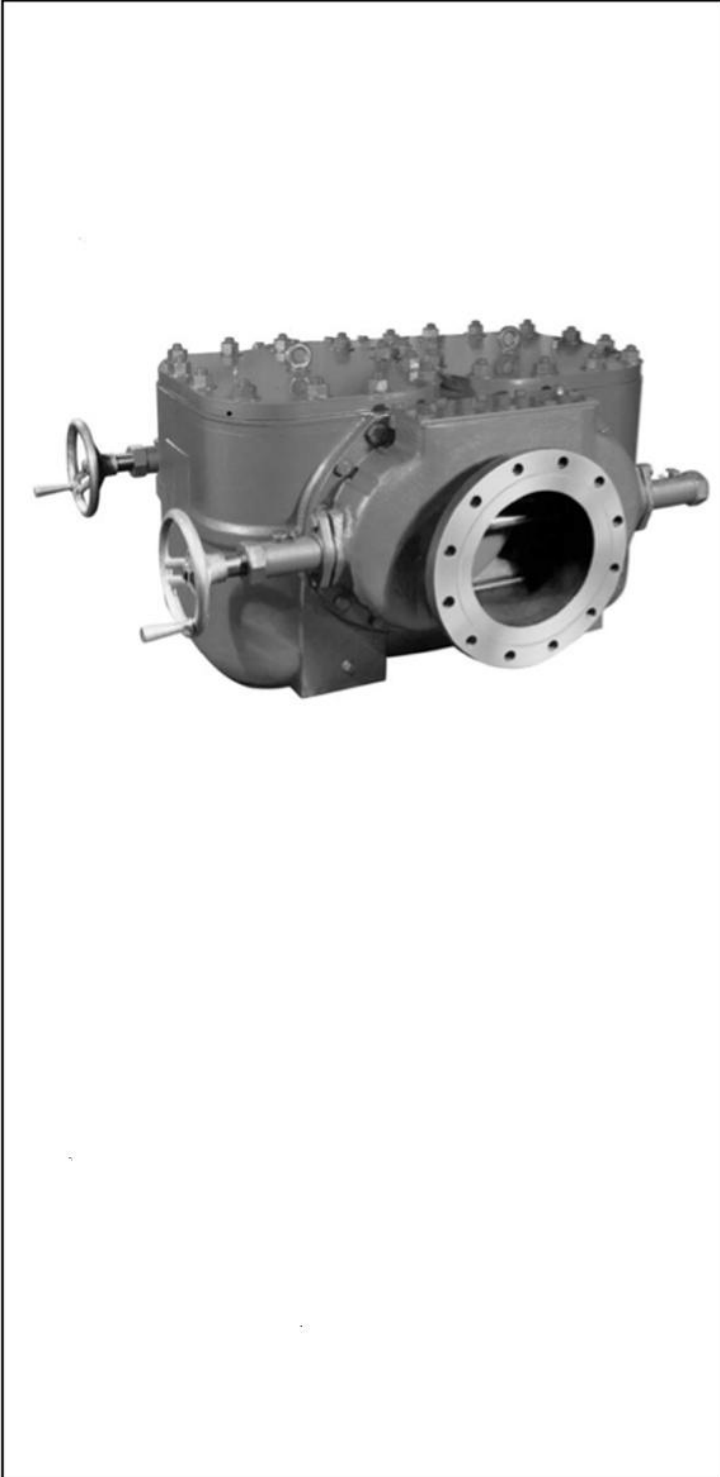


Read all the following information and instructions prior to installing and operating the equipment.  
Failure to comply with these instructions could result in bodily injury or property damage.



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## INTRODUCTION

A duplex strainer is a device installed in a pipeline to remove dirt and other unwanted debris from fluids. Straining is accomplished by directing the fluid through sized openings in a basket. Duplex strainers are installed where fluid flow cannot be interrupted while the basket is removed for cleaning. Duplex strainers are designed to withstand the rated pressure of the piping system.

For additional information on Duplex Basket Strainers, visit our website at [filtration.eaton.com](http://filtration.eaton.com).

### RECEIVING, HANDLING AND INSPECTION

1. After unpacking, inspect strainer for damage incurred during transit. Report any damage to the carrier immediately. If the strainer is not to be installed immediately, store indoors in a clean, dry environment. Replace protective wrap, flange protectors, etc. which may have been removed during receiving, handling and inspection.
2. Remove preservative with solvent-dampened cloth. Exercise care when using solvent and follow solvent manufacturer's instructions.
3. Check to be sure the rated pressure and temperature on the strainer nameplate is not less than the maximum pressure and temperature of the installation. The rated pressure shown on the nameplate is the maximum pressure, including shock, at which the strainer may be operated.
4. Remove body covers. Check for and remove any foreign or loose materials that could be carried downstream when fluid is introduced into the strainer.
5. Be sure shorter baskets are toward the inlet side of the strainer. Replace strainer cover. Tighten fasteners uniformly. Baskets are held in place by the pressure of the cover on the basket handles. If the baskets are loose, spring the handles to a higher position to insure greater compression when the cover is seated.

### INSTALLATION



**CAUTION:** Lift strainer with slings under the inlet and outlet connections. DO NOT lift the strainer by the lift eye located on the strainer cover. The lift eye is used to lift ONLY the cover.

1. Position the strainer in the line so that the fluid enters the connection marked inlet and be sure sufficient headroom is provided for easy removal of cover and baskets.
2. Support the strainer in the line as follows. Using the bosses on the bottom of the strainer, place the unit on concrete or steel pads. DO NOT support the strainer, or the piping coming to and from the strainer, by the strainer flanges and flange bolting.
3. Connect the strainer to the line. Use the same type flange faces. For example, DO NOT bolt raised face flanges to iron

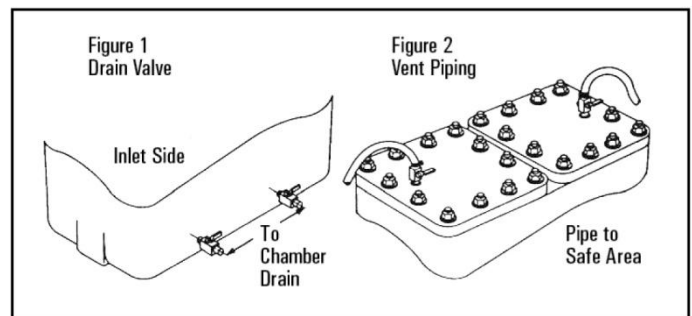
### INSTALLATION (CONTINUED)

- flat face flanges. Iron flanges must be flat face with full-face gaskets.
4. Cast strainers are subject to face-to-face variations due to shrinkage and machining tolerances. Prefabricated piping systems must allow for adjustments to compensate. Be sure flange gaskets are in place and fasteners are tight.



**CAUTION:** When strainer handles fluids other than water and with temperatures in excess of 120°F, the vent cock must be removed and the vent piped to a safe discharge point to protect the operator (see Figure 2). Wear protective clothing that includes gloves, vests and goggles when handling dangerous fluids.

5. An external "equalizer line" is provided between the two basket chambers. Eaton furnishes the ball valve and piping components. However, on "suction" applications DO NOT use this arrangement.



### RECOMMENDATIONS

1. Eaton recommends the removal of the drain plugs on the outlet side of the body and installation of drain valves as shown in Figure 1.
2. Pressure gauges, connected a minimum of four pipeline diameters from the strainer inlet and outlet, are recommended.
3. Cleaning frequency can be determined by the pressure drop across the strainer. Clean the baskets when there is a 5 PSI increase in pressure loss across the strainer.

### OPERATION

1. Determine the location of the valve disc, or “gate,” by observing the operation spindle through the sight holes at the end of the spindle mountings (see drawing page 6). The stainless steel operating spindle (1-1/2” diameter) can be seen through the sight hole on the isolated side. The torque bar (15/16” diameter) and/or the operating screw (acme threaded) can be seen through the sight hole on the operating side.

### START UP

1. Open both chamber vents. Rotate hand wheels a minimum of 20 turns to locate valve discs such that both chambers start to fill.
2. Close vents when chambers are filled and rotate hand wheels in the same direction until stop is reached. This way, only half the baskets are in service.
3. Close pressure equalizer valve.
4. Slowly introduce fluid to be strained.



**CAUTION:** Start system GRADUALLY. This eliminates sudden shock to strainer and other equipment in the line.

---



**CAUTION:** Recheck “Operation” procedure to ensure that both valve discs are sealing the same chamber. There should be NO SIGNIFICANT AMOUNT OF FLOW from vent in chamber that is isolated.

---



**NOTE:** The valve discs or “gates” are not designed or intended to provide absolute tight shut-off. Manufacturing standards require valve seepage to be low enough to provide time for basket exchange only.

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### SHUTDOWN: TEMPORARY

1. Tightly close valves on inlet and outlet connections of the strainer.
2. Open vents to relieve liquid pressure in the strainer.



**CAUTION:** DO NOT loosen covers while there is significant liquid or airflow from the vent.

---

### SHUTDOWN: EXTENDED PERIOD

If the system is to be shutdown for an extended period:

1. Drain fluid from the strainer.
2. Clean the baskets.
3. Lubricate operating mechanism, the chain drive and, if so equipped, the cover lift according to directions in section on lubrication.
4. Unseat the valve discs by turning hand wheels 15 to 20 turns.
5. Open pressure equalizer valve.

### SWITCHING FLOW

1. Open vent on inoperative chamber. Open pressure equalizer valve.
2. Close vent on inoperative chamber when air is expelled and fluid begins to flow.
3. Transfer valve discs by turning hand wheels. Both hand wheels must be turned simultaneously, clockwise to put the far basket chamber in operation, counterclockwise to put the near chamber in operation. The unit is equipped with a chain drive, so it is necessary to operate one hand wheel only. However, final seating and initial unseating should be done independently with each hand wheel. The reason being that the chain drive mechanism always has some "slack."
4. Close pressure equalizer valve.

### BASKET REMOVAL

1. Switch flow from dirty to clean chamber (see Switching Flow).
2. Open vent on dirty chamber to relieve liquid pressure.
3. After air and water flow from vent stops, remove cover nuts and body cover and drain fluid through bottom drain to a lever below the basket seat.
4. Remove dirty baskets and clean or exchange them.

### BASKET REPLACEMENT

1. Place new or clean basket squarely on basket seat.
2. Be sure basket handle is sufficiently high to be compressed by body cover.
3. Inspect body cover gasket and seal surface, clean seat or replace gasket as necessary. Always keep spare body cover gaskets in stock.
4. Replace body cover, tighten fasteners uniformly. If strainer is on suction service, fill basket chamber from outside source before installing body cover.
5. Make sure vent is open, close drain valve and refill chamber.

### TO REFILL THE CHAMBER WITH EQUALIZER

1. Open equalizer valve.
2. Close vent when air is expelled and fluid begins to flow.
3. Close equalizer valve.

### TO REFILL THE CHAMBER WITHOUT EQUALIZER

1. Rotate hand wheels 12 to 15 turns to admit fluid to chamber.
2. Close vent when air is expelled and fluid begins to flow.
3. Return valve disc to extreme position. Reseat valves individually.

### BASKET CLEANING



**CAUTION:** To prevent damage to the baskets, DO NOT permit strainer pressure differential between the inlet and outlet connections to exceed 20 PSI.

1. Clean baskets when there is a 5 PSI increase in pressure across the strainer.
2. During shutdown for a temporary period, drain fluid and clean baskets.

**HOW TO CLEAN**

1. Invert basket and wash out debris by directing a stream of air or water against the basket exterior. Use solvent if strained fluid is fuel or a chemical. Follow manufacturer’s instructions when using a solvent to clean the baskets.
2. Inspect basket at each cleaning for holes or tears. Replace as required. Always keep spare baskets in stock.

**MAINTENANCE: GENERAL**

1. Inspect baskets at each cleaning for holes or damage.
2. Replace as required. Inspect body cover seats and body cover gaskets. Clean seats and replace gaskets as required.

**MAINTENANCE: LUBRICATION**

1. Lubricate operating mechanism every six months. Apply heavy grease through the lube fittings located on the operating spindles (see drawing on page 6).
2. Lubricate chain drive and cover lift mechanism (if so equipped). Apply light grade grease to moving parts every three months or as indicated by operating conditions.

**MAINTENANCE: FLUID LEAKS**

1. Shut down strainer completely before inspecting valve discs and valve seats or replacing spindle mounting O-rings and gaskets, or O-ring nut seals.
2. Remove header covers only after inlet and outlet pipeline valves are closed, both cover vents are open and there is no flow of air or fluid through the vents.

**Location of Leak**

**Correction**

Spindle mounting-header joint	Replace spindle mounting O-ring and/or spindle mounting gasket
Spindle mounting sight holes	Replace O-ring on O-ring nut
Excessive leakage past the valve discs	Replace valve seat. Repair or replace valve disc

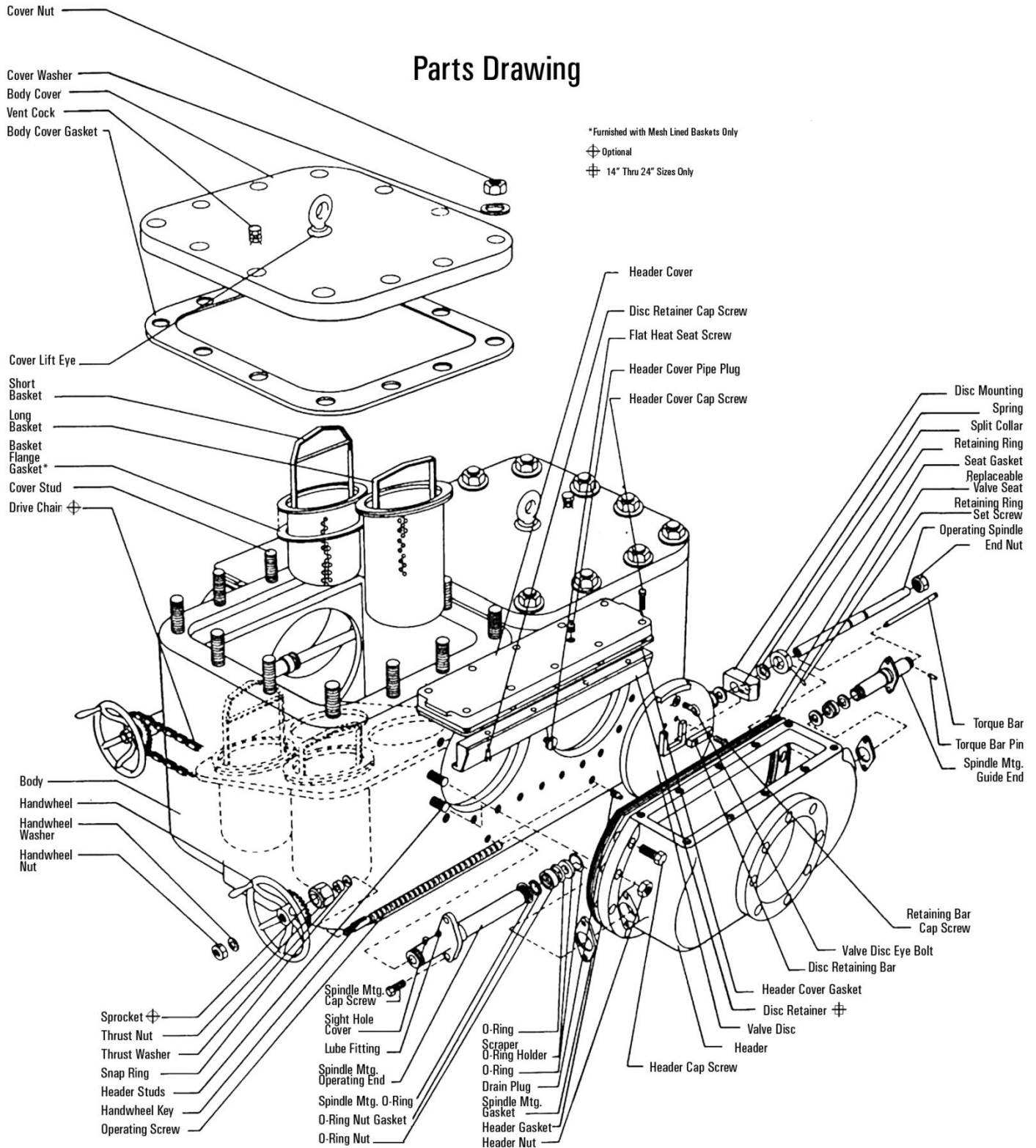
**HOW TO DISASSEMBLE SPINDLE MOUNTINGS**

1. Remove spindle-mounting cap screws.
2. Pull spindle mounting (guide end), including torque bar, out of header.
3. Rotate hand wheel counterclockwise to disengage operating screw from operating spindle. Pull spindle mounting (operating end), hand wheel and operating screw out of the header as a unit.
4. Replace gaskets and O-rings as required.
5. Reassemble spindle mounting reversing the process used for disassembly.
6. Refer to the assembly drawing to be sure components are in proper order.

**HOW TO DISASSEMBLE VALVE DISC**

1. Remove cap screws and lift cover from header.
2. Remove disc-retaining bar.
3. Rotate disc-mounting block out of recess on valve disc.
4. Attach hoist to valve disc eyebolt. Remove disc through header opening.
5. Clean and inspect valve seat and valve disc for scoring or wear. Wipe with a solvent dampened cloth. Scrape sealing surfaces if required for examination. Worn or scored valve seats must be replaced.
6. Reassemble valve disc to the operating mechanism by reversing the process used for disassembly.
7. Refer to assembly drawing to be sure components are in proper order.

Parts Drawing



**RECOMMENDED SPARE PARTS**

<u>Quantity</u>	<u>Description</u>
2	Short Basket
2	Long Basket
2	Header Cover Gasket
3	Body Cover Gasket
8	O-ring
4	O-ring Spindle Mounting
2	Snap Ring
2*	Basket Flange Gasket

\*Mesh lined baskets only.

When ordering spare parts, be sure to specify all nameplate data as well as description and quantity of parts.

Always use genuine Eaton replacement parts for guaranteed fit and performance.

Visit our web site [www.eaton.com/filtration](http://www.eaton.com/filtration) for information about the different types of Eaton Duplex Basket Strainers.

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All products manufactured by Seller are warranted against defects in material and workmanship under normal use and service for which such products were designed for a period of eighteen (18) months after shipment from our factory or twelve (12) months after start-up, whichever comes first. OUR SOLE OBLIGATION UNDER THIS WARRANTY IS TO REPAIR OR REPLACE, AT OUR OPTION, ANY PRODUCT OR ANY PART OR PARTS THEREOF FOUND TO BE DEFECTIVE. SELLER MAKES NO OTHER REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. WE SHALL NOT BE LIABLE FOR CARTAGE, LABOR, CONSEQUENTIAL DAMAGES OR CONTINGENT LIABILITIES. OUR MAXIMUM LIABILITY SHALL NOT IN ANY EVENT EXCEED THE CONTRACT PRICE FOR THE PRODUCT.