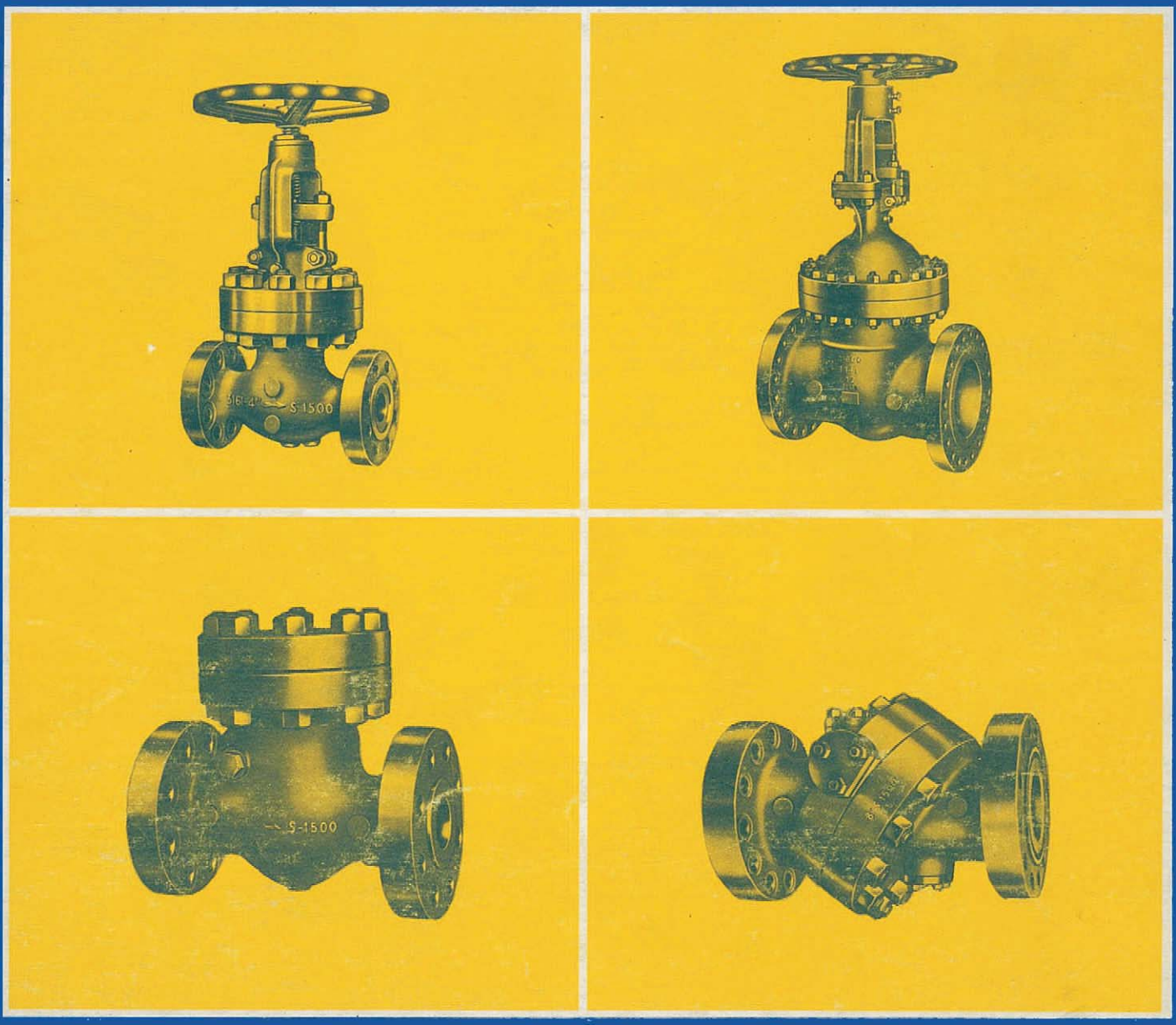
SELLA

of the Amicor group of companies

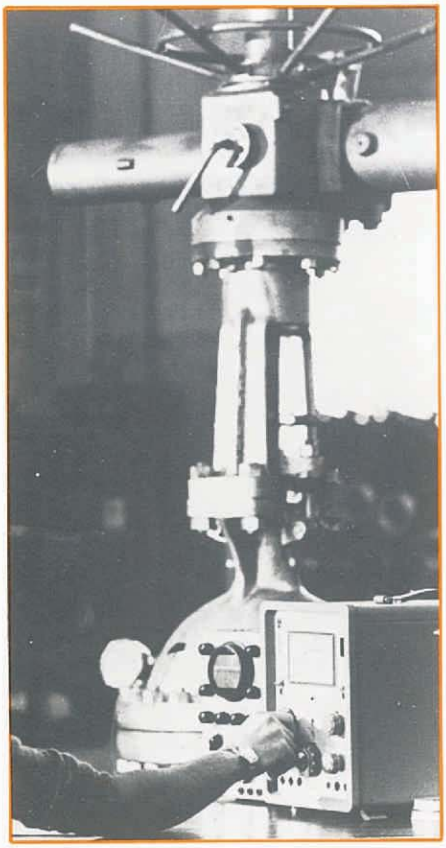
BOLTED BONNET VALVES

- ☐ GATE VALVES
- ☐ GLOBE VALVES
- ☐ SWING CHECK VALVES
- ☐ TILTING DISC NON SLAM CHECK VALVES

- ☐ CLASS 150
- ☐ CLASS 300
- ☐ CLASS 600
- ☐ CLASS 900
- ☐ CLASS 1500



CONTENTS



Introduction

SELLA SpA introduces its range of Bolted Bonnet Valves (Gate, Globe, Check, Tilting Disc Check).

☐ Our products are designed and manufactured to withstand the most severe working conditions in the OIL, PETROCHEMICAL and POWER INDUSTRIES.

☐ The valves contained in this catalogue are in strict accordance with the specifications laid down by API Std. 600, and by the American National Standard Institute (formely ASA). However, valves to other standards can be furnished on request.

☐ Advanced technical know-how, combined with continuous research, many years of experience and modern production methods, guarantee the highest degree of quality.

☐ All products are manufactured in accordance with the following criteria:

— Design characteristics to suit the working conditions, provide a high safety factor and prolonged efficient service.

— Construction of patterns and dies in accordance with the most up-to-date requirements.

— Inspection of castings and forgings to ensure soundness and uniformity.

— Materials are rigidly checked, physically and chemically.

— Up-to-date machinery to ensure interchangeability of component parts.

— Inspection of dimensions, tolerances and finishing during the various stages of production.

— Final inspection, including pressure testing of all seating surfaces.

☐ Our standard body/bonnet material is Cast Steel to ASTM A 216-WCB or WCC. If required, valves can be furnished in materials to any known specification, for example: A 352-LCB, A 352-LC2, A 352-LC3, A 351-CF8, A 351-CF8M.

☐ If specified by the customer, the castings can be subjected to non-destructive testing, including Magnetic Particle, Liquid Penetrant and Radiographic examination.

☐ SELLA reserves the right to change or modify the design or construction, without incurring any obligation to furnish or install such modifications on products previously or subsequently sold.

☐ The illustrations in this catalogue are a true representation of the construction, but are not necessarily to scale. Only the drawings which accompany our offers or order confirmations are binding.

VALVE TRIMS FOR SPECIFIED SERVICES

The Trim embodies all internal components for valve operation. The following tables give details of materials recommended for each component part against specific service conditions.

Special material required for handling some unusual fluids are not mentioned in the tables but these may be furnished upon receipt of customers specific requirements.

For steel valves however Trim A will be supplied unless otherwise specified.

TRIM CODE	TRIM SPECIFICATIONS			RECOMMENDED SERVICE
	SEAT RING	WEDGE/DISC	STEM	
A	13 Cr	13 Cr	13 Cr	Heavy hydrocarbons (gasoline, Kerosene, gas oil, fuel oils, lubricating oils) and their vapours up to 1000 °F. Acid oil mixtures, phenol, high pressure feed water and condensate. Superheated steam up to 750 °F. Temperature services up to 200 °F.
B	MONEL	13 Cr	13 Cr	Light hydrocarbons (light gasoline, propane, butane etc.) and their vapours and gas up to 750 °F. Low and normal pressure saturated steam and superheated steam up to 750 °F.
C	MONEL	MONEL	MONEL	Fluorhydric acid, sea water.
D	STELLITE	STELLITE	13 Cr	High pressure steam and water up to 1000 °F, abrasive fluids.
E	18 Cr - 8 Ni	18 Cr - 8 Ni	13 Cr	Low corrosive flluids up to 1100 °F
F	18 Cr - 11 Ni - 3 Mo	18 Cr - 11 Ni - 3 Mo	13 Cr	Low corrosive fluids up to 1500 °F
G	Bronze	Bronze	Brass	Low pressure exhaust steam (36 psi) low temperature water, inert gas, air, sea water.
H	18 Cr - 8 Ni	18 Cr - 8 Ni	18 Cr - 8 Ni	Corrosive Fluids and temperatures from — 150 °F to + 1100 °F
K	18 Cr - 11 Ni - 3 Mo	18 Cr - 11 Ni - 3 Mo	18 Cr - 11 Ni - 3 Mo	Corrosive Fluids and temperatures from — 150 °F to + 1500 °F
L	18C r - 8 Ni - Ti	18 Cr - 8 Ni - Ti	18 Cr - 8 Ni - Ti	Corrosive Fluids and temperatures from — 150 °F to + 1100 °F

GATE VALVES = TRIM MATERIALS

CLASSES 150-300

TRIM CODE	SEAT RING (pos. 4)	WEDGE (pos. 5)		STEM (pos. 6)	BACK SEAT BUSHING (pos. 7)	LANTERN (pos. 15)
		UP to 6"	8" AND ABOVE			
A	ASTM A 182-F6 ●	ASTM A 182-F6	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
B	MONEL ●●	ASTM A 182-F6	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
C	MONEL ●●	MONEL faced *	MONEL faced *	MONEL	MONEL	MONEL
D	STELLITE 6 ●●	STELLITE 6 faced *	STELLITE 6 faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
E	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% Ni faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
F	ASTM A 182-F 316 ●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
G	ASTM B 143-1B	ASTM B 61	ASTM B 61 faced *	forged BRASS	forged BRASS	forged BRASS
H □	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% ni faced *	ASTM A 182-F 304	ASTM A 182-F 304	ASTM A 182-F 304
K □	ASTM A 182-F 316 ●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F 316	ASTM A 182-F 316	ASTM A 182-F 316
L □	ASTM A 182-F 321 ●	ASTM A 182 - F 321	18% Cr - 10% Ni-Ti faced *	ASTM A 182-F 321	ASTM A 182-F 321	ASTM A 182-F 321

● 6" and above: facing only, Seat ring as body material.
●● Facing only, Seat ring as body material.

* Cast or forged steel, same as body.
□ Trim is integral only for valves with body of austenitic stainless steel.

GATE VALVES = TRIM MATERIALS

CLASSES 600-900-1500

TRIM CODE	SEAT RING (pos. 4)	WEDGE (pos. 5)				STEM (pos. 6)	BACK SEAT BUSHING (pos. 7)	LANTERN (pos. 15)
		CLASSES 600-900		CLASS 1500				
		UP to 4"	6" and above	UP to 4"	6" and above			
A	ASTM A 182-F6●	ASTM A 182-F6	13% Cr faced *	ASTM A 351-CA15	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
B	MONEL ●●	ASTM A 182-F6	13% Cr faced *	ASTM A 351-CA15	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
C	MONEL ●●	MONEL faced *	MONEL faced *	MONEL faced *	MONEL faced *	MONEL	MONEL	MONEL
D	STELLITE 6 ●●	STELLITE 6 faced *	STELLITE 6 faced *	STELLITE 6 faced *	STELLITE 6 faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
E	ASTM A 182-F 304 ●	18% Cr - 8% Ni faced *	18% Cr - 8% Ni faced *	18% Cr - 8% Ni - faced *	18% Cr - 8% Ni faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
F	ASTM A 182-F 316 ●	18% Cr - 8% Ni - 2% Mo faced *	18% Cr - 8% Ni - 2% Mo faced *	18% Cr - 8% Ni - 2% Mo faced *	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
G	ASTM B 143-1B	ASTM B 61	ASTM B 61 faced *	ASTM B 61	ASTM B 61 faced *	Forged BRASS	forged BRASS	forged BRASS
H □	ASTM A 182-F 304 ●	ASTM A 351-CF8	18% Cr - 8% Ni faced *	ASTM A 351-CF8	18% Cr - 8% Ni faced *	ASTM A 182-F 304	ASTM A 182-F 304	ASTM A 182-F 304
K □	ASTM A 182-F 316 ●	ASTM A 351-CF8M	ASTM A 351-CF8M	ASTM A 351-CF8M	ASTM A 351-CF8M	ASTM A 182-F 316	ASTM A 182-F 316	ASTM A 182-F 316
L □	ASTM A 182-F 321 ●	18% Cr - 10% Ni-Ti	18% Cr - 10% Ni - Ti faced *	18% Cr - 10% Ni-Ti	18% Cr - 10% Ni-Ti faced *	ASTM A 182-F 321	ASTM A 182-F 321	ASTM A 182-F 321

● 14" and above: facing only, Seat ring as body material.
●● Facing only, Seat ring as body material.

* Cast or forged steel, same as body.
□ Trim is integral only for valves with body of austenitic stainless steel.

GLOBE VALVES = TRIM MATERIALS

ALL CLASSES

TRIM CODE	SEAT RING (pos. 4)	DISC (pos. 5)		STEM (pos. 6)	BACK SEAT BUSHING (pos. 7)	LANTERN (pos. 15)	DISC THRUST PLATE (pos. 50)	DISC NUT (pos. 51)
		UP to 8"	10" and above					
A	ASTM A 182-F6 ●	ASTM A 182-F6	13% Cr. faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
B	MONEL ●●	ASTM A 182-F6	13% Cr. faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
C	MONEL ●●	MONEL *	MONEL *	MONEL	MONEL	MONEL	MONEL	MONEL
D	STELLITE 6 ●●	STELLITE 6	STELITE 6 faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6
E	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% Ni faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F 304	ASTM A 182-F 304
F	ASTM A 182-F 316●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F6	ASTM A 182-F 316	ASTM A 182-F 316
G	ASTM B 143-1B	ASTM B 61	ASTM B 61	forged BRASS	forged BRASS	forged BRASS	forged BRASS	forged BRASS
H☐	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% Ni faced *	ASTM A 182-F 304	ASTM A 182-F 304	ASTM A 182-F 304	ASTM A 182-F 304	ASTM A 182-F 304
K☐	ASTM A 182-F 316 ●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F 316	ASTM A 182-F 316	ASTM A 182-F 316	ASTM A 182-F 316	ASTM A 182-F 316
L☐	ASTM A 182-F 321 ●	ASTM A 182-F 321	18% Cr - 10% Ni-Ti faced *	ASTM A 182-F 321	ASTM A 182-F321	ASTM A 182-F 321	ASTM A 182-F 321	ASTM A 182-F 321

● 14" and above (classes 150-300) and 6" and above (classes 600-900-1500): facing only, Seat ring as body material.

●● Facing only, Seat ring as body material.

* Cast or forged steel, same as body.

☐ Trim is integral only for valves with body of austenitic stainless steel.

SWING CHECK / TILTING DISC NON SLAM CHECK VALVES

ALL CLASSES

= TRIM MATERIALS

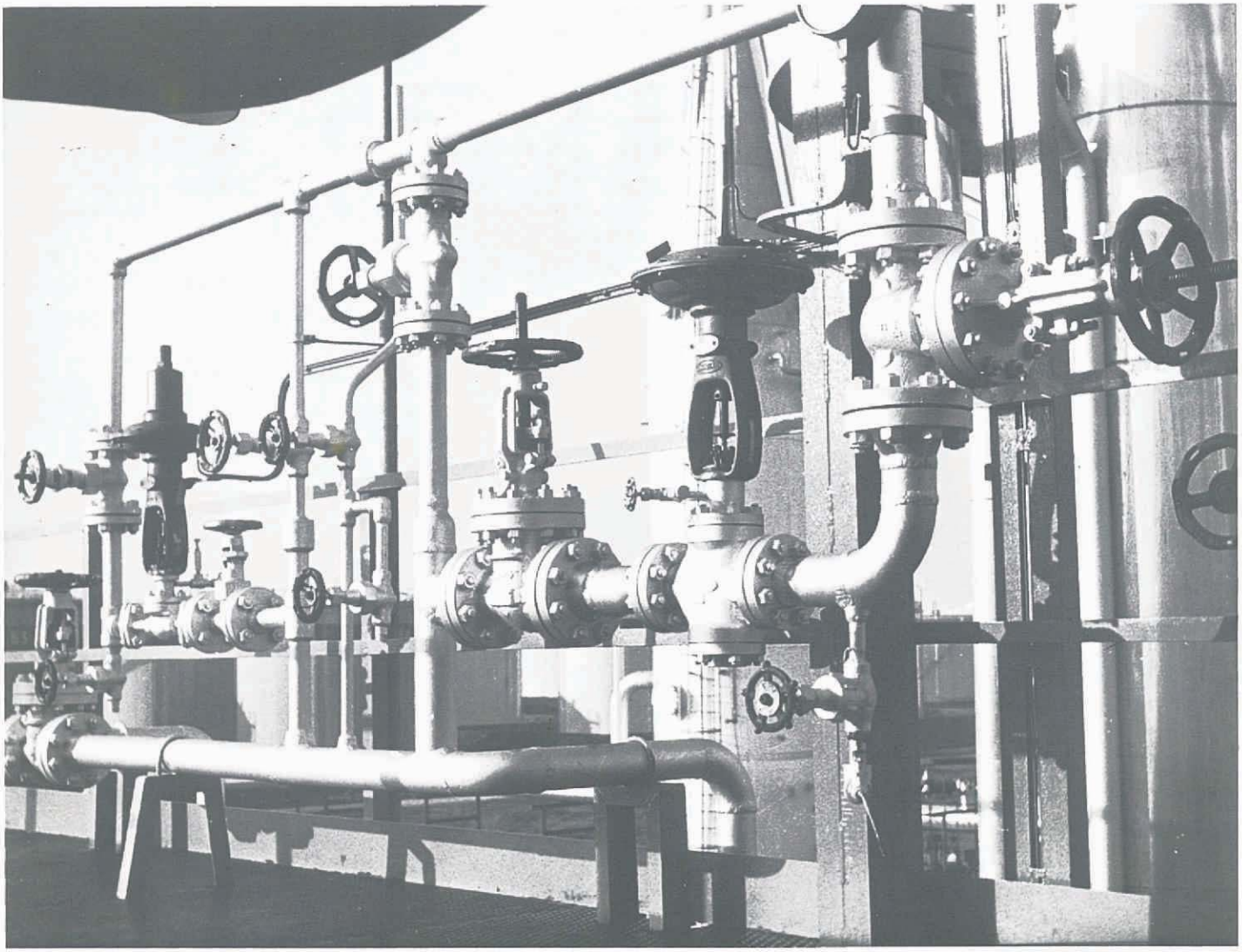
TRIM CODE	SEAT RING (pos. 4)	DISC (pos. 5)		DISC PIN (pos. 55)	SPACER WASHER
		UP to 6"	8" AND ABOVE		
A	ASTM A 182-F6 ●	ASTM A 182-F6	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6
B	MONEL ●●	ASTM A 182-F6	13% Cr faced *	ASTM A 182-F6	ASTM A 182-F6
C	MONEL ●●	MONEL FACED *	MONEL faced *	MONEL	MONEL
D	STELLITE 6 ●●	STELLITE 6 faced *	STELLITE 6 faced *	ASTM A 182-F6	ASTM A 182-F6
E	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% Ni faced *	ASTM A 182-F6	ASTM A 182-F6
F	ASTM A 182-F 316 ●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F6	ASTM A 182-F6
G	ASTM B 143-1B	ASTM B 61	ASTM B 61 faced *	forged BRASS	forged BRASS
H☐	ASTM A 182-F 304 ●	ASTM A 182-F 304	18% Cr - 8% Ni faced *	ASTM A 182-F 304	ASTM A 182-F 304
K☐	ASTM A 182-F 316 ●	ASTM A 182-F 316	18% Cr - 8% Ni - 2% Mo faced *	ASTM A 182-F 316	ASTM A 182-F 316
L☐	ASTM A 182-F 321 ●	ASTM A -182-F 321	18% Cr - 10% Ni-Ti faced *	ASTM A 182-F 321	ASTM A 182-F 321

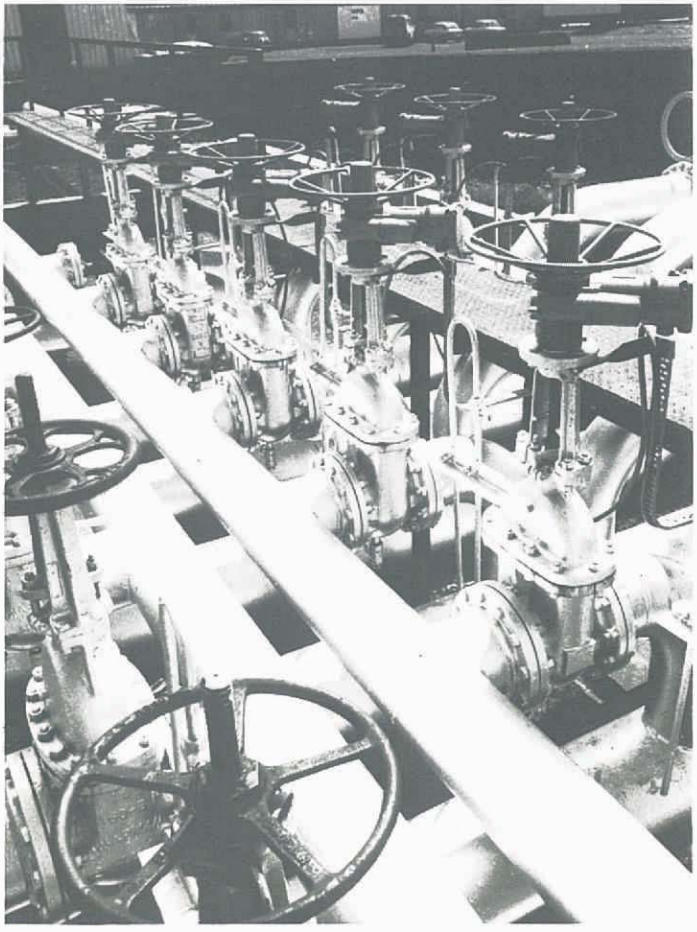
● 14" and above (classes 150-300) and 6" and above (classes 600-900-1500): facing only, Seat ring as body material.

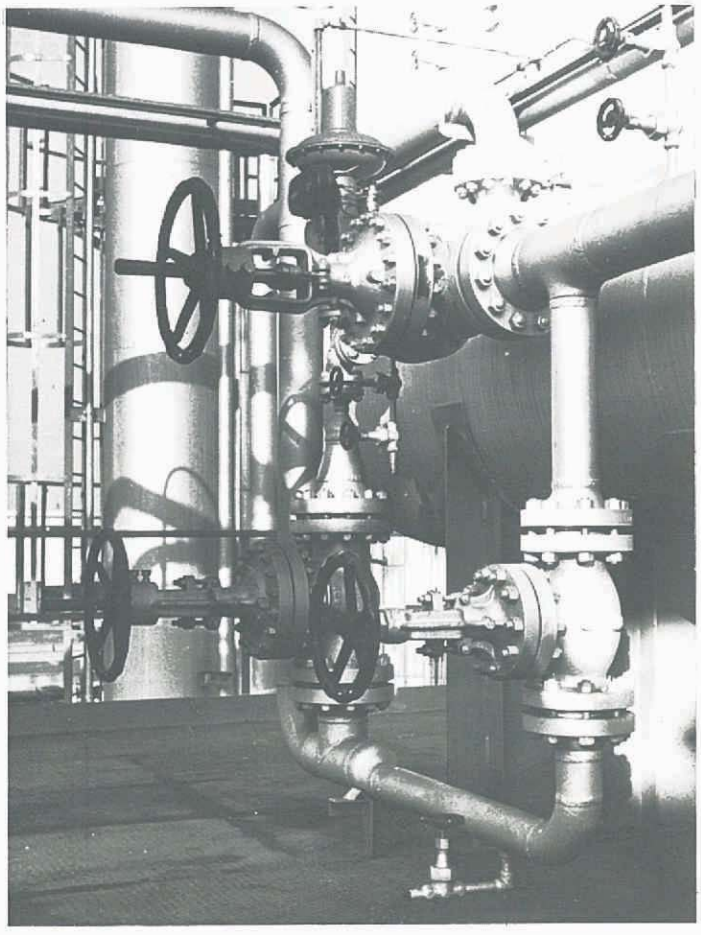
●● Facing only, Seat ring as body material.

* Cast or forged steel, same as body.

☐ Trim is integral only for valves with body of austenitic stainless steel.

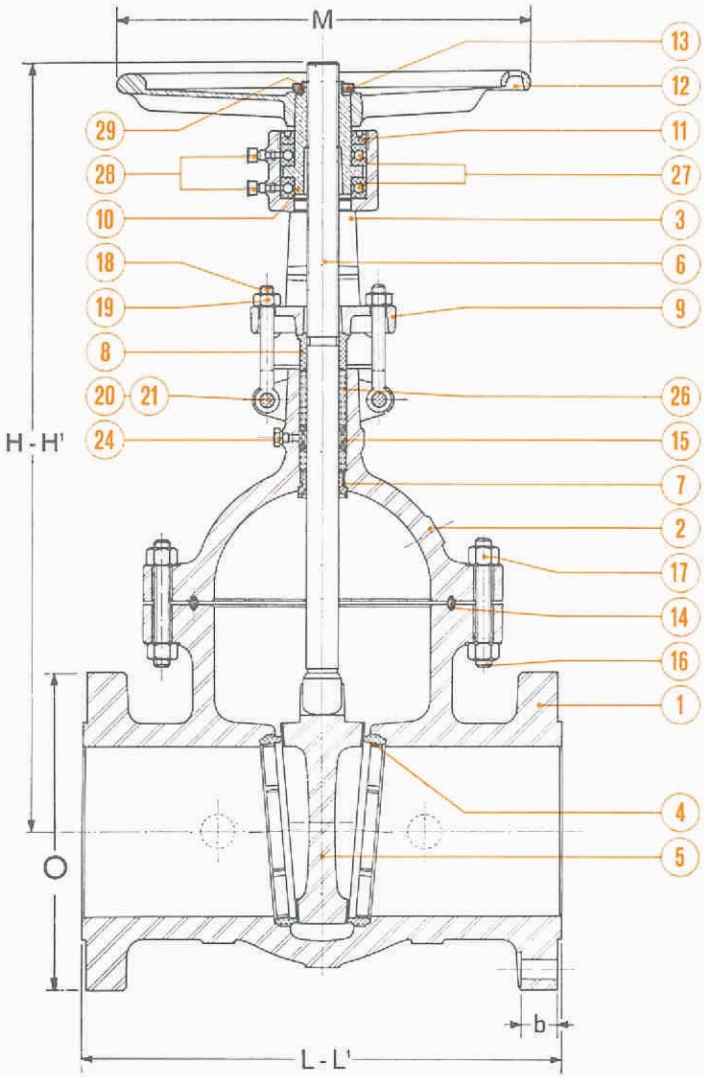






Gate valves

Bolted Bonnet



(class 600 lbs)

Pos.	PART		STANDARD MATERIALS		
1 2	BODY BONNET		Carbon steel ASTM-A 216-WCB	A 352-LCB or LC 2 or LC3	A 351-CF8 or CF8M
3	YOKE		A 216-WCB		
8 9	GLAND BUSHING GLAND FLANGE		A 105	A 182-F 304 or F 316	
10	YOKE NUT		Cast Iron Ni-Resist D2		
11	YOKE-NUT RETAINING NUT		A 105		
12	HANDWHEEL		Malleable Iron or Cast steel		
13	HANDWHEEL NUT		Brass		
14	BODY BONNET GASKET	150-300	Spiral Wound AISI 304 Asbetos		
		600-900-1500	Ring Joint soft iron	Ring Joint F 304-F 316	
16	BODY-BONNET STUD BOLT		A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
17	NUT FOR DITTO		A 194-2H	A 194-4	A 194-8
18	EYE BOLT		A 307 Gr B	A 320-B8	
19	NUT FOR DITTO			A 194-8	
20	EYE-BOLT STUD BOLT			A 320-B8	
21	NUT FOR DITTO			A 194-8	
22	YOKE STUD BOLT		A 193-B7		
23	NUT FOR DITTO		A 194-2H		
24	BONNET PLUG		A 105	A 182-F 304 or F 316	
26	STEM PACKING		J. Crane 187 I or equivalent		
27	YOKE THRUST BEARING		Steel		
28	GREASE NIPPLE		Steel		
29	SET SCREW		Carbon steel		
4 5 6 7 15	SEAT RING WEDGE STEM BACK SEAT BUSHING LANTERN		See special section on pager 3-4-5: TRIM MATERIALS		

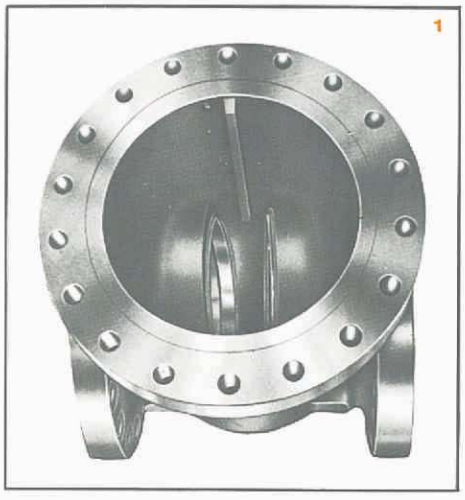
BODY 1

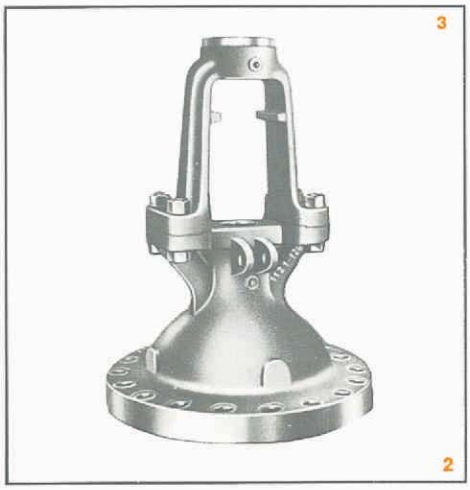
The cast steel body is designed so that the wall thickness at any point is greater than the minimum specified by A.P.I. Standard 600. Alternatively, gate valves can be provided with butt-welding ends to ANSI B 16-25. End-to-end dimensions comply with ANSI B 16-10. Special care has been taken with the design of the Class 150 valve body to ensure that the center section, which is of rectangular shape, is not subjected, in the critical areas, to intensified stresses.
In the case of the Class 300 body, the general shape is circular, with the exception of the area adjacent to the seating, which then becomes eliptical in shape.
Above Class 300, the valve bodies are of circular shape to minimize possible distortion under extreme working conditions.
The inlet and outlet ports have dimensions, equal to ANSI (ASA) B. 16.5 pipe fittings. The body flange thickness is always greater than the minimum calculated by the ASME Boiler and Pressure Vessels codes.

Particular attention has been given to the distribution of material, to maintain stresses within permissable limits and to prevent stress concentration anywhere in the valve design.
The body-bonnet flange for Class 150 is eliptical in form but, in the case of Class 300 and above, it is circular.
The inlet and outlet ports of the body are threaded to receive the body seat rings. The taper and the seat-to-seat dimensions are machined to strict tolerances, thus guaranteeing the interchangeability of wedge and seat rings.
The valve wedge travels between guides which are integrally cast with the body.
The minimum of clearance is allowed between the wedge slots and the body guides to ensure that the seating surfaces of the wedge do not contact the seat rings until the point of closure is reached.
By precision machining perfect coaxiality of the valve ends and seat rings, as well as exact perpendicularity of the body-bonnet flanges is guaranteed.
A specially designed machine, takes care of accurate spot facing of the flanges and is designed to limit spot facing to minimum requirements.
By this method a minimum of metal is removed and the ultimate thickness of the flange is greater than the minimum requirements of ANSI (ASA). The valve bodies are normally of cast carbon steel to ASTM A 216-WCB but if required they may be cast to any known alloy steel specification, including stainless steel and low carbon steel for low temperature services.
Where called for, and when considered necessary, castings are subjected to non-destructive tests, including magnetic particle, gammaray or X-ray examinations.
All cast bodies have integral bosses to provide extra thickness for fitting by-passes and drain plugs.

BONNET 2

The bonnet is normally of cast carbon steel to ASTM A 216-WCB but may be of any other material to suit customer's requirements.
The bonnet can be a separate item or an integral part of the yoke.
The bonnet maintains the same wall thickness as the valve body, to ensure uniformity of strength.
The body-bonnet flange drilling is spot-faced in order to obtain a true face for the stud-bolt nuts.
The inside of the bonnet contains a back-seat bushing permitting repacking of the stuffing box, with the valve in the fully open position and under pressure.
Back-seats are incorporated in all valve sizes and in all pressure classes.
A deep stuffing box allows for stem packing in accordance with the API specification.
Class 300 gate valves and above are fitted with a lantern ring which is set between the packing rings.
An external boss, drilled and tapped for a standard pipe connection, is provided to permit draining or water locking.
Two further bosses, located 90° apart, adjacent to the body-bonnet flange, may be tapped for drain plugs or pressure measuring instruments.
Gland adjustment is possible by means of nuts, and eyebolts.
When the yoke does not form an integral part of the bonnet, a bonnet-yoke flange is fitted accurately machined to ensure perfect alignment with the bonnet.


1


3

2

YOKE 3

The yoke, when not integral with the bonnet, is machined and drilled to match the bonnet yoke flange, which exactly locates the yoke and the yoke nut, in perfect alignment with the backseat bushing and the stem.
The yoke bonnet bolting material is to ASTM A 193-B 7.
The yoke section is so designed to secure perfect stability.
Legs are provided as a support for the gland flange during repacking.
The yoke has a machined thread, to receive the yoke sleeve retaining nut.
The yoke has one or two external bosses, drilled and tapped for standard valves.
Normally the yoke is of cast carbon steel to ASTM A 216-WCB, even if bonnet and body are cast in other materials. If required, it can be furnished in alloy steel.

SOFT SEATED VALVES

Our Soft Seated Block-and-Bleed valves, have seat rings with elastomer inserts (Teflon, Viton etc., depending on fluid and service conditions).
These valves have an elastomer primary seal, combined with a fire safe metal-to-metal secondary seal, for temperatures from - 100 °C (— 144 °F) to 240 °C (400 °F).
Upstream as well as downstream tightness is guaranteed.

5

4

WEDGE 5

The solid wedges, fiitted in gate valves class 150 and 300 up to and including 6" diameter, are drop forged and conform to material specification ASTM A 182-F 6.
For other sizes and series the wedge is either of forged or cast steel, having welded seat facings.
Welding procedure for our standard 13% CR. trim is such as to ensure 350-400 HB.
The wedge is one piece design.
Machined slots on each side of the wedge enable its travel to be correctly guided by means of the integrally cast body guides.
The wedge is secured to the stem by means of a « T » shaped slot in the head. This method of fixing permits free movement of the wedge.
The wedge seating surfaces are accurately machined and ground and lapped to a mirror finish, to secure no-leak conditions and to minimize the risk of galling.

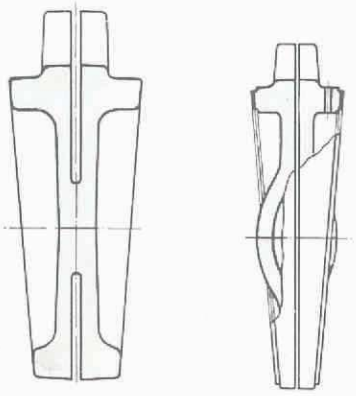
OPTIONAL WEDGES

For severe operating conditions, our valves can be furnished with Stellite faced seating surfaces. Methods employed are SMAW, SAW or GTAW process welding, followed by an appropriate cooling procedure (Sella procedures are qualified in accordance with ASME section IX and III).
Particularly for the use in hot water and steam, a flexible wedge (preferably Stellite faced) can be fitted, resulting in upstream as well as downstream tightness and producing the effect of two solid wedge gate valves in series.
For critical operating pressures and temperatures in Steam Power Plants etc., we recommend the use of our Pressure Seal Gate Valves (see Cat. N° 1S-177-PS).

SEAT RINGS 4

The seat rings are screwed into the body and are of the bottom seated type. The thread finish is smooth in order to avoid the danger of seizing.
Seat rings are provided with slots to facilitate assembling and removal.
The seats are ground and lapped with the contact surface of the wedge, to obtain perfect mating.
Normally, seats are of stainless steel to ASTM A 182-F6 but, if required, they can be supplied in other materials, including Monel and copper nickel. The seats are drop forged and heat treated in order to secure the best mechanical properties and the required hardness. The difference in hardness between seats and wedge is in accordance with the API specifications.

7



FLEXIBLE DISC DOUBLE DISC

STEM 6

The stem is machined from a solid forging and has a T-shaped head to connect with the slot of the wedge.
The contact surface of the head is of spherical shape to give greater strength and durability.
The stem dimensions are equal or in excess of the minimum laid down by the API Std 600 Specifications.
Stems are of stainless steel to ASTM A 182-F 6 but may be supplied in any other material, if required.
Stems are specially heat-treated to eliminate forging stresses and to secure adequate mechanical properties and hard surfaces.
The stem is accurately machined and ground, thereby reducing friction and corrosion to a minimum.
The ACME thread is machined to a smooth finish, to minimize friction during the opening and closing operations.

GLAND 8-9

The gland is a two-piece self aligning assembly.
The gland bushing is a machined cylindrical piece which is used for compression of the gland packings and is bored to suit a slidefit of the stem. A shoulder limits full entry of the bushing into the stuffing box.
The gland flange is designed and webbed to eliminate possible deformation under maximum load conditions.
Bearing surfaces between the flange and bushing are convex and the bushings are of carbon steel to ASTM - A 105, with a melting point above 1000 °C (1800 °F).
Gland flanges are either drop forged or cast steel according to valve size and pressure class.

YOKE NUT 10

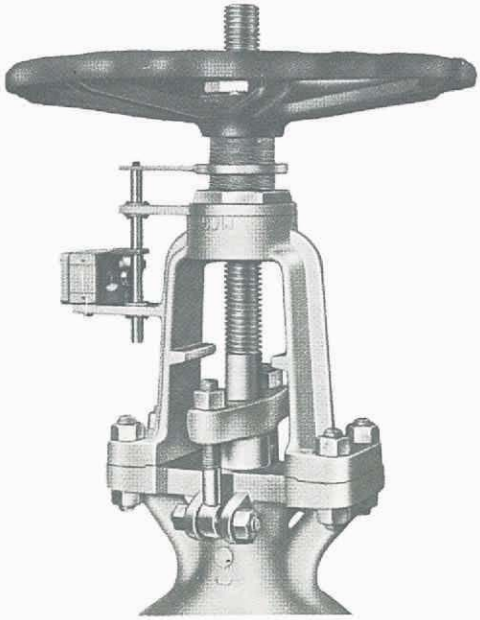
The upper portion of the yoke nut is tapered for the handwheel, the base taking the form of a shoulder, which sustains the upward thrust and is retained in position by a threaded sleeve.
The ACME thread of the yoke nut is designed to give the maximum number of thread engagement during operation. Valves have yoke sleeves fitted with thrust ball bearings.
In Class 150 and 300 they are provided from nominal diameter 14" and upwards, in Class 600, 900 and 1500 from Diameter 6" and over.
Yoke nuts are of nodular Ni-resist D2 in accordance with API Std. 600, having a melting point above 1000 ° (1800 °F).

10

HANDWHEEL 12

The handwheel rim has a serrated edge to give a good safe grip.
Handwheels are supplied in accordance with A.P.I. Std.

12



BOLTING

Body-bonnet bolting is in accordance with API Std. 600. All threads are machined in strict accordance with ANSI B.1.1.
Stud bolts are hexagon shaped, heavy type, hot forged to ANSI B.18.2.
All bolts and nuts are marked with material symbols.

Hydraulic test pressure

Figures quoted for each class are in accordance with the requirements of ANSI B.16.5, 1968 ed.
Tests according to ANSI B.16.5, 1973 ed. can be provided on request.

ACCESSORIES

☐ **By-pass Valves.** A by pass valve can be mounted, to customer's requirements. The desired location should be clearly stated on the order.

☐ **Locking Devices** can be fitted, to lock the valve in either the open or the closed position.

☐ **Chain Wheels** are available, either with or without chain guides.

☐ **Floor Stands** and **Extension Stems** can be furnished to customer's requirements which should be clearly stated in the order.

☐ **Gear Operation.** Valves can be furnished with either bevel or spur gears, to customer's requirements. Gears can be of the open or totally enclosed type. In order to determine the correct gear ratio, the line pressure and differential pressure should be stated.

☐ **Motor Operated Valves.** Valves can be fitted with electric or pneumatic actuators, to customer's requirements.
Customers are kindly requested to include the following technical information:

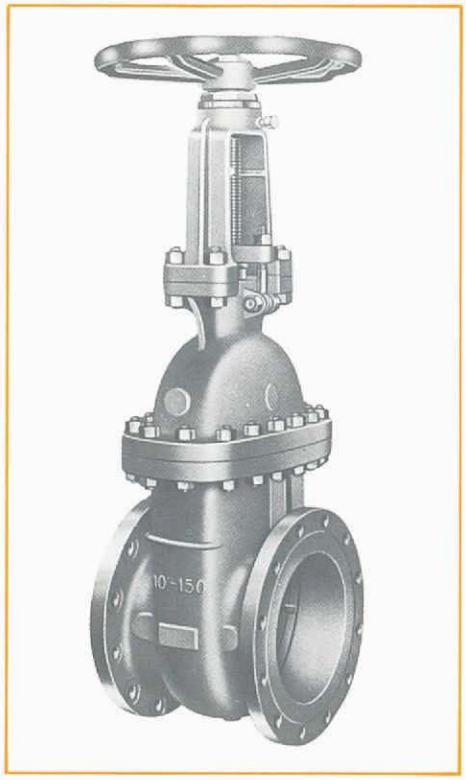
- Maximum operating pressure
- Maximum operating temperature
- Differential pressure across the valve
- Type of actuator (electric, pneumatic, weatherproof, flameproof, etc.)
- Voltage and frequency, or air pressure
- Desired closing time
- Operating frequency
- Ambient temperature
- The need of position indicators, position transmitters etc.
- Single or double torque switch
- Number and type of required auxiliary contacts for remote signalling etc.
- Special requirements.

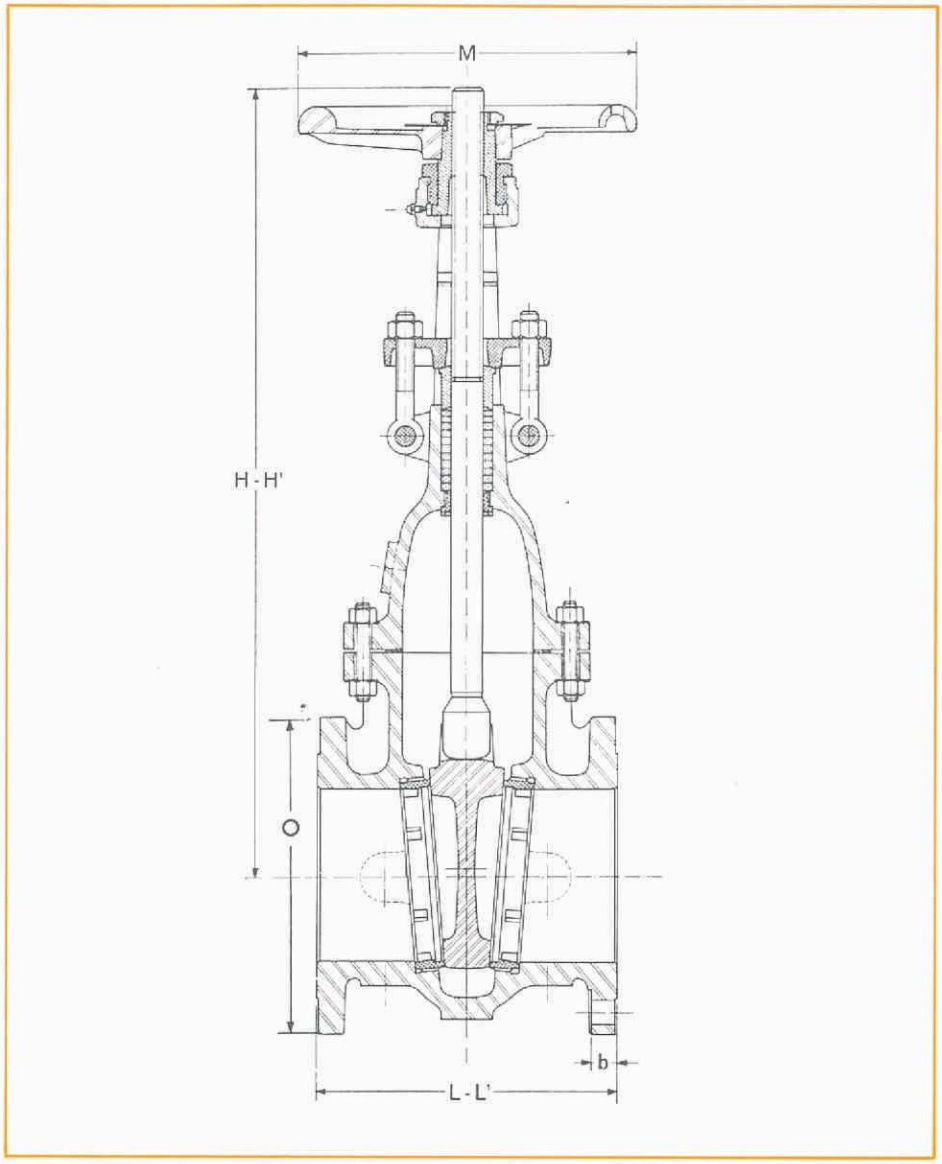
Gate valves

Bolted Bonnet
Fig. No. 1111

Class 150

Hydraulic test pressure:
Body: 425 psig. (29.9 kg/cm²)
Seats: 275 psig. (19.3 kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	1000	1050	1200
	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	40"	42"	48"
H	340	368	387	442	515	578	695	826	990	1146	1289	1489	1540	1697	2010	2024	2304	2429	2437	2629	2946	2769	3220	3220	3741
	13 3/8	14 1/2	15 5/8	17 3/8	20 9/32	22 3/4	27 3/8	32 1/2	39	45 1/8	50 1/2	58	60 5/8	66 13/16	79 1/8	79 11/16	90 11/16	95 5/8	96	103 1/2	116	109	126 3/4	126 3/4	147 1/4
H¹	392	429	474	527	628	718	862	1046	1264	1469	1643	1908	1995	2205	2600	2636	3003	3168	3199	3452	3846	3669	4264	4264	4964
	15 7/16	16	18 11/16	20 3/4	24 3/4	28 1/4	33 15/16	41 3/16	49 3/4	57 13/16	64	75	78 9/16	86 13/16	102 1/8	103 3/4	119 5/16	124 3/4	126	135 3/4	151 7/16	144 7/16	167 7/8	167 7/8	195 3/4
L	165	178	191	203	229	254	267	292	330	356	381	406	432	457	508	508	559	610	610	660	711	711	762	787	864
	6 1/2	7	7 1/2	8	9	10	10 1/2	11 1/2	13	14	15	16	17	18	20	20	22	24	24	26	28	28	30	31	34
L¹	178	191	203	216	241	267	279	305	343	368	394	419	445	470	521	521	—	—	—	—	—	—	—	—	—
	7	7 1/8	8	8 1/2	9 1/2	10 1/2	11	12	13 1/2	14 1/2	15 1/2	16 1/2	17 1/2	18 1/2	20 1/2	20 1/2	—	—	—	—	—	—	—	—	—
M	175	200	200	225	250	250	300	350	425	500	575	720	720	720	800	720	800	800	800	1600	1600	1600	1600	1600	1600
	6 7/8	7 1/2	7 7/8	8 7/8	9 7/8	9 7/8	11 13/16	13 3/4	16 3/4	19 11/16	22 5/8	28 1/4	28 1/4	28 1/8	31 1/2	28 3/4	31 1/2	31 1/2	31 1/2	63	63	63	63	63	63
O	127	152	178	191	229	254	280	343	406	483	533	597	635	699	749	813	870	927	984	1060	1111	1168	1289	1345	1511
	5	6	7	7 1/2	9	10	11	13 1/2	16	19	21	23 1/2	25	27 1/2	29 1/2	32	34 1/4	36 1/2	38 3/4	41 3/4	43 3/4	46	50 3/4	52 61/64	59 1/2
b	14.5	16 7/8	17.5	19	24	24	25.5	28.5	30.5	32	35	36.5	40	43	46	48	68.5	71.5	74.5	81	82.5	90.5	90.5	97	108
	5/8	9/16	11/16	3/4	15/16	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8	1 9/16	1 7/16	1 11/16	1 3/16	1 7/8	2 11/16	2 13/16	2 15/16	3 5/16	3 1/4	3 9/16	3 9/16	3 13/16	4 1/4

L = Face to face dimensions, 1/16" Raised Face
L¹ = Face to face dimensions, Ring Joint

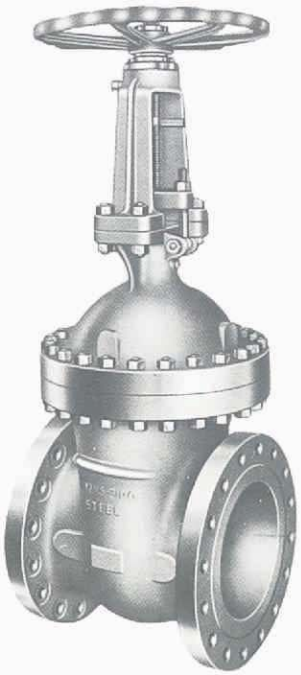
SIZES 1 1/2", 2 1/2", 5" are not normally within our product range, but can be supplied on request

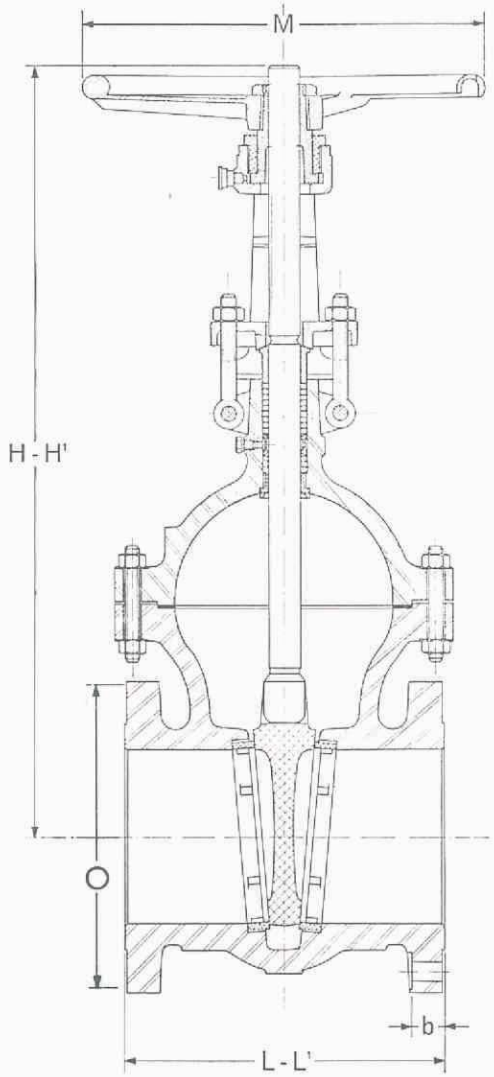
Gate valves

Bolted Bonnet
Fig. No. 1121

Class 300

Hydraulic test pressure:
Body: 1100 psig. (77.3 kg/cm²)
Seats: 720 psig. (50.6 kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	900	1200
	1½	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	36"	48"
H	382	375	436	450	527	630	695	852	1023	1178	1421	1569	1687	1898	2113	2178	2363	2505	2844	2775	3273	3898
	15 1/16	14 3/4	17 3/16	17 23/32	20 3/4	24 13/16	27 3/8	33 5/16	40 9/32	46 3/8	55 3/4	61 3/4	66 1/4	74 3/4	83 3/16	85 1/2	93	98 5/8	112	109 1/4	129	153 15/32
H'	437	435	513	535	640	771	860	1070	1296	1500	1793	1974	2156	2413	2693	2796	3032	3220	3624	3573	4200	5116
	17 3/16	17 1/8	20 3/16	21 1/16	25 3/16	30 3/8	33 7/8	42 1/8	51	59 1/16	70 1/2	77 3/4	84	95	106	110	119 3/8	126 3/4	142 1/16	140 11/16	165 3/8	201 13/32
L	191	216	241	283	305	381	403	419	457	502	762	838	914	991	1092	1143	1245	1346	1397	1397	1727	1727
	7½	8½	9½	11⅛	12	15	15⅞	16½	18	19¾	30	33	36	39	43	45	49	53	55	55	68	68
L'	203	232	257	298	321	397	419	435	473	518	778	854	930	1010	1114	1165	1270	1372	1422	1426	1756	—
	8	9⅛	10⅛	11¾	12⅝	15⅝	16½	17⅛	18⅝	20⅜	30⅝	33⅛	36⅝	39¾	43⅞	45⅞	50	54	56	56 7/64	69 7/64	—
M	200	200	225	225	250	300	350	425	500	500	720	720	720	800	800	800	1600	1600	1600	1600	1600	2000
	7 7/8	8	8 7/8	8 7/8	9 7/8	11 13/16	13 3/4	16 3/4	19 11/16	19 11/16	28 1/4	28 3/8	28 3/4	31 1/2	31 1/2	31 1/2	63	63	63	63	63	78 3/4
O	156	165	191	210	254	280	318	381	445	521	584	648	711	775	838	914	972	1035	1092	1149	1270	1465
	6⅛	6½	7½	8¼	10	11	12½	15	17½	20½	23	25½	28	30½	33	36	38¼	40¾	43	45¼	50	57 11/16
b	21	22.5	25.5	28.5	32	35	36.5	41.5	48	51	54	57.5	60.5	63.5	67	70	79.5	85.5	92	98.5	105	133
	13/16	7/8	1	1⅛	1¼	1⅜	1 7/16	1⅝	1⅞	2	2⅛	2¼	2⅜	2½	2⅝	2¾	3 3/64	3⅜	3⅝	3⅞	4 5/64	5¼

L = Face to face dimensions, 1/16" Raised Face
L' = Face to face dimensions, Ring Joint

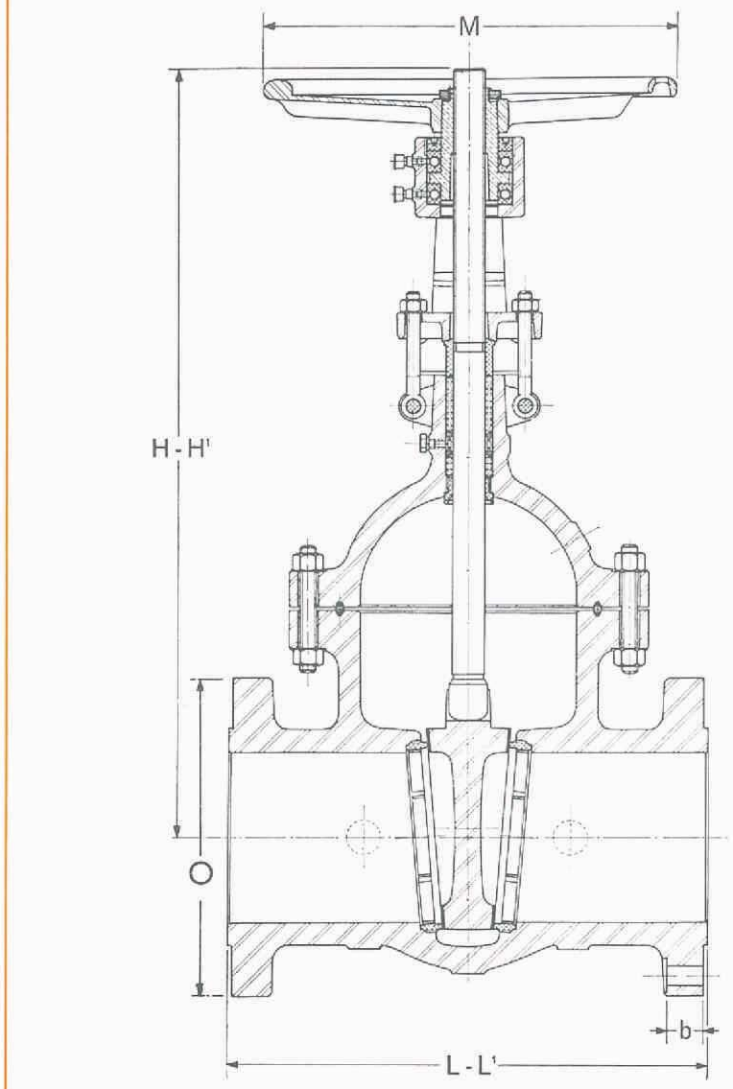
SIZES 1½", 2½", 5" are not normally within our product range, but can be supplied on request

Gate valves

Bolted Bonnet
Fig. No. 1141

Class 600

Hydraulic test pressure:
Body: 2175 psig. (152.9 kg/cm²)
Seats: 1440 psig. (101.2 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	750
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	30"
H	412	491	500	581	673	686	857	1025	1174	1368	1480	1638	1826	1930	2382	2435	3025
	16¼	19⁵⁄₁₆	19¹¹⁄₁₆	22⅞	26½	27	33¾	40⅜	46⁷⁄₃₂	53⅞	58¼	64	71⁷⁄₈	76	93¾	95⅞	119¼
H¹	464	560	580	677	796	832	1027	1261	1456	1704	1841	2050	2286	2425	2974	3055	3820
	18¼	22¹⁄₁₆	22¹³⁄₁₆	26⅝	31⅜	32¾	40⅜	49⅝	57⁵⁄₁₆	67³⁄₃₂	72½	80³⁄₄	90	95½	117¹⁄₁₆	120¼	150⅜
L	241	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1295	1397	1651
	9½	11½	13	14	17	20	22	26	31	33	35	39	43	47	51	55	65
L¹	241	295	333	359	435	511	562	664	791	841	892	994	1095	1200	1305	1407	1664
	9½	11⅝	13⅛	14⅛	17⅛	20⅛	22⅛	26⅛	31⅛	33⅛	35⅛	39⅛	43¼	47¼	51⅜	55⅜	65½
M	225	250	250	300	425	425	500	575	720	720	800	800	1000	1600	1600	1600	1600
	8⅞	9⅞	9⅞	11¹³⁄₁₆	16¾	16¾	19¹¹⁄₁₆	22⅝	28⁷⁄₈	28³⁄₈	31½	31½	39⅜	63	63	63	63
O	156	165	191	210	273	330	356	419	508	559	604	686	743	813	870	940	1130
	6⅛	6½	7½	8¼	10¾	13	14	16½	20	22	23¾	27	29¼	32	34¼	37	44½
b	22.5	25.5	28.5	32	38.5	44.5	48	55.5	63.5	67	70	76.5	82.5	89	95.5	102	114.5
	⅞	1	1⅛	1¼	1½	1¾	1⅞	2³⁄₁₆	2½	2⅝	2¾	3	3¼	3½	3¾	4	4½

L = Face to face dimensions, ¹/₄ Raised Face
L¹ = Face to face dimensions, Ring Joint

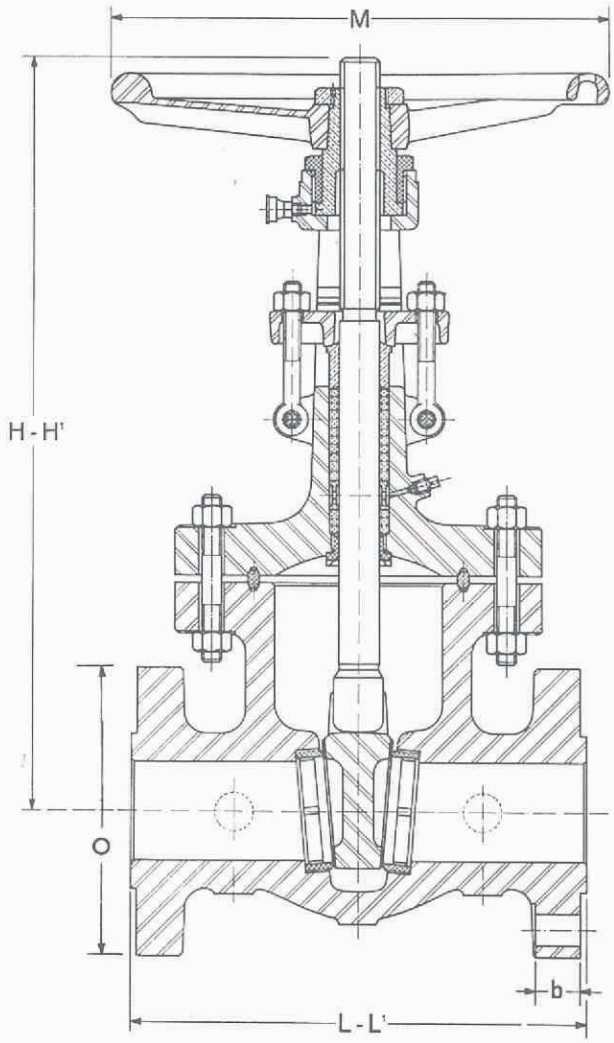
SIZES 1¹/₂", 2", 5" are not normally within our product range, but can be supplied on request

Gate valves

Bolted Bonnet
Fig. No. 1151

Class 900

Hydraulic test pressure:
Body: 3250 psig. (228.5 kg/cm²)
Seats: 2160 psig. (151.9 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
H	In these sizes dimensions are identical to Class 1500 lbs.			615	766	824	958	1114	1255	1439	1585	1705	1835	1970	2100	2240
				24¼	30⅛	32½	37¾	43⅞	49⅜	56 1/16	62⅜	67 1/8	72 1/4	77 7/16	82 13/16	88 3/16
H'				712	887	954	1148	1354	1537	1768	1940	2090	2255	2465	2610	2803
				28	35	37⅝	45¼	53⅜	60½	69 9/16	76⅜	82 1/4	88 3/4	97 7/16	102¾	110⅜
L				381	457	559	610	737	838	965	1029	1130	1219	1321	1435	1549
				15	18	22	24	29	33	38	40½	44½	48	52	56½	61"
L¹				384	460	562	613	740	841	968	1038	1140	1232	1334		1568
				15⅛	18⅛	22⅛	24⅛	29⅛	33⅛	38⅛	40⅞	44⅞	48½	52½		61¾
M				425	500	500	575	720	720	800	1600	1600	1600	1600	1600	1600
				16¾	19¾	19¾	22⅝	28 3/4	28 1/8	31½	63	63	63	63	63	63
O				241	292	349	381	470	546	610	642	705	788			
				9½	11½	13¾	15	18½	21½	24	25¼	27¾	31			
b				38.5	44.5	51	55.5	63.5	70	79.5	86	89	102			
				1½	1¾	2	2 3/16	2½	2¾	3⅛	3⅜	3½	4			

L = Face to face dimensions, 1/4 Raised Face
L¹ = Face to face dimensions, Ring Joint

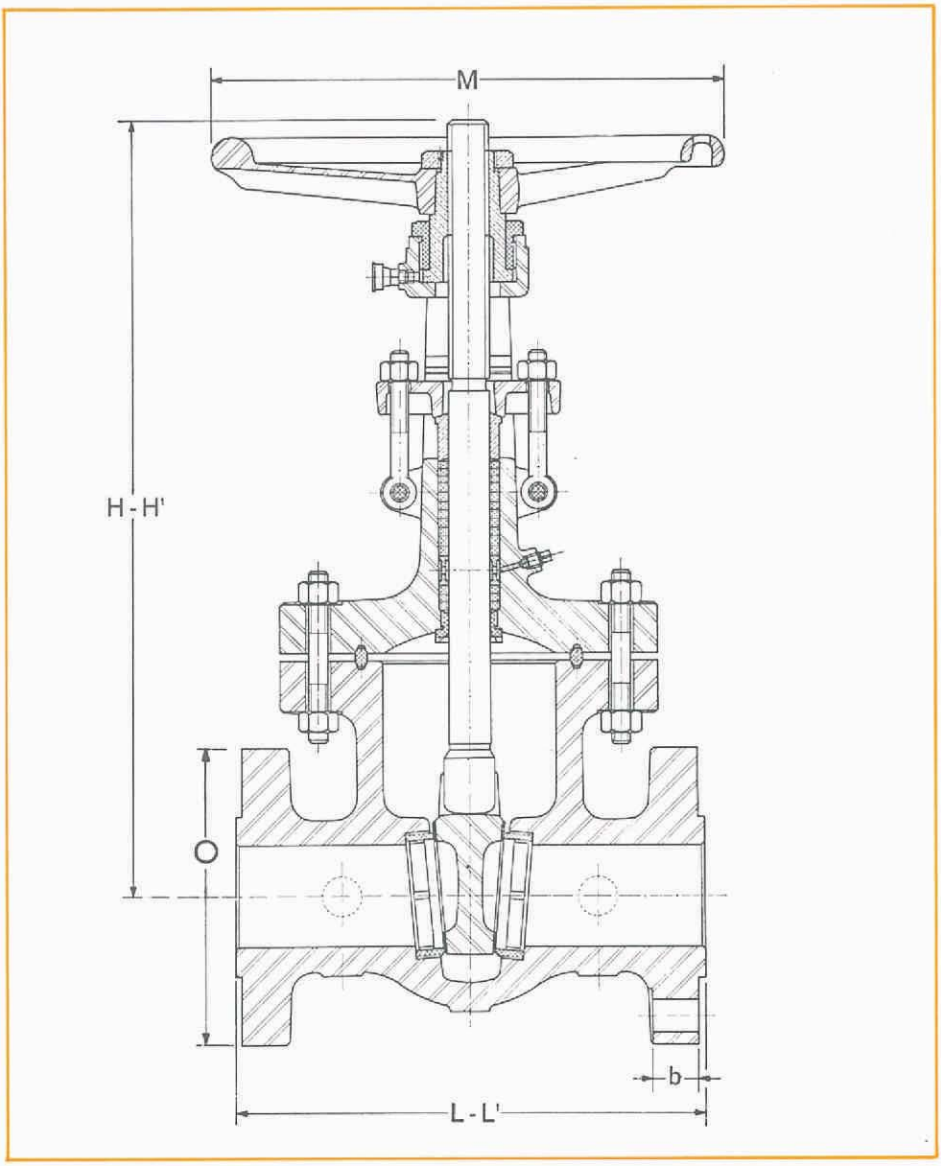
SIZES 1 1/2", 2 1/2", 5" are not normally within our product range, but can be supplied on request

Gate valves

Bolted Bonnet
Fig. No. 1161

Class 1500

Hydraulic test pressure:
Body: 5400 psig. (379.7 kg/cm²)
Seats: 3600 psig. (253.1 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

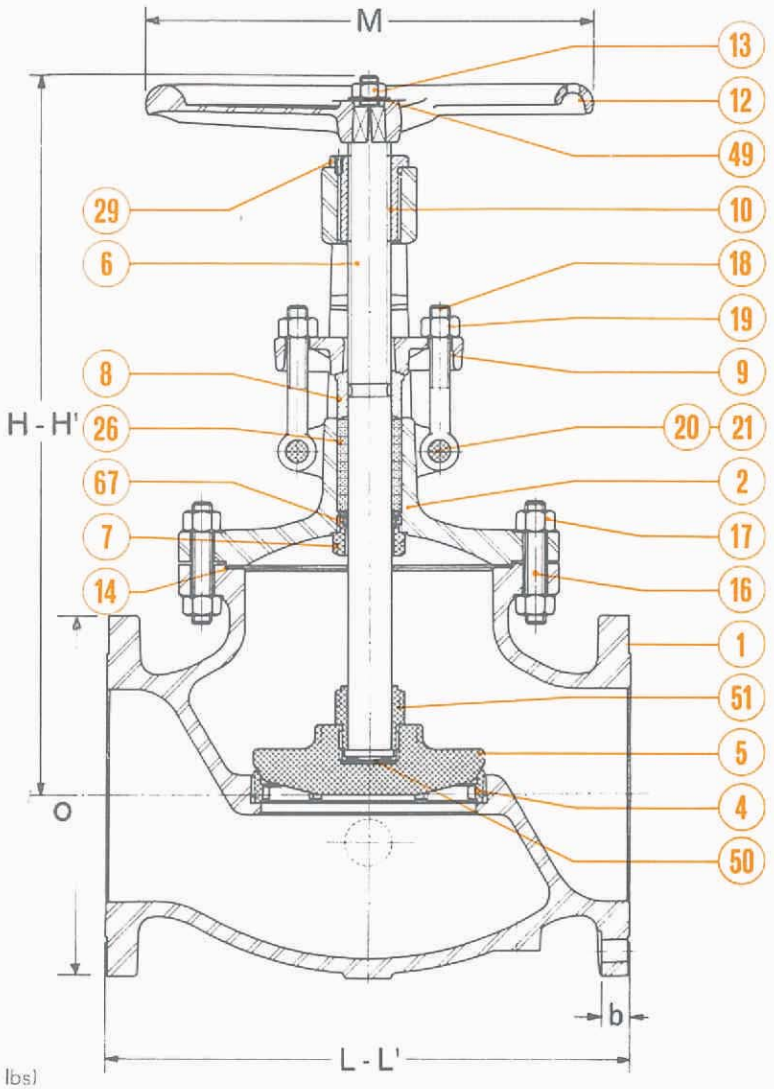
NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350	400
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"
H	525	556	611	714	814	792	987	1148	1336	1454	1645	1815
	20 11/16	21 7/8	24 1/16	28 1/8	32	31 3/16	38 7/8	45 3/16	52 5/8	57 1/4	64 3/4	71 1/2
H'	579	629	694	809	940	925	1163	1377	1605	1759	2000	2160
	22 13/16	24 3/4	27 5/16	31 7/8	37	36 7/16	45 13/16	54 7/32	63 3/16	69 1/4	78 3/4	85
L	305	368	419	470	546	673	705	832	991	1130	1257	1384
	12	14 1/2	16 1/2	18 1/2	21 1/2	26 1/2	27 3/4	32 3/4	39	44 1/2	49 1/2	54 1/2
L'	305	371	422	473	549	676	711	841	1000	1146	1276	1407
	12	14 5/8	16 5/8	18 5/8	21 5/8	26 5/8	28	33 1/8	39 3/8	45 1/8	50 1/4	55 3/8
M	250	300	425	500	575	575	720	720	800	1600	1600	1600
	9 7/8	11 13/16	16 3/4	19 11/16	22 5/8	22 5/8	28 3/4	28 3/8	31 1/2	63	63	63
O	178	216	245	267	311	375	394	483	584	673	749	825
	7	8 1/2	9 5/8	10 1/2	12 1/4	14 3/4	15 1/2	19	23	26 1/2	29 1/2	32 1/2
b	32	38.5	41.5	48	54	73	82.5	92	108	124	133.5	146
	1 1/4	1 1/2	1 5/8	1 7/8	2 1/8	2 7/8	3 1/4	3 5/8	4 1/4	4 7/8	5 1/4	5 3/4

L = Face to face dimensions, 1/4 Raised Face
L' = Face to face dimensions, Ring Joint

SIZES 1½", 2½", 5" are not normally within our product range, but can be supplied on request

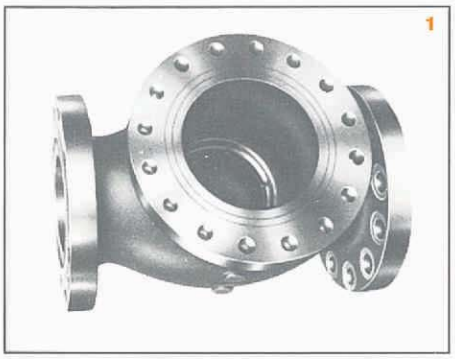
Globe valves

Bolted Bonnet



(class 150 lbs)

Pos.	PART		STANDARD MATERIALS		
1	BODY		Carbon Steel A 216-WCB	A 352-LCB or LC2 or LC3	A 351-CF8 or CF8M
2	BONNET				
3	YOKE		A 216-WCB		
8	GLAND BUSHING		A 105	A 182 F 304 or F 316	
9	GLAND FLANGE				
10	YOKE NUT		Cast Iron Ni-Resist D2		
12	HANDWHEEL		Malleable Iron or Cast steel		
13	HANDWHEEL NUT		Steel		
14	BODY-BONNET GASKET	150-300	Spiral Wound AISI 304 Asbestos		
		600-900-1500	Ring Jont soft Iron	Ring Joint F 304-F 316	
16	BODY-BONNET STUD BOLT		A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
17	NUT FOR DITTO		A 194-2H	A 194-4	A 194-8
18	EYE BOLT		A 307 Gr. B	A 320-B8	
19	NUT FOR DITTO			A 194-8	
20	EYE-BOLT STUD BOLT			A 320-B8	
21	NUT FOR DITTO			A 194-8	
22	YOKE STUD BOLT		A 193-B7		
23	NUT FOR DITTO		A 194-2H		
24	BONNET PLUG		A 105	A 182 F 304-F 316	
26	STEM PACKING		J. CRANE 187 I or equivalent		
29	SET SCREW		Carbon Steel		
49	WASHER		Carbon Steel		
67	BUSHING		B 148-9A		
4	SEAT RING		See special section on pages 3-4-5: TRIM MATERIALS		
5	DISC				
6	STEM				
7	BACK SEAT BUSHING				
15	LANTERN				
50	DISC THRUST PLATE				
51	DISC NUT				


1

BODY 1

The cast steel body has been designed so that the wall thickness at any point is greater than the minimum required by API Std. 600.
Port and seat passage dimensions are in accordance with ANSI B 16.5.
The end flanges are in accordance with ANSI B 16.5. Alternatively, globe valves can be provided with butt welding ends to ANSI B 16.25 (the type to be specified by the customer). End-to-end dimensions comply with ANSI B 16.10.
The body-bonnet flange is circular in shape, except for the smaller diameters of Class 150, which have a square flange.
The body-bonnet joint is male-female as standard feature for all classes but the valves can be furnished with a ring type joint.
Accurate machining guarantees perfect coaxiality of the valve ends and seat ring, as well as exact perpendicularity of the body-bonnet flanges.
The valve bodies are normally of cast steel to ASTM A 216-WCB or WCC, but, if required, they can be furnished in material to any known specification including stainless steel and low carbon steel for cold service conditions.
Castings are subjected to non-destructive tests, including, magnetic-particle, gamma-ray or X-ray examinations.
All cast bodies have integral bosses to provide extra thickness for fitting by-passes and drain plugs in accordance with the ANSI requirements.
When mounting our globe valves, we recommend to observe the arrow cast on the body, indicating the direction of flow.

BONNET 2

The bonnet of our globe valves is integral with the yoke and supplied identical to the body material.
A deep stuffing box allows for stem packing in accordance with the API Std 600 specifications.
Class 300 globe valves and above are fitted with a lantern ring which is placed between the packing rings.
An external boss, drilled and tapped for a standard pipe connection, is provided to permit draining or water locking.
Valves of Class 150 can be furnished with a lantern ring on request.
Gland adjustment is effected by means of nuts and eye-bolts.
The bases of the eye-bolts are secured to lugs, cast integrally with the bonnet.
The yoke « T » section has been designed in order to secure perfect stability. Lugs have been incorporated thus serving as a support for the gland flange during repacking. The yoke has a machined thread, to receive the yoke sleeve.
Accurate machining in our works gurantees perfect coaxiality, avoiding any mis-alignment, so often the main contributing factor of early wear of the stem.


2

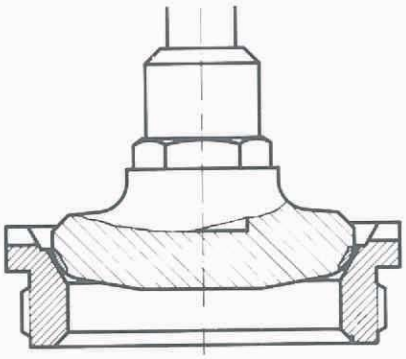
SEAT RING 4

The seat ring is screwed into the body and is of the bottom seated type. The thread finish is smooth to avoid the danger of seizing. The rings are provided with slots to facilitate assembly and removal.
The conical seating surface is ground and lapped with the contact surface of the disc, in order to obtain perfect mating. Normally, the seat is of 13% Cr. steel to ASTM A 182-F6 but, if required, it can be supplied in other materials, including Monel, copper Nickel etc. The seat is drop forged and heat treated in order to secure the best mechanical properties and the required hardness.
On request seat rings can be furnished with elastomer insert, such as Teflon, Viton etc (fig. b).

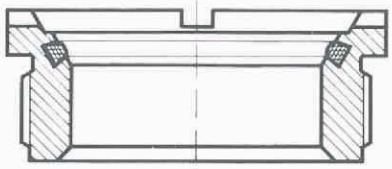
DISC 5

Sella globe valves are fitted with a loose disc, which can freely revolve around the stem, thus avoiding rubbing on the seat (and the danger of galling) at the point of closure.
It is a 3-piece assembly, consisting of the disc, a disc-nut and a thrust plate.
The disc has a conical seating surface, which is ground and lapped to a mirror finish.
Alternatively, the disc can be furnished with a spherical seating surface, forming a line contact with the conical surface of the seat ring (fig. a). Disc and disc-nut are manufactured of integral 13% Cr. steel to ASTM A 182-F6, suitably heat treated to obtain the required mechanical properties and hardness (350-380 Brinell). For nominal diameters ≥ 8", the disc is made of carbon steel or low alloy steel with a welded-on 13% Cr., or other materials on request (welding procedure for our standard 13% Cr. trim is such as to ensure 350-400 HB).
If required, discs with a parabolic regulating cone can be furnished (fig. c). In this case, and on request, valves can be fitted with a graduated position indicator.
The top of the disc -nut has been provided with a conical seating surface, to match the back seat bushing.
The thrust plate is made of hardened 13% Cr. steel and provides a point bearing with the rounded stem head. Thus galling is avoided and easy operation is guaranted. If the valve has to be operated against a considerable differential pressure, we recommend closing with the pressure under the disc. However if so desired we can fit a modified disc construction which allows closing with the pressure over the disc.

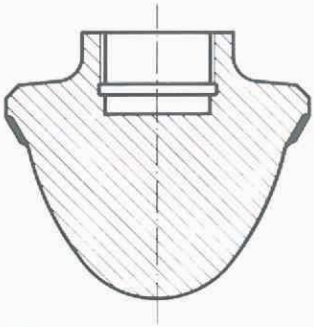

4



a) LINE CONTACT



b) SOFT SEAL



c) REGULATING CONE

STEM 6

The stem is machined from bar stock in 13% Cr. steel to ASTM A 182 F6 but, on request, can be furnished in any other material.
Dimensions are equal or in excess of the minimum laid down by API Std. 600.
Stems are specially heat-treated to eliminate forging stresses and to secure adequate mechanical properties and hard surfaces.
Moreover they are accurately machined and ground, thereby reducing friction and corrosion to a minimum.
The ACME thread is machined to a smooth finish, to minimize friction during the opening and closing operations.
The bottom of the stem head is rounded in order to provide a bearing point with the thrust plate in the disc housing.

BOLTING

The body-bonnet bolting consists of stud bolts to ANSI B 1.1, in material to ASTM A 193-B7. Nuts are in accordance with ANSI B 18.2, in material to ASTM A 194-2H.
Bolting in other material can be furnished, if called for by the service conditions or the customer's specifications.

Hydraulic test pressure

Figures quoted for each class are in accordance with the requirements of ANSI B.16.5, 1968 ed.
Tests according to ANSI B.16.5, 1973 ed. can be provided on request.

ACCESSORIES

☐ **By-pass Valves.** A by-pass valve can be mounted, to customer's requirements. The desired location should be clearly stated on the order.

☐ **Locking Devices** can be fitted, to lock the valve in either the open or the closed position.

☐ **Chain Wheels** are available, either with or without chain guides.

☐ **Floor Stands** and **Extension Stems** can be furnished to customer's requirements, which should be clearly stated in the order.

☐ **Gear Operation.** Valves can be furnished with either bevel or spur gears, to customer's requirements. Gears can be of the open or totally enclosed type. In order to determine the correct gear ratio, the line pressure and differential pressure should be stated.

☐ **Motor Operated Valves.** Valves can be fitted with electric or pneumatic actuators, to customer's requirements.
Customers are kindly requested to include the following technical information:

- Maximum operating pressure
- Maximum operating temperature
- Differential pressure across the valve
- Type of actuator (electric, pneumatic, weatherproof, flameproof, etc.)
- Voltage and frequency, or air pressure
- Desired closing time
- Operating frequency
- Ambient temperature
- The need of position indicators, position transmitters etc.
- Single or double torque switch
- Number and type of required auxiliary contacts for remote signalling etc.
- Special requirements.

GLAND 8 - 9

The gland is a 2-piece self aligning assembly comprising a gland bushing which has a spherical contact surface with the gland flange.
The gland bushing is of carbon steel to ASTM A 105 gr II and is bored in order to slide fit with the stem.
A shoulder limits full entry into the stuffing box. The gland flange is manufactured in forged or of cast steel depending on valve size and pressure class. It is designed and webbed to eliminate possible deformation under maximum load conditions.

YOKE SLEEVE 10

The yoke sleeve is screwed into the yoke and locked by means of a set screw. It is normally manufactured of Nodular Ni-Resist D2 in accordance with the API specifications. The ACME thread is accurately machined and the sleeve length is designed to provide a maximum number of thread engagements during operation.

BACK SEAT 7

Valves are fitted with a replaceable back seat, permitting repacking of the stuffing box, with the valve in the fully open position and under pressure.

HANDWHEEL 12

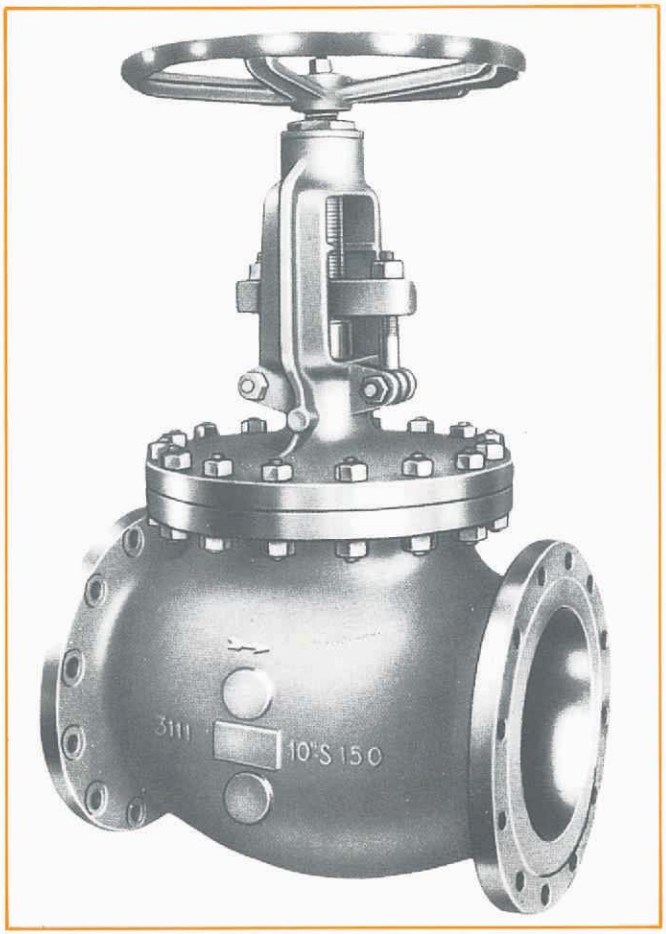
The handwheel rim has a serrated edge to give a good safe grip.
Handwheels are supplied in accordance with API Std.

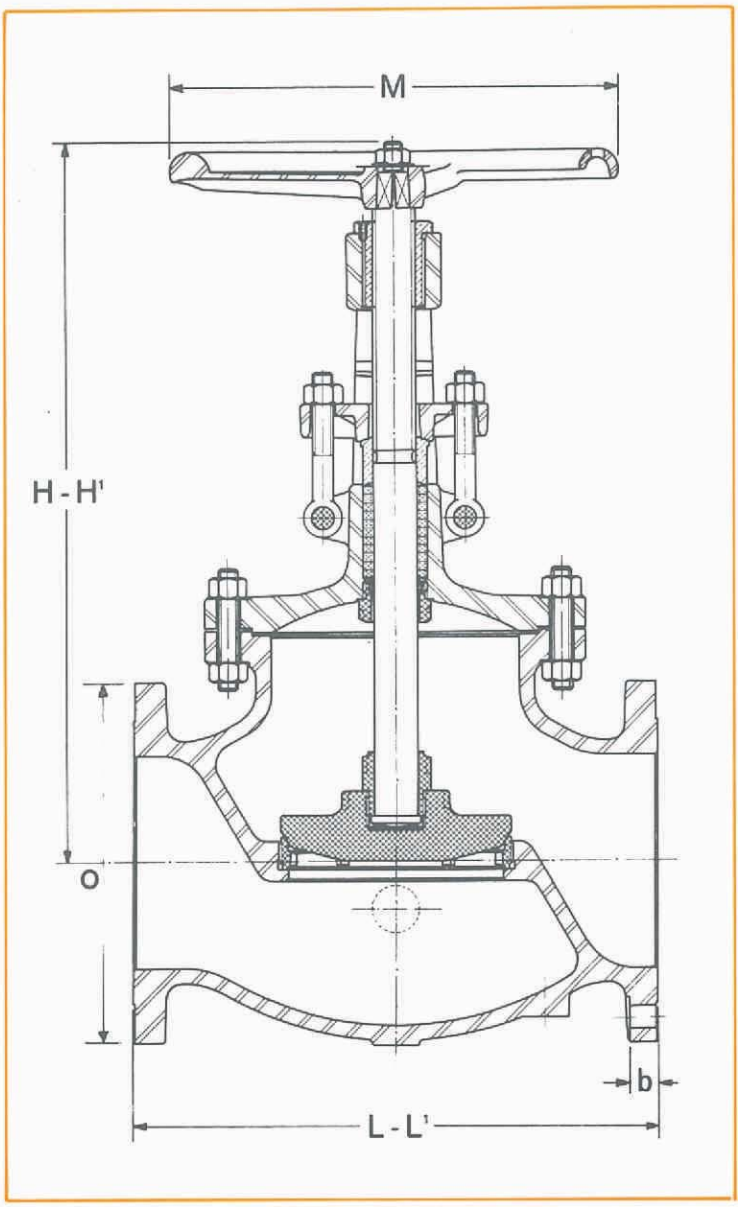
Globe valves

Bolted Bonnet
Fig. No. 3111

Class 150

Hydraulic test pressure:
Body: 425 psig. (29.9 kg/cm²)
Seats: 275 psig. (19.3 kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"
H	322	345	395	426	490	544	578	690	781	909	884
	12 11/16	13 9/16	15 9/16	16 3/4	19 5/16	21 7/16	22 3/4	27 3/16	30 3/4	35 13/16	34 13/16
H¹	358	380	446	480	561	624	678	800	925	1034	1036
	14 1/8	15	17 9/16	18 7/8	22 1/4	24 9/16	26 11/16	31 1/2	36 7/16	40 23/32	40 13/16
L	165	203	216	241	292	356	406	495	622	699	787
	6½	8	8½	9½	11½	14	16	19½	24½	27½	31
L¹	178	216	229	254	305	369	419	508	635	711	800
	7	8½	9	10	12	14½	16½	20	25	28	31½
M	175	200	200	225	250	300	350	425	500	575	575
	6 7/8	7 7/8	7 7/8	8 7/8	9 7/8	11 13/16	13 13/16	16 3/4	19 11/16	22 5/8	22 5/8
O	127	152	178	191	229	254	280	343	406	483	533
	5	6	7	7½	9	10	11	13½	16	19	21
b	14.5	16	17.5	19	24	24	25.5	28.5	30.5	32	35
	9/16	5/8	11/16	3/4	15/16	15/16	1	1 1/8	1 3/16	1 1/4	1 3/8

L = Face to face dimensions, 1/15" Raised Face
L¹ = Face to face dimensions, Ring Joint

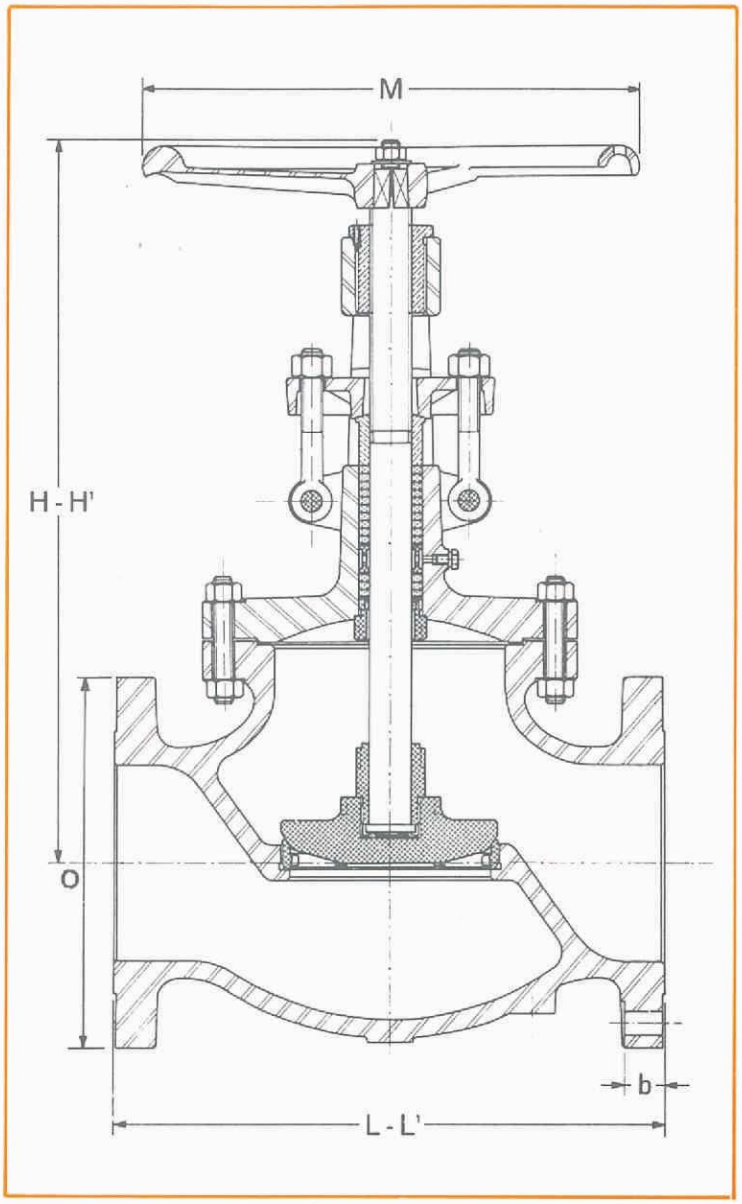
SIZES 1 1/2", 2 1/2", 5" are not normally within our product range, but can be suppled on request
SIZE 16" on application

Globe valves

Bolted Bonnet
Fig. No. 3121

Class 300

Hydraulic test pressure:
Body: 1100 psig. (77.3 kg/cm²)
Seats: 720 psig. (50.6 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200	250	300	350
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"
H	357	394	440	498	546	568	673	742	1007	1096	1227
	14 1/16	15½	17 5/16	19 5/8	21½	22 3/8	26½	29¼	39 3/8	43 5/32	48 5/16
H'	374	430	490	556	614	649	769	847	1130	1221	1387
	14¾	16 15/16	19 5/16	21 7/8	24 3/16	25 5/16	30¼	33 3/8	44½	48 5/64	54 5/8
L	229	267	292	318	356	400	445	559	622	711	762
	9	10½	11½	12½	14	15¾	17½	22	24½	28	30
L'	241	283	308	333	371	416	460	575	638	727	778
	9½	11⅛	12⅛	13⅛	14⅝	16⅜	18⅛	22⅝	25⅛	28⅝	30⅝
M	200	200	225	250	300	350	425	500	720	720	800
	7⅞	7⅞	8⅞	9⅞	11 13/16	13 13/16	16¾	19 11/16	28⅜	28⅜	31½
O	156	165	191	210	254	280	318	381	445	521	584
	6⅛	6½	7½	8¼	10	11	12½	15	17½	20½	23
b	21	22.5	25.5	28.5	32	35	36.5	41.5	48	51	54
	13/16	⅞	1	1⅛	1¼	1⅜	1 7/16	1⅝	1⅞	2	2⅛

L = Face to face dimensions, 1/16" Raised Face
L' = Face to face dimensions, Ring Joint

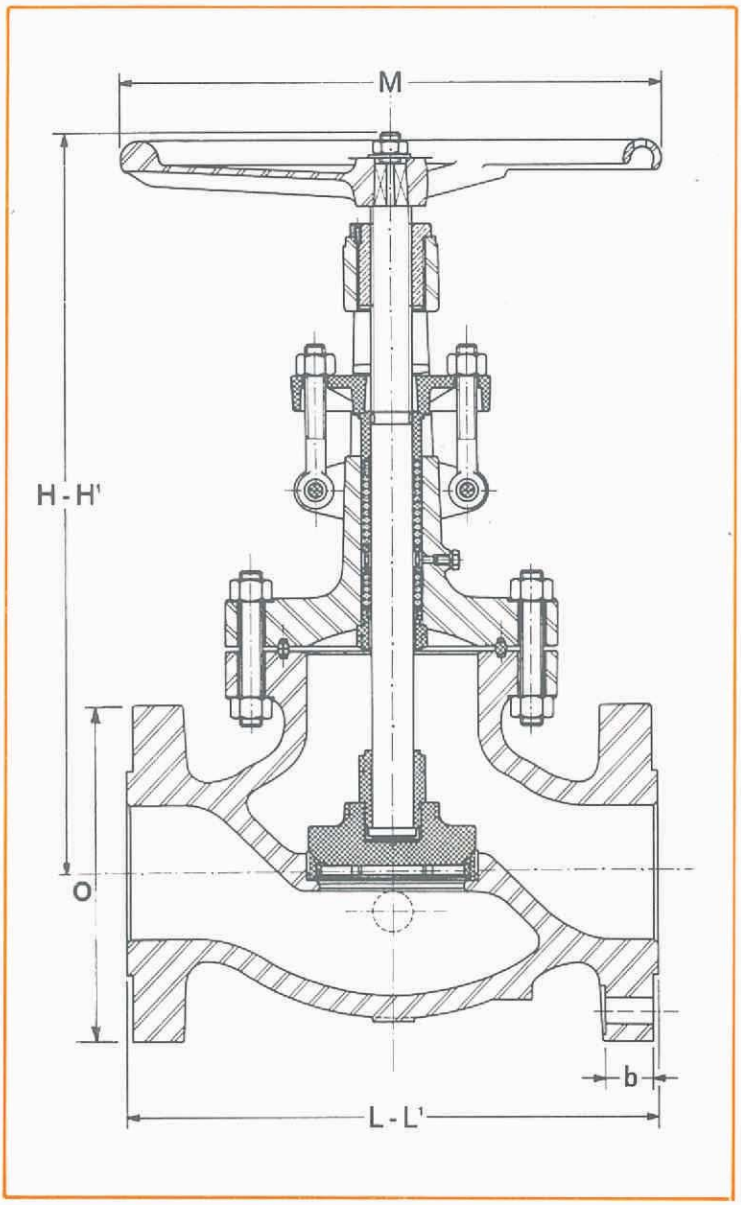
SIZES 1½", 2½", 5" are not normally within our product range, but can be suppled on request
SIZE 16" on application

Globe valves

Bolted Bonnet
Fig. No. 3141

Class 600

Hydraulic test pressure:
Body: 2175 psig. (152.9 kg/cm²)
Seats: 1440 psig. (101.2 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	-00	125	150	200	250	300
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
H	398	441	515	560	597	686	780	931	1235	1311
	15⅝	17⅜	20¼	22	23½	27	30²³/₃₂	36¹¹/₁₆	48⅝	51⅝
H'	428	478	565	618	677	777	893	1022	1362	1451
	16⅞	18⅞	22¼	24	26⅝	30⅝	35	40¼	53⅜	57⅛
L	241	292	330	356	432	508	559	660	787	838
	9½	11½	13	14	17	20	22	26	31	33
L'	241	295	333	359	435	511	562	663	790	841
	9½	11⅝	13⅛	14⅛	17⅛	20⅛	22⅛	26⅛	31⅛	33⅛
M	200	225	250	350	425	500	575	720	1600	1600
	7⅞	8⅞	9⅞	13¹³/₁₆	16¾	19¹¹/₁₆	22⅝	28⅜	63	63
O	156	165	191	210	273	330	356	419	508	559
	6⅛	6½	7½	8¼	10¾	13	14	16½	20	22
b	22.5	25.5	28.5	32	38.5	44,5	48	55.5	63.5	67
	⅞	1	1⅛	1¼	1½	1¾	1⅞	2³/₁₆	2½	2⅝

L = Face to face dimensions, 1/4" Raised Face
L' = Face to face dimensions, Ring Joint

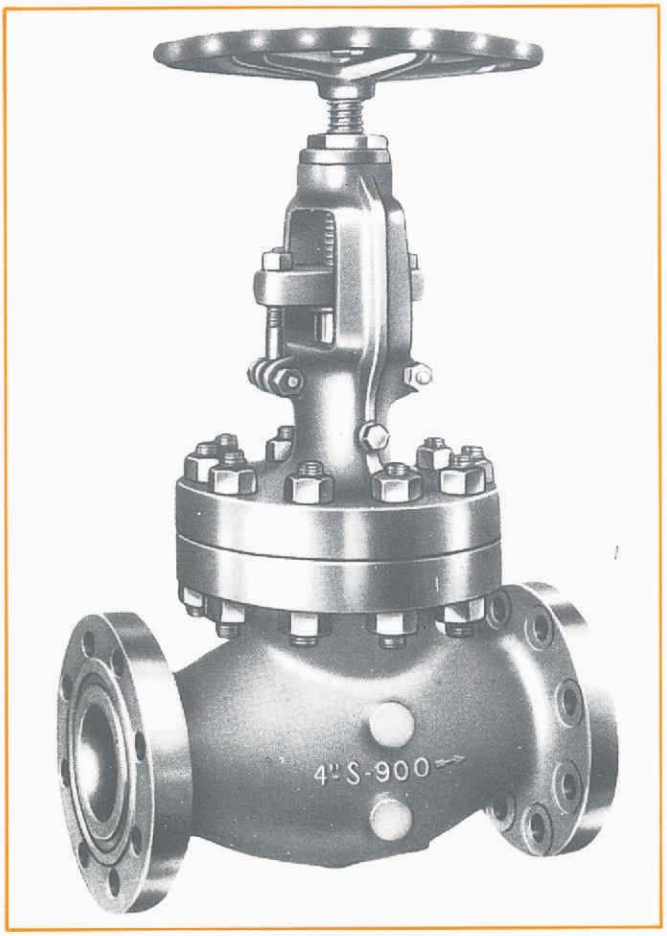
SIZES 1½", 2½", 5" are not normally within our product range, but can be suppled on request

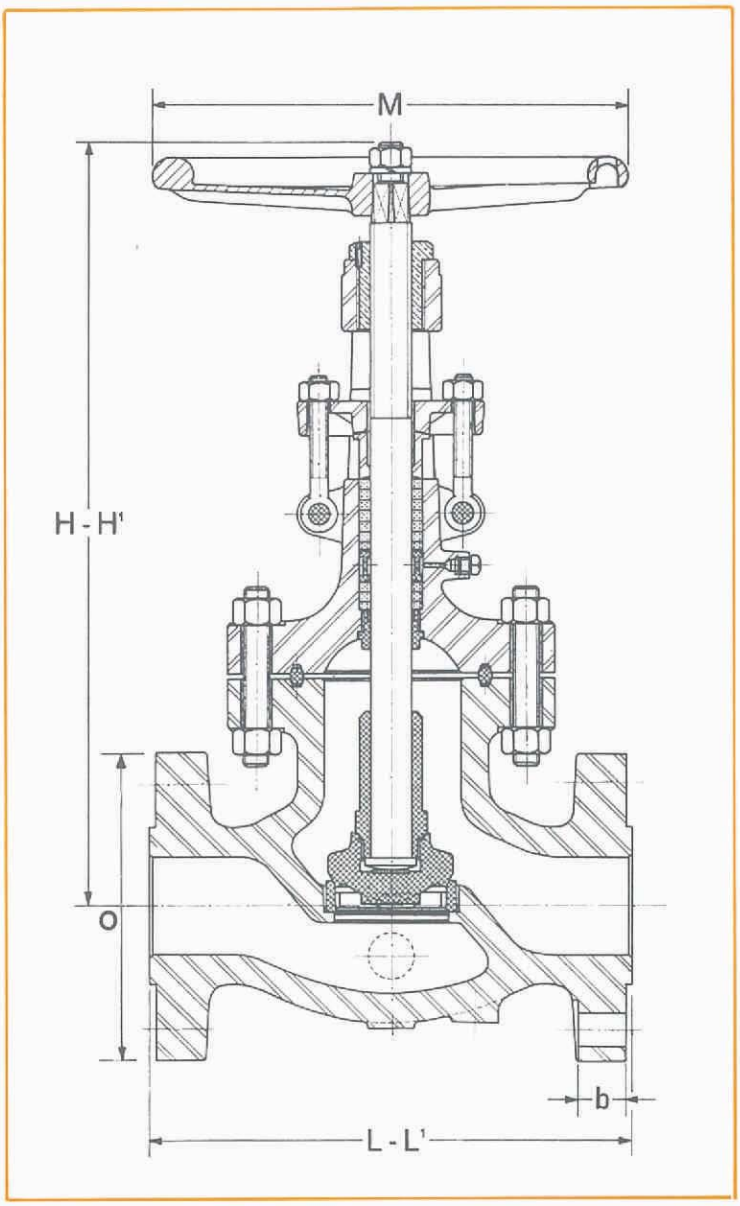
Globe valves

Bolted Bonnet
Fig. No. 3151

Class 900

Hydraulic test pressure:
Body: 3250 psig. (228.5 kg/cm²)
Seats: 2160 psig. (151,9 kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

NOM. SIZE	40	50	65	80	100	125	150	200
	1½"	2"	2½"	3"	4"	5"	6"	8"
H				590	720	870	967	1140
				23¼	28 11/32	34¼	37 3/4	44 7/8
H¹				648	790	945	1047	1251
				25½	31 7/64	37¼	41 7/32	49¼
L				381	457	559	610	737
				15	18	22	24	29
L¹				384	460	562	613	740
				15⅛	18⅛	22⅛	24⅛	29⅛
M				350	500	650	720	1600
				13¾	19¾	25⅝	28⅜	63
O				241	292	349	381	470
				9½	11½	13¾	15	18½
b				38.5	44.5	51	55.5	63.5
				1½	1¼	2	2 3/16	2½

Use 1500 Lb. dimensions in these sizes

L = Face to face dimensions, 1/4" Raised Face
L¹ = Face to face dimensions, Ring Joint

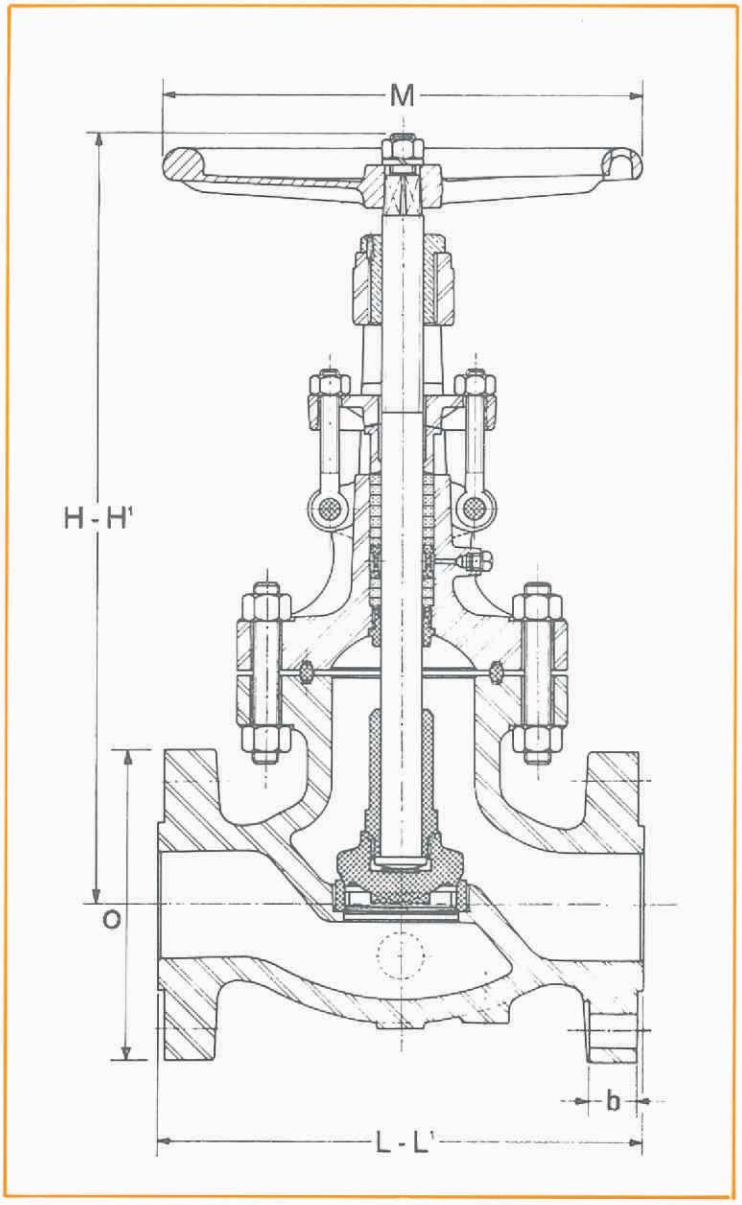
SIZES 1 1/2", 2 1/2", 5" are not normally within our product range, but can be suppled on request
SIZE 16" on application

Globe valves

Bolted Bonnet
Fig. No. 3161

Class 1500

Hydraulic test pressure:
Body: 5400 psig. (379,7 kg/cm²)
Seats: 3600 psig. (253.1 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

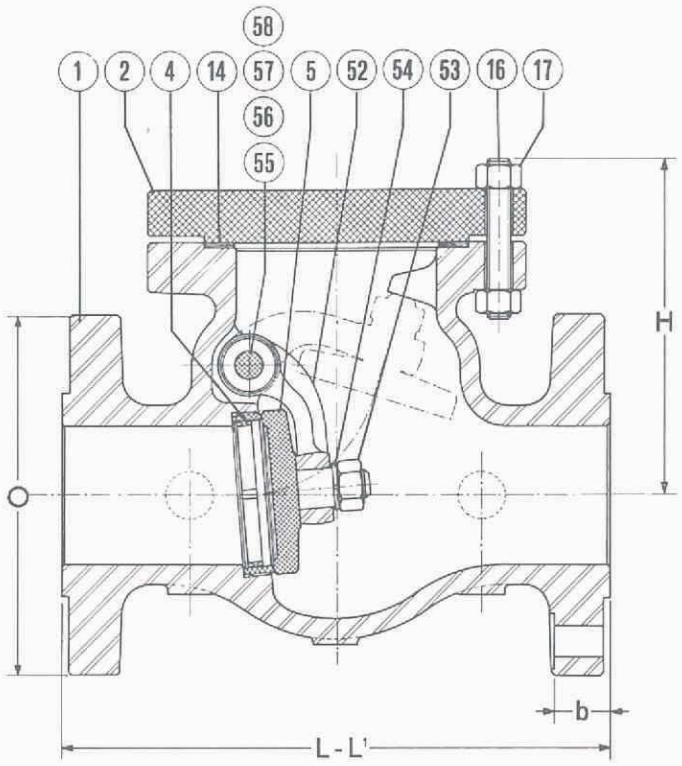
NOM. SIZE	40	50	65	80	100	125	150	200
	1½"	2"	2½"	3"	4"	5"	6"	8"
H	504	553	690	767	837	902	973	1043
	19 13/16	21 3/4	27 3/16	30 3/16	32 15/16	35 1/2	38 5/16	41 1/16
H¹	550	615	765	839	905	960	1040	1115
	21 21/32	24 1/4	30 1/8	33 1/32	35 1/2	37 13/16	41	43 7/8
L	305	368	419	470	546	673	705	832
	12	14 1/2	16 1/2	18 1/2	21 1/2	26 1/2	27 3/4	32 3/4
L¹	305	371	422	473	549	676	711	841
	12	14 5/8	16 5/8	18 5/8	21 5/8	26 5/8	28	33 1/8
M	250	300	500	575	650	720	1600	1600
	9 7/8	11 7/8	19 3/4	22 5/8	25 5/8	28 3/8	63	63
O	178	216	245	267	311	375	394	483
	7	8 1/2	9 5/8	10 1/2	12 1/4	14 3/4	15 1/2	19
b	32	38.5	41.5	48	54	73	82.5	92
	1 1/4	1 1/2	1 5/8	1 7/8	2 1/8	2 7/8	3 1/4	3 5/8

L = Face to face dimensions, 1/4" Raised Face
L¹ = Face to face dimensions, Ring Joint

SIZES 1 1/2", 2 1/2", 5" are not normally within our product range, but can be suppled on request

Swing check valves

Bolted Bonnet



(class 300 lbs)

Pos.	PART		STANDARD MATERIALS		
1 2	BODY BONNET		Carbon Steel A 216-WCB	A 352-LCB or LC2 or LC3	A 351-CF8 or CF8M
14	BODY-BONNET GASKET	150-300	Spiral Wound AISI 304 Asbestos		
		600-900-1500	Ring Joint soft Iron	Ring Joint F 304-F 316	
16	BODY BONNET STUD BOLT		A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
17	NUT FOR DITTO		A 194-2H	A 194-4	A 194-8
52	HINGE		Same as body		
53	DISC NUT		Carbon steel	A 182-F 304	
54	SPRING WASHER		Spring steel		
56	PLUG or FLANGE		A 105	A 182 - F 304 or F 316	
57	GASKET		Soft Iron	A 182 - F 304 or F 316	
4 5 55 58	SEAT RING DISC DISC PIN SPACER WASHER		See special section on pages 3-4-5: TRIM MATERIALS		

BODY 1

The cast steel body has been designed so that the wall thickness at any point is greater than the minimum required by API Std. 600 or API 6D. Sella check valves are able to withstand the strain resulting from « water hammer » caused by sudden flow reversals. Port and flanges dimensions are in accordance with ANSI B 16.5.
Alternatively our check valves can be provided with butt welding ends to ANSI B 16.25 (the type to be specified by the customer).
The end-to-end dimensions are in accordance with ANSI B 16.10 and API Std. 6D.
The body-bonnet flange is circular in shape, except for the smaller diameters of Class 150, which have a square flange.
The body-bonnet joint is male-female as standard feature for all classes but the valves can on application be furnished with a ring type joint.
The valve bodies are normally of cast steel to ASTM A 216-WCB or WCC but, if required, they can be furnished in material to any known specification, including stainless steel and low carbon steel for cold service conditions.
Castings are subjected to non-destructive tests, including magnetic particle, gamma-ray and X-ray examination.
All cast bodies have integral bosses to provide extra thickness for fitting by-passes and drain plugs in accordance with the ANSI requirements.

BONNET 2

The bonnet cap is forged or cast depending upon valve size and pressure class. The material is in conformity with the body material.
All flange drillings are spot-faced.

SEAT RING 4

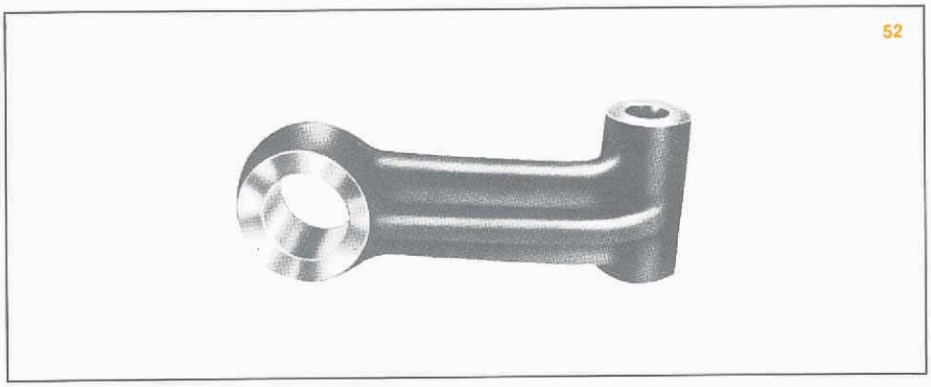
The replaceable seat ring is screwed into the body and is of the bottom seated type. The thread finish is smooth in order to avoid the danger of seizing. Slots are provided to facilitate assembly and removal. The seats are ground and lapped with the contact surface of the disc to obtain perfect mating. Seats are of stainless steel to specification ASTM A 182-F6 (hardness 250-280 HB) but, if required, they can be supplied in other materials.
The seats are drop forged and heat treated in order to secure the best mechanical properties and the required hardness.

DISC 5

The disc construction provides an ample seating surface.
It is manufactured of 13% C. steel to ASTM A 182-F6 (welding procedure for our standard 13% Cr. trim is such as to ensure a hardness of 350-400 HB.
For nominal diameters ≥ 8", the base material is carbon or low alloy steel (in conformity with the body material), with a 13% Cr. (or other materials) welded-on seating surface.

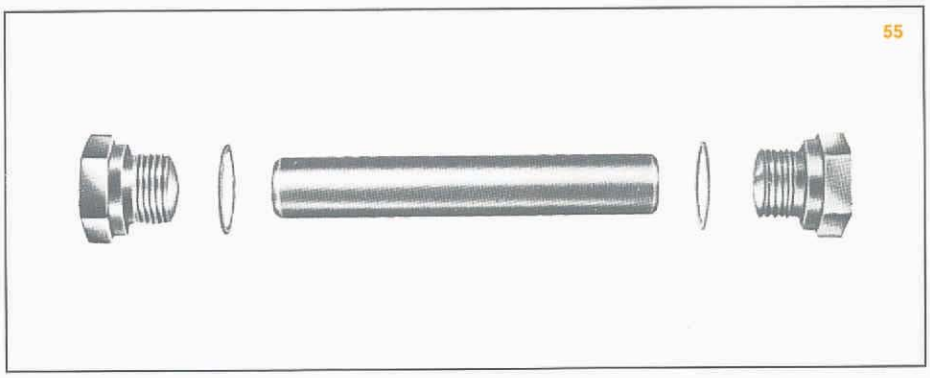
HINGE 52

The hinge arm is manufactured of steel, in conformity with the body material. In the larger valve sizes hinge bushings are provided, to minimize friction and to avoid the danger of seizing.



HINGE PIN 55

The hinge pin is of 13% Cr. steel to ASTM A 182-F6 and is held in place by 2 plugs, screwed into the valve body. Plain soft iron gaskets ensure perfect tightness. The valves of larger diameters have bolted flanges instead of plugs.



BOLTING

The body-bonnet bolting consists of stud bolts to ANSI B.1.1 in material to ASTM A 193-B7. The nuts are in accordance with ANSI B 18.2, in material to ASTM A 194 2H. Bolting in other material is furnished, if called for by the service conditions or the customer's specific requirements.

Hydraulic test pressure

Figures quoted for each class are in accordance with the requirements of ANSI B.16.5, 1968 ed.
Tests according to ANSI B.16.5, 1973 ed. can be provided on request.

ACCESSORIES

If required, swing check valves can be equipped with **Counter Lever** and/or **Dashpot Control.**

By-pass Valves can be fitted on request.

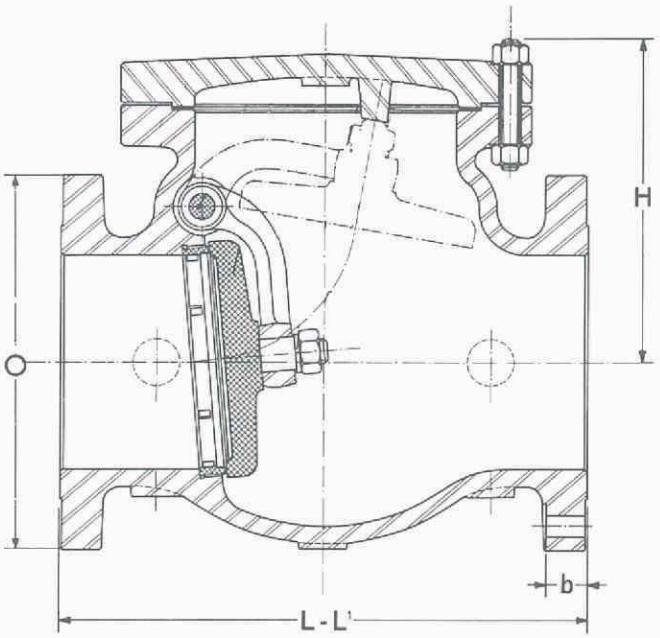
On request, the valves can be supplied with a **Locking Device** in either the open or the closed position.

Swing check valves

Bolted Bonnet
Fig. No. 7111

Class 150

Hydraulic test pressure:
Body: 425 psig. (29.9 kg/cm²)
Seats: 275 psig. (19.3 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800	900	1000	1050
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	30"	32"	36"	40"	42"
H	128	141	163	170	199	213	250	304	321	373	480	473	540	626	690	780	796	896	1021	1073	1073
	5 1/16	5 5/16	6 7/16	6 11/16	7 13/16	8 3/8	9 7/8	12	12 5/8	14 11/16	18 7/8	18 5/8	21 1/4	24 5/8	27 3/16	30 11/16	31 5/16	35 3/32	40 3/16	42 1/4	42 1/4
L	165	203	216	241	292	330	356	495	622	699	787	864	978	978	1295	1448	1524	1524	1549	1676	1676
	6½	8	8½	9½	11½	13	14	19½	24½	27½	31	34	38½	38½	51	57	60	60	61	66	66
L¹	178	216	229	254	305	343	368	508	635	711	800	876	99	991	1308	—	—	—	—	—	—
	7	8½	9	10	12	13½	14½	20	25	28	31½	34½	39	39	51½	—	—	—	—	—	—
O	127	152	178	191	229	254	280	343	406	483	533	597	635	699	813	927	984	1060	1168	1289	1345
	5	6	7	7½	9	10	11	13½	16	19	21	23½	25	27½	32	36½	38¾	41¾	46	50¾	52 51/64
b	14.5	16	17.5	19	24	24	25.5	28.5	30.5	32	35	36.5	40	43	48	52.5	54	57.5	60.5	63.5	67
	9/16	5/8	11/16	3/4	15/16	15/16	1	1⅛	1 3/16	1¼	1⅜	1 7/16	1 9/16	1 11/16	1⅞	2 1/16	2⅛	2¼	2⅜	2½	2⅝

L = Face to face dimensions, 1/4 Raised Face
L¹ = Face to face dimensions, Ring Joint

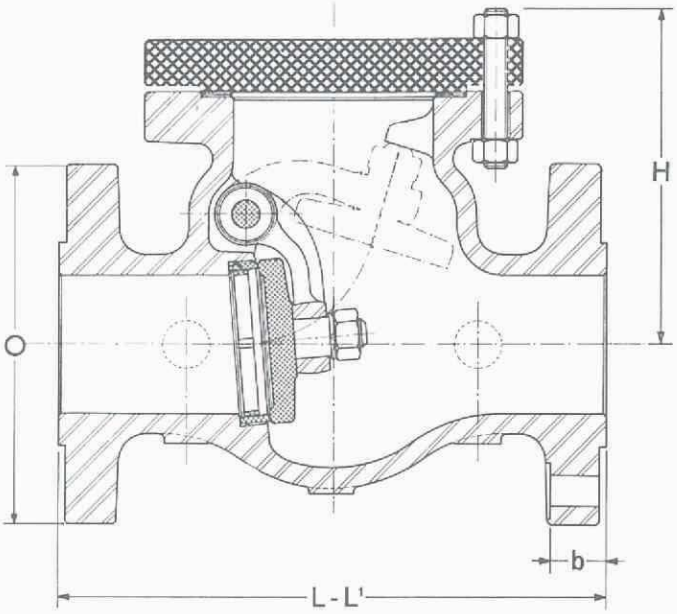
SIZES 1½", 2½", 5" are not normally within our products range, but can be supplied on request
SIZES 44", 46", 48", 54" on applicatin

Swing check valves

Bolted Bonnet
Fig. No. 7121

Class 300

Hydraulic test pressure:
Body: 1100 psig. (77.3 kg/cm²)
Seats: 720 psig. (56.6 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	900	1000	1200
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	36"	40"	48"
H	137	158	178	186	216	264	282	324	382	432	484	528	607	654	722	745	830	915	956	1137	1200	1447
	5⅜	6¼	6⅞	7	8½	10⅜	11⅛	12¾	15	17	19	20¾	23⅞	25¾	28⅜	29⅜	32¾	36	37⅝	44¾	47¼	56 31/32
L	241	267	292	318	356	400	445	533	622	711	838	864	978	1016	1092	1346	1346	1346	1594	2083	2083	2083
	9½	10½	11½	12½	14	15¾	17½	21	24½	28	33	34	38½	40	43	53	53	53	62¾	82	82	82
L¹	254	283	308	333	371	416	460	549	638	727	854	880	994	1035	1114	1368	1372	1372	1619	—	—	—
	10	11⅛	12⅛	13⅛	14⅝	16⅜	18⅛	21⅝	25⅛	28⅝	33⅝	34⅝	39⅛	40¾	43⅞	53⅞	54	54	63¾	—	—	—
O	156	165	191	210	254	280	318	381	445	521	584	648	711	775	838	914	972	1035	1092	1270	—	—
	6⅛	6½	7½	8¼	10	11	12½	15	17½	20½	23	25½	28	30½	33	36	38¼	40¾	43	50	—	—
b	21	22.5	25.5	28.5	32	35		41.5	48	51	54	57.5	60.5	63.5	67	70	80	86	92	105	—	—
	13/16	⅞	1	1⅛	1¼	1⅜	1 7/16	1⅝	1⅞	2	2⅛	2¼	2⅜	2½	2⅝	2¾	3 5/32	3⅜	3⅝	4 7/64	—	—

L = Face to face dimensions, 1/4 Raised Face
L¹ = Face to face dimensions, Ring Joint

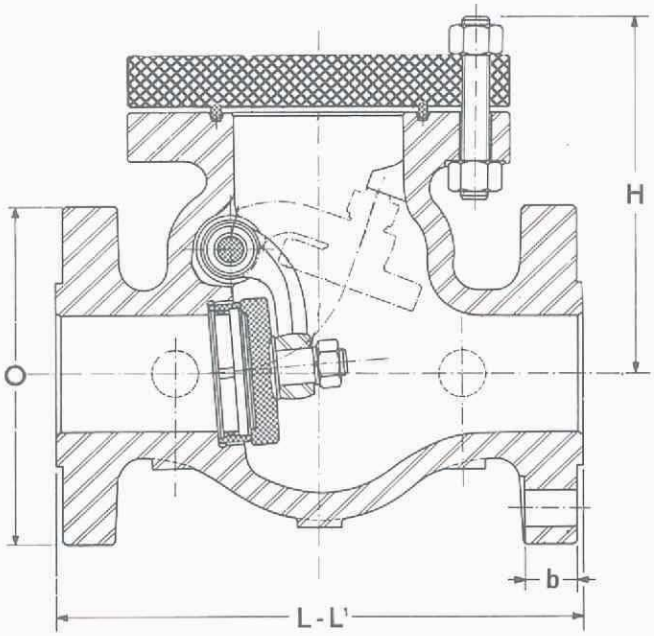
SIZES 1½", 2½", 5" are not normally within our products range, but can be supplied on request
SIZES 32", 34", 38", 42", 44", 46", 54" on application

Swing check valves

Bolted Bonnet
Fig. No. 7141

Class 600

Hydraulic test pressure:
Body: 2175 psig. (152.9 kg/cm²)
Seats: 1440 psig. (101.2 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	4u	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	750	900	1000	1200
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	30"	36"	40"	48"
H	163	194	211	230	292	306	368	408	468	516	564	666	740	800	873	877	1062	1250	1380	1690
	6 7/16	7 5/8	8 5/16	9 1/16	11 1/2	12 1/8	14 1/2	16 1/16	18 7/16	20 5/16	22 1/2	26 1/4	29 1/8	32	34 3/8	34 1/2	41 13/16	49 1/4	54 3/8	66 7/16
L	241	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1295	1397	1651	2083	2133	2235
	9 1/2	11 1/2	13	14	17	20	22	26	31	33	35	39	43	47	51	55	65	82	84	88
L¹	241	295	333	359	435	511	562	664	791	841	892	994	1095	1200	1305	1407	1664	2099	—	—
	9 1/2	11 5/8	13 1/8	14 1/8	17 1/8	20 1/8	22 1/8	26 1/16	31 1/8	33 1/8	35 1/8	39 1/8	43 1/8	47 1/4	51 3/8	55 3/8	65 1/2	82 1/2	—	—
O	156	165	191	210	273	330	356	419	508	559	604	686	743	813	870	940	1130	1315	—	—
	6 1/8	6 1/2	7 1/2	8 1/4	10 3/4	13	14	16 1/2	20	22	23 3/4	27	29 1/4	32	34 1/4	37	44 1/2	51 3/4	—	—
b	22.5	25.5	28.5	32	38.5	44.5	48	55.5	63.5	67	70	76.5	82.5	89	95.5	102	114.5	124	—	—
	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	1 7/8	2 3/16	2 1/2	2 3/8	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	4 7/8	—	—

L = Face to face dimensions, 1/4 Raised Face
L¹ = Face to face dimensions, Ring Joint

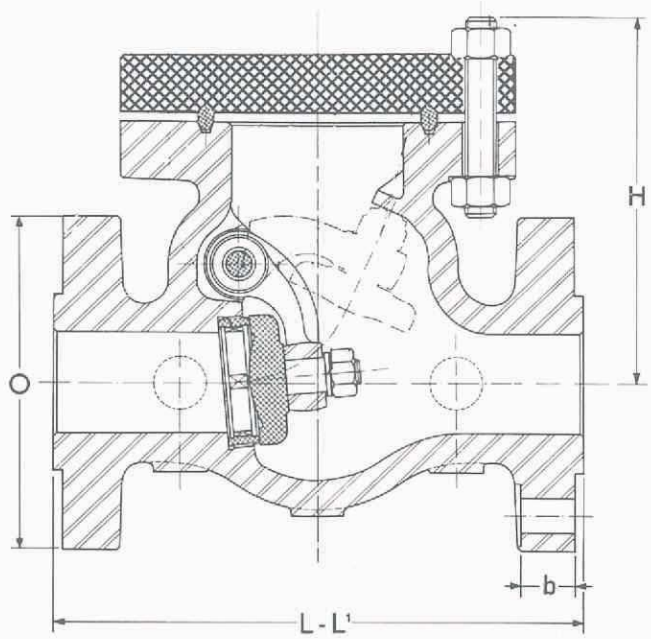
SIZES 1 1/2", 2 1/2", 5" are not normally within our products range, but can be supplied on request
SIZES 26", 28", 32", 34", 38", 42", 44", 46" on application

Swing check valves

Bolted Bonnet
Fig. No. 7151

Class 900

Hydraulic test pressure:
Body: 3250 psig. (228.5 kg/cm²)
Seats: 2160 psig. (151.9 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	40	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	700	750	800
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	28"	30"	32"
H	Use 1500 lb dimensions in these sizes			265	326	352	361	459	561	640	700	762	822	885	950	1015	1140	1205	1270
				10 7/16	12 13/16	13 7/8	14 1/4	18	22	25 3/16	27 9/16	30	32 3/8	34 7/8	37 3/8	40	44 7/8	47 7/16	50
L				381	457	559	610	737	838	965	1029	1130	1219	1321	1448	1549	1651	1804	1804
				15	18	22	24	29	33	38	40 7/8	44½	48	52	57	61	65	71	71
L¹				384	460	562	613	740	841	968	1038	1140	1232	1334	—	1568	—	—	—
				15 1/8	18 1/8	22 1/8	24 1/8	29 1/8	33 1/8	38 1/2	40 3/4	44 7/8	48 1/2	52 1/2	—	61 3/4	—	—	—
O				241	292	349	381	470	546	610	642	705	788	857	—	1041	1168	1232	1315
				9½	11½	13¾	15	18½	21½	24	25¼	27¾	31	33¾	—	41	46	48½	51¾
b				38.5	44.5	51	55.5	63.5	70	79.5	86	89	102	108	—	140	143	149	159
				1½	1¾	2	2 3/16	2½	2¾	3⅛	3⅜	3½	4	4¼	—	5½	5⅝	5⅞	6¼

L = Face to face dimensions, 1/4 Raised Face
L¹ = Face to face dimensions, Ring Joint

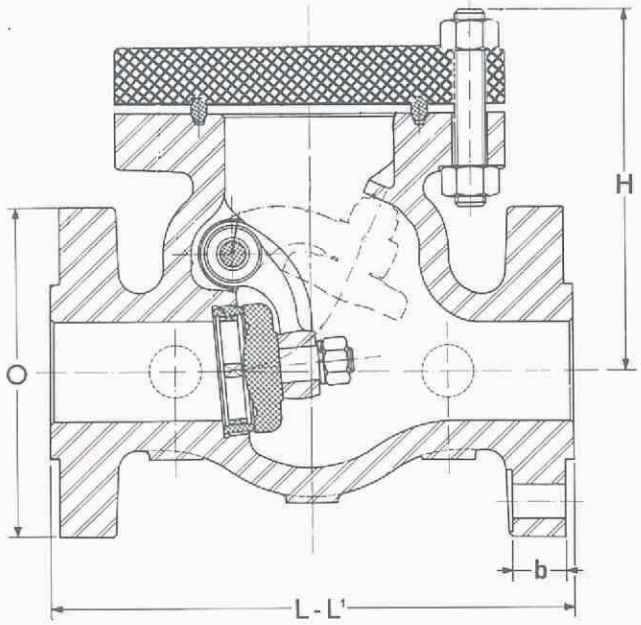
SIZES 1½", 2½", 5" are not normally within our products range, but can be supplied on request
SIZES 26", 34", 36" on request

Swing check valves

Bolted Bonnet
Fig. No. 7161

Class 1500

Hydraulic test pressure:
Body: 5400 psig. (379.7 kg/cm²)
Seats: 3600 psig. (253.1 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

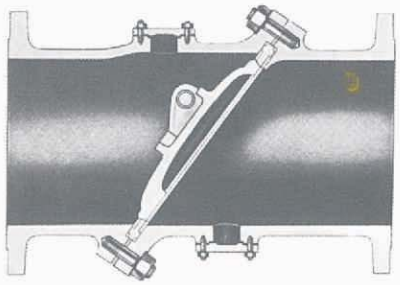
Nom. Size	40	50	65	80	100	125	150	200	250	300
	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"
H	221	263	288	304	364	482	506	597	702	818
	8¾	10⅜	11⅜	12	14¼	19	19⅞	23½	27¾	32 5/16
L	305	368	419	470	546	673	705	832	991	1130
	12	14½	16½	18½	21½	26½	27¾	32¾	39	44½
L¹	305	371	422	473	549	676	711	841	1000	1146
	12	14⅝	16⅝	18⅝	21⅝	26⅝	28	33⅛	39⅜	45⅛
O	178	216	245	267	311	375	394	483	584	673
	7	8½	9⅝	10½	12¼	14¾	15½	19	23	26½
b	32	38.5	41.5	48	54	73	82.5	92	108	124
	1¼	1½	1⅝	1⅞	2⅛	2⅞	3¼	3⅝	4¼	4⅞

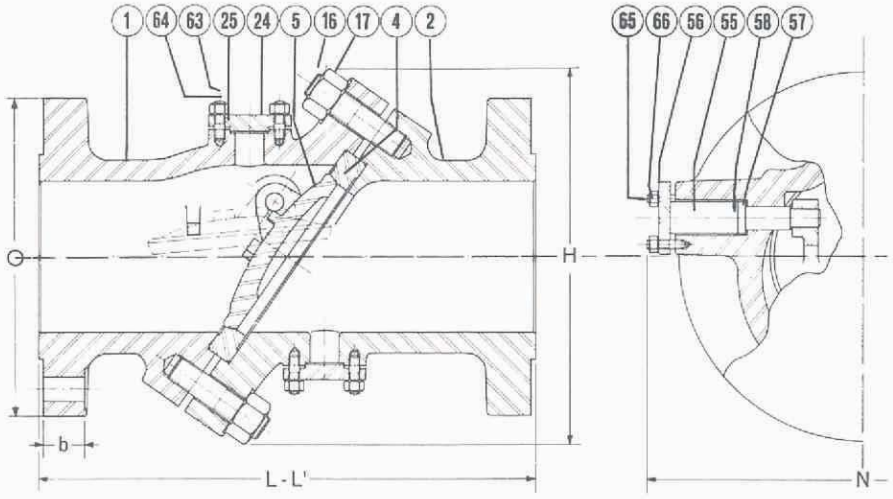
L = Face to face dimensions, ¼ Raised Face
L¹ = Face to face dimensions, Ring Joint

SIZES 1½", 2½", 5" are not normally within our products range, but can be supplied on request

Tilting disc non slam check valves

Bolted Bonnet





(class 600 lbs)

Pos.	PART	STANDARD MATERIALS		
1 2	INLET BODY OUTLET BODY	Carbon steel A 216-WCB	A 352-LB or LC2 or LC3	A 351-CF8 o CF8M
16	BODY BONNET STUDS	A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
17	NUT	A 194-2H	A 194-4	A 194-8
24	BODY INSPECTION FLANGE	Same as body, forged		
25	GASKET	Soft Iron	A 182 - F 304 or F 316	
56	DISC PIN SIDE FLANGE	Same as body, forged		
57	GASKET	Soft Iron	A 182 - F 304 or F 316	
63	STUD	A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
64	NUT FOR DITTO	A 194-2H	A 194-4	A 194-8
65	STUD	A 193-B7 ≤ 485 °C ≥ A 193-B16	A 320-L7	A 320-B8
66	NUT FOR DITTO	A 194-2H	A 194-4	A 194-8
4 5 55 58	SEAT RING DISC DISC PIN SPACER WASHER	See special section on pages 3-4-5: TRIM MATERIALS		

INTRODUCTION

The tilting Disc, non-slam, Check Valve has been developed in order to eliminate some inherent characteristics of conventional swing check valves under certain operating conditions. In the presence of sudden flow reversals the swing check valves tend to slam which may lead to « water hammer » and damage to the piping system or to the installed equipment. The balanced tilting disc, due to its particular construction, will close gradually and softly under most flow conditions.
In Sella's valve design the seat ring is contained between the two halves of the body which is sloped in respect of the vertical plane. The dome shape disc being pivoted slightly off-center, drops in and out of contact with the seat ring without rubbing, as indicated from the illustration.
The closing speed of the disc is governed by the amount of off-center, by exact location of the pivot and by the flow. In consequence, during closing the disc speed will diminsh in proportion to the decreasing fluid velocity in the line, resulting in quiet seating.
Furthemore, the disc will respond at very low differential pressures.
Moreover it will be evident that above features, combined with the streamlined shape of the disc and the near cylindrical shape of the body, result in a considerably lower pressure drop across the valve than can be achieved with conventional swing check valves.

The principal advantages of our Tilting Disc Check Valves therefore are:

- ☐ non-slam closing
- ☐ reduced pressure drop
- ☐ no disc chatter or disc floating
- ☐ minimum wear of moving parts, due to low rotating spees and soft seating
- ☐ simple construction, facilitating inspection and maintenance

The use of these valves is recommended where vibration or water hammer is to be expected and in all cases where large quantities of fluid, at high speed and variable pressure are involved.

1

2

PARTS DESCRIPTION

BODY 1 - 2

The cast steel body consists of two halves, connected by means of flanges, which are inclined in respect of the end flanges (alternatively, valves body can be constructed in a single unit, with a special device which permits a balanced disc to be fitted in).
The body shape has been designed with particular care in order to arrive at favourable flow characteristics and a minimum of pressure drop.
Each body part has been provided with an inspection hole, which is either plugged, depending on valve size and pressure class. A disc stop is cast integral with the downstream part of the body.
Accurate drilling of the flanges to limit spot facing to a minimum requirements.
By this method a minimum of metal is removed and the ultimate thickness of the flange is greater than the minimum requirements of ANSI (ASA). Castings are subjected to non-destructive tests, including, magnetic particle, gamma-ray and X-ray examinations.
All cast bodies have integral bosses to provvide extra thickness for fitting a by-pass.

SEAT RING 4

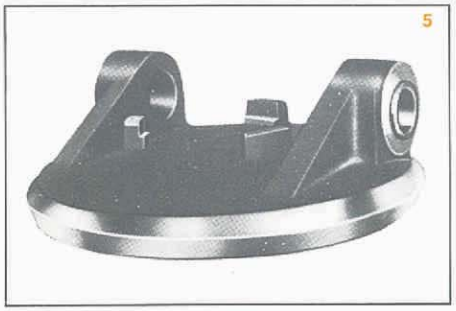
The seat ring has a rectangular cross section with a conical seating surface. It is clamped between the body halves, without the use of gaskets. Seats are machined from forged rings of 13% Cr. steel to ASTM A 182-F6, (or other materials on request) suitably heat treated to ensure the required properties and hardness.
The seating surface is ground and lapped to a mirror finish.

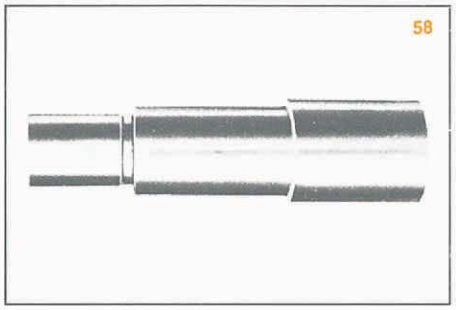
DISC 5

The cast disc has been designed in order to ensure a minimum of flow resistance.
The off-center disc hubs are drilled and machined. In the large diameters, they are provided with bushings of aluminium bronze to ASTM B 148 9A or Ni-resist D2.

DISC PINS 58

The disc is pivoted on two disc pins which fit into two hubs of the body and are held in position by means of plugs or flanges, depending on valve size and pressure class. Seal is secured by means of solid metalic gaskets. The material is 13% Cr. steel to ASTM A 182-F6, hardened and ground to a mirror finish.





BOLTING

The body bolting consist of stud bolts to ANSI 1.1, in material to ASTM A 193 B7. The nuts are in accordance with ANSI B 18,2, in material to ASTM A 194 2H.
Bolting in other materials is furnished if called for by the service conditions or the customer's requirements.

Hydraulic test pressure

Figures quoted for each class are in accordance with the requirements of ANSI B.16.5, 1968 ed.
Tests tccording to ANSI B.16.5, 1973 ed. can be provided on request.

LOCKING DEVICES

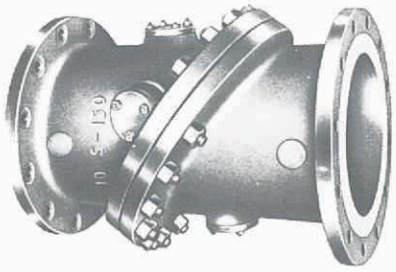
On request, the valves can be supplied with a locking device in either the open or the closed position.

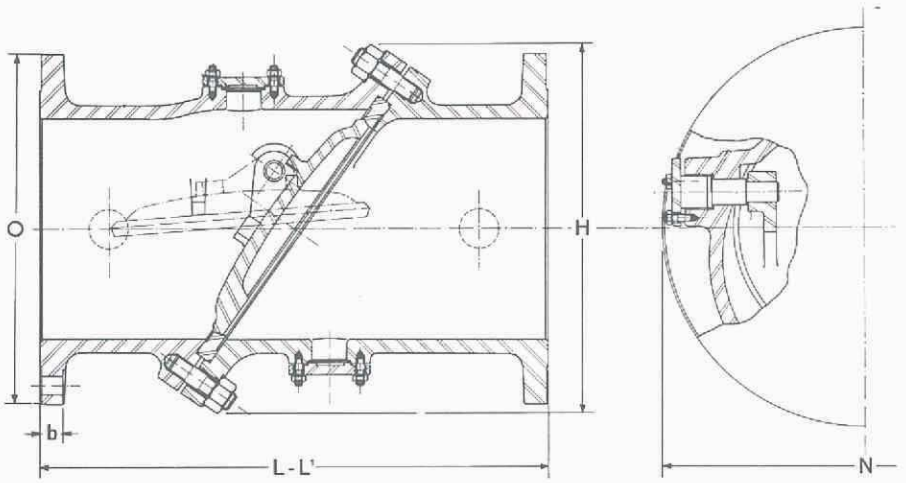
Tilting disc check valves

Fig. No. 30111

Class 150

Hydraulic test pressure:
Body: 425 psig. (29.9 kg/cm²)
Seats: 275 psig. (19.3 Kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

Nom. Size	50 2"	65 2½"	80 3"	100 4"	125 5"	150 6"	200 8"	250 10"	300 12"	350 14"	400 16"	450 18"	500 20"	550 22"	600 24"	650 26"	700 28"	750 30"	900 36"	1000 40"
H	161 6 5/16	185 7 5/16	214 8 7/16	236 9 5/16	285 11 1/4	310 12 3/16	378 14 7/8	436 17	510 20	560 22	585 23 1/32	698 27 1/2	765 30	830 32 3/4	895 35	888 35	940 37	1022 40 1/4	1280 50 1/4	1422 56
L	203 8	216 8½	241 9½	292 11½	330 13	356 14	495 19½	622 24½	698 27½	787 31	762 30	838 33	914 36	991 39	1092 43	1143 45	1194 47	1257 49½	1549 61	1676 66
L'	216 8½	229 9	254 10	305 12	343 13½	368 14½	508 20	635 25	711 28	800 31½	775 30½	851 33½	927 36½	1003 39½	1105 43½	— —	— —	— —	— —	— —
N	165 6½	190 7½	220 8 11/16	270 10 5/8	326 12 13/16	365 14 3/8	455 17 15/16	470 18 1/2	550 21 3/4	600 23 3/4	742 29 7/32	770 30 5/16	870 34 1/4	914 36	1024 40 5/16	985 38¾	1050 41 11/32	1125 44 5/16	1410 55½	1575 62
O		178 7	191 7½	229 9	254 10	280 11	343 13½	406 16	483 19	533 21	597 23½	635 25	699 27½	749 29½	813 32	870 34¼	927 36½	984 38¾	1168 46	1289 50¾
b	16 5/8	17.5 11/16	19 3/4	24 15/16	24 15/16	25.5 1	28.5 1 1/8	30.5 1 15/16	32 1¼	35 1 3/8	36.5 1 7/16	40 1 5/16	43 1 11/16	46 1 3/16	48 1⅞	51 2	52.5 2 1/16	54 2⅛	60.5 2⅜	63.5 2½

L = Face to face dimensions, 1/4" Raised Face
L' = Face to face dimensions, Ring Joint

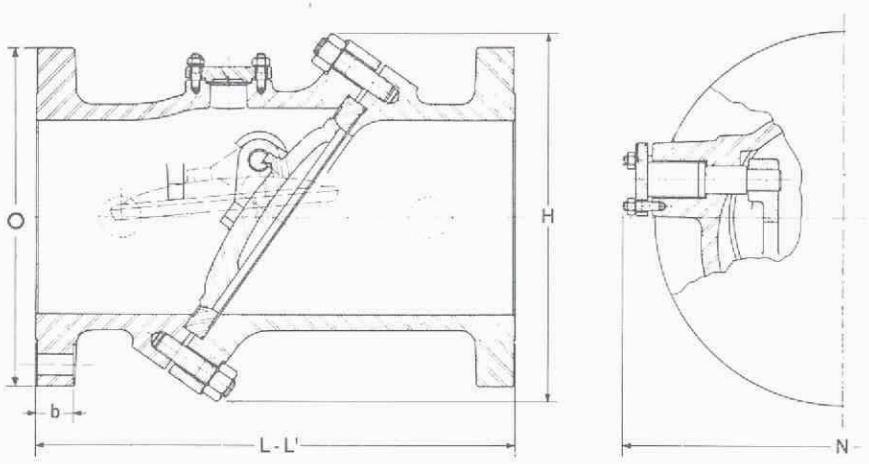
SIZES 2½" and 5" are not normally within our product range, but can be supplied on request
SIZES 32", 34", 38", 42", 48" on application

Tilting disc check valves

Fig. No. 30121

Class 300

Hydraulic test pressure:
Body: 1100 psig. (77.3 kg/cm²)
Seats: 720 psig. (50.6 kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	750	900	1000
	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	30"	36"	40"
H	168	195	226	266	295	340	416	498	560	640	735	721	824	897	955	1035	1149	1385	1525
	6⅝	7⅝	8⅞	10½	11⅝	13⅜	16⅜	19⅝	22	25	28¾	28⅜	32½	35 5/16	37⅝	40¼	45¼	54½	60
L	267	292	318	356	400	445	533	622	711	838	838	978	991	1092	1143	1245	1397	1651	2083
	10½	11½	12½	14	15¾	17½	21	24½	28	33	33	38½	39	43	45	49	55	65	82
L'	283	308	333	371	416	460	549	638	727	854	854	994	1010	1114	1165	1270	1422	—	—
	11⅛	12⅛	13⅛	14⅝	16⅜	18⅛	21⅝	25⅛	28⅝	33⅝	33⅝	39⅛	39¾	43⅞	45⅞	50	56	—	—
N	165	190	220	288	350	401	504	576	650	750	890	836	1018	1053	1140	1205	1326	1575	1725
	6½	7½	8⅝	11⅜	13¾	15¾	19 27/32	22¾	25⅝	29½	35	33	40	41½	44⅞	47¼	52 5/16	62	67⅞
O	165	191	210	254	280	318	381	445	521	584	648	711	775	838	914	972	1092	1270	—
	6½	7½	8¼	10	11	12½	15	17½	20½	23	25½	28	30½	33	36	38¼	43	50	—
b	22.5	22.5	28.5	32	35	36.5	41.5	48	51	54	57.5	60.5	63.5	67	70	80	92	105	—
	⅞	1	1⅛	1¼	1⅜	1 7/16	1⅝	1⅞	2	2⅛	2¼	2⅜	2½	2⅝	2¾	3 5/32	3⅝	4⅛	—

L = Face to face dimensions, 1/16" Raised Face
L' = Face to face dimensions. Ring Joint

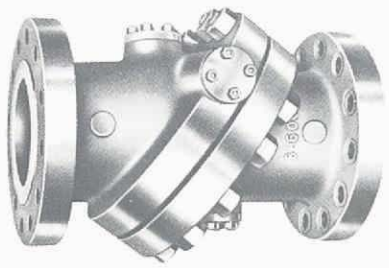
SIZES 2½" and 5" are not normally within our product range, but can be supplied on request
SIZES 28", 32", 34", 38", 42" on application

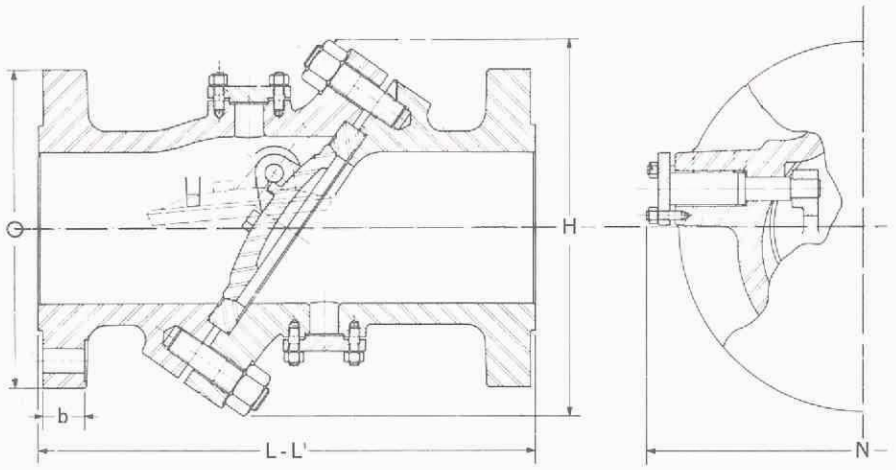
Tilting disc check valves

Fig. No. 30141

Class 600

Hydraulic test pressure:
Body: 2175 psig. (152.9 kg/cm²)
Seats: 1440 psig. (101.2 kg/cm²)





OVERALL DIMENSIONS (mm. & in.)

Nom. Size	50	65	80	100	125	150	200	250	300	350	400	450	500	600	750	800	900	1000
	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	32"	36"	40"
H	199	230	257	314	365	374	473	550	628	690	755	824	884	1005	1365	1365	1540	1575
	7⅞	9 1/16	10⅛	12⅜	14⅜	14¾	18⅝	21 11/16	24¾	27	29 3/4	32 7/16	34 1/4	39 5/16	53¾	55½	60⅝	62
L	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	1651	1651	1803	2032
	11½	13	14	17	20	22	26	31	33	35	39	43	47	55	65	65	71	80
L¹	295	333	359	435	511	562	664	791	841	892	994	1095	1200	1407	1664	1664	—	—
	11⅝	13⅛	14⅛	17⅛	20⅛	22⅛	26⅛	31⅛	33⅛	35⅛	39⅛	43⅛	47¼	55⅜	65½	65½	—	—
N	214	240	274	364	410	466	534	640	716	810	885	932	958	1105	1454	1454	1598	1740
	8 7/16	9 7/16	10 13/16	14 5/16	16⅛	18 11/32	21	25	28 3/16	31 3/4	34 3/4	36 11/16	37 3/4	43½	57¼	57¼	62 15/16	68½
O	165	191	210	273	330	356	419	508	559	604	686	743	813	940	1130	1194	1315	—
	6½	7½	8¼	10¾	13	14	16½	20	22	23¾	27	29¼	32	37	44½	47	51¾	—
b	25.5	28.5	32	38.5	44.5	48	55.5	63.5	67	70	76.5	82.5	89	102	114.5	117.5	124	—
	1	1⅛	1¼	1½	1¾	1⅞	2 3/16	2½	2⅝	2¾	3	3¼	3½	4	4½	4⅝	4⅞	—

L = Face to face dimensions, 1/16" Raised Face
L¹ = Face to face dimensions, Ring Joint

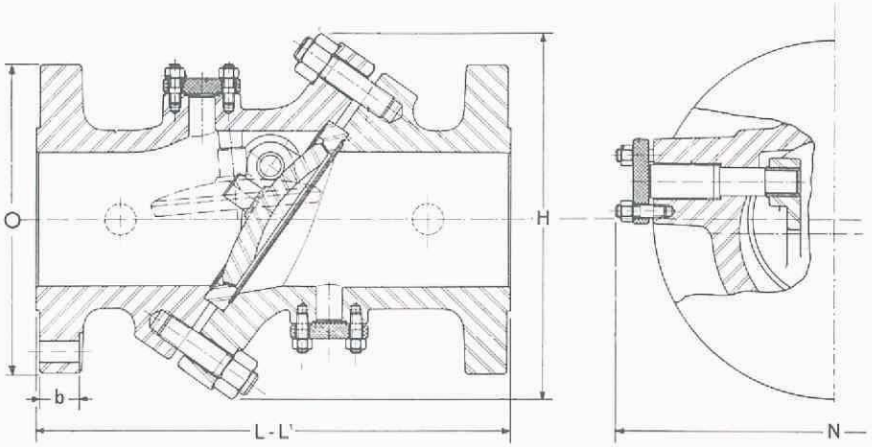
SIZES 2½" and 5" are not normally within our product range, but can be supplied on request
SIZES 22", 26", 28", 34", 38", 48" on application

Tilting disc check valves

Fig. No. 30151

Class 900

Hydraulic test pressure:
Body: 3250 psig. (228.5 kg/cm²)
Seats: 2160 psig. (151.9/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	50	65	80	100	125	150	200	250	300	350	400	450	500	600	750	800	900
	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	32"	36"
H	Use 1500 lb dimensions in these sizes		310	370	407	458	570	648	700	775	853	928	1007	1160	1388	1474	1612
			12¼	14⅝	16	18	22½	25 1/2	27 5/8	30½	33½	36½	39⅜	45 1/16	54⅝	58	63½
L			381	457	559	610	737	838	965	1029	1130	1219	1321	1549	1804	1804	2032
			15	18	22	24	29	33	38	40½	44½	48	52	61	71	71	80
L¹			384	460	562	613	740	841	968	1038	1140	1232	1334	1568	—	—	—
			15⅛	18⅛	22⅛	24⅛	29⅛	33⅛	38⅛	40⅞	44⅞	48½	52½	61¾	—	—	—
N			345	420	540	540	670	765	860	938	1015	1095	1174	1328	1553	1580	1783
			13⅝	16½	24¼	21¼	26⅜	30	33 7/8	37	40	43⅛	46¼	52 5/16	61⅛	62 7/32	70 5/16
O			241	292	349	381	470	546	610	642	705	788	857	1041	1232	1315	1460
			9½	11½	13¾	15	18½	21½	24	25¼	27¾	31	33¾	41	48½	51¾	57½
b			38.5	44.5	51	55.5	63.5	70	79.5	86	89	102	108	140	149	159	171.5
			1½	1¾	2	2 5/16	2½	2¾	3⅛	3⅜	3½	4	4¼	5 1/16	5⅞	6¼	6¾

L = Face to face dimensions, 1/16" Raised Face
L¹ = Face to face dimensions, Ring Joint

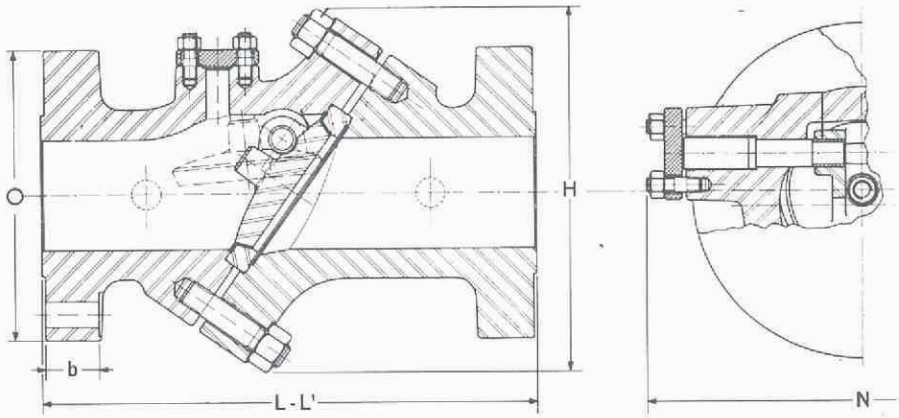
SIZES 2½" and 5" are not normally within our product range, but can be supplied on request
SIZES 22", 26", 28", 34" on application

Tilting disc check valves

Fig. No. 30161

Class 1500

Hydraulic test pressure:
Body 5400 psig. (379.7 kg/cm²)
Seats: 3600 psig. (253.- kg/cm²)



OVERALL DIMENSIONS (mm. & in.)

Nom. Size	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
H	210	265	330	400	435	485	585	732	900	985	1125	1265	1415	1432
	8¼	10 7/16	13	15¾	17⅛	19	23	28 13/16	35 11/16	38 25/32	44 5/16	49 13/16	55 23/32	56⅜
L	368	419	470	546	673	705	832	991	1130	1257	1384	1537	1664	1943
	14½	16½	18½	21½	26½	27¾	32¾	39	44½	49½	54½	60½	65½	76½
L¹	371	422	473	549	676	711	841	1000	1146	1276	1407	1559	1686	1972
	14⅝	16⅝	18⅝	21⅝	26⅝	28	33⅛	39⅜	45⅛	50¼	55⅜	61⅜	66⅜	77⅝
N	240	295	460	406	483	620	710	860	1050	1155	1320	1490	1665	1428
	9 7/16	11 5/8	18	16	19	24 1/2	27 15/16	33 7/8	41 3/8	45 25/32	52	58 3/4	65 1/2	56 7/32
O	216	245	267	311	375	394	483	584	673	749	825	914	984	1168
	8½	9⅝	10½	12¼	14¾	15½	19	23	26½	29½	32½	36	38¾	46
b	38.5	41.5	48	54	73	82.5	92	108	124	133.5	146	162	178	203
	1½	1⅝	1⅞	2⅛	2⅞	3¼	3⅝	4¼	4⅞	5¼	5¾	6⅜	7	8

L = Face to face dimensions, 1/16" Raised Face
L¹ = Face to face dimensions, Ring Joint

SIZES 2 1/2" and 5" are not normally within our product range, but can be supplied on request

SELLA

HEAD OFFICE:

Sella spa
Via Cimarosa, 4
20144 Milano - Italy
Phone: (02) 4984750 - 463524
Telex: 37680

WORKS:

- CORSICO (Milano)
- MOZZATE (Varese)
- PALAZZOLO (Milano)

NORTH AMERICAN SALES AND DISTRIBUTION CENTRE:

Sella Valve Corporation
4460 West 12th street
Houston Texas 77055
Phone (713) 688.9446
Telex: 910.8815460

SELLA REPRESENTATIVES ABROAD

Area representative

Bahrain
YUSUF BIN AHMED KANOO
Manama

Belgium
INTERNATIONAL VALVES SUPPLY (I.V.S.)
Borgerhout

East Europe
Z.R.A. KRYWALD
HATFIELD PEVERAL
Essex - U.K.

Egypt
AL SABAH COMPANY
Cairo

France
M.I.O.
Paris

Germany
ROLF GROHNE
Frankfurt

Greece
MICHAEL G. CHRYSSAFIDIS A.E.B.E.
Piraeus

Holland
TECHNISCH HANDELSKANTOOR LLOYD
Voorschoten

India
INDIA METAL (OVERSEAS) CORP
Bombay

Iran
PROMOTEC IRAN COMPANY
Teheran

Jordan
SYNCO (JORDAN SERVICES AND REPRESENTATIONS CO. LTD.)
Amman

Kuwait
ABDULAZIZ ABDULMOSHIN ALRASHED
Kuwait

Norway
NORDIC VALVES A/S
Oslo

Saudi Arabia
OILFIELD SUPPLIES & SERVICES / SAID GHODRAN
Damman

Spain
V.E.D.I.S.A.
Madrid

Sweden
DELTA PROCESS A/B
Malmö

Syria
A. H. NIZAMEDDIN
Damascus

Taiwan
D. B. HANK LTD.
Taipei

Turkey
ISMAIL TINER
Ankara

U.K.
BRITISH STEAM SPECIALTIES L.T.D.
Leicester

other Amicor companies in Italy:

- **Gallieni - Viganò - Marazza**
  Town water supply valves
  Marine Oil Tankers valves
- **Usuelli**
  Air filters - Large Fans
  Mechanical Sweepers

For information, contact Sella s.p.a. head office