PART NO.
55095-EN

SPECIFICATIONS

SERVICE REQUIREMENTS: Air: Minimum 60 psig (4 bar) – Maximum 120 psig (8 bar) at 5.0 CFM (140 dm3/m) clean, dry, non-lubricated air.
Electrical: 115 VAC / 230 VAC at 50/60 Hz.

MATERIAL: All wetted welded parts are 316 stainless steel.

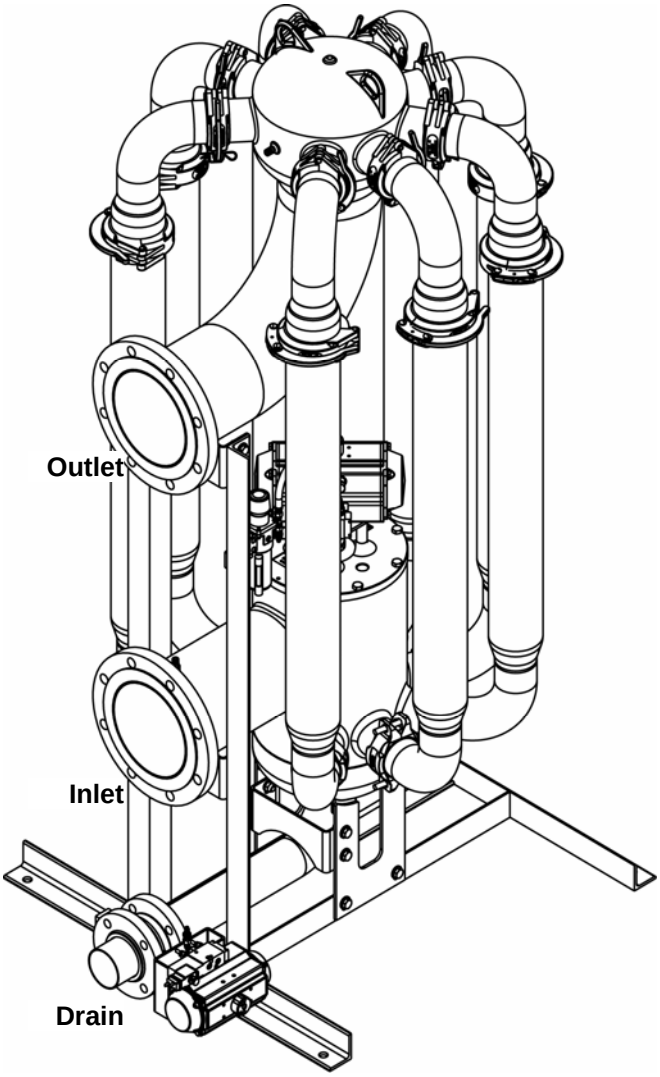
CONNECTIONS: Inlet and Outlet are 8" ANSI 150# raised face lap joint flanged. Drain is 3" schedule 5 weld stub.

ELASTOMERS: Buna-N (Nitrile), EPT (Nordel®) and Viton® are available.

DESIGN PRESSURE: Maximum pressure is 250 PSI (1724 kPa, 17.2 bar) for standard 4" and 6" units. Units with the 4" Hingelok® option have a maximum pressure of 200 PSI (1379 kPa, 13.8 bar). Units with the 6" Hingelok® option have a maximum pressure of 150 PSI (1034 kPa, 10.3 bar).

FILTER VOLUME: Complete unit (with 4" bodies): 43.1 gal. (163.1 liters). Each 4" station: 3.6 gal. (13.6 liters). Each 6" station: 4.8 gal. (18.1 liters).

AIRBORNE NOISE EMISSIONS: <70 dB(A) During normal operation.



INSTALLATION INSTRUCTIONS

1) Lift the entire filter system from the bottom of the filter frame or skid only. Do not lift with a crane or overhead hoist. Move the filter system as close as possible to the installation site before it is removed from the crate and skid. Position the filter frame on a prepared, level foundation. Level the filter frame before it is anchored to the foundation.
2) Anchor the filter to the foundation using the ¾" mounting holes provided in the frame.
3) Support all external process piping independently from the filter system.
4) Connect the inlet and outlet process piping (customer supplied) to the 8" flanged connections on the filter. Consult your pump manufactures installation guide for minimum pipe runs between the pumps outlet and the inlet of the filter system. NOTE: Isolation / block valves (supplied by others) are required on all process connections of the filter unit so it may be isolated from the process liquids in the event that service is required.
5) Connect the drain line (customer supplied) to the 3" flanged connection on the filter. Do not restrict or prohibit the flow of backwash liquids from the filter. Lack of proper flow (90 GPM, 340 l/min) for single and tri-cluster elements, (150 GPM, 567 l/min) for ACCUFLUX™ 7 elements, and pressure (45 PSI, 3 bar) during the backwash cycle will compromise the regeneration of the filter media. NOTE: When using fabric filter media, an orifice plate or flow control valve in the drain piping may be required to limit the differential pressure across the filter element to approximately 60 PSI (4 bar). This will prevent damage to the filter media.
6) This filter system is equipped with two pneumatic double acting cylinders piloted by individual 4-way solenoid valves. A rotary actuator provides force to move a flow diverter assembly from station to station while a second rotary actuator actuates the drain valve. Connect air supply lines (customer supplied) to the inlet port (1/4" NPTI) of each solenoid valve mounted on the control panel.

INSTALLATION CHECKLIST

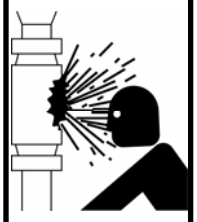
Complete this checklist before operating the system:

- ☐ Verify that all headers are piped correctly and supported independently from the filter system.
- ☐ Verify that the incoming instrument air pressure matches the requirements of this filter system.
- ☐ Verify that all filter body couplers, vent and drain plugs are closed tightly.

COMMISSIONING PROCEDURE

1) Inspect the piping connections to the filter. Verify that the inlet header on the filter is connected to the inlet side on the process fluid. Repeat this procedure for the outlet and drain headers.
2) All isolation valves to the filter should be closed. If there is a bypass loop around the filter, that loop should be closed to prevent backflushing dirty process fluid into the filter.

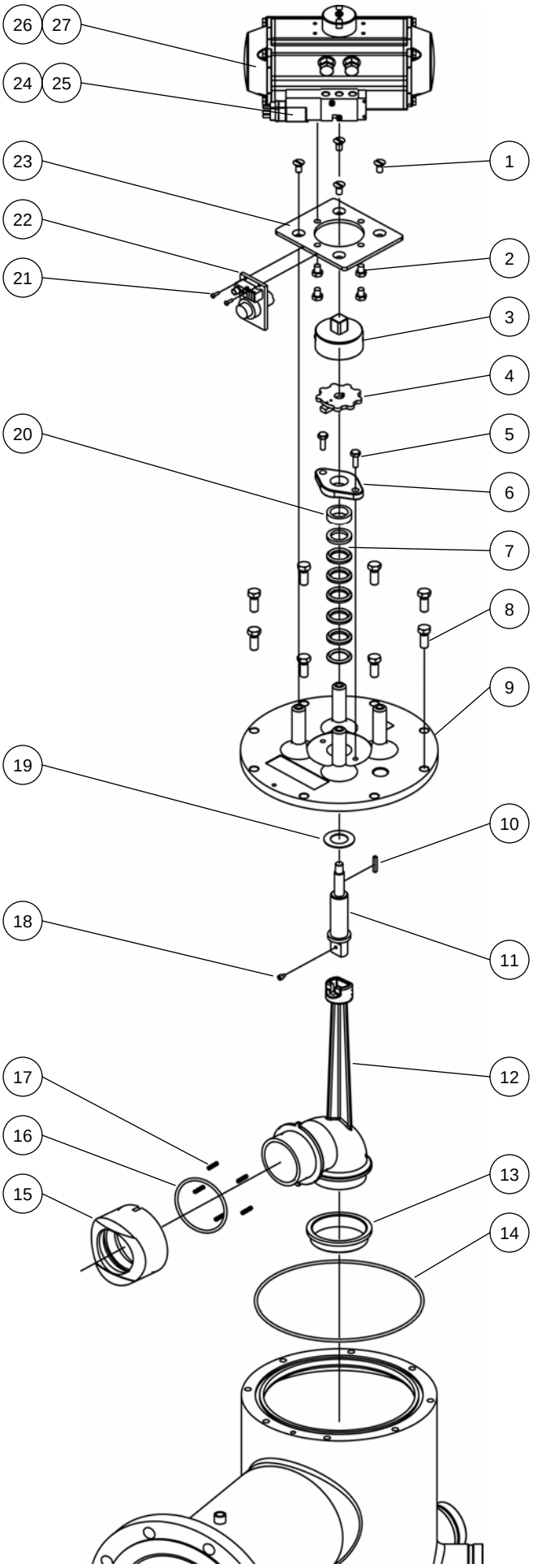
WARNING
Pressure vessel.



Maximum working pressure is: 250 PSI (17.2 bar)

Maximum differential pressure is: 150 PSI (10.3 bar)

This unit is a pressure vessel. Extreme care must be taken when inspecting or servicing the equipment.



3) Verify all PLC settings and initiate a backwash procedure. Verify the proper operation of the filter unit.

Backwash Interval (interval between time initiated backwashes)	120 minutes
Backwash Duration (duration unit backwashes at each station)	10 seconds
Station Pause Time (backwash delay between stations)	2 seconds
Backwash Delay (delay after backwash is initiated)	4 seconds
Excess DP Count/Time (number of backwashes within a given time that causes an excess DP fault)	6 DP initiated backwashes in 30 minutes

4) Confirm that there is sufficient backpressure on the filter system. In the absence of backpressure, the filter may immediately initiate a backwash and remain in a continuous backwash. The net differential between the backwash source (outlet) and the drain must be at least twice the pressure drop through the dirty screen for effective cleaning. For example, to backwash at the recommended 15 PSID dirt loss between the inlet and outlet, the outlet must be at least 30 PSI (assuming an atmospheric drain pressure, 0 PSI). This equates to a minimum 45 PSI inlet pressure.

5) Open the isolation valves for the outlet and drain piping.

6) Turn the power to the filter system ON.

7) Open the inlet isolation valve to allow approximately 25% of the flow to reach the filter.

WARNING: Opening the inlet valve to the fully open position without proper ramping will cause the particles to become wedged into the filter media. If this happens, the filter media will have to be removed and cleaned manually.

8) Over the next ½ hour, slowly introduce more of the flow until you reach 100%. You may want to manually initiate a backwash sequence during this time to ensure that piping debris is cleaned from the unit.

MAINTENANCE

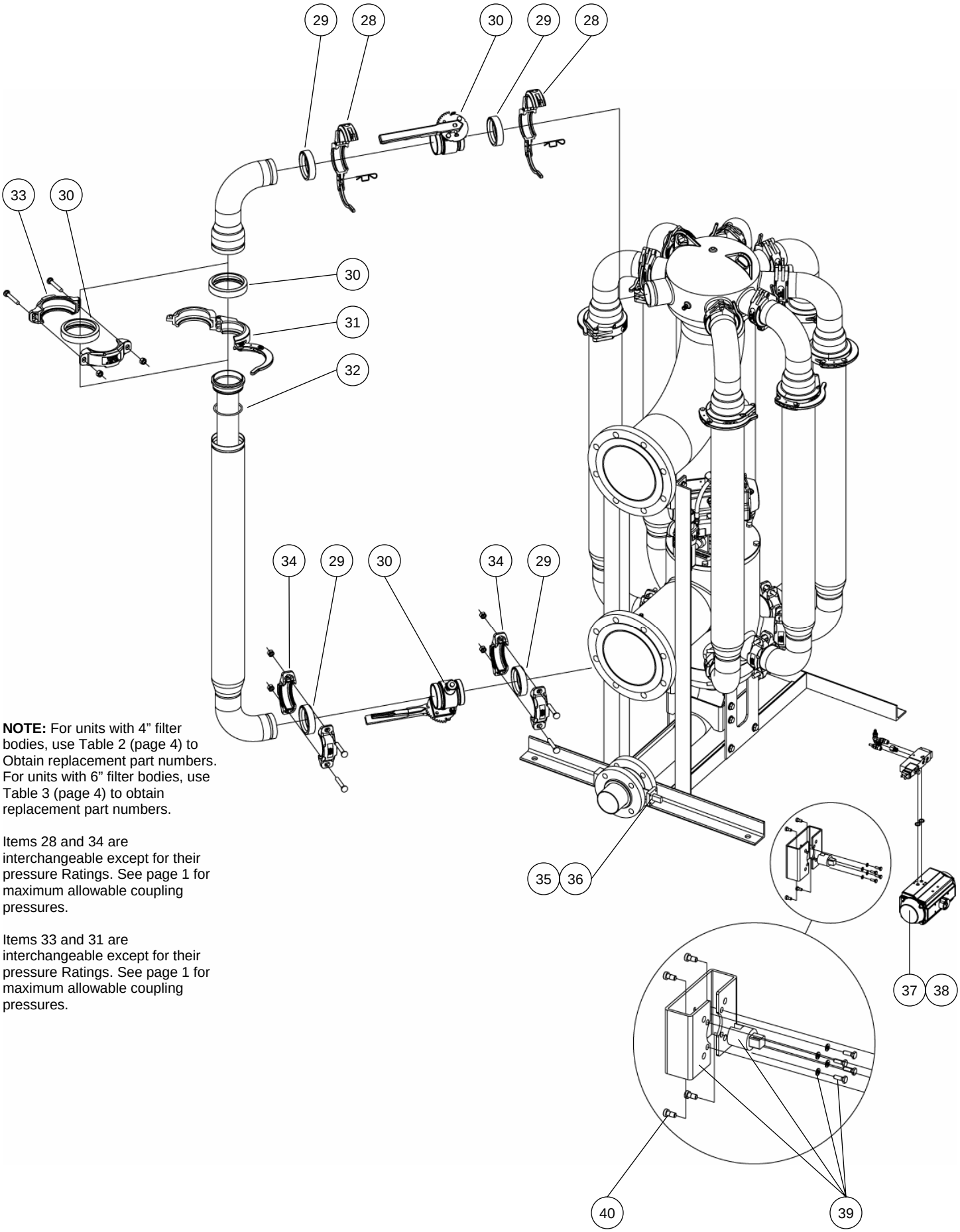
To keep your AFR filter unit operating correctly, please perform the following maintenance items at the recommended intervals:

A. For clutch (Item 3) maintenance, remove the screw and add approved grease (Fiske Bros. Lubriplate Low-Temp, Fiske Bros. Aeor Lubriplate, Exxon Beacon 325, Shell Aeroshell No. 7 or Shell Aeroshell No. 16) through the use of the grease fitting located 180 degrees from the screw. Remove as much of the old grease as possible by pumping a sufficient amount of grease into the clutch to insure that all previous grease has been purged out. This task should be performed every 6 months.

B. The Shaft Packing (Item 7) should be replaced every 6 months or when the Packing Plate (Item 6) reaches the lid. This packing will wear and will need to be tightened. To tighten the packing, torque the Hex Screws (Item 5) to 40 ft-lbs (54.2 N-m). Torque should be checked monthly or when leaking from the seal is detected.

C. Anytime maintenance is performed, it is imperative that the automation is reassembled properly. Specifically that the Key (Item 10) is in place and all parts are aligned properly.

D. The Proximity Switch (Item 22) must have its contacts within 2mm of the Locator Assembly (Item 4). Failure of this condition will lead to a fault with the function of the unit. To adjust this distance, loosen the lock screw and slide the switch to the desired location.



NOTE: For units with 4” filter bodies, use Table 2 (page 4) to Obtain replacement part numbers. For units with 6” filter bodies, use Table 3 (page 4) to obtain replacement part numbers.

Items 28 and 34 are interchangeable except for their pressure Ratings. See page 1 for maximum allowable coupling pressures.

Items 33 and 31 are interchangeable except for their pressure Ratings. See page 1 for maximum allowable coupling pressures.

TABLE 1 – REPLACEMENT PARTS		
Ref	Part Number	Description
1	46412	SCREW, 3/8-16X3/4 FLTHD SLTCA
2	55224	BOLT, M10 X 1.5 X 18MM SOCHDCP
3	55222	HUB/CLUTCH SUB ASSEMBLY
4	55214	LOCATOR ASSEMBLY, PROX SWITCH
5	P-10774-SS4	SCREW, 3/8-16 X 1 HEX HD CAP
6	P-41128	PLATE, PACKING DCF-2000
7	55070	SEAL, CHEVRON, AFR
8	P-30848-SS4	SCREW, 1/2-13X1-1/4 HEX HD CA
9	55037	LID, AFR, FOR INLET ASSY
10	55217	KEY, 3/16 X 3/16 X 1-1/4
11	55206	SHAFT, INDEXING AFR CLUTCH
12	55228	DIVERTER, GROOVED FOR POSITION
13	55038	SEAL, AFR DRAIN VALVE, TEFLON®
14	55092	O-RING,AFR OUTLET LID,BUN
	55093	O-RING,AFR OUTLET LID,EPT
	55094	O-RING,AFR OUTLET LID,VIT
15	55033	SEAL, INLET VALVE, AFR, TEFLON®
16	55080	O-RING,AFR SEAL FOR DRAIN,BUN
	55081	O-RING,AFR SEAL FOR DRAIN,EPT
	55082	O-RING,AFR SEAL FOR DRAIN,VIT
17	55032	SPRING, SS316 COMPRESSION
18	55230	SCREW, 1/4-20 X 1/4 SOCHDCAP
19	P-41220	WASHER, THRUST TOP DCF-2000
20	P-41127	RING, PACKING DCF-2000
21	P-10231-SS4	SCREW, 6-32 X 1/2 RD HD
22	55263	SWITCH, PROX SUB-ASSY 20-150V
23	55211	PLATE, ACTUATOR AFR CLUTCH
24	54113	SOL, MAC800 24VDC NAMUR 4WAY
	54123	SOL, MAC800 120VAC NAMUR 4WAY
	54122	SOL, MAC800 240VAC NAMUR 4WAY
25	54114	PILOT ASSY, 24VDC MAC
	54115	PILOT ASSY, 110VAC MAC
	54116	PILOT ASSY, 220VAC MAC
26	55231	ACTUATOR, NJ VPVL350DA-B
27	50099	AUTOMATION PACKAGE, AFR
28	55123	COUPLING, 3" HINGELOK
29	55083	GASKET,3" RIGIDLOK,BUN
	55084	GASKET,3" RIGIDLOK,EPT
	55085	GASKET,3" RIGIDLOK,VIT
30	55122	VALVE, BFLY 3" GRUVLOK BUN MAN
34	55103	COUPLING, 3" RIGIDLOCK ASSY

TABLE 1 – REPLACEMENT PARTS *Continued*		
Ref	Part Number	Description
35	55074	VALVE, B-FLY, 3", 285#, BUN
	55075	VALVE, B-FLY, 3", 285#, EPT
	55076	VALVE, B-FLY, 3", 285#, VIT
36	55077	KIT,VALVE,B-FLY,3",285#,BUN
	55078	KIT,VALVE,B-FLY,3",285#,EPT
	55079	KIT,VALVE,B-FLY,3",285#,VIT
37	60178	ACTUATOR, ROTARY, VPVL250DAB
38	60179	KIT, REPAIR FOR 60178 ACTUATOR
39	P-21059	BRKT, MTG 3" BFLY TO RP-1000
40	P-42312	SCREW, M8 X 1.25 X 16MM LONG

TABLE 2 – REPLACEMENT PARTS (4" Bodies)		
Ref	Part Number	Description
30	55089	GASKET,4" RIGIDLOK®,BUN
	55090	GASKET,4" RIGIDLOK®,EPT
	55091	GASKET,4" RIGIDLOK®,VIT
31	55124	COUPLING, 4" HINGELOK®
32	55086	O-RING,ELEMENT FLG,AFR,BUN
	55087	O-RING,ELEMENT FLG,AFR,EPT
	55088	O-RING,ELEMENT FLG,AFR,VIT
33	55101	COUPLING, 4" RIGIDLOK® ASSY

TABLE 3 – REPLACEMENT PARTS (6" Bodies)		
Ref	Part Number	Description
30	55139	GASKET,6" RIGIDLOK®,BUN
	55140	GASKET,6" RIGIDLOK®,EPT
	55141	GASKET,6" RIGIDLOK®,VIT
31	55138	COUPLING, 6" HINGELOK®
32	55142	O-RING,6" ELEMENT FLG,AFR,BUN
	55143	O-RING,6" ELEMENT FLG,AFR,EPT
	55144	O-RING,6" ELEMENT FLG,AFR,VIT
33	55137	COUPLING, 6" RIGIDLOK® ASSY

TABLE 4 – ELASTOMER INFORMATION		
Elastomer Type	Abbr	Max. Temp.
Buna-N	BUN	225°F (107°C)
Nordel®	EPT	300°F (149°C)
Viton®	VIT	350°F (176°C)

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