WALWORTH®

Since 1842

SLAB GATE
THROUGH CONDUIT VALVE
CATALOG

www.walworth.com

INDEX

INTRODUCTION

DESIGN FEATURES

SLAB GATE VALVES

TECHNICAL INFORMATION

CE

6D-0097

TÜV CERT

YARMOUTH RESEARCH AND TECHNOLOGY

QMS REGISTERED ISO 9001 Certificate Number: 0038

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.

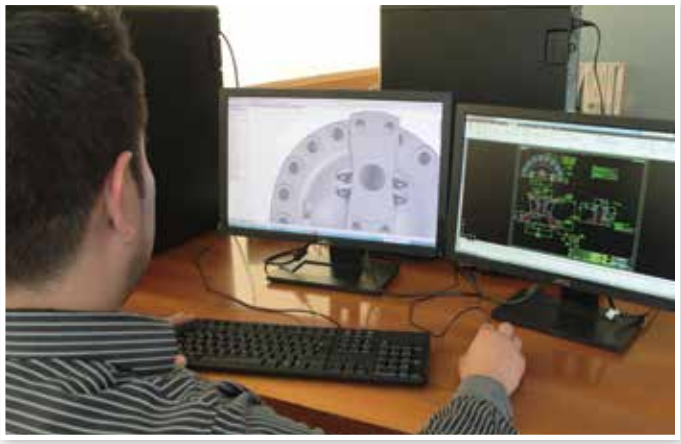
VISION
To be the world leader of unparalleled valve manufacturing and supply, WALWORTH:

- 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 strictly the most recognized international standards all over the world, such as API, ANSI, ASME, ASTM, MSS, NACE, AWWA, BSI, CSA, among others. Our Engineering team is always studying the new updates of these standards to incorporate any changes that may affect the design, regulations or performance of our products, being leaders in the new developments achieved.

Design is made using the most advanced technology and equipment, using finite elements and CAD system programs to ensure the proper assembly and performance of products since the concept, calculation and detailed drawings for manufacturing. WALWORTH is a leader in the development of new products according to valve market current needs.



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 of Authority to use the Official API Monogram
License Number: 6D-0097
ORIGINAL
WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico
API Spec 6D
The scope of this license includes the following products: Gate Valves; Plug Valves; Ball Valves; Check Valves
QMS Exclusions: No Exclusions Identified as Applicable
Effective Date: OCTOBER 13, 2011
Expiration Date: NOVEMBER 4, 2014
American Petroleum Institute

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 of Authority to use the Official API Monogram
License Number: 6A-0234
ORIGINAL
WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico
API Spec 6A
The scope of this license includes the following product: Valves at PSL 1 and 2
QMS Exclusions: No Exclusions Identified as Applicable
Effective Date: OCTOBER 13, 2011
Expiration Date: NOVEMBER 4, 2014
American Petroleum Institute

Certificate API-6A No. 6A-0234
From American Petroleum Institute to apply on valves at PSI, 1 through 4.

Certificate of Authority to use the Official API Monogram

License Number: 594-0007

WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico

American Petroleum Institute

Effective Date: OCTOBER 13, 2011
Expiration Date: NOVEMBER 4, 2014

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.

Certificate of Authority to use the Official API Monogram

License Number: 600-0109

WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico

American Petroleum Institute

Effective Date: OCTOBER 13, 2011
Expiration Date: NOVEMBER 4, 2014

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.

Certificate of Authority to use the Official API Monogram

License Number: 602-0024

WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico

American Petroleum Institute

Effective Date: OCTOBER 13, 2011
Expiration Date: NOVEMBER 4, 2014

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.

QMS REGISTERED

Certificate of Registration

APIQR REGISTRATION NUMBER
0038

WALWORTH
Avenida de la Industria Lote 16
Fraccionamiento Industrial El Trebol
Tepotzotlan
Mexico

ISO 9001:2008

Design and Manufacture of Valves

No Exclusions Identified as Applicable

Effective Date: November 4, 2011
Expiration Date: November 4, 2014
Registered Since: November 4, 2011

Manager of Operations, APIQR

Certificate ISO-9001 No. 0038
Issued by American Petroleum Institute since April 1999.

Certificate

Quality-Assurance System
acc. to Directive 97/23/EC

Certificate no.: 01 202 USAIQ-10 0012

Name and address of the manufacturer: Walworth – Inval Facility
Industrial de Válvulas, S.A. de C.V.
Avenida de la Industrial Lote 16
Fraccionamiento Industrial El Trebol
C.P. 54600, Tepotzotlan, Estado de Mexico

Herewith we certify that the above mentioned manufacturer operates a quality system according to the European Directive 97/23/EC. The manufacturer has the permission to affix the following CE marking to pressure equipment described and manufactured in accordance to the scope covered by this Quality-Assurance System:

CE 0035

Tested acc. to Directive 97/23/EC: QS-System (Module H)

Audit report no.: USAIQ-10 0012

Area of validity: Design, Manufacturing and testing of industrial valves, see annex to certificate

Manufacturing plant: Walworth – Inval Facility
Industrial de Válvulas, S.A. de C.V.
Avenida de la Industrial Lote 16
Fraccionamiento Industrial El Trebol
C.P. 54600, Tepotzotlan, Estado de Mexico

Valid until: April 07, 2015

Cologne, April 30, 2013

www.tuv.com

TÜVRheinland®
Precisely Right.

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


CFE
COMISIÓN FEDERAL DE ELECTRICIDAD
LAPEM
LABORATORIO DE PRUEBAS DE EQUIPOS Y MATERIALES
CONSTANCIA DE CALIFICACIÓN DE PROVEEDOR

Supplier Qualification Certificate NO. 279/13
Issued by the Equipment and Materials Testing Laboratory, CFE (LAPEM in Spanish)


PETROLEOS MEXICANOS
GRUPO TECNICO DE EVALUACION DE PROVEEDORES E INSPECCION DE BIENES
CONSTANCIA DE PROVEEDOR CONFIABLE

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

PRODUCT CERTIFICATIONS


FUGITIVE EMISSION TEST CERTIFICATE

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.


FUGITIVE EMISSION TEST CERTIFICATE

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.


FUGITIVE EMISSION TEST CERTIFICATE

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: 99009

Customer: The Walworth Company

Contact: David Cornelsen

Date(s) of Test: 12/8/99 – 12/23/99

Product(s) Tested: One 6" Class 300 Gate Valve with Empak-Mex EAF-100.001 packing

Purpose of Test: The test was conducted to evaluate the valve's stem 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 3500 open/close cycles with the valve pressurized to 645 psig. The valve was cycled with a 41 RPM gear motor coupled to the handwheel. One packing nut adjustment was required at cycle number 300 to maintain leakage levels below 100 PPMv.

At cycle number 3500, the packing leakage was 25-29 PPMv with the stem static. The packing nuts were tightened from 12/14 ft-lb back to 28 ft-lb and leakage decreased to about 1 PPMv.

See the attached data sheets for more information.

Test Witness: Matthew J. Wasielewski, P. E., President
YARMOUTH RESEARCH AND TECHNOLOGY

TÜV Rheinland Argentina S.A.
Servicios Industriales

TÜVRheinland®

Certificate

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. CORNELSEN, P.E., PRESIDENT

January 22, 2005

Ruben Paredes
Walworth – Ineval Facility
Av. De la Industria Lote 16 Fracc. Industrial el Trebol
Tepotzotlan, Edo. De Mexico
CP 54600, 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 Soft-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. Cornelsen P.E.
President

TÜV CERT
TÜVRheinland®
Precisely Right.

CERTIFICATE

Concerning the Agreement with the Technical Requirements in:

TA-Luft 2002, VDI 2440 Nov. 2000, Sec. 3.3.1.3

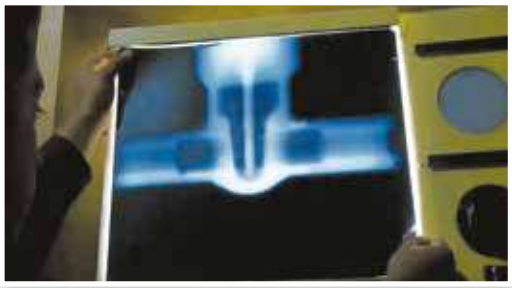
Kind of Valve:	Walworth API 600 Gate Valve	
Sealing System:	Graphite Seals	
Nominal Size, Nominal Pressure:	4 inch, ANSI 300	
Inspection Media/Pressure:	Helium / 51 Bars	Temperature = Ambient
Testing Method:	Helium Leak Test – VDI 2440, Appendix A	

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 quality international standards, in-house equipments are 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 raw casting material.

PMI Equipment.- 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 and the Customer's specifications.

Magnetic Particle Test.- On a random basis for standard products or when a Customer requests MT Certification, WALWORTH uses Magnetic Particle Testing Equipment on ferromagnetic materials.

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

Test Loop. A complete Laboratory Test loop exists for design validation of WALWORTH products, performing the test at maximum design pressure and cycling the valves from 3000 to 5000 cycles. The test takes more than four months to be completed.

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 the equipment used in its facilities to ensure the traceability of measurements to international standards. In this way, WALWORTH gets measurement control of its products to comply with international standards.

Fire Test Facilities.- Facilities to perform fire test in accordance to API requirements. The test exposes the valve to a flame at 1400 to 1800°F (761 to 980°C) to verify proper sealing of the valve.

Low Fugitive Emissions Test.- When a Customer requires low fugitive emissions certification, the Lab has its own LFE Test Equipment capable of measuring less than 20 ppm in either static or mechanical conditions at ambient temperature or thermal cycle operations.

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

Tensile Test Equipment.- To verify the mechanical properties of materials used for manufacturing, WALWORTH tests samples on a random basis even though we receive MTR's from our suppliers and foundries.

Hardness Test Equipment.- In either lab or shop tests, WALWORTH uses hardness testing equipment such as Rockwell B, C Brinell or Vickers to check compliance against specifications.

SLAB GATE VALVE
THROUGH CONDUIT RISING STEM DESIGN

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

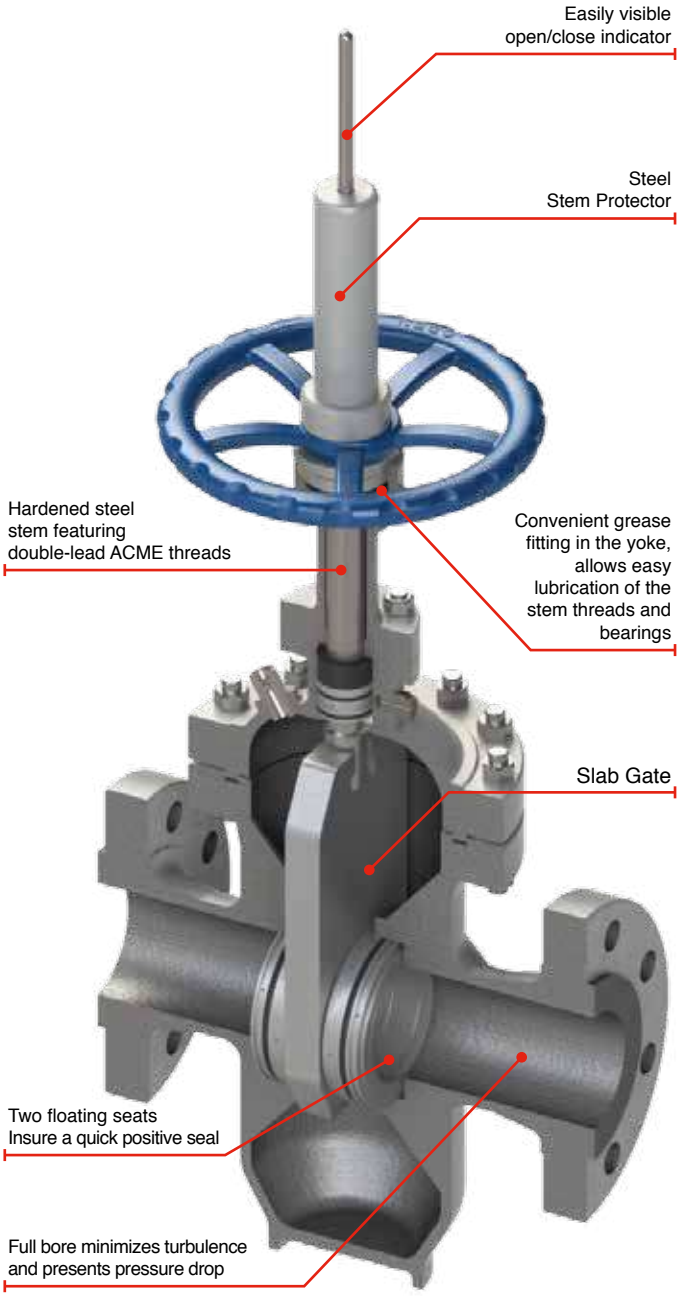
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.



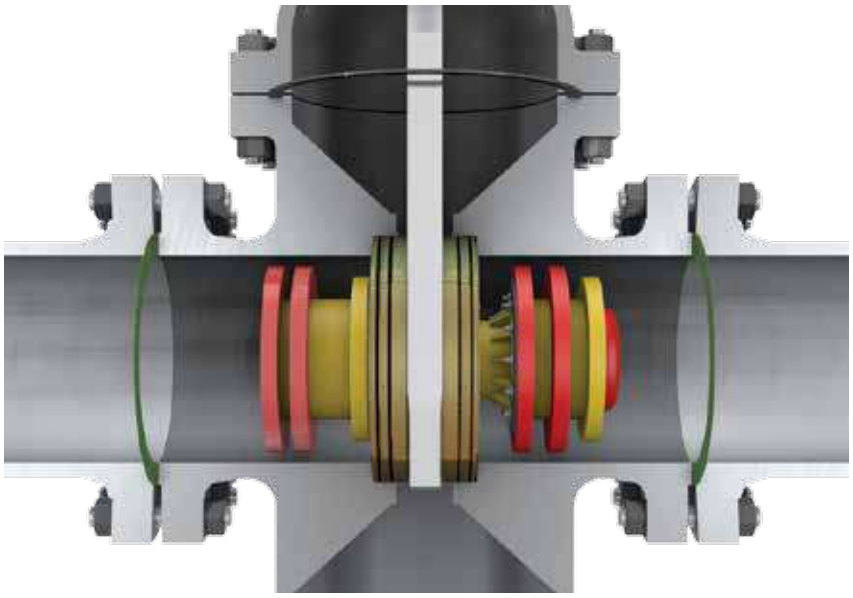
SLAB GATE VALVE DESIGN FEATURES

DISC CONFIGURATION

Solid flat disc made from forged or cast steel and electroless nickel platted (ENP) 0.003” thickness to prevent corrosion or galling. Hard faced seat areas of the wedge with welding overlays (Stellite 6) or complete hard faced coating all over the disc such as Tungsten Carbide, Chromium Carbide, Stellite 6, etc. using HVOF process in house are available upon request.

FULL OPENING THROUGH CONDUIT DESIGN

Valves are suitable for piggable operation.- Whenever a pipeline require maintenance or inspection, the use of scrappers, pigs, wipers or gauges are necessary.
WALWORTH Slab Gate Valves are through conduit design as have circular bore in the flat disc (obturator) that allows these tooling to pass with a nominal size not less than specified in API-6D (Minimum bore for full opening valves).



SLAB GATE VALVE DESIGN FEATURES

VENTING SYSTEMS ON BONNET

A feature is installed on bonnet to check if body-bonnet cavity retain pressured fluid. A special plug is installed on top of the bonnet and allen screw is fitted inside this plug. In order to eliminate over pressure inside body-bonnet cavity unscrew lightly the allen screw until fluid come out through the lateral holes located aside the plug; this is a safety way to eliminate overpressure and avoid any injury to the personnel.

PRESSURE RELIEF SYSTEM

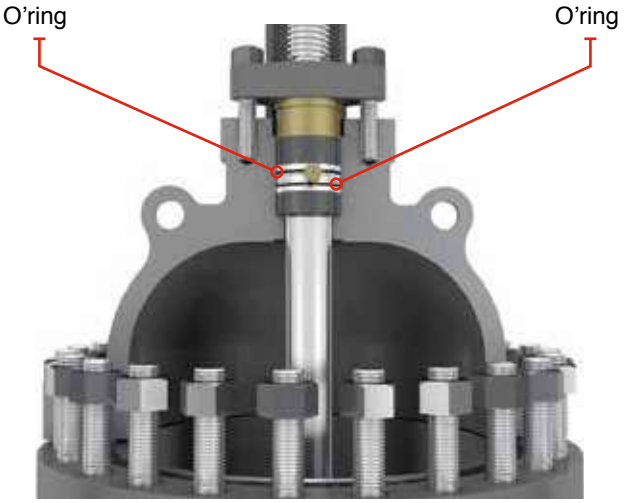
Relief Ball Check valve can be installed on bonnet instead the plug to protect the valve in case of over pressure deriving such a pressure to another pipeline.

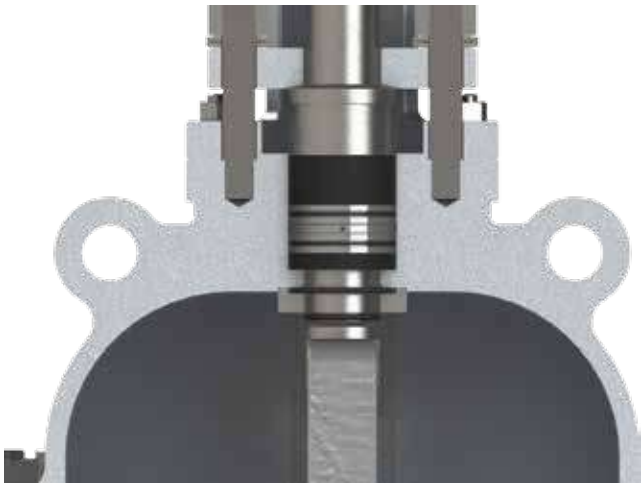
SLAB GATE VALVE DESIGN FEATURES

SEAL SYSTEM ON PACKING CHAMBER

Packing chamber is provided with a packing set and a lantern ring in the middle of the packing chamber, this feature incorporate two O'rings around the bushing to add additional sealing to the valve even with the disc in close position or during travel of the disc.

Stem is designed with backseat to seal packing chamber even with pressure on line. Stem seal is the secundary seal of the packing chamber when the valve is in the full open position.





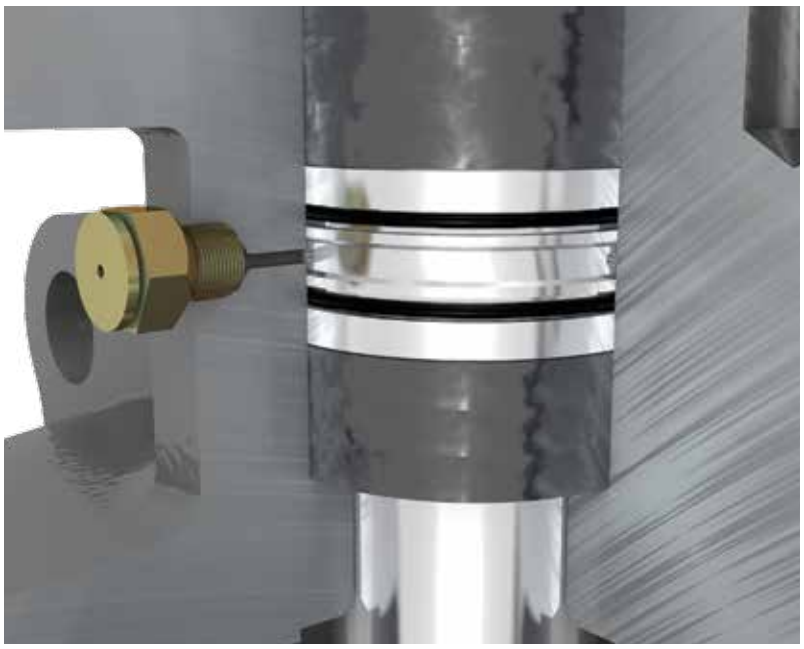
DRAIN OF THE VALVE

Due the type of service of the Slab Gate Valve, after a period of time the valve accumulates slurries on the bottom of the valve body where the disc is allocated on closed position. To clean this area, the valve is provided with a plug for drain purposes. Floating ball valve can be installed instead a plug upon request.

SLAB GATE VALVE DESIGN FEATURES

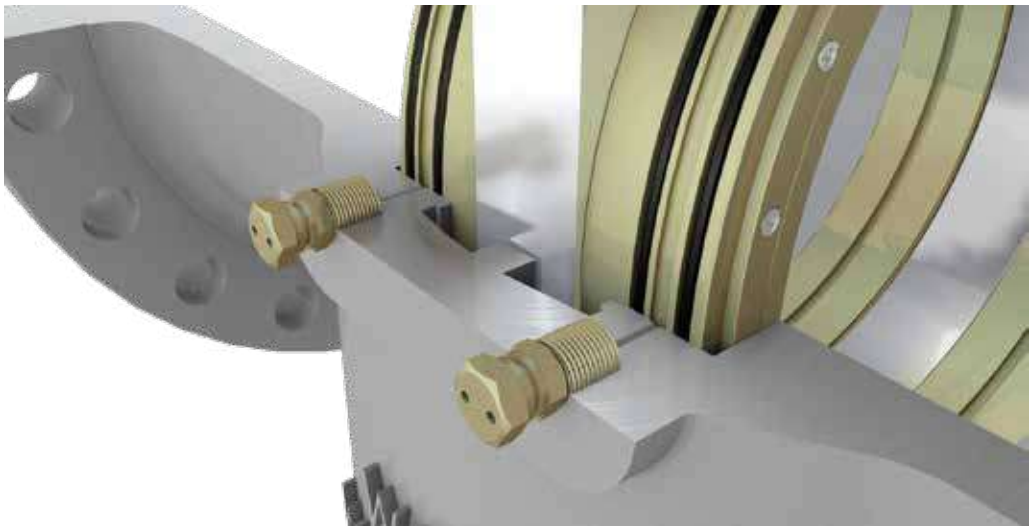
EMERGENCY SEALANT INJECTOR ON PACKING CHAMBER

If specified by the customer, packing chamber is also manufactured with emergency sealant injector in case of packing failure. When necessary it is possible to inject plastic sealant through the bushing while the valve is under pressure to stop the leakage.



EMERGENCY SEALANT INJECTOR SYSTEM ON SEAT RINGS

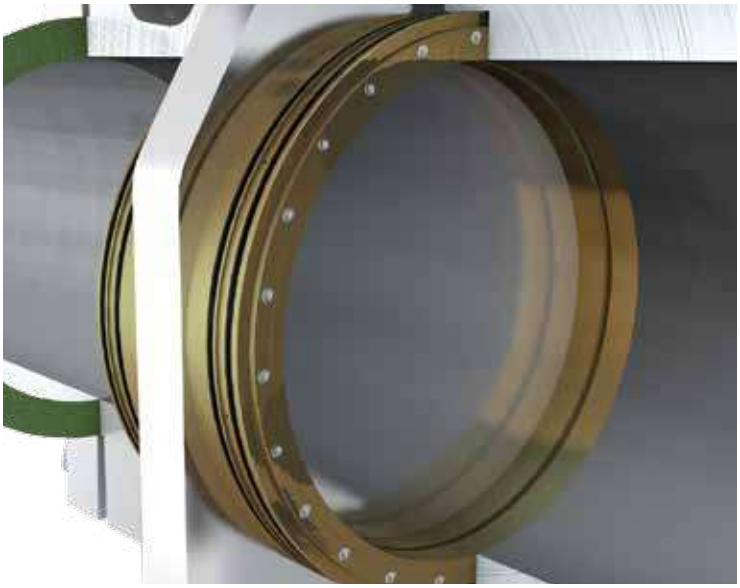
In case of damage in service of the seat rings a secondary plastic sealant injection system is provided if specified by the customer to seal all sealing surface of the seat rings. This is a temporary sealing fixture to help the valve sealing until can be repaired.
These sealing fittings are located strategically to assure complete coverage of the sealing seats surfaces to permit fill all around the seats.



SLAB GATE VALVE DESIGN FEATURES

SEATS ARRANGEMENT

The seating arrangement is composed of ENP coated seat and soft inserts that ensure that primary sealing occurs at the gate. In case of soft seat damage, metal to metal seating will function as a secondary seal.
Metal to metal seating design is available for abrasive service upon request.



DOUBLE BLOCK & BLEED DESIGN (DBB)

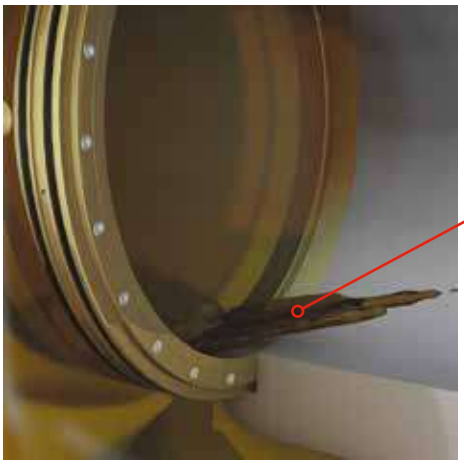
Slab Gate Valve can be subject to maintenance or repair on line without remove it from the line. When pressure is acting on both sides of the valve (upstream & downstream) seat rings design activate them against the disc to keep the valve sealing. Once the valve is acting as “DBB“, pressure and/or fluid on body-bonnet cavity can be released through the body drain system.
To test this feature with the valve half-open, the valve and its cavity shall be completely filled with test fluid. The valve shall then be closed and the valve body vent valve opened to allow excess test fluid to overflow from the valve cavity test connection. The test pressure shall be applied simultaneously from both valve ends.
Seat tightness shall be monitored through the valve cavity connection.

SLAB GATE VALVE DESIGN FEATURES

UNIDIRECTIONAL SEATS

WALWORTH Slab Gate Valves are unidirectional; this means that are designed for auto-relief the fluid in both downstream and upstream directions.

To test this feature with the valve half-open, the valve and its cavity shall be completely filled with test fluid. The valve shall be then be closed and the test pressure applied successively to the central cavity. Overpressure will be relieved through both valve ends.



Auto-relief through unidirectional seats

FINITE ELEMENT ANALYSIS
AND COMPUTER-ASSISTED DESIGN

FINITE ELEMENT ANALYSIS

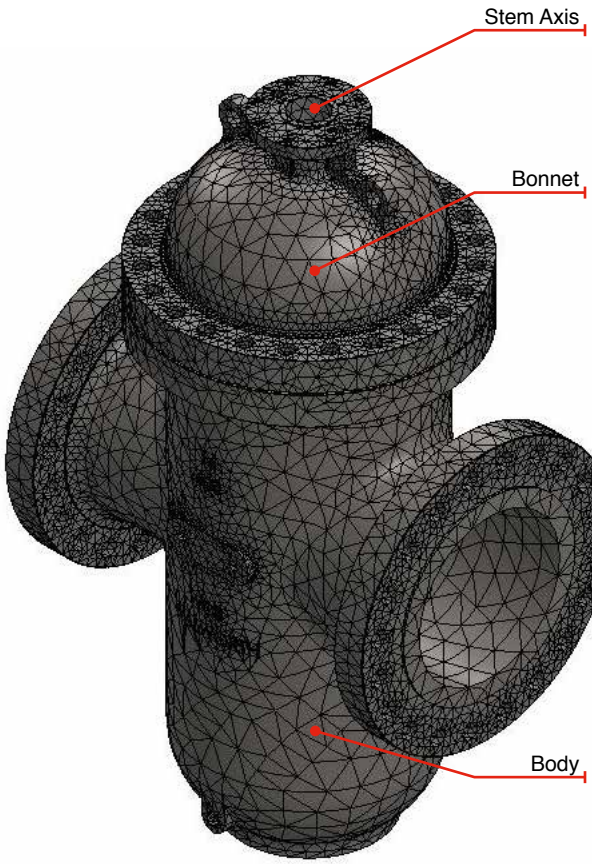
WALWORTH makes extensive use of the latest state-of-the art Finite Element Analysis techniques to optimize their valve designs. Through this approach, the performance of a complex structure, such as a valve, can be predicted by reducing it to a grouping of finite number of smaller structural elements more readily subjected to mathematical modeling.

All critical components of the valve are thoroughly analyzed by this technique to assure the structural, as well as functional integrity of the valve.

PIPING LOADS CONSIDERED

In actual service, sometimes vary high pipe loads may be transmitted to the valve ends by the attached pipeline system. The adequacy of the WALWORTH valves under these loads is established by thorough analysis in which pressure, pipe imposed bending moments and axial loads are considered simultaneously.

Stresses, as well as deflections, are analyzed to assure that the valve will continue to perform satisfactorily under the severe combination of these loads.



FINITE ELEMENT MODEL OF GATE VALVE

BODY CENTER SECTION
UNDER APPLIED BENDING MOMENT.

FINITE ELEMENT ANALYSIS
AND COMPUTER-ASSISTED DESIGN

OPTIMIZATION BY PARAMETRIC STUDIES AND COMPUTER-AIDED-DESIGN APPROACH

In optimizing the valve designs, detailed parametric studies involving many non-dimensional parameters are conducted on the critical components of the valve.

These studies have helped us develop optimum valve results of these Finite Elements Analysis and Parametric Studies are incorporated in a Computer Program that produces the complete design information for a valve of any given pressure rating most efficiently.

VALIDATION BY TESTING

Finite Element predications are validated by conducting actual non-destructive and performance tests on valves. It is integrated Finite Element Analysis, Computer- Assisted-Design and Testing Approach that assures that WALWORTH valves are technically most suitable, yet one of the most economical available valves for the application.

FINITE ELEMENT MESH USED OPTIMIZATION STUDIES

DETAILED STRESS CONTOURS

SLAB GATE VALVES, CLASS 150

THE ENERGY CONTROLLERS

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

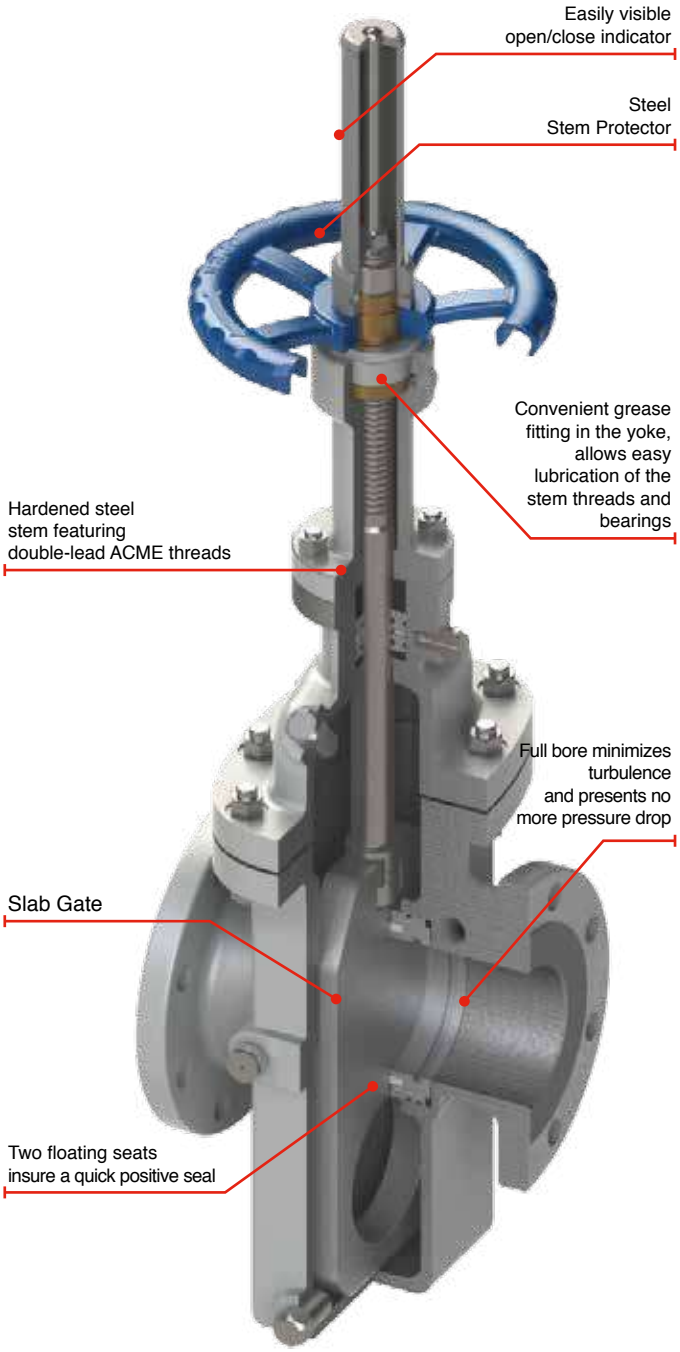
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.

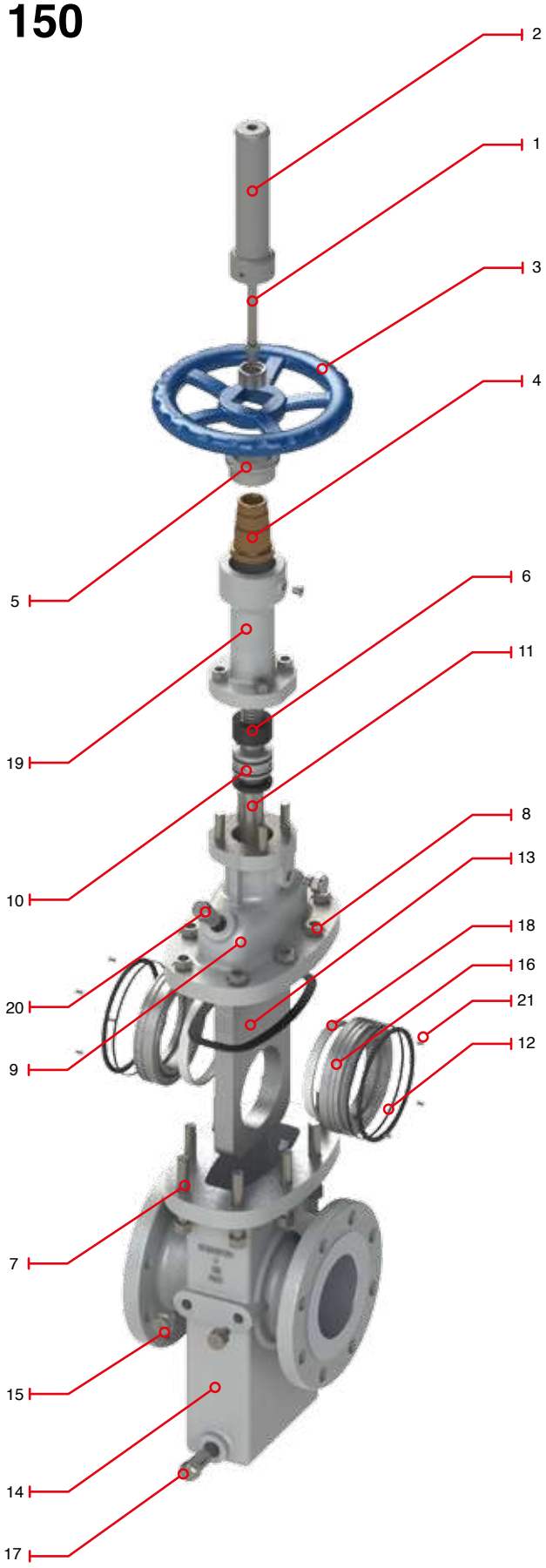


SLAB GATE VALVES, CLASS 150
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
1912	Handwheel	RF
1913	Handwheel	RTJ
1914	Handwheel	WE



Regular Bill of Materials

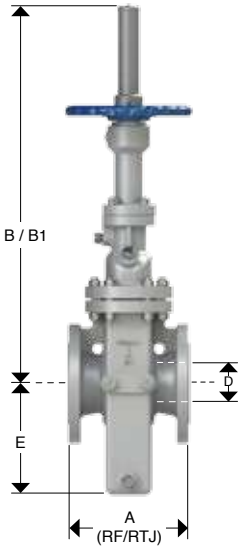
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr. 70 + ENP or ASTM A105N+ ENP
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + ENP
17	Drain Plug	Cs + Zn
18	Seat insert	RPTFE or Nylon
19	Yoke	ASTM A216 Gr. WCB
20	Vent	Cs + Zn
21	Spring	Inconel X-750

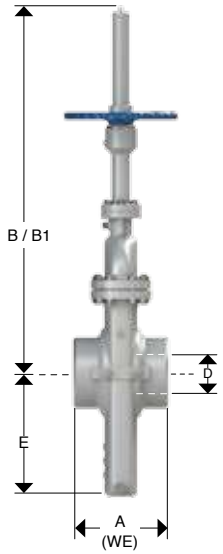
SLAB GATE VALVES, CLASS 150
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
1912	Handwheel	RF
1913	Handwheel	RTJ
1914	Handwheel	WE





Dimensions

NOM SIZE	in	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
OPERATION		HW	HW	HW	HW	HW	HW	HW	HW	HW	HW	HW	HW
D	in	1.93	2.91	3.94	5.91	7.91	9.92	11.93	13.15	15.16	17.17	19.17	23.19
	mm	49	74	100	150	201	252	303	334	385	436	487	589
A / RF	in	7.01	7.99	9.02	10.51	11.50	12.99	14.02	15.00	15.98	17.01	17.99	20.00
	mm	178	203	229	267	292	330	356	381	406	432	457	508
A / RTJ	in	7.52	8.50	9.49	10.98	12.01	13.50	14.49	15.51	16.50	17.52	18.50	20.51
	mm	191	216	241	279	305	343	368	394	419	445	470	521
A / WE	in	8.50	11.14	12.01	15.87	16.50	17.99	19.76	22.52	24.02	25.98	27.99	32.01
	mm	216	283	305	403	419	457	502	572	610	660	711	813
B	in	22.44	24.21	29.25	37.48	44.72	55.94	63.58	67.28	75.79	84.25	96.85	110.24
	mm	570	615	743	952	1136	1421	1615	1709	1925	2140	2460	2800
B1	in	25.28	27.87	34.09	44.33	53.78	66.93	76.77	81.57	92.20	102.83	117.72	135.24
	mm	642	708	866	1126	1366	1700	1950	2072	2342	2612	2990	3435
E	in	5.35	7.09	8.39	11.97	15.35	18.50	21.46	23.39	27.17	29.76	35.43	42.91
	mm	136	180	213	304	390	470	545	594	690	756	900	1090
Weight RF	lbs	77.14	110.20	165.30	297.54	462.84	661.20	958.74	1168.12	1498.72	2005.64	2931.32	4452.08
	kg	35	50	75	135	210	300	435	530	680	910	1330	2020
Weight WE	lbs	67.11	95.87	143.81	258.86	402.67	575.24	834.10	1016.26	1303.89	1744.91	2550.25	3873.31
	kg	30.45	43.5	65.25	117.45	182.7	261	378.45	461.1	591.6	791.7	1157.1	1757.4

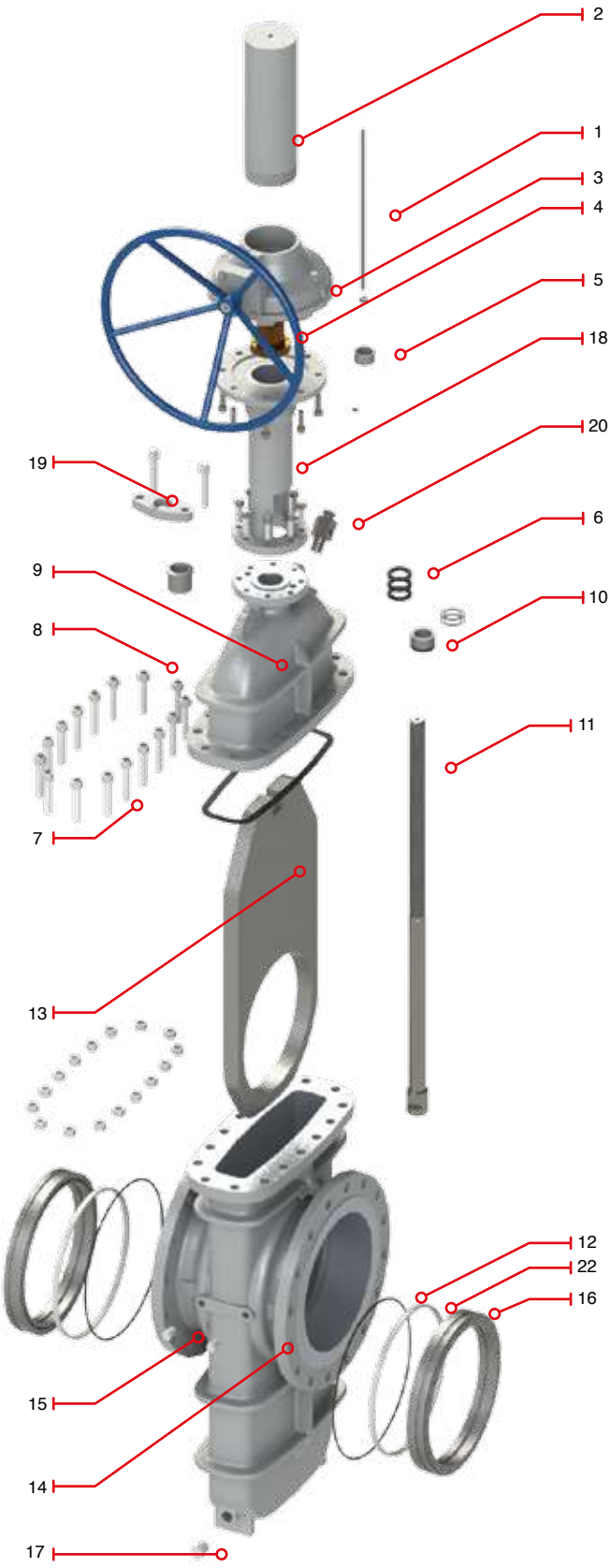
B = Close Position **B1** = Open Position

SLAB GATE VALVES, CLASS 150
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
1922	Gear Operator	RF
1923	Gear Operator	RTJ
1924	Gear Operator	WE



Regular Bill of Materials

No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Gear operator	Commercial Steel
4	Stem Nut	ASTM A439 D2
5	Stop	ASTM A 108 Gr. 1020
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr.70+ TCC or ASTM A105N+ TCC
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + TCC
17	Drain Plug	Cs + Zn
18	Yoke	ASTM A216 Gr. WCB
19	Gland Flange	CS
20	Vent	Cs + Zn
*21	Springs	Inconel X-750
22	Seat Insert	RPTFE or Nylon

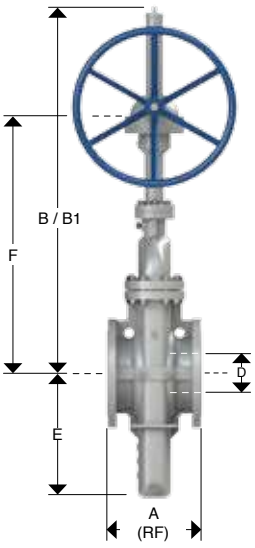
* Not shown

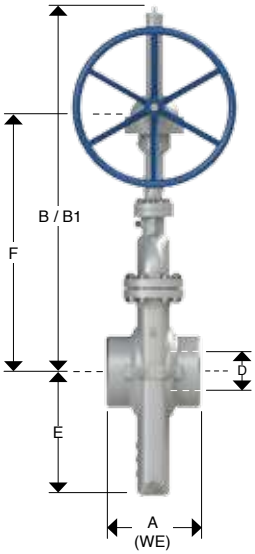
SLAB GATE VALVES, CLASS 150
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
1922	Gear Operator	RF
1923	Gear Operator	RTJ
1924	Gear Operator	WE





Dimensions

NOM SIZE	in	26"	28"	30"	32"	34"	36"	38"	40"	42"	48"
OPERATION		GO	GO	GO	GO	GO	GO	GO	GO	GO	GO
D	in	24.92	26.93	28.94	30.67	32.68	34.41	36.42	38.43	40.16	45.91
	mm	633	684	735	779	830	874	925	976	1020	1166
A / RF	in	22.01	24.02	25.98	27.99	30.00	32.01	33.31	35.98	37.99	44.02
	mm	559	610	660	711	762	813	846	914	965	1118
A / WE	in	34.02	35.98	35.98	37.99	39.96	40.00	42.01	44.02	45.98	52.01
	mm	864	914	914	965	1015	1016	1067	1118	1168	1321
B	in	121.26	127.17	135.83	144.09	152.76	161.42	166.54	178.74	188.98	204.72
	mm	3080	3230	3450	3660	3880	4100	4230	4540	4800	5200
B1	in	148.23	156.30	166.93	176.77	187.60	198.23	205.31	219.49	231.69	253.35
	mm	3765	3970	4240	4490	4765	5035	5215	5575	5885	6435
E	in	45.87	48.62	51.57	54.33	57.48	59.84	66.93	69.88	76.77	82.68
	mm	1165	1235	1310	1380	1460	1520	1700	1775	1950	2100
F	in	88.07	91.93	98.70	105.20	111.61	118.27	121.50	131.77	138.90	148.66
	mm	2237	2335	2507	2672	2835	3004	3086	3347	3528	3776
Weight RF	lbs	5697.34	6722.20	7934.40	9256.80	10469.00	11240.40	13113.80	15428.00	19174.80	27192.95
	kg	2585	3050	3600	4200	4750	5100	5950	7000	8700	12338
Weight WE	lbs	4956.69	5848.31	6902.93	8053.42	9108.03	9779.15	11409.01	13422.36	16682.08	23657.87
	kg	2248.95	2653.5	3132	3654	4132.5	4437	5176.5	6090	7569	10734.06

B = Close Position **B1** = Open Position

SLAB GATE VALVES, CLASS 300

THE ENERGY CONTROLLERS

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

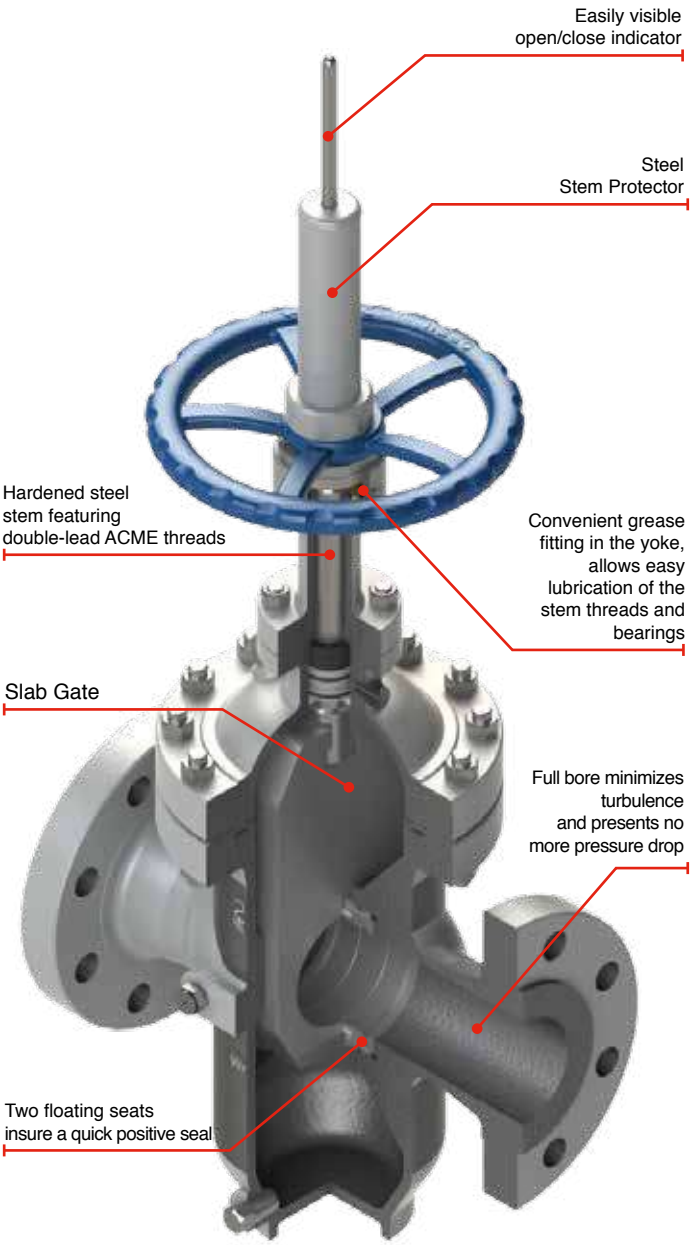
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.

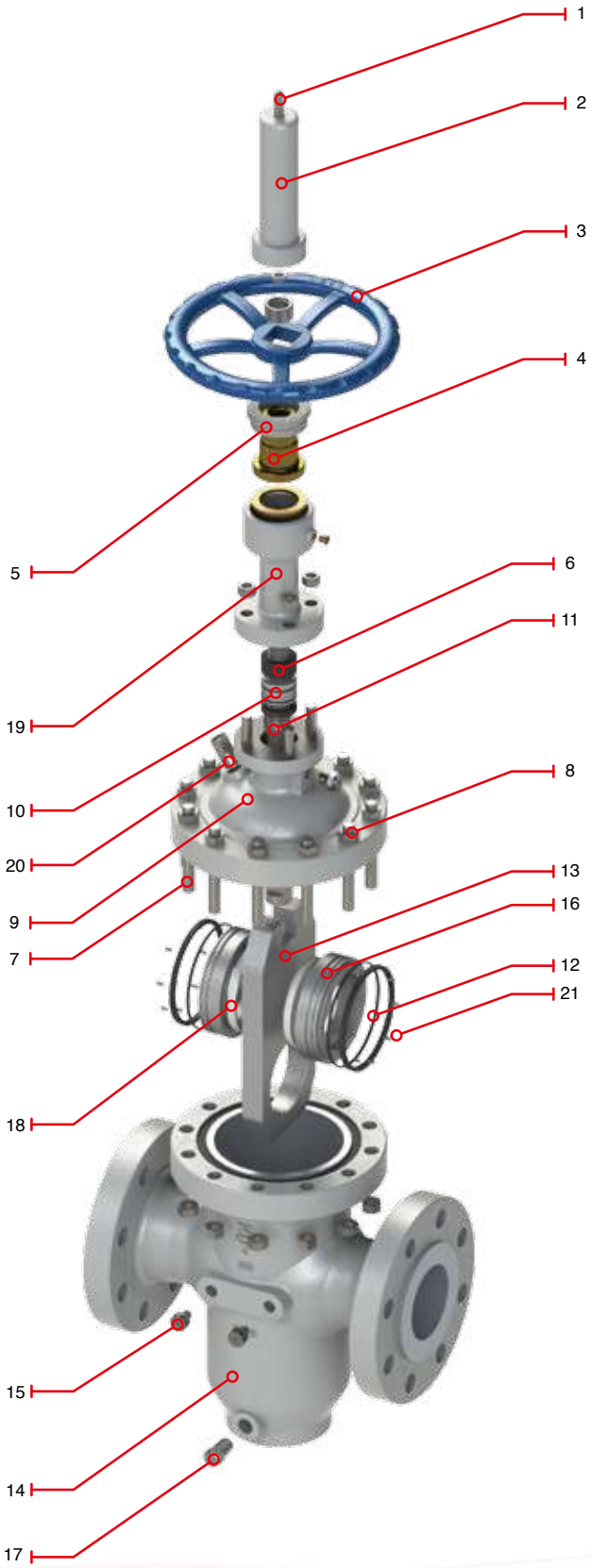


SLAB GATE VALVES, CLASS 300
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
3912	Handwheel	RF
3913	Handwheel	RTJ
3914	Handwheel	WE



Regular Bill of Materials

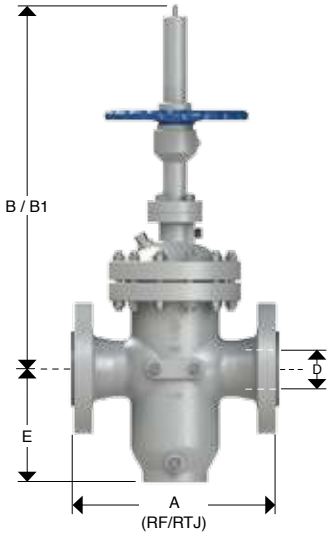
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr. 70 + ENP or ASTM A105N+ ENP
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + ENP
17	Drain Plug	Cs + Zn
18	Seat insert	RPTFE or Nylon
19	Yoke	ASTM A216 Gr. WCB
20	Vent	Cs + Zn
21	Spring	Inconel X-750

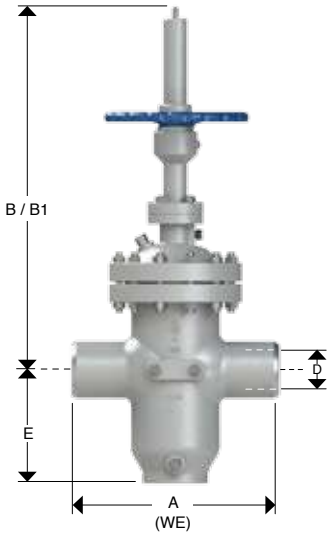
SLAB GATE VALVES, CLASS 300
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
3912	Handwheel	RF
3913	Handwheel	RTJ
3914	Handwheel	WE





Dimensions

NOM SIZE	in	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"
OPERATION		HW	HW	HW	HW	HW	HW	HW	HW	HW	HW
D	in	1.93	2.91	3.94	5.91	7.91	9.92	11.93	13.15	15.16	17.17
	mm	49	74	100	150	201	252	303	334	385	436
A / RF	in	8.50	11.14	12.01	15.87	16.50	17.99	19.76	30.00	32.99	35.98
	mm	216	283	305	403	419	457	502	762	838	914
A / RTJ	in	9.13	11.73	12.64	16.50	17.13	18.62	14.49	30.63	33.62	36.61
	mm	232	298	321	419	435	473	368	778	854	930
A / WE	in	8.50	11.14	12.01	15.87	16.50	17.99	19.76	30.00	32.99	35.98
	mm	216	283	305	403	419	457	502	762	838	914
B	in	22.44	24.21	29.25	37.48	44.72	55.94	63.58	67.28	75.79	84.25
	mm	570	615	743	952	1136	1421	1615	1709	1925	2140
B1	in	25.28	27.87	34.09	44.33	53.78	66.93	76.77	81.57	92.20	102.83
	mm	642	708	866	1126	1366	1700	1950	2072	2342	2612
E	in	5.35	7.09	8.39	11.97	15.35	18.50	21.46	23.39	27.17	29.76
	mm	136	180	213	304	390	470	545	594	690	756
Weight RF	lbs	99.18	165.30	198.36	473.86	727.32	1102.00	1542.80	2402.36	3526.40	4419.02
	kg	45	75	90	215	330	500	700	1090	1600	2005
Weight WE	lbs	86.29	143.81	172.57	412.26	632.77	958.74	1342.24	2090.05	3067.97	3844.55
	kg	39.15	65.25	78.3	187.05	287.1	435	609	948.3	1392	1744.35

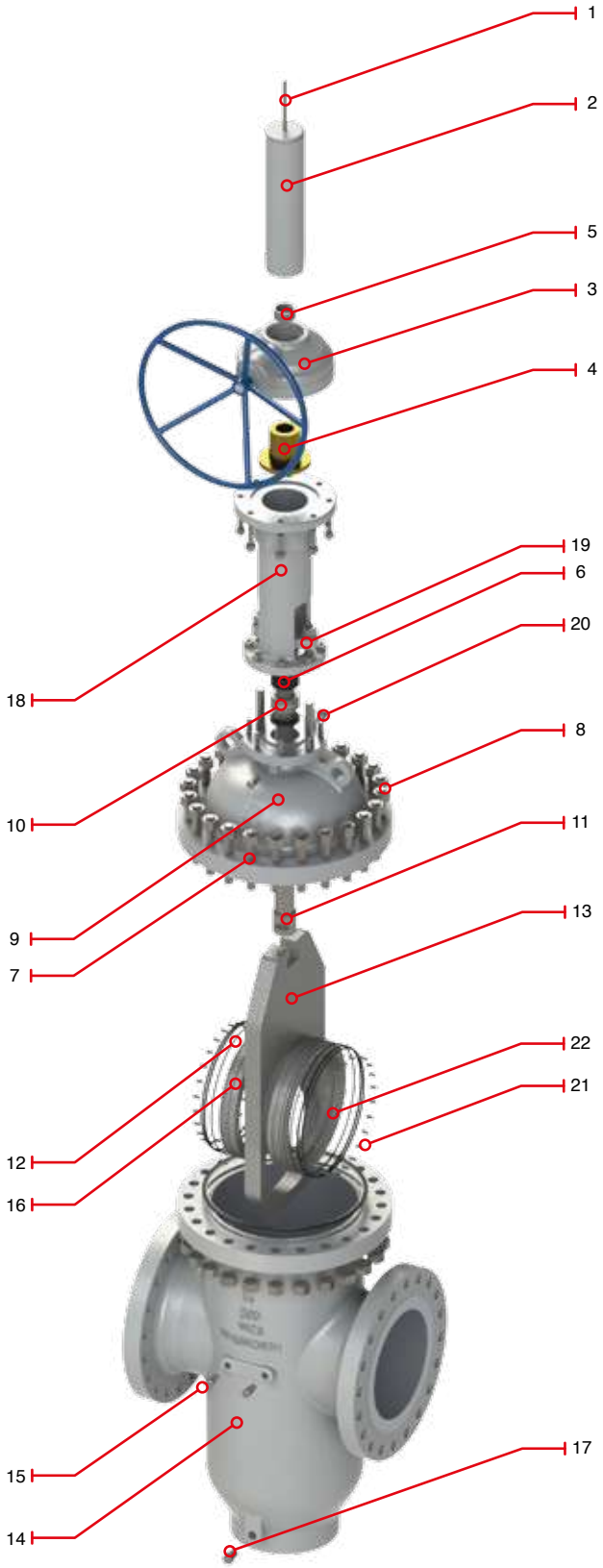
B = Close Position **B1** = Open Position

SLAB GATE VALVES, CLASS 300
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
3922	Gear Operator	RF
3923	Gear Operator	RTJ
3924	Gear Operator	WE



Regular Bill of Materials

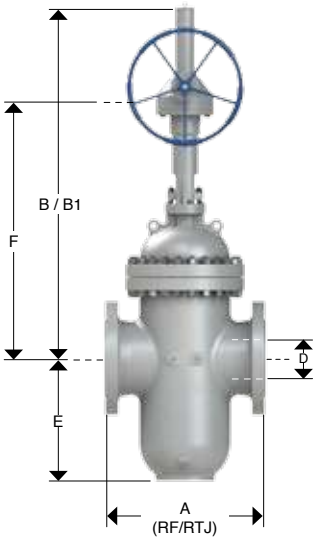
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr.70+ TCC or ASTM A105N+ TCC
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + TCC
17	Drain Plug	Cs + Zn
18	Yoke	ASTM A216 Gr. WCB
19	Gland Flange	CS
20	Vent	Cs + Zn
21	Springs	Inconel X-750
22	Seat Insert	RPTFE or Nylon

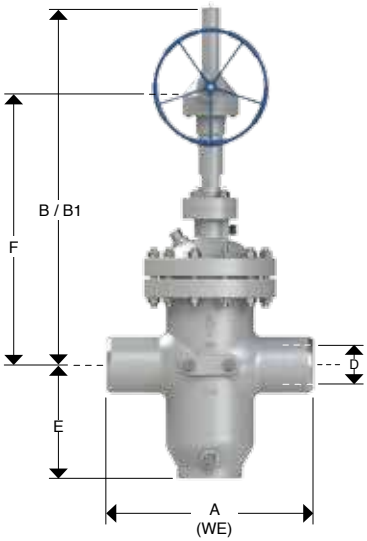
SLAB GATE VALVES, CLASS 300
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
3922	Gear Operator	RF
3923	Gear Operator	RTJ
3924	Gear Operator	WE





Dimensions

NOM SIZE	in	20"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	48"
OPERATION		GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO
D	in	19.17	23.19	24.92	26.93	28.94	30.67	32.68	34.41	36.42	38.43	40.16	45.91
	mm	487	589	633	684	735	779	830	874	925	976	1020	1166
A / RF	in	39.02	44.65	49.02	52.99	55.00	60.00	64.02	67.99	72.01	76.61	80.00	92.01
	mm	991	1134	1245	1346	1397	1524	1626	1727	1829	1946	2032	2337
A / RTJ	in	39.76	45.87	50.00	54.02	55.98	61.14	65.12	69.13	-	-	-	-
	mm	1010	1165	1270	1372	1422	1553	1654	1756	-	-	-	-
A / WE	in	39.02	45.00	49.02	52.99	55.00	60.00	64.02	67.99	72.01	76.61	80.00	92.01
	mm	991	1143	1245	1346	1397	1524	1626	1727	1829	1946	2032	2337
B	in	96.85	110.24	121.26	127.17	135.83	144.09	152.76	161.42	166.54	178.74	188.98	204.72
	mm	2460	2800	3080	3230	3450	3660	3880	4100	4230	4540	4800	5200
B1	in	117.72	135.24	148.23	156.30	166.93	176.77	187.60	198.23	205.31	219.49	231.69	253.35
	mm	2990	3435	3765	3970	4240	4490	4765	5035	5215	5575	5885	6435
E	in	35.43	42.91	45.87	48.62	51.57	54.33	57.48	59.84	66.93	69.88	76.77	82.68
	mm	900	1090	1165	1235	1310	1380	1460	1520	1700	1775	1950	2100
F	in	POA	POA	88.07	91.93	98.70	105.20	111.61	118.27	121.50	131.77	138.90	148.66
	mm	POA	POA	2237	2335	2507	2672	2835	3004	3086	3347	3528	3776
Weight RF	lbs	4738.60	7339.32	10482.22	13224.00	15207.60	16640.20	19615.60	23142.00	28101.00	34162.00	40961.34	55536.39
	kg	2150	3330	4756	6000	6900	7550	8900	10500	12750	15500	18585	25198
Weight WE	lbs	4122.58	6385.21	9119.53	11504.88	13230.61	14476.97	17065.57	20133.54	24447.87	29720.94	35636.37	48316.66
	kg	1870.5	2897.1	4137.72	5220	6003	6568.5	7743	9135	11092.5	13485	16168.95	21922.26

B = Close Position **B1** = Open Position

SLAB GATE VALVES, CLASS 600

THE ENERGY CONTROLLERS

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

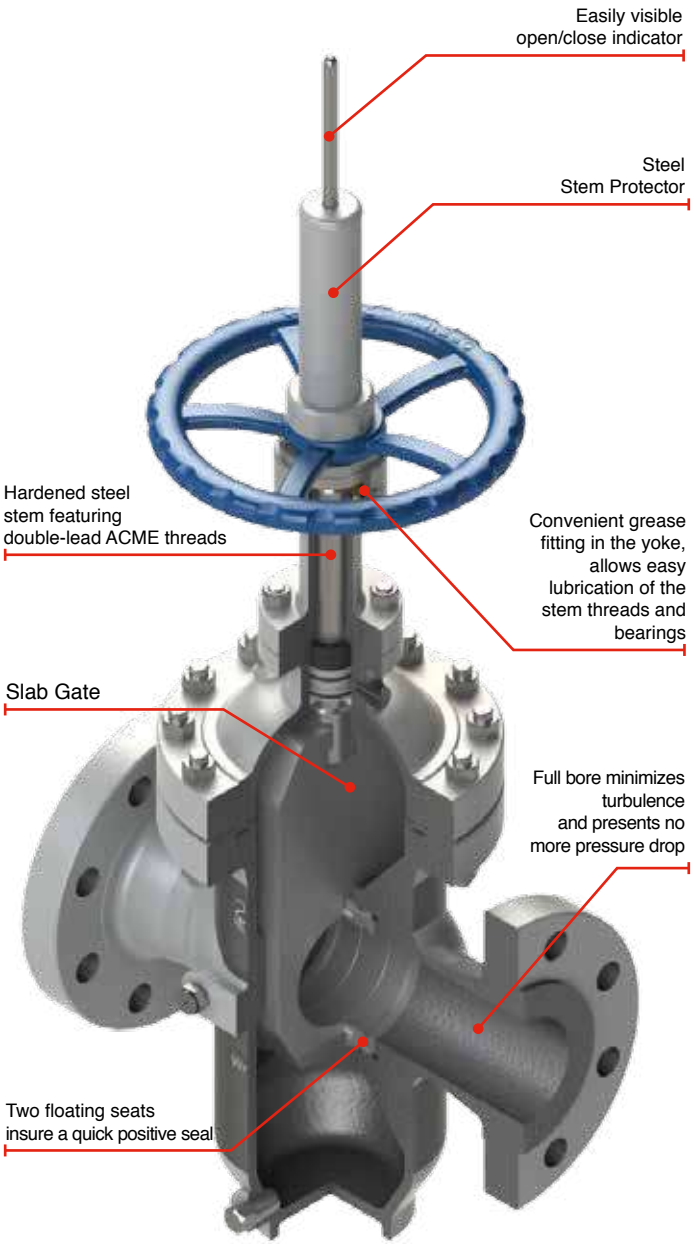
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.

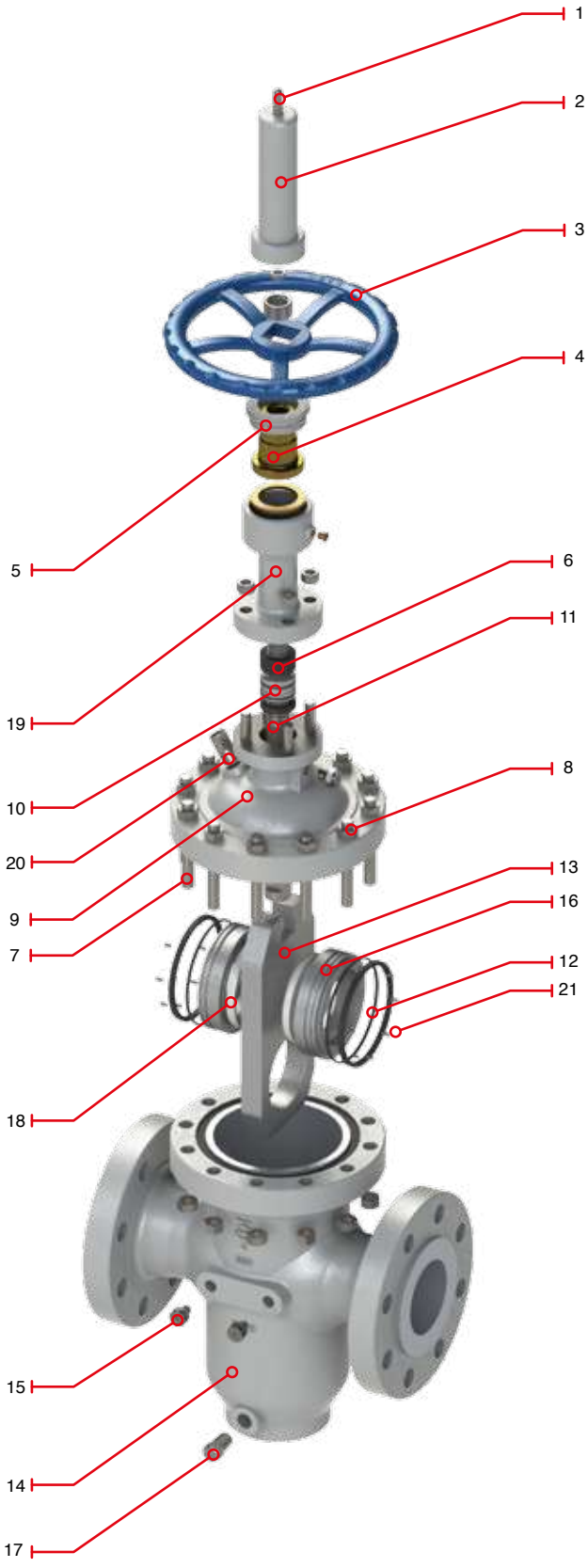


SLAB GATE VALVES, CLASS 600
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
6912	Handwheel	RF
6913	Handwheel	RTJ
6914	Handwheel	WE



Regular Bill of Materials

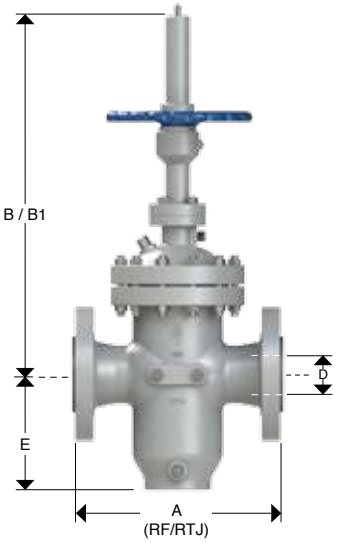
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr. 70 + ENP or ASTM A105N+ ENP
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + ENP
17	Drain Plug	Cs + Zn
18	Seat insert	RPTFE or Nylon
19	Yoke	ASTM A216 Gr. WCB
20	Vent	Cs + Zn
21	Spring	Inconel X-750

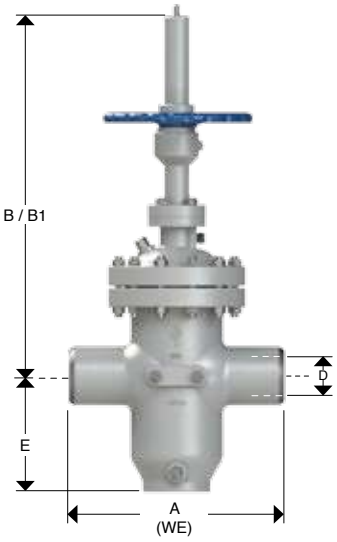
SLAB GATE VALVES, CLASS 600
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 24" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
6912	Handwheel	RF
6913	Handwheel	RTJ
6914	Handwheel	WE





Dimensions

NOM SIZE	in	2"	3"	4"	6"	8"	10"	12"	14"
OPERATION		HW	HW	HW	HW	HW	HW	HW	HW
D	in	1.93	2.91	3.94	5.91	7.91	9.92	11.93	13.15
	mm	49	74	100	150	201	252	303	334
A / RF	in	11.50	14.02	17.01	22.01	25.98	30.98	32.99	35.00
	mm	292	356	432	559	660	787	838	889
A / RTJ	in	11.61	14.13	17.13	22.13	26.14	31.14	33.11	35.12
	mm	295	359	435	562	664	791	841	892
A / WE	in	11.50	14.02	17.01	22.01	25.98	30.98	32.99	35.00
	mm	292	356	432	559	660	787	838	889
B	in	20.67	25.47	30.24	40.08	47.44	59.06	69.96	73.62
	mm	525	647	768	1018	1205	1500	1777	1870
B1	in	23.46	29.41	35.08	46.97	56.38	70.47	83.54	88.19
	mm	596	747	891	1193	1432	1790	2122	2240
E	in	5.83	7.76	9.29	12.80	16.34	19.69	23.82	25.87
	mm	148	197	236	325	415	500	605	657
* F	in	-	-	-	-	-	-	53.39	55.98
	mm	-	-	-	-	-	-	1356	1422
Weight RF	lbs	121.22	187.34	330.60	639.16	991.80	1542.80	2314.20	2975.40
	kg	55	85	150	290	450	700	1050	1350
Weight WE	lbs	105.46	162.99	287.62	556.07	862.87	1342.24	2013.35	2588.60
	kg	47.85	73.95	130.5	252.3	391.5	609	913.5	1174.5

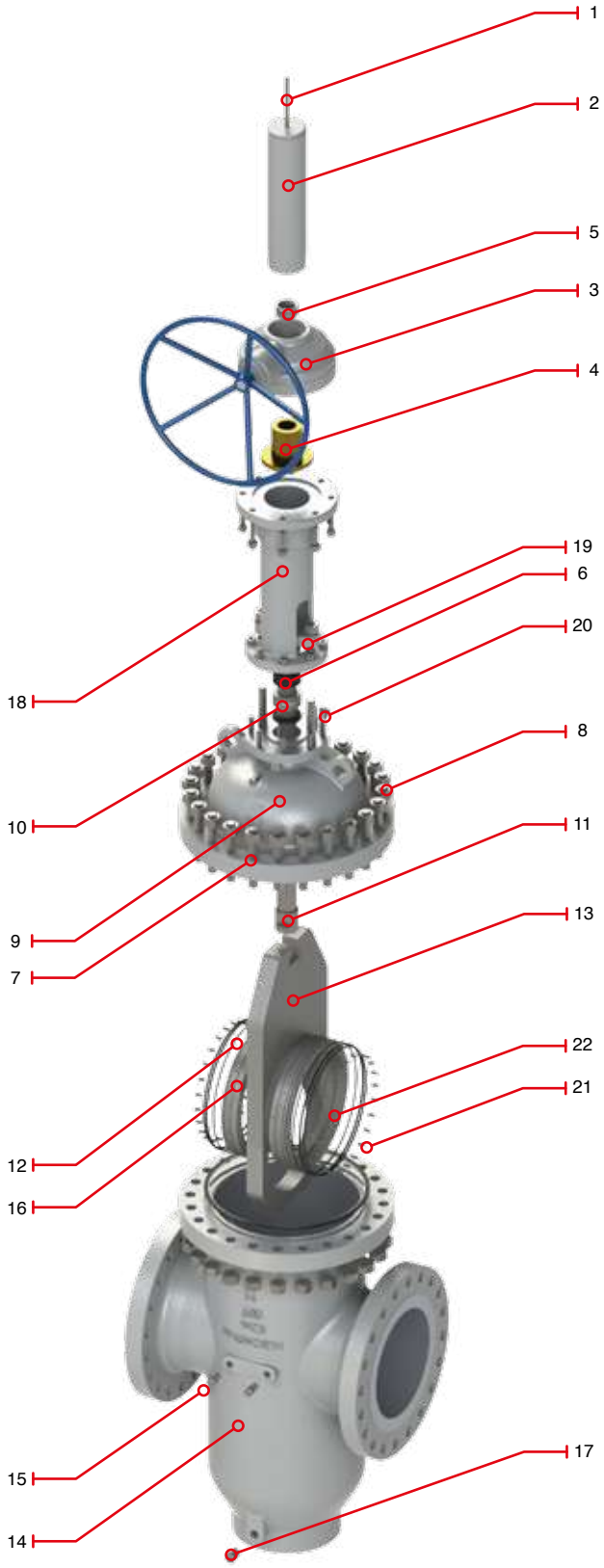
B = Close Position B1 = Open Position * For Gear operated valves if required by customer

SLAB GATE VALVES, CLASS 600
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
6922	Gear Operator	RF
6923	Gear Operator	RTJ
6924	Gear Operator	WE



Regular Bill of Materials

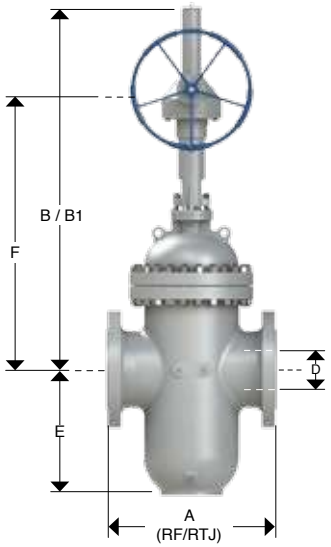
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr.70+ TCC or ASTM A105N+ TCC
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + TCC
17	Drain Plug	Cs + Zn
18	Yoke	ASTM A216 Gr. WCB
19	Gland Flange	CS
20	Vent	Cs + Zn
21	Springs	Inconel X-750
22	Seat Insert	RPTFE or Nylon

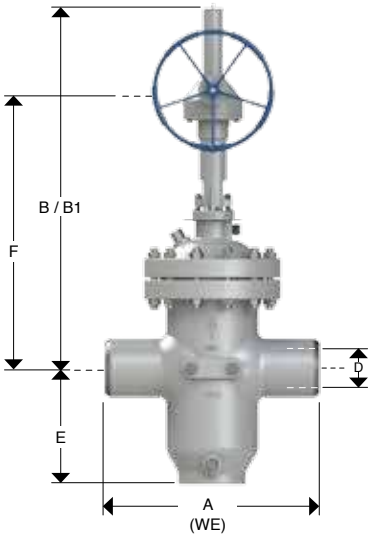
SLAB GATE VALVES, CLASS 600
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 26" to 48" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
6922	Gear Operator	RF
6923	Gear Operator	RTJ
6924	Gear Operator	WE





Dimensions

NOM SIZE	in	16"	18"	20"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	48"
OPERATION		GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO	GO
D	in	15.16	17.17	19.17	23.19	24.92	26.93	28.94	30.67	32.68	34.41	36.42	38.43	40.16	45.91
	mm	385	436	487	589	633	684	735	779	830	874	925	976	1020	1166
A / RF	in	39.02	42.99	47.01	55.00	57.01	60.98	65.00	70.00	75.98	82.01	85.98	90.00	95.98	110.00
	mm	991	1092	1194	1397	1448	1549	1651	1524	1626	2083	2184	2286	2438	2794
A / RTJ	in	39.13	43.11	47.24	55.39	57.52	61.50	65.51	70.63	76.61	82.64	-	-	-	-
	mm	994	1095	1200	1407	1461	1562	1664	1553	1654	2099	-	-	-	-
A / WE	in	39.02	42.99	47.01	55.00	57.01	60.98	65.00	70.00	75.98	82.01	85.98	90.00	95.98	110.00
	mm	991	1092	1194	1397	1448	1549	1651	1524	1626	2083	2184	2286	2438	2794
B	in	84.45	92.56	100.20	113.39	119.69	128.35	135.83	146.46	157.48	168.50	173.23	178.74	190.16	206.50
	mm	2145	2351	2545	2880	3040	3260	3450	3660	3880	4280	4400	4540	4830	5245
B1	in	101.57	111.50	121.26	138.58	147.24	157.87	167.32	179.72	192.83	205.71	212.44	220.16	234.49	255.35
	mm	2580	2832	3080	3520	3740	4010	4250	4490	4765	5225	5396	5592	5956	6486
E	in	29.13	32.48	36.22	42.52	48.43	51.57	51.57	57.09	60.63	63.78	66.85	69.88	77.95	84.45
	mm	740	825	920	1080	1230	1310	1310	1450	1540	1620	1698	1775	1980	2145
F	in	64.88	71.34	76.57	85.55	89.29	95.39	101.02	110.08	118.82	127.87	130.63	133.54	141.97	153.62
	mm	1648	1812	1945	2173	2268	2423	2566	2672	2835	3248	3318	3392	3606	3902
Weight RF	lbs	4584.32	5510.00	7449.52	11747.32	15868.80	18734.00	22040.00	29754.00	34382.40	39672.00	46945.20	50251.20	56202.00	77558.76
	kg	2080	2500	3380	5330	7200	8500	10000	13500	15600	18000	21300	22800	25500	35190
Weight WE	lbs	3988.36	4793.70	6481.08	10220.17	13805.86	16298.58	19174.80	25885.98	29912.69	34514.64	40842.32	43718.54	48895.74	67476.12
	kg	1809.6	2175	2940.6	4637.1	6264	7395	8700	11745	13572	15660	18531	19836	22185	30615.3

SLAB GATE VALVES, CLASS 900

THE ENERGY CONTROLLERS

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

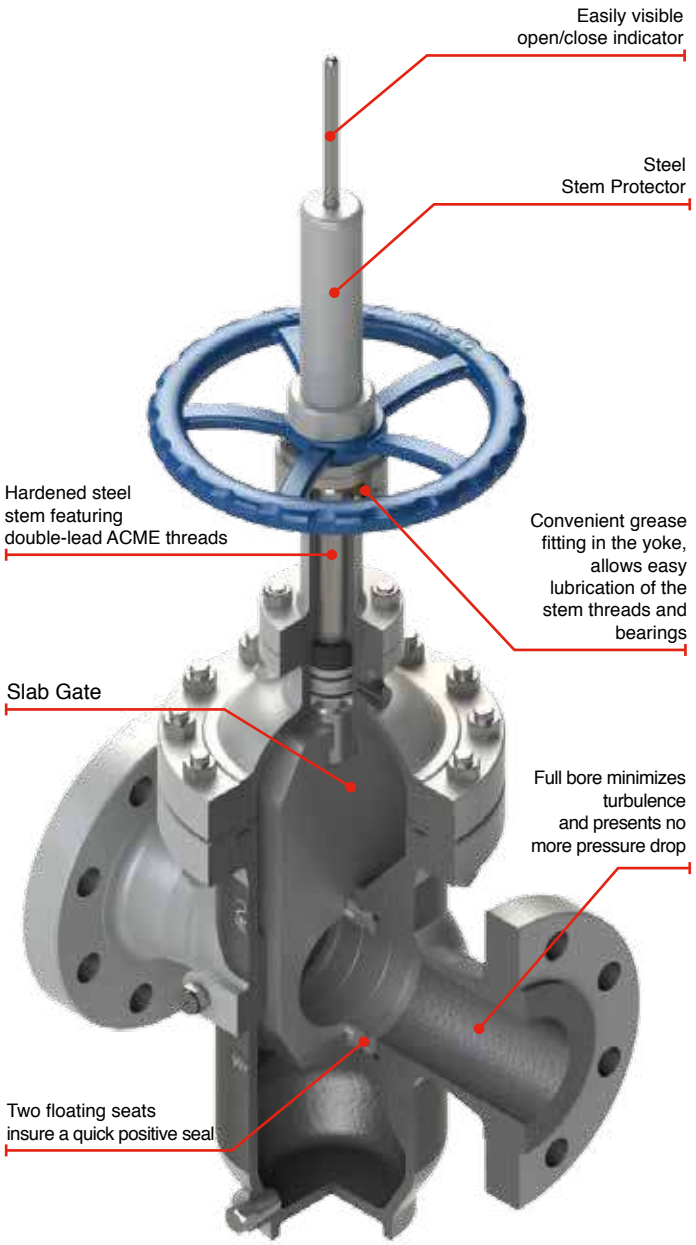
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.

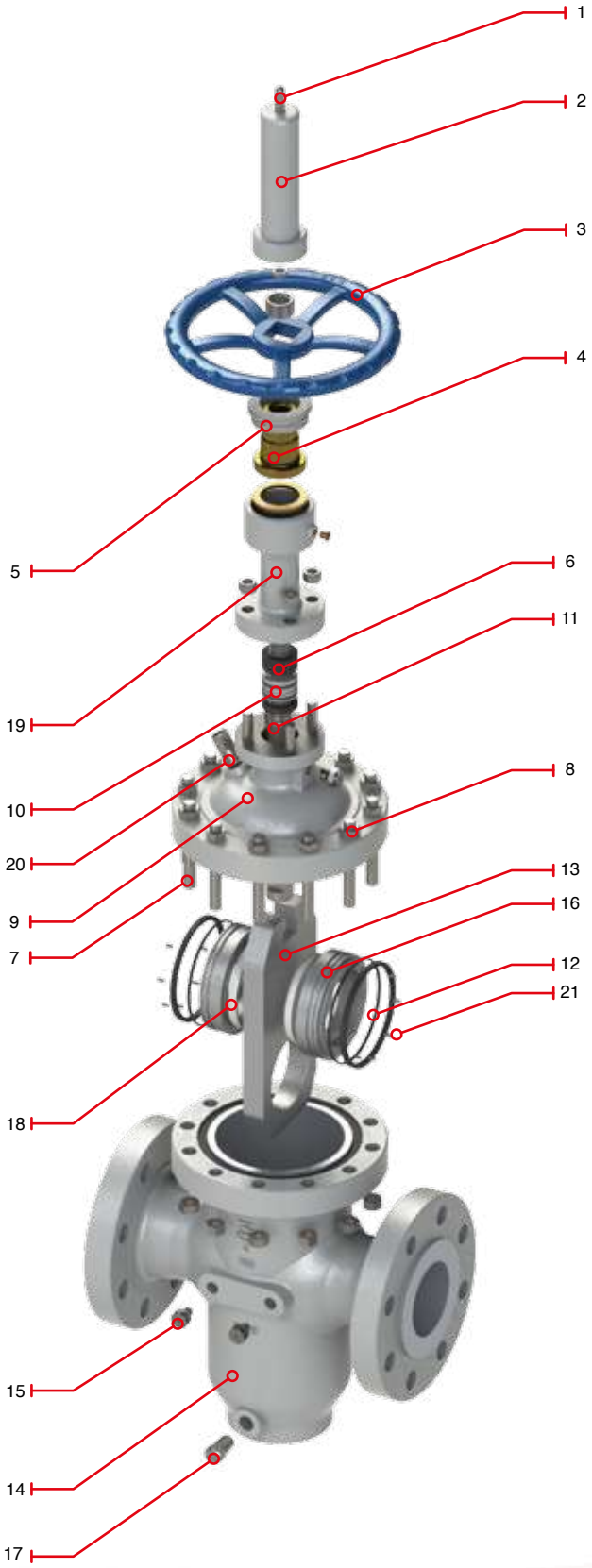


SLAB GATE VALVES, CLASS 900
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 6" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
9912	Handwheel	RF
9913	Handwheel	RTJ
9914	Handwheel	WE



Regular Bill of Materials

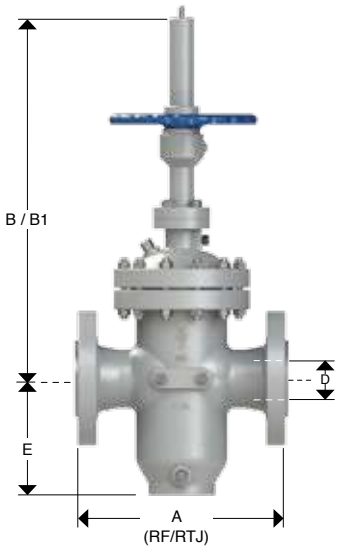
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr. 70 + ENP or ASTM A105N+ ENP
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + ENP
17	Drain Plug	Cs + Zn
18	Seat insert	RPTFE or Nylon
19	Yoke	ASTM A216 Gr. WCB
20	Vent	Cs + Zn
21	Spring	Inconel X-750

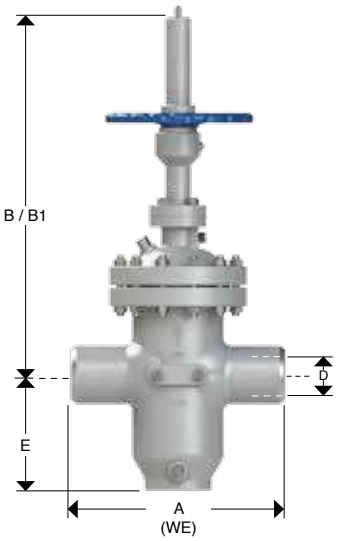
SLAB GATE VALVES, CLASS 900
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 6" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
9912	Handwheel	RF
9913	Handwheel	RTJ
9914	Handwheel	WE





Dimensions

NOM SIZE	in	2"	3"	4"	6"
OPERATION		HW	HW	HW	HW
D	in	1.93	2.91	3.94	5.91
	mm	49	74	100	150
A / RF	in	14.49	15.00	17.99	24.02
	mm	368	381	457	610
A / RTJ	in	14.61	15.12	18.11	24.13
	mm	371	384	460	613
A / WE	in	14.49	15.00	17.99	24.02
	mm	368	381	457	610
B	in	23.07	25.47	30.71	40.94
	mm	586	647	780	1040
B1	in	25.79	29.41	35.83	48.15
	mm	655	747	910	1223
E	in	7.28	8.27	9.29	13.39
	mm	185	210	236	340
Weight RF	lbs	143.26	352.64	396.72	881.60
	kg	65	160	180	400
Weight WE	lbs	124.64	306.80	345.15	766.99
	kg	56.55	139.2	156.6	348

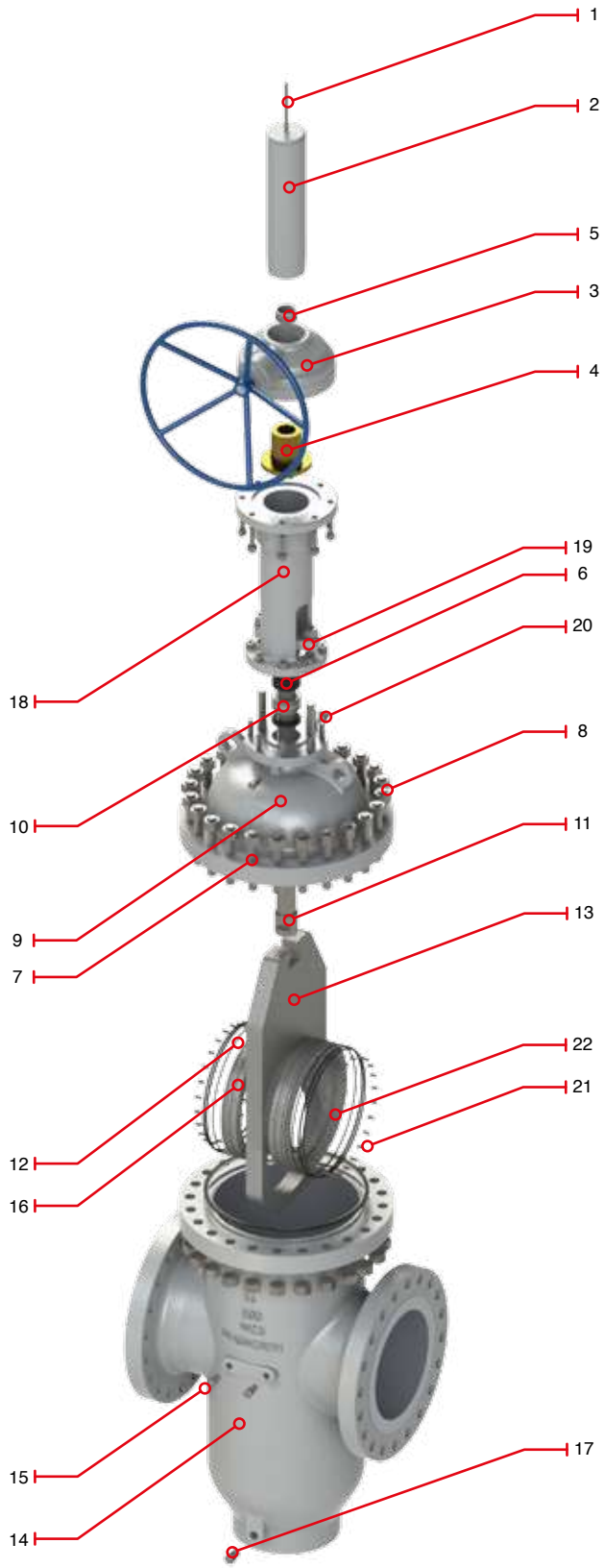
B = Close Position B1 = Open Position

SLAB GATE VALVES, CLASS 900
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 8" to 24" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
9922	Gear Operator	RF
9923	Gear Operator	RTJ
9924	Gear Operator	WE



Regular Bill of Materials

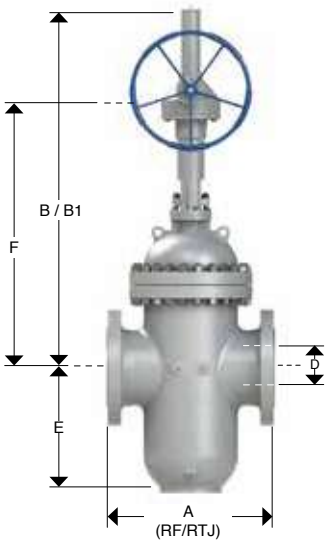
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr.70+ TCC or ASTM A105N+ TCC
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + TCC
17	Drain Plug	Cs + Zn
18	Yoke	ASTM A216 Gr. WCB
19	Gland Flange	CS
20	Vent	Cs + Zn
21	Springs	Inconel X-750
22	Seat Insert	RPTFE or Nylon

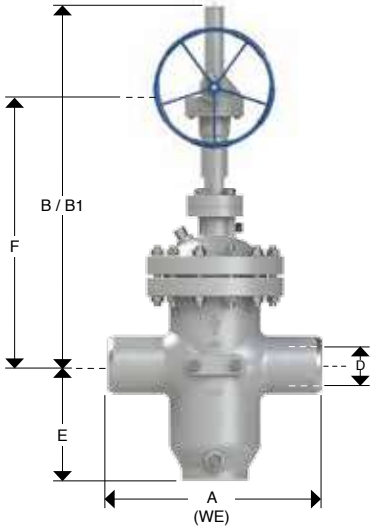
SLAB GATE VALVES, CLASS 900
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 8" to 24" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
9922	Gear Operator	RF
9923	Gear Operator	RTJ
9924	Gear Operator	WE





Dimensions

NOM SIZE	in	8"	10"	12"	14"	16"	18"	20"	24"
OPERATION		GO	GO	GO	GO	GO	GO	GO	GO
D	mm	7.91	9.92	11.93	12.68	14.69	16.65	18.54	22.44
	in	201	252	303	322	373	423	471	570
A / RF	mm	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	in	737	838	965	1029	1130	1219	1321	1549
A / RTJ	mm	29.13	33.11	38.11	40.87	44.88	48.50	52.52	61.73
	in	740	841	968	1038	1140	1232	1334	1568
A / WE	mm	29.02	32.99	37.99	40.51	44.49	47.99	52.01	60.98
	in	737	838	965	1029	1130	1219	1321	1549
B	mm	48.43	62.99	70.87	74.53	85.24	93.70	100.79	114.57
	in	1295	1600	1800	1893	2165	2380	2560	2910
B1	mm	57.80	74.49	84.49	89.02	101.81	112.32	121.46	139.21
	in	1533	1892	2146	2261	2586	2853	3085	3536
E	mm	16.93	20.67	24.41	26.77	29.92	33.46	37.20	43.90
	in	430	525	620	680	760	850	945	1115
F	mm	-	47.68	53.23	55.83	64.25	70.94	75.75	85.28
	in	973	1211	1352	1418	1632	1802	1924	2166
Weight RF	lbs	1630.96	2534.60	3636.60	5950.80	7383.40	11130.20	14326.00	21819.60
	kg	740	1150	1650	2700	3350	5050	6500	9900
Weight WE	lbs	1418.94	2205.10	3163.84	5177.20	6423.56	9683.27	12463.62	18983.05
	kg	643.8	1000.5	1435.5	2349	2914.5	4393.5	5655	8613

B = Close Position B1 = Open Position

SLAB GATE VALVES, CLASS 1500

THE ENERGY CONTROLLERS

WALWORTH Slab Gate Valves also named “Through Conduit Gate Valve” are manufactured and tested in accordance with the API-6D standard. This type of valve is very useful in transportation pipe lines for gas, crude oil and oil products. The Slab Gate Valve is through conduit and piggable. Slab Gate Valve has been designed to minimize pressure drop and catch foreign materials such as slurries into the disc cavity to keep clean the sealing surface areas.

FULL OPENING THROUGH CONDUIT DESIGN: WALWORTH Slab Gate valve allow the pipeline fluids to flow freely with a minimum of turbulence. In open position, Slab Gate allows the running of pigs, scraper wipers or hot tap cutters through the pipeline with no danger or damage to the internal mechanic components of the valve. Full-flow design keeps line scrapers from becoming stuck into the valve’s bore and prevents metal cuttings from jamming moving parts. Circular bore as per API-6D table 1.

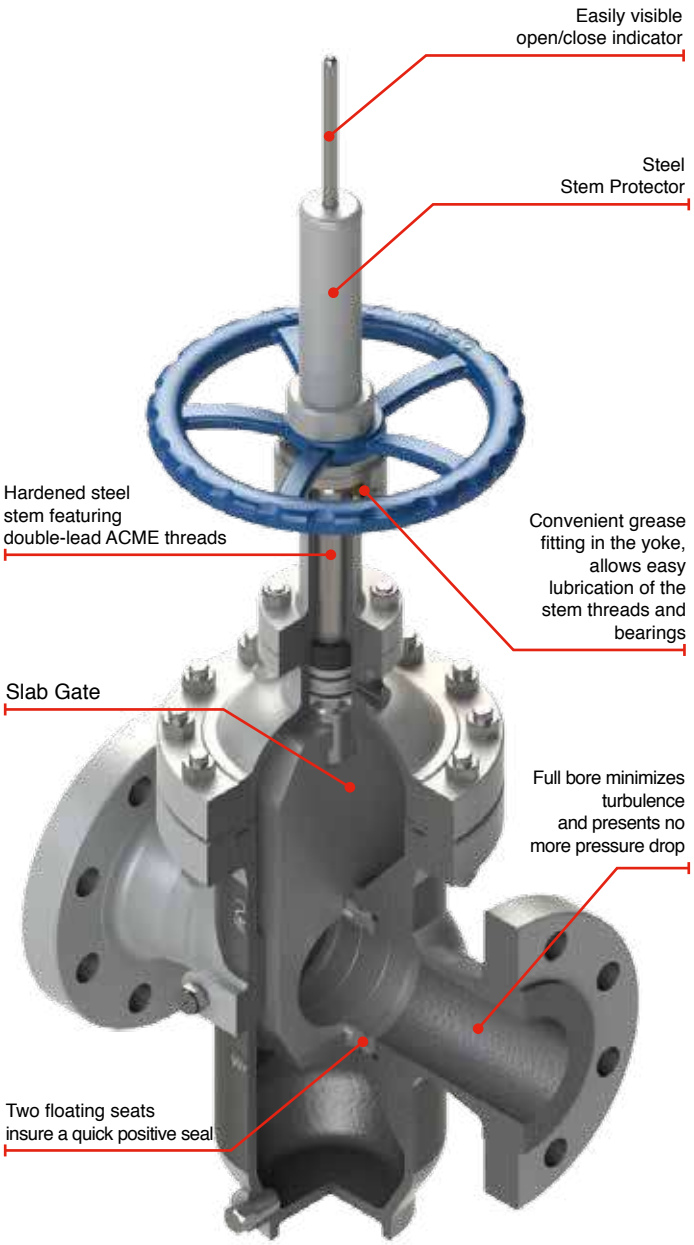
ENERGIZED SEAT FOR POSITIVE SEALING: When the slab-type disc is in the closed position, the seats (one on each side of the gate) are energized to have a tight seal upstream and downstream. The valve seats have a nylon or RPTFE (Reinforced PolyTetraFluoroEtlylene resine) circular insert on their sealing faces. Two elastomer O-rings on the peripherical surfaces of the seats prevent the fluid passing through the seats when the valve is expanded due to pressure. In this way, the sealing action of the O-rings actually increases with fluid pressure.

TIGHT SEALING: WALWORTH Slab Gate Valve uses the resultant force from the pressure line to help to have a mechanical tight sealing downstream side when high differential pressure occurs. Low pressure sealing is achieved by internal springs assisting pushing the seats against the disc to obtain the proper seal.

MAINTENANCE: Slab Gate valves are designed for free maintenance. The combination Chevron-Viton packing in the valve stem can be repacked while the valve is under pressure in open position. Slab Gate valves can be overhauled by trained serviceman or by the manufacturer.

NO LUBRICATING: In normal operating conditions, the Slab Gate valve does not need lubricant to maintain a seal. If damage occurs to sealing members, sealant can be injected as a temporary solution until valve is repaired.

BACKSEAT: Slab Gate Valve is designed with backseat bushing to keep packing chamber isolated for pressure line to permit packaging change. Also a secondary seal inside the packing chamber is included.

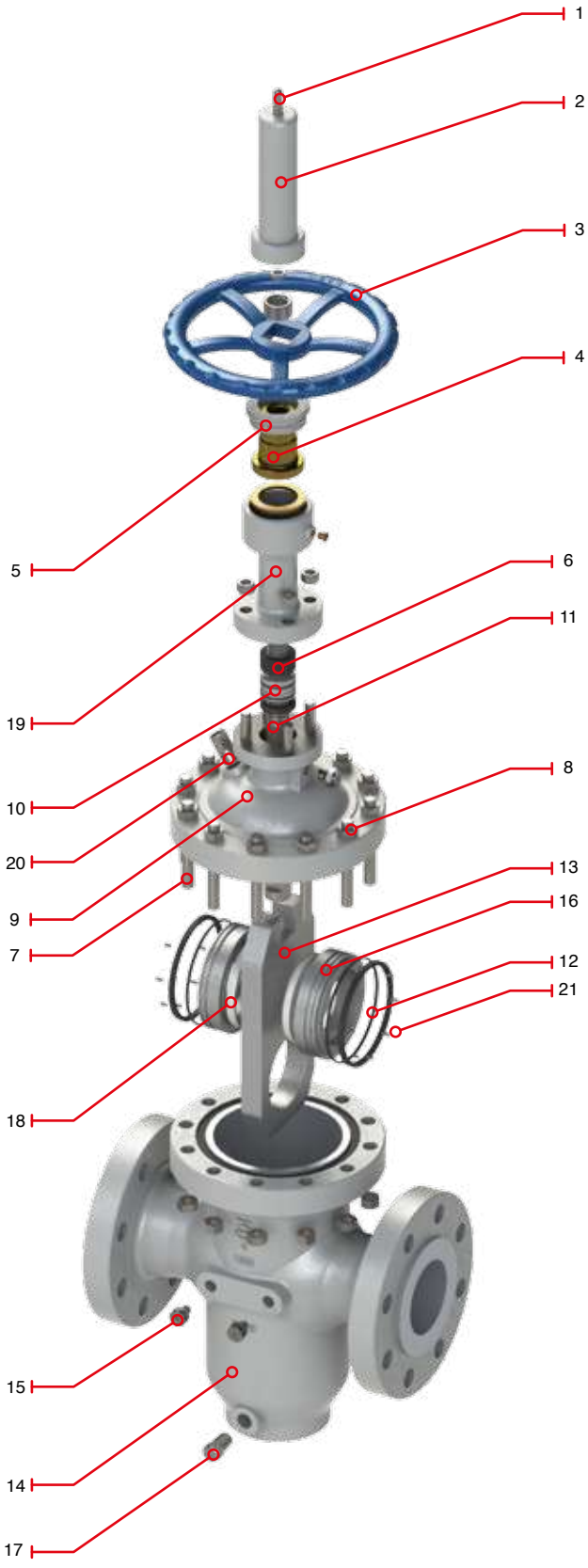


SLAB GATE VALVES, CLASS 1500
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 4" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
5912	Handwheel	RF
5913	Handwheel	RTJ
5914	Handwheel	WE



Regular Bill of Materials

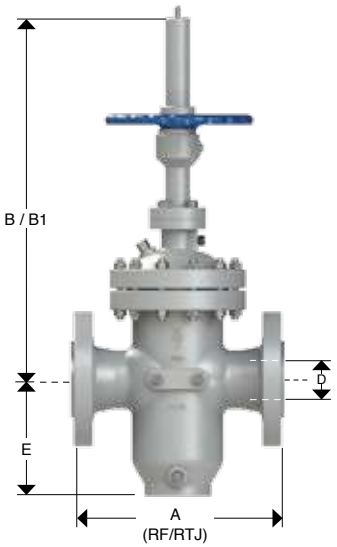
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr. 70 + ENP or ASTM A105N+ ENP
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + ENP
17	Drain Plug	Cs + Zn
18	Seat insert	RPTFE or Nylon
19	Yoke	ASTM A216 Gr. WCB
20	Vent	Cs + Zn
21	Spring	Inconel X-750

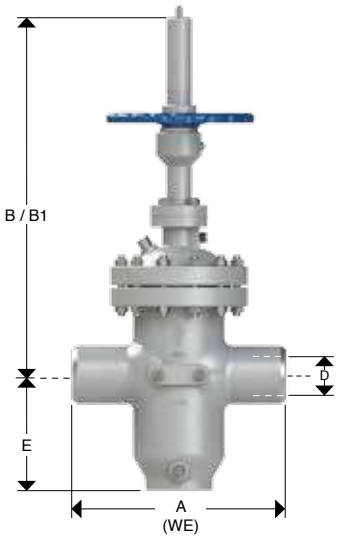
SLAB GATE VALVES, CLASS 1500
(HANDWHEEL OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 2" to 4" Handwheel operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
5912	Handwheel	RF
5913	Handwheel	RTJ
5914	Handwheel	WE





Dimensions

NOM SIZE	in	2"	3"	4"	6"
OPERATION		HW	HW	HW	HW
D	in	1.93	2.91	3.94	5.67
	mm	49	74	100	144
A / RF	in	14.49	18.50	21.50	27.76
	mm	368	470	546	705
A / RTJ	in	14.61	18.62	21.61	27.99
	mm	371	473	549	711
A / WE	in	14.49	18.50	21.50	27.76
	mm	368	470	546	705
B	in	23.07	25.47	30.71	40.94
	mm	586	647	780	1040
B1	in	25.83	29.45	35.83	47.95
	mm	656	748	910	1218
E	in	6.69	7.68	8.66	12.52
	mm	170	195	220	318
Weight RF	lbs	143.26	639.16	1024.86	2181.96
	kg	65	290	465	990
Weight WE	lbs	124.64	556.07	891.63	1898.31
	kg	56.55	252.3	404.55	861.3

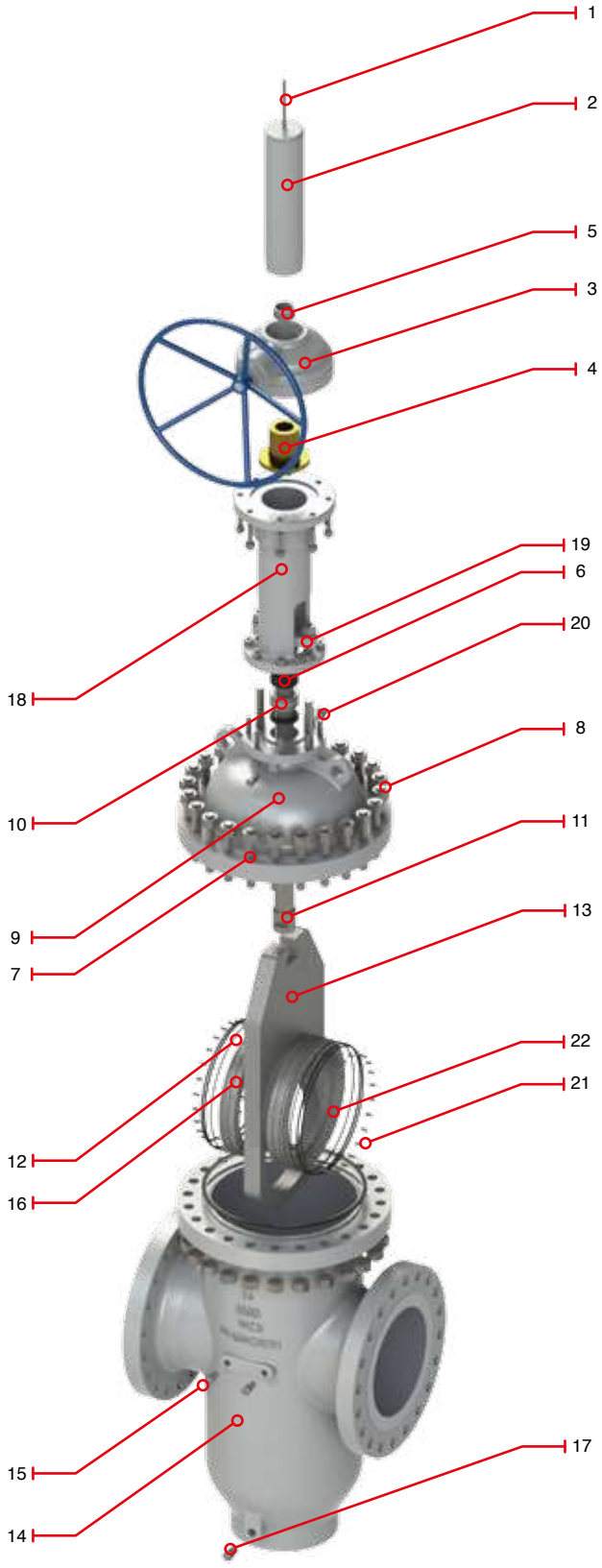
B = Close Position B1 = Open Position

SLAB GATE VALVES, CLASS 1500
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 6" to 24" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
5922	Gear Operator	RF
5923	Gear Operator	RTJ
5924	Gear Operator	WE



Regular Bill of Materials

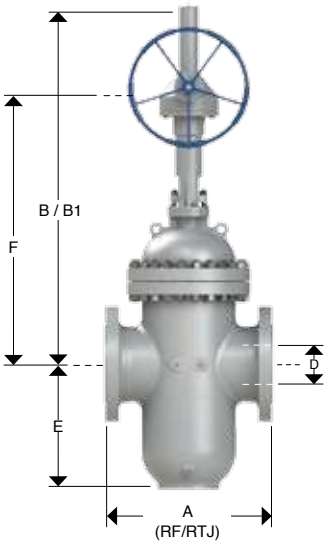
No.	Description	Standard Material
1	Indicator Rod	SS 410
2	Stem Protector	CS
3	Handwheel	A197
4	Stem Nut	ASTM A439 D2
5	Thrust Bearing	AISI 1035
6	Stem Packing	Graphite
7	Bolt	ASTM A193 Gr. B7M
8	Nut	ASTM A194 Gr. 2HM
9	Bonnet	ASTM A216 Gr. WCB
10	O-Ring Packing Seat	Viton
11	Stem	ASTM A276 Gr. 410
12	O-Ring	Viton
13	Gate	ASTM A515 Gr.70+ TCC or ASTM A105N+ TCC
14	Body	ASTM A216 Gr. WCB
15	Sealant Fitting	Cs + Zn
16	Seat	ASTM A105N + TCC
17	Drain Plug	Cs + Zn
18	Yoke	ASTM A216 Gr. WCB
19	Gland Flange	CS
20	Vent	Cs + Zn
21	Springs	Inconel X-750
22	Seat Insert	RPTFE or Nylon

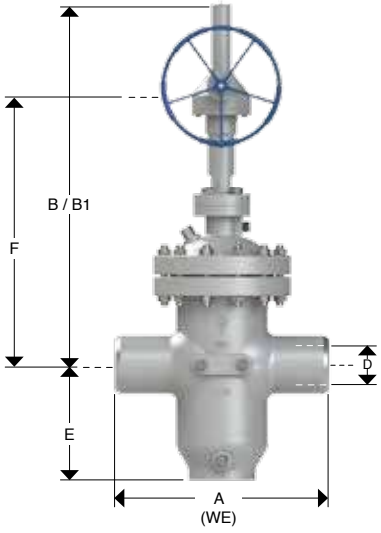
SLAB GATE VALVES, CLASS 1500
(GEAR OPERATED)

DESIGN FEATURES:

- Design in accordance with API-6D
- Rising stem
- Flange dimensions as per ASME B16.5
- For valves 26" and larger, flange dimensions as per ASME B16.47 Series A
- End to end dimensions as per API-6D table 2 and figure 2 (valves not listed in this table as per ASME B16.10)
- WE dimensions as per ASME B31.4 and/or ASME B31.8 and tapered as per ASME B16.25 figure 1
- Full opening
- Size from 6" to 24" Gear operated as standard

FIGURE No.	OPERATION	TYPE ON ENDS
5922	Gear Operator	RF
5923	Gear Operator	RTJ
5924	Gear Operator	WE





Dimensions

NOM SIZE	in	8"	10"	12"	14"	16"	18"	20"	24"
OPERATION		GO	GO	GO	GO	GO	GO	GO	GO
D	mm	7.56	9.41	11.30	12.40	14.17	15.98	17.87	21.50
	in	192	239	287	315	360	406	454	546
A / RF	mm	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.50
	in	832	991	1130	1257	1384	1537	1664	1943
A / RTJ	mm	33.11	39.37	45.12	50.24	55.39	61.38	66.38	77.64
	in	841	1000	1146	1276	1407	1559	1686	1972
A / WE	mm	32.76	39.02	44.49	49.49	54.49	60.51	65.51	76.50
	in	832	991	1130	1257	1384	1537	1664	1943
B	mm	50.98	62.99	70.87	74.49	85.24	93.70	100.79	114.57
	in	1295	1600	1800	1892	2165	2380	2560	2910
B1	mm	60.00	73.98	83.82	88.62	101.26	111.65	119.92	138.23
	in	1524	1879	2129	2251	2572	2836	3046	3511
E	mm	16.22	20.16	23.70	26.06	29.13	32.52	36.30	42.72
	in	412	512	602	662	740	826	922	1085
F	mm	38.46	48.15	53.58	55.75	64.65	70.98	76.85	85.94
	in	977	1223	1361	1416	1642	1803	1952	2183
Weight RF	lbs	3658.64	5631.22	10056.85	14804.27	22117.14	32326.07	40322.18	56620.76
	kg	1660	2555	4563	6717	10035	14667	18295	25690
Weight WE	lbs	3183.02	4899.16	8749.46	12879.71	19241.91	28123.68	35080.30	49260.06
	kg	1444.2	2222.85	3969.81	5843.79	8730.45	12760.29	15916.65	22350.3

B = Close Position B1 = Open Position

TECHNICAL INFORMATION

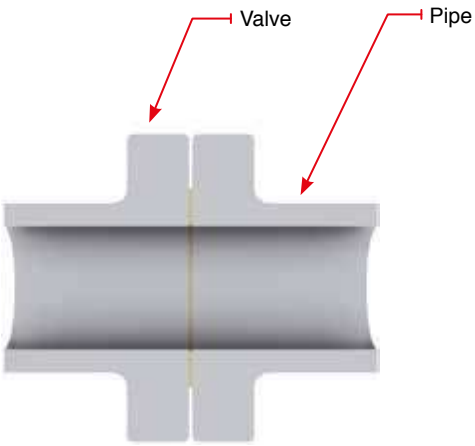
TYPES OF END CONNECTIONS

WALWORTH cast steel valves can be supplied with flanged ends in raised face, flat faces or ring joint type as well as in welding ends (buttweld). They can also be supplied with combined ends, such as flanged by weld, in accordance to customer requirements.

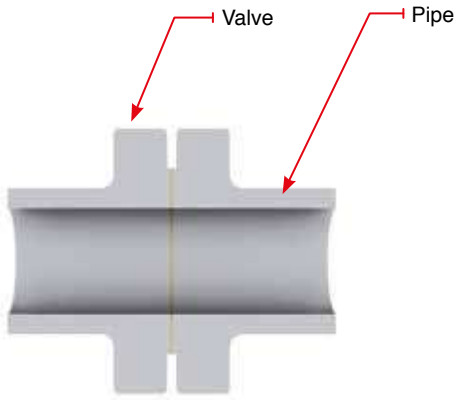
The buttweld ends in standard valves are machined in accordance with ASME B 31.4 and/or ASME B 31.8 and tapered as per ASME B16.5 figure 1; are supplied to meet the following pipe schedules:

Valve Pressure Class	Weld End Pipe Schedule
150/300	Schedule 40 – 2" to 10" Standard Wall – 12" to 24"
600	Schedule 80
900	Schedule 160 – 2" to 3" Schedule 120 – 4" and Larger
1500	Schedule 160

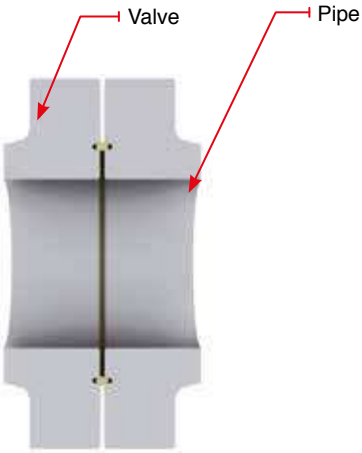
The customer must clearly specify the pipe wall thickness and type of pipe to be welded to the valves for schedules different than the above.



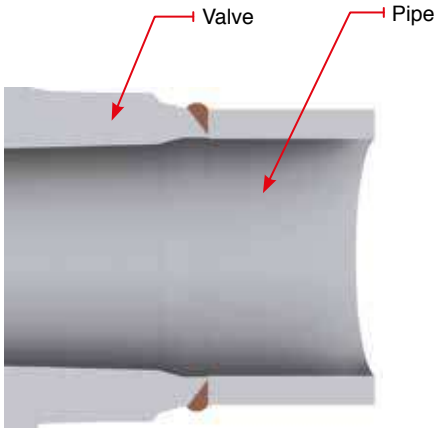
Flanged Ends
Flat Face



Flanged Ends
Raised Face



Flanged Ends
Ring Type Joint



Weld Ends Buttweld

TECHNICAL INFORMATION

TYPE OF OPERATIONS

The WALWORTH standard cast steel product line includes many different valves designed to meet most applications.

Special adaptations can be made to meet specific customer requirements. Valves can be supplied with manual handwheel/ gear operation, chain wheel, as well as electric, pneumatic and hydraulic actuators.

This makes it possible for WALWORTH to furnish valves adapted to the customers special needs such as controlled opening/ closing and remote installation.

Valves can also be supplied with a bypass, drain or vent connection, stem extension, position indicators, floor stand mounting as well as a lever and weight system for swing check valves.

Gear Operators

A manual gear operator is designed with a bevel gear and pinion ratio sized to transmit the required opening/closing torque with normal operator effort on the handwheel. They can be supplied as waterproof units and/or for underground installation with a square operating nut.

Chain Wheel Operation

Chain Wheels are designed for operating valves installed in remote or inaccessible locations. They can (PHOTO)be furnished with roller guides to prevent the chain from jumping off the wheel. Impact type chain wheels are also available to assist in unseating a tightly closed valve

Actuators

Valves can be furnished with either electric, pneumatic or hydraulic actuators. The actuators can be furnished as either waterproof and/or explosion proof. The customer must specify such things as open-close speed, maximum differential pressure, service temperature, type of voltage-phase-frequency, air or gas pressure for pneumatic actuators and flow characteristics for hydraulic actuators to be assured of correct performance.

TECHNICAL INFORMATION

BYPASS

A bypass can be furnished with WALWORTH slab gate valves for equalizing pressure around the main valve or for warming up the line before opening the main valve.

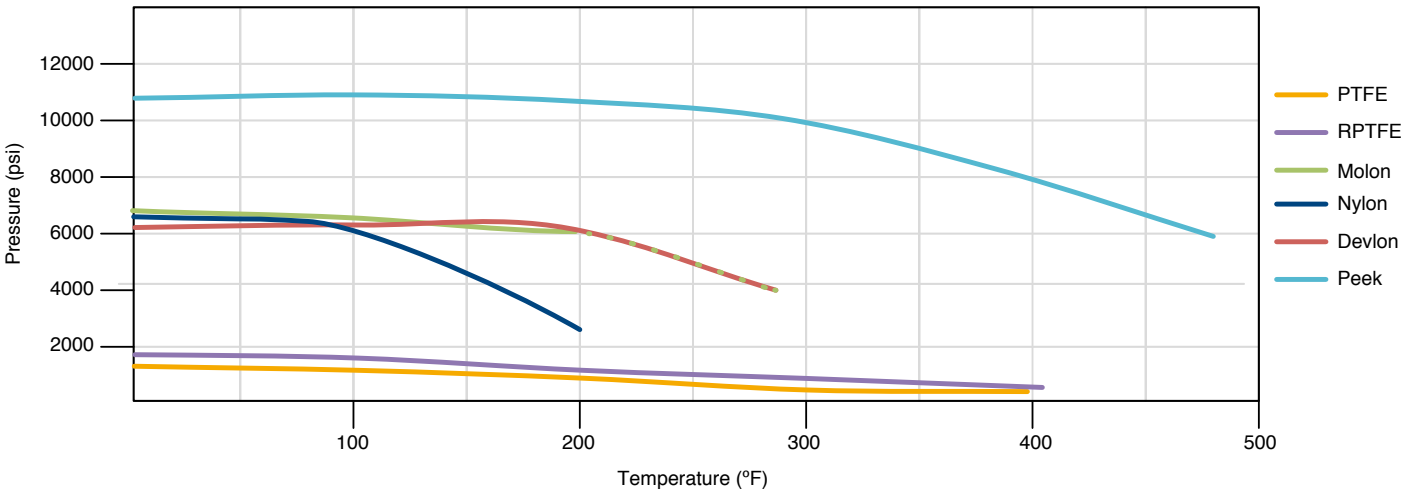
LOCKING DEVICE

Upon request, WALWORTH Slab Gate Valves can be supplied with locking device.

PRESSURE-TEMPERATURE RATINGS

PRESSURE-TEMPERATURE GRAPH FOR SOFT SEALS

The following graph shows the soft seals service performance curves at different temperatures and pressures as a reference.



CAST STEEL ASTM A 216 GR WCB-WCC

Temperature		Maximum allowable non-shock working pressure in PSIG by class					
°F	°C	150	300	600	900	1500	2500
-20 to 100	-29 to 38	285	740	1480	2220	3705	6170
200	93	260	680	1360	2035	3395	5655
300	149	230	655	1310	1965	3270	5450
400	204	200	635	1265	1900	3170	5280
500	260	170	605	1205	1810	3015	5025
600	316	140	570	1135	1705	2840	4730
650	343	125	550	1100	1650	2745	4575
700	371	110	530	1060	1590	2665	4425
750	399	98	505	1015	1520	2535	4230
800	427	80	410	825	1235	2055	3430
850	454	65	320	640	955	1595	2655
900	482	50	230	460	690	1150	1915
950	510	35	135	275	410	685	1145
1000	538	20	85	170	255	430	715

Note: Upon prolonged exposure to temperatures above 800°F, the carbide phase of steel may be converted to graphite. Permissible, but not recommended for prolonged use above 800°F.

PRESSURE-TEMPERATURE RATINGS

CAST STEEL ASTM A 352 GR LCB-LCC

Temperature		Maximum allowable non-shock working pressure in PSIG by class					
°F	°C	150	300	600	900	1500	2500
-20 to 100	-29 to 38	265	695	1395	2090	3480	5805
200	93	255	660	1320	1980	3300	5505
300	149	230	640	1275	1915	3190	5315
400	204	200	615	1230	1845	3075	5125
500	260	170	585	1175	1760	2930	4885
600	316	140	550	1105	1655	2755	455
650	343	125	535	1065	1600	2665	4440
700	371	110	510	1025	1535	2560	4270
750	399	95	475	955	1430	2385	3970
800	427	80	390	780	1175	1955	3255
850	454	65	300	595	895	1490	2485
900	482	50	200	405	605	1010	1685
950	510	35	135	275	410	685	1145
1000	538	20	85	170	255	430	715

Notes:
Not to be used over 650°F.

PRESSURE-TEMPERATURE RATINGS

CAST STEEL ASTM A 351 GR CF8

Temperature		Maximum allowable non-shock working pressure in PSIG by class					
°F	°C	150	300	600	900	1500	2500
-20 to 100	-29 to 38	275	720	1440	2160	3600	6000
200	93	230	600	1200	1800	3000	5000
300	149	205	540	1075	16154	2690	4480
400	204	190	495	995	1490	2485	4140
500	260	170	465	9320	1395	2330	3880
600	316	140	440	885	1325	2210	3680
650	343	125	430	865	1295	2160	3600
700	371	110	420	845	1265	2110	3520
750	399	95	415	825	1240	2065	3440
800	427	80	405	710	1215	2030	3380
850	454	65	395	790	1190	1980	3300
900	482	50	390	780	1165	1945	3240
950	510	35	380	765	1145	1910	3180
1000	538	20	355	710	1065	1770	2950
1050	566	20(a)	325	650	975	1630	2715
1100	593	20(a)	255	515	770	1285	2145
1150	621	20(a)	205	410	615	1030	1715
1200	649	20(a)	165	330	495	825	1370
1250	677	20(a)	135	265	400	970	1115
1300	704	20(a)	115	225	340	565	945
1350	732	20(a)	95	185	280	465	770
1400	760	20(a)	75	150	225	380	630
1450	788	20(a)	60	115	175	290	485
1500	816	15(a)	40	85	125	205	345

Notes:
- At temperatures over 1,000°F, use only when the carbon content is 0.04% or higher.

(a) For welding ends valves only. Flanged ends ratings terminate at 1000°F (538°C).

PRESSURE-TEMPERATURE RATINGS

CAST STEEL ASTM A 351 GR CF8 M

Temperature		Maximum allowable non-shock working pressure in PSIG by class					
°F	°C	150	300	600	900	1500	2500
-20 to 100	-29 to 38	275	720	1440	2160	3600	6000
200	93	235	620	1240	1860	3095	5160
300	149	215	560	1120	1680	2795	4660
400	204	195	515	1025	1540	2570	4280
500	260	170	480	955	1435	2390	3980
600	316	140	450	900	1355	2255	3760
650	343	125	440	885	1325	2210	3680
700	371	110	435	870	1305	2170	3620
750	399	95	425	855	1280	2135	3560
800	427	80	420	745	1265	2110	3520
850	454	65	420	735	1255	2090	3480
900	482	50	415	730	1245	2075	3460
950	510	35	385	775	1160	1930	3220
1000	538	20	365	725	1090	1820	3030
1050	566	20	360	720	1080	1800	3000
1100	593	20(a)	305	610	915	1525	2545
1150	621	20(a)	235	475	710	1185	1970
1200	649	20(a)	185	370	555	925	1545
1250	677	20(a)	145	295	440	735	1230
1300	704	20(a)	115	235	350	585	970
1350	732	20(a)	95	190	290	480	800
1400	760	20(a)	75	150	225	380	630
1450	788	20(a)	60	115	175	290	475
1500	816	15(a)	40	85	125	205	345

Notes:
- At temperatures over 1,000°F, use only when the carbon content is 0.04% or higher.

(a) For welding ends valves only. Flanged ends ratings terminate at 1000°F (538°C).

SOFT SEAT INSERT MATERIALS (PRESSURE-TEMPERATURE)

CLASS	Size	TEMPERATURE ˚F (˚C)					
		100 (38)	200 (93)	300 (149)	400 (204)	500 (260)	600 (316)
150	All	RPTFE-15%	RPTFE-15%	RPTFE-15%	RPTFE-15%	RPTFE-15%	RPTFE-15%
300	2 to 24	RPTFE-15%	RPTFE-15%	RPTFE-15%	RPTFE-15%	PEEK	PEEK
300	24 and up	NYLON 6	NYLON 6	MOLON	MOLON	PEEK	PEEK
600	2 to 12	RPTFE-15%	RPTFE-15%	MOLON	MOLON	PEEK	PEEK
600	14 and up	NYLON 6	NYLON 6	MOLON	MOLON	PEEK	PEEK
900	All	NYLON 6	NYLON 6	MOLON	PEEK	PEEK	PEEK
1500	All	NYLON 6	NYLON 6	PEEK	PEEK	PEEK	PEEK

"O"-Ring HNBR (AED) must be used as secondary seal

"O"-Ring VITON A&B FKM (AED) must be used as secondary seal

PEEK/RPTFE seals must be used as secondary seal

MOST COMMON TRIM ARRANGEMENTS FOR SOFT SEAT DESIGN

SOFT SEAT	150 #	300 #	600 #	900 #	1500 #
FIGURE NUMBER	1912-F-STD-WCB	3912-F-STD-WCB	6912-F-STD-WCB	9912-F-STD-WCB	5912-F-STD-WCB
DESIGN	API-6D	API-6D	API-6D	API-6D	API-6D
BODY MATERIAL	WCB	WCB	WCB	WCB	WCB
BONNET MATERIAL	WCB	WCB	WCB	WCB	WCB
YOKE MATERIAL	WCB	WCB	WCB	WCB	WCB
STYLE	DBB	DBB	DBB	DBB	DBB
TYPE OF DISC	SOLID FLAT	SOLID FLAT	SOLID FLAT	SOLID FLAT	SOLID FLAT
DISC MATERIAL	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70
COAT ON DISC	ENP 0.003"	ENP 0.003"	ENP 0.003"	ENP 0.003"	ENP 0.003"
SEAT RINGS MATERIAL	A105	A105	A105	A105	A105
COAT ON SEAT RINGS	ENP 0.003"	ENP 0.003"	ENP 0.003"	ENP 0.003"	ENP 0.003"
PRIMARELY SEAL MATERIAL	RPTFE	RPTFE	RPTFE	NYLON	NYLON
STEM MATERIAL	F6	F6	F6	F6	F6
STEM PACKING MATERIAL	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
GREASE FITIING MATERIAL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
PACKING STEM INJECTOR	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
TYPE OF ENDS	RF	RF	RF	RF	RF
FLANGED ENDS 2 TO 24"	ASME B16.5	ASME B16.5	ASME B16.5	ASME B16.5	ASME B16.5
FLANGED ENDS 26" AND UP	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A
PRESSURE TEST	API-6D	API-6D	API-6D	API-6D	API-6D
O'RINGS	VITON	VITON	VITON	VITON	VITON
OPERATION	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *

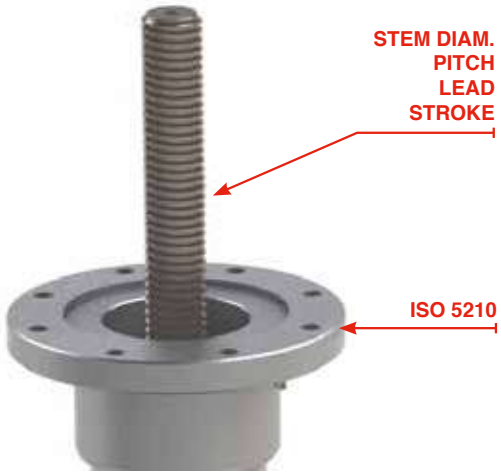
***** Third digit in figure number indicates valve operation, for GEAR OPERATOR use the number “2” instead of “1”.
Please refer to page 57 to know more types of operators.

MOST COMMON TRIM ARRANGEMENTS
FOR METAL TO METAL DESIGN

SOFT SEAT	150 #	300 #	600 #	900 #	1500 #
FIGURE NUMBER	1912-F-STD-WCB	3912-F-STD-WCB	6912-F-STD-WCB	9912-F-STD-WCB	5912-F-STD-WCB
DESIGN	API-6D	API-6D	API-6D	API-6D	API-6D
BODY MATERIAL	WCB	WCB	WCB	WCB	WCB
BONNET MATERIAL	WCB	WCB	WCB	WCB	WCB
YOKE MATERIAL	WCB	WCB	WCB	WCB	WCB
STYLE	DBB	DBB	DBB	DBB	DBB
TYPE OF DISC	SOLID FLAT	SOLID FLAT	SOLID FLAT	SOLID FLAT	SOLID FLAT
DISC MATERIAL	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70	A-105 OR A515-70
COAT ON DISC	HARD COATING	HARD COATING	HARD COATING	HARD COATING	HARD COATING
SEAT RINGS MATERIAL	A105	A105	A105	A105	A105
COAT ON SEAT RINGS	HARD COATING	HARD COATING	HARD COATING	HARD COATING	HARD COATING
PRIMARELY SEAL MATERIAL	N/A	N/A	N/A	N/A	N/A
STEM MATERIAL	F6	F6	F6	F6	F6
STEM PACKING MATERIAL	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
GREASE FITIING MATERIAL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
PACKING STEM INJECTOR	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
TYPE OF ENDS	RF	RF	RF	RF	RF
FLANGED ENDS 2 TO 24"	ASME B16.5	ASME B16.5	ASME B16.5	ASME B16.5	ASME B16.5
FLANGED ENDS 26" AND UP	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A	ASME B16.47 SERIES A
PRESSURE TEST	API-6D	API-6D	API-6D	API-6D	API-6D
O'RINGS	EDR	EDR	EDR	EDR	EDR
OPERATION	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *	HANDWHEEL *

* Third digit in figure number indicates valve operation, for GEAR OPERATOR use the number “2” instead of “1”.
Please refer to page 57 to know more types of operators.

API 6D THROUGH CONDUITS SLAB GATE VALVE
(SOFT SEAT), OPERATOR SIZING REQUIREMENTS



* WALWORTH Slab Gate Valves with gear operator are supplied with ISO flanges in accordance with ISO-5210.
Bare stem valves will be supplied with ISO flange upon request.

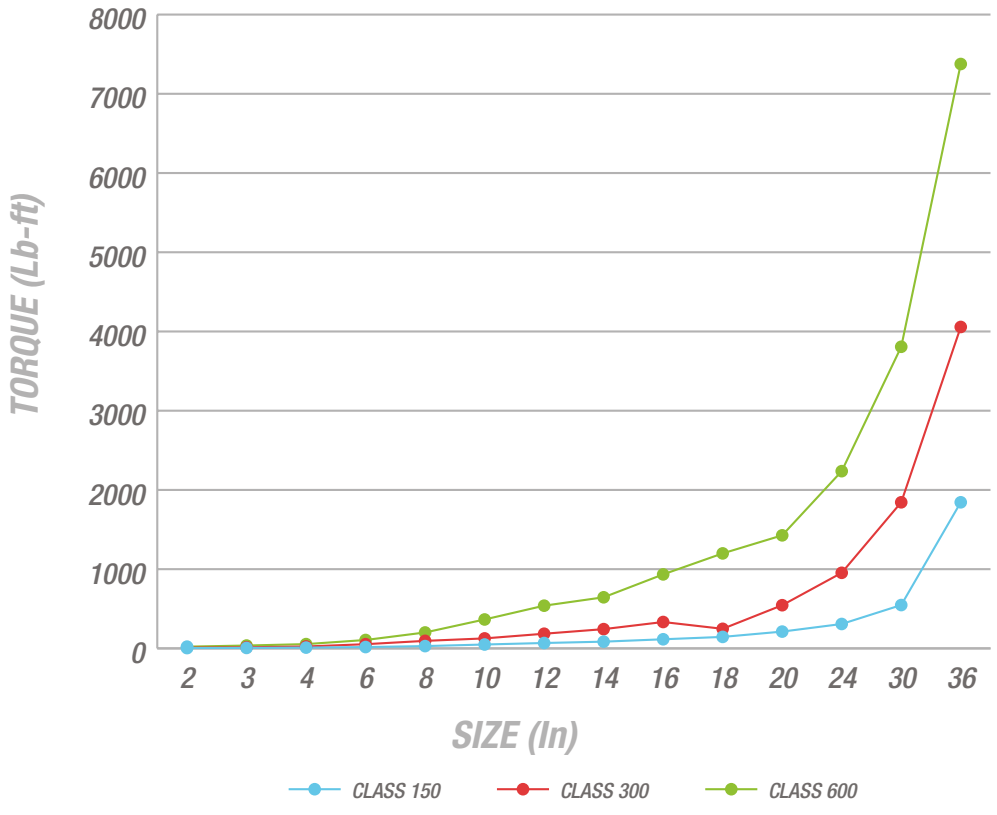
SIZE In (mm)	ASME CLASS	ASME WORKING PRESSURE	STEM In	PITCH In	LEAD In	TORQUE (lbf-ft)	THRUST (lbf)	STROKE In	TURNS OF STEM	ISO-5210
2 (50)	150	290	3/4"-ACME-LH	1/6"	single	4	832	2.756	17	F10
	300	750	3/4"-ACME-LH	1/6"	single	9	2068	2.756	17	F10
	600	1500	7/8"-6-ACME-LH	1/6"	single	22	4451	2.756	17	F10
3 (80)	150	290	7/8"-ACME-LH	1/6"	single	6	1192	3.661	22	F10
	300	750	7/8"-ACME-LH	1/6"	single	14	2968	3.3661	22	F10
	600	1500	1"-5-ACME-LH	1/5"	single	36	6430	3.858	20	F10
4(100)	150	290	1"-5-ACME-LH	1/5"	single	10	1731	4.843	25	F10
	300	750	1"-5-ACME-LH	1/5"	single	24	4203	4.843	25	F10
	600	1500	1 1/8"-5-ACME-LH	1/5"	single	54	8407	4.843	25	F12
6(150)	150	290	1 1/8"-5-ACME-LH	1/5"	single	17	2720	6.89	35	F12
	300	750	1 1/4"-5-ACME-LH	1/5"	single	53	7418	6.89	35	F14
	600	1500	1 3/8"-4-ACME-LH	1/4"	single	106	15826	6.89	28	F16
8(200)	150	290	1 1/4"-5-ACME-LH	1/5"	single	29	3956	8.976	46	F14
	300	750	1 1/2"-4-ACME-LH	1/4"	single	95	11128	8.976	36	F16
	600	1500	1 1/2"-4-ACME-LH	1/4"	single	201	23739	8.976	36	F16
10(250)	150	290	1 3/8"-4-ACME-LH	1/4"	single	49	5687	10.984	44	F14
	300	750	1 1/2"-4-ACME-LH	1/4"	single	126	14837	10.984	44	F16
	600	1500	1 7/8"-4-ACME-LH	1/4"	single	365	33631	10.945	44	F25
12(300)	150	290	1 1/2"-4-ACME-LH	1/4"	single	68	7913	13.228	53	F14
	300	750	1 5/8"-4-ACME-LH	1/4"	single	185	19783	13.228	53	F16
	600	1500	2"-4-ACME-LH	1/4"	single	539	46243	13.386	53	F25
14(350)	150	290	1 5/8"-4-ACME-LH	1/4"	single	85	9149	14.25	58	F16
	300	750	1 3/4"-4-ACME-LH	1/4"	single	243	24234	14.25	58	F25
	600	1500	2 1/8"-3-ACME-LH	1/3"	single	645	53167	14.625	44	F30
16(400)	150	290	1 3/4"-4-ACME-LH	1/4"	single	115	11375	16.457	66	F25
	300	750	2"-4-ACME-LH	1/4"	single	333	30663	16.75	58	F25
	600	1500	2 3/8"-3-ACME-LH	1/3"	single	934	68251	16.929	50	F30

* Recommended thrust and torque for sizing bevel gear or automation. This data includes a 20 % safety factor about torque information.

API 6D THROUGH CONDUITS SLAB GATE VALVE
(SOFT SEAT), OPERATOR SIZING REQUIREMENTS

SIZE In (mm)	ASME CLASS	ASME WORKING PRESSURE	STEM In	PITCH In	LEAD In	TORQUE (lbf-ft)	THRUST (lbf)	STROKE In	TURNS OF STEM	ISO-5210
18(500)	150	290	1 3/4"-4-ACME-LH	1/4"	single	145	14342	18.307	75	F25
	300	750	2"-4-ACME-LH	1/4"	single	247	36598	18.5	75	F25
	600	1500	2 1/2"-3-ACME-LH	1/3"	single	1199	82841	18.668	57	F30
20(500)	150	290	2"-4-ACME-LH	1/4"	single	212	18299	20.945	84	F25
	300	750	2 1/8"-3-ACME-LH	1/3"	single	545	45006	20.866	62	F30
	600	1500	2 1/2"-3-ACME-LH	1/3"	single	1427	986903	20.866	63	F30
24(600)	150	290	2 1/8"-3-ACME-LH	1/3"	single	308	25223	25.591	75	F25
	300	750	2 1/2"-3-ACME-LH	1/3"	single	954	5778	25.591	75	F30
	600	1500	3 "-2-ACME-LH	1/2"	single	2237	133311	24.062	50	F35
30(750)	150	290	2 1/2"-3-ACME-LH	1/3"	single	547	37587	30.636	93	F30
	300	750	2 3/4"-3-ACME-LH	1/3"	single	1844	105659	30.99	93	F35
	600	1500	3 1/4"-2-ACME-LH	1/2"	single	3807	204575	31	62	F35
36(900)	150	290	2 3/4"-3-ACME-LH	1/3"	single	1844	89923	36.63	109	F35
	300	750	3 3/4"-2-ACME-LH	1/2"	single	4057	224808	38	76	F35
	600	1500	4"-2-ACME-LH	1/2"	single	7376	325971	38	76	F40

* Recommended thrust and torque for sizing bevel gear or automation. This data includes a 20 % safety factor about torque information.



DESIGN BASIS

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

API American Petroleum Institute

6D	Steel gate, ball and plug valves for pipeline service.

ASME Standards ASME International (American Society of Mechanical Engineers)

B2.1	Pipe Threads
B16.5	Steel Pipe Flanges and Flanged Fittings
B16.10	Length of Ferrous Flanged and Welding End Valves
B16.25	Butt-Welding Ends
B18.2	Square and Hexagon Bolts and Nuts

ASTM American Society for Testing and Materials:

A-193	Alloy Steel and Stainless Steel Bolting Materials for High Temperature Service
A-194	Carbon and alloy steel nuts for high pressure and high temperature service, class2
A-216	Standard specification for steel castings, Carbon, Suitable for Fusion Welding, for High temperature Service

MSS Standards Manufactures Standardization Society of the Valve and Fittings:

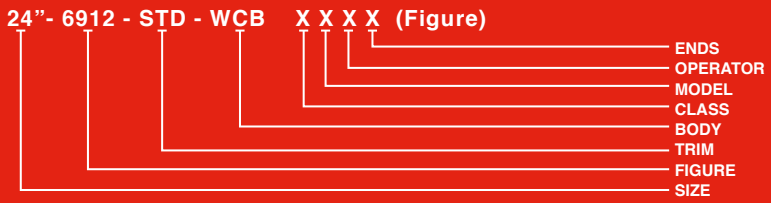
SP-25	Standard Marking System for Valves, Fittings, Flanges and Unions
SP-44	Steel Pipeline Flanges
SP-47	Limiting Dimensions of Raised Face Flange Gaskets
SP-61	Pressure testing of steel valves

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
Section V	Non Destructive Tests
Section VIII	Boiler and Pressure Vessel Code for Unfired Pressure Vessels, Divisions 1 and 2
Section IX	Welding Qualifications

HOW TO ORDER

WALWORTH Valves are identified by a figure number which describes main features. Identification procedure is intended to assist customers to specify the sort of valve required according to a specific need.



Size (in)	WALWORTH Figure
2"	1912
3"	1913
4"	1914
6"	1922
8"	1923
10"	1924
12"	3912
14"	3913
16"	3914
18"	3922
20"	3923
24"	3924
26"	6912
28"	6913
30"	6914
32"	6922
36"	6923
40"	6924
42"	9912
48"	9913
	9914
	9922
	9923
	9924
	5912
	5913
	5914
	5922
	5923
	5924
	2912
	2913
	2914
	2922
	2923
	2924

Trim
STD
Metal-Metal

Base Material
Carbon Steel
A216- WCB
Low Temp. Carbon Steel
A352-LCB
NOTE: Aditional Base Materials
are Available Upon Request

Supplementary Requirements
GO= Gear Operator
BS= Bare Stem
LD=Locking Device
TC=Tungsten Carbide Coating
ST=Stellite Coating

FIGURE DESCRIPTION

CLASS	MODEL	OPERATOR	ENDS
1 = 150#	9 = Slab gate	1 = Handwheel	2 = Rised face
3 = 300#		2 = Gear operator	3 = Ring type joint
6 = 600#		3 = Motor operated	4= Butt weld
9 = 900#		5 = Bare stem	
5 = 1500#			
2 = 2500#			

TRIM
STD = Gate: ASTM A515 Gr. 70/ENP or ASTM A105N/ENP; Stem: ASTM A276 Gr. 410; Seat: ASTM A105N/ENP
METAL-METAL = Gate: ASTM A515 Gr. 70/TCC or ASTM A105N/TCC; Stem: ASTM A276 Gr. 410; Seat: ASTM A105N/TCC

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 supplier price in effect at 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 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 bellow.

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 (5%) percent of prices of stock items.
- Ten (10%) percent of price of stock items ordered in quantities which exceed normal inventory levels.
- Five (5%) percent 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 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 manufacture 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 acceptance. 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 written claim, specifying the alleged defect, is presented to 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.

WALWORTH®

Since 1842

www.walworth.com

MÉXICO

Industrial de Válvulas, S.A. de C.V.
Industria Lote 16 Sin Número, Fracc. Industrial El Trébol De Tepotzotlán, Tepotzotlán Estado de México C.P. 54610
Phone: (52 55) 5899 1700 Fax: (52 55) 5876 0156 I e-mail: info@walworth.com.mx

---

USA/CAN AUTHORIZED DISTRIBUTOR

TWC The Valve Company
13641 Dublin Court, Stafford, Texas 77477 I Phone: (281) 566 1200 Fax: (281) 566 1299 I
www.twcvalves.com I e-mail: info@twcousa.com

Scan me with your smartphone to get more info about **WALWORTH valves**