

OPERATOR'S MANUAL & SALES AND ENGINEERING DATA

INCLUDING: SPECIFICATIONS, SERVICE KITS, GENERAL INFORMATION, TROUBLESHOOTING.

INCLUDE MANUALS: AF044X-XX Air Motor (pn 97999-1466) 66243-X-B LOWER PUMP END (PN 97999-828) & S-632 General Information Manual (pn 97999-624).

RELEASED: 8-26-10
REVISED: 9-15-10
(REV. 02)

4-1/4" AIR MOTOR

12:1 RATIO

6" STROKE

AF0412SXXXXXX-XX-X

EXTRUSION PUMP

CARBON 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.

SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- **637489** for repair of air motor section.
- **637071-XX3-B** for repair of Lower Pump section.. Refer to the chart on page 2 for description of -XX3-B options.

SPECIFICATIONS

Model Series (refer to option chart)	AF0412SXXXXXX-XX- X
Pump Type	Air Operated, Extrusion Double Acting Pump
Ratio	12:1
Air Motor	AF0460-XX
Motor Repair Kit	637489
Motor Diameter	4-1/4" (10.8 cm)
Stroke (double acting)	6" (15.2 cm)
Air Inlet (female)	1/2 - 14 N.P.T.F. - 1
Air Exhaust (female)	1-1/4 - 11-1/2 N.P.T.F. - 1
Lower Pump End Series	66243-XX3-B
Lower Pump Repair Kit	637071-XX3-B
Material Inlet (female)	1-1/2 - 11-1/2 N.P.T.F. - 1
(male)	2 - 11-1/2 P.T.F. SAE short
Material Outlet (female)	1 - 11-1/2 N.P.T.F. - 1
Weight	64 lbs (29 kgs)

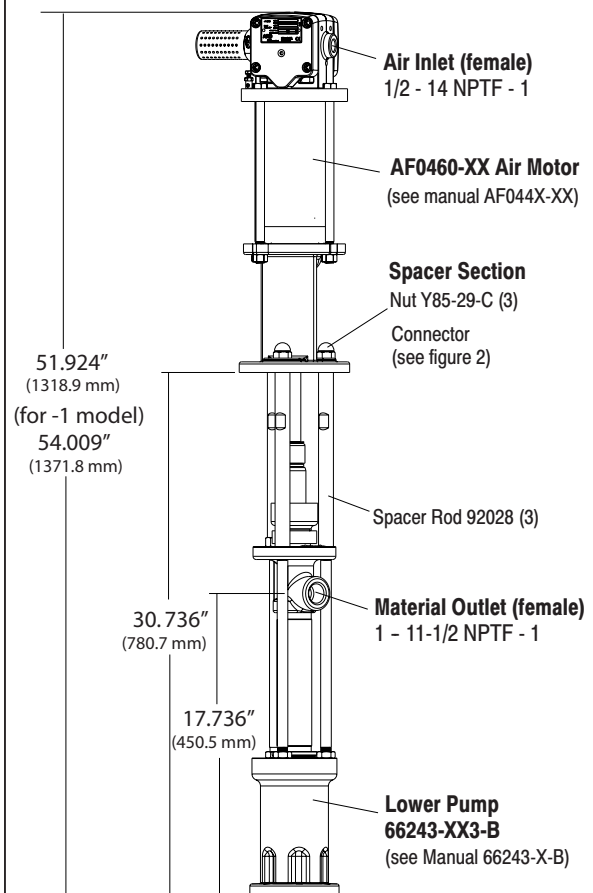
PUMP PERFORMANCE

Air Inlet Pressure Range	0 - 150 p.s.i. (0 - 10.3 bar)
Fluid Pressure Range	0 - 2085 p.s.i. (0 - 143.8 bar)
Maximum Rec'd Cycles / Minute	60
Displacement In.³ Per Cycle	12.5
Volume / Cycle	6.9 oz. (204.5 ml)
Cycles Per Gallon	18.5
Flow @ 60 Cycles / Minute	3.2 g.p.m. (12.3 l.p.m.)
Noise Level @ 60 p.s.i. - 40 c.p.m. ①	86.5 db(A)*

* The pump sound pressure level has 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.

PUMP DATA

MODEL AF0412SXXXXXX-XX-X



* For more dimensions see Page 2.

FIGURE 1

IMPORTANT

This is one of four documents which support the pump. Replacement copies of these forms are available upon request.

- ☒ **AF0412SXXXXXX-XX-X** Model Operator's Manual (pn 97999-1496)
- ☐ **S-632** General Information - Industrial Piston Pumps (pn 97999-624)
- ☐ **66243-X-B** Lower Pump End Operator's Manual (pn 97999-828)
- ☐ **AF0460-XX** Air Motor Operator's Manual (pn 97999-1466)

airpumping.co.uk

est. 1979

Unit 16, Upminster Trading Park, Warley St., Upminster, Essex, RM14 3PJ, ENGLAND

ARO

IR Ingersoll Rand
Industrial Technologies

PUMP OPTION DESCRIPTION CHART

	Pump Model	Lower Pump End	Lower End Repair Kit
	AF0412S11 XXXX-X Air Motor Option Plunger Type Spring Type Lower Packing Material Upper Packing Material	66243-XX3-B Spring Type Packing Material	637071-XX3-B Spring Type Packing Material
Packing Material			
Glass Filled PTFE (upper) Glass Filled PTFE (lower)	KK	3	3
UHMW-PE (upper) UHMW-PE (lower)	FF	C	C
UHMW-PE/ Leather Staggered (upper) UHMW-PE/ Leather Staggered (lower)	HH	G	G
Glass Filled PTFE/ UHMW-PE Staggered (upper) Virgin PTFE (lower)	GF	P	P
PTFE / UHMV-PE Stag'd (upper) Glass Filled PTFE (lower)	RK	R	R

Spring Type

Multiple Wave Spring	4	4	4
Multiple Wave Spring with alternate solvent cup	D	9	4
Multiple Wave Spring with two-piece spacer	8	B	B

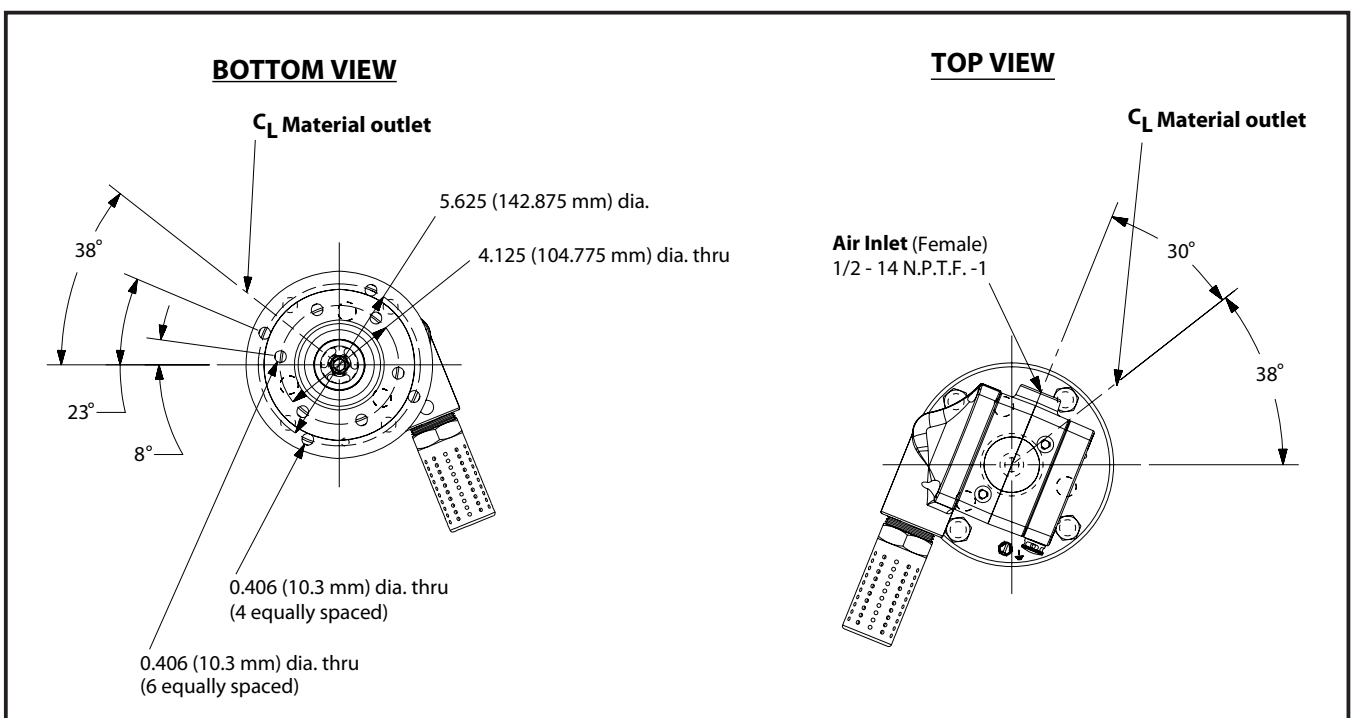
Plunger Type

Hardened Stainless Steel w/ Hard Chrome Plating	7	3	3
---	---	---	---

Air Motor Option

No Option		N/A	N/A
Intergrated ball valve regulator	1	N/A	N/A

DIMENSIONS



GENERAL DESCRIPTION

⚠ WARNING HAZARDOUS PRESSURE. Do not exceed maximum operating pressure of 2085 p.s.i. (143.8 bar) at 150 p.s.i. (10.3 bar) inlet air pressure.

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

Pump ratio is an expression of the relationship between the pump motor area and the lower pump end area. EXAMPLE: When 150 p.s.i. (10.3 bar) inlet pressure is supplied to the motor of a 4:1 ratio pump, it will develop a maximum of 600 p.s.i. (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.

- The Chop - Check pumps are primarily designed for the pumping of heavy viscous material with or without fibrous content. The models can be used with a gravity feed single post lift as a topper type assembly or with a two post lift as a force feed type assembly. 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.

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 nuts from the three spacer rods (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. Using e-ring pliers, slide the retaining ring up far enough to allow the sleeve to move upward and release the two connectors (figure 2). Lay the air motor aside.
5. Repeat step 4 to remove the other connector, then remove the extension rod.
6. Unscrew the three spacer rods only if disassembly of the lower pump end is necessary.

PUMP CONNECTION DETAIL

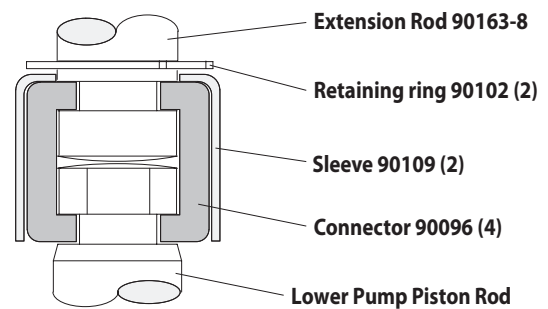


Figure 2

REASSEMBLY

1. Align the lower pump end with the extension rod and the air motor piston rod. NOTE: Position the air inlet of the air motor 30° from the material outlet.
2. Install the two connectors and retain with the sleeve, slide the retaining ring back into position. Repeat this step for the other connector also.
3. Reinstall the spacer rods to the lower pump end and torque evenly to 60 - 90 ft lbs (81.4 - 122.0 Nm).
4. Bring the motor and lower pump together and retain with three nuts.

PERFORMANCE CURVES

