

# LD<sup>®</sup>

BALL VALVES

## CATALOGUE



for liquid media

# 2019

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LD GROUP - is a leading manufacturer of steel valves for district heating/cooling, natural gas, petroleum products and chemical industry.

Established in 2002, the plant produces and distributes 1 100 000 items per year.



Today, LD is a famous quality mark recognized not only in Russia and CIS countries but also in Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Finland, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldavia, Mongolia, Poland, Romania, Serbia, Slovakia, Sweden, Ukraine, Uzbekistan.

We comply with all necessary international requirements and standards, such as ISO 9001:2015, PED 2014/68/EU, EN 488.



In order to guarantee competitive price and high quality only domestically produced raw materials are used for production of LD ball valves. For timely delivery, warehouses in Saint-Petersburg, Moscow and Novosibirsk are at your convenience and service.



### LD ball valve major features:

- DN 15 – 800, PN up to 40 bar
- Working media temp. -40C (-60C) to +200C, ambient temp. -40C (-60C) to +80C

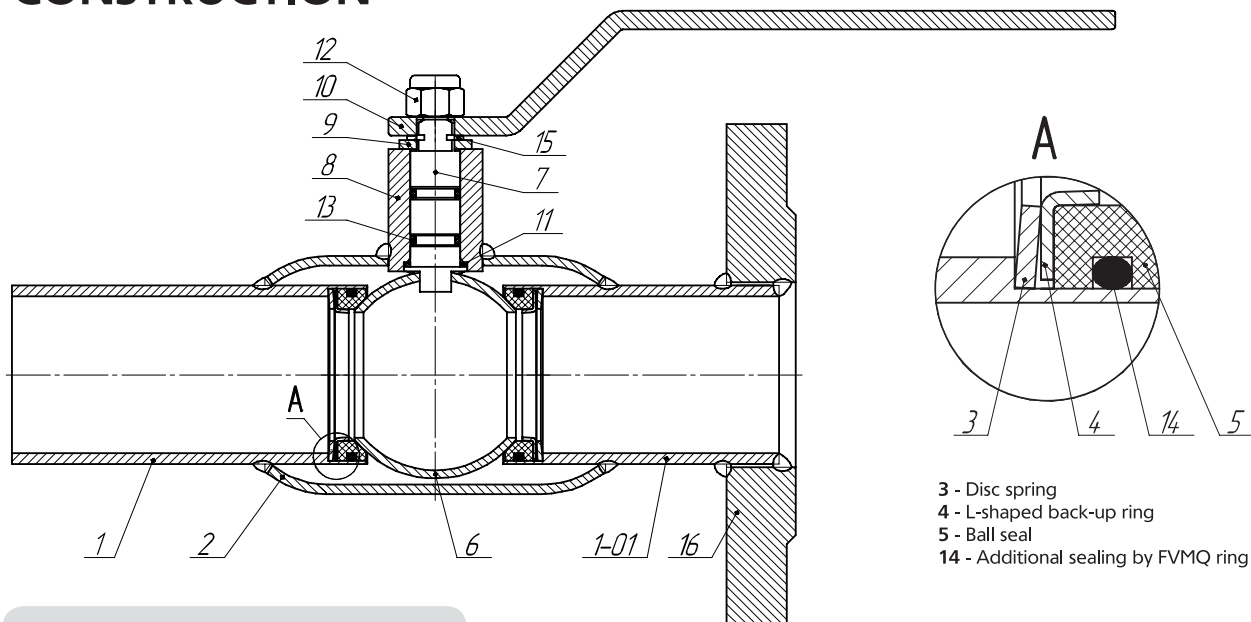
### Materials:

- carbon steel (Steel 20, 1.1151) for district heating/cooling, oil and gas (climate class N)
- alloyed steel (09G2S) for district heating/cooling, oil and gas (climate class NF)
- stainless steel (AISI 321, 1.4541) for utility water, non-aggressive media
- stainless steel (AISI 321, 1.4541) for chemical industry (aggressive media)



- Tightness A rate acc. to EN12266-1
- Service life 30 years (10 000 cycles)
- Warranty 3 years

## LD BALL VALVE CONSTRUCTION



- 3 - Disc spring
- 4 - L-shaped back-up ring
- 5 - Ball seal
- 14 - Additional sealing by FVMQ ring

### MATERIALS OF MAIN PARTS

| No.  |  | Climate class N                      |  | Climate class NF                                  |   |                                       |
|------|--|--------------------------------------|--|---|---|---------------------------------------|
|      |  | Material code                        | 02   | 03  | 01  | 01 - Energy                           |
|      |  | Steel grade                          | Carbon steel   | Alloyed steel                                     | Stainless steel                           | Stainless steel                       |
|      |  | Application                          | District heating/cooling,<br>oil and oil products    | District heating/cooling,<br>oil and oil products | Utility water,<br>non-aggressive media    | Chemical industry<br>aggressive media |
| 1    | <b>Welding end</b>                         | Carbon steel                         | Alloyed steel  | AISI 321  | AISI 321                                  |                                       |
| 1-01 | <b>Flange</b>                              | Carbon steel                         | Alloyed steel  | AISI 321  | AISI 321                                  |                                       |
| 2    | <b>Body</b>                                | Carbon steel                         | Alloyed steel  | AISI 321  | AISI 321                                  |                                       |
| 3    | <b>Disc spring</b>                         | Zinc plated spring steel             | Zinc plated spring steel                             | Zinc plated spring steel                          | AISI 321                                  |                                       |
| 4    | <b>L-shaped back-up ring</b>               | AISI 409                             | AISI 409   | AISI 409  | AISI 321                                  |                                       |
| 5    | <b>Ball seal</b>                           | PTFE+C                               | PTFE+C   | PTFE+C  | PTFE+C                                    |                                       |
| 6    | <b>Ball</b>                                | AISI 304, AISI 409                   | AISI 304, AISI 409                                   | AISI 304, AISI 409                                | AISI 321                                  |                                       |
| 7    | <b>Stem</b>                                | AISI 420                             | AISI 420   | AISI 420  | AISI 321                                  |                                       |
| 8    | <b>Stem shell</b>                          | Carbon steel                         | Alloyed steel  | AISI 321  | AISI 321                                  |                                       |
| 9    | <b>Handle</b>                              | Zinc plated steel                    | Zinc plated steel                                    | Zinc plated steel                                 | Zinc plated steel                         |                                       |
| 10   | <b>Washer</b>                              | PTFE                                 | PTFE   | PTFE  | PTFE                                      |                                       |
| 11   | <b>Nut</b>                                 | Zinc-plated steel with<br>polymer    | Zinc-plated steel with<br>polymer                    | Corrosion resistant steel<br>with polymer         | Corrosion resistant steel<br>with polymer |                                       |
| 12   | <b>Stem sealing ring</b>                   | EPDM, FVMQ                           | EPDM, FVMQ   | EPDM, FVMQ  | FVMQ                                      |                                       |
| 13   | <b>O-ring</b>                              | FVMQ                                 | FVMQ   | FVMQ  | FVMQ                                      |                                       |
| 14   | <b>Retaining ring</b>                      | Spring steel                         | Spring steel   | Spring steel                                      | Spring steel                              |                                       |
| 15   | <b>Flange</b>                              | Carbon steel                         | Alloyed steel  | AISI 321  | AISI 321                                  |                                       |
| 16   | <b>Working conditions<br/>and features</b> | Working media temp.<br>-40C to +200C | Working media temp.<br>-60 to +200C<br>Seamless pipe | Working media temp.<br>-60C to +200C              | Working media temp.<br>-60C to +200C      |                                       |

## BALL VALVE REDUCED BORE

### FLANGE/FLANGE

MATERIAL SPECIFICATION (Mat. code 02)

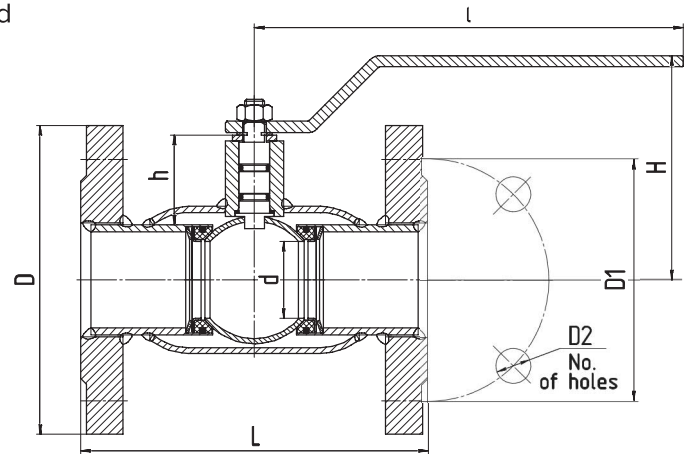
- Body:** carbon steel
- Stem:** stainless steel AISI 420 (X20Cr13)
- Ball:** stainless steel AISI 304, AISI 409
- Stem sealing:** EPDM, FVMQ
- Stem sealing/washer:** PTFE+C, PTFE
- Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

Connection dimensions acc. to DIN (EN) / GOST on request

- **DN 15-250:** lever – painted carbon steel with polymer end
- **DN 200-250:** ISO top flange for manual gear on default
- **DN 300-800:** manual gearbox on default

Gearbox in horizontal arrangement on default



### TECHNICAL DATA

| DN   | PN | CODE     | d   | D    | D1  | D2 | No. of holes | h   | H   | I     | L*** | Weight, kg |
|------|----|----------|-----|------|-----|----|--------------|-----|-----|-------|------|------------|
| 15   | 40 | 1159402  | 10  | 95   | 65  | 14 | 4            | 23  | 98  | 159   | 130  | 1,8        |
| 20   | 40 | 1209402  | 15  | 105  | 75  | 14 | 4            | 21  | 98  | 159   | 150  | 2,2        |
| 25   | 40 | 1259402  | 18  | 115  | 85  | 14 | 4            | 21  | 101 | 159   | 160  | 2,7        |
| 32   | 40 | 1329402  | 24  | 140  | 100 | 18 | 4            | 23  | 106 | 159   | 180  | 3,7        |
| 40   | 40 | 1409402  | 30  | 150  | 110 | 18 | 4            | 39  | 108 | 217   | 200  | 4,6        |
| 50   | 40 | 1509402  | 40  | 165  | 125 | 18 | 4            | 43  | 116 | 217   | 230  | 6,1        |
| 65   | 16 | 1659162  | 49  | 185  | 145 | 18 | 8            | 39  | 121 | 217   | 270  | 8,4        |
| 65   | 25 | 1659252  | 49  | 185  | 145 | 18 | 8            | 39  | 121 | 217   | 270  | 8,4        |
| 80   | 16 | 1809162  | 63  | 200  | 160 | 18 | 8            | 61  | 155 | 314,5 | 280  | 11,2       |
| 80   | 25 | 1809252  | 63  | 200  | 160 | 18 | 8            | 61  | 155 | 314,5 | 280  | 12         |
| 100  | 16 | 11009162 | 75  | 220  | 180 | 18 | 8            | 61  | 165 | 314,5 | 300  | 15         |
| 100  | 25 | 11009252 | 75  | 235  | 190 | 22 | 8            | 61  | 165 | 314,5 | 300  | 15         |
| 125  | 16 | 11259162 | 100 | 250  | 210 | 18 | 8            | 73  | 195 | 525   | 325  | 27,7       |
| 125  | 25 | 11259252 | 100 | 270  | 220 | 26 | 8            | 73  | 195 | 525   | 325  | 28,5       |
| 150  | 16 | 11509162 | 125 | 285  | 240 | 22 | 8            | 77  | 210 | 525   | 350  | 36         |
| 150  | 25 | 11509252 | 125 | 300  | 250 | 26 | 8            | 77  | 210 | 525   | 350  | 37         |
| 200  | 16 | 12009162 | 148 | 340  | 295 | 22 | 12           | 67  | 230 | 625   | 400  | 56         |
| 200  | 25 | 12009252 | 148 | 360  | 310 | 26 | 12           | 67  | 230 | 625   | 400  | 57         |
| 250  | 16 | 12509162 | 200 | 405  | 355 | 26 | 12           | 80  | 275 | 625   | 530  | 83         |
| 250  | 25 | 12509252 | 200 | 425  | 370 | 30 | 12           | 80  | 275 | 625   | 530  | 85         |
| 300* | 16 | 13009162 | 240 | 460  | 410 | 26 | 12           | 167 | -   | -     | 750  | 155        |
| 300* | 25 | 13009252 | 240 | 485  | 430 | 30 | 16           | 167 | -   | -     | 750  | 155        |
| 350* | 16 | 13509162 | 300 | 520  | 470 | 26 | 16           | 195 | -   | -     | 750  | 235        |
| 350* | 25 | 13509252 | 300 | 555  | 490 | 33 | 16           | 195 | -   | -     | 750  | 248        |
| 400* | 16 | 14009162 | 305 | 580  | 525 | 30 | 16           | 171 | -   | -     | 880  | 300        |
| 400* | 25 | 14009252 | 305 | 620  | 550 | 36 | 16           | 171 | -   | -     | 880  | 327        |
| 500* | 16 | 15009162 | 390 | 715  | 650 | 33 | 20           | 171 | -   | -     | 990  | 462        |
| 500* | 25 | 15009252 | 390 | 730  | 660 | 36 | 20           | 171 | -   | -     | 990  | 483        |
| 600* | 16 | 16009162 | 500 | 840  | 770 | 36 | 20           | 214 | -   | -     | 1173 | 950        |
| 600* | 25 | 16009252 | 500 | 845  | 770 | 39 | 20           | 214 | -   | -     | 1173 | 972        |
| 700* | 16 | 17009162 | 600 | 910  | 840 | 36 | 24           | 273 | -   | -     | 1376 | 1160       |
| 700* | 25 | 17009252 | 600 | 960  | 875 | 42 | 24           | 273 | -   | -     | 1376 | 1245       |
| 800* | 16 | 18009162 | 700 | 1025 | 950 | 39 | 24           | 380 | -   | -     | 1376 | 2600       |
| 800* | 25 | 18009252 | 700 | 1085 | 990 | 48 | 24           | 380 | -   | -     | 1376 | 2800       |

\*To be supplied with a gearbox on default. H indicated for valve with gearbox.

\*\*\* Other measurements on request.

## BALL VALVE FULL BORE



FLANGE/FLANGE

MATERIAL SPECIFICATION (Mat. code 02)

- Body:** carbon steel
- Stem:** stainless steel AISI 420 (X20Cr13)
- Ball:** stainless steel AISI 304, AISI 409
- Stem sealing:** EPDM, FVMQ
- Stem sealing/washer:** PTFE+C, PTFE
- Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

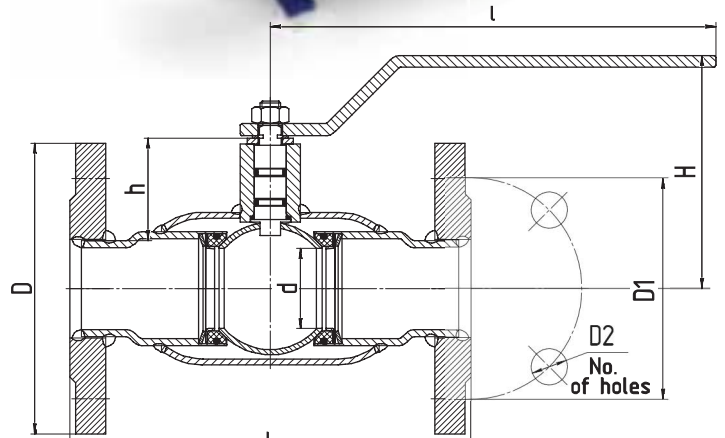
Connection dimensions acc. to DIN (EN) / GOST on request

- **DN 15-200:** lever – painted carbon steel with polymer end
- **DN 150-200:** ISO top flange for manual gear on default
- **DN 250-700:** manual gearbox on default

Gearbox in horizontal arrangement on default



Design of  
DN 350-700



### TECHNICAL DATA

| DN   | PN | CODE    | d   | D   | D1  | D2 | No. of holes | h   | H   | I     | L*** | Weight, kg |
|------|----|---------|-----|-----|-----|----|--------------|-----|-----|-------|------|------------|
| 15   | 40 | 115402  | 15  | 95  | 65  | 14 | 4            | 23  | 98  | 159   | 120  | 1,9        |
| 20   | 40 | 120402  | 18  | 105 | 75  | 14 | 4            | 21  | 98  | 159   | 140  | 2,5        |
| 25   | 40 | 125402  | 24  | 115 | 85  | 14 | 4            | 21  | 101 | 159   | 140  | 3,1        |
| 32   | 40 | 132402  | 30  | 140 | 100 | 18 | 4            | 23  | 106 | 217   | 165  | 4,2        |
| 40   | 40 | 140402  | 40  | 150 | 110 | 18 | 4            | 39  | 108 | 217   | 290  | 5,3        |
| 50   | 40 | 150402  | 49  | 165 | 125 | 18 | 4            | 43  | 116 | 217   | 300  | 7,1        |
| 65   | 16 | 165162  | 63  | 185 | 145 | 18 | 8            | 39  | 121 | 314,5 | 300  | 10,8       |
| 65   | 25 | 162252  | 63  | 185 | 145 | 18 | 8            | 39  | 121 | 314,5 | 300  | 10,8       |
| 80   | 16 | 180162  | 75  | 200 | 160 | 18 | 8            | 61  | 155 | 314,5 | 320  | 12,5       |
| 80   | 25 | 180252  | 75  | 200 | 160 | 18 | 8            | 61  | 155 | 314,5 | 320  | 12,5       |
| 100  | 16 | 1100162 | 100 | 220 | 180 | 18 | 8            | 61  | 165 | 525   | 350  | 23,2       |
| 100  | 25 | 1100252 | 100 | 235 | 190 | 22 | 8            | 61  | 165 | 525   | 350  | 23,2       |
| 125  | 16 | 1125162 | 125 | 250 | 210 | 18 | 8            | 73  | 195 | 525   | 380  | 33,4       |
| 125  | 25 | 1125252 | 125 | 270 | 220 | 26 | 8            | 73  | 195 | 525   | 380  | 37         |
| 150  | 16 | 1150162 | 148 | 285 | 240 | 22 | 8            | 77  | 210 | 625   | 410  | 44         |
| 150  | 25 | 1150252 | 148 | 300 | 250 | 26 | 8            | 77  | 210 | 625   | 410  | 46         |
| 200  | 16 | 1200162 | 200 | 340 | 295 | 22 | 12           | 67  | 230 | 625   | 530  | 71         |
| 200  | 25 | 1200252 | 200 | 360 | 310 | 26 | 12           | 67  | 230 | 625   | 530  | 72,6       |
| 250* | 16 | 1250162 | 248 | 405 | 355 | 26 | 12           | 80  | 275 | -     | 750  | 140        |
| 250* | 25 | 1250252 | 248 | 425 | 370 | 30 | 12           | 80  | 275 | -     | 750  | 140        |
| 300* | 16 | 1300162 | 300 | 460 | 410 | 26 | 12           | 221 | -   | -     | 750  | 236        |
| 300* | 25 | 1300252 | 300 | 485 | 430 | 30 | 16           | 221 | -   | -     | 750  | 249        |
| 350* | 16 | 1350162 | 390 | 520 | 470 | 26 | 16           | 247 | -   | -     | 990  | 422        |
| 350* | 25 | 1350252 | 390 | 555 | 490 | 33 | 16           | 247 | -   | -     | 990  | 449        |
| 400* | 16 | 1400162 | 390 | 580 | 525 | 30 | 16           | 223 | -   | -     | 990  | 468        |
| 400* | 25 | 1400252 | 390 | 620 | 550 | 36 | 16           | 223 | -   | -     | 990  | 496        |
| 500* | 16 | 1500162 | 500 | 715 | 650 | 33 | 20           | 264 | -   | -     | 1017 | 878        |
| 500* | 25 | 1500252 | 500 | 730 | 660 | 36 | 20           | 264 | -   | -     | 1017 | 899        |
| 600* | 16 | 1600162 | 600 | 840 | 770 | 36 | 20           | 318 | -   | -     | 1173 | 1211       |
| 600* | 25 | 1600252 | 600 | 845 | 770 | 39 | 20           | 318 | -   | -     | 1173 | 1233       |
| 700* | 16 | 1700162 | 700 | 910 | 840 | 36 | 24           | 430 | -   | -     | 1376 | 2500       |
| 700* | 25 | 1700252 | 700 | 960 | 875 | 42 | 24           | 430 | -   | -     | 1376 | 2550       |

\*To be supplied with a gearbox on default. H indicated for valve with gearbox.  
\*\*\* Other measurements on request.

## BALL VALVE REDUCED BORE

○ WELD/WELD

MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel AISI 420 (X20Cr13)

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** PTFE+C, PTFE

**Ball sealing:** PTFE+C with additional sealing made of FVMQ

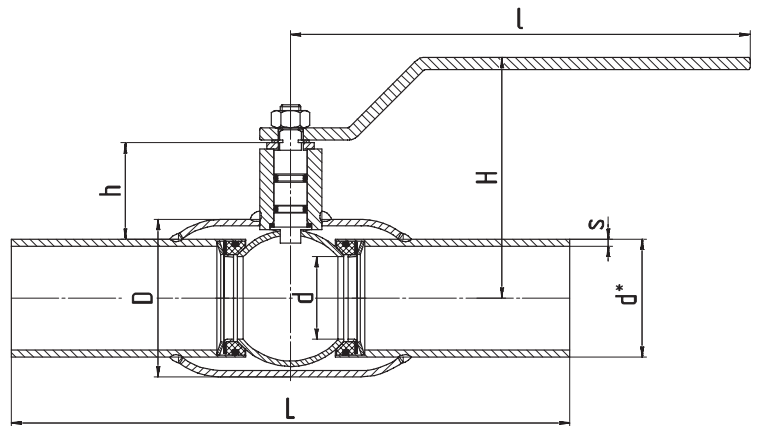


### OPERATION

Connection dimensions acc. to DIN (EN)/ GOST on request

- **DN 15-250:** lever – painted carbon steel with polymer end
- **DN 200-250:** ISO top flange for manual gear on default
- **DN 300-800:** manual gearbox on default

Gearbox in horizontal arrangement on default



### TECHNICAL DATA

| DN   | PN | CODE     | d   | d*    | s   | D    | h   | H   | I     | L*** | Weight, kg |
|------|----|----------|-----|-------|-----|------|-----|-----|-------|------|------------|
| 15   | 40 | 2159402  | 10  | 21,3  | 2,0 | 38   | 23  | 98  | 159   | 230  | 0,8        |
| 20   | 40 | 2209402  | 15  | 26,9  | 2,3 | 42   | 21  | 98  | 159   | 230  | 0,8        |
| 25   | 40 | 2259402  | 18  | 33,7  | 2,6 | 48   | 21  | 101 | 159   | 230  | 1,1        |
| 32   | 40 | 2329402  | 24  | 42,4  | 2,6 | 57   | 23  | 106 | 159   | 260  | 1,5        |
| 40   | 40 | 2409402  | 30  | 48,3  | 2,6 | 60   | 39  | 108 | 217   | 260  | 2          |
| 50   | 40 | 2509402  | 40  | 60,3  | 2,9 | 76   | 43  | 116 | 217   | 300  | 2,6        |
| 65   | 25 | 2659252  | 49  | 76,1  | 2,9 | 89   | 39  | 121 | 217   | 300  | 3,4        |
| 80   | 25 | 2809252  | 63  | 88,9  | 3,2 | 114  | 61  | 155 | 314,5 | 300  | 5,3        |
| 100  | 25 | 21009252 | 75  | 114,3 | 3,6 | 133  | 61  | 165 | 314,5 | 325  | 6,7        |
| 125  | 25 | 21259252 | 100 | 139,7 | 4,0 | 180  | 73  | 195 | 525   | 325  | 15,3       |
| 150  | 25 | 21509252 | 125 | 168,3 | 4,5 | 219  | 77  | 210 | 525   | 350  | 20,6       |
| 200  | 25 | 22009252 | 148 | 219,1 | 4,5 | 273  | 67  | 230 | 625   | 400  | 36         |
| 250  | 25 | 22509252 | 200 | 273,0 | 5,0 | 351  | 80  | 275 | 625   | 530  | 54         |
| 300* | 25 | 23009252 | 240 | 323,9 | 5,6 | 426  | 167 | -   | -     | 730  | 120        |
| 350* | 25 | 23509252 | 300 | 355,6 | 6,3 | 530  | 195 | -   | -     | 730  | 230        |
| 400* | 25 | 24009252 | 300 | 406,4 | 7,0 | 530  | 170 | -   | -     | 860  | 280        |
| 500* | 25 | 25009252 | 390 | 508,0 | 7,0 | 630  | 170 | -   | -     | 970  | 450        |
| 600* | 25 | 26009252 | 500 | 610   | 7,1 | 820  | 214 | -   | -     | 1143 | 790        |
| 700* | 25 | 27009252 | 600 | 711   | 8,0 | 1020 | 273 | -   | -     | 1346 | 990        |
| 800* | 25 | 28009252 | 700 | 813   | 8,8 | 1120 | 380 | -   | -     | 1346 | 2400       |

\*To be supplied with a gearbox on default. H indicated for valve with gearbox.  
\*\*\* Other measurements on request.



## BALL VALVE FULL BORE

○ WELD/WELD

MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel AISI 420 (X20Cr13)

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** PTFE+C, PTFE

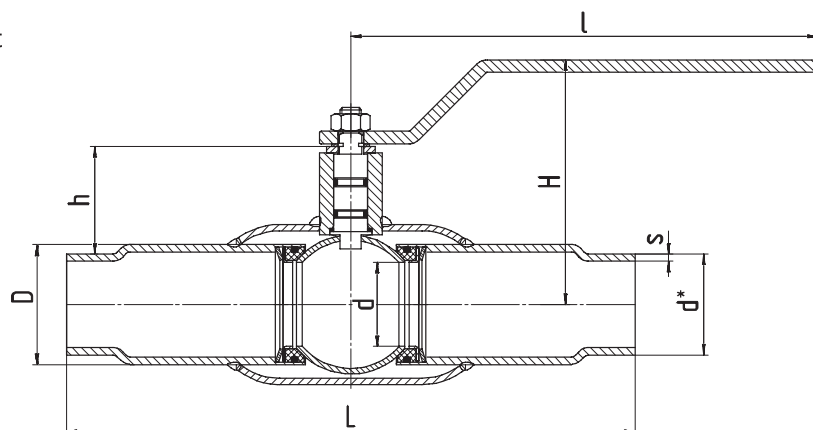
**Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

Connection dimensions acc. to DIN (EN)/ GOST on request

- **DN 15-250:** lever – painted carbon steel with polymer end
- **DN 150-200:** ISO top flange for manual gearbox with worm gear installation
- **DN 250-700:** manual gearbox on default

Gearbox in horizontal arrangement on default



### TECHNICAL DATA

| DN   | PN | CODE    | d   | d*    | s   | D    | h   | H   | I     | L*** | Weight, kg |
|------|----|---------|-----|-------|-----|------|-----|-----|-------|------|------------|
| 15   | 40 | 215402  | 15  | 21,3  | 2,0 | 27   | 23  | 98  | 159   | 230  | 0,8        |
| 20   | 40 | 220402  | 18  | 26,9  | 2,3 | 32   | 21  | 98  | 159   | 230  | 1,1        |
| 25   | 40 | 225402  | 24  | 33,7  | 2,6 | 38   | 21  | 101 | 159   | 260  | 1,5        |
| 32   | 40 | 232402  | 30  | 42,4  | 2,6 | 48   | 23  | 106 | 217   | 260  | 2          |
| 40   | 40 | 240402  | 40  | 48,3  | 2,9 | 57   | 39  | 108 | 217   | 300  | 2,6        |
| 50   | 40 | 250402  | 49  | 60,3  | 2,9 | 76   | 43  | 116 | 217   | 300  | 3,4        |
| 65   | 25 | 265252  | 63  | 76,1  | 3,2 | 89   | 39  | 121 | 314,5 | 300  | 5,3        |
| 80   | 25 | 280252  | 75  | 88,9  | 3,6 | 108  | 61  | 155 | 314,5 | 325  | 6,7        |
| 100  | 25 | 2100252 | 100 | 114,3 | 3,6 | 133  | 61  | 165 | 525   | 325  | 15,3       |
| 125  | 25 | 2125252 | 125 | 139,7 | 3,6 | 159  | 73  | 195 | 525   | 360  | 20,6       |
| 150  | 25 | 2150252 | 148 | 168,3 | 5,0 | 180  | 77  | 210 | 625   | 400  | 29,6       |
| 200  | 25 | 2200252 | 200 | 219,1 | 5,0 | 245  | 67  | 230 | 625   | 530  | 53         |
| 250* | 25 | 2250252 | 240 | 273,0 | 5,0 | 325  | 80  | 275 | -     | 730  | 120        |
| 300* | 25 | 2300252 | 300 | 323,9 | 5,6 | 377  | 167 | -   | -     | 730  | 230        |
| 350* | 25 | 2350252 | 390 | 355,6 | 6,3 | 630  | 247 | -   | -     | 970  | 376        |
| 400* | 25 | 2400252 | 390 | 406,0 | 6,3 | 426  | 170 | -   | -     | 970  | 450        |
| 500* | 25 | 2500252 | 500 | 508,0 | 7,1 | 820  | 170 | -   | -     | 991  | 765        |
| 600* | 25 | 2600252 | 600 | 610   | 7,1 | 1020 | 318 | -   | -     | 1143 | 1050       |
| 700* | 25 | 2700252 | 700 | 711   | 8,0 | 1120 | 430 | -   | -     | 1346 | 2300       |

\*To be supplied with a gearbox on default. H indicated for valve with gearbox.

\*\*\* Other measurements on request.

## BALL VALVE FULL BORE MODERNIZED

### MATERIAL SPECIFICATION (Mat. code 02)

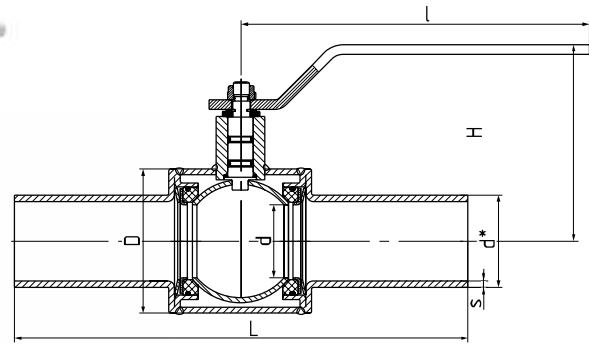
- Body:** carbon steel
- Stem:** stainless steel AISI 420 (X20Cr13)
- Ball:** stainless steel AISI 304, AISI 409
- Stem sealing:** EPDM, FVMQ
- Stem sealing/washer:** PTFE+C, PTFE
- Thread:** straight pipe thread
- Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

Connection dimensions acc. to DIN (EN)/ GOST on request

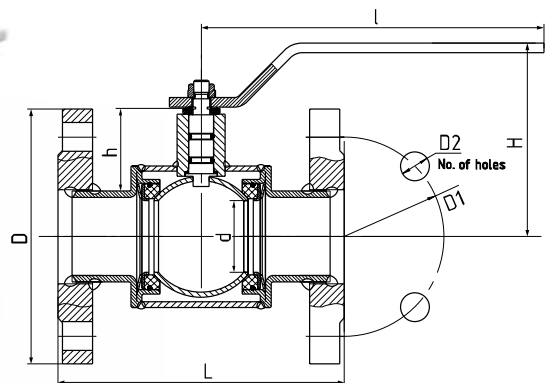
- **DN 15-100:** lever – painted carbon steel with polymer end

○ WELD/WELD



| DN  | PN | CODE      | d   | d*    | s   | D   | H   | h   | I     | L   | Weight, kg |
|-----|----|-----------|-----|-------|-----|-----|-----|-----|-------|-----|------------|
| 50  | 40 | M-250402  | 49  | 60,3  | 2,9 | 89  | 121 | 52  | 217   | 280 | 3          |
| 65  | 25 | M-265252  | 63  | 76,1  | 3,2 | 114 | 155 | 74  | 314,5 | 280 | 4,5        |
| 80  | 25 | M-280252  | 75  | 88,9  | 3,6 | 133 | 165 | 77  | 314,5 | 300 | 6,5        |
| 100 | 25 | M-2100252 | 100 | 114,3 | 3,6 | 180 | 195 | 107 | 525   | 330 | 13         |

○ FLANGE/FLANGE



| DN  | PN | CODE      | d   | D   | D1  | D2 | No | h   | H   | I     | L   | Weight, kg |
|-----|----|-----------|-----|-----|-----|----|----|-----|-----|-------|-----|------------|
| 50  | 40 | M-150402  | 49  | 165 | 125 | 18 | 4  | 52  | 121 | 217   | 180 | 8          |
| 65  | 16 | M-165162  | 63  | 185 | 145 | 18 | 8  | 74  | 155 | 314,5 | 200 | 10,5       |
| 65  | 25 | M-162252  | 63  | 185 | 145 | 18 | 8  | 74  | 155 | 314,5 | 200 | 11         |
| 80  | 16 | M-180162  | 75  | 200 | 160 | 18 | 8  | 77  | 165 | 314,5 | 210 | 13         |
| 80  | 25 | M-180252  | 75  | 200 | 160 | 18 | 8  | 77  | 165 | 314,5 | 210 | 14         |
| 100 | 16 | M-1100162 | 100 | 225 | 180 | 18 | 8  | 107 | 195 | 525   | 230 | 23         |
| 100 | 25 | M-1100252 | 100 | 230 | 190 | 22 | 8  | 107 | 195 | 525   | 230 | 24         |

## BALL VALVE

### THREAD/THREAD

#### MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel AISI 420 (X20Cr13)

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

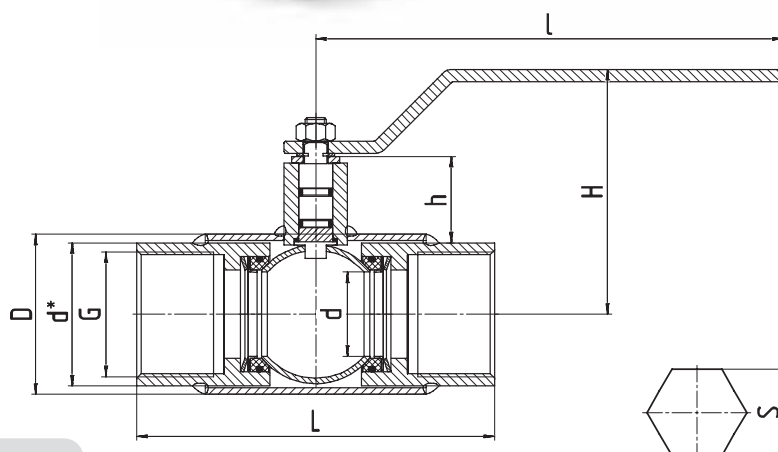
**Stem sealing/washer:** PTFE+C, PTFE

**Thread:** straight pipe thread

#### OPERATION

- **DN 15-100:** lever – painted carbon steel with polymer end

Gearbox in horizontal arrangement on default



#### TECHNICAL DATA FOR REDUCED BORE

| DN  | PN | CODE     | S  | d*  | d  | D   | G     | h  | H   | I     | L   | Weight, kg |
|-----|----|----------|----|-----|----|-----|-------|----|-----|-------|-----|------------|
| 15  | 40 | 3159402  | 27 | -   | 10 | 38  | 1/2   | 23 | 98  | 159   | 135 | 0,8        |
| 20  | 40 | 3209402  | 32 | -   | 15 | 42  | 3/4   | 21 | 98  | 159   | 135 | 0,8        |
| 25  | 40 | 3259402  | 41 | -   | 18 | 48  | 1     | 21 | 101 | 159   | 135 | 1,2        |
| 32  | 40 | 3329402  | -  | 48  | 24 | 57  | 1 1/4 | 23 | 106 | 159   | 135 | 1,5        |
| 40  | 40 | 3409402  | -  | 55  | 30 | 60  | 1 1/2 | 39 | 108 | 217   | 155 | 1,9        |
| 50  | 40 | 3509402  | -  | 68  | 40 | 76  | 2     | 43 | 116 | 217   | 170 | 2,9        |
| 65  | 25 | 3659252  | -  | 84  | 49 | 89  | 2 1/2 | 39 | 121 | 217   | 190 | 4          |
| 80  | 25 | 3809252  | -  | 98  | 63 | 114 | 3     | 61 | 155 | 314,5 | 200 | 5,8        |
| 100 | 25 | 31009252 | -  | 133 | 75 | 133 | 4     | 61 | 165 | 314,5 | 240 | 11,7       |

#### TECHNICAL DATA FOR FULL BORE

| DN | PN | CODE   | S  | d*  | d  | D   | G     | h  | H   | I     | L   | Weight, kg |
|----|----|--------|----|-----|----|-----|-------|----|-----|-------|-----|------------|
| 15 | 40 | 315402 | 27 | -   | 15 | 42  | 1/2   | 23 | 98  | 159   | 135 | 0,8        |
| 20 | 40 | 320402 | 41 | -   | 18 | 48  | 3/4   | 21 | 98  | 159   | 135 | 1,2        |
| 25 | 40 | 325402 | 41 | -   | 24 | 57  | 1     | 21 | 101 | 159   | 135 | 1,5        |
| 32 | 40 | 332402 | -  | 55  | 30 | 60  | 1 1/4 | 23 | 106 | 217   | 155 | 1,9        |
| 40 | 40 | 340402 | -  | 68  | 40 | 76  | 1 1/2 | 39 | 108 | 217   | 170 | 2,9        |
| 50 | 40 | 350402 | -  | 81  | 49 | 89  | 2     | 43 | 116 | 217   | 190 | 4,0        |
| 65 | 25 | 365252 | -  | 99  | 64 | 114 | 2 1/2 | 39 | 121 | 314,5 | 200 | 5,8        |
| 80 | 25 | 380252 | -  | 133 | 75 | 133 | 3     | 61 | 155 | 314,5 | 240 | 11,5       |

## SERVICE BALL VALVE

### COMBINED (THREAD/WELD)

MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel AISI 420 (X20Cr13)

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:**

EPDM, FVMQ

**Stem sealing/washer:**

PTFE+C, PTFE

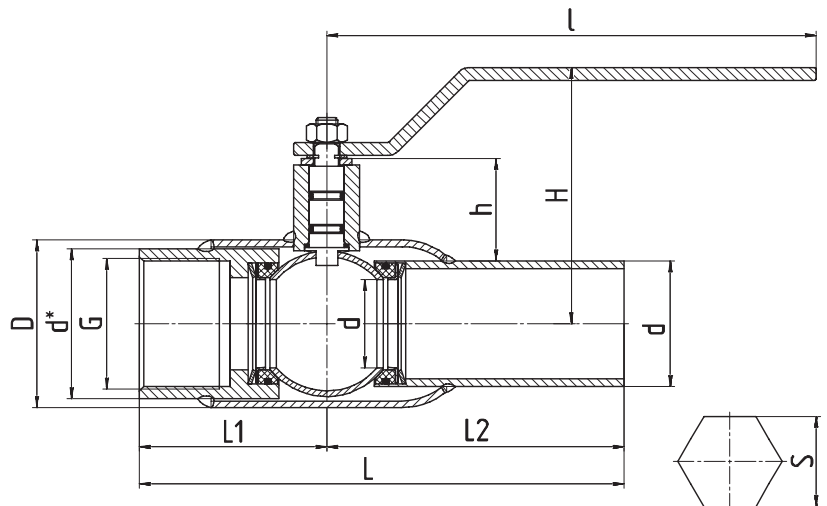
**Thread:** straight pipe thread



### OPERATION

Welding end acc. to DIN (EN) / GOST on request

- **DN 15-100:** lever – painted carbon steel with polymer end



### TECHNICAL DATA

| DN  | PN | CODE       | S  | d*  | D   | G     | L1   | L2  | I     | d     | L   | Weight, kg |
|-----|----|------------|----|-----|-----|-------|------|-----|-------|-------|-----|------------|
| 15  | 40 | S-4159402  | 27 | -   | 38  | 1/2   | 67,5 | 100 | 159   | 21,3  | 183 | 0,5        |
| 20  | 40 | S-4209402  | 32 | -   | 42  | 3/4   | 68   | 100 | 159   | 26,9  | 183 | 0,7        |
| 25  | 40 | S-4259402  | 41 | -   | 48  | 1     | 68   | 115 | 159   | 33,7  | 183 | 1,0        |
| 32  | 40 | S-4329402  | -  | 48  | 57  | 1 1/4 | 68   | 115 | 159   | 42,4  | 198 | 1,1        |
| 40  | 40 | S-4409402  | -  | 55  | 60  | 1 1/2 | 78   | 125 | 217   | 48,3  | 208 | 1,6        |
| 50  | 40 | S-4509402  | -  | 68  | 76  | 2     | 85   | 135 | 217   | 60,3  | 235 | 2,4        |
| 65  | 25 | S-4659252  | -  | 84  | 89  | 2 1/2 | 95   | 140 | 217   | 76,1  | 245 | 3,4        |
| 80  | 25 | S-4809252  | -  | 98  | 114 | 3     | 100  | 140 | 314,5 | 88,9  | 250 | 5,1        |
| 100 | 25 | S-41009252 | -  | 133 | 133 | 4     | 120  | 150 | 314,5 | 114,3 | 283 | 8,7        |

## BALL VALVE REDUCED BORE



MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel AISI 420 (X20Cr13)

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** PTFE+C, PTFE

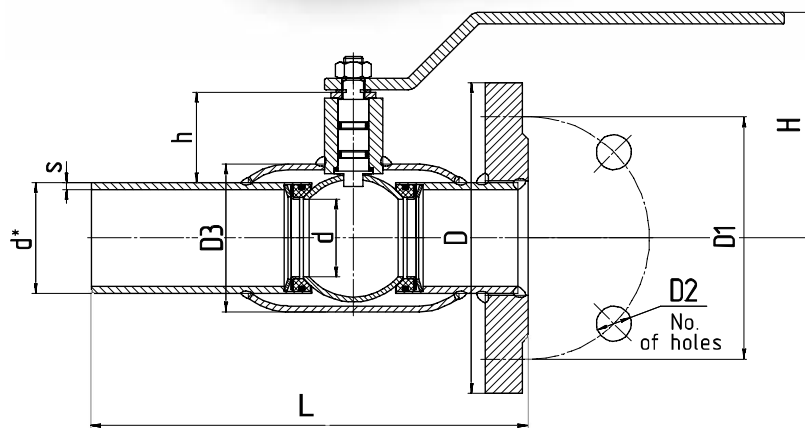
**Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

Connection dimensions acc. to DIN (EN) / GOST on request

- **DN 15-250:** lever – painted carbon steel with polymer end
- **DN 125-250:** manual gearbox with worm gear recommended

Gearbox in horizontal arrangement on default



### TECHNICAL DATA

| DN  | PN | CODE     | d   | d*    | s   | D3  | h  | H   | L     | D1  | D2 | No. of holes | D   | Weight, kg |
|-----|----|----------|-----|-------|-----|-----|----|-----|-------|-----|----|--------------|-----|------------|
| 15  | 40 | 4159402  | 10  | 21,3  | 2,0 | 38  | 23 | 98  | 180   | 65  | 14 | 4            | 95  | 1,5        |
| 20  | 40 | 4209402  | 15  | 26,9  | 2,3 | 42  | 21 | 98  | 190   | 75  | 14 | 4            | 105 | 1,9        |
| 25  | 40 | 4259402  | 18  | 33,7  | 2,6 | 48  | 21 | 101 | 195   | 85  | 14 | 4            | 115 | 2,0        |
| 32  | 40 | 4329402  | 24  | 42,4  | 2,6 | 57  | 23 | 106 | 220   | 100 | 18 | 4            | 140 | 3,0        |
| 40  | 40 | 4409402  | 30  | 48,3  | 2,6 | 60  | 39 | 108 | 230   | 110 | 18 | 4            | 150 | 4,5        |
| 50  | 40 | 4509402  | 40  | 60,3  | 2,9 | 76  | 43 | 116 | 265   | 125 | 18 | 4            | 165 | 5,3        |
| 65  | 16 | 4659162  | 45  | 76,1  | 2,9 | 89  | 39 | 121 | 285   | 145 | 18 | 8            | 185 | 7,2        |
| 65  | 25 | 4659252  | 45  | 76,1  | 2,9 | 89  | 39 | 121 | 285   | 145 | 18 | 8            | 185 | 7,4        |
| 80  | 16 | 4809162  | 63  | 89,9  | 3,2 | 114 | 61 | 155 | 290   | 160 | 18 | 8            | 200 | 9,0        |
| 80  | 25 | 4809252  | 63  | 89,9  | 3,2 | 114 | 61 | 155 | 290   | 160 | 18 | 8            | 200 | 9,3        |
| 100 | 16 | 41009162 | 75  | 114,3 | 3,6 | 133 | 61 | 165 | 312,5 | 180 | 18 | 8            | 220 | 12,3       |
| 100 | 25 | 41009252 | 75  | 114,3 | 3,6 | 133 | 61 | 165 | 312,5 | 190 | 22 | 8            | 235 | 12,8       |
| 125 | 16 | 41259162 | 100 | 139,7 | 4,0 | 180 | 73 | 195 | 325   | 210 | 18 | 8            | 250 | 25,0       |
| 125 | 25 | 41259252 | 100 | 139,7 | 4,0 | 180 | 73 | 195 | 325   | 220 | 26 | 8            | 270 | 25,4       |
| 150 | 16 | 41509162 | 125 | 168,3 | 4,5 | 219 | 77 | 210 | 350   | 240 | 22 | 8            | 285 | 26,3       |
| 150 | 25 | 41509252 | 125 | 159   | 4,5 | 219 | 77 | 210 | 350   | 250 | 26 | 8            | 300 | 26,9       |
| 200 | 16 | 42009162 | 148 | 219   | 4,5 | 273 | 67 | 230 | 400   | 295 | 22 | 12           | 340 | 45,5       |
| 200 | 25 | 42009252 | 148 | 219   | 4,5 | 273 | 67 | 230 | 400   | 310 | 26 | 12           | 360 | 45,5       |
| 250 | 16 | 42509162 | 200 | 273   | 4,5 | 351 | 80 | 275 | 530   | 355 | 26 | 12           | 405 | 84,5       |
| 250 | 25 | 42509252 | 200 | 273   | 4,5 | 351 | 80 | 275 | 530   | 370 | 30 | 16           | 425 | 84,5       |

## BALL VALVE REDUCED BORE (with extended spindle for underground installation)

○ WELD/WELD

### MATERIAL SPECIFICATION (03 - Energy)

**Body:** alloy steel (09G2S)

**Stem:** stainless steel (AISI 420)

**Stem top:** stainless steel (AISI 321) acc. to EN488

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** PTFE+C, PTFE

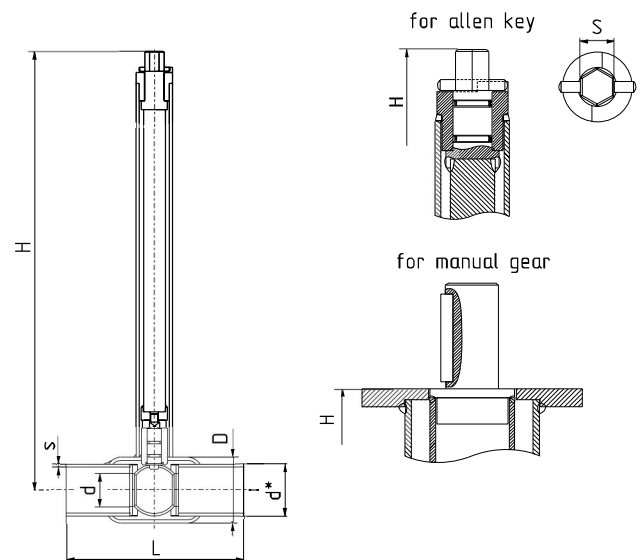
**Ball sealing:** PTFE+C with additional sealing made of FVMQ

### OPERATION

- Allen key
- Manual gear
- Electric actuator
- Pneumatic actuator

Gearbox in horizontal arrangement on default

Gearbox in vertical arrangement on request



### TECHNICAL DATA

| DN   | PN | CODE     | d   | d*    | s   | D    | H          | L      |
|------|----|----------|-----|-------|-----|------|------------|--------|
| 50   | 40 | 2509402  | 40  | 60,3  | 2,9 | 76   | on request | 300**  |
| 65   | 25 | 2659252  | 49  | 76,1  | 2,9 | 89   | on request | 300**  |
| 80   | 25 | 2809252  | 63  | 88,9  | 2,9 | 114  | on request | 300**  |
| 100  | 25 | 21009252 | 75  | 114,3 | 3,6 | 133  | on request | 325**  |
| 125  | 25 | 21259252 | 100 | 139,7 | 4,0 | 180  | on request | 325**  |
| 150  | 25 | 21509252 | 125 | 168,3 | 4,0 | 219  | on request | 350**  |
| 200  | 25 | 22009252 | 148 | 219,1 | 4,5 | 273  | on request | 400**  |
| 250* | 25 | 22509252 | 200 | 273,0 | 5,0 | 351  | on request | 530**  |
| 300* | 25 | 23009252 | 240 | 323,9 | 5,6 | 426  | on request | 730**  |
| 350* | 25 | 23509252 | 300 | 355,6 | 5,6 | 530  | on request | 730**  |
| 400* | 25 | 24009252 | 300 | 406,4 | 7,0 | 530  | on request | 860**  |
| 500* | 25 | 25009252 | 390 | 508,0 | 7,0 | 630  | on request | 970**  |
| 600* | 25 | 26009252 | 500 | 610   | 7,1 | 820  | on request | 1143** |
| 700* | 25 | 27009252 | 600 | 711   | 8,0 | 1020 | on request | 1346** |
| 800* | 25 | 28009252 | 700 | 813   | 8,8 | 1120 | on request | 1346** |

\*To be supplied with a gearbox on default.  
H indicates spindle height.  
\*\*L=1500 on request.

## BALL VALVE FULL BORE (with extended spindle for underground installation)

○ WELD/WELD

MATERIAL SPECIFICATION (03 - Energy)

**Body:** alloy steel (09G2S)

**Stem:** stainless steel (AISI 420)

**Stem top:** stainless steel (AISI 321) acc. to EN488

**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** PTFE+C, PTFE

**Ball sealing:** PTFE+C with additional sealing made of FVMQ

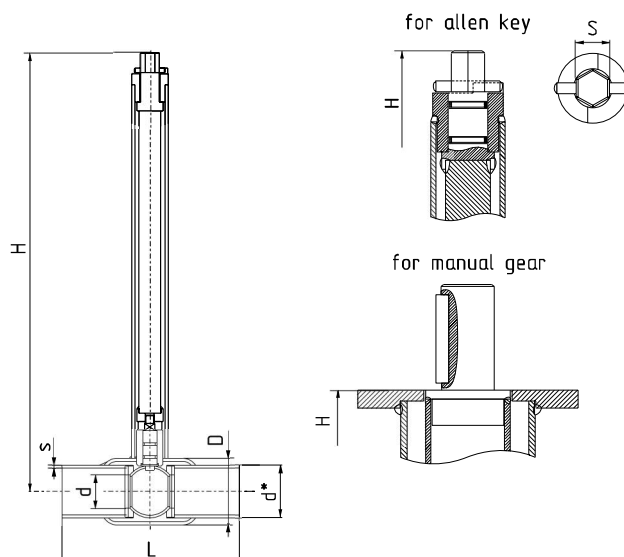


### OPERATION

- Allen key
- Manual gear
- Electric actuator
- Pneumatic actuator

Gearbox in horizontal arrangement on default

Gearbox in vertical arrangement on request



### TECHNICAL DATA

| DN   | PN | CODE       | d   | d*    | s   | D    | H          | L      |
|------|----|------------|-----|-------|-----|------|------------|--------|
| 50   | 40 | ES-250402  | 49  | 60,3  | 2,9 | 89   | on request | 280**  |
| 65   | 25 | ES-265252  | 63  | 76,1  | 2,9 | 114  | on request | 280**  |
| 80   | 25 | ES-280252  | 75  | 89,9  | 2,9 | 133  | on request | 300**  |
| 100  | 25 | ES-2100252 | 100 | 114,3 | 3,6 | 180  | on request | 330**  |
| 125  | 25 | ES-2125252 | 125 | 139,7 | 4,0 | 219  | on request | 360**  |
| 150  | 25 | ES-2150252 | 148 | 168,3 | 4,0 | 273  | on request | 390**  |
| 200  | 25 | ES-2200252 | 200 | 219,1 | 4,5 | 351  | on request | 510**  |
| 250* | 25 | ES-2250252 | 240 | 273,0 | 5,0 | 426  | on request | 730**  |
| 300* | 25 | ES-2300252 | 300 | 323,9 | 5,6 | 530  | on request | 730**  |
| 400* | 25 | ES-2400252 | 390 | 406,4 | 7,0 | 630  | on request | 970**  |
| 500* | 25 | ES-2500252 | 500 | 508,0 | 7,0 | 820  | on request | 991**  |
| 600* | 25 | ES-2600252 | 600 | 610   | 7,1 | 1020 | on request | 1143** |
| 700* | 25 | ES-2700252 | 700 | 711   | 8,0 | 1120 | on request | 1346** |

\*To be supplied with a gearbox on default.

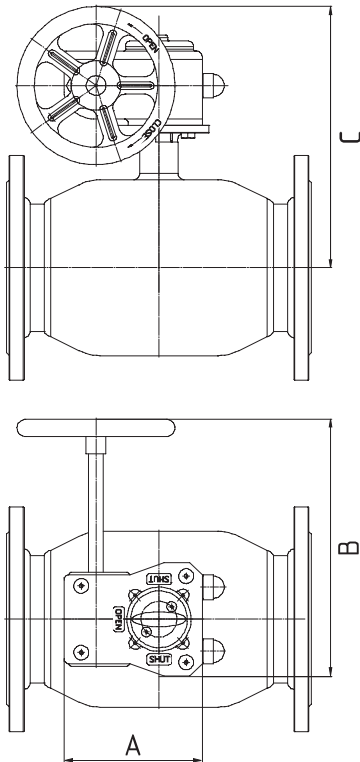
H indicates spindle height.

\*\*L=1500 on request.

# LD BALL VALVE WITH MANUAL GEAR

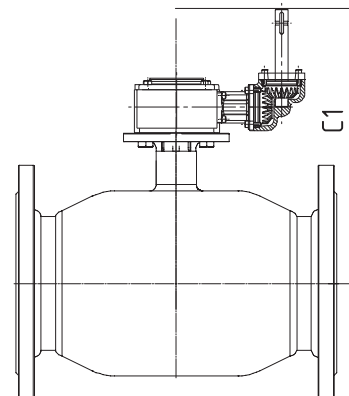
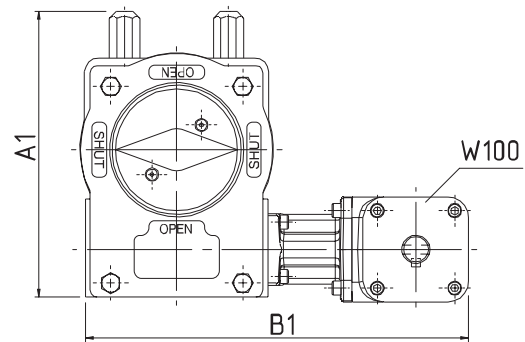
**APPLICATION** Recommended when high torques for opening-closing of the valve are needed

## Gearbox in horizontal arrangement\*



\* to be supplied with a wheel with all valve types on default

## Gearbox in vertical arrangement\*



\* to be supplied with a wheel on demand  
\*\* Allen key for 32 mm to be supplied on demand



### TECHNICAL DATA FOR REDUCED BORE

| DN  | Gear type   | Gear weight without wheel, kg | A (length) | B (width) | C (height) | Wheel diameter, mm | Gear type (vertical) | Gear weight without W100, kg | Gear weight with W100, kg | A1 (length) | B1 (width) | C1 (height) |
|-----|-------------|-------------------------------|------------|-----------|------------|--------------------|----------------------|------------------------------|---------------------------|-------------|------------|-------------|
| 25  | 242-10M     | 1                             | 82         | 112       | 151        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 32  | 242-10M     | 1                             | 82         | 112       | 155        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 40  | 242-10M     | 1                             | 82         | 112       | 168        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 50  | 242-10M     | 1                             | 82         | 112       | 176        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 65  | 242-10M     | 1                             | 82         | 112       | 181        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 80  | 242-20S     | 1,5                           | 100        | 137       | 202        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 100 | 242-20S     | 1,5                           | 100        | 137       | 212        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 125 | 242-30S     | 3,4                           | 131        | 173       | 289        | 200                | AB550W DMW100        | 4                            | 7,7                       | 127,5       | 232,5      | 362         |
| 150 | 242-30S     | 3,4                           | 131        | 173       | 306        | 200                | AB550W DMW100        | 4                            | 7,7                       | 127,5       | 232,5      | 379         |
| 200 | 242-30S     | 3,4                           | 131        | 173       | 330        | 200                | AB550W DMW100        | 9                            | 12,7                      | 174         | 275        | 403         |
| 250 | 242-40S     | 5,7                           | 163        | 226,5     | 471        | 400                | AB550W DMW100        | 9                            | 12,7                      | 174         | 275        | 437         |
| 300 | AB1250N     | 22                            | 258        | 340       | 678        | 600                | AB1250W DMW100       | 22                           | 25,7                      | 258         | 344        | 538         |
| 350 | AB2000N     | 24                            | 269        | 339       | 740        | 600                | E2000W MW100         | 24                           | 29,3                      | 255         | 410        | 600         |
| 400 | AB2000N     | 24                            | 269        | 339       | 740        | 600                | E2000W MW100         | 24                           | 29,3                      | 255         | 410        | 600         |
| 500 | AB6800N/PR6 | 64,2                          | 407        | 539       | 745        | 500                | E6800W/PR6 MW100     | 64,2                         | 69,5                      | 407         | 610        | 656         |
| 600 | AB6800N/PR6 | 64,2                          | 407        | 539       | 838        | 500                | E6800W/PR6 MW100     | 64,2                         | 69,5                      | 407         | 610        | 749         |

#### Adapter for 32 mm hexagon shaft

\* indicates connection type: 1 flange, 2 welding end, 3 thread, 4 drain or combined

### TECHNICAL DATA FOR FULL BORE

| DN  | Gear type   | Gear weight without wheel, kg | A (length) | B (width) | C (height) | Wheel diameter, mm | Gear type (vertical) | Gear weight without W100, kg | Gear weight with W100, kg | A1 (length) | B1 (width) | C1 (height) |
|-----|-------------|-------------------------------|------------|-----------|------------|--------------------|----------------------|------------------------------|---------------------------|-------------|------------|-------------|
| 20  | 242-10M     | 1                             | 82         | 112       | 151        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 25  | 242-10M     | 1                             | 82         | 112       | 155        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 32  | 242-10M     | 1                             | 82         | 112       | 168        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 40  | 242-10M     | 1                             | 82         | 112       | 176        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 50  | 242-10M     | 1                             | 82         | 112       | 181        | 100                | -                    | -                            | -                         | -           | -          | -           |
| 65  | 242-20S     | 1,5                           | 100        | 137       | 202        | 125                | -                    | -                            | -                         | -           | -          | -           |
| 80  | 242-20S     | 1,5                           | 100        | 137       | 212        | 125                | -                    | -                            | -                         | -           | -          | -           |
| 100 | 242-30S     | 3,4                           | 131        | 173       | 289        | 125                | AB210W DMW100        | 4                            | 7,7                       | 127,5       | 232,5      | 362         |
| 125 | 242-30S     | 3,4                           | 131        | 173       | 301        | 125                | AB215W DMW100        | 4                            | 7,7                       | 127,5       | 232,5      | 379         |
| 150 | 242-30S     | 3,4                           | 131        | 173       | 330        | 300                | AB550W DMW100        | 9                            | 12,7                      | 174         | 275        | 403         |
| 200 | 242-40S     | 5,7                           | 163        | 226       | 471        | 400                | AB550W DMW100        | 9                            | 12,7                      | 174         | 275        | 437         |
| 250 | AB1250N     | 22                            | 258        | 340       | 678        | 600                | AB1250W DMW100       | 22                           | 25,7                      | 258         | 344        | 538         |
| 300 | AB2000N     | 24                            | 255        | 339       | 740        | 600                | E2000W MW100         | 24                           | 29,3                      | 255         | 410        | 600         |
| 350 | AB6800N/PR6 | 64,2                          | 407        | 539       | 745        | 500                | E6800W/PR6 MW100     | 64,2                         | 69,5                      | 407         | 610        | 651         |
| 400 | AB6800N/PR6 | 64,2                          | 407        | 539       | 745        | 500                | E6800W/PR6 MW100     | 64,2                         | 69,5                      | 407         | 610        | 651         |
| 500 | AB6800N/PR6 | 64,2                          | 407        | 539       | 838        | 500                | E6800W/PR6 MW100     | 64,2                         | 69,5                      | 407         | 610        | 749         |
| 600 | A200N/PR10  | 134,4                         | 492        | 594,5     | 968        | 500                | E200W/PR10 MW100     | 134,4                        | 139,7                     | 492         | 665,5      | 891         |

#### Adapter for 32 mm hexagon shaft

LD reserves the right to apply gears of any manufacturer if it doesn't deteriorates technical characteristics


 TECHNICAL DATA OF MEOF SERIES SINGLE-TURN FLANGE  
ELECTRIC ACTUATORS FOR REDUCED BORE

# MEOF

| DN  | PN    | CODE              | Gear type                                | Nominal torque | Nominal time of output shaft full travel, s. | Nominal full travel value | Electromotor power, kW | Overall dimensions |
|-----|-------|-------------------|--|----------------|--|---------------------------|------------------------|--------------------|
| 15  | 40    | *159402           | МЭОФ-6,3/12,5-0,25М-98                   | 6,3            | 12,5   | 220                       | 0,11                   | 220x160x114        |
| 15  | 40    | *159402           | МЭОФ-16/10-0,25М-96К                     | 16             | 10   | 380                       | 0,11                   | 245x200x185        |
| 20  | 40    | *209402           | МЭОФ-6,3/12,5-0,25М-98                   | 6,3            | 12,5   | 220                       | 0,11                   | 220x160x114        |
| 20  | 40    | *209402           | МЭОФ-16/10-0,25М-96К                     | 16             | 10   | 380                       | 0,11                   | 245x200x185        |
| 25  | 40    | *259402           | МЭОФ-6,3/12,5-0,25М-98                   | 6,3            | 12,5   | 220                       | 0,11                   | 220x160x114        |
| 25  | 40    | *259402           | МЭОФ-16/10-0,25М-96К                     | 16             | 10   | 380                       | 0,11                   | 245x200x185        |
| 32  | 40    | *329402           | МЭОФ-12,5/12,5-0,25М-98                  | 12,5           | 12,5   | 220                       | 0,11                   | 220x160x114        |
| 32  | 40    | *329402           | МЭОФ-16/10-0,25М-96К                     | 16             | 10   | 380                       | 0,11                   | 245x200x185        |
| 40  | 40    | *409402           | МЭОФ-40/25-0,25М-96                      | 40             | 25   | 220                       | 0,12                   | 245x200x185        |
| 40  | 40    | *409402           | МЭОФ-40/25-0,25М-96К                     | 40             | 25   | 380                       | 0,11                   | 245x200x185        |
| 50  | 40    | *509402           | МЭОФ-40/25-0,25М-96                      | 40             | 25   | 220                       | 0,12                   | 245x200x185        |
| 50  | 40    | *509402           | МЭОФ-40/25-0,25М-96К                     | 40             | 25   | 380                       | 0,11                   | 245x200x185        |
| 65  | 16/25 | *659162/*659252   | МЭОФ-40/25-0,25М-96                      | 40             | 25   | 220                       | 0,12                   | 245x200x185        |
| 65  | 16/25 | *659162/*659252   | МЭОФ-40/25-0,25М-96К                     | 40             | 25   | 380                       | 0,11                   | 245x200x185        |
| 80  | 16/25 | *809162/*809252   | МЭОФ-100/25-0,25М-99                     | 100            | 25   | 220                       | 0,26                   | 426x315x300        |
| 80  | 16/25 | *809162/*809252   | МЭОФ-100/25-0,25М-99К                    | 100            | 25   | 380                       | 0,2                    | 426x315x300        |
| 100 | 16/25 | *1009162/*1009252 | МЭОФ-100/25-0,25М-99                     | 100            | 25   | 220                       | 0,26                   | 426x315x300        |
| 100 | 16/25 | *1009162/*1009252 | МЭОФ-100/25-0,25М-99К                    | 100            | 25   | 380                       | 0,2                    | 426x315x300        |
| 125 | 16/25 | *1259162/*1259252 | МЭОФ-250/63-0,25М-99                     | 250            | 63   | 220                       | 0,26                   | 426x315x300        |
| 125 | 16/25 | *1259162/*1259252 | МЭОФ-250/25-0,25М-99К                    | 250            | 25   | 380                       | 0,26                   | 450x315x300        |
| 150 | 16/25 | *1509162/*1509252 | МЭОФ-250/25-0,25М-99К                    | 250            | 25   | 380                       | 0,26                   | 426x315x300        |
| 150 | 16/25 | *1509162/*1509252 | МЭОФ-250/63-0,25М-99                     | 250            | 63   | 220                       | 0,26                   | 450x315x300        |
| 200 | 16/25 | *2009162/*2009252 | МЭОФ-630/15-0,25М-97К                    | 630            | 15   | 380                       | 0,22                   | 480x410x402        |
| 250 | 16/25 | *2509162/*2509252 | МЭОФ-1000/25-0,25М-97К                   | 1000           | 25   | 380                       | 0,22                   | 480x410x402        |
| 300 | 16/25 | *3009162/*3009252 | МЭОФ-4000/63-0,25-09К                    | 4000           | 63   | 380                       | 0,32                   | 650x340x600        |
| 350 | 16/25 | *3509162/*3509252 | МЭОФ-4000/63-0,25М-97К                   | 4000           | 63   | 380                       | 0,32                   | 720x660x605        |
| 400 | 16/25 | *4009162/*4009252 | МЭОФ-4000/63-0,25М-97К                   | 4000           | 63   | 380                       | 0,32                   | 720x660x605        |
| 500 | 16/25 | *5009162/*5009252 | ПЭМ-Б8М У2 +<br>РЗА-С2-20000.1-264-22.48 | 20000          | 88   | 380                       | 1,1                    | 1364x415x605       |
| 600 | 25    | *6009252          | ПЭМ-Б8М У2 +<br>РЗА-С2-20000.1-264-22.48 | 20000          | 88   | 380                       | 1,1                    | 1364x415x605       |
| 700 | 25    | *7009252          | ПЭМ-Б8М У2 +<br>РЗА-С2-20000.1-264-22.48 | 20000          | 88   | 380                       | 1,1                    | 1364x415x605       |

\* indicates connection type: 1 flange, 2 welding end, 3 thread, 4 drain or combined

 TECHNICAL DATA OF AUMA ELECTRIC ACTUATORS  
FOR REDUCED BORE

AUMA

| DN  | PN | CODE     | Gear type   | Actuator weight, kg | Overall dimensions, mm |     |     |     |
|-----|----|----------|---|---------------------|------------------------|-----|-----|-----|
|     |    |          |   |                     | A                      | B   | C   | D   |
| 20  | 40 | *209402  | SG 05.1 (SQ 05.2)                                     | 23                  | 358                    | 337 | 490 | 263 |
| 25  | 40 | *259402  | SG 05.1 (SQ 05.2)                                     | 23                  | 361                    | 337 | 490 | 263 |
| 32  | 40 | *329402  | SG 05.1 (SQ 05.2)                                     | 23                  | 366                    | 337 | 490 | 263 |
| 40  | 40 | *409402  | SG 05.1 (SQ 05.2)                                     | 23                  | 356                    | 326 | 490 | 263 |
| 50  | 40 | *509402  | SG 05.1 (SQ 05.2)                                     | 23                  | 365                    | 327 | 490 | 263 |
| 65  | 16 | *659162  | SG 05.1 (SQ 05.2)                                     | 23                  | 369                    | 325 | 490 | 263 |
| 65  | 25 | *659252  | SG 05.1 (SQ 05.2)                                     | 23                  | 369                    | 325 | 490 | 263 |
| 80  | 16 | *809162  | SG 07.1 (SQ 07.2)                                     | 24                  | 405                    | 348 | 490 | 263 |
| 80  | 25 | *809252  | SG 07.1 (SQ 07.2)                                     | 24                  | 405                    | 348 | 490 | 263 |
| 100 | 16 | *1009162 | SG 07.1 (SQ 07.2)                                     | 24                  | 414                    | 348 | 490 | 263 |
| 100 | 25 | *1009252 | SG 07.1 (SQ 07.2)                                     | 24                  | 414                    | 348 | 490 | 263 |
| 125 | 16 | *1259162 | SG 10.1 (SQ 10.2)                                     | 27                  | 451                    | 361 | 506 | 310 |
| 125 | 25 | *1259252 | SG 10.1 (SQ 10.2)                                     | 27                  | 451                    | 361 | 506 | 310 |
| 150 | 16 | *1509162 | SG 10.1 (SQ 10.2)                                     | 27                  | 468                    | 359 | 506 | 310 |
| 150 | 25 | *1509252 | SG 10.1 (SQ 10.2)                                     | 27                  | 468                    | 359 | 506 | 310 |
| 200 | 16 | *2009162 | SG 10.1 (SQ 10.2)                                     | 27                  | 493                    | 356 | 506 | 310 |
| 200 | 25 | *2009252 | SA 07.6/GS 63.3                                       | 33                  | 493                    | 356 | 506 | 310 |
| 250 | 16 | *2509162 | SG 12.1 (SQ 12.2)                                     | 28                  | 550                    | 374 | 506 | 390 |
| 250 | 25 | *2509252 | SA 10.2/GS 80.3                                       | 42                  | 837                    | 661 | 550 | 320 |
| 300 | 16 | *3009162 | SA 10.2/GS 125.3/VZ 4.3<br>(SA 07.6/GS 100.3/VZ 4.3)  | 73                  | 1120                   | 907 | 550 | 340 |
| 300 | 25 | *3009252 | SA 10.2/GS 125.3/VZ 4.3<br>(SA 07.6/GS 100.3/VZ 4.3)  | 73                  | 1120                   | 907 | 550 | 340 |
| 350 | 16 | *3509162 | SA 10.2/GS 125.3/VZ 4.3                               | 73                  | 1174                   | 908 | 550 | 340 |
| 350 | 25 | *3509252 | SA 10.2/GS 125.3/VZ 4.3                               | 73                  | 1174                   | 908 | 550 | 340 |
| 400 | 16 | *4009162 | SA 10.2/GS 125.3/VZ 4.3                               | 73                  | 1174                   | 908 | 550 | 340 |
| 400 | 25 | *4009252 | SA 10.2/GS 125.3/VZ 4.3                               | 73                  | 1174                   | 908 | 550 | 340 |
| 500 | 16 | *5009162 | SA 10.2/GS 160.3/GZ 8:1<br>(SA 10.2/GS 200.3/GZ 16:1) | 120 (200)           | 1226                   | 911 | 990 | 340 |
| 500 | 25 | *5009252 | SA 10.2/GS 160.3/GZ 8:1<br>(SA 10.2/GS 200.3/GZ 16:1) | 120 (200)           | 1226                   | 911 | 990 | 340 |
| 600 | 25 | *6009252 | SA 10.2/GS 160.3/GZ 8:1<br>(SA 10.2/GS 200.3/GZ 16:1) | 120 (200)           | 1226                   | 911 | 990 | 340 |
| 700 | 25 | *7009252 | SA 10.2/GS 160.3/GZ 8:1<br>(SA 10.2/GS 200.3/GZ 16:1) | 120 (200)           | 1226                   | 911 | 990 | 340 |

\* indicates connection type: 1 flange, 2 welding end, 3 thread, 4 drain or combined

Valve production for other electric, pneumatic and hydraulic actuator on request.

**DURING MAINTENANCE PLEASE  
FOLLOW THE INSTRUCTIONS BELOW:**

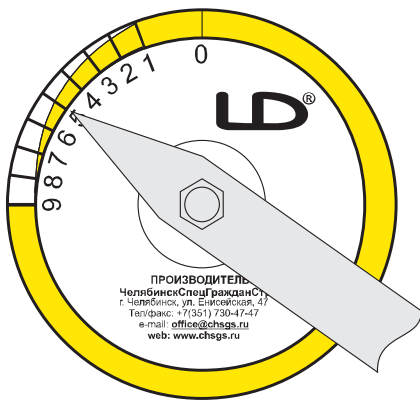
1. Maintenance of electric actuators has to be carried out according to the «Instructions for Operating User's Electrical Equipment»;
2. Installation site should have sufficient illumination;
3. Electric actuator case should be grounded;
4. Make sure you use fault-free tools when working with electric actuators;
5. Getting to scheduled maintenance, make sure the electric actuator is cut-off from the power supply network.



# CONTROL BALL VALVES **REGULA**

## APPLICATION

Control ball valves provide predictable and accurate control of flow rates in the pipeline, where the valve is mounted. The flow rate is controlled by means of a lever with a scale and flow rate control with linear relation. Special design of the ball with a figured groove allows to reduce noise and to increase control accuracy. The valve is installed on the pipeline according to the arrow specifying the direction of the working media.



### KV values

| VALUE | DN15  | DN25  | DN32  | DN40  | DN50  | DN65  | DN80   | DN100  | DN125  | DN150  | DN200  | DN250   | DN300   |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|---------|---------|
| 1     | 0,24  | 0,44  | 0,80  | 1,40  | 0,90  | 0,90  | 2,45   | 3,50   | 6,34   | 13,94  | 12,02  | 14,79   | 17,89   |
| 2     | 0,73  | 1,14  | 1,90  | 3,20  | 2,70  | 3,14  | 7,00   | 9,91   | 16,92  | 29,55  | 34,34  | 54,58   | 75,75   |
| 3     | 1,44  | 2,13  | 3,40  | 5,70  | 5,10  | 6,14  | 13,11  | 18,54  | 31,32  | 50,94  | 65,95  | 110,17  | 157,34  |
| 4     | 2,44  | 3,49  | 5,50  | 8,90  | 8,30  | 10,09 | 21,11  | 29,64  | 61,41  | 78,37  | 106,17 | 183,97  | 265,93  |
| 5     | 3,85  | 5,33  | 8,20  | 12,90 | 12,40 | 15,26 | 32,15  | 44,79  | 74,07  | 121,25 | 159,11 | 278,22  | 406,41  |
| 6     | 5,91  | 7,87  | 11,70 | 16,60 | 21,10 | 25,19 | 53,09  | 73,80  | 122,48 | 202,90 | 260,95 | 464,33  | 691,25  |
| 7     | 8,82  | 10,58 | 15,10 | 20,70 | 32,20 | 37,80 | 80,44  | 111,49 | 181,56 | 310,21 | 396,37 | 727,46  | 1087,56 |
| 8     | 11,05 | 11,01 | 17,30 | 24,40 | 46,60 | 52,61 | 114,41 | 158,04 | 273,06 | 446,84 | 563,61 | 1040,13 | 1588,03 |

Weight and overall dimensions are equal to shut off valves with corresponding diameter

## BALL VALVE **REGULA**

○ WELD/WELD

MATERIAL SPECIFICATION (Mat. code 02)

**Body:** carbon steel

**Stem:** stainless steel (AISI 420)

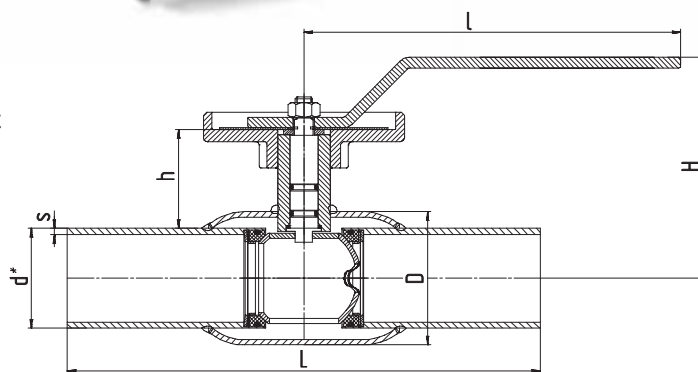
**Ball:** stainless steel AISI 304, AISI 409

**Stem sealing:** EPDM, FVMQ

**Stem sealing/washer:** reinforced PTFE

**Ball sealing:** reinforced PTFE

with additional sealing made of FVMQ



### OPERATION

Connection dimensions acc. to DIN (EN) / GOST on request

- **DN 15-100:** lever – galvanized carbon steel with polymer end
- **DN 125-300:** with manual gearbox on default

### TECHNICAL DATA FOR REDUCED BORE VALVE

| DN  | PN | CODE       | d*    | s   | D   | h   | H   | l     | L   |
|-----|----|------------|-------|-----|-----|-----|-----|-------|-----|
| 20  | 40 | R-2209402  | 26,9  | 2,3 | 42  | 21  | 98  | 159   | 230 |
| 25  | 40 | R-2259402  | 33,7  | 2,6 | 48  | 21  | 101 | 159   | 230 |
| 32  | 40 | R-2329402  | 42,4  | 2,6 | 57  | 23  | 106 | 159   | 260 |
| 40  | 40 | R-2409402  | 48,3  | 2,6 | 60  | 39  | 108 | 217   | 260 |
| 50  | 40 | R-2509402  | 60,3  | 2,9 | 76  | 43  | 116 | 217   | 300 |
| 65  | 25 | R-2659252  | 76,1  | 2,9 | 89  | 39  | 121 | 217   | 300 |
| 80  | 25 | R-2809252  | 88,9  | 3,2 | 114 | 61  | 155 | 314,5 | 300 |
| 100 | 25 | R-21009252 | 114,3 | 3,6 | 133 | 61  | 165 | 314,5 | 325 |
| 125 | 25 | R-21259252 | 139,7 | 4,0 | 180 | 73  | 195 | -     | 325 |
| 150 | 25 | R-21509252 | 168,3 | 4,0 | 219 | 77  | 210 | -     | 350 |
| 200 | 25 | R-22009252 | 219,1 | 4,5 | 273 | 67  | 230 | -     | 400 |
| 250 | 25 | R-22509252 | 273,0 | 5,0 | 351 | 80  | 275 | -     | 530 |
| 300 | 25 | R-23009252 | 323,9 | 5,6 | 426 | 167 | -   | -     | 730 |

### TECHNICAL DATA FOR FULL BORE VALVE

| DN  | PN | CODE      | d*    | s   | D   | h  | H   | l     | L   |
|-----|----|-----------|-------|-----|-----|----|-----|-------|-----|
| 15  | 40 | R-215402  | 21,3  | 2,0 | 27  | 23 | 98  | 159   | 230 |
| 20  | 40 | R-220402  | 26,9  | 2,3 | 32  | 21 | 98  | 159   | 230 |
| 25  | 40 | R-225402  | 33,7  | 2,6 | 38  | 21 | 101 | 159   | 260 |
| 32  | 40 | R-232402  | 42,4  | 2,6 | 48  | 23 | 106 | 217   | 260 |
| 40  | 40 | R-240402  | 48,3  | 2,9 | 57  | 39 | 108 | 217   | 300 |
| 50  | 40 | R-250402  | 60,3  | 2,9 | 76  | 43 | 116 | 217   | 300 |
| 65  | 25 | R-265252  | 76,1  | 3,2 | 89  | 39 | 121 | 314,5 | 300 |
| 80  | 25 | R-280252  | 88,9  | 3,6 | 108 | 61 | 155 | 314,5 | 325 |
| 100 | 25 | R-2100252 | 114,3 | 3,6 | 133 | 61 | 165 | 525   | 325 |
| 125 | 25 | R-2125252 | 139,7 | 3,6 | 159 | 73 | 195 | 525   | 360 |
| 150 | 25 | R-2150252 | 168,3 | 5,0 | 180 | 77 | 210 | 625   | 400 |
| 200 | 25 | R-2200252 | 219,1 | 5,0 | 245 | 67 | 230 | 625   | 530 |
| 250 | 25 | R-2250252 | 273,0 | 5,0 | 325 | 80 | 275 | 634   | 550 |

## BALL VALVE **REGULA**

### FLANGE/FLANGE

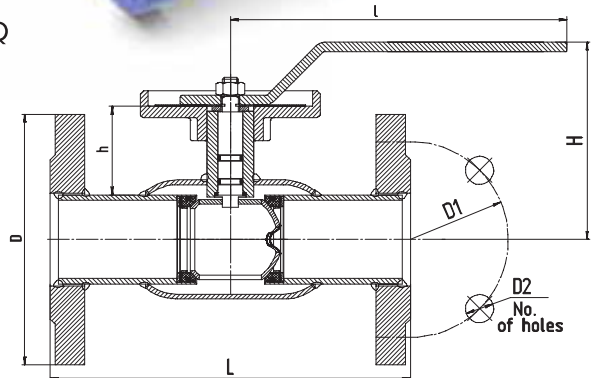
MATERIAL SPECIFICATION (Mat. code 02)

- Body:** carbon steel
- Stem:** stainless steel (AISI 420)
- Ball:** stainless steel AISI 304, AISI 409
- Stem sealing:** EPDM, FVMQ
- Stem sealing/washer:** reinforced PTFE
- Ball sealing:** reinforced PTFE with additional sealing made of FVMQ

### OPERATION

Connection dimensions acc. to (EN)DIN / GOST on request

- **DN 15-100:** lever – galvanized carbon steel with polymer end
- **DN 125-300:** with manual gearbox on default



### TECHNICAL DATA FOR REDUCED BORE VALVE

| DN  | PN | CODE       | D   | D1  | D2 | No. of holes | h   | H   | I     | L   |
|-----|----|------------|-----|-----|----|--------------|-----|-----|-------|-----|
| 20  | 40 | R-2209402  | 105 | 75  | 14 | 4            | 21  | 98  | 159   | 150 |
| 25  | 40 | R-2259402  | 115 | 85  | 14 | 4            | 21  | 101 | 159   | 160 |
| 32  | 40 | R-2329402  | 140 | 100 | 18 | 4            | 23  | 106 | 159   | 180 |
| 40  | 40 | R-2409402  | 150 | 110 | 18 | 4            | 39  | 108 | 217   | 200 |
| 50  | 40 | R-2509402  | 165 | 125 | 18 | 4            | 43  | 116 | 217   | 230 |
| 65  | 16 | R-2659162  | 185 | 145 | 18 | 8            | 39  | 121 | 217   | 270 |
| 65  | 25 | R-2659252  | 185 | 145 | 18 | 8            | 39  | 121 | 217   | 270 |
| 80  | 16 | R-2809162  | 200 | 160 | 18 | 8            | 61  | 155 | 314,5 | 280 |
| 80  | 25 | R-2809252  | 200 | 160 | 18 | 8            | 61  | 155 | 314,5 | 280 |
| 100 | 16 | R-21009162 | 200 | 180 | 18 | 8            | 61  | 165 | 314,5 | 300 |
| 100 | 25 | R-21009252 | 235 | 190 | 22 | 8            | 61  | 165 | 314,5 | 300 |
| 125 | 16 | R-21259162 | 250 | 210 | 18 | 8            | 73  | 195 | 525   | 325 |
| 125 | 25 | R-21259252 | 270 | 220 | 26 | 8            | 73  | 195 | 525   | 325 |
| 150 | 16 | R-21509162 | 285 | 240 | 22 | 8            | 77  | 210 | 525   | 350 |
| 150 | 25 | R-21509252 | 300 | 250 | 26 | 8            | 77  | 210 | 525   | 350 |
| 200 | 16 | R-22009162 | 340 | 295 | 22 | 12           | 67  | 230 | 625   | 400 |
| 200 | 25 | R-22009252 | 360 | 310 | 26 | 12           | 67  | 230 | 625   | 400 |
| 250 | 16 | R-22509162 | 405 | 355 | 26 | 12           | 80  | 275 | 625   | 500 |
| 250 | 25 | R-22509252 | 425 | 370 | 30 | 12           | 80  | 275 | 625   | 500 |
| 300 | 16 | R-23009162 | 460 | 410 | 26 | 12           | 167 | -   | -     | 500 |
| 300 | 25 | R-23009252 | 485 | 430 | 30 | 12           | 167 | -   | -     | 500 |

### TECHNICAL DATA FOR FULL BORE VALVE

| DN  | PN | CODE      | D   | D1  | D2 | No. of holes | h  | H   | I     | L   |
|-----|----|-----------|-----|-----|----|--------------|----|-----|-------|-----|
| 15  | 40 | R-215402  | 95  | 65  | 14 | 4            | 23 | 98  | 159   | 245 |
| 20  | 40 | R-220402  | 105 | 75  | 14 | 4            | 21 | 98  | 159   | 245 |
| 25  | 40 | R-225402  | 115 | 85  | 14 | 4            | 21 | 101 | 159   | 275 |
| 32  | 40 | R-232402  | 140 | 100 | 18 | 4            | 23 | 106 | 217   | 275 |
| 40  | 40 | R-240402  | 150 | 110 | 18 | 4            | 39 | 108 | 217   | 320 |
| 50  | 40 | R-250402  | 165 | 125 | 18 | 4            | 43 | 116 | 217   | 320 |
| 65  | 16 | R-265162  | 185 | 145 | 18 | 8            | 39 | 121 | 314,5 | 325 |
| 65  | 25 | R-265252  | 185 | 145 | 18 | 8            | 39 | 121 | 314,5 | 325 |
| 80  | 16 | R-280162  | 200 | 160 | 18 | 8            | 61 | 155 | 314,5 | 350 |
| 80  | 25 | R-280252  | 200 | 160 | 18 | 8            | 61 | 155 | 314,5 | 350 |
| 100 | 16 | R-2100162 | 220 | 180 | 18 | 8            | 61 | 165 | 525   | 350 |
| 100 | 25 | R-2100252 | 235 | 190 | 22 | 8            | 61 | 165 | 525   | 350 |
| 125 | 16 | R-2125162 | 250 | 210 | 18 | 8            | 73 | 195 | 525   | 375 |
| 125 | 25 | R-2125252 | 270 | 220 | 26 | 8            | 73 | 195 | 525   | 375 |
| 150 | 16 | R-2150162 | 285 | 240 | 22 | 8            | 77 | 210 | 625   | 515 |
| 150 | 25 | R-2150252 | 300 | 250 | 26 | 8            | 77 | 210 | 625   | 555 |
| 200 | 16 | R-2200162 | 340 | 295 | 22 | 12           | 67 | 230 | 625   | 560 |
| 200 | 25 | R-2200252 | 360 | 310 | 26 | 12           | 67 | 230 | 625   | 560 |
| 250 | 16 | R-2250162 | 405 | 355 | 26 | 12           | 80 | 275 | -     | 595 |
| 250 | 25 | R-2250252 | 425 | 370 | 30 | 12           | 80 | 275 | -     | 595 |

## APPLICATION

LD ball valves should be used as a stop valves on the pipelines. That means the valves should be fully opened or fully closed throughout the operation. Only REGULA series can be used for stream control!

## INSTALLATION GUIDELINES

1. Valves can be installed on pipelines in any position providing ease of use and access to manual actuator.
2. All caps shall be removed from valve connections before installation.
3. During installation on horizontal pipelines, valve shall be fully opened.
4. During installation on vertical pipelines: a) valve shall be fully opened during the welding of the upper end (in order to avoid damage of ball surface and seat); b) valve shall be fully closed during the welding of the lower end (in order to avoid welding heat draught).
5. Before valve's installation, pipeline shall be cleared from dirt, sand, slag etc.
6. Use electric welding for connection of the valve to the pipeline.
7. During welding, avoid overheat of the valve body. The valve is considered to be overheated, if temperature of the valve body in the seat area exceeds 80°C during welding. Use wet rags to cool the valve seat area and avoid overheat.
8. It is prohibited to turn the ball immediately after welding (without prior cooling).
9. Reduction of end-to-end length of a welded ball valve is not acceptable as it is specially designed to avoid overheat of the ball seat during its installation on a pipeline.
10. During installation of LD flanged valves, inspection of flange sealing faces is necessary.
11. The bolts tightening on the flanged connections shall be equal along the whole perimeter using «criss-cross» method.
12. Parallelism of pipe and valve flange sealing faces within a tolerance of 0.2 mm is acceptable.
13. It is forbidden to eliminate distortions of the pipeline flanges using tensioning of valve's flanges.
14. The max. amplitude of the pipeline's vibration displacement shall not exceed 0.25 mm.
15. In order to avoid pressure shock in the pipeline, open and close the valve smoothly.
16. During installation and operation of the valve safety requirements shall be fulfilled in accordance with GOST-53672.
17. During lifting and/or transportation of valves by means of mechanical lifting devices it is prohibited to fasten and/or to grip the handles, gearbox wheels or parts of electric, pneumatic and hydraulic actuators.

## ATTENTION!

### When operating the ball valve DO NOT:

1. Use the valves as regulating  
(In order to control flow rates use LD Regula Series);
2. Valve's dismantling, works on a tightening of flange joints in the presence of an operating medium and pressure in pipeline;
3. Operate the valve without a respectively executed certificate
4. Operate the valve using levers extending the handle arm;
5. Use the valve as a pipeline support.

