

KEYSTONE

Features

- Keystone proven valve and actuator technology.
- Failsafe pneumatic interlocks.
- Fully machined 316L or 304L stainless steel body.
- Linkage driven, with only one actuator required.
- Linkage safety guard fitted as standard.
- Overlapping discs to minimize leakage cavity volume on larger sizes.
- Travel limited actuator to stop disc contact on larger sizes.
- Full range of seats materials available.
- Optional end connections.
- Full range of optional accessories.

General Applications

- CIP/Process separation.
- Non-compatible fluid separation.
- Seat integrity monitoring.

Double block and bleed style stainless steel butterfly valve sizes 1" to 6" [25 mm to 150 mm].

- **F250D for imperial tubing**
- **F251D for metric tubing**



Typical Industries

- Brewery
- Dairy
- Winery
- Food processing
- Pharmaceutical
- Chemical

Technical Data Sizes

F250D: 1" to 6" [25 mm to 150 mm]
F251D: DN25 to DN150

Maximum Product Pressure @ 20°C

1000 kPa (10 bar)

Recommended Working Pressure @ 20°C

600 kPa (6 bar)

Minimum Product Pressure @ 20°C

Full Vacuum

General Temperature Range

-10°C to 95°C

End Connections

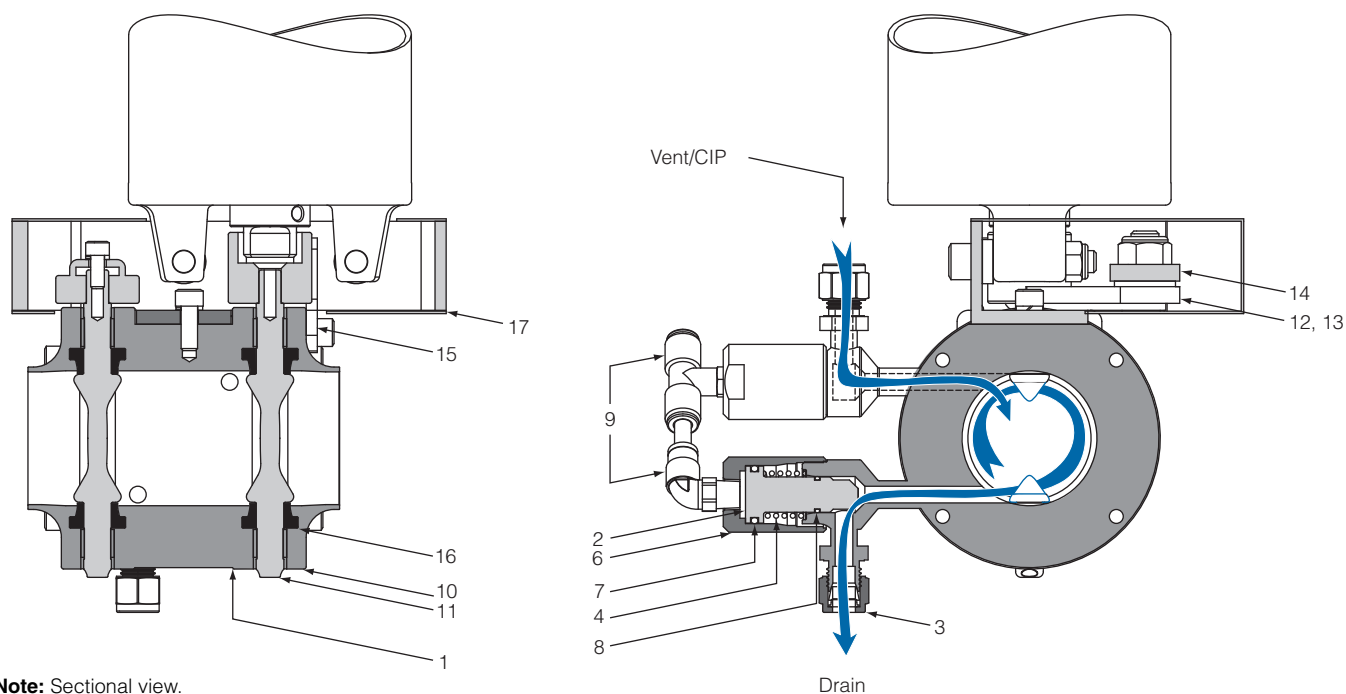
BW, Clamp, RJT, Wafer flange, others on request

Operating Principle

The Keystone F250D Double Block and Bleed Butterfly Valve consists of two sets of standard F250 Butterfly valve components arranged in series, within a single integral valve body, to provide an inline separation cavity when both valves are in the closed position. This inline separation of products is used to

isolate non-compatible fluids (i.e. CIP/product). The separation cavity has two pneumatically interlocked poppet valves, tangentially opposed to provide for the introduction and draining of CIP or flushing liquids. Their position provides for a turbulent circular washing action plus facilitates a drain to

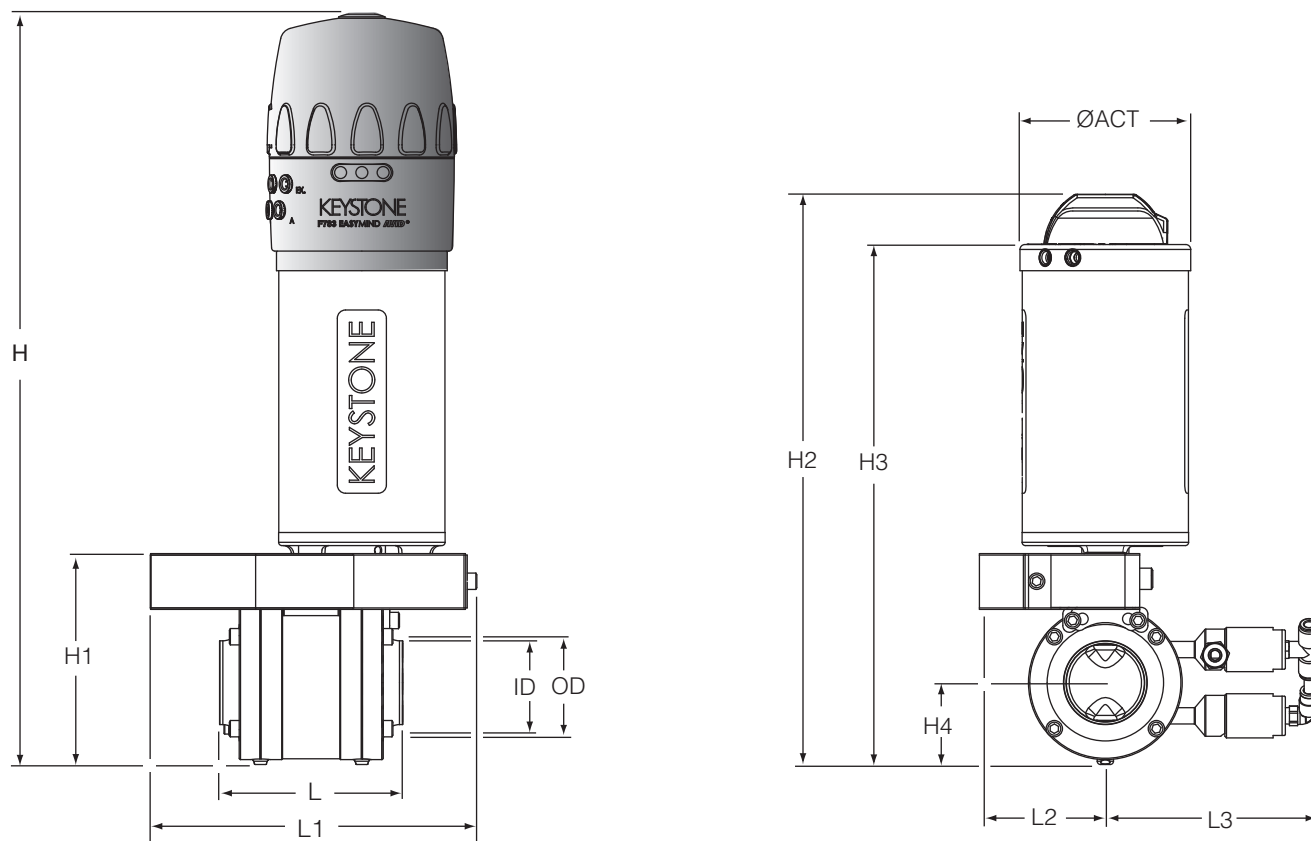
atmosphere should either of the separate valve seats fail. The valves' twin discs are connected by a linkage arrangement to the pneumatic actuator that simultaneously operates the pneumatic poppet valves.



Note: Sectional view.

Parts List

| No. | Description | Material | Standard |
|-----|--------------------|--|--------------------------|
| 1 | Body Spacer | 316L SS, 304L SS | ASTM A276 |
| 2 | CIP Piston | PTFE | Commercial |
| 3 | Nut and Ferrule | 316L SS, 304L SS | ASTM A276 |
| 4 | Spring | 302 SS | ASTM A313 |
| 5 | CIP Valve Body | 316L SS, 304L SS | ASTM A276 |
| 6 | CIP Valve Cylinder | 316L SS, 304L SS | ASTM A276 |
| 7 | O-ring | Nitrile | – |
| 8 | O-ring | Viton® | – |
| 9 | Air Fittings | NP Bronze | – |
| 10 | Valve Body | 316L SS, 304L SS | ASTM A276 |
| 11 | Disc | 316L SS | ASTM A276 |
| 12 | Arm Driven | 304 SS | ASTM A276 |
| 13 | Arm Driving | 304 SS | ASTM A276 |
| 14 | Arm Linkage | 304 SS | ASTM A276 |
| 15 | Mounting Bracket | 304 SS | ASTM A276 |
| 16 | Seat | Silicon (white) EPDM (black) Nitrile (black) Viton® (red) | FDA FDA FDA FDA |
| 17 | Guard Assembly | 304 SS | ASTM A276 |



Note:
F250D with F257 actuator and control head

F250D with F257 Actuator Dimensions [mm]

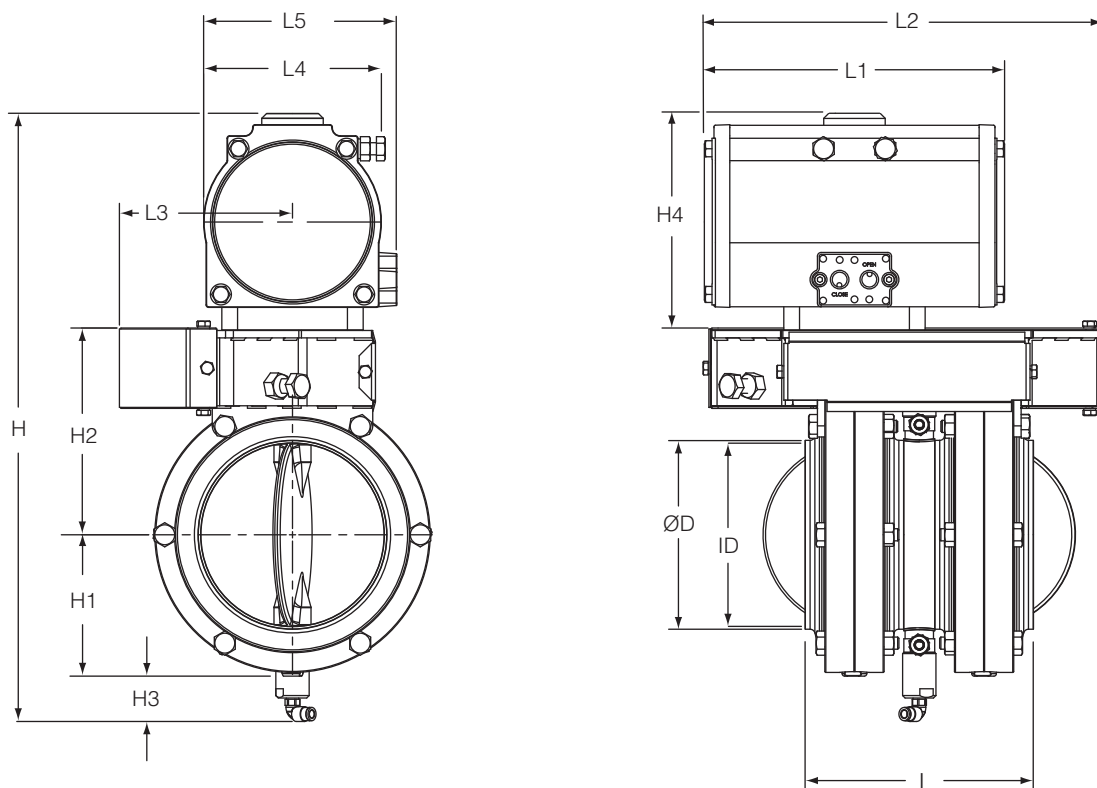
| Valve Size | L | | | L1 (Wafer) | L2 | L3 | H | H1 | H2 | H3 | H4 | OD | ID | ØACT | |
|------------|-------|---------|-------|------------|-----|----|-----|-----|-----|-----|-----|------|-------|------|-----|
| | (B/W) | (Clamp) | (BSM) | | | | | | | | | | | | |
| 25 | 112 | 142 | 142 | 150 | 200 | 77 | 124 | 434 | 104 | 324 | 293 | 34.5 | 25.8 | 22.3 | 104 |
| 40 | 112 | 142 | 142 | 150 | 200 | 77 | 126 | 444 | 114 | 334 | 303 | 39.5 | 38.5 | 35.0 | 104 |
| 50 | 112 | 142 | 142 | 150 | 200 | 77 | 131 | 459 | 129 | 349 | 318 | 47.0 | 51.2 | 47.7 | 104 |
| 65 | 112 | 142 | 162 | 150 | 200 | 77 | 134 | 468 | 138 | 358 | 327 | 52.0 | 63.9 | 60.4 | 104 |
| 80 | 125 | 145 | 157 | 165 | 232 | 98 | 143 | 591 | 178 | 493 | 462 | 62.0 | 76.6 | 73.1 | 141 |
| 100 | 135 | 157 | 169 | 175 | 232 | 98 | 149 | 618 | 205 | 520 | 489 | 75.5 | 102.0 | 98.5 | 141 |

F251D with F257 Actuator Dimensions [mm]

| Valve Size | L | | | L1 | L2 | L3 | H | H1 | H2 | H3 | H4 | OD | ID | ØACT |
|------------|-------|---------|---------|-----|----|-----|-----|-----|-----|-----|------|-------|-------|------|
| | (B/W) | (Clamp) | (Wafer) | | | | | | | | | | | |
| DN25 | 112 | 130 | 108 | 200 | 77 | 124 | 434 | 104 | 324 | 293 | 34.5 | 25.8 | 26.0 | 104 |
| DN32 | 112 | 130 | 108 | 200 | 77 | 126 | 444 | 124 | 334 | 303 | 34.5 | 35.2 | 32.0 | 104 |
| DN40 | 112 | 130 | 113 | 200 | 77 | 126 | 444 | 114 | 334 | 303 | 39.5 | 35.2 | 32.0 | 104 |
| DN50 | 112 | 130 | 113 | 200 | 77 | 131 | 459 | 129 | 349 | 318 | 47.0 | 54.5 | 50.0 | 104 |
| DN65 | 115 | 139 | 113 | 200 | 77 | 134 | 468 | 138 | 358 | 327 | 52.0 | 70.4 | 66.0 | 104 |
| DN80 | 119 | 147 | 113 | 232 | 98 | 143 | 591 | 178 | 493 | 462 | 62.0 | 85.4 | 81.0 | 141 |
| DN100 | 119 | 147 | 113 | 232 | 98 | 149 | 618 | 205 | 520 | 489 | 75.5 | 104.4 | 100.0 | 141 |

Keystone Hygienic Products – Figures 250D and 251D

Double Block and Bleed Butterfly Valves



Notes:

F250D with MRP/Premiair actuator.
F79U/E option also available.

F250D with MRP/F79U Actuator Dimensions [mm]

| Valve Size | L | | | | L1 | L2 | L3 | L4 | L5 | H | H1 | H2 | H3 | H4 | OD | ID |
|------------|-------|---------|-------|---------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-------|-----|
| | (B/W) | (Clamp) | (BSM) | (Wafer) | | | | | | | | | | | | |
| 125* | 179 | 205 | – | 153 | 242 | 325 | 140 | 144 | 155 | 469 | 99 | 155 | 35 | 282 | 132.4 | 125 |
| 125** | 179 | 205 | – | 153 | 242 | 325 | 140 | 144 | 155 | 469 | 99 | 155 | 35 | 282 | 132.4 | 125 |
| 150* | 185 | 215 | 236 | 235 | 242 | 325 | 140 | 144 | 155 | 493 | 115 | 167 | 37 | 282 | 148.4 | 153 |
| 150** | 185 | 215 | 236 | 235 | 242 | 325 | 140 | 144 | 155 | 493 | 115 | 167 | 37 | 282 | 148.4 | 153 |

F251D with MRP/F79U Actuator Dimensions [mm]

| Valve Size | L | | | | L1 | L2 | L3 | L4 | L5 | H | H1 | H2 | H3 | H4 | OD | ID |
|------------|------|---------|-------|---------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-------|-----|
| | (BW) | (Clamp) | (BSM) | (Wafer) | | | | | | | | | | | | |
| DN125* | 179 | 205 | 173 | 153 | 242 | 325 | 140 | 144 | 155 | 469 | 99 | 155 | 35 | 282 | 129.4 | 125 |
| DN125** | 179 | 205 | 173 | 153 | 242 | 325 | 140 | 144 | 155 | 469 | 99 | 155 | 35 | 282 | 129.4 | 125 |
| DN150* | 185 | 215 | 181 | 235 | 242 | 325 | 140 | 144 | 155 | 493 | 115 | 167 | 37 | 282 | 154.4 | 150 |
| DN150** | 185 | 215 | 181 | 235 | 242 | 325 | 140 | 144 | 155 | 493 | 115 | 167 | 37 | 282 | 154.4 | 150 |

Notes:

* Dims with MRP/Premiair actuators.
** Dims with F79U/E actuators.

Typical Specifying Sequence

Example:

050

F250D

255

CLP/RJT

398

Valve Size, inches [mm]

| | | |
|-----|-------|---------|
| 025 | 1" | [DN25] |
| 032 | 1.25" | [DN32] |
| 040 | 1.5" | [DN40] |
| 050 | 2" | [DN50] |
| 065 | 2.5" | [DN65] |
| 080 | 3" | [DN80] |
| 100 | 4" | [DN100] |
| 125 | 5" | [DN125] |
| 150 | 6" | [DN150] |

Figure

F250D - Double Block and Bleed for imperial tubing
F251D - Double Block and Bleed for metric tubing

| Trim | Seat | Body | Disc | Bearing |
|------|---------|------|------|---------|
| 255 | EPDM | 304 | 316 | PVDF |
| 256 | Silicon | 304 | 316 | PVDF |
| 257 | BUNA-N | 304 | 316 | PVDF |
| 258 | Viton® | 304 | 316 | PVDF |
| 259 | Viton® | 316 | 316 | PVDF |
| 262 | EPDM | 316 | 316 | PVDF |
| 263 | Silicon | 316 | 316 | PVDF |
| 264 | BUNA-N | 316 | 316 | PVDF |

End Connections

Weld Ends

BW - Butt Weld
BWD - Butt Weld DIN tube

Clamp Ends

CLP - Clamp

Thread Ends

DIN - Din Thread (fabricated)
RJT - RJT Male part
SMS - SMS Male Part, External Thread 6 TPI

Extended Definer

NB - Double Block and Bleed with no bleed
F257 - Supplied c/w F257, Drive stem and mount brackets for valve rated actuator
F79U - Supplied c/w F79U, Drive stem and mount brackets for valve rated actuator (no actuator supplied)
MRP - Supplied c/w MRP, Drive stem and mount brackets for valve rated actuator (no actuator supplied)

Keystone Hygienic Products – Figures 250D and 251D

Double Block and Bleed Butterfly Valves

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