

THE MOST COMPREHENSIVE INDUSTRIAL SOLUTION FOR FORGED STEEL AND CAST STEEL BALL, GATE, GLOBE, CHECK, PLUG, BUTTERFLY AND PIG VALVES

COMPLETE SOLUTIONS

YOU CAN TRUST



CHV CHENGFENG FLOW-TECH GROUP

CHV®

JACKETED BALL VALVES



CHENGFENG FLOW-TECH GROUP

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CHV-JV-1601

CHV INTERNATIONAL, INC.
CHENGDU CHENGGAO VALVE CO., LTD.
CHENGDU CHENGFENG VALVE CO., LTD.

PROFILE

CHENGFENG FLOW-TECH GROUP

Chengfeng Flow-Tech Group, headquartered in Chengdu, China, is the leading flow technology company in China. Being a high-tech group specialized in R&D, manufacturing of industrial valves, and being one of the core suppliers to Petro-China, SINOPEC and CNOOC for decades, it has transformed into a multi-dimensional group that is committed to providing the most complete solutions to the oil&gas markets. With industry-leading facilities, innovative technical teams and highly professional engineers, its top-notch services cover various realms in the energy sector – valve manufacturing and maintenance, fluids equipment solutions, flow control solutions and industrial data analytics, etc.

Chengfeng's products have been widely used in the oil&gas pipelines, petrochemical industries, aerospace industry and power stations, etc. Chengfeng's top two brands, CHV and CCFV, have established the nationwide reputation for their quality and service. Now, Chengfeng Flow-Tech Group has begun its new adventure – serving the world market.

CHENGDU CHENGGAO VALVE CO., LTD. (CHV)

CHV was founded in 1993, and has been specialized in the R&D and manufacturing of mid&high end ball valves ever since. CHV offers complete ball valve product lines. Among all the product lines, the High Pressure Large Diameter Fully Welded Ball Valves have captured more than half the domestic fully welded ball valve market. High Temperature Metal-Seated Oxygen Ball Valve and NACE Ball Valve are also leading the domestic market.

CHENGDU CHENGFENG VALVE CO., LTD. (CCFV)

CCFV was founded in 1966. Its main product lines include slab gate valves, expanding gate valves, tri-eccentric butterfly valves, check valves, globe valves and plug valves, etc. CCFV is leading the domestic slab gate valve market, taking up 70% of the oil transportation and storage sector.

CHV INTERNATIONAL, INC.

CHV International, Inc. is the newest branch of Chengfeng Flow-Tech Group. Based in Houston, Texas, U.S.A, its mission is to shorten the distance between the Group and the international market by providing faster response and better service to our customers around the globe.

CERTIFICATION

Chengfeng Flow-Tech Group's quality program is fully compliant with the industry's most stringent standards. The group holds all major certifications, including but not limited to API 6D, ISO 9001, ISO 14001, OHS 18001, CE, API 6FA, API 607 fire safety inspection certificate.

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PRODUCT RANGE

RANGE

MODEL OF HOLE		FULL BORE		REDUCED BORE	
SIZE	PRESSURE	ASME CLASS 150	ASME CLASS 300	ASME CLASS 150	ASME CLASS 300
NPS 3/4	DN 20	●	●		
NPS 1	DN 25	●	●		
NPS 1-1/2	DN 40	●	●	●	●
NPS 2	DN 50	●	●	●	●
NPS 3	DN 80	●	●	●	●
NPS 4	DN 100	●	●	●	●
NPS 6	DN 150	●	●	●	●
NPS 8	DN 200	●	●	●	●
NPS 10	DN 250	●	●	●	●
NPS 12	DN 300	●	●	●	●
NPS 14	DN 350	●	●	●	●
NPS 16	DN 400	●	●	●	●
NPS 18	DN 450	●	●	●	●
NPS 20	DN 500	●	●	●	●
NPS 24	DN 600	●	●	●	●
NPS 28	DN 700			●	●

*When ordering, please fill according to the ordering serial number table.

STRUCTURE CHARACTERISTICS

OPTIMAL DISCHARGE CHARACTERISTIC

The flow route is the same as the pipeline without protruding portion, which is specially applicable for delivery of easily congealable and high-viscosity fluid.

INSULATION/COLD INSULATION EFFECT

The all flow jacket makes the insulation and cold insulation effect of every body equal.

SMALL VOLUME, LIGHT WEIGHT

Generally, the regular jacketed valve volume is large and heavy, but the CHV jacketed type ball valve is the smallest and lightest one.

INSULATION SLEEVE

Jacketed welding is provided for the whole outer flank (carbon steel sectional material), and the insulation medium allowed to pass is 1MPa of steam or cooling water.

STANDARD & SPECIFICATIONS

Design Standard	CHV-STD
Test Standard	API 6D, API 598, ISO 17292
End Connection	ASME B16.5, ASME B16.47, etc.
Face-to-Face	CHV-STD
Fire Test	API 6FA, API 607
Anti-Corrosion, Acid-Resisting*	NACE MR0103, NACE MR0175, ISO 15156

*Optional, available upon request.

DESIGN FEATURES

OPEN, CLOSE DISPLAY

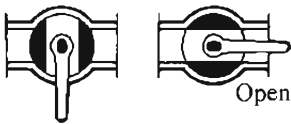
It adopts two-side flat stem position display, where the open and close position can be clearly displayed through the handle position.

Open: the handle is parallel with the pipeline

Close: the handle is vertical to the pipeline

At the full open and full close position, the valve can be locked.

CHV ball valve position



DISMOUNTABLE BODY

Self-tightening threaded seat makes the demounting and maintaining convenient and reliable.

JACKET

Welded with sectional materials and piping, which bring to the jacket high strength and light weight.

MAINTENANCE-FREE BEARING

It adopts the specified reinforced TFE or metal backed PTFE bearings, which makes the stem rotation self-lubricated.

STEM PACKING

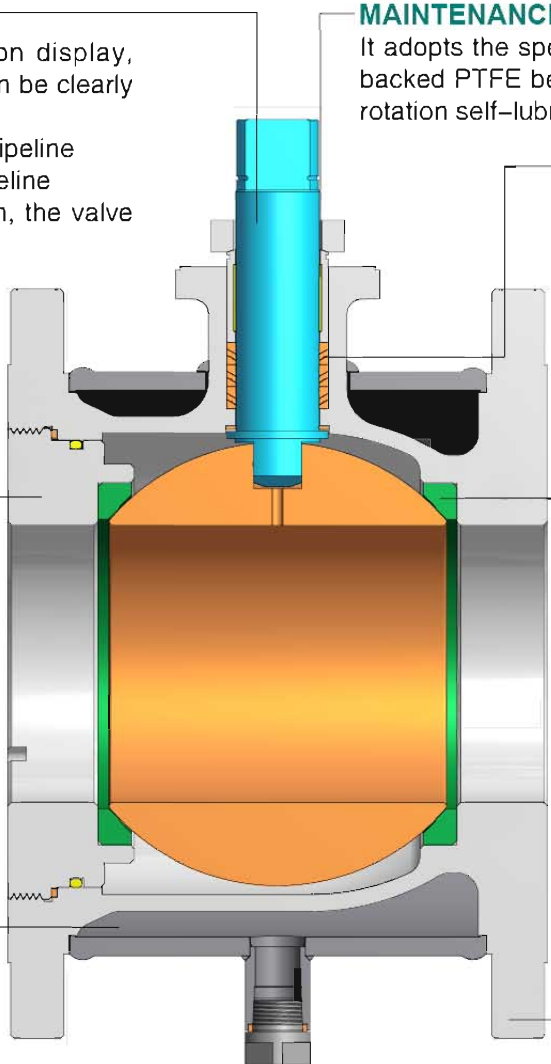
The packing employed by underneath stem seal has the special function of preventing the congealable medium from coagulating during stem rotation, so that to avoid the stem rotation from getting inflexible.

SEAT MATERIAL

TFE, specified reinforcement TFE and PEEK, etc.

FLANGE SPECIFICATION / ACTUAL SIZE

Because the jacketed valve is different from ordinary valves, the end flange specification size is always bigger than the inside nominal diameter flange. Always remember that when fixing and using.



JACKET

JACKETED PIPING

Employs the two specification joints with NPS 3/4 and ASME B16.5 1"-150Lb RF flange, selecting according to the size of valve port, for details see the dimension table.

The highest working pressure of jacket is 1MPa, temperature is 200°C ~ 350°C, but the usage temperature of jacket can not exceed the temperature grade of stem material.

WHEN FIXING AND PIPING THE JACKETED BALL VALVE, DO IT ACCORDING TO THE FOLLOWING SPECIFICATION.

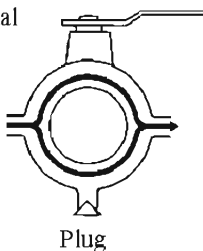
Ex.

High-efficiency piping

Low-efficiency piping

Horizontal piping

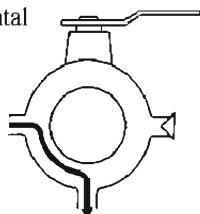
Inlet



Plug

Horizontal piping

Inlet



Outlet

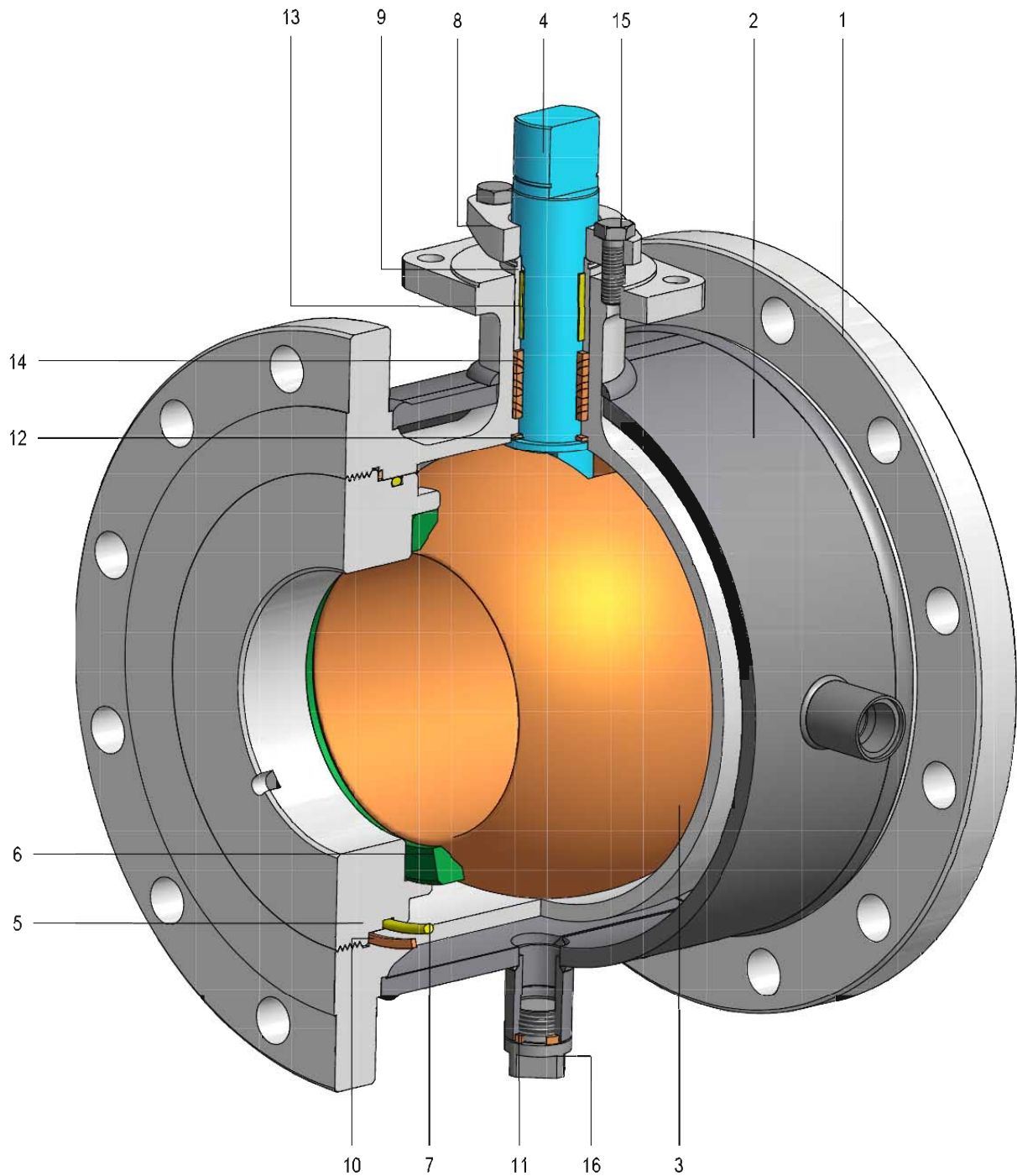
Insulation of jacketed part depends on the heat utilization ratio of flowing steam, so pay much attention to the relative position of inlet, outlet, and plug.

F20 SERIES PARTS LIST

CAST STEEL JACKETED FLOATING BALL VALVE PARTS LIST

1	Body	5	Seat	9	Packing Ring	13	Sliding Bearing
2	Jacket	6	Seat Insert	10	Gasket	14	Packing
3	Ball	7*	O-ring	11	Gasket	15	Bolt
4	Stem	8	Gland Flange	12	Thrust Bearing	16	Plug

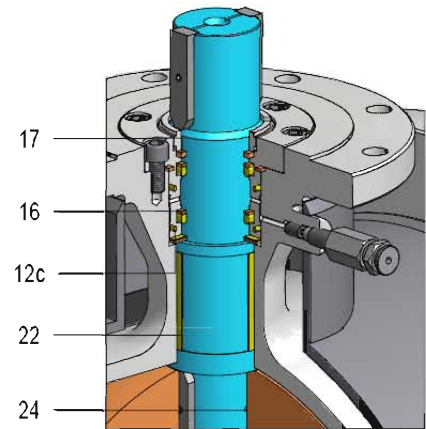
* Recommended spare parts.



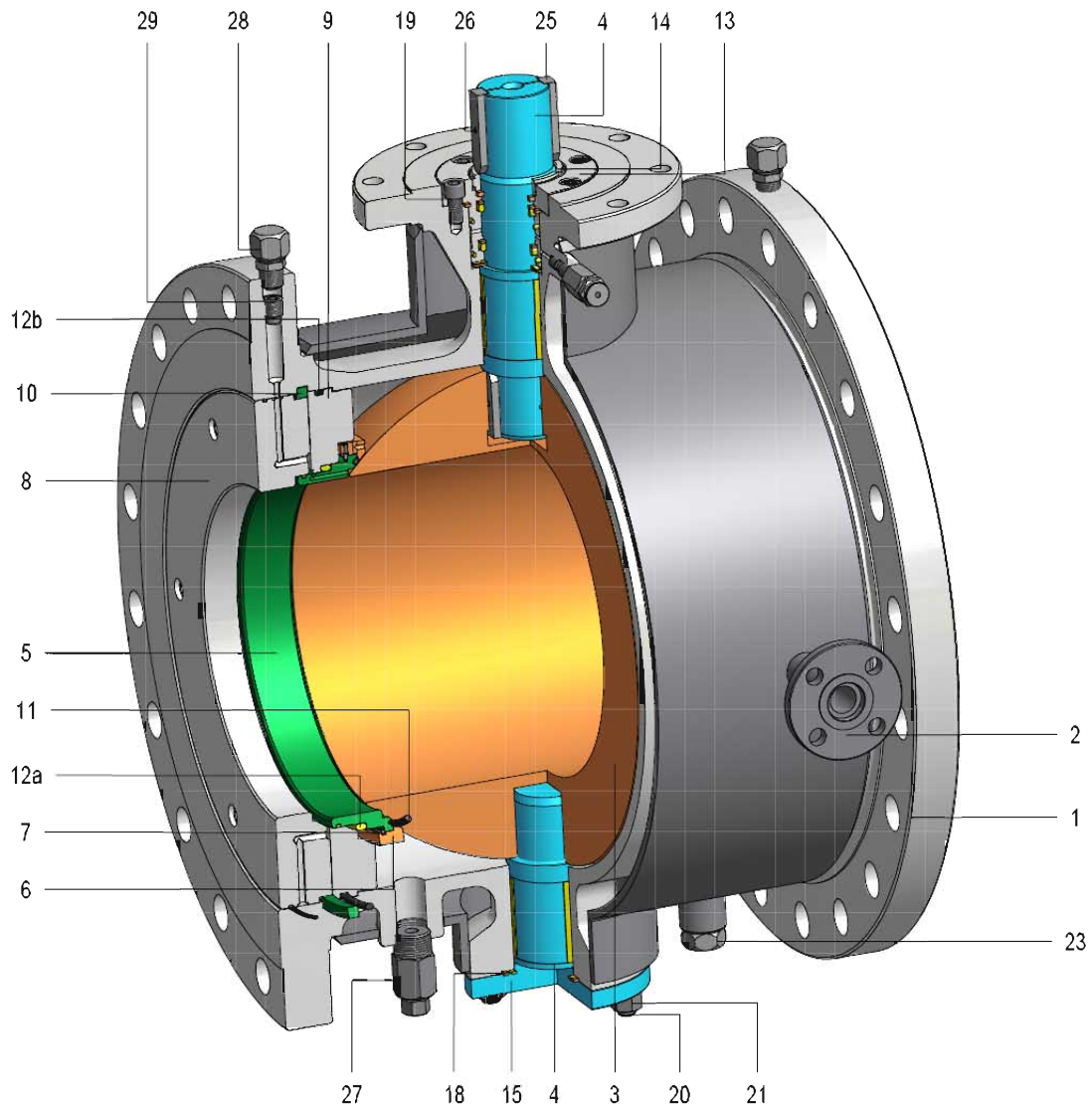
F21 SERIES PARTS LIST

CAST STEEL JACKETED TRUNNION BALL VALVE PARTS LIST

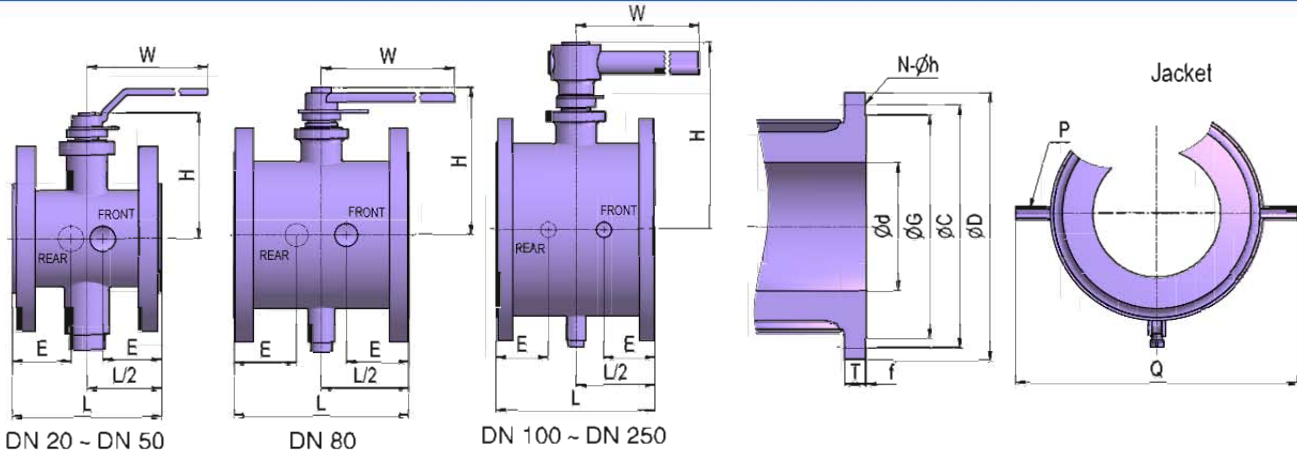
1	Body	12a*	O-ring	21	Hexagon Nut
2	Jacket	12b*	O-ring	22	Sliding Bearing
3	Ball	12c*	O-ring	23	Plug
4	Stem	13	Gland	24	Anti-static Device
5	Seat	14	Packing Ring	25	Key
6	Outer Seat Ring	15	Lower Cover	26	Pin
7	Seat Lock Ring	16	Back Ring	27	Drain Valve
8	Set Screw Ring	17	Packing	28	Grease Injection Valve
9	Spring Retainer	18	Gasket	29	Check Valve
10	Three Piece Ring	19	Head Bolt		
11	Seat Insert	20	Stud		



* Recommended spare parts.



DIMENSIONS & WEIGHTS



ASME CLASS 150 FULL BORE

Size NPS/DN	d	L	Flange Specifications ASME B16.5 Class 150								Jacket			H	W	Weight lb/kg
			End Cap	D	C	G	T	f	N-φh	E	Q	P				
1/2	0.50	4.61	1-1/2	4.92	3.87	2.87	0.50	0.08	4-φ 5/8	2.30	5.83	NPS 3/4	3.98	5.91	15	
15	13	117	40	125	98.4	73	12.7	2	4-φ 16	58.5	148	NPS 3/4	101	150	7	
3/4	0.75	4.61	1-1/2	4.92	3.87	2.87	0.50	0.08	4-φ 5/8	2.30	5.83	NPS 3/4	3.98	5.91	13	
20	19	117	40	125	98.4	73	12.7	2	4-φ 16	58.5	148	NPS 3/4	101	150	6	
1	1.00	5	2	5.91	4.75	3.63	0.56	0.08	4-φ 3/4	2.50	6.30	NPS 3/4	4.17	7.09	20	
25	25	127	50	150	120.7	92.1	14.3	2	4-φ 19	63.5	160	NPS 3/4	106	180	9	
1-1/2	1.50	6.5	2-1/2	7.09	5.50	4.13	0.63	0.08	4-φ 3/4	2.46	7.36	NPS 3/4	5.51	11.02	33	
40	38	165	65	180	139.7	104.8	15.9	2	4-φ 19	62.5	187	NPS 3/4	140	280	15	
2	1.94	7.01	3	7.48	6.00	5.00	0.69	0.08	4-φ 3/4	2.68	8.58	NPS 3/4	5.31	11.02	42	
50	49	178	80	190	152.4	127	17.5	2	4-φ 19	68	218	NPS 3/4	135	280	19	
2-1/2	2.44	7.99	4	9.06	7.50	6.19	0.88	0.08	4-φ 3/4	2.95	8.94	NPS 3/4	7.13	15.75	68	
65	62	203	100	230	190.5	157.2	22.3	2	8-φ 19	75	227	NPS 3/4	181	400	31	
3	2.94	9.02	6	11.02	9.50	8.50	0.94	0.08	8-φ 7/8	3.23	10.55	NPS 3/4	7.6	15.75	115	
80	74	229	150	280	241.3	215.9	23.9	2	8-φ 22	82	268	NPS 3/4	193	400	52	
4	3.94	10	8	13.58	11.75	10.63	1.06	0.08	8-φ 7/8	3.27	11.73	NPS 3/4	9.37	25.59	176	
100	100	254	200	345	298.5	269.9	27	2	8-φ 22	83	298	NPS 3/4	238	650	80	
5	4.92	10.51	8	13.58	11.75	10.63	1.06	0.08	8-φ 7/8	3.27	12.91	NPS 3/4	13.19	43.31	212	
125	125	267	200	345	298.5	269.9	27	2	8-φ 22	83	328	NPS 3/4	335	1100	96	
6	5.94	11.50	10	15.94	14.25	12.75	1.13	0.08	12-φ 1	3.74	15.87	NPS 3/4	13.98	43.31	340	
150	150	292	250	405	362	323.8	28.6	2	12-φ 25	95	403	NPS 3/4	355	1100	154	
8	7.94	12.99	14	21.06	18.75	16.25	1.31	0.08	12-φ 1-1/8	3.94	19.13	NPS 3/4	13.98	59.06	617	
200	201	330	350	535	476.3	412.8	33.4	2	12-φ 29	100	486	NPS 3/4	355	1500	280	
10	9.94	15.75	16	23.43	21.25	18.50	1.38	0.08	12-φ 1-1/8	4.72	19.69	NPS 3/4	16.40	59.06	924	
250	252	400	400	595	539.8	469.9	35	2	16-φ 29	120	500	NPS 3/4	416.5	1500	419	
*12	11.94	20.47	20	27.56	25.00	23.00	1.63	0.08	20-φ 1-1/4	4.72	29.69	ASME B16.5	19.15	-	1636	
*300	303	520	500	700	635	584.2	41.3	2	20-φ 32	120	754	1"-150Lb RF	486.5	-	742	
*14	13.19	24.61	20	27.56	25.00	23.00	1.63	0.08	20-φ 1-1/4	4.72	31.10	ASME B16.5	20.87	-	2216	
*350	334	625	500	700	635	584.2	41.3	2	20-φ 32	120	790	1"-150Lb RF	530	-	1005	
*16	15.19	28.35	24	32.09	29.50	27.25	1.81	0.08	20-φ 1-3/8	5.71	32.60	ASME B16.5	22.80	-	3000	
*400	385	720	600	815	749.3	692.2	46.1	2	20-φ 35	145	828	1"-150Lb RF	579	-	1361	

ASME CLASS 300 FULL BORE

Size NPS/DN	d	L	Flange Specifications ASME B16.5 Class 300								Jacket			H	W	Weight lb/kg
			End Cap	D	C	G	T	f	N-φh	E	Q	P				
1/2	0.50	4.61	1-1/2	6.10	4.50	2.87	0.81	0.08	4-φ 7/8	2.30	5.83	NPS 3/4	3.98	5.91	20	
15	13	117	40	155	114.3	73	20.7	2	4-φ 22	58.5	148	NPS 3/4	101	150	9	
3/4	0.75	4.61	1-1/2	6.10	4.50	2.87	0.81	0.08	4-φ 7/8	2.30	5.83	NPS 3/4	3.98	5.91	20	
20	19	117	40	155	114.3	73	20.7	2	4-φ 22	58.5	148	NPS 3/4	101	150	9	
1	1.00	5	2	6.50	5.00	3.63	0.88	0.08	8-φ 3/4	2.50	6.30	NPS 3/4	4.17	7.09	24	
25	25	127	50	165	127	92.1	22.3	2	8-φ 19	63.5	160	NPS 3/4	106	180	11	
1-1/2	1.50	6.5	2-1/2	7.48	5.87	4.13	1.00	0.08	8-φ 7/8	2.46	7.36	NPS 3/4	5.51	11.02	40	
40	38	165	65	190	149.2	104.8	25.4	2	8-φ 22	62.5	187	NPS 3/4	140	280	18	
2	1.94	7.01	3	8.27	6.63	5.00	1.13	0.08	8-φ 7/8	2.68	8.58	NPS 3/4	5.31	11.02	53	
50	49	178	80	210	168.3	127	28.6	2	8-φ 22	68	218	NPS 3/4	135	280	24	
2-1/2	2.44	7.99	4	10.04	7.87	6.19	1.25	0.08	8-φ 7/8	2.95	8.94	NPS 3/4	7.13	15.75	86	
65	62	203	100	255	200	157.2	31.8	2	8-φ 22	75	227	NPS 3/4	181	400	39	
3	2.94	9.02	6	12.60	10.63	8.50	1.44	0.08	12-φ 7/8	3.23	10.55	NPS 3/4	7.6	15.75	153	
80	74	229	150	320	269.9	215.9	36.6	2	12-φ 22	82	268	NPS 3/4	193	400	69	
4	3.94	10	8	14.96	13.00	10.63	1.63	0.08	12-φ 1	3.27	11.73	NPS 3/4	9.37	25.59	231	
100	100	254	200	380	330.2	269.9	41.3	2	12-φ 25	83	298	NPS 3/4	238	650	105	
5	4.92	10.51	8	14.96	13.00	10.63	1.63	0.08	12-φ 1	3.27	12.91	NPS 3/4	13.19	43.31	265	
125	125	267	200	380	330.2	269.9	41.3	2	12-φ 25	83	328	NPS 3/4	335	1100	120	
6	5.94	11.50	10	17.52	15.25	12.75	1.88	0.08	16-φ 1-1/8	3.74	15.87	NPS 3/4	13.98	43.31	417	
150	150	292	250	445	387.4	323.8	47.7	2	16-φ 29	95	403	NPS 3/4	355	1100	189	
8	7.94	12.99	14	23.03	20.25	16.25	2.13	0.08	20-φ 1-1/4	3.94	19.13	NPS 3/4	13.98	59.06	776	
200	201	330	350	585	514.4	412.8	54	2	20-φ 32	100	486	NPS 3/4	355	1500	352	
10	9.94	15.75	16	25.59	22.50	18.50	2.25	0.08	20-φ 1-3/8	4.72	19.69	NPS 3/4	16.40	59.06	1116	
250	252	400	400	650	571.5	469.9	57.2	2	20-φ 35	120	500	NPS 3/4	416.5	1500	506	
*12	11.94	20.47	20	30.51	27.00	23.00	2.50	0.08	24-φ 1-3/8	4.72	29.69	ASME B16.5	19.15	-	1933	
*300	303	520	500	775	685.8	584.2	63.5	2	24-φ 35	120	754	1"-150Lb RF	486.5	-	877	
*14	13.19	24.61	20	30.51	27.00	23.00	2.50	0.08	24-φ 1-3/8	4.72	31.10	ASME B16.5	20.87	-	2590	
*350	334	625	500	775	685.8	584.2	63.5	2	24-φ 35	120	790	1"-150Lb RF	530	-	1175	
*16	15.19	28.35	24	36.02	32.00	27.25	2.75	0.08	24-φ 1-5/8	5.71	32.60	ASME B16.5	22.80	-	3472	
*400	385	720	600	915	812.8	692.2	69.9	2	24-φ 41	145	828	1"-150Lb RF	579	-	1575	

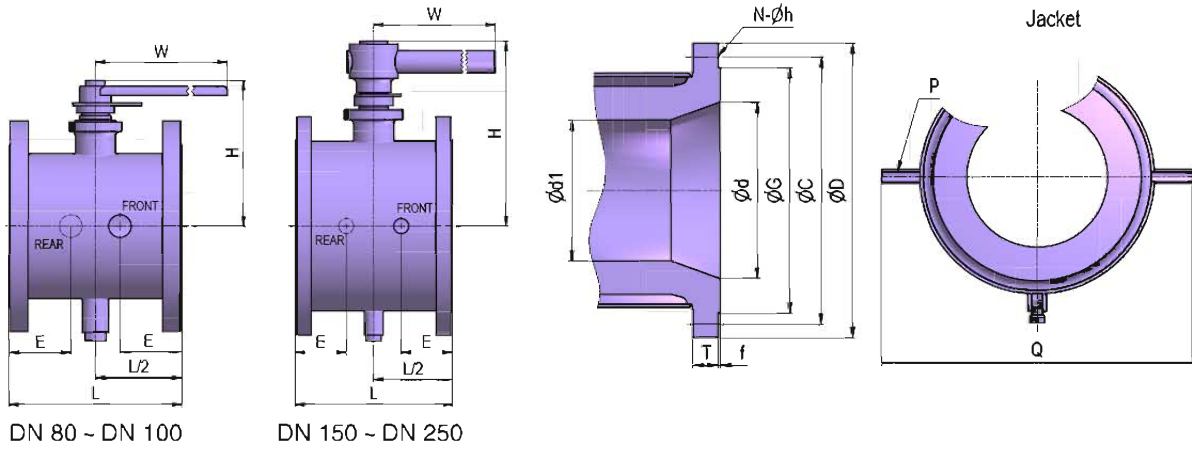
*** Marked for trunnion ball valve, assembled with gear operator. End cap can be specified by customer's standard.

Note: For dimensions & weights in larger sizes consult the factory.

Dimensions and weights are subject to change without notice.

Face to face dimensions not listed in industry standards are subject to change without notice.

DIMENSIONS & WEIGHTS



ASME CLASS 150 REDUCED BORE

Size NPS/DN	d1	d	L	Flange Specifications ASME B16.5 Class 150							Jacket			H	W	Weight lb/kg
				End Cap	D	C	G	T	f	N-φh	E	Q	P			
1-1/2 x 1 40 x 25	1.00 25	1.50 38	5.00 127	2 50	5.91 150	4.75 120.7	3.63 92.1	0.56 14.3	0.08 2	4-φ 3/4 4-φ 19	2.50 63.5	6.30 160	NPS 3/4	4.17 106	7.09 180	20 9
2 x 1-1/2 50 x 40	1.50 38	1.94 49	6.50 165	2-1/2 65	7.09 180	5.50 139.7	4.13 104.8	0.63 15.9	0.08 2	4-φ 3/4 4-φ 19	2.46 62.5	7.36 187	NPS 3/4	5.51 140	11.02 280	33 15
2-1/2 x 2 65 x 50	1.94 49	2.44 62	7.01 178	3 80	7.48 190	6.00 152.4	5.00 127	0.69 17.5	0.08 2	4-φ 3/4 4-φ 19	2.68 68	8.58 218	NPS 3/4	5.31 135	11.02 280	42 19
3 x 2-1/2 80 x 65	2.44 62	2.94 74	7.99 203	4 100	9.06 230	7.50 190.5	6.19 157.2	0.88 22.3	0.08 2	4-φ 3/4 8-φ 19	2.95 75	8.94 227	NPS 3/4	7.13 181	15.75 400	68 31
4 x 3 100 x 80	2.94 74	3.94 100	9.02 229	6 150	11.02 280	9.50 241.3	8.50 215.9	0.94 23.9	0.08 2	8-φ 7/8 8-φ 22	3.23 82	10.55 268	NPS 3/4	7.60 193	15.75 400	112 51
5 x 4 125 x 100	3.94 100	4.92 125	10.00 254	8 200	13.58 345	11.75 298.5	10.63 269.9	1.06 27	0.08 2	8-φ 7/8 8-φ 22	3.27 83	11.73 298	NPS 3/4	9.37 238	25.59 650	174 79
6 x 5 150 x 125	4.92 125	5.94 150	10.51 267	8 200	13.58 345	11.75 298.5	10.63 269.9	1.06 27	0.08 2	8-φ 7/8 8-φ 22	3.27 83	12.91 328	NPS 3/4	13.19 335	43.31 1100	209 95
8 x 6 200 x 150	5.94 150	7.94 201	11.50 292	10 250	15.94 405	14.25 362	12.75 323.8	1.13 28.6	0.08 2	12-φ 1 12-φ 25	3.74 95	15.87 403	NPS 3/4	13.98 355	43.31 1100	328 149
10 x 8 250 x 200	7.94 201	9.94 252	12.99 330	14 350	21.06 535	18.75 476.3	16.25 412.8	1.31 33.4	0.08 2	12-φ 1-1/8 12-φ 29	3.94 100	19.13 486	NPS 3/4	13.98 355	59.06 1500	595 270
12 x 10 300 x 250	9.94 252	11.94 303	15.75 400	16 400	23.43 595	21.25 539.8	18.50 469.9	1.38 35	0.08 2	12-φ 1-1/8 16-φ 29	4.72 120	19.69 500	NPS 3/4	16.40 416.5	59.06 1500	893 405
*14 x 12 *350 x 300	11.94 303	13.19 334	20.47 520	20 500	27.56 700	25.00 635	23.00 584.2	1.63 41.3	0.08 2	20-φ 1-1/4 20-φ 32	4.72 120	29.69 754	ASME B16.5 1"-150Lb RF	19.15 486.5	-	1625 737
*16 x 14 *400 x 350	13.19 334	15.19 385	24.61 625	20 500	27.56 700	25.00 635	23.00 584.2	1.63 41.3	0.08 2	20-φ 1-1/4 20-φ 32	4.72 120	31.10 790	ASME B16.5 1"-150Lb RF	20.87 530	-	2183 990
*18 x 16 *500 x 400	15.19 385	17.19 436	28.35 720	24 600	32.09 815	29.50 749.3	27.25 692.2	1.81 46.1	0.08 2	20-φ 1-3/8 20-φ 35	5.71 145	32.60 828	ASME B16.5 1"-150Lb RF	22.80 579	-	2931 1329

ASME CLASS 300 REDUCED BORE

Size NPS/DN	d1	d	L	Flange Specifications ASME B16.5 Class 300							Jacket			H	W	Weight lb/kg
				End Cap	D	C	G	T	f	N-φh	E	Q	P			
1-1/2 x 1 40 x 25	1.00 25	1.50 38	5.00 127	2 50	6.50 165	5.00 127	3.63 92.1	0.88 22.3	0.08 2	8-φ 3/4 8-φ 19	2.50 63.5	6.30 160	NPS 3/4	4.17 106	7.09 180	24 11
2 x 1-1/2 50 x 40	1.50 38	1.94 49	6.50 165	2-1/2 65	7.48 190	5.87 149.2	4.13 104.8	1.00 25.4	0.08 2	8-φ 7/8 8-φ 22	2.46 62.5	7.36 187	NPS 3/4	5.51 140	11.02 280	40 18
2-1/2 x 2 65 x 50	1.94 49	2.44 62	7.01 178	3 80	8.27 210	6.63 168.3	5.00 127	1.13 28.6	0.08 2	8-φ 7/8 8-φ 22	2.68 68	8.58 218	NPS 3/4	5.31 135	11.02 280	53 24
3 x 2-1/2 80 x 65	2.44 62	2.94 74	7.99 203	4 100	10.04 255	7.87 200	6.19 157.2	1.25 31.8	0.08 2	8-φ 7/8 8-φ 22	2.95 75	8.94 227	NPS 3/4	7.13 181	15.75 400	86 39
4 x 3 100 x 80	2.94 74	3.94 100	9.02 229	6 150	12.60 320	10.63 269.9	8.50 215.9	1.44 36.6	0.08 2	12-φ 7/8 12-φ 22	3.23 82	10.55 268	NPS 3/4	7.60 193	15.75 400	150 68
5 x 4 125 x 100	3.94 100	4.92 125	10.00 254	8 200	14.96 380	13.00 330.2	10.63 269.9	1.63 41.3	0.08 2	12-φ 1 12-φ 25	3.27 83	11.73 298	NPS 3/4	9.37 238	25.59 650	231 105
6 x 5 150 x 125	4.92 125	5.94 150	10.51 267	8 200	14.96 380	13.00 330.2	10.63 269.9	1.63 41.3	0.08 2	12-φ 1 12-φ 25	3.27 83	12.91 328	NPS 3/4	13.19 335	43.31 1100	265 120
8 x 6 200 x 150	5.94 150	7.94 201	11.50 292	10 250	17.52 445	15.25 387.4	12.75 323.8	1.88 47.7	0.08 2	16-φ 1-1/8 16-φ 29	3.74 95	15.87 403	NPS 3/4	13.98 355	43.31 1100	399 181
10 x 8 250 x 200	7.94 201	9.94 252	12.99 330	14 350	23.03 585	20.25 514.4	16.25 412.8	2.13 54	0.08 2	20-φ 1-1/4 20-φ 32	3.94 100	19.13 486	NPS 3/4	13.98 355	59.06 1500	761 345
12 x 10 300 x 250	9.94 252	11.94 303	15.75 400	16 400	25.59 650	22.50 571.5	18.50 469.9	2.25 57.2	0.08 2	20-φ 1-3/8 20-φ 35	4.72 120	19.69 500	NPS 3/4	16.40 416.5	59.06 1500	1085 492
*14 x 12 *350 x 300	11.94 303	13.19 334	20.47 520	20 500	30.51 775	27.00 685.8	23.00 584.2	2.50 63.5	0.08 2	24-φ 1-3/8 24-φ 35	4.72 120	29.69 754	ASME B16.5 1"-150Lb RF	19.15 486.5	-	1922 872
*16 x 14 *400 x 350	13.19 334	15.19 385	24.61 625	20 500	30.51 775	27.00 685.8	23.00 584.2	2.50 63.5	0.08 2	24-φ 1-3/8 24-φ 35	4.72 120	31.10 790	ASME B16.5 1"-150Lb RF	20.87 530	-	2577 1169
*18 x 16 *500 x 400	15.19 385	17.19 436	28.35 720	24 600	36.02 915	32.00 812.8	27.25 692.2	2.75 69.9	0.08 2	24-φ 1-5/8 24-φ 41	5.71 145	32.60 828	ASME B16.5 1"-150Lb RF	22.80 579	-	3457 1568

*** Marked for trunnion ball valve, assembled with gear operator. End cap can be specified by customer's standard.

Note: For dimensions & weights in larger sizes consult the factory.

Dimensions and weights are subject to change without notice.

Face to face dimensions not listed in industry standards are subject to change without notice.

ENGINEERING DATA

BODY & TRIM MATERIAL

CARBON	AUSTENITIC STAINLESS STEEL
A105N A216 WCB A216 WCC	A182 F304 A182 F316
LOW TEMPERATURE STEEL	A182 F304L A182 F316L
A350 LF2 A352 LCB A352 LCC	A182 F347 A182 FXM-19(Nitronic 50)
LOW ALLOY STEEL	A351 CF8M A351 CF3 A351 CF3M
AISI 4140 A694 F65 A694 F52	PRECIPITATION HARDENING STAINLESS STEEL
A694 F60 A350 LF3	A564 Gr.630 (UNS S17400)
MARTENSITIC STAINLESS STEEL	DUPLEX STAINLESS
A182 F6A A182 F6NM	A182 F51(UNS S31803) A182 F53 (UNS S31750)
A217 CA15 A487 CA6NM	A182 F55(UNS S31760) A995 4A (UNS J92205)
	A995 5A(UNS J93404)

VALVE TESTING

All valves manufactured by CHV are tested in compliance of API 6D or ISO 17292 requirements prior to shipping.

LEAKAGE RATES

Standard	Soft Seated	Metal-Seated	Cryogenic
API 6D	ISO 5208 Rate A	ISO 5208 Rate D	(1)
ISO 17292	ISO 17292	ISO 17292	(1)

(1) Please consult the factory.

STANDARD PERFORMANCE TESTS

- Visual & dimensional check.
- High pressure hydrostatic shell test.
- High pressure hydrostatic seats test.
- Low pressure air seats test.
- Stem torque check.

RATING & TEST PRESSURES AT AMBIENT TEMPERATURE (ASME B16.34 GROUP 1.1 MATERIALS)

ASME CLASS	RATING(1)			BODY TEST			H.P. SEAT TEST			AIR SEAT TEST		
	psi	bar	kgf/cm ²	psi	bar	kgf/cm ²	psi	bar	kgf/cm ²	psi	bar	kgf/cm ²
150	285	19.6	20	428	29.4	30	314	21.6	22	100	6.9	7
300	740	51.1	52	1110	76.7	78	814	56.2	57	100	6.9	7

(1) Typical only – Rating pressure may change for different materials.

Conversion Factors 1 bar =14.50 psi 1 kgf/cm²= 0.981 bar 1 bar = 100 kpa 1 kgf/cm²= 14.22 psi
 1 °F = (1.8 × °C) +32 1 °C = (°F-32) / 1.8

SEAT SEAL & O-RING TEMPERATURE-PRESSURE RATINGS

Seat Seal

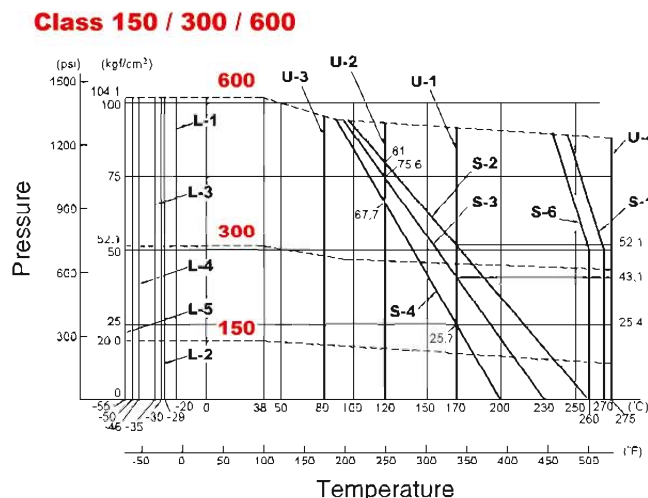
- S-1: PEEK
- S-2: Carbon Fiber+PTFE
- S-3: (1)Glass Fiber+PTFE
(2)Glass Fiber+PTFE+MoS2
- S-4: Virgin PTFE
- S-5: Nylon+MoS2
- S-6: PPL

O-Ring Upper Temperature Limit

- U-1: (1)FPM
(2)FPM-LT
- U-2: (1)EPDM (2)ECO
- U-3: (1)NBR (2)NBR-LT
- U-4: Kalrez-6375

O-Ring Lower Temperature Limit

- L-1: FPM
- L-2: (1)EPDM (2)NBR
- L-3: FPM-LT
- L-4: ECO
- L-5: NBR-LT



HOW TO ORDER

PLEASE PROVIDE FOLLOWING INFORMATION :

1. Max./Min. Operating Pressure, Max. /Min. Service Temp, Special Flow/Service Environment Requirements.
2. Design Standard (CHV-STD or Other).
3. Test Requirements (Standard Package, High Pressure (N2/Air), Low Emission, Low Temp. or other).
4. Other Requirements (Mating Flange, Third-party Inspection or other).

A	—	B	—	C	—	D	—	E	—	F	—	G	—	H	—	I	—	J	—	K
MODEL		SIZE		PRESSURE RATING		CONNECTION		ACTUATION		BODY MATERIAL		SEALS		TRIM MATERIAL		TRIM COATING		BOLTS& NUTS		SPECIAL REQUIREMENTS
F20		4		300		RF		G		C1		FV		002		1		B2		BE

EXAMPLE: F20-4-300RF-G-C1FV0021B2-BE

Cast steel jacketed floating ball valve, 4" full port, ASME 300, Flanged RF, Gear actuator, WCB body, PTFE/MITON seals, A105N trim, ENP trim coating, B7/2H bolts & nuts, Bolts & nuts ENP coating.

A		MODEL	
CODE	TYPE	CODE	TYPE
F20	Cast Steel Jacketed Floating Ball Valve	F21	Cast Steel Jacketed Trunnion Ball Valve

B		SIZE					
FULL BORE				REDUCED BORE			
CODE	NPS (DN)	CODE	NPS (DN)	CODE	NPS (DN)	CODE	NPS (DN)
1/2	1/2(15)	8	8(200)	1-1/2 x 1	1-1/2 x 1(40 x 25)	12 x 10	12 x 10(300 x 250)
3/4	3/4(20)	10	10(150)	2 x 1-1/2	2 x 1-1/2(50 x 40)	14 x 12	14 x 12(350 x 300)
1	1(25)	12	12(300)	2-1/2 x 2	2-1/2 x 2(65 x 50)	16 x 14	16 x 14(400 x 350)
1-1/2	1-1/2(40)	14	14(350)	3 x 2-1/2	3 x 2-1/2(80 x 50)	18 x 16	18 x 16(450 x 400)
2	2(50)	16	16(400)	4 x 3	4 x 3(100 x 80)	20 x 18	20 x 18(500 x 450)
2-1/2	2-1/2(65)	18	18(450)	5 x 4	5 x 4(125 x 100)	24 x 20	24 x 20(600 x 500)
3	3(80)	20	20(500)	6 x 5	6 x 4(150 x 125)	28 x 24	28 x 24(700 x 600)
4	4(100)	22	22(550)	8 x 6	8 x 6(200 x 150)		
6	6(150)	24	24(600)	10 x 8	10 x 8(250 x 200)		

C				D	
PRESSURE RATING				CONNECTION	
CODE	TYPE	CODE	TYPE	CODE	TYPE
150	ASME 150	1.6P	PN 16	RF	Flanged RF-B16.5(NPS 1/2~NPS 24)
300	ASME 300	3.2P	PN 32		Flanged RF-MSS SP 44(NPS 22)
					Flanged RF-B16.47(NPS 26~NPS 60) Series A
				XX	Others

E		ACTUATION	
CODE	TYPE	CODE	TYPE
B	Bare Stem	S	Pneumatic-Spring Return
W	Wrench	D	Pneumatic-Double Acting
G	Worm Gear	X	Others
E	Electric		

Type operator desired (electric, pneumatic), provide following information:
 1. Speed of opening and closing, probable frequency of operation.
 2. Accessories and controls (limit switches, valving, instrumentation, tanks, pumps, etc).
 3. Information on operating medium. (If electric: voltage, frequency, single-or three-phase, open-or explosion-proof motor, If pneumatic: operating medium and pressure. etc.)

F		BODY MATERIAL			
CODE	BODY	CODE	BODY	CODE	BODY
C1	A216 WCB	S0	A351 CF8	D0	A995 4A(UNS J92205)
C2	A216 WCC	S1	A351 CF3	D1	A995 5A(UNS J93404)
L1	A352 LCB	S2	A351 CF8M	XX	Others
L2	A352 LCC	S3	A351 CF3M		

G SEALS(1)								
CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring
VV	VITON-B	VITON-B	DH	DEVLON	HNBR	KT	PEEK	VITON-GLT
VH	VITON-B	HNBR	DG	DEVLON	VITON-GF	KQ	PEEK	PTFE-Elgiloy Spring
VT	VITON-B	VITON-GLT	DT	DEVLON	VITON-GLT	YV	N/A(2)	VITON-B
GG	VITON-GF	VITON-GF	DQ	DEVLON	PTFE-Elgiloy Spring	YH	N/A(2)	HNBR
TT	VITON-GLT	VITON-GLT	NV	NYLON	VITON-B	YG	N/A(2)	VITON-GF
HH	HNBR(2)	HNBR	NH	NYLON	HNBR	YT	N/A(2)	VITON-GLT
FV	RPTFE	VITON-B	NG	NYLON	VITON-GF	YQ	N/A(2)	PTFE-Elgiloy Spring
FH	RPTFE	HNBR	NT	NYLON	VITON-GLT	PQ	PCTFE	PTFE-Elgiloy Spring
FG	RPTFE	VITON-GF	NQ	NYLON	PTFE-Elgiloy Spring	XX	Others	Others
FT	RPTFE	VITON-GLT	KV	PEEK	VITON-B	(1) All seals on gaskets are Graphite. (2) Metal-to-Metal.		
FQ	RPTFE	PTFE-Elgiloy Spring	KH	PEEK	HNBR			
DV	DEVLON	VITON-B	KG	PEEK	VITON-GF			

H TRIM MATERIAL							
CODE	BALL	SEAT RINGS	STEM	CODE	BALL	SEAT RINGS	STEM
002	A105N	A105N	AISI 4140	311	A182 F304	A182 F304	A182 F51(UNS S31803)
004	A105N	A182 F304	AISI 4140	401	A182 F316	A182 F316	A182 F316
012	A105N	A182 F6A	AISI 4140	403	A182 F316	A182 F316	A564 GR.630 (UNS S17400)
020	A105N	A105N	A182 F6A	405	A182 F316	A182 F316	A182 F51(UNS S31803)
081	A694 F60	A105N	A694 F60	411	A182 F316	A182 F316	A182 FXM-19 (UNSS20910)
101	A350 LF2	A350 LF2	A350 LF2	502	A182 F304L	A182 F304L	A182 F51(UNS S31803)
102	A350 LF2	A350 LF2	AISI 4140	603	A182 F316L	A182 F316L	A182 F51(UNS S31803)
104	A350 LF2	A182 F304	AISI 4140	650	A182 FXM-19 (UNS S20910)	A182 FXM-19 (UNS S20910)	A182 FXM-19 (UNS S20910)
109	A350 LF2	A350 LF2	A564 GR.630 (UNS S17400)	680	A564 GR.630 (UNS S17400)	A564 GR.630 (UNS S17400)	A564 GR.630 (UNS S17400)
122	A350 LF2	A350 LF2	A182 F6A	701	A182 F51(UNS S31803)	A182 F51(UNS S31803)	A182 F51(UNS S31803)
278	A182 F6A	A182 F6A	A182 F6A	702	A182 F51(UNS S31803)	A182 F51(UNS S31803)	INCONEL 718 (UNS N07718)
279	A182 F6A	A182 F304	A564 GR.630 (UNS S17400)	751	A182 F53(UNS S32750)	A182 F53(UNS S32750)	A182 F53(UNS S32750)
280	A182 F6A	A182 F304	A182 F6A	752	A182 F53(UNS S32750)	A182 F53(UNS S32750)	INCONEL 718 (UNS N07718)
301	A182 F304	A182 F304	A182 F304	761	A182 F55(UNS S32760)	A182 F55(UNS S32760)	A182 F55(UNS S32760)
303	A182 F304	A182 F304	A564 GR.630 (UNS S17400)	XXX	Others	Others	Others

I TRIM COATING				J BOLTS & NUTS					
CODE	BALL	SEAT RINGS	STEM/TRUNNION	CODE	BOLT	NUT	CODE	BOLT	NUT
0	N/A	N/A	N/A	B1	A193 B7M	A194 2HM	N5	A320 B8M CL.2	A194 Gr.8M-S1
1	ENP	ENP	ENP	B2	A193 B7	A194 2H	N6	A320 B8M CL.1	A194 Gr.8MA
B	Stellite*	Stellite*	ENP	B3	A320 L7M	A194 7M	XX	Others	Others
L	Chrome Carbide*	Chrome Carbide*	ENP	B4	A320 L7	A194 Gr.7			
M	Tungsten Carbide*	Tungsten Carbide*	ENP	B5	A193 B8M	A194 Gr.8M			
P	NiCrMoCu*	NiCrMoCu*	ENP	B6	A193 B8	A194 Gr.8			
X	Others	Others	Others	B7	A193 B16	A194 Gr.7			
*Ball and seat rings sealing surface.				B8	A320 L7	A194 Gr.4			

K SPECIAL REQUIREMENTS, Misc (Multiple Choice)	
CODE	SPECIAL NOTES
K	Anti-corrosion, acid-resisting regs are in compliance with NACE MR0103, NACE MR0175, ISO 15156. Please provide detailed medium composition.
B-	Bolts & nuts coating, BE: ENP, BZ: Zinc Plating, BT: PTFE, BC: Cadmium+PTFE.
X	Others special requirements.

Notes: If you are uncertain about some categories, we will make suggestions based on your working conditions or your special requirement. The item marked with default will be used if no item is selected in that category unless it doesn't meet the working requirements.