

Dual Plate Check Valve

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Model 6700

API 6D / BS 1868

Size - 2" to 48" (50mm to 1200mm)

Rating - Class 150 to Class 2500

Cast Steel Valves

Wafer Design

Lug Design

Flange Design

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Dual Plate Check Valve (DPCV) - Model 6700



Company Overview

“INVACO” (Industrial Valve Company) founded and promoted by the technocrats having experience of 18 years in National and International valve industry. INVACO PRIVATE LIMITED (Industrial Valve Company) is registered experience company in Design, Development, Fabrication & Manufacturing of Industrial Valves. Our mission is to produce high quality and reliable Valves to our national & international clients / customers. Our proactive approach to technical issues enables to understand and implement cost-effective solutions to our valuable customers.

“INVACO” (Industrial Valve Company) committed to excellence by manufacturing top quality valves to exceed customer’s needs with low cost, on-time delivery & providing finest service in industry. “INVACO” manufacture Ball valves (Floating & Trunnion Mounted), Butterfly Valves (Damper, Sleeved, Double offset & Triple Offset), Gate Valves, Globe Valves , Check Valves, Strainers, Flap Valves, Dismantling Joints, Flange Adaptor, Flange Couplings & Sluice Gate/Penstock for Oil & Gas, Petrochemicals, Refineries, Power Plants, Water Treatment Plants, Chemical, Paper & Pulp, Sugar, Steel, Pharma, Pipeline Transmission and other process industries.

“INVACO” (Industrial Valve Company) is specialized in design, manufacturing & testing of CAST & FORGED Steel Dual Plate Check Valves. All Dual Plate Check Valves are designed as per ASME B16.34, API 594, API 6D and follows ISO 9001:2015 Quality Management Systems. INVACO, manufacture of Cast Steel Dual Plate Check valve size from 2” to 48” (50mm to 1200mm) with pressure range from Class 150 to Class 2500 and equivalent EN pressure ratings. Dual Plate Check valves produced from FORGED materials like WCB, WC6, WC9, CA15, LCB, LCC, CF8, CF3 , CF3M, CF8, CF8M, Alloy20, 4A, 5A, 6A, Aluminum Bronze, Inconel, Monel, Hast Alloys, and other special materials.

INVACO (Industrial Valve Company) aims to produced a zero defect valves for long life and reliable services. Making continual improvements aims towards to minimize the Total Ownership Cost for valued customers. Also aims to established sales and services of valves & actuators worldwide.

This catalog provides basic information of Dual Plate Check Valves. Every effort has been made to maintain technical accuracies however INVACO has reserve rights to make any change in design and materials without prior notice.



Quality Policy

At "INVACO", we established this comprehensive Quality Management System to implement a strategy of continual improvement and compliance with the requirements of the ISO 9001:2008 Quality Assurance standard and other industrial valves standards by:

Customer Focused:

- Make commitments we fully understand and believe we can meet and deliver.
- Meet all commitments to customers on time.
- Satisfy our customer's needs and exceed their expectations.

Performance Driven:

- Verify that our products and services meet customer requirements.
- Monitor benchmark and continuously improve our business, products, and services, organization and employee's performance.

Entire "INVACO" stick to the spirit and intent of this policy to ensure customer satisfaction is achieved at all respects and times.



Quality Standards for Dual Plate Check Valve

American Petroleum Institute (API)

API 6D API 594
 API 598 API Spec Q1
 API 602

American Society of Mechanical Engineers

ASME B16.34 ASME B16.5
 ASME B16.47 ASME B16.10
 ASME B16.25

British / European Standards

BS 1868 BS 5154
 BS EN 1092 BS EN 558
 BS EN 6364 BS EN 12266
 EN 10204

International Organization for Standardization (ISO)

ISO 9001:2015 ISO 5208
 ISO 5211 ISO 15848

Manufacturers Standardization Society (MSS - SP)

MSS SP-6 MSS SP-25
 MSS SP 44 MSS SP 45
 MSS SP 55 MSS SP 61
 MSS SP 72 MSS SP 82

National Association of Corrosion Engineers (NACE)

NACE MR 01-75 NACE TM 01-77
 NACE TM 02-84 NACE MR 01-03

Materials and Equipment Standards and Code (MESC)

MESC SPE 77/101 MESC SPE 77/105 MESC SPE 77/133 MESC SPE 77/306 MESC SPE 77/200
 MESC SPE 77/300 MESC SPE 77/302 MESC SPE 77/160 MESC SPE 77/200

Testing & Inspection for Dual Plate Check Valves

Test	Applicable Standards	Extent of Test
Visual Inspection	MSS SP - 55	100%
Marking Inspection	MSS SP - 25	100%
Chemical, Physical & Heat Treatment	Relevant ASTM Standards	100%
Alloy Verification / Positive Material Identification(PMI)	INVACO Procedure	Upon Customer Request
Hardness Requirement	NACE MR 01 - 75	Upon Customer Request
Radiographic Testing (RT) (X-Ray & Gamma Ray)	ASME B16.34 (Annex B) , ASTM E94 , E142 , E446 , E186 , E280, BPVC Sec V-Art 7 & 22, ASME Sec VIII - Div-1	Upon Customer Request
Ultrasonic Testing (UT)	ASME B16.34 , ASTM A388 , A609 , A578 , BPVC Sec V - Art 4 & 23, ASME VIII Div-1	Upon Customer Request
Magnetic Particle Inspection(MPI)- (Dry & Wet)	ASME B16.34 Annex C , ASTM E709 , ASTM A275 , E1444, ASME Sec VIII Div-2, BPVC Sec V - Art 7 & 23	Upon Customer Request
Liquid / Dye Penetrant Inspection (LP / DP)	ASME B16.34 Annex D ,ASTM E 165 , E1417 , ASME Sec VIII Div 1,BPVC Sec V - Art 6 & 24.	Upon Customer Request
Impact Test	ASTM A 370	Upon Customer Request
Microstructural & Ferrite Content measurement	ASTM E 562	Upon Customer Request
Microscopic / inclusion Count Test	ASTM E 45	Upon Customer Request
Pitting Corrosion	ASTM G 48	Upon Customer Request



Crevice Corrosion	ASTM G 48	Upon Customer Request
Hydrogen Induced Cracking Test (HIC)	NACE TM 02 - 84	Upon Customer Request
Ferric Chloride Corrosion Test	ASTM A 923	Upon Customer Request
Hardness Test	ASTM E 18 , ASTM E 92, NACE MR 01 - 75	Upon Customer Request
Intergranular Corrosion Cracking (IGC)	ASTM A 262	Upon Customer Request
Chloride Stress Corrosion Cracking Test (CSCC)	NACE TM 01 - 75	Upon Customer Request
Size / Dimension Check	INVACO Approved Drawings	100%
Functional Check	INVACO Approved Drawings	100%
Shell Test (Hydro Test)	API 598, API6D, Approved GA Drawings	100%
Seat Test (Hydro Test)	API 598, API6D, Approved GA Drawings	100%
Backseat Test (Hydro Test)	API 598, API6D, Approved GA Drawings	100%
Seat Test (Air/Pneumatic Test)	API 598, API6D, Approved GA Drawings	100%
Helium Leak / Fugitive Emission Test	ISO 15848, MESC 77 / 312	Upon Customer Request
Torque Test (Not Applicable for DPVC)	API 6D , INVACO Procedure	10% or Upon Customer Request
Blasting Report	INVACO Procedure	10% or Upon Customer Request
Surface Finish Report	INVACO Procedure	10% or Upon Customer Request
Painting / Dry Film Thickness Report	INVACO Procedure	10% or Upon Customer Request
Tag No, Serial No, Name Plate	INVACO Procedure	100%
Note: - 1) Backseat test is applicable to Gate & Globe Valve. 2) Above Test available upon customer request with extra cost. 3) For more information kindly contact "INVACO".		

Manufacturing Range for GGC (Gate, Globe & Check Valve)

Valve	ASME CLASS / Size - in (mm)						
	150	300	600	800	900	1500	2500
Gate Valve	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	----	2" - 24" (50 - 600)	2" - 12" (50 - 300)	2" - 12" (50 - 300)
Globe Valve	2" - 24" (50 - 600)	2" - 24" (50 - 600)	2" - 24" (50 - 600)	----	2" - 18" (50 - 450)	2" - 16" (50 - 400)	2" - 12" (50 - 300)
Check Valve	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	2" - 48" (50 - 1200)	----	2" - 16" (50 - 400)	2" - 14" (50 - 350)	2" - 10" (50 - 250)
Forge Valve (GGC)	----	----	----	1/2" - 2" (15 - 50)	1/2" - 2" (15 - 50)	1/2" - 2" (15 - 50)	----



Features of Dual Plate Check Valve (Model - 6700)



Quality Standards:-

Design Standards	- API 6D / ASME B16.34 / API 594 / MESC SPE 77-104.133, 306,302.
Testing Standards	- API 598 / EN 12266 / ISO 5208 / BS 6755
End to End Standards	- ASME B 16.10 / EN 558
Flange Drilling Standards	- ASME B16.5 / ASME B 16.47 / BS EN 1092.
Butt-Weld	- ASME B 16.25
Fugitive Emission Test	- MESC SPE 77 - 312 / ISO 15848
Valve Marking	- MSS SP 25 / ASME B 16.34
Visual Inspection	- MSS SP 55
Material Testing	- NDE / NACE MR 01- 75 / NACE MR 01- 03 Compliance available.

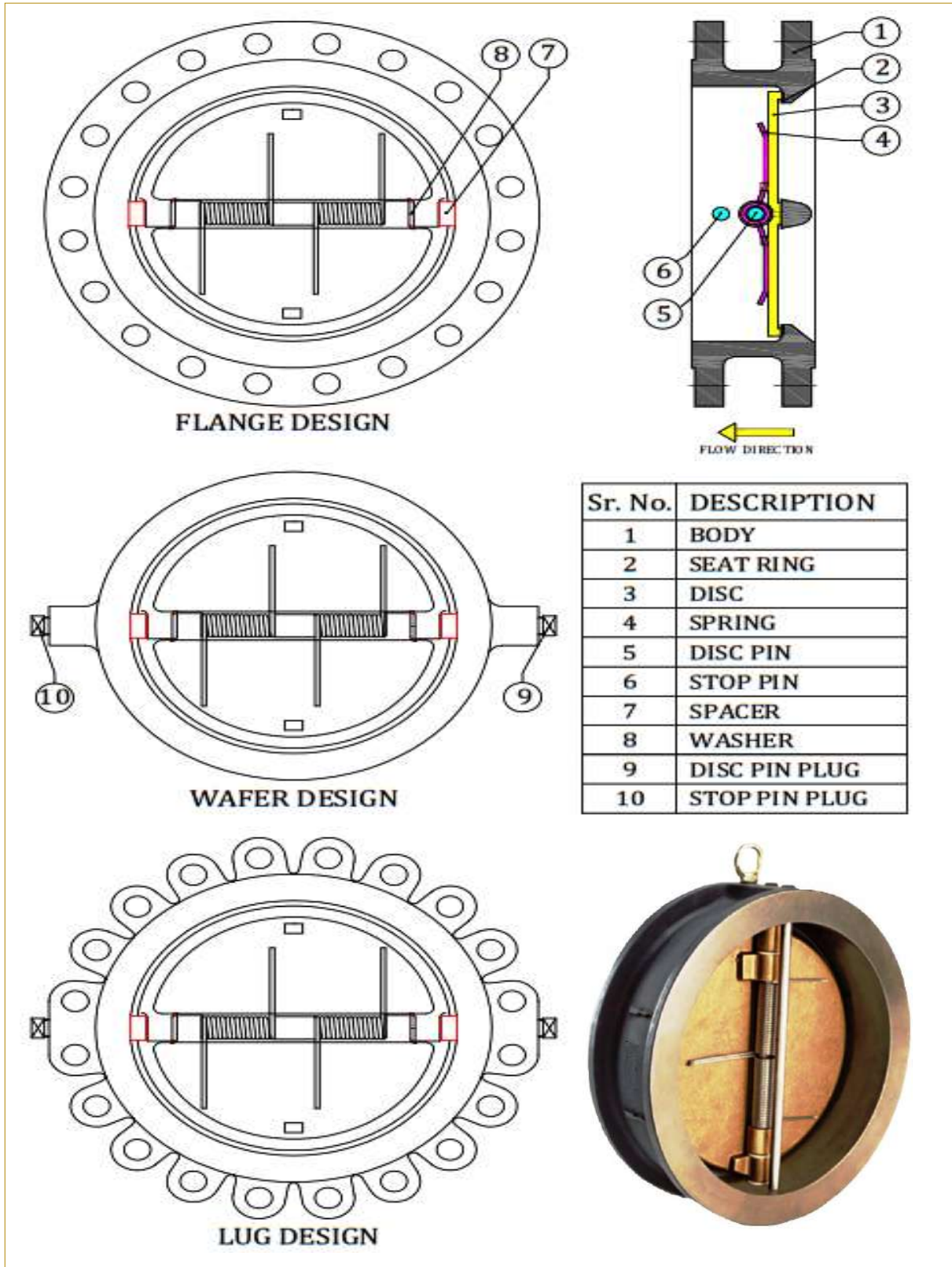
Key Features:-

- Size :- 2" to 48" (50mm to1200mm)
- Rating:- 150# to 2500# & Equiv. DIN Rating
- API Trim, Hard Face, Stallite
- Retainer-less design.
- Two Independent Torsion Springs
- Shock Bumper
- Uninterrupted Gasket Surface
- Soft or metal seat option

Materials - Carbon Steel, Low Temperature Carbon Steel, Stainless Steel, Duplex, Super Duplex, Incoloy, Inconel, Monel, Aluminum Bronze, Hastalloy, Titanium and other materials.

Applications - Offshore / Onshore Oil & Gas, Chemical, Petrochemical & Allied Process, Power Plant, Water Treatment Plant, Liquefied Natural Gas, Sugar, Paper & Pulp, Steel, Piping & Process Industry

GA Drawing for Dual Plate Check Valve (Model - 6700)



Material of Construction for Dual Plate Check Valve (Model - 6700)

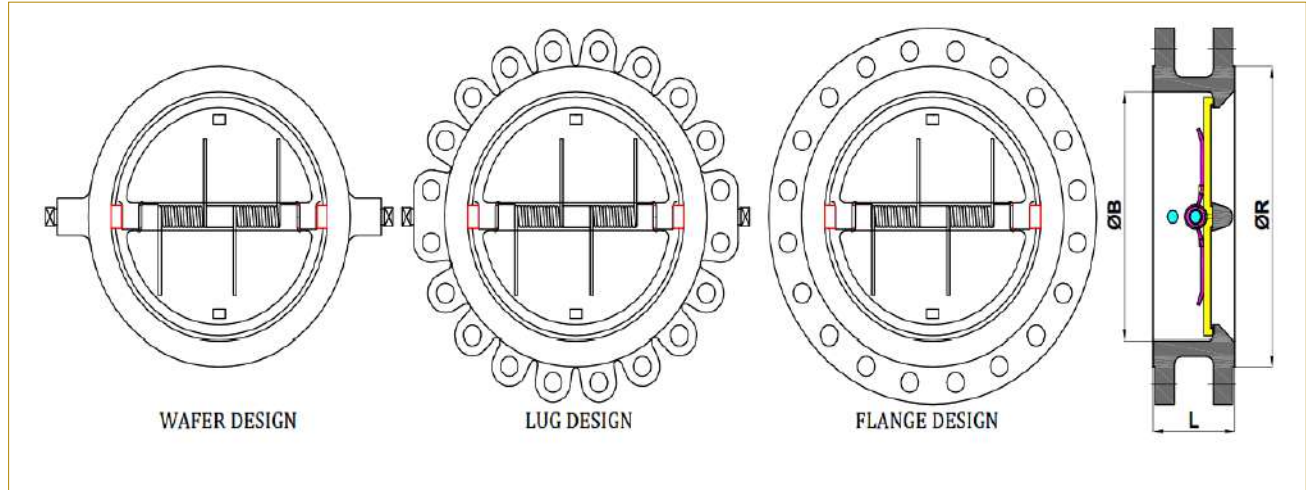


Bill of Material For Check Valve

Sr. No.	Part	Carbon Steel	Low Temp. Carbon Steel	Stainless Steel	DUPLEX	Aluminum Bronze	Nickel Alloys
1	Body	A216 Gr WCB	A325 Gr. LCB, LCC	A351 Gr. CF8M, CF8	A890 Gr. 4A, 5A, 6A	C95800, C95500, C63200	A494 Gr. CW6MC, CW12M, M 35-1
2	Seat Ring	Integrated in Body (Overlay / Hard Face / Stallite / Soft Seat)					
3	Disc	CF8M, CF8	CF8M, CF8	CF8M, CF8	4A, 5A, 6A	C95800, C95500, C63200	CW6MC, 12MW, M35-1
4	Spring	Stainless Steel / Inconel X -750 or 718					
5	Disc Pin	F304, F316	F316L	F316L, F304L	F51, F53, F55	MONEL	Inconel 625, 750
6	Stop Pin	F304, F316	F316L	F316L, F304L	F51, F53, F55	MONEL	Inconel 625, 750
7	Spacer	F304, F316	F316L	F316L, F304L	F51, F53, F55	MONEL	Inconel 625, 750
8	Washer	PTFE / Brass					
9	Disc Pin Plug	F304, F316	F316L	F316L, F304L	F51, F53, F55	MONEL	Inconel 625, 750
10	Stop Pin Plug	F304, F316	F316L	F316L, F304L	F51, F53, F55	MONEL	Inconel 625, 750

NOTE: ** Stellite or Hardface or API Trims are optional and as per customer requirement.
 ** "INVACO" reserve rights to change MATERIALS & DESIGN anytime without prior notice.

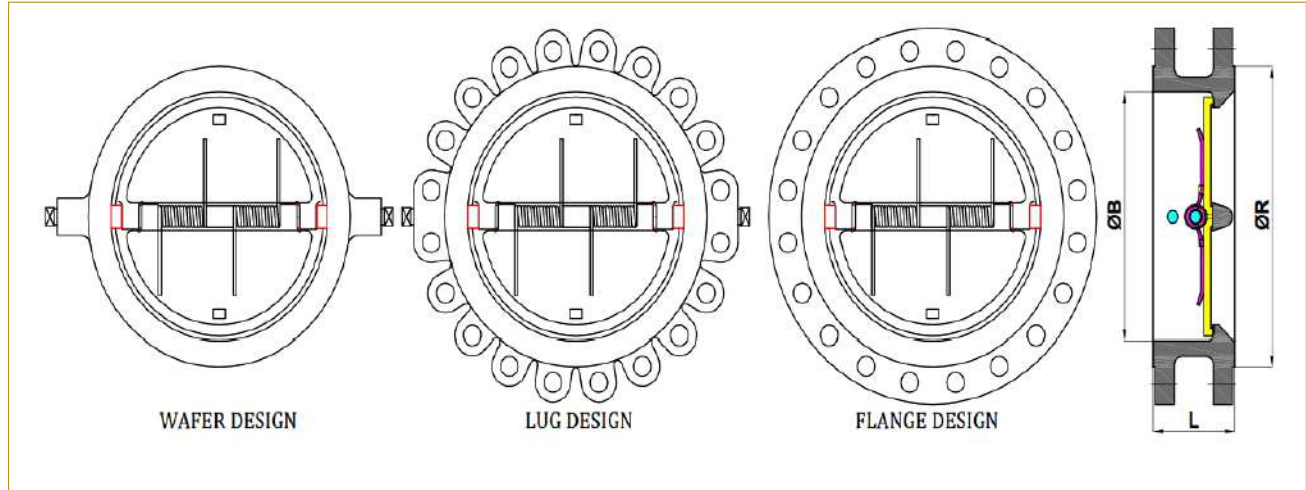
Dimensions for Dual Plate Check Valve (Model - 6700)



Size		150#				300#				600#			
		Face to Face - L (mm)		ØB	ØR	Face to Face - L (mm)		ØB	ØR	Face to Face - L (mm)		ØB	ØR
in	mm	Wafer & Lug	Flange	mm	mm	Wafer & Lug	Flange	mm	mm	Wafer & Lug	Flange	mm	mm
2	50	60	---	60.5	102	60	---	60.5	102	60	---	60.5	102
2½	65	67	---	73.5	110	67	---	73.5	110	67	---	73.5	110
3	80	73	---	89	138	73	---	89	138	73	---	89	138
4	100	73	---	114	158	73	---	114	158	79	---	114	158
6	150	98	---	168	216	98	---	168	216	137	---	168	216
8	200	127	---	219	270	127	---	219	270	165	---	219	270
10	250	146	---	273	324	146	---	273	324	213	---	273	324
12	300	181	181	324	381	181	181	324	381	229	229	324	381
14	350	184	184	356	412	222	222	356	412	273	273	356	412
16	400	191	191	406	470	232	232	406	470	305	305	406	470
18	450	203	203	457	534	264	264	457	534	362	362	457	534
20	500	219	219	508	585	292	292	508	585	368	368	508	585
24	600	222	222	610	693	318	318	610	693	438	438	610	693
26	650	356	356	660	749	356	356	660	749	457	457	660	749
28	700	381	381	711	800	381	381	711	800	483	483	711	800
30	750	305	305	762	857	368	368	762	857	505	505	762	857
32	800	356	356	813	914	406	406	813	914	533	533	813	914
36	900	368	368	914	1022	483	483	914	1022	635	635	914	1022
40	1000	432	432	1016	1124	546	546	1016	1086	660	660	1016	1111
48	1200	524	524	1219	1359	629	629	1219	1302	787	787	1219	1334

NOTE: - ** All API Trims are available.
 ** All dimensions are in "mm" unless & otherwise specified.
 ** INVACO reserves the right to change materials, design & dimensions anytime without prior notice

Dimensions for Dual Plate Check Valve (Model - 6700)



Size		900#				1500#				2500#			
		Face to Face - L (mm)		ΦB	ΦR	Face to Face - L (mm)		ΦB	ΦR	Face to Face - L (mm)		ΦB	ΦR
in	mm	Wafer & Lug	Flange	mm	mm	Wafer & Lug	Flange	mm	mm	Wafer & Lug	Flange	mm	mm
2	50	70	---	60.5	102	70	---	60.5	102	70	---	60.5	102
2½	65	83	---	73.5	110	83	---	73.5	110	83	---	73.5	110
3	80	83	---	89	138	83	---	89	138	86	---	89	138
4	100	102	---	114	158	102	---	114	158	105	---	114	158
6	150	159	---	168	216	159	---	168	216	159	---	168	216
8	200	206	---	219	270	206	---	219	270	206	---	219	270
10	250	241	---	273	324	248	---	273	324	250	---	273	324
12	300	292	292	324	381	305	---	324	381	305	---	324	381
14	350	356	356	356	412	356	---	356	412	---	---	---	---
16	400	384	384	406	470	384	---	406	470	---	---	---	---
18	450	451	451	457	534	468	---	457	534	---	---	---	---
20	500	451	451	508	585	533	---	508	585	---	---	---	---
24	600	495	495	610	693	559	---	610	693	---	---	---	---
26	650	610	---	660	749	---	---	---	---	---	---	---	---
28	700	660	---	711	800	---	---	---	---	---	---	---	---
30	750	711	---	762	857	---	---	---	---	---	---	---	---

NOTE: - ** All API Trims are available.
 ** All dimensions are in "mm" unless & otherwise specified.
 ** INVACO reserves the right to change materials, design & dimensions anytime without prior notice.

Body & Trim Material for Dual Plate Check Valve (Model - 6700)

Body & Trim Material:-		
Material Group / Type	Casting	Forging
Carbon Steel	A216 Gr WCB , WCA	A105 / A 106
	A216 Gr WCC	A105N
Low Temperature Carbon Steel	A352 Gr LCB	A350 Gr LF2 CL.1
	A352 Gr LCC	
	A352 Gr LC1 / LC2	
	A352 Gr LC3	A350 Gr LF3 CL.1
Alloy Steel	A217 Gr WC1	A182 Gr F1
	A217 Gr WC5	
	A217 Gr WC6	A182 Gr F11 CL.2
	A217 Gr WC9	A182 Gr F22 CL.3
	A217 Gr C5	A182 Gr F5a
	A217 Gr C12	A182 Gr F9
	A217 Gr C12A	A182 Gr F91
Stainless Steel	A217 Gr CA15	A182 Gr F6A / ANSI 410
	A351 Gr CF10M	A182 Gr F304H
	A351 Gr CF8A	A182 Gr F347H
	A351 Gr CF8	A182 Gr F304
	A351 Gr CF3	A182 Gr F304L
	A351 Gr CF8M	A182 Gr F316
	A351 Gr CF3M	A182 Gr F316L
	A351 Gr CF8C	A182 Gr F347
Duplex / Super Duplex	A890 Gr CD4MCuN (1B)	
	A890 Gr CD3MCuN (1C)	
	A890 Gr CE8MN (2A)	
	A890 Gr CD3MN (4A)	A182 Gr F51
	A890 Gr CE3MN (5A)	A182 Gr F53
	A890 Gr CD3MWCuN (6A)	A182 Gr F55
Nickel / Super Nickel Alloys	A494 Gr CY40	Inconel 600
	A494 Gr CZ100	
	A494 Gr CW6MC	Inconel 625
	A494 Gr M 35 -1	Monel 400
		Monel K-500
	A494 Gr CW6M / CW12MW	Hastalloy C / C-276
Aluminum Bronze	B148 Gr C95200	
	B148 Gr C95400	
	B148 Gr C95500	
	B148 Gr C95800	
Titanium	B367 Gr C2	B381 Gr F2
	B367 Gr C3	B381 Gr F3
Special Materials	A351 Gr CN7M	Alloy 20
	A351 Gr CN2MCuN	904L
	A351 Gr CK3MCuN	SMO 254 / A182 Gr F44
	CB7CU -1	17 - 4 PH

Note: - Wrought names are given as a reference for commonly accepted equivalent material. "INVACO" cannot hold any liability for any damages incurred due to this table. For more information kindly contact "INVACO".



Seat Insert & Seal Material:-

Materials	Temperature Range °C		Pressure Class		Size	
	Min.	Max.	Seat Rings	Seal	Seat Rings	Seal
PTFE (Glass Filled)	- 100	+200	600#	----	24"(600mm)	----
PTFE (Carbon Filled)	- 100	+180	600#	----	24"(600mm)	----
Nylon6 (Devlon)	- 60	+140	2500#	----	60"(1500mm)	----
Nylon	- 60	+120	2500#	----	60"(1500mm)	----
Peek	- 100	+240	2500#	----	24"(600mm)	----
Derlin	- 45	+90	1500#	----	24"(600mm)	----
Viton B	- 29	+180	600#	2500#	160"(4000mm)	60"(1500mm)
Viton AED	- 40	+200	600#	2500#	160"(4000mm)	60"(1500mm)
Buna N / NBR	- 30	+120	600#	2500#	160"(4000mm)	60"(1500mm)
HNBR	- 40	+150	600#	2500#	160"(4000mm)	60"(1500mm)
Graphite	- 240	+560	----	2500#	24"(600mm)	60"(1500mm)

NOTE: - **Above table is for reference, information may differ, INVACO cannot hold any liability for any damages incurred due to this table.

** Temperature & Pressure range may vary with different brands manufacturer.

Testing Pressure:-

ASME CLASS	Working Pressure			Body Test (Hydro)			Seat Test (Hydro)			Seat Test (Air)		
	psi	bar	Kg/cm ²	psi	bar	Kg/cm ²	psi	bar	Kg/cm ²	psi	bar	Kg/cm ²
150	285	19.6	20	464	32	33	333	23	23.5	100	6	7
300	741	51.1	52	1145	79	81	842	58	59	100	6	7
400	988	68.1	69	1523	105	107	1189	82	84	100	6	7
600	1480	102.1	104	2262	156	159	1653	114	116	100	6	7
800	2001	138	141	3046	210	214	2248	155	158	100	6	7
900	2222	153.2	156	3423	236	240	2494	172	175	100	6	7
1500	3703	255.3	260	5685	392	400	4177	288	293	100	6	7
2500	6171	425.5	434	945	652	665	6932	478	487	100	6	7

Note: - Rating Pressure may be change for different materials.

Spares part list:-

Spares for Dual Plate Check Valve			
Part No	Part	Quantity for Start up	Quantity for 2 years Operation
2	Seat Ring (For Soft Seat Only)	1	3 nos
4	Spring	1 Set	3 Set
7	Spacer	1 Set	3 Set
8	Thrust Washer	1 Set	3 Set



Dual Plate Check Valve



Model - 6700

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Your Local INVACO Representative -

We are 70 Km away from Mumbai International Airport.