

LE-LF type shut-off and control valve

| | |
|-------------------|--------------------------------|
| Dimension range | DN 10 - 50 / NPS 3/8" - 2" |
| Pressure range | PN 16 - 400 / Class 150 - 2500 |
| Temperature range | - 60°C - +550°C |

This valve is designed according to API 602 Standard with forged body up to 50mm nominal size, for wide pressure-, and temperature ranges. The LE type valve is suitable for closing gas and liquid mediums streams while the LF type is suitable also for chocking. The valve seat and the disc is welded with Stellite 6 for the purpose of excellent abrasion resistance. The packing of the stuffing box is graphite (or Teflon) rings, which can be replaced during operation as well, in the uppermost position of the stem. The sealing of the bonnet is highly flexible spiral wound gasket. For higher pressures the sealing is a stainless steel gasket ring. The valves can be manufactured with threaded valve seats on demand.

Materials:

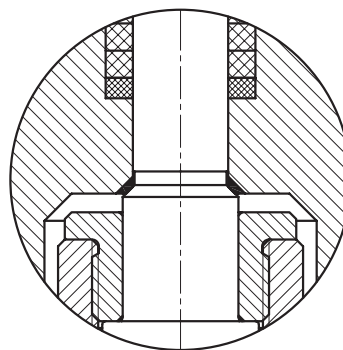
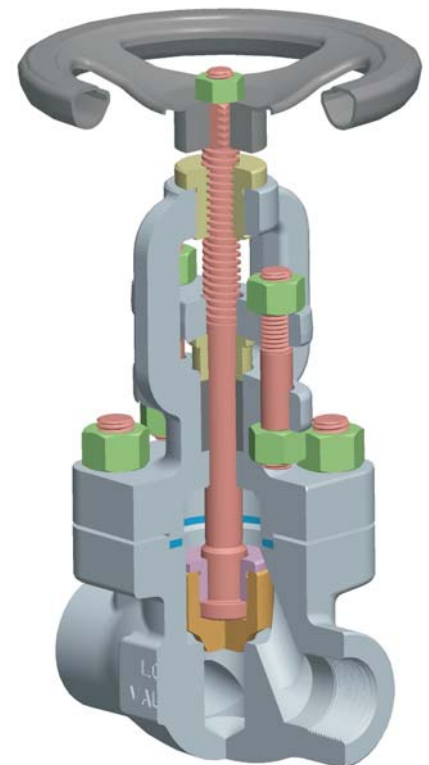
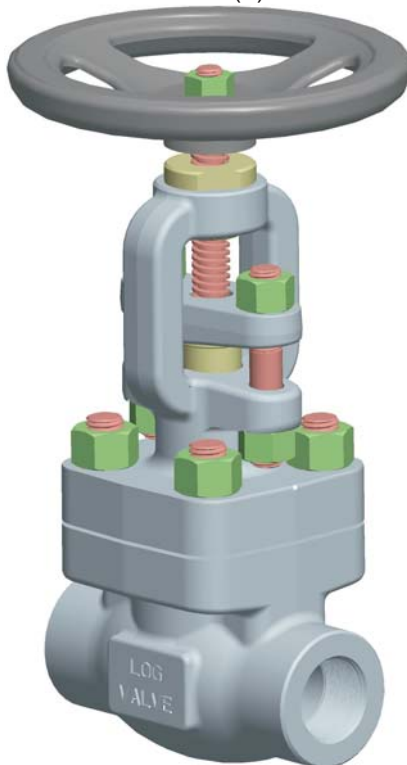
- ASTM A105
- ASTM A350 LF2
- ASTM A182 F11
- ASTM A182 F316(L)

Main features:

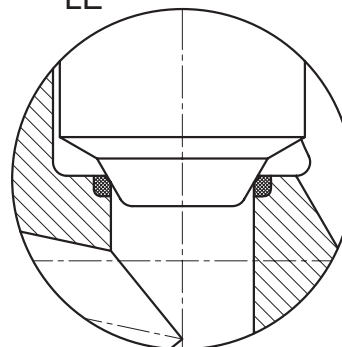
- Disc closing on conical surface
- Bolted bonnet
- Rising stem design with rising handwheel
- Ensured backseat
- Flanged, threaded, butt welded, or socket welded ends

Design possibilities:

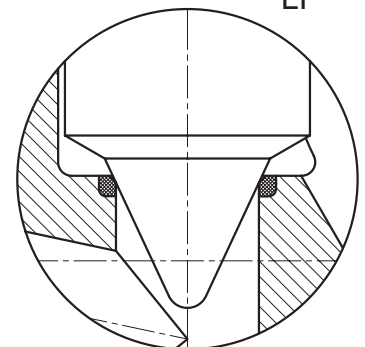
- Renewable valve seat
- Electric motor operation
- Pneumatic operation



LE



LF

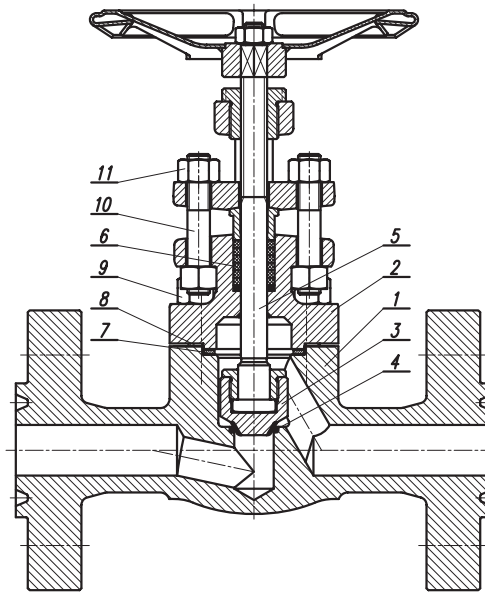


Design standards:

- Construction: API 602 / ISO 15761
- Face to face length: ASME B16.10; EN 558
- Socket welded type: ASME B16.11; DIN 3239
- Butt welded type: ASME B16.25; EN 12627
- Threaded type: ASME B1.20.1 NPT
- Flanged type: ASME B16.5; EN 1092-1; GOST 12815; GOST 12821
- Pressure test: API 602; EN 12266-1

List of the main components

LE-LF type shut-off and control valve



| N° | Description | Standard design | | | NACE design | Corrosion-resistant design |
|-------|---------------------|---------------------------|---------------------------|---------------------------|----------------------------|------------------------------|
| | | T= -29°C ~ +427°C | T= -46°C ~ +343°C | T= -20°C ~ +550°C | T= -46°C ~ +343°C | T= -60°C ~ +427°C |
| 1 | Body | ASTM A105 | ASTM A350 LF2 | ASTM A182 F11 | ASTM A350 LF2 | ASTM A182 F316(L) |
| 2 | Bonnet | ASTM A105 | ASTM A350 LF2 | ASTM A182 F11 | ASTM A350 LF2 | ASTM A182 F316(L) |
| 3 | Valve head | ASTM A276 410 (+HF) | ASTM A276 410 (+HF) | ASTM A276 410 (+HF) | ASTM A182 F6NM (+HF) | ASTM A276 316(L) (+HF) |
| 4 | Valve seat | HF ASTM A276 410 (+HF) | HF ASTM A276 410 (+HF) | HF ASTM A276 410 (+HF) | HF ASTM A182 F6NM (+HF) | HF ASTM A276 316(L) (+HF) |
| 5 | Stem | ASTM A276 410 | ASTM A276 410 | ASTM A276 410 | ASTM A182 F6NM | ASTM A276 316(L) |
| 6 | Gland packing | Grafit | Grafit | Grafit | Grafit | Grafit |
| 7 | Body-bonnet packing | Spiral Wound 316L+Grafit | Spiral Wound 316L+Grafit | Spiral Wound 316L+Grafit | ASTM A276 316L | Spiral Wound 316L+Grafit |
| 8; 10 | Bolt | ASTM A193 B7 | ASTM A320 L7 | ASTM A193 B16 | ASTM A320 L7M | ASTM A193 B8M Cl.2 |
| 9; 11 | Nut | ASTM A194 2H | ASTM A194 Gr.4 | ASTM A194 8M | ASTM A194 2HM | ASTM A194 8M |

- HF = Stellite 6 welding on (min. 350 HB)
- For other mediums, orders on material quality is based on temperature.

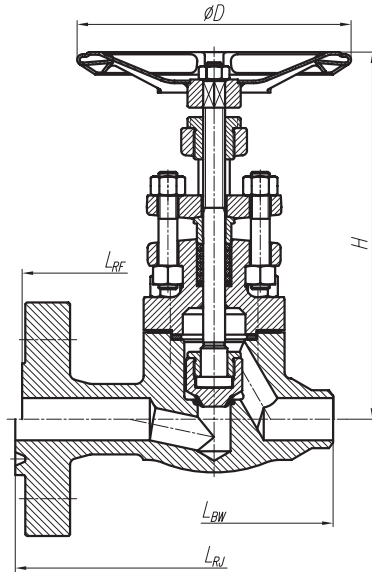
Optional TRIM material combinations:

| Trim number (API 602) | Sealing surface of valve head | Sealing surface of valve seat | Stem material |
|-----------------------|-------------------------------|-------------------------------|---------------|
| 1 | 410 | 410 | 410 |
| 5 | Stellit 6 | Stellit 6 | 410 |
| 8 | 410 | Stellit 6 | 410 |
| 10 | 316 | 316 | 316 |
| 12 | 316 | Stellit 6 | 316 |
| 16 | Stellit 6 | Stellit 6 | 316 |

LE-LF

Chart of dimensions

LE-LF type shut-off and control valve ANSI



CLASS 150

| NPS | L _{RF} * (mm) | L _{RJ} * (mm) | L _{BW} (mm) | ØD (mm) | H (mm) |
|--------|------------------------|------------------------|----------------------|---------|--------|
| 1/2" | 152 | --- | 110 | 100 | 186 |
| 3/4" | 178 | --- | 120 | 100 | 218 |
| 1" | 203 | 216 | 135 | 125 | 225 |
| 1 1/4" | 216 | 229 | 150 | 125 | 248 |
| 1 1/2" | 229 | 242 | 170 | 150 | 291 |
| 2" | 267 | 283 | 210 | 150 | 340 |

* CLASS 300 face to face length

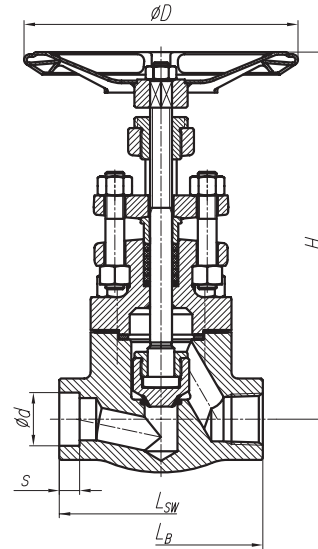
CLASS 600

| NPS | L _{RF} (mm) | L _{RJ} (mm) | L _{BW} (mm) | ØD (mm) | H (mm) |
|--------|----------------------|----------------------|----------------------|---------|--------|
| 1/2" | 165 | 163 | 110 | 100 | 189 |
| 3/4" | 190 | 190 | 120 | 125 | 228 |
| 1" | 216 | 216 | 135 | 150 | 234 |
| 1 1/4" | 229 | 229 | 150 | 150 | 278 |
| 1 1/2" | 241 | 241 | 170 | 200 | 304 |
| 2" | 292 | 295 | 210 | 250 | 354 |

CLASS 2500**

| NPS | L _{RF} (mm) | L _{RJ} (mm) | L _{BW} (mm) | ØD (mm) | H (mm) |
|--------|----------------------|----------------------|----------------------|---------|--------|
| 1/2" | 264 | 264 | 150 | 150 | 286 |
| 3/4" | 273 | 273 | 165 | 200 | 332 |
| 1" | 308 | 308 | 175 | 250 | 352 |
| 1 1/4" | 349 | 352 | 195 | 250 | 406 |
| 1 1/2" | 384 | 387 | 230 | 300 | 448 |
| 2" | 451 | 454 | 265 | 350 | 530 |

** with ring-joint body-bonnet packing



CLASS 300

| NPS | L _{RF} (mm) | L _{RJ} (mm) | L _{BW} (mm) | ØD (mm) | H (mm) |
|--------|----------------------|----------------------|----------------------|---------|--------|
| 1/2" | 152 | 163 | 110 | 100 | 186 |
| 3/4" | 178 | 191 | 120 | 100 | 218 |
| 1" | 203 | 216 | 135 | 125 | 225 |
| 1 1/4" | 216 | 229 | 150 | 125 | 248 |
| 1 1/2" | 229 | 242 | 170 | 150 | 291 |
| 2" | 267 | 283 | 210 | 150 | 340 |

CLASS 900; CLASS 1500

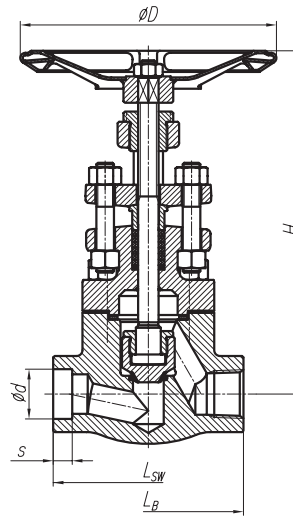
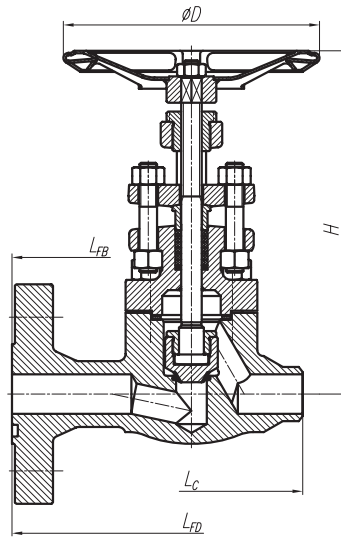
| NPS | L _{RF} (mm) | L _{RJ} (mm) | L _{BW} (mm) | ØD (mm) | H (mm) |
|--------|----------------------|----------------------|----------------------|---------|--------|
| 1/2" | 216 | 216 | 110 | 125 | 189 |
| 3/4" | 229 | 229 | 120 | 150 | 228 |
| 1" | 254 | 254 | 135 | 175 | 234 |
| 1 1/4" | 279 | 279 | 150 | 200 | 278 |
| 1 1/2" | 305 | 305 | 170 | 250 | 304 |
| 2" | 368 | 371 | 210 | 250 | 354 |

CLASS 800; CLASS 1500; CLASS 2500**

| NPS | L _{sw} ; L _b (mm) | | Ød (mm) | S _{min} (mm) | ØD (mm) | | H (mm) | |
|--------|---------------------------------------|------|---------|-----------------------|-------------|------|-------------|------|
| | 800 1500 | 2500 | | | 800 1500 | 2500 | 800 1500 | 2500 |
| 3/8" | 90 | 110 | 17,6 | 10 | 100 | 125 | 189 | 270 |
| 1/2" | 95 | 120 | 21,8 | 10 | 125 | 150 | 189 | 286 |
| 3/4" | 115 | 145 | 27,2 | 13 | 150 | 200 | 228 | 332 |
| 1" | 130 | 165 | 33,9 | 13 | 175 | 250 | 234 | 352 |
| 1 1/4" | 150 | 200 | 42,7 | 13 | 200 | 250 | 278 | 406 |
| 1 1/2" | 170 | 221 | 48,5 | 13 | 250 | 300 | 304 | 448 |
| 2" | 210 | 250 | 61,2 | 16 | 250 | 350 | 354 | 530 |

Chart of dimensions

LE-LF type shut-off control valve
 EN



PN 16; PN 25; PN 40

| DN | L _{FB} ; L _{FD} (mm) | L _c (mm) | L _{sw} ; L _b (mm) | Ø _d (mm) | S _{min} (mm) | ØD (mm) | H (mm) |
|----|---|------------------------|--|------------------------|--------------------------|------------|-----------|
| 10 | 130 | --- | 90 | 17,6 | 10 | 100 | 186 |
| 15 | 130 | 110 | 95 | 21,8 | 10 | 100 | 186 |
| 20 | 150 | 120 | 115 | 27,2 | 13 | 100 | 218 |
| 25 | 160 | 135 | 130 | 33,9 | 13 | 125 | 225 |
| 32 | 180 | 150 | 150 | 42,7 | 13 | 125 | 248 |
| 40 | 200 | 170 | 170 | 48,8 | 13 | 150 | 291 |
| 50 | 230 | 210 | 210 | 61,2 | 16 | 150 | 340 |

PN 63

| DN | L _{FB} ; L _{FD} (mm) | L _c (mm) | L _{sw} ; L _b (mm) | Ø _d (mm) | S _{min} (mm) | ØD (mm) | H (mm) |
|----|---|------------------------|--|------------------------|--------------------------|------------|-----------|
| 10 | 210 | --- | 90 | 17,6 | 10 | 100 | 186 |
| 15 | 210 | 110 | 95 | 21,8 | 10 | 100 | 186 |
| 20 | 230 | 120 | 115 | 27,2 | 13 | 125 | 218 |
| 25 | 230 | 135 | 130 | 33,9 | 13 | 125 | 225 |
| 32 | 260 | 150 | 150 | 42,7 | 13 | 150 | 248 |
| 40 | 260 | 170 | 170 | 48,8 | 13 | 150 | 291 |
| 50 | 300 | 210 | 210 | 61,2 | 16 | 200 | 340 |

PN 100; PN 160

| DN | L _{FB} ; L _{FD} (mm) | L _c (mm) | L _{sw} ; L _b (mm) | Ø _d (mm) | S _{min} (mm) | ØD (mm) | H (mm) |
|----|---|------------------------|--|------------------------|--------------------------|------------|-----------|
| 10 | 210 | --- | 90 | 17,6 | 10 | 100 | 189 |
| 15 | 210 | 110 | 95 | 21,8 | 10 | 100 | 189 |
| 20 | 230 | 120 | 115 | 27,2 | 13 | 125 | 228 |
| 25 | 230 | 135 | 130 | 33,9 | 13 | 150 | 234 |
| 32 | 260 | 150 | 150 | 42,7 | 13 | 150 | 278 |
| 40 | 260 | 170 | 170 | 48,8 | 13 | 200 | 304 |
| 50 | 300 | 210 | 210 | 61,2 | 16 | 250 | 354 |

PN 250

| DN | L _{FB} ; L _{FD} (mm) | L _c (mm) | L _{sw} ; L _b (mm) | Ø _d (mm) | S _{min} (mm) | ØD (mm) | H (mm) |
|----|---|------------------------|--|------------------------|--------------------------|------------|-----------|
| 10 | 230 | --- | 90 | 17,6 | 10 | 100 | 189 |
| 15 | 230 | 110 | 95 | 21,8 | 10 | 125 | 189 |
| 20 | --- | 120 | 115 | 27,2 | 13 | 150 | 228 |
| 25 | 260 | 135 | 130 | 33,9 | 13 | 175 | 234 |
| 32 | --- | 150 | 150 | 42,7 | 13 | 200 | 278 |
| 40 | 300 | 170 | 170 | 48,8 | 13 | 250 | 304 |
| 50 | 350 | 210 | 210 | 61,2 | 16 | 250 | 354 |

PN 320; PN 400

| DN | L _{FB} ; L _{FD} (mm) | L _c (mm) | L _{sw} ; L _b (mm) | Ø _d (mm) | S _{min} (mm) | ØD (mm) | H (mm) |
|----|---|------------------------|--|------------------------|--------------------------|------------|-----------|
| 10 | 230 | --- | 110 | 17,6 | 10 | 125 | 270 |
| 15 | 230 | 150 | 120 | 21,8 | 10 | 150 | 286 |
| 20 | --- | 165 | 145 | 27,2 | 13 | 200 | 332 |
| 25 | 260 | 175 | 165 | 33,9 | 13 | 250 | 352 |
| 32 | --- | 195 | 200 | 42,7 | 13 | 250 | 406 |
| 40 | 300 | 230 | 221 | 48,8 | 13 | 300 | 448 |
| 50 | 350 | 265 | 250 | 61,2 | 16 | 350 | 530 |

LE-LF