Armstrong® GP-2000CS Carbon Steel Body

For Steam Service

The GP-2000CS is a high performance, externally piloted reducing valve for large capacity requirements. Typical use is on intermittent service, including applications such as heat exchangers, steam coils, rotating dryers, process equipment and heating systems. With a 20:1 rangeability and high C_V, the GP-2000CS is reliable and accurate (+/-1% of pressure set point from 5% to 100% of flow) over a long, trouble-free service life. Stellited stainless steel working parts are renewable in-line. Single seated for dead-end service. Available with both NPT (1/2" - 2") and flanged connections in 2" - 4" sizes.

For a fully detailed certified drawing, refer to:

GP-2000CS	**CD2248**
GP-2000CS Flanged	**CD2249**

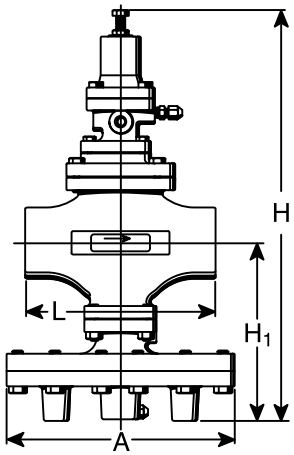
GP-2000CS Specifications

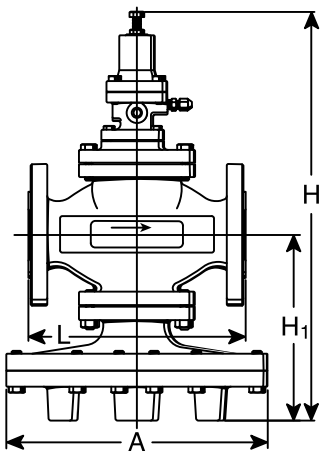
Application	Inlet Pressure psig (bar)	Reduced Pressure psig (bar)	Spring Color	Maximum Temperature °F (°C)	Minimum Differential psig (bar)	Materials				
						Body	Main Valve/Seat	Pilot Valve/Seat	Diaphragm	Color
Steam	NPT 15 - 450 (1 - 31)	3 - 21 (.21 - 1.4)	Yellow	600°F (315°C)	7 (.48)	Carbon Steel WCB ASTM216 A216M-08	Stainless Steel 304 Stainless Steel Stellite	420 Stainless Steel	Stainless Steel AISI 301	Silver
	150 lb Flanged 15 - 140 (1 - 9.6)	15 - 200 (1 - 13.6)	Green							
	300 lb Flanged 15 - 450 (1 - 31)	190 - 300 (13.1 - 20.6)	Brown							

GP-2000CS Dimensions and Weights

Size		L						A		F		H Integral		H_1		H_2		Weight						C_V
		NPT		150#		300#												NPT		150#		300#		
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg	lb	kg	
1/2	15	5-15/16	150	–	–	–	–	7-15/16	200	6-7/8	176	15-3/4	398	6-3/4	170	9-5/8	244	35	16	–	–	–	–	5.0
3/4	20	5-15/16	150	–	–	–	–	7-15/16	200	6-7/8	176	15-3/4	398	6-3/4	170	9-5/8	244	35	16	–	–	–	–	7.2
1	25	6-5/16	160	–	–	–	–	8-15/16	226	7-1/16	179	15-15/16	404	6-15/16	175	10	254	49	22	–	–	–	–	10.9
1-1/4	32	7-1/8	180	–	–	–	–	8-15/16	226	7-7/16	188	17-1/8	434	7-5/8	192	11-1/8	283	53	24	–	–	–	–	14.3
1-1/2	40	7-1/8	180	–	–	–	–	8-15/16	226	7-7/16	188	17-1/8	434	7-5/8	192	11-1/8	283	53	24	–	–	–	–	18.8
2	50	9-1/8	230	8-9/16	217	9-1/8	232	10-15/16	276	7-11/16	195	19-5/8	498	8-1/2	216	12-5/8	321	62	37	88	40	92	42	32
2-1/2	65	–	–	10-15/16	278	11-1/2	292	13-13/16	352	8-5/16	211	21-3/4	552	9-13/16	251	14-3/4	375	–	–	159	72	168	76	60
3	80	–	–	11-3/4	298	12-7/16	315	13-13/16	352	8-3/4	222	22-5/8	575	10-7/16	264	15-3/4	400	–	–	174	79	185	84	78
4	100	–	–	13-1/2	343	14-1/8	359	15-13/16	401	9-7/16	239	25-15/16	658	12-5/8	321	19-1/4	489	–	–	276	125	293	133	120

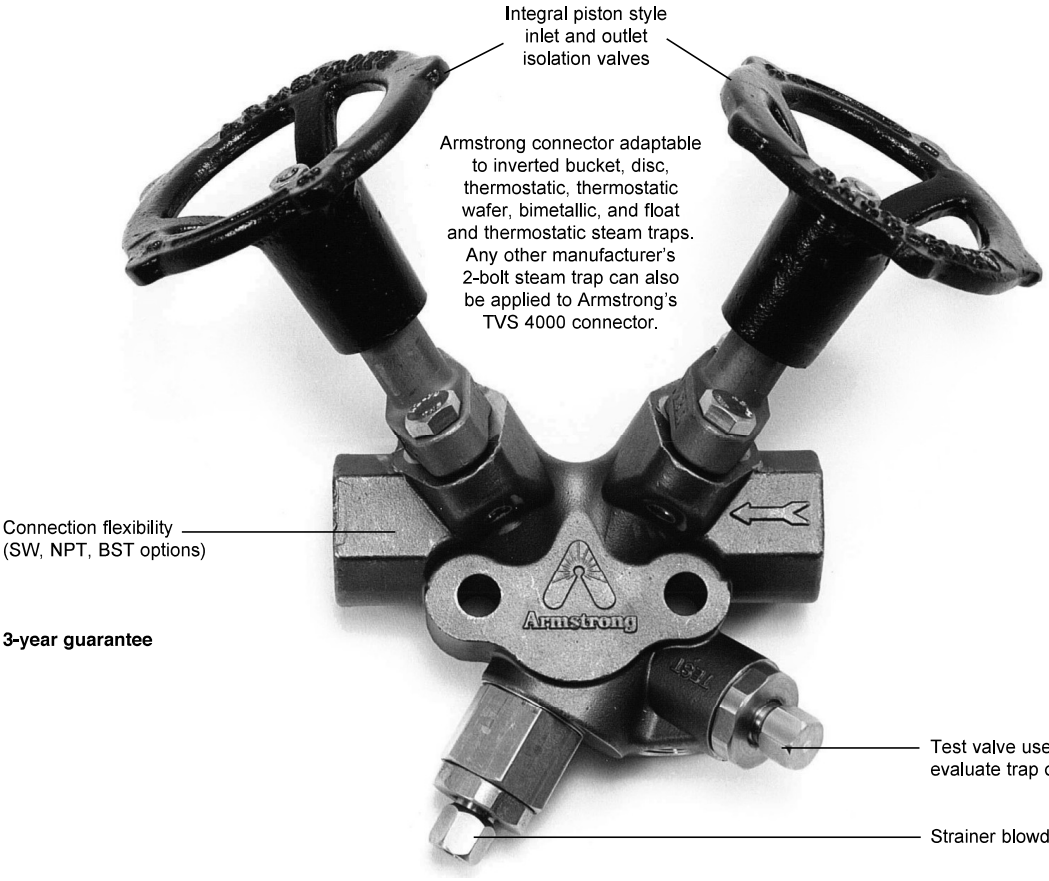
For capacities see page PTC-38.





All dimensions and weights are approximate. Use certified print for exact dimensions. Design and materials are subject to change without notice.

TVS 4000 Series Stainless Steel Trap Valve Station



Description

Same principle. Different package with two piston-style isolation valves, test valve and integral stainless steel strainer with blowdown valve. What you'll find new are all the benefits of a piston valve integrated into the same space-saving package.

Maximum Operating Conditions

Maximum allowable pressure:
650 psig @ 600°F (45 bar @ 315°C)

Materials—TVS 4000 Connector

Connector:	ASTM A351 Gr. CF8M
Strainer screen:	Stainless steel
Test valve:	Stainless steel
Blowdown valve:	Stainless steel

Isolation Valve Components

All wetted parts:	Stainless steel
Valve sealing rings:	Graphite and stainless steel
Handwheel:	Ductile iron

Weight

6-1/2 lb (2.9 kg)

Features

- **Reduced costs.** TVS saves on these fronts: reduced leak points, installation and maintenance time.
- **A full range of features.** TVS has test and strainer blowdown valves. When installed with Armstrong Model 2011 and 2022 steam traps, it will also accommodate the Armstrong pop drain as well as TrapAlert™ and SteamEye®—remote steam trap monitoring and testing devices.
- **Reduced design time.** Permits combining products with exact face-to-face dimensions.
- **Three-year guarantee.** The TVS 4000 is guaranteed for three years.
- **Easy, in-line repairability with maximum safety.** TVS allows isolation at point of service with upstream/downstream depressurization.
- **Installation versatility.** The connector design makes the TVS adaptable to any manufacturer's 2-bolt steam trap and piping configuration.
- **Simplified trap testing.** TVS enhances your capability to check trap operation and offers a built-in method to block and bleed traps.

How to Order

Model	Connection	Type of Connection Inlet/Outlet	Flow Direction	Trap Type
TVS 4000	1/2" 3/4"	NPT SW BSPT Flanged*	R = Right to Left L = Left to Right	Inverted Bucket Disc Thermostatic wafer Bimetallic Float and Thermostatic

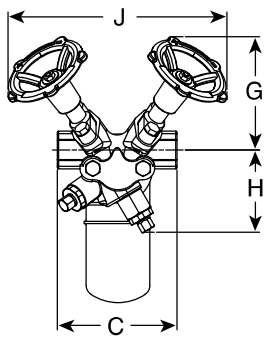
*Consult factory.

U.S. Patent 6,467,503

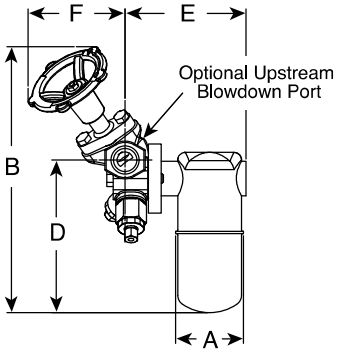
Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit www.armstronginternational.com for up-to-date information.

TVS 4000 Series Stainless Steel Trap Valve Station

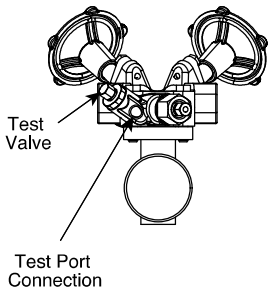
For Pressures to 650 psig (45 bar)...Capacities to 1,300 lb/hr (590 kg/hr) (Using 2000 Series Inverted Bucket Steam Traps)



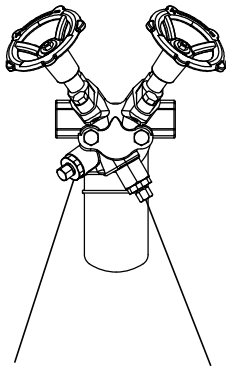
Model TVS 4000 With 2000 Series SS Trap
Front View



Model TVS 4000 With 2000 Series SS Trap
Side View



Model TVS 4000 With 2000 Series SS Trap
Bottom View



Test Valve
Used to test and evaluate trap operation

Strainer Blowdown Valve

Same principle. Different package with two piston-style isolation valves, test valve and integral stainless steel strainer with blowdown valve. Now the energy-saving performance and reliability of the inverted bucket steam trap are available in a versatile new package. You'll still enjoy all the familiar benefits. And the same efficient condensate drainage from virtually every kind of steam-using equipment. What you'll find new are all the benefits of a piston valve integrated into the same space-saving package.

Materials—TVS 4000 Connector

Connector:	ASTM A351 Gr. CF8M
Strainer screen:	Stainless steel
Screen retainer:	Stainless steel
Gasket:	Stainless steel
Retainer unit:	Stainless steel
Test valve:	Stainless steel
Blowdown valve:	Stainless steel

Isolation Valve Components

Handwheel:	Ductile iron
Nut:	Stainless steel
Stem, washers:	Stainless steel
Bonnet:	ASTM A351 Gr. CF8M
Bonnet, bolts:	DIN 933, Gr. 8.8 per DIN 267
Valve plug:	Stainless steel
Disc springs:	Stainless steel
Valve sealing rings:	Graphite and stainless steel
Lantern bushing:	Stainless steel
Valve washers:	Stainless steel

Materials—Series 2000 Traps

Body:	ASTM A240 Gr. 304L
Internals:	All stainless steel—304
Valve and seat:	Hardened chrome steel—17-4PH

For a fully detailed certified drawing, refer to CD #1232.

TVS 4000 Series With 2000 Series Inverted Bucket Steam Trap						
Model No.	**2010**		**2011**		**2022**	
Pipe Connections	**in**	**mm**	**in**	**mm**	**in**	**mm**
	1/2, 3/4	15, 20	1/2, 3/4	15, 20	1/2, 3/4	15, 20
"A" Trap Diameter	2-11/16	68	2-11/16	68	3-7/8	98
"B" Height (Valve Open)	8	203	10-1/2	268	12-1/2	318
"C" Face to Face	4-3/4	120	4-3/4	120	4-3/4	120
"D" Connection ℄ to Bottom	4-3/4	120	6	154	8	203
"E" Connection ℄ to Outside of Trap	4-1/2	114	4-13/16	122	5-7/8	149
"F" Connection ℄ to Front of Handwheel (Valve Open)	3-1/2	89	3-7/8	98	3-7/8	98
"G" Connection ℄ to Top of Handwheel (Valve Open)	3-1/4	83	4-1/2	114	4-1/2	114
"H" Connection ℄ to Bottom of Connector	1-7/8	47	3-1/4	83	3-1/4	83
"J" Width Across Handwheels (Valve Open)	9-1/4	235	8-3/4	222	8-3/4	222
Test Port Connection	1/4 NPT	6	1/4 NPT	6	1/4 NPT	6
Weight lb (kg)	9	4	9-1/2	4.3	12	5.4
Maximum Operating Pressure (Trap)	200 psi (14 bar)		400 psi (28 bar)		650 psig (45 bar)	
Maximum Allowable Pressure (Trap)	400 psi (28 bar) @ 750°F (399°C)				650 psig @ 600°F (45 bar @ 315°C)	

U.S. Patent 6,467,503

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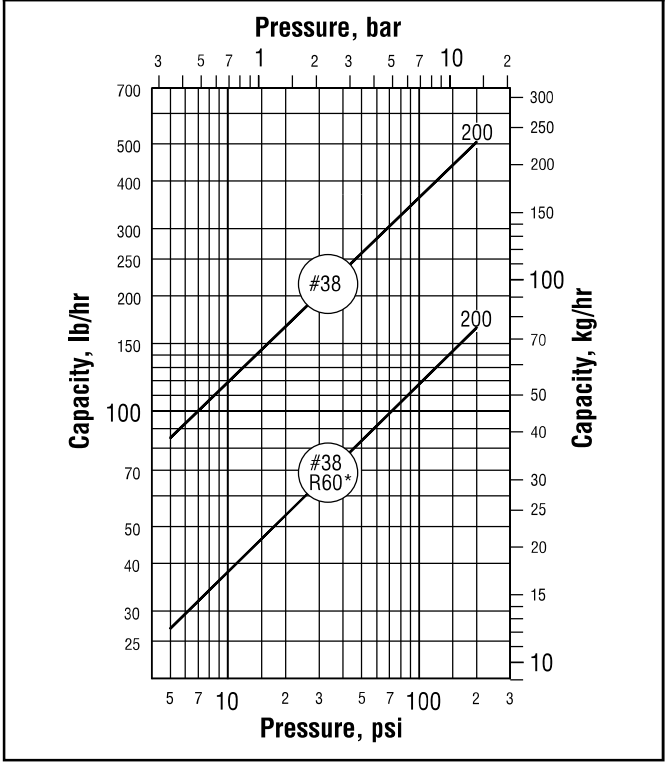
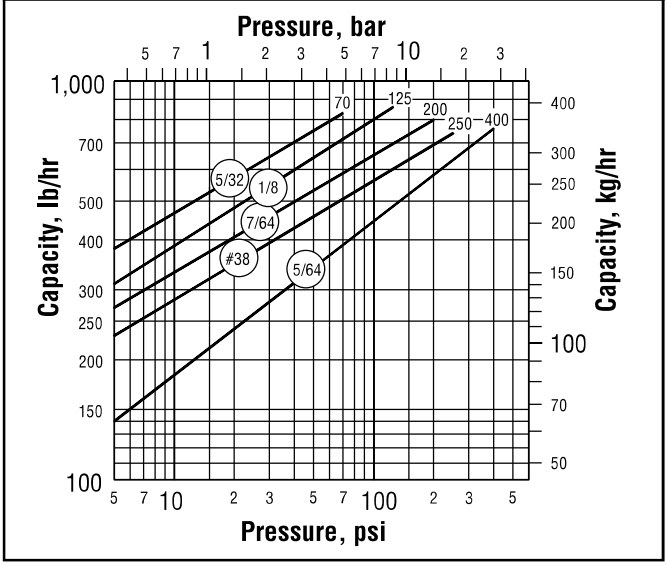
TVS 4000 Series Stainless Steel Trap Valve Station

For Pressures to 650 psig (45 bar)...Capacities to 1,300 lb/hr (590 kg/hr) (Using 2000 Series Inverted Bucket Steam Traps)

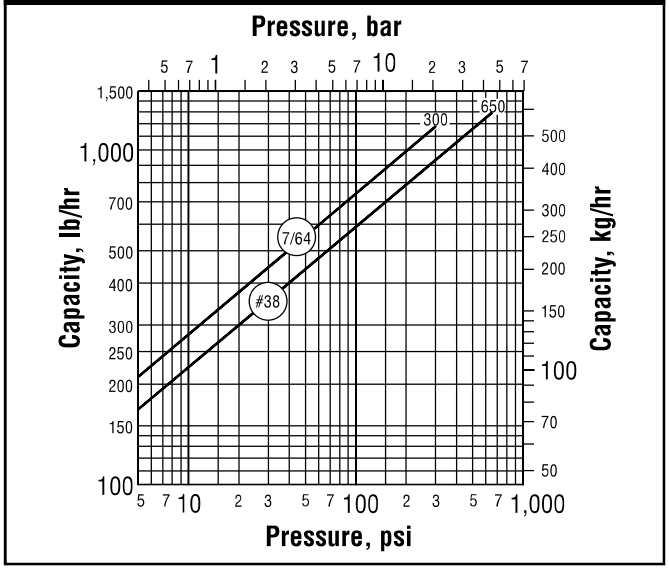
Model 2010 Capacity



Model 2011 Capacity



Model 2022 Capacity



*NOTE: Because the orifice is located at the top, inverted bucket steam traps handle dirt and scale better than other types of traps. However, in applications where extremely dirty conditions exist, care should be exercised in the use of all types of restricted-orifice, reduced-capacity traps.

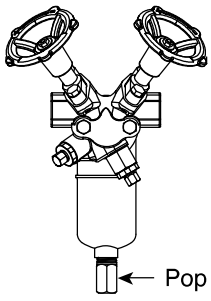
Options

Insu-Pak™

Now you can insulate the in-line traps in your plant without complicating regular trap maintenance. Insu-Pak, a simple reusable insulation package, cuts the time and cost of in-field installation because it goes on in a snap. And it comes off just as easily. The Insu-Pak can prevent trap freeze-up when used with a properly designed condensate manifold. Designed for use with Model 2010 and Model 2011 traps.

Pop Drain

Simple but effective against freeze-up. Properly installed and maintained at low points in your system, the simple, pressure-actuated pop drain opens for condensate drainage at 5 psig (0.35 bar) for Models 2011 and 2022.



Probe Connections are available for trap monitoring on Models 2011 and 2022.

How to Order

Model	Connection	Type of Connection Inlet/Outlet	Flow Direction	Trap Type
TVS 4000	1/2" 3/4"	NPT SW BSPT Flanged*	R = Right to Left L = Left to Right	Inverted Bucket Disc Thermostatic wafer Bimetallic Float and Thermostatic

*Consult factory.

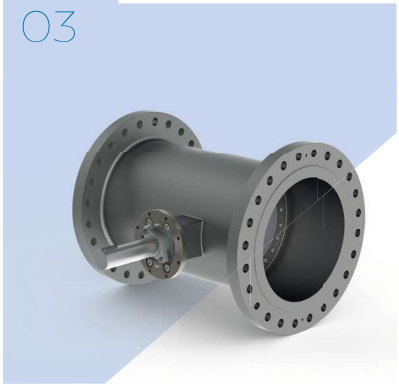
U.S. Patent 6,467,503

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit www.armstronginternational.com for up-to-date information.

Data sheet Quadax®- gate valve replacement butterfly valve

REV01_0318

03



body details

butterfly valve:	bare shaft
pressure range:	0-2320 psi
orifice:	NPS 3-40
connection:	flange
body materials:	carbon steel, stainless steel, special material (duplex, inconell, bronze)
valve seat materials:	inconell, others on request
seal materials:	graphite / stainless steel, inconell, stainless steel, PTFE

⚠ Above stated body materials refer to the valve port connections that get in contact with the media only!

details needed

- size
- pipe connection
- operating pressure
- flow rate
- Δp
- closing time
- media
- process temperature
- outside temperature

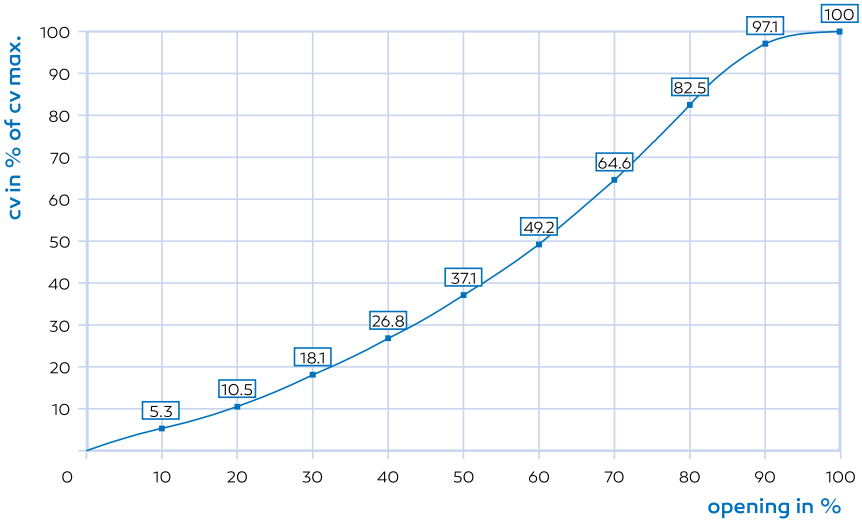
⚠ The valves' technical design is based on media and application requirements. This can lead to deviations from the general specifications shown on the data sheet with regards to the design, sealing materials and characteristics.

⚠ If order or application specifications are incomplete or imprecise there exists a risk of an incorrect technical design of the valve for the required application. As a consequence, the physical and / or chemical properties of the materials or seals used, may not be suitable for the intended application.

general specifications

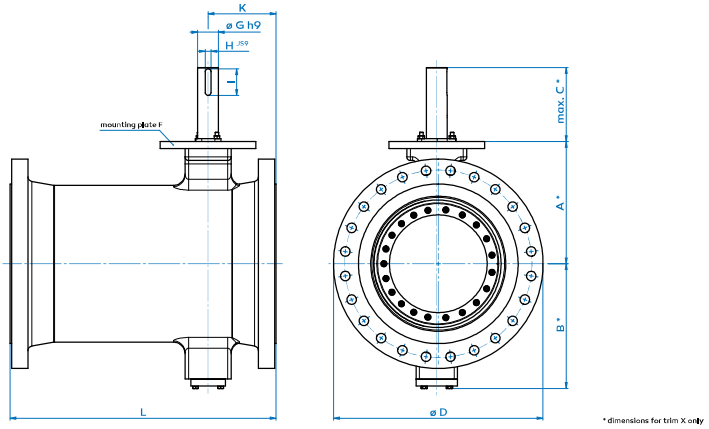
ports	flange	
		ANSI 150 / 300 / 600 / 900
function	NC / NO / DA	depending upon actuator
pressure range	body pressure	0 to 2320 psi
	Δp standard shaft	754 psi in both directions
	Δp optional shaft	1450 psi in both directions
cv value	gal/min	see table
leakage rate		ANSI class VI
		A DIN EN 12266
		BS 6364
		Fire safe
flow direction	A → B	as marked
switching time	s	size/4
process- and outside temperature	standard	14 °F to +842 °F
	with special materials	-454 °F to +1472 °F
limit switches		option
approvals		PED / Fire safe / BAM / TA Luft / ATEX in further
weight	lb	see table
additional equipment		upon request

cv-curve



müller quadax GmbH
Im Kupfertal 52
74670 Forchtenberg, Germany
T.: +49 79 47 / 943 43 - 0
F.: +49 79 47 / 943 43 - 29
mail: info@quadax.de
www.quadax.de

Data sheet Quadax®- gate valve replacement butterfly valve



Dimensions

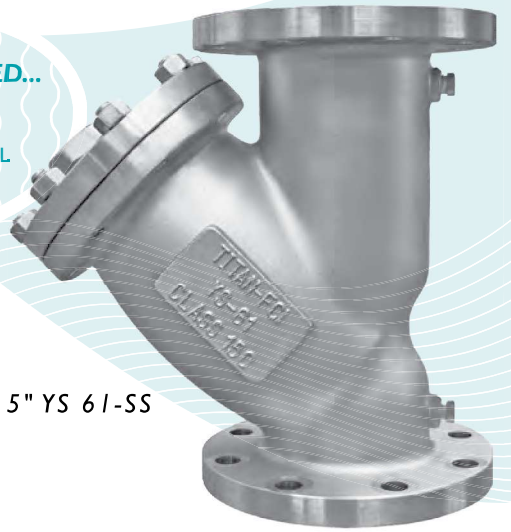
size	(mm)		80	100	125	150	200	250	300	350	400	450	500	600	700	750	800	900	1000
	(inch)		3	4	5	6	8	10	12	14	16	18	20	24	28	30	32	36	40
pipe cl to mounting plate		A	5.04	6.38	7.48	7.99	9.45	10.98	12.01	12.80	15.16	15.94	17.32	20.87	24.80	24.80	27.56	32.68	36.22
pipe cl to cover screws		B	5.08	6.22	7.32	8.03	9.49	11.06	12.09	13.11	15.08	15.87	17.36	21.30	25.31	25.31	28.07	32.91	36.46
bare shaft length for direct mounting		C	3.74	4.92	5.31	5.71	7.09	7.09	7.09	11.02	11.38	11.81	12.60	12.60	14.45	14.45	14.45	15.67	15.67
bare shaft length for adapter		C	2.01	2.68	2.68	2.68	3.35	3.35	3.35	6.81	6.69	6.69	6.69	6.69	8.27	-	-	-	-
flange diameter	ANSI 150	D	7.48	9.06	-	11.02	13.86	15.94	19.09	21.65	23.23	25.20	27.56	32.09	36.50	38.74	42.72	45.98	50.79
	ANSI 300	D	8.27	10.00	-	12.60	14.96	17.52	20.28	23.03	25.98	27.95	30.31	35.75	40.75	42.99	45.24	50	48.74
	ANSI 600	D	8.27	10.83	-	13.98	16.54	20	22.05	23.82	26.97	29.33	32.09	37.01	42.24	44.09	47.01	51.77	51.97
mounting plate F ISO 5211	(others on request)	F	F07	F10	F12	F14	F16	F16	F16	F25	F30	F30	F35	F35	F40	F40	F40	F48	F48
trim A	290 psi max.	G	-	-	-	-	-	-	1.57	1.77	1.97	2.17	2.17	2.76	3.54	3.54	3.94	4.33	4.72
		H	-	-	-	-	-	-	0.47	0.55	0.55	0.63	0.63	0.79	0.98	0.98	1.10	1.26	1.26
		I	-	-	-	-	-	-	1.77	2.36	2.36	3.15	3.15	3.54	4.53	4.53	4.92	5.51	6.30
trim X (standard)	754 psi max.	G	0.71	0.79	0.87	1.26	1.26	1.57	1.77	2.17	2.56	2.76	2.95	3.54	4.33	4.33	5.12	5.91	6.30
		H	0.24	0.24	0.24	0.39	0.39	0.47	0.55	0.63	0.71	0.79	0.79	0.98	1.26	1.26	1.26	1.42	1.57
		I	1.10	1.10	1.57	1.57	1.57	1.77	2.36	3.15	3.46	3.54	3.54	4.53	5.51	5.51	7.09	7.09	7.87
trim B	1500 psi max.	G	-	-	-	-	1.77	2.17	2.56	2.95	3.54	3.74	4.33	5.12	5.91	5.91	7.09	7.48	8.66
		H	-	-	-	-	0.55	0.63	0.71	0.79	0.98	0.98	1.26	1.26	1.42	1.42	1.77	1.77	1.97
		I	-	-	-	-	2.36	3.15	3.46	3.54	115	4.92	5.51	7.09	7.09	7.09	8.66	9.84	11.02
trim C	2250 psi max.	G	0.79	1.10	1.26	1.57	1.97	2.56	2.95	3.54	4.33	4.33	5.12	5.91	6.69	6.69	7.87	9.06	9.84
		H	0.24	0.31	0.39	0.47	0.55	0.71	0.79	0.98	1.26	1.26	1.26	1.42	1.57	1.57	1.77	1.97	2.20
		I	1.10	1.57	1.57	1.77	2.36	3.46	3.54	4.53	5.51	5.51	7.09	7.09	7.87	7.87	9.45	11.02	12.60
ANSI B 16.10	ANSI 150	K	3.98	4.49	-	4.92	5.28	5.94	6.61	6.93	7.48	8.50	8.98	10.00	12.01	12.01	12.99	13.98	-
		L	7.99	9.02	-	10.51	11.50	12.99	14.02	15.00	15.98	17.01	17.99	20.00	24.02	24.02	25.98	27.99	-
	ANSI 300	K	4.02	4.33	-	4.92	5.28	5.94	6.61	6.93	7.48	8.54	9.45	11.42	13.58	14.76	15.55	17.52	-
		L	11.10	12.01	-	15.87	16.50	17.99	19.76	30.0	32.99	35.98	39.02	45.00	52.99	55.00	60.00	67.99	-
	ANSI 600	K	4.41	4.96	-	6.02	6.50	7.13	7.64	8.15	8.58	9.45	9.88	11.77	13.58	14.76	15.55	17.52	-
		L	14.02	17.01	-	22.01	25.98	30.98	32.99	35.00	39.02	42.99	47.01	55.00	60.98	65.00	70.00	82.01	-
cv-value (gal/min) trim A	Δp max. 290 psi		-	-	-	-	-	-	4462	6370	9237	12483	15024	24013	29620	37978	42003	55308	65269
cv-value (gal/min) trim X	Δp max. 754 psi		137	300	486	760	1680	2850	4314	5953	8513	11612	14091	22387	26838	31702	38771	50250	59765
cv-value (gal/min) trim B	Δp max. 1500 psi		-	-	-	-	1458	2469	3698	5185	7305	10160	11913	19137	23053	25914	33293	45295	51679
cv-value (gal/min) trim C	Δp max. 2250 psi		117	242	400	670	1353	2228	3402	4607	6580	9290	10979	17444	21199	24658	31138	40341	47523
weight (standard)	(approx. lb)		49	66	93	115	203	260	432	633	833	1089	1327	1814	2081	2385	2734	3263	3549

TITAN FLOW CONTROL, INC.

"Y" (WYE) STRAINER ❖ FLANGED ENDS, RAISED FACE

ANSI CLASS 150 ❖ CARBON AND STAINLESS STEEL

NEWLY DESIGNED...
Gauge Taps
STANDARD ON ALL YS 61 MODELS IN SIZES 2" ~ 24"



5" YS 61-SS

MODELS: YS 61-CS
(CARBON STEEL)

YS 61-SS
(STAINLESS STEEL)

FEATURES

SIZE RANGE: 1/2" ~ 24"

◇ **NEW DESIGN WITH GAUGE TAPS**
TITAN'S YS61 HAS CONVENIENT GAUGE TAPS FURNISHED WITH A PLUG ON BOTH THE INLET AND OUTLET SIDES OF SIZES 2" THROUGH 24". THESE TAPS ALLOW FOR EASY INSTALLATION OF PRESSURE GAUGES TO MONITOR DIFFERENTIAL PRESSURE AND DETERMINE WHEN SCREEN CLEANING IS NECESSARY.

◇ **LARGE STRAINING CAPACITY**
WITH ITS LARGE BODY AND SIZABLE STRAINING ELEMENT, THE YS61 PROVIDES EXCELLENT OPEN AREA RATIOS THAT ARE TYPICALLY TWO-AND-A-HALF TIMES LARGER THAN THE CORRESPONDING PIPELINE.

◇ **PRECISION MACHINED SEATS**
PRECISION MACHINED SCREEN SEATS IN BOTH THE BODY AND CAP HELP TO ENSURE ACCURATE POSITIONING OF THE SCREEN DURING REASSEMBLY AFTER CLEANING. ALSO, THE MACHINED BODY SEATS ENABLE FINER FILTRATION BY PREVENTING DEBRIS BYPASS.

◇ **SELF-CLEANING CAPABILITY**
WITH A TAPPED NPT BLOW-OFF CONNECTION, THIS UNIT CAN BE FITTED WITH A BLOW-DOWN VALVE WHICH FACILITATES CLEANING OF THE STRAINING ELEMENT. PLEASE CONTACT FACTORY FOR MORE INFORMATION.

◇ **EPOXY PAINTED**
CARBON STEEL UNITS ARE EPOXY PAINTED TO HELP RESIST RUST AND CORROSION. TITAN FCI ALSO OFFERS EPOXY COATING AS AN OPTION FOR THE YS61.

◇ **OPTIONAL COVER DESIGNS**
TITAN'S YS61 IS AVAILABLE WITH DIFFERENT COVER OPTIONS INCLUDING SWING, CLAMP, AND HINGE TYPE COVERS. PLEASE CONSULT FACTORY FOR MORE INFORMATION ON THESE OPTIONS.

TECHNICAL

PRESSURE/ TEMPERATURE RATING CS - ASTM A216 GR. WCB - CLASS 150
WOG (Non-shock): 285 PSI @ 100 °F
PRESSURE/ TEMPERATURE RATING SS - ASTM A351 GR. CF8M - CLASS 150
WOG (Non-shock): 275 PSI @ 100 °F

- *The above listed temperatures are theoretical and may vary during actual operating conditions.*
- *Carbon Steel not recommended for prolonged use above 800 °F.*
- *Stainless Steel not recommended for prolonged use above 1000 °F.*

APPLICATIONS

CARBON STEEL PROPERTIES: CARBON STEEL PERFORMS EXCEPTIONALLY WELL IN HIGH TEMPERATURES, UP TO 800°F IN CONTINUOUS SERVICE. IT PROVIDES HIGH RESISTANCE TO SHOCK, VIBRATION, PIPING STRAINS, AND FIRE AND FREEZING HAZARDS. CARBON STEEL STRAINERS ARE OFTEN USED IN THE OIL AND PETROCHEMICAL INDUSTRIES.

STAINLESS STEEL PROPERTIES: STAINLESS STEEL IS COMMONLY SPECIFIED FOR HIGH TEMPERATURE SERVICE, UP TO 1000°F IN CONTINUOUS SERVICE. STAINLESS STEEL STRAINERS ARE COMMONLY FOUND IN THE CHEMICAL, FOOD, AND PHARMACEUTICAL INDUSTRIES.

The above data represents common market and service applications. No representation or guarantee, expressed or implied, is given due to the numerous variations of concentrations, temperatures and flow conditions that may occur during actual service.

TITAN FLOW CONTROL, INC.
YOUR PIPELINE TO THE FUTURE!
Tel: 910-735-0000 ◇ Fax: 910-738-3848 ◇ titan@titanfci.com ◇ www.titanfci.com
290 Corporate Drive ◇ PO Box 7408 ◇ Lumberton, NC 28358

YS61-1215

TITAN FLOW CONTROL, Inc.
290 Corporate Drive
Lumberton, NC 28358
Tel: 910.735.0000
E-mail: titan@titanfci.com
Web: www.titanfci.com
Fax: 910.738.3848

WYE STRAINER

YS 61-CS - (Carbon Steel)

YS 61-SS - (Stainless Steel)

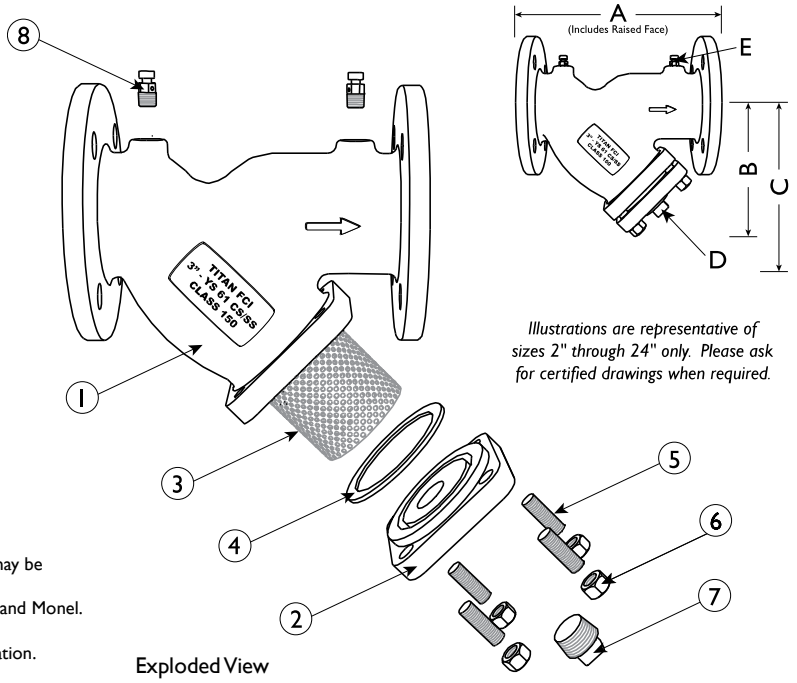
Flanged Ends • Raised Face • Carbon & Stainless Steel

ANSI Class 150

BILL OF MATERIALS (1)

No.	PART	YS 61-CS (6)	YS 61-SS
1	Body (2)	Carbon Steel A216 Gr. WCB	Stainless Steel A351 Gr. CF8M
2	Cover	Carbon Steel A216 Gr. WCB	Stainless Steel A351 Gr. CF8M
3	Straining Element (3)	Stainless Steel	Stainless Steel
4	Gasket (3) (4)	Stainless Steel Spiral Wound	Stainless Steel Spiral Wound
5	Studs	Alloy Steel	Stainless Steel
6	Nuts	Alloy Steel	Stainless Steel
7	NPT Plug Blow-off	Carbon Steel	Stainless Steel
8	NPT Plug Gauge Taps (5)	Carbon Steel	Stainless Steel

1. Bill of Materials represents standard materials. Equivalent or better materials may be substituted at the manufacturer's discretion.
2. Available in additional body materials, such as LCB, WC6, WC9, 316L, Alloy 20, and Monel.
3. Denotes recommended spare parts.
4. A wide range of gasket materials are available; contact factory for more information.
5. Part number 8 (NPT Plug - Gauge Taps) only applies to sizes 2" through 24".
6. Carbon Steel bodies are epoxy painted.



Exploded View

Illustrations are representative of sizes 2" through 24" only. Please ask for certified drawings when required.

DIMENSIONS AND PERFORMANCE DATA (1)

SIZE		in	½	¾	1	1¼	1½	2	2½	3	4	5	6	8	10	12	14	16	18	20	24
		mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
A DIMENSION FACE TO FACE (2)		in	6.50	7.37	7.37	7.00	7.12	7.87	9.75	10.06	12.12	15.62	18.50	21.37	26.00	29.87	36.00	41.75	46.00	49.50	58.37
		mm	166	188	188	178	181	200	248	256	308	397	470	543	661	759	914	1060	1168	1257	1483
B DIMENSION CENTER LINE TO BOTTOM		in	3.50	3.75	3.75	4.75	4.75	5.25	6.50	7.00	8.25	11.25	13.50	15.50	18.50	22.25	25.00	26.50	31.00	39.00	45.00
		mm	89	96	96	121	121	134	166	178	210	286	343	394	470	566	625	673	787	991	1143
C DIMENSION SCREEN REMOVAL		in	5.00	5.00	5.00	7.00	7.00	7.00	9.75	10.00	12.00	20.00	20.00	22.75	28.00	30.00	36.50	42.00	45.50	56.00	68.00
		mm	127	127	127	178	178	178	248	254	305	508	508	578	712	762	927	1067	1156	1422	1727
D NPT Plug BLOW-OFF		in	3/8	1/2	1/2	1/2	1/2	1/2	1	1	1 1/2	2	2	2	2	2	2	2	2	2	2
		mm	10	15	15	15	15	15	25	25	40	50	50	50	50	50	50	50	50	50	50
E NPT Plug GAUGE TAPS		in	N/A	N/A	N/A	N/A	N/A	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
		mm	N/A	N/A	N/A	N/A	N/A	8	8	8	8	8	8	8	8	8	8	8	8	8	8
ASSEMBLED WEIGHT APPROXIMATE		lb	5.5	10.3	10.3	12.0	12.5	21.0	32.0	35.0	55.0	90.0	140.0	220.0	356.0	644.0	1000	1090	2400	2700	3340
		kg	2.5	4.6	4.6	5.4	5.7	9.5	14.5	15.9	24.9	40.8	63.5	99.7	161.5	292.1	453.6	494.4	1089	1225	1515
Flow Coefficient		C_V	C/F	C/F	C/F	C/F	42	70	110	160	260	400	570	950	1600	2200	3300	4900	6100	8000	11000

1. Dimensions and weights are for reference only. When required, request certified drawings.
2. Face to face dimension includes raised face. These values have a tolerance of ±0.06 in (±2.0 mm) for sizes 10" and lower and a tolerance of ±0.12 in (±3.0 mm) for sizes 12" and larger.

REFERENCED STANDARDS & CODES

CODE	DESCRIPTION
ASME/ANSI B16.5	Pipe Flanges and Flanged Fittings
ASME/ANSI B16.34	Flanged, Threaded, and Welding End

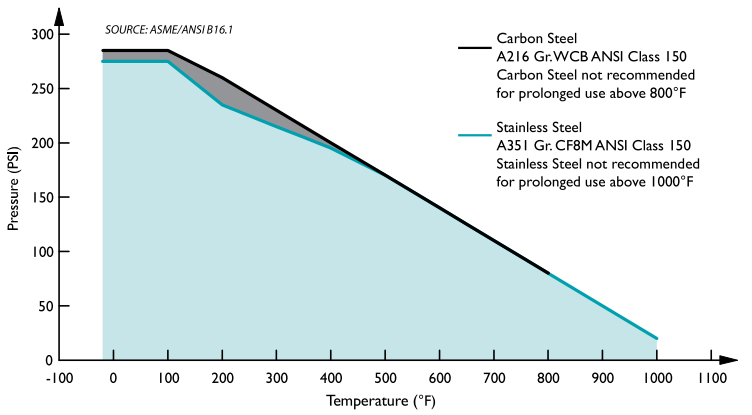
STANDARD SCREEN SELECTIONS

Size	Liquid	Open Area	Steam	Open Area
1/2" - 4"	1/16 (.0625)	41%	1/32 (.033)	28%
5" - 8"	1/8 (.125)	40%	3/64 (.045)	36%
10" - 12"	1/8 (.125)	40%	30 Mesh Lined	44.8%

PRESSURE - TEMPERATURE RATING

Body Material	A216 Gr. WCB	A351 Gr. CF8M
WOG (Non-shock):	285 PSI @ 100 °F	275 PSI @ 100 °F

PRESSURE - TEMPERATURE RATINGS

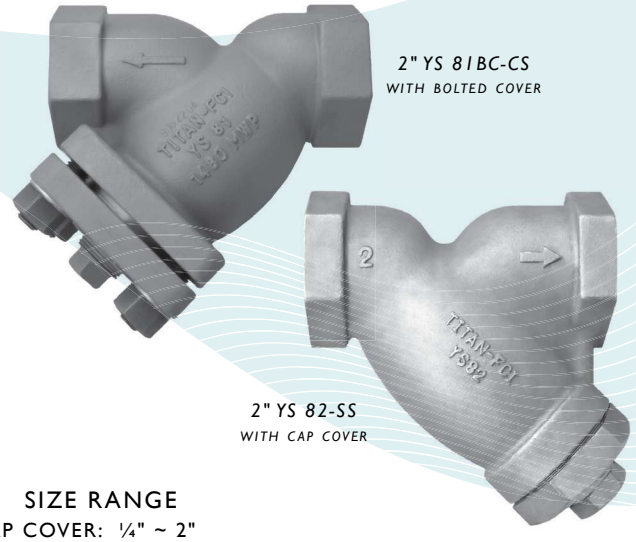


Titan FCI makes every effort to ensure the information presented on our literature accurately reflects exact product specifications. However, as product changes occur, there may be short-term differences between actual product specifications and the information contained within our literature. Titan FCI reserves the right to make design and specification changes to improve our products without prior notification. When required, request certified drawings.

TITAN FLOW CONTROL, INC.

"Y" (WYE) STRAINER ❖ THREADED AND SOCKET WELD

ASME CLASS 600 ❖ CARBON AND STAINLESS STEEL



2" YS 81BC-CS
WITH BOLTED COVER

2" YS 82-SS
WITH CAP COVER

MODELS:

YS81-CS
(CARBON STEEL - THREADED)

YS82-CS
(CARBON STEEL - SOCKET WELD)

YS81-SS
(STAINLESS STEEL- THREADED)

YS82-SS
(STAINLESS STEEL - SOCKET WELD)

YS81/82BC
(BOLTED COVER DESIGN)

SIZE RANGE
CAP COVER: ¼" ~ 2"
BOLTED COVER: 2" ~ 3"

FEATURES

◇ **BOLTED AND CAP COVER DESIGNS**
TITAN† UNITS YS81BC AND YS82BC SIZES 2½" AND 3" HAVE A BOLTED COVER AS STANDARD. AN OPTIONAL BOLTED COVER IS ALSO AVAILABLE ON SIZE 2". CAP COVERS ARE STANDARD ON YS81 AND 82 SIZES ¼" - 1½".

◇ **RUGGED - HIGH QUALITY DESIGN**
THE YS81 AND YS82 ARE IDEAL FOR PETROCHEMICAL AND OTHER DEMANDING INDUSTRIAL APPLICATIONS THAT HAVE HIGHER PRESSURE AND TEMPERATURE REQUIREMENTS.

◇ **LARGE STRAINING CAPACITY**
WITH ITS LARGE BODY AND SIZABLE STRAINING ELEMENT, THE YS81 AND YS82 PROVIDE EXCELLENT OPEN AREA RATIOS THAT ARE TYPICALLY TWO-AND-A-HALF TIMES LARGER THAN THE CORRESPONDING PIPELINE.

◇ **PRECISION MACHINED SEATS**
PRECISION MACHINED SCREEN SEATS IN BOTH THE BODY AND CAP HELP TO ENSURE ACCURATE POSITIONING OF THE SCREEN DURING REASSEMBLY AFTER CLEANING. ALSO, THE MACHINED BODY SEATS ENABLE FINER FILTRATION BY PREVENTING DEBRIS BYPASS.

◇ **SELF-CLEANING CAPABILITY**
WITH THE OPTIONAL SOCKET WELD BLOW-OFF CONNECTION, THIS UNIT CAN BE FITTED WITH A BLOW-DOWN VALVE WHICH FACILITATES CLEANING OF THE STRAINING ELEMENT. PLEASE CONTACT FACTORY FOR MORE INFORMATION.

◇ **EPOXY PAINTED**
CARBON UNITS ARE EPOXY PAINTED TO HELP RESIST RUST AND CORROSION. TITAN FCI ALSO OFFERS EPOXY COATING. PLEASE CONTACT FACTORY FOR MORE INFORMATION.

TECHNICAL

PRESSURE/ TEMPERATURE RATING CS - ASTM A216 GR. WCB - CLASS 600
WOG (Non-shock): 1480 PSI @ 100 °F
PRESSURE/ TEMPERATURE RATING SS - ASTM A351 GR. CF8M - CLASS 600
WOG (Non-shock): 1440 PSI @ 100 °F

- *The above listed temperatures are theoretical and may vary during actual operating conditions.*
- *Carbon Steel not recommended for prolonged use above 800 °F.*
- *Stainless Steel not recommended for prolonged use above 1000 °F.*

APPLICATIONS

CARBON STEEL PROPERTIES: CARBON STEEL PERFORMS EXCEPTIONALLY WELL IN HIGH TEMPERATURES, UP TO 800°F IN CONTINUOUS SERVICE. IT PROVIDES HIGH RESISTANCE TO SHOCK, VIBRATION, PIPING STRAINS, AND FIRE AND FREEZING HAZARDS. CARBON STEEL STRAINERS ARE OFTEN USED IN THE OIL AND PETROCHEMICAL INDUSTRIES

STAINLESS STEEL PROPERTIES: STAINLESS STEEL IS COMMONLY SPECIFIED FOR HIGH TEMPERATURE SERVICE, UP TO 1000°F IN CONTINUOUS SERVICE. STAINLESS STEEL STRAINERS ARE COMMONLY FOUND IN THE CHEMICAL, FOOD, AND PHARMACEUTICAL INDUSTRIES.

The above data represents common market and service applications. No representation or guarantee, expressed or implied, is given due to the numerous variations of concentrations, temperatures and flow conditions that may occur during actual service.

TITAN® FLOW CONTROL, INC.
YOUR PIPELINE TO THE FUTURE!
Tel: 910-735-0000 ◇ Fax: 910-738-3848 ◇ titan@titanfci.com ◇ www.titanfci.com
290 Corporate Drive ◇ PO Box 7408 ◇ Lumberton, NC 28358

YS8182-0614

TITAN® FLOW CONTROL, Inc.
290 Corporate Drive
Lumberton, NC 28358
Tel: 910.735.0000
E-mail: titan@titanfci.com
Web: www.titanfci.com
Fax: 910.738.3848

WYE STRAINER

Threaded Ends
YS 81-CS (Carbon Steel)
YS 81-SS (Stainless Steel)

Socket Weld Ends
YS 82-CS (Carbon Steel)
YS 82-SS (Stainless Steel)

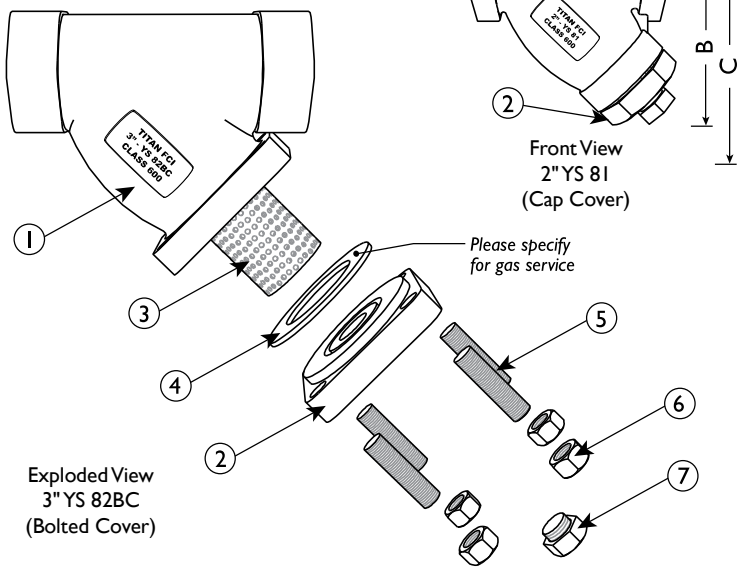
ASME Class 600

BILL OF MATERIALS (1)

No.	PART	YS 81/82-CS (6)	YS 81/82-SS
1	Body (2)	Carbon Steel A216 Gr. WCB	Stainless Steel A351 Gr. CF8M
2	Cover/Cap (5)	Carbon Steel A216 Gr. WCB	Stainless Steel A351 Gr. CF8M
3	Straining Element (3)	Stainless Steel	Stainless Steel
4	Gasket (3)(4)	Stainless Steel Spiral Wound	Stainless Steel Spiral Wound
5	Studs (5) BC models only	Alloy Steel	Alloy Steel
6	Nuts (5) BC models only	Alloy Steel	Alloy Steel
7	Plug	Carbon Steel	Stainless Steel

1. Bill of Materials represents standard materials. Equivalent or better materials may be substituted at the manufacturer's discretion.
2. Available in additional body materials, such as LCB, WC6, WC9, 316L, Alloy 20, and Monel.
3. Denotes recommended spare parts.
4. The cover gasket is encapsulated in a machined recessed seat. A wide range of gasket materials are available; contact factory.
5. Only bolted cover designs (2½", 3", and optional 2") have Parts 5 and 6 (Studs and Nuts). Threaded cap covers are standard on Sizes ¼" through 1½". Size 2" is available with either a bolted or cap cover.
6. Carbon Steel bodies are epoxy painted.

Illustrations are representative of different YS81/82 models. Exploded view is shown with bolted cover; front view with cap. Contact factory for certified drawings of specific models when required.

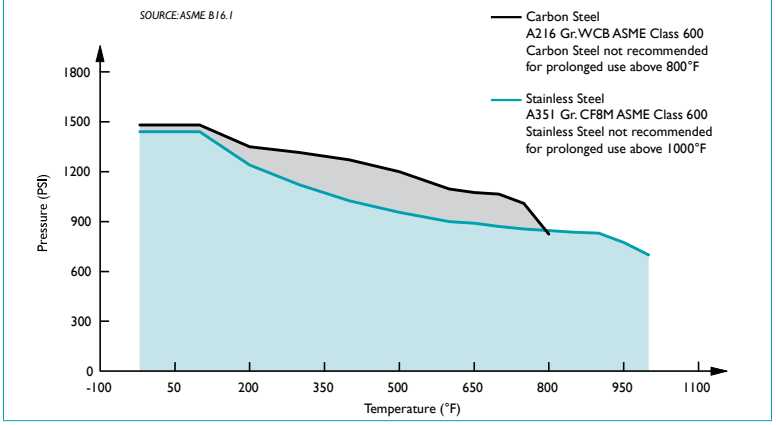


DIMENSIONS AND PERFORMANCE DATA (1)

SIZE		in	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2 (3)	2 1/2 (4)	3 (4)
		mm	8	10	15	20	25	32	40	50	65	80
A DIMENSION THREADED COVER		in	2.93	2.93	2.93	3.68	4.56	4.93	5.56	6.93	n/a	n/a
		mm	75	75	75	94	116	126	142	177	n/a	n/a
A DIMENSION BOLTED COVER		in	BOLTED COVER NOT AVAILABLE IN SIZES ¼" - 1½"							7.50	12.00	12.00
		mm								191	305	305
B DIMENSION CENTER LINE TO BOTTOM		in	2.37	2.37	2.37	2.81	3.68	4.12	4.75	6.00	10.50	10.50
		mm	61	61	61	72	94	105	121	153	267	267
C DIMENSION SCREEN REMOVAL		in	2.62	2.62	2.62	3.37	4.75	5.25	6.00	7.25	16.00	16.00
		mm	67	67	67	86	121	134	153	184	407	407
D NPT Plug BLOW-OFF		in	1/4	1/4	1/4	3/8	3/8	3/4	3/4	1	1 1/4	1 1/4
		mm	8	8	8	10	10	20	20	25	32	32
APPROXIMATE ASSEMBLED WEIGHT		lb	1.5	1.5	1.5	2.5	5.0	5.5	9.0	13.0	46.0	43.0
		kg	0.7	0.7	0.7	1.1	2.3	2.5	4.1	5.9	20.9	19.5
Flow Coefficient		C_V	0.7	2	8	15	22	38	42	70	110	160

1. Dimensions and weights are for reference only. When required, request certified drawings.
2. Face to face values have a tolerance of ±0.06 in (±2.0 mm) for sizes 10" and lower.
3. Size 2" is available in either a cap or bolted cover; please specify when ordering. Weight given is for model with cap cover.
4. Sizes 2½" and 3" have bolted covers.

PRESSURE - TEMPERATURE RATINGS



PRESSURE - TEMPERATURE RATING

Body Material	A216 Gr. WCB	A351 Gr. CF8M
WOG (Non-shock):	1480 PSI @ 100 °F	1440 PSI @ 100 °F

REFERENCED STANDARDS & CODES

CODE	DESCRIPTION
ASME B1.20.1	National Pipe Thread Taper
ASME B16.11	Forged Steel Fittings, Socket-Welding & Threaded
ASME B16.34	Flanged, Threaded, and Welding End

SCREEN SELECTION GUIDELINES

Size	Liquid	Open Area	Steam	Open Area
1/2" ~ 3"	1/16 (.0625)	41%	1/32 (.033)	28%

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