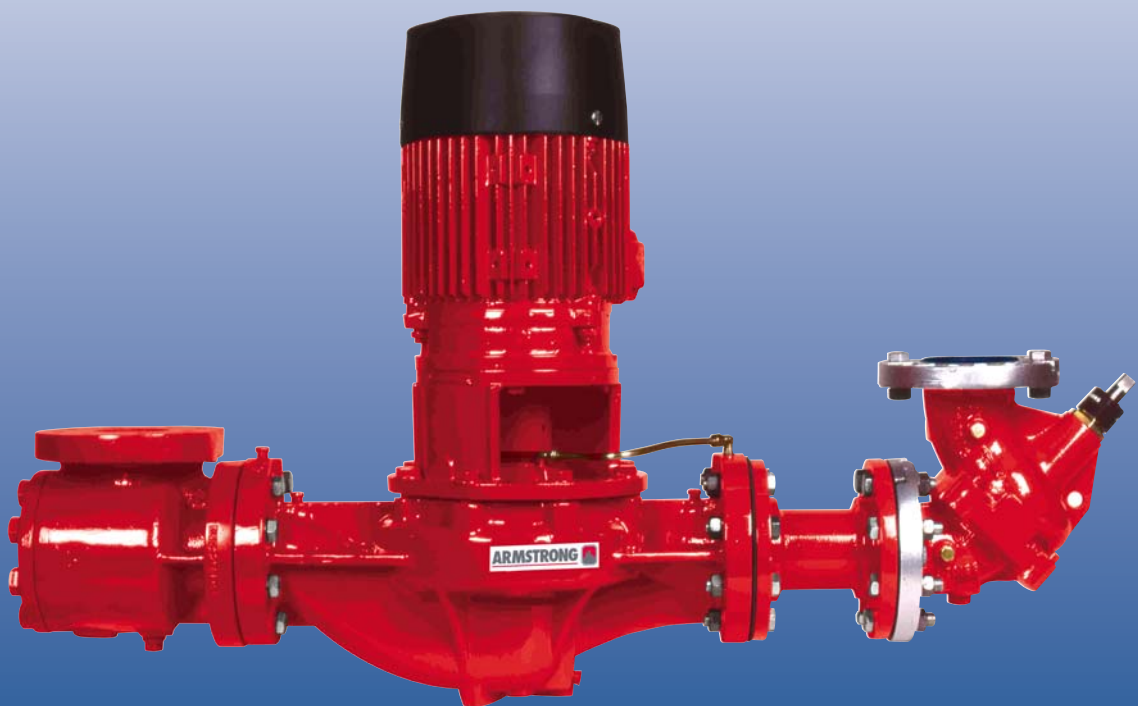


ARMSTRONG



Pump Trim

FILE NO:	6-1
DATE:	June 2011
SUPERSEDES:	6-1
DATE:	August 2010

Suction Guides



Designed for direct mounting on the suction flange of horizontal and vertical pumps.

▶ **Armstrong Suction Guide Design:**

- Model SG: Supplied with cast iron body and 125 psig/PN16 flanges.
- Model SGG: Supplied with ductile iron body with grooved inlet connection and 125 psig/PN16 outlet flange.
- Model SGHH: Supplied with ductile iron body and 250 psig/PN25 flanges.



▶ **90° Elbow**

Mounting the Suction Guide on any pump suction turns the piping 90°, replacing an elbow. In addition, the Suction Guide can be rotated to any position allowed by the pump suction bolts, from vertical to horizontal.

▶ **In-Line Strainer**

The stainless steel strainer has free area of at least 250% of pipe sectional area. A disposable fine-mesh strainer is installed for start-up cleaning.

▶ **Reducing Elbow**

The Suction Guide connects same size piping to the pump suction, but can also connect to inlet piping one size larger than the pump suction, eliminating a reducing elbow.

▶ **Guide Vanes**

Flow stabilizing vanes on the outlet allow the Suction Guide to bolt directly to the pump, saving the space and cost of a long straight pipe length.

Suction Guides and Flo-Trex Valves

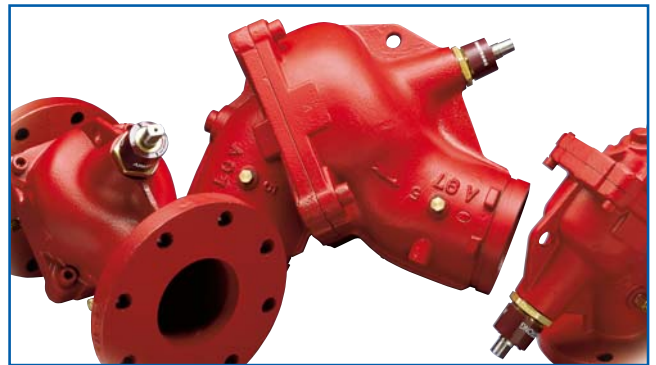
Armstrong Model FTV Flo-Trex combination valves combine the features of a check valve, throttling valve, and a shut-off valve, and are designed for installation on the discharge side of centrifugal pumps. The convertible body design permits the valve to be changed on site from the straight to the angle configuration.

▶ Armstrong

Model FTV Flo-Trex Valve Design:

Model FTV-F: Flo-Trex valve is supplied with hard (cast-in) flanges.

Model FTV-G: Flo-Trex valve is supplied with grooved port connections, designed for Armstrong Armgrip™ flange adapters or standard grooved pipe fittings.



▶ Drip-tight Shut Off Valve

The Armstrong Flo-Trex valve is designed and tested for drip-tight isolation at 150% of maximum working pressure.

▶ Non-slam Check Valve

The Armstrong Flo-Trex valve incorporates a spring closure design that closes the valve in a controlled manner, protecting the valve from slamming due to a reversal in flow caused by gravity or re-circulation from a parallel pump.

▶ Flow Throttling Valve

The Armstrong Flo-Trex valve uses a plug and disc design which is the most effective valve type for combining throttling of flow and isolation. Other design valves may be effective for throttling or isolation, but not both.

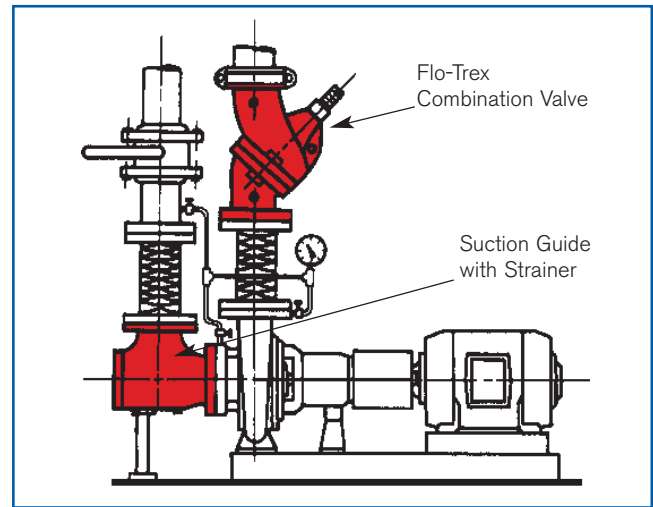
▶ Convertible Body Design

The Armstrong Flo-Trex convertible body design permits the valve to be changed on-site from straight to angle configuration.

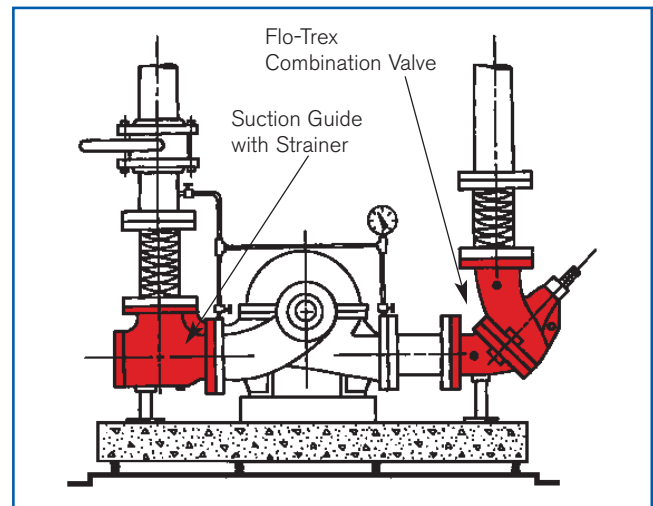
► Suction Guides and Flo-Trex Valves

- Fewer components required as redundant fittings are eliminated
- Fewer connections required with Armstrong's multi-purpose fittings
- Less installation time required by reducing the number of fittings
- Less installation space required as pump inlet spool piece is eliminated

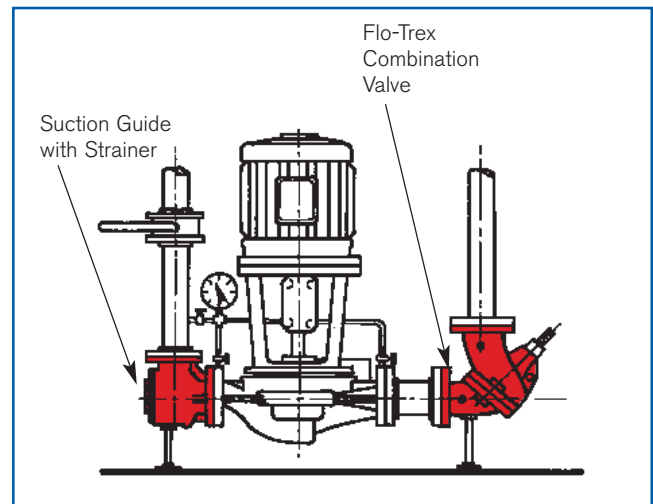
► Armstrong Method



Base Mounted Single Suction Pump



Base Mounted Double Suction Pump

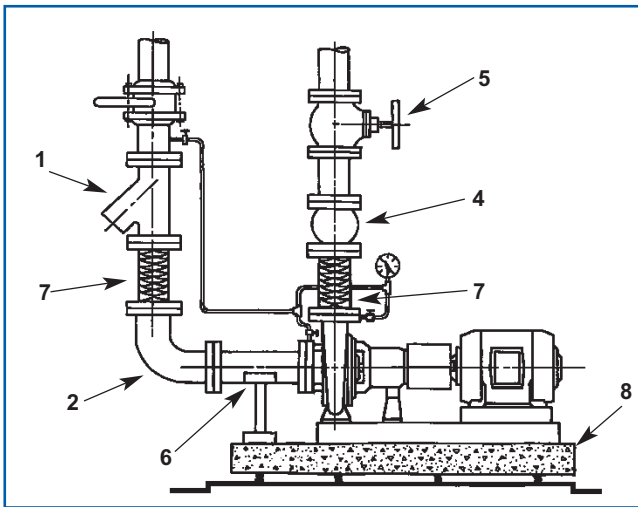


Vertical In-Line Pump

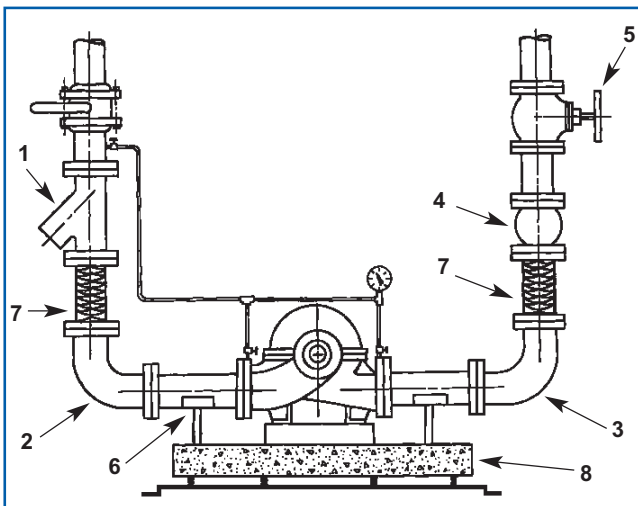
► The Smart Choice

An Armstrong Vertical In-Line Pump installation requires the fewest components and connections, maximizing savings and minimizing installation time.

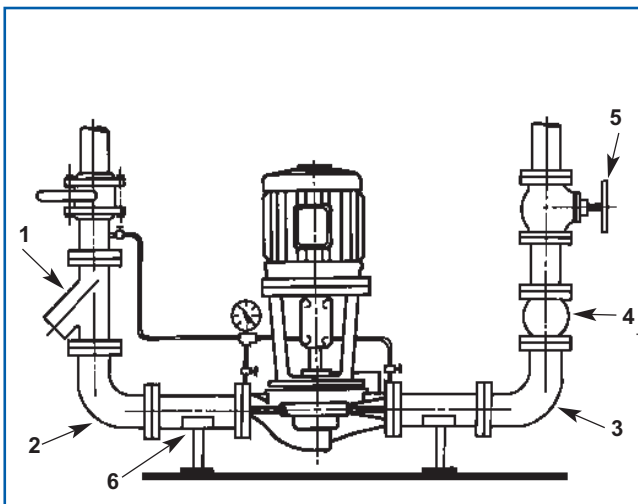
► Conventional Method



Base Mounted Single Suction Pump



Base Mounted Double Suction Pump



Vertical In-Line Pump

Components eliminated using Armstrong Flo-Trex Valves and Suction Guide strainer for base mounted single and double suction pump installations and Vertical In-Line installations:

1. "Y" Strainer
2. Suction long radius elbow
3. Discharge long radius elbow
4. Discharge check valve
5. Discharge globe valve
6. Suction spool piece

In addition, use of the FTV-G style eliminates three welded flange connections.

Additional components eliminated using Armstrong Vertical In-Line pumps with Flo-Trex Valves and Suction Guide strainers in place of base mounted applications:

7. Flexible connectors
8. Inertia base isolation
9. Field shaft alignment (not shown)

Materials of Construction

► Suction Guides

Model	Body	Cover	Strainer 3 mm (1/8") Perforations	Fine-Mesh (Start-Up) Strainer	Guide Vaness
SG	Cast Iron	Ductile Iron	Stainless Steel	Galvanized Steel	Cast Iron
SGHH	Ductile Iron	Ductile Iron	Stainless Steel	Galvanized Steel	Ductile Iron

► Flo-Trex Valves

Model	Body	Disc	Stem & Spring	Seat & O-Ring	Port Fittings
FTV-F 125 PN16	Cast Iron	Bronze	Stainless Steel	EPDM	Brass
FTV-F 250 PN25	Ductile Iron	Bronze	Stainless Steel	EPDM	Brass
FTV-G PN25	Ductile Iron	Bronze	Stainless Steel	EPDM	Brass

► Suction Guide Body

Cast iron, or ductile iron, with PN16 or PN25 flanges. Same size ports are available with oversized inlet flange to eliminate reducer.

► Guide Vanes

Stabilizing vanes reduce turbulence, thereby creating optimum flow conditions and minimizing stress on pump components.

► Strainer

3mm (1/8") perforated stainless steel, star-shaped for added strength, designed to provide large free flow area to reduce pressure drop.



Model SG Suction Guide

► Start-up strainer

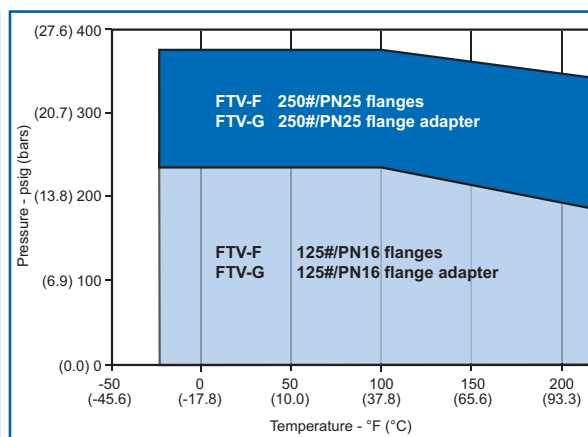
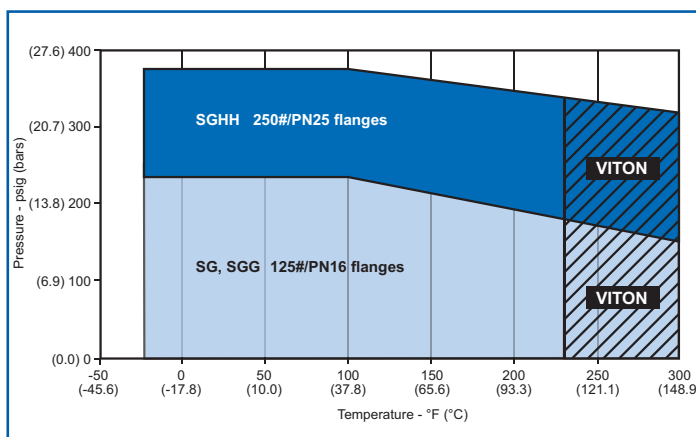
Removable fine mesh strainer, furnished as a standard item, helps prevent mechanical seal or instrument damage during initial run period.

Optional magnet to help eliminate free floating metallic particles from system.

Removable cover, with O-ring, enables easy access to strainer.

Maximum Operating Parameters

► Suction Guide & Flo-Trex Pressure/Temperature Parameters



Note: For temperatures from 230°F to 300°F (110°C to 149°C) use Viton Elastomer.

Technical Information

► Design Benefits

- Reduced field installation and material costs.
- Cast iron or ductile valve body with hard flanges, or ductile iron valve body with standard grooved ends.
- Eliminates requirement for two separate valves on pump discharge and, in some cases, a 90° elbow.
- FTV-G eliminates three welded flange connections.
- Soft seat to ensure tight shut-off.
- Spring-closure design uses a non-slam silent check valve feature for vertical mounting.
- Flow measurement and pump throttling capabilities.
- Temperature measurement capability.
- Spring-closure design check valve prevents gravity or reverse circulation when pump is not operating.
- Bonnet "O" Ring can be replaced under full system pressure by back seating of valve stem.
- Suitable for maximum working pressure up to 375 psi (26 bars) and temperatures up to 110°C (230°F).
- Optional Viton elastomer for temperatures up to 150°C (300°F).
- Valve seat can be changed in the field without use of special tools.
- Low pressure drop due to "Y" pattern valve design.

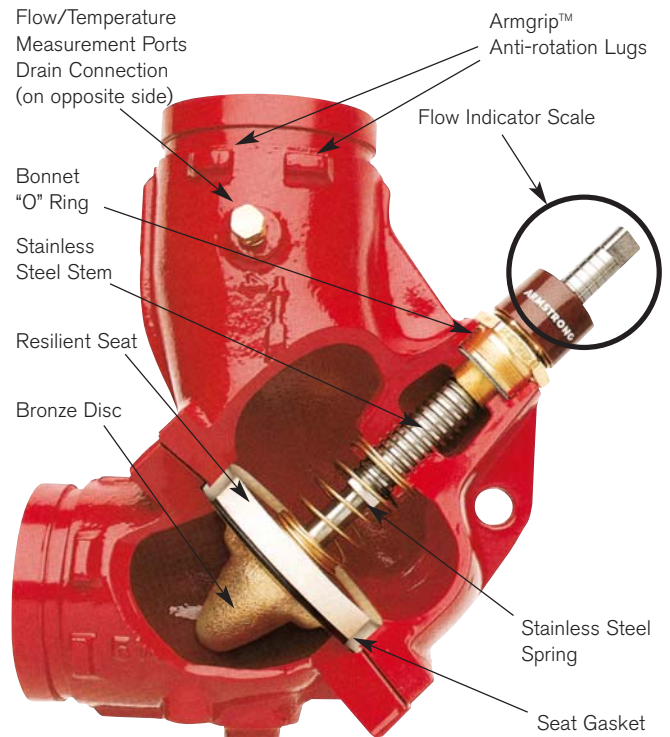
► Flow Indicator Scale

The valve stem, with its grooved rings and positioning sleeve, indicates the throttle position of the valve.

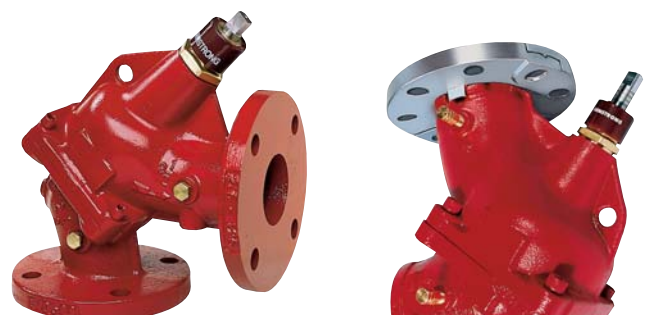
The quarter turn graduations on the sleeve, with the scribed line on the stem, provide for approximate flow measurement.

► Hard Flanged Body or Armgrip™ Flange Adapter

The hard flanged body or the combination of the Armgrip flange adapter and Flo-Trex body, equipped with the unique Armgrip™ anti-rotation lugs, ensures a rigid pump installation.



Model FTV-GA Flo-Trex Valve



Typical Specification - Pump Trim

► Suction Guides

Furnish and install on the suction of each pump an Armstrong Suction Guide, with Outlet Flow Stabilizing Guide Vanes, removable Stainless Steel Strainer and Fine Mesh Start-up Strainer.

For 10 bar flanged pipe - Supply valve with Cast Iron body with PN16 flanged ports.

For 20 bar flanged pipe - Supply valves with Ductile Iron body and PN25 flanged ports.

The mechanical contractor shall inspect the strainer prior to activating the pump and, further, shall remove the Fine Mesh Start-up Strainer after a short running period (24 hours maximum). Space shall be provided for removal of the Strainer and connection of a blow-down valve.

► Flo-Trex Valves

Furnish and install on the discharge side of each pump an Armstrong Model FTV Flo-Trex Combination Valve. Each valve is to incorporate the following three functions in one body: Tight shut-off, spring-closure type, silent non-slam check giving effective throttling with flow measurement capability. The body shall have (2) 1/4" NPT connections on each side of the valve seat. Two connections to have brass pressure and temperature metering ports, with Nordel check valves and gasketed caps. Two other connections to be supplied with brass drain plugs. Metering ports are to be interchangeable with drain ports to allow for measurement flexibility when installed in tight locations. The valve disc shall be bronze plug & disc type with high impact engineered resin seat to ensure tight shut-off and silent check operation.

The valve stem shall be stainless steel with flat surfaces provided for adjustment with open-end wrench.

For Grooved Piping: Valve body shall be ductile iron with grooved ends and Armstrong anti-rotation Armgrip™ lugs on the inlet and outlet of the body.

Flange adapters, where necessary, are to be Armstrong Armgrip™ PN16 or PN25 ductile iron flanges with anti-rotation lugs and EPT gaskets.

For Welded Flange Piping:

For 10 bar flanges - Valve body shall be Cast Iron with PN16 flanged ports.

For 20 bar flanges - Valve body shall be Ductile Iron with PN25 flanged ports.

The valve shall be selected and installed in accordance with the manufacturer's instructions and be suitable for the pressure and temperature specified.

► Insulation (Available for 2.5" - 6" Flo-Trex Valves)

Each valve shall be furnished with a pre-formed removable PVC insulation jacket to meet ASTM D1784 Class 14253-C, MEA #7-87, ASTM-E-84 and ASTM136 with a flame spread rating of 25 or less and a smoke development rating of 50 or less. There will be provided sufficient mineral fibreglass insulation to meet ASHRAE 90.1-1989 specifications in operating conditions with maximum Fluid Design Operating Temperature Range of 60°C-93°C (141°F-200°F) and Mean Rating Temperature of 52°C (125°F).

Our policy is one of continuous improvement and we reserve the right to alter our dimensions and specifications without notice

Armstrong Integrated Limited
Wenlock Way
Manchester
United Kingdom, M12 5JL
T: +44 (0) 8444 145 145
F: +44 (0) 8444 145 146

S. A. Armstrong Limited
23 Bertrand Avenue
Toronto, Ontario
Canada, M1L 2P3
T: 001 416 755 2291
F: 001 416 759 9101

