

# CAST IRON VALVES CATALOG



www.walworth.com



# **INDEX**

#### INTRODUCTION

WALWORTH ENGINEERING CONTROL	5
WALWORTH QUALITY SYSTEM	5
QUALITY CONTROL EQUIPMENT	9

#### **CAST IRON GATE, GLOBE & SWING CHECK VALVES**

STRUCTURAL FEATURES	11
WALWORTH CAST IRON OS&Y GATE VALVES CLASS 125	. 12
WALWORTH CAST IRON OS&Y GATE VALVES CLASS 250	. 15
WALWORTH CAST IRON NRS GATE VALVES CLASS 125	. 18
WALWORTH CAST IRON RISING STEM GLOBE VALVES CLASS 125	. 21
WALWORTH CAST IRON RISING STEM GLOBE VALVES CLASS 250	. 24
WALWORTH CAST IRON SWING CHECK VALVES CLASS 125	. 27
WALWORTH CAST IRON SWING CHECK VALVES CLASS 250	30

### **TECHNICAL INFORMATION**

ACCESSORIES - BYPASS, DRAIN AND VENT CONNECTIONS
ACCESSORIES - POSITION INDICATOR
ACCESSORIES - LEVER AND COUNTER WEIGHT
ACCESSORIES - WALL TAPING
ACCESSORIES - BOSS LOCATIONS
ACCESSORIES - FLOOR STANDS
ACCESSORIES - STEM EXTENSION
PRESSURE-TEMPERATURE RATINGS
DESIGN BASIS
HOW TO ORDER
TERMS AND CONDITIONS



YARMOUTH RESEARCH AND TECHNOLOGY





# WALWORTH

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

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

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

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

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



### WALWORTH VALUES

#### MISSION

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



#### VISION

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

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





### WALWORTH ENGINEERING CONTROL

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

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



# WALWORTH QUALITY SYSTEM

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





#### Certificate API-6D No. 6D-0097

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

#### Certificate API-6A No. 6A-0234

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





#### Certificate API-594 No. 594-0007

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



#### API-600 Certificate No. 600-0109

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



#### API-602 Certificate No. 602-0024

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



### Certificate ISO-9001 No. 0038

Issued by American Petroleum Institute since April 1999.

Certificat	
	Quality-Assurance System
	acc. to Directive 97/23/EC
Certificate to.)	61 362 UBA/G-16 8913
Name and address of the manufacturer	Wahrorth – Inval Facility Industrial de Váhvalas, S.A. de C.V. Avenida de la Industrial Los 15 Fraccionamianto Industrial El Trabol C.P. 54603, Fraetortalina, Estado de Mexico
	Herewith we certify that the above medicine' manufacture operates a superior system according to the fungement Docative \$722800. The manufacturer has the permassion to affit the Kalavang CE method to previous examined theorithed and manufactured to accordance to the scope covered by the Double-Messance Rystem.
	C€ 0035
Tested acc. to Directive 01234EC	GB-Synthem (Module W) the GP-Module X1, 5, 57 and 10 are performed by Malazie II;
Audit report no.:	LISAG-IS STORE
Area of validity	Design, Manufacturing and testing of industrial valves, see annex to certificate
Manufacturing plant	Walworth – Inval Facility Industrial de Valvallas, S.A. de C.V. Avenida de la Industrial Lois 19 Praccionamiento Industrial El Tribol C.P. 5460, Tepotocillas, Ilistado de Manico
Valid write	April 07, 2218
Culture, April 30, 2013	Noting Share ( A days
10V Revenued Contribution Book for Pressure Transporter TOV Norman Industries Contain Norther Story, 10-49, 1010 Net Concern Story, 71-57110 Rose	5015apt
www.fux.com	A TÜVRheinland*

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



	CFE	-	62
	CONCERNMENT OF THE PARTY OF THE		
	TAI	DEA	1
LABORAT	L/1	LIV	
CONS	TANCIA DE CAL	FICACIÓN	DE PROVEEDOR
		abers	
	CONTRACTOR OF THE R. O.	and a cost of	
In the second seco			
NATOR POLIAL	HELETERS DE HELPARE	ABAMES.	Training and
ANDIA DOCIAL ALANTA O Antonia Alanta di Alanta di	ADDITION, DE VILLAN, R. Anita Adol November de la Protection November	* Sherry:	ano na mainteo - Tampeterra ani ny analasi - Ananasi - Anana
	Additional of the Ada Adaptive procession Adaptive of the Adaptive Adaptive of the Adaptive Adaptive of the Adaptive Additional of the Ad		
ALTON ROCAL In Jacks & American American Strategies (1997) In American Strategies (1997)	Helderheit, Ed Hall, Rad Haufert and Stationard In Haufert and Stationard In Helder Helderheit Held		
	Andressen, Dir Ha Andre Andressen, Dir Andressen, Barner, Barn		
		an a	
NUCLE POCIAL R. Jack & description (2005) 201 2010/2019 (2019) 2012 (2019) 2019 (2019) 201			

+ epose an analysis
CONSTANCIA DE PROVEEDOR CONFIABLE
INCLUTINAL DE VALVULAR, E.A. DE C.V. (1814-638) AV. ROLATINAL COTE 18 FRACE NEUERSTRAK, E.S. TREEDE, TENTIZETURA, ROC DE WEX, C.R. SHOOD TEL, SHAR THOS
IN ADDRESS CON LA ADDRESS A DU BUTCHE DE METORE DE LA DUDAG INTELTADO POR PORCUERO MENDANOS, Y INGUMENTE ADDRESSA CONTONIS A INCONTINUENTO DEPARTMENTE INCONTENTE IDMETARCE ANAL EL DUDANTIEL DE LOS DOCUMENTE INCOLUCTIO
FAMILIANTE DE VILVIANE DE AUDRO FANDED CORFUENTA AP SE BUORD FAMIL NEL IN RETRIEVER COMPARTA BOLA SEURI AN 48 VILVIARAS DE AUDRO FORMADO ENVIRUITA ELECTO EXTENSION AN 482 BUBRICE ANTAS CHA SEURIDEO Y ALVEO
ESS. COMPANIES DE ESTRECE EN EL INTRODOC DE CUE PERSONAL MICONDE ENFOLMAN AUDITADE EL ESUMERIO A SU ESTREMI EL ESTA SU LA CADAL ESSENHACION EL ESTREMA CON AUXILIA DE LA ALURACI CAL LOS RESULTACION ES ES DERENAN Y AL ESSAN A L'ANOMEDIO ES RESENTAS SUS PRODUCTOS AVAN VERYOLACION DE LA DALLINE, CANADO AN ILLA RESULTAS.
Non 2 1990 A AND AND AND AND AND AND AND AND AND A
Jung the first the state of the

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

#### Supplier Qualification Certificate NO. 279/13

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



#### Emissions after 500 cycles at ambient and 350 °F

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



Emissions after 500 cycles at ambient and 350 °F Issued by Yarmouth Research and Technology Lab for 16 inch Class 150 Gate Valve After 500 cycles the measurement result was less than 50 ppm.



#### Emissions after 500 cycles at ambient and 350 °F

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



### **PRODUCT** CERTIFICATIONS



	PROJECT SUMMARY
Project Numbers	mana .
Coperation of the	The Walworth Company
Context	David Cortection
Date(s) of Tests	12899 - 122299
freedoorten Textedo	One W Class 200 Gate Valve with Empil Mex EAF 100.001 packing
Surpose of Tests	The test was conducted to evaluate the earlier's new scaling preformance of anticent and at 100° F as related to the 1990 Associations in the Clean At Act importants. Leakapp measurements was conducted in memorylence with 10°CPR Part 60. Appendix A. Method 31.
f sour faisients	These theread cipils from scalars to MD day. Force combains developing 300 spectra wave and the scalar percentration in Gilpang. The value was cycled with a 64 BPM gave motor required in the family wave cycled with a 64 BPM adjustment was required at replacements 200 is manifestim halongs break basics 100 PPMs. At cycle manifest 100 ppm, and any wave 25-29 PPMs with the states ratio. The packing taskage wave 25-29 PPMs
	T2110 h.2 hask to 29 ft its and leakage decreased to about 1 P19h. Nee the attached data aboves for more information.
To of Williamson	Statister J. Wanniewski, P. L. President Yannia vin Bratanci and Threesenent
	Notes for 177 Marchine

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".



#### 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.



#### 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.

	CERT	IFICA'	ГЕ
Concer	ming the Agreement	with the Technical R	equinements in:
TA-Lu	ft 2002, VDI 24	40 Nov. 2000,	Sec. 3.3.1.3
Test report	208140	Columi	60 December, 2000
Class .		Andrew Statements	A de CH
The Blant Automp	surgers and internal fig-	second and and an address of the second second	a landaria da la desta de calendaria de la construcción de la construc
meet the system ins following con- impulsations of 1 Vertications in an	e intere of 5 15" when deces. The BFV Value o fection 5.2.6.4 of The G conducts with Section 3	get connection have been a 25 s in) with a helium is different Clean Air Act, (CA 3.1.3 of VCR 2640 (Rev.	<ul> <li>aucosestulų testeri is mes spectromater under rictal atalit, suela fulfita tre Cudt, (Laskage 2000).</li> </ul>
Rind of Valve	n interia of 5.10° mbar dilone. The IBPV Value o lection 5.2.6.4 of The G continue with Section 3	ge consider have been s 75 s of with a hallwork off the exemited model and a hallwork of the annual Clean Air Ais, (1A 1.3 1.3 of VCR 2642 (Rev.	n aucocensibility texteel to react spectrometer ander most and the seeks fulfility the Curlip, dj.natiogen 2000; 1920 Qurlip Valve
Need the spheres the following con- requirements of t Vertication) in an Kind of Valve. Valve Table.	e prillerse of 6 15° mbar dillone. The BFV Value o Section 5.2.6.4 of The G conductor with Section 3	set connection have been a PEx x m) with a hallware antean Clean Air ALL (CA 3.1.3 of VCI 2542 (Rev. Waterorth AP 4 Inch, Class	n successibility testient in mask spectrometer survive most of under service fulfility (the count of the service fulfility) (add) (the service fulfility) (add) (the service fulfility) (add) (the service fulfility) (add) (the service fulfility) (the service fulfility)
Kind of Valve Valve Type	e priteria of 5 10° milar dilone. The BFV Value o location 1.2.64 of The G containing with Section 3	ge contection have been a f25 5 (1) will a hallour a similar Clean Air Act, (1A 3 1 3 of VCI 2542 (Rev. Walkeetth AP 4 milt, Clean WCB Booly ( CR 13 Clean	n porcesskillig basket to most specificmente under rocat stati sunde bulkte äve 4. dut (
New York Street Street Repairweets of 3 Vertication in an Kind of Valve: Valve Type: Sealing System Montaind Size	n orthogram of a 11 <sup>-2</sup> value discus. The BPV Value discus The BPV Value social and the discussion social and the discussion of the discussion of the discussion W	gel contraction faces been offic to on white a balance with the scattering muchan entranc Cleane Air Ast, (CA, 3.1.1.3 of VCI 2840 (Raw, Wateworth, AP 4 inch, Cleane WCB Body I (CH, 13 Grouph 4 inch, Cleane Complete Complete 4 inch, Cleane Complete Complete 4 inch, Cleane Complete Complete 4 inch, Cleane Complete Com	n pocosektuly bester to main spectrometer under most statt seeks kullitis tre (kul), (Lankage 2000). I 820 Catto Valve 0000, Figures KERIAT Steen & Cites ( 197 Seat de Deals
Kind of Valve. Kind of Valve. Valve Type. Sealing System Mommal Size.	n onter of 6 15 <sup>-7</sup> obser discus, The BPV Value - discus 6.2.6 of 17te (5 contenue with Socher 2 Norminal Pressure: Norminal Pressure:	USE STOREGAL THE STORE THE STORE STOREGAL STOREG	n poceastichy tester in mass spectroments under rotat startit unde Mills Sie (July, Caladige 2000). 1800 Option Valve 600, Pigene Kähler Biser & Chel (197 Best die Bestin Areit 190 Tempesetre w Santimer Tempesetre w Santimer
Read the systems inclusion of the second second requirements of the vertication) in an Xand of Valve. Valve Type: Sealing System Naminal State. Inspection Me. Switching Cycl	n onter of 6 15 <sup>2</sup> obta dison. The BY Value locate 5.2.6.4 of The G contents with Souther 3 Monvinal Pressure: dis/Pressure: dis/Pressure:	trgs connection have been to be a manning market off the seaming market off the seaming market off the seaming market of the seaming market of the seaming market water and the seaming decays decays a test, Stations (21) Save S Connection Stations (21) Save S Connection S Connec	n potoantikly tedent in mest spectrometer under richt Andre Lebbs Ste (2007), (Talange 2007), 1800 Garle Valve (2007), (Talange 2007), 2007, (Talange Athlet) Teory and the Talanti Areas Job Teory and the Analiset Talanti Cyclus 800
New Yorking con requirements of 1 Verifications in an Xind of Valve. Valve Type: Sealing System Numinal Size. Propertion Me Switching Cycl Lastage Fate	n orders of 6 15 <sup>2</sup> obta disces. The BV Value isotran 5.2.6.4 of The G contracts with facilities 3 w. Norwinal Pressure: darFreescer: lat: (21ws) [) (bar-1/1 act)	per connection have been 175 x 10 with with a balance of the the scanning matches with the scanning matches with the scanning matches with the scanning of the Wathworth P AT WCB Body 100 Host Graph 4 Hosts Halters I (F1 Base 9 Cycles 5 Lite 7 Ontor – Insteil	n potoasticky tester in sums spectroment order solito statute and the second statute of the soliton Curls, Charlenge 2000, 1 1100 Curls Valve 500, Figure EBDIO Bares A. Chesi of 198 Bart. de Barsis AREI 209 Presignature = Antibase Taula Cystus BIO 3.174-8 bittes - Fasci
Rend of Valves requirements of I verification in ea Kond of Valves. Valve Type: Sealing System Numinal State. Inspection Met Switching Cyto Laskage Rote Testing Netho	e orders of 6 15 <sup>2</sup> robot docum 15.2.6.4 of The G isoten 5.2.6.4 of The G isoteness with Sectors 3 W Norwinal Pressure: dat/Pressure: Bits: Chiving - [pitar - 1 / sac] d;	oge opproxision have been to be a second and the balance of the flar examination much as the flar examination of the balance of the second and the second and watereen the second and well Body I CH 13 Graph A Stelluest / EH Steve B Chysics State - Instein Halfwat Least Test-	n potoantikly tedent in same spectrolinet and de- table dark seek. Mills Ste 2000). Biological States States States States States States States States States Tates Cyclus 680 3.546 Jondar - Ranci Viz 1468, Agewood A
Kind of Valve. Kind of Valve. Valve Type: Sealing System Nummal Size. Inspection Mer Switching Cycl. Laskage Rate Testing Nethor Source Laboratory	e present of a 112" obtain Sectors The Sector Secto	ger operandliker hand bei 1752 in 19 with with a balance in seringer Chann Air Alls, (CA 3.1.3 of VCR 24440 (Her- WCR Bodyr 107, 11 WCR Bodyr 107, 13 Graph 4 test, Statland 11 Barry 0 Crystee 5.18-7 (Indone - Instein 16.18-7 (Indone - Instein 16.18 Test	n potoantikly tedent in stat and seak tablik te ital and tablik te potoantikle seak tablik potoantikle seak potoantikle seak
Kind of Valve Valve Type Stalley System Kand of Valve Valve Type Sealing System Naminal Stan Inspection Me Switching Cycl Lasting Ratio Testing Methor Young Laborato Yaong Laborato	a interes of 5 15° new Society 5.2.6.4 of The (i location 5.2.6.4 of The (i location) 2.2.6.4 of The (i location) 2.2.6.4 of The (i location) Normal Pressure: Bit (24mg) (inter-1/1 and) d: r ach new Termenastr	opt consolitor has been the solution of the holders of the for community of the holders of the community of the solution of the holder of the solution of the holder of the weight of the holder of the solution of the holder of the holders Lath Sector Internal Sector of the holders of the holder of the holders Lath Sector Internal Sector of the holders of the holder of the holder of the holder of the holder of the holder of the hol	Botosettel in Botosettel in Botosettel in Curls, Charlings BOD Gulin Valve BOD Gulin Valve BOD Gulin Valve BOD Gulin Valve BOD Gulin Valve BOD Botos BOD Gulin Valve BOD
New Yorkshill and Statements of Inglatements of Workshill and Yalve. Yalve Type. Sealing Syntar Ausninal State. Inspection Met Switching Cycl Laskage Rate Testing Metho Yaste Laterator Yastever Mass Matter J	a preserve of a 10° vision South the STV vision No. No. No. No. No. No. No. No. No. No.	oge consection have been right to regardly have been rented Deen Ar Act, Och 3.1.3 of VC2 2440 (Rev. Wathweth, AP 4 (anni, Clama ) RC38 (Jong 1, Clama ) R	proceedingly tasked in the state spectrolimited and the state spectrolimited and the state spectrolimited and the state spectrolimited and the spectrolimit

**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 casting raw 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**.- In a random basis for standard products or when a Customer request MT Certification, WALWORTH has Magnetic Particle Test Equipment to perform on ferromagnetic materials.

**Penetrant Test Examination**.- WALWORTH has the personnel and materials to perform PT examination by solvent removable or water washable techniques. 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 expends more than 4 months to be finished.

**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 into 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 value to a fire flame at 1400 to 1800 °F (761 to 980 °C) to verify proper seal of the value.





Low Fugitive Emissions Test.- When a Customer requires low fugitive emissions certification. The Lab has its own LFE Test Equipment capable to measure less than 20 ppm either in both static or Mechanical conditions at ambient temperature or thermal cycle operations.

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





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

Hardness Test Equipments.- Either lab or shop test, WALWORTH use hardness tester equipments as Rockwell B, C Brinell or Vickers to check compliance against specifications.





# **CAST IRON GATE, GLOBE & SWING CHECK VALVES**

### STRUCTURAL FEATURES

**WALWORTH** Cast Iron Valves are used for many services in different kind of industries, from utilities, pulp and paper mills, sugar plants, refinieries, steel mills, chemical plants, shipyards, etc. **WALWORTH** Cast Iron Valves have been used to control fluids for a longer period of time than other brands. The main field of this type of valves is the water industry. However, demands are coming more and more for all above mentioned services. **WALWORTH** Cast Iron valves are manufactured in accordance with MSS standards.

**WALWORTH** offers this product line in the following base materials:

a) Cast Iron in accordance with ASTM A126 Class B.

**WALWORTH** offers this product line in the following standard trim:

a) Bronze trim in accordance with ASTM B62 grade C83600.

#### **DESIGN FEATURES**

- Design in accordance with MSS-SP-70 type 1 for gate valves.
- Design in accordance with MSS-SP-85 for globe valves.
- Design in accordance with MSS-SP-71 for swing check valves.
- Bolted Bonnet design.
- Rising stem and Non Rising Stem Options as per MSS-SP-70 Type 1.
- Hand-wheel, Chain-wheel, Gear operation as per Customer requirements.
- Stem extensions or floor stands.
- · Lever and counterweight options (only for check valves).
- Test as per API-598.
- Classes 125 psig and 250 psig.
- By-Pass, drains and special connections available upon request.



### PRODUCT RANGE

ТҮРЕ	SIZE	TRIM	PRESSURE CLASS	ENDS	FIGURE Nr.
Iron Gate Valve Rising Stem (OS & Y)	2" to 36"	Bronze	125#	FF	W726 F
Iron Globe Valve Rising Stem (OS& Y)	2" to 12"	Bronze	125#	FF	W906 F
Iron Swing Check Valve	2" to 24"	Bronze	125#	FF	W928 F
Iron Gate Valve Non Rising Stem	2" to 36"	Bronze	125#	FF	W719 F
Iron Swing Check Valve with lever & counter weight	2" to 24"	Bronze	125#	FF	W928F LCW
Iron Gate Valve Rising Stem (OS & Y)	2" to 12"	Bronze	250#	FF	W786F
Iron Globe Valve Rising Stem (OS& Y)	2" to 12"	Bronze	250#	FF	W8955F
Iron Swing Check Valve	2" to 24"	Bronze	250#	FF	W8970F
Iron Swing Check Valve with lever & counter weight	2" to 24"	Bronze	250#	FF	W8970F LCW

### CAST IRON GATE VALVES HANDWHEEL WITH OUTSIDE SCREW AND YOKE (OS&Y)

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

#### **DESIGN FEATURES**

- Gate Valves design in accordance with MSS SP-70 type solid, wedge/Disc.
- Body and Bonnet Cast Iron in Accordance with ASTM A 126 Class B.
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

### STANDARD MANUFACTURING OF WEDGE

- Solid Wedge single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration.
- Service Conditions WOG-Water, Oil, Air, Gas, Water, Steam and Pumping Systems.

### HANDWHEEL OPERATION

- Handwheels are furnished on all Gate & Globe Valves, manual gear, hydraulic or motored operators and chainwheels can be supplied when specified.
- By-Pass, Drains and Special connections are available upon request.
- Stem Nut replaceable in line to avoid shut down of pipe line process.
- Non Rising Stem with trapezoidal metric thread for quick operation.
- Surface finish suitable to seal properly to obtain low fugitive emissions.

### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass
   Stem.
- Graphite is used for Gaskets and Packing
- · Glands may be threaded or bolted type
- Bronze trim valves are recommended for steam, water, air, and noncorrosive oil or gas.
- All Iron Valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-70
- CLASS 125
- Outside Screw & Yoke (OS&Y)
- Cast Iron Construction
- Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

#### 125 psi (8.6 Bar) Saturated Stem @ 353°F (178°C)

200 psi (13.8 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass		
1	Body	ASTM A126 class B		
2	Body Seat Ring	ASTM B62 Grade C83600		
3	Wedge Seat Ring	ASTM B62 Grade C83600		
4	Wedge	ASTM A126 class B		
5	Stem	Brass ASTM B16		
6	Bonnet Gasket	Graphite		
7	Bonnet Bolt	ASTM A307 class B		
8	Bonnet Nut	ASTM A563 class B		
9	Bonnet	ASTM A126 class B		
10	Packing	Graphite		
11	Gland Follower	ASTM A536 65-45-12		
12	Bolt Steel			
13	Nut	Steel		
14	Gland Bolt	Steel		
15	Gland Nut	Steel		
16	Yoke	ASTM A126 class B		
17	Stem Nut	Cast Brass (Mn-Brass)		
18	Screw	Steel		
19	Yoke Nut	ASTM A126 class B		
20	Handwheel	ASTM A126 class B		
21	Identification Plate*	Aluminum		
22	Handwheel Nut	Steel		



\* Not Shown



#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-70
- CLASS 125
- Outside Screw & Yoke (OS&Y)
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per to ANSI B16.1







#### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305	356	406	457	508	610	762	914
Nominal Diameter	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
۸	mm	177.8	190.0	203.2	228.6	254.0	266.7	292.1	330.2	355.6	381.0	406.4	432.0	457.0	508.0	PCR	PCR
A	in	7.00	7.48	8.00	9.00	10.00	10.50	11.50	13.00	14.00	15.00	16.00	17.01	17.99	20.00	PCR	PCR
R (Onen)	mm	311	347	384	490	541	656	778	933	1102	1259	1395	1560	1708	1990	PCR	PCR
в (Open)	in	12.24	13.66	15.12	19.29	21.30	25.83	30.63	36.73	43.39	49.57	54.92	61.42	67.24	78.35	PCR	PCR
C	mm	178	178	200	254	300	300	348	400	457	560	560	610	610	765	PCR	PCR
U	in	7.01	7.01	7.87	10.00	11.81	11.81	13.70	15.75	17.99	22.05	22.05	24.02	24.02	30.12	PCR	PCR
_	mm	152.0	178.0	190.0	228.6	254.0	279.4	343.0	406.0	483.0	533.4	597.0	635.0	699.0	813.0	PCR	PCR
E	in	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01	PCR	PCR
Weight	kg	17	23	28	50	70	92	129	208	289	380	460	673	859	1225	2492	3682
W726F	lb	37.49	50.72	61.74	110.25	154.36	202.87	284.45	458.65	637.27	837.93	1014.33	1484.01	1894.16	2701.21	5495.04	8119.07
Cv	Flow	241.0	386.0	556.0	1018.0	1639.0	2438.0	4486.0	7009.0	10473.0	14256.0	18619.0	24528.0	30281.0	43605.0	83444	120160
	Coefficient																

PCR= per customer request



### CAST IRON GATE VALVES HANDWHEEL WITH OUTSIDE SCREW AND YOKE (OS&Y)

WALWORTH design for class 250 is based in uniform wall thickness distributed to offer the maximum mechanichal properties. Flange dimensions and drilling comply with ASME B16.1. Face to face dimensions are in accordance with ASME B16.10.

#### **DESIGN FEATURES**

- Gate valves design in accordance with MSS SP-70 type 1 solid, wedge/Disc.
- Body and Bonnet Cast iron in accordance with ASTM A 126 Class B.
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

#### STANDARD MANUFACTURING OF WEDGE

- Solid Wedge single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration.
- Service Conditions WOG-Water, Oil, Air, Gas, Water, Steam and Pumping Systems.

### HANDWHEEL OPERATION

- Handwheels are furnished on all Gate & Globe Valves, manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.
- By-Pass, Drains and Special connections, available upon request.
- Stem Nut, replaceable in line to avoid shut down of pipe line process.
- Rising stem with trapezoidal metric thread for quick operation.
- Surface finish suitable to seal properly to obtain low fugitive emissions.

#### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass
   Stem
- Graphite is used for Gaskets and Packing
- · Glands may be threaded or bolted type
- Bronze trim valves are recommended for steam, water, sea water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-70
- CLASS 250
- Outside Screw & Yoke (OS&Y)
- Cast Iron Construction
- Bolted Body design
- · Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled conforms to ANSI B16.1

#### 250 psi (17.2 Bar) Saturated Stem @ 406°F (207°C)

500 psi (34.5 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass
1	Body	ASTM A126 class B
2	Body Seat Ring	ASTM B62
3	Wedge Seat Ring	ASTM B62
4	Wedge	ASTM A126 class B
5	Stem	Brass ASTM B16
6	Bonnet Gasket	Graphite
7	Bonnet Bolt	ASTM A307 class B
8	Bonnet Nut	ASTM A563 class B
9	Bonnet	ASTM A126 class B
10	Packing	Graphite
11	Gland Follower	ASTM A536 65-45-12
12	Yoke Bolt	Steel
13	Nut	Steel
14	Gland Bolt	Steel
15	Gland Nut	Steel
16	Yoke	ASTM A126 class B
17	Stem Nut	Cast Brass (Mn-Brass)
18	Screw*	Steel
19	Nut	ASTM A126 class B
20	Handwheel	ASTM A126 class B
21	Identification Plate*	Aluminum
22	Handwheel Nut	Steel
23	Bolt	Steel



\* Not Shown



#### **DESIGN FEATURES**

- Design in accordance with MSS SP-70
- CLASS 250
- Outside Screw & Yoke (OS&Y)
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

Catalog Figure No.	Type of Ends
W786F	Flat Face ends





#### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305
Nominal Diameter	in	2	2 1/2	3	4	5	6	8	10	12
•	mm	215.9	241.3	282.5	304.8	381.0	403.2	419.1	457.0	502.0
A	in	8.50	9.50	11.12	12.00	15.00	15.87	16.50	17.99	19.76
	mm	325	362	406	493	579	644	795	935	1059
B (Open)	in	12.80	14.25	15.98	19.41	22.80	25.35	31.30	36.81	41.69
C	mm	175	200	254	300	300	348	400	457	457
C	in	6.89	7.87	10.00	11.81	11.81	13.70	15.75	17.99	17.99
_	mm	165.0	191.0	210.0	254.0	279.0	318.0	381.0	445.0	521.0
E	in	6.50	7.52	8.27	10.00	10.98	12.52	15.00	17.52	20.51
Weight	kg	28	34	46	76	101	132	201	317	433
W786F	lb	61.74	74.97	101.43	167.59	222.71	291.07	443.22	699.01	954.80
Cv	Flow Coefficient	241.0	386.0	556.0	1018.0	1639.0	2438.0	4486.0	7009.0	10473.0

### CAST IRON GATE VALVES HANDWHEEL WITH NON RISING STEM

Non Rising Stem Cast Iron valves are used when there is not enough, space above the valve to permit that stem goes up. In this configuration, the stem is coupled by threads inside the wedge, which permit to the stem movement with freedom.

### **DESIGN FEATURES**

- Gate valves design in accordance with MSS SP-70 type 1 solid, wedge/Disc.
- Body and Bonnet Cast iron in Accordance with ASTM A 126 Class B.
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled as per ANSI B16.1

### STANDARD MANUFACTURING OF WEDGE

- Solid Wedge single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration.
- Service Conditions WOG-Water, Oil, Air, Gas, Water, Steam, Pumping Systems.

### HANDWHEEL OPERATION

- Handwheels are furnished on all Gate & Globe Valves, manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.
- By-Pass, Drains and Special connections, available upon request.
- Stem Nut, replaceable in line to avoid shut down of pipe line process.
- Non Rising stem with trapezoidal metric thread for quick operation.
- Surface finish suitable to seal properly to obtain low fugitive emissions.

### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass Stem.
- · Graphite is used for Gaskets and Packing.
- Glands may be threaded or bolted type.
- Bronze trim valves are recommended for steam, water, sea water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- Design in accordance with MSS SP-70
- CLASS 125
- Non Rising Stem (NRS)
- Cast Iron Construction
- Bolted Body design
- · Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled conforms to ANSI B16.1

125 psi (8.6 Bar) Saturated Stem @ 353°F (178°C) 200 psi (13.8 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass
1	Body	ASTM A126 class B
2	Seat Ring	ASTM B62 GradeC 83600
3	Wedge Seat Ring	ASTM B62 GradeC 83600
4	Wedge	ASTM A126 class B
5	Wedge Nut	Cast Brass (Mn-Brass)
6	Stem	Brass ASTM B16
7	Bonnet Gasket	Graphite
8	Bonnet Bolt	ASTM A307 class B
9	Bonnet Nut	ASTM A563 class B
10	Bonnet	ASTM A126 class B
11	Yoke Bolt	ASTM A307 class B
12	Nut	ASTM A563 class B
13	Gasket*	Graphite
14	Stuffing Box	ASTM A126 class B
15	Packing	Graphite
16	Gland Follower	ASTM A536 65-45-12
17	Handwheel	ASTM A126 class B
18	Identification Plate*	Aluminum
19	Washer	Steel
20	Handwheel Nut	ASTM A563-B

\* Not Shown





#### **DESIGN FEATURES**

- Design in accordance with MSS SP-70
- CLASS 125
- Non Rising Stem (NRS)
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1







### **Dimensions and Weights**

	mm	51	64	76	100	107	150	202	254	205	256	406	457	E00	610	760	014
D		51	04	70	102	127	152	203	234	305	330	400	457	506	010	102	914
Diameter	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24	30	36
•	mm	177.8	190.0	203.2	228.6	254.0	266.7	292.1	330.2	355.6	381.0	406.4	432.0	457.0	508.0	PCR	PCR
A	in	7.00	7.48	8.00	9.00	10.00	10.50	11.50	13.00	14.00	15.00	16.00	17.01	17.99	20.00	PCR	PCR
в	mm	302	332	335	423	485	545	644	769	860	987	1044	1148	1257	1418	PCR	PCR
В	in	11.89	13.07	13.19	16.65	19.09	21.46	25.35	30.28	33.86	38.86	41.10	45.20	49.49	55.83	PCR	PCR
0	mm	178	178	200	254	300	300	348	400	457	560	560	610	610	765	PCR	PCR
U	in	7.01	7.01	7.87	10.00	11.81	11.81	13.70	15.75	17.99	22.05	22.05	24.02	24.02	30.12	PCR	PCR
F	mm	152.0	178.0	190.0	228.6	254.0	279.4	343.0	406.0	483.0	533.4	597.0	635.0	699.0	813.0	PCR	PCR
E	in	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01	PCR	PCR
Weight	kg	17	22	27	47	68	87	118	197	275	370	463	589	762	1113	2086	3083
W719F	lb	37.49	48.51	59.54	103.64	149.94	191.84	260.20	434.40	606.39	815.88	1020.95	1298.79	1680.26	2454.24	4599.78	6798.24
	Flow	241.0	386.0	556.0	1018.0	1639.0	2438.0	4486.0	7009.0	10473.0	14256.0	18619.0	24528.0	30281.0	43605.0	83444	120160

PCR= per customer request

Coefficient



#### CAST IRON GLOBE VALVES HANDWHEEL OPERATED WITH RISING STEM

Globe Valves are mainly used to modulate or regulate the volume of the flow. A Globe Valve is not recommended when a continuous full flow of fluid is required due to the high pressure drop inherent to the design of a Globe Valve. This type of valve should always be installed so the flow intake enters through the base of the valve seat. The valve has an arrow stamped on the body to indicate the preferred direction on flow. Globe valves may be used with fluids containing particles in suspension.

#### **DESIGN FEATURES**

- · Globe valves design in accordance with MSS SP-85
- Body and Bonnet Cast iron in Accordance with ASTM A 126 Class B
- Conical Plug Type Disc
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled comforms to ANSI B16.1

### STANDARD MANUFACTURING OF PLUG

- Conical Plug Type Disc single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration.
- Service Conditions WOG-Water, Oil, Air, Gas, Water, Steam, Pumping Systems.

### HANDWHEEL OPERATION

- Handwheels are furnished on all Gate & Globe Valves, manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.
- By-Pass, Drains and Special connections, are available upon request.
- Stem Nut, replaceable in line to avoid shut down of pipe line process.
- Rising stem with trapezoidal metric thread for quick operation. Surface finish suitable to seal properly to obtain low fugitive emissions.

### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass
   Stem
- WALWORTH use asbestos-free sealers for all Cast Iron Valves.
- · Graphite is used for Gaskets and Packing
- · Glands may be threaded or bolted type
- Bronze trim valves are recommended for steam, water, sea water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-85
- CLASS 125
- Rising Stem
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled conforms to ANSI B16.1

125 psi (8.6 Bar) Saturated Stem @ 350°F (178°C)

200 psi (13.8 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass
1	Body	ASTM A126 class B
2	Body Seat Ring	ASTM B62 Grade C83600
3	Disc Seat Ring*	ASTM B62 Grade C83600
4	Plug Disc*	ASTM A126 class B
5	Washer*	ASTM A182 GR F304
6	Disc Nut	Cast Brass (Mn-Brass)
7	Stem	Brass ASTM B16
8	Gasket	Graphite
9	Bonnet Bolt	Steel
10	Packing	Graphite
11	Bonnet	ASTM A126 class B
12	Packing Gland	ASTM A536 65-45-12
13	Gland Nut	Steel
14	Gland Bolt	Steel
15	Stem Nut	Cast Brass (Mn-Brass)
16	Handwheel	ASTM A126 class B
17	Washer	Steel
18	Nut	ASTM A563 class B
19	Identification Plate*	Aluminum

\* Not Shown





#### **DESIGN FEATURES**

- Design in accordance with MSS SP-85
- CLASS 125
- Rising Stem
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled conforms to ANSI B16.1







### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305
Nominal Diameter	in	2	2 1/2	3	4	5	6	8	10	12
•	mm	203.0	216.0	241.0	292.0	330.0	356.0	495.0	622.0	698.0
A	inch	7.99	8.50	9.49	11.50	12.99	14.02	19.49	24.49	27.48
D (On an)	mm	254	292	330	353	387	470	540	565	673
B (Open)	inch	10.00	11.50	13.00	13.88	15.25	18.50	21.25	22.25	26.50
0	mm	178	178	200	254	300	300	348	400	457
C	inch	7.01	7.01	7.87	10.00	11.81	11.81	13.70	15.75	17.99
_	mm	203.0	216.0	214.0	292.0	330.0	356.0	495.0	622.0	698.5
	inch	7.99	8.50	8.43	11.50	12.99	14.02	19.49	24.49	27.50
Weight	kg	28	34	46	76	101	132	201	317	433
W906F	lb	61.74	74.97	101.43	167.59	222.71	291.07	443.22	699.01	954.80
Cv	Flow	47.0	76.0	109.0	199.0	320.0	477.0	877.0	1370.0	2048.0
	Coefficient									



### CAST IRON GLOBE VALVES HANDWHEEL OPERATED WITH RISING STEM

Globe Valves are mainly used to modulate or regulate the volume of the flow. A Globe Valve is not recommended when a continuous full flow of fluid is required due to the high pressure drop inherent to the design of a Globe Valve. This type of valve should always be installed so the flow intake enters through the base of the valve seat. The valve has an arrow stamped on the body to indicate the preferred direction on flow. Globe valves may be used with fluids containing particles in suspension.

#### **DESIGN FEATURES**

- · Globe valves design in accordance with MSS SP-85
- · Body and Bonnet Cast iron in Accordance with ASTM A 126 Class B.
- · Conical Plug Type Disc
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled as per ANSI B16.1

### STANDARD MANUFACTURING OF PLUG

- Conical Plug Type Disc single piece design with long disc guides is a proven performer for all service conditions, particularly suitable for conditions of severe turbulence and stem vibration.
- Service Conditions WOG-Water, Oil, Air, Gas, Water, Steam, Pumping Systems.

### HANDWHEEL OPERATION

- Handwheels are furnished on all Gate & Globe Valves, manual gear, hydraulic or motor operators and chainwheels can be supplied when specified.
- By-Pass, Drains and Special connections, available upon request.
- Stem Nut, replaceable in line to avoid shut down of pipe line process.
- Rising stem with trapezoidal metric thread for quick operation. Surface finish suitable to seal properly to obtain low fugitive emissions.

#### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass
   Stem
- · Graphite is used for Gaskets and Packing
- Glands may be threaded or bolted type
- Bronze trim valves are recommended for steam, water, sea water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-85
- CLASS 250
- Rising Stem
- Cast Iron Construction
- · Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

250 psi (17.2 Bar) Saturated Stem @ 406°F (207°C)

500 psi (34.5 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

#### Regular Bill of Materials

No.	Description	Brass
1	Body	ASTM A126 class B
2	Body Seat Ring	ASTM B62 Grade C83600
3	Disc Seat Ring	ASTM B62 Grade C83600
4	Plug Disc	ASTM B62 Grade C83600
5	Washer	Commercial Brass
6	Disc Nut	Cast Brass (Mn-Brass)
7	Stem	Brass ASTM B16
8	Gasket	Graphite
9	Bonnet Bolt	Steel
10	Packing	Graphite
11	Bonnet	ASTM A126 class B
12	Packing Gland	ASTM A536 65-45-12
13	Gland Nut	Steel
14	Gland Bolt	Steel
15	Stem Nut	Cast Brass (Mn-Brass)
16	Handwheel	ASTM A126 class B
17	Washer	Steel
18	Nut	ASTM A563 class B
19	Identification Plate*	Aluminum



\* Not Shown



#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-85
- CLASS 250
- Rising Stem
- Cast Iron Construction
- Bolted Body design
- Handwheel Operated
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

Catalog Figure No.	Type of Ends
W8955F	Flat Face ends







#### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305
Nominal Diameter	in	2	2 1/2	3	4	5	6	8	10	12
۸	mm	267.0	292.0	318.0	356.0	400.0	444.0	533.0	622.0	711.0
A	inch	10.51	11.50	12.52	14.02	15.75	17.48	20.98	24.49	27.99
B (Open)	mm	286	311	334	394	457	514	584	610	718
	inch	11.25	12.25	13.13	15.50	18.00	20.25	23.00	24.00	28.25
0	mm	175	200	254	300	300	348	400	457	457
U	inch	6.89	7.87	10.00	11.81	11.81	13.70	15.75	17.99	17.99
E	mm	165.0	191.0	210.0	254.0	279.0	318.0	381.0	445.0	521.0
E	inch	6.50	7.52	8.27	10.00	10.98	12.52	15.00	17.52	20.51
Weight	kg	28	34	46	76	101	132	201	317	433
W8955F	lb	61.74	74.97	101.43	167.59	222.71	291.07	443.22	699.01	954.80
Cv	Flow	47.0	76.0	109.0	199.0	320.0	477.0	877.0	1370.0	2048.0
	Coefficient									



### **CAST IRON SWING CHECK VALVES**

#### **DESIGN FEATURES**

- · Body and Cover Cast iron in accordance with ASTM A 126 Class B.
- · Swing Check valves design in accordance with MSS SP-71
- Swing Type Disc.
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1
- Bolted Cover design.

### STANDARD MANUFACTURING OF DISC

- Disc to Hanger connection allows, the disc a controlled movement independent of the hanger to assure proper disc alignment with the seat at closure position.
- · Service Conditions WOG-Water, Water Pumping Systems.
- · Counter weight options.
- By-Pass, Drains and Special connections, available upon request.

#### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass
   Shaft
- Bronze trim valves are recommended for steam, water, sea water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-71
- CLASS 125
- Cast Iron Construction
- Bolted Cover design
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

125 psi (8.6 Bar) Saturated Stem @ 353°F (207°C)

200 psi (13.8 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass
1	Body	ASTM A126 class B
2	Body Seat Ring	ASTM B62 Grade C83600
3	Disc Seat Ring	ASTM B62 Grade C83600
4	Disc	ASTM A126 class B
5	Hanger	ASTM A536 65-45-12
6	Washer	Steel
7	Nut	Steel
8	Pin Retainer Clip	Steel
9	Side Pin	Brass ASTM B16
10	Gasket	GRAPHITE
11	Hanger Pin	ASTM A182 Gr F304
12	Cover	ASTM A126 class B
13	Bolt	ASTM A307 class B
14	Nut	ASTM A563 class B
15	Identification Plate*	Aluminum

\* Not Shown





#### **DESIGN FEATURES**

- · Design in acordance with MSS SP-71
- CLASS 125
- Cast Iron Construction
- · Bolted Cover design
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1

Catalog Figure No.	Type of Ends
W928F	Flat Face ends







### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305	356	406	457	508	610
Diameter	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
•	mm	203.2	215.2	241.3	292.1	416.0	355.6	465.3	622.3	698.5	787.4	914.0	914.0	1016.0	1219.0
A	inch	8.00	8.47	9.50	11.50	16.38	14.00	18.32	24.50	27.50	31.00	35.98	35.98	40	47.99
Б	mm	112	132	141	162	292	211	270	316	357	560	589	645	702	812
В	inch	4.41	5.20	5.55	6.38	11.50	8.31	10.63	12.44	14.06	22.05	23.19	25.39	27.64	31.97
0	mm	152	178	190	229	254	279	343	406	483	533	597	635	699	813
U	inch	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01
Weight	kg	12	18	21	37	56	72	123	201	291	419	542	656	902	1260
W928F	lb	26.46	39.69	46.31	81.59	123.48	158.77	271.22	443.22	641.68	923.93	1195.15	1446.53	1988.97	2778.39
Cv	Flow	75.0	120.0	173.0	316.0	509.0	756.0	1392.0	2175.0	3250.0	4424.0	5778.0	7611.0	9397.0	13521.0
	Coefficient														



### CAST IRON SWING CHECK VALVES DESIGN FEATURES

- Body and Cover Cast iron in accordance with ASTM A 126 Class B.
- Swing Check valves design in accordance with MSS SP-71
- Swing Type Disc.
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled as per ANSI B16.1

#### STANDARD MANUFACTURING OF DISC

- Disc to Hanger connection allows, the disc a controlled movement independent of the hanger to assure proper disc alignment with the seat at closure position.
- Service Conditions WOG-Water, Water Pumping Systems.
- · Counter weight options.
- By-Pass, Drains and Special connections, available upon request.

#### TRIM MATERIALS

- Cast Iron Valves are provided with Bronze Seat and Brass Shaft.
- Bronze trim valves are recommended for steam, water, air, and noncorrosive oil or gas.
- All iron valves are recommended for oil, gas, or fluids that corrode bronze, but not iron or steel.





#### **DESIGN FEATURES**

- · Design in accordance with MSS SP-71
- CLASS 250
- Cast Iron Construction
- Bolted Cover design
- Face to Face dimensions as per ANSI B16.10
- · Flanged drilled conforms to ANSI B16.1

250 psi (17.2 Bar) Saturated Stem @ 406°F (207°C)

500 psi (13.8 Bar) Cold water pressure @ -20°F(-29 °C) to 150 °F(66°C).

### **Regular Bill of Materials**

No.	Description	Brass						
1	Body	ASTM A126 class B						
2	Body Seat Ring	ASTM B62 Grade C83600						
3	Disc Seat Ring*	ASTM B62 Grade C83600						
4	Disc	ASTM A126 class B						
5	Hanger	ASTM A536 65-45-12						
6	Washer	Steel						
7	Nut	Steel						
8	Pin Retainer Clip	Brass Steel						
9	Body plug	ASTM B16						
10	Gasket	TEFLON						
11	Hanger Pin	ASTM A182 Gr F304						
12	Cover	ASTM A126 class B						
13	Body Gasket	Graphite						
14	Bolt	ASTM A307 class B						
15	Nut	ASTM A563 class B						
16	Identification Plate*	Aluminum						

\* Not Shown





- · Design in accordance with MSS SP-71
- CLASS 250
- Cast Iron Construction
- Bolted Cover
- Face to Face dimensions as per ANSI B16.10
- Flanged drilled as per ANSI B16.1









#### **Dimensions and Weights**

D	mm	51	64	76	102	127	152	203	254	305	356	406	457	508	610
Diameter	in	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
٨	mm	203.2	215.2	241.3	292.1	416.0	355.6	465.3	622.3	698.5	787.4	914.0	914.0	2016.0	1219.0
A	inch	8.00	8.47	9.50	11.50	16.38	14.00	18.32	24.50	27.50	31.00	35.98	35.98	79.37	47.99
	mm	112	132	141	162	292	211	270	316	357	560	589	645	702	812
В	inch	4.41	5.20	5.55	6.38	11.50	8.31	10.63	12.44	14.06	22.05	23.19	25.39	27.64	31.97
0	mm	152	178	190	229	254	279	343	406	483	533	597	635	699	813
U	inch	5.98	7.01	7.48	9.00	10.00	11.00	13.50	15.98	19.02	21.00	23.50	25.00	27.52	32.01
Weight	kg	12	18	21	37	56	72	123	201	291	419	542	656	902	1260
W8970F	lb	26.46	39.69	46.31	81.59	123.48	158.77	271.22	443.22	641.68	923.93	1195.15	1446.53	1988.97	2778.39
Cv	Flow	75.0	120.0	173.0	316.0	509.0	756.0	1392.0	2175.0	3250.0	3962.0	5249.0	6786.0	8480.0	12427.0
	Coefficient														



### **TYPE OF OPERATIONS**

The WALWORTH standard cast iron 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.

### **Chain Wheel Operation**

(adjustable sprocket rim)

Chain Wheels are designed for operating valves installed in remote or inaccessible locations. They can 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.



### **Square Nut Operation**

Non Rising Stem Valves can be delivered with square nut instead handwheel, when installation in hard access places is required. All square nuts have 2" dimension between faces, which allows to use just one size tool for all 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.







### ACCESSORIES

#### **Bypass, Drain and Vent Connections**

A bypass line can be furnished with WALWORTH cast iron valves for equalizing pressure around the main valve or for warming up the line before opening the main valve. Drain connections are normally located in the valve body to drain the valve when internal inspection or maintenance is required. A vent connection can be located in the valve bonnet to relieve an over-pressure that could occur due to an expansion of trapped liquid. MSS SP-45 lists the standard locations and connection sizes for gate, globe and check valves. By Pass or drain connections are threaded for all Cast iron valves.

Nominal Size of Valve	2" to 4"	6" to 8"	10" and Larger
Size of Bypass-Drain-Vent	1/2"	3/4"	1"



**Bypass** 



Drain



### ACCESSORIES

#### **Position Indicator**

A position indicator device can be installed on Non Rising Stem Valves. Neal of the indicator shows when the valve is in close or open position, if valve is installed in a not visible place, installation can be made in workshop or in the field.



### Lever and Counter Weight

A lever and counter weight is used on a Swing Check Valve to control the valve opening under variable flow conditions to prevent disc flutter and also to assist/control the disc closing under a rapid flow reversal condition to prevent disc/seat damage. A spring can also be used with a lever to provide a more rapid closing as can a dash pot or snubber to soften the closing seat.





### ACCESSORIES

#### Wall Taping

Maximum pipe size that may be tapped in valve wall without adding special bosses.														
Size of Valve (In)	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
Size of Tapping (In)	3/8"	3/8"	3/8"	1/2"	3/4"	3/4"	3/4"	1 1/4"	1 1/2"	2"	2"	2"	2"	2"

#### **Boss Locations**

All WALWORTH Iron Valves are available with tapping for drain and special tapping. Boss locations and symbols and tapping procedures are in accordance with MSS By-Pass and Drain Connection Standard SP-45 (When tappings are needed at any other than the standard boss locations, a sketch must be provided clearly showing the exact location on the valve. WALWORTH will review the request and advise if request can be met.)

All tappings are plugged at no extra charge. When Bosses are ordered tapped, the standard size of tapping is in accordance with the following table taken from MSS Specifications SP-45

Maximum pipe size that may be tapped in valve wall without adding special bosses.														
Size of Valve (In)	2	3	4	5	6	7	8	10	12	14	16	18	20	24
Size of Drain Tapping (in) Series A (steam)	1/2	1/2	1/2	3/4	3/4	3/4	1	1	1	1	1	1	1	1



Bosses and drain connection positions in accordance with MSS-SP-45 & ASME B16.34 Standards



### ACCESSORIES

#### **Floor Stands**

Floor Stands are designed for operating Gate, Globe and Angle Valves that are installed in inaccessible places under a floor. For your conveniences, they are available in two heights (20" and 32"). They are also available with an indicator so the position of the disc (wedge) can be read at a glance.

When ordering a floor stand-the dimensions from the centerline of the valve waterway to the top of the floor must be furnished. This dimension is the "A" dimension pictured below. The WALWORTH valve figure number and size must also be furnished and specify valve stem coupling for use with floor stand. Nothing extra is needed, except the floor mounting bolts which will vary depending on the floor construction.

#### Minimum "A" dimensions:





### ACCESSORIES

#### **Stem Extension**

Stem Extensions are designed to permit remote operation of Gate, Globe or Angle Valves by providing an extension to the valve stem long enough to reach from the valve to the desired remote operating location. The extension consists of a length of steel tube with a coupling on one end to attach to the valve, and a coupling on the other end to attach to a handwheel or some other type of operating device.

The Stem Extension is made to accept the handwheel from the valve to wich it is being attached, therefore, extensions are not supplied with a handwheel unless it is special ordered. Orders or inquiries for Stem Extensions to be attached to a WALWORTH valve must include the dimension from the center line of the valve waterway to the top of the handwheel. This dimension is the "A" distance as shown below. Please specify separately coupling sets for iron valve extensions. Adequate support must be provided for Long Stem Extensions exceeding 12ft. Of "A" dimension. This support should be rigid and of sufficient strength to prevent "wind-up" deflection or transfer of abnormal loads to the valve. This is a custom-built requirement provided by the costumer.

#### Minimum "A" dimensions:

Valva aiza	"4	۴
valve size	In.	mm
2"	28.5	724
2 1/2"	29	737
3"	31	787
4"	36	914
5"	39	991
6"	43	1092
8"	53	1346
10"	60.5	1537
12"	70	1778

#### **Rising Stem Valve**



#### **Non-Rising Stem Valve**





# **PRESSURE-TEMPERATURE RATINGS**

### **CAST IRON ASTM A126**

Temperature		Working class pressure										
Tempe	rature	1	25 Class (200WOG	250 Class (500WOG)								
°F	°C	2"-12"	14"-24"	30"-48"	2"-12"	14"-24"						
- 20 to 150	-29 to 65	200	150	150	500	300						
200	93	190	135	115	460	280						
225	107	180	130	100	440	270						
250	121	175	125	85	415	260						
275	135	170	120	65	395	250						
300	148	165	110	50	375	240						
325	162	155	105		355	230						
350	176	150	100		335	220						
375	190	145			315	210						
400	204	140			290	200						
425	218	130			270							
450**	232	125			250							

\*\*Maximum temperature of trim on Bronze and TFE NOTE: For valves 30" and over please contact the plant or your closer distributor





# **DESIGN BASIS**

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

API

#### American Petroleum Institute:

- API 595 Cast Iron Gate Valves Flanged Ends
- API 598 Valve Inspection and Testing
- API 604 Ductile Iron Gate Valves Flanged Ends

#### ANSI Standards National Standards Institute:

- ANSI B1.1 Unified Inch Screw Threads (UN and UNR Thread Form)
- ANSI B1.20.1 NPT General Purpose Pipe Threads (Inches)
- ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings
- ANSI B16.10 Face to Face and End to End Valve Dimensions
- ANSI B16.21 Nonmetallic Flat Gaskets for Pipe Flanges
- ANSI B31.1 Power Piping
- ANSI B31.2 Fuel Gas Piping
- ANSI B31.3 Process Piping
- ANSI B31.4 Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
- ANSI B31.5 Refrigeration Piping and Heat Transfer Components
- ANSI B31.8 Gas Transmission and Distribution Piping Systems

#### MSS Standards Manufacturer's Standardization Society

- MSS SP-6 Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
- MSS SP-9 Spot Facing for Bronze, Iron and Steel Flanges
- MSS SP-25 Standard Marking System for Valves, Fittings, Flanges, and Unions
- MSS SP-45 Bypass and Drain Connections
- MSS SP-70 Gray Iron Gate Valves Flanged and Threaded Ends
- MSS SP-71 Gray Iron Swing Check Valves, Flanged and Threaded Ends
- MSS SP-82 Valve Pressure Testing Methods
- MSS SP-85 Gray Iron Globe & Angle Valves Flanged and Threaded Ends

#### ASTM Standars American Society for Testing and Materials:

- ASTM A-126 Gray Iron Castings for Valves, Flanges, and Pipe Fittings
- ASTM B-62 Composition Bronze or Ounce Metal Castings
- ASTM B-16 Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines
- ASTM A-307 Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
- ASTM A-563 Carbon and Alloy Steel Nuts

#### NACE Standard National Association of Corrosion Engineers

• NACE MR0175 Sulfide Stress Corrosion Cracking Resistant Metallic Materials for Oil Field Equipment

#### Boiler and pressure vessel code:

- Section II Part A Ferrous Material Specifications
- Section II Part B Non Ferrous Material Specifications
- Section II Part C Specifications for Welding Rods, Electrodes and Filler Metals
- Section V Non Destructive Examination
- Section VIII Rules for Construction of Pressure Vessels, Divisions 1 and 2
- Section IX Welding and Brazing Qualifications



### **HOW TO ORDER**

16" 18" 20" 24" 30" 36"

WALWORTH valves are designated by catalog figures and numbers which describe their main characteristics. The valve identification system shown herein is intended to assist our Customers in specifying the valve required and to avoid mistakes being made during manufacturing.



Size	WALWORTH Figure	Туре	Ends	Class	Stem	Trim
2"	W719	Gate	F= Flat Face	125 #	NRS	Bronze-Brass
2 1/2"	W726	Gate	F= Flat Face	125 #	OS&Y	Bronze-Brass
3"	W786	Gate	F= Flat Face	250 #	OS&Y	Bronze-Brass
4"	W906	Globe	F= Flat Face	125 #	OS&Y	Bronze-Brass
5"	W8955	Globe	F= Flat Face	250 #	OS&Y	Bronze-Brass
6"	W928	Swing Check	F= Flat Face	125 #	OS&Y	Bronze-Brass
8"	W870	Swing Check	F= Flat Face	250 #	OS&Y	Bronze-Brass
10"						
12"	1					
1/"	7					

#### **IRON VALVES CROSS REFERENCE FOR COMMONLY USED VALVES & MATERIALS**

GATE	WALWORTH	CRANE	NIBCO	MILWAUKEE	POWELL	STOCKHAM
Class 125 NRS	W719F	461	F-619	F2882 A	1787	G-612
Class 125 OS&Y	W726F	461 1/2	F-617-0	F2885 A	1793	G-623
Class 250 OS&Y	W786F	7 1/2E	F-667-0	F2894 A	1797	G-667
GLOBE						
Class 125	W906F	351	F-718-B	F2981 A	241	G-512
SWING CHECK						
Class 125	W928F	373	F-918-B	F2974 A	559	G-931
STOP CHECK						
Class 250 Straight-Way Y-Pattern		28E				F-540
Class 125 Angle Y-Pattern		30E	F-869-B			F-541



### **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 or of 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 in connection with the sale. Seller shall be established by Federal, State or other government regulation with respect to the product(s) topped by the order which shall be lower than the price(s) specified in the order.

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

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

DIFFERED SHIPMENTS: If for any reason the customer desires to delay shipments more than 30 days after manufacturing is complete, or to place a hold on 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 percent (5%) of prices of stock items.

- Ten percent (10%) of prices of stock items ordered in quantities which exceed normal inventory levels.

- Five percent (5%) of prices prior to drawing submittal on made-to-order items.

- 15% after drawing approval, but prior to the start of castings.
- 30% to 50% during casting cycle, depending on the state of completion.

- 55% to 75% during machining and assembly operations, depending on the state of completion.

-100% after final assembly and testing.

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

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

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

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

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

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

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

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

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





#### 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

