

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



CFVT CHENGFENG FLOW-TECH GROUP

CHV®

3-WAY/4-WAY BALL VALVES

Y 3-Way · T 3-Way · L 3-Way · X 4-Way



CHENGFENG FLOW-TECH GROUP

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CHV-WB-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 & DESIGN FEATURES

CHV 3-Way/4-Way ball valves are with innovative and unique structure and specialized control system. Working with pneumatic/electronic control instruments, they are widely used in metallurgy, mining, petroleum, chemical, electric, shipbuilding, industrial automation control systems, etc. They can be applied to fluid, gas, dust substance, and diversion condition. With the force-balanced 4-side seat seal structure (Y-Type 3-Way with 3-side seat seal), they have reliable sealing performance. The smooth flow channel minimizes the loss due to the fluid resistance, stabilizes the flow path, and ensures the operation accuracy. 3-Way/4-Way ball valves can be categorized into Y-Type 3-Way (3-side seat seal), L-Type 3-Way, T-Type 3-Way and X-Type 4-Way.

PRODUCT RANGE

Pressure Class	ASME CLASS 150-300	ASME CLASS 600	ASME CLASS 900
Nominal Dimension	NPS 1/2-36 DN 15-900	NPS 1/2-24 DN 15-600	NPS 1/2-12 DN 15-300

TEMPERATURE RANGE

Temperature Range	-46°C~538°C (-50°F~1000°F)
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STANDARD & SPECIFICATIONS

Design Standard	ISO 17292, API 6D, CHV-STD
Inspection Standard	ISO 17292, API 6D, API 598
End Connection	ASME B16.5, MSS SP-44, ASME B31.8, ASME B 16.25, 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

Main Features	<ul style="list-style-type: none"> -Excellent sealing performance. -Long service life. -Low friction torque. -With blow out proof stem. -Floating ball or trunnion ball. -One piece ball/Stem trunnion-supported type. -3 seat design maintains proper ball position. -Anti-static grounding device. -Open and closed locking device for positional safety lockout. -Flow plans for both T & L ports can be field rearranged to meet other flow plans. -Both T & L valves can be offered with an off position. -Reinforced TFE, PPL or PMSS seats with dual sealing. -Multiple operating modes (manual, electric, pneumatic, hydraulic, and pneumatic-hydraulic, etc.). -Multiple seat options (plastic soft seal, rubber soft seal, metal seal, etc.).
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PRODUCT RANGE & DESIGN FEATURES

Y 3-WAY BALL VALVE (WY10 SERIES, WY20 SERIES)

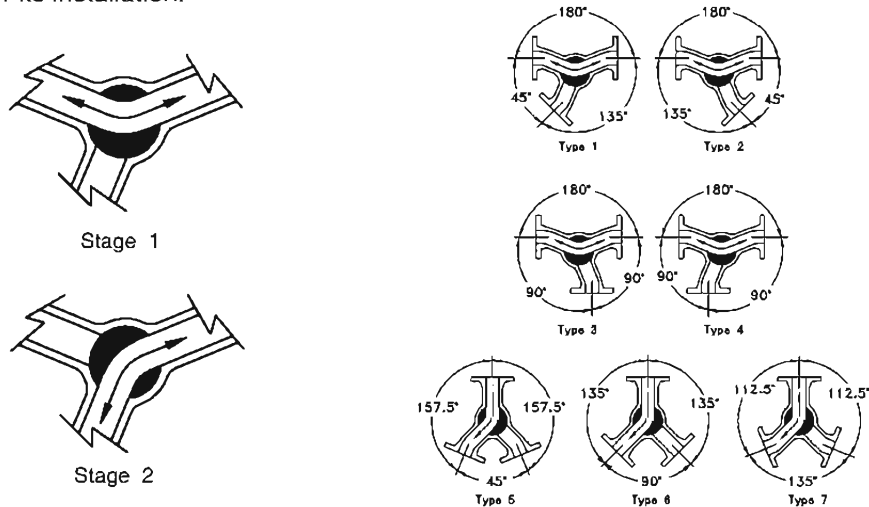
FEATURES

Type Y flow passage (3-way and 2-port).

OPERATING MODE AND INSTALLATION METHOD

Y-Type 3-Way ball valve has Type Y flow passage and three-side valve seat, and it has an effective function of changeover between Stage 1 and Stage 2 working conditions, which is mainly used to divert the flow in Type Y pipelines.

Y-Type 3-Way ball valve can be installed with a variety of methods, and different configurations subject to pipeline layout can be selected for its installation.



L-TYPE 4-SIDE SEAT BALL VALVE (WL10 SERIES, WL20 SERIES)

T-TYPE 4-SIDE SEAT BALL VALVE (WT10 SERIES, WT20 SERIES)

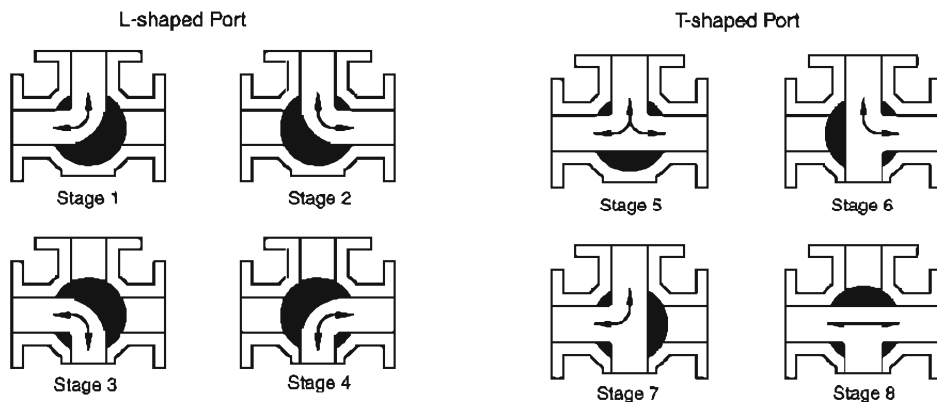
FEATURES

4-Side seat 3-Way ball valve has two categories of flow passage pattern: Type L (3-way and 2-port) and Type T (3-way and 3-port). The right option is subject to your application. Type Y flow passage. (3-way and 2-port)

OPERATING MODE

4-Side seat 3-Way ball valve with L-shaped port can change over between the working conditions from Stage 1 to Stage 4. Thanks to the use of 4-side seat, force is evenly exerted on the valve, which guarantees safe and reliable tightness of Open/Close port. It is mainly used to divert the flow.

4-Side seat 3-Way ball valve with T-shaped port can change over between the working conditions from Stage 5 to Stage 8. Thanks to the use of 4-side seat, force is evenly exerted on the valve, which guarantees safe and reliable tightness of Open/Close port. It is mainly used to disperse, converge and divert flows and full open of the 3-Way port.



PRODUCT RANGE & DESIGN FEATURES

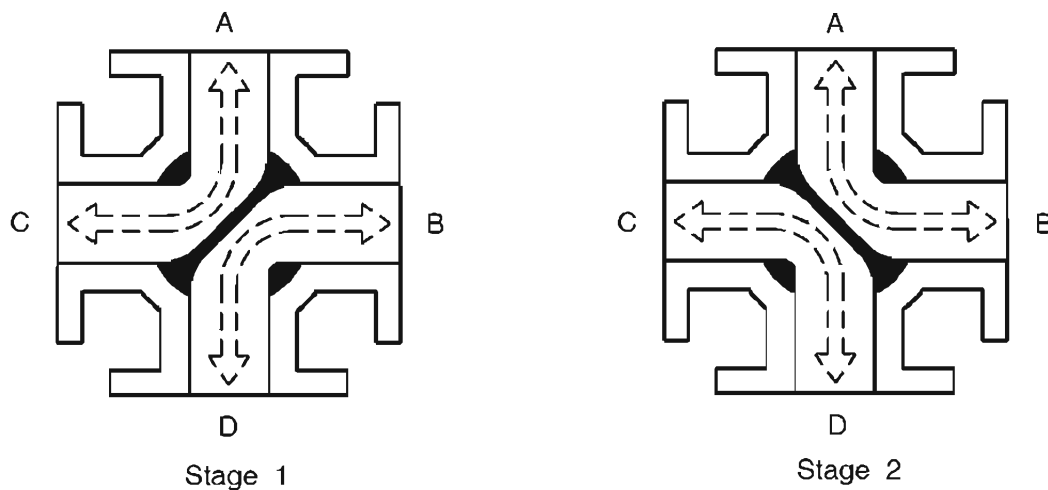
X-TYPE 4-WAY 4-SIDE SEAT BALL VALVE (WX10 SERIES, WX20 SERIES)

FEATURES

4-Way ball valve with X-shaped flow passage (2-way and 4-port).

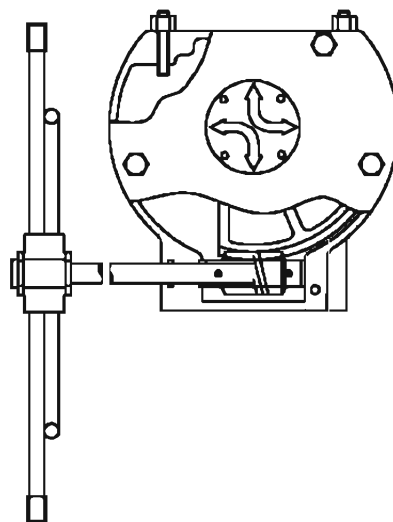
OPERATING MODE

4-Side seat 2-Way ball valve with X-shaped port can change over between the working conditions from Stage 1 to Stage 2. Thanks to the use of 4-side seat, force is evenly exerted on the valve. It is extensively applied to a wide range of fields or industries, such as petroleum, chemical, natural gas, paper-making, pharmaceutical, food processing, water supply and drainage system, etc. Its main purpose is to divert flow passage.



DETERMINATION OF FLOW DIRECTION

The flow direction can be determined by the scale marked on the top of the stem when the valve is operated by hander and hand wheel (or just by hand). When it is operated by hand, the direction is indicated by the nameplate with an arrow.

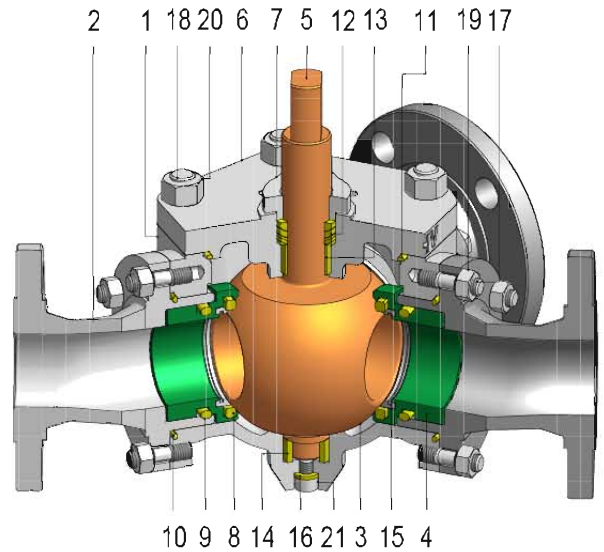


PARTS LIST

Y-TYPE 3-WAY BALL VALVE PARTS LIST (WY10 SERIES)

1	Body	11*	O-ring
2	End Cap	12*	Rectangular Packing
3	Ball	13	Sliding Bearing
4	Seat	14	Sliding Bearing
5	Stem	15	Outer Seat Ring
6	Bonnet	16	Gasket
7	Gland Flange	17	Stud
8	Seat Insert	18	Stud
9*	O-ring	19	Hexagon Nut
10*	O-ring	20	Hexagon Nut

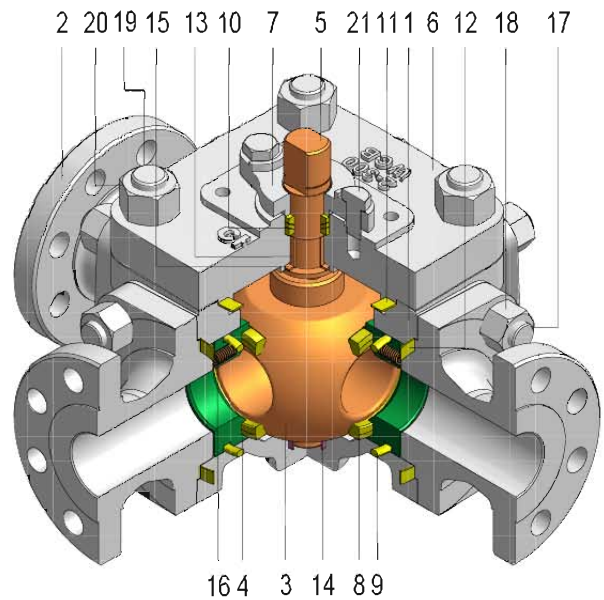
* Recommended spare parts.



L-TYPE AND T-TYPE 3-WAY BALL VALVE PARTS LIST (WL10 SERIES & WT10 SERIES)

1	Body	12*	Gasket
2	End Cap	13	Sliding Bearing
3	Ball	14	Sliding Bearing
4	Seat	15	Thrust Bearing
5	Stem	16	Coil Spring
6	Bonnet	17	Stud
7	Gland Flange	18	Hexagon Nut
8	Seat Insert	19	Stud
9*	O-ring	20	Hexagon Nut
10*	Rectangular Packing	21	Bolt
11*	Gasket		

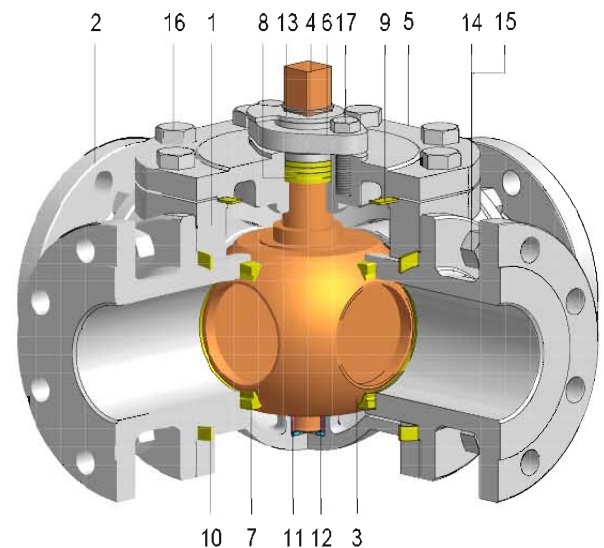
* Recommended spare parts.



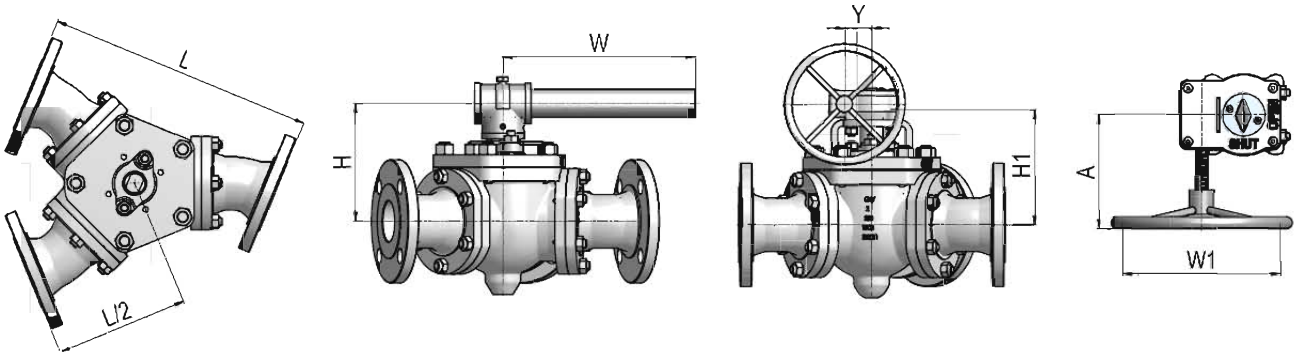
X-TYPE 4-WAY BALL VALVE PARTS LIST (WX10 SERIES)

1	Body	10*	Gasket
2	End Cap	11	Sliding Bearing
3	Ball	12	Thrust Bearing
4	Stem	13	Stopper
5	Bonnet	14	Stud
6	Gland Fange	15	Hexagon Nut
7	Seat	16	Bolt
8*	Rectangular Packing	17	Bolt
9*	Gasket		

* Recommended spare parts.



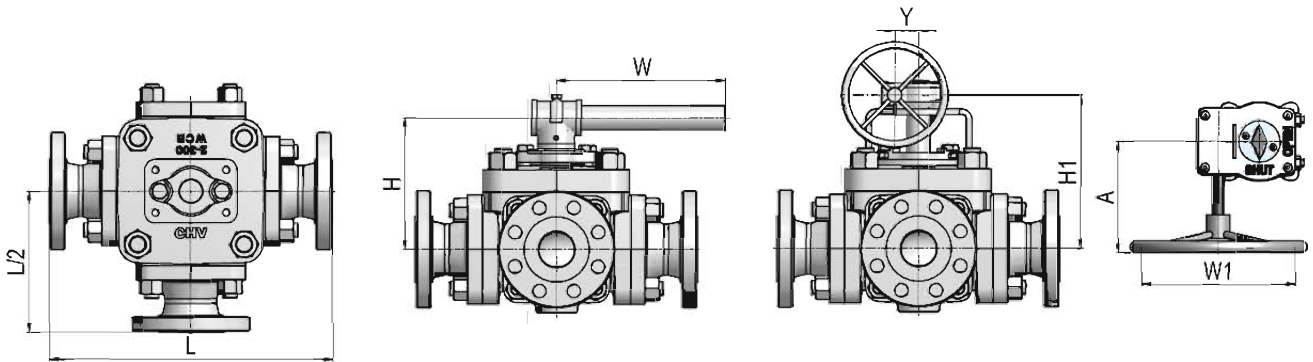
WY10 DIMENSIONS & WEIGHTS



Y-TYPE 3-WAY BALL VALVE									
Size	L		H	H1	Y	A	W	W1	Weight
NPS/DN	150Lb	300Lb							lb/kg
1/2 15	3.15 80	3.15 80	3.15 80	①	①	①	5.91 150	①	①
3/4 20	7.08 180	7.08 180	3.62 92	①	①	①	7.09 180	①	①
1 25	7.28 185	7.28 185	3.93 100	①	①	①	7.09 180	①	①
1-1/2 40	10.31 262	10.31 262	4.64 118	①	①	①	15.75 400	①	①
2 50	12.99 330	12.99 330	5.15 131	①	①	①	15.75 400	①	①
2-1/2 65	14.96 380	14.96 380	5.67 144	①	①	①	25.60 650	①	①
3 80	15.75 400	15.75 400	6.29 160	①	①	①	25.60 650	①	①
4 100	16.54 420	18.5 470	①	9.06 230	3.35 85	11.57 294	①	17.72 450	①
5 125	18.11 460	18.11 460	①	13.03 331	3.35 85	11.57 294	①	17.72 450	①
6 150	20.08 510	21.46 545	①	14.65 372	4.55 115.5	13.78 350	①	23.62 600	①
8 200	24.41 620	26.46 672	①	16.77 426	4.55 115.5	13.78 350	①	23.62 600	①
10 250	27.17 690	28.74 730	①	19.02 483	5.69 144.5	17.20 437	①	23.62 600	①
12 300	29.33 745	30.90 785	①	20.08 510	5.69 144.5	17.20 437	①	23.62 600	①

* Weight figures are relevant to flanged end valves. ①Please consult the factory.
 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.

WL10 & WT10 DIMENSIONS & WEIGHTS



L-TYPE, T-TYPE 3-WAY BALL VALVE									
Size	L		H	H1	Y	A	W	W1	Weight
NPS/DN	150Lb	300Lb							lb/kg
1/2	2.76	①	1.77	①	①	①	5.91	①	①
15	70	①	45	①	①	①	150	①	①
3/4	6.5	①	2.99	①	①	①	7.09	①	①
20	165	①	76	①	①	①	180	①	①
1	6.5	①	2.99	①	①	①	7.09	①	①
25	165	①	76	①	①	①	180	①	①
1-1/2	9.84	①	4.65	①	①	①	25.59	①	①
40	250	①	118	①	①	①	650	①	①
2	10.24	10.24	5.04	①	①	①	25.59	①	①
50	260	260	128	①	①	①	650	①	①
2-1/2	12.6	①	6.50	①	①	①	43.31	①	①
65	320	①	165	①	①	①	1100	①	①
3	13.78	①	6.38	①	①	①	25.60	①	①
80	350	①	162	①	①	①	650	①	①
4	15.35	①	①	8.94	3.35	11.57	①	17.72	①
100	390	①	①	227	85	294	①	450	①
5	20.08	①	①	9.76	3.35	11.57	①	17.72	①
125	510	①	①	248	85	294	①	450	①
6	22.83	26.77	①	14.53	4.55	13.78	①	23.62	①
150	580	680	①	369	115.5	350	①	600	①
8	26.38	28.15	①	16.77	4.55	13.78	①	23.62	①
200	670	715	①	426	115.5	350	①	600	①
10	29.13	30.71	①	18.74	5.69	17.20	①	23.62	①
250	740	780	①	476	144.5	437	①	600	①
12	34.02	35.83	①	19.72	5.69	17.20	①	23.62	①
300	864	910	①	501	144.5	437	①	600	①

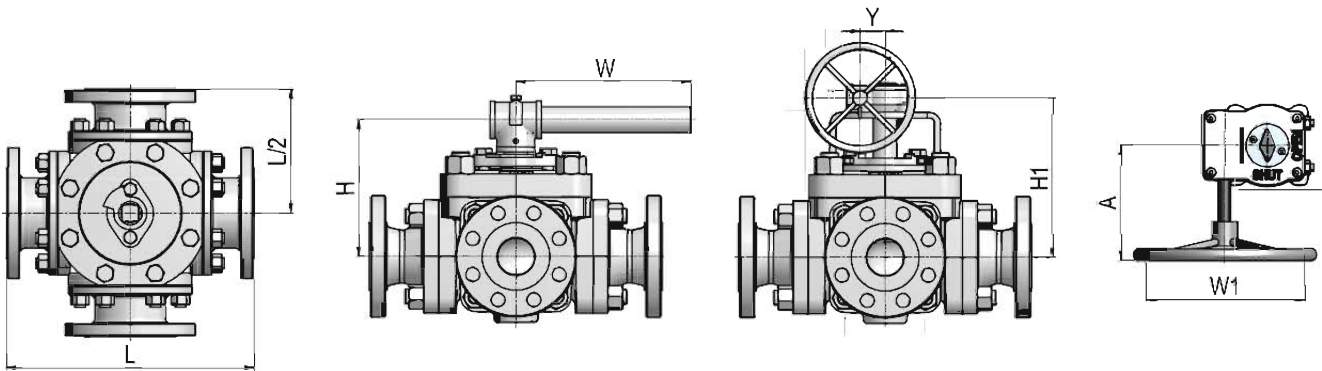
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WX10 DIMENSIONS & WEIGHTS



X-TYPE 4-WAY BALL VALVE									
Size NPS/DN	L		H	H1	Y	A	W	W1	Weight
	150Lb	300Lb							lb/kg
1/2	2.76	①	1.77	①	①	①	5.91	①	①
15	70	①	45	①	①	①	150	①	①
3/4	6.5	①	2.99	①	①	①	7.09	①	①
20	165	①	76	①	①	①	180	①	①
1	6.5	①	2.99	①	①	①	7.09	①	①
25	165	①	76	①	①	①	180	①	①
1-1/2	9.84	①	4.65	①	①	①	25.59	①	①
0	250	①	118	①	①	①	650	①	①
2	10.24	10.24	5.04	①	①	①	25.59	①	①
50	260	260	128	①	①	①	650	①	①
2-1/2	12.6	①	6.50	①	①	①	43.31	①	①
65	320	①	165	①	①	①	1100	①	①
3	13.78	①	6.38	①	①	①	25.60	①	①
80	350	①	162	①	①	①	650	①	①
4	15.35	①	①	8.94	3.35	11.57	①	17.72	①
100	390	①	①	227	85	294	①	450	①
5	20.08	①	①	9.76	3.35	11.57	①	17.72	①
125	510	①	①	248	85	294	①	450	①
6	22.83	26.77	①	14.53	4.55	13.78	①	23.62	①
150	580	680	①	369	115.5	350	①	600	①
8	26.38	28.15	①	16.77	4.55	13.78	①	23.62	①
200	670	715	①	426	115.5	350	①	600	①
10	29.13	30.71	①	18.74	5.69	17.20	①	23.62	①
250	740	780	①	476	144.5	437	①	600	①
12	34.02	35.83	①	19.72	5.69	17.20	①	23.62	①
300	864	910	①	501	144.5	437	①	600	①

* Weight figures are relevant to flanged end valves. ①Please consult the factory.
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HOW TO ORDER

PLEASE PROVIDE FOLLOWING INFORMATION :

1. Max./Min. Operating Pressure, Max. /Min. Service Temp, Special Flow/Service Environment Requirements.
2. Design Standard (API6D, ISO 17292, ASME B16.34, API 608 or Other).
3. Test Requirements (Standard Package, UT, PT, MT, RT, High Pressure (N2/Air), Low Emission, Low Temp. or other).
4. Other Requirements (Mating Flange, PUP, 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
WY10	10	150	RF	G	C1	VV	002	1	B2	BE

EXAMPLE:WY10-10-150RF-G-C1VV0021B2-BE

Cast steel Y-Type 3-Way ball valve, 10" reduced port, ASME 150, BE, Flanged RF, Gear actuator, WCB body, VITON/VITON seals, A105N trim, ENP trim coating, B7/2H bolts & nuts, Bolts & nuts ENP coating.

A MODEL		B SIZE					
CODE	TYPE	FULL BORE					
WY10	Cast Steel Y-Type 3-Way Ball Valve	CODE	NPS(DN)	CODE	NPS(DN)	CODE	NPS(DN)
WT10	Cast Steel L-Type 3-Way Ball Valve	1/2	1/2(15)	4	4(100)	18	18(450)
WL10	Cast Steel T-Type 3-Way Ball Valve	3/4	3/4 (20)	6	6(150)	20	20(500)
WX10	Cast Steel X-Type 4-Way Ball Valve	1	1(25)	8	8(200)	24	24(600)
WY20	Forged Steel Y-Type 3-Way Ball Valve	11/2	11/2 (40)	10	10(250)	28	28(700)
WT20	Forged Steel L-Type 3-Way Ball Valve	2	2(50)	12	12(300)	30	30(750)
WL20	Forged Steel T-Type 3-Way Ball Valve	21/2	21/2 (65)	14	14(350)	32	32(800)
WX20	Forged Steel X-Type 4-Way Ball Valve	3	3(80)	16	16(400)	36	36(900)

C PRESSURE RATING				D CONNECTION					
CODE	TYPE	CODE	TYPE	CODE	TYPE				
150	ASME 150	1.6P	PN 16	RF	Flanged RF-B16.5(NPS 1/2-NPS 24)			RFB	Flanged RF-B16.47(NPS 26-NPS 60) Series B
300	ASME 300	3.2P	PN 32		Flanged RF-MSS SP 44(NPS 22)			RJB	Flanged RJ-B16.47(NPS 26-NPS 60) Series B
600	ASME 600	8P	PN 80		Flanged RF-B16.47(NPS 26-NPS 60) Series A			SW	Socket Weld-ASME B16.11
900	ASME 900	10P	PN 100	RJ	Flanged RJ-B16.5(NPS 1/2-NPS 24)			ET	External Thread-ASME B1.20.1
		16P	PN 160		Flanged RJ-MSS SP 44(NPS 22)			BW	Butt Weld-ASME B31.8*

*For weld end valves, specify ID or OD, wall thickness and grade of pipe.

E ACTUATION				
CODE	TYPE		CODE	TYPE
B	Bare Stem		S	Pneumatic-Spring Return
W	Wrench		D	Pneumatic-Double Acting
G	Worm Gear		M	Gas- Hydraulic
E	Electric		N	Electro-Hydraulic
H	Hydraulic		X	Others

Type operator desired (electric, hydraulic, 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 hydraulic or pneumatic: operating medium and pressure. etc.)

F BODY MATERIAL								
CODE	BODY	CLOSURES	CODE	BODY	CLOSURES	CODE	BODY	CLOSURES
C1	A216 WCB	A216 WCB	S8	A182 F316L	A182 F316L	AA	A350 LF2	A350 LF6 CL1
C2	A216 WCC	A216 WCC	D0	A995 4A(UNS J92205)	A995 4A(UNS J92205)	AB	A350 LF2	A350 LF6 CL2
C5	A105N	A105N	D1	A995 5A(UNS J93404)	A995 5A(UNS J93404)	AC	A105N	A216 WCB
L1	A352 LCB	A352 LCB	D5	A182 F51(UNS S31803)	A182 F51(UNS S31803)	AD	A105N	A350 LF2
L2	A352 LCC	A352 LCC	D6	A182 F53(UNS S32750)	A182 F53(UNS S32750)	AE	A350 LF2	A352 LCB
L5	A350 LF2	A350 LF2	D7	A182 F55(UNS S32760)	A182 F55(UNS S32760)	AF	A350 LF2	A694 F60
S0	A351 CF8	A351 CF8	D8	A182 F60(UNS S32205)	A182 F60(UNS S32205)	AH	A105N	A350 LF6 CL2
S1	A351 CF3	A351 CF3	I5	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	AL	A105N	A350 LF6 CL1
S2	A351 CF8M	A351 CF8M	I6	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)	AM	A216 WCB	A105N
S3	A351 CF3M	A351 CF3M	I7	CW6MC(UNS N26625)	CW6MC(UNS N26625)	XX	Others	Others
S5	A182 F304	A182 F304	I8	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)			
S6	A182 F316	A182 F316	M6	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)			
S7	A182 F304L	A182 F304L	H5	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)			

G SEALS(1)								
CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring	CODE	SEAT INSERT	O-Ring
VV	Viton-B(2)	Viton-B	DH	DEVLON	HNBR	KT	PEEK	VITON-GLT
VH	Viton-B(2)	HNBR	DG	DEVLON	VITON-GF	KQ	PEEK	PTFE-Elgiloy Spring
VT	Viton-B(2)	VITON-GLT	DT	DEVLON	VITON-GLT	YV	N/A(3)	Viton-B
GG	VITON-GF(2)	VITON-GF	DO	DEVLON	PTFE-Elgiloy Spring	YH	N/A(3)	HNBR
TT	VITON-GLT(2)	VITON-GLT	NV	NYLON	Viton-B	YG	N/A(3)	VITON-GF
HH	HNBR(2)	HNBR	NH	NYLON	HNBR	YT	N/A(3)	VITON-GLT
FV	RPTFE	Viton-B	NG	NYLON	VITON-GF	YQ	N/A(3)	PTFE-Elgiloy Spring
FH	RPTFE	HNBR	NT	NYLON	VITON-GLT	PQ	PCTFE	PTFE-Elgiloy Spring
FG	RPTFE	VITON-GF	NO	NYLON	PTFE-Elgiloy Spring	XX	Others	Others
FT	RPTFE	VITON-GLT	KV	PEEK	Viton-B	(1)All seals on gaskets are Graphite. (2)Delta Ring. (3) 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	411	A182 F316	A182 F316	A182 FXM-19(UNSS20910)
004	A105N	A182 F304	AISI 4140	502	A182 F304L	A182 F304L	A182 F51(UNS S31803)
012	A105N	A182 F6A	AISI 4140	603	A182 F316L	A182 F316L	A182 F51(UNS S31803)
020	A105N	A105N	A182 F6A	650	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)	A182 FXM-19(UNS S20910)
081	A694 F60	A105N	A694 F60	680	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)	A564 GR.630(UNS S17400)
101	A350 LF2	A350 LF2	A350 LF2	701	A182 F51(UNS S31803)	A182 F51(UNS S31803)	A182 F51(UNS S31803)
102	A350 LF2	A350 LF2	AISI 4140	702	A182 F51(UNS S31803)	A182 F51(UNS S31803)	INCONEL 718(UNS N07718)
104	A350 LF2	A182 F304	AISI 4140	751	A182 F53(UNS S32750)	A182 F53(UNS S32750)	A182 F53(UNS S32750)
109	A350 LF2	A350 LF2	A564 GR.630(UNS S17400)	752	A182 F53(UNS S32750)	A182 F53(UNS S32750)	INCONEL 718(UNS N07718)
122	A350 LF2	A350 LF2	A182 F6A	761	A182 F55(UNS S32760)	A182 F55(UNS S32760)	A182 F55(UNS S32760)
278	A182 F6A	A182 F6A	A182 F6A	801	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)
279	A182 F6A	A182 F304	A564 GR.630(UNS S17400)	802	INCONEL 600(UNS N06600)	INCONEL 600(UNS N06600)	INCONEL 718(UNS N07718)
280	A182 F6A	A182 F304	A182 F6A	805	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)	INCONEL 625(UNS N06625)
301	A182 F304	A182 F304	A182 F304	809	INCONEL 718(UNS N07718)	INCONEL 718(UNS N07718)	INCONEL 718(UNS N07718)
303	A182 F304	A182 F304	A564 GR.630(UNS S17400)	821	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)	INCOLOY 825(UNS N08825)
311	A182 F304	A182 F304	A182 F51(UNS S31803)	826	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)	INCOLOY 925(UNS N09925)
401	A182 F316	A182 F316	A182 F316	831	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)	HASTELLOY C-276 (UNS N10276)
403	A182 F316	A182 F316	A564 GR.630(UNS S17400)	841	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)	MONEL K500(UNS N05500)
405	A182 F316	A182 F316	A182 F51(UNS S31803)	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.