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Figure numbers are presented for many of our items-however we are prepared to supply based upon your own descriptions or with reference numbers from any industry catalog.

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METRIC BRONZE CHECKS

FLANGED ENDS OR WAFER TYPE

DIN or JIS SPECIFICATIONS

SIZES: 15mm to 250mm

5K JIS (Japanese) SWING CHECK F-7371

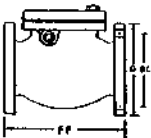
SIZE	25	32	40
FF	110	130	140
D	95	115	120
BC	75	90	95
wt(kg)	2	3	4

5K JIS (Japanese) LIFT CK F-7356, F-7415; ANGLE CK F-7416

SIZE	15	20	25	32	40
FF	55	60	120	140	160
D	100	110	95	115	120
BC	60	65	75	90	95
wt(kg)	2	2	3	4	5

PN 10/16 DIN (European) LIFT CHECK

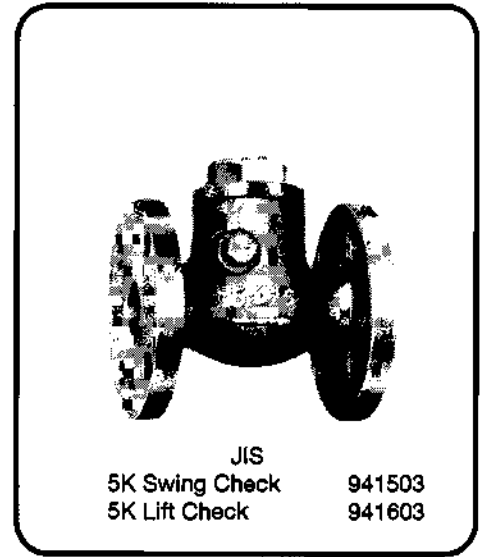
SIZE	15	20	25	32	40	50	65	80	100
FF	70	80	90	105	120	140	180	200	230
D	95	105	115	140	150	165	185	200	220
BC	65	75	85	100	110	125	145	160	180
wt(kg)	2	2	2	4	5	7	10	13	19



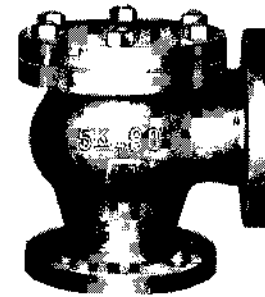
PN 10/16 DIN (European) WAFER CHECK

This thin wafer valve is designed to fit between two joining flanges. The outside diameter of the valve is dimensioned to fit inside the bolts of the joining flanges.

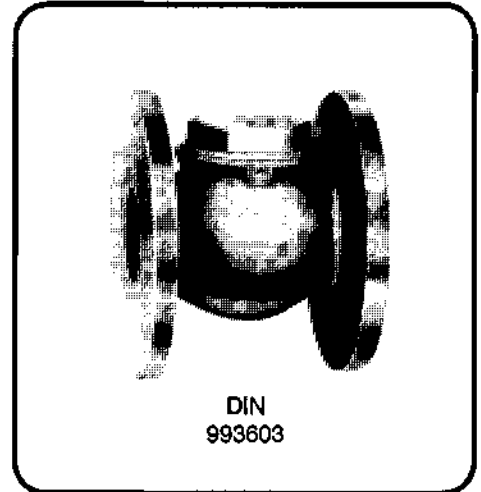
SIZE	40	50	65	80	100	125	150	200	250
Thickness	16	16	16	16	16	18	19	29	29
Diameter	94	109	129	144	164	195	221	276	330
Bore	19	30	38	48	73	96	116	143	190



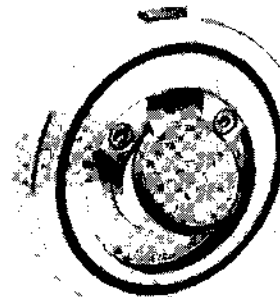
JIS
5K Swing Check 941503
5K Lift Check 941603



Angle Check
941803



DIN
993603



Wafer Check
993903

W & O SUPPLY INC

METRIC CAST IRON CHECK VALVES

FLANGED ENDS

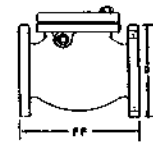
DIN or JIS SPECIFICATIONS

SIZES: 40mm to 500mm

Cast Iron body with bronze trim
Ductile (Nodular) Iron body add "DI" to figure number

PN 10/16 DIN (European) SWING CHECK

SIZE	40	50	65	80	100	125	150	200	250	300
FF	180	200	230	260	300	350	400	500	600	700
D	150	165	185	200	220	250	285	340	395	445
BC	110	125	145	160	180	210	240	295	350	400
wt(kg)	10	12	17	22	28	42	54	86	160	210



PN 10/16 DIN (European) LIFT CHECK

SIZE	15	20	25	32	40	50	65	80	100	125	150	200
FF	130	150	160	180	200	230	290	310	350	400	480	600
D	95	105	115	140	150	165	180	200	220	250	285	340
BC	65	75	85	100	110	125	145	165	180	210	240	295
wt(kg)	2	3	4	6	7	10	15	20	31	49	69	132

5K JIS (Japanese) SWING CHECK F-7372

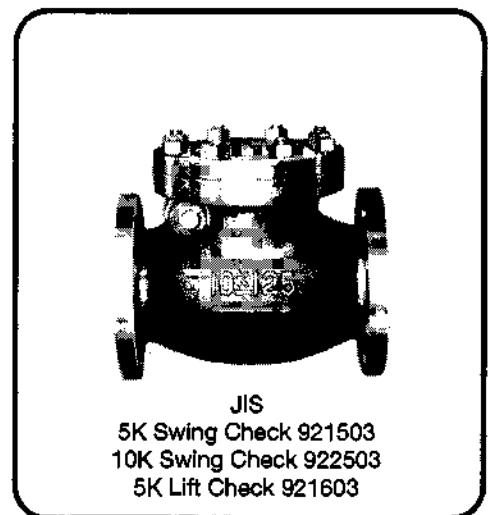
SIZE	50	65	80	100	125	150	200	250
FF	190	220	250	280	330	380	460	550
D	130	155	180	200	235	265	320	385
BC	105	130	145	165	200	230	280	345
wt(kg)	9	14	19	27	39	54	94	150

10K JIS (Japanese) SWING CHECK F-7373

SIZE	50	65	80	100	125	150	200
FF	21	240	270	300	350	400	480
D	155	175	185	210	250	280	330
BC	120	140	150	175	210	240	290
wt(kg)	14	20	23	31	49	65	103

5K JIS (Japanese) LIFT CHECK F-7358

SIZE	50	65	80	100	125	150
FF	210	250	280	340	410	480
D	130	155	180	200	235	265
BC	105	130	145	165	200	230
wt(kg)	11	17	23	33	48	68



METRIC BRONZE CHECKS

FLANGED ENDS OR WAFER TYPE

DIN or JIS SPECIFICATIONS

SIZES: 15mm to 250mm

5K JIS (Japanese) SWING CHECK F-7371

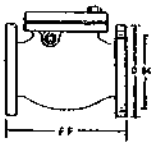
SIZE	25	32	40
FF	110	130	140
D	95	115	120
BC	75	90	95
wt(kg)	2	3	4

5K JIS (Japanese) LIFT CK F-7356, F-7415; ANGLE CK F-7416

SIZE	15	20	25	32	40
FF	55	60	120	140	160
D	100	110	95	115	120
BC	60	65	75	90	95
wt(kg)	2	2	3	4	5

PN 10/16 DIN (European) LIFT CHECK

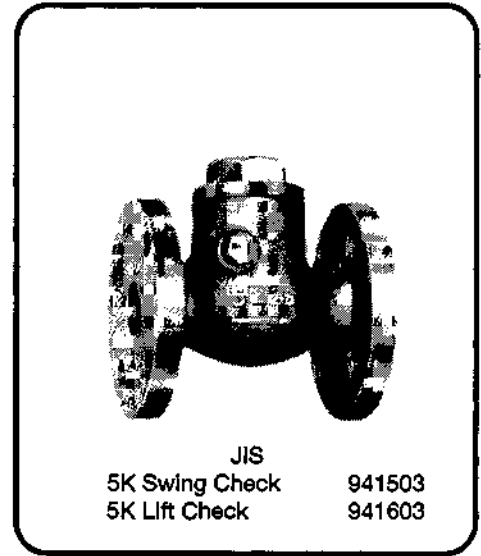
SIZE	15	20	25	32	40	50	65	80	100
FF	70	80	90	105	120	140	180	200	230
D	95	105	115	140	150	165	185	200	220
BC	65	75	85	100	110	125	145	160	180
wt(kg)	2	2	2	4	5	7	10	13	19



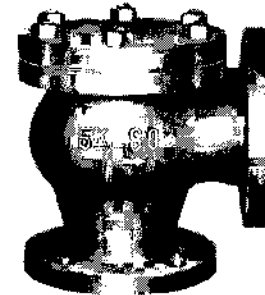
PN 10/16 DIN (European) WAFER CHECK

This thin wafer valve is designed to fit between two joining flanges. The outside diameter of the valve is dimensioned to fit inside the bolts of the joining flanges.

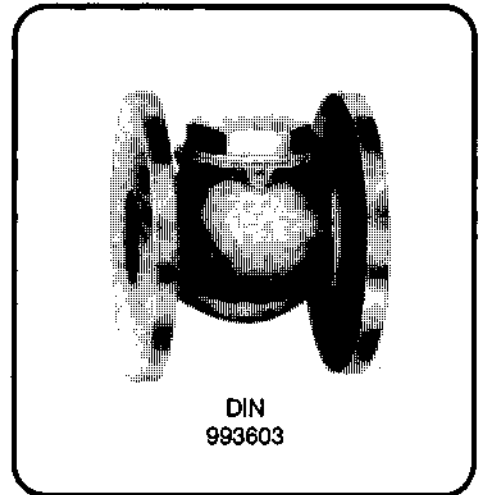
SIZE	40	50	65	80	100	125	150	200	250
Thickness	16	16	16	16	16	18	19	29	29
Diameter	94	109	129	144	164	195	221	276	330
Bore	19	30	38	48	73	96	116	143	190



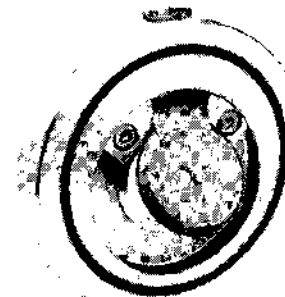
JIS
5K Swing Check 941503
5K Lift Check 941603



Angle Check
941803



DIN
993603



Wafer Check
993903

METRIC CAST STEEL CHECK VALVES

FLANGED ENDS

DIN or JIS SPECIFICATIONS

SIZES: 40mm to 500mm

PN 16 DIN (European) SWING CHECK

SIZE	40	50	65	80	100	125	150	200	250
FF	180	200	240	260	300	350	400	500	600
D	150	165	185	200	250	220	285	340	405
BC	110	125	145	160	180	210	240	295	355
wt(kg)	12	16	22	29	41	57	75	120	195

PN 40 DIN (European) LIFT CHECK

SIZE	15	20	25	32	40	50	65	80	100	125	150	200	250	300
FF	130	150	160	180	200	230	290	310	350	400	480	500	730	850
D	95	105	115	140	150	165	185	200	235	270	300	375	450	515
BC	65	75	85	100	110	125	145	160	190	220	250	320	385	450
wt(kg)	4	4	5	8	11	15	25	26	42	56	82	152	230	290

10K JIS (Japanese) SWING CHECK

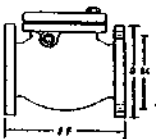
SIZE	50	65	80	100	125	150	200
FF	210	240	270	300	350	400	480
D	155	175	185	210	250	280	330
BC	120	140	150	175	210	240	290
wt(kg)	14	20	23	31	49	65	103

10K JIS (Japanese) LIFT CHECK

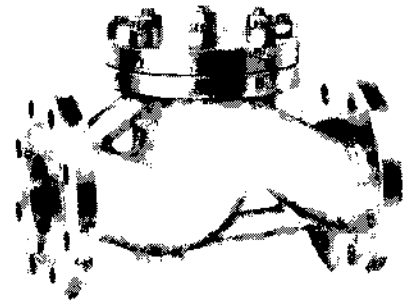
SIZE	50	65	80	100	125	150	200
FF	220	270	300	350	420	490	570
D	155	175	185	210	250	280	330
BC	120	140	150	175	210	240	290
wt(kg)	15	25	30	40	60	80	120

PN 10/16 DIN (European) WAFER SWING CHECK

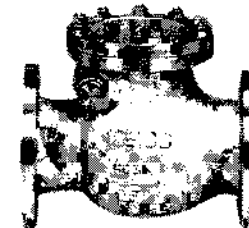
SIZE	50	65	80	100	125	150	200	250
Thickness	19	19	19	19	19	19	29	29
Diameter	109	129	144	164	195	221	276	330
Bore	26	38	47	70	92	114	143	190



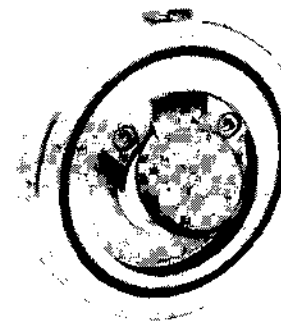
DIN
PN 16 Swing Check 953501
PN 40 Lift Check 953601



Lift Check



JIS
10K Swing Check 912501
10K Lift Check 912601



Steel - 953901
Stainless - 983901

W & O SUPPLY INC

VALVE DIMENSIONS: ANSI

SIZE	CAST IRON		CAST STEEL								SIZE
	125 LB FLGD	250 LB FLGD	150 LB FLGD	150 LB B/W	300 LB	400 LB	600 LB	900 LB	1500 LB	2500 LB	
ANSI GATE VALVE FACE-TO-FACE DIMENSION											
1			5	5		8-1/2	8-1/2	10	10	12-1/8	1
1-1/4			5-1/2	5-1/2		9	9	11	11	13-3/4	1-1/4
1-1/2			6-1/2	6-1/2	7-1/2	9-1/2	9-1/2	12	12	15-1/8	1-1/2
2	7	8 1/2	7	8-1/2	8-1/2	11-1/2	11-1/2	14-1/2	14-1/2	17-3/4	2
2-1/2	7-1/2	9-1/2	7-1/2	9-1/2	9-1/2	13	13	16-1/2	16-1/2	20	2-1/2
3	8	11-1/8	8	11-1/8	11-1/8	14	14	15	18-1/2	22-3/4	3
3-1/2	8-1/2	11-7/8	8-1/2		11-7/8	15	15	17	19-1/2		3-1/2
4	9	12	9	12	12	16	17	18	21-1/2	26-1/2	4
5	10	15	10	15	15	18	20	22	26-1/2	31-1/4	5
6	10-1/2	15-7/8	10-1/2	15-7/8	15-7/8	19-1/2	22	24	27-3/4	36	6
8	11-1/2	16-1/2	11-1/2	16-1/2	16-1/2	23-1/2	26	29	32-3/4	40-1/4	8
10	13	18	13	18	18	26-1/2	31	33	39	50	10
12	14	19-3/4	14	19-3/4	19-3/4	30	33	38	44-1/2	56	12
14	15	22-1/2	15	22-1/2	30	32-1/2	36	40-1/2	49-1/2		14
16	16	24	16	24	33	35-1/2	39	44-1/2	54-1/2		16
18	17	26	17	26	36	38-1/2	43	48	60-1/2		18
20	18	28	18	28	39	41-1/2	47	52	65-1/2		20
24	20	31	20	32	45	48-1/2	55	61	76-1/2		24
GLOBE, SWING CHECK*, ANGLE** VALVES FACE-TO-FACE DIMENSIONS											
1			5**	5**	8*	8-1/2	8-1/2	10	10	12-1/8	1
1-1/4			5-1/2**	5-1/2**	8-1/2*	9	9	11	11	13-3/4	1-1/4
1-1/2			6-1/2	6-1/2	9*	9-1/2	9-1/2	12	12	15-1/8	1-1/2
2	8	10-1/2	8	8	10-1/2	11-1/2	11-1/2	14-1/2	14-1/2	17-3/4	2
2-1/2	8-1/2	11-1/2	8-1/2	8-1/2	11-1/2	13	13	16-1/2	16-1/2	20	2-1/2
3	9-1/2	12-1/2	9-1/2	9-1/2	12-1/2	14	14	15	18-1/2	22-3/4	3
3-1/2	10-1/2	13-1/4	10-1/2	10-1/2	13-1/4	15	15	17	19-1/2		3-1/2
4	11-1/2	14	11-1/2	11-1/2	14	16	17	18	21-1/2	26-1/2	4
5	13	15-3/4	14*	14*	15-3/4	18	20	22	26-1/2	31-1/4	5
6	14	17-1/2	16*	16*	17-1/2	19-1/2	22	24	27-3/4	36	6
8	19-1/2	21	19-1/2	19-1/2	22*	23-1/2	26	29	32-3/4	40-1/4	8
10	24-1/2	24-1/2	24-1/2	24-1/2	24-1/2	26-1/2	31	33	39	50	10
12	27-1/2	28	27-1/2	27-1/2	28	30	33	38	44-1/2	56	12

* Swing check F-F equals globe valve except 5" & 6" 150 LB @ 13" & 14" and 1", 1 1/4", 1 1/2", 8" 300 LB @ 8 1/2", 9", 9 1/2", 21" respectively.
 ** Angle valve centerline-to-face is 1/2 of globe F-F except 1" & 1 1/4" 150 LB which are 2 3/4" & 3" C-F length

ABBREVIATIONS

MATERIALS

AI	all iron
BR, BRZ	bronze
BT	bronze trim
CI	cast iron
CR	chromium
CR 13	type 410 stainless steel, 13% CR
CS	cast steel
CUNI	coppernickel (90/10 & 70/30)
DI	ductile iron
EPT	ethylene propylene ter polymer
FS	forged steel
HF	stellite face (hard face)
IBBM	iron body bronze mounted (trim)
M	monel metal
MO	molybdenum
MI	malleable iron
MT	monel trim
NBR	buna-n rubber
NICU	nickel copper alloy (monel)
SS	stainless steel
TEF, TFE, T	teflon
UT	universal trim (CR-13)
18-8S	type 304 stainless steel
18-8S,MO	type 316 stainless steel

RATINGS

CWP	cold working pressure
S, SP	steam, steam pressure
WSP	working steam pressure
WP	working pressure
WOG, OWG	water oil gas pressure

SOCIETIES

ABS	American Bureau of Shipping
AISI	American Iron & Steel Institute
API	American Petroleum Institute
ASA	American Standards Association
ANSI	American National Standards Institute
ASME	Am. Society of Mechanical Engineers
ASTM	Am. Society for Testing & Materials
AWWA	American Water Works Associaton
BS	British Standard
DIN	Deutscher Industrial Norm
ISO	International Standards Organization
JIS	Japanese Industrial Standard
Mil-Spec	Military Standards
MSS	Manufacturers Standardization Society
SAE	Society of Automotive Engineers

STEM DESIGN

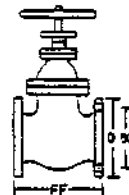
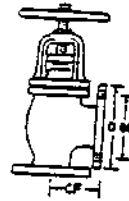
NRS	non-rising stem
OS&Y, OSY	outside screw and yoke, rising stem
RS	rising stem

BONNET DESIGN

BB	bolted bonnet
SB, TB	screwed, threaded bonnet
UB	union bonnet
WB	welded bonnet

END CONNECTIONS

BW, BWE	buttweld ends
FE, FLG	flanged ends
FF	flat face
FFD	flanged, faced and drilled
RF	raised face
SW, SWE	socketweld ends
SCR, SCRD, SE	screwed ends
SB, S/B	silbrazed
SJ	solder joint (tube size)
WS	walseal, face-fed



MEASUREMENTS

BC, BCD	bolt circle diameter, pitch
BHN	brinell hardness number
C-F	center to face
F-F	face to face, building length
IPS	iron pipe size
KG	kilogram
M	meter
MM	millimeter
NPS	nominal (name) pipe size
PCD	pitch circle or bolt circle diameter
SCH	schedule
SMLS	seamless
STD	standard, Sch 40 (through 10" IPS)
XH, XS	extra heavy, Sch 80 (through 8" IPS)
XXH, XXS	double extra/heavy

THREADS

BSP, BSPT	British Standard Thread (tapered)
BSPP	British Standard Thread (parallel)
IPT, TIPT	iron pipe thread, tapered IPT
SIPT	straight iron pipe thread
NH, NST	National Hose, Standard (Hose) Thread
NPSH	National Pipe Straight Hose (SIPT)
NPT	National Pipe Thread

VALVE TRIM

CR 13/HF (Type 410), UT: 13% chromium stainless steel stem, disc faces with hard faced (stellite) seat faces. Recommended for oil and oil vapor services. Also used for steam, water, air and gas services in globe, angle and swing check valves, for temperatures to 950°F.

Bronze stem, disc faces and seat rings. Used primarily in fresh and salt water services. ASTM B-62 bronze used for temperatures to 450°F, and ASTM B-61 bronze to 550°F.

Type 316 (18% chromium, 8% nickel with molybdenum) stainless steel stem, disc faces, and seat rings. Recommended for corrosive service.

Monel (65% Ni 35% Cu) stem, disc faces, and seat rings. Recommended for highly corrosive marine services.

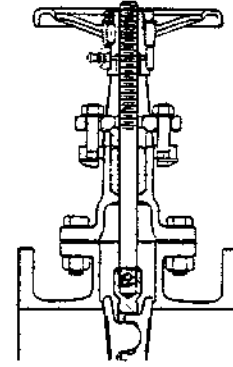
Full Stellite 13% chromium stainless steel stem with stellite hard faced seats and disc facing. Used for severe steam service.

VALVE DESIGN

BODY-BONNET CONNECTIONS

Threaded bonnets are generally applicable only for non-critical services such as plumbing and heating shutoff in low pressure lines. This design is the simplest and least expensive, but tends to distort over time making reconditioning difficult.

Critical services, involving applications which could endanger persons or property, require union bonnets, bolted bonnets, or pressure seal bonnets. The union bonnet design offers easy coupling and uncoupling, and is therefore favored where the use of soft metal or composition discs requires periodic replacement. Bolted and pressure seal designs are utilized with larger sizes and higher pressure applications.



Outside Screw and Yoke
Rising Stem

STEM CONSTRUCTION

RISING STEM - OUTSIDE SCREW AND YOKE

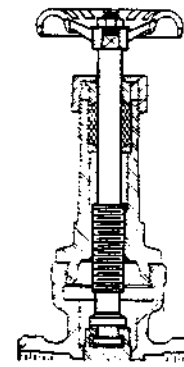
This design keeps stem threads outside the body in order to avoid the damaging effects of high temperature, corrosives, and inline solids inside the valve. When the handwheel is turned, the stem rises as the yoke bushing engages the stem threads. External threads afford easy lubrication, but care must be taken to protect threads from damage.

RISING STEM - INSIDE SCREW

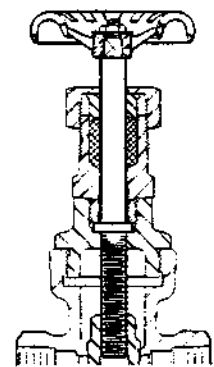
This stem design is most commonly used in bronze gate valves. Since the handwheel and stem both rise, adequate clearance for operation must be provided. The stem and handwheel position indicates the position of the disc inside the valve. Care must be taken to protect the stem externally.

NON-RISING STEM - INSIDE SCREW

This design requires minimum headroom for operation. Since the stem does not travel vertically, packing wear is reduced. Heat, corrosives, and inline solids may damage stem threads, however, and cause excessive wear. It is also impossible to visually determine the position of the disc, unless valve is fitted with an indicator device.



Inside Screw, Rising
Stem and Handwheel



Inside Screw
Non-Rising Stem

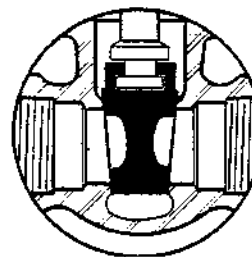
DISC CONSTRUCTION

GATE VALVES

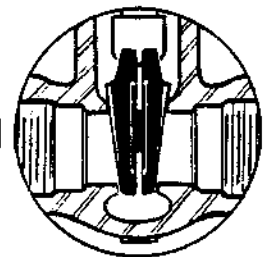
The solid wedge disc is the most widely used design in gate valve construction due to its simplicity and versatility. Gate valves with this disc may be installed in any position. The solid wedge disc is particularly suitable for steam service where a split or double disc would chatter.

Flexible discs are wedge-seated with disc faces joined at the center by a hub. This design enables the disc faces to independently compensate for variable temperatures and pressures, and allows valve operation at lower torques.

Split disc, double disc or parallel slide is especially suitable for use with non-condensing gases and liquids at normal temperatures. Disc halves are forced outward against the body seats by a disc spreader when closing the valve, but only after the disc assembly has been lowered into seating position. In opening the valve, pressure on the disc is relieved before being raised to avoid wear on body seats. Valves with this disc design are recommended for vertical installation only.



Solid Wedge



Flexible Wedge



Double Disc

VALVE DESIGN

GLOBE VALVES

Discs and seats in most globe valves can be repaired or replaced without removing the valve body from the line.

Teflon or composition discs are especially suitable for tight shutoff of gases. They are also suitable for most general services such as steam, water, and gasoline. Solid particles may be embedded in service without effecting tight shutoff. Teflon or composition discs are not recommended for severe throttling applications.

Conical discs can be reground and so are desirable for services that result in deposit build up on seating services. This design is usually found in bronze valves with bronze or other corrosion resistant seats.

Tapered plug discs have wider seating contact than the conical design, and are suitable for severe throttling applications.

The needle-type disc is used for exacting flow regulation, usually in instrumentation.

The screw down check-type disc, commonly referred to as "stop check," permits globe and angle valves to serve as check valves. In the open position, the disc slides freely on the stem, and will seat to stop or check reversal of flow.

END CONNECTIONS

THREADED

Tapped with female taper pipe threads, threaded end connections are the least expensive and lightest in weight.

SOCKETWELD

Socketweld ends are pipe size and are recommended with high temperature and pressure applications where absolutely tight, leakproof connections must be maintained over a long period.

BUTTWELD

Like socketweld the butt weld end is a leakproof connection suitable for severe and high pressure applications.

FLANGED

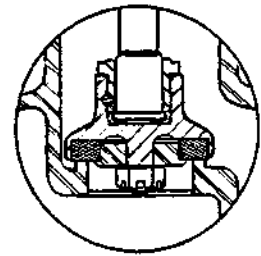
Flanged ends provide a strong, tight joint and are generally used for line sizes above 3" that must be assembled and disassembled frequently.

SOLDER

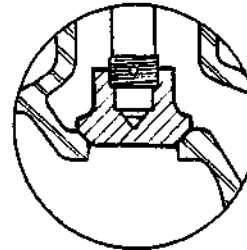
Solder ends are socket ends for tube size applications and mostly used with Types K, L, and M copper tubing for low pressure services. Maximum temperature applications may not exceed 250° F due to the low melting point of solder.

SILBRAZE

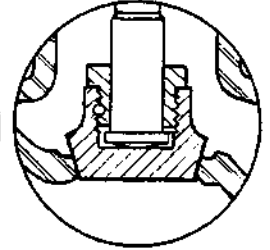
Silbrazed ends are used with IPS sized copper or coppernickel pipe. The brazed silver solder joint is superior to a standard soldered joint, having higher pressure and temperature holding properties.



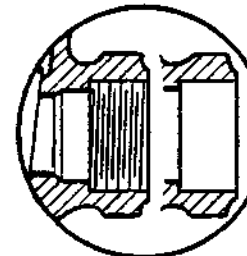
Teflon / Composition Disc



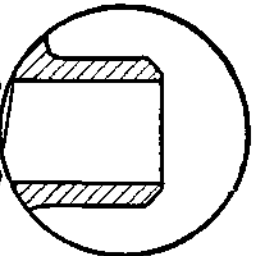
Conical Disc



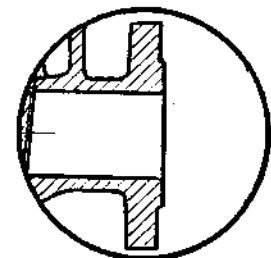
Plug Disc



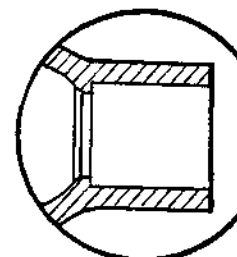
Threaded & Socketweld



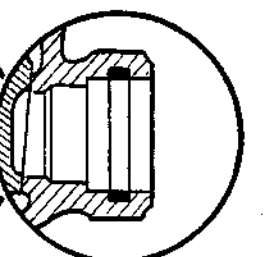
Buttweld



Flanged



Solder Joint



Silbrazed

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Figure numbers are presented for many of our items-however we are prepared to supply based upon your own descriptions or with reference numbers from any industry catalog.

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