

## Hitewell MV200 FLANGED BALL VALVES

Hitewell MV200 series ball valve is widely used. The construction of the valve is same The construction uses same valve internals as earlier developed M150 series. Much new design is used such as Blow-out Proof Stem and Anti-static Devices. The proven special shaft/ball joint enables MV200 to be used in the most demanding applications and also assures tight shut-off even with the lowest pressure differentials.

### APPLICATION

- Chemical, Petrochemical
- Oil, Natural Gas
- Power
- Steel
- Liquid
- Oil
- Water
- Gas
- Steam



### SIZE

1/2" ... 12" / DN15 ... DN300

### PRESSURE RATING

ASME CLASS 150/300    PN16/25/40

### Temperature Range

-50°C ... +250°C For different seat

-60°F ... +480°F

### APPLICABLE STANDARDS

**Design: ASME B16.34, API 608**

**Fire Safe: API 607 5<sup>th</sup> 2005, ISO 10497**

**Face to Face: ASME B16.10**

**Wall Thickness: ASME B16.34**

**End Flange: ASME B16.5**

**Inspection & Testing: API 598, API 6D**

### DESIGN STANDARDS

See Table 1

### MATERIAL OF CONSTRUCTION

Body: A351-CF8M/A351-CF8/A216-WCB, 1.4408/1.4308/1.0619

Ball: A351-CF8M/A351-CF8, 1.4408/1.4308, Special Material

Seat: TFM1600/PTFE/RTFE  
 Seal-Ring /Gasket: PTFE  
 Body Gasket: PTFE /GRAFOIL (Fire Safe)  
 Packing: PTFE/ GRAFOIL (Fire Safe)

**BOLT CONNECTION**  
 ASTM A 193 B8M/A194 8M

**STANDARD FEATURES**

Skim  
 ATEX  
 Q-Trim  
 Over Load Construction

**SIZE**

High Cv with Same Size  
 Same inside diameter with lowest fluid resistance  
 Full-bore Ball Valve



**INSPECTION & TESTING**

Every valve must be tested with the whole body and the seal of the seat at 1.5\*PN.

**Sealing**

Bubble Sealing with Soft Ball or VI

**OPTION**

Other Alloy Steel  
 American MR-01-75 Standards  
 EN1024 3.1B and 3.1A Standards for Casting

Cv (Kv) and Damping coefficient

Size	Cv 90°	Kv 90°	ξ 90°
1/2"	30	25	0.09
3/4"	65	50	0.09
1"	105	91	0.08
1-1/4"	170	140	0.08
1-1/2"	250	220	0.07
2"	490	425	0.06
2-1/2"	870	750	0.06
3"	1160	1000	0.05
4"	2200	1900	0.05
5"	3400	2900	0.04
6"	5100	4400	0.04

### Anti-static Devices

When operating the valve, the friction between the ball and the nonmetal seat will produce electrostatic charge that can be accumulated on the ball. To prevent static spark, an antistatic device is placed on the valve to derive the electric charge accumulated on the ball from the static channel between the ball and the stem, or between the stem and valve body.

### Fire Safe Construction

Hitewell soft-seated ball valves(2-PC Body, Flange Ends, Series MV) conform to Fire Tests of API 607 Fourth Edition and BS6755 Part 2 (1987). Our products can seal properly during the fire and after the accident, reduce inside and outside leakage of pipeline fluids, and prevent environmental pollution (even the fire) resulted from flammable or other fluids in the pipeline.

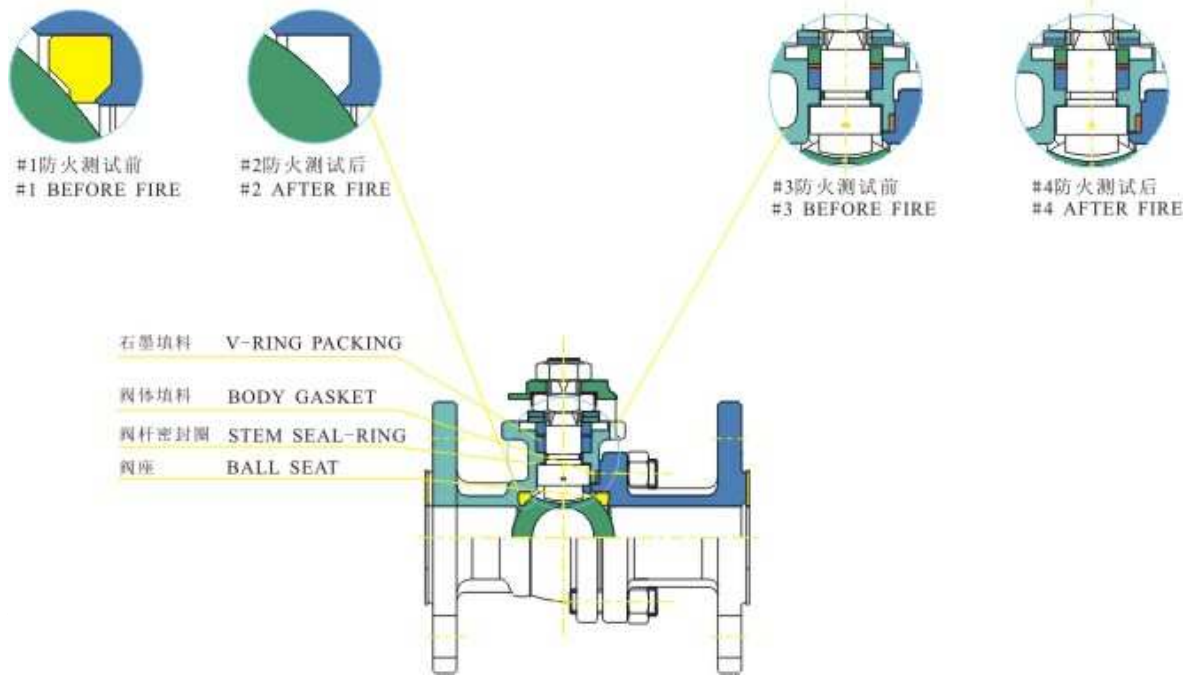
### Design features:

1. During the fire ,soft seats (such as PTFE,RTFE... etc) will burn up and lose supporting and sealing functions. Then, the Ball free moves downstream due to pressure from upstream, contacts secondary metal seats of Body or End Cap, and finally achieves to prevent leakage (see figures #1 & #2).
2. Grafoil Body Gaskets can endure high temperature and remain unaffected during the fire, and eventually prevent fluid leakage to exterior. Moreover, the connection of Body and End Cap Flange maintains metal to metal contact by Stud Bolts screwed into Body (see figures #3 & #4).
3. Grafoil Stem seals can endure high temperature and remain unaffected during the fire and prevent fluid leakage to the exterior (see figures #5 & #6 ).

### Blow-out Proof Stem

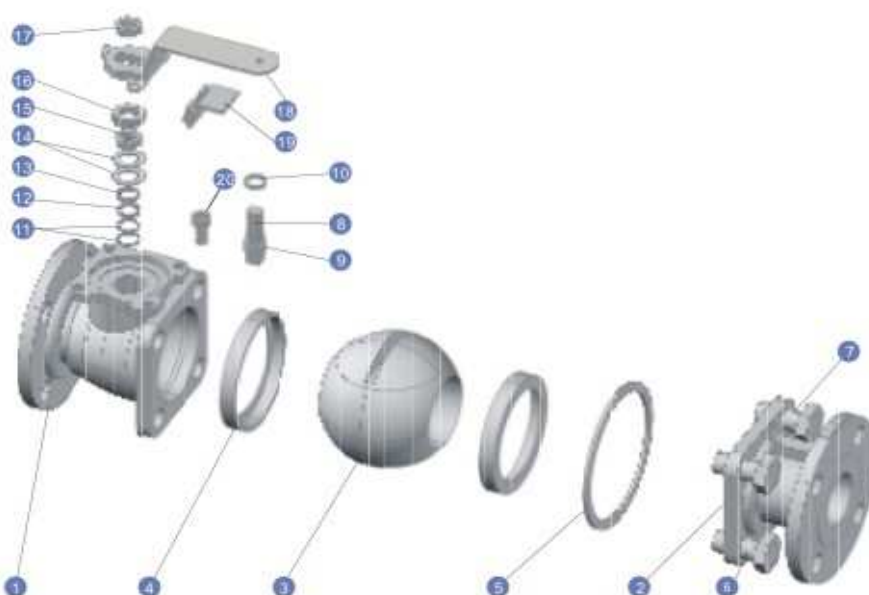
When operating the valve, the pressure in the body may push the stem or when repaired, the stem or medium may fly out when there is pressure in the body. To prevent such case, a dummy club is placed at the lower part of the stem.





STANDARD	AMERICAN	GERMAN	JAPAN
Pressure Rating	B16.34 CLASS150 (BS5351 CLASS 150) B16.34 CLASS 300 BS5351 CLASS 300	DIN 3357 PN10-PN40 EN 12516-1	B2001 10K B2001 20K
Face to Face	B16.10	DIN 3202 F4/F18 DIN 3202 F1/F17	B2002 10K Form 6 B2002 20K Form 10
End Flange	B16.5 RF serrated Finish (AARH200)	DIN 2501 PN10-PN40 Facing DIN 2526 Form C	B2212 10K B2214 20K
Inspection & Testing	API 598, API 6D	DIN 3230/3, EN 12266	JIS B2003
Quality Assurance	ISO 9001, QS9000 AD 2000-Merkblatt W0 PED 97/23EC CE0036 API 6D		

Table 2 MATERIAL OF CONSTRUCTION



NO	SPARE PART	MATERIAL		
		ANSI/JIS/DIN	ANSI/JIS/DIN	ANSI/JIS/DIN
1	Body	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308/CF8	A216-WCB/SCPH2/1.0619
2	End Cap	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308/CF8	A216-WCB/SCPH2/1.0619
3	Ball	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308/CF8	
4	Seat	TFM1600/PTFE/RTFE		
5	Body Gasket	TFM1600/PTFE/316 SPIRAL WOUND+GRAFOIL		
6	Bolt	A193-B8		A193-B7
7	Nut	A194-8		A194-2H
8	Stem	SUS316	SUS304	
9	Anti-Static	SUS316	SUS304	
10	Stem Seal-Ring	PTFE		
11	Packing	PTFE/GRAFOIL		
12	Bushing	50%SS+50%PTFE/SUS304		
13	Gland	SUS316		
14	Belleville Washer	SUS301		
15	Stem Nut	A194-8		
16	Stop-Lock-Cap	SUS304		
17	(1/2"~3") Handle Nut	A194-8		
18	(1/2"~3") Handle	VINYL PLASTIC		
19	(1/2"~3") Lock Device	SUS304		
20	Stop Bolt	A193-B8		

## Actuator

Series MV200 can equipped with the following Hitewell actuators.

VED/VEDL Pneumatic Double Acting Actuator, see VED Volumes

VEDS/VEDLS Pneumatic Spring Return Actuator, see VED Volumes

VAQ Electric Quarter Actuator, see VAQ Volumes

VAD/TW Electric Large Torque Quarter Actuator, see VED Volumes

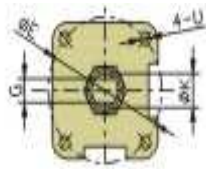
M M series Gear Boxes, see M Volumes

LH Handle (1" --4" )

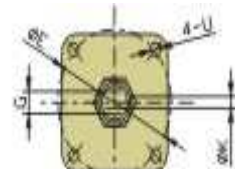
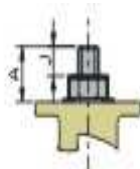
Other Actuator please contact local Hitewell office.

## WEIGHT

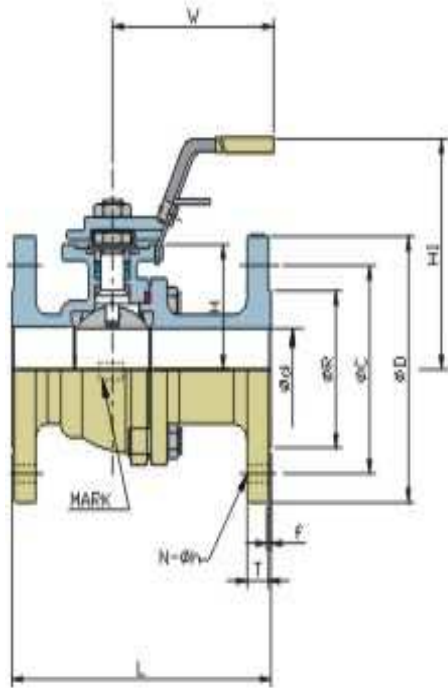
Size	ANSI Class150	ANSI Class300
1/2"	1.6	2.4
3/4"	2.1	3.4
1"	3.0	4.6
1-1/4"	3.6	6.5
1-1/2"	5.7	8.3
2"	8.5	11
2-1/2"	14.3	17.2
3"	18.1	26
4"	30	55
5"	40	90
6"	100	135
8"	175	240
10"	340	390
12"	505	600
14"	715	820
16"	950	1150



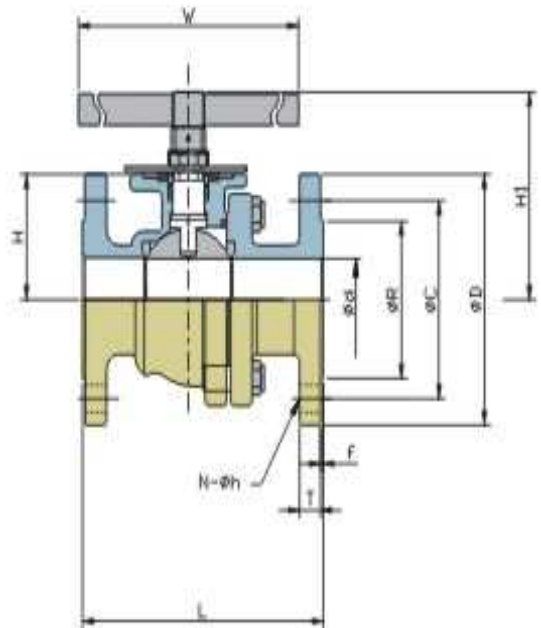
1/2"-3"



4"



1/2"-3"



4"-12"

**ANSI CLASS 150 DIMENSION TABLE (1/2" ...10" Handle) 单位: mm**

尺寸	φd	L	ΦR	φD	φC	f	T	H	H1	N	Φh	W	G	A	J	ΦK	U	ΦE	ISO5211
1/2" "	15.0	108.0	35.0	89.0	60.5	1.6	9.7	37.0	86.0	4	16.0	135.0	6.3	20.0	10.0	12.0	M5	42.0	F04
3/4" "	20.0	117.0	43.0	98.6	70.0	1.6	10.5	40.0	90.0	4	16.0	135.0	6.3	20.0	10.0	12.0	M5	42.0	F04
1" "	25.0	127.0	51.0	108.0	79.2	1.6	11.2	45.5	96.0	4	16.0	170.0	9.0	24.0	11.0	15.0	M6	50.0	F05
1-1/4" "	32.0	140.0	63.5	117.0	88.9	1.6	12.7	50.0	102.0	4	16.0	170.0	9.0	24.0	11.0	15.0	M6	50.0	F05
1-1/2" "	38.0	165.0	73.2	127.0	98.6	1.6	14.2	62.0	114.0	4	16.0	200.0	9.6	27.0	16.0	16.0	M8	70.0	F07
2" "	50.0	178.0	92.0	152.5	120.7	1.6	15.9	71.0	127.0	4	19.0	200.0	9.6	27.0	16.0	16.0	M8	70.0	F07
2-1/2" "	64.0	190.0	104.7	177.8	139.7	1.6	17.5	89.0	177.0	4	19.0	250.0	16.0	42.5	21.0	24.0	M10	102.0	F10
3" "	76.0	203.0	127.0	190.5	152.4	1.6	19.1	100.0	183.0	4	19.0	250.0	16.0	42.5	21.0	24.0	M10	102.0	F10
4" "	100.0	229.0	157.2	228.6	190.5	1.6	23.9	123.0	214.0	8	19.0	400.0	18.0	47.5	25.0	29.0	M10	102.0	F10
5" "	125	356	186	254.0	216.0	1.6	24.0	180.0	256.0	8	22.3	600.0	27	-	-	-	M12	125	F12
6" "	150	394	216	279.4	241.3	1.6	25.4	201.0	276.0	8	22.3	800.0	27	-	-	-	M12	125	F12
8" "	200	457	270	342.9	298.5	1.6	28.5	250.0	448.0	8	22.3	305.0	27	-	-	-	M12	125	F12
10" "	250	533	324	406.4	362.0	1.6	30.0	310.0	506.0	12	25.4	305.0	36	-	-	-	M16	140	F14

ANSI CLASS 300 DIMENSION TABLE (1/2" ...10" Handle)

单位: mm

尺寸	φd	L	ΦR	φD	φC	f	T	H	H1	N	Φh	W	G	A	J	Φk	U	ΦE	ISO5211
1/2 "	15.0	140.0	35.0	95.3	66.5	1.6	14.3	37.0	86.0	4	16.0	135.0	6.3	20.0	10.0	12.0	M5	42.0	F04
3/4 "	20.0	152.0	43.0	117.4	82.6	1.6	15.9	40.0	90.0	4	19.0	135.0	6.3	20.0	10.0	12.0	M5	42.0	F04
1" "	25.0	165.0	51.0	124.0	88.9	1.6	17.5	45.5	96.0	4	19.0	170.0	9.0	24.0	11.0	15.0	M6	50.0	F05
1-1/4 "	32.0	178.0	63.5	133.4	98.6	1.6	19.1	50.0	102.0	4	19.0	170.0	9.0	24.0	11.0	15.0	M6	50.0	F05
1-1/2 "	38.0	190.0	73.2	155.5	114.3	1.6	20.7	62.0	114.0	4	22.3	200.0	9.6	27.0	16.0	16.0	M8	70.0	F07
2" "	50.0	216.0	92.0	165.1	127.0	1.6	22.3	71.0	127.0	8	19.0	200.0	9.6	27.0	16.0	16.0	M8	70.0	F07
2-1/2 "	64.0	241.0	104.7	190.5	149.4	1.6	25.4	89.0	177.0	8	22.3	250.0	16.0	42.5	21.0	24.0	M10	102.0	F10
3" "	76.0	282.0	127.0	209.6	168.1	1.6	28.6	100.0	183.0	8	22.3	250.0	16.0	42.5	21.0	24.0	M10	102.0	F10
4" "	100.0	305.0	157.2	254.0	200.2	1.6	31.8	123.0	214.0	8	22.3	400.0	18.0	47.5	25.0	29.0	M10	102.0	F10
5" "	125	381.0	186.0	279.4	235.0	1.6	35.0	180.0	256.0	8	22.3	600.0	27	-	-	-	M12	125	F12
6" "	150	403.0	216.0	317.5	269.8	1.6	36.6	201.0	276.0	12	22.3	800.0	27	-	-	-	M12	125	F12
8" "	200	502.0	270.0	381.0	330.2	1.6	41.2	250.0	448.0	12	25.4	305.0	27	-	-	-	M12	125	F12
10" "	250	568.0	324.0	444.5	387.4	1.6	47.8	310.0	506.0	16	28.5	305.0	36	-	-	-	M16	140	F14

MV200 Model Schedule Illustration

MV200-

1	2	3	4	5	6	7	8
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The pneumatic or electric actuator can be confirmed by user or Hitewell factory.

Body part

1 No	Size	
	Inch	mm
0H	1/2	15
0T	3/4	20
01	1	25
1Q	1-1/4"	32
1H	1-1/2"	40
02	2	50
2H	2-1/2"	65
03	3	80
04	4	100
05	5	125
06	6	150
08	8	200
10	10	250
12	12	300

2 No	Body & Flange Pressure Rating
A	ANSI 150#
B	ANSI 300#
C	DIN PN16
D	DIN PN25
E	DIN PN40
F	JIS 10K
G	JIS 20K

3 No	Connect Mode
A	RF
B	MFM
X	Special Specification

4	No	Body Material
A		A216-WCB
B		A351-CF8
C		A351-CF8M
X		Special Specification

5	No	Ball Material
A		A216-WCB
B		A351-CF8
C		A351-CF8M
X		Special Specification

6	No	Seat Material
A		PTFE
B		RTFE
C		TFM1600
X		Special Specification

7	No	Body Type
A		Stand
B		Fire Safe
X		Special Specification

8	No	Control Mode
A		Handle
B		Pneumatic ( Double Acting, Bracket Connect)
C		Pneumatic (Spring Return Acting, Bracket Connect )
D		Pneumatic (Double Acting, Direct Mount with Actuator )
E		Pneumatic ( Spring Return Acting, Direct Mount with Actuator )
F		Electric ( Bracket Connect)
G		Electric ( Direct Mount with Actuator)
X		Special Specification