



WALWORTH®
Since 1842



API 602
GATE, GLOBE AND CHECK VALVES

CATALOG

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YARMOUTH RESEARCH AND TECHNOLOGY



WALWORTH

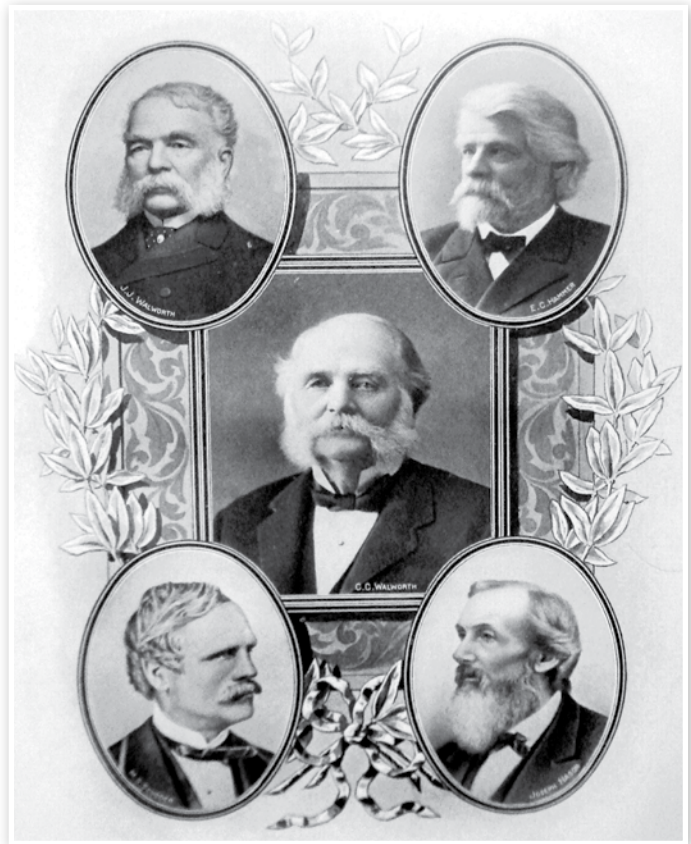
WALWORTH is one of the world's most comprehensive industrial valve manufacturers. Founded in 19th century by James Walworth, the Company has consistently dedicated itself to improvements in design and manufacturing of an array of valves exceptionally suited for the world's fluid control sector. We satisfy all end use industries and comprehensive customer requirements by adhering to the most demanding quality standards.

WALWORTH relies on its broad experience in supplying valves to the petrochemical, oil & gas, petroleum, power generation, pulp and paper, cryogenic and geothermal industries, among others.

Over the years, WALWORTH has produced over 40,000 different types of products and serves as a global supplier to various markets utilizing the expertise of over 500 trained employees.

Our manufacturing system includes: utilization of Company directed raw material warehouses; modern and newly acquired specialized machinery; welding processes such as SMAW, GMAW, SAW, PAW; assembly testing for all low pressure, high pressure, and at low or high temperatures; painting and coating processes; export crating and shipment.

WALWORTH is capable of providing the world's most comprehensive industrial valve line to the North American, Central American, South American, European and African markets. WALWORTH is proud to meet and satisfy the precise demands of our customers throughout the world by providing a quality product, competitive cost, and excellent service.



WALWORTH VALUES

MISSION

WALWORTH manufactures and supplies world-class valves and components for the flow control industry through exceptional service, competitive pricing, and consistently, on-time deliveries.



VISION

To be the world leader of unparalleled valve manufacturing and supply, WALWORTH:

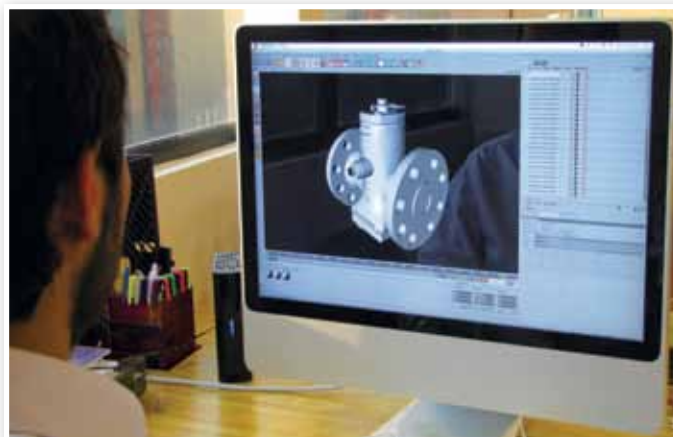
- Set the standard for product quality in the flow control industry.
- Exceed the service expectations of our customers.
- Forge enduring relationships with customers, team members, and community.
- Hire, develop, and retain experienced and dedicated team members.



WALWORTH ENGINEERING CONTROL

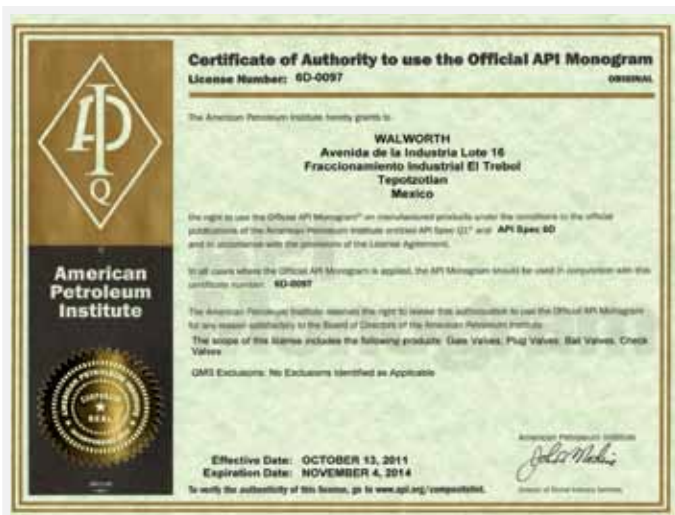
WALWORTH products are manufactured following the strict international standards recognized all over the world, such as API, ANSI, ASME, ASTM, MSS, NACE, AWWA, BSI, CSA, among others. Our Engineering team consistently monitors updates to these standards and incorporates any applicable changes that affect the design, regulations and/or performance of our products.

Our designs are made using the most advanced technology and equipment, finite elements, and CAD system programs to ensure proper assembly and performance. From conception to calculation to detailed drawings for manufacturers, WALWORTH is a leader in development of new products that meet the needs of the current valve market.”



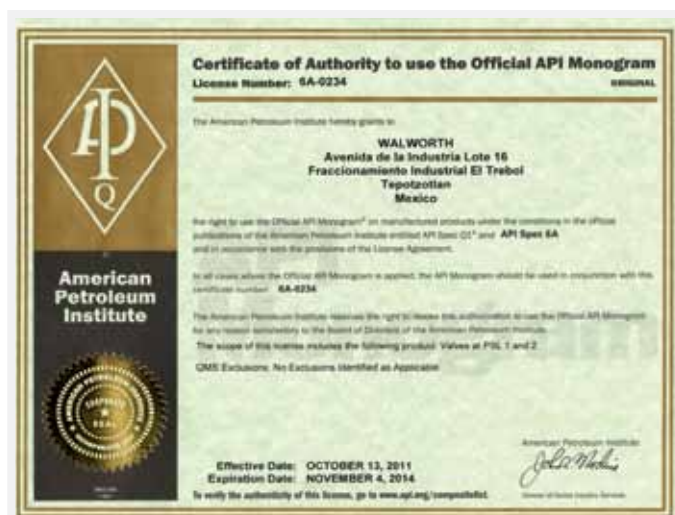
WALWORTH QUALITY SYSTEM

Throughout the years, WALWORTH has developed its Quality System which is an integral part of our manufacturing policy. Our primary goal is to provide products that meet and exceed market standards. In this sense, WALWORTH is an ISO-9001 Audited and Certified Company that has achieved major certifications worldwide. Our system includes the selection of raw materials from approved vendors, and rigorous oversight of our manufacturing process that is vital to quality control. The use of serial numbers allows WALWORTH the ability to not only ensure the quality of components used but to monitor and trace the fabrication process as well.



Certificate API-6D No. 6D-0097

Issued by American Petroleum Institute to apply on Gate valves, Plug valves, Ball valves and Check valves manufactured in accordance with API-6D specification.



Certificate API-6A No. 6A-0234

From American Petroleum Institute to apply on valves at PSI, 1 through 4.



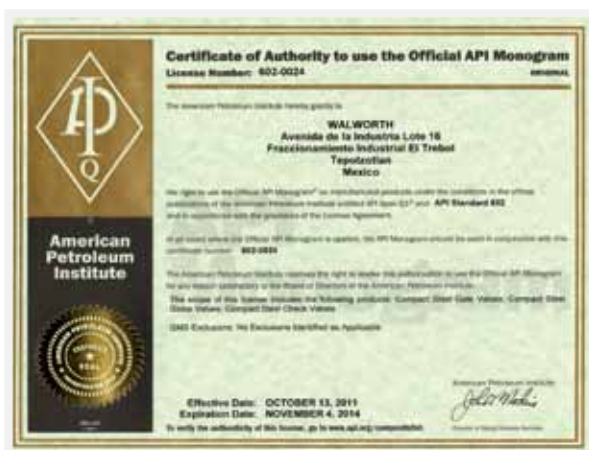
Certificate API-594 No. 594-0007

Issued by American Petroleum Institute to apply on Check Valves-Type A; Check Valves Type B manufactured in accordance with API-594 specification.



API-600 Certificate No. 600-0109

Issued by American Petroleum Institute to apply on Bolted Bonnet Steel Gate Valves manufactured in accordance with API-600 specification.



API-602 Certificate No. 602-0024

Issued by American Petroleum Institute to apply on Compact Steel Gate Valves, Compact Steel Globe Valves, and Compact Steel Check Valves manufactured in accordance with API-602 specification.



Certificate ISO-9001 No. 0038

Issued by American Petroleum Institute since April 1999.



Certificate as per PED 97/23/EC Module H
To stamp CE products.



Supplier Qualification Certificate NO. 279/13

Issued by the Equipment and Materials Testing Laboratory, CFE (LAPEM in Spanish)



Certificate NMX-CC-9001 (Mexican Standards ISO-9001) No. 0552/2007 Issued by PEMEX in accordance with ISO-9001 Quality Assurance System.

PRODUCT CERTIFICATIONS



Emissions after 500 cycles at ambient and 350 °F

Issued by Yarmouth Research and Technology Lab for 3 inch Class 300 Gate Valve After 500 cycles the measurement result was less than 50 ppm.



Emissions after 500 cycles at ambient and 350 °F

Issued by Yarmouth Research and Technology Lab for 8 inch Class 300 Gate Valve After 500 cycles the measurement result was less than 50 ppm.



Emissions after 500 cycles at ambient and 350 °F

Issued by Yarmouth Research and Technology Lab for 16 inch Class 150 Gate Valve After 500 cycles the measurement result was less than 50 ppm.



YARMOUTH RESEARCH AND TECHNOLOGY
PROJECT SUMMARY

Project Number: 00008
Customer: The Walworth Company
Contact: David Cornelien
Date(s) of Test: 12/9/99 - 12/23/99
Product(s) Tested: One 8" Class 300 Gate Valve with Empak-Mex EAF-100-001 packing.
Purpose of Test: The test was conducted to evaluate the valve's atom sealing performance at ambient and at 350° F as related to the 1990 Amendments to the Clean Air Act requirements. Leakage measurements were conducted in accordance with 40 CFR Part 60, Appendix A, Method 21.
Conclusion: Three thermal cycles from ambient to 350 deg. F were conducted throughout 5000 open/close cycles with the valve presented to 640 psig. The valve was cycled with a 45 RPM gear motor coupled to the handwheel. One packing seal adjustment was required on cycle number 300 to maintain leakage levels below 100 PP50.
At cycle number 3500, the packing leakage was 25-29 PP50s with the stem static. The packing nuts were tightened from 12/14 B.B. back to 28 B.B. and leakage decreased to about 1 PP50s.
See the attached data sheets for more information.
Test Witness: Matthew J. Wasieleski, P.E., President
YARMOUTH RESEARCH AND TECHNOLOGY

Phone or Fax (202) 946-3646
42 East Elm Street P.O. Box 110 Yarmouth, Maine 04096-0110

TÜV Rheinland Argentina S.A.
Servicios Industriales
Certificación Control
San José 53 - 7° Floor
C1020BAAU Buenos Aires

TÜVRheinland®

Certificate

Certificate No. TRASA 700-13-0019
Customer: WALWORTH METCO - Industrial de Valdivia S.A. de C.V.
Av. de la Industria Lote 18
Paseo Industrial El Trebol, S.P. 48000
Tepic, Jalisco, México
Product Tested: API 6D Trunnion mounted body ball valves, carbon steel (A105-WCB) construction, double block and bleed service, primarily used for oil and gas standard and severe applications.
Trademark: WALWORTH
Model / Type: See table below for model and type information.
Applicable Standard: ASME B16.34
TUV Report No.: TRASA 700-13-0019
Results: Successful testing. 100% Pass.
Safety Function: The Trunnion Ball Valves will meet the design and construction requirements for the intended application. The valve is designed and built to meet the requirements of the ASME B16.34 standard.
Specific Requirements: The performance for Trunnion Mounted Body Ball Valves tested at 1000 PSI (6.9 MPa) shall be as follows:
Sealing: 100% Pass
Leakage: 100% Pass
Bursting: 100% Pass
Fatigue: 100% Pass
Impact: 100% Pass
Hydrotest: 100% Pass
Visual Inspection: 100% Pass
Dimensional Inspection: 100% Pass
Material Inspection: 100% Pass
Welding Inspection: 100% Pass
Paint Inspection: 100% Pass
Final Inspection: 100% Pass
Overall Acceptance: 100% Pass
Business Area: Valves
Tested By: David Cornelien
Tested On: 12/9/99 - 12/23/99
Tested At: Yarmouth Research and Technology, Yarmouth, Maine, USA
Page 1 of 5

Certificates of Ultra Low Fugitive Emissions No. 20985-3, 8 & 16 in accordance with ISO-15848-1 "Industrial Valves"
Measurement, Test and Qualification Procedures for Fugitive Emissions "Part 1: Classification System and Qualification Procedures for Type Testing of Valves".

TÜV Rheinland Certificate No. TRASA 700-13-0019
API-6D Trunnion mounted bolted body ball valves, carbon steel (A105-WCB) construction, double block and bleed service, primarily used but not limited to the oil and gas standard and severe applications.

DACOR SERVICES
CONSULTANTS
ENGINEERING • QUALITY ASSURANCE • MANUFACTURING
DAVID J. CORNELIEN, P.E., PRESIDENT

January 22, 2005

Ruben Parades
Walworth - Inval Facility
Av. De la Industria Lote 16 Fracc. Industrial El Trebol
Tepic, Jalisco, Edo. De Mexico
CP 48000, Mexico

Reference: Witness Report - API Spec 6FA Fire Test
Number 01-1/05

This will certify that the following listed valve successfully passed all requirements of API Specification 6FA Fire Test for Valves, Third Edition dated April 1999 and API Standard 607 Fire Test for Self-Seated Quarter-Turn Valves, Fourth Edition dated May 1993. The tests were made and verified on January 21, 2005.

API 6D Trunnion Mounted Ball Valve, 12-inch Class 150 Figure 8122, Serial Number V05B01.

The successful test of the 12-inch Class 150 API 6D Ball Valve qualifies this design/type of valve as meeting the requirements of API Spec 6FA / API Std 607 for sizes 12-inch through 24-inch in pressure classes 150 and 300.

Sincerely,

David J. Cornelien P.E.
President



24002 Mathews Drive • Katy, Texas 77494
Telephone (281) 395-5275 • Telex (281) 395-5275

tuv
CERT

TÜVRheinland®
Precisely Right.

CERTIFICATE
Certificate No.: 01 202 USA-TA-00-79704

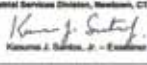
Concerning the Agreement with the Technical Requirements in:
TA-Luft 2002, VDI 2440 Nov. 2000, Sec. 3.3.1.3

Test report: 200140 **Date:** 01 December, 2000
Client: Industrial de Valdivia, S.A. de C.V.
Manufacturer's Address: Av. De la Industria Lote 18
Paseo Industrial El Trebol,
Tepic, Jalisco, Edo. De Mexico, CP 48000

The stem sealing system and internal flange connection have been successfully tested to meet the tightness criteria of 0.10⁻⁶ mbar x l/s at a helium mass spectrometer under the following conditions. The SPV Valve with the examined mechanical stuff seals fulfills the requirements of Section 3.3.1.3 of the German Clean Air Act (TA-Luft, Leakage verification) in accordance with Section 3.3.1.3 of VDI 2440 (Rev. 2000).

Kind of Valve:	Walworth API 6D Gate Valve
Valve Type:	4 inch, Class 300, Figure 8122
Sealing System:	WCB Body / CR 13 Stem & Stem / HP Seat
Sealing System:	Graphite Seals
Nominal Size, Nominal Pressure:	4 inch, ANSI 300
Inspection Media/Pressure:	Helium / 81 Bar Temperature = Ambient
Switching Cycles (times):	8 Cycles Total Cycles 800
Leakage Rate (mbar x l/s):	5.2e-7 (mbar x l/s) 5.7e-8 (mbar x l/s)
Testing Method:	Helium Leak Test - VDI 2440, Appendix A

Testing Laboratory: TÜV Rheinland North America, Inc.
Industrial Services Division, Westboro, CT, USA
Matthew J. Wasieleski, PE
404 Walnut Hill Road, N. Yarmouth, ME USA
www.yarmouthresearch.com


Klaus J. Bärlein, Jr. - Examiner



Fire Test Certificate No. 01-1/05
In accordance with API-6FA and API Standard API-607 for Trunnion Ball Valves in accordance with API-6D.

TA Luft Certificate (Fugitive Emission) Approval
ISO-5211 Top Flange, Anti-Static Device.

QUALITY CONTROL EQUIPMENT

In order to assure that WALWORTH products comply with international quality standards, in-house equipment is kept for monitoring control. Some of this equipment includes:



X-Ray Examination Equipment. WALWORTH has its own Ir-92 source in-house for the radiographic examination (RT) of castings from 0.100" up to 2 1/2" wall thickness to verify the soundness of the casting raw material.

PMI Equipment. A new generation of Positive Material Identification Equipment gives WALWORTH the capability to perform quick chemical analysis on incoming raw materials and on pieces after assembly, to certify that materials used were produced and assembled in accordance with WALWORTH's and our Customer's specifications.



Magnetic Particle Test. On a random basis for standard products or when a Customer requests MT Certification, WALWORTH has Magnetic Particle Test Equipment to perform on ferromagnetic materials.

Penetrant Test Examination. WALWORTH has the personnel and materials to perform PT examination by solvent removable or water washable techniques. NDT personnel are ASNT Certified.



Test Loop. A complete Laboratory Test loop exists for design validation of WALWORTH products. The test is performed at maximum design pressure, advances the valves from 3000 to 5000 cycles, and requires more than four months to complete.

Pressure Gradient Test Loop. This test exposes Plug valves to the extremes of both positive and negative pressure gradients to verify that the plug in a balanced plug design will prevent lock-up in the body.





Metrology Laboratory. WALWORTH developed a calibration and/or verification system in all of the equipment used in its facilities. This ensures our ability to trace measurements, control products, and comply with international standards.

Fire Test Facilities. WALWORTH has the facilities to perform fire tests in accordance with API requirements. The test exposes the valve to a fire flame at 1400 to 1800 °F (761 to 980 °C) to verify proper seal of the valve.



Low Fugitive Emissions Test. This test is performed when a Customer requires low fugitive emissions certification. Our Lab has its own LFE test equipment that is capable of measuring less than 20 ppm in both static and mechanical conditions at either ambient temperature or thermal cycle operations.

Ultrasonic Testing Equipment. Using ultrasonic techniques, we can detect sub surface flaws in materials and evaluate castings and forgings that cannot be radiographed. In addition, we utilize these techniques to measure the wall thickness of castings and forgings.



Tensile Test Equipment. We use this equipment to verify the mechanical properties of materials used for manufacturing. WALWORTH tests samples on a random basis even though we receive MTRs from our suppliers and foundries.

Hardness Test Equipments. In both lab and shop tests, WALWORTH uses hardness tester equipment, such as Rockwell B, C Brinell or Vickers, to ensure compliance with specifications.



WALWORTH API 602 VALVES

FORGED STEEL, ALLOY AND STAINLESS STEEL

WALWORTH offers this product line manufactured in accordance with API-602. and ANSI Classes 800, 1500 and 2500 for socket weld, threaded and combined ends. Also available are Integral Flanges in 150, 300, 600 and 1500 either Raised Face or ring type joint ends.

WALWORTH keeps a large quantity of these valves in stock in the most common trims used by the industry. For Certain Customer applications where forged material is not available (specifically for high nickel alloys), WALWORTH has developed this product line using sand casting. In order to keep the same quality level as forged, these castings are produced with 10% of each lot to be subject to X-ray examination.

WALWORTH offers the majority of materials known and used for this product line, including but not limited to:

1. Carbon Steels A105.
2. Low Carbon Steels LF2, LF3.
3. Low Alloy Steels F1, F11, and F22.
4. Medium Alloy Steels F5, F9, and F91.
5. Stainless Steel Valves F304, F316.
6. Low Carbon Stainless Steel F304L, F316L.
7. Duplex Stainless Steel F51, F53.
8. Nickel Alloys Inconel, and Monel.

When cast steel valves are manufactured in accordance with API-602. as an acceptable option, WALWORTH offers this product line in the following materials either socket weld, threaded or flanged ends:

1. Stainless Steels CF8, CF8M, CF8C, CF10, CG8M.
2. Low Carbon Stainless Steels CF3, CF3M, CG3M.
3. Super Stainless Steels CN7M (Alloy 20), CN3M (Alloy 20 modified), CT15C.
4. High Nickel Alloys Monel M30C, Monel M35-1, Monel CZ100, Inconel CY40, (Inconel 600), CW2M (Hastelloy C4), N12MV (Hastelloy B), CW12MW (Former Hastelloy C-276), CW6M (New Hastelloy C-276), CU5MCuC (Incoloy 825), N7M (Hastelloy B2), CW6MC (Inconel 625).
5. Duplex Stainless Steel CE8MN, CD6MN, CD3MN.
6. Super Duplex Stainless Steel CE3MN, CD3MNCuN.
7. Aluminum Bronze 95500, 95600, 95800.

TYPE	SIZE	PRESSURE CLASS AS PER API 602 AND ASME/ANSI B16.34 FOR SW OR NPT ENDS	PRESSURE CLASS AS PER API 602 AND ASME/ANSI B16.34 FOR RF OR RTJ ENDS
Gate	1/4" to 2"	800, 1500 & 2500	150, 300, 600, & 1500
Globe	1/4" to 2"	800, 1500 & 2500	150, 300, 600, & 1500
Piston Check	1/4" to 2"	800, 1500 & 2500	150, 300, 600, & 1500
Ball Check	1/4" to 2"	800, 1500 & 2500	150, 300, 600, & 1500
Swing Check	1/4" to 2"	800, 1500 & 2500	150, 300, 600, & 1500



API 602 VALVES BODY MATERIALS

WALWORTH offers the standard product line of API-602 Forged Steel valves in a wide variety of carbon steel, low and medium alloy materials, that can be used in combination with listed API-602 trims.

However, due to the actual requirements that the global market demands, WALWORTH now offers additional materials like stainless steel, nickel and exotic alloys. Also, WALWORTH offers a new product line for valves with heavy wall thickness in Aluminum Bronze, either ASTM B148 grade 95500, 95600 or 95800.

FORGING SPECIFICATION	COMMON DESIGNATION	MATERIAL SUFFIX	WROUGHT BAR SPECIFICATION	SERVICE RECOMMENDATIONS (1)	COMMON TRIM FOR THIS BASE MATERIAL	
					150 TO 600 #	900 TO 2500 #
A105	Carbon Steel	ASTM A216 WCB	Grade A105	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°F) and +800°F (+425°C)	UT, 3HF, A	HF, 3HF+HF
A105N	Carbon Steel	ASTM A216 WCC	Grade A105N	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°F) and +800°F (+425°C)	UT, 3HF, A	HF, 3HF+HF
A350 LF1	Low Temp Carbon steel	ASTM A352 LCB	Grade A350 LF1	Low temperature applications to -50 °F (-46°C).Not for use above + 650°F(+340°C).	UT, 3HF, A	HF, 3HF+HF
A350 LF2	Low Temp Carbon steel	ASTM A352 LCC	Grade A350 LF2	Low temperature applications to -50 °F (-46°C).Not for use above + 650°F(+340°C).	UT, 3HF, A	HF, 3HF+HF
A350 LF3	3 1/2 % Nickel Steel	ASTM A352 LC3	Grade A350 LF3	Low temperature applications to - 150°F (-101°C). Not for use above + 650°F(+340°C).	UT, 3HF, A	HF, 3HF+HF
A182 F1	C-1/2 Mo Low Alloy Steel	ASTM A217 WC1	Grade A182 F1	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°C) and + 1100°F(+593°C).	UT, 3HF, A	HF, 3HF+HF
A182 F2	0.75% Ni; Mo; 0.75% Cr Low Alloy Steel	ASTM A217 WC5	Grade A182 F2	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°C) and + 1100°F(+593°C).	UT, 3HF, A	HF, 3HF+HF
A182 F11	1 1/4% Chrome; 1/2% Moly Low Alloy Steel	ASTM A217 WC6	Grade A182 F11 Class 2	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°C) and + 1100°F(+593°C).	UT, 3HF, A	HF, 3HF+HF
A182 F22	2 1/4 % Chrome Low Alloy Steel	ASTM A217 WC9	Grade A182 F11 Class 3	Non-corrosive applications including water, oil and gases at temperatures between -20°F (-30°C) and + 1100°F(+593°C).	UT, 3HF, A	HF, 3HF+HF
A182 F5	5% Chrome; 1/2 % Moly, Medium Alloy Steel	ASTM A217 Grade C5	A182 F5	Mild corrosive or erosive applications as well as non-corrosive applications at temperatures between- 20°F (-30°C) and + 1200°F (+649°C).	UT, 3HF, A	HF, 3HF+HF
A182 F9	9% Chrome; 1% Moly, Medium Alloy Steel	ASTM A217 C12	Grade A182 F9	Mild corrosive or erosive applications as well as non-corrosive applications at temperatures between- 20°F (-30°C) and + 1200°F (+649°C).	UT, 3HF, A	HF, 3HF+HF

API 602 VALVES BODY MATERIALS

FORGING SPECIFICATION	COMMON DESIGNATION	MATERIAL SUFFIX	WROUGHT BAR SPECIFICATION	SERVICE RECOMMENDATIONS (1)	COMMON TRIM FOR THIS BASE MATERIAL	
					150 TO 600 #	900 TO 2500 #
A182 F91	9% Chrome; 1% Moly; V-N, Medium Alloy Steel	ASTM A217 Grade C12-A	A182 F91	Mild corrosive or erosive applications as well as non-corrosive applications at temperatures between -20°F (-30°C) and +1200°F (+649°C).	UT, 3HF, A	HF, 3HF+HF
ASTM A182 F304	18% Chrome; 8% Nickel; 0.08 % C Stainless Steel	ASTM A351 Grade CF8	ASTM A479 304	Corrosive or extremely high temperature non-corrosive serviceS between -450°F (-268°C) and +1200°F (+649°C). Above +800°F (+425°C) specify carbon content of 0.04% or greater.	4HF	4HF+HF
ASTM A182 F316	18% Chrome; 12% Nickel; 2 % Mo; 0.08 % C Stainless Steel	ASTM A351 Grade CF8M	ASTM A479 316	Corrosive or either extremely low or high temperature non-corrosive services between -450°F (-268°C) and +1200°F (+649°C). Above +800°F (+425°C)specify carbon content of 0.04% or greater.	18-8smo, 3HF	3HF+HF
ASTM A182 304L	18% Chrome; 8% Nickel; 0.03 % C Low Carbon Stainless Steel	ASTM A351 Grade CF3	ASTM A479 304L	Brackish water, phosphate solutions, pressurized water @ 570 °F (299 °C), sea water, steam.	304L, 3HF	304L, 3HF+HF
ASTM A182 F316L	18% Chrome; 12% Nickel; 2 % Mo; 0.03 % C Low Carbon Stainless Steel	ASTM A351 Grade CF3M	ASTM A479 316L	Acetic acid, calcium carbonate, calcium lactate, potable water, sea water, steam, sulfites.	316L, 3HF	316L, 3HF+HF
ASTM A182 F317L	18% Chrome; 12% Nickel; 3 % Mo; 0.03 % C Low Carbon Stainless Steel	ASTM A351 Grade CG3M	ASTM A182 F317L	Corrosive or non corrosive services to +800°F (+425°C)"	317L, 317LH	317L, 317LH
ASTM A182 F347	18% Chrome; 10% Nickel; Cb; 0.08 % C Stainless Steel	ASTM A351 Grade CF8C	ASTM A479 347	Primarily for high temperature, corrosive applications between -450°F (-268°C) and +1200°F (+649°C). Above +1000°F (+540°C) specify carbon content of 0.04% or greater. Hydrogen service."	347H, 347HF	347H, 347HF
ASTM A182 F304H	18% Chrome; 8% Nickel; 0.08 % C Stainless Steel	ASTM A351 Grade CF10	ASTM A479 304H	Corrosive or extremely high temperature non-corrosive serviceS between -450°F (-268°C) and +1200°F (+649°C). Above +800°F (+425°C) specify carbon content of 0.04% or greater.	310, 310HF	310HF
ASTM A182 F316H	18% Chrome; 8% Nickel; 2% Mo; 0.08 % C Stainless Steel	ASTM A351 Grade CF10M	ASTM A479 316H	Corrosive or extremely high temperature non-corrosive serviceS between -450°F (-268°C) and +1200°F (+649°C). Above +800°F (+425°C) specify carbon content of 0.04% or greater.	310, 310HF	310HF
ASTM A182 F317	18% Chrome; 10% Nickel; 3 % Mo; 0.08 % C Stainless Steel	ASTM A351 Grade CG8M	ASTM A182 F317	Heavy water manufacturing, Nuclear, Petroleum, Pipe Line, Power, Pulp and paper, Printing Textile, Corrosive dye solutions, ink, sulfite liquor.	317H, 21HF	317H, 21HF
ASTM A182 F310H	25% Chrome; 20% Nickel; 0.04 To 0.2 % C Super Stainless Steel	ASTM A351 Grade CK20	ASTM A182 F310H	Aircraft, Chemical processing, Oil Refining, Pulp and Paper. Corrosives Hot products around 1200 °F (649 °C), sulfite liquor, sulfuric acid (dilute).	310, 310HF	310HF
ASTM B462 N08020	19% Chrome; 28% Nickel; Cu-Mo; 0.07 % C Super Stainless Steel	ASTM A351 Grade CN7M	ASTM B473 N08020	Acetic acid (hot), brines, caustic solutions, (strong, hot), hydrochloric acid (dilute), hydrofluoric acid and hydrofluosilicic acid (dilute), nitric acid, (strong, hot), nitric-hydrofluoric pickling acids, sulfates and sulfites, sulfuric acid, (all concentrations to 150 °F (65.6 °C), sulfuric acid, phosphoric acid.	A20, A20H	A20, A20H
ASTM B462 N08020	19% Chrome; 28% Nickel; Cu-Mo; 0.03 % C Super Stainless Steel	ASTM A351 Grade CN3MN	ASTM B473 N08020	Acetic acid (hot), brines, caustic solutions, (strong, hot), hydrochloric acid (dilute), hydrofluoric acid and hydrofluosilicic acid (dilute), nitric acid, (strong, hot), nitric-hydrofluoric pickling acids, sulfates and sulfites, sulfuric acid, (all concentrations to 150 °F (65.6 °C), sulfuric acid, phosphoric acid. Better weldability properties than CN7M	A20, A20H	A20, A20H
ASTM A182 F44	20% Chrome; 18% Nickel; 6% Mo; 0.25 % C Super Stainless Steel	ASTM A351 Grade CK3MCuN	ASTM A479 S31254	Acetic Acid, antibiotics and drugs, bleaching compounds, formic acid, fruit and juices, hot air, hot water, hydrocarbons, hydrochloric acid, organic liquids and acids, nitric acid, organic salts, oxalic acid, phosphoric acid, sea water, sewage, sodium bisulfite, steam, sulfamic acid, 10 % sulfuric acid,	254HF	254HF
ASTM B564 N08810	19% Chrome; 32% Nickel; 0.05 to 0.15 % C Incoloy 800.	ASTM A351 Grade CT15C	ASTM B408 N08810		810T	810T

API 602 VALVES BODY MATERIALS

FORGING SPECIFICATION	COMMON DESIGNATION	MATERIAL SUFFIX	WROUGHT BAR SPECIFICATION	SERVICE RECOMMENDATIONS (1)	COMMON TRIM FOR THIS BASE MATERIAL	
					150 TO 600 #	900 TO 2500 #
N/A	25.5% Chrome; 5.5% Nickel; 2% Mo; 0.040% C Super Stainless Steel	ASTM A351 Grade CD4MCu	ASTM A479 S32550	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics).	32250H	32250H
ASTM B469 8904	21% Chrome; 25.5% Nickel; 4.5% Mo; 1.5%Cu; 0.02% C Super Stainless Steel	ASTM A351 Grade CN2MCuN	ASTM B625 8904		8904H	8904H
ASTM A182 F6	12% Chrome Steel	ASTM A487 Grade CA15	ASTM A276 410	Corrosive application at temperatures between -20°F (-30°C) and + 900°F (+482°C).	UT, HF	UT, HF
ASTM A182 F6	12% Chrome Steel	ASTM A487 Grade CA6NM	ASTM A276 410	Corrosive application at temperatures up to +1300°F (704°C). Boiler feed water 250 °F (115°C), sea water, steam sulfur.	UT, HF	UT, HF
ASTM B564 N04400	67% Ni; 30% Cu, Monel	ASTM M-35-1 A494 Grade	ASTM B164 N04400	Weldable grade. Good resistance to corrosion by all common organic acids and salt water. Also highly resistant to most alkaline solutions to +7W°F (+400°C)	A, AHF	A, AHF
ASTM B160 N02200	95% Nickel	ASTM CZ100 A494 Grade	ASTM B160 N02200	Chemical processing, mineral processing, food processing. Nickel is useful in handling hot concentrate alkaline or caustic solutions, reducing acids, certain food products, organic acids under certain conditions, dry chlorine and anhydrous ammonia. Cast nickel is not applicable in oxidizing acids and alkaline perchlorate.	2200	2200
ASTM B564 N06600	75% Nickel; 15% Cr; 8% Fe, Inconel 600	ASTM CY-40 A494 Grade	ASTM B166 N06600	Very good for high temperature service. Good resistance to strongly corrosive media and atmosphere to + 800°F (+425°C). Hot boiler feed water, hot caustics, hot concentrate alk water, elevated temperature oxidizing conditions.	600, 600HF	600, 600HF
ASTM B564 N06625	60% Nickel; 22% Cr; 9% Mo; 3.5% Cb, Inconel 625	ASTM CW6MC A494 Grade	ASTM B446 N06625	Very good for high temperature service. Good resistance to strongly corrosive media and atmosphere to + 800°F (+425°C).	625, 625HF	625, 625HF
ASTM B425 N08825	42% Nickel; 21.5% Cr; 3% Mo; 2.3% Cu, Incoloy 825	ASTM CU5MCuC A494 Grade	ASTM B425 N08825		825, 23HF	825, 23HF
ASTM B335 N10001	62% Nickel; 28% Mo; 5% Fe, Hastelloy B	ASTM N12MV A494 Grade	ASTM B335 N10001		10001, HB	10001, HB
ASTM B335 N10665	62% Nickel; 28% Mo; 2% Fe, Hastelloy B2	ASTM A494 Grade N7M	ASTM B335 N10665		HB	HB
ASTM B574 N06455	61% Nickel; 16% Mo; 16% Cr, Hastelloy C4	ASTM CW2M A494 Grade	ASTM B574 N06455	Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids to + 1200°F (+649°C)	6455H	6455H
ASTM B574 N10276	56% Nickel; 18% Mo; 17% Cr; 6% Fe, Hastelloy C-276 (FORMER ALLOY)	ASTM CW12MW A494 Grade	ASTM B574 N10276	Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids to + 1200°F (+649°C)	HC, HCH	HC, HCH
ASTM B574 N10276	56% Nickel; 19% Mo; 18% Cr; 16% Fe, Hastelloy C-276 (NEW ALLOY)	ASTM CW6MC A494 Grade	ASTM B574 N10276	Good resistance to strong oxidation conditions. Good properties at high temperatures, high resistance to formic, phosphoric, sulphurous and sulfuric acids to + 1200°F (+649°C)	HC, HCH	HC, HCH

API 602 VALVES BODY MATERIALS

FORGING SPECIFICATION	COMMON DESIGNATION	MATERIAL SUFFIX	WROUGHT BAR SPECIFICATION	SERVICE RECOMMENDATIONS (1)	COMMON TRIM FOR THIS BASE MATERIAL	
					150 TO 600 #	900 TO 2500 #
N/A	25.5% Chrome; 5.5% Nickel; 2% Mo; 0.040% C Duplex Stainless Steel Grade 1A.	ASTM A995 Grade CD4MCu	ASTM A479 S32550	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics).	32250H	32250H
ASTM A182 F51	24% Chrome; 9.5% Nickel; 4% Mo; 0.080% C Duplex Stainless Steel Grade 2A.	ASTM A995 Grade CE8MN	ASTM A479 32750	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics).	32750H, 31803H, 51H	32750H, 31803H, 51H
ASTM A182 F51	22% Chrome; 5% Nickel; 3% Mo; N; 0.030% C Duplex Stainless Steel Grade 4A.	ASTM A995 Grade CD3MN	ASTM A479 31803	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics).	32750H, 31803H, 51H	32750H, 31803H, 51H
ASTM A182 F53	25% Chrome; 7% Nickel; 4.5% Mo; N; 0.030% C Duplex Stainless Steel Grade 5A.	ASTM A995 Grade CeE3MN	ASTM A182 F53	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics). Useful where the Pitting Resistance Number (PREN) is required.	53H, 53HF	53H, 53HF
ASTM A182 F53	25% Chrome; 7.5% Nickel; 3.5% Mo; N; 0.030% C Duplex Stainless Steel Grade 6A.	ASTM A995 Grade CD3MWCuN	ASTM A182 F53	Concentrate brine, fatty acids, potable water, pulp water, pulp liquors at 220 °F (104 °C), sea water, stem, sulfuric acid (15-30% @ 140-160 °F (60-71 °C), sulfuric acid (35-40 % @ 185 °F (85 °C), plus 5 % organics). Useful where the Pitting Resistance Number (PREN) is required.	53H, 53HF	53H, 53HF
N/A	79% min Copper; 4.5% Nickel; 9% Aluminum; 3-4.5% Fe; 0.03 % max Pb.	ASTM B148 Grade 95800	ASTM C63000	Sea water service.	BCE630	BCE630

(1) The above list of consuming industries and corrosive materials are useful as examples of typical applications where these materials can be used as a guide; however, the responsibility of choosing the proper alloy is that of the Engineering firm or End User.

NOMENCLATURE

TYPE	CLASS
ST6	STELLITE 6
13%Cr	STAINLESS STEEL 410
316	STAINLESS STEEL 316
304	STAINLESS STEEL 304
HC	HASTELLOY "C"
CN7M	CHROME-NICKEL STEEL
321	STAINLESS STEEL 321
ST21	STELLITE 21
A20	STAINLESS STEEL ALLOY 20
347	STAINLESS STEEL 347
321	STAINLESS STEEL 321
8810	STAINLESS STEEL 8810
625	INCONEL 625
410 T	STAINLESS 410 (HARDNESS 200-275 BHN)

TYPE	CLASS
316L	STAINLESS STEEL 316L
HB	HASTELLOY "B"
317L	STAINLESS STEEL 317L
17 4PH	STAINLESS STEEL 17 4PH
317	STAINLESS STEEL 317
825	INCOLOY 825
304L	STAINLESS STEEL 304L
K500	MONEL K500
31803	STAINLESS STEEL 31803
718	INCONEL 718
8367	STAINLESS STEEL 8367
TC	TUNGSTEN CARBIDE
W1	WALWELD-100
NUC	NUCALLOY

WALWORTH API 602 VALVES TRIM ARRANGEMENTS

WALWORTH valves are available in the widest range of standard and special trims available in the Industry. The following table shows the most popular trims used for the valves currently offered by the Company.

Special trims as per Customer requirements are available upon request. Please contact your closest WALWORTH Distributor.

WALWORTH TRIM Nr.	API-602 TRIM Nr.	SEAL MATERIAL TYPE	STEM AND OTHER TRIM PARTS (1)	WEDGE/DISC SEAT SURFACES	BODY SEAT SURFACES (2)
AA	1	13Cr-0.75Ni-1Mn	SS-410 (200-275 HBN)	SS-410 (200 HBN)	SS-410 (250 HBN min)
18-8	2	19Cr-9.5Ni-2Mn-0.08C	SS-304	SS-304	SS-304
310	3	25Cr-20.5Ni-2Mn	SS-310	SS-310	SS-310
N/A	4	13Cr-0.75Ni-1Mn	SS-410 (200-275 HBN)	SS-410 (200-275 HBN)	SS-410 (275 HBN min)
HF	5 OR 5A	13Cr-0.5Ni-1Mn/Co-Cr-A	SS-410(200-275 HBN)	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
AAA	6	13Cr-0.5Ni-1Mn/Ni-Cu	SS-410(200-275 HBN)	SS-410(250 HBN min)	Monel 400 (175 HBN min)
N/A	7	13Cr-0.5Ni-1Mo/13Cr-0.5Ni-1Mo	SS-410(200-275 HBN)	SS-410(250 HBN min)	SS-410(750 HBN min)
UT	8 OR 8A	13Cr-0.75Ni-1Mn/1/2Co-Cr-A	SS-410 (200-275 HBN)	SS-410 (250 HBN min)	Stellite 6 (350 HBN min)
A	9	70Ni-30Cu	UN N04400 (Monel 400)	UN N04400 (Monel 400)	UN N04400 (Monel 400)
18-8smo	10	18Cr-12Ni-2.5Mo-2Mn	SS-316	SS-316	SS-316
AHF	11 OR 11A	70Ni-30Cu/1/2Co-Cr-A	UN N04400 (Monel 400)	UN N04400 (Monel 400)	Stellite 6 (350 HBN min)
3HF	12 OR 12A	18Cr-12Ni-2.5Mo-2Mn/1/2Co-Cr-A	SS-316	SS-316	Stellite 6 (350 HBN min)
A20	13	29Ni-19Cr-2.5Mo-0.07C	UNS N08020 (Alloy 20)	UNS N08020 (Alloy 20)	UNS N08020 (Alloy 20)
A20H	14 OR 14A	29Ni-19Cr-2.5Mo-0.07C/1/2Co-Cr-A	UNS N08020 (Alloy 20)	UNS N08020 (Alloy 20)	Stellite 6 (350 HBN min)
NUC	NOT SPECIFIED	13Cr-0.5Ni-1Mn/NUCALLOY	SS-410(200-275 HBN)	NUCALLOY	NUCALLOY
4HF	NOT SPECIFIED	19Cr-9.5Ni-2Mn-0.08C/1/2Co-Cr-A	SS-304	SS-304	Stellite 6 (350 HBN min)
4HF+HF	NOT SPECIFIED	19Cr-9.5Ni-2Mn-0.08C/Co-Cr-A	SS-304	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
304L	NOT SPECIFIED	19Cr-9.5Ni-2Mn-0.03C	SS-304L	SS-304L	SS-304L
1HF	NOT SPECIFIED	18Cr-12Ni-2.5Mo-2Mn/Co-Cr-Mo	SS-316	Stellite 21 (320 HBN min)	Stellite 21 (320 HBN min)
3HF+HF	16	18Cr-12Ni-2.5Mo-2Mn/Co-Cr-A	SS-316	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
3TC (3)	NOT SPECIFIED	18Cr-8Ni-Mo/TgC	SS-316/Tungsten carbide	Tungsten Carbide	Stellite 6 (350 HBN min)
316L	NOT SPECIFIED	17Cr-12Ni-2.5Mo-2Mn0.03C	SS-316L	SS-316L	SS-316L
3LHF	NOT SPECIFIED	17Cr-12Ni-2.5Mo-2Mn0.03C/1/2Co-Cr-A	SS-316L	SS-316L	Stellite 6 (350 HBN min)
3HFL	NOT SPECIFIED	17Cr-12Ni-2.5Mo-2Mn0.03C/Co-Cr-A	SS-316L	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
21HF	NOT SPECIFIED	19Cr-11.5Ni-3.5Mo/Co-Cr-A	SS-317	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
317	NOT SPECIFIED	19Cr-11.5Ni-3.5Mo	SS-317	SS-317	SS-317

WALWORTH API 602 VALVES TRIM ARRANGEMENTS

WALWORTH TRIM Nr.	API-602 TRIM Nr.	SEAL MATERIAL TYPE	STEM AND OTHER TRIM PARTS (1)	WEDGE/DISC SEAT SURFACES	BODY SEAT SURFACES (2)
317H	NOT SPECIFIED	19Cr-11.5Ni-3.5Mo/1/2Co-Cr-A	SS-317	SS-317	Stellite 6 (350 HBN min)
317LH	NOT SPECIFIED	19Cr-13Ni-3.5Mo/Co-Cr-A	SS-317L	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
317L	NOT SPECIFIED	19Cr-13Ni-3.5Mo-0.03C	SS-317L	SS-317L	SS-317L
317LS	NOT SPECIFIED	19Cr-13Ni-3.5Mo/1/2Co-Cr-A	SS-317L	SS-317L	Stellite 6 (350 HBN min)
2HF	NOT SPECIFIED	18Cr-10Ni-0.1N/Co-Cr-A	SS-321	SS-321	Stellite 6 (350 HBN min)
321F	NOT SPECIFIED	18.5Cr-11Ni-2Mn/Co-Cr-A	SS-321	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
321	NOT SPECIFIED	19Cr-11.5Ni-3.5Mo	SS-321	SS-321	SS-321
347HF	NOT SPECIFIED	18.5Cr-11Ni-2Mn-Co/Co-Cr-A	SS-347	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
347	NOT SPECIFIED	18.5Cr-11Ni-2Mn-Co	SS-347	SS-347	SS-347
347H	NOT SPECIFIED	18.5Cr-11Ni-2Mn-Co/1/2Co-Cr-A	SS-347	SS-347	Stellite 6 (350 HBN min)
254HF	NOT SPECIFIED	20Cr-18Ni-6.2Mo-0.02C-Cu+N	UNS S31254	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
51H	NOT SPECIFIED	22Cr-5.5Ni-3Mo-N-0.03C/Co-Cr-A	UNS S31803	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
31803H	NOT SPECIFIED	22Cr-5.5Ni-3Mo-N-0.03C/Co-Cr-A	UNS S31803	UNS S31803	Stellite 6 (350 HBN min)
T9	NOT SPECIFIED	16Cr-4Ni-4Cu-Nb+Ta/Co-Cr	17-4pH	Triballoy 900	Triballoy 900
HC	NOT SPECIFIED	55Ni-15.5Cr-16Mo-3Tg-4Fe	Hastelloy C-276	Hastelloy C-276	Hastelloy C-276
HCH	NOT SPECIFIED	55Ni-15.5Cr-16Mo-3Tg-4Fe/1/2Co-Cr-A	Hastelloy C-276	Hastelloy C-276	Stellite 6 (350 HBN min)
UOP	NOT SPECIFIED	63Ni-30Cu-Al+Ti/70Ni-30Cu	UN N05500 (Monel K-500)	UN N04400 (Monel 400)	UN N04400 (Monel 400)
625	NOT SPECIFIED	60Ni-22Cr-9Mo-3.5Cb	UNS N06625 (Incoloy 625)	UNS N06625 (Incoloy 625)	UNS N06625 (Incoloy 625)
625HF	NOT SPECIFIED	60Ni-22Cr-9Mo-3.5Cb/Co-Cr-A	UNS N06625 (Incoloy 625)	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
8367HF+HF	NOT SPECIFIED	25Ni-20Cr-6.5Mo-2Mn-0.03C/Co-Cr-A	UNS N08367 (AL6XN)	Stellite 6 (350 HBN min)	Stellite 6 (350 HBN min)
810T	NOT SPECIFIED	33Ni-21Cr-39.5Fe-1.5Mn	UNS N08810 (Incoloy 800H)	UNS N08810 (Incoloy 800H)	UNS N08810 (Incoloy 800H)
825	NOT SPECIFIED	42Ni-21.5Cr-3Mo-Ti+Al-0.05C	UNS N08825 (Incoloy 825)	UNS N08825 (Incoloy 825)	UNS N08825 (Incoloy 825)
23HF	NOT SPECIFIED	42Ni-21.5Cr-3Mo/CO-Cr-Mo	UNS N08825 (Incoloy 825)	Stellite 21 (320 HBN min)	Stellite 21 (320 HBN min)
HB	NOT SPECIFIED	66Ni-28Mo-1Mn-0.02C	UNS N10665 (Hastelloy B2)	UNS N10665 (Hastelloy B2)	UNS N10665 (Hastelloy B2)
BCE630	NOT SPECIFIED	79Cu-4.5Ni-9Al-4Fe-0.03Pb	ASTMB B150 63000	ASTMB B150 63000	ASTM B150 63000
HB	NOT SPECIFIED	66Ni-28Mo-1Mn-0.02C	UNS N10665 (Hastelloy B2)	UNS N10665 (Hastelloy B2)	UNS N10665 (Hastelloy B2)

COMMON CONSTRUCTION MATERIALS COMBINATION

The following table shows the most common combination in between base material and trim. There are many other trims which can be combined with these base materials, please refer to other sections of this catalog for additional information.

DESCRIPTION	ASTM A 105 TRIM UT (API-602 Nr. 8)	ASTM A182 Grade F11 TRIM UT (API-602 Nr. 8)	ASTM A182 Grade F22 TRIM UT (API-602 Nr. 8)	ASTM A182 Grade F5TRIM UT (API-602 Nr. 8)	ASTM A182 Grade F9 TRIM UT (API-602 Nr. 8)	ASTM A350 Grade LF1 TRIM UT (API-602 Nr. 8)
BODY	ASTM A 105	ASTM A182 Grade F11	ASTM A182 Grade F22	ASTM A182 Grade F5	ASTM A182 Grade F9	ASTM A350 Grade LF1
BONNET GASKET	304+FLEXIBLE GRAPHITE	304+FLEXIBLE GRAPHITE	304+FLEXIBLE GRAPHITE	304+FLEXIBLE GRAPHITE	304+FLEXIBLE GRAPHITE	304+FLEXIBLE GRAPHITE
SEAT	ASTM A 276 TYPE 410 + ST6	ASTM A 276 TYPE 410 + ST6	ASTM A 276 TYPE 410 + ST6	ASTM A 276 TYPE 410 + ST6	ASTM A 276 TYPE 410 + ST6	ASTM A 276 TYPE 410 + ST6
WEDGE	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420
STEM PACKING	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE	FLEXIBLE GRAPHITE
BONNET	ASTM A105	ASTM A182 Grade F11	ASTM A182 Grade F22	ASTM A182 Grade F5	ASTM A182 Grade F9	ASTM A350 Grade LF1
STEM	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410
EYE BOLT PIN	ASTM A 276 TYPE 304	ASTM A 276 TYPE 304	ASTM A 276 TYPE 304	ASTM A 276 TYPE 304	ASTM A 276 TYPE 304	ASTM A 276 TYPE 304
EYE BOLT	ASTM A193 GR. B7	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16
BONNET BOLTS	ASTM A193 GR. B7	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16	ASTM A193 GR. B16
GLAND NUT	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420
GLAND PLATE	ASTM A105	ASTM A182 Grade F11	ASTM A182 Grade F22	ASTM A182 Grade F5	ASTM A182 Grade F9	ASTM A350 Grade LF1
GLAND BUSHING	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420	ASTM A 276 TYPE 420
STEM NUT	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410	ASTM A 276 TYPE 410
HANDWHEEL	ASTM A 197	ASTM A 197	ASTM A 197	ASTM A 197	ASTM A 197	ASTM A 197
HANDWHEEL NUT	ASTM A194 GR. 2H	ASTM A194 GR. 2H	ASTM A194 GR. 2H	ASTM A194 GR. 2H	ASTM A194 GR. 2H	ASTM A194 GR. 2H
IDENTIFICATION PLATE	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM	ALUMINUM

CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES

The following table shows the nominal chemical composition and mechanical properties for the most common materials supplied. Additional information can be requested from your closest WALWORTH Distributor for other steel, stainless steels or Nickel alloys.

CHEMICAL COMPOSITION AND MECHANICAL PROPERTIES										
Elements and Properties	CARBON STEEL	LOW CARBON STEEL		LOW ALLOY STEEL		MEDIUM ALLOY STEEL		STAINLESS STEEL		
	ASTM-A105	ASTM-A350		ASTM-A182				ASTM-A182		
		LF1	LF2	F11	F22	F5	F9	F304	F316	F347
Carbon	0.35	0.30	0.30	0.10-0.20	0.05-0.15	0.15	0.15	0.030	0.030	0.080
Manganese	0.60-1.05	0.60-1.05	0.60-1.05	0.30-0.80	0.30-0.80	0.30-0.60	0.30-0.60	2.00	2.00	2.00
Phosphorus	0.035	0.035	0.035	0.040	0.040	0.03	0.030	0.045	0.045	0.045
Sulphur	0.040	0.040	0.040	0.040	0.040	0.03	0.030	0.030	0.030	0.030
Silicon	0.10-0.35	0.10-0.35	0.10-0.35	0.50-1.00	0.50	0.50	0.50-1.00	1.00	1.00	1.00
Nickel	0.40	0.40	0.40	-	-	0.50	-	8.0-11.0	10.0-14.0	9.0-13.0
Chromium	0.30	0.30	0.30	1.00-1.50	2.00-2.50	4.00-6.00	8.0-10.0	18.0-20.0	16.0-18.0	17.0-20.0
Molybdenum	0.12	0.12	0.12	0.44-0.65	0.87-1.13	0.44-0.65	0.90-1.10	-	2.0-3.0	-
Copper	0.40	0.40	0.40	-	-	-	-	-	-	-
Columbium	0.02	0.02	0.02	-	-	-	-	-	-	* 2
Vanadium	0.05	0.05	0.05	-	-	-	-	-	-	-
Yield Strength PSI minimum	70,000	71,000	71,000	70,000	75,000	70,000	85,000	75,000	75,000	75,000
Elongation In 2"% minimum	36,000	36,000	36,000	40,000	45,000	40,000	55,000	30,000	30,000	30,000
ReductionArea % minimum	22	22	22	20	20	20	20	30	30	30
Hardness (HB) Maximum	30	30	30	30	30	35	40	50	50	50
Notes:										
1. The percentage (%) shown on the elements is the maximum except where ranges are indicated.										
2. Steel F347 should have a Columbium content of not less than 8 times the carbon content, but not exceeding 1%.										

WALWORTH API 602 GATE VALVES

The Gate Valve is used when the need exists for a device that allows an interruption or cut off in the flow of fluid. Gate Valves are not to be used for flow modulation as the high velocity through a partially open valve may result in erosive damage to the wedge and seats. Under normal operating conditions, the valve should remain either fully open or fully closed. Installation of a Gate Valve is independent of the flow direction.

DESIGN FEATURES

- Valves in accordance with API-602..
- Socket Weld, Threaded, Combined or Flanged RF or RTJ ends.
- Bolted Bonnet or Welded Bonnet options.
- Expanded Seat Rings.
- Low fugitive emissions control.
- NACE Service either MR-0175 or MR-0103.
- Test in accordance with API-598.

Rising stem with precision acme double thread for quick operation.

Stem-gate connection designed so that under severe applied loads (stuck gate), the stem will fail outside of the stuffing box pressure boundary.

Stem packing is designed for optimum control of fugitive emissions leakage to the atmosphere. The ultra-low emission leakage rate is assured by the fine finish on the stem sealing area, the reduced diametrical clearances and the stem straightness control.

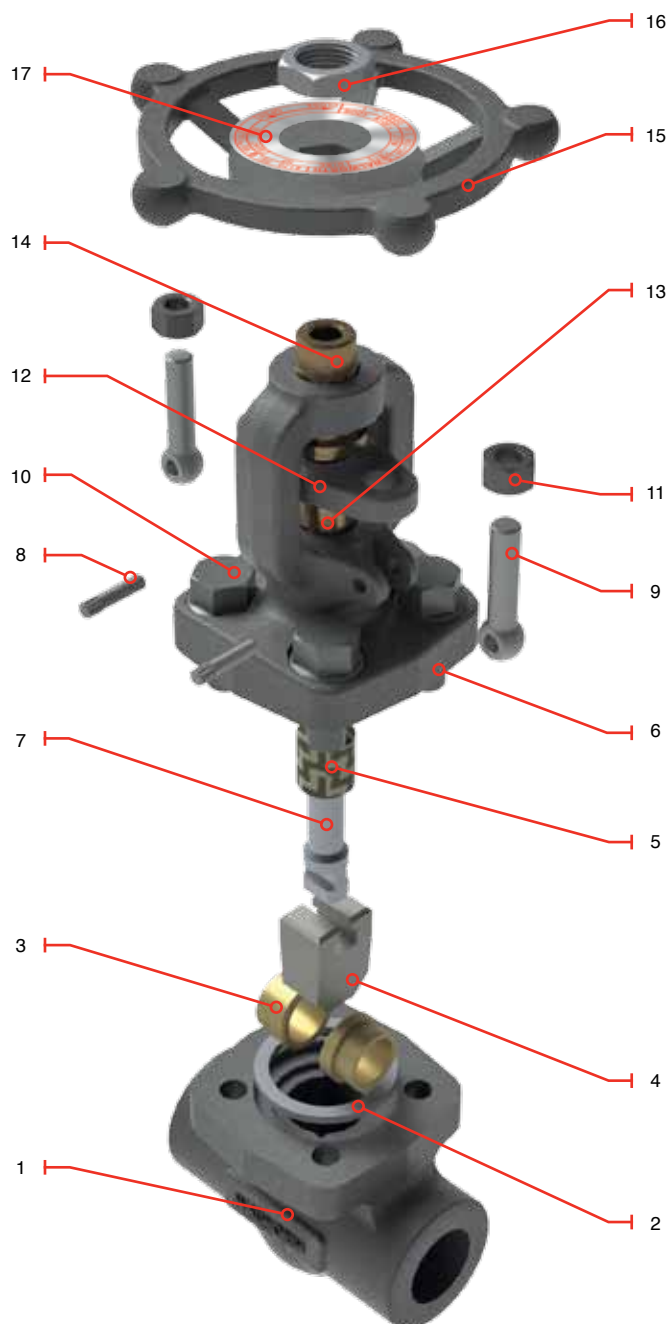
Backseat designed to relieve back pressure on the stem packing when fully seated. Replacing stem packing under pressure is not recommended.

Body to bonnet joint designed to apply a uniform load to the gasket to assure a leak proof seal.

Stellite seat rings provide increased resistance to wear, abrasion and erosion of the sealing surfaces.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105
1	BODY	A105
2	BONNET GASKET	304+FLEXIBLE GRAPHITE
3	SEAT	A276-410+STL
4	WEDGE	A276-420
5	STEM PACKING	FLEXIBLE GRAPHITE
6	BONNET	A105
7	STEM	A276-410
8	EYE BOLT PIN	A276-304
9	EYE BOLT	A193-B7
10	BONNET BOLTS	A193-B7
11	GLAND NUT	A276-420
12	GLAND PLATE	A105
13	GLAND BUSHING	A276-420
14	STEM NUT	A276-410
15	HANDWHEEL	A197
16	HANDWHEEL NUT	A194-2H
17	IDENTIFICATION PLATE	ALUMINIUM



API 602 GATE VALVES TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Bonnet	950S	Threaded
		950SW	Socket Weld
		950SSW	Threaded X Socket Weld
Full	800 Bolted Bonnet	958S	Threaded
		958SW	Socket Weld
		958SSW	Threaded X Socket Weld
Standard	800 Welded Bonnet	957S	Threaded
		957SW	Socket Weld
		957SSW	Threaded X Socket Weld
Full	800 Welded Bonnet	959S	Threaded
		959SW	Socket Weld
		959SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 950 Standard Port, Bolted Bonnet

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	4.72	5.51
	mm	79	79	79	92	111	120	120	140
B (open)	in	5.87	5.87	6.02	6.02	7.28	8.74	9.45	10.98
	mm	149	149	153	153	185	222	240	279
C	in	3.94	3.94	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	100	100	125	160	160	180
D	in	0.31	0.39	0.51	0.51	0.71	1.14	1.14	1.44
	mm	8	10	13	13	18	29	29	36.5
E	in	1.34	1.34	1.34	1.57	1.93	2.52	2.52	3.07
	mm	34	34	34	40	49	64	64	78
Weight	lb	4.18	4.18	4.4	4.84	7.92	12.1	13.64	21.34
	kg	1.9	1.9	2.0	2.2	3.6	5.5	6.2	9.7

Fig. 957 Standard Port, Welded Bonnet

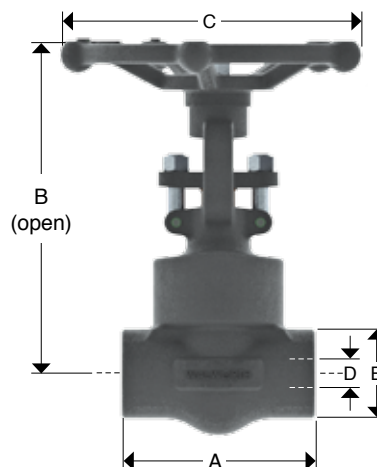
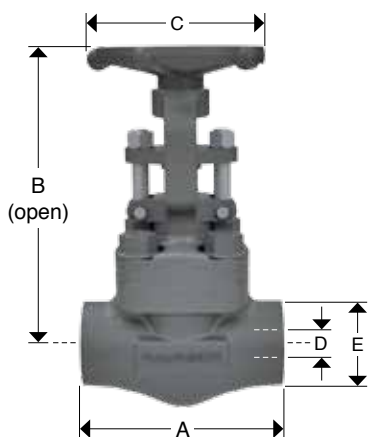
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	4.72	5.51
	mm	79	79	79	92	111	120	120	140
B (open)	in	6.18	6.18	6.34	6.34	7.48	8.66	9.45	10.98
	mm	157	157	161	161	190	220	240	279
C	in	3.94	3.94	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	100	100	125	160	160	180
D	in	0.31	0.39	0.51	0.51	0.71	1.14	1.14	1.45
	mm	8	10	13	13	18	29	29	36.8
E	in	1.34	1.34	1.34	1.57	1.93	2.52	2.52	3.07
	mm	34	34	34	40	49	64	64	78
Weight	lb	3.74	3.74	3.96	4.4	7.48	11.66	13.2	20.9
	kg	1.7	1.7	1.8	2.0	3.4	5.3	6.0	9.5

Fig. 958 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	4.72	5.51	6.30
	mm	92	111	120	120	140	160
B (open)	in	6.02	7.28	8.74	9.45	10.98	13.11
	mm	153	185	222	240	279	333
C	in	3.94	4.92	6.30	6.30	7.09	7.87
	mm	100	125	160	160	180	200
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
E	in	1.57	1.93	2.28	2.4	3.07	3.23
	mm	40	49	58	61	78	82
Weight	lb	7.26	8.36	12.76	14.74	22.66	33.44
	kg	3.3	3.8	5.8	6.7	10.3	15.2

Fig. 959 Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	4.72	5.51	6.30
	mm	92	111	120	120	140	160
B (open)	in	6.34	7.48	8.66	9.45	10.98	12.56
	mm	161	190	220	240	279	319
C	in	3.94	4.92	6.30	6.30	7.09	7.87
	mm	100	125	160	160	180	200
D	in	0.51	0.71	0.94	1.14	1.45	1.45
	mm	13	18	24	29	36.8	36.8
E	in	1.57	1.93	2.28	2.4	3.07	3.46
	mm	40	49	58	61	78	88
Weight	lb	7.04	8.14	12.54	14.52	22.44	33.22
	kg	3.2	3.7	5.7	6.6	10.2	15.1



API 602 GATE VALVES TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Bonnet	1950S	Threaded
		1950SW	Socket Weld
Full	1500 Bolted Bonnet	1950SSW	Threaded X Socket Weld
		1951S	Threaded
Standard	1500 Bolted Bonnet	1951SW	Socket Weld
		1951SSW	Threaded X Socket Weld
Standard	1500 Welded Bonnet	1957S	Threaded
		1957SW	Socket Weld
Full	1500 Welded Bonnet	1957SSW	Threaded X Socket Weld
		1958S	Threaded
Full	1500 Welded Bonnet	1958SW	Socket Weld
		1958SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 1950 Standard Port, Bolted Bonnet

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.62	3.62	4.37	4.72	4.72	5.51	6.30
	mm	79	92	92	111	120	120	140	160
B (open)	in	6.89	7.01	7.13	7.13	8.58	9.33	10.79	12.56
	mm	175	178	181	181	218	237	274	319
C	in	3.94	3.94	4.92	4.92	6.30	6.30	7.09	7.87
	mm	100	100	125	125	160	160	180	200
D	in	0.31	0.51	0.51	0.51	0.71	0.94	1.14	1.45
	mm	8	13	13	13	18	24	29	36.8
E	in	1.34	1.57	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34	40	42	49	58	64	78	88.0
Weight	lb	6.60	7.04	7.70	8.80	13.20	15.40	23.76	34.10
	kg	3.0	3.2	3.5	4.0	6.0	7.0	10.8	15.5

Fig. 1957 Standard Port, Welded Bonnet

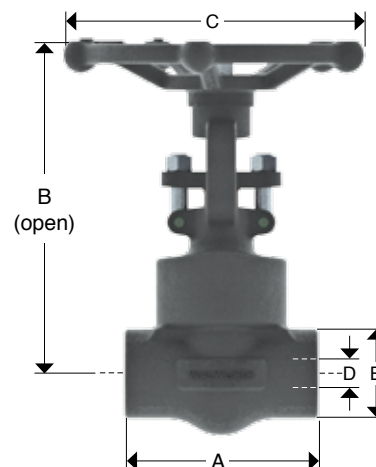
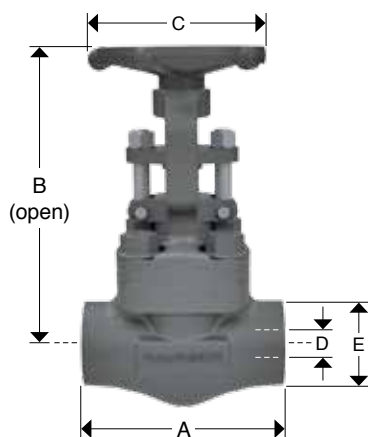
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.62	3.62	4.37	4.72	4.72	5.51	6.30
	mm	79	92	92	111	120	120	140	160
B (open)	in	6.89	7.01	7.13	7.13	8.58	9.33	10.79	12.56
	mm	175	178	181	181	218	237	274	319
C	in	3.94	3.94	4.92	4.92	6.30	6.30	7.09	7.87
	mm	100	100	125	125	160	160	180	200
D	in	0.31	0.51	0.51	0.51	0.71	0.94	1.14	1.45
	mm	8	13	13	13	18	24	29	36.8
E	in	1.34	1.57	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34	40	42	49	58	64	78	88
Weight	lb	6.16	6.6	7.26	8.14	12.54	14.74	23.1	33.44
	kg	2.8	3.0	3.3	3.7	5.7	6.7	10.5	15.2

Fig. 1951 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	4.72	5.51	6.30	9.06
	mm	111	120	120	140	160	230
B (open)	in	7.13	8.58	9.33	10.79	12.56	13.58
	mm	181	218	237	274	319	345
C	in	4.92	6.30	6.30	7.09	7.87	7.87
	mm	125	160	160	180	200	200
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
E	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49	58	64	78	88	88
Weight	lb	9.46	13.86	16.06	24.64	34.98	36.3
	kg	4.3	6.3	7.3	11.2	15.9	16.5

Fig. 1958 Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	4.72	5.51	6.30	9.06
	mm	111	120	120	140	160	230
B (open)	in	7.13	8.58	9.33	10.79	12.56	13.58
	mm	181	218	237	274	319	345
C	in	4.92	6.30	6.30	7.09	7.87	7.87
	mm	125	160	160	180	200	200
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
E	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49	58	64	78	88	88
Weight	lb	9.24	13.64	15.84	24.42	34.76	36.08
	kg	4.2	6.2	7.2	11.1	15.8	16.4



API 602 GATE VALVES TH & SW, CLASS 2500

Design Characteristics

- API 602 & ASME B16.34
- Welded Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500 Welded Bonnet	952S 952SW 952SSW	Threaded Socket Weld Threaded X Socket Weldr
Full	2500 Welded Bonnet	962S 962SW 962SSW	Threaded Socket Weld Threaded X Socket Weldr

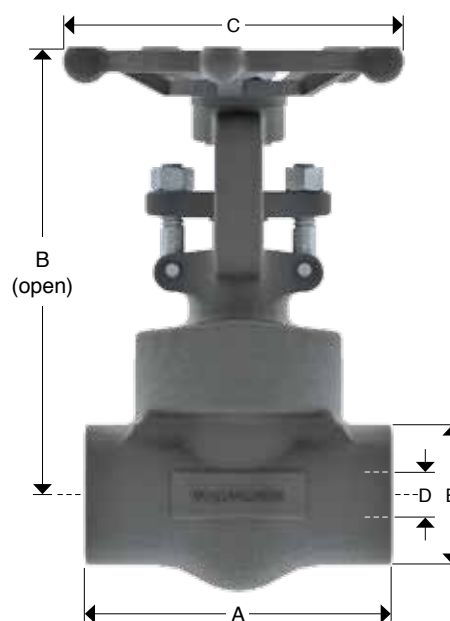
Dimensions and Weights

Fig. 952 Welded Bonnet, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	5.91	6.69	7.87	7.87	9.84
	mm	150	150	170	200	200	250
B (open)	in	11.1	11.1	12.8	14.7	14.8	17
	mm	284	284	327	374	377	434
C	in	6.30	6.30	7.87	9.84	9.84	11.81
	mm	160	160	200	250	250	300
D	in	0.55	0.55	0.75	0.98	1.10	1.38
	mm	14	14	19	25	28	35
E	in	2.05	2.05	2.52	3.15	3.15	3.74
	mm	52.0	52.0	64.0	80.0	80.0	95.0
Weight	lb	22	21.56	49.5	69.74	70.4	83.6
	kg	10	9.8	22.5	31.7	32	38

Fig. 962 Welded Bonnet, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	6.69	7.87	7.87	9.84	PCR
	mm	150	170	200	200	250	
B (open)	in	11.1	12.8	14.7	14.8	17	PCR
	mm	284	327	374	377	434	
C	in	6.30	7.87	9.84	9.84	11.81	PCR
	mm	160	200	250	250	300	
D	in	0.55	0.75	0.98	1.10	1.38	PCR
	mm	14	19	25	28	35	
E	in	2.05	2.52	3.15	3.15	3.74	PCR
	mm	52.0	64.0	80.0	80.0	95.0	
Weight	lb	21.56	49.5	69.74	70.4	83.6	PCR
	kg	9.8	22.5	31.7	32	38	



API 602 GATE VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	150	9515RF 9515RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	300	9530RF 9530RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	600	9560RF 9560RTJ	Flanged Raised Face Flanged Ring Type Joint

Dimensions and Weights

Fig. 9515 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	7.00
	mm	108	117	127	140	165	178
A (RJ)	in	-	-	5.50	6.00	7.00	7.50
	mm	-	-	140	153	178	191
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.51	0.71	0.94	1.14	1.45
	mm	13	13	18	24	29	36.8
Weight	lb	6.6	7.7	12.1	14.96	22.88	31.68
	kg	3.0	3.5	5.5	6.8	10.4	14.4

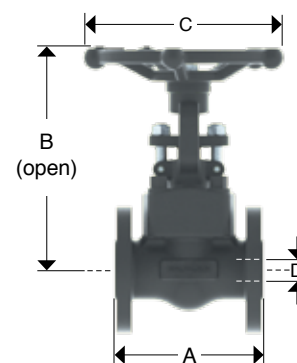


Fig. 9530 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	5.50	6.00	6.50	7.00	7.50	8.50
	mm	140	152	165	178	190	216
A (RJ)	in	5.94	6.50	7.00	7.50	8.00	9.13
	mm	151	165	178	191	203	232
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.51	0.71	0.94	1.14	1.45
	mm	13	13	18	24	29	36.8
Weight	lb	7.92	10.78	15.4	20.68	29.26	39.6
	kg	3.60	4.90	7.00	9.40	13.30	18.00

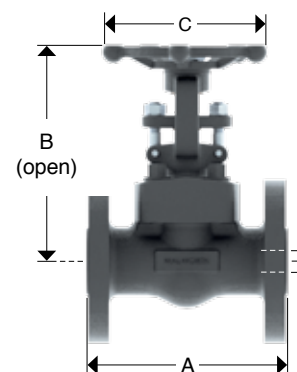
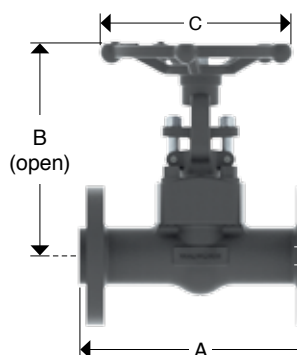


Fig. 9560 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.63
	mm	163	190	216	229	241	295
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.51	0.71	0.94	1.14	1.45
	mm	13	13	18	24	29	36.8
Weight	lb	9.24	12.76	19.36	26.62	33	42.9
	kg	4.20	5.80	8.80	12.10	15.00	19.50



API 602 GATE VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	150	9518RF 9518RTJ	Flanged Raised Face Flanged Ring Type Joint
Full	300	9538RF 9538RTJ	Flanged Raised Face Flanged Ring Type Joint
Full	600	9568RF 9568RTJ	Flanged Raised Face Flanged Ring Type Joint

Dimensions and Weights

Fig. 9518 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	7.00
	mm	108	117	127	140	165	178
A (RJ)	in	-	-	5.50	6.00	7.00	7.50
	mm	-	-	140	153	178	191
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
Weight	lb	6.6	7.7	12.1	14.96	22.88	31.68
	kg	3.0	3.5	5.5	6.8	10.4	14.4

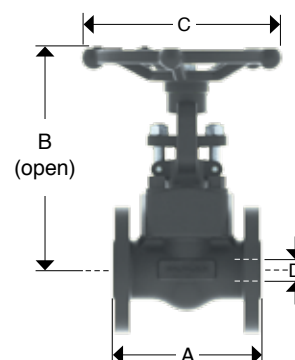


Fig. 9538 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	5.50	6.00	6.50	7.00	7.50	8.50
	mm	140	152	165	178	190	216
A (RJ)	in	5.94	6.50	7.00	7.50	8.00	9.13
	mm	151	165	178	191	203	232
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
Weight	lb	7.92	10.78	15.4	20.68	29.26	39.6
	kg	3.60	4.90	7.00	9.40	13.30	18.00

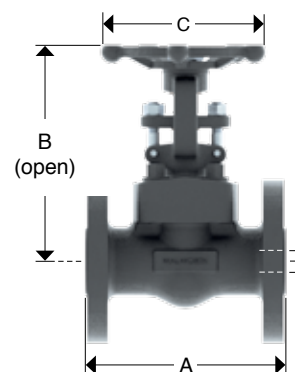
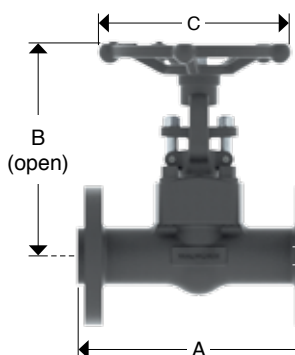


Fig. 9568 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.63
	mm	163	190	216	229	241	295
B (open)	in	6.02	6.02	7.28	8.74	9.45	10.98
	mm	153	153	185	222	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.71	0.94	1.14	1.45	1.89
	mm	13	18	24	29	37	48
Weight	lb	9.24	12.76	19.36	26.62	33	42.9
	kg	4.20	5.80	8.80	12.10	15.00	19.50



API 602 GATE VALVES RF/RTJ, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Solid Wedge
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Expanded Seat Rings

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Bonnet	19515RF 19515RTJ	Flanged Raised Face Flanged Ring Type Joint
Full	1500 Bolted Bonnet	19185RF 19185RTJ	Flanged Raised Face Flanged Ring Type Joint

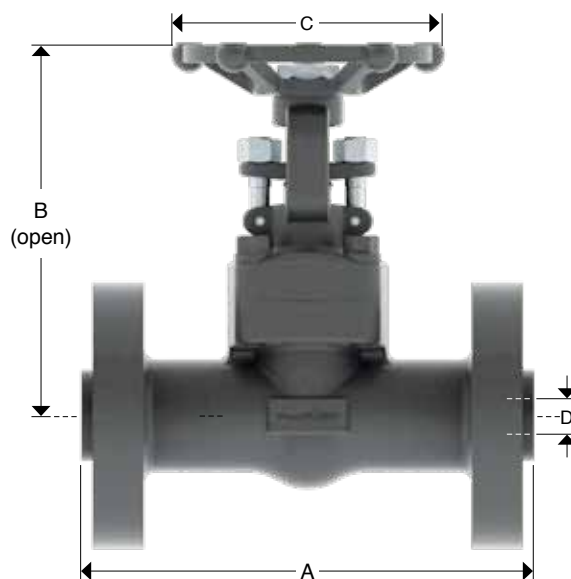
Dimensions and Weights

Fig. 19515 Standard Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RJ)	in	-	-	10.00	11.00	12.00	14.50
	mm	-	-	254	279	305	368
A (RJ)	in	-	-	10.00	11.00	12.00	14.63
	mm	-	-	254	279	305	371
B (open)	in	7.13	7.13	11.06	9.33	10.79	12.56
	mm	181	181	281	237	274	319
C	in	4.92	4.92	6.30	6.30	7.09	7.87
	mm	125	125	160	160	180	200
D	in	0.51	0.51	0.71	0.94	1.14	1.45
	mm	13	13	18	24	29	36.8
Weight	lb	15.84	25.3	34.32	35.64	50.16	62.04
	kg	7.2	11.5	15.6	16.2	22.8	28.2

Fig. 19185 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RJ)	in	-	-	10.00	11.00	12.00	14.50
	mm	-	-	254	279	305	368
A (RJ)	in	-	-	10.00	11.00	12.00	14.63
	mm	-	-	254	279	305	371
B (open)	in	7.13	7.13	9.33	10.79	12.56	13.78
	mm	181	181	237	274	319	350
C	in	4.92	6.30	6.30	7.09	7.87	8.66
	mm	125	160	160	180	200	220
D	in	0.51	0.71	0.94	1.14	1.45	1.88
	mm	13	18	24	29	37	48
Weight	lb	25.3	34.32	35.64	50.16	62.04	77
	kg	11.5	15.6	16.2	22.8	28.2	35.0



WALWORTH API 602 GLOBE VALVES

The Globe Valves are primarily used to modulate or regulate the volume of the flow.

A Globe Valve is not recommended when a continuous full flow of fluid is required due to the high pressure drop inherent to the design of a Globe Valve.

This type of valve should always be installed so the flow intake enters through the base of the valve seat. The valve has an arrow stamped on the body to indicate the preferred direction on flow.

Globe Valves may be used with fluids containing particles in suspension.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket Weld, Threaded, Combined or Flanged RF or RTJ ends.
- Bolted Bonnet or Welded Bonnet options.
- Standard or Full Port.
- Low fugitive emissions control.
- NACE Service either MR-0175 or MR-0103.
- Test in accordance with API-598.

Rising stem with precision acme thread.

Stem packing is designed for optimum control of fugitive emissions leakage to the atmosphere. The ultra-low emission leakage rate is assured by the fine finish on the stem, the reduced diametrical clearances and the stem straightness control.

Backseat designed to relieve back pressure on the stem packing when fully seated. Replacing stem packing under pressure is not recommended.

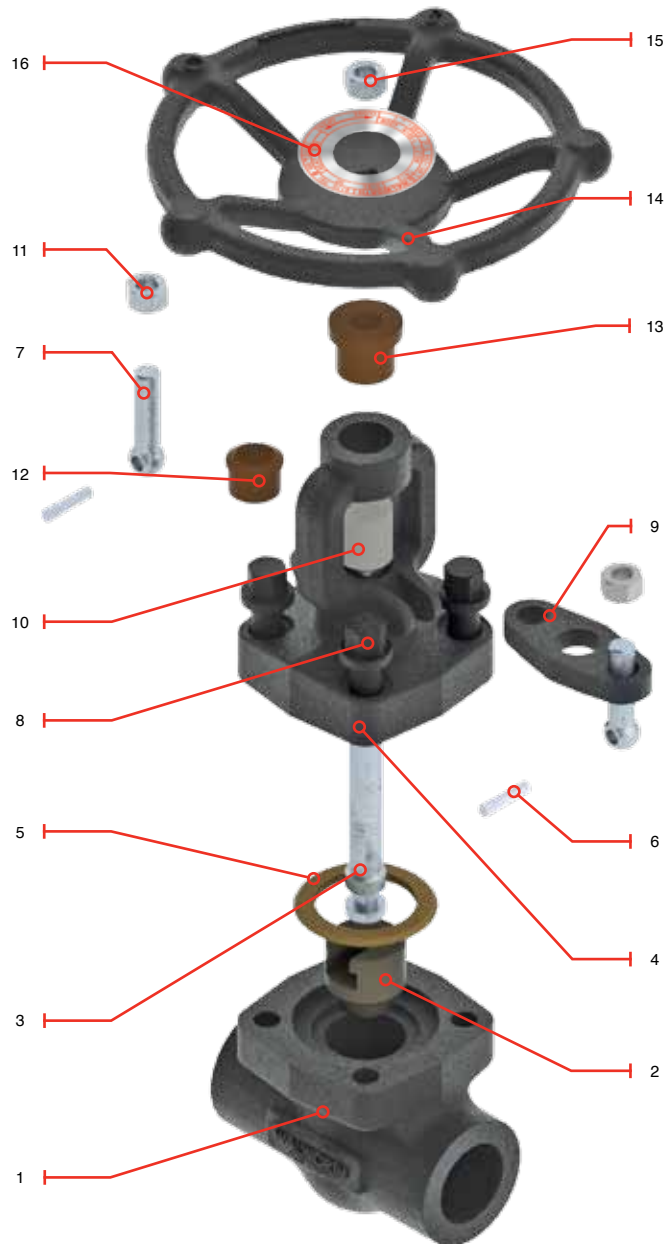
Body to bonnet joint designed to apply a uniform load to the gasket to assure a leak proof seal.

Stellited seat ring, providing increased resistance to wear, abrasion and erosion of the sealing surface.

Integral welded seat or threaded seat.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	PLUG TYPE DISC	A276-420
3	STEM	A276-410
4	BONNET	A105
5	BONNET GASKET	304+FLEXIBLE GRAPHITE
6	EYE BOLT PIN	A276-304
7	EYE BOLT	A193-B7
8	BONNET BOLTS	A193-B7
9	GLAND PLATE	A105
10	STEM PACKING	FLEXIBLE GRAPHITE
11	GLAND NUT	A194-2H
12	GLAND BUSHING	A276-420
13	STEM NUT	A276-410
14	HANDWHEEL	A197
15	HANDWHEEL NUT	A194-2H
16	IDENTIFICATION PLATE	ALUMINIUM



API 602 GLOBE VALVES TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Bonnet	5520S	Threaded
		5520SW	Socket Weld
		5520SSW	Threaded X Socket Weld
Full	800 Bolted Bonnet	5528S	Threaded
		5528SW	Socket Weld
		5528SSW	Threaded X Socket Weld
Standard	800 Welded Bonnet	5527S	Threaded
		5527SW	Socket Weld
		5527SSW	Threaded X Socket Weld
Full	800 Welded Bonnet	5529S	Threaded
		5529SW	Socket Weld
		5529SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 5520 Standard Port, Bolted Bonnet

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B (open)	in	6.06	6.06	6.22	6.22	7.55	8.94	9.45	10.98
	mm	154	154	158	158	192	227	240	279
C	in	3.94	3.94	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	100	100	125	160	160	180
D	in	0.26	0.39	0.39	0.51	.68	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.34	1.34	1.34	1.57	1.92	2.24	2.52	3.07
	mm	34	34	34	40	49	58	64	78
Weight	lb	4.62	4.62	4.4	4.84	5.5	12.1	15.4	25.3
	kg	2.1	2.1	2.0	2.2	2.5	5.5	7.0	11.5

Fig. 5527 Standard Port, Welded Bonnet

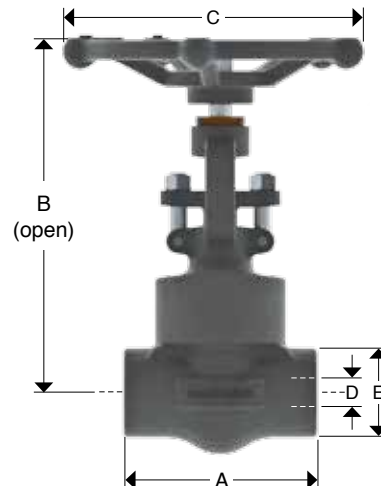
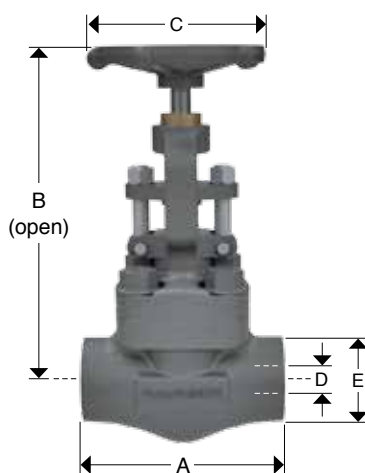
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B (open)	in	6.06	6.06	6.22	6.22	7.56	8.94	9.45	10.98
	mm	154	154	158	158	192	227	240	279
C	in	3.94	3.94	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	100	100	125	160	160	180
D	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34	34	34	40	49	58	64	78
Weight	lb	4.4	4.4	4.18	4.62	8.14	11.88	15.18	25.08
	kg	2.0	2.0	1.9	2.1	3.7	5.4	6.9	11.4

Fig. 5528 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B (open)	in	6.22	7.56	8.94	9.45	10.98	12.80
	mm	158	192	227	240	279	325
C	in	6.29	4.92	6.30	6.30	7.09	7.87
	mm	160	125	160	160	180	200
D	in	0.51	0.69	0.91	1.12	1.40	1.85
	mm	13	17.5	17.5	28.5	35.5	47.0
E	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49	58	64	78	88
Weight	lb	4.84	8.36	12.1	15.4	25.3	26.4
	kg	2.2	3.8	5.5	7.0	11.5	12.0

Fig. 5529 Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B (open)	in	6.22	7.56	8.94	9.45	10.98	12.80
	mm	158	192	227	240	279	325
C	in	3.94	4.92	6.30	6.30	7.09	7.87
	mm	100	125	160	160	180	200
D	in	0.51	0.69	0.91	1.12	1.42	1.85
	mm	13	17.5	23.0	28.5	36.0	47.0
E	in	1.57	1.93	2.28	2.52	3.11	3.46
	mm	40	49	58	64	79	88
Weight	lb	4.62	8.14	11.88	15.18	25.08	26.18
	kg	2.1	3.7	5.4	6.9	11.4	11.9



API 602 GLOBE VALVES TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Bonnet	5521S	Threaded
		5521SW	Socket Weld
		5521SSW	Threaded X Socket Weld
Full	1500 Bolted Bonnet	5538S	Threaded
		5538SW	Socket Weld
		5538SSW	Threaded X Socket Weld
Standard	1500 Welded Bonnet	5537S	Threaded
		5537SW	Socket Weld
		5537SSW	Threaded X Socket Weld
Full	1500 Welded Bonnet	5539S	Threaded
		5539SW	Socket Weld
		5539SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 5521 Standard Port, Bolted Bonnet

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.62	3.62	4.37	4.72	5.98	6.77	8.66
	mm	79	92	92	111	120	152	172	220
B (open)	in	6.89	7.01	7.36	7.36	8.94	9.53	10.94	12.80
	mm	175	178	187	187	227	242	278	325
C	in	3.94	4.92	4.92	4.92	6.30	6.30	7.09	7.87
	mm	100	125	125	125	160	160	180	200
D	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.34	1.65	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34	42	42	49	58	64	78	88.0
Weight	lb	6.6	6.6	7.7	8.8	13.86	17.6	27.5	42.9
	kg	3.0	3.0	3.5	4.0	6.3	8.0	12.5	19.5

Fig. 5537 Standard Port, Welded Bonnet

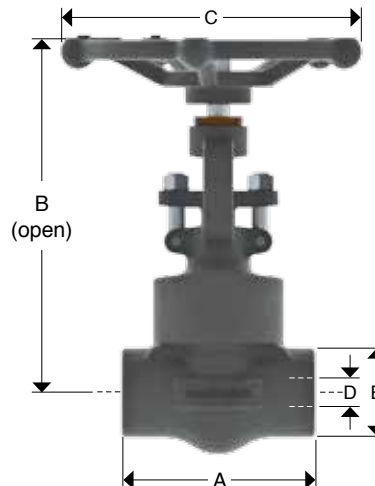
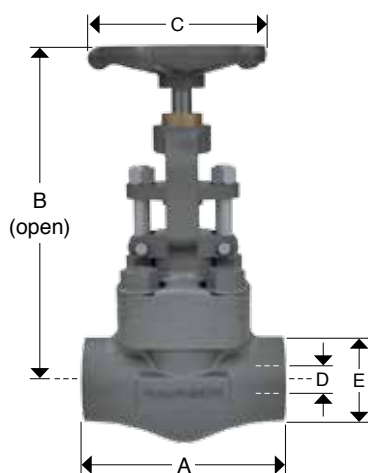
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.62	4.37	4.37	4.72	5.98	6.77	8.66
	mm	79	92	111	111	120	152	172	220
B (open)	in	6.22	6.22	7.36	7.36	8.94	9.53	10.94	12.80
	mm	158	158	187	187	227	242	278	325
C	in	3.94	3.94	4.92	4.92	6.30	6.30	7.09	7.87
	mm	100	100	125	125	160	160	180	200
D	in	0.39	0.51	0.51	0.51	0.69	0.91	1.12	1.38
	mm	10	13	13	13	17.5	23.0	28.5	35.0
E	in	1.34	1.57	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34	40	42	49	58	64	78	88.0
Weight	lb	6.16	6.6	7.26	8.36	13.42	17.16	27.06	42.46
	kg	2.8	3.0	3.3	3.8	6.1	7.8	12.3	19.3

Fig. 5538 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	9.84
	mm	111	120	152	172	220	250
B (open)	in	7.36	8.94	9.53	10.94	12.80	13.98
	mm	187	227	242	278	325	355
C	in	4.92	6.30	6.30	7.09	7.87	7.87
	mm	125	160	160	180	200	200
D	in	0.51	0.69	0.91	1.12	1.38	1.85
	mm	13	17.5	23.0	28.5	35.0	47.0
E	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49	58	64	78	88	88
Weight	lb	8.8	13.86	17.6	27.5	42.9	44
	kg	4.0	6.3	8.0	12.5	19.5	20.0

Fig. 5539 Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	8.66
	mm	111	120	152	172	220	220
B (open)	in	7.36	8.94	9.53	10.94	12.80	13.98
	mm	187	227	242	278	325	355
C	in	4.92	6.30	6.30	7.09	7.87	7.87
	mm	125	160	160	180	200	200
D	in	0.51	0.69	0.91	1.12	1.38	1.85
	mm	13	17.5	23.0	28.5	35.0	47.0
E	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49	58	64	78	88	88
Weight	lb	8.58	13.86	17.38	27.28	42.68	43.78
	kg	3.9	6.3	7.9	12.4	19.4	19.9



API 602 GLOBE VALVES TH & SW, CLASS 2500

Design Characteristics

- API 602 & ASME B16.34
- Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500	5522S	Threaded
		5522SW	Socket Weld
		5522SSW	Threaded X Socket Weld
Full	2500	5622S	Threaded
		5622SW	Socket Weld
		5622SSW	Threaded X Socket Weld

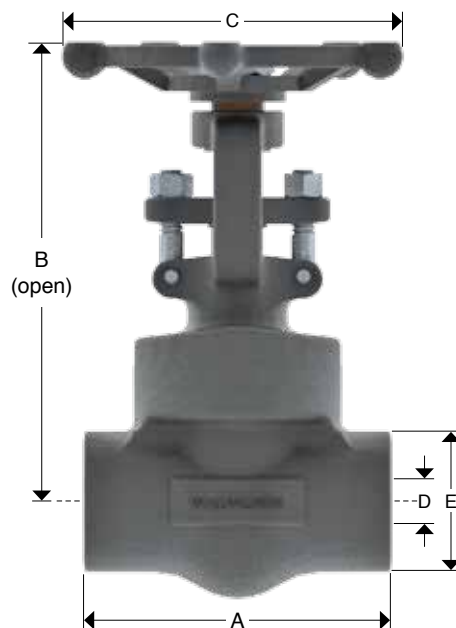
Dimensions and Weights

Fig. 5522 Welded Bonnet, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	5.91	6.69	7.87	7.87	9.84
	mm	150	150	170	200	200	250
B (open)	in	11.5	11.5	13.5	15.0	15	17.4
	mm	293	293	344	383	383	442
C	in	6.30	6.30	7.87	9.84	9.84	11.81
	mm	160	160	200	250	250	300
D	in	.43	.43	.55	.62	.98	1.1
	mm	11	11	14	16	25	28
E	in	2.05	2.05	2.52	3.15	3.15	3.74
	mm	52.0	52.0	64.0	80.0	80.0	95.0
Weight	lb	24.2	23.76	26.62	48.4	47.74	81.4
	kg	11	10.8	12.1	22	21.7	37

Fig. 5622 Welded Bonnet, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	6.69	7.87	7.87	9.84	PCR
	mm	150	170	200	200	250	PCR
B (open)	in	11.5	13.5	15	15	17.4	PCR
	mm	293	344	383	383	442	PCR
C	in	6.30	7.87	9.84	9.84	11.81	PCR
	mm	160	200	250	250	300	PCR
D	in	.43	.55	.62	.98	1.1	PCR
	mm	11	14	16	25	28	PCR
E	in	2.05	2.52	3.15	3.15	3.74	PCR
	mm	52.0	64.0	80.0	80.0	95.0	PCR
Weight	lb	23.76	26.62	48.4	47.74	81.4	PCR
	kg	10.8	12.1	22	21.7	37	PCR



API 602 GLOBE VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	150	5615RF 5615RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	300	5630RF 5630RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	600	5660RF 5660RTJ	Flanged Raised Face Flanged Ring Type Joint

Dimensions and Weights

Fig. 5615 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	in	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B (open)	in	6.02	6.22	7.56	8.94	9.44	10.98
	mm	153	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	.39	.51	.69	.91	1.12	1.4
	mm	10	13	17.5	23	28.5	35
Weight	lb	9.9	15.2	21.6	29.7	42.9	61.6
	kg	4.5	6.9	9.8	13.5	19.5	28.0

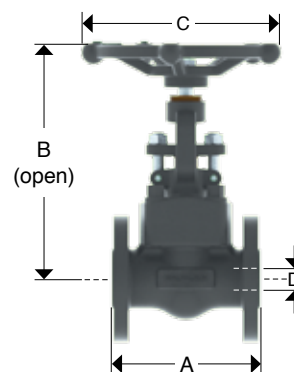


Fig. 5630 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.00	7.00	8.00	8.50	9.00	10.50
	mm	152	178	203	216	229	267
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.13
	mm	163	191	216	229	242	283
B (open)	in	6.22	6.22	7.56	8.94	9.49	10.98
	mm	158	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	.39	.51	.69	.91	1.12	1.4
	mm	10	13	17.5	23	28.5	35
Weight	lb	10.56	16.94	24.2	36.96	46.64	71.72
	kg	4.80	7.70	11.00	16.80	21.20	32.60

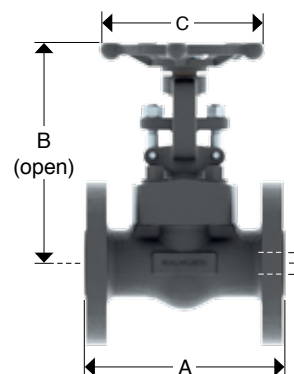
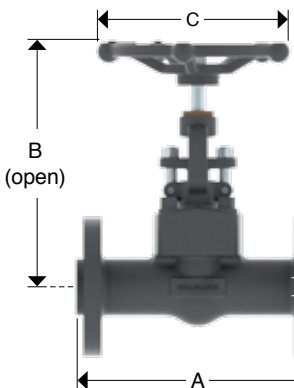


Fig. 5660 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.63
	mm	163	190	216	229	241	295
B (open)	in	6.22	6.22	7.56	8.94	9.49	10.98
	mm	158	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	.39	.51	.69	.91	1.12	1.4
	mm	10	13	17.5	23	28.5	35
Weight	lb	12.32	17.16	27.5	37.4	51.7	85.36
	kg	5.60	7.80	12.50	17.00	23.50	38.80



API 602 GLOBE VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	150	5618RF	Flanged Raised Face
		5618RTJ	Flanged Ring Type Joint
Full	300	5638RF	Flanged Raised Face
		5638RTJ	Flanged Ring Type Joint
Full	600	5668RF	Flanged Raised Face
		5668RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 5618 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	in	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B (open)	in	6.02	6.22	7.56	8.94	9.44	10.98
	mm	153	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.69	0.91	1.12	1.40	1.85
	mm	13	17.5	23.0	28.5	35.5	47.0
Weight	lb	9.9	15.2	21.6	29.7	42.9	61.6
	kg	4.5	6.9	9.8	13.5	19.5	28.0

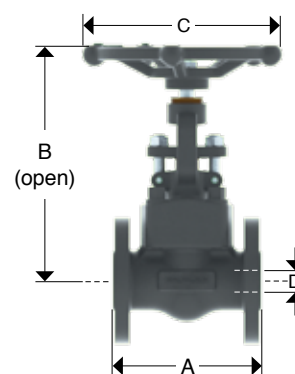


Fig. 5638 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.00	7.00	8.00	8.50	9.00	10.50
	mm	152	178	203	216	229	267
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.13
	mm	163	191	216	229	242	283
B (open)	in	6.22	6.22	7.56	8.94	9.44	10.98
	mm	158	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.69	0.91	1.12	1.40	1.85
	mm	13	17.5	23.0	28.5	35.5	47.0
Weight	lb	10.56	16.94	24.2	36.96	46.64	71.72
	kg	4.80	7.70	11.00	16.80	21.20	32.60

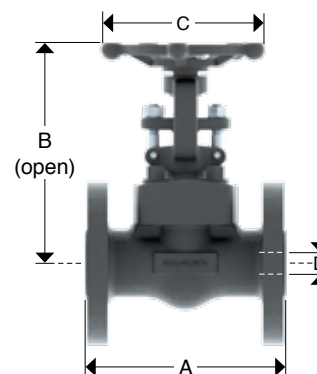
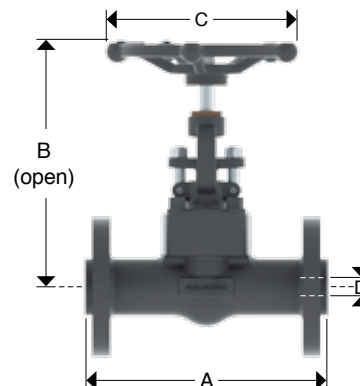


Fig. 5668 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	7.50	8.50	9.00	9.50	11.63
	mm	163	190	216	229	241	295
B (open)	in	6.22	6.22	7.56	8.94	9.44	10.98
	mm	158	158	192	227	240	279
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.51	0.69	0.91	1.12	1.40	1.85
	mm	13	17.5	23.0	28.5	35.5	47.0
Weight	lb	12.32	17.16	27.5	37.4	51.7	85.36
	kg	5.60	7.80	12.50	17.00	23.50	38.80



API 602 GLOBE VALVES RF/RTJ, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Bonnet	15615RF 15615RTJ	Flanged Raised Face Flanged Ring Type Joint
Full	1500 Welded Bonnet	15685RF 15685RTJ	Flanged Raised Face Flanged Ring Type Joint

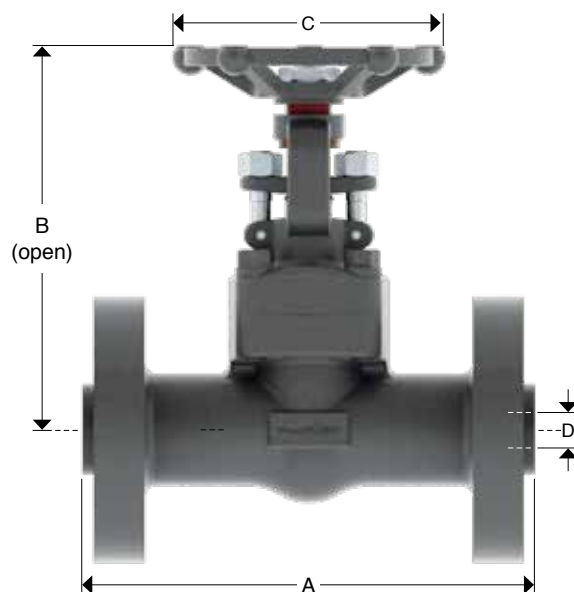
Dimensions and Weights

Fig. 15615 Standard Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B (open)	in	7.36	7.36	8.94	9.53	10.94	12.80
	mm	187	187	227	242	278	325
C	in	4.92	4.92	6.30	6.30	7.09	7.87
	mm	125	125	160	160	180	200
D	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	24.2	29.04	38.28	41.8	53.9	68.2
	kg	11.0	13.2	17.4	19.0	24.5	31.0

Fig. 15685 Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B (open)	in	7.36	8.94	9.53	10.94	12.80	13.78
	mm	187	227	242	278	325	350
C	in	4.92	6.30	6.30	7.09	7.87	8.66
	mm	125	160	160	180	200	220
D	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
Weight	lb	29.04	38.28	41.8	53.9	68.2	79.2
	kg	13.2	17.4	19.0	24.5	31.0	36.0



WALWORTH API 602 “Y” PATTERN GLOBE VALVES

The “Y” Pattern Globe Valves are primarily used to modulate or regulate the volume of the flow when a minor flow is required.

A “Y” Pattern Globe Valve is recommended when a continuous full flow of fluid is required due to the highest CV against a “T” Pattern Globe Valve.

Also suitable for solving some troubles in the field when space limits the usage of a standard “T” Pattern Globe Valve.

This type of valve should always be installed so the flow intake enters through the base of the valve seat. The valve has an arrow stamped on the body to indicate the preferred direction of the flow.

Globe Valves may be used with fluids containing particles in suspension.

DESIGN FEATURES

- Valves in accordance with API-602..
- Socket Weld, Threaded, Combined Threaded x Socket Weld
- Bolted Bonnet or Weld ed Bonnet options.
- Standard or Full Port.
- Low fugitive emissions control.
- NACE Service either MR-0175 or MR-0103.
- Test in accordance with API-598.

Rising stem with precision acme thread.

Stem packing is designed for optimum control of fugitive emissions leakage to the atmosphere. The ultra-low emission leakage rate is assured by the fine finish on the stem, the reduced diametrical clearances and the stem straightness control.

Backseat designed to relieve back pressure on the stem packing when fully seated. Replacing stem packing under pressure is not recommended.

Body to bonnet joint designed to apply a uniform load to the gasket to assure a leak proof seal.

Stellited seat ring, providing increased resistance to wear, abrasion and erosion of the sealing surface.

Integral welded seat or threaded seat.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	PLUG TYPE DISC	A276-420
3	STEM	A276-410
4	BONNET	A105
5	BONNET GASKET	304+FLEXIBLE GRAPHITE
6	EYE BOLT PIN	A276-304
7	EYE BOLT	A193-B7
8	BONNET BOLTS	A193-B7
9	GLAND PLATE	A105
10	STEM PACKING	FLEXIBLE GRAPHITE
11	GLAND NUT	A194-2H
12	GLAND BUSHING	A276-420
13	STEM NUT	A276-410
14	HANDWHEEL	A197
15	HANDWHEEL NUT	A194-2H
16	IDENTIFICATION PLATE	ALUMINIUM



API 602 “Y” PATTERN GLOBE VALVES SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Bonnet	5520YS	Threaded
		5520YSW	Socket Weld
		5520YSSW	Threaded X Socket Weld
Full	800 Bolted Bonnet	5528YS	Threaded
		5528YSW	Socket Weld
		5528YSSW	Threaded X Socket Weld
Standard	800 Welded Bonnet	5527YS	Threaded
		5527YSW	Socket Weld
		5527YSSW	Threaded X Socket Weld
Full	800 Welded Bonnet	5529YS	Threaded
		5529YSW	Socket Weld
		5529YSSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 5520Y Standard Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.17	4.72	5.98	5.98	7.09
	mm	106	106	120	152	152	180
B (open)	in	6.69	6.69	7.95	9.80	9.80	11.06
	mm	170	170	202	249	249	281
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.61	1.61	1.97	2.52	2.52	3.15
	mm	41	41	50	64	64	80
Weight	lb	4.4	4.84	8.36	12.1	15.4	25.3
	kg	2.0	2.2	3.8	5.5	7.0	11.5

Fig. 5527Y Standard Port, Welded Bonnet

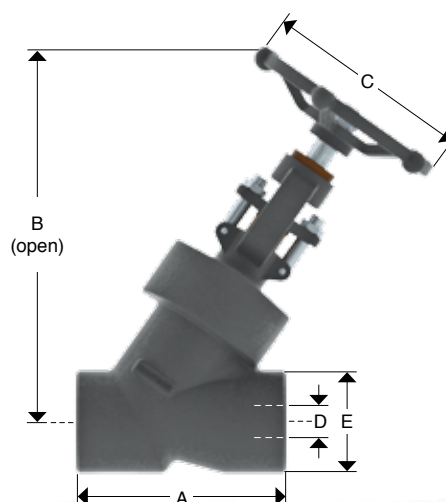
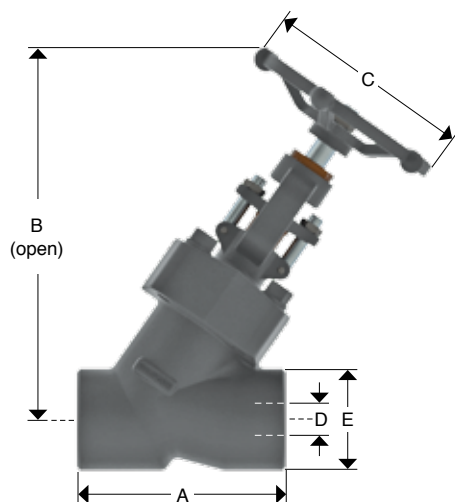
Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.17	4.72	5.98	5.98	7.09
	mm	106	106	120	152	152	180
B (open)	in	6.54	6.54	7.76	9.57	9.57	10.71
	mm	166	166	197	243	243	272
C	in	3.94	3.94	4.92	6.30	6.30	7.09
	mm	100	100	125	160	160	180
D	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
E	in	1.61	1.61	1.97	2.52	2.52	3.15
	mm	41	41	50	64	64	80
Weight	lb	4.4	4.84	8.36	12.1	15.4	25.3
	kg	2.0	2.2	3.8	5.5	7.0	11.5

Fig. 5528Y Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.72	5.98	5.98	7.09	7.87
	mm	106	120	152	152	180	200
B (open)	in	6.69	7.95	9.80	9.80	11.06	11.81
	mm	170	202	249	249	281	300
C	in	3.94	4.92	6.30	6.30	7.09	7.87
	mm	100	125	160	160	180	200
D	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
E	in	1.61	1.97	2.52	2.52	3.15	3.54
	mm	41	50	64	64	80	90
Weight	lb	4.84	8.36	12.1	15.4	25.3	30.8
	kg	2.2	3.8	5.5	7.0	11.5	14.0

Fig. 5529Y Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.72	5.98	5.98	7.09	7.87
	mm	106	120	152	152	180	200
B (open)	in	6.54	7.76	9.57	9.57	10.71	11.42
	mm	166	197	243	243	272	290
C	in	3.94	4.92	6.30	6.30	7.09	7.87
	mm	100	125	160	160	180	200
D	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
E	in	1.61	1.97	2.52	2.52	3.15	3.54
	mm	41	50	64	64	80	90
Weight	lb	4.84	8.36	12.1	15.4	25.3	30.8
	kg	2.2	3.8	5.5	7.0	11.5	14.0



API 602 “Y” PATTERN GLOBE VALVES SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Spiral Wound Gasket
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Bonnet	5521YS	Threaded
		5521YSW	Socket Weld
Full	1500 Bolted Bonnet	5538YS	Threaded
		5538YSW	Socket Weld
Standard	1500 Welded Bonnet	5537YS	Threaded
		5537YSW	Socket Weld
Full	1500 Welded Bonnet	5539YS	Threaded
		5539YSW	Socket Weld

Dimensions and Weights

Fig. 5521Y Standard Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	4.72	5.98	5.98	7.09	7.87
	mm	120	120	152	152	180	200
B (open)	in	7.87	7.87	9.84	9.84	11.14	12.76
	mm	200	200	250	250	283	324
C	in	4.92	4.92	6.30	6.30	7.09	7.87
	mm	125	125	160	160	180	200
D	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.97	1.97	2.52	2.52	3.15	3.54
	mm	50	50	64	64	80	90.0
Weight	lb	4.4	4.84	8.36	12.1	15.4	25.3
	kg	2.0	2.2	3.8	5.5	7.0	11.5

Fig. 5537Y Standard Port, Welded Bonnet

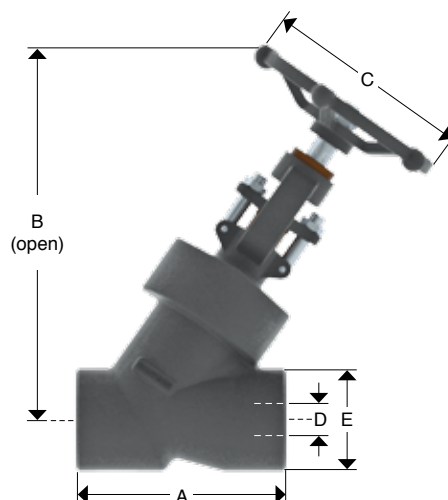
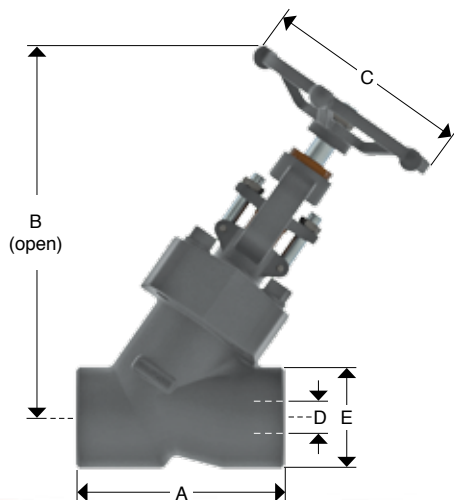
Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	4.72	5.98	5.98	7.09	7.87
	mm	120	120	152	152	180	200
B (open)	in	7.56	7.56	9.45	9.45	10.75	12.44
	mm	192	192	240	240	273	316
C	in	4.92	4.92	6.30	6.30	7.09	7.87
	mm	125	125	160	160	180	200
D	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
E	in	1.97	1.97	2.52	2.52	3.15	3.54
	mm	50	50	64	64	80	90.0
Weight	lb	4.4	4.84	8.36	12.1	15.4	25.3
	kg	2.0	2.2	3.8	5.5	7.0	11.5

Fig. 5538Y Full Port, Bolted Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	5.98	5.98	7.09	7.87	8.66
	mm	120	152	152	180	200	220
B (open)	in	7.87	9.84	9.84	11.1	12.7	12.9
	mm	200	250	250	283	324	330
C	in	4.9	6.2	6.3	7.04	7.87	8.66
	mm	125	160	160	180	200	220
D	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
E	in	1.96	2.51	2.52	3.34	3.54	3.93
	mm	50	64	64	80	90	100
Weight	lb	4.84	8.36	12.1	15.4	25.3	30.8
	kg	2.2	3.8	5.5	7.0	11.5	14.0

Fig. 5539Y Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	5.98	5.98	7.09	7.87	8.66
	mm	120	152	152	180	200	220
B (open)	in	7.56	9.45	9.45	10.75	12.44	12.99
	mm	192	240	240	273	316	330
C	in	4.92	6.30	6.30	7.09	7.87	8.66
	mm	125	160	160	180	200	220
D	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
E	in	1.97	2.52	2.52	3.15	3.54	3.94
	mm	50	64	64	80	90.0	100.0
Weight	lb	4.84	8.36	12.1	15.4	25.3	30.8
	kg	2.2	3.8	5.5	7.0	11.5	14.0



API 602 “Y” PATTERN GLOBE VALVES SW, CLASS 2500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Bonnet
- Tapered loose disc
- Stem with ACME Threaded (OS&Y)
- Bolted Gland Bushing
- Standard or Full Port
- Threaded, Socket Weld or Threaded x Socket Weld
- Integral Seat Ring

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500	5522YS	Threaded
	Welded	5522YSW	Socket Weld
	Bonnet	5522YSSW	Threaded X Socket Weld
Full	2500	5622YS	Threaded
	Welded	5622YSW	Socket Weld
	Bonnet	5622YSSW	Threaded X Socket Weld

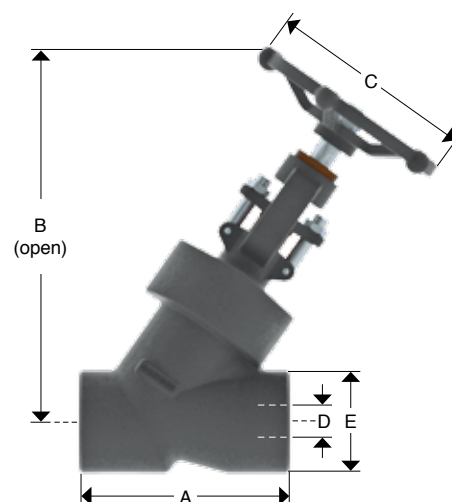
Dimensions and Weights

Fig. 5522Y Standard Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.98	5.98	7.09	7.87	7.87	9.06
	mm	152	152	180	200	200	230
B (open)	in	9.57	9.57	11.42	13.19	13.19	15.35
	mm	243	243	290	335	335	390
C	in	6.30	6.30	7.87	9.84	9.84	11.81
	mm	160	160	200	250	250	300
D	in	0.43	0.55	0.75	0.98	1.10	1.38
	mm	11.0	14.0	19.0	25.0	28.0	35.0
E	in	2.52	2.52	3.15	3.54	3.54	3.82
	mm	64	64	80	90	90	97.0
Weight	lb	4.4	4.84	8.36	12.1	15.4	25.3
	kg	2.0	2.2	3.8	5.5	7.0	11.5

Fig. 5622Y Full Port, Welded Bonnet

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.98	7.09	7.87	7.87	9.06	PCR
	mm	152	180	200	200	230	PCR
B (open)	in	9.57	11.42	13.19	13.19	15.35	PCR
	mm	243	290	335	335	390	PCR
C	in	6.30	7.87	9.84	9.84	11.81	PCR
	mm	160	200	250	250	300	PCR
D	in	0.55	0.75	0.98	1.10	1.38	PCR
	mm	14.0	19.0	25.0	28.0	35.0	PCR
E	in	2.52	3.15	3.54	3.54	3.82	PCR
	mm	64	80	90	90	97.0	PCR
Weight	lb	4.84	8.36	12.1	15.4	25.3	PCR
	kg	2.2	3.8	5.5	7.0	11.5	PCR



WALWORTH API 602 PISTON CHECK VALVES

Piston Check valves are generally used to protect pumps or similar equipment, allowing the flow in only one direction and preventing flow reversal due to back pressure.

The piston check valves are designed with globe valve bodies, producing an increased drop pressure in the pipeline. This design provides a tight seal as well as a fast reaction to the closure impulse.

Metal seated check valves may not provide drop tight sealing when used in gas system or fluid system with low back flow pressure or fluids containing particles.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket weld, threaded, combined or flanged RF or RTJ ends.
- Bolted or Welded Bonnet options.
- Low fugitive emissions control.
- Nace service either MR-0175 or MR-0103
- Test in accordance with API-598.
- Horizontal Fluid Control
- Vertical Fluid Control with Spring

Body to cover joint designed to apply a uniform load to the gasket to assure a leak proof seal.

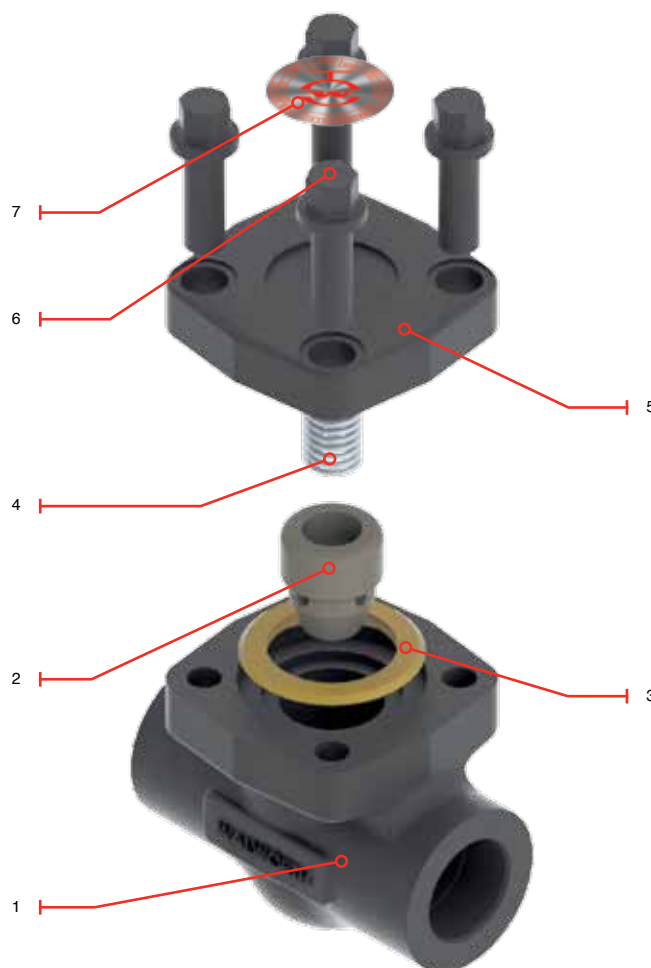
Guided piston to assure a correct seal.

Spring to allow a mounting in a vertical line available upon request.

Stellite seat provides increased resistance to wear abrasion and erosion of sealing surface.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	PISTON	A276-420
3	GASKET	304+FLEXIBLE GRAPHITE
4	SPRING	A276-304
5	COVER	A105
6	COVER BOLT	A193-B7
7	IDENTIFICATION PLATE	ALUMINIUM



API 602 PISTON CHECK VALVES TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Cover	5540S	Threaded
		5540SW	Socket Weld
		5540SSW	Threaded X Socket Weld
Full	800 Bolted Cover	5548S	Threaded
		5548SW	Socket Weld
		5548SSW	Threaded X Socket Weld
Standard	800 Welded Cover	5547S	Threaded
		5547SW	Socket Weld
		5547SSW	Threaded X Socket Weld
Full	800 Welded Cover	5549S	Threaded
		5549SW	Socket Weld
		5549SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 5540 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34.0	34.0	34.0	40.0	49.0	58.0	64.0	78.0
Weight	lb	3.3	3.3	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.5	1.5	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 5547 Welded Cover, Standard Port

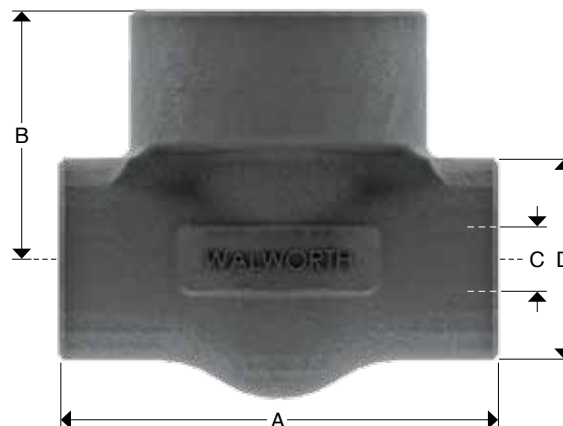
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34.0	34.0	34.0	40.0	49.0	58.0	64.0	78.0
Weight	lb	3.3	3.3	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.5	1.5	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 5548 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B	in	2.17	2.83	3.19	3.70	4.41	5.20
	mm	55	72	81	94	112	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13	17.5	23	28.5	35	35.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49.0	58	64.0	78	88.0
Weight	lb	4.18	5.72	9.24	11.66	19.8	24.2
	kg	1.9	2.6	4.2	5.3	9.0	11.0

Fig. 5549 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B	in	2.17	2.83	3.19	3.70	4.41	5.20
	mm	55	72	81	94	112	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13	17.5	23	28.5	35	35.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49.0	58	64.0	78	88.0
Weight	lb	4.18	5.72	9.24	11.66	19.8	24.2
	kg	1.9	2.6	4.2	5.3	9.0	11.0



API 602 PISTON CHECK VALVES TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	5541S	Threaded
		5541SW	Socket Weld
Full	1500 Bolted Cover	5559S	Threaded
		5559SW	Socket Weld
Standard	1500 Welded Cover	5545S	Threaded
		5545SW	Socket Weld
Full	1500 Welded Cover	5569S	Threaded
		5569SW	Socket Weld

Dimensions and Weights

Fig. 5541 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	5.98	6.77	8.66
	mm	79	79	92	111	120	152	172	220
B	in	2.87	2.87	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73	73	73	73	84	97	115	132
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34.0	34.0	42.0	49.0	58.0	64.0	78.0	88.0
Weight	lb	4.84	4.84	5.28	6.38	10.12	14.3	23.1	34.1
	kg	2.2	2.2	2.4	2.9	4.6	6.5	10.5	15.5

Fig. 5545 Welded Cover, Standard Port

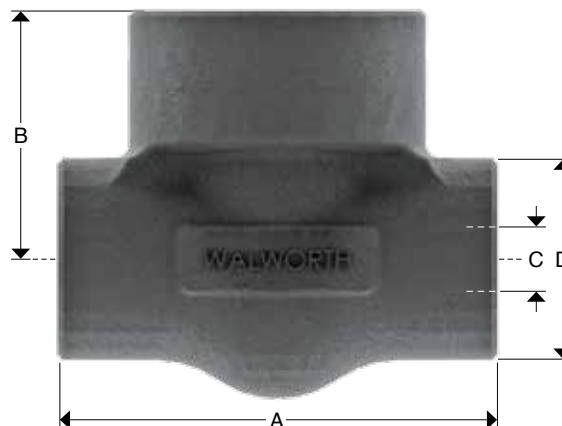
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	5.98	6.77	8.66
	mm	79	79	92	111	120	152	172	220
B	in	2.87	2.87	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73	73	73	73	84	97	115	132
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34.0	34.0	42.0	49.0	58.0	64.0	78.0	88.0
Weight	lb	4.84	4.84	5.28	6.38	10.12	14.3	23.1	34.1
	kg	2.2	2.2	2.4	2.9	4.6	6.5	10.5	15.5

Fig. 5559 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	10.24
	mm	111	120	152	172	220	260
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73	84	97	115	132	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13.0	17.5	23.0	28.5	35.0	35.0
D	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49.0	58.0	64.0	78.0	88.0	88.0
Weight	lb	6.38	10.12	14.3	23.1	34.32	37.4
	kg	2.9	4.6	6.5	10.5	15.6	17.0

Fig. 5569 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	7.87
	mm	111	120	152	172	220	250
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73	84	97	115	132	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13.0	17.5	23.0	28.5	35.0	35.0
D	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49.0	58.0	64.0	78.0	88.0	88.0
Weight	lb	6.38	10.12	14.3	23.1	34.32	37.4
	kg	2.9	4.6	6.5	10.5	15.6	17.0



API 602 PISTON CHECK VALVES TH & SW, CLASS 2500

Design Characteristics

- API 602 & ASME B16.34
- Welded cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500	5542S	Threaded
	Welded	5542SW	Socket Weld
	Bonnet	5542SSW	Threaded X Socket Weld
Full	2500	5642S	Threaded
	Welded	5642SW	Socket Weld
	Bonnet	5642SSW	Threaded X Socket Weld

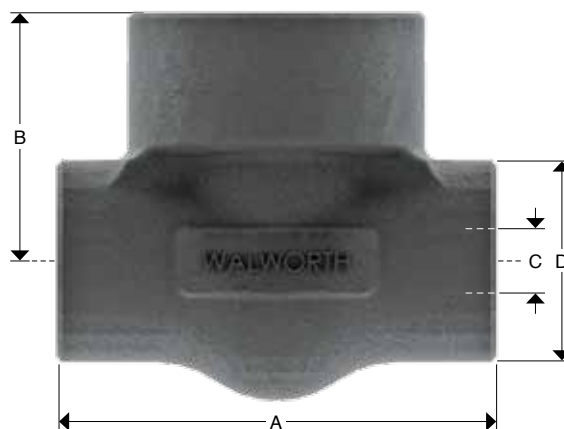
Dimensions and Weights

Fig. 5542 Welded Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	5.91	6.69	7.87	7.87	9.84
	mm	150	150	170	200	200	250
B	in	4.02	4.02	4.21	5.04	5.04	5.63
	mm	102	102	107	128	128	143
C	in	0.43	0.55	0.75	0.98	1.10	1.38
	mm	11	14	19	25	28	35
D	in	2.05	2.05	2.52	3.15	3.15	3.74
	mm	52.0	52.0	64.0	80.0	80.0	95.0
Weight	lb	17.6	17.16	26.4	42.9	42.46	59.4
	kg	8	7.8	12	19.5	19.3	27

Fig. 5642 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	6.69	7.87	7.87	9.84	PCR
	mm	150	170	200	200	250	PCR
B	in	4.02	4.21	5.04	5.04	5.63	PCR
	mm	102	107	128	128	143	PCR
C	in	0.55	0.75	0.98	1.10	1.38	PCR
	mm	14	19	25	28	35	PCR
D	in	2.05	2.52	3.15	3.15	3.74	PCR
	mm	52.0	64.0	80.0	80.0	95.0	PCR
Weight	lb	17.16	26.4	42.9	42.46	59.4	PCR
	kg	7.8	12	19.5	19.3	27	PCR



API 602 PISTON CHECK VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Piston type disc
- Standard port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	150	5815RF	Flanged Raised Face
		5815RTJ	Flanged Ring Type Joint
Standard	300	5830RF	Flanged Raised Face
		5830RTJ	Flanged Ring Type Joint
Standard	600	5860RF	Flanged Raised Face
		5860RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 5815 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	in	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

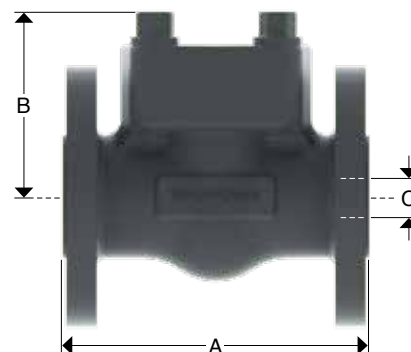


Fig. 5830 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.00	7.00	8.00	8.50	9.00	10.50
	mm	152	178	203	216	229	267
A (RJ)	in	6.4375	7.50	8.50	9.00	9.50	11.125
	mm	163	191	216	229	242	283
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	8.14	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8

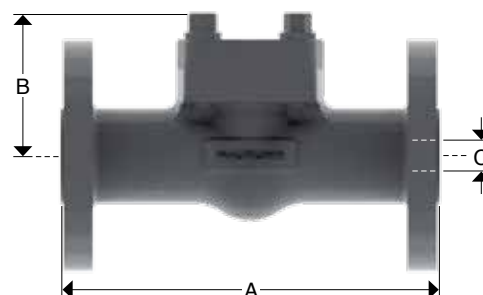


Fig. 5860 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	0.75	1.00	1.25	1.50	11.63
	mm	163	190	216	229	241	295
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 PISTON CHECK VALVE RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Piston type disc
- Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	150	5818RF	Flanged Raised Face
		5818RTJ	Flanged Ring Type Joint
Full	300	5838RF	Flanged Raised Face
		5838RTJ	Flanged Ring Type Joint
Full	600	5868RF	Flanged Raised Face
		5868RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 5818 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	in	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.9	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35	40
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

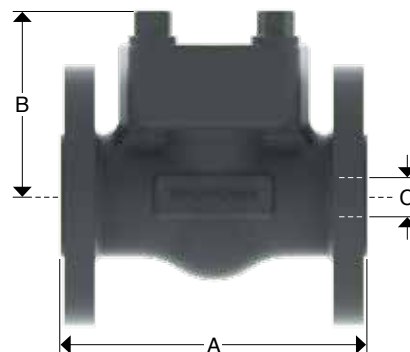


Fig. 5838 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.00	7.00	8.00	8.50	9.00	10.50
	mm	152	178	203	216	229	267
A (RJ)	in	6.4375	7.50	8.50	9.00	9.50	11.125
	mm	163	191	216	229	242	283
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.9	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35	40
Weight	lb	8.14	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8



Fig. 5868 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	0.75	1.00	1.25	1.50	11.63
	mm	163	190	216	229	241	295
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.9	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35	40
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 PISTON CHECK VALVE RF/RTJ, CLASS 1500

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	15815RF 15815RTJ	Flanged Raised Face Flanged Ring Type Joint

Design Characteristics

- API 602 & ASME B16.34
- Bolted Cover
- Piston type disc
- Standard Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	1500 Welded Cover	15885RF 15885RTJ	Flanged Raised Face Flanged Ring Type Joint

Design Characteristics

- API 602 & ASME B16.34
- Welded Cover
- Piston type disc
- Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

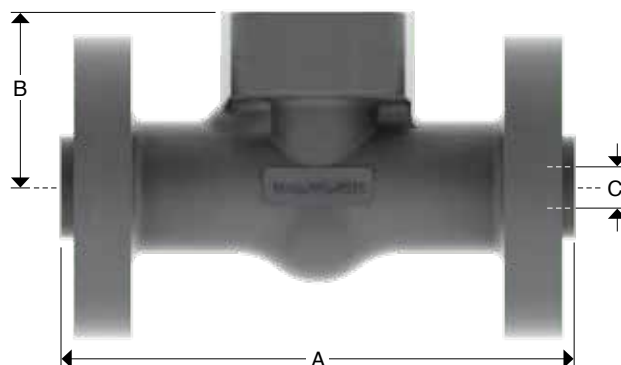
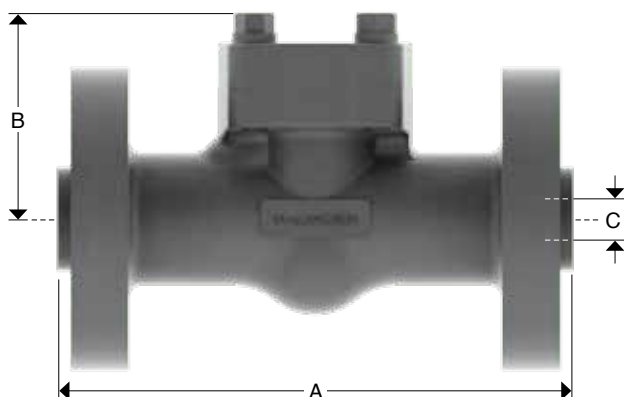
Dimensions and Weights

Fig. 15815 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B	in	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73	73	84	97	115	132
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	20.68	24.64	31.68	35.2	47.3	61.6
	kg	9.4	11.2	14.4	16.0	21.5	28.0

Fig. 15885 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B	in	2.87	3.31	3.82	4.53	5.20	PCR
	mm	73	84	97	115	132	PCR
D	in	0.51	0.69	0.91	1.12	1.38	PCR
	mm	13.0	17.5	23.0	28.5	35.0	PCR
Weight	lb	24.64	31.68	35.2	47.3	61.6	PCR
	kg	11.2	14.4	16.0	21.5	28.0	PCR



WALWORTH API 602 “Y” PATTERN PISTON CHECK VALVES

“Y” Pattern Piston Check Valves are generally used to protect pumps or similar equipment, allowing the flow in only one direction and preventing flow reversal due to back pressure. Also is used when a laminar flow and increased CV is desired.

This design provides a tight seal as well as a fast reaction to the closure impulse.

Metal seated check valves may not provide drop tight sealing when used in gas system or fluid system with low back flow pressure or fluids containing particles.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket Weld, Threaded, Combined or Flanged RF or RTJ Ends.
- Bolted or Welded Bonnets Options.
- Low fugitive emissions control.
- Nace service either MR-0175 or MR-0103
- Test in accordance with API-598..
- Horizontal Fluid Control
- Vertical Fluid Control with Spring

Body to cover joint designed to apply a uniform load to the gasket to assure a leak proof seal.

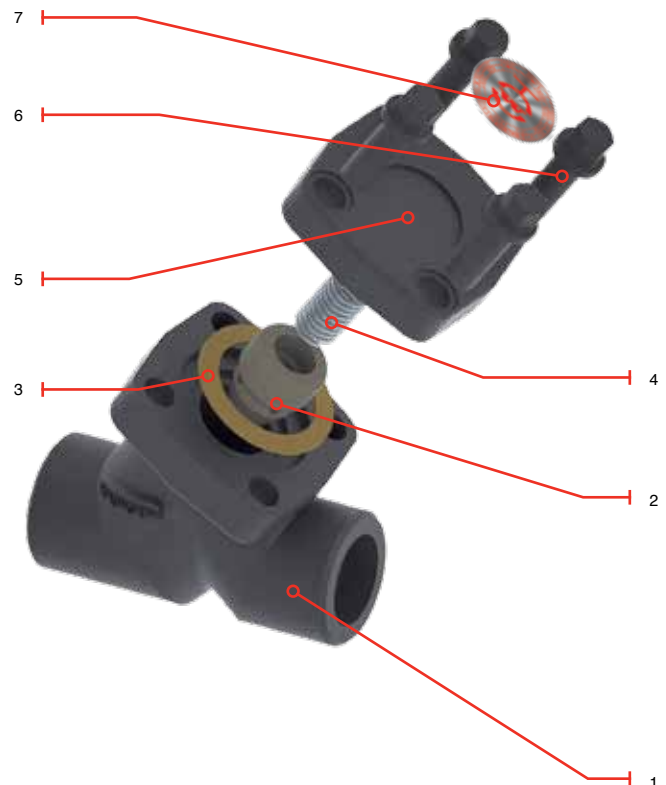
Guided piston to assure a correct seal.

Spring to allow a mounting in a vertical line available upon request.

Stellite seat provides increased resistance to wear abrasion and erosion of sealing surface.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	PISTON	A276-420
3	GASKET	304+FLEXIBLE GRAPHITE
4	SPRING	A276-304
5	COVER	A105
6	COVER BOLT	A193-B7
7	IDENTIFICATION PLATE	ALUMINIUM



API 602 “Y” PATTERN PISTON CHECK VALVES TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Cover	5540YS	Threaded
		5540YSW	Socket Weld
		5540YSSW	Threaded X Socket Weld
Full	800 Bolted Cover	5548YS	Threaded
		5548YSW	Socket Weld
		5548YSSW	Threaded X Socket Weld
Standard	800 Welded Cover	5547YS	Threaded
		5547YSW	Socket Weld
		5547YSSW	Threaded X Socket Weld
Full	800 Welded Cover	5549YS	Threaded
		5549YSW	Socket Weld
		5549YSSW	Threaded X Socket Weld

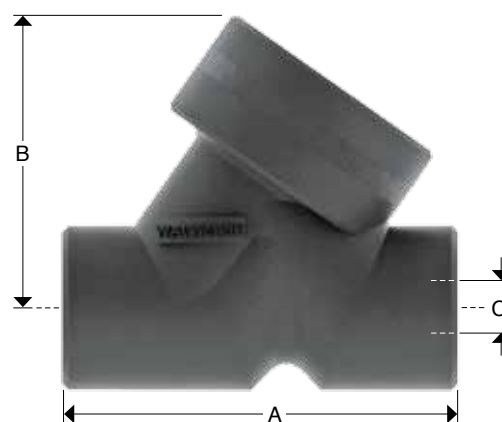
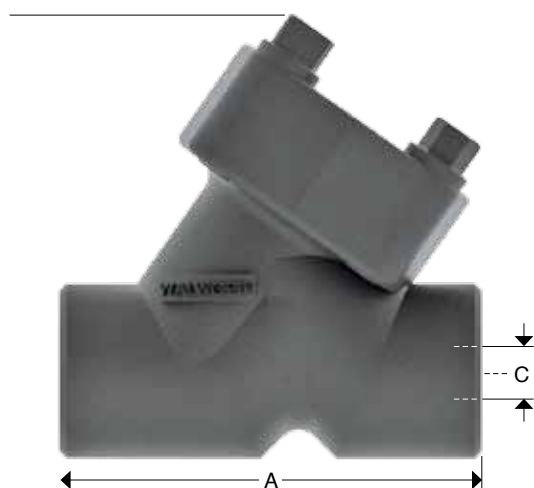
Dimensions and Weights

Fig. 5540Y Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.17	4.72	5.98	5.98	7.09
	mm	106	106	120	152	152	180
B	in	6.30	6.30	7.40	9.13	9.13	10.31
	mm	160	160	188	232	232	262
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.61	1.61	1.97	2.52	2.52	3.15
	mm	41	41	50	64	64	80
Weight	lb	3.08	4.18	5.77	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 5547Y Welded Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.17	4.72	5.98	5.98	7.09
	mm	106	106	120	152	152	180
B	in	3.03	3.03	3.46	4.25	4.25	4.88
	mm	77	77	88	108	108	124
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.61	1.61	1.97	2.52	2.52	3.15
	mm	41	41	50	64	64	80
Weight	lb	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.3	9.0



API 602 “Y” PATTERN PISTON CHECK VALVES TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	5541YS	Threaded
		5541YSW	Socket Weld
		5541YSSW	Threaded X Socket Weld
Full	1500 Bolted Cover	5559YS	Threaded
		5559YSW	Socket Weld
		5559YSSW	Threaded X Socket Weld
Standard	1500 Welded Cover	5545YS	Threaded
		5545YSW	Socket Weld
		5545YSSW	Threaded X Socket Weld
Full	1500 Welded Cover	5569YS	Threaded
		5569YSW	Socket Weld
		5569YSSW	Threaded X Socket Weld

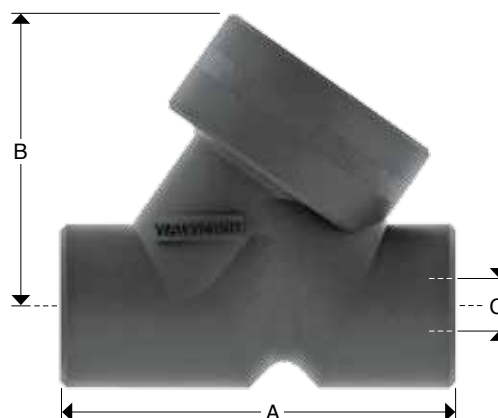
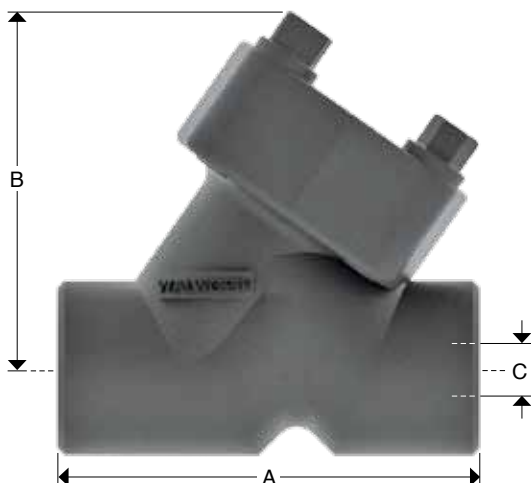
Dimensions and Weights

Fig. 5541Y Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	4.72	5.98	7.09	7.09	7.87
	mm	120	120	152	180	180	200
B	in	4.06	4.06	4.96	5.75	5.75	6.61
	mm	103	103	126	146	146	168
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.97	1.97	2.52	3.15	3.15	2.54
	mm	50	50	64	80	80	90
Weight	lb	3.08	4.18	5.77	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 5545Y Welded Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	4.72	5.98	7.09	7.09	7.87
	mm	120	120	152	180	180	200
B	in	3.46	3.46	4.25	4.25	4.88	5.67
	mm	88	88	108	108	124	144
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.97	1.97	2.52	3.15	3.15	3.15
	mm	50	50	64	80	80	80
Weight	lb	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.3	9.0



API 602 “Y” PATTERN PISTON CHECK VALVES TH & SW, CLASS 2500

Design Characteristics

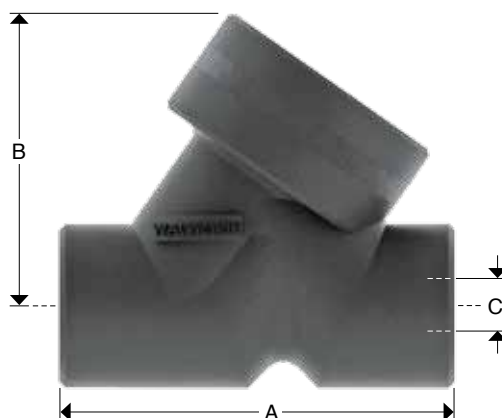
- API 602 & ASME B16.34
- Welded cover
- Piston type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500	5542YS	Threaded
	Welded	5542YSW	Socket Weld
	Cover	5542YSSW	Threaded X Socket Weldr
Full	2500	5642YS	Threaded
	Welded	5642YSW	Socket Weld
	Cover	5642YSSW	Threaded X Socket Weldr

Dimensions and Weights

Fig. 5542Y Welded Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.98	5.98	7.09	7.87	7.87	9.06
	mm	152	152	180	200	200	230
B	in	4.37	4.37	5.04	5.71	5.71	6.30
	mm	111	111	128	145	145	160
C	in	0.43	0.55	0.75	0.98	1.10	1.38
	mm	11	14.0	19	25.0	28	35.0
D	in	2.52	2.52	3.15	3.54	3.54	3.86
	mm	64	64	80	90	90	98
Weight	lb	3.08	4.18	5.77	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.3	9.0



WALWORTH API 602 BALL CHECK VALVES

Ball check valves are generally used to protect pumps or similar equipment, allowing the flow in only one direction and preventing flow reversal due to the back pressure.

The ball check valve can be used for a high viscosity fluid. The arrow stamped on the valves should match direction of the flow.

The sealing ability of check valves depends on the pressure of the back flow and the viscosity of the fluid.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket Weld, Threaded, Combined or Flanged RF or RTJ ends.
- Bolted or Welded Bonnet options.
- Low fugitive emissions control.
- Nace service either MR-0175 or MR-0103
- Test in accordance with API-598..

Body to cover joint designed to apply a uniform load to the gasket to assure a leak proof seal.

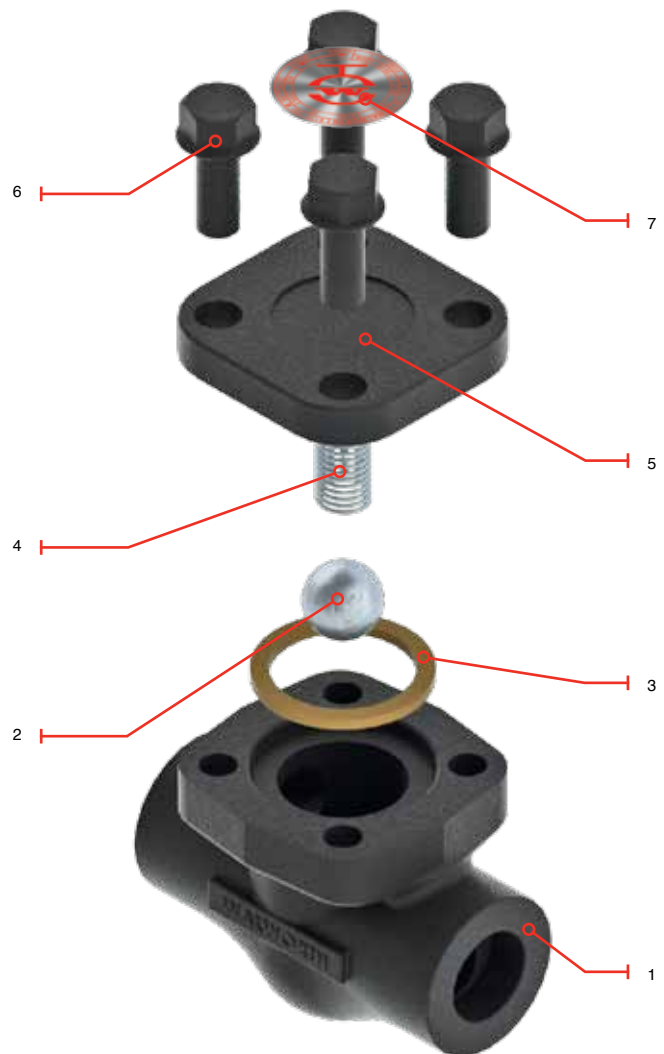
Spring to allow mounting in a vertical line.

Ball completely guided to assure a correct seal.

Stellite seat provides increased resistance to wear abrasion and erosion of the sealing surface.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	BALL	A276-304
3	GASKET	304+FLEXIBLE GRAPHITE
4	SPRING	A276-304
5	COVER	A105
6	COVER BOLT	A193-B7
7	IDENTIFICATION PLATE	ALUMINIUM



API 602 BALL CHECK VALVES TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Cover	6650S	Threaded
		6650SW	Socket Weld
		6650SSW	Threaded X Socket Weld
Full	800 Bolted Cover	6658S	Threaded
		6658SW	Socket Weld
		6658SSW	Threaded X Socket Weld
Standard	800 Welded Cover	6627S	Threaded
		6627SW	Socket Weld
		6627SSW	Threaded X Socket Weld
Full	800 Welded Cover	6629S	Threaded
		6629SW	Socket Weld
		6629SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 6650 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34.0	34.0	34.0	40.0	49.0	58.0	64.0	78.0
Weight	lb	3.3	3.3	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.5	1.5	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 6627 Welded Cover, Standard Port

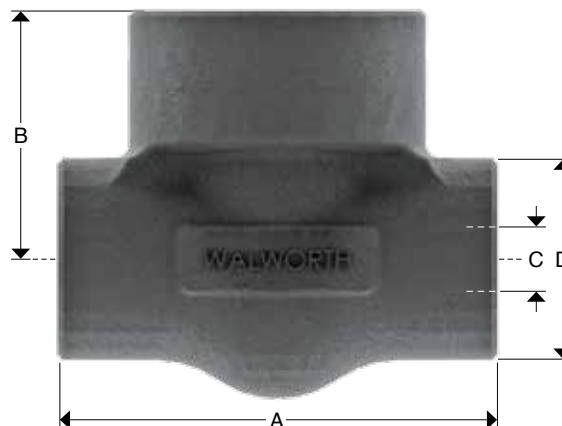
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	5.98	6.77
	mm	79	79	79	92	111	120	152	172
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34.0	34.0	34.0	40.0	49.0	58.0	64.0	78.0
Weight	lb	3.3	3.3	3.08	4.18	5.72	9.24	11.66	19.8
	kg	1.5	1.5	1.4	1.9	2.6	4.2	5.3	9.0

Fig. 6658 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B	in	2.17	2.83	3.19	3.70	4.41	5.20
	mm	55	72	81	94	112	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13	17.5	23	28.5	35	35.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49.0	58	64.0	78	88.0
Weight	lb	4.18	5.72	9.24	11.66	19.8	24.2
	kg	1.9	2.6	4.2	5.3	9.0	11.0

Fig. 6629 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	5.98	6.77	8.66
	mm	92	111	120	152	172	220
B	in	2.17	2.83	3.19	3.70	4.41	5.20
	mm	55	72	81	94	112	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13	17.5	23	28.5	35	35.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49.0	58	64.0	78	88.0
Weight	lb	4.18	5.72	9.24	11.66	19.8	24.2
	kg	1.9	2.6	4.2	5.3	9.0	11.0



API 602 BALL CHECK VALVES TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	6651S	Threaded
		6651SW	Socket Weld
		6651SSW	Threaded X Socket Weld
Full	1500 Bolted Cover	6638S	Threaded
		6638SW	Socket Weld
		6638SSW	Threaded X Socket Weld
Standard	1500 Welded Cover	6637S	Threaded
		6637SW	Socket Weld
		6637SSW	Threaded X Socket Weld
Full	1500 Welded Cover	6659S	Threaded
		6659SW	Socket Weld
		6659SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 6651 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	5.98	6.77	8.66
	mm	79	79	92	111	120	152	172	220
B	in	2.87	2.87	2.87	3.31	3.82	4.53	5.20	
	mm	73	73	73	84	97	115	132	
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34.0	34.0	42.0	49.0	58.0	64.0	78.0	88.0
Weight	lb	4.84	4.84	5.28	6.38	10.12	14.3	23.1	34.1
	kg	2.2	2.2	2.4	2.9	4.6	6.5	10.5	15.5

Fig. 6637 Welded Cover, Standard Port

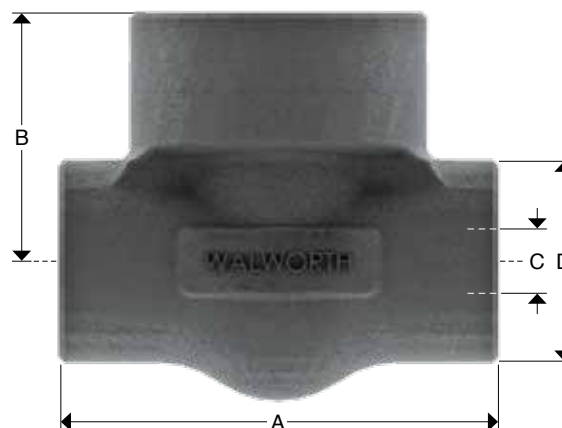
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	5.98	6.77	8.66
	mm	79	79	92	111	120	152	172	220
B	in	2.87	2.87	2.87	3.31	3.82	4.53	5.20	
	mm	73	73	73	84	97	115	132	
C	in	0.26	0.39	0.39	0.51	0.69	0.91	1.12	1.38
	mm	6.5	10.0	10.0	13.0	17.5	23.0	28.5	35.0
D	in	1.34	1.34	1.65	1.93	2.28	2.52	3.07	3.46
	mm	34.0	34.0	42.0	49.0	58.0	64.0	78.0	88.0
Weight	lb	4.84	4.84	5.28	6.38	10.12	14.3	23.1	34.1
	kg	2.2	2.2	2.4	2.9	4.6	6.5	10.5	15.5

Fig. 6638 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	10.2
	mm	111	120	152	172	220	260
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73	84	97	115	132	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13.0	17.5	23.0	28.5	35.0	35.0
D	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49.0	58.0	64.0	78.0	88.0	88.0
Weight	lb	6.38	10.12	14.3	23.1	34.32	37.4
	kg	2.9	4.6	6.5	10.5	15.6	17.0

Fig. 6659 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	5.98	6.77	8.66	10.2
	mm	111	120	152	172	220	260
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73	84	97	115	132	132
C	in	0.51	0.69	0.91	1.12	1.38	1.38
	mm	13.0	17.5	23.0	28.5	35.0	35.0
D	in	1.93	2.28	2.52	3.07	3.46	3.46
	mm	49.0	58.0	64.0	78.0	88.0	88.0
Weight	lb	6.38	10.12	14.3	23.1	34.32	37.4
	kg	2.9	4.6	6.5	10.5	15.6	17.0



API 602 BALL CHECK VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard Port
- Integral Flanged Ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	150	6615RF	Flanged Raised Face
		6615RTJ	Flanged Ring Type Joint
Standard	300	6630RF	Flanged Raised Face
		6630RTJ	Flanged Ring Type Joint
Standard	600	6660RF	Flanged Raised Face
		6660RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 6615 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.61	5.00	5.51	6.50	7.99
	mm	108.0	117.0	127.0	140.0	165.0	203.0
A (RJ)	in	4.68	5.12	5.51	6.02	7.01	8.50
	mm	119.0	130.0	140.0	153.0	178.0	216.0
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

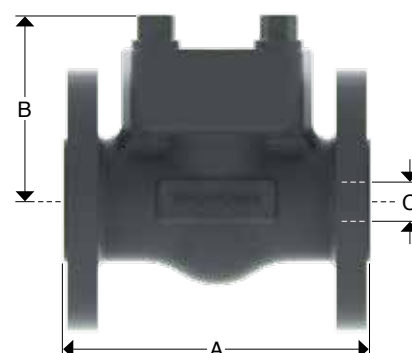


Fig. 6630 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	5.98	7.01	8.50	9.02	9.49	10.51
	mm	152.0	178.0	216.0	229.0	241.0	267.0
A (RJ)	in	6.42	7.52	9.02	9.53	10.00	11.14
	mm	163.0	191.0	229.0	242.0	254.0	283.0
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8

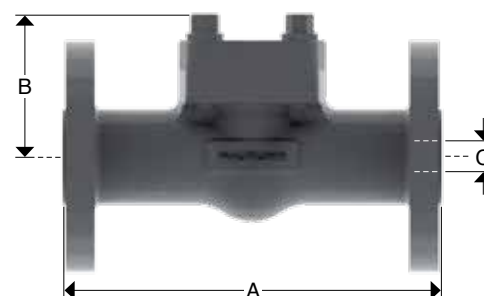


Fig. 6660 Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.48	8.50	9.02	9.49	11.50
	mm	165.0	190.0	216.0	229.0	241.0	292.0
A (RJ)	in	6.50	7.48	8.50	9.02	9.49	11.61
	mm	165.0	190.0	216.0	229.0	241.0	295.0
B	in	2.15	2.15	2.83	3.19	3.7	4.41
	mm	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 BALL CHECK VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Full Port
- Integral Flanged Ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	150	6618RF	Flanged Raised Face
		6618RTJ	Flanged Ring Type Joint
Full	300	6638RF	Flanged Raised Face
		6638RTJ	Flanged Ring Type Joint
Full	600	6668RF	Flanged Raised Face
		6668RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 6618 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.61	5.00	5.51	6.50	7.99
	mm	108.0	117.0	127.0	140.0	165.0	203.0
A (RJ)	in	4.68	5.12	5.51	6.02	7.01	8.50
	mm	119.0	130.0	140.0	153.0	178.0	216.0
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.91	1.16	1.37	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

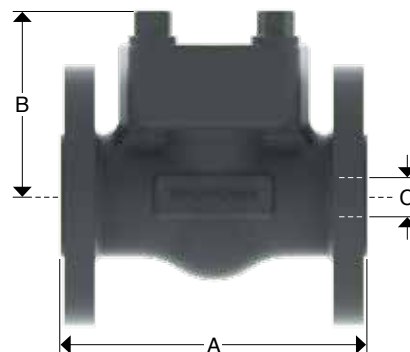


Fig. 6638 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	5.98	7.01	8.50	9.02	9.49	10.51
	mm	152.0	178.0	216.0	229.0	241.0	267.0
A (RJ)	in	6.42	7.52	9.02	9.53	10.00	11.14
	mm	163.0	191.0	229.0	242.0	254.0	283.0
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.91	1.16	1.37	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
Weight	lb	8.14	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8



Fig. 6668 Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.52	8.50	9.02	9.49	11.50
	mm	165.0	190.0	216.0	229.0	241.0	292.0
A (RJ)	in	6.50	7.52	8.50	9.02	9.49	11.61
	mm	165.0	190.0	216.0	229.0	241.0	295.0
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	.51	.68	.91	1.16	1.37	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 BALL CHECK VALVES RF/RTJ, CLASS 1500

Design Characteristics

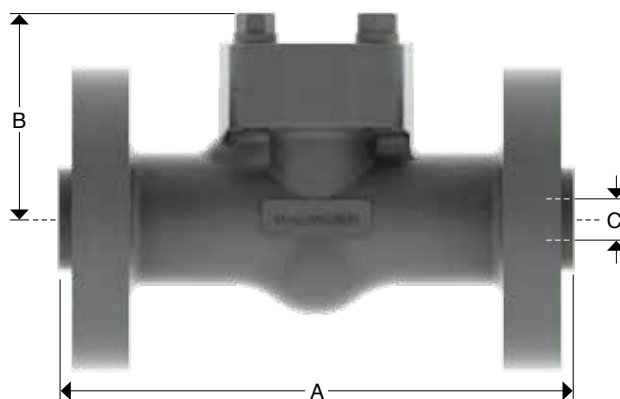
- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard Port
- Integral Flanged Ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control
- Piston with spring optional for vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	16615RF 16615RTJ	Flanged Raised Face Flanged Ring Type Joint

Dimensions and Weights

Fig. 16615 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	8.50	9.02	10.00	10.98	12.01	14.49
	mm	216	229	254	279	305	368
B	in	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73	73	84	97	115	132
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	20.68	24.64	31.68	35.2	47.3	61.6
	kg	9.4	11.2	14.4	16.0	21.5	28.0



WALWORTH API 602 “Y” PATTERN BALL CHECK VALVES

“Y” Pattern Ball Check Valves are generally used to protect pumps or similar equipment, allowing the flow in only one direction and preventing flow reversal due to back pressure. Also is used when a laminar flow and increased CV is desired.

This design provides a tight seal as well as fast reaction to the closure impulse.

Metal seated check valves may not provide drop tight sealing when used in gas system or fluid system with low back flow pressure or fluids containing particles.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket Weld, Threaded, Combined or Flanged RF or RTJ Ends.
- Bolted or Welded Bonnet Options.
- Low fugitive emissions control.
- Nace service either MR-0175 or MR-0103
- Test in accordance with API-598..

Body to cover joint designed to apply a uniform load to the gasket to assure a leak proof seal.

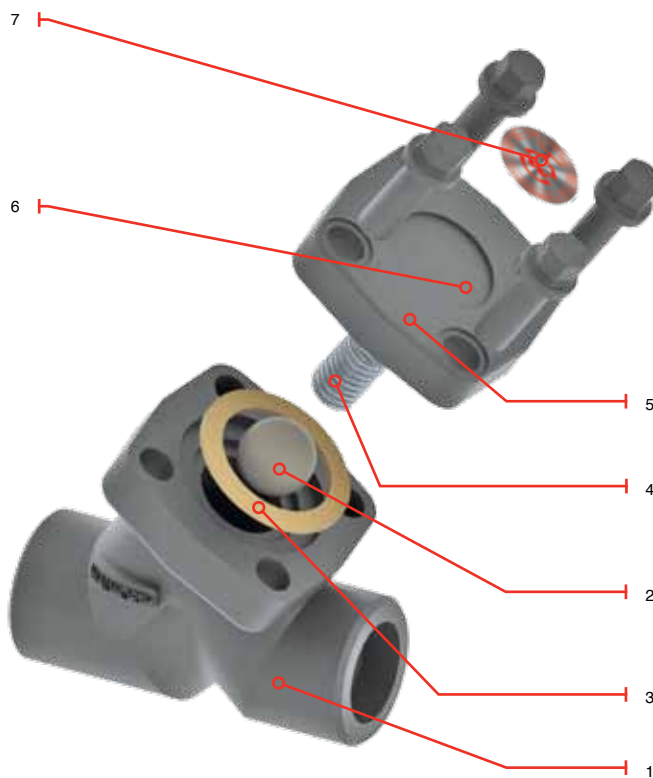
Spring to allow mounting in a vertical line.

Ball completely guided to assure a correct seal.

Stellite seat provides increased resistance to wear abrasion and erosion of the sealing surface.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	BALL	A276-304
3	GASKET	304+FLEXIBLE GRAPHITE
4	SPRING	A276-304
5	COVER	A105
6	COVER BOLT	A193-B7
7	IDENTIFICATION PLATE	ALUMINIUM



API 602 “Y” PATTERN CHECK VALVES TH & SW, CLASS 800

Design Characteristics

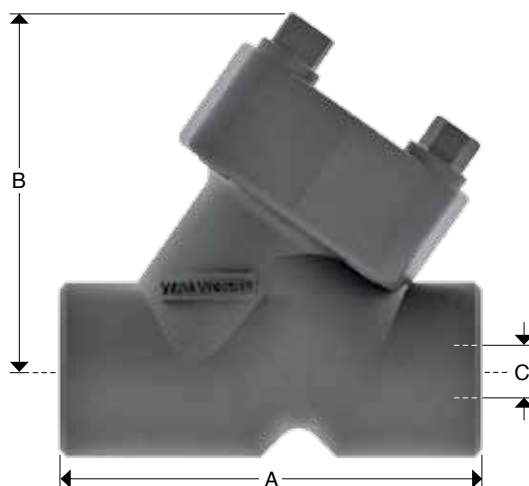
- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Cover	6650YS 6650YSW 6650YSSW	Threaded Socket Weld Threaded X Socket Weldr

Dimensions and Weights

Fig. 6650Y Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.17	4.17	4.72	5.98	5.98	7.09
	mm	106	106	120	152	152	180
B	in	6.30	6.30	7.40	9.13	9.13	10.31
	mm	160	160	188	232	232	262
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.61	1.61	1.97	2.52	2.52	3.15
	mm	41	41	50	64	64	80
Weight	lb	3.08	4.18	5.77	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.8	9.0



API 602 “Y” PATTERN CHECK VALVES TH & SW, CLASS 1500

Design Characteristics

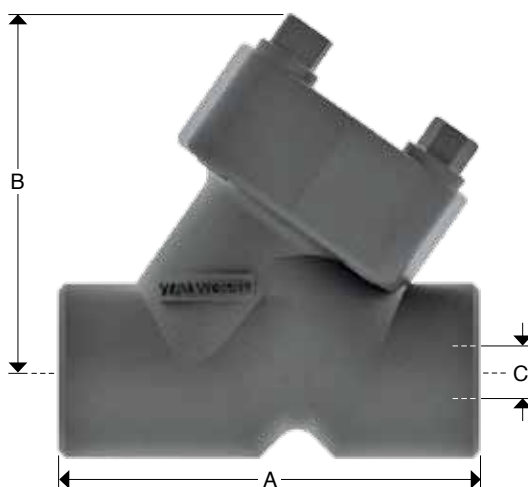
- API 602 & ASME B16.34
- Bolted cover
- Ball type disc
- Standard Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Integral Seat Ring
- Horizontal Fluid Control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500 Bolted Cover	6651YS 6651YSW 6651YSSW	Threaded Socket Weld Threaded X Socket Weldr

Dimensions and Weights

Fig. 6651Y Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.72	4.72	5.98	7.09	7.09	7.87
	mm	120	120	152	180	180	200
B	in	4.06	4.06	4.96	5.75	5.75	6.61
	mm	103	103	126	146	146	168
C	in	0.39	0.51	0.68	0.91	1.12	1.38
	mm	10	13.0	17.5	23.0	28.5	35.0
D	in	1.97	1.97	2.52	3.15	3.15	3.15
	mm	50	50	64	80	80	80
Weight	lb	3.08	4.18	5.77	9.24	11.66	19.8
	kg	1.4	1.9	2.6	4.2	5.8	9.0



WALWORTH API 602 SWING CHECK VALVES

Check valves are generally used to protect pumps or similar equipment, allowing the flow in only one direction and preventing flow reversal due to back pressure.

The swing type check valves are designed to produce a low pressure drop in the pipeline. This design provides a tight seal as well as a fast reaction to the closure.

DESIGN FEATURES

- Valves in accordance with API-602.
- Socket weld, threaded, combined.
- Bolted or welded bonnets options.
- Low fugitive emissions control.
- Nace service either MR-0175 or MR-0103
- Test in accordance with API-598..

Body to cover joint designed to apply a uniform load to the gasket to assure a leak proof seal.

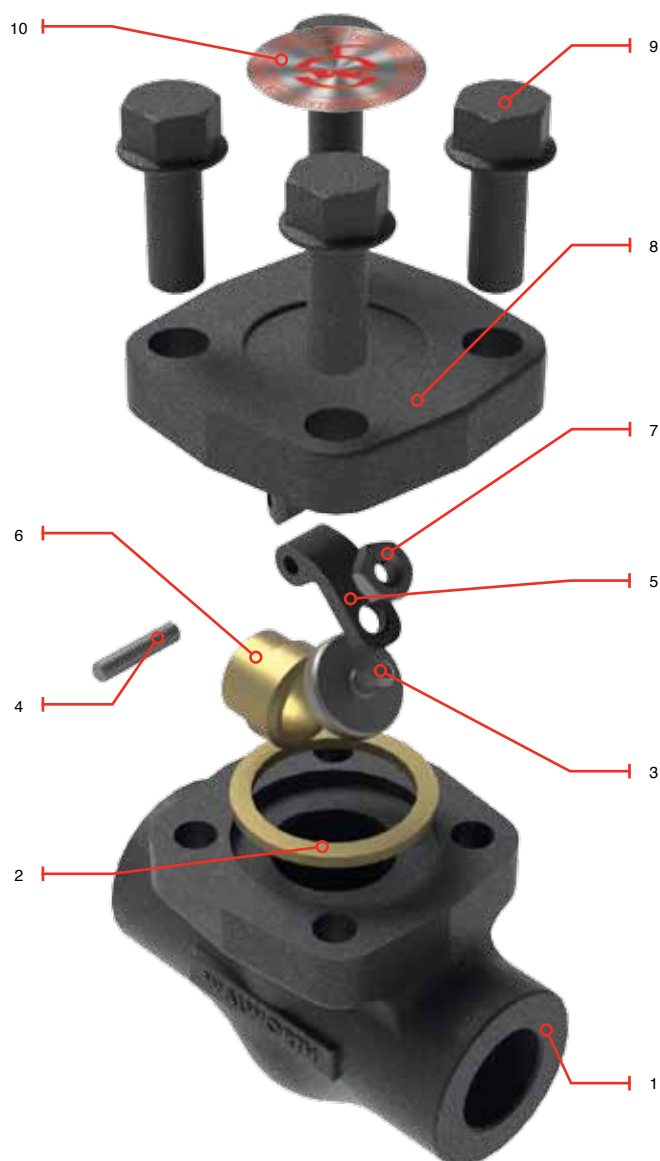
Disc to hanger allows the disc a controlled movement independent to the hanger to assure proper disc alignment with the seat at closure.

The connection is secured by a welded disc nut to prevent disassembly due to vibration and closure impact.

Stellite seat ring provides increased resistance to wear abrasion and erosion of the sealing surface.

REGULAR BILL OF MATERIALS

No.	DESCRIPTION	TRIM 8 A 105N
1	BODY	A105
2	GASKET	304+FLEXIBLE GRAPHITE
3	DISC	A276-420
4	HANGER PIN	A276-304
5	HANGER	A276-304
6	SEAT	A276-410
7	DISC NUT	A194-8
8	COVER	A105
9	COVER BOLT	A193-B7
10	IDENTIFICATION PLATE	ALUMINIUM



API 602 SWING CHECK VALVE TH & SW, CLASS 800

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Cover
- Swing type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or Vertical Fluid Control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	800 Bolted Cover	5640S	Threaded
		5640SW	Socket Weld
		5640SSW	Threaded X Socket Weldr
Full	800 Bolted Cover	5648S	Threaded
		5648SW	Socket Weld
		5648SSW	Threaded X Socket Weld
Standard	800 Welded Cover	5647S	Threaded
		5647SW	Socket Weld
		5647SSW	Threaded X Socket Weld
Full	800 Welded Cover	5649S	Threaded
		5649SW	Socket Weld
		5649SSW	Threaded X Socket Weld

Dimensions and Weights

Fig. 5640 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	4.72	5.51
	mm	79	79	79	92	111	120	120	140
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.31	0.39	0.51	0.51	0.69	0.94	1.12	1.45
	mm	8	10	13	13	18	24	29	36.8
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34	34	34	40	49	58	64	78.0
Weight	lb	2.86	2.86	2.64	3.74	5.28	8.8	11.22	19.36
	kg	1.3	1.3	1.2	1.7	2.4	4.0	5.1	8.8

Fig. 5647 Welded Cover, Standard Port

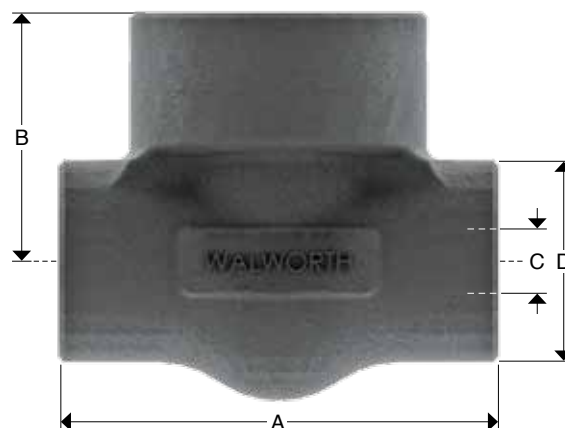
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.11	3.62	4.37	4.72	4.72	5.51
	mm	79	79	79	92	111	120	120	140
B	in	2.15	2.15	2.15	2.15	2.83	3.19	3.70	4.41
	mm	54.5	54.5	54.5	54.5	72.0	81.0	94.0	112.0
C	in	0.31	0.39	0.51	0.51	0.69	0.94	1.12	1.45
	mm	8	10	13	13	18	24	29	36.8
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34	34	34	40	49	58	64	78.0
Weight	lb	2.86	2.86	2.64	3.74	5.28	8.8	11.22	19.36
	kg	1.3	1.3	1.2	1.7	2.4	4.0	5.1	8.8

Fig. 5648 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	4.72	5.51	6.30
	mm	92	111	120	120	140	160
B	in	2.15	2.83	3.19	3.70	4.41	5.19
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	0.51	0.69	0.94	1.12	1.45	1.89
	mm	13	18	24	29	36.8	48.0
D	in	1.57	1.93	2.28	2.52	3.07	3.07
	mm	40	49	58	64	78.0	78.0
Weight	lb	3.74	5.06	8.58	11	19.14	33.66
	kg	1.7	2.3	3.9	5.0	8.7	15.3

Fig. 5649 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	3.62	4.37	4.72	4.72	5.51	6.30
	mm	92	111	120	120	140	160
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	0.51	0.69	0.94	1.12	1.45	1.89
	mm	13	18	24	29	36.8	48.0
D	in	1.57	1.93	2.28	2.52	3.07	3.07
	mm	40	49	58	64	78.0	78.0
Weight	lb	3.74	5.06	8.58	11	19.14	33.66
	kg	1.7	2.3	3.9	5.0	8.7	15.3



API 602 SWING CHECK VALVE TH & SW, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted or Welded Cover
- Swing type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or Vertical Fluid Control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500	5641S	Threaded
	Bolted	5641SW	Socket Weld
	Cover	5641SSW	Threaded X Socket Weldr
Full	1500	5628S	Threaded
	Bolted	5628SW	Socket Weld
	Cover	5628SSW	Threaded X Socket Weldr
Standard	1500	5651S	Threaded
	Welded	5651SW	Socket Weld
	Cover	5651SSW	Threaded X Socket Weldr
Full	1500	5657S	Threaded
	Welded	5657SW	Socket Weld
	Cover	5657SSW	Threaded X Socket Weldr

Dimensions and Weights

Fig. 5641 Bolted Cover, Standard Port

Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	4.72	5.51	6.30
	mm	79	79	92	111	120	120	140	160
B	in	2.87	2.87	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73.0	73.0	73.0	73.0	84.0	97.0	115.0	132.0
C	in	.26	0.39	0.51	0.51	0.71	0.94	1.14	1.45
	mm	6.8	10	13	13	18	24	29	36.8
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34	34	34	40	49	58	64	78.0
Weight	lb	4.84	4.4	4.84	5.94	9.68	13.86	22.66	33.66
	kg	2.2	2.0	2.2	2.7	4.4	6.3	10.3	15.3

Fig. 5651 Welded Cover, Standard Port

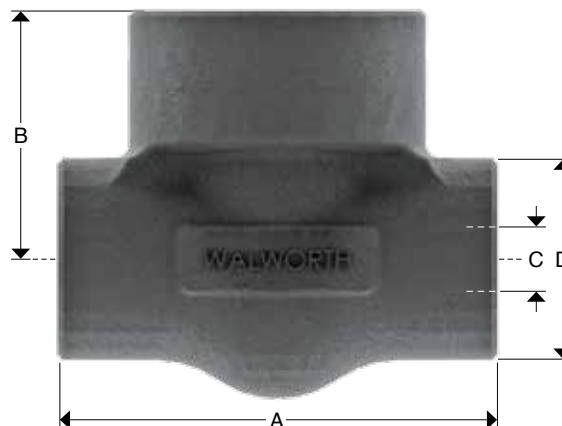
Sizes	in	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	6	10	13	19	25	32	38	51
A	in	3.11	3.11	3.62	4.37	4.72	4.72	5.51	6.30
	mm	79	79	92	111	120	120	140	160
B	in	2.87	2.87	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73.0	73.0	73.0	73.0	84.0	97.0	115.0	132.0
C	in	0.26	0.39	0.51	0.51	0.71	0.94	1.14	1.45
	mm	6.8	10	13	13	18	24	29	36.8
D	in	1.34	1.34	1.34	1.57	1.93	2.28	2.52	3.07
	mm	34	34	34	40	49	58	64	78.0
Weight	lb	4.84	4.4	4.84	5.94	9.68	13.86	22.66	33.66
	kg	2.2	2.0	2.2	2.7	4.4	6.3	10.3	15.3

Fig. 5628 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	4.72	5.51	6.30	8.66
	mm	111	120	120	140	160	220
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73.0	84.0	97.0	115.0	132.0	132.0
C	in	0.51	0.69	0.94	1.12	1.45	1.89
	mm	13	18	24	29	36.8	48.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49	58	64	78.0	88.0
Weight	lb	5.94	9.46	13.64	22.44	33.66	36.74
	kg	2.7	4.3	6.2	10.2	15.3	16.7

Fig. 5657 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	4.37	4.72	4.72	5.51	6.30	8.66
	mm	111	120	120	140	160	220
B	in	2.87	3.31	3.82	4.53	5.20	5.20
	mm	73.0	84.0	97.0	115.0	132.0	132.0
C	in	0.51	0.69	0.94	1.12	1.45	1.89
	mm	13	18	24	29	36.8	48.0
D	in	1.57	1.93	2.28	2.52	3.07	3.46
	mm	40	49	58	64	78.0	88.0
Weight	lb	5.94	9.46	13.64	22.44	33.66	36.74
	kg	2.7	4.3	6.2	10.2	15.3	16.7



API 602 SWING CHECK VALVE TH & SW, CLASS 2500

Design Characteristics

- API 602 & ASME B16.34
- Welded cover
- Swing type disc
- Standard or Full Port
- Threaded, Socket Weld Or Threaded X Socket Weld
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or Vertical Fluid Control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	2500 Welded Cover	5652S	Threaded
		5652SW	Socket Weld
		5652SSW	Threaded X Socket Weldr
Full	2500 Welded Cover	5672S	Threaded
		5672SW	Socket Weld
		5672SSW	Threaded X Socket Weldr

Dimensions and Weights

Fig. 5652 Welded Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	5.91	6.69	7.87	7.87	9.84
	mm	150	150	170	200	200	250
B	in	4.02	4.02	4.21	5.04	5.04	5.63
	mm	102	102	107	128	128	143
C	in	0.43	0.55	0.75	0.98	1.10	1.38
	mm	11	14	19	25	28	35
D	in	2.05	2.05	2.52	3.15	3.15	3.74
	mm	52.0	52.0	64.0	80.0	80.0	95.0
Weight	lb	18.04	17.6	27.06	44	43.56	60.5
	kg	8.2	8.0	12.3	20.0	19.8	27.5

Fig. 5672 Welded Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A	in	5.91	6.69	7.87	7.87	9.84	PCR
	mm	150	170	200	200	250	
B	in	4.02	4.21	5.04	5.04	5.63	PCR
	mm	102	107	128	128	143	
C	in	0.55	0.75	0.98	1.10	1.38	PCR
	mm	14	19	25	28	35	
D	in	2.05	2.52	3.15	3.15	3.74	PCR
	mm	52.0	64.0	80.0	80.0	95.0	
Weight	lb	17.6	27.06	44	43.56	60.5	PCR
	kg	8.0	12.3	20.0	19.8	27.5	



API 602 SWING CHECK VALVE RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Swing type disc
- Standard port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	150	56415RF 56415RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	300	56430RF 56430RTJ	Flanged Raised Face Flanged Ring Type Joint
Standard	600	56460RF 56460RTJ	Flanged Raised Face Flanged Ring Type Joint

Dimensions and Weights

Fig. 56415 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	pulg.	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	pulg.	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B	in	2.15	2.15	2.83	3.19	3.58	4.41
	mm	54.5	54.5	72.0	81.0	91.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

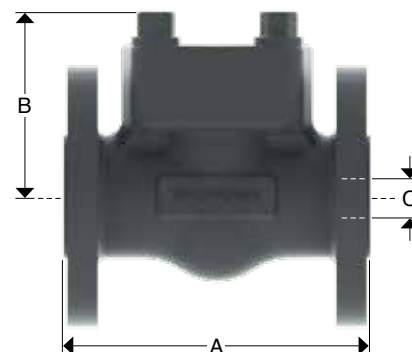


Fig. 56430 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	pulg.	-	-	8.50	9.00	9.50	10.50
	mm	-	-	216	229	241	267
A (RJ)	pulg.	-	-	9.00	9.50	10.00	11.125
	mm	-	-	229	242	254	283
B	in	2.15	2.15	2.83	3.19	3.58	4.41
	mm	54.5	54.5	72.0	81.0	91.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	8.14	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8

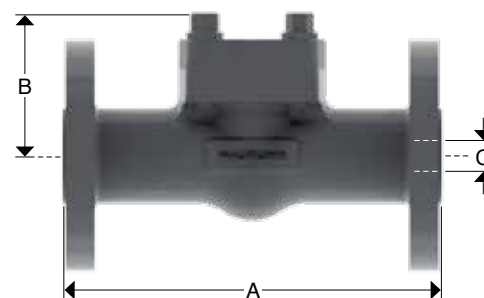


Fig. 56460 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	pulg.	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	pulg.	6.44	0.75	1.00	1.25	1.50	11.63
	mm	163	190	216	229	241	295
B	in	2.15	2.15	2.83	3.19	3.58	4.41
	mm	54.5	54.5	72.0	81.0	91.0	112.0
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 SWING CHECK VALVES RF/RTJ, CLASS 150, 300 & 600

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Swing type disc
- Full port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Full	150	56418RF	Flanged Raised Face
		56418RTJ	Flanged Ring Type Joint
Full	300	56438RF	Flanged Raised Face
		56438RTJ	Flanged Ring Type Joint
Full	600	56468RF	Flanged Raised Face
		56468RTJ	Flanged Ring Type Joint

Dimensions and Weights

Fig. 56418 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	4.25	4.63	5.00	5.50	6.50	8.00
	mm	108	117	127	140	165	203
A (RJ)	in	-	-	5.50	6.00	7.00	8.50
	mm	-	-	140	153	178	216
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	91	112.0	132.0
C	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13	17.5	23	28.5	35	40
Weight	lb	7.48	9.68	18.04	19.58	26.4	31.46
	kg	3.4	4.4	8.2	8.9	12.0	14.3

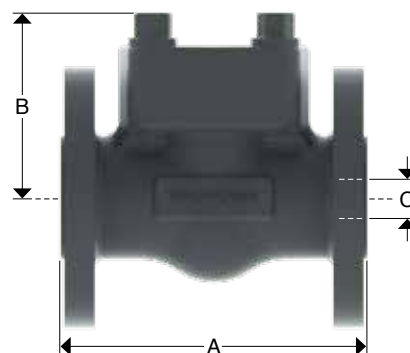


Fig. 56438 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	-	-	8.50	9.00	9.50	10.50
	mm	-	-	216	229	241	267
A (RJ)	in	-	-	9.00	9.50	10.00	11.125
	mm	-	-	229	242	254	283
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13	17.5	23	28.5	35	40
Weight	lb	8.14	10.56	19.36	21.12	30.14	39.16
	kg	3.7	4.8	8.8	9.6	13.7	17.8



Fig. 56468 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	6.50	7.50	8.50	9.00	9.50	11.50
	mm	165	190	216	229	241	292
A (RJ)	in	6.44	0.75	1.00	1.25	1.50	11.63
	mm	163	190	216	229	241	295
B	in	2.15	2.83	3.19	3.70	4.41	5.20
	mm	54.5	72.0	81.0	94.0	112.0	132.0
C	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13	17.5	23	28.5	35	40
Weight	lb	7.48	12.76	20.9	22.88	34.32	53.9
	kg	3.4	5.8	9.5	10.4	15.6	24.5



API 602 SWING CHECK VALVES RF/RTJ, CLASS 1500

Design Characteristics

- API 602 & ASME B16.34
- Bolted cover
- Swing type disc
- Standard or Full Port
- Integral flanged ends (Raised Face or Ring Type Joint)
- Spiral wound gasket
- Threaded Seat Ring
- Horizontal or vertical fluid control

PORT	CLASS	CATALOG FIGURE No.	ENDS TYPES
Standard	1500	56441RF	Flanged Raised Face
Full	1500	56448RF	Flanged Raised Face

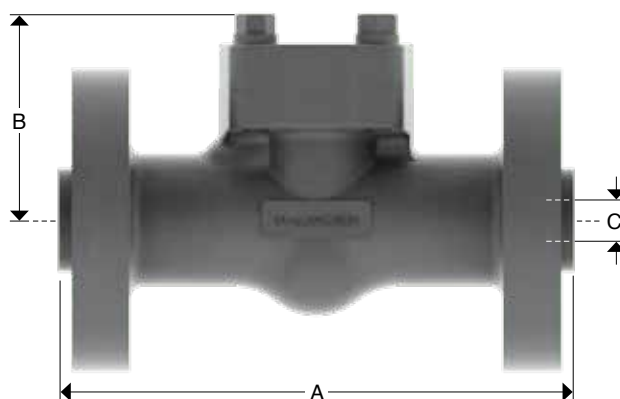
Dimensions and Weights

Fig. 56441 Bolted Cover, Standard Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B	in	2.87	2.87	3.31	3.82	4.53	5.20
	mm	73	73	84	97	115	132
C	in	0.39	0.51	0.69	0.91	1.12	1.38
	mm	10.0	13.0	17.5	23.0	28.5	35.0
Weight	lb	20.68	24.64	31.68	35.2	47.3	61.6
	kg	9.4	11.2	14.4	16.0	21.5	28.0

Fig. 56448 Bolted Cover, Full Port

Sizes	in	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	mm	13	19	25	32	38	51
A (RF)	in	8.50	9.00	10.00	11.00	12.00	14.50
	mm	216	229	254	279	305	368
A (RJ)	in	8.50	9.00	10.00	11.00	12.00	14.625
	mm	216	229	254	279	305	371
B	in	2.87	3.31	3.82	4.53	5.20	5.71
	mm	73	84	97	115	132	145
C	in	0.51	0.69	0.91	1.12	1.38	1.57
	mm	13.0	17.5	23.0	28.5	35.0	40.0
Weight	lb	24.64	31.68	35.2	47.3	61.6	70.4
	kg	11.2	14.4	16.0	21.5	28.0	32.0



TECHNICAL INFORMATION

WEDGE DESIGN

Solid wedge characteristics:

- Its angled design offers facility to open and close without any difficulty. This provides a hermetic seal to the valve.
- Will handle fluids with high solids content without difficulty.



NACE SERVICE VALVES

The National Association of Corrosion Engineers (NACE) establishes standards for materials resistant to Sulfide Stress Cracking (SSC) to be used in hydrogen sulfide (H₂S) bearing hydrocarbon service.

NACE standard MR0175 defines a sulfide stress cracking region based on the relationship of H₂S present to the total operating pressure.

This must be considered when specifying valves for service where H₂S is present, as proper selection of materials is a customer's responsibility.

Sulfide stress cracking in materials not suitable for H₂S service can result in a sudden failure, causing damage to equipment and harm to personnel.

Important considerations when specifying NACE service

1. Hydrogen ion concentration (Ph).
2. Concentration and total pressure of the hydrogen sulfide (H₂S).
3. Concentration of water, carbon dioxide (CO₂) and chlorides.
4. Service temperature.

The customer can select valves made of alloy/carbon steel material with controlled hardness and/or a stainless steel material depending on the severity of the fluid. Valves having a body/bonnet with a controlled hardness of Rc 22 and studs/nuts of B7M/2HM can be combined with a customer selected trim and manufactured to meet NACE MR0175 requirements.

TECHNICAL INFORMATION

BODY AND BONNET JOINT GASKETS

WALWORTH Flanged end valves are available as bolted bonnet valves in classes 150, 300, 600 and 1500, and are furnished with a Stainless Steel Spiral Wound Graphite filled Bonnet Gasket as Standard.

WALWORTH Forged Steel Valves with Threaded, Socket Weld and Threaded X Socket Weld Ends in class 800 and 1500 are furnished with the Stainless Steel Spiral Wound Gasket as Standard, with the welded bonnet construction at the customer's option.

All WALWORTH ASME Class 2500 Froged Steel Valves are furnished in Welded Bonnet construction.

WALWORTH Valves can also be supplied with special materials to comply with specific requirements of the customer.

TYPE	CLASS				
	150	300	600	800	1500
GATE	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3
GLOBE	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3
CHECK	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3	1, 2 6 3



1. SPIRAL WOUND GASKET: Stainless Steel Type 304/ Graphite Filled (For A105; F5; F9; F11; F22, & F304)

2. SPIRAL WOUND GASKET: Stainless Steel Type 316/ Graphite Filled (For F316)

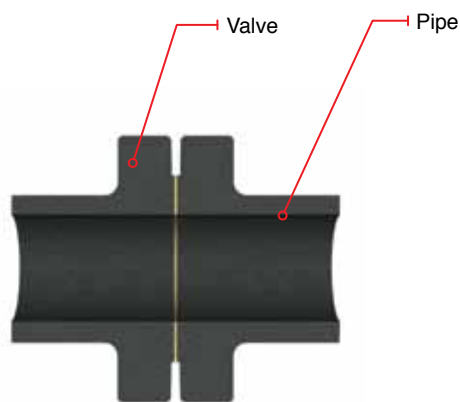
3. SPIRAL WOUND GASKET: With base materials per body material / Graphite Filled.(For special alloys)



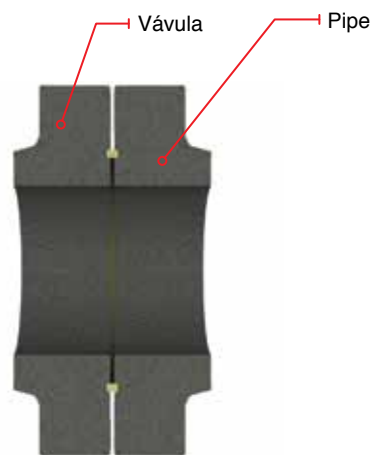
TECHNICAL INFORMATION

TYPES OF END CONNECTIONS

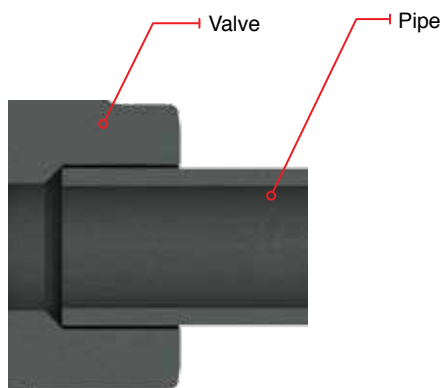
WALWORTH API 602 Valves can be supplied with Flanged ends in Raised Face or Ring Type Joint Ends as well as Threaded, Socket Weld, or Threaded X Socket Weld Ends.



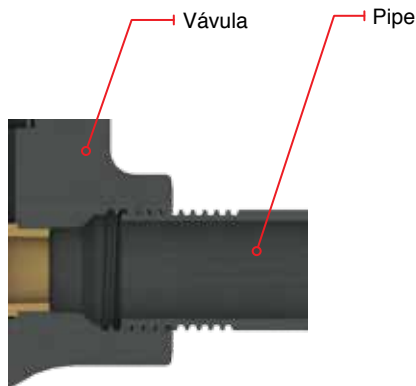
Flanged Raised Face



Flanged Ring Type Joint



Socket Weld End



Threaded Ends NPTF

VALVES FOR OXYGEN SERVICE

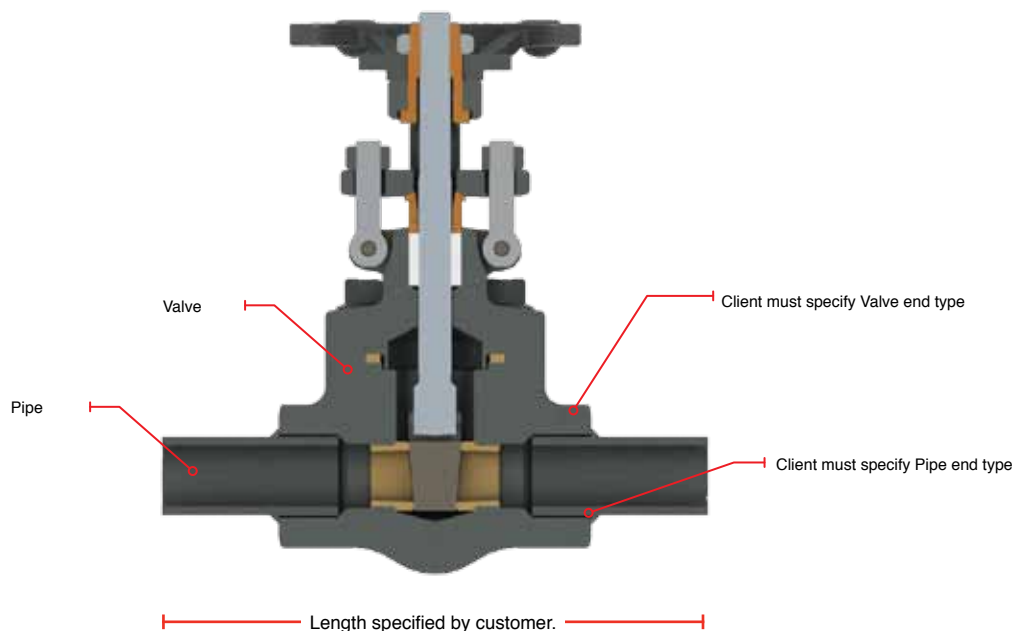
The WALWORTH API 602 Gate, Globe and Check Valves can be supplied for oxygen service. These valves are normally stainless steel type 316 or type 304 and are carefully cleaned by a chemical process to eliminate grease and any other residue. They are completely sealed in bags to prevent contact with the environment before being installed.

VALVES LOCKS

The WALWORTH API 602 Gate and Globe valves can be supplied with locks, to prevent operation by unauthorized personnel.

VALVE EXTENSIONS

These are the valves with extensions at the end using pipe nipples. For the valves to be supplied with extensions, the type of ends must be specified as well as the total length between ends.



SEALING SURFACES OVERLAY

The type of material used to overlay the sealing surfaces on gates disks and seats is determined by the type of trim designated.

The WALWORTH Standard trims is API No. 8 (UT) where the sealing surface of the gate is overlaid with 410 Stainless Steel (13% CR) and the seat sealing surface is overlaid with stellite No. 6.

This Standard trim provides good resistance to corrosion, wear, abrasion and erosion that can be used by the fluid flowing through the system. The controlled difference in hardness between the 410 Stainless Steel and the Stellite No. 6 provides good resistance to damage during normal operation.

WALWORTH can furnish valves with a variety of trims and materials to meet the customer's requirements for an optimum service life.



CV API 602 VALVES

GATE VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	4.831	4.831	----	----	----	----
3/8"	0.375	7.682	12.982	----	----	----	----
1/2"	0.500	13.220	13.220	15.332	13.220	13.220	15.332
3/4"	0.750	13.739	13.739	15.934	26.339	26.339	15.934
1"	1.000	27.461	27.461	30.597	48.819	48.819	30.597
1 1/4"	1.250	72.881	49.916	54.163	72.881	72.881	54.163
1 1/2"	1.500	74.596	74.596	69.541	120.121	120.121	69.541
2"	2.000	124.234	126.285	114.233	214.851	214.851	114.233

GLOBE VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	0.624	0.624	----	----	----	----
3/8"	0.375	1.502	1.502	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	1.923	4.868	4.868	3.116
1"	1.000	5.075	5.075	3.248	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	4.243	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	10.840	21.858	21.247	13.598
2"	2.000	22.337	22.337	14.296	40.279	40.279	22.337

GLOBE "Y" PATTERN VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	0.624	0.624	----	----	----	----
3/8"	0.375	1.502	1.502	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	1.923	4.868	4.868	3.116
1"	1.000	5.075	5.075	3.248	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	4.243	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	10.840	21.858	21.247	13.598
2"	2.000	22.337	22.337	14.296	40.279	40.279	22.337

PISTON CHECK VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	0.624	0.624	----	----	----	----
3/8"	0.375	1.502	1.502	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	1.923	4.868	4.868	3.116
1"	1.000	5.075	5.075	3.248	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	4.243	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	10.840	21.858	21.247	13.598
2"	2.000	22.337	22.337	14.296	40.279	40.279	22.337

CV API 602 VALVES

PISTON CHECK “Y” PATTERN VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	----	----	----	----	----	----
3/8"	0.375	----	----	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	3.116	4.868	4.868	3.116
1"	1.000	5.075	5.075	5.983	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	10.358	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	13.598	21.858	21.247	13.598
2"	2.000	22.337	22.337	22.337	40.279	40.279	22.337

BALL CHECK VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	0.624	0.624	----	----	----	----
3/8"	0.375	1.502	1.502	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	1.923	4.868	4.868	3.116
1"	1.000	5.075	5.075	3.248	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	4.243	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	10.840	21.858	21.247	13.598
2"	2.000	22.337	22.337	14.296	40.279	40.279	22.337

BALL CHECK “Y” PATTERN VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	----	----	----	----	----	----
3/8"	0.375	----	----	----	----	----	----
1/2"	0.500	1.530	1.530	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	3.116	4.868	4.868	3.116
1"	1.000	5.075	5.075	5.983	8.767	8.767	5.983
1 1/4"	1.250	8.964	8.964	10.358	13.764	13.764	10.358
1 1/2"	1.500	14.088	14.088	13.598	21.858	21.247	13.598
2"	2.000	22.337	22.337	22.337	40.279	40.279	22.337

SWING CHECK VALVES

SIZE		150/300/600/800 STANDARD PORT GAL/MIN	1500 STANDARD PORT GAL/MIN	2500 STANDARD PORT GAL/MIN	150/300/600/800 FULL PORT GAL/MIN	1500 FULL PORT GAL/MIN	2500 FULL PORT GAL/MIN
in	mm						
1/4"	0.250	0.945	0.682	----	----	----	----
3/8"	0.375	1.502	1.502	----	----	----	----
1/2"	0.500	2.585	2.585	1.851	2.585	2.585	2.998
3/4"	0.750	2.686	2.686	3.116	5.150	5.150	3.116
1"	1.000	5.370	5.370	5.983	9.546	9.546	5.983
1 1/4"	1.250	9.761	9.761	10.358	14.251	14.251	10.358
1 1/2"	1.500	14.586	14.586	13.598	23.488	23.488	13.598
2"	2.000	24.694	24.694	22.337	42.012	42.012	22.337

PRESSURE-TEMPERATURE RATINGS

ASTM A 105 (1)(2), ASTM 350 GR LF2 (1), ASTM A216 Grade WCB (1) and ASTM A352 Grade LCC (1)

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	285	740	1480	1973	3705	6170
200	93	260	680	1360	1809	3395	5655
300	149	230	655	1310	1747	3270	5450
400	204	200	635	1265	1689	3170	5280
500	260	170	605	1205	1609	3015	5025
600	316	140	570	1135	1516	2840	4730
650	343	125	550	1100	1467	2745	4575
700	371	110	530	1060	1413	2665	4425
750	399	98	505	1015	1351	2535	4230
800	427	80	410	825	1098	2055	3430
850	454	65	320	640	849	1595	2655
900	482	50	230	460	613	1150	1915
950	510	35	135	275	364	685	1145
1000	538	20	85	170	227	430	715

(1) Upon prolonged exposure to temperatures above 425°C, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged usage above 425°C.

(2) Only killed steel shall be used above 455°C.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F5 AND ASTM A217 Grade C5

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	290	750	1500	2000	3750	6250
200	93	260	750	1500	2000	3750	6250
300	149	230	730	1455	1942	3640	6070
400	204	200	705	1410	1880	3530	5880
500	260	170	665	1330	1773	3325	5540
600	316	140	605	1210	1613	3025	5040
650	343	125	590	1175	1569	2940	4905
700	371	110	570	1135	1516	2840	4730
750	399	95	530	1065	1418	2660	4430
800	427	80	510	1015	1356	2540	4230
850	454	65	485	975	1298	2435	4060
900	482	50	375	745	996	1870	3115
950	510	35	275	550	733	1370	2285
1000	538	20	200	400	529	995	1655
1050	566	20(*)	145	290	382	720	1200
1100	593	20(*)	100	200	267	495	830
1150	621	20(*)	60	125	164	310	515
1200	649	15(*)	35	70	93	170	285

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F9 AND ASTM A217 Grade C12

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	290	750	1500	2000	3750	6250
200	93	260	750	1500	2000	3750	6250
300	149	230	730	1455	1942	3640	6070
300	204	200	705	1410	1880	3530	5880
500	260	170	665	1330	1773	3325	5540
600	316	140	605	1210	1613	3025	5040
650	343	125	590	1175	1569	2940	4905
700	371	110	570	1135	1516	2840	4730
700	399	95	530	1065	1418	2660	4430
800	427	80	510	1015	1356	2540	4230
850	454	65	485	975	1298	2435	4060
900	482	50	450	900	1200	2245	3745
950	510	35	375	755	1004	1885	3145
1000	538	20	255	505	676	1270	2115
1050	566	20(*)	170	345	458	855	1430
1100	593	20(*)	115	225	302	565	945
1150	621	20(*)	75	150	200	375	630
1200	649	20(*)	50	105	138	255	430

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F11 AND ASTM A217 Grade WC6

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	290	750	1500	2000	3750	6250
200	93	260	750	1500	2000	3750	6250
300	149	230	720	1445	1124	3610	6015
400	204	200	695	1385	1849	3465	5775
500	260	170	665	1330	1773	3325	5540
600	316	140	605	1210	1613	3025	5040
650	343	125	590	1175	1569	2940	4905
700	371	110	570	1135	1516	2840	4730
750	399	95	530	1065	1418	2660	4430
800	427	80	510	1015	1356	2540	4230
850	454	65	485	975	1298	2435	4060
900	482	50	450	900	1200	2245	3745
950	510	35	320	640	849	1595	2655
1,000	538	20	215	430	578	1080	1800
1,050	566	20(*)	145	290	382	720	1200
1,100	593	20(*)	95	190	258	480	800
1,150	621	20(*)	65	130	173	325	545
1,200	649	15(*)	40	80	111	205	345

(*) Use normalized and tempered material only.

(*) Permissible, but not recommended for prolonged use above 595°C.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F22 AND ASTM A217 Grade WC9

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	290	750	1500	2000	3750	6250
200	93	260	750	1500	2000	3750	6250
300	149	230	720	1445	1124	3610	6015
400	204	200	695	1385	1849	3465	5775
500	260	170	665	1330	1773	3325	5540
600	316	140	605	1210	1613	3025	5040
650	343	125	590	1175	1569	2940	4905
700	371	110	570	1135	1516	2840	4730
750	399	95	530	1065	1418	2660	4430
800	427	80	510	1015	1356	2540	4230
850	454	65	485	975	1298	2435	4060
900	482	50	450	900	1200	2245	3745
950	510	35	385	755	1031	1930	3220
1,000	538	20	265	535	711	1335	2230
1,050	566	20(*)	175	350	467	875	1455
1,100	593	20(*)	110	220	293	550	915
1,150	621	20(*)	70	135	182	345	570
1,200	649	15(*)	40	80	111	205	345

* At temperatures above 538°C, use only when the carbon content is 0.04% or higher.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F91 AND ASTM A217 Grade C12-A

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	290	750	1500	2000	3750	6250
200	93	260	750	1500	2000	3750	6250
300	149	230	730	1455	1942	3640	6070
400	204	200	705	1410	1880	3530	5880
500	260	170	665	1330	1773	3325	5540
600	316	140	605	1210	1613	3025	5040
650	343	125	590	1175	1569	2940	4905
700	371	110	570	1135	1516	2840	4730
750	399	95	530	1065	1418	2660	4430
800	427	80	510	1015	1356	2540	4230
850	454	65	485	975	1298	2435	4060
900	482	50	450	900	1200	2245	3745
950	510	35	385	755	1025	1930	3220
1,000	538	20	365	725	970	1820	3030
1,050	566	20(*)	360	720	960	1800	3000
1,100	593	20(*)	300	605	805	1510	2515
1,150	621	20(*)	225	445	595	1115	1855
1,200	649	20(*)	145	290	385	720	1200

* At temperatures above 538°C, use only when the carbon content is 0.04% or higher.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F304 AND ASTM A351 Grade CF8

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	275	720	1440	1920	3600	6000
200	93	230	600	1200	1600	3000	5000
300	149	205	540	1075	1436	2690	4480
400	204	190	495	995	1324	2485	4140
500	260	170	465	9320	1240	2330	3880
600	316	140	440	885	1178	2210	3680
650	343	125	430	865	1151	2160	3600
700	371	110	420	845	1124	2110	3520
750	399	95	415	825	1102	2065	3440
800	427	80	405	710	1080	2030	3380
850	454	65	395	790	1058	1980	3300
900	482	50	390	780	1036	1945	3240
950	510	35	380	765	1018	1910	3180
1000	538	20	355	710	947	1770	2950
1050	566	20(*)	325	650	867	1630	2715
1100	593	20(*)	255	515	684	1285	2145
1150	621	20(*)	205	410	547	1030	1715
1200	649	20(*)	165	330	440	825	1370
1250	677	20(*)	135	265	356	970	1115
1300	704	20(*)	115	225	302	565	945
1350	732	20(*)	95	185	249	465	770
1400	760	20(*)	75	150	200	380	630
1450	788	20(*)	60	115	156	290	485
1500	816	15(*)	40	85	111	205	345

(*) Permissible, but not recommended for prolonged use above 595°C.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F316 AND ASTM A351 Grade CF8M

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	275	720	1440	1920	3600	6000
200	93	235	620	1240	1653	3095	5160
300	149	215	560	1120	1493	2795	4660
400	204	195	515	1025	1369	2570	4280
500	260	170	480	955	1276	2390	3980
600	316	140	450	900	1204	2255	3760
650	343	125	440	885	1178	2210	3680
700	371	110	435	870	1160	2170	3620
750	399	95	425	855	1138	2135	3560
800	427	80	420	745	1124	2110	3520
850	454	65	420	735	1116	2090	3480
900	482	50	415	730	1107	2075	3460
950	510	35	385	775	1031	1930	3220
1000	538	20	365	725	969	1820	3030
1050	566	20	360	720	960	1800	3000
1100	593	20(*)	305	610	813	1525	2545
1150	621	20(*)	235	475	631	1185	1970
1200	649	20(*)	185	370	493	925	1545
1250	677	20(*)	145	295	391	735	1230
1300	704	20(*)	115	235	311	585	970
1350	732	20(*)	95	190	258	480	800
1400	760	20(*)	75	150	200	380	630
1450	788	20(*)	60	115	156	290	475
1500	816	15(*)	40	85	111	205	345

* At temperatures above 538°C, use only when the carbon content is 0.04% or higher.

(a) Flanged End Valve ratings terminate at 1000°F.

PRESSURE-TEMPERATURE RATINGS

ASTM A 182 GR F347 AND ASTM A351 Grade CF8C

Temperature		MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE IN PSIG BY CLASS					
°F	°C	150	300	600	800	1500	2500
-20 to 100	-29 to 38	275	720	1,440	1920	3,600	6,000
200	93	255	660	1,325	1764	3,310	5,520
300	149	230	615	1,235	1644	3,085	5,140
400	204	200	575	1,150	1538	2,880	4,800
500	260	170	540	1,085	1444	2,710	4,520
600	316	140	515	1,030	1378	2,580	4,300
650	343	125	505	1,015	1351	2,530	4,220
700	371	110	495	995	1324	2,485	4,140
750	399	95	490	985	1311	2,460	4,100
800	427	80	485	975	1298	2,435	4,060
850	454	65	485	970	1293	2,425	4,040
900	482	50	450	900	1200	2,245	3,745
950	510	35	385	775	1031	1,930	3,220
1000	538	20	365	725	969	1,820	3,030
1050	566	20(a)	360	720	960	1,800	3,000
1100	593	20(a)	325	645	858	1,610	2,685
1150	621	20(a)	275	550	733	1,370	2,285
1200	649	20(a)	205	410	551	1,030	1,715
1250	677	20(a)	180	365	484	910	1,515
1300	704	20(a)	140	275	364	685	1,145
1350	732	20(a)	105	205	276	515	860
1400	760	20(a)	75	150	200	380	630
1450	788	20(a)	60	115	156	290	485
1500	816	15(a)	40	85	111	205	345

(*) Not to be used over 1000°F.

(a) Flanged End Valve ratings terminate at 1000°F.

DESIGN BASIS

All of WALWORTH's Valve Designs, when applicable, follow one or more of the following standards.

API	American Petroleum Institute.	
	API 598	Valve Inspection and Testing
	API-602	Steel Gate, Globe, and Check Valves for Sizes NPS 4 (DN 100) and smaller for the Petroleum and Natural Gas Industries
ASME/ANSI	American National Standard Institute:	
	B1.20.1	Pipe threads, general purpose (inch.)
	B16.5	Steel pipe Flanges and flanged fittings
	B16.10	Length of ferrous flanged and welding end valves
	B16.11	Forged fittings, Socket-Welding and Threaded
	B16.25	Butt-welding ends
MSS	B18.2	Square and hexagon bolts and nuts
	Manufactures Standardization Society of the Valve and Fittings:	
	SP-6	Standard finishes for contact faces of pipe flanges and connecting-end flanges of valves and fittings
	SP-9	Spot facing for bronze, iron, and steel flanges and unions
	SP-25	Standard marking system for valves, fittings, flanges and unions
	SP-45	Bypass and drain connections
	SP-53	Quality standard for steel castings and forgings for valves, flanges, and fittings, and other piping components -Magnetic Particle Examination Method
	SP-54	Quality standard for steel castings for valves, flanges, and fittings, and other components -Radiographic examination method for surface
	SP-55	Quality standard for steel castings for valves, flanges, and fittings, and other components -Visual Method for evaluation of surface irregularities
	SP-91	(R96) Guidelines for manual operation of valves
	SP-92	(R92) MSS Valves user guide
	SP-93	Quality standard for steel castings and forgings for valves, flanges, and fittings, and other piping components -Liquid Penetrant Examination Method
ASTM Standards	Amercian Society for Testing and Materials	
	ASTM A 105	Standard specification for carbon steel forgings for piping applications
	ASTM A 182	Standard specification for forged or rolled alloy-steel pipe flanges, forged fittings, and valves and parts for high-temperature service
	ASTM A 193	Standard specification for alloy-steel and stainless steel bolting materials for high-temperature service
	ASTM A 194	Standard specification for carbon and alloy steel nuts for bolts for high pressure and high temperature
	ASTM A 276	Standard specification for stainless and heat-resisting steel bars and shapes
	ASTM A 350	Standard specification for carbon and alloy-steel forgings requiring notch toughness testing for piping components
NACE Standards	National Association of Corrosion Engineers	
	NACE MR0175	Standard material requirements sulfide stress cracking resistant metallic material for oilfield equipment
Boiler and Pressure Vessel Code:		
	Section II Part A	Ferrous Material Specifications.
	Section II Part B	Non Ferrous Material Specifications.
	Section II Part C	Specifications for Welding Rods, Electrodes and Filler Metals Specifications.
	Section V	Non-destructive Examination.
	Section VIII	Rules for Construction of Pressure Vessels, Divisions 1 and 2.
	Section IX	Welding Qualifications

HOW TO ORDER:

SIZE (INCH)	WALWORTH FIGURE	TYPE	CLASS	BONNET OR COVER	PORT	ENDS	TRIM	BASE MATERIAL ASTM	
3/8"	950	GATE	800 #	BB	STD	S/SW/SSW	AA= API No. 1	CARBON STEELS:	
1/2"	958	GATE	800 #	BB	FULL	S/SW/SSW	18-8= API No. 2	A105N	
3/4"	957	GATE	800 #	WB	STD	S/SW/SSW	310= API No. 3	ALLOY STEELS:	
1"	959	GATE	800 #	WB	FULL	S/SW/SSW	HF= API No. 5	A182-F1	
1 1/4"	1950	GATE	1500 #	BB	STD	S/SW/SSW	AAA= API No. 6	A182-F5	
1 1/2"	1951	GATE	1500 #	BB	FULL	S/SW/SSW	UT= API No. 8	A182-F5a	
2"	1957	GATE	1500 #	WB	STD	S/SW/SSW	A= API No. 9	A182-F9	
	1958	GATE	1500 #	WB	FULL	S/SW/SSW	18-8smo= API No. 10	A182-F11	
	952	GATE	2500 #	WB	STD	S/SW/SSW	AHF= API No. 11	A182-F22	
	962	GATE	2500 #	WB	FULL	S/SW/SSW	3HF= API No. 12	LOW CARBON STAINLESS STEELS:	
	5520	GLOBE	800 #	BB	STD	S/SW/SSW	A20= API No. 13	A182-F304L	
	5528	GLOBE	800 #	BB	FULL	S/SW/SSW	A20H= API No. 14	A182-F316L	
	5527	GLOBE	800 #	WB	STD	S/SW/SSW	NUC= 410 + NUCALLOY	STAINLESS STEELS:	
	5529	GLOBE	800 #	WB	FULL	S/SW/SSW	4HF= 304+304+ST6	A182-F304	
	5521	GLOBE	1500 #	BB	STD	S/SW/SSW	4HF+HF= 304+ST6+ST6	A182-F316	
	5538	GLOBE	1500 #	BB	FULL	S/SW/SSW	304L= 304L+304L+304L	LOW CARBON STEELS:	
	5537	GLOBE	1500 #	WB	STD	S/SW/SSW	1HF= 316+ST21+ST21	A350-LF1	
	5539	GLOBE	1500 #	WB	FULL	S/SW/SSW	3HF+HF= 316+ST6+ST6	A350-LF2	
	5522	GLOBE	2500 #	WB	STD	S/SW/SSW	3TC= 316/TC+TC+ST6 NOTE: TC= Tungsten Carbide.	A350-LF3	
	5622	GLOBE	2500 #	WB	FULL	S/SW/SSW	316L= 316+316+316	NICKEL ALLOYS:	
	5623	GLOBE	4500 #	WB	STD	S/SW/SSW	3LHF= 316L+316L+ST6	B564-N0 4400 (MONEL 400)	
	5520Y	GLOBE "Y"	800 #	BB	STD	S/SW/SSW	3HFL= 316L+ST6+ST6	B564-UNS 8810 (INCOLOY 800H)	
	5528Y	GLOBE "Y"	800 #	BB	FULL	S/SW/SSW	21HF= 317+ST6+ST6	B564-UNS 8825 (INCOLOY 825)	
	5527Y	GLOBE "Y"	800 #	WB	STD	S/SW/SSW	317= 317+317+317	B564-UNS 6600 (INCONEL 600)	
	5529Y	GLOBE "Y"	800 #	WB	FULL	S/SW/SSW	317H= 317+317+ST6	B564-UNS 6625 (INCONEL 625)	
	5521Y	GLOBE "Y"	1500 #	BB	STD	S/SW/SSW	317LH= 317L+ST6+ST6	B564-N0 6022 (HASTELLOY C22)	
	5538Y	GLOBE "Y"	1500 #	BB	FULL	S/SW/SSW	31L= 317L+317L+317L	B564-N 10276 (HASTELLOY C276)	
	5537Y	GLOBE "Y"	1500 #	WB	STD	S/SW/SSW	317LS= 317L+317L+ST6	DUPLEX STAINLESS STEEL:	
	5539Y	GLOBE "Y"	1500 #	WB	FULL	S/SW/SSW	2HF= 321+321+ST6	A182-F51	
	5522Y	GLOBE "Y"	2500 #	WB	STD	S/SW/SSW	321F= 321+ST6+ST6	SUPER DUPLEX STAINLESS STEEL:	
	5622Y	GLOBE "Y"	2500 #	WB	FULL	S/SW/SSW	321= 321+321+321	A182-F55	
	5540	PISTON CHECK	800 #	BB	STD	S/SW/SSW	347HF= 347+ ST6+ST6	SUPPLEMENTARY REQUIREMENTS	
	5548	PISTON CHECK	800 #	BB	FULL	S/SW/SSW	347= 347+347+347		
	5547	PISTON CHECK	800 #	WB	STD	S/SW/SSW	347= 347+347+ST6		
	5549	PISTON CHECK	800 #	WB	FULL	S/SW/SSW	254HF= 31254+ST6+ST6		
	5541	PISTON CHECK	1500 #	BB	STD	S/SW/SSW	51H= 31803+ST6+ST6	GO= Gear operator.	
	5559	PISTON CHECK	1500 #	BB	FULL	S/SW/SSW	31803H= 31803+31803+ST6	MOV= Motor operated valve.	
	5545	PISTON CHECK	1500 #	WB	STD	S/SW/SSW	T9= 17-4pH+TRIBALLOY 900 + TRIBALLOY 900	POV= Pneumatic operated valve.	
	5569	PISTON CHECK	1500 #	WB	FULL	S/SW/SSW	HC= Hc-276+Hc-276+Hc-276	LD= Locking device.	
	5542	PISTON CHECK	2500 #	WB	STD	S/SW/SSW	HCH= Hc-276+Hc-276+ST6	NACEMR-01-75.	
	5642	PISTON CHECK	2500 #	WB	FULL	S/SW/SSW	UOP= MONELK500+MONEL 400+MONEL 400	NACEMR-01-03	
	5540Y	PISTON CHECK "Y"	800 #	BB	STD	S/SW/SSW	625= INCONEL 625+INCONEL 625+INCONEL 625	NACW for low temperature.	
	5548Y	PISTON CHECK "Y"	800 #	BB	FULL	S/SW/SSW	625HF= INCONEL 625+ST6+ST6	SP= Special paint.	
	5547Y	PISTON CHECK "Y"	800 #	WB	STD	S/SW/SSW	8367HF+HF= AL6XN+ST6+ST6	SG= Special gasket.	
	5549Y	PISTON CHECK "Y"	800 #	WB	FULL	S/SW/SSW	810T= INCOLOY 800H+INCOLOY 800H+INCOLOY800H	SPK= Special packing.	
	5541Y	PISTON CHECK "Y"	1500 #	BB	STD	S/SW/SSW	825= INCOLOY 825+INCOLOY825+INCOLOY 825	VOC= Certification of volatile	
	5559Y	PISTON CHECK "Y"	1500 #	BB	FULL	S/SW/SSW	23HF= INCOLOY 825+ST6+ST6	organic compounds.	
	5545Y	PISTON CHECK "Y"	1500 #	WB	STD	S/SW/SSW	HB= HASTELLOY B2+HASTELLOB2+HASTELLOY B2	XX= Additional requirements.	
	5569Y	PISTON CHECK "Y"	1500 #	WB	FULL	S/SW/SSW	NOTE: ADDITIONAL BASE MATERIALS & TRIMS ARE AVAILABLE UPON REQUEST.		
	5542Y	PISTON CHECK "Y"	2500 #	WB	STD	S/SW/SSW			
	5642Y	PISTON CHECK "Y"	2500 #	WB	FULL	S/SW/SSW			
	6650	BALL CHECK	800 #	BB	STD	S/SW/SSW	ENDS RF= RAISED FACE RTJ= RING TYPE JOINT	WALWORTH valves are designed by a catalog figure number which describe their main characteristics. The valve identification system shown herein is intended to assist our Customers to specify the valve required and avoid mistakes during manufacturing.	
	6658	BALL CHECK	800 #	BB	FULL	S/SW/SSW			
	6627	BALL CHECK	800 #	WB	STD	S/SW/SSW			
	6629	BALL CHECK	800 #	WB	FULL	S/SW/SSW			
	6651	BALL CHECK	1500 #	BB	STD	S/SW/SSW	BONNET OR COVER BB = BOLTED WB = WELDED	WALWORTH gate & globe valves are supplied handwheel operated unless otherwise is specified in price list.	
	6638	BALL CHECK	1500 #	BB	FULL	S/SW/SSW			
	6637	BALL CHECK	1500 #	WB	STD	S/SW/SSW			
	6659	BALL CHECK	1500 #	WB	FULL	S/SW/SSW			
	6650Y	BALL CHECK "Y"	800 #	BB	STD	S/SW/SSW			
	6651Y	BALL CHECK "Y"	1500#	BB	STD	S/SW/SSW			
	5640	SWING CHECK	800 #	BB	STD	S/SW/SSW			
	5648	SWING CHECK	800 #	BB	FULL	S/SW/SSW			
	5647	SWING CHECK	800 #	WB	STD	S/SW/SSW			
	5649	SWING CHECK	800 #	WB	FULL	S/SW/SSW			
	5641	SWING CHECK	1500 #	BB	STD	S/SW/SSW			
	5628	SWING CHECK	1500 #	BB	FULL	S/SW/SSW			
	5651	SWING CHECK	1500 #	WB	STD	S/SW/SSW			
	5657	SWING CHECK	1500 #	WB	FULL	S/SW/SSW			
	5652	SWING CHECK	2500 #	WB	STD	S/SW/SSW			
	5672	SWING CHECK	2500 #	WB	FULL	S/SW/SSW			

1/2"-950-SW-UT-A105-NACE MR 01-75

1/2"-950-SW-UT-A105-NACE MR 01-75

SUPPLEMENTARY REQUIREMENTS.
 BASE MATERIAL.
 TRIM ARRANGEMENT.
 TYPE OF ENDS.
 TYPE OF VALVE & PRESSURE CLASS.
 AS PER FIGURE NUMBER.
 SIZE OF THE VALVE IN INCHES.

SIZE (INCH)	WALWORTH FIGURE	TYPE	CLASS	BONNET OR COVER	PORT	ENDS	TRIM	BASE MATERIAL ASTM
3/8"	9515	GATE	150 #	BB	STD	RF/RTJ	AA= API No. 1	CARBON STEELS:
1/2"	9518	GATE	150 #	BB	FULL	RF/RTJ	18-8= API No. 2	A105N
3/4"	9530	GATE	300 #	BB	STD	RF/RTJ	310= API No. 3	ALLOY STEELS:
1"	9538	GATE	300 #	BB	FULL	RF/RTJ	HF= API No. 5	A182-F1
1 1/4"	9560	GATE	600 #	BB	STD	RF/RTJ	AAA= API No. 6	A182-F5
1 1/2"	9568	GATE	600 #	BB	FULL	RF/RTJ	UT= API No. 8	A182-F5a
2"	19515	GATE	1500 #	BB	STD	RF/RTJ	A= API No. 9	A182-F9
	19185	GATE	1500 #	WB	FULL	RF/RTJ	18-8smo= API No. 10	A182-F11
	5615	GLOBE	150 #	BB	STD	RF/RTJ	AHF= API No. 11	A182-F22
	5618	GLOBE	150 #	BB	FULL	RF/RTJ	3HF= API No. 12	LOW CARBON STAINLESS STEELS:
	5630	GLOBE	300 #	BB	STD	RF/RTJ	A20= API No. 13	A182-F304L
	5638	GLOBE	300 #	BB	FULL	RF/RTJ	A20H= API No. 14	A182-F316L
	5660	GLOBE	600 #	BB	STD	RF/RTJ	NUC= 410 + NUCALLOY	STAINLESS STEELS:
	5668	GLOBE	600 #	BB	FULL	RF/RTJ	4HF= 304+304+ST6	A182-F304
	15615	GLOBE	1500 #	BB	STD	RF/RTJ	4HF+HF= 304+ST6+ST6	A182-F316
	15685	GLOBE	1500 #	WB	FULL	RF/RTJ	304L= 304L+304L+304L	LOW CARBON STEELS:
	5815	PISTON CHECK	150 #	BB	STD	RF/RTJ	1HF= 316+ST21+ST21	A350-LF1
	5818	PISTON CHECK	150 #	BB	FULL	RF/RTJ	3HF+HF= 316+ST6+ST6	A350-LF2
	5830	PISTON CHECK	300 #	BB	STD	RF/RTJ	3TC= 316/TC+TC+ST6 NOTE: TC= Tungsten Carbide.	A350-LF3
	5838	PISTON CHECK	300 #	BB	FULL	RF/RTJ	316L= 316+316+316	NICKEL ALLOYS:
	5860	PISTON CHECK	600 #	BB	STD	RF/RTJ	3LHF= 316L+316L+ST6	B564-N0 4400 (MONEL 400)
	5868	PISTON CHECK	600 #	BB	FULL	RF/RTJ	3HFL= 316L+ST6+ST6	B564-UNS 8810 (INCOLOY 800H)
	15815	PISTON CHECK	1500 #	BB	STD	RF/RTJ	21HF= 317+ST6+ST6	B564-UNS 8825 (INCOLOY 825)
	15885	PISTON CHECK	1500 #	WB	FULL	RF/RTJ	317= 317+317+317	B564-UNS 6600 (INCONEL 600)
	6615	BALL CHECK	150 #	BB	STD	RF/RTJ	317H= 317+317+ST6	B564-UNS 6625 (INCONEL 625)
	6618	BALL CHECK	150 #	BB	FULL	RF/RTJ	317LH= 317L+ST6+ST6	B564-N0 6022 (HASTELLOY C22)
	6630	BALL CHECK	300 #	BB	STD	RF/RTJ	31L= 317L+317L+317L	B564-N 10276 (HASTELLOY C276)
	6638	BALL CHECK	300 #	BB	FULL	RF/RTJ	317LS= 317L+317L+ST6	DUPLEX STAINLESS STEEL:
	6660	BALL CHECK	600 #	BB	STD	RF/RTJ	2HF= 321+321+ST6	A182-F51
	6668	BALL CHECK	600 #	BB	FULL	RF/RTJ	321F= 321+ST6+ST6	SUPER DUPLEX STAINLESS STEEL:
	16615	BALL CHECK	1500 #	BB	STD	RF/RTJ	321= 321+321+321	A182-F55
	56415	SWING CHECK	150 #	BB	STD	RF/RTJ	347HF= 347+ ST6+ST6	
	56418	SWING CHECK	150 #	BB	FULL	RF/RTJ	347= 347+347+347	
	56430	SWING CHECK	300 #	BB	STD	RF/RTJ	347= 347+347+ST6	
	56438	SWING CHECK	300 #	BB	FULL	RF/RTJ	254HF= 31254+ST6+ST6	SUPPLEMENTARY REQUIREMENTS
	56460	SWING CHECK	600 #	BB	STD	RF/RTJ	51H= 31803+ST6+ST6	GO= Gear operator.
	56468	SWING CHECK	600 #	BB	FULL	RF/RTJ	31803H= 31803+31803+ST6	MOV= Motor operated valve.
	56441	SWING CHECK	1500 #	BB	STD	RF/RTJ	T9= 17-4pH+TRIBALLOY 900+ TRIBALLOY 900	POV= Pneumatic operated valve.
	56448	SWING CHECK	1500 #	BB	FULL	RF/RTJ	HC= Hc-276+Hc-276+Hc-276	LD= Locking device.
							HCH= Hc-276+Hc-276+ST6	NACEMR-01-75.
							UOP= MONELK500+MONEL 400+MONEL 400	NACEMR-01-03
							625= INCONEL 625+INCONEL 625+INCONEL 625	NACW for low temperature.
							625HF= INCONEL 625+ST6+ST6	SP= Special Paint.
							8367HF+HF= AL6XN+ST6+ST6	SG= Special gasket.
							810T= INCOLOY 800H+INCOLOY 800H+INCOLOY800H	SPK= Special packing.
							825= INCOLOY 825+INCOLOY825+INCOLOY 825	VOC= Certification of volatile
							23HF= INCOLOY 825+ST6+ST6	organic compounds.
							HB= HASTELLOY B2+HASTELLOB2+HASTELLOY B2	XX= Additional requirements.
							NOTE: ADDITIONAL BASE MATERIALS & TRIMS ARE AVAILABLE UPON REQUEST.	

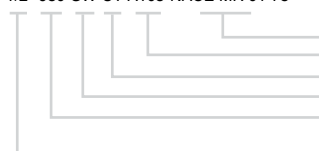
ENDS
RF= RAISED FACE
RTJ= RING TYPE JOINT

BONNET OR COVER
BB = BOLTED
WB = WELDED

WALWORTH valves are designed by a catalog figure number which describes their main characteristics. The valve identification system shown herein is intended to assist our Customers in specifying the valve required and avoid mistakes during manufacturing.

WALWORTH gate & globe valves are supplied handwheel operated unless otherwise is specified in price list.

1/2"-950-SW-UT-A105-NACE MR 01-75



SUPPLEMENTARY REQUIREMENTS.
 BASE MATERIAL.
 TRIM ARRANGEMENT.
 TYPE OF ENDS.
 TYPE OF VALVE & PRESSURE CLASS
 AS PER FIGURE NUMBER.
 SIZE OF THE VALVE IN INCHES.

THE WALWORTH COMPANY GENERAL TERMS AND CONDITIONS

ACCEPTANCE: All quotations are for acceptance within 30 days from date of quotation unless extended in writing. In the event a purchase order is placed after this period of time, the WALWORTH Company reserves the right to requote base prices of all valves offered. All orders and contracts are subject to credit approval and acceptance by the WALWORTH Company.

FREIGHT: When prices are f.o.b. point of shipment - no freight allowance - we will attempt to route shipments in the method which will result in the lowest cost unless otherwise instructed. All shipments will be freight charges collect except when stipulated on the purchase order, in which case you will be invoiced for all transportation charges. Delivery of material to a common carrier shall be considered to be delivery to Buyer and shall be at Buyer's risk thereafter. Claims of loss of or damage to material in transit shall be filed by the Buyer directly with the carrier.

PRICES: There will be added to all prices quoted sales, use, occupation or any other excise or similar tax which Seller may be required to pay or collect on or in connection with the sale. Seller shall be established by Federal, State or other government regulation with respect to the product(s) topped by the order which shall be lower than the price(s) specified in the order.

ESCALATION TERMS: Prices shown in this price schedule reflect the costs in effect at the time of publication. These prices will remain firm on all products with a quoted delivery of twenty-six (26) weeks or less. On products which have a scheduled delivery of more than twenty-six (26) weeks, the goods will be invoiced based on the applicable price sheet in effect at the time of shipment. In no event will the invoiced price be less than the price originally quoted.

PURCHASED COMPONENTS: (i.e. motors, gearing, etc.) Prices are quoted on the supplier's price in effect at the time of quotation. Actual invoice price will be adjusted in accordance with the supplier's escalation policy.

DIFFERED SHIPMENTS: If for any reason the customer desires to delay shipments more than 30 days after manufacturing is complete, or to place a on hold or stop to the order during the manufacturing cycle, The WALWORTH Company reserves the right to consider the order cancelled and to invoke cancellation charges per the schedule below.

CANCELLATION: After order acceptance by WALWORTH, items or completed orders may be cancelled and Buyer will be charged for work performed, based on the following schedule:

- Five percent (5%) of prices of stock items.
- Ten percent (10%) of price of stock items ordered in quantities which exceed normal inventory levels.
- Five percent (5%) of prices prior to drawing submittal on made-to-order items.
- 15% after drawing approval, but prior to the start of castings.
- 30% to 50% during casting cycle, depending on the state of completion.
- 55% to 75% during machining and assembly operations, depending on the state of completion.
- 100% after final assembly and test.

REMITTANCES: Remittances must be made to the address indicated on the invoice.

CREDIT TERMS: As quoted. Invoices on balances overdue will be subject to a service charge of 1 1/2 % per month on such indebtedness.

DELIVERIES: Shipments and deliveries shall at all times be subject to the approval of Seller's Credit Department. If the Buyer shall fail to make any

payments according to the terms of the contract, Seller may, in addition to and not in limitation of its other rights and remedies, at its option, cancel all or any part of Buyer's incomplete contracts with Seller, or may defer shipments of deliveries under Buyer's contracts with Seller except upon receipt of satisfactory security or for cash shipment.

All schedule of shipments are estimated as closely as possible and Seller will use its best efforts to ship within the time scheduled, but does not guarantee to do so. Schedules commence with the date Seller receives authorization to proceed with the order, subject to the provisions of the next sentence. The order will not be released for manufacture until complete specifications and approved drawings (if drawing approval is required) are received at the plant of manufacturer and the estimated schedule of shipment will commence with the date of such receipt.

Seller shall not be liable for any direct, indirect or consequential damage or loss caused by any delay in delivery, regardless of the cause of delay.

Without limiting the generality of the foregoing, Seller assumes no responsibility for delays in delivery resulting from fire, flood, accidents, riots, strikes, transportation delays, labor or material shortages, existing or future laws, acts of any governmental authority, or any other cause beyond Seller's control. Items offered from stock are subject to prior sale.

INSPECTION: Final inspection and acceptance of products must be made at the plant of manufacture, unless otherwise provided in the order and/ or in agreed upon specifications. Prices do not include charges for special tests or inspections performed at the request of the Buyer, unless called for in the order and/or in agreed upon specifications.

RETURNS: Permission in writing and return tagging instructions must be obtained from Seller before any goods returned for credit or adjustment will be accepted. Where returned goods are accepted, a minimum charge of 25% of the invoice price will be made, plus freight from both directions and costs of reconditioning the material for resale as new.

WARRANTY: Seller will replace without charge or refund the purchase price of products manufactured by Seller which prove to be defective in the material or workmanship, provided in each case that the product is properly installed and is used in the service for which Seller recommends it and that a written claim, specifying the alleged defect, is presented to Seller. Seller shall in no event be responsible for (a) claims for labor, expenses or other damages occasioned by defective products or (b) for consequences or secondary damages. THE WARRANTY STATED IN THIS PARAGRAPH IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. WITH RESPECT TO WARRANTIES, THIS PARAGRAPH STATES BUYER'S EXCLUSIVE REMEDY AND SELLER'S EXCLUSIVE LIABILITY.

DESIGN, ETC: Seller reserves the right to change design, materials or specifications without notice. There will be a charge for modifying an order after it has been entered when such change or modification results in additional engineering or clerical work for either The WALWORTH Company or our suppliers.

MINIMUM CHARGE: Orders totaling less than \$100.00 net will be billed at a minimum charge of \$100.00. Repair parts will be billed at a minimum charge of \$50.00.

NOTE: We reserve the right to correct obvious clerical errors in quotations, invoices, and other contracts.



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