

CONVAL THREE -WAY GLOBE VALVES

Two position three-way valves have three ports, with one arranged between the other two. The center port connects to either one of the other two ports as the valve stem is moved laterally toward it to stop in a seat. As a diverter valve, flow is directed through the center to one port or the other. It may also be used for drainage from one port through the center port until the stem is shifted, closing that port and connecting the center to the other.

Conval three-way valves are dual globe valves on a common stem, with two opposed discs. The seats are essentially back to back. Moving the stem in one direction seats one disc, while moving in the opposite direction seats the other disc into the other seat. Conval three-way valves have the distinctive leak-tight sealing capability inherent to globe valves as well as the suitability for use at high temperatures and pressures. Unlike other valves, shifting from position to position is not hindered by close fits or fouling from foreign matter.

Motor and air operators are available, as well as such accessories as position indicating switches and the like.

Drawing SP7516 depicts a typical manually operated three-way valve with position indicating switches.

INSTALLATION AND SERVICING OF THREE -WAY GLOBE VALVES

Refer to: (a) CLAMPSEAL GLOBE VALVES servicing instructions
(Servinstructions 92-01.PM4 and GlandTorqueAddendum01-95.PM5)

(b) CLAMPSEAL TOOL KIT
(MktgToolKit93-01.PM4)

The above referenced bulletins provide valuable information for globe type valves. Some accommodation is needed for use on three-way valves:

No backseating provision is provided.

Access to the lower disk and seat is gained by removal of the lower short yoke and the lower (blank) bonnet. The lower stem is fixed to the upper stem/disc assembly. Exposure of the seats and discs requires disassembly of the lower disc from the lower stem, removing the hex and jam nuts and the retaining washer holding it in place. Note- the disc fit on the lower shaft has a slight taper, easily disengaged by drawing the disc into the lower seat, rotating the stem counterclockwise in the threaded yoke bushing.

Both stems are withdrawn through the upper bonnet opening in the body.

Refacing and lapping of discs and seats requires tools not listed in the above references. Consult the Conval sales department or distributor.

Accessories such as position indicating switch components are removed as necessary to permit disassembly.

Reassembly is performed as described in ref (a) and adding the lower disk and retainer washer, screwing on the nut to press it on the taper, then adding the jam nut that prevents loosening. The lower bonnet and lower yoke are installed and locked in a manner similar to the upper, disregarding orientation.

Accessory components are then replaced, the valve operated and checked as soon as possible.

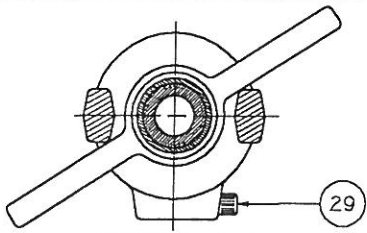
OPERATION OF THREE-WAY GLOBE VALVES

Refer to page one (1) for a description of how such valves are used.

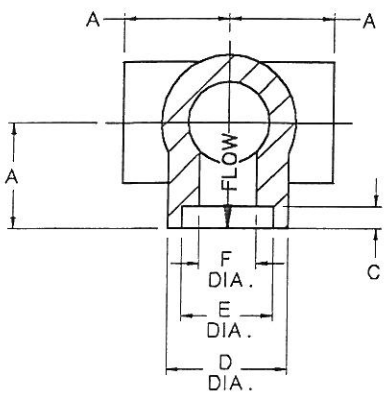
Rotating the valve stem in a clockwise direction seats the upper disc, exposing port B to the center port and closing port A.

Rotating the valve stem in a counterclockwise direction seats the lower disc, exposing port A to the center port and closing port B.

Note- when shifting from position to position, some fluid transfer is observed at the ports until seated. That condition is normal for three way-valves and is to be anticipated.

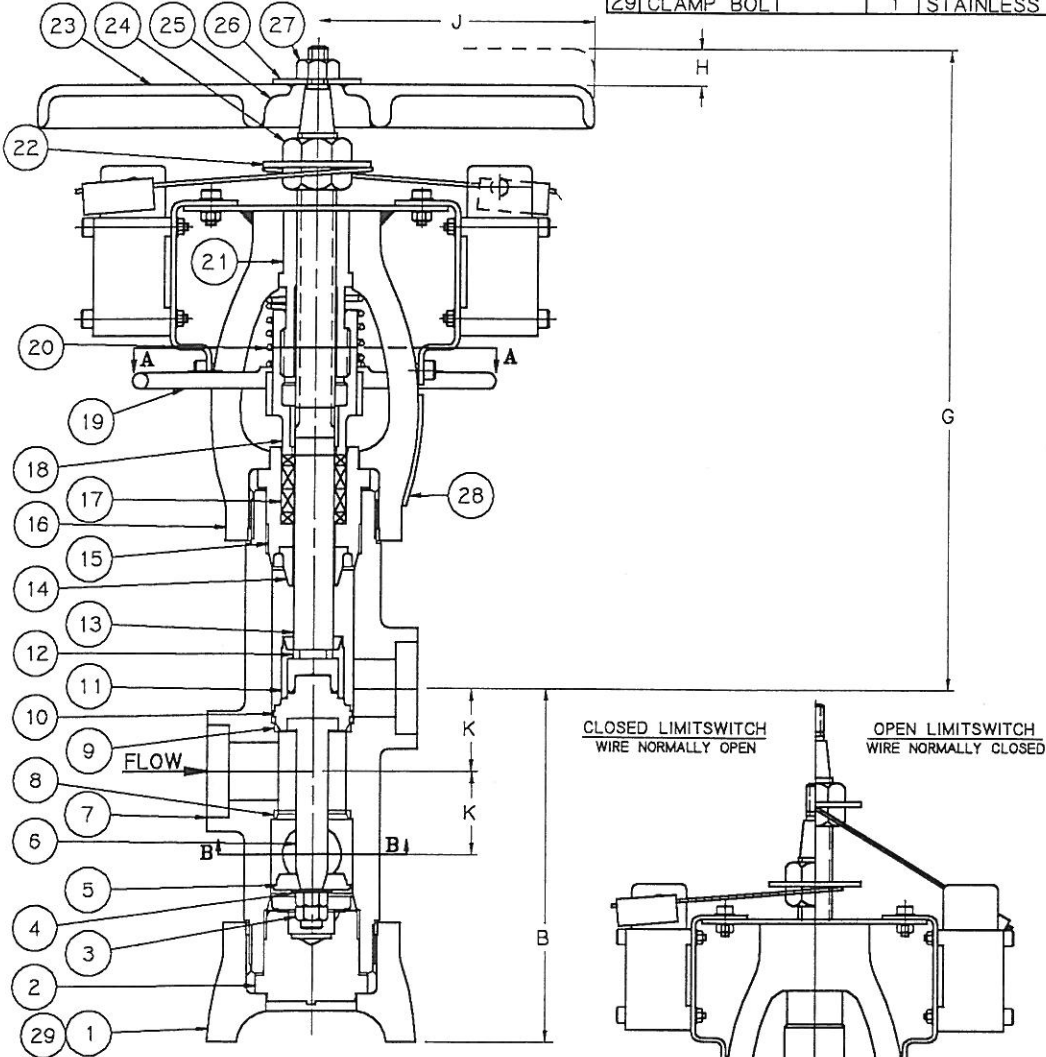


SECTION A-A



SECTION B-B

LIST OF MATERIALS				
NO.	NAME	QTY	MATERIAL	SPECIFICATION
1	YOKE, LOWER	1	FORGED CARBON STEEL	ASME SA-105
2	BONNET, LOWER	1	NITRONIC 50	ASME SA479 TYPE XM-19H
3	JAM NUT	2	STEEL	MFR. STD.
4	RETAINING WASHER	1	STEEL	MFR. STD.
5	DISC, LOWER	1	COBALT ALLOY	ASTM A732 GR. 21
6	STEM, LOWER	1	NITRONIC 60	ASME SA479 UNS S21800
7	BODY	1	FORGED CARBON STEEL	ASME SA-105
8	SEAT RING, LOWER	1	COBALT ALLOY	ASTM A732 GR. 21
9	SEAT RING, UPPER	1	COBALT ALLOY	ASTM A732 GR. 21
10	DISC, UPPER	1	COBALT ALLOY	ASME 5387A
11	RETAINER	1	STAINLESS	ASTM A582 TYPE 416
12	SPLIT RINGS	2	STAINLESS	ASME SA479 TYPE 316
13	STEM	1	STAINLESS	ASTM A582 TYPE 316
14	BACKSEAT	1	NITRONIC 60	ASME SA479 UNS S21800
15	BONNET	1	STAINLESS	ASME SA479 TYPE 410
16	YOKE, UPPER	1	FORGED CARBON STEEL	ASME SA-105
17	PACKING	2	END/WIPER RINGS	BRAIDED CARBON YARN
18	GLAND	2	DIE FORMED RINGS	FLEXIBLE GRAPHITE
19	INTEGRAL GLAND WRENCH	1	CAST	AMS 5360
20	SPRING	1	STAINLESS	MFR. STD.
21	YOKE BUSHING, UPPER	1	ALUMINUM BRONZE	ASME SB-150 UNS C64200
22	STRIKER PLATE	1	STEEL	MFR. STD.
23	HANDLE	1	MALLEABLE IRON	ASTM A47 GR. 325 10
24	CHECK NUT	2	STEEL	MFR. STD.
25	HANDLE ADAPTER	1	MALLEABLE IRON	ASTM A47 GR. 325 10
26	WASHER	1	STEEL	MFR. STD.
27	LOCKNUT	1	STEEL	MFR. STD.
28	I.D. TAG	1	STAINLESS	ASME SA240 TYPE 304
29	CLAMP BOLT	1	STAINLESS	MFR. STD.



REVISIONS		
C		
B		
A		
NO.	DESCRIPTION	DRAWN BY DATE

VALVE OUTLINE DIMENSIONS (INCHES)	A	3
	B	7 1/2
	C	5/8
	D	3 1/2
	E	2.416 2.406
	F	1 11/16
	G	17 3/4
	H	1 7/8
	J	17
	K	2 3/8

PIPE SIZE	SIZE CODE	FLOW cv	WT. LBS.
2"	9K	60	65

Conval
SOLVERS. CONNECTICUT
CLAMPSEAL
CLASS 1500 STD
FORGED CARBON STEEL

SERVICE 3705 PSI - 100 DEG F
RATING 2060 PSI - 800 DEG F

3 WAY VALVE
DRAWN BY P.E.M.
CHECK BY
APPROVED BY
2"
12Z0UJ - 105

CERTIFIED

DATE:

FILE No. SP7516

KJC OPERATING / BORON, CA.
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