

4.3

Throttle and throttle check valve

Type DV(P)/DRV(P)...10

Sizes 6 to 30
Up to 350bar
Up to 375 L/min



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Features

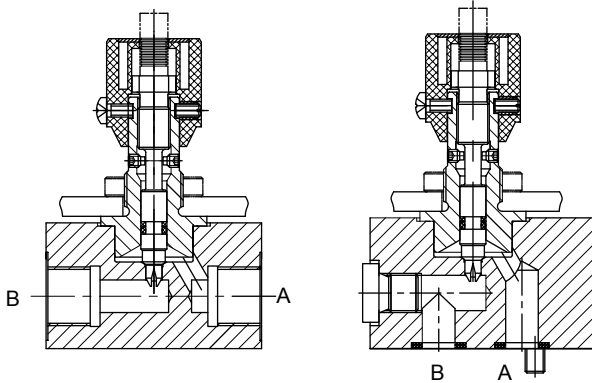
- For direct in-pipe mounting
- For control panel mounting
- Threaded connection
- Good repeatability of set values due to color scale
- Variant, optional:

Function and configuration

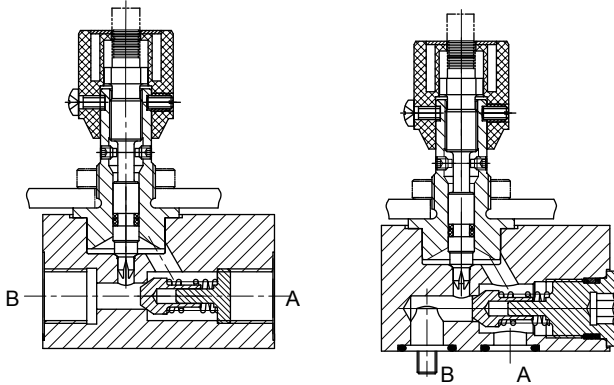
Throttle valve of type DV, DVP and check valve of type DRV, DRVP are flow control valves to adjust movement speed of actuators simply and exactly. These valve can also be used as shut-off valve when completely shut.

The scale of triangle shows how large the flow is (The larger the triangle is and the greater the flow is). At the same time, for resetting again, it can be restored to the preset position.

Type DV, DVP



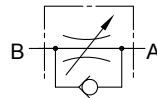
Type DRV, DRVP



Symbols

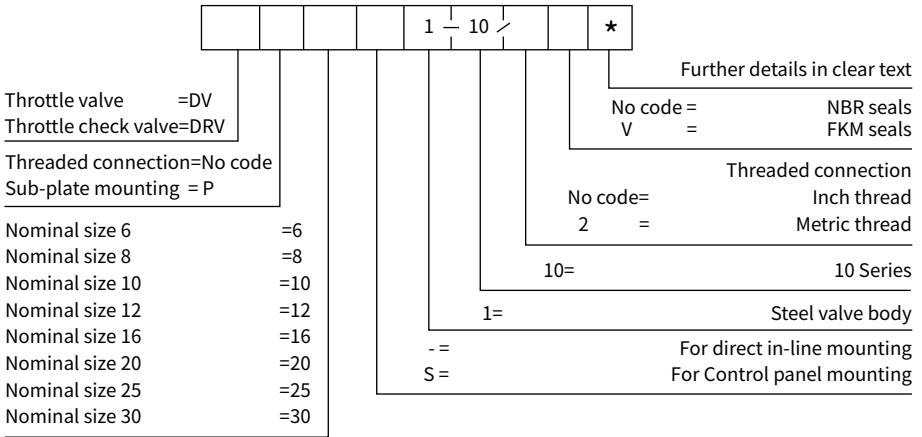


Type DV, DVP



Type DRV, DRVP

Specification



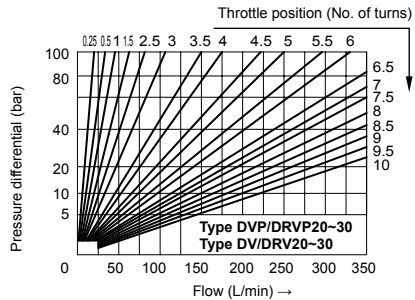
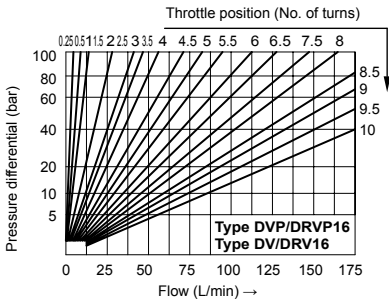
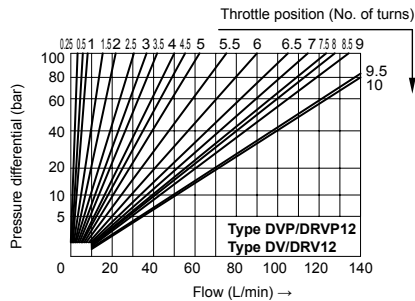
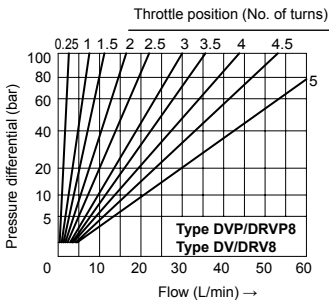
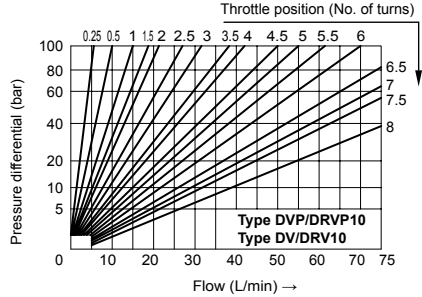
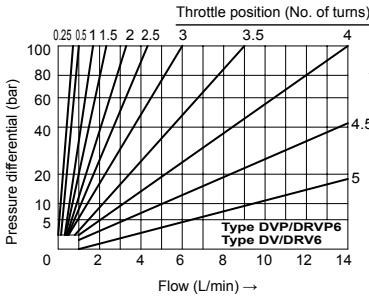
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Technical data

| Size | | 6 | 8 | 10 | 12 | 16 | 20 | 25 | 30 | |
|-------------------------------|--------------------|--|------|------|-----|-----|-----|-----|-----|------|
| Max.Operating pressure | bar | 350 | | | | | | | | |
| Check valve cracking pressure | bar | 5 | | | | | | | | |
| Weight | Type DV | kg | 0.12 | 0.53 | 0.7 | 0.9 | 1.5 | 2.5 | 3.3 | 3.8 |
| | Type DVP | | 0.25 | 0.7 | 1.0 | 1.3 | 2.6 | 4.3 | 8.3 | 11.2 |
| | Type DRV | | 0.13 | 0.6 | 0.7 | 0.9 | 1.5 | 3.1 | 4.1 | 5.3 |
| | Type DRVP | | 0.26 | 0.7 | 1.0 | 1.4 | 2.7 | 4.7 | 8.8 | 12.2 |
| Fluid | | Mineral oil; phosphate ester | | | | | | | | |
| Fluid temperature range | °C | -20 to +80 | | | | | | | | |
| Viscosity | mm ² /s | 2.8~500 | | | | | | | | |
| Installation position | | Optional | | | | | | | | |
| Degree of contamination | | Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406 | | | | | | | | |

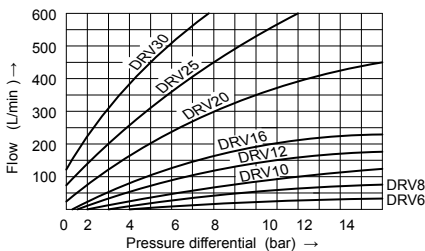
Characteristic curves (Measured at $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP46)

Flow direction: A to B relation of differential pressure ΔP to flow Q in constant throttle position



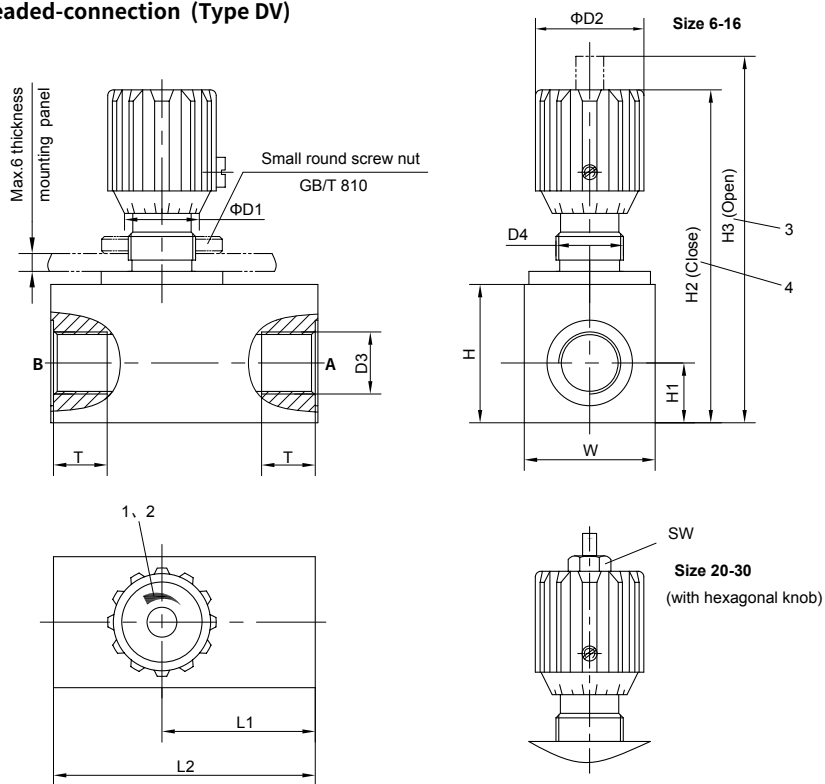
Type DRV

Flow direction: B to A P-Q curve of Free flow via open check valve



Unit dimensions

• Threaded-connection (Type DV)



1 Flow increases with anti-clockwise rotation

2 Flow reduces with clockwise rotation

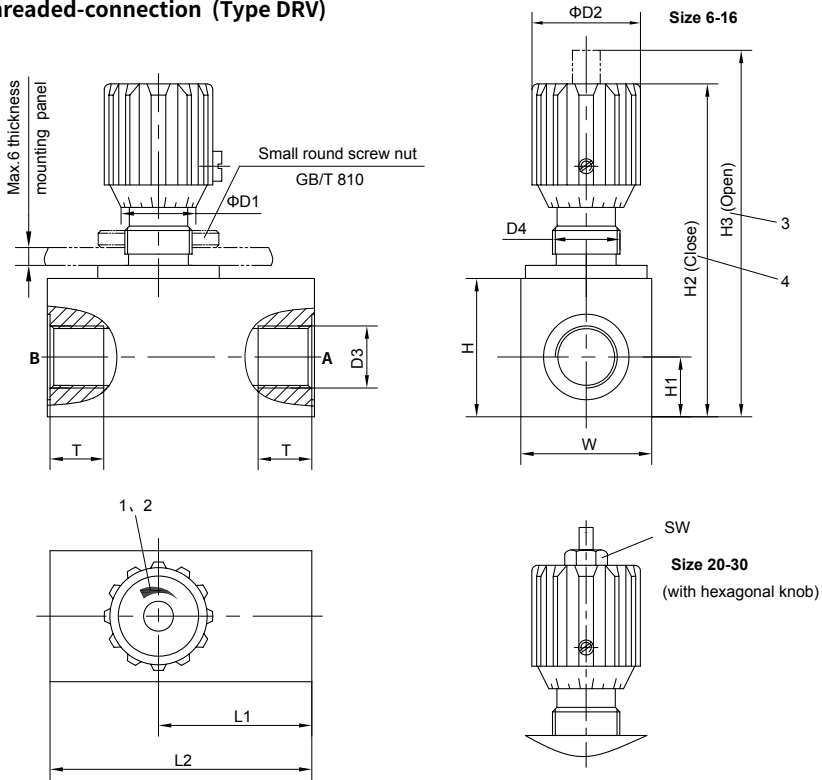
3 Throttle fully opens

4 Throttle closes

| Size | W×H | ΦD1 | ΦD2 | D3 | | D4 | H1 | H2 | H3 | L1 | L2 | SW | T |
|------|-----------|-----|------|--------|---------|----------|------|-------|-------|------|------|----|----|
| 6 | 20×20 | 15 | 24 | G1/8 | M10×1 | M12×1.25 | 10 | 64 | 68 | 19.5 | 39 | | 9 |
| 8 | 34×30.5 | 20 | 29 | G1/4 | M14×1.5 | M18×1.5 | 12.5 | 83 | 90 | 32.5 | 63.5 | | 12 |
| 10 | 36.5×38.5 | 20 | 29 | G3/8 | M18×1.5 | M18×1.5 | 16 | 95 | 103 | 33 | 66 | | 12 |
| 12 | 37×38 | 26 | 37.5 | G1/2 | M22×1.5 | M22×1.5 | 17.5 | 101.5 | 109.5 | 44.5 | 80 | | 14 |
| 16 | 45×52 | 26 | 37.5 | G3/4 | M27×2 | M22×1.5 | 22.5 | 124 | 134.5 | 44.5 | | | 16 |
| 20 | 57×56.5 | 38 | 50 | G1 | M33×2 | M36×1.5 | 26 | 162.5 | 178.5 | 49.5 | 99 | 19 | 18 |
| 25 | 63×66 | 38 | 50 | G1 1/4 | M42×2 | M36×1.5 | 30 | 167 | 186 | 54.5 | 109 | 19 | 20 |
| 30 | 73×76 | 38 | 50 | G1 1/2 | M48×2 | M36×1.5 | 35 | 177.5 | 196 | 54.5 | 109 | 19 | 22 |

Unit dimensions

• Threaded-connection (Type DRV)



| Size | W×H | $\Phi D1$ | $\Phi D2$ | D3 | | D4 | H1 | H2 | H3 | L1 | L2 | SW | T |
|------|---------|-----------|-----------|--------|---------|----------|------|-------|-------|------|------|----|----|
| 6 | 20×21 | 15 | 24 | G1/8 | M10×1 | M12×1.25 | 10 | 65 | 70 | 28 | 46 | | 9 |
| 8 | 34×35 | 20 | 29 | G1/4 | M14×1.5 | M18×1.5 | 15 | 87 | 94 | 38 | 64.5 | | 12 |
| 10 | 36.5×41 | 20 | 29 | G3/8 | M18×1.5 | M18×1.5 | 16 | 98 | 105 | 45.5 | 71 | | 12 |
| 12 | 37×42 | 26 | 37.5 | G1/2 | M22×1.5 | M22×1.5 | 17.5 | 105 | 113 | 48 | 81 | | 14 |
| 16 | 45×54 | 26 | 37.5 | G3/4 | M27×2 | M22×1.5 | 22.5 | 124 | 134.5 | 56.5 | 89 | | 16 |
| 20 | 57×59 | 38 | 50 | G1 | M33×2 | M36×1.5 | 26 | 162.5 | 178.5 | 80 | 128 | 19 | 18 |
| 25 | 63×70 | 38 | 50 | G1 1/4 | M42×2 | M36×1.5 | 30 | 170 | 186.5 | 98 | 144 | 19 | 20 |
| 30 | 73×80 | 38 | 50 | G1 1/2 | M48×2 | M36×1.5 | 35 | 180 | 195.5 | 105 | 145 | 19 | 22 |

1 Flow increases with anti-clockwise rotation

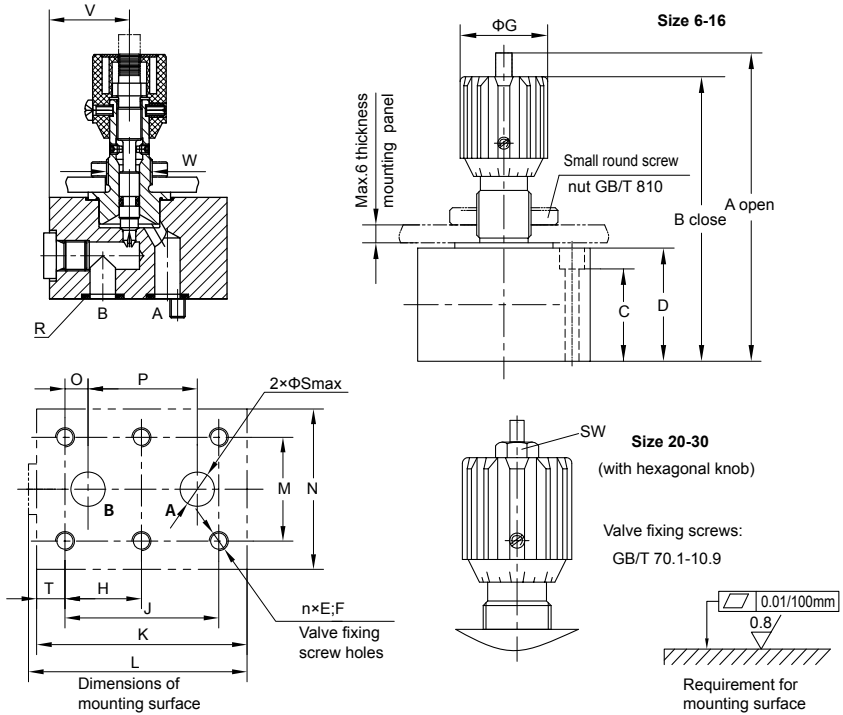
2 Flow reduces with clockwise rotation

3 Throttle fully opens

4 Throttle closes

Unit dimensions

• Sub-plate mounting (Type DVP)

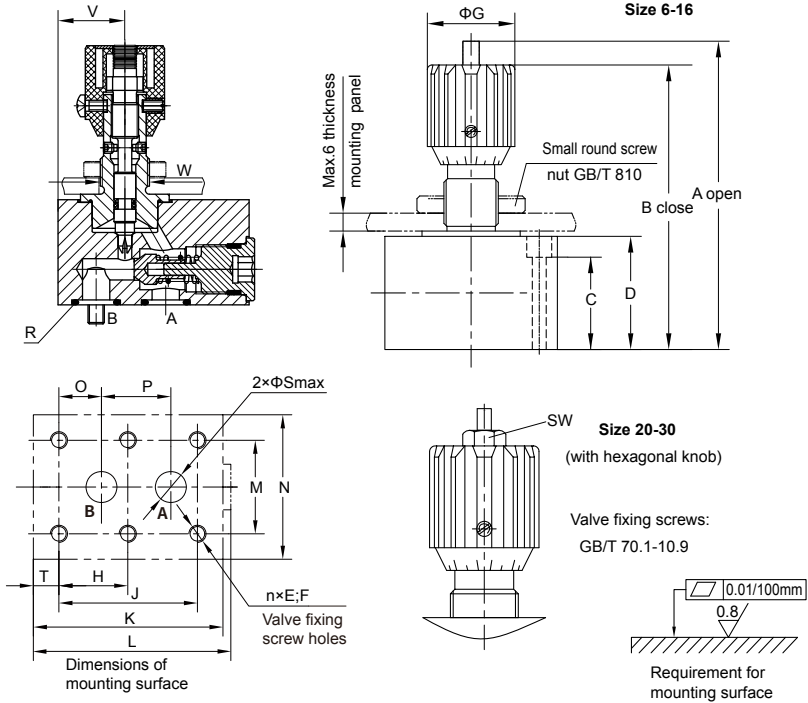


| Size | A | B | C | D | n | E | F | G | H | J | K | L | M | N |
|------|------|-------|------|------|---|-----|----|------|------|------|------|------|------|------|
| 6 | 66 | 61.5 | 10 | 18 | 4 | M6 | 12 | 24 | - | 19 | 38 | 41 | 28.5 | 41.5 |
| 8 | 89.6 | 82.7 | 21 | 30.5 | 4 | M6 | 12 | 29 | - | 35 | 63.5 | 67 | 33.5 | 46 |
| 10 | 104 | 96 | 29.5 | 40 | 4 | M6 | 12 | 29 | - | 33.5 | 70 | 72.3 | 38 | 51 |
| 12 | 109 | 100.5 | 29 | 38 | 4 | M6 | 12 | 37.5 | - | 38 | 80 | 82 | 44.5 | 57.5 |
| 16 | 133 | 122.3 | 41 | 52 | 6 | M8 | 16 | 37.5 | 38 | 76 | 104 | 107 | 54 | 70 |
| 20 | 177 | 161 | 49 | 61 | 6 | M8 | 16 | 50 | 47.5 | 95 | 127 | 129 | 60 | 76.5 |
| 25 | 185 | 170 | 55 | 68.5 | 6 | M10 | 20 | 50 | 60 | 120 | 165 | 168 | 76 | 100 |
| 30 | 195 | 179 | 63 | 79 | 6 | M12 | 24 | 50 | 71.5 | 143 | 186 | 186 | 92 | 115 |

| Size | O | P | R | S | T | V | W | SW | Vale fixing screw |
|------|------|------|-------------------|----|------|------|----------|----|-------------------|
| 6 | 1.6 | 16 | O-ring 7×1.5 | 5 | 9.5 | 18.5 | M12×1.25 | - | M6×20 |
| 8 | 4.5 | 25.5 | O-ring 12.3×2.4 | 8 | 14.3 | 31 | M18×1.5 | - | M6×30 |
| 10 | 4 | 25.5 | O-ring 12.3×2.4 | 10 | 17 | 31.5 | M18×1.5 | - | M6×40 |
| 12 | 4 | 30 | O-ring 15×2.65 | 12 | 21 | 36.5 | M22×1.5 | - | M6×40 |
| 16 | 11.4 | 54 | O-ring 19×3 | 15 | 14 | 49 | M22×1.5 | - | M8×55 |
| 20 | 19 | 57 | O-ring 30×3 | 20 | 17 | 47 | M36×1.5 | 19 | M8×60 |
| 25 | 20.6 | 79.5 | O-ring 32×3 | 25 | 15 | 77 | M36×1.5 | 19 | M10×70 |
| 30 | 23.8 | 95 | O-ring 34.52×3.53 | 30 | 15 | 85 | M36×1.5 | 19 | M12×80 |

Unit dimensions

• Sub-plate mounting (Type DRVP)



| Size | A | B | C | D | n | E | F | G | H | J | K | L | M | N |
|------|-----|-------|----|------|---|-----|----|------|------|------|------|-----|------|------|
| 6 | 67 | 62.5 | 9 | 19 | 4 | M6 | 12 | 24 | - | 19 | 41.5 | 43 | 28.5 | 41.5 |
| 8 | 90 | 83 | 19 | 31 | 4 | M6 | 12 | 29 | - | 35 | 63 | 67 | 33.5 | 46 |
| 10 | 103 | 95 | 30 | 38.5 | 4 | M6 | 12 | 29 | - | 33.5 | 70 | 72 | 38 | 51 |
| 12 | 112 | 103.5 | 29 | 41 | 4 | M6 | 12 | 37.5 | - | 38 | 80 | 84 | 44.5 | 57.5 |
| 16 | 132 | 122 | 41 | 51 | 6 | M8 | 16 | 37.5 | 38 | 76 | 104 | 107 | 54 | 70 |
| 20 | 176 | 161 | 48 | 60 | 6 | M8 | 16 | 50 | 47.5 | 95 | 127 | 131 | 60 | 76.5 |
| 25 | 186 | 171 | 55 | 70 | 6 | M10 | 20 | 50 | 60 | 120 | 165 | 169 | 76 | 100 |
| 30 | 195 | 180 | 63 | 79 | 6 | M12 | 24 | 50 | 71.5 | 143 | 186 | 190 | 92 | 115 |

| Size | O | P | R | S | T | V | W | SW | Vale fixing screw |
|------|------|------|----------------------------|----|-----|------|-------------------|----|-------------------|
| 6 | 1.6 | 16 | O-ring 7 \times 1.5 | 5 | 6.4 | 10 | M12 \times 1.25 | - | M6 \times 20 |
| 8 | 4.5 | 25.5 | O-ring 12.3 \times 2.4 | 8 | 9.3 | 25.8 | M18 \times 1.5 | - | M6 \times 30 |
| 10 | 4 | 25.5 | O-ring 13.2 \times 2.4 | 10 | 10 | 24.5 | M18 \times 1.5 | - | M6 \times 40 |
| 12 | 4 | 30 | O-ring 15 \times 2.65 | 12 | 21 | 31.5 | M22 \times 1.5 | - | M6 \times 40 |
| 16 | 11.4 | 54 | O-ring 19 \times 3 | 15 | 14 | 41 | M22 \times 1.5 | - | M8 \times 55 |
| 20 | 19 | 57 | O-ring 30 \times 3 | 20 | 17 | 44 | M36 \times 1.5 | 19 | M8 \times 60 |
| 25 | 20.6 | 79.5 | O-ring 32 \times 3 | 25 | 15 | 62 | M36 \times 1.5 | 19 | M10 \times 70 |
| 30 | 23.8 | 95 | O-ring 34.52 \times 3.53 | 30 | 15 | 72 | M36 \times 1.5 | 19 | M12 \times 80 |