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# TILTING DISC CHECK VALVE

## INTRODUCTION BOLTED CAP

A. **CLASS 150**

B. **CLASS 300**

C. **CLASS 600**

## PRESSURE SEAL

D. **CLASS 900**

E. **CLASS 1500**

F. **CLASS 2500**

# INTRODUCTION

Tilting Disc Check Valves consist of a cylindrical housing, with a pivoted circular disc. The pivots are located just above the center of the disc, and offset from the plane of the body seat. This design gives a bell-crank action to the disc. The seat is of circular bevel type and the disc drops in or out of contact without rubbing or sliding.

## ◆ FEATURES

- Reduced maintenance is assured because the disc is the only moving part and is designed to minimize flutter in the closed position, thus reducing wear on the pivot pin, disc, and seat.
- Loss of head is minimized by the balanced disc and its "aerofoil" design. Streamlined body without pockets contributes to straight-through flow.
- Short distance of travel, combined with a balanced disc allows rapid closure while minimizing slamming.
- Drop tight seating is accomplished over the full pressure range because a slight clearance at the pivot pin assures complete seating between the disc ring and body ring.

Slamming of check valves is the result of failure of the valve disc to reach its closed position before the fluid flow reversal. Tilting disc check valves have to close rapidly since the disc has a shorter distance to travel and therefore arrives at the seat faster...minimizing a slam.

Tilting disc check valves are used to prevent reversal of flow in horizontal or vertical pipe lines. In vertical lines, or for any angle from horizontal to vertical, they can be used for upward flow only.

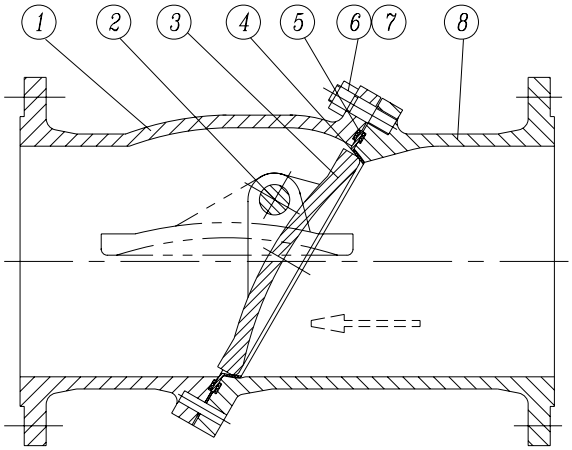
Tilting check valves are automatically actuated. They are opened by velocity pressure, and closed by gravity. Seating load and tightness is dependent on back pressure. The disc and moving parts may constantly move if the velocity pressure is not sufficient to hold the valve in a wide open and stable position. Premature wear and noisy operation or vibration of the moving parts can be avoided by selecting the size of check valve on the basis of flow conditions. Sizing swing check valves on this basis may often result in the use of valves that are smaller than the pipe in which they are used, necessitating the use of reducers for installation. The pressure drop will be no greater than that of the larger valve that is only partially open, and valve life will be greatly extended. The added bonus, of course, is the lower cost of the smaller valve.

# BOLTED CAP

## Main Parameter Specification

| | |
|---|---|
| Design and Manufacture: | API 6D, BS1868 |
| Face to Face Dimension: | API B16.10 |
| Flange Connection Dimension: | ASME B16.5, ASME B16.47 |
| Test and Inspection: | API 598, API 6D |
| Size: | 2”~24”(50mm~600mm) |
| Class: | Class 150lb ~ Class 600lb |

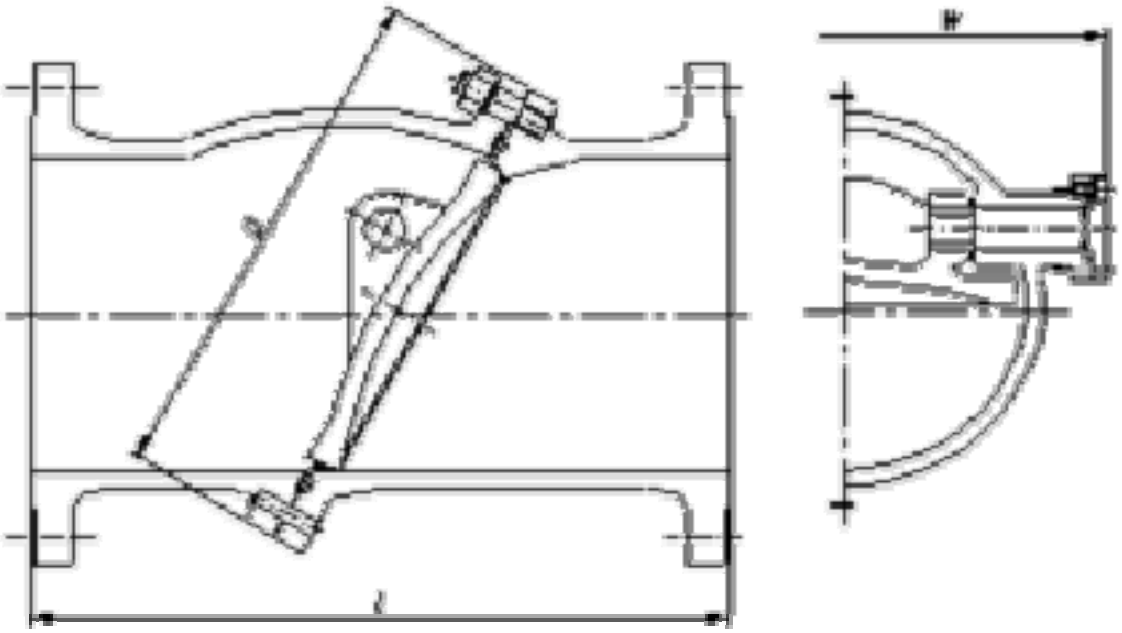
## Material




| ①L-BODY | ②HINGE PIN | ③DISC | ⑥BOLT | ⑦NUT | ⑧R-BODY |
|---|---|---|---|---|---|
| **Carbon Steel** | | | | | |
| A216 WCB | A182 F6A | A216 WCB | A193 B7 | A194 2H | A216 WCB |
| A352 LCB | A182 F6A | A352 LCB | A320 L7 | A194 4 | A352 LCB |
| **Alloy Steel** | | | | | |
| A217 WC1 | A182 F6A | A217 WC1 | A193 B7 | A194 2H | A217 WC1 |
| A217 WC6 | A182 F6A | A217 WC6 | A193 B16 | A194 4 | A217 WC6 |
| A217 WC9 | A182 F6A | A217 WC9 | A193 B16 | A194 4 | A217 WC9 |
| A217 C5 | A182 F6A | A217 C5 | A193 B16 | A194 4 | A217 C5 |
| **Stainless Steel** | | | | | |
| A351 CF8 | A182 F304 | A351 CF8 | A193 B8 | A194 8 | A351 CF8 |
| A351 CF8M | A182 F316 | A351 CF8M | A193 B8M | A194 8M | A351 CF8M |
| A315 CF3 | A182 F304L | A315 CF3 | A193 B8 | A194 8 | A315 CF3 |
| A351CF3M | A182 F316L | A351CF3M | A193 B8M | A194 8M | A351CF3M |
| ④SEAT | F6, 304, 316, MONEL or acc. to customer's requirement | | | | |
| ⑤GASKET | PTFE, RPTFE, SS+GRAPHITE or acc. to customer's requirement | | | | |

***** We can supply the products with our customer's requirement.

## Dimensions and Weights



### Class 150

| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | mm | 203 | 216 | 241 | 292 | 356 | 495 | 622 | 698 | 787 | 864 | 978 |
| D | mm | 160 | 182 | 196 | 230 | 300 | 390 | 432 | 510 | 540 | 635 | 700 |
| W | mm | 178 | 198 | 224 | 252 | 326 | 426 | 456 | 530 | 576 | 670 | 740 |
| WT | kg | 11 | 16 | 22 | 34 | 62 | 112 | 169 | 238 | 337 | 420 | 550 |

### Class 300

| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | mm | 267 | 292 | 318 | 356 | 444 | 533 | 622 | 711 | 838 | 864 | 978 |
| D | mm | 170 | 196 | 214 | 245 | 320 | 400 | 460 | 540 | 580 | 660 | 725 |
| W | mm | 198 | 220 | 232 | 268 | 360 | 426 | 457 | 572 | 620 | 690 | 760 |
| WT | kg | 17 | 22 | 32 | 97 | 110 | 162 | 228 | 380 | 443 | 530 | 780 |

### Class 600

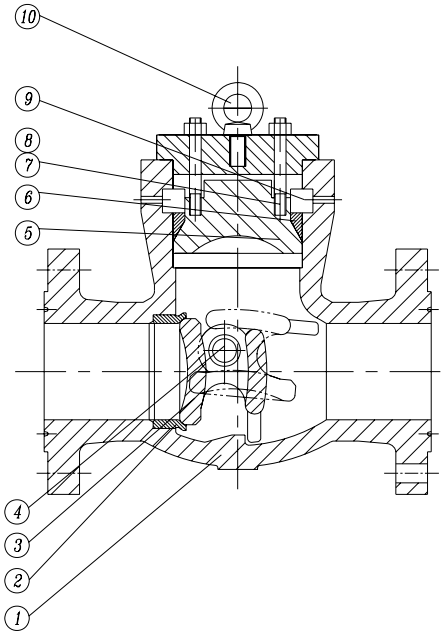
| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | mm | 292 | 330 | 356 | 432 | 559 | 660 | 787 | 838 | 889 | 991 | 1092 |
| D | mm | 185 | 196 | 210 | 270 | 340 | 440 | 520 | 570 | 610 | 690 | 755 |
| W | mm | 212 | 225 | 240 | 298 | 405 | 460 | 492 | 602 | 650 | 710 | 780 |
| WT | kg | 27 | 44 | 47 | 115 | 190 | 320 | 430 | 586 | 750 | 1015 | 1480 |

# PRESSURE SEAL

## Main Parameter Specification

| | |
|---|---|
| Design and Manufacture: | API B16.34 |
| Face to Face Dimension: | API B16.10 |
| Flange Connection Dimension: | ASME B16.5, ASME B16.47 |
| BW Connection Dimension: | ASME B16.25 |
| Test and Inspection: | API 598, API 6D |
| Size: | 2”~18”(50mm~450mm) |
| Class: | Class 900lb ~ Class 2500lb |

## Material




| | CS | Alloy Steel | | | Stainless Steel | |
|---|---|---|---|---|---|---|
| ① BODY | A216 WCB | A217 WC6 | A217 WC9 | A217 C5 | A351 CF8 | A351 CF8M |
| ② SEAT | F6, 304, 316, MONEL or acc. to customer's requirement | | | | | |
| ③ DISC | A216 WCB | A217 WC6 | A217 WC9 | A217 C5 | A351 CF8 | A351 CF8M |
| ④HINGE PIN | A276 410 | A276 410 | A276 410 | A276 410 | A276 304 | A276 316L |
| ⑤ COVER | A216 WCB | A217 WC6 | A217 WC9 | A217 C5 | A351 CF8 | A351 CF8M |
| ⑥ GASKET | PTFE, RPTFE, SS+GRAPHITE or acc. to customer's requirement | | | | | |
| ⑦ BOLT | A193 B7 | A193 B7 | A193 B7 | | A193 B8 | A193 B8M |
| ⑧ NUT | A194 2H | A194 2H | A194 2H | | A194 8 | A194 8M |
| ⑨SEAT RING | F6, 304, 316, MONEL or acc. to customer's requirement | | | | | |
| ⑩EYE BOLT | Carbon Steel | | | | | |

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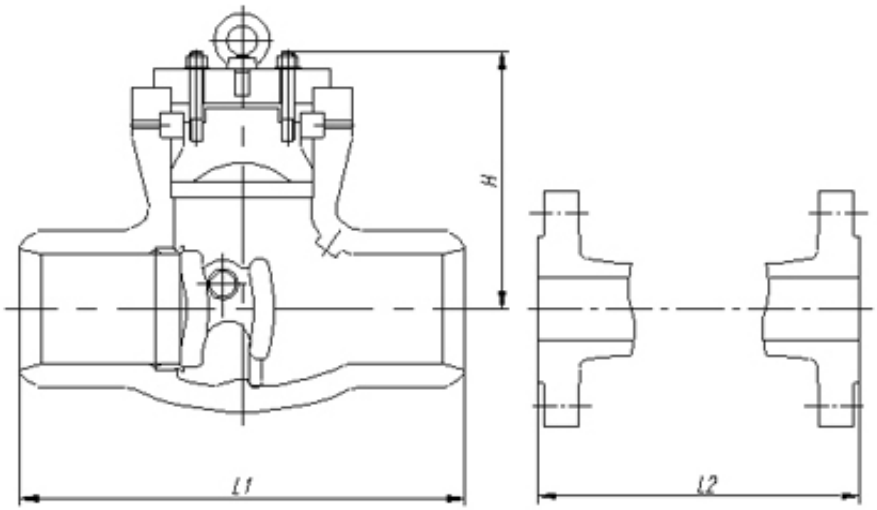
## Dimensions and Weights




**Class 900**

| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 (BW) | mm | 216 | 254 | 305 | 356 | 508 | 660 | 787 | 914 | 991 | 1092 | 1219 |
| L2 (RF) | mm | 368 | 419 | 381 | 457 | 610 | 737 | 838 | 965 | 1029 | 1130 | 1219 |
| H | mm | 229 | 260 | 206 | 280 | 337 | 395 | 454 | 540 | 584 | 660 | 753 |
| WT (kg) | RF | 54 | 70 | 88 | 118 | 230 | 550 | 850 | 1220 | 1690 | 2710 | 3030 |
| | BW | 30 | 46 | 49 | 93 | 160 | 390 | 600 | 900 | 1200 | 1600 | 2000 |

**Class 1500**

| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 (BW) | mm | 216 | 254 | 305 | 406 | 559 | 711 | 864 | 991 | 1067 | 1194 | 1346 |
| L2 (RF) | mm | 368 | 419 | 470 | 546 | 705 | 832 | 991 | 1130 | 1257 | 1384 | 1537 |
| H | mm | 229 | 260 | 206 | 280 | 337 | 395 | 454 | 540 | 566 | 630 | 865 |
| WT (kg) | RF | 54 | 70 | 105 | 178 | 392 | 600 | 980 | 1550 | 2100 | 2600 | 3300 |
| | BW | 30 | 46 | 65 | 135 | 280 | 480 | 780 | 1100 | 1500 | 2000 | 2500 |

**Class 2500**

| Valve Size | in | 2 | 2-1/2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 (BW) | mm | 279 | 330 | 368 | 457 | 610 | 762 | 914 | 1041 | 1118 | - | - |
| L2 (RF) | mm | 451 | 508 | 578 | 673 | 914 | 1022 | 1270 | 1422 | - | - | - |
| H | mm | 229 | 260 | 270 | 280 | 343 | 483 | 559 | 570 | 620 | - | - |
| WT (kg) | RF | 85 | 115 | 155 | 265 | 585 | 985 | 1600 | 2290 | - | - | - |
| | BW | 58 | 70 | 85 | 145 | 330 | 780 | 1220 | 1800 | 2400 | - | - |

# OUR PRODUCTS


**Class 600 - 2"**


**Class 300 - 4"**


**Class 150 - 15"**