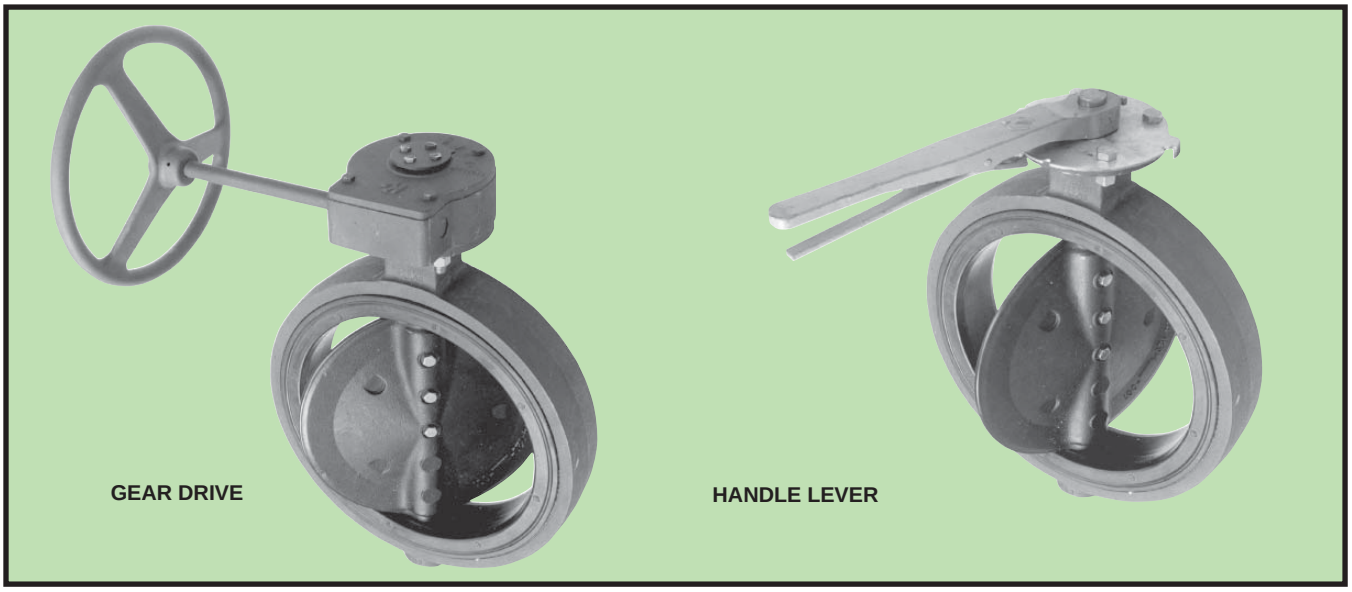
fives north american

Flow Control Business Group

RESILIENT SEAT WAFER VALVES

Bulletin 1154A

April 2000



1154A Resilient Seat Wafer Valves provide bubble tight shut off up to 150 psig (open end differential).

These valves are suitable for air, gas, and liquids that are compatible with listed materials of construction. Maximum temperature limit is 200 F.

Sizes -7 thru -10 are equipped with a locking lever handle. Sizes -12 thru -20 are equipped with a heavy duty worm gear operator. Consult North American for electric or pneumatic actuators.

FEATURES:

- Cast in top plate to accommodate actuator changeover.
- By-directional stem seal suitable for pressure or vacuum.
- Stem seal and seat provide total isolation of body and stem parts from stream.
- Seat has molded-in "O" ring seal; no need for flange gaskets.
- Seat is dove-tailed to allow simple replacement.
- Compatible with 8767A, B, C, and E Flanges. Select flange to suit service pressure. See Sheet 8767.

MATERIALS OF CONSTRUCTION:

Body: cast iron

Disk: ductile iron

Stem: phosphate coated carbon steel

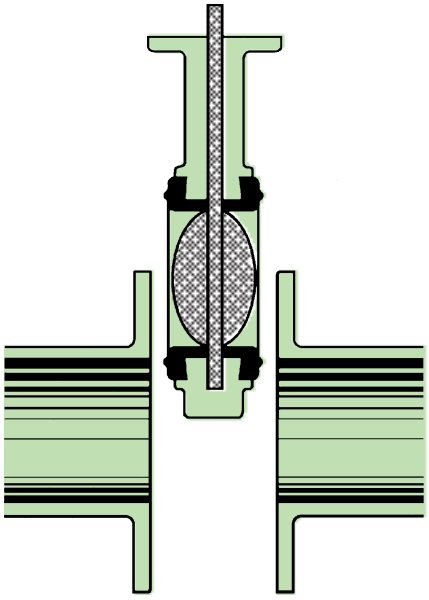
Disk screw: 316 stainless steel

Stem bushing: acetal

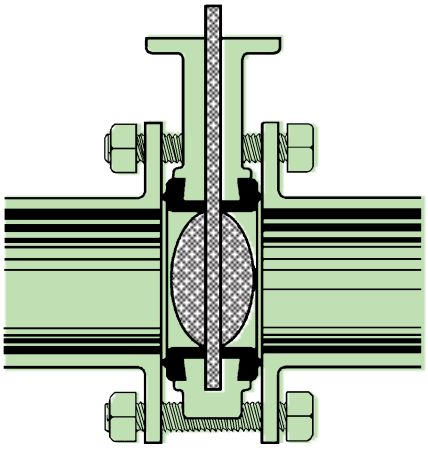
Seat, "O" ring, and Stem packing: Buna N

Valve designation	Capacities 2 psig inlet 1 osi ΔP scfh	seating and unseating Torque* 2 psi ΔP pound·inches	150 psi ΔP pound·inches
1154A-7 (4")	49 200	480	570
1154A-8 (6")	108 000	900	1 200
1154A-9 (8")	192 000	1500	2 100
1154A-10 (10")	306 000	2300	3 200
1154A-12 (12")	480 000	3100	4 600
1154A-14 (14")	540 000	4300	6 700
1154A-16 (16")	780 000	5500	9 100
1154A-18 (18")	1 080 000	6900	12 300
1154A-20 (20")	1 320 000	8500	16 000

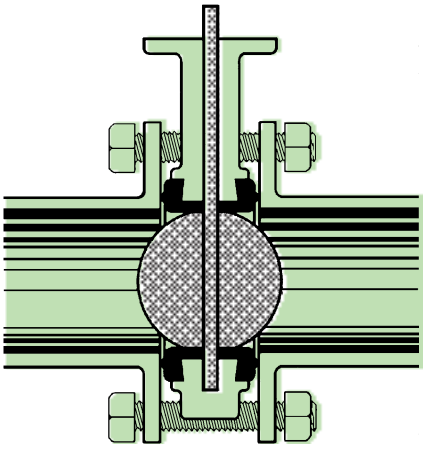
* Table lists normal condition torques. Ideal condition of clean medium and no depositing results in torque values of $^1/_2$ those shown.



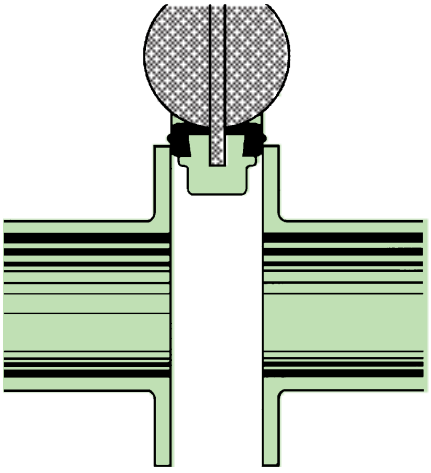
Open pipework to allow free valve entry. Rotate valve stem clockwise to position disk edge about $^{3}/_{8}$" from the outside edge of the seat (semi-closed position). This will protect disk edge, and reduce rubber interface and initial torque build-up.



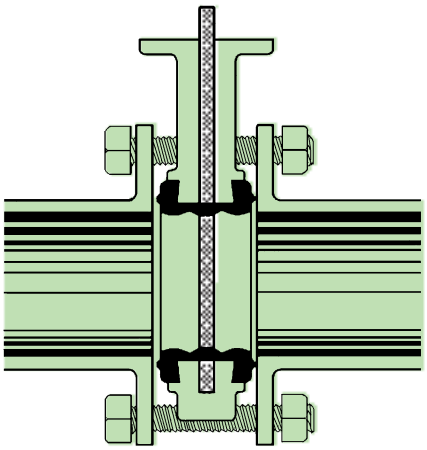
Insert the valve between the flanges and assemble the valve body to the flanges with all required flange bolts. DO NOT USE FLANGE GASKETS. 1154A Valve seat has a molded-in O-ring that effects a positive seal against standard ANSI flange faces. (N.A. style 8767A, B, C, and E.)



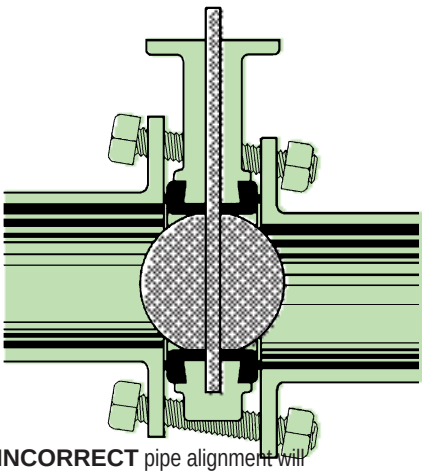
Turn the disk to full-open position. Center the valve body to the flanges, and tighten the bolts handtight. Slowly close the valve to check for adequate disk clearance. Return disk to full-open position and cross-tighten all bolts to proper torque specification.



DO NOT install valve with pipework spread insufficiently. This will damage the valve seat. Installing valve with disk in full-open position as shown, will impact flange and damage disk edge.



DO NOT install with disk in fully closed position. This will cause seat distortion. When flange bolts are tightened, rubber will close around disk edge creating excessive torque in initial operation.



INCORRECT pipe alignment will cause interference between disk edge and flange face creating leakage, excessive torque and damage to disk and seat.

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Flange and Pipe Compatibility: 1154A Valves are used between all types of ANSI 125 and 150 pound flat or raised face flanges. Flange gaskets are unnecessary as 1154A Valve seat face design eliminates the need for gaskets. Lined pipe, heavy wall pipe, or flanges must have a minimum allowable inside diameter "K" at the centered body face to clear disk sealing edge when opening valve.

Installation Information: 1154A Valves are nondirectional and will control flow equally well in either direction. For best results in dirty service, position the valve assembly to have stem in horizontal position and lower disk edge to open in downstream direction. To install valve between existing ANSI flanges, flanges must be spread sufficiently before placing valve in position to prevent distortion and/or damage to the sealing face of seat.

In new construction using ANSI welding type flanges, the following method of installation has proven beneficial. With the disk in nearly closed position, center each companion flange bore to the body face bore, span valve body with flange bolting, and make-up the bolting. Use flange-body-flange assembly for fit-up and centering to pipe. Tack weld the flanges to pipe. Remove bolting and valve assembly from between flanges. **Important: Do not finish weld the flanges to pipe with valve bolted between flanges as this will result in serious heat damage to seat.** Finish welding the flanges to pipe and allow flanges to cool completely.

Installation Instructions: Observe that the disk sealing edge is in line with keyway in stem. Rotate stem clockwise to position disk within body at least $^{3}/_{8}$" away from body face. After spreading the flanges, center valve body between flanges and span valve body with all flange bolts possible. Turn disk to full-open position. Next, maintain the valve to flange alignment while gradually removing the flange spreaders and tightening flange bolting handtight. Slowly close the valve clockwise to check for adequate disk clearance. Return the disk to the full-open position and cross-tighten all bolting to proper torque specification. Again, check for adequate disk clearance. If installation is satisfactory, valve is ready for service after installing valve operator or actuator.

Maintenance: Routine maintenance or lubrication is not required.

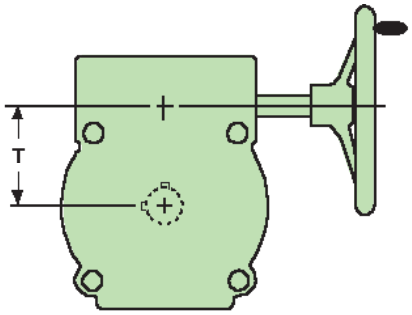
Repairs: 1154A Valves are field repairable. If in time it is necessary to replace certain parts, valve must be removed from the line. Proceed by turning disk to the nearly closed position, loosen all flange bolting, remove necessary bolting, spread the flanges if necessary, and remove valve from between flanges.

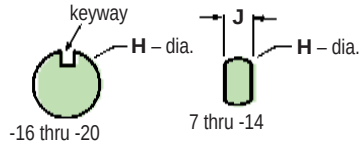
Valve Disassembly: Turn disk to the almost open position. Proceed by removing operator or actuator, disk screws with "O" rings, stem, packing and bushing. Remove disk by pulling or "rolling" the disk out of seat bore. To remove seat from body, pry under both seat edges at one point, collapse seat into the shape of a round bottom heart configuration (B), and pull the seat out of body bore. Discard parts to be replaced.

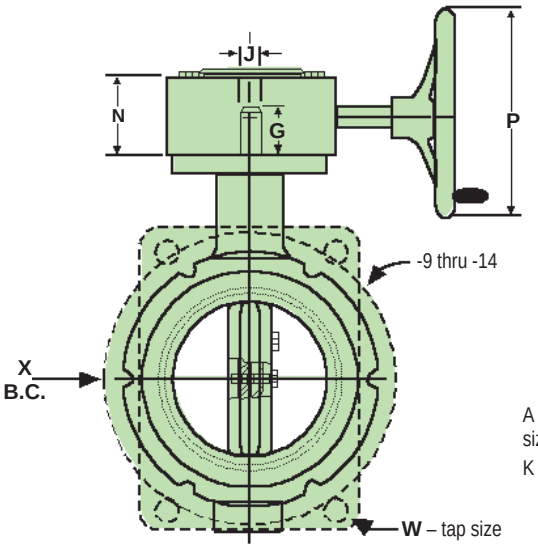
Valve Assembly: Clean all reusable parts. If possible, use Silicone base oil or lubricant to facilitate assembly. Collapse seat into the shape of a round bottom heart configuration (B), firmly place "bottom" part of seat into position taking care to align lower stem holes, snap seat into position within the body, and check all stem holes for proper alignment. Install disk with the screw holes toward body top plate and align stem holes. Install packing, bushing, and stem. Use a rotary downward pressure on stem to facilitate assembly while paying particular attention that the seat is not damaged due to any misalignment of stem holes. Align the counterdrilled portion of the stem screw holes with disk screw holes. Place "O" rings on disk screws. Install disk screws and tighten securely.

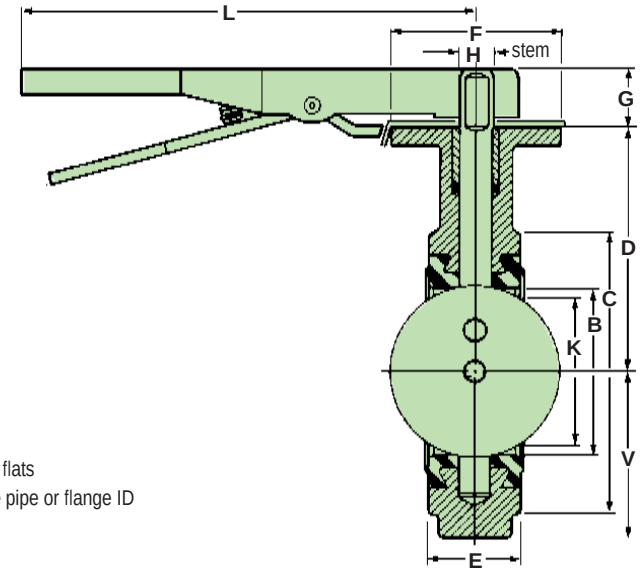
DIMENSIONS

inches









A = pipe size
sizes -7 & 8: H dia. × J flats
K = minimum allowable pipe or flange ID

Valve designation	A	B	C	D	E	F	G	H	J	K	L	N	P	T	V
1154A-7	4	4 1/8	6 7/8	7	2 1/8	4	1 1/4	5/8	7/16	3 7/8	11	–	–	–	4 13/16
1154A-8	6	6 1/8	8 3/4	7 15/16	2 1/4	4	1 1/4	5/8	7/16	6	11	–	–	–	5 7/8
1154A-9	8	8 1/8	11	9 3/16	2 1/2	–	1 5/8	3/4	15/16	8	16	–	–	–	6 15/16
1154A-10	10	10 1/8	13 3/8	10 1/2	2 13/16	–	1 5/8	7/8	1 1/8	10	16	–	–	–	8 3/8
1154A-12	12	12 1/8	16 1/8	12 1/16	3 1/8	–	–	1 1/8	1 1/4	12	–	1 5/8	10	–	9 13/16
1154A-14	14	13 1/4	17 3/4	13 1/8	3 5/8	–	–	1 3/8	1 1/2	13 1/4	–	2 1/4	16	–	10 3/8
1154A-16	16	15 1/4	20 1/4	14 1/2	4 1/8	6	–	1 1/2	1 1/2	15	–	2 7/16	16	3 1/8	12 1/8
1154A-18	18	17 1/4	21 5/8	16	4 5/8	8	–	2	2	16 7/8	–	3	16	4 5/8	13
1154A-20	20	19 1/4	23 7/8	17 1/2	5 1/8	8	–	2	2	18 3/4	–	3	16	4 5/8	15

Valve designation	W	X	wt, lb w/operator	keyway
1154A-7	5/8-11 UNC	–	15	–
1154A-8	3/4-10 UNC	–	21	–
1154A-9	3/4-10 UNC	11 3/4	34	–
1154A-10	7/8-9 UNC	14 1/4	59	–
1154A-12	7/8-9 UNC	17	94	–
1154A-14	1-8 UNC	18 3/4	147	–
1154A-16	1-8 UNC	21 1/4	218	3/8 × 3/8
1154A-18	1 1/8-7 UNC	22 3/4	297	1/2 × 3/8 Flat
1154A-20	1 1/8-7 UNC	25	390	1/2 × 3/8 Flat

DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC.
IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

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