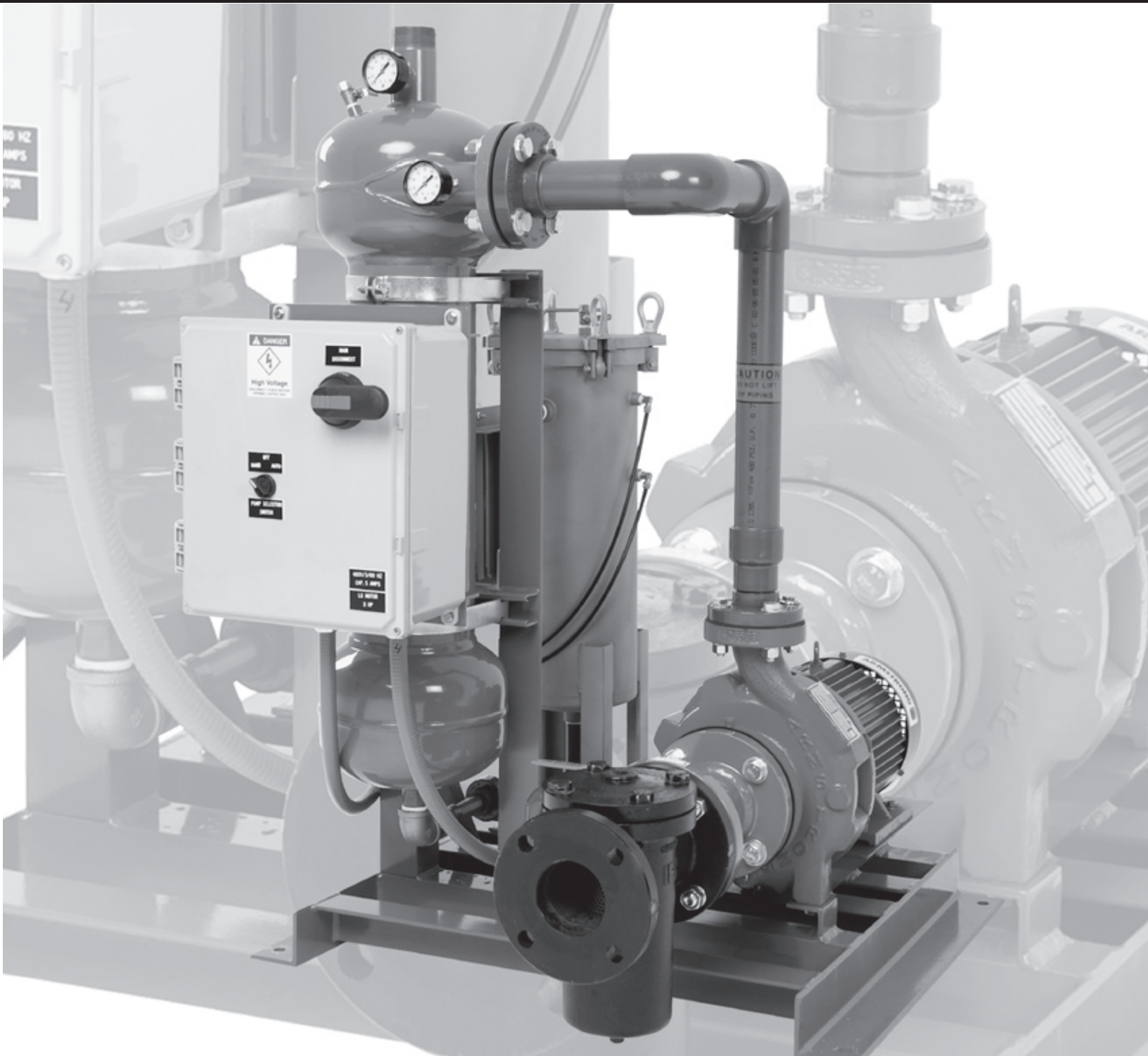


OPERATION AND MAINTENANCE MANUAL

PF-63 Series

Separator



PUROFLUX

C O R P O R A T I O N
FILTRATION AND CONTROL SYSTEMS

PF-63 SERIES SEPARATOR

Please read this **OPERATION AND MAINTENANCE MANUAL** thoroughly and understand all safety related issues before attempting any work on the PF-63 series separator.

INTRODUCTION

PUROFLUX is the right choice when it comes to having a more efficient, safe, and effective system. With over 30 years of combined filtration experience, PUROFLUX engineers can find a solution to a wide variety of filtration problems.

Following the guidelines listed in this manual will help to insure the safety of all personnel, which maintain the separator unit and related equipment. If there are any questions on the procedures or performance of the PF-63 series separator contact the local factory representative or call the factory direct at (805)579-0216. Do not operate the separator until all questions about operating procedures are answered by a qualified representative. This manual covers recommended procedures for installation and anchoring, start-up and shut down, and safety and maintenance.

NOTE:

All recommendations are minimums. The environment/operating conditions in which the separator unit is installed will dictate the frequency of scheduled maintenance. Maintaining your PF-63 Series Separator will assure a long trouble free life.

Puroflux Corporation

Phone (805)579.0216 • Fax (805)579.6005

Website: www.puroflux.com

E-Mail: sales@puroflux.com

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CHAPTER 1

RECEIVING AND INSTALLATION

Recommended procedures for the receiving of equipment and proper installation of the PF-63 series separator.

RECEIVING EQUIPMENT

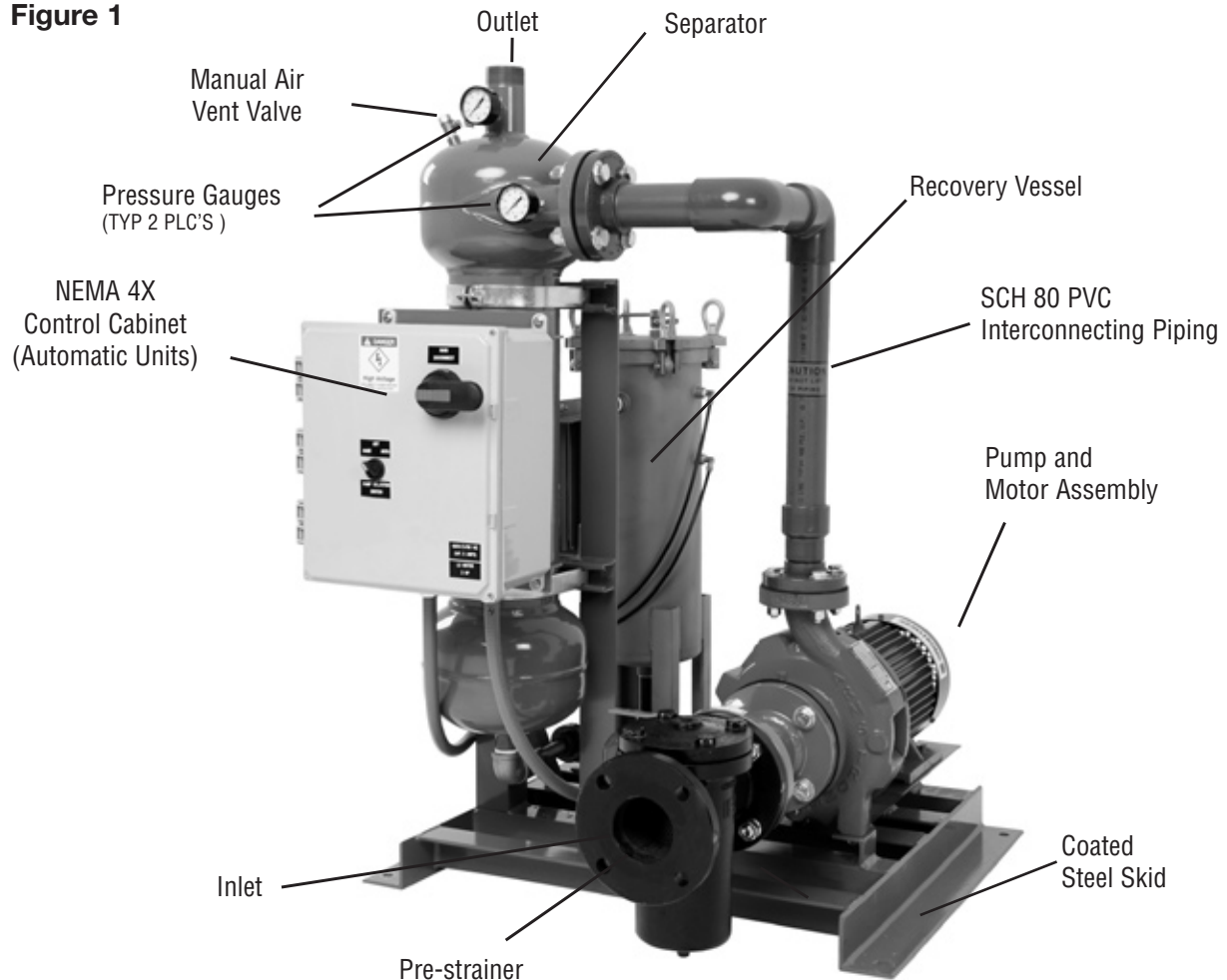
Before accepting the separator equipment and prior to signing the bill of lading, all equipment should be checked thoroughly for any shipping damage. Make sure that all required equipment noted on the bill of lading is received. See Figure #1 and Table I for components to be inspected upon receiving.

Check the model and serial number against the invoice. Serial and model numbers can be found on a nameplate located on the inside of the control cabinet door.

Table I – Receiving / Inspection

SEPARATOR (PF-61 SERIES)
RECOVERY VESSEL (PFRV SERIES)
PRESSURE GAUGES
SCH 80 PVC INTERCONNECTING PIPING
ISOLATION VALVES (RECOVERY VESSEL)
MANUAL AIR VENT VALVE
MOTOR CONTROLS (NEMA 4X CABINET)
PUMP & MOTOR ASSEMBLY
PRE-STRAINER
DIFFERENTIAL PRESSURE INDICATOR

**PF-63 Series Separator
Figure 1**



DESIGN CRITERIA

The PUROFLUX PF-63 series separator is designed for use in closed circuit or open process liquid applications. Standard equipment design is 150 psi @ 100°F (temperature dependent - higher design pressures and temperatures are available). The PF-63 series separator will remove suspended solids with a specific gravity of 1.2 or higher down to 45 micron/325 mesh.

NOTE:

Never, install the PF-63 series separator in an application where the system pressure exceeds the separator package design pressure.

The PF-63 series separator packages utilize a PF-61 series separator in conjunction with a PFRV series recovery system. Standard units are equipped with inlet and outlet gauges, pump and motor, cast iron pre-strainer, Sch. 80 PVC interconnecting piping, manual air vent valves, coated steel skid, flow controller, isolation valves (recovery vessel), and differential pressure indicator for the recovery system.

SUPPORT AND LIFTING

The PF-63 series separators should be lifted only by the skid. If the unit is hoisted, lifting straps must be placed around skid and should not come in contact with the separator package components. The assembly must be fully supported from the bottom of the skid before lifting.

INSTALLATION AND ANCHORING

The PF-63 series separator is designed for use in both full flow and slip stream use on pressurized closed systems or open atmospheric systems.

1. Determine the location and orientation of where the separator is to be installed in the piping system or open sump. A three foot clearance is recommended around the separator for service.
2. Locate the separator as close to the system piping as possible.

Important Note:

Never install the PF-63 series separator in an application where the system pressure exceeds the separator design pressure of the separator package.

3. Verify that the housekeeping pad will accommodate the weight of the separator under operating conditions. See Table II on page 7 for operating weights.
4. The PF-63 series separator should be rigidly anchored to the floor (see the specification drawing for location and size of the anchor holes).
5. After the PF-63 series separator is installed in its permanent location, the inlet and outlet gauges (if not previously installed) should be installed on the separator vessel (see figure #1 on page 4).
6. Before hook-up begins check the system's inlet (pump & pre-strainer), outlet and recovery system for foreign objects, which may have entered during shipment.
7. Always use appropriate hardware to match the separator connections.

NOTE:

Mating flange bolts, gaskets and other miscellaneous fittings are not included with the separator.

8. The inlet connection of the separator is located on the side of the vessel and is pre-plumbed from the pump discharge. The outlet is located at the top of the separator vessel. The purge connection is located at the bottom of the vessel and is pre-plumbed to the inlet of the recovery system. Flow to the separator must enter at the inlet connection and exit at the outlet connection.

TABLE II - WEIGHT & VOLUME			
MODEL PF-63	DRY (LBS.)	OPER. (LBS.)	VOL.(GALS.)
PF-63-012	370	438	8
PF-63-015	372	440	8
PF-63-020	530	640	13
PF-63-025	640	752	14
PF-63-030	689	809	15
PF-63-040A	850	1067	26
PF-63-040B	970	1198	26
PF-63-050	1350	1822	36
PF-63-060A	1757	2197	53
PF-63-060B	1873	2317	53

SEPARATOR REQUIREMENTS

1. Puroflux separators are designed to operate within a specified range of 3 to 10 psi pressure drop across the separator. It may be necessary to install a flow control or throttling valve downstream of the separator in order to achieve the proper flow and pressure drop.

NOTE:

Operating outside the specified range of the separator can cause reduced efficiency and possible damage to the separator or system.

2. The separator package should be installed to merge with the natural flow of the system, never against it. A straight run of 5 to 6 pipe diameters up and down stream of the separator is recommended to reduce turbulence.

3. The PF-63 series separators are equipped with a pump designed to maintain proper flows through the separator system. Standard units are equipped with a pump to match the required separator system flow (gpm) @ 60 feet of head (see Table V on page 13). Some installations may require that a throttling valve be installed in the outlet line to regulate the flow or the pump may need to be altered (lower/higher discharge head) to maintain proper flows.

4. The minimum inlet pressure should be at least equal to the pressure loss anticipated through the PF-63 series separator plus the systems down stream pressure requirements.

5. The recovery system is pre-plumbed from the separator purge (waste) to the "INLET" of the recovery system. The "OUTLET" of the recovery system is plumbed back to the suction side of the pump (see figure #1 on page 4).

SYSTEM PIPING OVERVIEW

1. Pipe sizes must be large enough to maintain proper flow. It is important to understand that the selection of a separator is based on the flow rate through the separator (approx. 10 ft/sec.) and not the separator pipe size (connections). If necessary reduce pipe runs at the separator connections to maintain proper fluid velocity. Always follow good piping practices when running piping. The separator connections may be smaller than the actual piping between the separator and system. Upon request Puroflux can provide a typical installation drawing.

2. PVC, copper, steel or galvanized pipe are all acceptable, and may be used when installing the separator. The choice of piping materials will depend on the design criteria and conditions of each installation.

SEPARATOR UNIT PIPING:

Piping should be installed for PF-63 series separators on pressurized system or slip stream applications as follows:

1. Table III on page 9 shows PF-63 series separator piping connections and sizes.

NOTE:

Do Not reduce the pipe sizes listed, the pipe sizes are minimums. If long runs, excessive fittings or lifts are necessary, enlarge the pipe diameter in order to reduce friction loss.

2a. (Closed circuit or pressurized system) Run an influent line from the pressure side of the system piping to the pump inlet connection labeled "INLET".

NOTE:

The influent line should be piped from the discharge side of the process system pump. A service valve and flange/union should be installed in this line near the separator. For application on pressurized systems where the system pump is utilized, the separator package pump may not be required or should be sized to meet the dynamics of the system.

2b. (Open system or sump) Run an influent line from the deep or depressed portion of an open sump to the pump inlet connection labeled "INLET".

NOTE:

If the separator package or the piping run is above the water level a check or foot valve maybe required to maintain prime. A service valve and flange/union should be installed in this line near the separator.

3a. (Closed circuit or pressurized system) Run an effluent line from the separator return labeled "OUTLET" back to the system piping (low pressure side).

NOTE:

The effluent line should be piped to the suction side of the process system pump. A flow control or throttling device is recommended in the effluent line (separator return) to regulate flow through the separator. A service valve and flange/union should be installed in this line near the separator.

3b. (Open system or sump) Run an effluent line from the separator return labeled "OUTLET" back to the system sump on the opposing side of the suction (influent) line.

NOTE:

If the system dynamics dictate a lower or higher discharge pressure, the pump & motor may require a change to match the actual system dynamics. A flow control or throttling device could also be installed in the effluent line to regulate flow through the separator. A service valve and flange/union should be installed in this line near the separator.

NOTE:

It is important that all piping and components associated with the filter system installation must be supported to eliminate stress on the filter and piping.

Always follow local, county, state or other government agency requirements for piping hook-ups.

TABLE III - SIZE & CONNECTION		
MODEL PF-63	INLET(INCHES)	OUTLET (INCHES)
PF-63-012	2 (FLNG)	1-1/4 (MPT)
PF-63-015	2 (FLNG)	1-1/2 (MPT)
PF-63-020	3 (FLNG)	2 (MPT)
PF-63-025	3 (FLNG)	2-1/2 (MPT)
PF-63-030	3 (FLNG)	3 (FLNG)
PF-63-040A	4 (FLNG)	4 (FLNG)
PF-63-040B	4 (FLNG)	4 (FLNG)
PF-63-050	6 (FLNG)	5 (FLNG)
PF-63-060A	6 (FLNG)	6 (FLNG)
PF-63-060B	8 (FLNG)	6 (FLNG)

ELECTRICAL CONTROLS

Standard separator packages are equipped with a NEMA type 4X control cabinet containing a door disconnect switch with thermal overload and short circuit protection.

IMPORTANT NOTE:

Standard voltage is 460v/3Ø/60 hz, 230v/3Ø/60 hz, 208v/3Ø/60 hz. All other voltages are optional.

WIRING REQUIREMENTS

1. Install circuit breaker between the closest branch distribution panel and the control panel.

2. See table IV and V (on page 13) for amp draws and pump horsepowers. The control box is pre-wired and includes a door disconnect switch with overload and short circuit protection. Reference Figure #1 on page 4.

3. Hand-Off-Auto Switch (HOA) is supplied. The HOA switch is used to control the pump motor. In the "Hand" mode the pump will start locally only. In the "Auto" mode the pump motor will be started from a remote location.

NOTE:

The signal from the remote location is a dry contact. In the "Off" position the pump is off however, there is voltage at the control panel.

NOTE:

Always follow local, county, state or other government authority's requirements for electrical hook-up.

TABLE IV - HORSEPOWER / AMPERES		
MOTOR HP	MOTOR VOLTAGE	AMPERAGE 3 PHASE
1	208 / 240 / 460	5 / 4 / 2
2	208 / 240 / 460	8 / 7 / 4
3	208 / 240 / 460	11 / 10 / 5
5	208 / 240 / 460	17 / 16 / 8
7 1/2	208 / 240 / 460	25 / 22 / 11
10	208 / 240 / 460	32 / 28 / 14
15	208 / 240 / 460	48 / 42 / 21
20	208 / 240 / 460	62 / 54 / 27
25	208 / 240 / 460	78 / 68 / 34

Chapter 2

OPERATION AND MAINTENANCE

Recommended procedures for, the proper operation and general maintenance of the PF-63 series separator.

Please read this entire OPERATION and MAINTENANCE MANUAL thoroughly and understand all safety related issues before attempting any work on the PF-63 series separator.

THEORY OF OPERATION

The Puroflux PF-63 series separator utilizes high centrifugal forces to separate solids from liquids. The suspended particulate is simply dropped from the carrying fluid where it is collected for discard. The PF-63 separators do not require a backwashing and will not interrupt throughput when purging. Because no backwash is required large amounts of system fluids will not be wasted. The PF-61 series separator collects and concentrates particulate as it falls from the process fluid into the accumulation chamber. Because the separator and the accumulation chamber are at equal pressures, there is no need for any additional pressure to induce purging.

Influent is fed via the system pressure or external booster pump tangentially into the separator acceptance chamber. The influent is spun in a downward motion pushing the suspended particulate to the walls of the separator vessel by centrifugal forces. Suspended solids are forced downward into the collection chamber for purge. The clean liquid then reverses direction moving upward entering the vortex finder where it is then returned back to the process system.

Purging the accumulation chamber is done without excess waste of system fluid while the separator package remains "on-line". The purge is set at a constant flow to the recovery system. The purged waste is concentrated in the recovery system while the clean fluid is drawn back into the system flow.

GENERAL MAINTENANCE PROCEDURES

Always follow the start-up and shut down procedures before and after any service or maintenance is done on the separator unit. The PF-63 series separators are designed for low maintenance and minimal service. With proper care the PF-63 series separators will give trouble free service. The following is a list of maintenance check points and schedules.

1. Visually inspect separator package every 48 hours (min.) for proper operation. Check for unusual noise or vibration.
2. Read pressure gauges (gauge reading should not exceed design pressure).
3. Clean pump pre-strainer (check as often as environment dictates).
4. Check the gasket condition each time the pre-strainer is serviced.
5. Check voltage and amperage draw on motor.
6. Read PFRV differential pressure indicator (indicator reading should not exceed 29 psid).
7. Replace or clean bag(s) @ 25 psid (recommended). Refer to Recovery Vessel Bag Change section on page 15.
8. Inspect recovery system internal assembly each bag change.
9. Clean or replace bag(s) before blind-off occurs (check as often as environment dictates).
10. Lubricate the o-ring on retainer basket (applicable only to PFRV-3S and PFRV-3T) each time the recovery system is serviced.
11. Lubricate the o-ring on the cover each time the recovery system is serviced.

WARNING:

Close and lock out all isolation valves to the separator package prior to performing maintenance.

PUMP PRE-STRAINER

The pump pre-strainer is mounted in front of the pump and is utilized to protect the pump from large debris. The pre-strainer contains a corrosion resistant stainless steel basket with 1/8 inch mesh. The pre-strainer basket must be kept clean and free of debris.

NOTE:

Always relieve internal vessel pressure and follow the shut down procedure (on page 19) before attempting any service work. Remove the pre-strainer lid bolts and remove the lid. Remove the basket and clean all debris from inside the basket. Replace the basket and lid, (check gasket alignment) and re-tighten the bolts. Make sure the gasket is in good condition. A cracked or torn cover gasket can cause air leaks and poor performance. Replace if necessary.

PUMP AND MOTOR

For standard units the pump wet end is cast iron bronze fitted. The close coupled pump and motor assembly is bolted together with hex bolts for ease of maintenance or repair. The pump utilizes a standard mechanical seal pressed into the motor bracket, which is bolted directly to the pump volute. The pump shaft slides over the motor shaft and the pump impeller is keyed on to the end of the motor shaft and locked in place with a hex jam nut or cap screw (See Figure II on page 22).

The pump design conditions for the PF-63 series separators are the flow rates (GPM)@60 feet of head (TDH) (See Table V). This correlates to approximately 26 psi discharge pressure at design flow. Motor horsepowers are also listed.

WARNING:

Always disconnect and lock out all electrical power to the separator package prior to performing pump maintenance.

**TABLE V - MOTOR HORSEPOWERS
FLOW RATE @ 60 TDH**

MODEL PF-63	MOTOR(HP)	SYSTEM (GPM)	PURGE (GPM)
PF-63-012	2	50	15
PF-63-015	3	80	15
PF-63-020	5	110	15
PF-63-025	5	160	15
PF-63-030	7.5	220	15
PF-63-040A	10	330	20
PF-63-040B	10	400	20
PF-63-050	15	600	20
PF-63-060A	20	900	20
PF-63-060B	25	1200	20

CLEANING & ADJUSTING PUMP

Always follow the shut down procedure (on page 19) before attempting any repairs or adjustments. The impeller should spin freely. If not, check for an obstruction or debris that may be lodged between the impeller and volute or impeller and adapter bracket. If no debris can be found and the impeller remains obstructed remove the bolts holding the volute to the motor bracket and the two bolts holding the motor to the base (refer to Figure 2 on page 22). Slide the motor and motor bracket away from the pump volute. Inspect the volute for foreign material. Reverse the above procedures to reassemble (replace any gaskets which are not in good condition). Rotate the pump shaft manually after assembly to check clearance. Always follow the start-up procedures (on page 17) whenever the separator unit has been turned off.

RECOVERY SYSTEM

The purged waste from the separator enters the inlet of recovery system and is distributed over the bag(s) evenly. Suspended solids are trapped by the bag. The effluent (filtered) then passes from the recovery system through the outlet and returned back to the separator system inlet. The trapped particles cause the differential pressure across the bag(s) to rise. When the pressure differential reaches a maximum of 25 psid the bag(s) will require a change out. The bag(s) can be removed following the procedure outlined in the recovery vessel bag change section on page 15.

OPTIONAL REMOTE DIFFERENTIAL PRESSURE INDICATOR (DRY CONTACT)

The PFRV series recovery system can be supplied with an optional remote differential pressure indicator (dry contact). The indicator is supplied in a NEMA 4X control cabinet, with dry contact alarm and terminal blocks. It can be used with 12 or 24 volts. Do not hook-up any higher voltages. Refer to wiring diagram provided with remote alarm controls.

RECOVERY VESSEL BAG CHANGE

The most important step in changing filter bags is to make sure that the pressure is relieved prior to opening the unit. This can be accomplished by the following steps.

NOTE:

A bag change can be done while the separator remains in service. However, it is recommended that the separator package be shut down while performing a bag change.

1. Close the outlet isolation valve in the line leading from the recovery system outlet back to the system pump suction.
2. Close the inlet isolation valve leading from the separator purge to recovery system inlet.
3. Open the manual air vent on the top of the recovery system to relieve any internal pressure.
4. If required, open the drain plug. The fluid drained from the recovery system may be returned to the system.
5. Loosen the four bolts on the cover so that they are free and can be swung down. Rotate cover by lifting up on the handle located on the vessel cover. Remove stainless steel bag retention band by lifting straight up.

NOTE:

For the PFRV-3S & 3T series (3 bag unit) the bag hold down ring is secured in place by a 3/8" nut and washer located in the center of the retaining basket plate. To remove the hold down ring, remove the nut and washer then lift the ring vertically.

For the PFRV-3S & 3T series raise the cover by turning the handles on the davit clockwise until the cover is clear of the recovery system housing. Swing to either side.

6. Remove dirty filter bag. Lift the bag straight up by the lifting strap.

NOTE:

If the bag is completely blinded off, the bag may not drain and may be heavy.

7. Inspect the retaining basket and o-ring. Remove and clean if necessary. Replace retaining basket o-ring if needed.
8. If the bag is not worn or in need of replacement, it can be washed. To wash the bag, turn it inside out and flush with a hose. Replace the bag if the differential pressure does not return to the clean start-up differential pressure. Replace by inserting the clean filter bag into the retaining basket (already installed) and form the bag to the contours of the basket by pressing against the retaining basket. The bag support ring must be seated flush on retaining basket.

9. Once bag is inserted into the retaining basket insert stainless steel bag retention band back into place.

NOTE:

For installation of the bag/basket hold down ring on PFRV-3S & 3T series (3 bag unit), place it over the retaining plate stud located in the center of the retaining basket plate. Secure the hold down ring with the 3/8" nut and washer. Do not over tighten the hold down nut.

10. Inspect the cover and o-ring for foreign matter, and clean all surfaces. Check positioning of the o-ring, which should be properly seated in the recovery system cover.

11. Close cover carefully. Do not drop.

WARNING:

The cover is heavy, be careful not to pinch hands and/or fingers.

12. Re-tighten cover bolts evenly and securely.

NOTE:

Always follow the start-up procedures (see page 17) whenever the recovery system has been turned off.

CHAPTER 3

START-UP PROCEDURE

Before initial start-up or after a shutdown period, the filter unit should be thoroughly inspected.

Important Note:

Perform the first two procedures with the electric power off and locked out. Refer to the Fluid Treatment section on page 20 regarding the safeguarding of maintenance personnel from biological contaminants prior to start-up.

1. Check the pump pre-strainer by removing the lid, inspect the cover gasket for wear. Replace cover gasket if necessary. Clean debris from the pre-strainer basket. Prime the pump if necessary and replace the basket, lid and fasteners.

NOTE:

All electrical power to the separator package must be locked out.

2. Turn the pump and motor shaft by hand to ensure free rotation.

NOTE:

All electrical power to the separator package must be locked out.

3. Check the recovery system by loosening the four bolts holding the cover. Inspect the cover o-ring for cracks or wear, replace it if necessary. Refer to Bag Change section on page 15.

4. Clean any debris from the bag(s) or support basket. Inspect the bag(s) for wear or debris. Change if necessary.

5. Inspect the basket o-ring (applicable only to PFRV-3S and PFRV-3T) and retaining basket and bag(s) for proper installation.

6. Lubricate o-rings.

7. Verify that the recovery system cover is properly positioned and locked down secure.

8. Verify that the service valves in the inlet and outlet line are open. Bump the motor and check the arrow on the pump volute for proper rotation. Turn the pump motor off. Do not run the pump for an extended period of time rotating backwards. Have a qualified electrician change leads to correct rotation.

9. Open the manual air relief valves on top of the separator and recovery system. Open the inlet isolation valve to the recovery system only.

NOTE:

The outlet isolation valve on the recovery system should remain closed.

10. Start the pump and fill the separator and recovery system. Once a steady stream of water is coming out and all air has been evacuated the manual air relief valves can be closed. Now slowly open the outlet valve on the recovery system.
11. Check the voltage and current of all leads on the pump motor. The correct amperage draw can be found on the motor nameplate or in Table IV on page 10.
12. Check the separator package for any unusual noise or vibration. Shut separator unit off and contact your local PUROFLUX representative if there are any questions about the operation or performance of the separator unit.
13. Check the separator package and all integral piping to the unit for any air or fluid leaks. All air leaks must be found and repaired. Failure to do so could result in poor performance or personal injury.
14. Check the gauges and pressure differential indicator and record the clean start up differential pressures. Use the starting pressure as a bench mark whenever routine maintenance is preformed.
15. After several hours of run time from start up perform steps 11 through 14 again.

OPERATION IN COLD WEATHER

When the PF-63 series separator is exposed to below-freezing temperatures, it will require protection to prevent freezing. An indoor installation in a heated room is the best way to preventing freezing of any liquid in the separator package. If an indoor installation is not practical, sufficient insulation or supplemental heat must be supplied. Heat tape and insulation around the liquid filled components must be used to prevent freezing. The separator package should be drained when not in use for long periods of time. See shutdown section on page 19.

SHUTDOWN

The following service should be performed if the separator package is off line for a prolonged time period.

1. Shut off and lock out all electrical power.
2. Close the service valves in the inlet and outlet lines to and from the separator package.
3. Relieve all pressure from the separator package and piping. Open the manual air relief valves located on top of the separator and recovery vessel and leave the valves open.
4. Drain all external piping to and from the separator package.
5. Open the drain plugs on the pump pre-strainer housing and the pump volute. Allow all the liquid to drain and then replace the drain plugs.
6. Open the purge valve and allow the separator vessel to drain fully (will drain to recovery vessel).
7. Remove the drain plug located at the bottom of the recovery vessel. Allow the liquid to drain and then replace the drain plug.
8. Remove the bolts from the pump pre-strainer cover. Remove the cover and clean debris from the pump pre-strainer basket. Inspect the gasket and lubricate (replace gasket if necessary). Replace the pre-strainer basket, gasket and cover and then tighten bolts.
9. Loosen the four bolts on the recovery vessel cover so that they are free and can be swung down. Rotate cover by lifting up on the handle located on the vessel cover.
10. Remove stainless steel bag retention band. Clean or change the recovery vessel bag. Refer to recovery vessel bag change section on page 15.
11. Reposition bag and stainless steel bag retention band back into recovery vessel.
12. Inspect recovery vessel cover o-ring and lubricate (replace o-ring if necessary).
13. Reposition recovery vessel cover and re-tighten bolts evenly and securely.
14. Close the manual air relief valves located on the top of the separator and recovery vessel.

RECOMMENDED SPARE PARTS

PUROFLUX maintains a complete stock of replacement parts. When ordering replacement or stock parts, be sure to include the unit serial and model numbers.

The following spare parts are recommended:

1. Inlet/outlet gauges
2. Pump pre-strainer cover gasket
3. Pump seal and gasket kit
4. O-ring for recovery system cover
5. O-ring for retainer basket (applicable only to PFRV-3S and PFRV-3T)
6. Replacement bags

FLUID TREATMENT

Separation is an effective way of reducing the level of suspended solids in a system. However, it is only one portion of a complete treatment program. Dissolved solids will not be removed from the system by separation. It is important to realize that the dissolved solids will concentrate, and can cause damage to a system. Furthermore airborne impurities and biological contaminants may be introduced into the system.

To control all potential contaminants, a treatment program must be employed by a competent professional. Such treatment should be initiated before the system start-up and continued regularly thereafter.

SAFETY

All electrical, mechanical, and rotating machinery are potential hazards. It is important to be familiar with the design, construction, and operation of all equipment before performing any work. Always use adequate safeguards (including use of protective clothing where necessary or required) whenever installing, operating or working on the equipment.

Care should be taken when working on, near, or around this equipment. Appropriate safeguards must be established to prevent the personnel and/or public from injury and to prevent damage to the equipment, affiliated system and premises.

It is important to be thoroughly familiar with the equipment, associated system, controls, and the procedures set forth in this manual. Only qualified personnel should operate, maintain, and repair this equipment. Always follow proper procedures and use the correct tools, when handling, lifting, installing, operating, maintaining, or repairing the equipment. This will aid in the prevention of personal injury and/or property damage.

WARRANTY

PUROFLUX will guarantee all products to be free from manufactured defects in materials and workmanship for a period of 12 months from the date of shipment. Puroflux has an extended limited warranty of 5 years on all its separator vessels. In the event of any such defect, PUROFLUX will repair or provide a replacement.

NOTE:

Consumables such as fuses and pump seals are not covered under standard warranty

NOTE:

Replacement part(s) maybe new or remanufactured, at Puroflux's option. All warranty products, which prove to be defective, will be F.O.B. Puroflux's plant. Puroflux will not replace, repair, or pay for any charges without a written agreement prior to such work.

This warranty is not extended to any defects which can be attributed to having been caused by accident, alteration, abuse, misuse, consumer negligence, normal expected wear, chemical corrosion or by acts of God.

To obtain any needed repair(s) or replacement of defective parts or product, a Return Goods Authorization (RGA) number must first be obtained from PUROFLUX. This will be the record for tracking all items returned to PUROFLUX. The RGA form must be returned with the defective items in order to insure proper credit, Before the replacement part can be sent a purchase order must be issued to cover the cost of each replacement part and shipping. Upon inspection and an issue of credit of the defective items by PUROFLUX and/or PUROFLUX'S vendor(s), credit will be issued.

NOTE:

Items deemed defective will be replaced with a new or remanufactured part (at PUROFLUX'S option). This includes both mechanical and electrical components.

NOTE:

Shipping and handling, labor, or repair charges are not covered by PUROFLUX'S warranty policy.

NOTE:

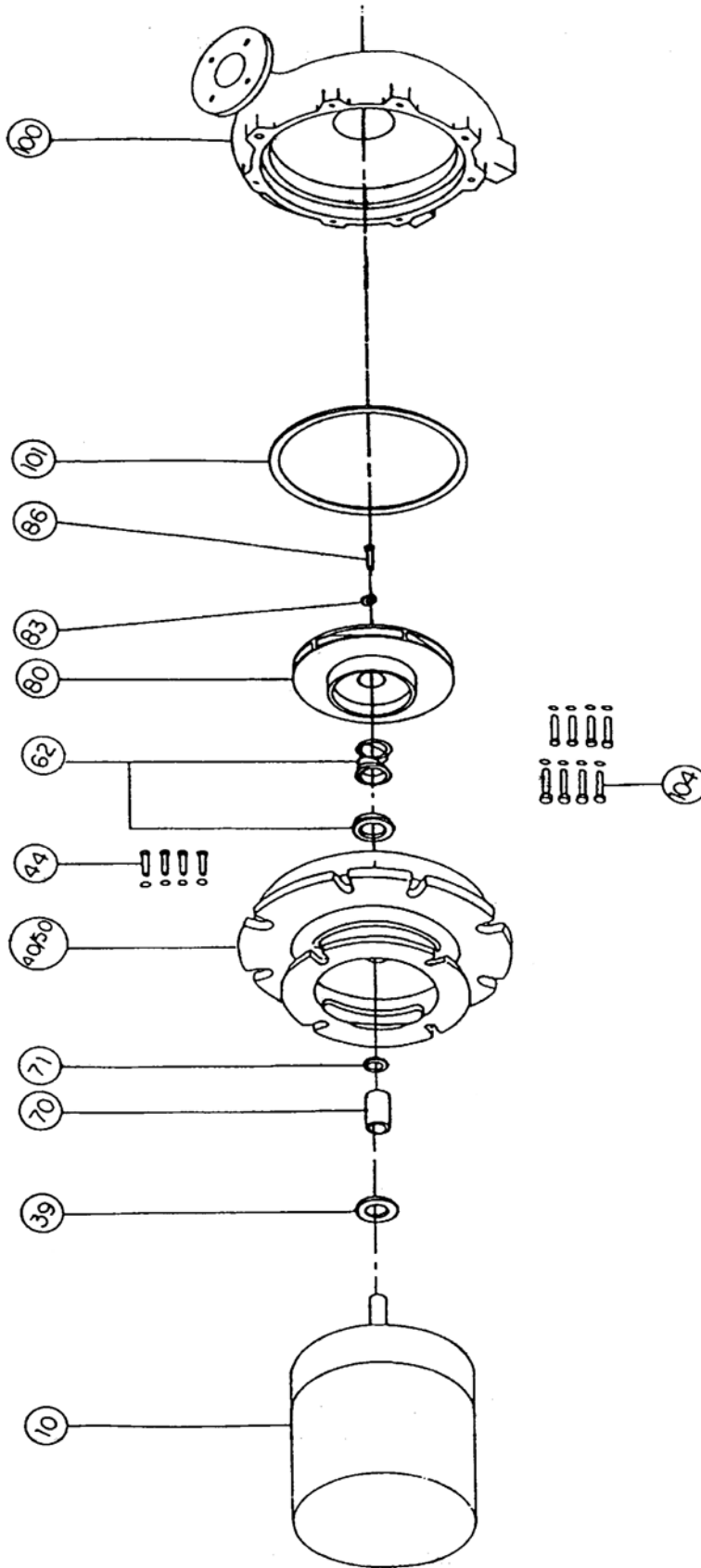
The return of defective items must be made within thirty (30) days of shipment or the invoice will be considered due and payable.

NOTE:

Any damage to the separator unit during shipment must be claimed at the time of accepting the separator (note all damage to the separator unit on the bill of lading before signing). All damages received during shipping are the sole responsibility of the freight company and must be taken care of through the freight company.

FIGURE 2

EXPLODED VIEW



INDEX

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
39	WATER SLINGER	62	MECHANICAL SEAL	83	IMPELLER WASHER
44	MOTOR CAPSCREW	70	SHAFT SLEEVE	86	IMPELLER CAPSCREW
40/50	ADAPTER/STUFFING BOX B.F.	71	SHAFT SLEEVE SPACER	100	CASING
40/50	ADAPTER/STUFFING BOX A.B.	70/71	SHAFT SLEEVE KIT	101	CASING GASKET
40/50	ADAPTER/STUFFING BOX D.I.	80	IMPELLER	104	ADAPT. STUFF. BOX CAPSCREWS