

**Suction Diffuser Strainer**

**SD 22-CI**

**Tri-flow Control Check Valve**

**TF 21-CI**

**TITAN**

®

# Pump Protection

*Titan Flow Control, Inc.  
has quality products that you can  
depend on, a guarantee that is  
critical when considering the set-  
up of expensive equipment within a  
pump piping system.*

Titan's durable **Suction Diffuser** and **Tri-flow Control Check Valve** are essential to protecting and promoting the longevity of pumps. At the same time, these two products are an economical choice, designed specifically to save space, energy, and installation and maintenance time.

A Titan **Suction Diffuser**, while functioning as a strainer to prevent foreign particles from harming a pump, also has straightening vanes that reduce turbulence in the flow and alleviate stress and erosion on the pump. Titan manufactures each diffuser with a mesh start-up screen that can be removed after the diffuser's start up period. Just one Titan Suction Diffuser replaces three products in a typical pump set up: *an elbow, strainer, and an entry pipe.*

The **Tri-flow Control Check Valve** is a spring-loaded valve that can be adjusted from full flow to complete shut-off. With a graduated position indicator, Titan's Tri-flow is easy to adjust and control flow and its automatic shut-off helps to prevent waterhammer. The Tri-flow is three products in one as it takes the place of a *balance valve, shut-off valve, and check valve.*



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# Suction Diffuser

**SD 22-CI • 90° Suction Diffuser Strainer • Flanged • ANSI 125**

## High quality protection for pumps

Directly mounted to the inlet side of the pump, Titan's Suction Diffuser Strainer is crucial for protecting expensive pumps. Serving as a strainer, it prevents unwanted debris from entering pump. It also helps to increase the service life of the pump as the straightening vanes on the outlet side of the diffuser help to smooth turbulent flow before it enters the pump. An optional magnetic insert that attracts metallic particles is also available. The suction diffuser has cast in supporting pads that fit standard support feet so an additional pipe saddle is not necessary.

## Energy efficient and economical design

Titan's Suction Diffuser takes the place of a strainer, reducing elbow, and an entrance pipe. In addition to these specific parts, using the suction diffuser reduces the amount of piping, welds, and bolts required in a traditional pump set-up. Not only is it economical as far as the initial investment, but time and money are saved on installation and servicing. The suction diffuser's minimal head loss, as a result of its large open area ratio, can yield savings in energy costs for many years. Straightening vanes on the outlet side of the diffuser help to maintain a smooth flow throughout the piping system decreasing pressure loss.

## Easy to service

The suction diffuser comes with a convenient mesh start-up screen that can be removed after its initial introductory period, thus two screens are not necessary. Quick-open knobs minimize down time while servicing and provide easy access to the strainer. The standard NPT plug can be replaced with an optional blow down valve for easy cleaning.



## SD 22 CAST IRON

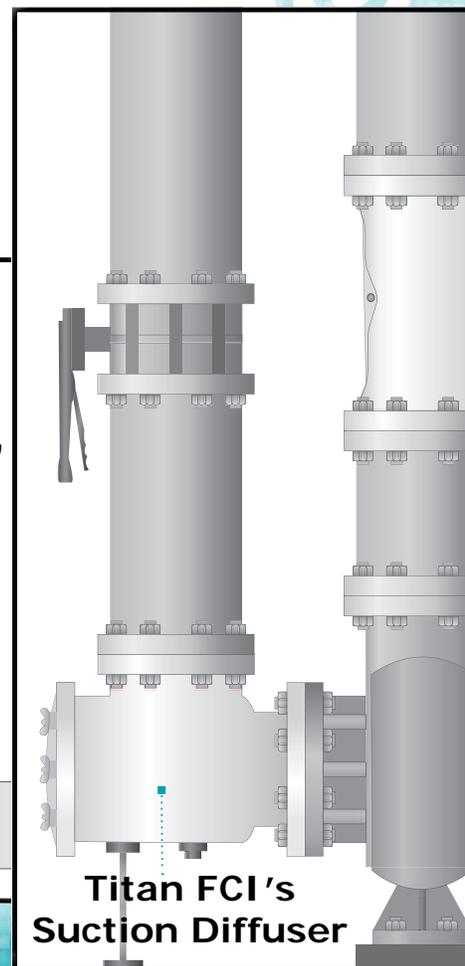
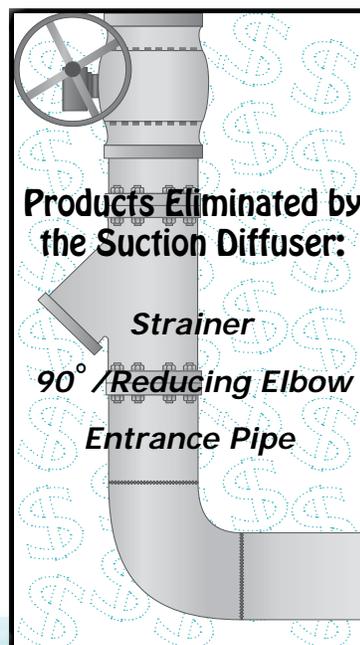
*Saves space,  
energy, time  
and money as it  
functions as three  
products in one!*

### SIZES AVAILABLE:

**2 x 1 1/4"**  
through  
**18 x 18"**

CODE	DESCRIPTION
ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings
ANSI B16.5	Pipe Flanges & Flanged Fittings
MSS SP-6	Standard Finishes for Connecting-end Flanges
MSS SP-25	Standard Marking System for Valves
MSS SP-55	Quality Standard for Valve Castings
ASTM F1199	Standard Specification for Cast and Welded Pipe Line Strainers
ASTM F1200	Standard Specification for Fabricated (Welded) Pipe Line Strainers

Referenced Codes  
and Standards



**TITAN**

# Tri-flow Valve

**TF 21-CI • Tri-flow Control Check Valve • Flanged • ANSI 125****TF 21  
CAST IRON***High Quality,  
Cost-effective  
Pump Protection***SIZES AVAILABLE:****2" through 20"**

## ***Economical and convenient design***

Titan's Tri-flow Control Check Valve is three valves in one, replacing a calibrated balance valve, shut-off valve, and silent check valve for a simplified and inexpensive way to control flow from a pump. Flow through the valve is adjustable from zero to full by the ACME rising stem. A graduated position indicator on the stem provides an accurate check of the valve's position for throttling service, and a hand-wheel is provided with all Tri-flow control check valves for ease of operation. The Tri-Flow also has a soft-seated, dovetail O-ring groove ensuring a bubble tight seal in the closed position.

## ***Quick closure to reduce water hammer***

Silent shut-off is achieved via the fully automatic, spring assisted disc that closes near zero flow velocity when functioning as a check valve. The soft seat and quick closure helps to prevent flow reversal, slamming, and surges.

## ***Minimal head loss***

The valve's body has a large body with at least a 2 to 1 ratio to connecting pipe. The disc's low cracking pressure reduces the amount of energy required to open the valve.

## **Titan FCI's Tri-flow Valve**

**SAVE  
with the  
SD 22  
and TF 21**

## **Products Eliminated by the Tri-flow Valve:**

*Balance Valve*  
*Shut-off Valve*  
*Check Valve*

## **MARKETS**

Process Industry, Power Industry, Chemical Industry, Water/Oil/Gas, Waste, Mining, Paper

## **SERVICING**

The mesh start-up screen in the suction diffuser should be removed after the initial start-up period. Regular screen cleaning is necessary to clear diffuser of foreign matter build up during normal use and to maintain a low differential pressure. An optional blow down valve is available to assist in screen cleaning.

The Tri-flow can be adjusted as necessary to control the flow. Regular servicing is not required although some parts, such as spring and O-Ring, should be inspected and replaced as needed.

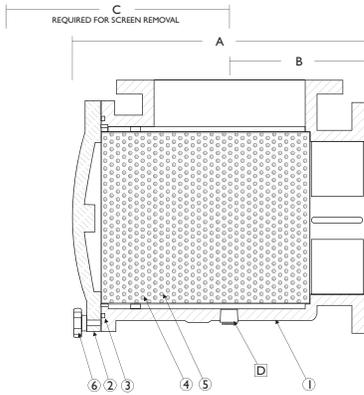
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# Suction Diffuser Strainer

## SD 22-CI



Illustrations are only representative of the products. Variations may exist between different sizes. Please ask for certified drawings when required.

### SD 22-CI BILL OF MATERIALS <sup>(1)</sup>

No.	Part	SD 22-CI
1	Body	Cast Iron A126-B
2	Cover	Cast Iron A126-B
3	O-Ring <sup>(2)</sup>	EPDM
4	Straining Element <sup>(2)</sup>	Stainless Steel 304
5	Start-up Screen <sup>(2)</sup>	Stainless Steel 304 20 Mesh
6	Bolt	Carbon Steel AISI 1035

- Equivalent or better materials may be substituted at the manufacturer's discretion.
- Denotes recommended spare parts.

### SD 22-CI DIMENSIONS AND PERFORMANCE DATA

SIZE	in	2 x 1 1/4	2 x 1 1/2	2 x 2	2 1/2 x 2	2 1/2 x 2 1/2	3 x 2	3 x 2 1/2	3 x 3	4 x 3	4 x 4
<b>A DIMENSION</b> TOP OF COVER TO FLANGE	in	9.25	9.25	9.25	10.0	10.0	9.37	10.75	10.62	12.37	12.0
	mm	235	235	235	254	254	238	273	270	314	305
<b>B DIMENSION</b> CENTER TO FLANGE	in	4.5	4.5	4.5	5.0	5.0	4.5	5.75	5.75	6.75	6.5
	mm	114	114	114	127	127	114	146	146	171	165
<b>C DIMENSION</b> SCREEN REMOVAL	in	8.81	8.81	8.81	9.12	9.12	9.62	9.62	9.62	11.5	11.5
	mm	224	224	224	232	232	244	244	244	292	292
<b>D DIMENSION</b> N.P.T.	in	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	1
	mm	20	20	20	20	20	20	20	20	20	25
<b>WEIGHT</b> (APPROXIMATE)	lb	24.0	26.0	28.0	39.0	40.0	34.0	52.0	53.0	74.0	76.5
	kg	10.9	11.8	12.7	17.7	18.1	15.4	23.6	24.0	33.6	34.7

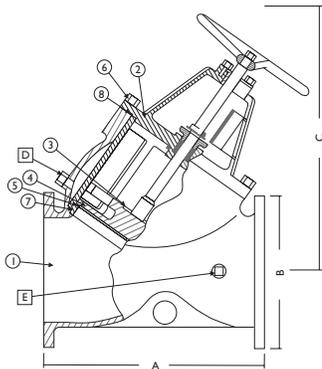
SIZE	in	5 x 4	5 x 5	6 x 4	6 x 5	6 x 6	8 x 5	8 x 6	8 x 8	10 x 8	10 x 10
<b>A DIMENSION</b> TOP OF COVER TO FLANGE	in	15.0	15.25	12.0	15.98	16.5	19.17	16.5	20.75	21.0	27.0
	mm	381	387	305	406	419	487	419	527	533	686
<b>B DIMENSION</b> CENTER TO FLANGE	in	7.5	7.5	6.5	10.43	8.0	9.0	8.0	9.0	9.0	11.5
	mm	191	191	165	265	203	229	203	229	229	292
<b>C DIMENSION</b> SCREEN REMOVAL	in	14.87	14.87	16.56	16.56	16.56	16.87	16.87	22.87	22.87	30.25
	mm	378	378	421	421	421	429	429	581	581	768
<b>D DIMENSION</b> N.P.T.	in	1	1	1	3/4	1	1	1	1 1/4	1	1 1/4
	mm	25	25	25	19	25	25	25	32	25	32
<b>WEIGHT</b> (APPROXIMATE)	lb	110.5	112.5	96.0	160.5	155.5	185.0	180.0	298.5	296.0	480.0
	kg	50.1	51.0	43.5	72.8	70.5	83.9	81.6	135.4	134.3	217.7

SIZE	in	12 x 8	12 x 10	12 x 12	14 x 10	14 x 12	14x14	16x12	16x14	16x16	18x16*
<b>A DIMENSION</b> TOP OF COVER TO FLANGE	in	21.0	26.68	26.68	25.0	27.0	26.87	32.17	30.25	29.33	36.38
	mm	533	678	678	635	686	683	817	768	745	924
<b>B DIMENSION</b> CENTER TO FLANGE	in	11.0	11.25	12.0	13.0	13.25	13.25	19.25	14.5	14.33	21.81
	mm	280	286	305	330	337	337	489	368	364	554
<b>C DIMENSION</b> SCREEN REMOVAL	in	22.87	33.0	28.75	33.0	31.0	33.12	33.66	31.0	33.12	38.75
	mm	581	838	730	838	787	841	855	787	841	985
<b>D DIMENSION</b> N.P.T.	in	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1	1 1/2	C/F	1
	mm	32	32	32	32	32	32	25.4	40	C/F	25.4
<b>WEIGHT</b> (APPROXIMATE)	lb	422.0	498.0	588.0	515.0	554.0	564.0	724.0	748.0	C/F	1600
	kg	191.4	225.9	266.7	233.6	251.3	255.8	328.4	339.3	C/F	725.8

1. Dimensions and weights are for reference only. When required, request certified drawings. \* Larger sizes are available. Please consult factory for dimensions.

# Tri-flow Control Check Valve

## TF 21-CI



### TF 21-CI DIMENSIONS AND PERFORMANCE DATA

SIZE	in	2	2 1/2	3	4	5	6	8	10	12	14	16	20
<b>A DIMENSION</b> FACE TO FACE	in	8.39	9.84	10.05	14.5	16.0	18.0	21.5	25.5	30.12	30.39	33.78	C/F
	mm	213	250	255	368	407	457	546	648	765	772	858	C/F
<b>ØB DIMENSION</b> FLANGE DIAMETER	in	6.0	7.0	7.5	9.0	10.0	11.0	13.5	16.0	19.0	21.0	23.5	C/F
	mm	152	178	191	229	254	279	343	406	483	533	597	C/F
<b>C DIMENSION</b> CLEARANCE, FULL OPEN	in	12.0	12.5	14.0	15.5	19.5	21.5	26.0	27.0	32.0	C/F	C/F	C/F
	mm	305	318	356	394	495	546	660	686	813	C/F	C/F	C/F
<b>D DIMENSION</b> N.P.T.	in	1/2	3/4	1/2	1/2	1/2	3/4	3/4	1	1	3/4	1	C/F
	mm	15	20	15	15	15	20	20	25	25	20	25	C/F
<b>E DIMENSION</b> N.P.T.	in	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	C/F
	mm	8	8	8	8	8	8	8	8	8	8	8	C/F
<b>WEIGHT</b> (APPROXIMATE)	lb	33.0	42.0	59.0	104.0	170.0	202.0	280.0	442.0	816.0	1112.0	1478.0	C/F
	kg	15.0	19.1	26.8	47.2	77.1	91.6	127.0	200.5	370.1	504.4	670.4	C/F
<b>Flow Coefficient</b>	C <sub>v</sub>	82	128	188	334	528	765	1371	2153	3105	C/F	C/F	C/F

1. Dimensions and weights are for reference only. When required, request certified drawings.

### TF 21-CI BILL OF MATERIALS <sup>(1)</sup>

No.	Part	TF 21-CI
1	Body	Cast Iron, A126-B
2	Cover	Cast Iron, A126-B
3	Spring <sup>(2)</sup>	Stainless Steel, 300 Series
4	Disc	Ductile Iron A536, Plated
5	Disc Seat	EPDM O-Ring
6	Bolt	Carbon Steel, AISI 1035
7	Seat Guide	Ductile Iron A536, Plated
8	O-Ring <sup>(2)</sup>	EPDM

#### TF 21-CI's Bill of Materials Notes:

- Equivalent or better materials may be substituted at the manufacturer's discretion.
- Denotes recommended spare parts.

#### SPRING AND SEAT TEMPERATURE RATINGS

Material	Temperature
EPDM	-20 °F - 300 °F
Stainless Steel	450 °F MAX

## PRESSURE TEMPERATURE RATING

**SD 22 AND TF 21  
CAST IRON  
ASTM A126 B - CLASS 125**

**WOG (Non-Shock)**

**200 PSI @ 150°F**

\*These temperatures are theoretical and may vary during actual operating conditions.



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