



4-Way Diverter Plug Valves



Plug Valve Specialists
Strong Company! Good Company!

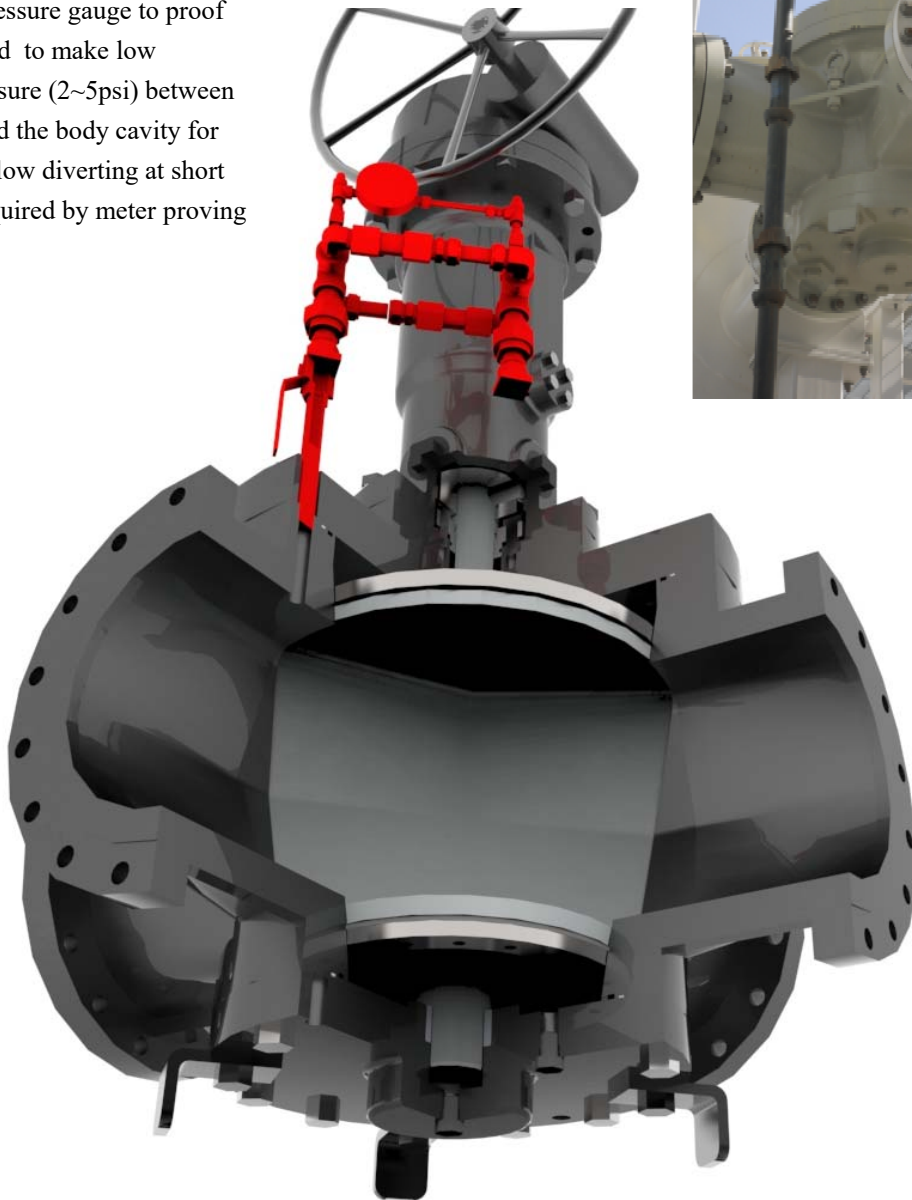
www.3zvalve.com

4-way Diverter Plug Valve

3Z 4-way diverter plug valves are designed for the rigid requirements of bi-directional meter proving which especially requires the valve to be cycled hundreds of times per day and has a short cycling time around 10 seconds during valve operation.

Proof of Seal Integrity

3Z 4-way diverter valves supply special low differential pressure device systems with pressure gauge to proof seal integrity and to make low differential pressure (2~5psi) between the upstream and the body cavity for the purpose of flow diverting at short cycling time required by meter proving systems.



How the 3Z 4-way Diverter Plug Valve Works

STEP 1:

Lowered and seated position: The plug and slip seal are lowered and seated at fully open or closed position.

STEP 2:

Lifted position: The plug and slip seal are lifted slightly to avoid galling or abrasion during this step.

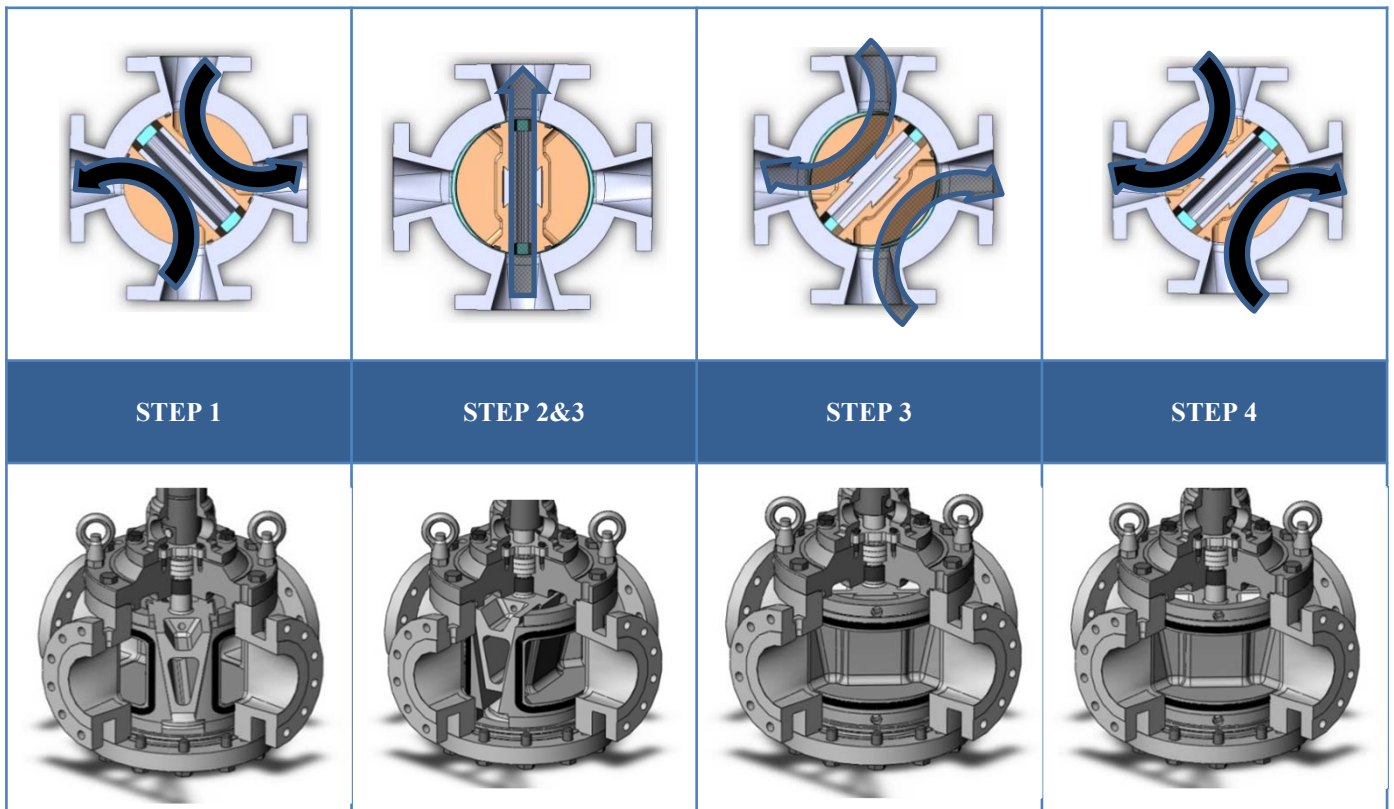
STEP 3:

90° Rotated position: The plug and slip seal are rotated 90° for the purpose of flow diverting with short cycling time, required in meter proving system. No rubbing. No friction.

STEP 4:

Lowered & reseated position: The plug is lowered and reseated at fully open or closed position.

3Z developed a unique patented ball-locking mechanism. The 3Z mechanism provides low torque and smooth, frictionless operation. This mechanism is provided as a standard in 3Z 4-way Diverter Plug Valves.



Parts and Material

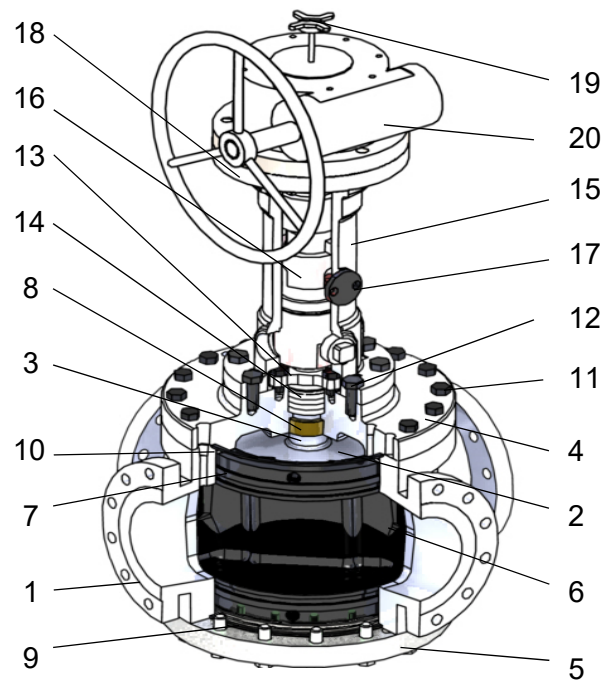


Size: 3” - 8”

4-way Diverter Plug Valve with Slip Seal

Sizes 3”- 8” 3Z 4-way diverter plug valves are designed with slip seals. It is possible to inspect and replace the sealing slips simply. The valve has top and bottom bolted cover that is disassembled to replace the sealing slips on the pipe line.

| No | Parts | Specification |
|----|---------------|----------------------|
| 1 | Body | A216 WCB + Cr plated |
| 2 | Plug | A216 WCB + ENP |
| 3 | Stem | 17-4PH |
| 4 | Top cover | A216 WCB |
| 5 | Bottom cover | A216 WCB |
| 6 | Slip | A536 80-55-06 + MPC |
| 7 | Slip Seal | Viton |
| 8 | Bushing | A436 Type 2 |
| 9 | Gasket | (Graphite + 316) SWG |
| 10 | O-ring | Viton |
| 11 | Cover bolt | A193 B7 |
| 12 | Housing bolt | STEEL |
| 13 | Gland | A216 WCB + Zn plated |
| 14 | Gland packing | Graphite |
| 15 | Housing | A216 WCB |
| 16 | Operator | A322 4140 |
| 17 | Guide | A322 4140 |
| 18 | Housing cover | AISI 1045 |
| 19 | Indicator | AISI 1020 |
| 20 | Gear operator | Ductile iron |



4-way Diverter Valve - Parts and Material

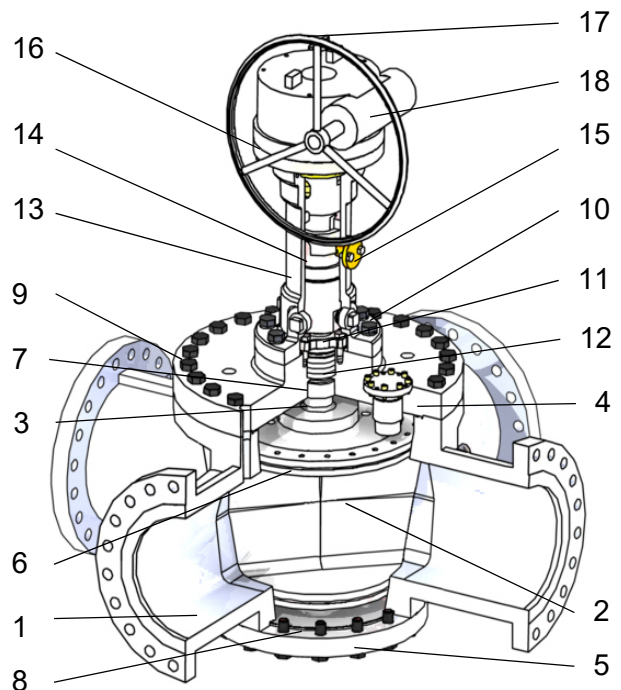


Size: 10" - 20"

4-way Diverter Plug Valve

Sizes 10" – 20" 3Z 4-way diverter plug valves are designed with plug seals. The plug seal has an especially simple design to replace simply. The valve has top and bottom bolted cover that is disassembled to replace the plug seal on the pipe line.

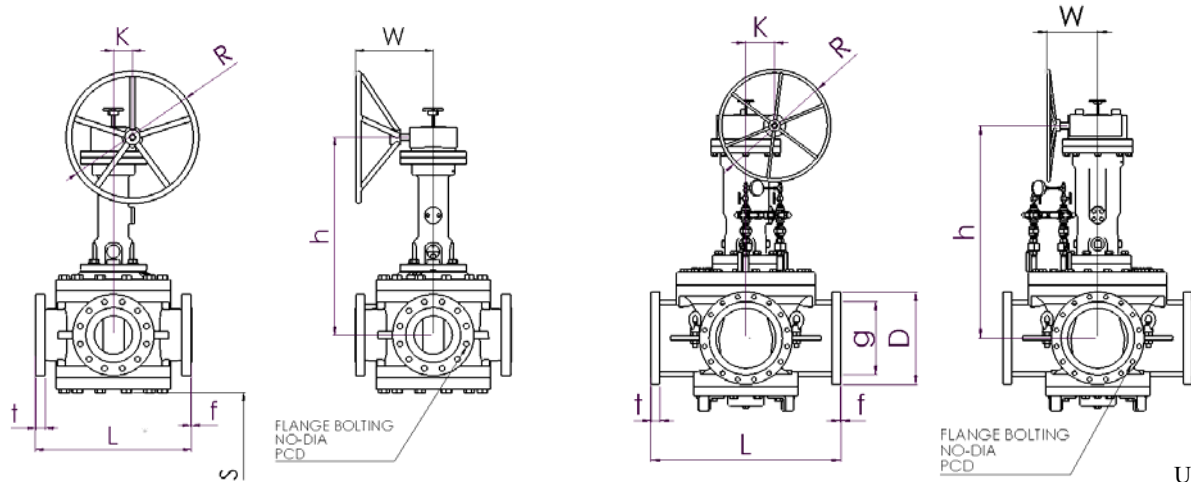
| No | Parts | Specification |
|----|---------------|----------------------|
| 1 | Body | A216 WCB + Cr plated |
| 2 | Plug | A216 WCB + ENP |
| 3 | Stem | 17-4PH |
| 4 | Top cover | A216 WCB |
| 5 | Bottom cover | A216 WCB |
| 6 | Plug Seal | Viton |
| 7 | Bushing | A436 Type 2 |
| 8 | Gasket | (Graphite + 316) SWG |
| 9 | Cover bolt | A193 B7 |
| 10 | Housing bolt | STEEL |
| 11 | Gland | A216 WCB + Zn plated |
| 12 | Gland packing | Graphite |
| 13 | Housing | A216 WCB |
| 14 | Operator | A322 4140 |
| 15 | Guide | A322 4140 |
| 16 | Housing cover | AISI 1045 |
| 17 | Indicator | AISI 1020 |
| 18 | Gear operator | Ductile iron |



4-way Diverter Plug Valve - Dimensions

Size: 3" - 8"

Size: 10" - 20"



Unit: mm

| Class | Size | * L | D | PCD | NO | DIA | g | t | f | h | R | K | W | + S |
|-------|------|-------|-----|-------|----|-----|-------|-------|---|-------|-----|-----|-----|-----|
| 150 | 12 | 930 | 485 | 431.8 | 12 | 25 | 381 | *49.3 | 2 | 1,200 | 710 | 180 | 400 | - |
| | 16 | 1,219 | 595 | 539.8 | 16 | 29 | 469.9 | *55.6 | 2 | 1,370 | 710 | 180 | 400 | - |
| | 20 | 1,473 | 700 | 635.0 | 20 | 32 | 584.2 | *62.0 | 2 | 1,470 | 800 | 230 | 488 | - |
| 300 | 3 | 432 | 210 | 168.3 | 8 | 22 | 127 | 27.0 | 2 | 720 | 400 | 83 | 260 | 220 |
| | 4 | 508 | 255 | 200.0 | 8 | 22 | 157.2 | 30.2 | 2 | 700 | 400 | 83 | 260 | 250 |
| | 6 | 614 | 320 | 269.9 | 12 | 22 | 215.9 | 35.0 | 2 | 800 | 500 | 97 | 294 | 305 |
| | 8 | 711 | 380 | 330.2 | 12 | 25 | 269.9 | 39.7 | 2 | 1,020 | 630 | 153 | 370 | 355 |
| | 10 | 930 | 445 | 387.4 | 16 | 29 | 323.8 | 46.1 | 2 | 1,200 | 710 | 180 | 400 | - |
| | 12 | 930 | 520 | 450.8 | 16 | 32 | 381.0 | 49.3 | 2 | 1,200 | 710 | 180 | 400 | - |
| | 16 | 1,219 | 650 | 571.5 | 20 | 35 | 469.9 | 55.6 | 2 | 1,370 | 710 | 180 | 400 | - |
| | 20 | 1,473 | 775 | 685.8 | 24 | 35 | 584.2 | 62.0 | 2 | 1,470 | 800 | 230 | 488 | - |
| 600 | 4 | 530 | 275 | 215.9 | 8 | 25 | 157.2 | 38.1 | 7 | 790 | 500 | 97 | 294 | 280 |
| | 6 | 645 | 355 | 292.1 | 12 | 29 | 215.9 | 47.7 | 7 | 870 | 560 | 112 | 324 | 330 |
| | 8 | 820 | 420 | 349.2 | 12 | 32 | 269.9 | 55.6 | 7 | 1,020 | 630 | 153 | 370 | 400 |
| | 10 | 1,020 | 510 | 431.8 | 16 | 35 | 323.8 | 63.5 | 7 | 1,200 | 710 | 180 | 400 | - |
| | 12 | 1,020 | 560 | 489.0 | 20 | 35 | 381.0 | 66.7 | 7 | 1,250 | 710 | 180 | 400 | - |
| | 16 | 1,319 | 685 | 603.2 | 20 | 41 | 469.9 | 76.2 | 7 | 1,370 | 710 | 180 | 400 | - |
| 900 | 4 | 546 | 290 | 235.0 | 8 | 32 | 157.2 | 44.5 | 7 | 800 | 500 | 97 | 294 | 290 |
| | 6 | 711 | 380 | 317.5 | 12 | 32 | 215.9 | 55.6 | 7 | 870 | 560 | 112 | 324 | 420 |
| | 8 | 813 | 470 | 393.7 | 12 | 38 | 269.9 | 63.5 | 7 | 1,150 | 630 | 153 | 370 | 530 |
| | 10 | 1,020 | 545 | 469.9 | 16 | 38 | 323.8 | 69.9 | 7 | 1,260 | 710 | 180 | 400 | - |

+ Minimum Clearance for installation, repair and replacement

* Manufacturing Standard

- If additional classes and sizes are required, please consult the factory when ordering.

Technical Data

Approx CV Factor (GPM)

Class 150 - 900

2-way Standard Type, Full Bore Type, 4-way - Diverter Type

| Class | 150 | 300 | 600 | 900 | 150 | 300 | 600 | 150 | 300 | 600 | 900 |
|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|
| Fig | 124 | 324 | 624 | 924 | 124 FB | 324 FB | 624 FB | 144 | 344 | 644 | 944 |
| Size | | | | | | | | | | | |
| 2 | 200 | 200 | 280 | - | 525 | 525 | - | - | - | - | - |
| 3 | 260 | 220 | 300 | - | 1,100 | 1,100 | - | - | 300 | - | - |
| 4 | 620 | 600 | 500 | 500 | 2,100 | 2,100 | 2,000 | - | 600 | 600 | 600 |
| 6 | 1,400 | 1,200 | 1,300 | 1,300 | 5,000 | 5,000 | 4,900 | - | 1,200 | 1,200 | 1,200 |
| 8 | 2,500 | 2,000 | 2,100 | 2,500 | 9,700 | 9,700 | 9,600 | - | 2,200 | 2,200 | 2,200 |
| 10 | 3,700 | 3,100 | 3,300 | 3,300 | 14,600 | 14,600 | 14,000 | - | 4,200 | 4,200 | 4,200 |
| 12 | 4,200 | 3,700 | 4,800 | 5,000 | 21,500 | 21,500 | 21,000 | 5,100 | 5,100 | 5,100 | - |
| 14 | 5,600 | 5,000 | - | - | 28,000 | 28,000 | - | - | - | - | - |
| 16 | 7,000 | 8,500 | 7,400 | - | 35,000 | 35,000 | 34,000 | 8,800 | 8,800 | 8,800 | - |
| 18 | 10,000 | 10,000 | 13,000 | - | 47,000 | 47,000 | - | - | - | - | - |
| 20 | 15,900 | 12,000 | 20,000 | - | 59,000 | 59,000 | 58,000 | 14,000 | 14,000 | - | - |
| 22 | 19,000 | - | - | - | - | - | - | - | - | - | - |
| 24 | 23,000 | 18,000 | - | - | 85,000 | 85,000 | - | - | - | - | - |
| 28 | - | 29,000 | - | - | - | - | - | - | - | - | - |
| 30 | 37,000 | 33,000 | - | - | - | - | - | - | - | - | - |
| 36 | 53,000 | - | - | - | - | - | - | - | - | - | - |
| 40 | 65,600 | - | - | - | - | - | - | - | - | - | - |

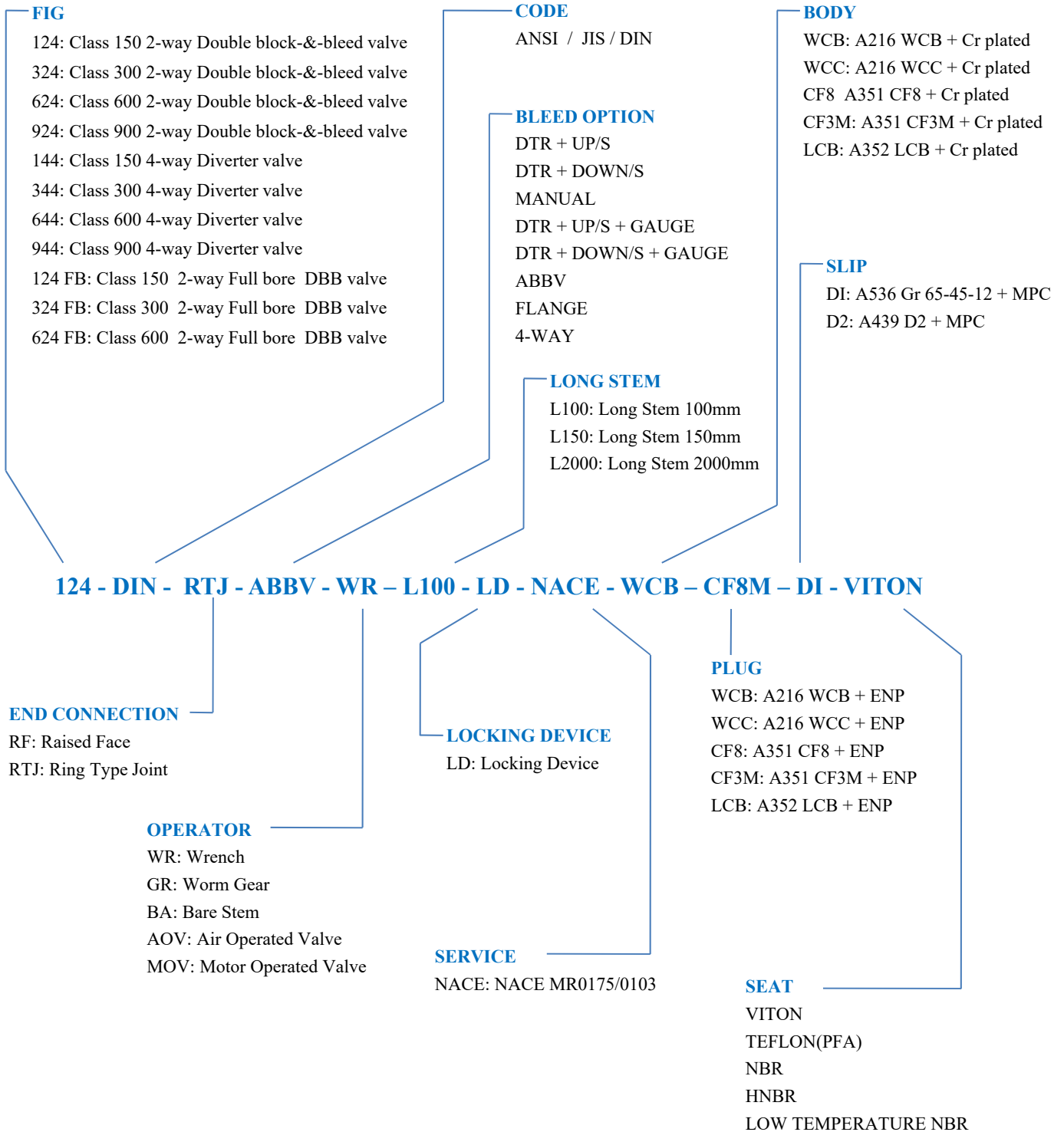
Approx Weight (kg)

Class 150 - 900

2-way - Standard Type, Full Bore Type, 4-way - Diverter Type

| Class | 150 | 300 | 600 | 900 | 150 | 300 | 600 | 150 | 300 | 600 | 900 |
|-------|--------|-------|-------|-------|--------|--------|--------|-------|-------|-------|-------|
| Fig | 124 | 324 | 624 | 924 | 124 FB | 324 FB | 624 FB | 144 | 344 | 644 | 944 |
| Size | | | | | | | | | | | |
| 2 | 30 | 34 | 39 | - | 60 | 65 | 70 | - | - | - | - |
| 3 | 42 | 42 | 60 | - | 80 | 90 | 135 | - | 240 | 290 | - |
| 4 | 50 | 60 | 100 | 150 | 130 | 150 | 215 | - | 320 | 450 | 600 |
| 6 | 100 | 140 | 320 | 430 | 240 | 320 | 510 | - | 490 | 680 | 760 |
| 8 | 180 | 240 | 520 | 820 | 460 | 600 | 860 | - | 1,000 | 1,300 | 1,500 |
| 10 | 250 | 320 | 820 | 1,200 | 660 | 830 | 1,200 | - | 1,600 | 1,700 | 1,900 |
| 12 | 400 | 510 | 1,200 | 2,300 | 830 | 1,400 | 2,000 | 1,600 | 1,600 | 1,900 | - |
| 14 | 490 | 880 | - | - | 1,400 | 1,700 | - | - | - | - | - |
| 16 | 650 | 1,200 | 2,100 | - | 1,900 | 2,500 | 3,400 | 2,600 | 2,600 | 3,600 | - |
| 18 | 790 | 1,700 | - | - | 3,200 | 3,200 | - | - | - | - | - |
| 20 | 1,600 | 2,100 | 3,700 | - | 3,600 | 4,500 | 7,500 | 4,000 | 4,000 | - | - |
| 22 | 1,750 | - | - | - | - | - | - | - | - | - | - |
| 24 | 2,050 | 3,300 | 7,200 | - | 5,100 | 7,100 | - | - | - | - | - |
| 28 | - | 5,400 | - | - | - | - | - | - | - | - | - |
| 30 | 4,170 | 8,000 | - | - | - | - | - | - | - | - | - |
| 36 | 6,520 | - | - | - | - | - | - | - | - | - | - |
| 40 | 10,500 | - | - | - | - | - | - | - | - | - | - |

How to Order



- If additional information is required, please consult the factory when ordering.



#1 Plant (3Z Manufacturing & Assembly) :
254, Sihwa Venture-Ro, Siheung-City, Gyeonggi-Do, Korea

#2 Plant (3Z Foundry) :
117, Hwanggeum 2-ro, Yangchon-eup Gimpo-city in Gyeonggi-Do, Korea

Sales Office
Tel : +82.2.333.1212
Fax : +82.2.333.4111
Homepage : www.3zvalve.com

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