THE ORIGINATOR OF PISTON-TYPE SAMPLING VALVES

SAMPLE VALVES

SV SERIES | MS SERIES | QA SERIES

SprayNozzle ENGINEERING
Total Spraying Solutions

Strahman
WASHDOWN EQUIPMENT

STRAHMAN GROUP

PRECISION AND PERFORMANCE

ABOUT US

Since its inception in 1921, the Company has earned a global reputation for reliable products that provide superior performance, innovative solutions to complex problems, and long-term reliability. Strahman Group products have become known as the "gold standard" for numerous industries, including oil & gas, food & beverage processing, chemical, petrochemical, polymer, biotechnology, pharmaceutical, mining, pulp and paper, and general industry.

Founded in 1921 by Theodore and Herman Strahman, the Company started as a distributor of European valve products. As the Company grew, the Strahman's began to design and manufacture their line of valve products with a mission to provide superior equipment to meet customer's more stringent emerging demands. It was the first to develop the free-flowing, non-clogging piston tank bottom and drain valve for the Dairy industry in the USA. Their design and engineering expertise led to further development of a complete line of high-quality washdown equipment and was added to the product portfolio a few years later.

> **For nearly 100 years, Strahman has been known as a global leader in the manufacturing and distribution of process valve products and industrial washdown equipment.**

Recognizing a need for a high-performance mixing unit that could distribute hot water for facility clean-up, Strahman engineers pioneered the first steam and cold-water safety mixing unit. During that time, typical industry methods outfitted random plumbing fittings in no particular order and with little regard to safety or efficiency. Strahman soon earned a reputation for producing the "gold standard" of mixing units through innovation and design. Subsequent years led to developing the industry's first hot and cold-water mixing units, followed by the industry's first thermostatically controlled mixing unit. In the early 30s, Strahman focused its attention on developing a complete line of hand-held industrial spray nozzles and hoses.

In the last decade, the wash down department's developments has led to Strahman offering enhanced value throughout their portfolio by considering compatibility and interchangeability throughout its product line. The addition of a full line of attachments for their line of nozzles such as the HydroDrain Cleaner is an example of powerful allies in industrial clean-up jobs in factories worldwide. Premium hoses and nozzles are fully compatible with their hot and cold water mixing units, adding the ability to wash down an area with 160° pressurized water.

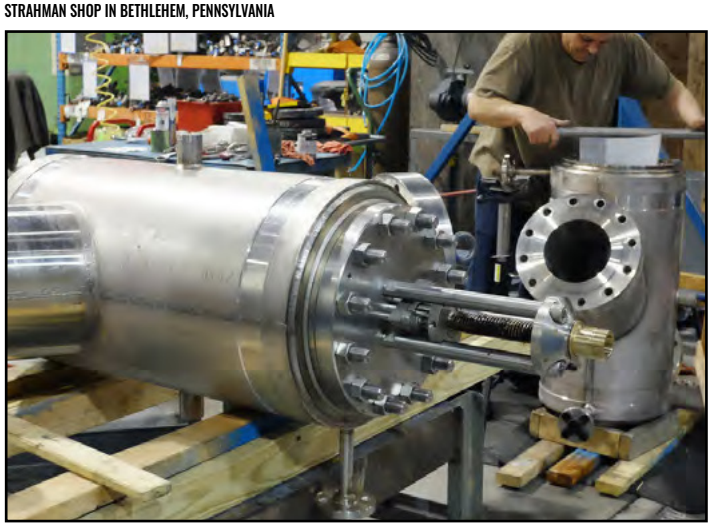
In the many decades since, Strahman has earned the reputation of providing wash down systems with rugged design, superior performance, and precise temperature control. Long-lasting and trouble-free–that has made the Strahman name well respected and a go-to-brand throughout many industries.

OUR MANUFACTURING CAPABILITIES

Our two full-service facilities located in Bethlehem, Pennsylvania and Mery, France are fully capable of performing every part of the manufacturing process in house. This gives us the flexibility to meet our customers' schedules as well as allows us to closely monitor the quality of our products every step of the way.

Strahman's Slab Gate Valves are designed by our experienced US and European engineering staffs using rigid flow analysis calculations. Every valve meets the customer's specific needs, with each design being the optimum solution for an application's unique specifications. Then, Strahman achieves the world's highest product quality through our ISO 2001 manufacturing processes.

STRAHMAN SHOP IN BETHLEHEM, PENNSYLVANIA



MACHINING WORK IS PERFORMED IN OUR BETHLEHEM, PA SHOP. VALVES ARE MANUFACTURED TO ASME CODES AND CUSTOMER SPECIFICATIONS.

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Strahman® PROCESS VALVES

CONTENTS

Strahman Piston-Type Sampling Valves comply with the Pressure Equipment Directive (PED) No. 97/23/EC under SEP. Strahman Drain Valves 3" NB through 12" NB ANSI classes 150, 300, and 600 and 2" NB ANSI classes 300 and 600 comply under Category II liquid service.

ISO 9001 QMI-SAI Global

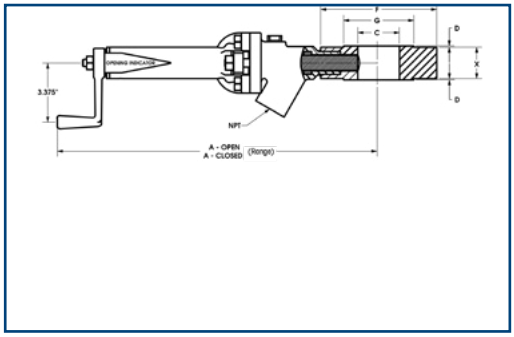
ANAB ACCREDITED ISO/IEC 17021 MANAGEMENT SYSTEMS CERTIFICATION BODY

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

ASSEMBLED AND/OR MADE IN THE USA

PUBLISHED 091721

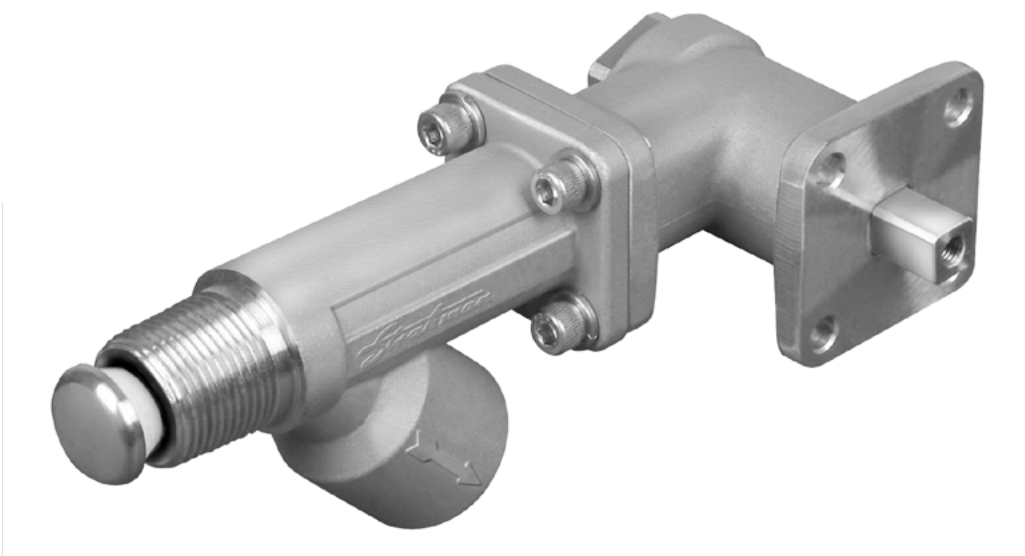
QUIK™ SAMPLING VALVE



The innovative Quick Sampling Valve (QSV-700) was designed specifically for industrial applications that require precise sampling control and operator safety. The QSV-700 combines a Linear Rising Valve Stem with a quarter-turn actuation. The QSV-700 has an ANSI Class 600 Body Rating.

The unique QSV-700 soft-seat design and the bubble tight shut-off with live loaded packing is rated to ANSI Seat Leakage Class VI to assure leak-free service. The valve features a spring-loaded and fail-close safety design. The self-contained manual hand actuator with an ergonomic handle features multiple positions for control.

- 45 degree outlet for larger flow capacity
- Piston stem end breaks through any crust or scale that forms
- 316 stainless steel body is standard - available in the following materials:
  - Alloy 20
  - Hastelloy B or C
  - Titanium
  - Nickel
  - Monel
  - Inconel
- Other stainless steels and materials available on request
- Body extensions can be customized for special applications and installations up to 6"
- Couplings, tees and adapters allow a wide variety of installation possibilities
- Standard and custom body extensions are available to unclog almost any depth of piping dead space
- Strahman offers a wide range of product options that provide great flexibility of choice to the user. These options are:
  - Inlet and outlet connections can be threaded, flanged or socket welded
  - Connections can be US Standard, DIN, BSP, JIS or other
  - Actuation can be hand, electric actuator or pneumatic (Standard ISO 150 5211 F5 mounting)
  - Local and remote position indication available
  - Positioners available
  - Sampling bottles, flushing connection and other accessories are available upon request



Please refer to page 4 for pressure and maximum temperature ratings for 316 stainless steel. Pressure and temperature ratings are in accordance with ASME B16.34 pressure class 600. For pressure/temperature ratings in other materials, consult Strahman Valves.

NOTE: Minimum temperature -328°F (-200°C)
Maximum temperature 450°F (232°C)

This US made valve has a wide range of industrial applications for a variety of sampling needs. It can be used for injection service (reverse flow) of process chemicals, cleaning agents and other applications. It is best suited for handling fluids that do not have suspended solids that can be lodged under the seat.

NOTE: When installing Quik Sampling Valve, use only a Strahman half coupling; use of any other coupling may affect performance.

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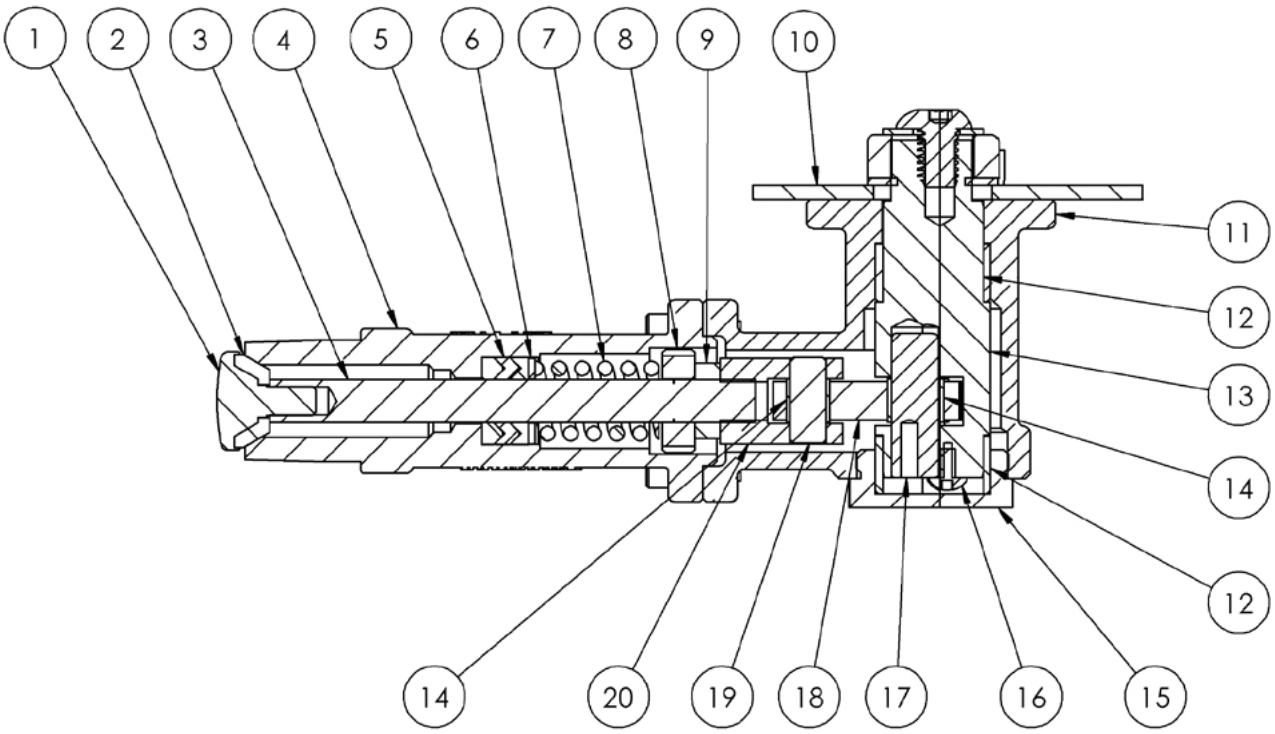
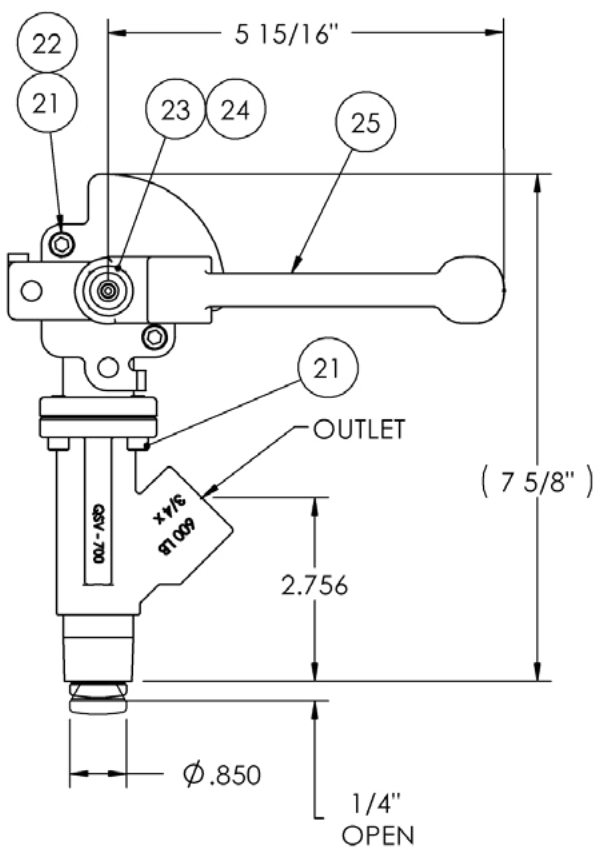
QUIK™ SAMPLING VALVE





Part No.	Description	Material
1*	STEM END	316 SST
2*	MAIN SEAL	TFM
3*	STEM	316 SST
4	BODY	316 SST
5*	PACKING	TFM
6*	PACKING FOLLOWER	303 SST
7	SPRING	303 SST
8*	STEM GUIDE BUSHING	PEEK
9	JAM NUT	303 SST
10	DETENT PLATE	304 SST
11	ACTUATOR HOUSING	316 SST
12*	SHAFT BEARINGS (2)	PEEK
13	ACTUATOR SHAFT	303 SST
14*	LINK BEARING (2)	PEEK
15	HOUSING COVER	303 SST
16	BUTTON HEAD SCREW	SST
17	LINK SHAFT PIN	SST
18	LINK	303 SST
19	CLEVIS PIN	303 SST
20	CLEVIS	303 SST
21	SHCS	SST
22	NUT	SST
23	HANDLE SCREW	SST
24	HANDLE WASHER	SST
25	HANDLE	304 SST

* Denotes recommended spare parts

THE ORIGINAL PISTON-TYPE SAMPLING VALVES

CANNOT CLOG - DOES NOT LEAK

Since 1921, Strahman Valves, Inc. has been a pioneer and leader in the Sampling Valve industry by first developing the Piston-Type Sampling Valve Series. At the time, the unique design of dual sealing rings was truly innovative and set Strahman apart from other valve companies. The quality and integrity of manufacturing excellence has provided Strahman customers with a long lasting, reliable product that works for years with trouble-free performance.

Visit out website at www.strahmanvalves.com and learn more about the Strahman product line that differentiates us from other manufacturers of Sampling Valves.

- Piston moves through the valve clearing out any material that may harden
- Piston extension breaks through any crust or scale that forms
- Dual sealing ring arrangement keeps the valve from leaking to the atmosphere
- No dead spot - piston completely fills the valve interior
- Always gives a live sample - new product is introduced into the sampling area when the piston retracts
- Opening indicator provides operators clear and simple indication of the valve position
- 316 stainless steel body is standard - available in the following materials:
  - Alloy 20
  - Hastelloy B or C
  - Titanium
  - Nickel
  - Monel
  - Inconel
  - Other stainless steels and materials available on request
- Body extensions can be customized for special applications and installations
- Couplings, tees, adapters and inserts allow a wide variety of installation possibilities
- Standard and custom piston extensions are available to unclog almost any depth of piping dead space
- Strahman offers a wide range of product options that provide great flexibility of choice to the user. These options are:
  - Inlet and outlet connections can be threaded, flanged or socket welded
  - Connections can be US Standard, DIN, BSP, JIS or other
  - Actuation can be hand crank, handwheel, gear operator, electric actuator or cylinder actuator (air or hydraulic)
  - Local and remote position indication available
  - Positioners available
  - Sampling bottles, flushing connection and other accessories are available upon request

Pressure and temperature ratings are in accordance with ASME B16.34 pressure class 600. See below for 316 and 316L stainless steel material. For Pressure/Temperature ratings in other materials, consult Strahman Valves.

NOTE: Maximum temperature allowable for 316L

Pressure/Temperature Ratings Table

												316L MAX
	Pressure	psig	275	235	215	195	170	140	110	80	50	35	65
316	**CL 150**	(barg)	(19.0)	(16.2)	(14.8)	(13.4)	(11.7)	(9.7)	(7.6)	(5.5)	(3.4)	(2.4)	(4.5)
& 316L	**Temperature**	Deg. F	100	200	300	400	500	600	700	800	900	950	**850**
		(Deg. C)	(37.8)	(93.3)	(148.9)	(204.4)	(260.0)	(315.6)	(371.1)	(426.7)	(482.2)	(510.0)	(454.4)

												316L MAX
	Pressure	psig	720	620	560	515	480	450	430	420	415	385	420
316	**CL 300**	(barg)	(49.7)	(42.8)	(38.6)	(35.5)	(33.1)	(31.0)	(29.7)	(29.0)	(27.6)	(26.6)	(29.0)
& 316L	**Temperature**	Deg. F	100	200	300	400	500	600	700	800	900	950	**850**
		(Deg. C)	(37.8)	(93.3)	(148.9)	(204.4)	(260.0)	(315.6)	(371.1)	(426.7)	(482.2)	(510.0)	(454.4)

												316L MAX
	Pressure	psig	1440	1240	1120	1025	955	900	870	845	830	775	835
316	**CL 600**	(barg)	(99.3)	(85.5)	(77.2)	(70.7)	(65.9)	(62.1)	(60.0)	(58.3)	(57.2)	(53.4)	(57.6)
& 316L	**Temperature**	Deg. F	100	200	300	400	500	600	700	800	900	950	**850**
		(Deg. C)	(37.8)	(93.3)	(148.9)	(204.4)	(260.0)	(315.6)	(371.1)	(426.7)	(482.2)	(510.0)	(454.4)

MAX. TEMP		
	LAM/TFE, TFM	450°
	MR (medium range) rings	650°
	Graphite rings	1000°

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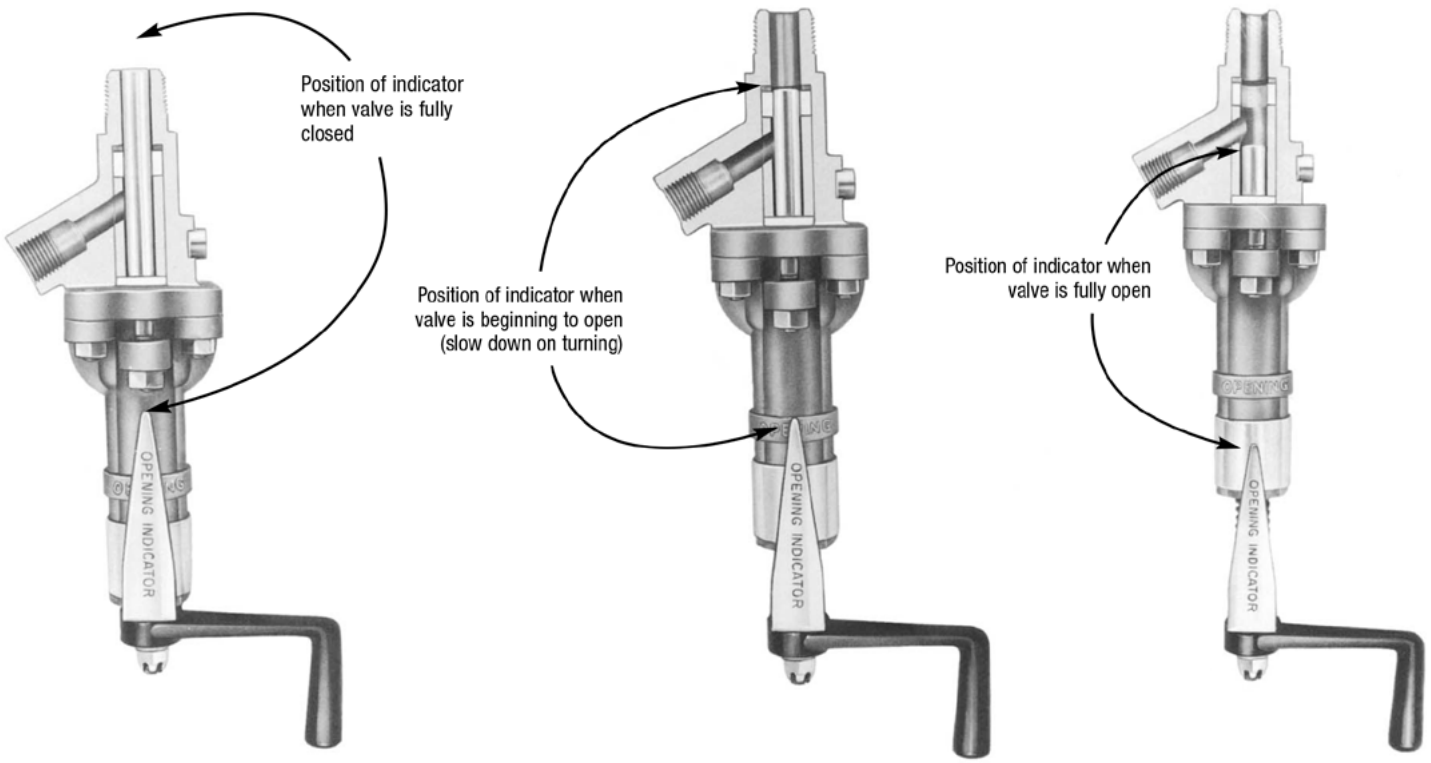
SAMPLING VALVE WITH OPENING INDICATOR

To keep abreast of our customers' requirements, Strahman Valves, Inc. includes an OPENING INDICATOR on its line of hand-operated Piston-Type Sampling Valves (on all models up to 6" piston extensions*). The indicator shows the operator of the valve that the product, which is normally under pressure, is in position to start flowing through the valve and tells him to be cautious and open the valve slowly so there will not be a sudden surge of product.

The INDICATOR is attached to the valve directly under the valve handle and extends up the side of the bonnet. When the valve is in the fully closed (extended) position, the indicator extends beyond the upper edge of a raised ring on the bonnet, which is marked "OPENING."

As the operator turns the valve handle counter-clockwise, the indicator lowers as the piston is being retracted to the fully open position. When the tip of the indicator is flush with the upper edge of the "OPENING" ring on the bonnet it is indicating that the piston is moving through the sealing ring and the product is ready to flow through the valve. At this point, the operator should turn the handle slowly to avoid any sudden burst of product which would be under pressure.

* Not available on valves above 6" piston extensions.



AVAILABLE ON MODELS

SV-500 ⅜" x ¼"	SV-700 ¾" x ½"
SV-600 ½" x ⅜"	SV-800 1" x ¾"
SV-700 FLG	SV-800 FLG
SV-900	SV-1000

- No dead spot - piston completely fills valve and extends to inner surface of pipe
- Always gives a live sample
- Open-piston is retracted into body allowing full free flow
- Valve is kept tight by two compressible valve rings

PISTON-TYPE SAMPLING VALVE SPECIFICATION

The Sampling Valve shall be Model SV700 ¾" MNPT inlet* by ____" FNPT (½" or ¾") outlet*. The body shall be investment cast 316 SST and internals of 316 SST fabricated wetted parts. The valve shall be a soft seat design of PTFE and shall meet ANSI Class VI, bubble tight shutoff. The piston shall have linear travel with mutli-turn handle for manual operation, or a pneumatic or hydraulic cylinder for automatic operation. The piston shall completely fill the valve interior allowing for no cavities (dead space), the valve will be self-pigging and will not clog. The Sampling Valve will insure new product samples are always taken with no prior sample material remaining. The piston shall have a ____" extension that shall extend beyond the threaded inlet to break through any product crust, insuring proper sample flow.

*Also available with Flanged, or SW inlet and outlet connection. For other Sampling Valve Models, refer to the size tables.

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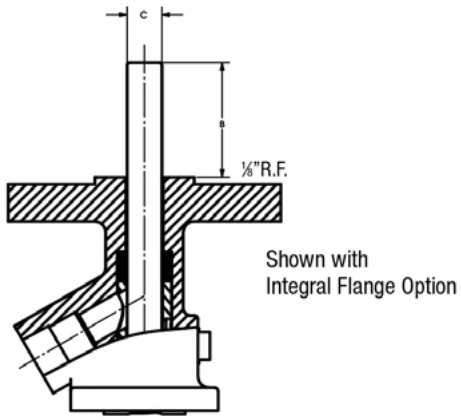
HAND OPERATED SAMPLING VALVES SV-500, SV-600, SV-700 AND SV-800

New Sampling Valves SV-500, SV-600 and SV-700 body no longer require a base ring. For older valves base rings, item #719 may be required as spare parts. Please consult your Strahman representative for verification.

Part No.	Description	Material	Part No.	Description	Material
701	LOCK NUT	304 SST	717*	PISTON	316 SST
704	BUSHING LOCK SCREW	304 SST	718*	INLET RING	TFE
705*	BUSHING	BRONZE	720	BODY	316 SST
706	BONNET	304 SST	724	GLAND NUTS	303 SST
707*	STEM	416 SST	725	GLAND STUDS	304 SST
708	GLAND	304 SST	731	CAGE LOCK	316 SST
712	BONNET NUTS	303 SST	740*	CAGE LOCK GASKET	RTFE
713	BONNET STUDS	304 SST	741	OPENING INDICATOR	304 SST
714*	GLAND RING	TFE	742	CRANK HANDLE	MALLEABLE IRON
715	CAGE	316 SST			
716*	SPLIT NUT	316 SST			



* Denotes recommended spare parts; Wetted parts outlined

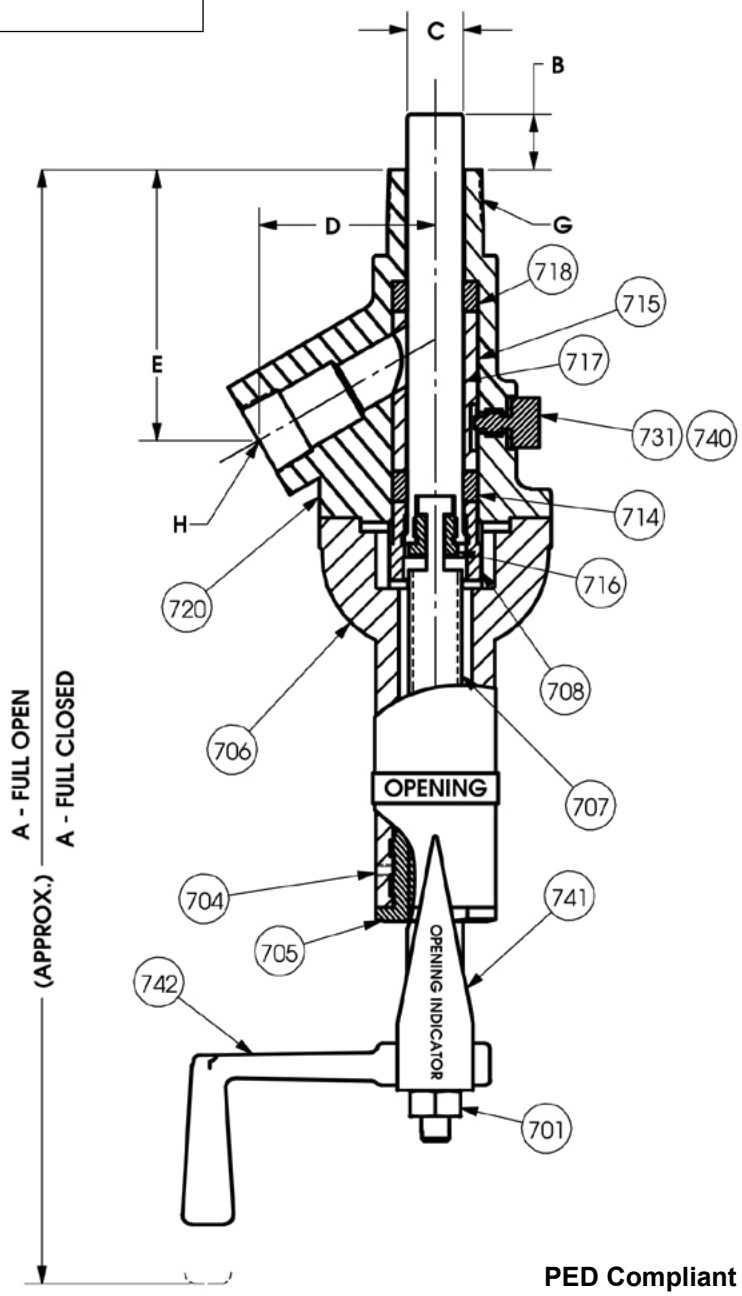
SV-500 ⅜" x ¼" ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
11 ⅜"	13 ¾"	0"	.243"	1 ⅞"	3 1/32"	⅜"	¼"
13 ⅜"	17 ¾"	2"	.243"	1 ⅞"	3 1/32"	⅜"	¼"
15 ⅜"	21 ¾"	4"	.243"	1 ⅞"	3 1/32"	⅜"	¼"
17 ⅜"	25 ¾"	6"	.243"	1 ⅞"	3 1/32"	⅜"	¼"

SV-600 ½" x ⅜" ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
11 ⅜"	13 ¾"	0"	.368"	1 ⅞"	3 1/32"	½"	⅜"
13 ⅜"	17 ¾"	2"	.368"	1 ⅞"	3 1/32"	½"	⅜"
15 ⅜"	21 ¾"	4"	.368"	1 ⅞"	3 1/32"	½"	⅜"
17 ⅜"	25 ¾"	6"	.368"	1 ⅞"	3 1/32"	½"	⅜"

SV-700 ¾" x ½" and ¾" x ¾"ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
11 ⅜"	13 ⅞"	0"	.590"	1 ⅞"	3 1/32"	¾"	½", ¾"
13 ⅜"	17 ⅞"	2"	.590"	1 ⅞"	3 1/32"	¾"	½", ¾"
15 ⅜"	21 ⅞"	4"	.590"	1 ⅞"	3 1/32"	¾"	½", ¾"
17 ⅜"	25 ⅞"	6"	.590"	1 ⅞"	3 1/32"	¾"	½", ¾"

SV-800 1" x ¾" and 1" x 1" ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
12 ⅝"	15 ½"	0"	.787"	2 ⅜"	3 ⅝"	1"	¾", 1"
14 ⅝"	19 ½"	2"	.787"	2 ⅜"	3 ⅝"	1"	¾", 1"
16 ⅝"	23 ½"	4"	.787"	2 ⅜"	3 ⅝"	1"	¾", 1"
18 ⅝"	27 ½"	6"	.787"	2 ⅜"	3 ⅝"	1"	¾", 1"

"B" DIM ± 1/16"
"C" DIM ± .002"
Forward Deck details see page 7, Item #712, #713, #724, #725



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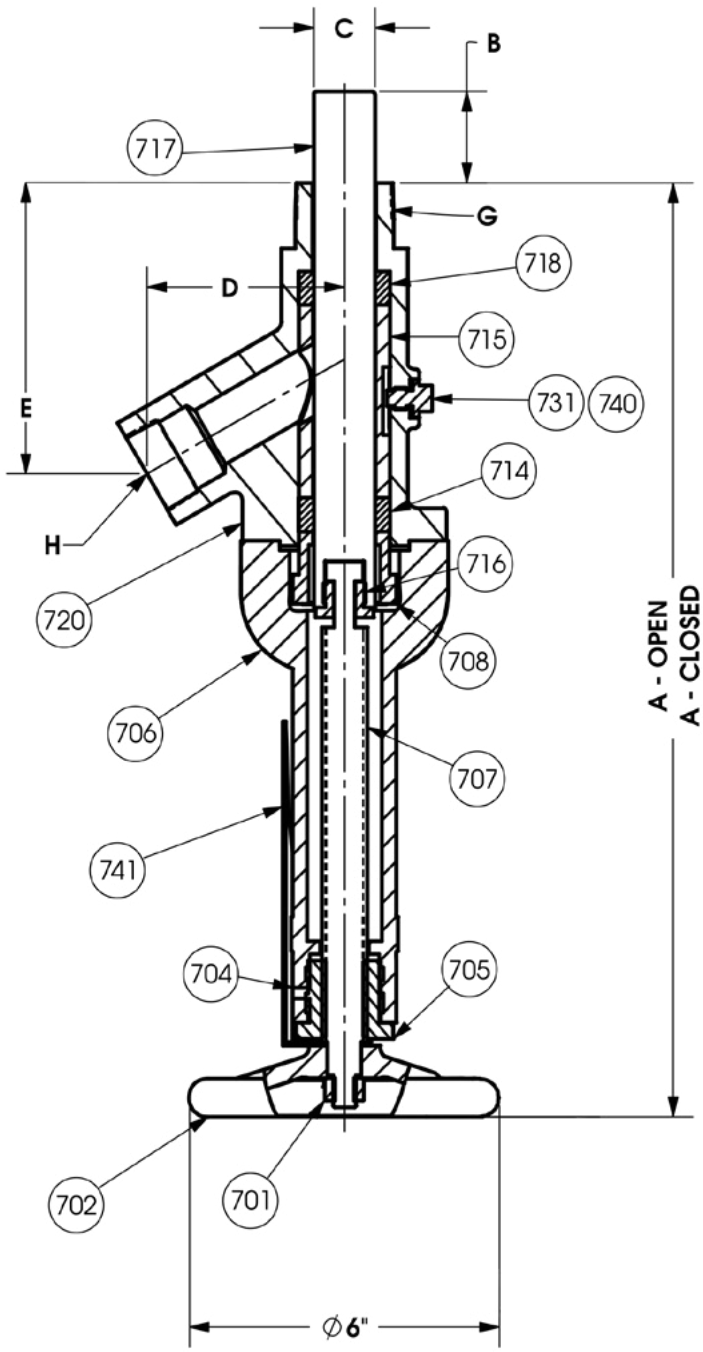
HAND OPERATED SAMPLING VALVES SV-900 AND SV-1000

Part No.	Description	Material
701	WHEEL NUT	CARBON STEEL
702	HANDWHEEL	CAST IRON
704	BUSHING LOCK SCREW	304 SST
705*	BUSHING	BRONZE
706	BONNET	304 SST
707*	STEM	416 SST
708	GLAND	304 SST
712	BONNET NUTS	303 SST
713	BONNET STUDS	304 SST
714*	GLAND RING	TFE
715	CAGE	316 SST
716*	SPLIT NUT	316 SST
717*	PISTON	316 SST
718*	INLET RING	TFE
720	BODY	316 SST
724	GLAND NUTS	303 SST
725	GLAND STUDS	304 SST
731	CAGE LOCK	316 SST
740*	CAGE LOCK GASKET	RTFE

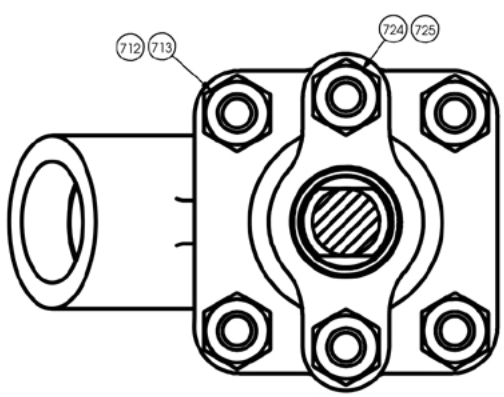
* Denotes recommended spare parts; Wetted parts outlined



SV-900 1¼" x 1" ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
14 3/16"	18 1/16"	0"	.984"	3 ¼"	4 ⅞"	1 ¼"	1"
16 3/16"	22 1/16"	2"	.984"	3 ¼"	4 ⅞"	1 ¼"	1"
18 3/16"	26 1/16"	4"	.984"	3 ¼"	4 ⅞"	1 ¼"	1"
20 3/16"	30 1/16"	6"	.984"	3 ¼"	4 ⅞"	1 ¼"	1"

SV-1000 1½" x 1¼" ANSI 600							
A Closed	A Open	B	C	D	E	G NPT	H NPT
15 9/16"	20 1/16"	0"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"
17 9/16"	24 1/16"	2"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"
19 9/16"	28 1/16"	4"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"
21 9/16"	32 1/16"	6"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"

"B" DIM ± ⅛"
"C" DIM ± .002"



VALVE DECK DETAIL

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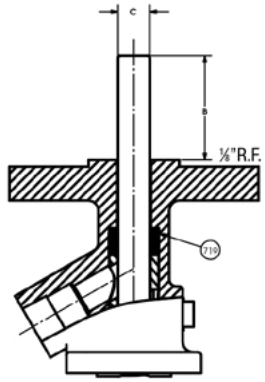
AIR OPERATED SAMPLING VALVES

New Sampling Valves SV-500, SV-600 and SV-700 body no longer require a base ring. For older valves base rings, item #719 may be required as spare parts. Please consult your Strahman representative for verification.



Shown with
Integral Flange Option

SV-500 ⅜" x ¼" ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
15 7/16"	21 5/8"	0"	.243"	1 7/8"	3 1/32"	⅜"	¼"	⅜"	2 ½"
19 7/16"	23 5/8"	2"	.243"	1 7/8"	3 1/32"	⅜"	¼"	⅜"	2 ½"
23 7/16"	25 5/8"	4"	.243"	1 7/8"	3 1/32"	⅜"	¼"	⅜"	2 ½"

SV-600 ½" x ⅜" ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
15 7/16"	21 5/8"	0"	.368"	1 7/8"	3 1/32"	½"	⅜"	⅜"	2 ½"
19 7/16"	23 5/8"	2"	.368"	1 7/8"	3 1/32"	½"	⅜"	⅜"	2 ½"
23 7/16"	25 5/8"	4"	.368"	1 7/8"	3 1/32"	½"	⅜"	⅜"	2 ½"

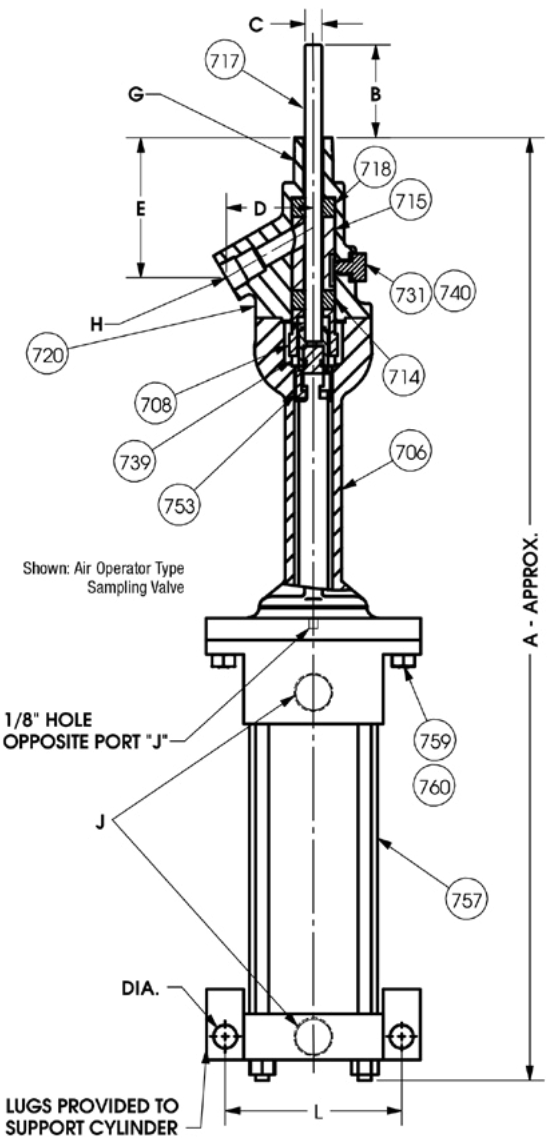
SV-700 ¾" x ½" and ¾" x ¾"ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
15 5/8"	21 ¾"	0"	.590"	1 7/8"	3 1/32"	¾"	½", ¾"	⅜"	2 ½"
19 5/8"	23 ¾"	2"	.590"	1 7/8"	3 1/32"	¾"	½", ¾"	⅜"	2 ½"
13 5/8"	25 ¾"	4"	.590"	1 7/8"	3 1/32"	¾"	½", ¾"	⅜"	2 ½"

SV-800 1" x ¾" and 1" x 1" ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
19 1/16"	25 1/16"	0"	.787"	2 ⅜"	3 5/8"	1"	¾", 1"	½"	3 ¼"
23 1/16"	27 1/16"	2"	.787"	2 ⅜"	3 5/8"	1"	¾", 1"	½"	3 ¼"
27 1/16"	29 1/16"	4"	.787"	2 ⅜"	3 5/8"	1"	¾", 1"	½"	3 ¼"

SV-900 1 ¼" x 1" ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
23 5/8"	31 ⅛"	0"	.984"	3 ¼"	4 7/8"	1 ¼"	1"	½"	4"
25 5/8"	33 ⅛"	2"	.984"	3 ¼"	4 7/8"	1 ¼"	1"	½"	4"
27 5/8"	35 ⅛"	4"	.984"	3 ¼"	4 7/8"	1 ¼"	1"	½"	4"

SV-1000 1 ½" x 1 ¼" ANSI 600									
A	As	B	C	D	E	G NPT	H NPT	J NPT	AIR CYL. BORE
29 7/8"	33 15/16"	0"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"	½"	5"
31 7/8"	35 15/16"	2"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"	½"	5"
33 7/8"	37 15/16"	4"	1.181"	3 13/16"	5 9/16"	1 ½"	1 ¼"	½"	5"

A = Air Operated "B" DIM ± 1/16"
AS = Air Switch Type "C" DIM ± .002"
For Air Cylinder support information see page 9
Forward Deck details see page 7, Item #712, #713, #724, #725



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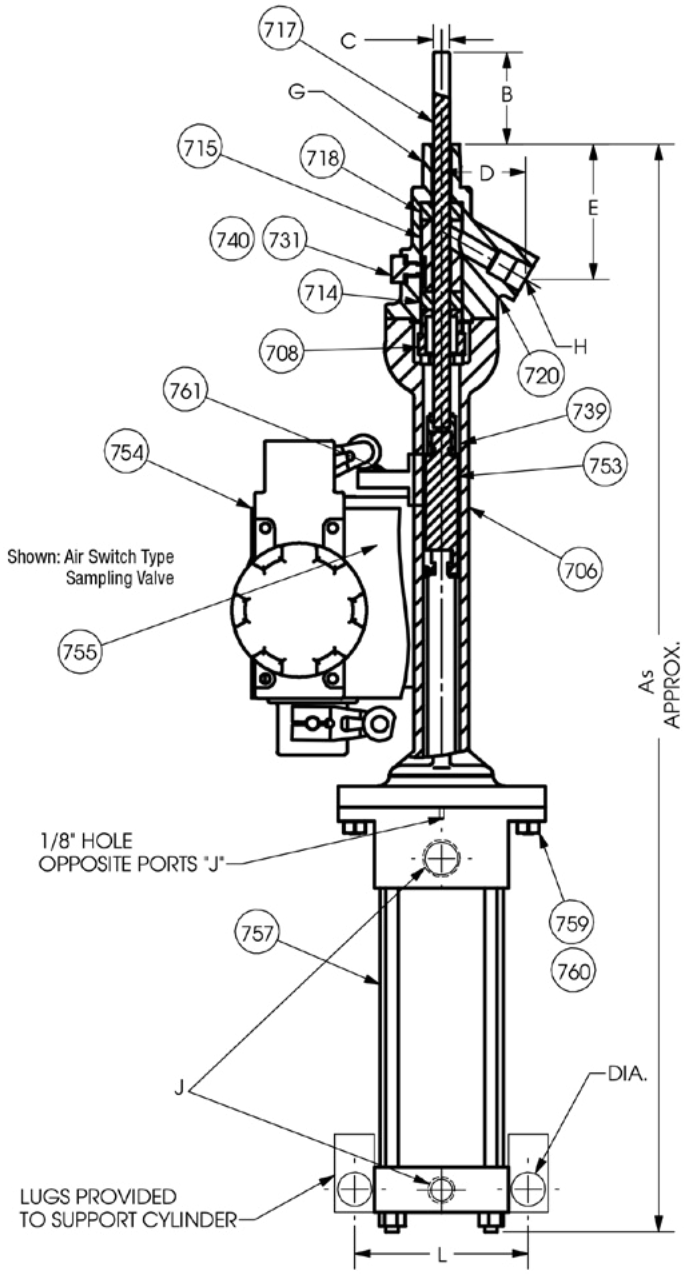
AIR OPERATED SWITCH TYPE SAMPLING VALVES

Part No.	Description	Material
706	BONNET	304 SST
708	GLAND	304 SST
712	BONNET NUTS	303 SST
713	BONNET STUDS	304 SST
714*	GLAND RING	TFE
715	CAGE	316 SST
717*	PISTON	316 SST
718*	INLET RING	TFE
720	BODY	316 SST
724	GLAND NUTS	303 SST
725	GLAND STUDS	304 SST
731	CAGE LOCK	316 SST
739	PISTON SET SCREW	304 SST
740*	CAGE LOCK GASKET	RTFE
753*	PISTON CONNECTOR	BRONZE
754**	SWITCHES	
755**	SWITCH BRACKET	304 SST
757	CYLINDER	
759	CYLINDER STUD	304 SST
760	CYLINDER NUTS	303 SST
761*	SWITCH TRIP	304 SST

* Denotes recommended spare parts
Wetted parts outlined
** Denotes as air operated switch type parts only
Forward Deck details see page 7, Item #712, #713, #724, #725

AIR CYLINDER SUPPORT			
Valve	Cyl Bore	L	DIA
SV-500	2 ½	3 ¾	7/16
SV-600	2 ½	3 ¾	7/16
SV-700	2 ½	3 ¾	7/16
SV-800	3 ¼	4 ¾	9/16
SV-900	4	5 ½	9/16
SV-1000	5	6 ⅞	13/16



AIR SUPPLY REQUIREMENTS FOR THE SV-500 AND SV-600
Minimum air to operate against atmospheric pressure - 50 PSI Minimum air to operate against maximum pressure Temperature rating per ANSI B16.34 - 80 PSI

AIR SUPPLY REQUIREMENTS FOR THE SV-700 AND SV-800
Minimum air to operate against atmospheric pressure - 70 PSI Minimum air to operate against maximum pressure Temperature rating per ANSI B16.34 - 150 PSI

AIR SUPPLY REQUIREMENTS FOR THE SV-900 AND SV-1000
Minimum air to operate against atmospheric pressure - 50 PSI Minimum air to operate against maximum pressure Temperature rating per ANSI B16.34 - 135 PSI

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SAMPLING VALVES SV-700 AND SV-800 FLG WITH INTEGRAL INLET FLANGE

INTEGRAL FLANGE SAMPLING VALVES

Strahman Valves can supply flanged connections on any sampling valves. For applications where welded flanges are prohibited, Strahman offers investment cast valves that feature an integral flanged inlet and female threaded outlet. This option is available on a limited range of valve models.

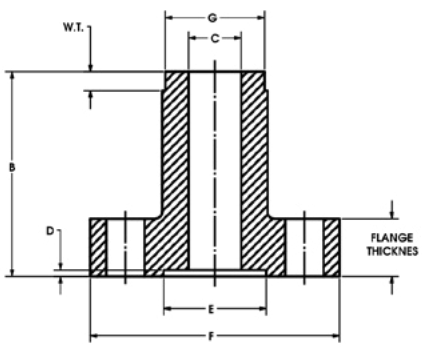
Integral Flanged Valves are available in the following sizes and ANSI Flange Ratings:

- ¾ SV-700 Class 150#, 300# and 600#
- 1" SV-700 and SV-800 150# only

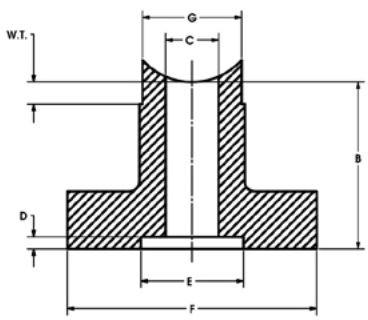
All other sizes and flange ratings are available in 316L Stainless Steel body with a flange fitted and backwelded to the inlet. The flange rating can not exceed the ANSI 600# rating of the body.

The Valve Raised Face is ⅛" standard and 1⁄16" available upon request. The Adapter is recessed to facilitate the piloting of the valve, as shown in the diagram on page 11. Strahman can provide a mating flange nozzle, or an adapter that has a female recess to match the male raised face of the Strahman Valve. This insures that the valve and flange are concentric and that no scoring of the piston occurs on the inside of the nozzle that may cause the valve to leak.

CAUTION: If there is no proper recess in the mating flange as supplied by the customer, or no Strahman Nozzle or Adapter is supplied there must be a required ¼" clearance between the outside diameter of the piston and the inside diameter of the nozzle. The following chart is a guide of proper measurements to prevent scoring of the piston. Strahman Adapters are shown on page 11.



NON-CONTOURED NOZZLE



CONTOURED NOZZLE

Valve Type	Piloting Diameter 150#, 300# and 600# - see E	Piston Diameter	Nozzle Bore with Piloting - see C	Nozzle Bore without Piloting - see C	Piloting Depth 150/300#* - see D	Flange Thickness 150#	Flange Thickness 300/600#*
SV-500 (½")	1.379"	.243	.293	.493	⅛"	1"	1"
SV-600 (½")	1.379"	.368	.418	.618	⅛"	1"	1"
SV-700 (¾")	1.692"	.590	.640	.840	⅛"	1"	1 ⅛"
SV-700 (1")	2.004"	.590	.640	.840	⅛"	1"	1 ⅛"
SV-800 (1")	2.004"	.787	.837	1.037	⅛"	1"	1 ⅛"
SV-900 (1 ¼")	2.504"	.984	1.034	1.234	11/64"	1"	1 ⅛"
SV-1000 (1 ½")	2.879"	1.181	1.233	1.431	11/64"	1"	1 ⅛"

* 600 lbs. = ¼" all sizes

SPECIAL NOTE - ALL NOZZLES
Where required, give pipe size and schedule or tank wall thickness and radius.

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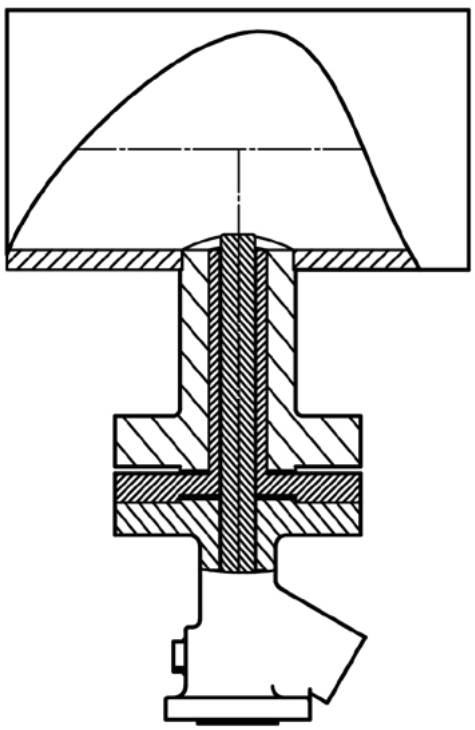
SAMPLING VALVE ADAPTER

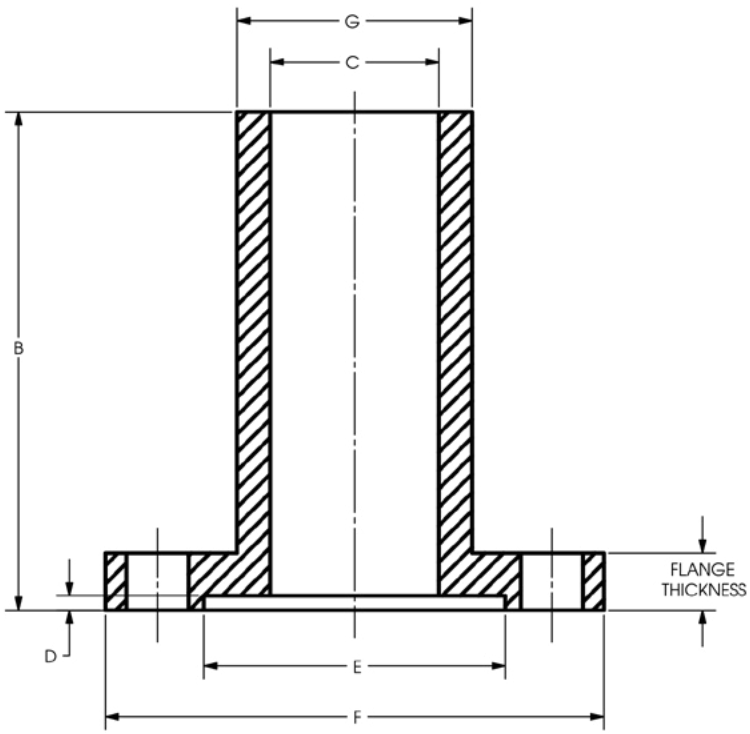
The standard adapter for sampling valves is constructed of 316 stainless steel, but available in other custom alloys. The adapter is positioned between the existing nozzle and the piston of the valve. The OD (outside diameter) of the adapter conforms with the ID (inside diameter) of the nozzle and ID of the adapter conforms with the OD (outside diameter) of the piston. The adapter fills the space between the nozzle and piston for a snug fit, this accommodates an accurate alignment and reduces gouging of the piston.

The sampling adapter prevents the possibility of process fluid from collecting around the piston and hardening, causing binding and making operating the valve difficult. In addition, no particles can lodge in the space between the nozzle and the piston that could damage the piston.

Misalignment of the valve during installation can cause scoring damage to the piston. Misalignment can come from the clearance holes of raised face flanges which can cause the sampling valves to be as much as ¼" out of alignment. If the nozzle diameter is not large enough, the piston can rub against the nozzle causing the nozzle to scratch and damage the valve piston. The adapter provides piloting that aligns the nozzle and the piston as shown on page 10.

Special option: For special applications, the nozzle or adapter can be supplied with a PTFE liner for a tight fit.





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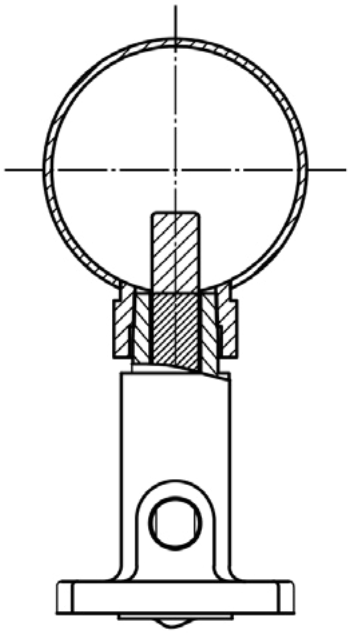
HALF COUPLINGS AND SPECIAL TEES

HALF COUPLINGS

Contoured and Non-Contoured Couplings

Strahman Couplings slide into a hole drilled in a pipeline and a socket weld type weld is used to attach it to the pipe. Contoured couplings (shown right) are normally used for smaller pipe sizes up to 6". Contouring of the coupling allows it to match the inside of the pipe and not obstruct the flow. The contour should be installed in line with the pipe. Non-contoured couplings can be supplied for pipe sizes 8" and above, but normally the non-contoured couplings (shown below) are used because there is little obstruction of flow.

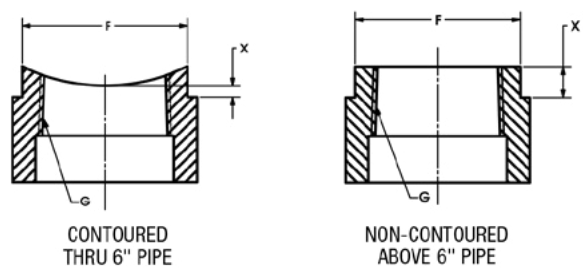


HALF COUPLING INSTALLATION INSTRUCTIONS
The Sampling Valve inlet connection should be flush with the contour of the half coupling, AFTER WELDING INTO PIPE OR VESSEL, to assure proper satisfactory operation of Sampling Valve. To ensure proper installation and sealing of threaded connection, retapping of the half coupling may be necessary to correct distortion caused by welding.

SPECIAL NOTE - ALL HALF COUPLINGS
Dimension X - Pipe size and schedule number or tank wall thickness. Please specify when ordering. Couplings for wall thickness greater than those shown above available and priced on request.

Valve	F	G NPT	Maximum Wall Thickness
SV-500	1 11/32"	3/8"	1/2" Cont. 11/16" Non-Cont.
SV-600	1 11/32"	1/2"	1/2" Cont. 11/16" Non-Cont.
SV-700	1 11/32"	3/4"	1/2" Cont. 11/16" Non-Cont.
SV-800	1 3/4"	1"	11/16"
SV-900	2 3/32"	1 1/4"	13/16"
SV-1000	2 5/16"	1 1/2"	7/8"

Socket weld and BSP Threaded half couplings are also available.



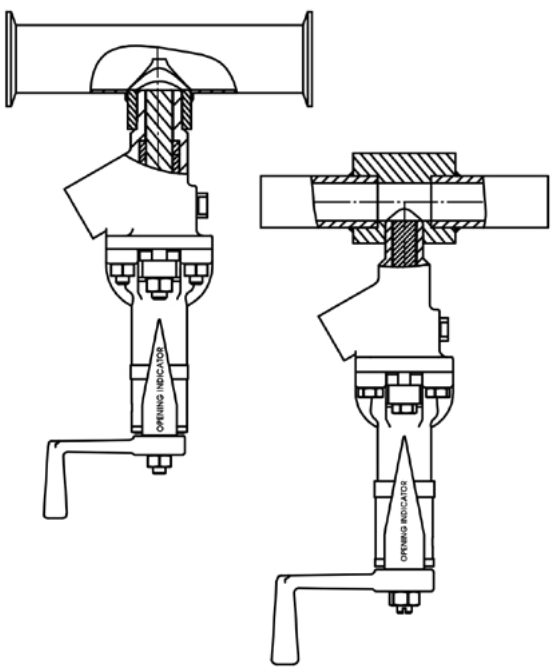
SPECIAL TEES

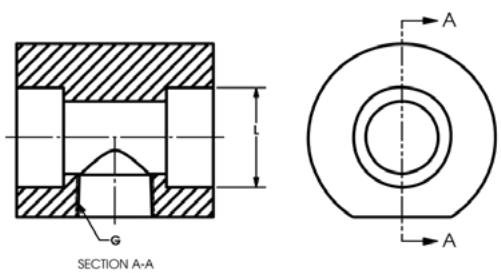
Quick Disconnect Tee with Sampling Valve

Special Tee for pipe or tubing below L DIM where required, give actual pipe size and schedule.

SV-500, SV-600 and SV-700 special tee required for pipe size under 2".

SV-800, SV-900 and SV-1000 special tee required for pipe size under 3".





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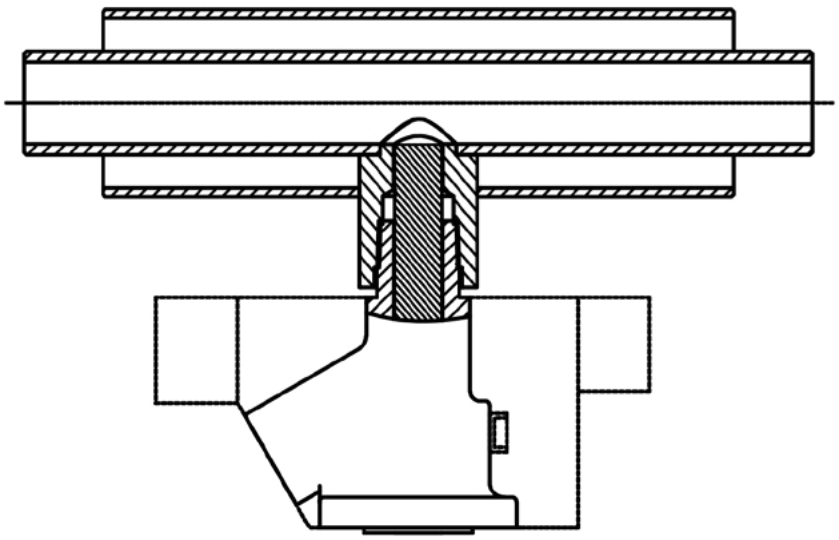
JACKETED TEES

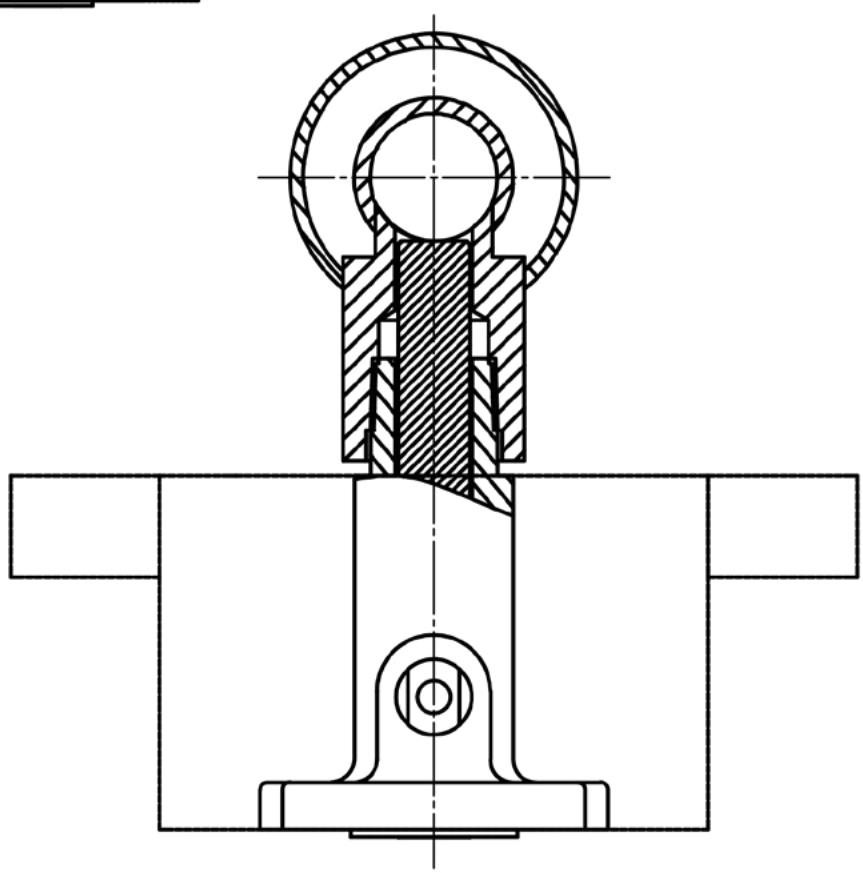
Jacketed tees are supplied for installation into a process line with a steam jacket. Customer must specify the core pipe size and schedule along with the jacket pipe size and schedule. This determines the size and length of the extended coupling.

Example: 3" sch. 40 core with 4" sch. 10 jacket.

Available with SV-500, SV-600, SV-700 and SV-800

Also available with air cylinder.





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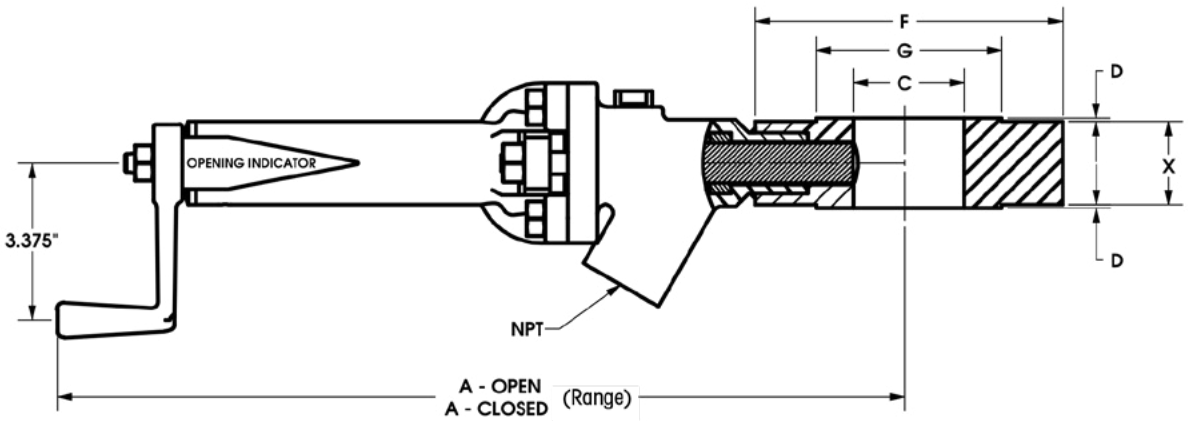
INSERT WITH SAMPLING VALVE
MODELS SV-500, SV-600, SV-700, SV-800, SV-900, SV-1000

FOR USE IN PIPELINE INSTALLATIONS



For use with Ram-Type Drain Valves a recess is required. Use piloting dimensions as discussed on page 10.

FLANGE THICKNESS (DIMENSION X)			
SV-500/600/700	SV-800	SV-900	SV-1000
1 5/8"	2"	2 3/8"	2 3/4"

DRILLING: 150 PSI - ANSI STANDARD BOLT HOLES STRADDLE ℄'S.					
FLANGE SIZE	A OPEN	A CLOSED	D	F	G
1"	19 3/8"	14 5/8"	1/16"	4 1/4"	2.000" 1.995"
1 1/2"	23 3/16"	15"	1/16"	5"	2.875" 2.870"
2"	23 1/2"	15 1/2"	1/16"	6"	3.625" 3.620"
2 1/2"	24 5/16"	15 15/16"	1/16"	7"	4.125" 4.120"
3"	24 5/8"	16 3/16"	1/16"	7 1/2"	5.000" 4.995"
4"	25 5/8"	16 15/16"	1/16"	9"	6.187" 6.182"
6"	26 13/16"	19 15/16"	1/16"	11"	8.500" 8.495"
8"	30 13/16"	21 3/16"	1/16"	13 1/2"	10.625" 10.620"

NOTE: Customer must specify pipe ID.
NOTE: Insert can be furnished with NPT female tapping for all size sampling valves.
NOTE: Insert also available for use with Strahman Drain Valves.

DRILLING: 300 PSI - ANSI STANDARD BOLT HOLES STRADDLE ℄'S.					
FLANGE SIZE	A OPEN	A CLOSED	D	F	G
1"	22 11/16"	14 15/16"	1/16"	4 7/8"	2.000" 1.995"
1 1/2"	23 13/16"	15 1/2"	1/16"	6 1/8"	2.875" 2.870"
2"	20 1/2"	15 3/4"	1/16"	6 1/2"	3.625" 3.620"
2 1/2"	23 13/16"	16 3/16"	1/16"	7 1/2"	4.125" 4.120"
3"	25 7/16"	16 9/16"	1/16"	8 1/4"	5.000" 4.995"
4"	28 5/8"	19 7/16"	1/16"	10"	6.187" 6.182"
6"	30 1/4"	20 3/4"	1/16"	12 1/2"	8.500" 8.495"
8"	32 3/8"	21 15/16"	1/16"	15"	10.625" 10.620"

DRILLING: 600 PSI - ANSI STANDARD BOLT HOLES STRADDLE ℄'S.					
FLANGE SIZE	A OPEN	A CLOSED	D	F	G
1"	21 1/16"	14 15/16"	1/4"	4 7/8"	2.000" 1.995"
1 1/2"	23 13/16"	15 1/2"	1/4"	6 1/8"	2.875" 2.870"
2"	20 7/16"	15 3/4"	1/4"	6 1/2"	3.625" 3.620"
2 1/2"	N/A	N/A	N/A	N/A	N/A
3"	25 7/16"	16 9/16"	1/4"	8 1/4"	5.000" 4.995"
4"	29 3/8"	19 7/8"	1/4"	10 3/4"	6.187" 6.182"
6"	29 3/4"	21 1/2"	1/4"	14"	8.500" 8.495"
8"	37 1/8"	24 3/4"	1/4"	16 1/2"	10.625" 10.620"

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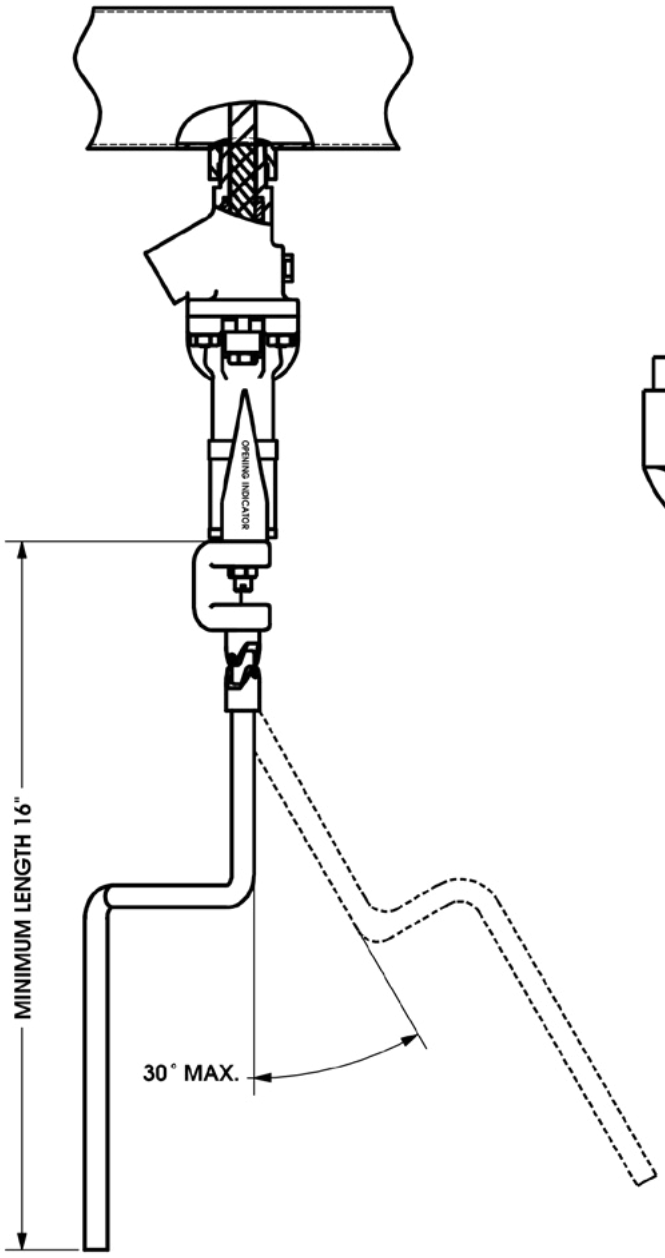
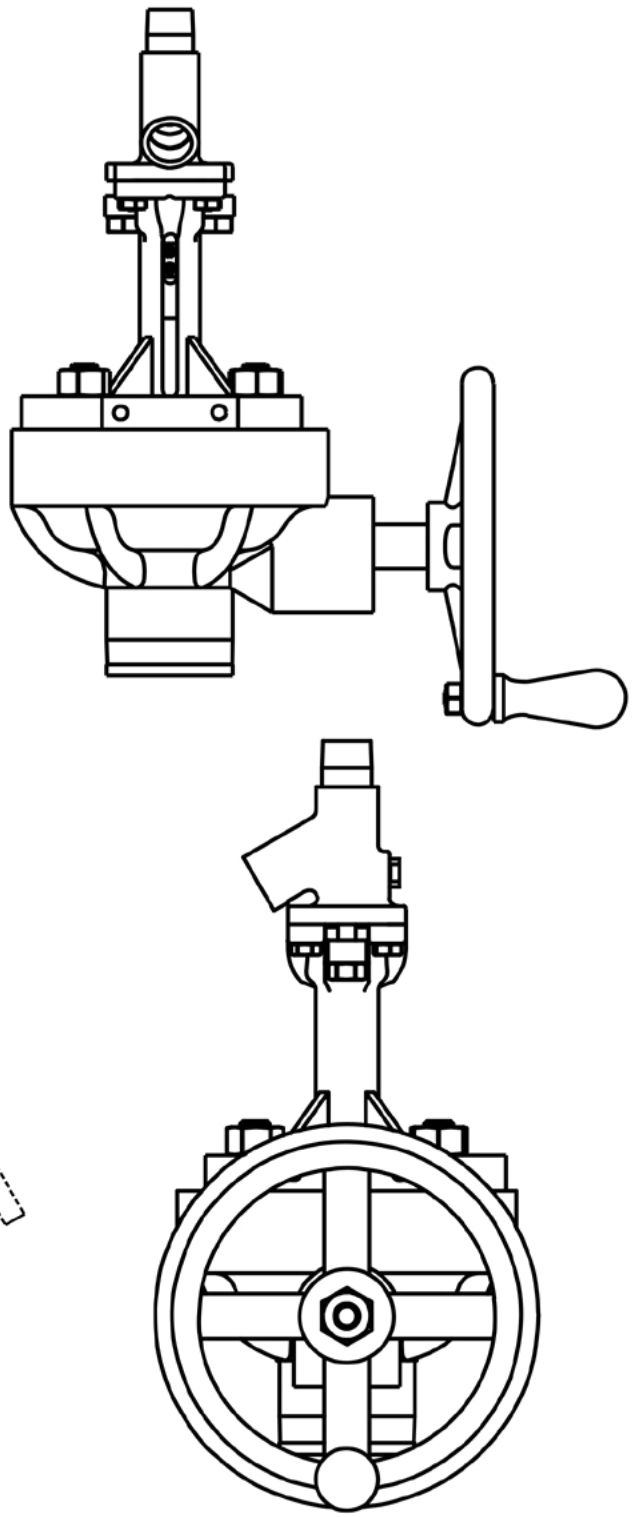
SPECIAL EXTENDED CRANK HANDLE AND GEAR OPERATOR OPTIONS

Special Strahman Extended Sampling Valve Crank Handle can be furnished in lengths from 16 in. to 10 ft. The Extended Crank Handle can be furnished for use on any sampling valve now in service, by removing the original crank handle and replacing it with an extended crank handle in the length required.





Front and Side View Shown:
Gear Box with easy turn hand wheel

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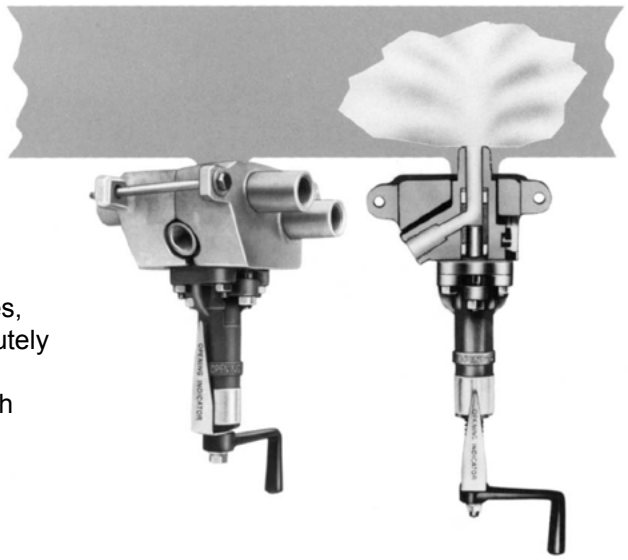
HEAT JACKETS FOR SAMPLING VALVES

1 PIECE JACKET AVAILABLE FOR SV-500, SV-600, SV-700 AND SV-800

Bolt On Heat Jackets offer superior performance and reliability for a cost-competitive price. CSI Heat Jackets are cast to conform precisely to the Strahman sampling valve body so that there are almost no air gaps. The special aluminum based alloy acts as an efficient heat transfer agent to evenly distribute heat throughout the valve body ensuring no cool spots. A carbon steel ASME coded pressure vessel chamber contains either steam, or heat transfer fluid.



Standard Design is a two-piece bolt on jacket; single piece designs are available for certain sizes and configurations. For flanged valves, the casting is shaped to envelope the flange, so that there is absolutely no exposed surface area where cooling may occur. Compared to a fabricated jacket that is welded to a valve, the bolt on jacket is much more compact and efficient.

Benefits of the bolt on jacket versus the welded type are:

- No dissimilar metals welded together (carbon steel jacket on stainless steel valve body).
- No distortion of the valve body due to welding (heat) that can affect the piston travel.
- No heat affected zone that can cause inter-granular corrosion by changing grain structure of the body material.
- No post weld heat treatment that can cause distortion in the valve body leading to piston misalignment.
- The jacket does not need to be removed to service the valve.
- If the valve needs to be replaced, the jacket can be reused offering substantial savings
- Standard Strahman Valves are purchased, not custom fabrications
- Quick deliveries with many standard jackets in stock

Pressure: 300 PSI
Temperature: 600°F

½" FNPT connections standard

An option for the CSI Heat Jacket is the use of electrical energy as a heating medium instead of Steam or Heat Transfer Fluids. At lower temperatures, the electrical CSI Heat Jacket maintains a constant temperature, more accurately, than steam or transfer fluids.

Accessories for the Heat Jackets are:

1. Custom formed Insulation Blankets conserve energy and also prevent personnel hazards from direct contact with a high temperature surface. Sold separately.
2. Special jumpers connect the two halves of the heat jacket easily and conveniently. Sold separately.
3. Heat Transfer Cement to fill in any voids between the jacket and the valve body. For most applications, less than one quart is required. Sold separately.

For details on these custom accessories, contact your Strahman Distributor to find out the extraordinary performance and value.

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QUICK-ADVANCE PISTON-TYPE SAMPLING VALVES

QUICK-ADVANCE PISTON-TYPE SAMPLING VALVES

Piston Type Sampling Valves are widely employed in the sampling of thick slurries and viscous materials because their design provides little to no dead space within the valve and vessel or line connection. The piston completely fills the valve and connection bores and provides a self-cleaning (self-pigging) action during the closing stroke of the valve. The common design of this type of valve also utilizes a very long stroke to completely withdraw the piston from the media flow.

Typical designs for a manually operated piston type valve used for draining or sampling liquids utilize a hand wheel attached to a threaded stem which in turn is connected to the piston. The stem typically turns in a fixed threaded bushing that is generally found in the yoke (or bonnet) or the piston itself. Rotary motion of the hand wheel causes a linear movement of the piston.

Although the effort used to draw a sample using a piston type valve is greater than using a ball valve, the advantages quickly outweigh any of the disadvantages. For instance, ball valves are operated with a quarter-turn. A ball valve allows material to accumulate around the ball which prevents a representative sample from being drawn unless the valve is first properly purged.

Strahman's new Quick Advance Sampling Valves offer all of the features typically found in piston type sampling valves with the convenience of a quick open/close feature of a ball valve. The QA series uses a rack and gear combination to maintain the linear motion of the piston and provides the valve with a full piston design while traveling just 1/3 turn. This results in less time and labor required to collect a true, representative sample.

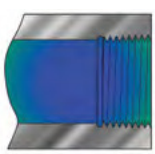
All QA Series Valves feature a safety stop detent that prevents the valve from opening under process pressure. The QA-700 is rated to ANSI Class 300 and is available in the same materials as Strahman's standard Sampling Valve line. The new QA Series is available with standard packing rings and zero or two inch piston extensions. Conversion kits for existing valves are also available.

STANDARD FEATURES FOR QA SERIES PISTON TYPE SAMPLING VALVES

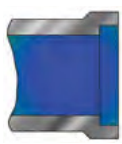
1. FAST OPENING: SINGLE PULL ACTUATION TO OPEN/CLOSE — using just a 1/3 turn the valve can be stroked from full open to full closed position. The rack and gear combination translates the rotary motion into linear movement.
2. NO DEAD SPACE: FULL PISTON DESIGN — the piston fills the entire bore of the valve with no clearance. A true representative sample is always assured.
3. COMPRESSIBLE PACKING RINGS — employing a pair of rings above and below the valve discharge provides a seatless design that meets the requirements of ANSI leakage Class VI.
4. FLOW CONTROL — inherent design features flow control sample positions and provide metering flow options to ensure accurate sample quantities
5. INTEGRAL HANDLE LOCK — The handle includes a locking device that ensures the valve will not open under process pressure, vibration or by incidental contact.
6. SAFETY STOP — prevents the QA series valve from opening if the handle is released.

AVAILABLE END CONNECTIONS

Flanges

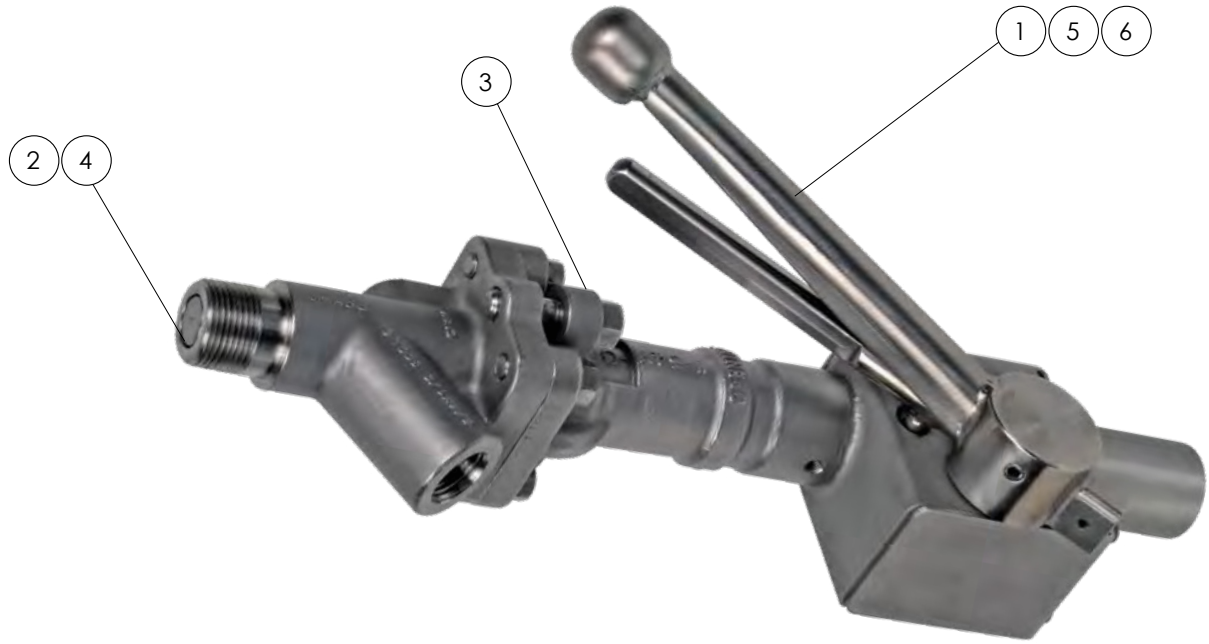


Threaded connections NPT & BSP



Socket Weld

QUICK-ADVANCE PISTON-TYPE SAMPLING VALVES



RANGE DEFINITION

	3/8" x 1/4", 0" PE	3/8" x 3/8", 0" PE	1/2" x 3/8", 0" PE	1/2" x 1/2", 0" PE	3/4" x 1/2", 0" PE	3/4" x 3/4", 0" PE	3/8" x 1/4", 2" PE	3/8" x 3/8", 2" PE	1/2" x 3/8", 2" PE	1/2" x 1/2", 2" PE	3/4" x 1/2", 2" PE	3/4" x 3/4", 2" PE
PN 10												
PN 16												
ANSI 150/PN 20												
PN 25												
PN 40												
ANSI 300/PN 50												

Available Sizes

TECHNICAL & GENERAL INFORMATION

DESIGN CODE & CONSTRUCTION

- Design standard compliant with ASME B16.34, ASME B31.3 and ASME B16.10
- International standards include ANSI, DIN, JIS and API.
- Wide range of materials available including carbon steel, stainless steel, titanium, Hastelloy, duplex steel, monel, inconel and chrome-moly steels.
- Cast design standard, fabricated forged and bar stock designs available.
- Qualify by design to API 6FA Fire Safe requirements using graphite rings.

QUALITY ASSURANCE & TESTING

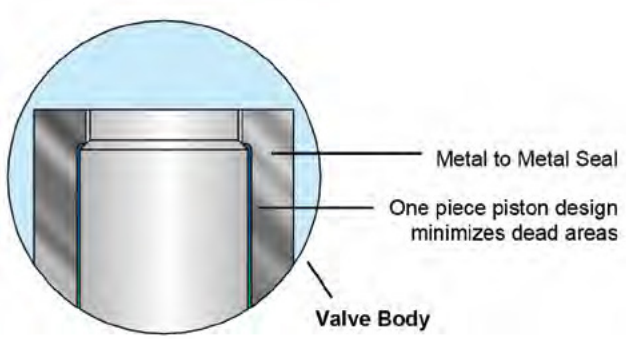
- ISO 9001 compliant
- PED/ATEX/CE marking
- TA Luft
- Standard Strahman testing procedures

SEALING SYSTEM

M SEAL

This sealing system offers a wide range of material combinations selected to create a differential hardness between body and plunger seat. The maintenance friendly design of the **M Seal** system provides long and reliable valve performance and is suitable for almost all process conditions.

- **Temperature:** Min.: -200˚C / -330˚F
  Max.: 540˚C / 1000˚F
- **Pressure:** ANSI 600: 100 bar / 1440 PSI max
  ANSI 1500: 250 bar / 3600 PSI max



In order to keep abreast of customer requirements, Strahman has developed a Metal Seated Sampling Valves for use in ANSI Class 600, 1000°F applications. This valve is dimensionally identical to the Strahman SV Series of Sampling Valves which are the world-wide standard for industrial sampling. A special fabricated bar-stock design is available for ANSI 1500, 1000°F service.

- Piston moves through the valve clearing out any material that may solidify within the body
- Piston extension breaks through scale or crust
- No dead spot - piston fills valve interior
- Always gives a true live sample
- 316 stainless steel body is standard. Also available: Alloy 20, Hastelloy, Titanium, Nickel and Monel
- Threaded, flanged, SW ends to US Standards, DIN BSP, JIS with manual, electric, air actuation
- Lever operated, quick-opening design available

METAL SEATED SAMPLING VALVES SPECIFICATIONS

The Sampling Valve shall be Model SV ¾” MNPT inlet* by ¾” or ½” FNPT outlet*. The body shall be of investment cast 316 SST and internals of 316 SST fabricated wetted parts. The valve shall be a hard seal design and shall meet ANSI Class IV shutoff. The piston shall have linear travel with mutli-turn handle for manual operations, or pneumatic/hydraulic cylinder actuator. The piston shall fill the valve interior allowing for no cavities (dead space), will be self-pigging and will not clog. The Sampling Valve will assure new product samples are always taken with no prior material remaining. The piston shall have a _____” extension that shall extend beyond the threaded inlet to break through any product crust, insuring proper product flow.

* Flanged or SW connections available

_____” Customer to specify

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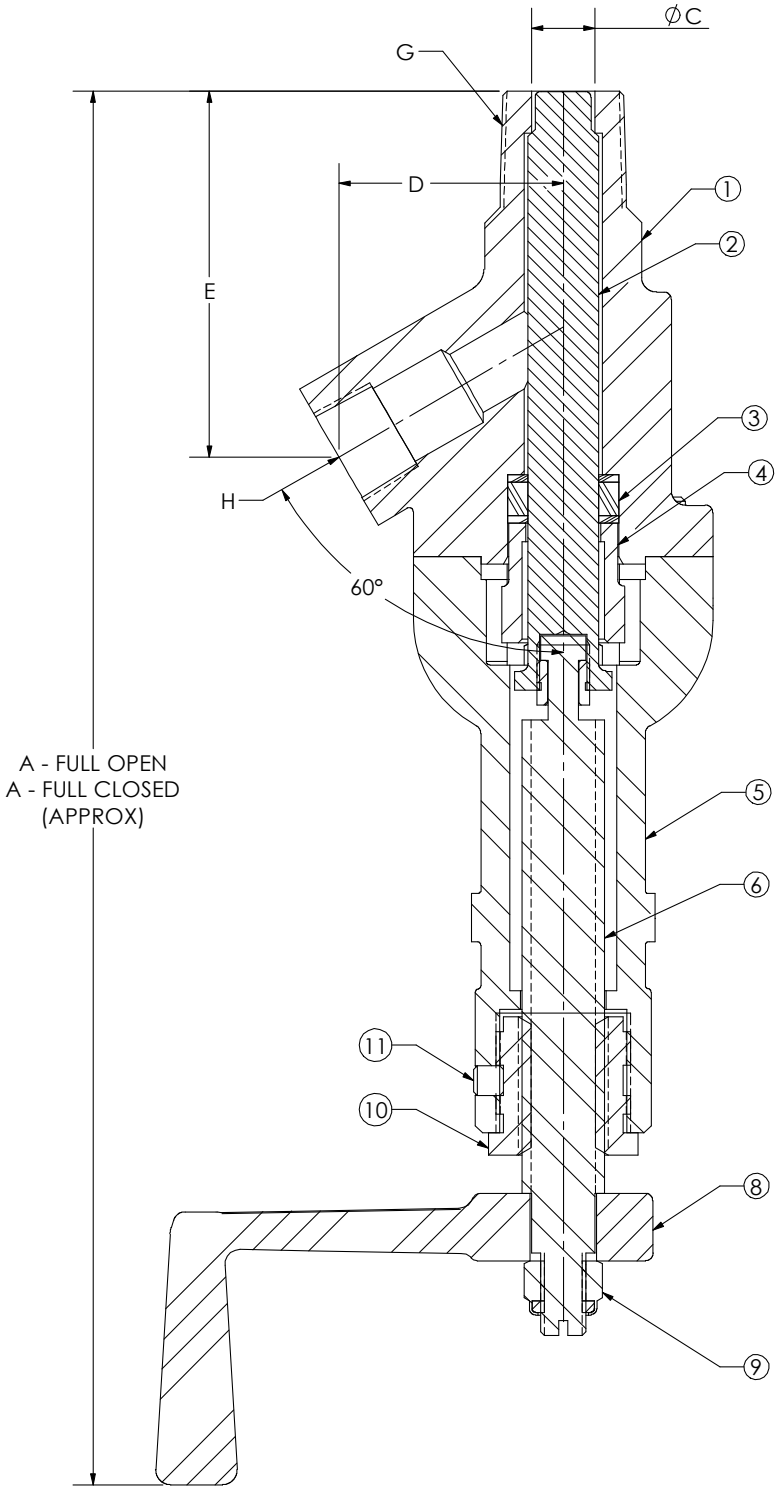
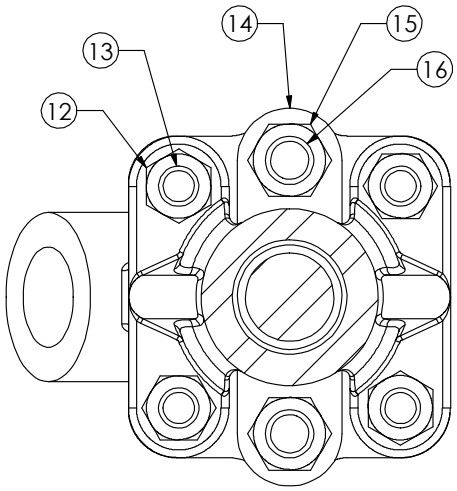
NEW ZEALAND spraynozzle.co.nz sales@spraynozzle.co.nz 0800 NOZZLE +64 (7) 839 6444

METAL SEATED SAMPLE VALVES FOR HIGH TEMPERATURE SERVICE





VALVE DECK DETAIL

Dimensions							
Valve Size	**A** CLOSED	**A** OPEN	**C**	**D**	**E**	**G** NPT	**H** NPT
SV-7HS	11-⅞"	14-⅜"	.531"	1-⅞"	3-^{1}⁄$_{32}$"	¾"	½", ¾"
SV-8HS	13-⅛"	16"	.688"	2-⅜"	3-⅝"	1"	¾", 1"

Part No.	Description	Material
1	BODY †	316 SST
2	PISTON *†	316 SST
3	PACKING	GRAPHITE
4	GLAND	304 SST
5	BONNET	304 SST
6	STEM	416 SST
8	CRANK HANDLE	M. IRON
9	LOCK NUT	304 SST
10	BONNET BUSHING	BRONZE
11	BUSHING LOCK SCREW	304 SST
12	BONNET NUT	303 SST
13	BONNET STUD	304 SST
14	SPRING WASHER	17.7 PH
15	GLAND NUT	303 SST
16	GLAND STUD	304 SST

* Denotes recommended spare parts
† Denotes wetted parts

THE STRAHMAN FAMILY OF PRODUCTS INCLUDE:

Strahman WASHDOWN EQUIPMENT

BI-TORQ VALVE AUTOMATION

Strahman PROCESS VALVES

WASH DOWN EQUIPMENT

Strahman offers a full line of mixing units, hose stations, hoses, nozzles, and wash down accessories designed for industrial use for a wide variety of industry including food & beverage processing, meat & poultry, agriculture, pharmaceutical, research laboratories, chemical, wineries, breweries, and more.

AUTOMATED VALVES & THERMAL SHUT-OFF VALVES

Strahman automated valve packages with floating ball valves and resilient seated butterfly valves come complete with electric or pneumatic actuators for a wide array of industrial applications. Additionally, a full suite of API 607 fire safe valve products are offered as actuated units or to be used in conjunction with our FM approved thermal shut-off assemblies. Resettable Emergency Block Valves (R-EBV) are also available for the oil & gas and chemical industries.

VALVES & LINE BLINDS

Strahman's portfolio includes: sampling valves, drain valves, gate valves, diverter and piston-type valves, ball valves, and line blinds for the control of fluid and gases in the pipeline system. Strahman also provides custom solutions for industry where products manufactured in batch and continuous process require consistent high quality and safety. Strahman serves a wide variety of industries and process applications including oil refinery, pulp and paper, and chemical.

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