



Type-14 Flanged Diaphragm

Standard Features (Sizes 1/2" - 2")

- Flanged (ANSI) face-to-face dimensions are equivalent to most commonly used metallic valves
- Rugged body and bonnet are of solid thermoplastic for maximum corrosion resistance
- Uniquely designed body and bonnet together with diaphragms of new sealing designs by computer dynamic analysis for superior sealing
- Weir design for excellent throttling
- Bubble-tight sealing, even in applications such as slurries or suspended particles
- Bonnet seals to protect internal from corrosive environments
- Built-in travel stop to prevent overtightening or compressive strain on diaphragm
- Integrally molded bottom stand for simple yet firm panel mounting
- Indicator at the top for indication of valve position and prevention of overtightening
- PVDF gas barrier, which protects EPDM backing from gas permeation, is standard for all valves with PTFE diaphragm
- Low profile
- Bayonet structure to connect compressor and diaphragm – Easy diaphragm replacement

Options

- 2" square nut
- Stem extensions (single and two-piece design)
- Locking device for tamper proofing
- Chainwheel operator

Specifications

Sizes: 1/2" - 4"
Body Materials: PVC, CPVC, PP and PVDF
Bonnet Materials: PVC, PP, PPG and PVDF
Diaphragms: EPDM and 3-Layer EPDM/PVDF/PTFE
 Also available in Nitrile and FKM

End Connection: Flanged
Operator: Handwheel

Parts Type-14 Flanged (Sizes 1/2" - 2")

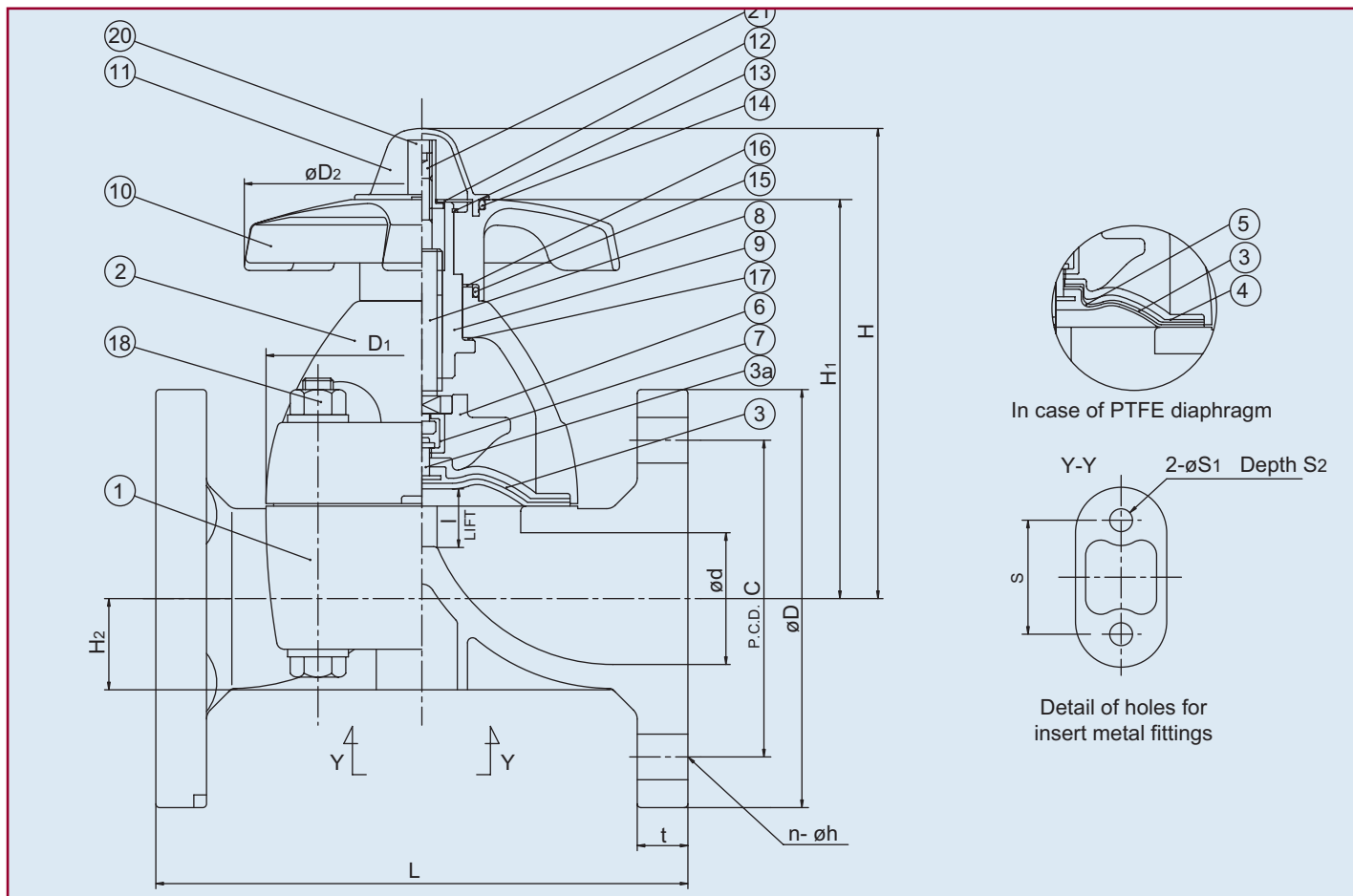
| PARTS | | | |
|-------|------------------------|--------|---------------------|
| NO. | DESCRIPTION | PCS. | MATERIAL |
| 1 | Body | 1 | PVC, CPVC, PP, PVDF |
| 2 | Bonnet | 1 | PVC, PPG, PP, PVDF |
| 3 | Diaphragm | 1 | EPDM, PTFE, Others |
| 3a | Diaphragm Metal Insert | 1 | Stainless Steel 304 |
| 4 | Cushion* | 1 | EPDM |
| 5 | PVDF Gas Barrier* | 1 | PVDF |
| 6 | Compressor | 1 | PVDF |
| 7 | Joint | 1 | Stainless Steel 304 |
| 8 | Stem | 1 | Copper Alloy |
| 9 | Sleeve | 1 | Copper Alloy |
| 10 | Hand Wheel | 1 | PP |
| 11 | Gauge Cover | 1 | PC |
| 12 | Name Plate | 1 | PVC |
| 13 | Retaining Ring C Type | 1 | Stainless Steel 304 |
| 14 | O-Ring (A) | 1 | EPDM |
| 15 | O-Ring (B) | 1 | EPDM |
| 16 | Thrust Ring (A) | 1 | UHMWPE |
| 17 | Thrust Ring (B) | 1 | UHMWPE |
| 18 | Bolt, Nut, Washer | 4 Sets | Stainless Steel 304 |
| 20 | Stopper (A) | 1 | Copper Alloy |
| 21 | Screw | 1 | Stainless Steel 304 |

* Used on PTFE diaphragm.



Type-14 Flanged

Diaphragm Valves



Dimensions Type-14 Flanged (Sizes 1/2" – 2") (in.)

| NOMINAL SIZE | | ANSI CLASS 150 | | | | | | | | | | | | | | | |
|--------------|----|----------------|------|------|---|------|-------------|------|------|------|------|------|------|------|------|------|------|
| INCHES | mm | d | C | D | n | h | D1 | D2 | l | L | t | H | H1 | H2 | S | S1 | S2 |
| 1/2 | 15 | 0.63 | 2.38 | 3.50 | 4 | 0.62 | 2.13 × 2.60 | 3.46 | 0.39 | 4.25 | 0.43 | 4.09 | 3.39 | 0.49 | 0.98 | 0.28 | 0.51 |
| 3/4 | 20 | 0.79 | 2.75 | 3.88 | 4 | 0.62 | 2.13 × 2.60 | 3.46 | 0.39 | 5.88 | 0.51 | 4.17 | 3.46 | 0.57 | 0.98 | 0.28 | 0.51 |
| 1 | 25 | 0.98 | 3.12 | 4.25 | 4 | 0.62 | 2.64 × 3.15 | 3.46 | 0.47 | 5.88 | 0.59 | 4.37 | 3.66 | 0.73 | 0.98 | 0.28 | 0.51 |
| 1-1/4 | 32 | 1.26 | 3.50 | 4.62 | 4 | 0.62 | 2.64 × 3.15 | 3.46 | 0.47 | 6.38 | 0.63 | 4.57 | 3.82 | 0.89 | 0.98 | 0.28 | 0.51 |
| 1-1/2 | 40 | 1.57 | 3.88 | 5.00 | 4 | 0.62 | 4.25 × 4.25 | 6.14 | 0.83 | 6.94 | 0.63 | 6.97 | 5.67 | 1.08 | 1.77 | 0.35 | 0.59 |
| 2 | 50 | 2.05 | 4.75 | 6.00 | 4 | 0.75 | 4.84 × 4.84 | 6.14 | 0.98 | 7.94 | 0.79 | 7.52 | 6.22 | 1.42 | 1.77 | 0.35 | 0.59 |

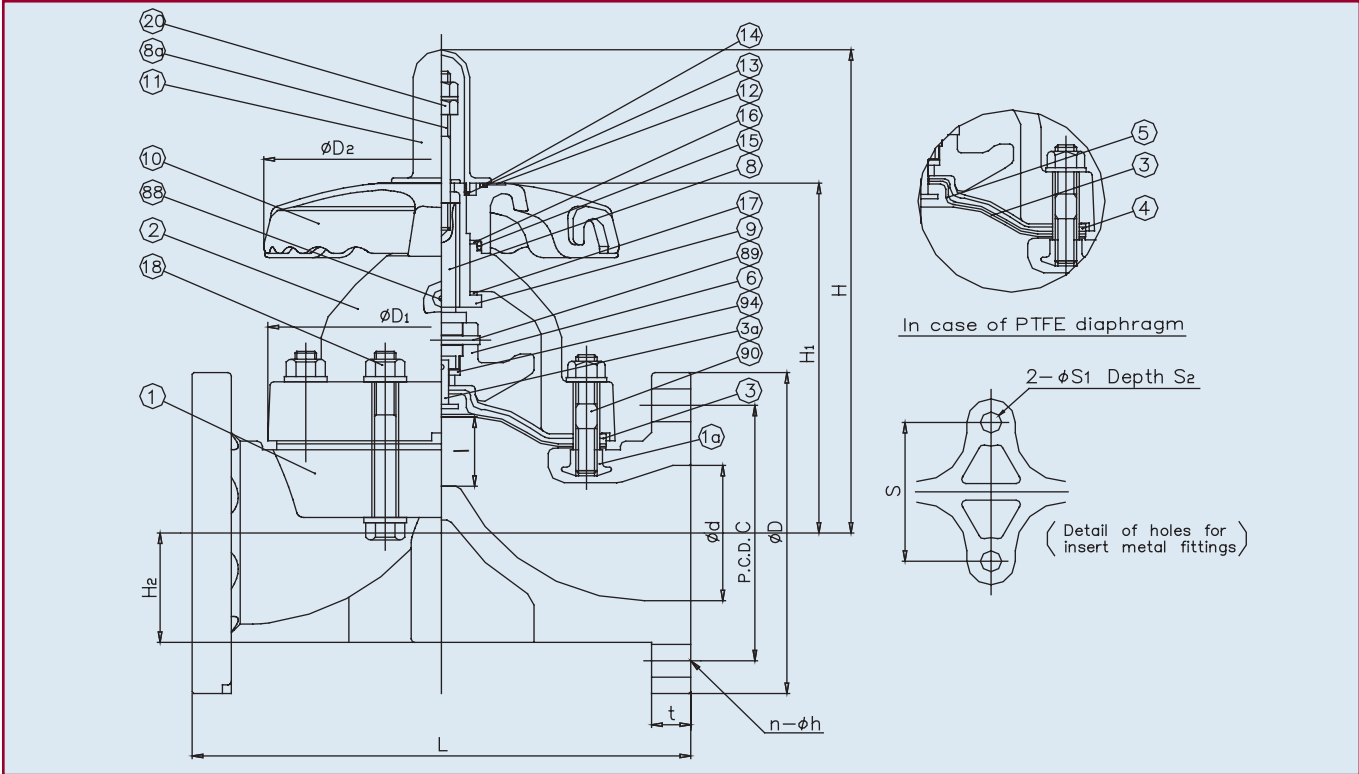
Pressure vs. Temperature psi, water, non-shock

Cv Values/Wt.

| NOMINAL SIZE | | PVC | | CPVC | | | | PP | | | | PVDF | | | | NOMINAL SIZE | | Cv | WT. FLG. (lbs) |
|--------------|----|-----------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|--------------|----|-----|----------------|
| | | ALL DIAPHRAGMS | | ALL DIAPHRAGMS | | | | ALL DIAPHRAGMS | | | | PTFE DIAPHRAGM | | | | | | | |
| | | 30° F 105° F | 106° F 140° F | 30° F 105° F | 106° F 140° F | 141° F 175° F | 176° F 195° F | - 5° F 105° F | 106° F 140° F | 141° F 175° F | 176° F 195° F | - 40° F 140° F | 141° F 175° F | 176° F 210° F | 211° F 250° F | | | | |
| INCHES | mm | INCHES | mm | INCHES | mm | INCHES | mm | INCHES | mm | INCHES | mm | INCHES | mm | INCHES | mm | | | | |
| 1/2 | 15 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 1/2 | 15 | 4.8 | 1.50 |
| 3/4 | 20 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 3/4 | 20 | 5.3 | 1.80 |
| 1 | 25 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 1 | 25 | 8.5 | 2.40 |
| 1-1/4 | 32 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 1-1/4 | 32 | 11 | 3.10 |
| 1-1/2 | 40 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 1-1/2 | 40 | 26 | 6.20 |
| 2 | 50 | 150 | 100 | 150 | 115 | 85 | 40 | 150 | 115 | 85 | 70 | 150 | 120 | 95 | 70 | 2 | 50 | 43 | 8.00 |

Type-14 Flanged

Diaphragm Valves



Dimensions Type-14 Flanged (Sizes 2-1/2" - 4") (in.)

| NOMINAL SIZE | | ANSI CLASS 150 | | | | | | | t | | | | | | | | | |
|--------------|-----|----------------|------|------|---|------|------|-------|------|-------|----------|---------|-------|------|------|------|------|------|
| INCHES | mm | d | C | D | n | h | D1 | D2 | l | L | PVC CPVC | PP PVDF | H | H1 | H2 | S | S1 | S2 |
| 2-1/2 | 65 | 2.64 | 5.50 | 7.00 | 4 | 0.75 | 6.89 | 8.66 | 1.34 | 9.84 | 0.87 | 0.91 | 10.47 | 7.40 | 2.40 | 3.35 | 0.43 | 0.79 |
| 3 | 80 | 3.07 | 6.00 | 7.50 | 4 | 0.75 | 7.91 | 8.66 | 1.65 | 10.38 | 0.87 | 0.91 | 11.02 | 7.95 | 2.48 | 3.94 | 0.59 | 1.10 |
| 4 | 100 | 3.94 | 7.50 | 9.00 | 8 | 0.75 | 9.49 | 10.12 | 1.97 | 12.94 | 0.87 | 0.94 | 12.95 | 9.49 | 3.07 | 4.72 | 0.59 | 1.10 |

Pressure vs. Temperature psi, water, non-shock

Cv Values/Wt.

| NOMINAL SIZE | | PVC | | CPVC | | | | PP | | | | PVDF | | | | NOMINAL SIZE | Cv | WT. FLG. (lbs) | |
|--------------|-----|-----------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|--------------|-----|----------------|-------|
| | | ALL DIAPHRAGMS | | ALL DIAPHRAGMS | | | | ALL DIAPHRAGMS | | | | PTFE DIAPHRAGM | | | | | | | |
| INCHES | mm | 30° F 105° F | 106° F 140° F | 30° F 105° F | 106° F 140° F | 141° F 175° F | 176° F 195° F | - 5° F 105° F | 106° F 140° F | 141° F 175° F | 176° F 195° F | - 40° F 140° F | 141° F 175° F | 176° F 210° F | 211° F 250° F | INCHES | mm | | |
| 2-1/2 | 65 | 150 | 115 | 150 | 120 | 95 | 85 | 150 | 120 | 95 | 85 | 150 | 115 | 85 | 70 | 2-1/2 | 65 | 85 | 14.33 |
| 3 | 80 | 150 | 115 | 150 | 120 | 95 | 85 | 150 | 120 | 95 | 85 | 150 | 115 | 85 | 70 | 3 | 80 | 115 | 17.64 |
| 4 | 100 | 150 | 115 | 150 | 120 | 95 | 85 | 150 | 120 | 95 | 85 | 150 | 115 | 85 | 70 | 4 | 100 | 185 | 25.80 |

Caution

- After replacing diaphragm, do not tighten bolts for bonnet and body with diaphragm in the closed position. Excessive force could damage bonnet or body.
- Full vacuum rated 1/2" through 2 - 1/2".
- Vacuum Rating

| | | |
|----|-----------------------|--------------------|
| | (1) Rubber Diaphragms | (2) PTFE Diaphragm |
| 3" | -25.59" | -9.84" |
| 4" | -19.69" | -3.94" |
- Never remove valve from pipeline under pressure.
- Always wear protective gloves and goggles.

Type 14 Flanged

Diaphragm Valves

Parts Type 14 Flanged (2-1/2" – 4")

| PARTS | | | |
|-------|------------------------|--------|----------------------------------|
| NO. | DESCRIPTION | PCS. | MATERIAL |
| 1 | Body | 1 | PVC, CPVC, PP, PVDF |
| 2 | Bonnet | 1 | PVC, PPG, PP, PVDF |
| 3 | Diaphragm | 1 | EPDM, PTFE, Others |
| 3a | Diaphragm Metal Insert | 1 | Stainless Steel 304 |
| 4 | Cushion* | 1 | EPDM |
| 5 | PVDF Gas Barrier* | 1 | PVDF |
| 6 | Compressor | 1 | PVDF |
| 8 | Stem | 1 | Copper Alloy |
| 8a | Indicating Rod | 1 | Stainless Steel 304 |
| 9 | Sleeve | 1 | Copper Alloy |
| 10 | Hand Wheel | 1 | PP |
| 11 | Gauge Cover | 1 | PC |
| 12 | Name Plate | 1 | PVC |
| 13 | Retaining Ring C Type | 1 | Stainless Steel 304 |
| 14 | O-Ring (A) | 1 | EPDM |
| 15 | O-Ring (B) | 1 | EPDM |
| 16 | Thrust Ring (A) | 1 | UHMWPE |
| 17 | Thrust Ring (B) | 1 | UHMWPE |
| 18 | Bolt, Nut, Washer | 4 Sets | Stainless Steel 304 |
| 20 | Stopper (A) | 1 | Copper Alloy |
| 88 | Grease Nipple | 1 | Copper Alloy |
| 89 | Compressor Pin | 1 | Stainless Steel 304 |
| 90 | Stud Bolt, Nut | 4 Sets | Stainless Steel 304, Others |
| 94 | Metal of Compressor | 1 | Stainless Steel 304 ¹ |
| 1a | Inserted Nut | 4 | Copper Alloy ² |

* Used on PTFE diaphragm

¹ Used for PVDF body

² Used for PVC, CPVC, PP bodies

Troubleshooting

What if fluid leaks when valve is fully closed?

1. Travel stop not set correctly. Adjust it per the Asahi Operation and Maintenance manual.
2. Solids built up inside valve. Clean inside, including weir and diaphragm.
3. Diaphragm and/or weir are worn or damaged. Change the part(s).

What if valve cannot be fully opened?

1. Diaphragm is not properly engaged with compressor. Check engagement per Operation and Maintenance manual.

What if fluid leaks to atmosphere?

1. Bonnet bolts not properly torqued. Re-torque according to Operation and Maintenance manual.
2. Line pressure exceeds maximum recommended line pressure. Check or reduce system line pressure.
3. Diaphragm has ruptured or has been chemically attacked. Replace diaphragm.

Sample Specification

All Type-14 flanged diaphragm valves shall be of solid thermoplastic construction for body and bonnet with molded flanged ends. The valves shall come standard with a position indicator, travel stop (to prevent overtightening) and bonnet O-ring sealing arrangement. The valve shall be weir type with a square bonnet body sealing design and bayonet connection diaphragm (1/2"- 2") or round bonnet body sealing design (2-1/2"- 4"). All PTFE diaphragms shall be supplied with a PVDF gas barrier between the layers of EPDM and PTFE for aggressive chemical service. The face-to-face dimensions shall conform to Type G. PVC conforming to ASTM D1784 Cell Classification 12454-A, CPVC conforming to ASTM D1784 Cell Classification 23567A, PP conforming to ASTM D4101 Cell Classification PPO210B67272, PPG (bonnet only) conforming to ASTM D4101 Cell Classification PPO110M20A21130, and PVDF conforming to ASTM D3222 Cell Classification Type II. PVC, CPVC, PP and PVDF shall be rated to 150psi for elastomeric and PTFE diaphragms at 70° F., as manufactured by Asahi/America, Inc.