



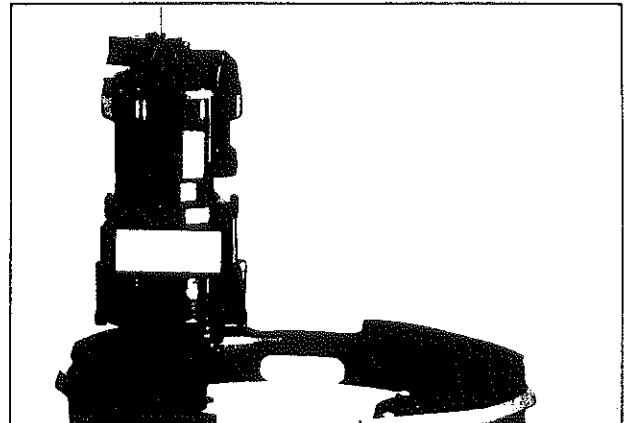
Flowserve Pump Division

5599 East Holmes Road / Memphis, Tennessee 38118 U.S.A.
1-800-343-7867 / 901-259-3900 / Fax 901-259-3946

AP-30

DESCRIPTION

The AP-30 is an air operated piston pump designed for high flow rates at low pressure. The unit has 1-inch NPT inlet and outlet ports. The suction port is equipped with a 2-inch NPT bung adapter for mounting the pump onto tanks and drums. The air inlet port is 1/4-inch NPT.




Many variables such as air pressure, viscosity of fluids pumped, length and size of discharge hose, and use of flow meter or reels will greatly affect the gallons per minute that can be delivered by the pump. The following are examples of flow rates of different fluids using 125 psi air pressure.

LIQUID BEING TRANSFERED	DISCHARGE HOSE		TEMP OF LIQUID °F	APPROX. GPM
	LENGTH FEET	DIAMETER INCH		
Water with no meter used	12	1	75°	30
Diesel or gasoline thru a meter	12	1	75°	28
40 wt oil thru a meter	12	1	75°	10
40 wt oil thru a meter	12	1	60°	7½


WARNING:

When pumping flammable fluids, proper grounding of equipment is a must! The AP-30 can be grounded by attaching a wire to any bolt on the pump and connecting it to a metal frame. The discharge hose can be grounded by using a static wire lined hose.


WARNING:

 Before pumping potentially corrosive fluids, check material for compatibility. Chlorine, Acetic Anhydride (Ammonia), and Methyl Ethyl Ketones are just a few liquids that are not compatible and should not be pumped. If in doubt contact The Liquid Manufacture or Scienco Products.

WARNING:

 The AP-30 operates using compressed air. Proper EYE protection should always be used while operating pump. Remove all air pressure and relieve fluid pressure before performing any maintenance on pump.

WARNING:

 Do not use anything but compressed air to operate pump. Use of any flammable gas to operate pump will result in an extremely hazardous situation, and a possible explosion.

WARNING:

Do not exceed 125 psi air pressure.

WARNING:

Do not operate or test this unit until you have read and clearly understand the Owners Manual.

WARNING:

Do not alter or modify this product without expressed written consent from the manufacturer. Unauthorized alteration or modification of this product may result in serious injury.



Flowserve Pump Division

MATERIALS OF CONSTRUCTION

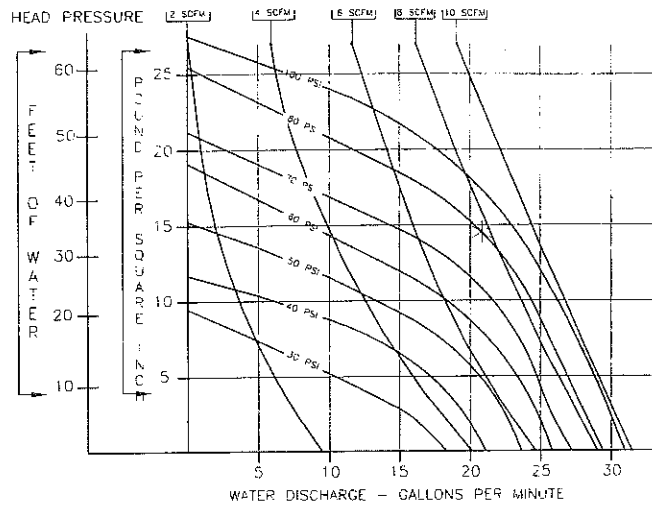
- Shaft & Springs - Stainless Steel
- Housing & Piston - Aluminum
- Valves - Nylon
- Packing - Teflon

SPECIFICATIONS

Capacity	30 G.P.M.
Power Source	Compressed Air 125 PSIG Max.
Height Bare Pump	16"
Width Bare Pump	7 1/2"
Air Inlet	1/4" Female NPT
Suction Port	1" Female NPT
Discharge Port	1" Female NPT
Weight	15 lbs.
Shipping Weight	18 lbs.

AP-30 PERFORMANCE CURVE

*EXAMPLE: At 80 PSI Air Pressure and 14 PSI Fluid Pressure. The AP-30 will pump 21 GPM



PISTON INSTALLATION

During the last few years, we have had inquiries regarding the installation of the piston in the AIR PUMP. Listed below are the steps to installing the piston.

As you can see in Figure 1, the piston rod is removed from the piston and the hole in the center of the piston is positioned over the center of the cylinder at an angle. **THIS IS VERY IMPORTANT!**

The piston is then pushed down into the cylinder at

an angle until the hole in the center of the piston is inside the cylinder. Once the hole in the center of the piston is inside the cylinder, proceed to push down as in Figure 2 and continue to push as in Figure 3 until the piston is horizontal. Then install piston rod from the top side. **NOTE:** If the piston is not horizontal after installation remove piston and repeat procedure.

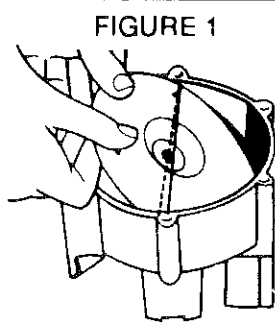


FIGURE 1

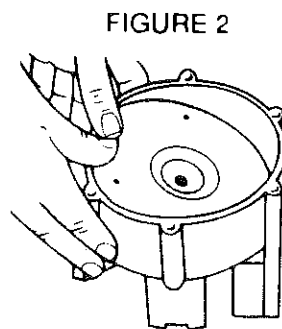


FIGURE 2

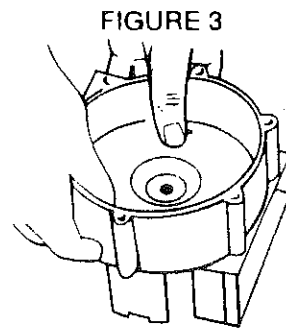
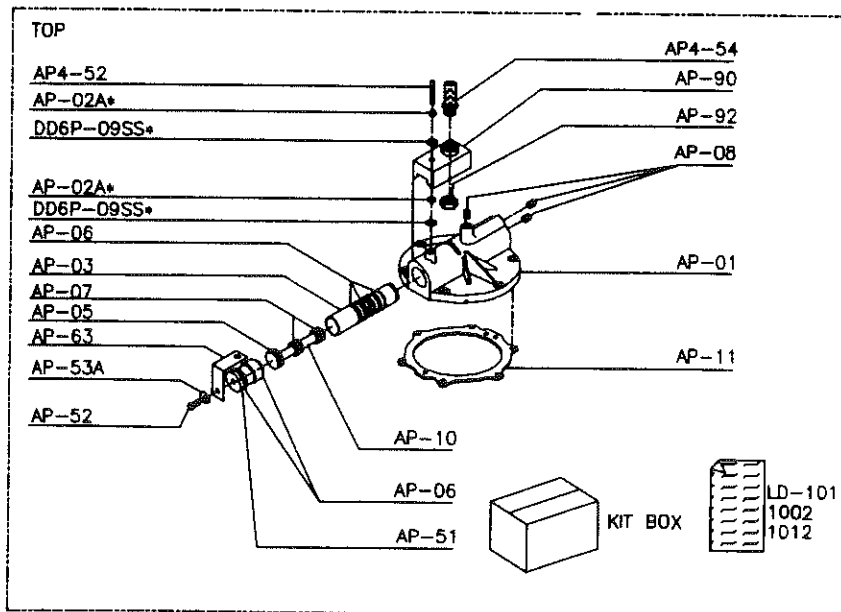
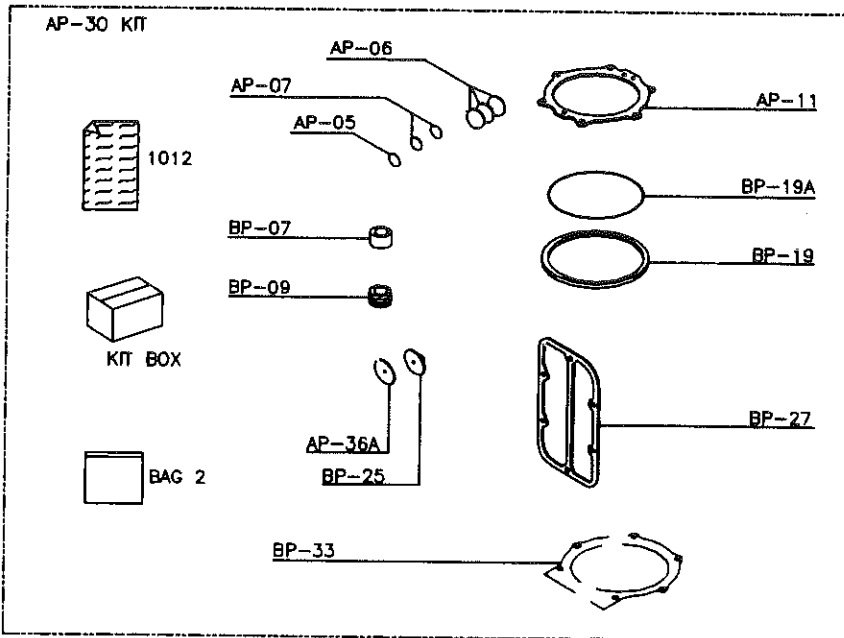
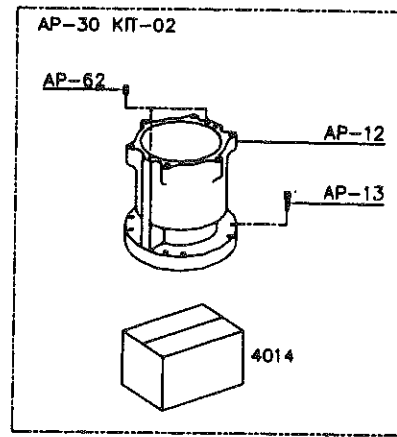
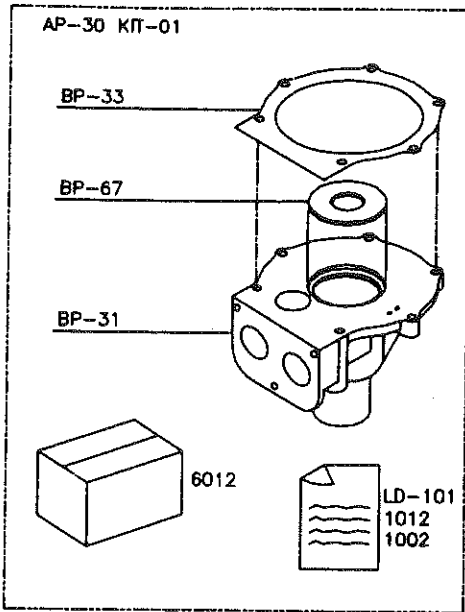


FIGURE 3

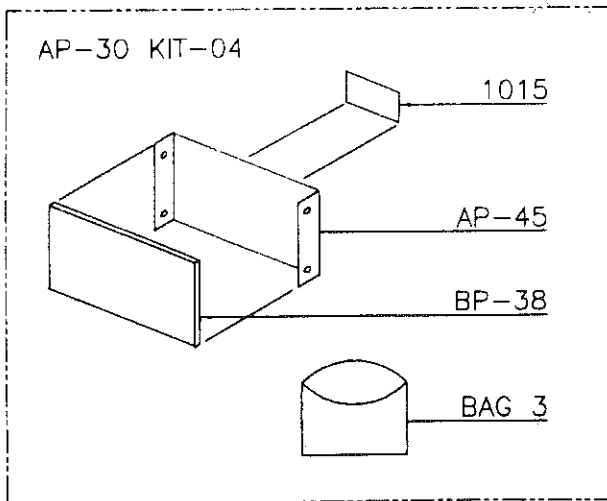
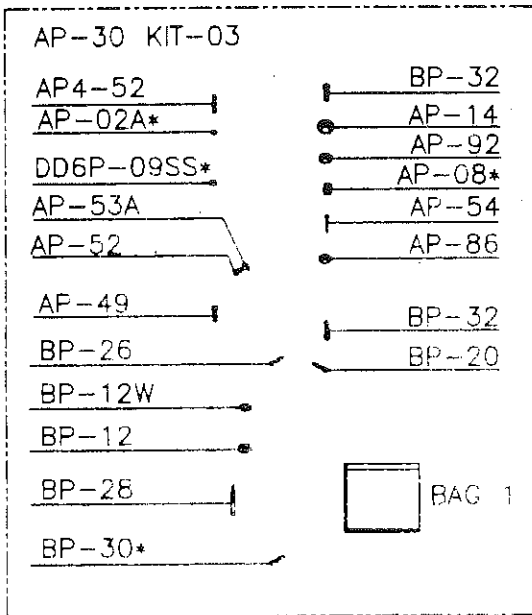
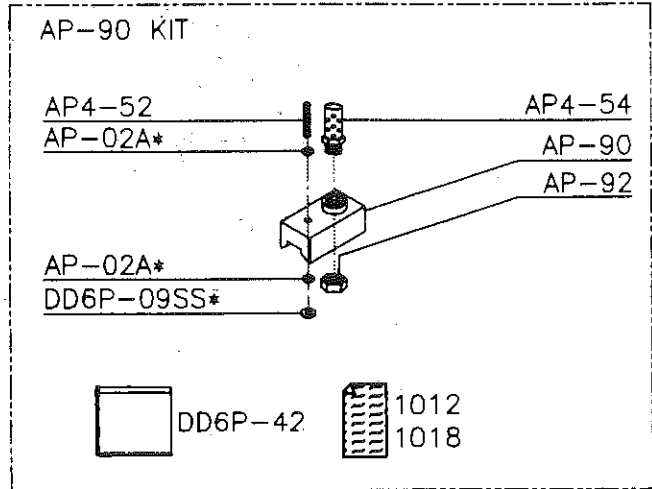
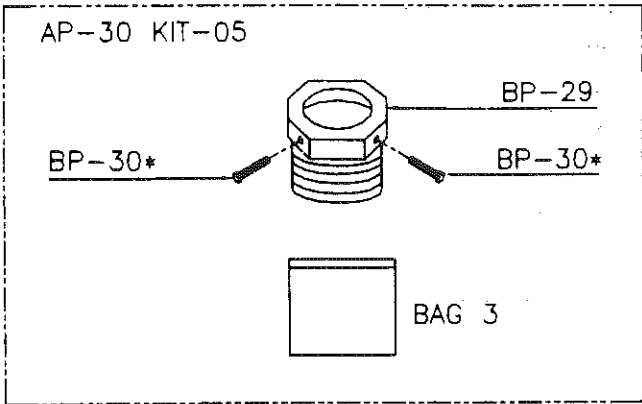
THE CLEANLINESS HABIT PAYS DIVIDENDS

Using a wire screen in the pipe inlet will prevent many types of pump failure caused by getting "Trash" into the pump.

AIR PUMP KITS



AIR PUMP KITS



MOUNTING AND START-UP PROCEDURES

1. Assemble the dip tube by connecting the two 1-inch pipe sections with the 1-inch coupling. Use care not to cross thread. Attach the dip tube assembly to the pumps inlet port located on the bottom.
2. Secure pump to the containers 2-inch bung. For ease of mounting, the 2-inch bung adapter on the pump is removable, and can be placed on the container first. The pump with dip tube can then be slid into position and the two hold down screws fastened.
3. Connect discharge hose to 1-inch NPT discharge port. Be sure container is adequately vented before pumping.
4. Connect available air supply to the 1/4 -inch NPT fitting on side of pump. Do not exceed 125 psi. We recommend the use of a valve or a quick disconnect fitting to easily allow the air to be shut off when pump is not being used.

SERVICE HINTS

I. Pump Does Not Cycle:

1. Remove all hoses, meters, dip tubes, etc. from pump. Be sure no fluid is in pump. Apply air pressure to see if pump cycles. If the pump cycles check out the removed accessories for blockage.
2. **Disconnect air supply.** Remove the pipe plug (ref. 1) and the 5/16 screw (ref. 67), both located on the spool valve housing (ref. 3). With a thin rod (such as an allen wrench) manually push the spool valve (ref. 63) back and forth to assure its proper operation.
3. If pump does not cycle and you hear air escaping from the air exhaust located on top of pump, the cause is most likely a damaged o-ring. If no air is escaping skip down to step 4. To replace damaged o-rings: Disconnect air supply. Remove nut (ref. 75) and air deflector (ref. 79) from spool valve housing. Remove the jam nut (ref. 73) and screw (ref. 77) from spool valve housing (ref. 3). The plug (ref. 65) can be pulled from the spool valve housing by pulling on the 5/8 bolt (ref. 67). Remove the lower pipe plug (ref. 1). The spool can be removed by inserting a thin rod or screw driver thru the hole left by the pipe plug and pushing the spool (ref. 63) from the spool valve housing. To remove the spool sleeve (ref. 71) a tool can be made by grinding down the small leg of a 5/32 allen wrench until its no taller than 3/16. This tool can then be inserted into the spool sleeve and the small leg hooked into one of the radial holes on the sleeve. While in this position the sleeve can be pulled out of the housing using pliers. The o-rings (ref. 69,70,72) on the

spool and sleeve can now be inspected and replaced.

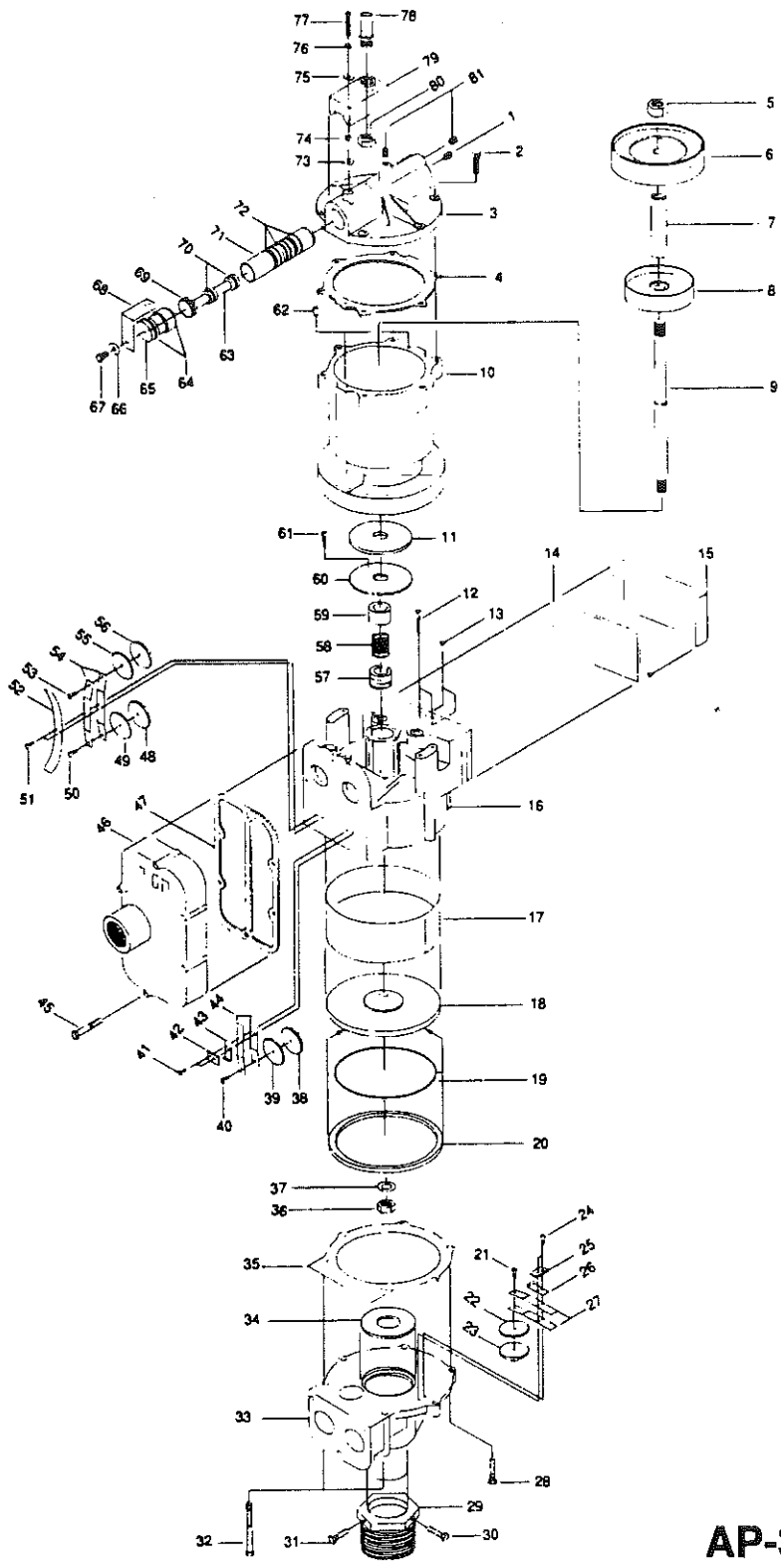
4. If the pump still does not cycle then perhaps some trash or other obstruction is preventing the fluid piston (ref. 18) from completing its full stroke. To inspect, remove the six screws (ref. 45) and the side housing (ref. 46). You will need replacement gasket (ref. 47).

II. Pump Runs At A Slow Rate:

1. Check wire screen in suction pipe for blockage.
2. Air motor is icing up due to water in air line. If this happens install an air line lubricator and fill with antifreeze.
3. A 50 foot long hose will pump much slower than a 15 foot hose. Try and use the shortest possible hose for maximum flow rate.

III. Pump Oscillates But No Discharge:

1. Check suction pipe for air leaks, obstructions, and verify that the end of the dip tube reaches liquid level in tank.
2. Pump will not operate properly if either suction valves or discharge valves are not working properly. To inspect, remove pump from the air supply and drain fluid. Remove the six side screws (ref. 45) and the side housing (ref. 46). This will expose 3 valves for inspection. The fourth valve is on the bottom housing (ref. 33) and is inspected by removing the screws (ref. 28,32). Check for obstructions or blown gaskets. Replace as needed.



AP-30 Air Pump

WARRANTY

The Company (Flowserve Pump Division/ Scienco Products) warrants that the Equipment manufactured by it and delivered hereunder will be free of defects in material and workmanship for a period of twelve months from the date of placing the Equipment in operation or eighteen months from the date of shipment, whichever shall first occur. The Purchaser shall be obligated to promptly report any failure to conform to this warranty, in writing to the Company within said period, whereupon the Company shall, at its option, correct such nonconformity, by suitable repair to such Equipment or , furnish a replacement part F.O.B. point of shipment, provided the Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations of the Company. Accessories or equipment furnished by the Company, but manufacturers have conveyed to the Company and which can be passed on to the Purchaser. The Company shall not be liable for any repairs, replacements, or adjustments to the Equipment or any costs of labor performed by the Purchaser or others without the Company's prior written approval.

The effects of corrosion, erosion and normal wear and tear are specifically excluded. Performance warranties are limited to those specifically stated within the Com-

pany's proposal. Unless responsibility for meeting such performance warranties are limited to specified shop or field tests, the Company's obligation shall be to correct in the manner and for the period of time provided above.

THE COMPANY MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

Correction by the Company of nonconformities whether patent or latent, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of the Company for such nonconformities, whether based on contract, warranty, negligence, indemnity, strict liability or otherwise with respect to or arising out of such Equipment.

The Purchaser shall not operate Equipment which is considered to be defective, without first notifying the Company in writing of its intention to do so. Any such use of equipment will be at the Purchaser's sole risk and liability.

Due to changing economic and manufacturing conditions, prices, colors and specifications are subject to change without notice.

Nothing contained in this brochure is intended to extend any warranty or representation, express or implied, regarding the products described herein. Any such warranties or other terms and conditions of sales of products shall be in accordance with Flowserve Pump Division standard terms and conditions of sale for such products, which are available on request.

AP-30 Parts List

DETAIL NUMBER	PART NUMBER	QTY	DESCRIPTION
1	AP-08	1	Pipe Plug 1/16 X 1/4
2	BP-32	6	1/4-20 X 7/8 Hex Head Screw
3	AP-01	1	Spool Valve Housing
4	AP-11	1	Top Gasket
5	AP-14	1	1/2-20 Hex Nut
6	AP-15	1	Large Rubber Piston
7	AP-17	1	Spacer
8	AP-18	1	Small Rubber Piston
9	AP-16	1	Piston Rod
10	AP-12	1	Air Motor Housing
11	AP-19	1	Foam Washer
12	AP-54	8	8-32 X 1 Self-Tapping Hex Head Screw
13	AP-86	2	8-32 Nut
14	BP-38	1	Breather Filter
15	AP-45	1	Breather Cover
16	AP-44	1	Upper Housing
17	BP-17	1	Piston Liner Stainless Steel
18	BP-18	1	Fluid Piston
19	BP-19A	1	O-Ring #01-156
20	BP-19	1	Piston Ring
21	BP-20	1	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
22	AP-36A	1	Valve Backup Stainless Steel
23	BP-25	1	Valve
24	BP-20	2	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
25	BP-21	1	Valve Spring Base
26	BP-35	1	Single Valve Spring Back-up
27	BP-36	2	Single Valve Spring
28	BP-32	4	1/4-20 X 7/8 Hex Head Screw
29	BP-29	1	2" Bung Adaptor
30	BP-30	1	1/4-20 X 1/2 Hex Head Cap Screw
31	BP-30	1	1/4-20 X 1/2 Hex Head Cap Screw
32	BP-28	2	1/4-20 X 2 Hex Head Cap Screw
33	BP-31	1	Lower Housing
34	BP-67	1	Aluminum Washer
35	EP-33	1	Bottom Gasket
36	BP-12	1	7/16 Thin Nut
37	BP-12W	1	7/16 Lock Washer
38	BP-25	1	Valve
39	AP-36A	1	Valve Backup Stainless Steel
40	BP-20	1	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
41	BP-20	2	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
42	BP-21	1	Valve Spring Base
43	BP-35	1	Single Valve Spring Back-up
44	BP-36	2	Single Valve Spring
45	BP-26	6	1/4-20 X 1-1/2 Hex Head Screw
46	BP-16	1	Valve Housing
47	BP-27	1	Side Gasket
48	BP-25	1	Valve
49	AP-36A	1	Valve Backup Stainless Steel
50	BP-20	1	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
51	BP-20	2	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
52	AP-23	1	Double Valve Support
53	BP-20	1	6-32 X 3/8 Phillips Pan Head Self-Tapping Screw
54	BP-23	2	Double Valve Spring
55	AP-36A	1	Valve Spring Back-up Stainless Steel
56	BP-25	1	Valve
57	BP-09	1	Chevron Packing
58	BP-08	1	Spring #2655
59	BP-07	1	Teflon Packing
60	AP-20	1	Washer Plate
61	AP-49	4	8-32 X 1/2 Allen Head Cap Screw
62	AP-62	2	3/18 X 1/2 Spiral Pin
63	AP-10	1	Spool
64	AP-06	2	O-Ring #01-117
65	AP-51	1	Plug
66	AP-53A	1	5/16 Washer
67	AP-52	1	5/18-18 X 1/2 Hex Head Screw
68	AP-63	1	Plug Retainer
69	AP-05	1	#01-115 O-Ring
70	AP-07	2	#01-111 O-Ring
71	AP-03	1	Spool Sleeve
72	AP-06	3	#01-117 O-Ring
73	DD6P-09SS	1	1/4 Flat Washer Stainless Steel
74	AP-02A	1	1/4-20 Half Nut
75	DD6P-09SS	1	1/4 Flat Washer Stainless Steel
76	AP-02A	1	1/4-20 Half Nut
77	AP4-52	1	1/4-20 X 1-1/4 Allen Head Set Screw
78	AP4-54	1	1/4 NPT Muffler
79	AP-90	1	Air Manifold
80	AP-92	1	1/4 NPT Jam Nut
81	AP-08	2	Pipe Plug 1/6 X 1/4

Parts Not Shown:

- (1) AP-30 Literature - Instruction Manual #1012
- (2) BP-64 Suction Pipe Straight
- (3) BP-64A Suction Pipe Tapered
- (4) BP-65 1" Pipe Coupling
- (5) BP-65A Filter

Repair Kits Available

REFERENCE	PART NUMBER	DESCRIPTION
1	AP-30 KIT	(AP-30 Repair Kit)
2	AP-30 KIT 01	(Lower Housing Kit)
3	AP-30 KIT-02	(Air Housing Kit)
4	AP-30 KIT-03	(Screw & Nut Kit)
5	AP-30 KIT-04	(Breather Cover Kit)
6	AP-30 KIT-05	(Bung Adapter Kit)
7	AP-90 KIT	(AP-30 Muffler Upgrade Kit)
8	TOP	(Complete Top for AP-30)

SCIENCO® PRODUCTS

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Memphis, TN 38118

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