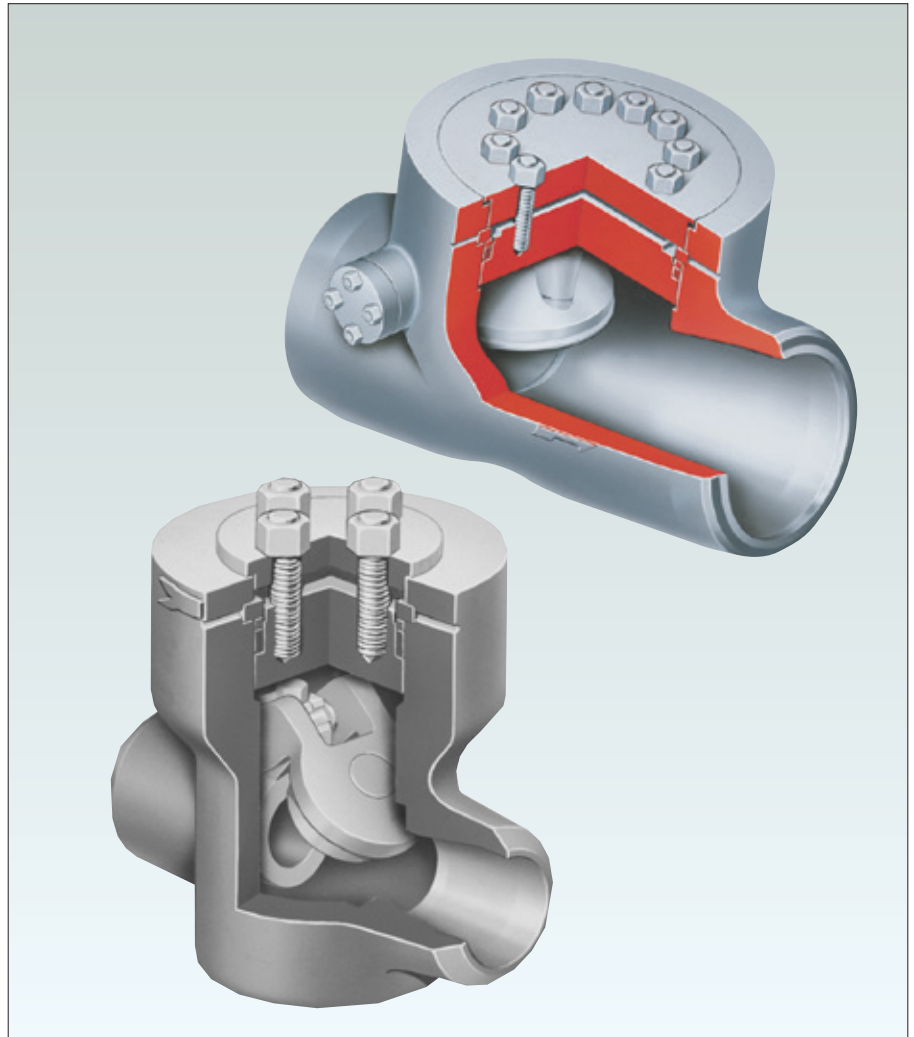


## DEWRANCE

### Features & Benefits

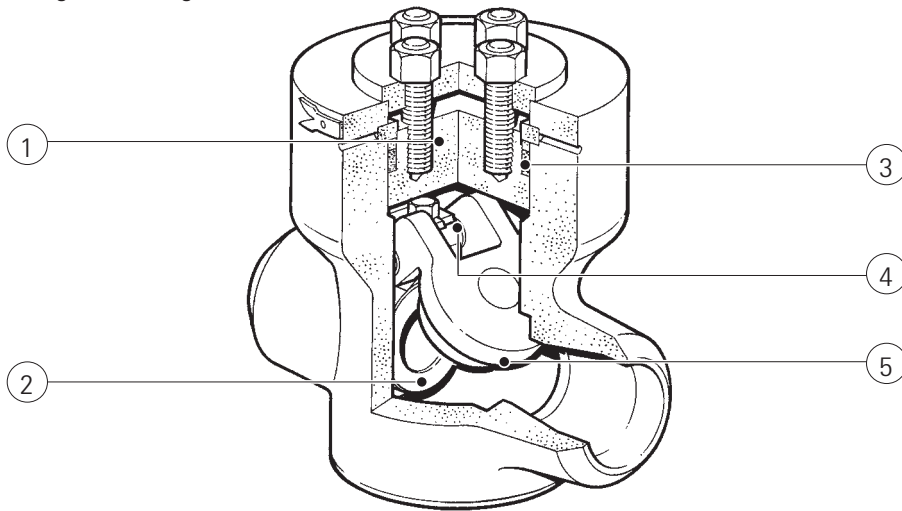
- Excellent Reliability
  - Direct deposited seats hard-faced with Stellite® or Equivalent
  - Tilting Disc design balanced for quick opening and immediate closing on flow reversal
  - Lightweight disc with minimum travel
  - Optimum performance under all flow conditions
  - Self-draining geometry
- Low Cost Maintenance
  - Expanded graphite pressure seal design
  - Nitrided hinge pin, supported in nitrided bearings, giving a low coefficient of friction and hardwearing surface for maximum performance
  - Easy access through pressure seal cover
  - Simplified seat refurbishment, only requires lapping
  - Longer seat life due to non-scuffing action of seat to disc geometry
- Improved Performance
  - Aerodynamic self-aligning tilting disc design for low pressure drop characteristic
  - Automatic self closure on flow reversal
  - Inclined seat geometry combined with conical seat and disc for tight seal without scuffing
- Typical Applications
  - Main Steam Isolation
  - Boiler Feed Pump Isolation
  - Deaerator Recirculation
  - Economizer Recirculation
  - Spray Water Isolation
  - Attemperator Spray
  - Chemical injection



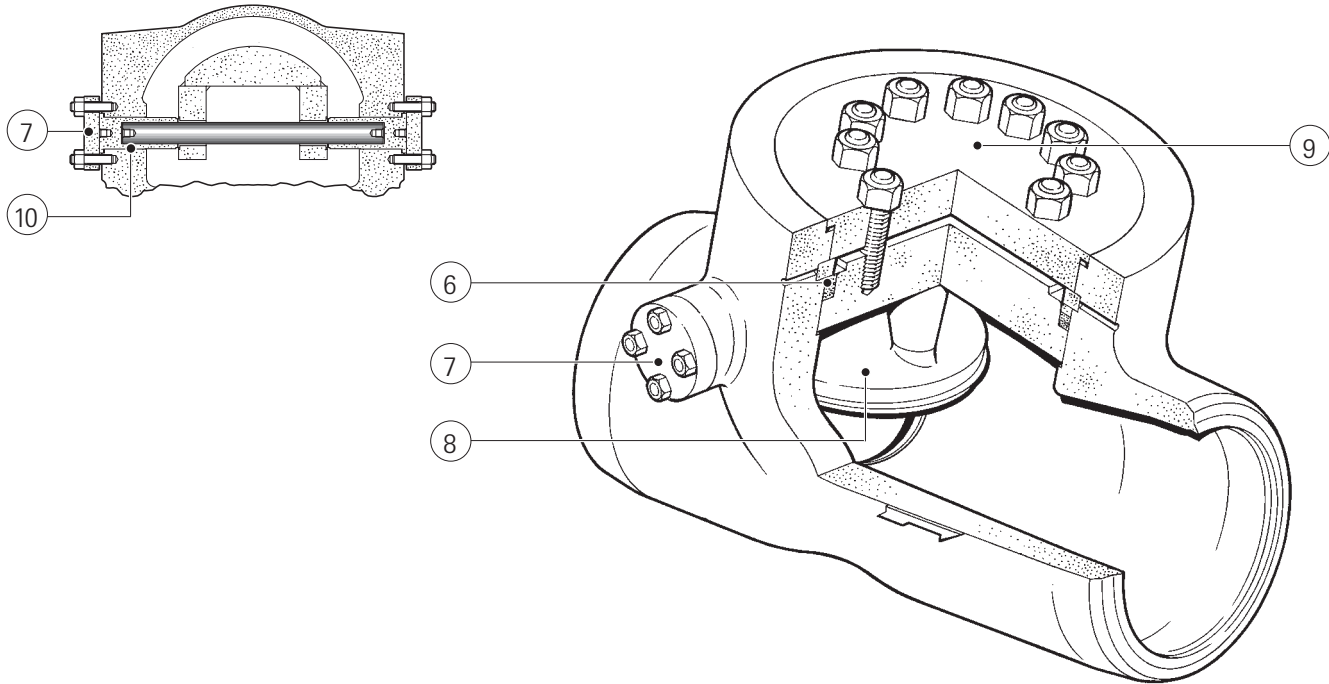
### Technical data

Sizes	: 2 1/2" – 24"
ASME	: B16.34 – 1996
Valve overall lengths to:	ASME B16.10 – 1992
Pressure Class	: 1000, 1690, 2850

**Swing Check design**



**Tilting Disc design**



**Legenda**

**Swing Check Design**

- 1 Pressure Seal Closure improves as pressure increases. Hard Faced Stellite\* or equivalent Discs and Seats.
- 3 Graphoil® Pressure Seal Ring.
- 4 Unique location of Disc Hinge eliminates external bearings or seals.
- 5 Self aligning Swing Check Disc.

**Tilting Disc Design**

- 6 Graphoil® Pressure Seal Ring.
- 7 Disc supported on Nitrided Bearings. Free to rotate on bearings and spindle, no keyways used.
- 8 Inclined Seat and aerodynamic Tilting Disc gives low pressure drop.
- 9 Pressure Seal Closure improves as pressure increases and provides easy access for inline maintenance.
- 10 Glandless hinge pin sealing for reliability and performance.

# Check Valves - High Pressure Steel

## Pressure/Temperature Ratings (Check Valves)

### Imperial 1000 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-20° to 100°	Pressure in lbf/sq. in. at Temp. °F (for intermediate ratings use linear interpolation)																
	Forged	Cast			200	300	400	500	600	650	700	750	800	850*	900	950	975	1000	1025	1050	1075
F67	D A105	E A216	Std.	2468	2250	2188	2112	1995	1823	1789	1778	1678	1373	894	-	-	-	-	-	-	-
F67	D A105	E WCB	Spec.	2500	2500	2500	2500	2500	2378	2333	2312	2100	1716	1116	-	-	-	-	-	-	-
F67		J A217	Std.	2500	2500	2406	2311	2217	2017	1961	1894	1773	1694	1623	1499	1062	892	722	600	478	400
F67		J WC6	Spec.	2500	2500	2500	2500	2500	2500	2500	2444	2428	2400	2256	1956	1328	1114	900	750	600	500
F67	K A182	L A217	Std.	2500	2500	2428	2351	2217	2017	1961	1894	1773	1694	1623	1499	1256	1062	868	725	583	475
F67	K F22	L WC9	Spec.	2500	2500	2472	2416	2400	2400	2384	2372	2300	2244	2144	2000	1572	1328	1084	906	728	592

### Metric 1000 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-30° to 38°	Pressure in Bar at Temp. °C (for intermediate ratings use linear interpolation)																	
	Forged	Cast			50	100	150	200	250	300	350	375	400	425	450*	475	500	525	550	575	600	
F67	D A105	E A216	Std.	170.1	166.8	154.6	150.8	146.0	139.0	129.0	123.2	121.6	114.9	95.9	66.9	-	-	-	-	-	-	-
F67	D A105	E WCB	Spec.	172.4	172.4	172.4	172.4	172.4	172.4	166.3	160.5	157.3	143.7	119.9	83.6	-	-	-	-	-	-	-
F67		J A217	Std.	172.4	172.4	171.6	165.7	159.9	154.0	142.9	134.1	129.4	122.0	117.1	112.7	105.6	84.1	60.5	42.4	29.3	20.3	
F67		J WC6	Spec.	172.4	172.4	172.4	172.4	172.4	172.4	172.4	171.4	168.4	167.3	165.6	157.1	140.2	107.2	75.6	53.0	36.7	25.2	
F67	K A182	L A217	Std.	172.4	172.4	171.8	167.3	162.5	154.5	142.9	134.1	129.4	122.0	117.1	112.7	105.6	92.6	72.1	51.2	35.1	23.0	
F67	K F22	L WC9	Spec.	172.4	172.4	172.1	170.3	166.9	165.7	165.5	164.2	162.8	158.4	155.0	148.9	140.5	119.0	90.2	64.0	43.8	28.6	

### Imperial 1690 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-20° to 100°	Pressure in lbf/sq. in. at Temp. °F (for intermediate ratings use linear interpolation)																
	Forged	Cast			200	300	400	500	600	650	700	750	800	850*	900	950	975	1000	1025	1050	1075
F73	D A105	E A216	Std.	4173	3803	3696	3571	3374	3082	3025	3002	2839	2320	1509	-	-	-	-	-	-	-
F73	D A105	E WCB	Spec.	4225	4225	4225	4225	4225	4016	3938	3909	3549	2896	1882	-	-	-	-	-	-	-
F73		J A217	Std.	4225	4225	4067	3904	3746	3408	3313	3199	2996	2861	2744	2530	1796	1507	1217	1014	811	676
F73		J WC6	Spec.	4225	4225	4225	4225	4225	4225	4225	4130	4106	4056	3814	3307	2247	1884	1521	1268	1014	845
F73	K A182	L A217	Std.	4225	4225	4102	3977	3746	3408	3313	3199	2996	2861	2744	2530	2124	1797	1469	1227	985	802
F73	K F22	L WC9	Spec.	4225	4225	4175	4079	4056	4033	4006	3887	3791	3622	3380	2654	2245	1836	1534	1233	1003	

### Metric 1690 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-30° to 38°	Pressure in Bar at Temp. °C (for intermediate ratings use linear interpolation)																
	Forged	Cast			50	100	150	200	250	300	350	375	400	425	450*	475	500	525	550	575	600
F73	D A105	E A216	Std.	287.6	282.1	261.3	254.7	246.9	235.1	218.1	208.2	205.4	194.3	162.1	113.0	-	-	-	-	-	-
F73	D A105	E WCB	Spec.	291.3	291.3	291.3	291.3	291.3	291.3	280.9	271.0	266.0	242.9	202.4	140.9	-	-	-	-	-	-
F73		J A217	Std.	291.3	291.3	290.0	280.2	270.1	260.2	241.5	226.6	218.6	206.2	197.8	190.5	178.3	142.1	102.3	71.6	49.6	34.1
F73		J WC6	Spec.	291.3	291.3	291.3	291.3	291.3	291.3	291.3	289.7	284.5	282.9	279.9	265.7	237.1	181.2	127.9	89.5	62.0	42.6
F73	K A182	L A217	Std.	291.3	291.3	290.3	282.6	274.9	261.1	241.5	226.6	218.6	206.2	197.8	190.5	178.3	156.5	122.1	86.6	59.4	38.9
F73	K F22	L WC9	Spec.	291.3	291.3	290.9	287.7	281.8	279.9	279.7	277.6	275.1	267.7	261.8	251.6	237.4	201.0	152.5	108.3	74.2	48.5

### Imperial 2850 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-20° to 100°	Pressure in lbf/sq. in. at Temp. °F (for intermediate ratings use linear interpolation)																
	Forged	Cast			200	300	400	500	600	650	700	750	800	850*	900	950	975	1000	1025	1050	1075
F95	D A105	E A216	Std.	7035	6412	6236	6019	5688	5199	5102	5061	4788	3910	2542	-	-	-	-	-	-	-
F95	D A105	E WCB	Spec.	7125	7125	7125	7125	7125	6771	6641	6589	5985	4885	3175	-	-	-	-	-	-	-
F95		J A217	Std.	7125	7125	6858	6584	6314	5745	5591	5392	5050	4822	4628	4269	3028	2540	2052	1710	1368	1140
F95		J WC6	Spec.	7125	7125	7125	7125	7125	7125	7125	6965	6921	6840	6435	5579	3786	3175	2565	2138	1710	1425
F95	K A182	L A217	Std.	7125	7125	6920	6703	6314	5745	5591	5392	5050	4822	4628	4269	3586	3030	2475	2067	1660	1351
F95	K F22	L WC9	Spec.	7125	7125	7045	6880	6840	6840	6800	6760	6555	6391	6106	5700	4480	3787	3095	2585	2076	1690

### Metric 2850 int. Class (ASME B16.34 1996)

Prod. No.	ASTM Body Mat.		ASME code B16.34	-30° to 38°	Pressure in Bar at Temp. °C (for intermediate ratings use linear interpolation)																
	Forged	Cast			50	100	150	200	250	300	350	375	400	425	450*	475	500	525	550	575	600
F95	D A105	E A216	Std.	484.8	475.6	440.6	429.6	416.2	396.3	367.9	351.1	346.3	327.7	273.2	190.3	-	-	-	-	-	-
F95	D A105	E WCB	Spec.	491.3	491.3	491.3	491.3	491.3	491.3	473.7	457.0	448.5	409.6	341.4	237.8	-	-	-	-	-	-
F95		J A217	Std.	491.3	491.3	489.0	472.4	455.5	438.7	407.1	382.2	368.5	347.5	333.4	321.2	300.8	239.6	172.4	120.7	83.6	57.5
F95		J WC6	Spec.	491.3	491.3	491.3	491.3	491.3	491.3	491.3	488.6	479.8	476.9	471.9	448.2	400.0	305.5	215.6	150.9	104.5	71.9
F95	K A182	L A217	Std.	491.3	491.3	489.6	476.8	463.4	440.2	407.1	382.2	368.5	347.5	333.4	321.2	300.8	264.2	205.9	145.9	100.0	65.4
F95	K F22	L WC9	Spec.	491.3	491.3	490.6	485.5	475.3	472.1	471.6	468.2	464.1	451.5	441.3	424.1	400.3	339.1	257.3	182.5	125.0	81.8

\* Permissible but not recommended for prolonged usage above 800°F (425°C).

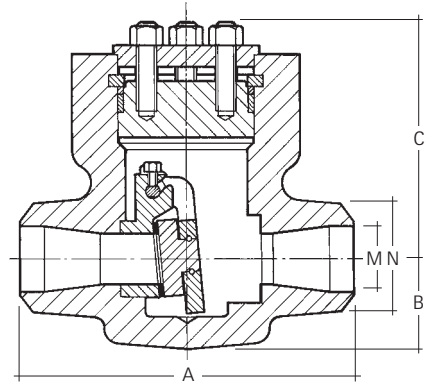
# Swing Disc Check Valve F73

## High Pressure Steel / 'N' Design

### Sizes 2 1/2"–5" ASME B16.34 1690 Class

#### Main component materials

Description	Carbon Steel	Alloy Steel
Body	A105	A182 F22
Bonnet	A516 Gr. 70	A387 Gr. 22
Cover	BS1501-161 G430A	A387 Gr. 11
Hinge Pin	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Hinge Pin Bush	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Seat	A516 Gr. 70	A387 Gr. 22
Disc	A105	A387 Gr. 22
Pressure Seal Ring	Expanded Graphite	Expanded Graphite



#### Hydrostatic shell & seat leak test pressures

Press. Class	Material			
	ASTM A105		ASTM A182-F22	
	Shell	Seat	Shell	Seat
1690	6350 psi	4650 psi	6350 psi	4650 psi
1690	438 bar	321 bar	438 bar	321 bar

#### Dimensions

Size	A	B	C	M	N	Max.Width	Weight	Cv	K Factor	Product Numbers	
										Carbon Steel A105	Alloy Steel F22
2½ in	10	2.6	6.18	1.65	2.99	7.32	53 lb	82	0.9888	F73DZ065N	F73KZ065N
65 mm	254	66	157	42	76	186	24 kg				
3 in	12	2.6	7.13	2.17	3.58	7.32	126 lb	145	0.9338	F73DZ080N	F73KZ080N
80 mm	305	66	181	55	91	186	57 kg				
4 in	16	3.15	8.23	2.99	4.61	8.58	165 lb	411	0.8719	F73DZ100N	F73KZ100N
100 mm	406	80	209	76	117	218	75 kg				
†5 in	19	4.45	10.47	4.25	5.71	9.65	227 lb	601	0.8093	F73EZ125N	F73LZ125N
†125 mm	483	113	266	108	145	245	103 kg				

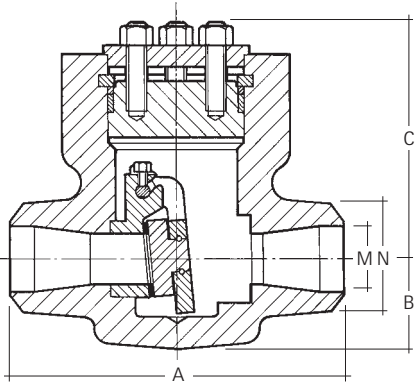
#### Notes

\* Per ASME B16.10

† 5" valve to have cast steel body

# Swing Disc Check Valve F95

## High Pressure Steel / 'N' Design



### Sizes 2 1/2"–5" ASME B16.34 2850 Class

#### Main component materials

Description	Carbon Steel	Alloy Steel
Body	A105	A182 F22
Bonnet	A516 Gr. 70	A387 Gr. 22
Cover	BS1501-161 G430A	A387 Gr. 11
Hinge Pin	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Hinge Pin Bush	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Seat	A516 Gr. 70	A387 Gr. 22
Disc	A105	A387 Gr. 22
Pressure Seal Ring	Expanded Graphite	Expanded Graphite

#### Hydrostatic shell & seat leak test pressures

Press. Class	Material ASTM		ASTM	
	A105		A182-F22	
	Shell	Seat	Shell	Seat
2850	10700 psi	7900 psi	10700 psi	7900 psi
2850	737 bar	541 bar	737 bar	541 bar

#### Dimensions

Size	A*	B	C	M	N	Max.Width	Weight	Cv	K Factor	Product Numbers	
										Carbon Steel A105	Alloy Steel F22
2½ in	13	2.6	6.18	1.38	2.99	7.32	66 lb	56	1.0277	F95DZ065N	F95KZ065N
65 mm	330	66	157	35	76	186	30 kg				
3 in	14.5	3.15	7.68	1.65	3.58	8.58	150 lb	82	0.9888	F95DZ080N	F95KZ080N
80 mm	368	80	195	42	91	218	68 kg				
4 in	18	3.15	7.76	2.13	4.61	8.58	170 lb	140	0.9375	F95DZ100N	F95KZ100N
100 mm	457	80	197	54	117	218	77 kg				
5† in	21	5.31	11.18	3.46	5.71	12	272 lb	390	0.8453	F95EZ125N	F95LZ125N
125† mm	533	135	284	88	145	305	123 kg				

#### Notes

- \* Per ASME B16.10
- † 5" valve to have cast steel body

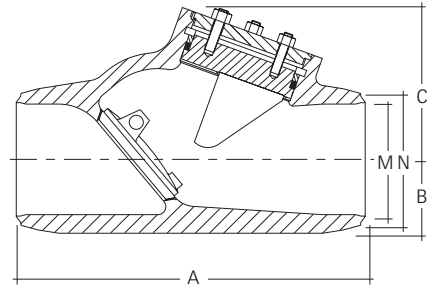
# Tilting Disc Check Valve F67

## High Pressure Steel / 'N' Design

### Sizes 6"–24" ASME B16.34 1000 Class

#### Main component materials

Description	Carbon Steel	Alloy Steel	Alloy Steel
Body	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Bonnet	A516 Gr. 70	A387 Gr. 11	A387 Gr. 22
Cover	BS1501-161 G430A	A387 Gr. 11	A387 Gr. 11
Hinge Pin	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)
Hinge Pin Bush	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Hinge Pin Housing	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Disc	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Gasket	Expanded Graphite	Expanded Graphite	Expanded Graphite
Pressure Seal Ring	Expanded Graphite	Expanded Graphite	Expanded Graphite



#### Hydrostatic shell & seat leak test pressures

Press. Class	Material					
	ASTM A-216 WCB		ASTM A-217 WC6		ASTM A-217 WC9	
	Shell	Seat	Shell	Seat	Shell	Seat
1000	3750 psi	2750 psi	3750 psi	2750 psi	3750 psi	2750 psi
1000	259 bar	190 bar	259 bar	190 bar	259 bar	190 bar

#### Dimensions

Size	A*	B	C	M	N	Max.Width	Weight	Cv	K Factor	Product Numbers		
										Carbon Steel WCB	Alloy Steel WC6	Alloy Steel WC9
6 in	20	3.58	10.02	5.63	6.81	15.67	232 lb	831	1.30	F67EZ150N	F67JZ150N	F67LZ150N
150 mm	508	91	259	143	173	398	105 kg					
8 in	26	4.8	12.4	7.44	8.78	17.68	443 lb	1492	1.23	F67EZ200N	F67JZ200N	F67LZ200N
200 mm	660	122	315	189	223	449	201 kg					
10 in	31	5.98	14.57	9.25	10.94	20.16	722 lb	2365	1.17	F67EZ250N	F67JZ250N	F67LZ250N
250 mm	787	152	370	235	278	512	328 kg					
12 in	36	7.6	17.13	11.10	12.99	25.16	1180 lb	3481	1.12	F67EZ300N	F67JZ300N	F67LZ300N
300 mm	914	193	435	282	330	639	535 kg					
14 in	39	7.76	18.23	12.2	14.25	26.69	1652 lb	4263	1.09	F67EZ350N	F67JZ350N	F67LZ350N
350 mm	991	197	463	310	362	678	749 kg					
16 in	43	9.09	20.98	13.98	16.26	28.03	2137 lb	5676	1.06	F67EZ400N	F67JZ400N	F67LZ400N
400 mm	1092	231	533	355	413	712	969 kg					
18 in	48	9.61	23.5	15.59	18.31	33	2853 lb	7126	1.04	F67EZ450N	F67JZ450N	F67LZ450N
450 mm	1219	244	597	396	465	838	1294 kg					
20 in	52	10.43	26.06	17.32	20.31	34.7	3797 lb	8881	1.02	F67EZ500N	F67JZ500N	F67LZ500N
500 mm	1321	265	662	440	516	880	1722 kg					
24† in	61	13.5	31.1	20.79	24.37	41.6	6367 lb	13055	0.98	F67EZ600N	F67JZ600N	F67LZ600N
600† mm	1549	343	790	528	619	1056	2888 kg					

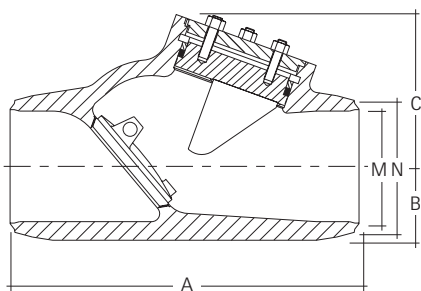
#### Notes

\* Per ASME B16.10

† 24" Nominal sizes not shown in ASME B16.10

# Tilting Disc Check Valve F73

## High Pressure Steel / 'N' Design



### Sizes 6"–24" ASME B16.34 1690 Class

#### Main component materials

Description	Carbon Steel	Alloy Steel	Alloy Steel
Body	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Bonnet	A516 Gr. 70	A387 Gr. 11	A387 Gr. 22
Cover	BS1501-161 G430A	A387 Gr. 11	A387 Gr. 11
Hinge Pin	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)
Hinge Pin Bush	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Hinge Pin Housing	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Disc	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Gasket	Expanded Graphite	Expanded Graphite	Expanded Graphite
Pressure Seal Ring	Expanded Graphite	Expanded Graphite	Expanded Graphite

#### Hydrostatic shell & seat leak test pressures

Press. Class	Material					
	ASTM A-216 WCB		ASTM A-217 WC6		ASTM A-217 WC9	
	Shell	Seat	Shell	Seat	Shell	Seat
1690	6350 psi	4650 psi	6350 psi	4650 psi	6350 psi	4650 psi
1690	438 bar	321 bar	438 bar	321 bar	438 bar	321 bar

#### Dimensions

Size	A*	B	C	M	N	Max.Width	Weight	Cv	K Factor	Product Numbers		
										Carbon Steel WCB	Alloy Steel WC6	Alloy Steel WC9
6 in	22	3.74	10.87	5.12	6.81	15.6	379 lb	672	1.36	F73EZ150N	F73JZ150N	F73LZ150N
150 mm	559	95	276	130	173	396	172 kg					
8 in	28	4.96	13.35	6.69	8.78	19.5	708 lb	1178	1.29	F73EZ200N	F73JZ200N	F73LZ200N
200 mm	711	126	339	170	223	495	321 kg					
10 in	34	6.18	16.26	8.35	10.94	22	1184 lb	1880	1.23	F73EZ250N	F73JZ250N	F73LZ250N
250 mm	864	157	413	212	278	560	537 kg					
12 in	39	7.28	19.64	10.04	12.99	28.8	1969 lb	2786	1.17	F73EZ300N	F73JZ300N	F73LZ300N
300 mm	991	185	499	255	330	731	893 kg					
14 in	42	7.87	20.83	11.02	14.25	28.43	2099 lb	3401	1.14	F73EZ350N	F73JZ350N	F73LZ350N
350 mm	1066	200	529	280	362	722	952 kg					
16 in	47	9.1	23.5	12.64	16.26	30.3	3563 lb	4534	1.11	F73EZ400N	F73JZ400N	F73LZ400N
400 mm	1194	231	597	321	413	770	1616 kg					
18 in	53	10.43	26.06	14.09	18.31	32.8	4125 lb	5686	1.09	F73EZ450N	F73JZ450N	F73LZ450N
450 mm	1346	265	662	358	465	833	1871 kg					
20 in	58	11.54	28.82	15.63	20.31	36.3	6112 lb	7128	1.05	F73EZ500N	F73JZ500N	F73LZ500N
500 mm	1473	293	732	397	516	921	2772 kg					
24† in	66	13.86	34.61	18.78	24.37	43.5	9779 lb	10493	1.01	F73EZ600N	F73JZ600N	F73LZ600N
600† mm	1676	352	879	477	619	1106	4435 kg					

#### Notes

- \* Per ASME B16.10
- † 24" Nominal sizes not shown in ASME B16.10

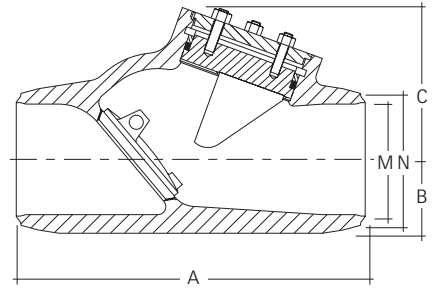
# Tilting Disc Check Valve F95

## High Pressure Steel / 'N' Design

### Sizes 6"–24" ASME B16.34 2850 Class

#### Main component materials

Description	Carbon Steel	Alloy Steel	Alloy Steel
Body	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Bonnet	A516 Gr. 70	A387 Gr. 11	A387 Gr. 22
Cover	BS1501-161 G430A	A387 Gr. 11	A387 Gr. 11
Hinge Pin	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)	A565-XM32 (Nitrided)
Hinge Pin Bush	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Hinge Pin Housing	AISI 431 (Nitrided)	AISI 431 (Nitrided)	AISI 431 (Nitrided)
Disc	A216 Gr. WCB	A217 Gr. WC6	A217 Gr. WC9
Gasket	Expanded Graphite	Expanded Graphite	Expanded Graphite
Pressure Seal Ring	Expanded Graphite	Expanded Graphite	Expanded Graphite



#### Hydrostatic shell & seat leak test pressures

Press. Class	Material					
	ASTM A-216 WCB		ASTM A-217 WC6		ASTM A-217 WC9	
	Shell	Seat	Shell	Seat	Shell	Seat
2850	10700 psi	7900 psi	10700 psi	7900 psi	10700 psi	7900 psi
2850	737 bar	541 bar	737 bar	541 bar	737 bar	541 bar

#### Dimensions

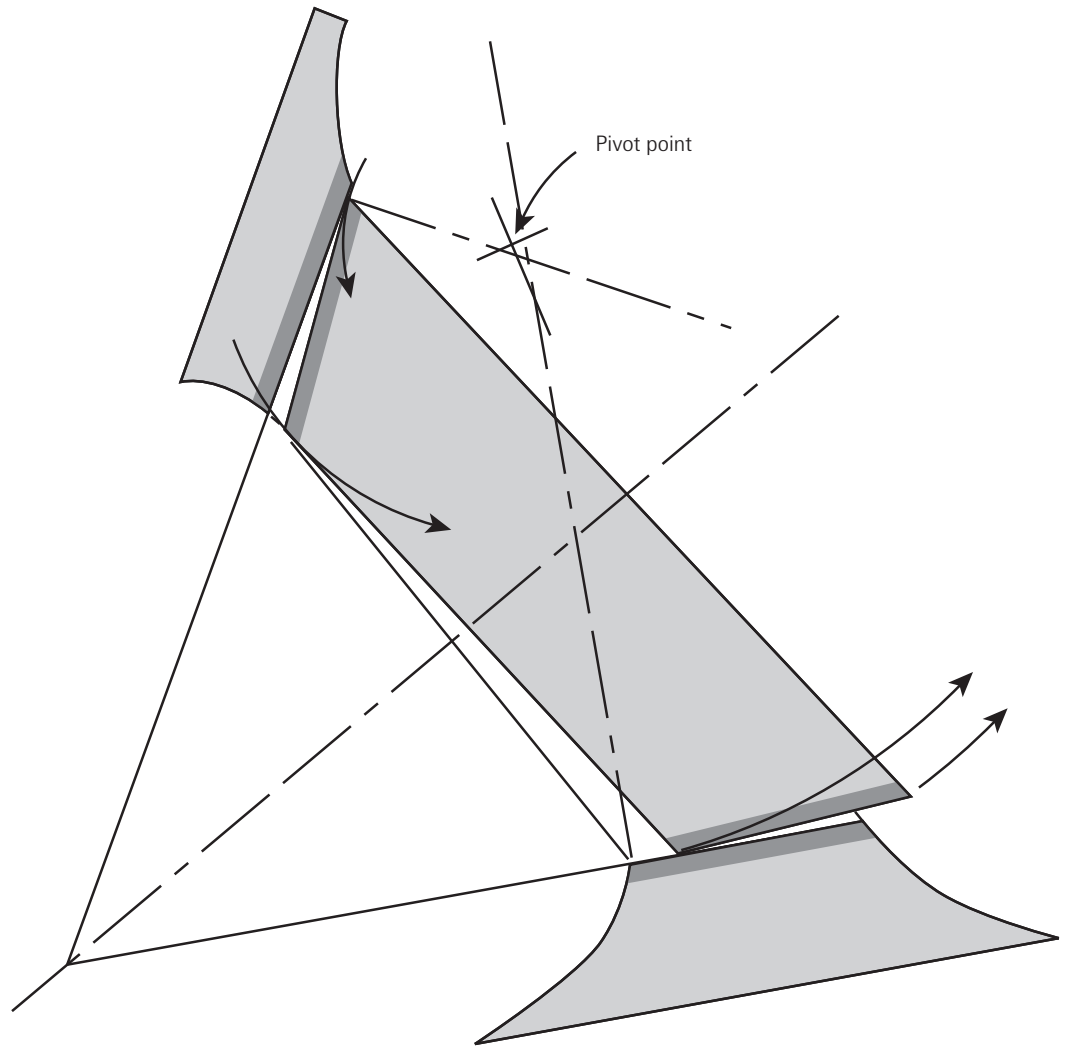
Size	A*	B	C	M	N	Max.Width	Weight	Cv	K Factor	Product Numbers		
										Carbon Steel WCB	Alloy Steel WC6	Alloy Steel WC9
6 in	24	3.86	10.12	4.17	6.81	17.5	531 lb	426	1.49	F95EZ150N	F95JZ150N	F95LZ150N
150 mm	610	98	257	106	173	445	241 kg					
8 in	30	5.04	13.35	5.51	8.78	22.9	975 lb	767	1.40	F95EZ200N	F95JZ200N	F95LZ200N
200 mm	762	128	339	140	223	581	442 kg					
10 in	36	6.42	15.83	6.89	10.94	25.7	1693 lb	1226	1.34	F95EZ250N	F95JZ250N	F95LZ250N
250 mm	914	163	402	175	278	654	768 kg					
12 in	41	7.48	19.53	8.23	12.99	29.1	2796 lb	1790	1.28	F95EZ300N	F95JZ300N	F95LZ300N
300 mm	1041	190	496	209	330	740	1268 kg					
14 in	44	7.91	20.71	9.06	14.25	31.7	2879 lb	2195	1.25	F95EZ350N	F95JZ350N	F95LZ350N
350 mm	1117	201	526	230	362	806	1309 kg					
16 in	49	9.41	24.88	10.39	16.26	35.9	4600 lb	2934	1.21	F95EZ400N	F95JZ400N	F95LZ400N
400 mm	1245	239	632	264	413	913	2086 kg					
18 in	55	10.43	27.64	11.61	18.31	39.9	5886 lb	3695	1.19	F95EZ450N	F95JZ450N	F95LZ450N
450 mm	1397	265	702	295	465	1014	2675 kg					
20 in	60	11.46	28.94	12.83	20.31	40.8	7664 lb	4570	1.16	F95EZ500N	F95JZ500N	F95LZ500N
500 mm	1524	291	735	326	516	1036	3484 kg					
24† in	68	13.94	36.85	15.47	24.37	53.2	12663 lb	6823	1.10	F95EZ600N	F95JZ600N	F95LZ600N
600† mm	1727	354	936	393	619	1352	5756 kg					

#### Notes

- \* Per ASME B16.10
- † 24" Nominal sizes not shown in ASME B16.10



**Cone in a cone**



**Design Features**

- 1 Proven cone in a cone seating geometry used on our standard Tilting Disc Check Valve.
- 3 Non scuffing design ensures disc always leaves seat due to position of pivot.
- 3 Pressure intensity high enough to seal.
- 4 Dissimilar seating materials to prevent pick-up.

# Tilting Disc Check Valve

## Materials of Construction

### ASTM specification Ferrous

Type	Forgings						Castings				Studs		
Main use	Bonnets, Covers, Seats Discs						Valve Bodies				Covers, Glands		
ASTM Spec (UNS)	A105	A182 F22	A276 420	A182 F347	BS970 316S31	A182 F91	A216 WCB	A217 WC6	A217 WC9	ASTM A743 GR.C12A	A193 GR.B7	A193 GR.B16	A193 GR.B6
Carbon %	0.75 max	0.15 max	0.15 min	0.08 max	0.07	0.08/0.12	0.30 max	0.20 max	0.05/0.18	0.12	0.37/0.49	0.36/0.47	0.15 max
Silicon %	1.5 max	0.5 max	1.0 max	1.0 max	1.0	0.2/0.5	0.6 max	0.6 max	0.6 max	0.2/0.5	0.15/0.35	0.15/0.35	1.0 max
Mang.%	-	0.3/0.6	1.0 max	2.0 max	2.0	0.3/0.6	1.0 max	0.5/0.8	0.40/0.70	0.3/0.6	0.65/1.1	0.45/0.70	1.0 max
Chrom.%	-	2.0/2.5	12.0/14.0	17.0/20.0	16.5/18.5	8.0/9.5	*0.5 max	1.0/1.5	2.0/2.75	8.0/9.5	0.75/1.2	0.80/1.15	11.5/13.5
Molybd.%	-	0.87/1.13	-	-	2.0/2.5	0.85/1.05	*0.20max	0.45/0.65	0.90/1.2	0.85/1.05	0.15/0.25	0.50/0.65	-
Nickel %	-	-	-	9.0/13.0	10.5/13.5	0.4 max	*0.5 max	*0.5 max	*0.50 max	0.4	-	-	-
Copper	-	-	-	-	-	-	*0.3 max	0.5 max	*0.50 max	-	-	-	-
Sulphur	0.08 max	0.04 max	0.03 max	0.03 max	0.03	0.01 max	0.045 max	0.045 max	0.045 max	0.018	0.04 max	0.040 max	0.03 max
Phosp. %	0.08 max	0.04 max	0.04 max	0.045max	0.045	0.02max	0.04 max	0.04 max	0.04 max	0.02	0.035 max	0.035 max	0.04 max
Niobium %	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	75/85	-	-	-	-	-	0.03	-	-	-	-	0.25/0.35	-
Almumin.%	2.0 max	-	-	-	-	-	-	-	-	-	-	0.015 max	-
Iron %	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL
U.T.S.ksi min	70	60		75	74	85	70	70	70	85	125	125	110
Yield ksi min	36	30		30	30	60	36	40	40	60	105	105	85

\* Residual elements total 1.0% max

### Ferrous

Type	Plate	Bar				Nuts		
Main use	Covers	Stems		Pillars		Covers, Glands		
ASTM Spes (UNS)	ASTM A516 GR 70	A276 S43100	ASTM A565-XM32	A108 G10200	A193 GR.B7	A194 GR.2H	A194 GR.4	A194 GR.B8
Carbon %	0.18/0.31	0.2 max	0.08/0.15	0.18/0.23	0.37/0.49	0.40min	0.4/0.5	-0.08 max
Silicon %	0.13/0.45	1.0 max	0.35 max	-	0.15/0.35	0.4 max	0.15/0.35	1.0 max
Mang.%	0.6/1.2	1.0 max	0.5/0.9	0.3/0.6	0.65/1.1	1.0 max	0.7/0.9	2.0 max
Chrom.%	-	15/17	11/12.5	-	0.75/1.20	-	-	18.0/20.0
Molybd. %	-	-	1.5/2.0	-	0.15/0.25	-	0.20/0.30	-
Nickel %	-	1.25/2.50	2.0/3.0	-	-	-	-	8.0/10.5
Copper	-	-	-	-	-	-	-	-
Sulphur	0.035 max	0.03 max	0.025 max	0.05 max	0.04 max	0.05 max	0.04 max	0.03 max
Phosp. %	0.035 max	0.04 max	0.025 max	0.04 max	0.35 max	0.04 max	0.035 max	0.045 max
Niobium %	-	-	-	-	-	-	-	-
Vanadium	-	-	0.25/0.40	-	-	-	-	-
Almumin.%	-	-	-	-	-	-	-	-
Iron %	BAL	BAL	BAL	BAL	BAL	BAL	BAL	BAL
U.T.S.ksi min	55		115		100			
Yield ksi min	30		75		75			

### Non Ferrous

Type	Non Ferrous
Main use	Sleeve Gland
ASTM Spec (UNS)	B150 C63000
Almumin.%	9.0-11.0
Silicon %	0.25 max
Mang.%	1.5 max
Tin. %	0.2 max
Zinc %	0.3 max
Nickel %	4.0-5.5
Copper	BAL
Iron %	2.0-4.0
Phosp.%	-
Niobium %	-
Vanadium	-
Lead %	-
U.T.S.ksi min	94
Yield KIS MIN	46

