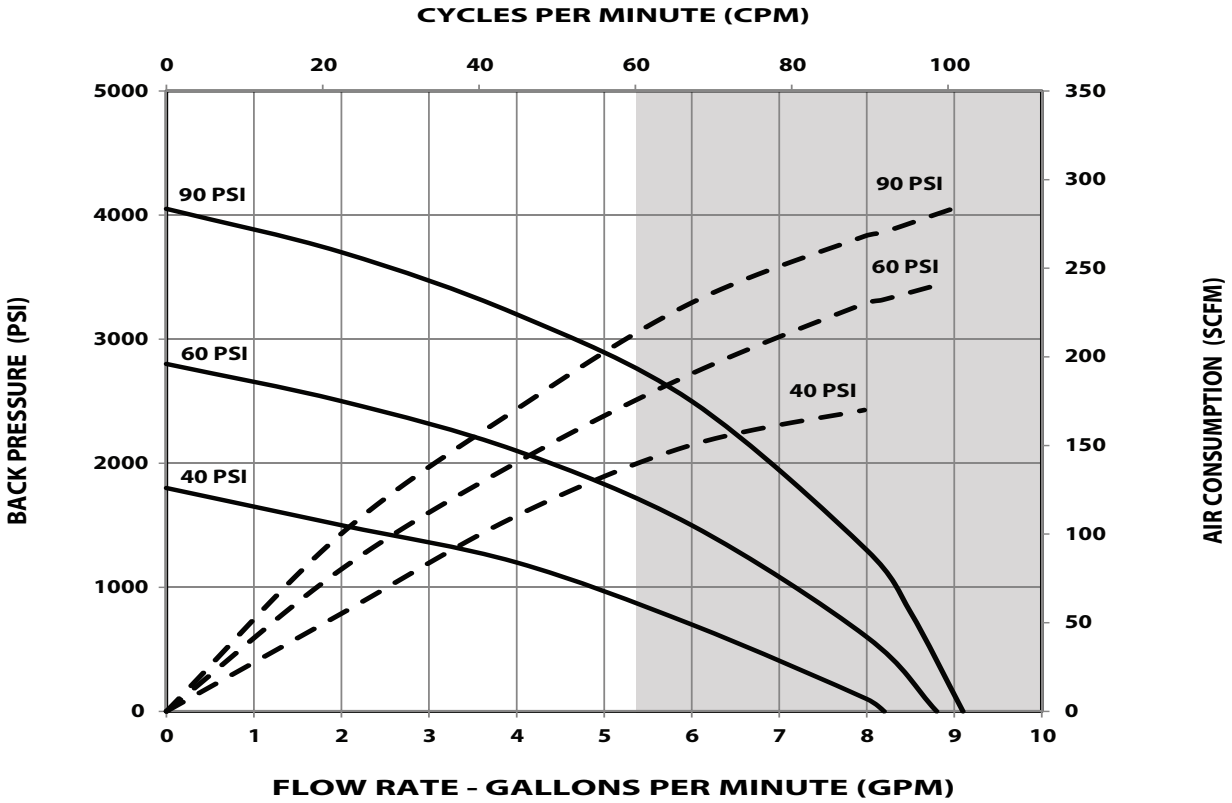


REASSEMBLY

1. Align the pump motor with the lower pump end. Position the air inlet of the motor 150° from the material outlet.
2. Install the two (94688) connectors and retain with the (94689) sleeve. Slide the (95069) "e" ring back into position.
3. Assemble the three (93866) spacer rods to the lower pump and secure using three (Y14-750-K) lock washers and (Y6-128-C) cap screws.
4. Reinstall the spacer rods to the pump motor.
5. Bring the motor and lower pump together and retain with three (Y14-750-K) lock washers and (Y6-128-C) cap screws.

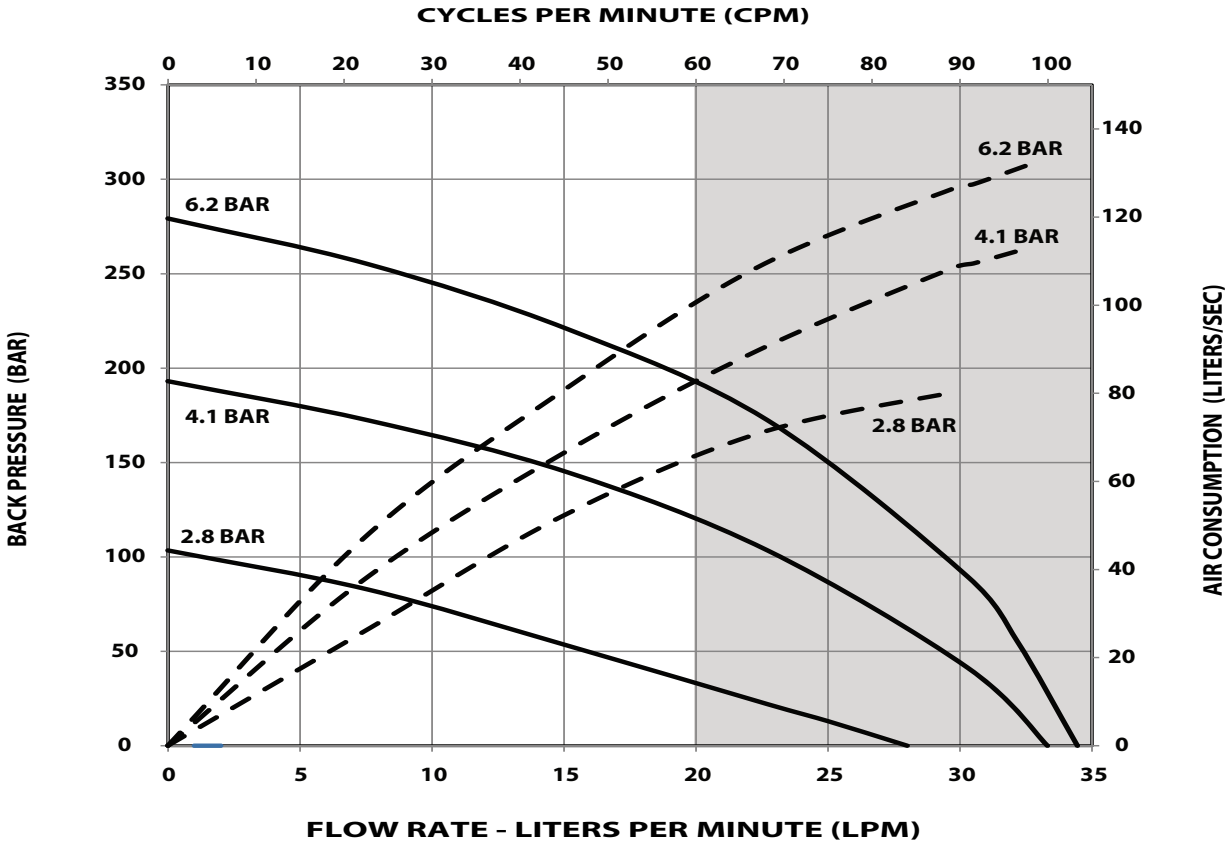
PERFORMANCE CURVES

PERFORMANCE BASED ON 30wt. OIL (100 cSt) AT 40° C TEMPERATURE



NOTE : NON SHADED AREA OF THE GRAPH REPRESENTS RECOMMENDED OPERATING RANGE

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