



FUGITIVE EMISSION VALVE DEVELOP THE WORLD

WEN ZHOU VERVO FL TECH CO.,LTD.

Tel: 0086-577-57999188 Fax: 0086-577-57999088

E-mail: info@vervo.cn Http: //www.vervo.cn

VERVO[®]

VERVO[®]



- A GATE VALVES
- B GLOBE VALVES
- C BALL VALVES
- D CHECK VALVES
- E STRAINERS
- F FORGED STEEL VALVES

**TOP QUALITY PRODUCTS FOR AN
INTERNATIONAL MARKET
FOCUS ON LOW EMISSION VALVES**





VERVO considers product quality and customer's requirement as our highest priority. **VERVO's** mission has always been service customers with the best quality products. Through the years, **VERVO** has been consistently improving our engineering and technical force; enhancing our quoting and sales services to better meet our client's ever-growing needs. By better design, engineering and management, we strive to produce better quality products with the most cost-effective technology and manufacturing methods to offer our customers the most economical and valued products.

BRIEF INTRODUCTION

VERVO Valve is a valve manufacture enterprise combining R&D, production and sales as a whole. Our product line consists of a broad range of gate valves, globe valves, ball valves and check valves, strainers utilized in the oil and gas, refinery, petrochemical and many other industries throughout the world.

VERVO has built excellent reputation for its high quality products. In order to maintain this reputation, all valves will be manufacture under fully certified ISO9001 and API Q1 Quality Management System.

Through its conviction to provide only the finest quality products and services to match the need of our customers, VERVO has now established itself as a serious player in the valve business. VERVO can respond to customers' requests faster and more efficiently than ever while becoming one of the best partners for your needs.

Along with standard gate, globe and check valves, VERVO offers many specialty products for services such as HF acid, sour gas, cryogenic, chlorine and oxygen.

Our products include various types of valves in different materials. They are manufactured according to internationally accepted standards such as API, ANSI, DIN BS, AND JIS.

Should you have a requirement for special applications, our technical and engineering staff is always here to support you.



MANUFACTURING EQUIPMENTS

- 1) CNC Workshop
- 2) Warehouse
- 3) Inspection Area



TEST EQUIPMENT

VERVO®



PMI TEST

COATING THICKNESS GAUGE

LEEB HARDNESS TESTER

BRINELL HARDNESS

ROCKWELL HARDNESS TESTER



MT TEST

UT TEST

ULTRASONIC THICKNESS METER

TALYSUF



CERTIFICATE

VERVO OWN MANY API AND ISO CERTIFICATIONS
VERVO RESPECT AND STRICTLY FOLLOW STANDARD



- A/01-04** ● CAST STEEL GATE VALVES
PRESSURE SEAL GATE VALVES
- B/05-08** ● CAST STEEL GLOBE VALVES
PRESSURE SEAL GLOBE VALVES
- C/09-20** ● CAST STEEL FLOATING BALL VALVES
CAST STEEL TRUNNION BALL VALVES
CRYOGENIC LOW TEMPERATURE BALL VALVES
BLOCK & BLEED BALL VALVES
ORBIT BALL VALVES
- D/21-24** ● CAST STEEL SWING CHECK VALVE
CAST STEEL WAFER CHECK VALVES
- E/25-26** ● Y TYPE & BASKET STRAINER
TYPE STRAINER
TEMPORARY FILTER
- F/27-50** ● FORGED STEEL VALVES SERIES
 - FORGED GATE VALVES
 - HIGH PRESSURE GATEVALVES
 - SPECIAL PURPOSES GATE VALVES
 - FORGED GLOBE VALVES
 - PRESSURE SEALING GLOBE VALVES
 - Y TYPE GLOBE VALVES
 - FORGED CHECK VALVES
 - Y TYPE CHECK VALVES
 - 2PCS FORGED STEEL BALL VALVES
 - 3PCS FORGED STEEL BALL VALVES
 - FORGED STEEL CRYOGENIC GATE &GLOBE VAVLES
 - BELLOWS SEALED GATE &GLOBE VALVES



PRODUCT CONTENTS

CAST STEEL GATE VALVES CL150-2500

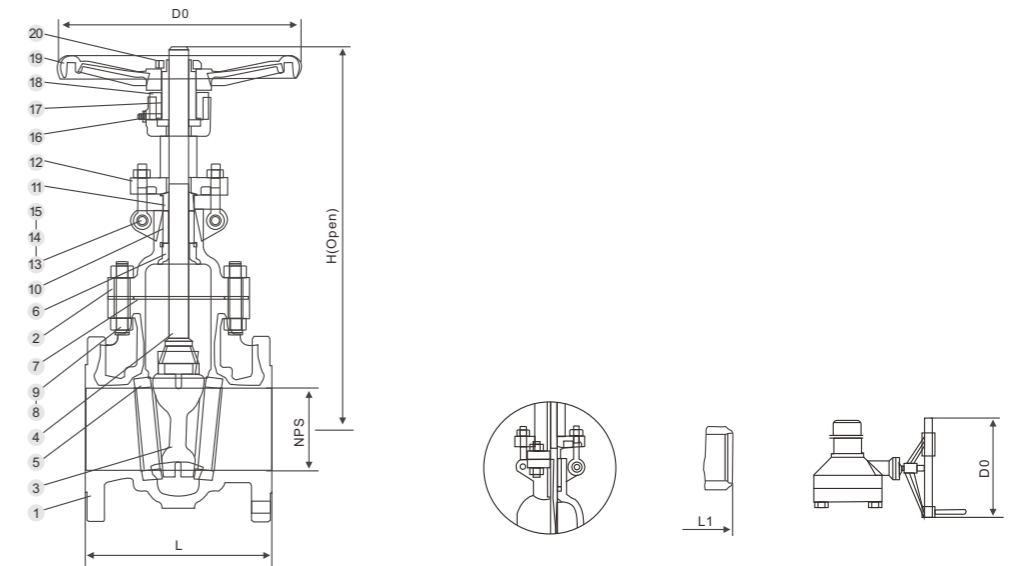


VERVO cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600&API 6D, British standard BS1414 & BS EN 1984 and generally, conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,
also special material like S31803,S32750,CN7M

Features
Size:2"~56"
Pressure Rating:Class 150~2500
BB, Bolted Bonnet;PSB,Pressure Seal Bonnet
OS&Y,Outside Screw and Yoke
Flexiable Wedge/Solid Wedge
Renewable Seat Rings
Flange or Butt Welding

Specifications
Design:ASME B16.34/API600/API6D
Face to Face:ASME B 16.10/BS EN558
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
End BW:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,BS6755
Special :NACE MR-01-75



Materials of Parts

No	Part Name	Carbon steel	1 ¹ / ₄ cr- ¹ / ₂ mo	Carbon Steel
1	Body	A216-WCB	A352-LCB	A352-LCB
2	Bonnet	A216-WCB	A352-LCB	A352-LCB
3	Wedge	A216-WCB+CR13	A352-LCB+CR13	A352-LCB+CR13
4	Stem	A182-F6a	A182-F6a	A182-F6a
5	Seat ring	A105+CR13	A350-LF2+CR13	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-420	A276-420
7	Bonnet Gasket	Spiral wound(Graphite+304)		
8	Bonnet Stud	A193-B7	A320-L7	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-4	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-420	A276-420
12	Gland Flange	A216-WCB	A352-LCB	A352-LCB
13	EyeBolt Pin	Carbon steel	Carbon steel	Carbon steel
14	Eyebolt	Carbon steel	Carbon steel	Carbon steel
15	Eyebolt Nut	Carbon steel	Carbon steel	Carbon steel
16	Grease Fitting	Brass+Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yokesleeve Jam nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note:1).ductile ni-resist optional

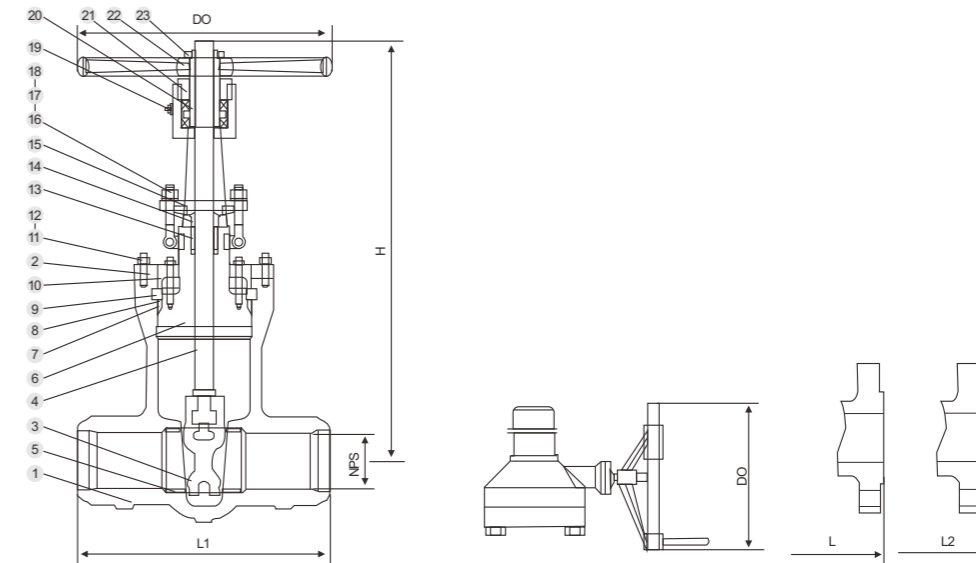
2).wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

PRESSURE SEAL CAST STEEL GATE VALVES CL900-2500

VERVO cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600&API 6D, British standard BS1414 & BS EN 1984 and generally, conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.



VERVO Material:
WCB,LCB,WCB,WC9,CF8,CF8M,CF3,CF3M,CF8C,
also special material like S31803,S32750,CN7M



No	Part Name	Carbon Steel	1 1/4cr-1/2mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Wedge	A216-WCB+HF	A217-WC6+HF	A351-CF8M+HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket	Steel Ring	304SS RING	316SS RING
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing	Graphite		
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Fitting	Brass+Steel		
20	Yokesleeve	Aluminum-Bronze ²⁾		
21	Yokesleeve Jam Nut	Carbon Steel	Stainless Steel	
22	Handwheel	Malleable Iron		
23	Handwheel Nut	Carbon steel		

Note:1)Graphite optional
2)Ductile Ni-resist optional
3)Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

Features
Size:2"~56"
Pressure Rating:Class 150~2500
BB, Bolted Bonnet;PSB,Pressure Seal Bonnet
OS&Y,Outside Screw and Yoke
Flexiable Wedge/Solid Wedge
Renewable Seat Rings
Flange or Butt Welding

Specifications
Design:ASME B16.34/API600/API6D
Face to Face:ASME B 16.10/BS EN558
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
End BW:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,BS6755
Special :NACE MR-01-75

B CAST STEEL GLOBE VALVES

CAST STEEL
GLOBE VALVES

VERVO[®]

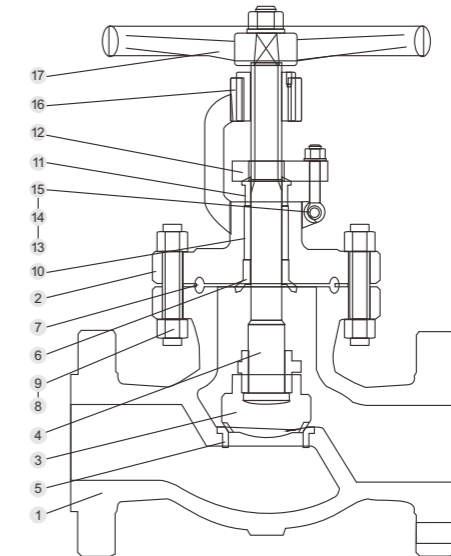
CAST STEEL GLOBE VALVES

CL150-2500



VERVO cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All globe valve are full ported and meet the design requirements of American Petroleum Institute standard API600& 6D.BS EN 13709 and generally conform to American Society of Mechanical Engineers standard ASME B16.34 .Valves are available in a complete range of body/ bonnet materials and trims.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,
also special material like S31803,S32750,CN7M



Materials of Parts

No	Part Name	Carbon steel	1 ¹ / ₄ cr- ¹ / ₂ mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Disc	A105+CR13	A182-F11+HF	A350-LF2+CR13
4	Stem	A182-F6a	CR-MO-V	A182-F6a
5	Seat Ring	A105+HF	A182-F11+HF	A350-LF2+HF
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	SteelRing	304SS Ring	Steel Ring
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eyebolt Pin	Carbon Steel	A276-420	Carbon Steel
14	Eyebolt	Carbon Steel	A193-B7	Carbon Steel
15	Eyebolt Nut	Carbon Steel	A194-2H	Carbon Steel
16	Yokesleeve	Aluminum-Bronze ¹⁾		
17	Handwheel	Malleable Iron		

Note:1).ductile ni-resist optional

2).wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

Features
Size:2''~56''
Pressure Rating:Class 150~2500 BB, Bolted
Bonnet;PSB,Pressure Seal Bonnet
OS&Y,Outside Screw and Yoke
Flexiable Wedge/Solid Wedge
Renewable Seat Rings
Flange or Butt Welding

Specifications
Design:ASME B16.34/API600/API6D
Face to Face:ASME B 16.10/BS EN558
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
End BW:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,BS6755
Special :NACE MR-01-75

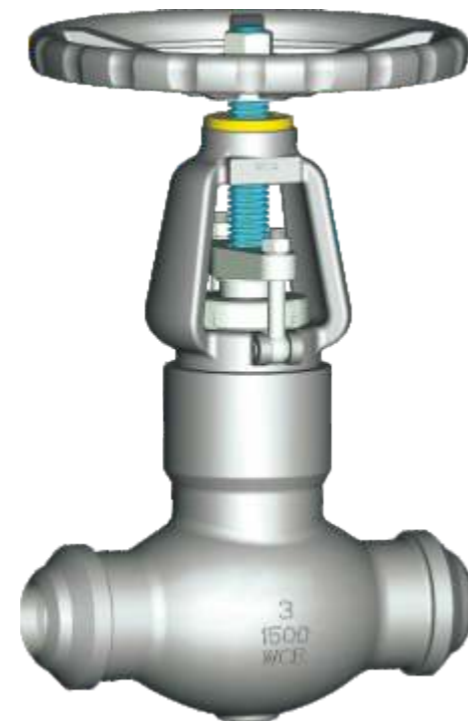
B PRESSURE SEAL GLOBE VALVES

PRESSURE SEAL
CAST STEEL GLOBE VALVES

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PRESSURE SEAL CAST STEEL GLOBE VALVES CL900-2500

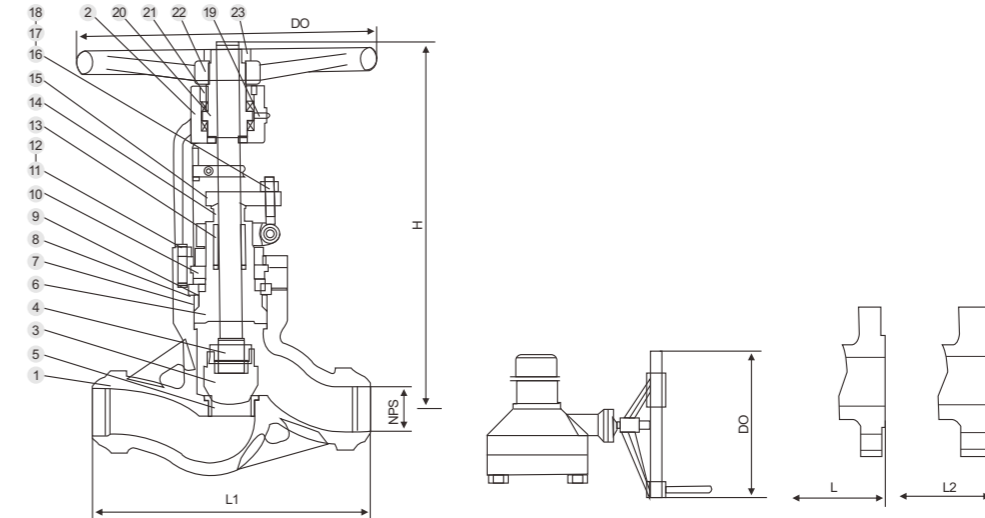
VERVO cast steel globe valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600&API 6D, British standard BS1414 & BS EN 1984 and generally, conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.



VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,
CN7M

Features
Size:2"~36"
Pressure Rating:Class 900~2500
PSB,Pressure Seal
Bonnet
OS&Y,Outside Screw and Yoke
Flexiable Wedge/Solid Wedge Renewable
Seat Rings
Flange or Butt Welding

Specifications
Design:ASME B16.34
Face to Face:ASME B 16.10/BS EN558
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
End BW:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,BS6755
Special :NACE MR-01-75



No	Part Name	Carbon Steel	1 ¹ / ₄ Cr- ¹ / ₂ Mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217-WC6	A351-CF8M
2	Yoke	A216-WCB	A217-WC6	A351-CF8M
3	Disc	A216-WCB+HF	A217-WC6+HF	A351-CF8M+HF
4	Stem	A182-F6a	CR-MO-V	A182-316
5	Seat Ring	A105+HF	A182-F11+HF	A240-316+HF
6	Bonnet	A105	A182-F11	A240-316
7	Bonnet Gasket ¹⁾	Steel Ring	304SS Ring	316SS Ring
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193-B7	A193-B16	A193-B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing		Graphite	
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216-WCB	A217-WC6	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193-B7	A193-B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Fitting		Brass+Steel	
20	Yokesleeve		Aluminum-Bronze ²⁾	
21	Yokesleeve Jam Nut	Carbon Steel		Stainless Steel
22	Handwheel		Malleable Iron	
23	Handwheel Nut		Carbon Steel	

Note:1)Graphite optional
2)Ductile Ni-resist optional
3)Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

CAST STEEL FLOATING BALL VALVES

CL150-1500

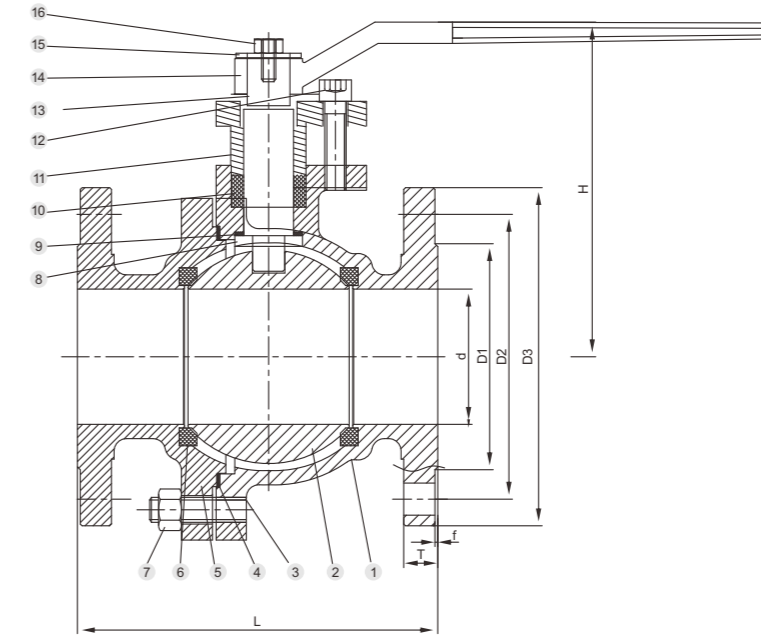
VERVO steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute Standard API 608& API 6D British standard ISO17292 and generally conform to American Society of Mechanical engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.



VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,
also special material like S31803,S32750,CN7M

Features
Size:1/2"~12"
Pressure Rating:Class 150~1500
Two Piece Cast Steel Body
Floating ball,Full&Reduce Bore
Anti-Static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

Specifications
Design:ASME B16.34/API6D/ISO17292
Face to Face:ASME B 16.10
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,BS6755
Special :NACE MR-01-75



Materials of Parts

NO	Name	Material		
1	Body	ASTM A216 WCB	ASTM A352 LCB	ASTM A351 CF8M
2	Ball	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
3	Stud	ASTM A193 B7	ASTM A320 L7	ASTM A193 B8M
4	Bonnet Gasket	304+Graphite/PTFE	304+Graphite/PTFE	316+Graphite/PTFE
5	Bonnet	ASTM A216 WCB	ASTM A352 LCB	ASTM A351 CF8M
6	Seat	RPTFE	RTPFE	RPTFE
7	Nut	ASTM A194 2H	ASTM A194 7	ASTM A194 8M
8	Stem	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F316
9	Thrust Washer	RPTFE	RPTFE	RPTFE
10	Packing	Graphite/PTFE	Graphite/PTFE	Graphite/PTFE
11	Gland	ASTM A216 WCB	ASTM A352 LCB	ASTM A351 CF8M
12	Hex Screw	ASTM A193 B7	ASTM A320 L7	ASTM A193 B8M
13	Stop Plate	SS	SS	SS
14	Lever	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8M
15	Washer	SS	SS	SS
16	Hex Bolt	ASTM A193 B7	ASTM A320 L7	ASTM A193 B8M

Note:1)A105+ENP optional
2)Spiral wound construction.

CAST STEEL TRUNNION BALL VALVES

CAST STEEL
TRUNNION BALL VALVES

VERVO[®]

CAST STEEL TRUNNION BALL VALVES CL150-2500

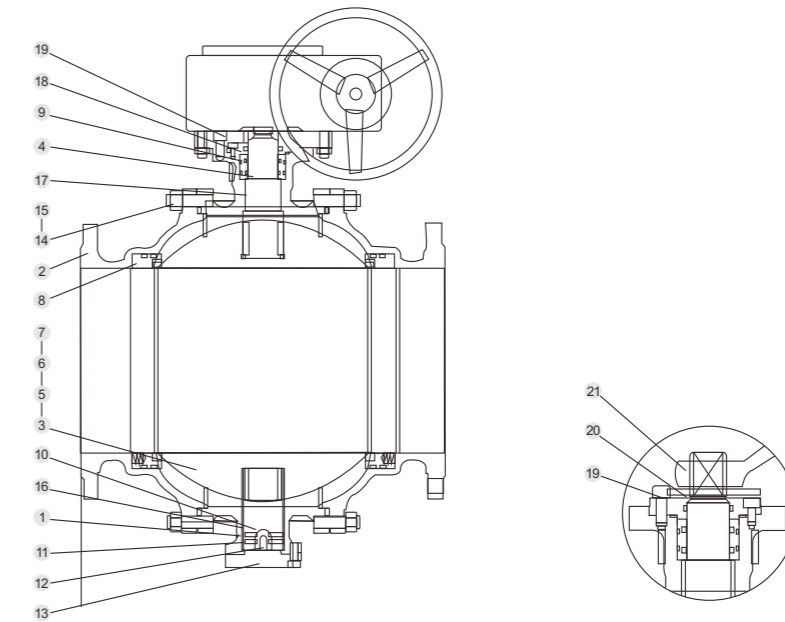


VERVO steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D British standard and generally conform to American society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C, CN7M

Features
Size:2" - 56"
Pressure Rating:Class 150~500
Three Piece Cast/Forged Steel Body
Trunnion, Full&Reduce Bore
Anti-Static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

Specifications
Design:API608,API6D,ISO17292,ASME B16.34
Face to Face:ASME B 16.10,API 6D
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,API6D
Special :NACE MR-01-75



Materials of Parts

No	Part Name	Carbon steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet	A216-WCB	A351-CF8M	A352-LCB
3	Ball	A182-F304 ¹⁾	A182-F316	A182-F304 ¹⁾
4	Stem	A276-304	A276-316	A276-304
5	Seat	A105+ENP	A182-F316	A350-LF2+ENP
6	Seat Insert	Glass Filled PTFE		
7	Seat Spring	A313-304	Inconel X-750	A313-304
8	Seat O-Ring	NBR	Viton	Viton
9	Stem O-Ring	NBR	Viton	Viton
10	Bonnet Gasket	Graphite+304 ²⁾	Graphite+316 ²⁾	Graphite+304 ²⁾
11	Bonnet O-Ring	NBR	Viton	Viton
12	Antistatic Spring	A313-304	A313-316	A313-304
13	Lower Cover	A216-WCB	A182-F316	A182-F304
14	Bonnet Stud	A193-B7	A193-B8	A320-L7
15	Bonnet Stud Nut	A194-2H	A194-8	A194-4
16	Trunnion	A276-304	A276-316	A276-304
17	Trunnion Bearing	304+PTFE	316+PTFE	304+PTFE
18	Gland Flange	A216-WCB	A351-CF8M	A352-LCB
19	Gland Bolt	A193-B7	A193-B8	A193-B7
20	Stop Plate	Carbon Steel	Carbon Steel+Zn	Carbon Steel
21	Handle	Carbon Steel		

Note:1)A105+ENP optional
2)Spiral wound construction.

CRYOGENIC LOW TEMPERATURE BALL VALVES

CL150-300

Usage
The cryogenic ball valve is used to cut off or connect the media in various pipelines of class 150-class 1500. The valves made of different materials are suitable for various media and different temperature. The lowest working temperature is -196°C. The driving modes include manual operation, worm and worm gear transmission, Pneumatic operation and electric operation. The connection ends can be flange or welding.



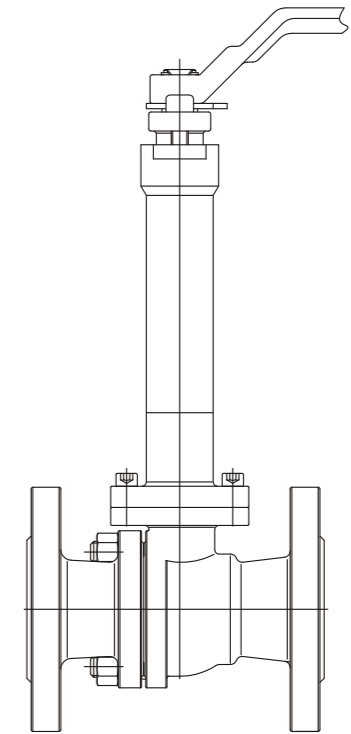
VERVO Material:
CF8, CF8M, CF3, CF3M, CF8C,

Features
Size: 2" - 56"
Pressure Rating: Class 150 ~ 500
Three Piece Cast/Forged Steel Body
Trunnion, Full & Reduce Bore
Anti-Static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

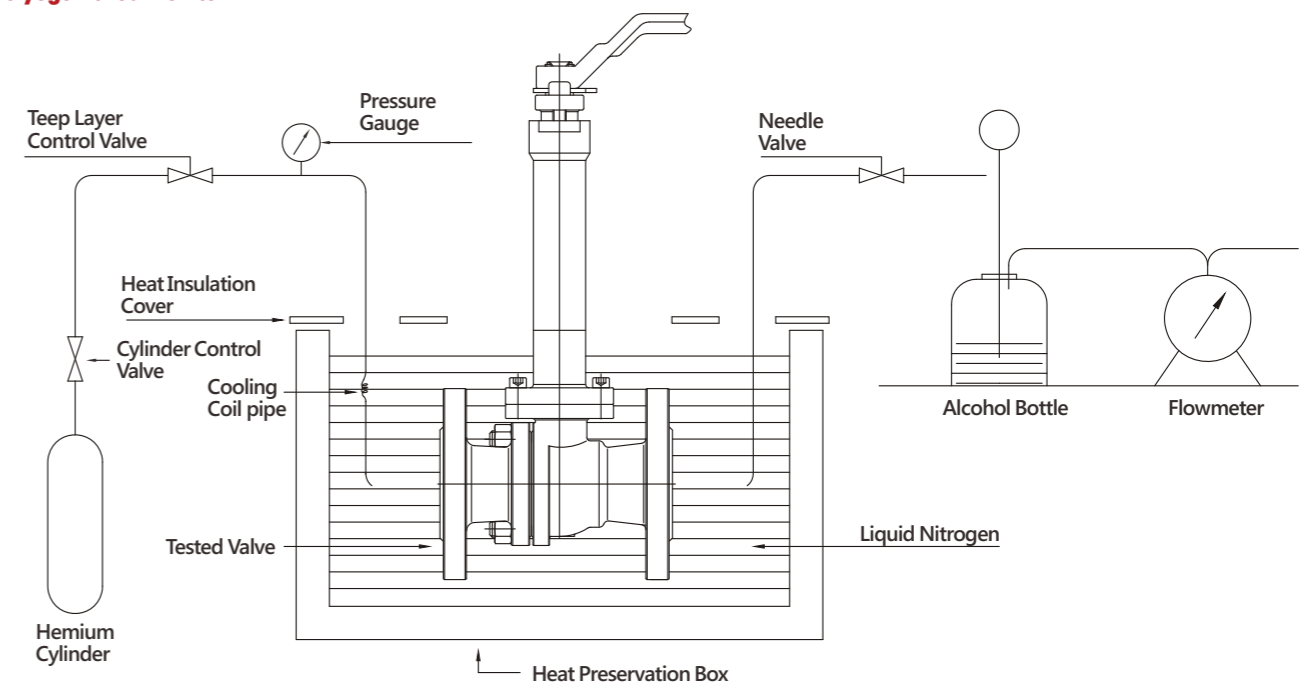
Specifications
Design: API 608, API 6D, BS 5351, ASME B16.34
Face to Face: ASME B 16.10, API 6D
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange: ASME B16.25
Pressure Temp: ASME 16.34
Test: API 598, ISO 5208, API 6D
Special: NACE MR-01-75

Product Range

The cryogenic ball valves are classified into cryogenic floating ball valves and cryogenic trunnion ball valves. Refer to the data for floating ball valve and trunnion ball valves for the product range. Face-to-face dimensions, connection flange dimensions, etc. For the ball valves with temperature higher than -50°C, the long neck structure is not designed. For the ball valves with temperature lower than -50°C, the neck length is generally designed according to standard requirements or according to user requirements.



Typical Layout Diagram of Cryogenic Test Device



Note: The stem packing bushing is located on the top cover of the heat preservation box.

Structural Features

The cryogenic ball valve is used for low temperature service condition, especially the dangerous media service conditions such as natural gas. Our company has accumulated rich experience in designing, manufacturing, testing and inspecting the cryogenic ball valve.

Lowest Working Temperature of Shell Materials and Main Parameters

lowest working temperature of shell materials				
Casting		Forging		
Materials	Lowest Working	Materials	Lowest Working	
ASTM A352 LCB	-46°C	ASTM A350 LF2	-46°C	
ASTM A352 LCC	-46°C	ASTM A350 LF2	-46°C	
ASTM A352 LC1	-59°C	ASTM A350 LF5	-59°C	
ASTM A352 LC2	-73°C	ASTM A350 LF9	-73°C	
ASTM A352 LC3	-101°C	ASTM A350 LF3	-101°C	
ASTM A351 CF8	-254°C	ASTM A182 F304	-254°C	
ASTM A351 CF8M	-254°C	ASTM A182 F316	-254°C	
ASTM A351 CF3	-254°C	ASTM A182 F304L	-254°C	
ASTM A351 CF3M	-254°C	ASTM A182 F306L	-254°C	
Main Parameters				
Design and Manufacturing	MSS SP-134-2006 GB/T24925			
Face to Face Dimensions	ASME B16.10			
Type of Connection	Flange	ASME B16.5	Wafer	ASME B16.5
Pressure Test	API 598			
Transmission Mode	Manual, Worm drive, Pneumatic, Electrical			

material selection

Common steel will show low temperature brittleness under low temperature. Therefore, it is a key for design and manufacturing to select suitable body materials according to the lowest working temperature of the cryogenic ball valve. Refer to the following table for the lowest working temperature of body materials. The low temperature materials shall be subjected to low temperature impact test according to standard requirements. For valves with working temperature lower than -100°C, the body, bonnet and stem must be subjected to cryogenic treatment after rough machining the ball and seat sealing face should be subjected to cryogenic treatment hard alloy spray welding/overlay welding, then grinding and assembly can be carried out so as to ensure the adaptability of materials under low temperature. In addition, the packing, gasket, bolt and nut shall be made of materials suitable for low temperature service condition.



Structural Design and Machining and Manufacturing Features

According to standard requirements, the ball valve with temperature lower than -50°C generally adopts the long neck structure design to improve the temperature at the packing and ensure reliable sealing of stem packing, the neck length is generally designed according to standard requirements or according to contract requirements if users have special requirements for the valve used for low temperature media. When the valve is at the closed position, the low temperature liquid staying in the middle cavity of valve will be gasified with the rise of temperature, which causes the volume to expand rapidly and leads to abnormal pressure rise in the middle cavity, or even valve breakage if serious.

The ball valve is provided with the function of middle cavity automatic pressure relief. In case of abnormal pressure rise in the middle cavity, the medium in the middle cavity will overcome the spring pre-tightening effect through its own force and push the seat out of the ball to realize automatic pressure relief, so as to ensure valve safety. According to contract requirements, cryogenic test can be carried out to test operating torque, sealing performance and other indexes under low temperature. The parts of the valve have been subjected to cryogenic treatment to ensure stability of stem and size of parts under low temperature.

BLOCK & BLEED BALL VALVE

BLOCK & BLEED
BALL VALVES

VERVO[®]

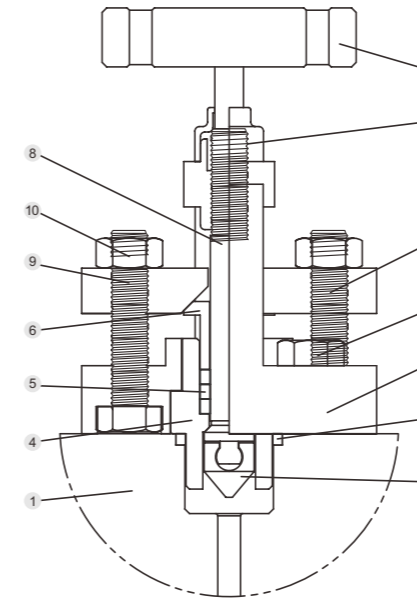
BLOCK & BLEED BALL VALVES CL150-2500

VERVO steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D British standard BS 5351 and generally conform to American society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

VERVO Material:
A105,LF2,F304,F316,F304L,F316L,F51,F53,INCONEL



Outside screw and yoke(OS&Y) needle valve

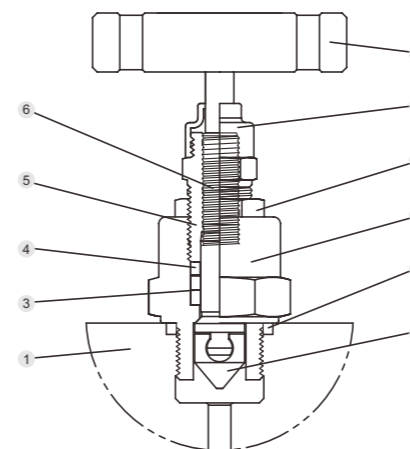


Materials of Parts

NO.	Name	Stainless Steel	Carbon Steel	Duplex Stainless Steel
1	Body	A182 F316	A350 LF2	A182 F51
2	Os & y bonnet	A182 F316	A350 LF2	A182 F51
3	Gland flange	A182 F316	A350 LF2	A182 F51
4	Insert	A479 TP316		S31803
5	Packing	Graphite		
6	Bushing	A479 TP316		S31803
7	Vee tip	A479 TP316		
8	Stem	A479 TP316		S31803
9	Flange bolt	A193 B8M	A320 L7M	A453 Gr.660
10	Flange nut	8M	A194 GR.7	A453 Gr.660
11	Bonnet bolt	A194 B8M	A320 L7M	A453 Gr.660
12	Bonnet seal	SS+Graphite		
13	Dust cap	PVC		
14	Bar handle	A276 TP316		F316

316 Stainless steel construction
Maximum cold working pressure rating
10,000 psig (690 bar).
Temperature rating -54°C to 538°C (-65°F to 1000°F).

Glove style needle valve



Materials of Parts

NO.	Name	Stainless Steel	Carbon Steel	Duplex Stainless Steel
1	Body	SS316	A350 LF2	A182 F51
2	Bonnet	SS316	A350 LF2	A182 F51
3	Packing	Graphite		
4	Packing gland	A479 TP316		S31803
5	Packing bolt	SS316	A350 LF2	S31803
6	Stem	A479 TP316		
7	Vee tip	SS360+Hard Cr		
8	Lock nut	SS316	A350 LF2	S31803
9	Bonnet seal	SS+Graphite		
10	Dust cap	PVC		
11	Bar handle	A276 TP316		F316

316 Stainless steel construction
Maximum cold working pressure rating
10,000 psig (690 bar).
Temperature rating -54°C to 538°C (-65°F to 1000°F).

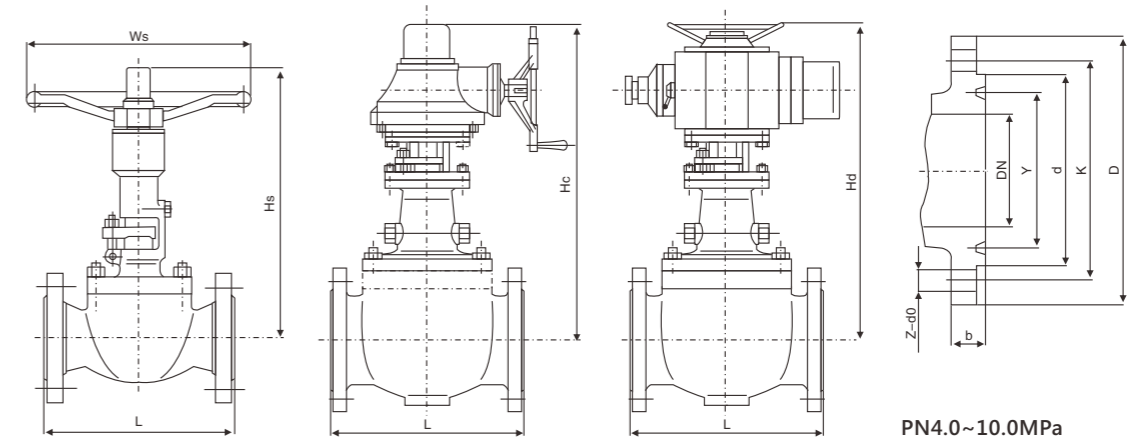
Features
Size: 1/2" ~ 48"
Pressure Rating: Class 150 ~ 500
Three/Two Piece Body
Floating /Trunnion, Full&Reduce
Bore Anti-Static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

Specifications
Design: API608, API6D, BS5351, ASME B16.34
Face to Face: ASME B 16.10, API 6D
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598, ISO5208, API6D
Special : NACE MR-01-75

ORBIT BALL VALVES CL150-2500

VERVO steel ball valves are designed manufactured to provide maximum service life and dependability. All ball valves are full ported and meet the design requirements of American Petroleum Institute standard API 608&API 6D British standard BS 5351 and generally conform to American society of Mechanical Engineers standard ASME B16.34 valves are available in a complete range of body/bonnet materials and trims.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,CN7M



PN4.0~10.0MPa
300LB-2500LB

Materials of Parts

Body Cover	GB	WCB		ZG1Cr18Ni9Ti		ZG0Cr18Ni12Mo2Ti		ZG15Cr1Mo1V
	ASTM	WCB		CF8		CF8M		WC9
Ball	GB	WCB+Carbide Alloy		ZG1Cr18Ni9Ti+Carbide Alloy		ZG0Cr18Ni12Mo2Ti+Carbide Alloy		ZG25Cr2Mo1V+Carbide Alloy
	ASTM	420		CF8+HF		CF8M+HF		WC9+HF
Stem	GB	2Cr13		1Cr18Ni9Ti		0Cr18Ni12Mo2Ti		25Cr2Mo1V
	ASTM	420		304		316		F22a
Valve seat	GB	PTFE	1Cr18Ni9Ti	PTFE	1Cr18Ni9Ti	PTFE	0Cr18Ni12Mo2Ti	D517
	ASTM	PTFE	304	PTFE	304	PTFE	316	HF
Packing	GB	PTFE	Flexible Graphite	PTFE	Flexible Graphite	PTFE	Flexible Graphite	Flexible Graphite
	ASTM	PTFE	Flexible Graphite	PTFE	Flexible Graphite	PTFE	Flexible Graphite	Flexible Graphite
Bolt	GB	35CrMoA		0Cr18Ni9		0Cr18Ni9		15CrMo
	ASTM	A193 B7		A320 B8		A320 B8M		A193 B16
Nut	GB	45		1Cr13		0Cr17Ni12Mo2		20CrMo
	ASTM	A194 2H		A194-8		A194-8M		A194-4

Features
Size:1/2"~48"
Pressure Rating:Class 150~2500
Floating /Trunnion,Full&Reduce
Bore Anti-Static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

Specifications
Design:API608,API6D,BS5351,ASME B16.34
Face to Face:ASME B 16.10,API 6D
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,API6D

CAST STEEL CHECK VALVE

CAST STEEL SWING CHECK VALVE

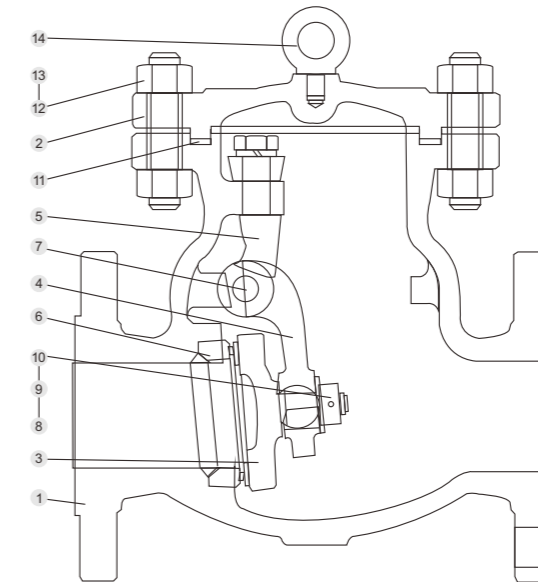


CAST STEEL SWING CHECK VALVE CL150-2500



VERVO swing check valve consists of a flap or disc which hangs down in the flow path. With flow in the forwards direction, the pressure of the fluid forces the disc to swing upwards, allowing flow through the valve. Reverse flow will cause the disc to shut against the seat and stop the fluid going back down the pipe. In the absence of flow, the weight of the flap is responsible for the closure of the valve.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,CN7M



Materials of Parts

No	Part Name	Carbon steel	1 1/4cr-1/2mo	Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Cover	A216-WCB	A217-WC6	A352-LCB
3	Disc ¹⁾	A105-CR13	A182-F11+HF	A350-LF2+CR13
4	Hinge	A216-WCB	A217-WC6	A352-LCB
5	Fork Part	A216-WCB	A217-WC6	A352-LCB
6	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
7	Hinge Pin	A276-420	A276-304	A276-420
8	Disc Washer	Carbon Steel	A276-304	Carbon Steel
9	Disc Nut	Carbon Steel	A194-7	Carbon Steel
10	Disc Nut Pin	Carbon Steel	A276-420	Carbon Steel
11	Gasket	Spiral Wound(Graphite+304)		
12	Stud	A193-B7	A193-B16	A320-L7
13	Stud Nut	A194-2H	A194-7	A194-4
14	Eyebolt ²⁾	Carbon Steel		

Note:1)Cast steel disc for NPS 4" and above.

2)NPS 6" & larger.

3)Disc and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.

Features
Size:2" ~56"
Pressure Rating:Class 150 ~2500
BC,Bolted Cover;PSC,Pressure Seal Cover
Renewable Seat Rings
Flange or Butt Welding

Specifications
Design:API608,API6D,BS5351,ASME B16.34
Face to Face:ASME B 16.10,API 6D
End Flange: ASME B 16.5/BS EN1092/ASME 16.47
BW Flange:ASME B16.25
Pressure Temp:ASME 16.34
Test:API598,ISO5208,API6D
Special :NACE MR-01-75

D CAST STEEL CHECK VALVE

CAST STEEL
WAFER CHECK VALVES

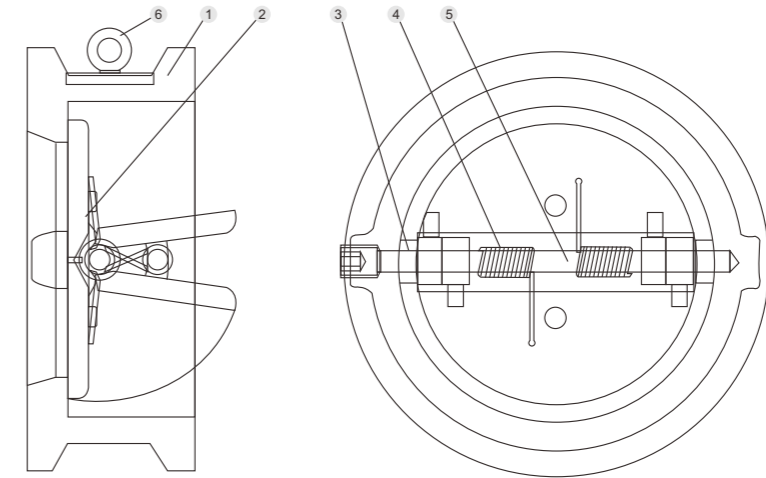
VERVO[®]

CAST STEEL WAFER CHECK VALVES

CL150-2500

VERVO wafer check valves, also known as dual-plate check valves, have two spring loaded half-moon shaped discs that rotate about their shaft. The disc plates are kept shut by a torsion spring. When fluid flows in a forward direction, the pressure of the fluid causes the disc plates to swing open, allowing flow. The check valve is closed by the spring as soon as flow ceases, before any reverse flow can occur.

VERVO Material:
WCB,LCB,WC6,WC9,CF8,CF8M,CF3,CF3M,CF8C,
CN7M



Materials of Parts

No	Part Name	Carbon steel	18Cr-9NiMo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Plate	A216-WCB+CR13	A351-CF8M+HF	A350-LCB+CR13
3	Stop Pin	A276-420	A276-304	A276-420
4	Back Spring	A313-304	A313-316	A313-304
5	Hinge Pin	A276-420	A276-304	A276-420
6	Eyebolt ²⁾	Carbon Steel		

Note:1)NPS 8" & larger.

Features

Size:2"~60"

Pressure Rating:Class 150~2500

Wafer /Double Flange/Lug

Specifications

Design:API 594,API 6D,ASME B16.34

Face to Face:API 594,API 6D

End Flange: ASME B 16.5/ASME 16.47

Pressure Temp:ASME 16.34

Test:API598,ISO5208

Special :NACE MR-01-75

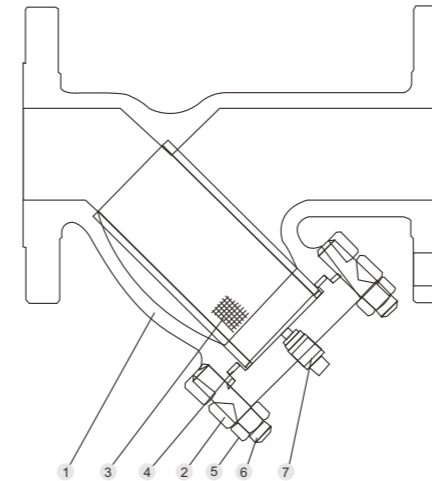
Y TYPE & BASKET STRAINER TYPE STRAINER TEMPORARY FILTER

CL150-2500

VERVO When debris, such as scale, rust and other foreign matter mixes with the water, oil, gas, air, steam or other media and is allowed to flow through a pipeline, it can become the cause of damage to the line's valve seats, resulting in shortened valve life, not to mention equipment malfunction and damage.

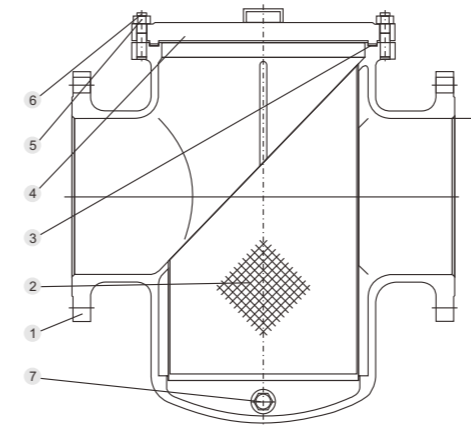
Strainers separate and remove the solids suspended in fluids, protecting equipment from their harmful effects. Each strainer incorporates a screen to filter suspended solids and is designed so that collected solids can be disposed of and the filter cleaned without having to be removed from the line.

Strainers can be classified into two main types according to their shape: Y-type and U-type. VERVO offers both a Y-type strainer that provides relatively low resistance to fluids and a compact shape, requiring less installation space, and the U-type that can be added plumbed into plant equipment



Materials of Parts

No	Part Name	Carbon Steel	18Cr-9Ni-2Mo	Carbon Steel
1	Body	A216-WCB	A351-CF8M	A352-LCB
2	Bonnet Cap	A216-WCB	A351-CF8M	A350-LCB
3	Screen	A240-304	A240-316	A240-304
4	Bonnet Gasket	Graphite+304 ¹⁾	PTFE	Graphite+304 ¹⁾
5	Bonnet Stud	A193-B7	A193-B8	A320-L7
6	Bonnet Stud Nut	A194-2H	A194-8	A194-7
7	Drain Plug	A276-410	A276-316	A276-410



No	Part Name	No	Part Name
1	Body	5	Bolt
2	Disc	6	Nut
3	Gasket	7	NPT Screw Plug
4	Cover		

Materials of Parts

Body	WCB/CF8M/CF8/CF3M/CF3/CD3MN
Strainer	316/304/316L/304L/S31803
Bonnet	F316/F304/F316L/F304L/F51
Bolt	B7M/B8M/L7M/B16M
Nut	2HM/8M/7M/4M
Gasket	Flexible graphite+ 304/Flexible graphite+ 316
Screw Plug	410/316/304/316L/304L/S31803

Materials could be chosen according to customers' requirement & working condition.

Features
Size:2''~60''
Pressure Rating:Class 150~2500
Flange or Butt Welding

Specifications
Design:ASME B16.34
Face to Face:ASME B16.10,EN588
End Flange: ASME B 16.5/BS EN1092
Pressure Temp:ASME 16.34
Test:API598
Special :NACE MR-01-75

FORGED GATE VALVES CL800-2500

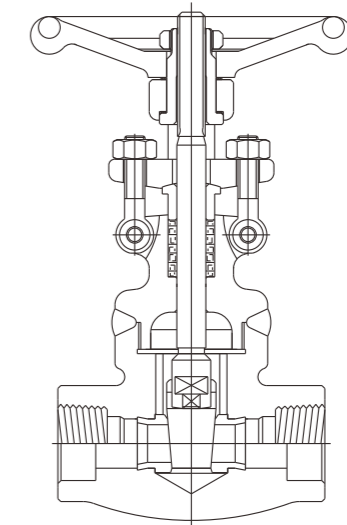
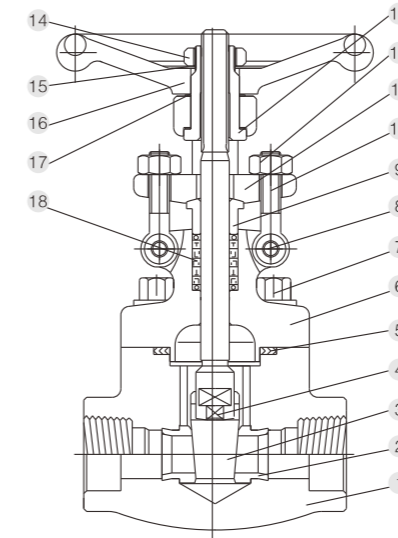


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BB, Bolted Bonnet; WB, Welded Bonnet
OS&Y, Outside Screw and Yoke
Solid Wedge
Newable Seat Rings
Thread / SW / BW / Flange

Specifications
Design: API602/ASME B16.34/BS5352
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special: NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
2	Seat	410	410HF	304	410HF	304(L)	316(L)	F51
3	Wedge	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51
4	Stem	410	410	304	410	304(L)	316(L)	F51
5	Gasket	304+ Flexible Graphite						
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Name plate	AL	AL	AL	AL	AL	AL	AL
16	Hand wheel	A197	A197	A197	A197	A197	A197	A197
17	Lubrication gasket	410	410	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite

HIGH PRESSURE GATE VALVES

CL1500-2500

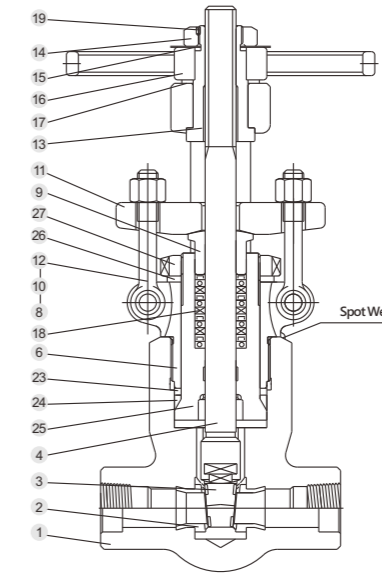


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2"~4"
Pressure Rating: Class 1500~2500
BB, WB, PSB
OS&Y, Outside Screw and Yoke
Solid Wedge
Newable Seat Rings
Thread /SW / BW/Flange

Specifications
Design: API602/ASME B16.34/BS5352
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special : NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F91/F91
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F91
2	Seat	410	410HF	304	410HF	304(L)	316(L)	410HF
3	Wedge	F6a	F6a	F304	F6aHF	F304(L)HF	F316(L)HF	F6aHF
4	Stem	410	410	304	410	304(L)	316(L)	410
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F91
8	Pin	410	410	410	410	304	304	410
9	Gland	410	410	304	410	304	316	410
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8
11	Gland flange	A105	A105	A105	A105	F304	F304	A105
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Name plate	AL	AL	AL	AL	AL	AL	AL
16	Hand wheel	A197	A197	A197	A197	A197	A197	A197
17	Lubrication gasket	410	410	410	410	410	410	410
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite
19	Stop nut	35	35	35	35	35	35	35
23	Seal gasket	420	420	304	304	304(L)	316(L)	420
24	PS ring	304	304	304	304	304	316	316
25	PS seal	420	420	304	304	304(L)	316(L)	F91
26	Nut pad	410	410	410	410	410	410	410
27	Packing nut	Cast steel	Cast steel	Cast steel	Cast steel	Stainless steel	Stainless steel	Cast steel

SPECIAL PURPOSES GATE VALVES

CL800-2500

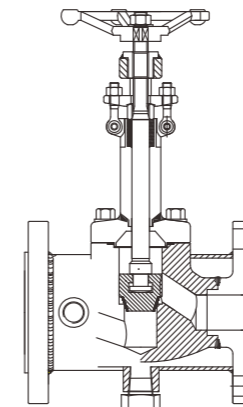
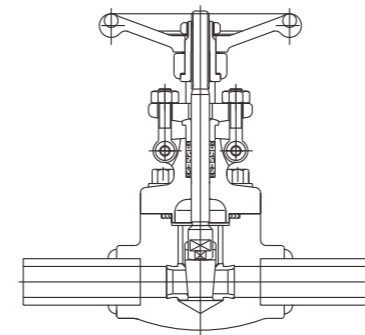
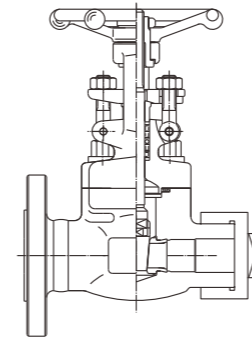
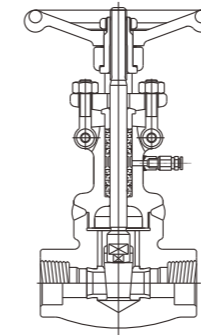
VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM



Features
Size: 1/2" ~ 4"
Pressure Rating: Class 1500 ~ 2500
BB, WB, PSB
OS&Y, Outside Screw and Yoke
Solid Wedge
Newable Seat Rings
Thread /SW / BW / Flange

Specifications
Design: API602/ASME B16.34/BS5352
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special : NACE MR-01-75



VACUUM GATE VALVES

Welded bonnet	Temperature pressure rate : 1975psi / 100°F
OS & Y	Body/bonnet : Cast steel
Packing	Trim : 13cr
Distance ring	Bolt : B7
Injector sealing gum valves	
Solid wedge	

FOR VENTING AND / OR RELEASING MEDIA

Bolted	Temperature pressure rate : 1975psi / 100°F
OS & Y	Body/bonnet : Cast steel
Cap fitting connection	Trim : 13cr
Solid wedge	Bolt : B7

COUPLING PIPE VALVES

Bolted boonet	Temperature pressure rate : 1975psi / 100°F
OS & Y	Body/bonnet : Cast steel
Double end pipe connection	Trim : 13cr
Solid wedge	Bolt : B7

HOOP GATE VALVES

Bolted boonet	Temperature pressure rate : 1975psi / 100°F
OS & Y	Body/bonnet : Cast steel
With jacket	Trim : 13cr
Solid wedge	Bolt : B7

FORGED GLOBE VALVES CL800-2500

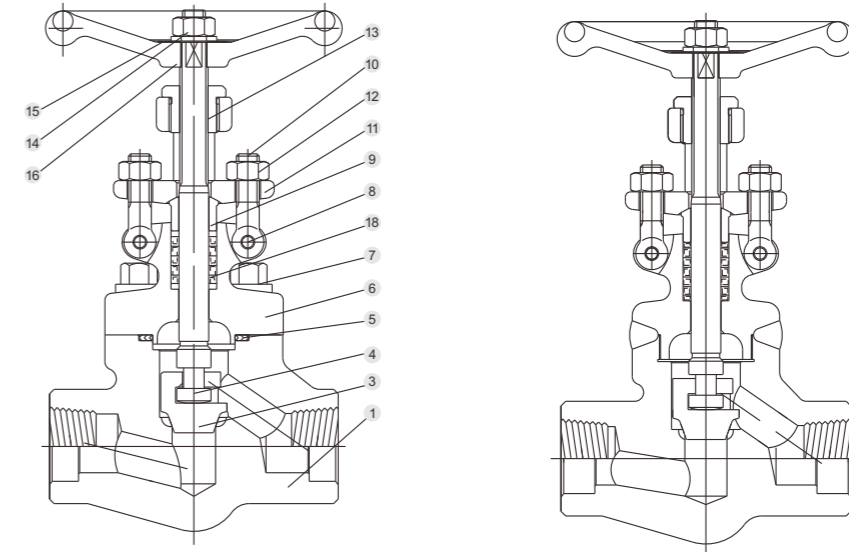


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BB, Bolted Bonnet; WB, Welded Bonnet
OS&Y, Outside Screw and Yoke
Solid Wedge
Thread /SW / BW/Flange

Specifications
Design: API602/ASME B16.34/BS5352
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special : NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51	
1	Body	A105	A105+HF	LF2	F11+HF	F304(L)	F316(L)	F51	
3	Disc	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51	
4	Stem	410	410	304	410	304(L)	316(L)	F51	
5	Gasket	304+Flexible graphite					316+Flexible graphite		
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51	
7	Bolt	B7	B7	L7	16	B8(M)	B8(M)	B8M	
8	Pin	410	410	410	410	304	304	304	
9	Gland	410	410	304	410	304	316	F51	
10	Gland eyebolt	B7	B7	L7	B16	B(8M)	B(8M)	B8M	
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304	
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8M	
13	Stem nut	410	410	410	410	410	410	410	
14	Locking nut	35	35	35	35	35	35	35	
15	Name plate	AL	AL	AL	AL	AL	AL	AL	
16	Handwheel	A197	A197	A197	A197	A197	A197	A197	
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	

PRESSURE SEALING GLOBE VALVES

CL1500-2500

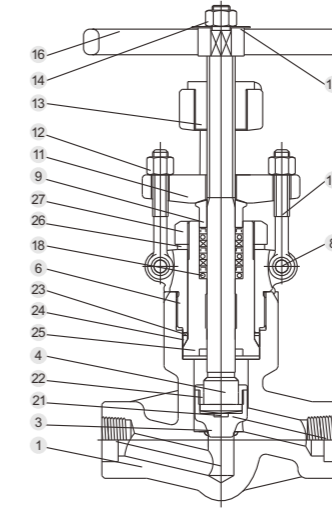


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BB, Bolted Bonnet; PSB
OS&Y, Outside Screw and Yoke
Solid Wedge
Thread / SW / BW / Flange

Specifications
Face to Face: ASME B 16.10 / BS EN 558
End Flange: ASME B 16.5
End BW: ASME B 16.25
Pressure Temp: ASME 16.34
Test: API 598
Special: NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F91/F91	
1	Body	A105	A105+HF	LF2	F11+HF	F304(L)	F316(L)	F91+HF	
3	Disc	410	410	304	410+HF	304(L)+HF	316(L)+HF	410+HF	
4	Stem	410	410	304	410	304(L)	316(L)	410	
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F91	
8	Pin	410	410	410	410	304	304	410	
9	Gland	410	410	304	410	304	316	410	
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8	
11	Gland flange	A105	A105	LF2	F11	F304	F304	F91	
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8	
13	Stem nut	410	410	410	410	410	410	410	
14	Locking nut	35	35	35	35	35	35	35	
15	Name plate	AL	AL	AL	AL	AL	AL	AL	
16	Handwheel	A197	A197	A197	A197	A197	A197	A197	
18	Packing	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	Graphite	
21	Stempad	420	420	420	420	316SH	316SH	420	
22	Disc nut	410	410	410	410	304(L)	316(L)	410	
23	Seal ring gasket	420	420	304	304	304(L)	316(L)	316(L)	
24	P.S. ring	304	304	304	304	304	316	304	
25	P.S. seat	420	420	304	304	304(L)	316(L)	F91	
26	Nut pad	410	410	410	410	410	410	410	
27	Draw-in stud	Cast steel				Stainless steel			

Y TYPE GLOBE VALVES CL800-2500

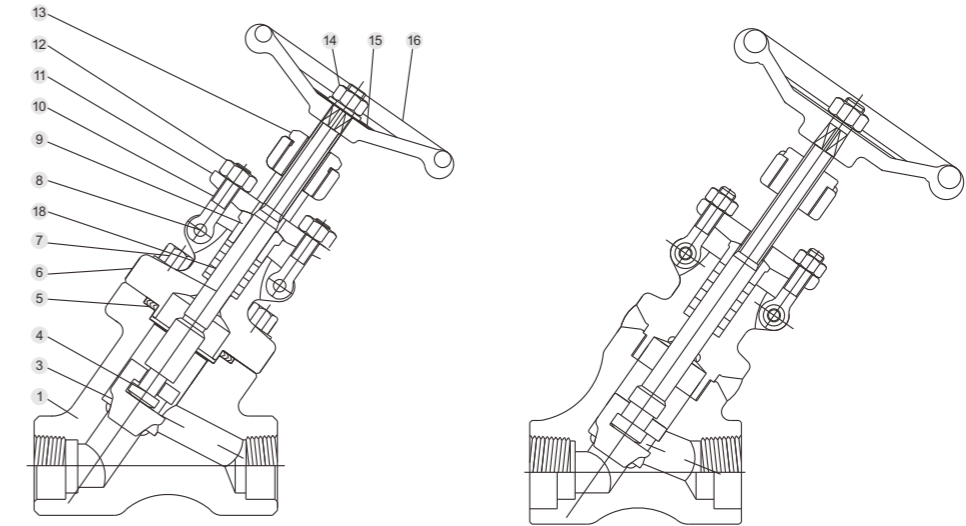


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2"~4"
Pressure Rating: Class 150~2500
BB, Bolted Bonnet; PSB
OS&Y, Outside Screw and Yoke
Solid Wedge
Thread /SW / BW/Flange

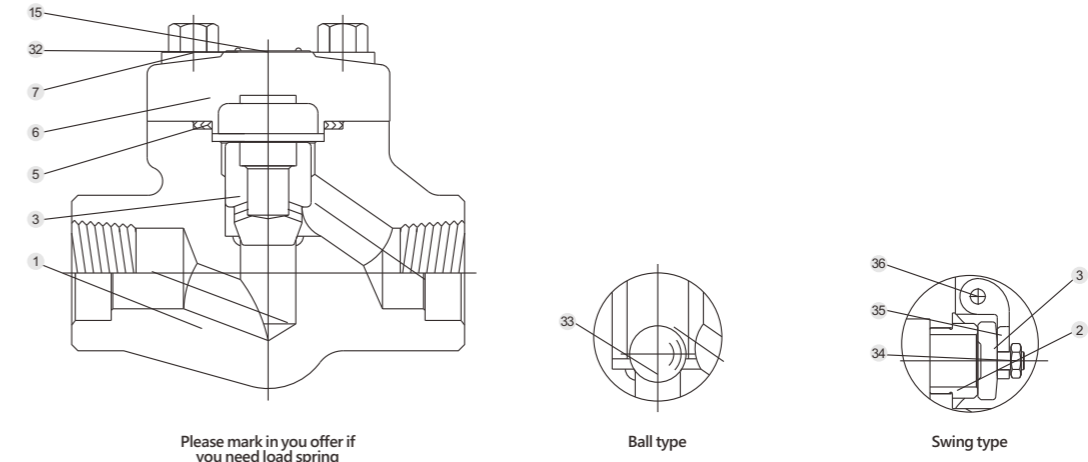
Specifications
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special : NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105+HF	LF2	F11+HF	F304(L)	F316(L)	F51
3	Disc	F6a	F6a	F304	F6a+HF	F304(L)	F316(L)	F51
4	Stem	410	410	304	410	304(L)	316(L)	F51
5	Gasket	304+Flexible Graphite						
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
8	Pin	410	410	410	410	304	304	304
9	Gland	410	410	304	410	304	316	F51
10	Gland eyebolt	B7	B7	L7	B16	B8(M)	B8(M)	B8M
11	Gland flange	A105	A105	LF2	F11	F304	F304	F304
12	Hex nut	2H	2H	2H	2H	8(M)	8(M)	8M
13	Stem nut	410	410	410	410	410	410	410
14	Locking nut	35	35	35	35	35	35	35
15	Name plate	AL	AL	AL	AL	AL	AL	AL
16	Hand wheel	A197	A197	A197	A197	A197	A197	A197
18	Packing	Graphite						

FORGED CHECK VALVES CL800-2500



VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BC, Bolted Bonnet, WC, Weld Cover
Thread / SW / BW / Flange

Specifications
Face to Face: ASME B 16.10 / BS EN 558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API 598
Special: NACE MR-01-75

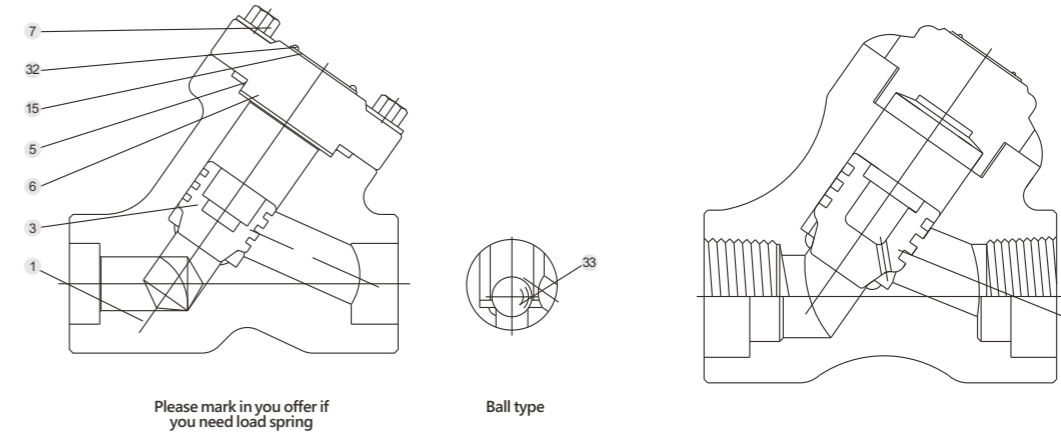
Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
2	Seat ring	410	410HF	304	410HF	304(L)	316(L)	F51
3	Disc	F6a	F6a	F304	F6aHF	F304(L)	F316(L)	F51
5	Gasket	304+Flexible Graphite				316+Flexible Graphite		
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8(M)
15	Name plate	AL	AL	AL	AL	AL	AL	AL
32	Revit	AL	AL	AL	AL	AL	AL	AL
33	Steelball	430	430	304	STL	316(L)	316(L)	STL
34	Disc nut	2H	2H	8	8	8(M)	8(M)	8M
35	Hinge	410	410	304	410	316(L)	316(L)	F51
36	Pin	410	410	304	410	304(L)	316(L)	F51

Y TYPE CHECK VALVES CL800-2500

VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	F11/F6aHF	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	A105	LF2	F11	F304(L)	F316(L)	F51
3	Disc	410	410HF	304	410HF	304(L)	316(L)	F51
5	Gasket	304+Flexible Grapite			316+Flexible Grapite			
6	Bonnet	A105	A105	LF2	F11	F304(L)	F316(L)	F51
7	Bolt	B7	B7	L7	B16	B8(M)	B8(M)	B8(M)
15	Name plate	AL	AL	AL	AL	AL	AL	AL
32	Revit	AL	AL	AL	AL	AL	AL	AL
33	Steelball	430	430	304	STL	316(L)	316(L)	STL

Features
Size: 1/2"~4"
Pressure Rating: Class 150~2500
BC, Bolted Bonnet, WC, Weld Cover
Thread /SW / BW/Flange

Specifications
Design: API602/ASME B16.34/BS5352
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special: NACE MR-01-75

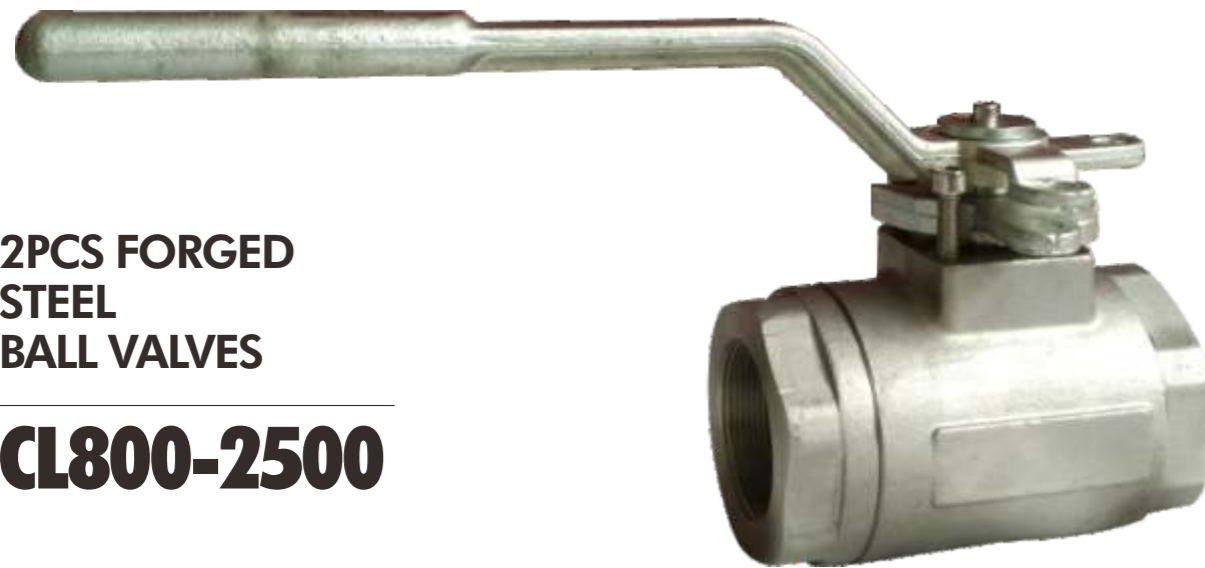
FORGED STEEL BALL VALVES

2PCS FORGED
STEEL BALL VALVES

VERVO[®]

2PCS FORGED
STEEL
BALL VALVES

CL800-2500



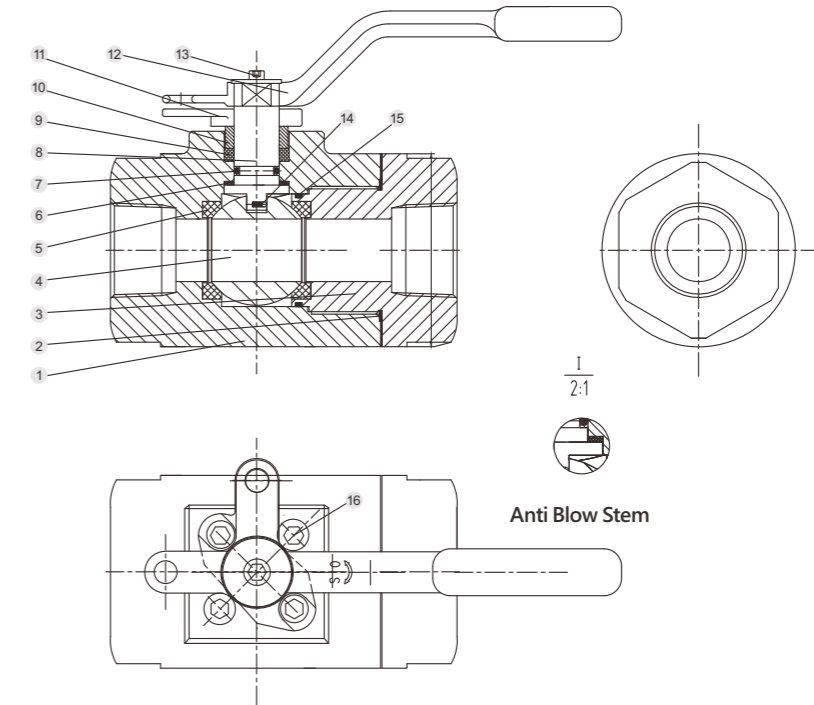
VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:

A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2" ~ 2"
Pressure Rating: Class 150 ~ 1500
BB, Bolted Bonnet
Thread /SW

Specifications
Design: API608
Face to Face: ASME B 16.10/BSEN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special: NACE MR-01-75



Materials of Parts

NO.	Part Name	A105/F6a	LF2/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	A105	LF2	F304(L)	F316(L)	F51
2	Seat	RPTFE or PEEK				
4	Stem	410	304	304(L)	316(L)	F51
5	Gasket	PTFE				
6	Bonnet	A105	LF2	F304	F316	F51
9	Gland	410	304	304(L)	316(L)	F51
11	Gland flange	A105	LF2	F304	F316	F51
14	Flat nut	8	8	8	8M	8M
18	Packing	PTFE				
40	Ball	F6	F304	F304(L)	F316(L)	F51
41	O-ring	VITON				
42	Back seal gasket	RPTFE or PEEK				
43	Wrench	ANSI 1025				
44	Screw	B8	B8	B8	B8M	B8M
45	Lock					
46	Locator	ANSI1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025

FORGED STEEL BALL VALVES

3PCS FORGED
STEEL BALL VALVES

VERVO[®]

3PCS FORGED STEEL BALL VALVES

CL800-2500

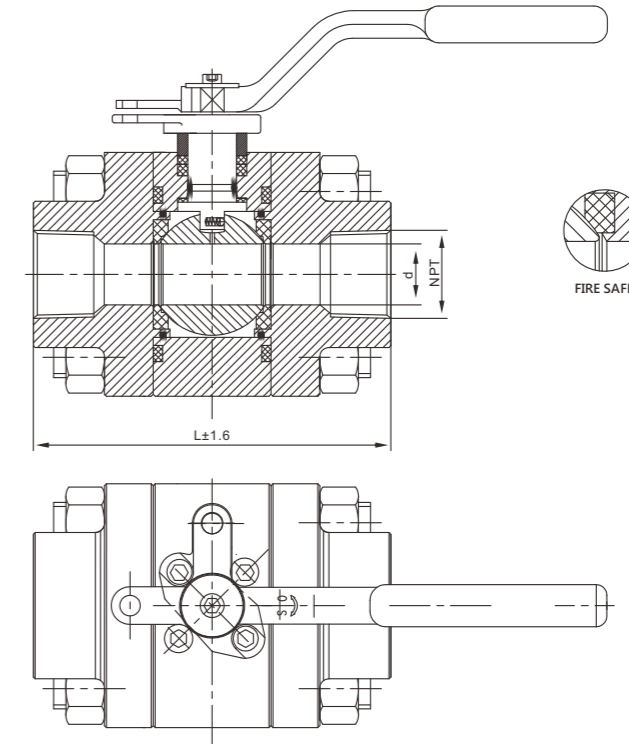


VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55, INCONEL, F11, F22, F5, F9, F91, TITANIUM

Features
Size: 1/2"~2"
Pressure Rating: Class 150~1500
BC, Bolted Bonnet
Thread /SW

Specifications
Design: API608
Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special : NACE MR-01-75



Materials of Parts

NO	Name	Material		
1	Hex Bolt	ASTM A193 B8M	ASTM A193 B8	ASTM A193 B8M
2	Hex Nut	ASTM A194 B8M	ASTM A194 8	ASTM A194 8M
3	Body	ASTM A182 F316	ASTM A182 F304	ASTM A182 F51
4	Gasket	SS 316+Graphite	SS 304+Graphite	SS 316+Graphite
5	Bonnet	ASTM A182 F316	ASTM A182 F304	ASTM A182 F51
6	Seat Ring	RPTFE	RPTFE	RPTFE
7	Ball	ASTM A182 F316	ASTM A182 F304	ASTM A182 F51
8	Antistatic Spring	SS	SS	SS
9	Stem	ASTM A182 F316	ASTM A182 F304	ASTM A182 F51
10	Thrust Pad	RPTFE	RPTFE	RPTFE
11	O ring	VITON	VITON	VITON
12	Packing	Graphite	Graphite	Graphite
13	Gland	ASTM A276 316	ASTM A216 304	ASTM A182 F51
14	Gland Flange	ASTN A216 WCB+Zn	ASTN A216 WCB+Zn	ASTN A216 WCB+Zn
15	The Handle	ASTN A216 WCB+Zn	ASTN A216 WCB+Zn	ASTN A216 WCB+Zn
16	Flat Pad	CS+Zn	CS+Zn	CS+Zn
17	Socket Head Bolts	ASTM A193 B8M	ASTM A193 B8	ASTM A193 B8M

FORGED STEEL CRYOGENIC VALVES

FORGED STEEL CRYOGENIC
GATE & GLOBE VALVES

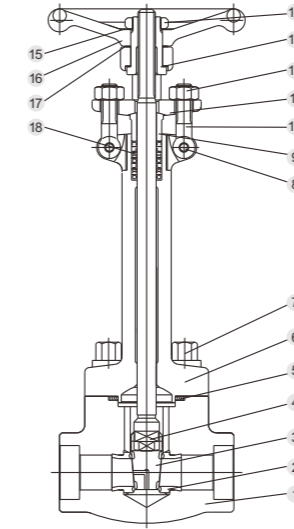
VERVO[®]

FORGED STEEL CRYOGENIC GATE & GLOBE VALVES

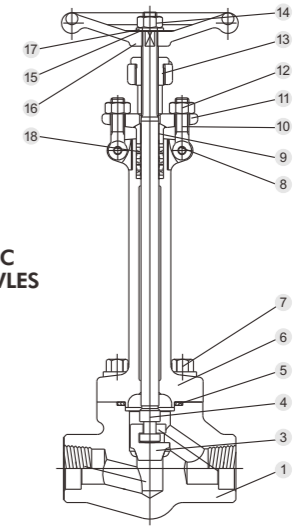
CL800-1500

VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55,
INCONEL, F11, F22, F5, F9, F91, TITANIUM



CRYOGENIC
GATE VALVES



CRYOGENIC
GLOBE VALVES

Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	LF2/304	LF3/304	F304(L)/304(L)	F316(L)/316(L)	F51/F51
1	Body	-	-	LF2	LF3	F304(L)	F316(L)	F51
2	Seat ring	-	-	304	304	304(L)	316(L)	F51
3	Wedge disc	-	-	F304	F304	F304(L)	F316(L)	F51
4	Stem	-	-	304	304	304(L)	316(L)	F51
5	Gasket	-	-	304+ Flexible graphite				
6	Bonnet	-	-	LF2	LF3	F304(L)	F316(L)	F51
7	Bolt	-	-	L7	L7	B8	B8	B8
8	Pin	-	-	410	410	304	304	304
9	Gland	-	-	304	304	304	316	F51
10	Gland eyebolt	-	-	L7	L7	B8(M)	B8(M)	B8M
11	Gland flange	-	-	LF2	LF3	F304	F304	F304
12	Hex nut	-	-	2H	2H	8(M)	8(M)	8M
13	Stem nut	-	-	410	410	410	410	410
14	Locking nut	-	-	35	35	35	35	35
15	Name plate	-	-	AL	AL	AL	AL	AL
16	Hand wheel	-	-	ALA197	ALA197	A197	A197	A197
17	Lubrication gasket	-	-	410	410	410	410	410
18	Packing	-	-	Graphite				

Features

Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BB, Bolted Bonnet;
OS&Y, Outside Screw and Yoke
Solid Wedge
Thread /SW / BW / Flange

Specifications

Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special: NACE MR-01-75

BELLOW SEALED VALVES

BELLOW SEALED
GATE & GLOBE VALVES

VERVO[®]

BELLOW SEALED GATE & GLOBE VALVES

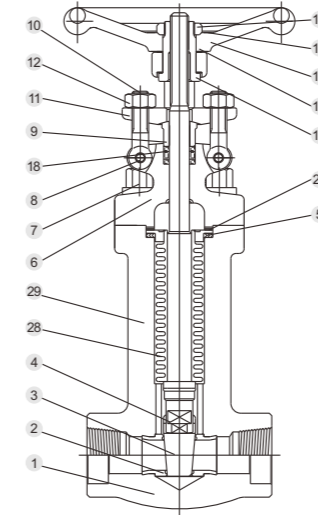
CL800-1500

VERVO Valves are available in three bonnet designs. The first design is the bolted bonnet, with male-female joint, spiral wound gasket, made in F304L/graphite. Ring joint gasket are also available on request. The second design is the welded bonnet, with a threaded and seal welded joint. On request a full penetration strength welded joint is available. The third design is the pressure seal bonnet, with a threaded and pressure seal bonnet joint.

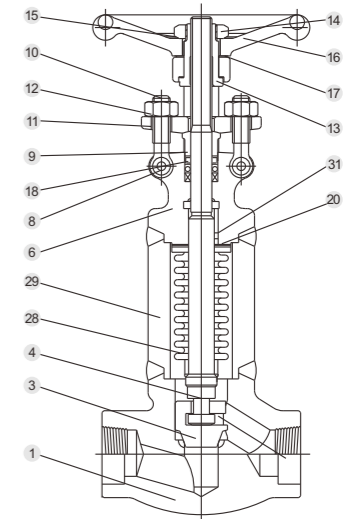
VERVO Material:
A105, LF2, F304, F316, F304L, F316L, F321, F51, F53, F55,
INCONEL, F11, F22, F5, F9, F91, TITANIUM



BELLOW SEALED
GATE VALVES



BELLOW SEALED
GLOBE VALVES



Materials of Parts

NO.	Part Name	A105/F6a	A105/F6aHFS	A105/F6aHF	F304(L)/304(L)	F316(L)/316(L)
1	Body	A105	A105	A105	F304(L)	F316(L)
2	Seat	410	410HF	410HF	304(L)	316(L)
3	Wedge disc	F6a	F6a	F6aHF	F304(L)	F316(L)
4	Stem	410	410	410	304(L)	316(L)
5	Gasket	304+Flexible graphite				
6	Bonnet	A105	A105	A105	F304(L)	F316(L)
7	Bolt	B7	B7	B7	B8	B8
8	Pin	410	410	410	304	304
9	Gland	410	410	410	304	316
10	Gland eyebolt	B7	B7	B7	B8(M)	B8(M)
11	Gland flange	A105	A105	A105	F304	F304
12	Hex nut	2H	2H	2H	8(M)	8(M)
13	Stem nut	410	410	410	410	410
14	Locking nut	35	35	35	35	35
15	Name plate	AL	AL	AL	AL	AL
16	Hand wheel	A197	A197	A197	A197	A197
17	Lubrication gasket	410	410	410	410	410
18	Packing	Graphite				
20	Gasket	304+Flexible graphite				
28	Bellow	F321	F321	F321	F316L	F316L

Features

Size: 1/2" ~ 4"
Pressure Rating: Class 150 ~ 2500
BB, Bolted Bonnet;
OS&Y, Outside Screw and Yoke
Solid Wedge
Thread /SW / BW/Flange

Specifications

Face to Face: ASME B 16.10/BS EN558
End Flange: ASME B 16.5
End BW: ASME B16.25
Pressure Temp: ASME 16.34
Test: API598
Special: NACE MR-01-75