

# Hydraulic ball valves

Stainless steel hydraulic ball valves for complete tube-and-fitting systems.



## Fluidline part numbers - female NPT range

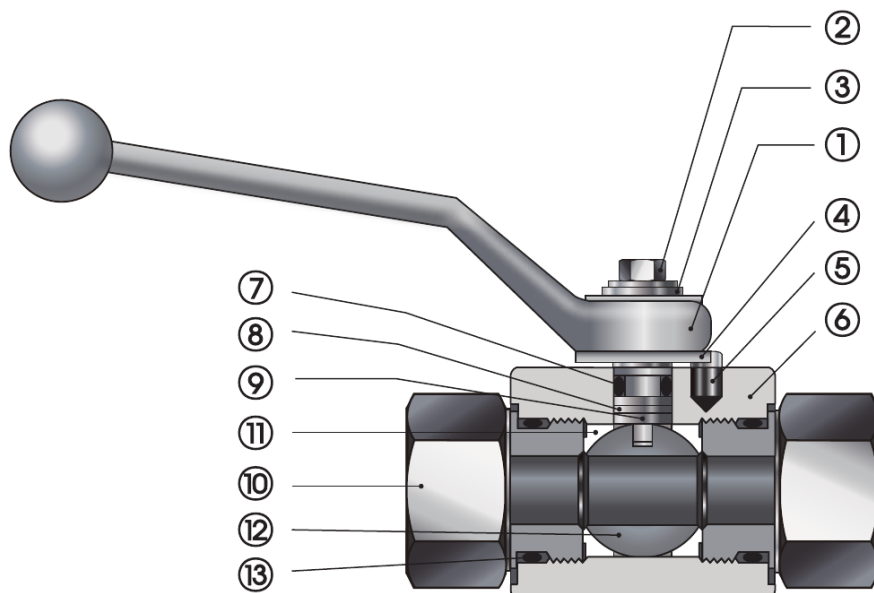
| Fluidline part number | Female NPT | Listed pressure | Listed material |
|-----------------------|------------|-----------------|-----------------|
| H-BV3-F-1/2"-NPT      | 1/2"       | 500 bar         | SS316/L         |
| H-BV4-F-3/4"-NPT      | 3/4"       | 315 bar         | SS316/L         |
| H-BV5-F-1"-NPT        | 1"         | 315 bar         | SS316/L         |
| H-BV5-F-1 1/4"-NPT    | 1 1/4"     | 315 bar         | SS316/L         |
| H-BV5-F-1 1/2"-NPT    | 1 1/2"     | 250 bar         | SS316/L         |
| H-BV5-F-2"-NPT        | 2"         | 250 bar         | SS316/L         |

The six Fluidline codes and pressures above are retained from the Fluidline part list. The technical reference tables on pages 5-6 cover DIN tube, BSPP and BSP taper variants; they are not dimensional specifications for these NPT codes.

Confirm the exact supplied dimensions, body material, seats, seals and allowable pressure at operating temperature with Fluidline. Photographs illustrate the range. No NPT dimensional table or pressure-temperature derating curve is provided in the supplied reference.

# Valve construction

Numbered cutaway with stainless steel and carbon steel construction options.



| No. | Component            | Stainless steel option           | Carbon steel option              |
|-----|----------------------|----------------------------------|----------------------------------|
| 1   | Handle               | SS316                            | Carbon steel                     |
| 2   | Locking bolt         | Stainless steel                  | Stainless steel                  |
| 3   | Washer               | Stainless steel                  | Stainless steel                  |
| 4   | Locking device plate | SS316                            | Carbon steel                     |
| 5   | Stop pin             | SS316                            | Carbon steel                     |
| 6   | Body                 | A479 / SS316; DIN 17440 / 1.4571 | A108 / 12L14; DIN 1651 / 95Mn28K |
| 7   | Stem seal            | NBR (standard)                   | NBR (standard)                   |
| 8   | Stem inner packing   | PTFE                             | PTFE                             |
| 9   | Stem                 | A479 / SS316; DIN 17440 / 1.4571 | A108 / 12L14; DIN 1651 / 95Mn28K |
| 10  | Plug                 | A479 / SS316; DIN 17440 / 1.4571 | A108 / 12L14; DIN 1651 / 95Mn28K |
| 11  | Ball seat            | POM-MoS2 (standard)              | POM-MoS2 (standard)              |
| 12  | Ball                 | 316 stainless steel              | 304 stainless steel              |
| 13  | Plug seal            | NBR (standard)                   | NBR (standard)                   |

Construction options are reference information, not confirmation of the internals supplied under an NPT part number. The source general material table uses a different stainless DIN grade and ball description; see page 3. Confirm the order-specific material specification.

# Materials and temperature

Component limits and material options from the supplied technical reference.

## Seal temperature limits

| Seal material | Minimum | Maximum |
|---------------|---------|---------|
| NBR (Buna N)  | -23 C   | 121 C   |
| Viton         | -23 C   | 200 C   |

## Ball-seat / ball-seal temperature limits

| Material | Minimum | Maximum |
|----------|---------|---------|
| POM      | -30 C   | 100 C   |
| PTFE     | -54 C   | 65 C    |

Temperatures are in degrees Celsius and reproduce the supplied chart. These are component limits, not an assembled-valve pressure/temperature rating. Do not combine the highest pressure and temperature independently. No derating graph was supplied.

## General materials of construction

| Component                   | Stainless steel option         | Carbon steel option            |
|-----------------------------|--------------------------------|--------------------------------|
| Body / end connector / stem | A479 SS316; DIN 17440 / 1.4541 | A108 12L14; DIN 1651 / 95Mn28K |
| Ball                        | 316 stainless steel            | 316 stainless steel            |
| Seat rings                  | POM (standard)                 | POM (standard)                 |
| O-seals                     | NBR (standard)                 | NBR (standard)                 |
| Handle                      | SS316 / A276                   | Carbon steel                   |
| Locking device              | Stainless steel                | Stainless steel                |

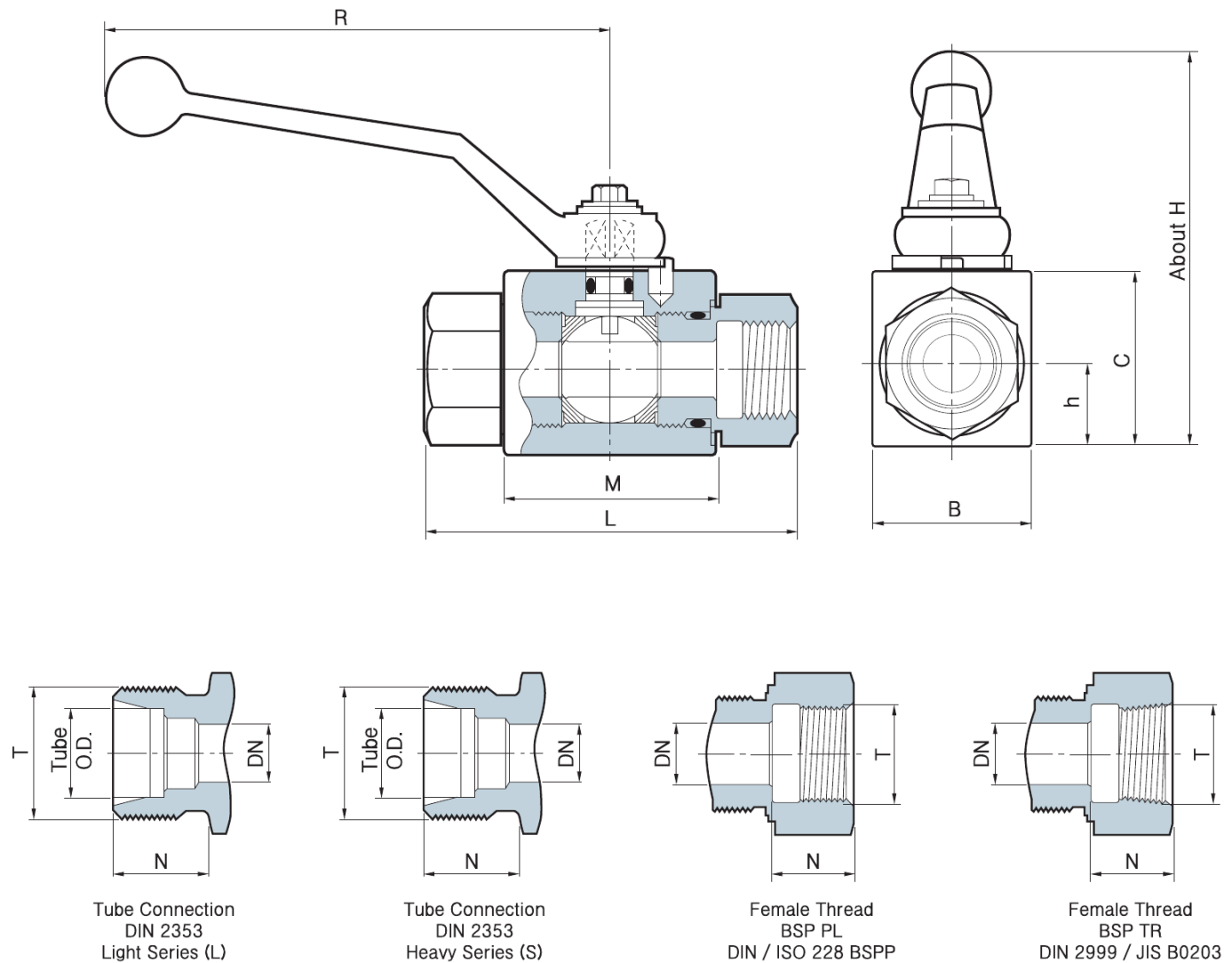
Source-table differences retained for transparency: the component table gives DIN 1.4571 for stainless body/stem/plug and a 304 ball for the carbon steel option; the general table gives DIN 1.4541 and a 316 ball. These are not asserted to be equivalent. Ask Fluidline to confirm the supplied construction.

**Listed options:** seat materials POM, PCTFE, PEEK or PTFE; seal materials NBR or Viton; body materials SUS316 or carbon steel. Availability and ratings depend on the selected configuration.



# Dimensions and connections

Drawing symbols correspond to the reference tables on pages 5 and 6.



## Dimension key

B: body width C: body height h: centreline height  
 L: overall body/connector length M: central body length  
 N: connection detail length H: approximate overall handle height  
 R: handle reach T: connection thread DN: maximum orifice

All linear dimensions are in millimetres. Use the drawing and the correct end-connection table together. DIN light (L), DIN heavy (S), BSPP and BSP taper connections are distinct. An NPT dimensional drawing must be obtained for the NPT Fluidline part numbers on page 1.

# DIN 2353 valve dimensions

Reference variants. Request the matching Fluidline code and current drawing.

## Light series - L

| Tube OD | DN | PN bar | B  | C  | h  | L   | M  | N  | H~   | R   | Thread T | kg  |
|---------|----|--------|----|----|----|-----|----|----|------|-----|----------|-----|
| 6       | 6  | 315    | 26 | 33 | 14 | 67  | 40 | 10 | 71   | 115 | M12x1.5  | 0.4 |
| 8       | 6  | 315    | 26 | 33 | 14 | 67  | 40 | 10 | 71   | 115 | M14x1.5  | 0.4 |
| 10      | 6  | 315    | 26 | 33 | 14 | 74  | 40 | 11 | 71   | 115 | M16x1.5  | 0.5 |
| 12      | 10 | 315    | 32 | 38 | 17 | 74  | 43 | 11 | 73   | 115 | M18x1.5  | 0.6 |
| 15      | 13 | 315    | 35 | 40 | 18 | 82  | 48 | 12 | 74   | 115 | M22x1.5  | 0.7 |
| 18      | 13 | 315    | 35 | 40 | 18 | 82  | 48 | 12 | 74   | 115 | M26x1.5  | 0.8 |
| 22      | 20 | 160    | 49 | 57 | 25 | 101 | 62 | 14 | 85.5 | 160 | M30x2.0  | 2.1 |
| 28      | 25 | 160    | 58 | 65 | 30 | 108 | 66 | 14 | 88.5 | 160 | M36x2.0  | 2.3 |
| 35      | 25 | 160    | 58 | 65 | 30 | 112 | 66 | 16 | 88.5 | 160 | M45x2.0  | 2.3 |

## Heavy series - S

| Tube OD | DN | PN bar | B  | C  | h  | L   | M  | N  | H~   | R   | Thread T | kg  |
|---------|----|--------|----|----|----|-----|----|----|------|-----|----------|-----|
| 8       | 6  | 500    | 26 | 33 | 14 | 73  | 40 | 12 | 71   | 115 | M16x1.5  | 0.4 |
| 10      | 6  | 500    | 26 | 33 | 14 | 73  | 40 | 12 | 71   | 115 | M18x1.5  | 0.4 |
| 12      | 6  | 500    | 32 | 38 | 17 | 76  | 43 | 12 | 73   | 115 | M20x1.5  | 0.5 |
| 14      | 10 | 500    | 32 | 38 | 17 | 80  | 43 | 14 | 73   | 115 | M22x1.5  | 0.6 |
| 16      | 13 | 400    | 35 | 40 | 18 | 86  | 48 | 14 | 74   | 115 | M24x1.5  | 0.7 |
| 20      | 13 | 400    | 35 | 40 | 18 | 90  | 48 | 16 | 74   | 115 | M30x2.0  | 0.8 |
| 25      | 20 | 315    | 49 | 57 | 25 | 109 | 62 | 18 | 85.5 | 160 | M36x2.0  | 2.1 |
| 30      | 25 | 315    | 58 | 65 | 30 | 120 | 66 | 20 | 88.5 | 160 | M42x2.0  | 2.3 |
| 38      | 25 | 315    | 58 | 65 | 30 | 124 | 66 | 22 | 88.5 | 160 | M52x2.0  | 2.3 |

DN is the maximum orifice. The source states PN in bar with a safety factor of 1.5. All dimensions are in mm; H is approximate and weight is in kg. Tube connections are described as complete with sleeves and nuts. Ratings remain subject to the supplied materials and operating conditions.



# BSP threaded dimensions

These tables describe BSP variants. They do not specify the NPT range.

## Female BSPP - DIN / ISO 228

| Thread T  | DN | PN bar | B  | C  | h  | L     | M  | N    | H~   | R   | kg  |
|-----------|----|--------|----|----|----|-------|----|------|------|-----|-----|
| PF 1/4"   | 6  | 500    | 26 | 33 | 14 | 68.8  | 40 | 14   | 71   | 115 | 0.4 |
| PF 3/8"   | 10 | 500    | 32 | 38 | 17 | 72    | 43 | 14   | 73   | 115 | 0.6 |
| PF 1/2"   | 13 | 500    | 35 | 40 | 18 | 82.2  | 48 | 16.5 | 74   | 115 | 0.7 |
| PF 3/4"   | 20 | 315    | 49 | 57 | 25 | 94.6  | 62 | 18   | 85.5 | 160 | 1.6 |
| PF 1"     | 25 | 315    | 58 | 65 | 30 | 112.8 | 66 | 20   | 88.5 | 160 | 2.3 |
| PF 1 1/4" | 25 | 315    | 58 | 65 | 30 | 120   | 66 | 22   | 88.5 | 160 | 2.3 |
| PF 1 1/2" | 32 | 250    | 92 | 93 | 44 | 130.2 | 85 | 24   | 112  | 240 | 6.4 |
| PF 2"     | 38 | 250    | 92 | 93 | 44 | 150.2 | 85 | 26   | 112  | 240 | 6.2 |

## Female BSP taper - DIN 2999 / JIS B0203

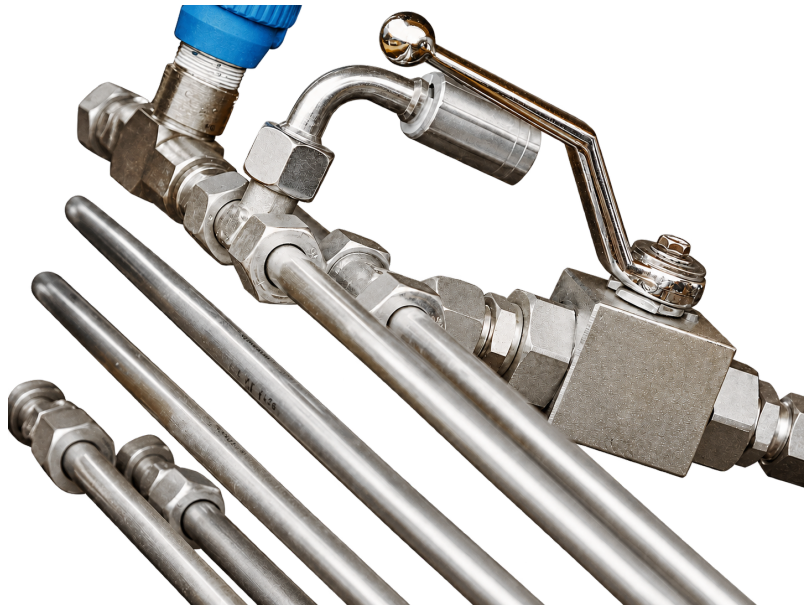
| Thread T  | DN | PN bar | B  | C  | h  | L     | M  | N    | H~   | R   | kg  |
|-----------|----|--------|----|----|----|-------|----|------|------|-----|-----|
| PT 1/4"   | 6  | 500    | 26 | 33 | 14 | 68.8  | 40 | 15   | 71   | 115 | 0.4 |
| PT 3/8"   | 10 | 500    | 32 | 38 | 17 | 78    | 43 | 15   | 73   | 115 | 0.6 |
| PT 1/2"   | 13 | 500    | 35 | 40 | 18 | 82.2  | 48 | 20.5 | 74   | 115 | 0.7 |
| PT 3/4"   | 20 | 315    | 49 | 57 | 25 | 100.6 | 62 | 21.5 | 85.5 | 160 | 1.6 |
| PT 1"     | 25 | 315    | 58 | 65 | 30 | 119   | 66 | 24   | 88.5 | 160 | 2.3 |
| PT 1 1/4" | 25 | 315    | 58 | 65 | 30 | 126   | 66 | 25.4 | 88.5 | 160 | 2.3 |
| PT 1 1/2" | 32 | 250    | 92 | 93 | 44 | 130   | 85 | 28   | 112  | 240 | 6.4 |
| PT 2"     | 38 | 250    | 92 | 93 | 44 | 160.2 | 85 | 32   | 112  | 240 | 6.4 |

PF and PT are the source thread labels. DN is the maximum orifice. The source states PN in bar with a safety factor of 1.5. Linear dimensions are in mm; H is approximate and weight is in kg. Confirm the exact thread and supplied drawing with Fluidline.

No supplier part-number format is used here. Specify the connection and size, then request a confirmed Fluidline ordering code. Do not substitute BSPP or BSP taper dimensions for an NPT part.

# Complete the tube run

Bring the valve, fittings, adapters, tubing and tube supports into one enquiry.



## Selection checklist

- 01 Fluidline part number and quantity
- 02 Connection size and thread
- 03 Normal and peak pressure
- 04 Fluid and temperature range
- 05 Seat, seal and body materials
- 06 Delivery town and country

Application photograph: hydraulic ball valve within a tube-and-fitting assembly.

## Confirm the complete supplied configuration

Use the Fluidline code for the six NPT valves listed on page 1. For DIN tube, BSPP or BSP taper variants, request a confirmed Fluidline code. Include compatible adapters for DIN 2353 / ISO 8434-1 tube fittings and request an order-specific dimensional drawing.

## Fluidline Products - quotations & technical confirmation

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Fluidline part numbers and NPT listed pressures: Fluidline supplied part list. Drawings and reference charts: supplied three-page high-pressure ball valve technical sheet. The source contains material-table differences noted on page 3. Confirm current specifications before ordering. This catalogue is not an installation manual.