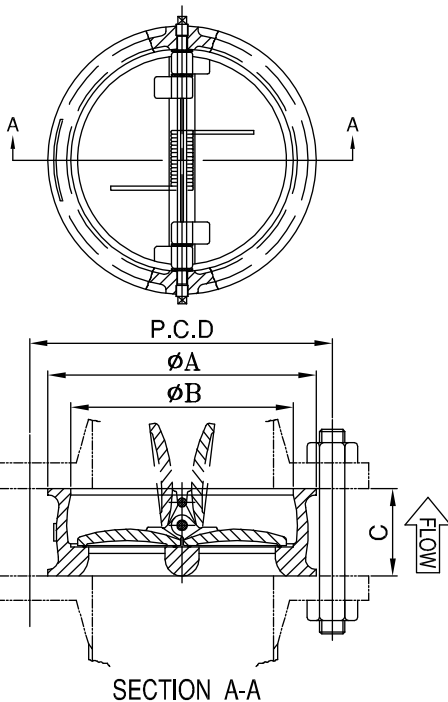
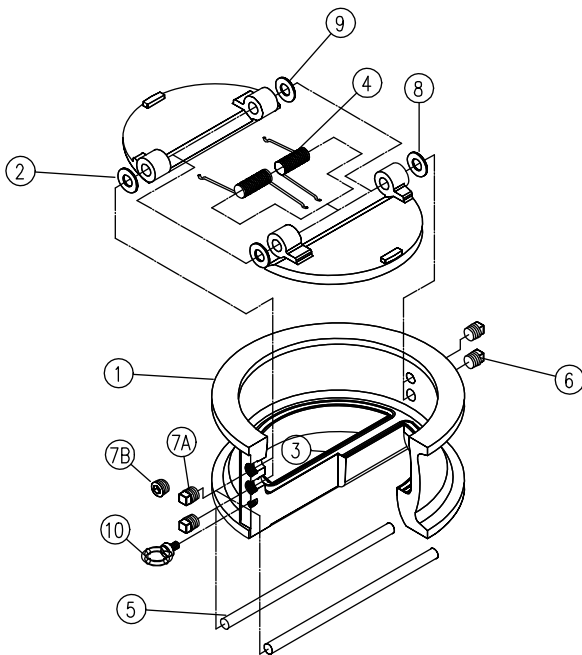


Fig No: MV-1220 1-1/2"~ 60"
DN40 ~ DN1500



Features :

- Small and Light Quick Reaction Vertical and Horizontal Bubble tight
- Low Pressure Drop
- No Slamming, Plates Start closing Against the Flow Before the stops
- Seat : NBR / EPDM / Viton / Metal
- NBR/EPDM Lined available for Cast&Ductile Iron Valves



Cast & Ductile Iron

MATERIALS LIST		
NO.	PART NAME	MATERIAL
1	BODY	A126 CLASS B A536 65-45-12
2	PLATE	B584-C83600
3	SEAT	VITON EPDM NBR
4	SPRING	SUS316-WPA
5	HINGE PIN	SUS316
6	STOP PIN	SUS316
7A	PLUG	A105
7B		
8	BODY BEARING	PTFE.
9	PLATE BEARING	PTFE.
10	EYE-BOLT	A105

Pressure Rating :
125#/150#/300#/PN6/PN10/PN16/5K/10K

Specifications:

- Design According to API 594
- Shell Wall Thickness According to API 594
- Face to Face According to DIN 3202 K3 or EN 558-1
- Flanged Dimension According to ASME B16.1/ISO 7005/JIS B2238
- Pressure -Temperature Rating According to ASME B16.1
- Pressure Test According to API 598

Stainless & Carbon Steel

MATERIALS LIST		
NO.	PART NAME	MATERIAL
1	BODY	CF8M/CF8/WCB SCS314/SCS13/WCB 1.4408/1.4308/WCB
2	PLATE	CF8M/CF8/WCB SCS314/SCS13/WCB 1.4408/1.4308/WCB
3	SEAT	VITON EPDM NBR
4	SPRING	SUS316-WPA
5	HINGE PIN	SUS316/SUS304
6	STOP PIN	SUS316/SUS304
7A	PLUG	A105
7B		
8	BODY BEARING	SS316
9	PLATE BEARING	SS316
10	EYE-BOLT	A105

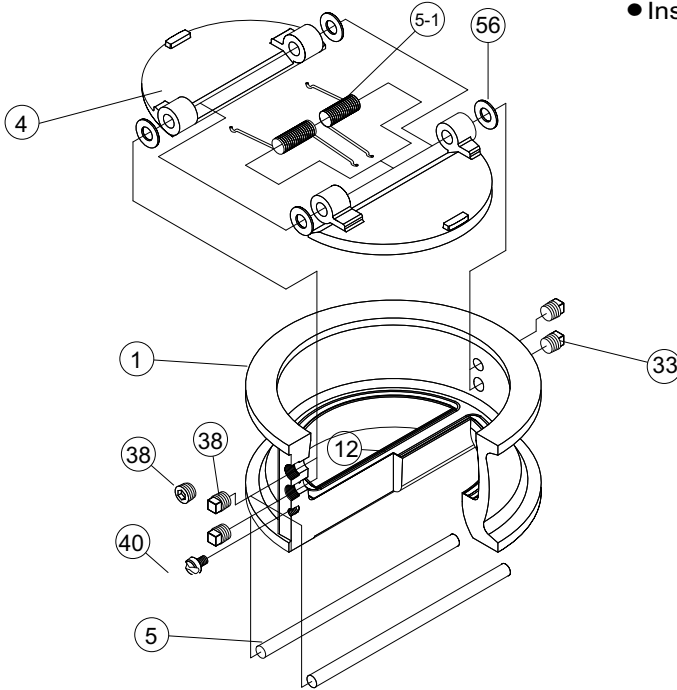
Pressure Rating :
150#/300#/600#/900#/1500#/2500#
PN6/PN10/16/PN25/40/PN50/PN110
PN150/PN260/PN420
5K/10K/16K/20K/30K/40K/63K

Specifications:

- Design According to API 594
- Shell Wall Thickness According to API 594
- Face to Face According to API 594
- Flanged Dimension According to ANSI B16.5
- Pressure -Temperature Rating According to ASME B16.34
- Pressure Test According to API 598

Fig No: MV-1220 Rubber Lined Cast & Ductile Iron Valves

- Suit Flanges for : ASME B16.5/ISO-7005-1/JIS-B2238
- Design : API 594
- Face to Face : API-594/API6D/JIS B2202
- Inspection : API-598

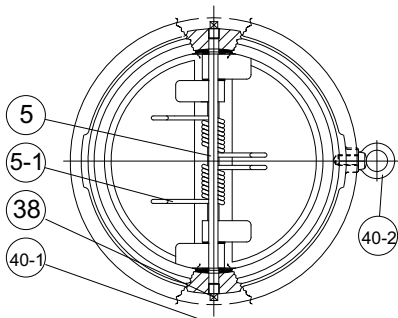
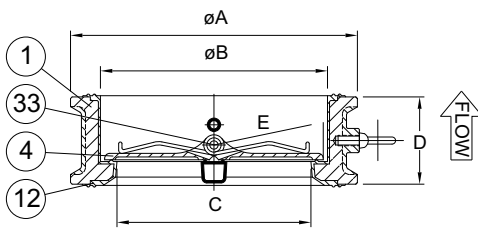


MATERIAL LIST

NO.	PART NAME	MATERIAL
1	BADY	ASTM A126B
4	PLATE	ASTM A351 CF8
5	HINGE PIN	SUS304
5-1	SPRING	SUS316
12	SEAT	NBR/EPDM
33	STOP PIN	SUS304
38	RETAINER	A105
40	EYE BOLT	A105
56	BEARING	PTFE.

MATERIAL LIST

NO.	PART NAME	MATERIAL	Q'TY	NOTE
1	BODY	ASTM A126 class B A536 65-45-12	1	
4	PLATE	ASTM A351 CF8	2	
5	HINGE PIN	SUS304	1	
5-1	SPRING	SUS316	1	2"-6"
			2	8"-24"
12	SEAT	NBR/EPDM	1	
33	STOP PN	SUS304	1	
38	RETAINER	A105	4	
40-1	EYE BOLT	A105	1	6"-8"
			2	24"
40-2	EYE BOLT	A105	1	10"-20"



DIMENSION

unit:mm

SIZE	øA					øB	C	D	E
	10K	C125	C150	PN10	PN16				
DN50 2"			101			72	45	54	32
DN65 2-1/2"			121			80	50	54	35
DN80 3"			131			91	67	57	43
DN100 4"	156	175	175	156	156	119	90	64	53
DN125 5"			187			141	112	70	65
DN150 6"			217			171	137	76	80
DN200 8"	267	279	279	267	267	226	188	95	108
DN250 10"			330			281	240	108	132
DN300 12"	375	410	410	375	375	327	282	143	154
DN350 14"	420	451	451	438	438	362	310	184	170
DN400 16"	483	514	483	483	495	420	360	191	200
DN450 18"	538	538	538	538	538	462	406	203	218
DN500 20"	592	606	606	592	617	512	457	213	243
DN600 24"	695	718	718	695	731	614	558	222	290

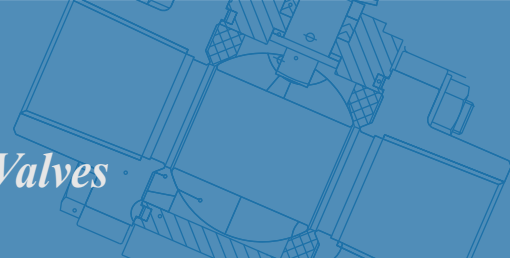


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Suit Flanges For : ASME - B16.5 / MSS SP - 44 / API - 605

Design : API - 594 Face To Face : API - 594 / API - 6D

Inspection : API - 598 / ASME - B16.34

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight	
							lbs	kgs
1-1/2"	RF	150	86	60	43	98.6	4.0	1.8
	RF/RJ-20	300-600	95		60	114.3	6.2	2.8
	RF/RJ-20	900-1500	98		70	124.0	13.2	6.0
	RF/RJ-23	2500	117		70	146.1	25.3	11.5
2"	RF	150	105	60	60	120.7	5.5	2.5
	RF/RJ-23	300-600	111		60	127.0	7.7	3.5
	RF/RJ-24	900-1500	143		70	165.1	14.3	6.5
	RF/RJ-26	2500	146		70	171.5	27.5	12.5
2-1/2"	RF	150	124	73	67	139.7	5.5	3.0
	RF/RJ-26	300-600	130		67	149.4	8.8	4.0
	RF/RJ-27	900-1500	165		83	190.5	15.4	7.0
	RF/RJ-28	2500	168		83	196.9	38.5	17.5
3"	RF	150	137	89	73	152.4	9.9	4.5
	RF/RJ-31	300-600	149		73	168.1	11.0	5.0
	RF/RJ-31	900	168		83	190.5	24.2	11.0
	RF/RJ-35	1500	175		83	203.2	26.4	12.0
4"	RF	150	175	114	73	190.5	17.6	8.0
	RF/RJ37	300	181		73	200.2	19.8	9.0
	RF/RJ-37	600	194		79	215.9	24.2	11.0
	RF/RJ-37	900	206		102	235.0	37.4	17.0
5"	RF	150	197	141	86	215.9	22.0	10.0
	RF/RJ-41	300	216		86	235.0	28.6	13.0
	RF/RJ-41	600	238		105	266.7	46.3	21.0
	RF	150	222		168	98	241.3	28.6
RF/RJ-45	300	251	98	269.7		50.7	23.0	
RF/RJ-45	600	267	136	292.0		70.5	32.0	
RF/RJ-45	900	289	159	317.5		112.3	51.0	
6"	RF/RJ-46	1500	283	159	317.5	123.3	56.0	
	RF/RJ-47	2500	318	159	368.3	187.2	85.0	
	RF	150	279	219	127	298.5	61.7	28.0
	RF/RJ-49	300	308		127	330.2	79.3	36.0
RF/RJ-49	600	321	165		349.2	143.2	65.0	
RF/RJ-49	900	359	206		393.7	180.6	82.0	
8"	RF/RJ-50	1500	352	206	393.7	200.4	91.0	
	RF/RJ-51	2500	387	206	438.2	281.9	128.0	
	RF	150	340	274	146	362.0	99.1	45.0
	RF/RJ-53	300	362		146	387.4	132.2	60.0
RF/RJ-53	600	400	213		431.8	215.9	98.0	
RF/RJ-53	900	435	241		469.9	277.5	126.0	
10"	RF/RJ-54	1500	435	248	482.6	290.7	132.0	
	RF/RJ-55	2500	476	254	540.0	440.5	200.0	
	RF	150	410	324	181	431.8	149.8	68.0
	RF/RJ-57	300	422		181	450.9	189.4	86.0
RF/RJ-57	600	457	229		489.0	308.4	140.0	
RF/RJ-57	900	498	292		533.4	359.0	163.0	
12"	RF/RJ-58	1500	521	305	571.5	383.3	174.0	
	RF/RJ-60	2500	549	305	619.0	865.6	393.0	
	RF	150	451	356	184	476.3	209.3	95.0
	RF/RJ-61	300	486		222	514.4	374.4	170.0
RF/RJ-61	600	492	273		527.1	407.5	185.0	
RF/RJ-62	900	521	356		558.8	960.4	436.0	
14"	RF/RJ-63	1500	578	356	635.0	1057.3	480.0	
	RF	150	514	406	191	539.8	290.7	132.0
	RF/RJ-65	300	540		232	571.5	458.1	208.0
	RF/RJ-65	600	565		305	603.3	603.5	274.0
RF/RJ-66	900	575	384		616.0	1180.6	536.0	
16"	RF/RJ-67	1500	641	384	704.9	1284.1	583.0	

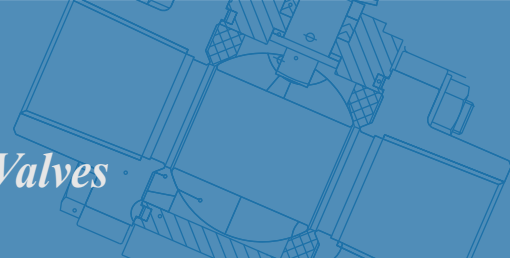


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight		
							lbs	kgs	
18"	RF	150	549	475	203	577.9	323.8	147.0	
	RF/RJ-69	300	597		264	628.7	652.0	296.0	
	RF/RJ-69	600	613		362	654.1	872.2	396.0	
	RF/RJ-70	900	638		451	685.8	1442.7	655.0	
	RF/RJ-71	1500	705		705	774.7	1735.7	788.0	
20"	RF	150	606	508	219	635	445.0	202.0	
	RF/RJ-73	300	654		292	685.8	806.2	366.0	
	RF/RJ-73	600	683		368	723.9	1427.3	648.0	
	RF/RJ-74	900	699		451	749.3	2044.1	928.0	
	RF/RJ-75	1500	756		533	831.9	2828.2	1284.0	
22"	RF	150	660	559	219	692.2	506.6	230.0	
24"	RF	150	718	610	222	749.3	583.7	265.0	
	RF/RJ-77	300	775		319	812.8	1165.2	529.0	
	RF/RJ-77	600	791		438	838.2	2004.4	910.0	
	RF/RJ-78	900	838		495	901.7	2753.3	1250.0	
	RF/RJ-79	1500	902		559	990.6	4213.7	1913.0	
26" (MMS)	RF	150	772	660	250	806.5	1300.0	590.0	
	RF/RJ-93	300	835		356	876.3	1625.6	738.0	
	RF/RJ-93	600	867		457	914.4	1865.6	847.0	
26" (API-605)	RF/RJ-100	900	883	660	533	952.5	2627.8	1193.0	
	RF	150	725		356	744.5	1101.3	500.0	
	RF	300	771		356	803.1	1376.7	625.0	
28" (MMS)	RF	600	765	711	457	806.5	1586.0	720.0	
	RF	900	838		553	901.7	2233.4	1014.0	
	RF	150	832		711	321	863.6	1134.4	515.0
	RF/RJ-94	300	898			321	939.8	1300.0	590.0
RF/RJ-94	600	914	483	965.2		1938.3	880.0		
RF/RJ-101	900	946	572	1022.4		3189.4	1448.0		
28" (API-605)	RF	150	776	711	321	795.3	962.6	437.0	
	RF	300	826		321	857.3	1101.3	500.0	
	RF	600	819		483	863.6	1751.1	795.0	
	RF	900	902		572	971.6	2863.4	1300.0	
30" (MMS)	RF	150	882	762	305	914.4	1101.3	500.0	
	RF/RJ-95	300	953		368	997.0	2110.1	958.0	
	RF/RJ-95	600	972		505	1022.4	3185.0	1446.0	
	RF/RJ-102	900	1010		635	1085.9	4052.9	1840.0	
30" (API-605)	RF	150	827	762	305	841.2	991.2	450.0	
	RF	300	886		368	920.8	1894.3	860.0	
	RF	600	879		505	927.1	2863.4	1300.0	
	RF	900	959		635	1035.1	3634.4	1650.0	
32" (MMS)	RF	150	940	813	356	977.9	1519.8	690.0	
	RF/RJ-96	300	1006		406	1054.1	2026.4	920.0	
	RF/RJ-96	600	1022		533	1079.5	3801.8	1726.0	
32" (API-605)	RF/RJ-105	900	1073	813	660	1155.7	4361.2	1980.0	
	RF	150	881		356	898.4	1365.6	620.0	
	RF	300	940		406	977.9	1839.2	835.0	
36" (MMS)	RF	600	933	914	533	984.3	3414.0	1550.0	
	RF	900	1016		660	1092.2	3920.7	1780.0	
	RF	150	1048		914	368	1085.9	1894.3	860.0
	RF/RJ-98	300	1118			483	1168.4	2731.3	1240.0
RF/RJ-98	600	1130	635	1193.8		6132.2	2784.0		
RF/RJ-105	900	1200	716	1289.1		7075.0	3212.0		
36" (API-605)	RF	150	987	914	368	1009.7	1718.1	780.0	
	RF	300	1048		483	1088.9	2445.0	1110.0	
	RF	600	1048		635	1104.9	5506.6	2500.0	
	RF	900	1124		718	1200.2	6365.6	2890.0	

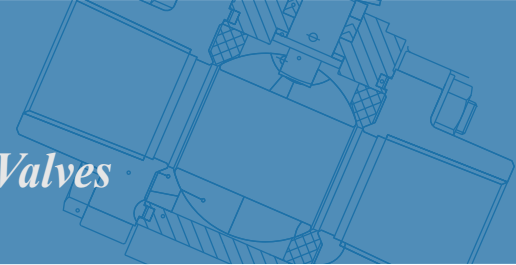


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight	
							lbs	kgs
40" (MMS)	RF	150	1162	1016	406	1200.2	2039.6	926.0
	RF	300	1114		546	1155.7	4251.1	1930.0
	RF	600	1156		660	1212.9	8334.8	3784.0
	RF	900	1251		762	1339.9	8784.1	3988.0
40" (API-605)	RF	150	1095	1016	406	1120.6	1828.2	830.0
	RF	300	1149		546	1190.5	3854.6	1750.0
	RF	600	1156		550	1212.9	8334.8	3784.0
	RF	900	1251		762	1339.9	8784.1	3988.0
42" (MMS)	RF	150	1219	1067	432	1257.3	2559.5	1162.0
	RF	300	1168		568	1206.5	5845.8	2654.0
	RF	600	1219		702	1282.7	6962.6	3161.0
	RF	900	1302		787	1390.6	8105.7	3680.0
42" (API-605)	RF	150	1146	1067	432	1171.4	2290.7	1040.0
	RF	300	1200		568	1244.6	5253.3	2385.0
	RF	600	1219		702	1282.7	6962.6	3161.0
	RF	900	1302		787	1390.6	8105.7	3680.0
44" (MMS)	RF	150	1276	1118	462	1314.5	3348.0	1520.0
44" (API-605)	RF	150	1197	1118	462	1222.2	3017.6	1370.0
48" (MMS)	RF	150	1384	1219	524	1422.4	4361.2	1980.0
	RF	300	1492		629	1371.6	6524.2	2962.0
	RF	600	1391		787	1460.5	7092.5	3220.0
48" (API-605)	RF	150	1307	1219	524	1335.0	3920.7	1780.0
	RF	300	1368		629	1416.1	5881.1	2670.0
	RF	600	1391		787	1460.5	7092.5	3220.0
54" (MMS)	RF	150	1549	1372	591	1593.9	6828.2	3100.0
	RF	300	1492		730	1549.4	9020.8	4100.0
54" (API-605)	RF	150	1464	1372	591	1492.3	6136.6	2786.0
	RF	300	1530		730	1577.8	9801.8	4450.0
60" (MMS)	RF	150	1715	1524	660	1760	8810.6	4000.0
	RF	300	1645		838	1701.8	11343.6	5150.0
60" (API-605)	RF	150	1630	1524	660	1662.2	8546.2	3880.0
	RF	300	1707		838	1763.8	11242.3	5104.0



Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Suit Flanges For : ISO - 7005 - 1

Design : API - 594 Face To Face : API - 594 / API - 6D

Inspection : ISO - 5208 / ISO - 7005 - 1 / API - 598

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
DN40	RF	PN6	86	60	43	100.0	1.8
	RF	PN10/16/25	92		43	110.0	1.8
	RF/R-20	PN40/PN50	92		60	114.5	2.8
	RF/R-20	PN110	92		60	114.5	6.0
	RF/R-20	PN150/260	92		70	124.0	11.5
	RF/R-23	PN420	113		70	146.0	
DN50	RF	PN6	96	60	60	110.0	2.5
	RF	PN10/16/25/40	105		60	125.0	2.5
	RF/R-23	PN50	109		60	127.0	3.5
	RF/R-23	PN110	109		60	127.0	3.5
	RF/R-24	PN150/260	139		70	165.0	6.5
	RF/R-26	PN420	142		70	171.5	12.5
DN65	RF	PN6	115	73	67	130.0	2.7
	RF	PN10/16	124		67	145.0	2.7
	RF	PN25/40	124		67	145.0	2.7
	RF/R-26	PN50	124		67	149.0	4.0
	RF/R-26	PN110	124		67	149.0	4.0
	RF/R-27	PN150/260	161		83	190.5	7.0
	RF/R-28	PN420	164		83	197.0	17.5
DN80	RF	PN6	132	89	73	150.0	4.5
	RF	PN10/16	137		73	160.0	4.5
	RF	PN25/40	137		73	160.0	4.5
	RF/R-31	PN50	146		73	168.5	5.0
	RF/R-31	PN110	146		73	168.5	5.0
	RF/R-31	PN150	164		83	190.5	11.0
	RF/R-35	PN260	170		83	203.0	12.0
	RF/R-32	PN420	193		86	228.5	21.0
DN100	RF	PN6	146	114	73	170.0	8.0
	RF	PN10/16	156		73	180.0	8.0
	RF	PN25/40	168		73	190.0	8.5
	RF/R-37	PN50	178		73	200.0	9.5
	RF/R-37	PN110	190		79	216.0	11.0
	RF/R-37	PN150	202		102	235.0	17.0
	RF/R-39	PN260	206		102	241.5	19.0
	RF/R-38	PN420	231		105	273.0	39.5
DN125	RF	PN6	181	141	86	200.0	10.0
	RF	PN10/16	187		86	210.0	10.0
	RF	PN25/40	194		86	220.0	13.0
	RF/R-41	PN50	213		86	235.0	14.5
	RF/R-41	PN110	237		105	267.0	21.0
DN150	RF	PN6	207	168	98	225.0	13.0
	RF	PN10/16	217		98	240.0	13.0
	RF	PN25/40	224		98	250.0	23.0
	RF/R-45	PN50	248		98	270.0	25.0
	RF/R-45	PN110	262		136	292.0	32.0
	RF/R-45	PN150	285		159	317.5	51.0
	RF/R-46	PN260	278		159	317.5	56.0
	RF/R-47	PN420	313		159	368.5	85.0
DN200	RF	PN6	257	219	127	280.0	28.0
	RF	PN10	267		127	295.0	28.0
	RF	PN16	267		127	295.0	28.0
	RF	PN25	276		127	310.0	28.0
	RF/R-49	PN40	290		127	320.0	36.0
	RF/R-49	PN50	304		127	330.0	39.0
	RF/R-49	PN110	312		165	292.0	65.0
	RF/R-49	PN150	354		206	393.5	82.0
	RF/R-50	PN260	345		206	393.5	91.0
	RF/R-51	PN420	383		206	438.0	128.0

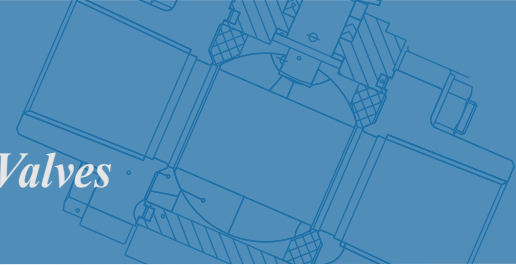


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
DN250	RF	PN6	317	274	146	335.0	45.0
	RF	PN10	330		146	350.0	45.0
	RF	PN16	330		146	355.0	45.0
	RF	PN25	340		146	370.0	45.0
	RF/R-53	PN40	353		146	385.0	60.0
	RF/R-53	PN50	353		146	387.5	64.0
	RF/R-53	PN110	396		213	432.0	98.0
	RF/R-53	PN150	430		241	470.0	126.0
	RF/R-54	PN260	430		248	482.5	132.0
RF/R-55	PN420	525	254	593.5	200.0		
DN300	RF	PN6	367	324	181	395.0	68.0
	RF	PN10	375		181	400.0	68.0
	RF	PN16	375		181	410.0	68.0
	RF	PN25	400		181	430.0	68.0
	RF/R-57	PN40	417		181	450.0	86.0
	RF/R-57	PN50	417		181	451.0	90.0
	RF/R-57	PN110	454		229	489.0	140.0
	RF/R-57	PN150	494		292	533.5	163.0
	RF/R-58	PN260	517		305	571.5	174.0
RF/R-60	PN420	545	305	619.0	393.0		
DN350	RF	PN6	410	356	184	445.0	95.0
	RF	PN10	438		184	460.0	95.0
	RF	PN16	438		184	470.0	95.0
	RF	PN25	457		184	490.0	95.0
	RF/R-61	PN40	474		222	510.0	170.0
	RF/R-61	PN50	482		222	514.5	175.0
	RF/R-61	PN110	488		273	527.0	225.0
	RF/R-62	PN150	517		356	559.0	436.0
	RF/R-63	PN260	575		356	635.0	480.0
DN400	RF	PN6	470	406	191	495.0	132.0
	RF	PN10	483		191	515.0	132.0
	RF	PN16	495		191	525.0	132.0
	RF	PN25	507		191	550.0	132.0
	RF/R-65	PN40	546		232	585.0	208.0
	RF/R-65	PN50	531		232	571.5	213.0
	RF/R-65	PN110	561		305	603.0	274.0
	RF/R-66	PN150	571		384	616.0	536.0
	RF/R-67	PN260	637		384	705.0	583.0
DN450	RF	PN6	528	457	203	550.0	147.0
	RF	PN10	538		203	565.0	147.0
	RF	PN16	545		203	585.0	147.0
	RF	PN25	565		203	600.0	147.0
	RF/R-69	PN40	571		264	610.0	296.0
	RF/R-69	PN50	593		264	628.5	300.0
	RF/R-69	PN110	609		362	654.0	396.0
	RF/R-70	PN150	635		451	686.0	655.0
	RF/R-71	PN260	700		468	774.5	788.0
DN500	RF	PN6	578	508	219	600.0	202.0
	RF	PN10	592		219	620.0	202.0
	RF	PN16	617		219	650.0	202.0
	RF	PN25	625		219	660.0	202.0
	RF/R-73	PN40	625		292	670.0	366.0
	RF/R-73	PN50	650		292	686.0	372.0
	RF/R-73	PN110	679		368	724.0	648.0
	RF/R-74	PN150	695		451	749.5	928.0
	RF/R-75	PN260	752		533	832.0	1284.0

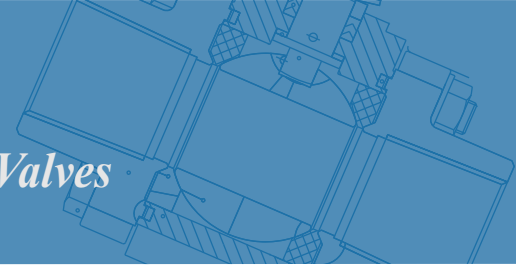


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
DN600	RF	PN6	679	610	222	705.0	265.0
	RF	PN10	695		222	725.0	265.0
	RF	PN16	731		222	770.0	265.0
	RF	PN25	731		222	770.0	265.0
	RF/R-77	PN40	747		318	795.0	529.0
	RF/R-77	PN50	771		318	813.0	535.0
	RF/R-77	PN110	787		438	838.0	910.0
	RF/R-78	PN150	833		495	901.5	1250.0
RF/R-79	PN260	896	558	990.5	1913.0		
DN650	RF/R-93	PN50	831	660	356	876.0	738.0
	RF/R-93	PN110	863		457	914.0	847.0
	RF/R-100	PN150	878		533	952.0	1193.0
DN700	RF	PN6	784	711	321	810.0	515.0
	RF	PN10	804		321	840.0	515.0
	RF	PN16	804		321	840.0	515.0
	RF	PN25	833		321	875.0	515.0
	RF/R-94	PN50	895		321	940.0	590.0
	RF/R-94	PN110	910		483	965.0	880.0
	RF/R-101	PN150	942		572	1022.0	1448.0
DN750	RF/R-95	PN50	949	762	368	997.0	958.0
	RF/R-95	PN110	967		505	1022.0	1446.0
	RF/R-102	PN150	1006		635	1086.0	1840.0
DN800	RF	PN6	890	813	356	920.0	690.0
	RF	PN10	911		356	950.0	690.0
	RF	PN16	911		356	950.0	690.0
	RF	PN25	942		356	990.0	690.0
	RF/R-96	PN50	1003		406	1054.0	920.0
	RF/R-96	PN110	1020		533	1080.0	1726.0
	RF/R-103	PN150	1070		660	1156.0	1980.0
DN900	RF	PN6	991	914	368	1020.0	860.0
	RF	PN10	1011		368	1050.0	860.0
	RF	PN16	1011		368	1050.0	860.0
	RF	PN25	1042		368	1090.0	860.0
	RF/R-98	PN50	1113		483	1168.0	1240.0
	RF/R-98	PN110	1126		635	1194.0	2784.0
	RF/R-105	PN150	1195		718	1289.0	3212.0
DN1000	RF	PN6	1091	1016	405	1120.0	926.0
	RF	PN10	1121		405	1160.0	926.0
	RF	PN16	1121		405	1170.0	926.0
	RF	PN25	1154		405	1210.0	926.0
	RF	PN50	1111		546	1156.0	1930.0
	RF	PN110	1153		660	1213.0	3784.0
	RF	PN150	1246		762	1340.0	3988.0
DN1050	RF	PN50	1161	1067	432	1206.0	1162.0
	RF	PN110	1215		568	1283.0	2654.0
	RF	PN150	1246		701	1340.0	3161.0
DN1200	RF	PN6	1308	1219	524	1340.0	1980.0
	RF	PN10	1341		524	1380.0	1980.0
	RF	PN16	1341		524	1390.0	1980.0
	RF	PN25	1364		524	1420.0	1980.0
	RF	PN50	1321		629	1372.0	2962.0
	RF	PN110	1386		787	1460.0	3220.0
DN1350	RF	PN50	1489	1371	730	1549.0	4100.0
DN1500	RF	PN50	1642	1524	838	1702.0	5500.0

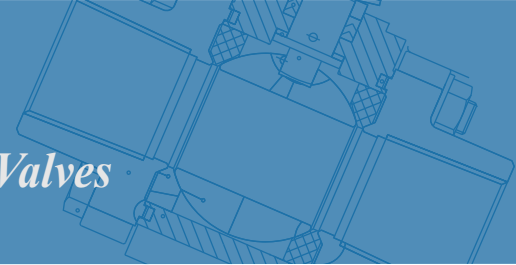


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Suit Flanges For : JIS - B2238 / JPI - 7S - 15 - 93

Design : API - 594 Face To Face : API - 594 / API - 6D / JIS - B2002

Inspection : JIS - B2003 / JPI - 7S - 39 - 96 / API - 598

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
40A (JIS)	RF	5K	80	60	43	95.0	1.8
	RF	10K	86		43	105.0	1.8
	RF/R-20	16/20K	86		60	105.0	1.8
	RF/R-20	30/40K	97		60	120.0	2.8
	RF/R-23	63K	105		70	130.0	6.0
40A (JPI)	RF	150	82		60	98.6	1.8
	RF/R-20	300-600	92		60	114.3	2.8
	RF/R-20	900-1500	92		70	114.3	6.0
	RF/R-23	2500	113		70	146.0	11.5
50A (JIS)	RF	5K	90		60	60	105.0
	RF	10K	101	60		120.0	2.5
	RF/R-23	16/20K	101	60		120.0	2.5
	RF/R-23	30/40K	111	60		130.0	3.5
	RF/R-24	63K	122	70		145.0	6.5
50A (JPI)	RF	150	101	60		120.6	2.5
	RF/R-23	300-600	109	60		127.0	3.5
	RF/R-24	900-1500	139	70		165.1	6.5
	RF/R-26	2500	142	70		171.4	12.5
65A (JIS)	RF	5K	115	73		67	130.0
	RF	10K	121		67	140.0	3.0
	RF/R-26	16/20K	121		67	140.0	3.0
	RF/R-26	30/40K	137		67	160.0	4.0
	RF/R-27	63K	150		83	175.0	7.0
65A (JPI)	RF	150	121		67	139.7	3.0
	RF/R-26	300-600	124		67	149.4	4.0
	RF/R-27	900-1500	161		83	190.5	7.0
	RF/R-28	2500	164		83	196.8	17.5
80A (JIS)	RF	5K	126		89	73	145.0
	RF	10K	131	73		150.0	4.5
	RF/R-31	16/20K	137	73		160.0	4.5
	RF/R-31	30/40K	147	73		170.0	5.0
	RF/R-31	63K	170	83		185.0	11.0
80A (JPI)	RF	150	131	73		152.4	4.5
	RF/R-31	300-600	146	73		168.1	5.0
	RF/R-31	900	164	83		190.5	11.0
	RF/R-35	1500	171	83		203.2	12.0
	RF/R-32	2500	193	83		228.6	21.0
100A (JIS)	RF	5K	146	114	73	165.0	8.0
	RF	10K	156		73	175.0	8.0
	RF/R-37	16/20K	162		73	185.0	8.0
	RF/R-37	30K	168		79	195.0	11.0
	RF/R-37	40K	178		79	205.0	17.0
	RF/R-37	63K	190		102	220.0	19.0
100A (JPI)	RF	150	171		73	190.5	8.0
	RF/R-37	300	178		73	200.2	9.0
	RF/R-37	600	190		79	215.9	11.0
	RF/R-37	900	202		102	235.0	17.0
	RF/R-39	1500	206		102	241.3	19.0
	RF/R-38	2500	231		105	273.0	39.5
125A (JIS)	RF	5K	181	141	86	200.0	10.0
	RF	10K	187		86	210.0	10.0
	RF/R-41	16/20K	194		86	225.0	10.0
	RF/R-41	30K	205		105	230.0	13.0
	RF/R-41	40K	223		105	250.0	21.0
125A (JPI)	RF	150	194		86	215.9	10.0
	RF/R-41	300	213		86	235.0	13.0
	RF/R-41	600	237		105	266.7	21.0

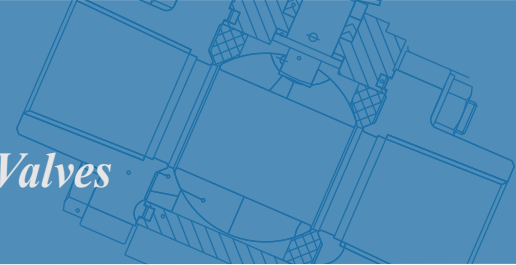


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
150A (JIS)	RF	5K	207	168	98	230.0	13.0
	RF	10K	217		98	240.0	13.0
	RF/R-45	16/20K	235		98	260.0	13.0
	RF/R-45	30K	248		136	275.0	23.0
	RF/R-45	40K	262		136	295.0	32.0
	RF/R-45	63K	272		159	305.0	51.0
150A (JPI)	RF	150	217	168	98	241.3	13.0
	RF/R-45	300	248		98	269.7	23.0
	RF/R-45	600	262		136	292.1	32.0
	RF/R-45	900	285		159	317.5	51.0
	RF/R-46	1500	278		159	317.5	56.0
	RF/R-47	2500	313		159	368.3	85.0
200A (JIS)	RF	5K	257	219	127	280.0	28.0
	RF	10K	267		127	290.0	28.0
	RF/R-49	16/20K	276		127	305.0	28.0
	RF/R-49	30K	290		165	320.0	36.0
	RF/R-49	40K	312		165	345.0	65.0
	RF/R-49	63K	327		206	360.0	82.0
200A (JPI)	RF	150	276	219	127	298.4	28.0
	RF/R-49	300	304		127	330.2	36.0
	RF/R-49	600	312		165	349.2	65.0
	RF/R-49	900	354		206	393.7	82.0
	RF/R-50	1500	345		206	393.7	91.0
	RF/R-51	2500	383		206	438.2	128.0
250A (JIS)	RF	5K	317	274	146	345.0	45.0
	RF	10K	330		146	355.0	45.0
	RF/R-53	16/20K	353		146	380.0	45.0
	RF/R-53	30K	357		213	390.0	60.0
	RF/R-53	40K	377		213	410.0	98.0
	RF/R-53	63K	391		241	430.0	126.0
250A (JPI)	RF	150	330	274	146	362.0	45.0
	RF/R-53	300	353		146	387.4	60.0
	RF/R-53	600	396		213	431.8	98.0
	RF/R-53	900	430		241	469.9	126.0
	RF/R-54	1500	430		248	482.6	132.0
	RF/R-55	2500	525		254	539.8	200.0
300A (JIS)	RF	5K	367	324	181	390.0	68.0
	RF	10K	375		181	400.0	68.0
	RF/R-57	16/20K	400		181	430.0	68.0
	RF/R-57	30K	417		229	450.0	86.0
	RF/R-57	40K	431		229	470.0	140.0
	RF/R-57	63K	446		292	485.0	163.0
300A (JPI)	RF	150	400	324	181	431.8	68.0
	RF/R-57	300	417		181	450.8	86.0
	RF/R-57	600	454		229	489.0	140.0
	RF/R-57	900	494		292	533.4	163.0
	RF/R-58	1500	517		305	571.5	174.0
	RF/R-60	2500	545		305	619.3	393.0
350A (JIS)	RF	5K	410	356	184	435.0	95.0
	RF	10K	420		184	445.0	95.0
	RF/R-61	16/20K	447		184	480.0	95.0
	RF/R-61	30K	456		222	495.0	170.0
	RF/R-61	40K	474		273	515.0	185.0
	RF/R-62	63K	482		356	530.0	436.0
350A (JPI)	RF	150	447	356	184	476.2	95.0
	RF/R-61	300	482		222	514.4	170.0
	RF/R-61	600	488		273	527.0	185.0
	RF/R-62	900	517		356	558.8	436.0
	RF/R-62	1500	517		356	558.8	436.0
	RF/R-63	1500	575		356	635.0	480.0

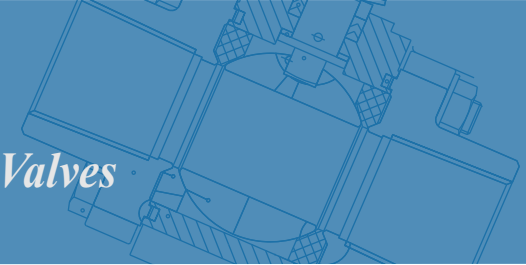


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
400A (JIS)	RF	5K	470	406	191	495.0	132.0
	RF	10K	483		191	510.0	132.0
	RF/R-65	16/20K	507		191	540.0	132.0
	RF/R-65	30K	521		232	560.0	208.0
	RF/R-65	40K	531		305	570.0	274.0
	RF/R-66	63K	544		384	590.0	536.0
400A (JPI)	RF	150	507	406	191	539.8	132.0
	RF/R-65	300	531		232	571.5	208.0
	RF/R-65	600	561		305	603.2	274.0
	RF/R-66	900	571		384	616.0	536.0
	RF/R-67	1500	637		384	704.8	583.0
450A (JIS)	RF	5K	528	457	203	555.0	147.0
	RF	10K	538		203	565.0	147.0
	RF/R-69	16/20K	572		264	585.0	296.0
450A (JPI)	RF	150	545	457	203	577.8	147.0
	RF/R-69	300	593		264	628.6	296.0
	RF/R-69	600	609		362	654.0	396.0
	RF/R-70	900	635		451	685.8	655.0
	RF/R-71	1500	700		468	774.7	788.0
500A (JIS)	RF	5K	578	508	219	605.0	202.0
	RF	10K	592		219	620.0	202.0
	RF/R-73	16/20K	625		292	660.0	366.0
500A (JPI)	RF	150	603	508	219	635.0	202.0
	RF/R-73	300	650		292	685.8	366.0
	RF/R-73	600	679		368	723.9	648.0
	RF/R-74	900	695		451	749.3	928.0
	RF/R-75	1500	752		533	831.8	1284.0
550A (JIS)	RF	5K	638	559	219	665.0	230.0
	RF	10K	647		219	680.0	230.0
600A (JIS)	RF	5K	679	610	222	715.0	265.0
	RF	10K	695		222	730.0	265.0
	RF/R-77	16/20K	731		318	770.0	529.0
600A (JPI)	RF	150	714	610	222	749.3	265.0
	RF/R-77	300	771		318	812.8	529.0
	RF/R-77	600	787		438	838.2	910.0
	RF/R-78	900	833		495	901.7	1250.0
	RF/R-79	1500	896		559	990.6	1913.0
650A (JIS)	RF	5K	743	660	356	770.0	590.0
	RF	10K	747		356	780.0	590.0
	RF/R-93	16K	781		356	820.0	738.0
	RF/R-93	20K	802		356	850.0	738.0
700A (JIS)	RF	5K	784	711	321	820.0	515.0
	RF	10K	804		321	840.0	515.0
	RF/R-94	16K	833		321	875.0	590.0
	RF/R-94	20K	852		321	900.0	590.0
750A (JIS)	RF	5K	847	762	305	880.0	500.0
	RF	10K	867		305	900.0	500.0
	RF/R-95	16K	893		368	935.0	958.0
	RF/R-95	20K	914		368	970.0	958.0
800A (JIS)	RF	5K	890	813	356	930.0	690.0
	RF	10K	917		356	950.0	690.0
	RF/R-96	16K	942		406	990.0	920.0
	RF/R-96	20K	974		406	1030.0	920.0
900A (JIS)	RF	5K	991	914	368	1030.0	860.0
	RF	10K	1011		368	1050.0	860.0
	RF/R-98	16K	1042		483	1090.0	1240.0
	RF/R-98	20K	1084		483	1140.0	1240.0

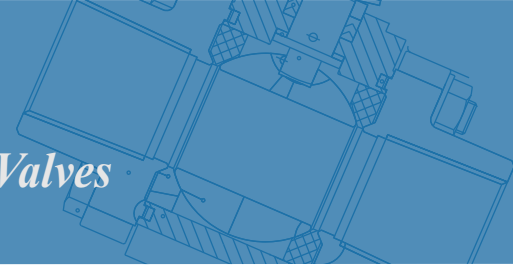


Fig No: MV-1220 Dimensions For Stainless & Carbon Steel

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight kgs
1000A (JIS)	RF	5K	1091	1016	405	1130.0	926.0
	RF	10K	1121		405	1160.0	926.0
	RF	16K	1154		546	1210.0	1930.0
1100A (JIS)	RF	5K	1207	1118	462	1240.0	1520.0
	RF	10K	1231		462	1270.0	1520.0
1200A (JIS)	RF	5K	1308	1219	524	1350.0	1980.0
	RF	10K	1341		524	1380.0	1980.0
	RF	16K	1364		629	1310.0	3220.0
1350A (JIS)	RF	5K	1472	1371	590	1505.0	3100.0
	RF	10K	1495		590	1540.0	3100.0
	RF	16K	1528		730	1590.0	4100.0
1500A (JIS)	RF	5K	1627	1524	660	1660.0	4000.0
	RF	10K	1655		660	1700.0	4000.0
	RF	16K	1688		838	1750.0	5150.0

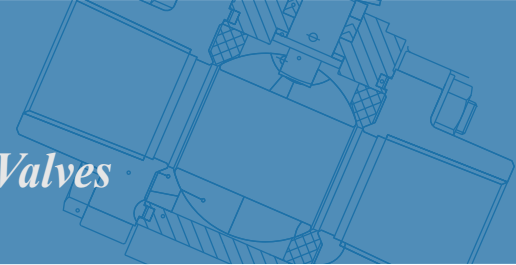


Fig No: MV-1220 Dimensions For Cast & Ductile Iron

Design : API - 594 Face To Face : API - 594
 Inspection : API - 598 suit for : ASME B16.1 & MSS-SP44

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight	
							lbs	kgs
1-1/2" (DN40)	FF	5K	80	60	43	95.0	3.3	1.5
		10K	86			105.0	3.3	1.5
		125 LB	86			98.5	3.3	1.5
		PN6	86			100.0	3.3	1.5
		PN10/16	86			110.0	3.3	1.5
2" (DN50)	FF	5K	90	60	54	105.0	4.4	2.0
		10K	101			120.0	4.4	2.0
		125 LB	105			120.6	4.4	2.0
		PN6	96			110.0	4.4	2.0
		PN10/16	105			125.0	4.4	2.0
2-1/2" (DN65)	FF	5K	115	73	54	130.0	5.5	2.5
		10K	121			140.0	5.5	2.5
		125 LB	124			139.7	5.5	2.5
		PN6	115			130.0	5.5	2.5
		PN10/16	124			145.0	5.5	2.5
3" (DN80)	FF	5K	126	89	57	145.0	6.6	3.0
		10K	131			150.0	6.6	3.0
		125 LB	137			152.4	6.6	3.0
		PN6	126			150.0	6.6	3.0
		PN10/16	137			160.0	6.6	3.0
4" (DN100)	FF	5K	146	114	64	165.0	8.8	4.0
		10K	156			175.0	9.9	4.5
		125 LB	175			190.5	11.0	5.0
		PN6	146			170.0	8.8	4.0
		PN10/16	156			180.0	9.9	4.5
5" (DN125)	FF	5K	181	141	70	200.0	11.0	5.0
		10K	187			210.0	12.1	5.5
		125 LB	197			215.9	13.2	6.0
		PN6	181			200.0	11.0	5.0
		PN10/16	187			210.0	12.1	6.0
6" (DN150)	FF	5K	207	168	76	230.0	14.3	6.5
		10K	217			240.0	16.5	7.5
		125 LB	222			241.3	17.6	8.0
		PN6	207			225.0	14.3	6.5
		PN10/16	217			240.0	17.6	8.0
8" (DN200)	FF	5K	257	219	95	280.0	30.8	14.0
		10K	267			290.0	33.0	15.0
		125 LB	279			298.4	35.2	16.0
		PN6	257			280.0	30.8	14.0
		PN10	267			295.0	35.2	16.0
		PN16	267			295.0	35.2	16.0
10" (DN250)	FF	5K	317	274	108	345.0	52.9	24.0
		10K	330			355.0	55.1	25.0
		125 LB	340			362.0	57.3	26.0
		PN6	317			335.0	52.9	24.0
		PN10	330			350.0	55.1	25.0
		PN16	330			355.0	55.1	25.0
12" (DN300)	FF	5K	367	324	143	390.0	96.9	44.0
		10K	375			400.0	99.1	45.0
		125 LB	410			431.8	103.5	47.0
		PN6	367			395.0	96.9	44.0
		PN10	375			400.0	99.1	45.0
		PN16	375			410.0	101.3	46.0
14" (DN350)	FF	5K	410	356	184	435.0	182.8	83.0
		10K	420			445.0	187.2	85.0
		125 LB	451			476.2	476.2	88.0
		PN6	410			445.0	445.0	83.0
		PN10	438			460.0	460.0	85.0
		PN16	438			470.0	470.0	87.0



Fig No: MV-1220 Dimensions For Cast & Ductile Iron

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight	
							lbs	kgs
16" (DN400)	FF	5K	470	406	191	495.0	253.3	115.0
		10K	483			510.0	255.5	117.0
		125 LB	514			539.7	268.7	122.0
		PN6	470			495.0	253.3	115.0
		PN10	483			515.0	258.8	117.0
		PN16	495			525.0	262.1	119.0
18" (DN450)	FF	5K	528	457	203	555.0	304.0	138.0
		10K	538			565.0	308.4	140.0
		125 LB	549			577.8	317.2	144.0
		PN6	528			550.0	304.0	138.0
		PN10	538			565.0	313.9	140.0
		PN16	545			585.0	319.4	144.0
20" (DN500)	FF	5K	578	508	213	605.0	394.3	179.0
		10K	592			620.0	398.7	181.0
		125 LB	606			635.0	414.1	188.0
		PN6	578			600.0	394.3	179.0
		PN10	592			620.0	400.9	181.0
		PN16	617			650.0	418.5	190.0
22" (DN550)	FF	5K	638	559	219	665.0	473.6	210.0
		10K	647			680.0	473.6	215.0
		125 LB	660			692.1	495.6	225.0
24" (DN600)	FF	5K	679	610	222	715.0	555.1	252.0
		10K	695			730.0	555.1	263.0
		125 LB	718			749.3	570.5	269.0
		PN6	679			705.0	555.1	252.0
		PN10	695			725.0	579.3	263.0
		PN16	731			770.0	579.3	265.0
26" (DN650)	FF	5K	743	660	250	770.0	1141.0	505.0
		10K	747			780.0	1141.0	518.0
		125 LB	774			806.4	1167.4	530.0
28" (DN700)	FF	5K	784	711	321	820.0	837.0	380.0
		10K	804			840.0	837.0	385.0
		125 LB	831			863.6	863.4	392.0
		PN6	784			810.0	837.0	380.0
		PN10	804			840.0	837.0	385.0
		PN16	804			840.0	837.0	385.0
30" (DN750)	FF	5K	847	762	305	880.0	925.1	420.0
		10K	867			900.0	947.1	430.0
		125 LB	883			914.4	975.8	443.0
32" (DN800)	FF	5K	890	813	356	930.0	1211.5	550.0
		10K	911			950.0	1244.5	565.0
		125 LB	940			978.0	1268.7	576.0
		PN6	890			920.0	1211.5	550.0
		PN10	911			950.0	1244.5	565.0
		PN16	911			950.0	1244.5	565.0
36" (DN900)	FF	5K	991	914	368	1030.0	1585.9	720.0
		10K	1011			1050.0	1630.0	740.0
		125 LB	1048			1085.8	1720.3	781.0
		PN6	991			1020.0	1585.9	720.0
		PN10	1011			1050.0	1630.0	740.0
		PN16	1011			1050.0	1630.0	740.0
40" (DN1000)	FF	5K	1091	60	43	1030.0	1762.1	800.0
		10K	1121			1060.0	1806.2	820.0
		125 LB	1162			1200.1	1854.6	842.0
		PN6	1091			1120.0	1762.1	800.0
		PN10	1121			1160.0	1806.2	820.0
		PN16	1121			1170.0	1806.2	820.0
42"(DN1050)	FF	125 LB	1219	60	54	1257.3	2326.0	1056.0
44" (DN1100)	FF	5K	1207	60	54	1240.0	2973.6	1350.0
		10K	1321			1270.0	3039.6	1380.0
		125 LB	1276			1222.2	3105.7	1410.0
48" (DN1200)	FF	5K	1308	73	54	1350.0	3986.8	1810.0
		10K	1341			1380.0	4141.0	1880.0
		125 LB	1384			1422.4	4185.0	1900.0
		PN6	1308			1340.0	2986.8	1810.0
		PN10	1341			1380.0	4141.0	1880.0
		PN16	1341			1390.0	4141.0	1880.0
54" (DN1350)	FF	5K	1472	89	57	1505.0	5793.0	2630.0
		10K	1495			1540.0	5947.1	2700.0
		125 LB	1549			1593.8	6167.4	2800.0
60" (DN1500)	FF	5K	1627	89	57	1660.0	7709.3	3500.0
		10K	1655			1700.0	7819.4	3550.0
		125 LB	1714			1759.0	8149.8	3700.0

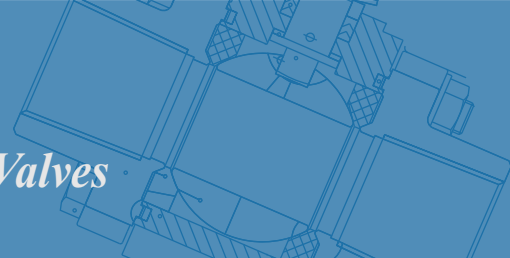


Fig No: MV-1220 Dimensions For Cast & Ductile Iron

Size (inches) (mm)	End Facing	Pressure Rating	ØA mm	ØB mm	C mm	PCD	Weight	
							lbs	kgs
1-1/2" (DN40)	FF	125-150	86	60	43	98.6	3.3	1.5
		250-300	95			114.3	4.4	2.0
2" (DN50)	FF	125-150	105	60	54	120.7	4.4	2.0
		250-300	111			127.0	5.5	2.5
2-1/2" (DN65)	FF	125-150	124	73	60	139.7	5.5	2.5
		250-300	130			149.4	7.1	3.2
3" (DN80)	FF	125-150	137	89	67	152.4	6.6	3.0
		250-300	149			168.1	8.4	3.8
4" (DN80)	FF	125-150	175	114	67	190.5	11.0	5.0
		250-300	181			200.0	13.2	6.0
5" (DN125)	FF	125-150	197	141	83	215.9	13.2	6.0
		250-300	216			235.0	16.5	7.5
6" (DN150)	FF	125-150	222	168	95	241.3	17.6	8.0
		250-300	251			269.7	22.0	10.0
8" (DN200)	FF	125-150	279	219	127	298.5	35.2	16.0
		250-300	308			330.2	41.0	18.6
10" (DN250)	FF	125-150	348	274	140	362.0	57.3	26.0
		250-300	362			387.4	66.1	30.0
12" (DN300)	FF	125-150	410	324	181	431.8	103.5	47.0
		250-300	422			450.9	114.5	52.0
14" (DN350)	FF	125-150	451	356	184	476.3	193.8	88.0
		250-300	486			514.4	337.0	153.0
16" (DN400)	FF	125-150	514	406	191	539.8	268.7	122.0
		250-300	540			571.5	411.9	187.0
18" (DN450)	FF	125-150	549	457	203	577.9	317.2	144.0
		250-300	597			628.7	585.9	266.0
20" (DN500)	FF	125-150	606	508	213	635.0	414.1	188.0
		250-300	654			685.8	724.7	329.0
22" (DN550)	FF	125	660	559	219	692.2	506.6	230.0
24" (DN600)	FF	125-150	718	610	222	749.3	570.5	259.0
		250-300	775			812.8	1048.5	476.0
26" (DN650)	FF	125-150	772	660	250	806.5	1167.4	530.0
		250-300	835			876.3	1255.5	570.0
28" (DN700)	FF	125-150	832	711	321	863.6	863.4	392.0
		250-300	898			939.8	991.2	450.0
30" (DN750)	FF	125-150	883	762	305	914.4	975.8	443.0
		250-300	953			997.0	1898.7	862.0
32" (DN800)	FF	125-150	940	813	356	977.9	1268.7	576.0
		250-300	1006			1054.1	1823.8	828.0
36" (DN900)	FF	125-150	1048	914	368	1085.9	1720.3	781.0
		250-300	1117			1068.4	2458.1	1116.0
40" (DN1000)	FF	125-150	1162	1016	419	1200.2	1854.6	842.0
		250-300	1114			1155.7	3627.8	1647.0
42" (DN1050)	FF	125-150	1219	1067	432	1257.3	2326.0	1056.0
		250-300	1168			1206.5	5260.0	2388.0
44" (DN1100)	FF	125-150	1276	1118	462	1314.5	3105.7	1410.0
48" (DN1300)	FF	150	1384	1219	524	1422.4	4185.0	1900.0
		300	1492			1371.6	5870.0	2665.0
54" (DN1350)	FF	125-150	1549	1372	591	1593.9	6167.4	2800.0
		250-300	1492			1549.4	8149.8	3700.0
60" (DN1500)	FF	125-150	1715	1524	660	1759.0	8326.0	3780.0
		250-300	1645			1701.8	11013.2	5000.0