

# Maintenance Instructions

## Installation

In vertical lines, Dia-Flo® diaphragm valves may be installed in any position. In horizontal lines, where drainability is critical, Dia-Flo® valves should be installed with the drain dot or hash mark, located on the end connection close to the body bonnet flange, at 12 O'Clock. This angle is unique to each valve size. Contact the factory if a drain dot or hash mark is not present. In horizontal lines, where drainability is a concern but not critical (typically processes other than pharmaceutical, bioprocessing, food or beverage), the valve should be positioned with the stem at 90 degrees from vertical. In all lines, the bonnet assembly should be positioned with the weep hole (a small hole in the side of the bonnet used as a diaphragm leak detection port) facing down.

## Diaphragm Replacement for Handwheel Operated Weir Valve

1. Remove pressure from line containing valve. Rotate handwheel clockwise to just close valve.
2. Remove bonnet nuts.
3. Lift off bonnet and unscrew diaphragm from compressor by turning counterclockwise.
4. Replacement diaphragm should be identical size and grade as original diaphragm. See diaphragm identification drawing below for location of size and grade marking. Thread new diaphragm into compressor handtight, then back off until bolt holes in diaphragm register with bolt holes in bonnet flange.

Note: For PTFE plastic diaphragms, remove elastomer backing cushion included with plastic diaphragm. Replace elastomer backing cushion each time the PTFE diaphragm is changed. PTFE diaphragms are molded in the closed position, but should be inverted to the open position prior to installation to ensure complete (correct) thread engagement. To invert, press with thumbs at center bottom of diaphragm while retaining with fingers at the diaphragm edge.

5. Rotate handwheel counterclockwise just enough to permit flange area of diaphragm to rest flat against flange area of bonnet.
6. Replace valve bonnet on body and tighten bonnet nuts handtight.
7. Close valve fully by rotating handwheel clockwise; then back off one half to one full turn of handwheel. Tighten bonnet nuts evenly with a wrench (per instructions below).
8. Open valve and check bonnet nuts to ensure they are evenly tightened.
9. If diaphragm leaks at body / bonnet joint after reaching temperature and pressure, depressurize system and retighten bonnet nuts.

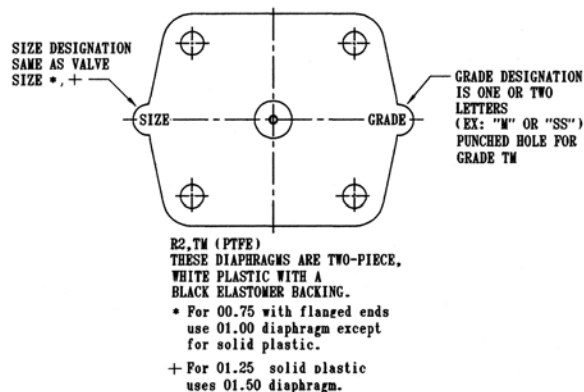
## To Tighten Bonnet Nuts

Prior to pressurization (with the valve open), tighten the bonnet nuts in a crisscross pattern in accordance with chart on next page. Retightening 24 hours after the system reaches operating temperature and pressure is recommended. If leakage occurs at the body/diaphragm seating area, immediately depressurize system and tighten bonnet nuts as noted above. If leakage continues, diaphragm replacement is required.

## Diaphragm Identification

Elastomer – 1 piece, made of rubber, with molded-in stud (see tabs).

Note: For diaphragm replacement of actuated valves, see current version of DFAMM on our web site.



# Maintenance Instructions



Handwheel Operated Weir Valve



Handwheel Operated Straightway Valve

## Diaphragm Replacement for Handwheel Operated Straightway Valve

Perform steps 1–6 as for Weir Valve.

- Open valve 2 to 3 turns and tighten bonnet nuts evenly with a wrench (see instructions below).
- If diaphragm leaks at body/bonnet joint after reaching temperature and pressure, depressurize system and retighten bonnet nuts.

### To Tighten Bonnet Nuts

Prior to pressurization (with the valve open), tighten the bonnet nuts in a crisscross pattern in accordance with Table below. Retightening 24 hours after the system reaches operating temperature and pressure is recommended.

If leakage occurs at the body/diaphragm seating area, immediately depressurize system and tighten bonnet nuts as noted above. If leakage continues, diaphragm replacement is required.

## Bonnet Fastener Torques in Inch-Pounds

Bonnett		Metal				Plastic
Body		All Weir & Straightway (Except Glass Lined Weir)		Glass Lined, Weir		All
Diaphragm		Elastomer	PTFE	Elastomer	PTFE	All
Size						
IN.	DN.					
1/2	15	40	80	40	40	18
3/4*	20	48	80	48	80	18
1	25	48	100	48	80	25
1 1/4, 1 1/2	32, 40	48	220	48	110	75
2	50	96	275	96	170	100
2 1/2	60	192	575	192	200	—
3	80	300	1000	300	300	420
4	100	192	575	192	360	180
6	150	480	1200	480	600	—
8	200	480	1200	480	600	—
10	250	480	1200	480	—	—
12	300	480	1200	480	—	—