

## Suction Guides and Flo-Trex Valves

Engineered for Maximum Efficiency, Cost Savings and Protection of your HVAC System

SOLUTION GUIDE

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## THE BEST AVAILABLE PROTECTION FOR HVAC COMPONENTS



**A**rmstrong Suction Guides are installed on the suction side of pumps to protect against damage from debris and foreign matter, and to optimize flow efficiency. Most pump installations require a long-radius elbow, flow-straightening entrance pipe, and y strainer. The Suction Guide's versatile 4-function design saves space and installation costs by incorporating all these devices into a single solution.

### Protection for HVAC components

Ensures reliable operation

Extends component life

Eliminates unnecessary costs in HVAC systems

Reduces component and material costs

Reduces installation labour and costs

Reduces HVAC system maintenance costs

## MAXIMUM COST SAVINGS

Eliminate the purchase and installation of unnecessary components. Most installations require a long radius elbow, flow straightening entrance pipe, and y strainer.

Versatile 4-function design of the Suction Guide reduces installed costs by combining

90° elbow

In-line strainer

Reducing elbow

Guide vanes



# FLUID SUPPLY TO THE PUMP PERFECTLY MANAGED

Labour savings

Protection from debris

Extra protection during  
the commissioning and  
start-up phase

Minimize pressure drop

Mechanical room  
space savings



## DESIGN LEADERSHIP

**Flow stabilizing vanes** on the outlet create smooth, laminar flow to protect pump components. A Suction Guide can be bolted directly to the pump inlet, eliminating the cost and the space requirement for an added spool piece.

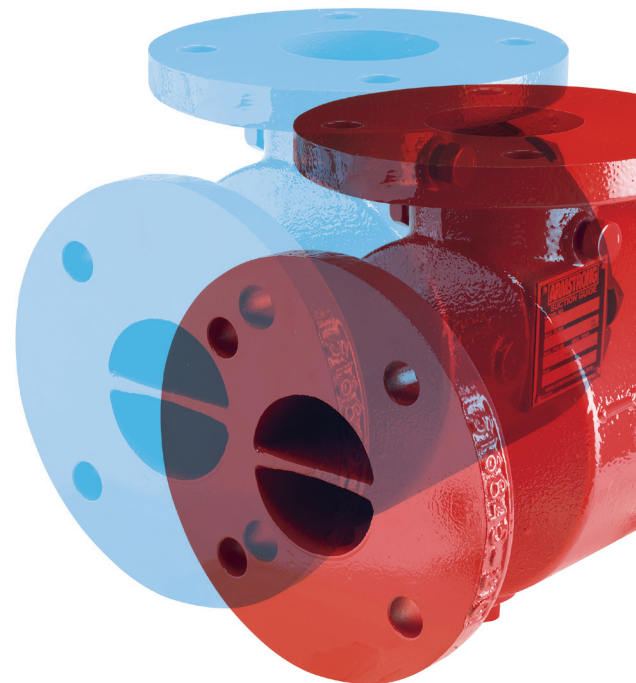
**Permanent stainless-steel strainer** protects the pump and other downstream components from debris. The integrated strainer has a free surface area of at least 250% of pipe sectional area. Small amounts of accumulated debris will not restrict flow or cause a pressure drop. The strainer removes particles as small as  $\frac{1}{8}$  inch.

**Disposable fine-mesh filter** for the start-up phase provides filtering of debris introduced during construction. Mesh #16 rated filter removes particles as small as 1200 Microns.

Connects to the same-size piping as the pump suction. Models are available to connect to inlet piping one size larger than the pump suction, eliminating a reducing spool.

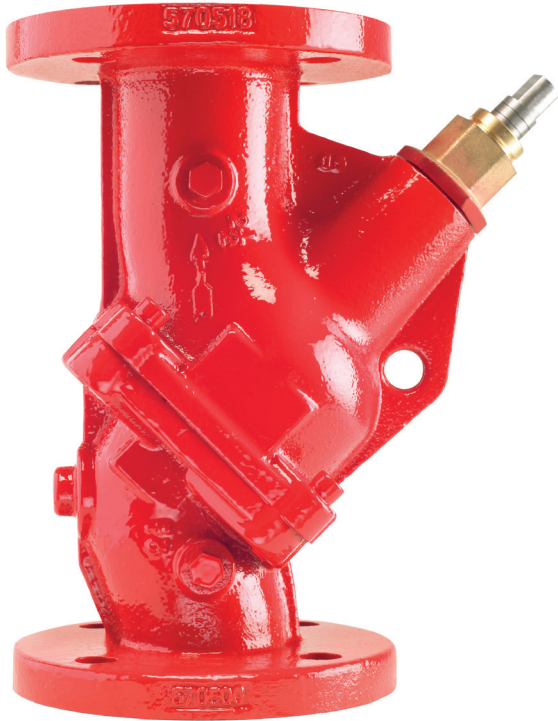
Wide range of sizes and configurations for different pipe and flange choices creates flexibility for system design. 6" piping can be connected to 4 sizes of pump flange.

A Suction Guide can be rotated from vertical to horizontal configuration, with no change to performance or effectiveness.





# FLO-TREX VALVES



**T**o protect pumps from damage and keep them operating at peak efficiency, Armstrong Flo-Trex Valves are used on the discharge side of pumping equipment.

Flo-Trex Valves function as a shut-off valve, a non-slam check valve, a flow throttling valve and a 90 degree elbow - all in a single device.

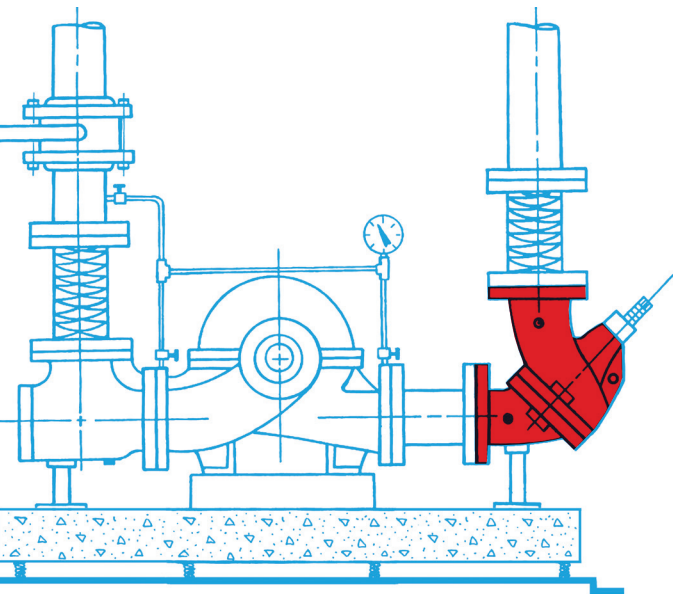
**Extended operating life for system components**

**Installation labor savings**

**All-in-one protection and flow control**

**Flexibility for system design and installation**

**Reduced space requirement in mechanical room**



## MAXIMUM COST SAVINGS

Eliminate the purchase and installation of unnecessary components. Flo-Trex Valves serve 4 functions and eliminate the need for

**Discharge long-radius elbow**

**Discharge check valve**

**Discharge globe valve**



# ALWAYS IN CONTROL

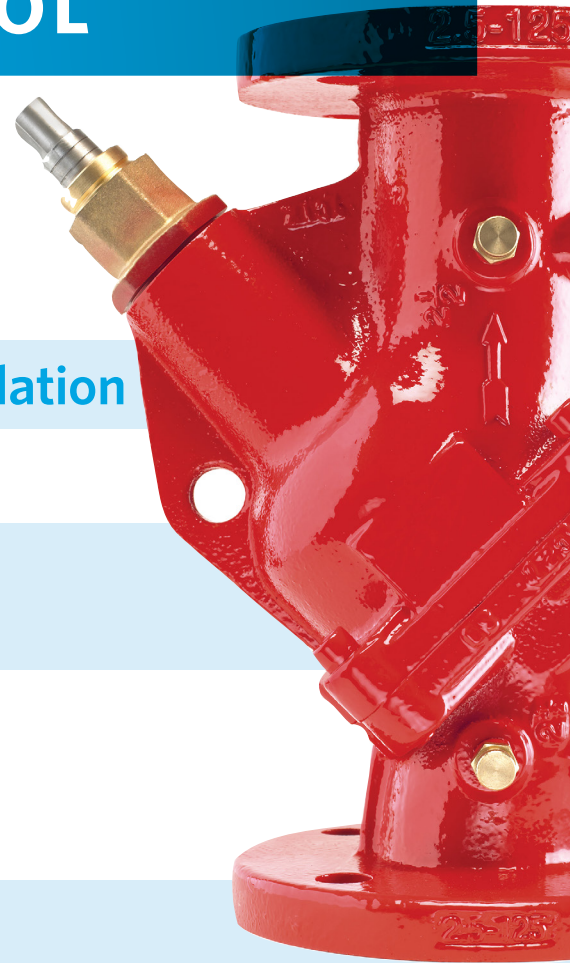
Precise control of flow

Effective shut-off for pump isolation

Low pressure drop

Protection against slamming  
and reverse flow

Reduced system noise



## DESIGN LEADERSHIP

Flo-Trex Valves provide an all-in-one combination of check valve and throttling valve in elbow configuration.

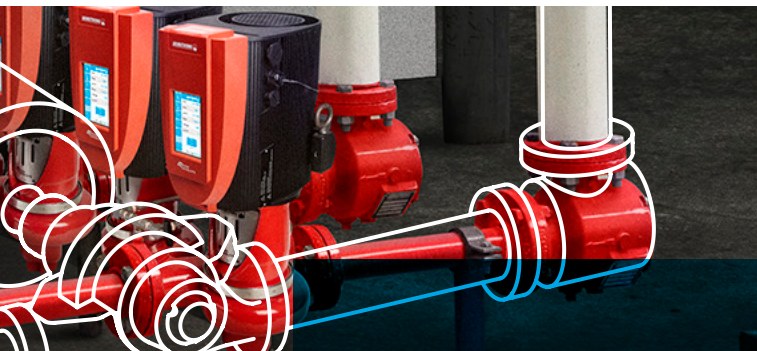
**Plug and disc valve design** is the most effective system for accurate throttling of flow and isolation. When the valve is closed, the disk closes off the flow path completely. When the valve is fully open the disk is removed from the flow path completely.

**Drip-tight shut-off** capability provides drip-tight isolation at 150% of maximum working pressure.

**Check valve capability**, with spring closure design and elastomer seal, protects the pump from reverse flow and prevents slamming.

**Convertible body design** for sizes 2.5" and up – permits the valve to be changed on-site from straight to 90 degree angle configuration.

**Valve setting accuracy** markings on valve stem indicate settings for easy return to the correct flow rate after maintenance.



# Armstrong Suction Guides and Flo-Trex Valves

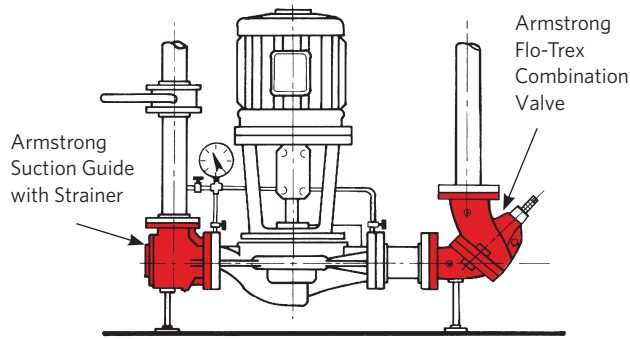
## ARMSTRONG METHOD

Fewer components required

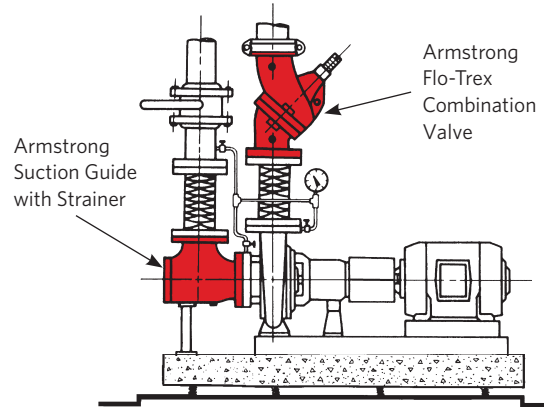
Fewer connections required

Less installation time required

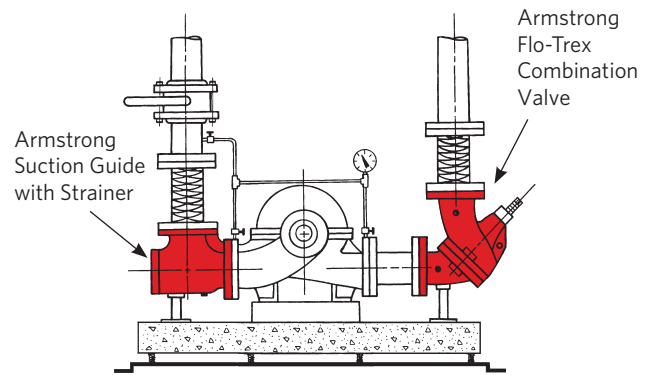
Less installation space required



Vertical In-Line Pump



Base Mounted Single Suction Pump



Base Mounted Double Suction Pump

## The Smart Choice

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

## MATERIALS OF CONSTRUCTION

### Suction Guides

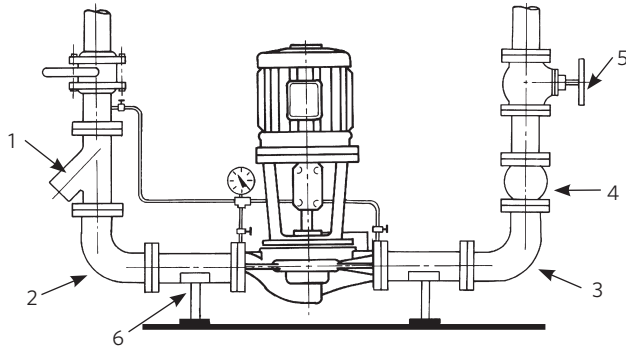
MODEL	BODY	COVER	STRAINER ELEMENT	FINE-MESH STRAINER	GUIDE VANES
SG-TF (threaded inlet up to 2")	Ductile Iron	Ductile Iron	Stainless Steel	Galvanized Steel	Ductile Iron
SG (flanged up to 12")	Cast Iron	Cast Iron	Stainless Steel	Galvanized Steel	Cast iron
SG (14" & larger)	Carbon Steel	Carbon Steel	Stainless Steel	Galvanized Steel	Carbon Steel
SGG, SGHH	Ductile Iron	Ductile Iron	Stainless Steel	Galvanized Steel	Ductile Iron

### Flo-Trex Valves

MODEL	BODY	DISC	STEM & SPRING	SEAT & O-RING	PORT FITTING
FTV-TS, FTV-GS	Stainless Steel	Brass	Stainless Steel	EPDM	Brass
FTV-F (2.5" to 12") ANSI-125/PN16	Cast Iron	Bronze	Stainless Steel	EPDM	Brass
FTV-FS (14" & larger) ANSI-125/PN16	Cast Iron	Carbon Steel/EPDM	Stainless Steel	Bronze/EPDM	Brass
FTV-HF ANSI-250/PN25	Ductile Iron	Bronze	Stainless Steel	EPDM	Brass
FTV-G	Ductile Iron	Bronze	Stainless Steel	EPDM	Brass

# Reduce Field Installation and Materials Costs

## CONVENTIONAL METHOD



Vertical In-Line Pump

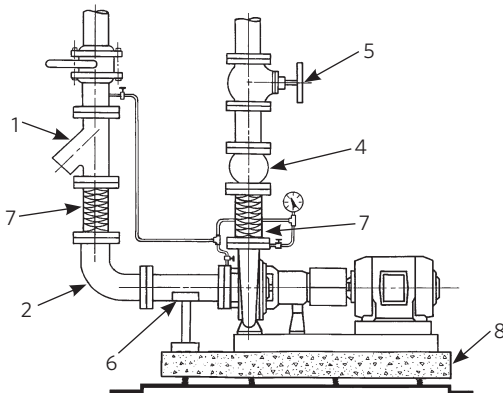
Components eliminated using Armstrong Flo-Trex Valves and Suction Guide strainer for base mounted single and double suction pump installations and Vertical In-Line installations:

- 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

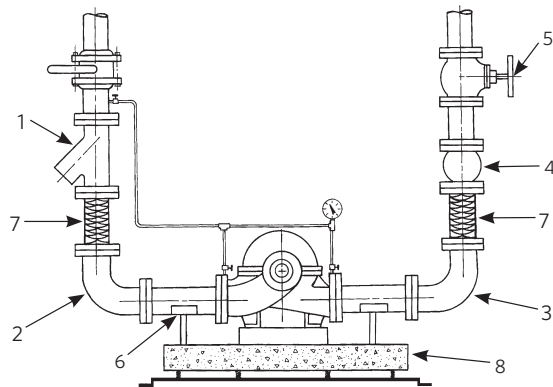
In addition, use of the FTV-G style eliminates three welded flange connections.

Additional components and labour eliminated when Armstrong Vertical In-Line pumps are used instead of base-mounted pumps:

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



Base Mounted Single Suction Pump



Base Mounted Double Suction Pump

## Maximum Operating Parameters

MAX OPERATING CONDITIONS	ANSI 125	ANSI 250
	175 psig at 140°F (12 bars at 60°C)	375 psig at 100°F (26 bars at 38°C)
	130 psig at 230°F (9 bars at 110°C)	300 psig at 230°F (21 bars at 110°C)

**NOTE:**

- Units are hydrostatically tested to 150% of maximum working pressure.
- Pressure/Temperature parameters not shown for:
  - » SG and FTV models 14" and larger
  - » FTVs smaller than 2.5"
- Throttling at the pump in variable speed systems is not recommended. But one common trend in most HVAC designs, is that system might require throttling after the pump has been installed to minimize downtime/ capital loss\*

\* refer to Technical paper for more details.

Please refer to submittal data for those models.

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