## Full lift safety valve / Standard safety valve

### ARI-SAFE
### Full lift safety valve D/G
### Standard safety valve F

- Type-test approved acc. to DIN EN ISO 4126-1 / AD2000-A2 / TRD421
- TÜV · SV · . . -663 · D/G **Figure 901/911**
- TÜV · SV · . . -663 · F **Figure 901/911**
- Further approvals: see inside

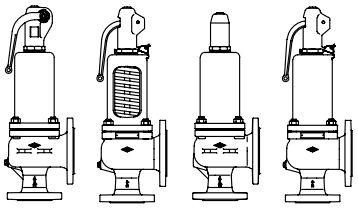


Fig. 901 902 911 912

Page 2

### ARI-SAFE
### Standard safety valve for the heating technology

- Type-test approved acc. to DIN EN ISO 4126-1 / DIN EN 12828 / TRD 721
- TÜV · SV · . . -688 · D/G/H **Figure 903**
- TÜV · SV · . . -688 · D **Figure 904**

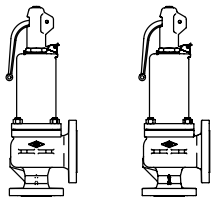


Fig. 903 904

Page 14

### ARI-SAFE-P
### Standard safety valve D/G/F

- Type-test approved acc. to DIN EN ISO 4126-1 / AD2000-A2
- TÜV · SV · . . -811 · D/G **Figure 921/923**
- TÜV · SV · . . -811 · F **Figure 921/923**

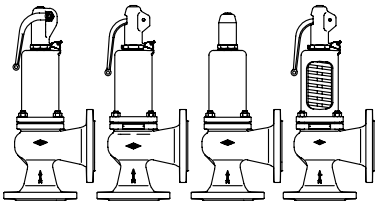


Fig. 921 922 923 924

Page 20

### ARI-SAFE-TC
### Full lift safety valve D/G
### Standard safety valve F

- Type-test approved acc. to DIN EN ISO 4126-1 / AD2000-A2 / TRD421
- TÜV · SV · . . -995 · D/G **Figure 941-943**
- TÜV · SV · . . -995 · F **Figure 941/943**

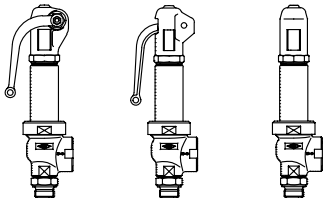


Fig. 941 942 943

Page 26

### ARI-SAFE-TC
### Standard safety valve for the heating technology

- Type-test approved acc. to DIN EN ISO 4126-1 / DIN EN 12828 / TRD 721
- TÜV · SV · . . -997 · D/G/H **Figure 945**
- TÜV · SV · . . -997 · D **Figure 946**

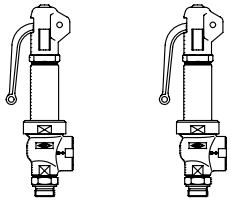


Fig. 945 946

Page 30

### ARI-SAFE-TCP
### Standard safety valve D/G/F

- Type-test approved acc. to DIN EN ISO 4126-1 / AD2000-A2
- TÜV · SV · . . -1041 · D/G **Figure 961-963**
- TÜV · SV · . . -1041 · F **Figure 961/963**

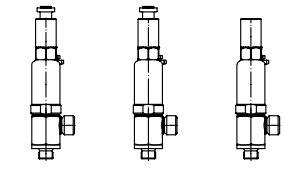


Fig. 961 962 963

Page 34

### ARI-SAFE-TCS
### Standard safety valve D/G/F

- Type-test approved acc. to DIN EN ISO 4126-1 / AD2000-A2
- TÜV · SV · . . -1041 · D/G **Figure 951-953**
- TÜV · SV · . . -1041 · F **Figure 951/953**

**ALSO FOR HORIZONTAL APPLICATION**

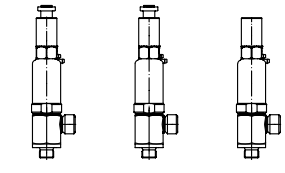


Fig. 951 952 953

Page 38

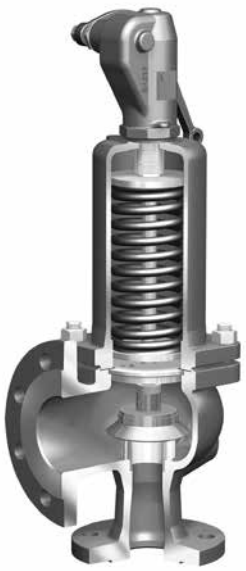


**Fig. 900**

**Fig. 940**

**Fig. 920**

**Fig. 950/960**

**Features:**

- Direct loaded with spring
- Wear resistant seat/disc
- Precision disc alignment and guide
- Possible with soft seal disc
- Possible with EPDM bellows
- Possible with stainless steel bellows
- ARI-SAFE-TC/TCP/TCS: All common thread types

## ARI-SAFE-- Full lift safety valve D/G, Standard safety valve F

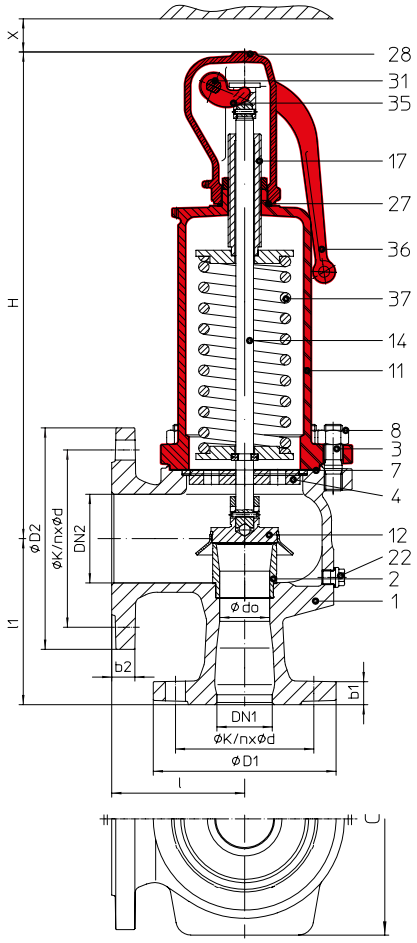



Fig. ... .901
closed lifting device,
closed bonnet

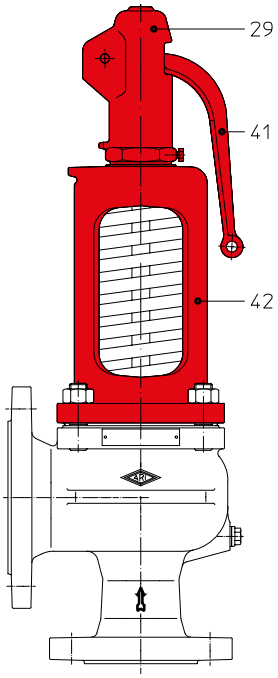



Fig. ... .902
open lifting device,
open bonnet

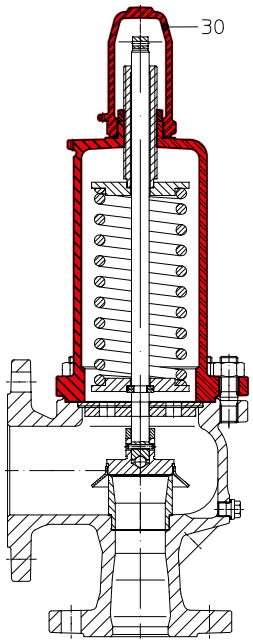



Fig. ... .911
gastight cap,
closed bonnet

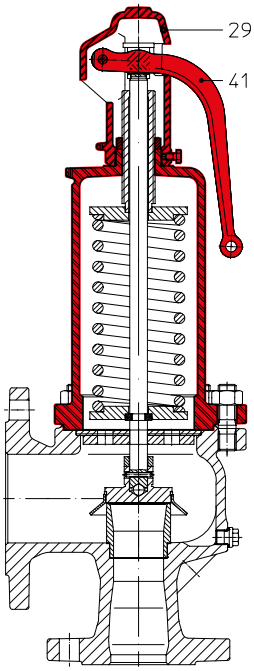



Fig. ... .912
open lifting device,
closed bonnet

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Flange | Flangeholes / -thickness tolerances |
|---|---|---|---|---|---|---|
| 12.901 / 902 / 911 / 912 | PN16/16 | EN-JL1040 | DN20/32 - 150/250 | -10°C to +300°C | DIN EN 1092-2 | DIN 2533/2533 |
| 23.901 / 902 / 911 / 912 | PN25/16 (PN25/10) | EN-JS1049 | DN200/300 - 250/350 | -10°C to +350°C | DIN EN 1092-2 | DIN 2534/2533 |
| 25.901 / 902 / 911 / 912 | PN40/16 | EN-JS1049 | DN20/32 - 250/350 | -10°C to +350°C | DIN EN 1092-2 | DIN 2535/2533 |
| 34.901 / 902 / 911 / 912 | PN25/16 (PN25/10) | 1.0619+N | DN200/300 - 250/350 | -10°C to +450°C | DIN EN 1092-1 | DIN 2544/2543 |
| 35.901 / 902 / 911 / 912 | PN40/16 | 1.0619+N | DN15/25 - 250/350 | -10°C to +450°C | DIN EN 1092-1 | DIN 2545/2543 |
| 55.901 / 911 | PN40/16 | 1.4408 | DN15/25 - 250/350 | -60°C to +400°C | DIN EN 1092-1 | DIN 2545/2543 |

| **Construction** | | |
|---|---|---|
| Safety valve, spring loaded, direct loaded | | |
| **Requirement** | | |
| Acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2, material selection observe TRB 801 No. 45! | | |
| **Type-test approval** | | |
| Full lift safety valve:<br>(acc. to VdTÜV-leaflet 663) | Fig. 901/902/911/912 | TÜV · SV · . . -663 · D/G |
| Standard safety valve: | Fig. 901/911 | TÜV · SV · . . -663 · F |

| **Sizing** | |
|---|---|
| for steam, air and water refer to capacity tables, calculations acc. to EN ISO 4126-1, TRD421 and AD2000-A2. | |
| **Details required** | |
| Medium gasform: | Mass flow (kg/h), molar mass (kg/kmol), Isotropic exponent, temperature (°C), set pressure (barg), back pressure (barg) |
| Medium liquid: | Mass flow (kg/h), density (kg/m3), viscosity, temperature (°C), set pressure (barg), back pressure (barg) |
| **Order data:** | |
| ARI-SAFE-Safety valve, Figure ..., DN .../..., PN ..., Material ..., Set pressure ...bar | |

| | **standard: without metal bellows** | **DN15/25 - 100/150 optional: with metal bellows** (refer to page 14) |
|---|---|---|
| **Superimposed back pressure** | no backpressure allowed | on request |
| **Built up back pressure** | max. 10% from set pressure (higher on request) | on request |

| Parts | | | | | | |
|---|---|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 12.901/902/911/912** | **Fig. 23./25.901/902/911/912** | **Fig. 34./35.901/902/911/912** | **Fig. 55.901/911** |
| 1 | | Body | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | GP240GH+N, 1.0619+N | GX5CrNiMo19-11-2, 1.4408 |
| 2 | | Seat | X6CrNiMoTi17-12-2, 1.4571 | | | |
| 3 | | Studs | 25CrMo4, 1.7218 | | | A4 - 70 |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT (≥ DN65: EN-GJS-400-18U-LT, EN-JS1049) | | | X6CrNiMoTi17-12-2, 1.4571 |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | | | |
| 8 | | Hexagon nut | C35E, 1.1181 | | | A4 |
| 11 | | Bonnet, closed | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 12 | | Disc | X39CrMo17-1+QT, 1.4122+QT | | | X6CrNiMoTi17-12-2, 1.4571 |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT | | | X6CrNiMoTi17-12-2, 1.4571 |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT | | | X2CrNiMo17-12-2, 1.4404 |
| 22 | | Plug screw | 5.8 | | | A4 |
| 27 | x | Sealing ring | CuFA (≥ DN125: Graphit) | | | X6CrNiMoTi17-12-2, 1.4571 |
| 28 | | Cap, closed | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 29 | | Cap, open | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | | -- |
| 30 | | Cap, gastight | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 31 | x | Packing rings | Pure graphite | | | |
| 35 | | Lift fork | EN-GJS-400-15, EN-JS1030 (DN200: GP240GH+N, 1.0619+N) | | | GX5CrNiMo19-11-2, 1.4408 |
| 36 | | Lever, closed | EN-GJS-400-18U-LT, EN-JS1049 | | | GX5CrNiMo19-11-2, 1.4408 |
| 37 | x | Spring | FDSiCr / 51CrV4, 1.8159 | | | X10CrNi18-8, 1.4310 (FDSiCr: 51CrV4, 1.8159) [2] |
| 41 | | Lever, open | EN-GJS-400-18U-LT, EN-JS1049 | | | -- |
| 42 | | Bonnet, open | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | | -- |
| 43 | | Bellows (optional) | EPDM 70 Shore A | | | |
| 55 | | Bellows unit (optional) | X6CrNiMoTi17-12-2, 1.4571 | | | |
| 70 | | Balanced piston (at bellows) | X6CrNiMoTi17-12-2, 1.4571 | | | |
| | └ Spare parts | | | | | |

[1] Optional: GP240GH, 1.0619

[2] Special coating

| **DN1 / DN2** | **15 / 25** | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** | **200 / 300** | **250 / 350** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Special-DN** | | | **25 / 50** | **40 / 50** | **40 / 80** | | **80 / 100** | | | **150 / 200** | | | |

| **Spring ranges: Standard design** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Full lift safety valve Fig. 901/902/911/912 | (barü) | 0,2 - 0,45 | 0,2 - 0,5 | 0,2 - 0,5 | | | | 0,2 - 0,5 | 0,2 - 0,5 | 0,2 - 0,4 | 0,2 - 0,5 | 0,2 - 0,3 | 0,2 - 0,3 |
| | (barü) | > 0,45 - 0,9 | > 0,5 - 1 | > 0,5 - 1 | | | | > 0,5 - 1 | > 0,5 - 1 | > 0,4 - 0,75 | > 0,5 - 1 | > 0,3 - 0,5 | > 0,3 - 0,35 |
| | (barü) | > 0,9 - 1,3 | > 1 - 1,5 | > 1 - 1,5 | | | | > 1 - 1,5 | > 1 - 1,5 | > 0,75 - 1,1 | > 1 - 1,5 | > 0,5 - 0,85 | > 0,35 - 0,6 |
| | (barü) | > 1,3 - 2 | > 1,5 - 2,5 | > 1,5 - 2 | | | | > 1,5 - 2 | > 1,5 - 2 | > 1,1 - 1,5 | > 1,5 - 1,9 | > 0,85 - 1,1 | > 0,6 - 0,7 |
| | (barü) | > 2 - 2,5 | > 2,5 - 4,5 | > 2 - 2,7 | | | | > 2 - 2,7 | > 2 - 2,5 | > 1,5 - 1,9 | > 1,9 - 2,3 | > 1,1 - 1,4 | > 0,7 - 0,9 |
| | (barü) | > 2,5 - 3,2 | > 4,5 - 8,5 | > 2,7 - 3,6 | | | | > 2,7 - 3,6 | > 2,5 - 3 | > 1,9 - 2,5 | > 2,3 - 2,7 | > 1,4 - 1,8 | > 0,9 - 1,5 |
| | (barü) | > 3,2 - 4,3 | > 8,5 - 19 | > 3,6 - 5 | | | | > 3,6 - 5 | > 3 - 3,6 | > 2,5 - 2,95 | > 2,7 - 3,3 | > 1,8 - 2,0 | > 1,5 - 1,9 |
| | (barü) | > 4,3 - 5,6 | > 19 - 28 | > 5 - 9 | | | | > 5 - 9 | > 3,6 - 5 | > 2,95 - 4 | > 3,3 - 4,1 | > 2,0 - 2,2 | > 1,9 - 2,6 |
| | (barü) | > 5,6 - 10 | > 28 - 35 | > 9 - 16 | | | | > 9 - 14 | > 5 - 9 | > 4 - 5,7 | > 4,1 - 5,5 | > 2,2 - 2,4 | > 2,6 - 3,0 |
| | (barü) | > 10 - 20 | > 35 - 40 | > 16 - 22 | | | | > 14 - 19 | > 9 - 14 | > 5,7 - 8,2 | > 5,5 - 7,4 | > 2,4 - 2,7 | > 3,0 - 4,5 |
| | (barü) | > 20 - 25,9 | | > 22 - 28 | | | | > 19 - 25 | > 14 - 19 | > 8,2 - 12 | > 7,4 - 11 | > 2,7 - 3,1 | > 4,5 - 6,0 |
| | (barü) | > 25,9 - 40 | | > 28 - 34 | | | | | > 19 - 24 | > 12 - 17 | > 11 - 16 | > 3,1 - 4,0 | > 6,0 - 7,0 |
| | (barü) | | | > 34 - 40 | | | | | | > 17 - 24 | > 16 - 21 | > 4,0 - 4,8 | > 7,0 - 8,5 |
| | (barü) | | | | | | | | | > 24 - 27 | > 21 - 26 | > 4,8 - 5,6 | > 8,5 - 10,0 |
| | (barü) | | | | | | | | | | | > 5,6 - 6,8 | > 10,0 - 11,5 |
| | (barü) | | | | | | | | | | | > 6,8 - 7,8 | > 11,5 - 13,0 |
| | (barü) | | | | | | | | | | | > 7,8 - 9,5 | > 13,0 - 14,0 |
| | (barü) | | | | | | | | | | | > 9,5 - 11,0 | > 14,0 - 15,0 |
| | (barü) | | | | | | | | | | | > 11,0 - 13,0 | > 15,0 - 16,0 |
| | (barü) | | | | | | | | | | | > 13,0 - 15,0 | > 16,0 - 20,0 |
| | (barü) | | | | | | | | | | | > 15,0 - 17,5 | |
| | (barü) | | | | | | | | | | | > 17,5 - 21,0 | |
| | (barü) | | | | | | | | | | | > 21,0 - 25,0 | |

Information / restriction of technical rules need to be observed!
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified
(contact manufacturer for information, refer to Product overview and Resistance list).

| **Spring ranges: Bellows design (optional)** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard safety valve Fig. 901/911 | (barü) | 5 - 6,4 | 3 - 3,7 | 2,5 - 3,3 | 2,5 - 3,2 | 2,6 - 3,6 | 2,8 - 3,4 | 2,5 - 3,7 | 2,5 - 3,3 | 2,5 - 3,5 | 1,1 - 1,5 | 1,1 - 1,3 | 2,4 - 2,7 | 2,1 -2,4 |
| | (barü) | > 6,4 - 7,7 | > 3,7 - 4,6 | > 3,3 - 4,6 | > 3,2 - 4 | > 3,6 - 4,5 | > 3,4 - 4,5 | > 3,7 - 4,6 | > 3,3 - 4,5 | > 3,5 - 4,2 | > 1,5 - 2 | > 1,3 - 1,7 | > 2,7 - 2,9 | > 2,4 - 2,6 |
| | (barü) | > 7,7 - 10 | > 4,6 - 6,3 | > 4,6 - 5,4 | > 4 - 5,5 | > 4,5 - 5,6 | > 4,5 - 8,4 | > 4,6 - 5,9 | > 4,5 - 5,8 | > 4,2 - 4,9 | > 2 -2,5 | > 1,7 - 2,1 | > 2,9 - 3,1 | > 2,6 - 2,9 |
| | (barü) | > 10 - 16 | > 6,3 - 8,4 | > 5,4 - 7 | > 5,5 - 6,4 | > 5,6 - 7,5 | > 8,4 - 10 | > 5,9 - 8 | > 5,8 - 7,5 | > 4,9 - 5,6 | > 2,5 - 2,9 | > 2,1 - 2,4 | > 3,1 - 3,3 | > 2,9 - 3,2 |
| | (barü) | > 16 - 18,5 | > 8,4 - 10,2 | > 7 - 9 | > 6,4 - 7,9 | > 7,5 - 10 | > 10 - 11,5 | > 8 - 10 | > 7,5 - 8,9 | > 5,6 - 7 | > 2,9 - 3,5 | > 2,4 - 2,8 | > 3,3 - 3,6 | > 3,2 - 3,6 |
| | (barü) | > 18,5 - 26 | > 10,2 - 13 | > 9 - 11,7 | > 7,9 - 11,5 | > 10 - 12,5 | > 11,5 - 16 | > 10 - 18 | > 8,9 - 10,5 | > 7 - 8 | > 3,5 - 4,2 | > 2,8 - 3,1 | > 3,6 - 3,9 | > 3,6 - 4,1 |
| | (barü) | > 26 - 40 | > 13 - 17 | > 11,7 - 16 | > 11,5 - 18,5 | > 12,5 - 16 | > 16 - 18,5 | > 18 - 24 | > 10,5 - 13 | > 8 - 9,3 | > 4,2 - 5,1 | > 3,1 - 3,4 | > 3,9 - 4,1 | > 4,1 - 4,6 |
| | (barü) | | > 17 - 27,5 | > 16 - 22 | > 18,5 - 25 | > 16 - 22 | > 18,5 - 23 | > 24 - 26 | > 13 - 18 | > 9,3 - 11,5 | > 5,1 - 6,5 | > 3,4 - 3,9 | > 4,1 - 4,3 | > 4,6 - 5,2 |
| | (barü) | | | > 22 - 30 | | | | | > 18 - 23 | > 11,5 - 14 | > 6,5 - 7,5 | > 3,9 - 4,8 | > 4,3 - 4,8 | > 5,2 - 5,8 |
| | (barü) | | | | | | | | | > 14 - 20 | > 7,5 - 9 | > 4,8 - 5,8 | > 4,8 - 5,5 | > 5,8 - 6,5 |
| | (barü) | | | | | | | | | | > 9 - 10,5 | > 5,8 - 6,8 | > 5,5, - 6,5 | > 6,5 - 7,2 |
| | (barü) | | | | | | | | | | > 10,5 - 12,6 | > 6,8 - 8,1 | > 6,5 - 7,9 | > 7,2 - 8,3 |
| | (barü) | | | | | | | | | | > 12,6 - 17 | > 8,1 - 9,7 | > 7,9 - 9,5 | > 8,3 - 9,3 |
| | (barü) | | | | | | | | | | > 17 -25 | > 9,7 - 11,3 | > 9,5 - 12,3 | > 9,3 - 10 |
| | (barü) | | | | | | | | | | | > 11,3 - 13 | > 12,3 - 15,9 | > 10 - 10,8 |
| | (barü) | | | | | | | | | | | > 13 - 15 | > 15,9 -20 | > 10,8 - 11,5 |
| | (barü) | | | | | | | | | | | > 15 - 18 | | > 11,5 - 12,2 |
| | (barü) | | | | | | | | | | | | | > 12,2 - 13 |

| DN1 / DN2 | | | 15 / 25 | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 | 200 / 300 | 250 / 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sonder-DN | | | | | 25 / 50 | 40 / 50 | 40 / 80 | | 80 / 100 | | | 150 / 200 | | | |
| **Dimensions** | | | | | | | | | | | | | | | |
| d0 | | (mm) | 13 | 18 | 22,5 | 29 | 36 | 45 | 58,5 | 72 | 90 | 106 | 125 | 165 | 200 |
| A0 | | ($mm^2$) | 133 | 254 | 398 | 661 | 1018 | 1590 | 2688 | 4072 | 6362 | 8825 | 12272 | 21382 | 31416 |
| l | | (mm) | 80 | 85 | 100 | 110 | 115 | 120 | 140 | 160 | 180 | 200 [1] | 225 | 300 | 325 |
| l1 | | (mm) | 90 | 95 | 105 | 115 | 140 | 150 | 170 | 195 | 220 | 250 [1] | 285 | 305 | 340 |
| H | | (mm) | 260 | 270 | 280 | 330 | 390 | 435 | 545 | 610 | 690 | 845 | 890 | 1105 | 1175 |
| H (Bellows design) | | (mm) | 290 | 310 | 335 | 390 | 445 | 500 | 620 | 690 | 808 | 919 | 953 | 1215 | 1262 |
| X | | (mm) | 150 | 150 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 500 | 500 | 500 | 500 |
| C (Widthupport tongues) | EN-JL1040 | (mm) | -- | -- | -- | -- | -- | -- | -- | 280 | 332 | 362 | 408 | -- | -- |
| | EN-JS1049 | (mm) | -- | -- | -- | -- | -- | -- | -- | 280 | 332 | 362 | 408 | 521 | 600 |
| | 1.0619+N | (mm) | -- | -- | -- | -- | -- | 204 | 242 | 280 | 332 | 362 | 408 | 521 | 600 |
| | 1.4408 | (mm) | -- | -- | -- | -- | -- | 204 | 242 | 280 | 332 | 362 | 408 | 521 | 600 |
| Drainhole with plug | | (inch) | G1/4" | | | | | | G3/8" | | | | | | |
| | | Standard for EN-JL1040, EN-JS1049 1.0619+N, optional at 1.4408 | | | | | | | | | | | | | |

[1] DN150 / 200: l=241,3 l1=239,7

| **Weights** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| standard | | (kg) | 7 | 8,5 | 10 | 14 | 20 | 28 | 40 | 53 | 80 | 125 | 165 | 280 | 430 |
| optional: Bellows design | | (kg) | 7,5 | 9,5 | 11,5 | 16 | 22,5 | 32 | 47 | 59 | 93 | 140 | 180 | 310 | 470 |
| **Flanges** | | | | | | | | | | | | | | | |
| ØD1 | PN16 | (mm) | 95 | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 | -- | -- |
| | PN25 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 360 | 425 |
| | PN40 | (mm) | 95 | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 235 | 270 | 300 | 375 | 450 |
| ØD2 | PN10 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 445 | 505 |
| | PN16 | (mm) | 115 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 | 340 | 405 | 460 | 520 |
| b1 | EN-JL1040 | (mm) | -- | 16 | 16 | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 | -- | -- |
| | EN-JS1049 | (mm) | -- | 18 | 18 | 18 | 19 | 20 | 22 | 24 | 24 | 27 | 29 | 37 | 40 |
| | 1.0619+N | (mm) | 16 | 20 | 20 | 20 | 21 | 22 | 24 | 26 | 28 | 31 | 34 | 37 | 40 |
| | 1.4408 | (mm) | 16 | 16 | 16 | 18 | 19 | 20 | 22 | 22 | 23 | 26 | 28 | 37 | 40 |
| b2 | EN-JL1040 | (mm) | -- | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 | 30 | 32 | -- | -- |
| | EN-JS1049 | (mm) | -- | 19 | 19 | 20 | 20 | 20 | 20 | 22 | 22 | 31 | 33 | 33 | 35 |
| | 1.0619+N | (mm) | 18 | 19 | 19 | 20 | 20 | 20 | 20 | 22 | 22 | 27 | 29 | 33 | 35 |
| | 1.4408 | (mm) | 18 | 15 | 16 | 17 | 17 | 17 | 17 | 19 | 19 | 24 | 26 | 33 | 35 |
| Flanges acc. to DIN EN 1092-1 / -2, Flangeholes/-thickness tolerances acc. to DIN 2533 / 2543 / 2545 / 28605 / 28607, raised face, facing acc. to DIN EN 1092-1 form B1 | | | | | | | | | | | | | | | |

| **Standard-Flangeholes** | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 |
| ØK | PN10 DIN 2532 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 400 | 460 |
| n x Ød | | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12x22 | 16x22 |
| ØK | PN16 DIN 2533 | (mm) | 65 | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 180 | 210 | 240 | 295 | 355 | 410 | 470 |
| n x Ød | | (mm) | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4x18 [1] | 8x18 | 8x18 | 8x18 | 8x22 | 12x22 | 12x26 | 12x26 | 16x26 |
| ØK | PN25 DIN 2533 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 310 | 370 | -- | -- |
| n x Ød | | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12x26 | 12x30 | -- | -- |
| ØK | PN40 DIN 2545 | (mm) | 65 | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 190 | 220 | 250 | 320 | 385 | -- | -- |
| n x Ød | | (mm) | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x22 | 8x26 | 8x26 | 12x30 | 12x33 | -- | -- |
| [1] also with 8 bore holes acc. to DIN EN 1092-1/-2 possible. | | | | | | | | | | | | | | | | | |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JL1040 | PN16 | (bar) | -- | 16 | 14,4 | 12,8 | 11,2 | 9,6 | -- | -- | -- |
| EN-JS1049 | PN25 | (bar) | on request | 25 | 24,3 | 23 | 21,8 | 20 | 17,5 | -- | -- |
| EN-JS1049 | PN40 | (bar) | on request | 40 | 38,8 | 36,8 | 34,8 | 32 | 28 | -- | -- |

| **acc. to manufacturers standard** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0619+N | PN25 | (bar) | 18,7 | 25 | 23,9 | 22 | 20 | 17,2 | 16 | 14,8 | 8,2 |
| 1.0619+N | PN40 | (bar) | 30 | 40 | 38,1 | 35 | 32 | 28 | 25,7 | 23,8 | 13,1 |

| **acc. to DIN EN 1092-1** | | | **-60°C to <-10°C** | **-10°C to 100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4408 | PN40 | (bar) | 40 | 40 | 36,3 | 33,7 | 31,8 | 29,7 | 28,5 | 27,4 | -- |

[1] Studs and nuts made of A4-70 (at temperatures below -10°C)

| **Certified coefficient of discharge Kdr** (Values for D/G variable: DN15-100; 250 < 3,5 bar, DN125-200 < 4,0 bar) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN1 / DN2** | **15 / 25** | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** | **200 / 300** | **250 / 350** |
| TÜV · SV · . . -663 · D/G | 0,74 | | | | | | | | | 0,7 | | 0,75 | 0,7 |
| TÜV · SV · . . -663 · F | 0,52 | 0,54 | | | | | 0,48 | | | 0,45 | | 0,56 | 0,52 |

**Capacity saturated steam (incl. 10% overpressure)**

| DN1 / DN2 | | | 15 / 25 | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 | 200 / 300 | 250 / 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Saturated steam (kg/h) | | | | | | | | | | | | |
| | 0,2 | (barg) | 42 | 81 | 126 | 210 | 324 | 506 | 855 | 1295 | 2024 | 2510 | 3490 | 6937 | 8931 |
| | 0,4 | (barg) | 60 | 120 | 185 | 307 | 473 | 739 | 1250 | 1890 | 2960 | 3630 | 5050 | 9694 | 12615 |
| | 0,5 | (barg) | 67 | 132 | 207 | 344 | 529 | 827 | 1400 | 2120 | 3310 | 4070 | 5660 | 10859 | 14204 |
| | 0,6 | (barg) | 74 | 147 | 230 | 383 | 590 | 923 | 1560 | 2360 | 3690 | 4470 | 6220 | 11934 | 15698 |
| | 0,8 | (barg) | 87 | 174 | 272 | 453 | 698 | 1090 | 1840 | 2790 | 4360 | 5240 | 7280 | 13901 | 18492 |
| | 1 | (barg) | 100 | 203 | 317 | 526 | 811 | 1270 | 2140 | 3245 | 5070 | 6030 | 8385 | 15868 | 21306 |
| | 1,5 | (barg) | 133 | 272 | 425 | 707 | 1090 | 1700 | 2875 | 4355 | 6800 | 8050 | 11200 | 20739 | 28637 |
| | 2 | (barg) | 164 | 305 | 477 | 792 | 1220 | 1900 | 3220 | 4880 | 7625 | 10125 | 14080 | 25647 | 36333 |
| | 2,5 | (barg) | 194 | 366 | 572 | 950 | 1460 | 2285 | 3865 | 5855 | 9145 | 11990 | 16660 | 30689 | 43601 |
| | 3 | (barg) | 224 | 424 | 662 | 1100 | 1695 | 2645 | 4475 | 6775 | 10600 | 13880 | 19300 | 35874 | 50185 |
| | 4 | (barg) | 280 | 535 | 837 | 1390 | 2140 | 3350 | 5650 | 8570 | 13400 | 17550 | 24400 | 45676 | 62689 |
| | 5 | (barg) | 335 | 640 | 1000 | 1665 | 2565 | 4000 | 6770 | 10260 | 16000 | 21000 | 29250 | 54723 | 75043 |
| | 6 | (barg) | 390 | 745 | 1165 | 1940 | 2990 | 4665 | 7890 | 11950 | 18650 | 24500 | 34050 | 63698 | 87350 |
| | 7 | (barg) | 445 | 850 | 1330 | 2210 | 3400 | 5320 | 9000 | 13600 | 21300 | 27900 | 38800 | 72658 | 99638 |
| | 8 | (barg) | 500 | 957 | 1495 | 2485 | 3820 | 5980 | 10100 | 15300 | 23900 | 31350 | 43600 | 81599 | 111898 |
| | 9 | (barg) | 554 | 1060 | 1660 | 2755 | 4245 | 6630 | 11200 | 16950 | 26500 | 34800 | 48400 | 90525 | 124139 |
| | 10 | (barg) | 609 | 1165 | 1820 | 3025 | 4665 | 7290 | 12300 | 18650 | 29150 | 38250 | 53200 | 99452 | 136381 |
| | 11 | (barg) | 664 | 1270 | 1985 | 3300 | 5080 | 7940 | 13400 | 20300 | 31750 | 41600 | 58000 | 108370 | 148610 |
| | 12 | (barg) | 718 | 1375 | 2150 | 3570 | 5500 | 8590 | 14500 | 22000 | 34350 | 45100 | 62700 | 117282 | 160831 |
| | 13 | (barg) | 773 | 1480 | 2310 | 3840 | 5920 | 9250 | 15600 | 23650 | 37000 | 48500 | 67500 | 126197 | 173057 |
| | 14 | (barg) | 827 | 1580 | 2475 | 4110 | 6340 | 9900 | 16700 | 25350 | 39600 | 52000 | 72300 | 135113 | 185284 |
| | 15 | (barg) | 882 | 1690 | 2640 | 4385 | 6760 | 10550 | 17800 | 27000 | 42200 | 55400 | 77000 | 144035 | 197518 |
| | 16 | (barg) | 936 | 1790 | 2800 | 4655 | 7170 | 11200 | 18950 | 28700 | 44800 | 58800 | 81800 | 152960 | 209758 |
| | 17 | (barg) | 991 | 1900 | 2965 | 4930 | 7590 | 11850 | 20050 | 30350 | 47400 | 62200 | 86600 | 161889 | 222002 |
| | 18 | (barg) | 1046 | 2000 | 3130 | 5200 | 8010 | 12500 | 21150 | 32050 | 50100 | 65700 | 91400 | 170826 | 234257 |
| | 19 | (barg) | 1101 | 2100 | 3295 | 5470 | 8430 | 13150 | 22250 | 33700 | 52700 | 69100 | 96200 | 179777 | 246532 |
| | 20 | (barg) | 1156 | 2210 | 3460 | 5750 | 8850 | 13800 | 23350 | 35400 | 55300 | 72600 | 101000 | 188724 | 258800 |
| | 21 | (barg) | 1210 | 2320 | 3620 | 6020 | 9250 | 14500 | 24500 | 37100 | 57900 | 76000 | 105800 | 197693 | |
| | 22 | (barg) | 1265 | 2420 | 3790 | 6290 | 9700 | 15150 | 25600 | 38800 | 60600 | 79500 | 110900 | 206658 | |
| | 24 | (barg) | 1375 | 2635 | 4120 | 6840 | 10500 | 16450 | 27850 | 42100 | 65900 | 86500 | 120600 | 224640 | |
| | 25 | (barg) | 1431 | 2740 | 4280 | 7120 | 10950 | 17100 | 28950 | 43800 | | 90200 | 125500 | 233648 | |
| | 26 | (barg) | 1486 | 2850 | 4450 | 7390 | 11350 | 17800 | 30050 | | | 93700 | 130300 | | |
| | 27 | (barg) | 1541 | 2950 | 4620 | 7670 | 11820 | 18460 | 31220 | | | 96950 | | | |
| | 28 | (barg) | 1597 | 3060 | 4780 | 7950 | 12250 | 19100 | 32300 | | | | | | |
| | 30 | (barg) | 1708 | 3270 | 5120 | 8500 | 13100 | 20450 | 34550 | | | | | | |
| ← max. set pressure stainless steel version - Spring | 32 | (barg) | 1819 | 3490 | 5450 | 9060 | 13950 | 21800 | 36800 | | | | | | |
| | 34 | (barg) | | | | | | | | | | | | | |
| | 40 | (barg) | | | | | | | | | | | | | |

**Capacity air (incl. 10% overpressure)**

| DN1 / DN2 | | | 15 / 25 | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 | 200 / 300 | 250 / 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Air 0°C and 1,013 bara (Nm³/h) | | | | | | | | | | | | |
| | 0,2 | (barg) | 49 | 95 | 148 | 246 | 380 | 594 | 1003 | 1520 | 2375 | 2945 | 4100 | 8150 | 10398 |
| | 0,4 | (barg) | 72 | 143 | 223 | 370 | 570 | 891 | 1505 | 2280 | 3565 | 4380 | 6090 | 11695 | 15219 |
| | 0,5 | (barg) | 82 | 161 | 252 | 419 | 646 | 1009 | 1705 | 2585 | 4035 | 4970 | 6910 | 13256 | 17340 |
| | 0,6 | (barg) | 91 | 182 | 284 | 472 | 728 | 1135 | 1920 | 2910 | 4545 | 5520 | 7675 | 14731 | 19376 |
| | 0,8 | (barg) | 110 | 218 | 341 | 567 | 873 | 1365 | 2305 | 3490 | 5460 | 6555 | 9115 | 17428 | 23182 |
| | 1 | (barg) | 126 | 255 | 398 | 661 | 1019 | 1590 | 2690 | 4075 | 6370 | 7575 | 10530 | 19963 | 26803 |
| | 1,5 | (barg) | 168 | 344 | 538 | 894 | 1378 | 2150 | 3640 | 5510 | 8610 | 10195 | 14180 | 26284 | 36294 |
| | 2 | (barg) | 209 | 388 | 607 | 1008 | 1550 | 2425 | 4100 | 6210 | 9700 | 12890 | 17920 | 32693 | 46314 |
| | 2,5 | (barg) | 248 | 468 | 731 | 1215 | 1870 | 2925 | 4945 | 7490 | 11700 | 15330 | 21300 | 39310 | 55850 |
| | 3 | (barg) | 288 | 544 | 850 | 1410 | 2175 | 3400 | 5750 | 8700 | 13600 | 17840 | 24800 | 46140 | 64547 |
| | 4 | (barg) | 362 | 692 | 1080 | 1800 | 2770 | 4330 | 7310 | 11080 | 17300 | 22725 | 31600 | 59135 | 81161 |
| | 5 | (barg) | 436 | 834 | 1300 | 2160 | 3330 | 5210 | 8800 | 13340 | 20840 | 27350 | 38000 | 71211 | 97653 |
| | 6 | (barg) | 510 | 975 | 1520 | 2530 | 3900 | 6090 | 10300 | 15600 | 24370 | 31900 | 44400 | 83238 | 114146 |
| | 7 | (barg) | 583 | 1115 | 1745 | 2900 | 4465 | 6970 | 11790 | 17860 | 27900 | 36600 | 50900 | 95264 | 130638 |
| | 8 | (barg) | 657 | 1255 | 1965 | 3260 | 5030 | 7860 | 13280 | 20100 | 31430 | 41200 | 57300 | 107291 | 147130 |
| | 9 | (barg) | 730 | 1395 | 2185 | 3630 | 5590 | 8740 | 14770 | 22370 | 34960 | 45800 | 63800 | 119318 | 163623 |
| | 10 | (barg) | 804 | 1540 | 2400 | 3990 | 6150 | 9610 | 16250 | 24600 | 38500 | 50500 | 70200 | 131344 | 180115 |
| | 11 | (barg) | 878 | 1680 | 2625 | 4360 | 6720 | 10500 | 17750 | 26900 | 42000 | 55100 | 76600 | 143371 | 196607 |
| | 12 | (barg) | 951 | 1820 | 2845 | 4730 | 7290 | 11380 | 19240 | 29150 | 45500 | 59700 | 83100 | 155398 | 213099 |
| | 13 | (barg) | 1025 | 1960 | 3070 | 5090 | 7850 | 12270 | 20730 | 31400 | 49000 | 64400 | 89500 | 167424 | 229592 |
| | 14 | (barg) | 1099 | 2100 | 3290 | 5460 | 8400 | 13150 | 22200 | 33650 | 52600 | 69000 | 96000 | 179451 | 246084 |
| | 15 | (barg) | 1173 | 2245 | 3500 | 5830 | 8980 | 14030 | 23700 | 35900 | 56100 | 73600 | 102400 | 191477 | 262576 |
| | 16 | (barg) | 1246 | 2385 | 3725 | 6190 | 9540 | 14900 | 25200 | 38200 | 59600 | 78200 | 108800 | 203504 | 279069 |
| | 17 | (barg) | 1320 | 2530 | 3950 | 6560 | 10100 | 15800 | 26700 | 40400 | 63100 | 82900 | 115300 | 215531 | 295561 |
| | 18 | (barg) | 1394 | 2670 | 4170 | 6920 | 10670 | 16650 | 28100 | 42700 | 66700 | 87500 | 121700 | 227557 | 312053 |
| | 19 | (barg) | 1467 | 2800 | 4390 | 7300 | 11240 | 17550 | 29600 | 44900 | 70200 | 92100 | 128100 | 239584 | 328546 |
| | 20 | (barg) | 1541 | 2950 | 4610 | 7660 | 11800 | 18400 | 31150 | 47200 | 73700 | 96800 | 134600 | 251610 | 345038 |
| | 21 | (barg) | 1614 | 3090 | 4830 | 8020 | 12370 | 19300 | 32650 | 49400 | 77300 | 101400 | 141000 | 263637 | |
| | 22 | (barg) | 1688 | 3230 | 5050 | 8390 | 12930 | 20200 | 34150 | 51700 | 80800 | 106000 | 147500 | 275664 | |
| | 24 | (barg) | 1835 | 3515 | 5490 | 9120 | 14060 | 21970 | 37100 | 56200 | 87900 | 115300 | 160400 | 299717 | |
| | 25 | (barg) | 1909 | 3655 | 5710 | 9490 | 14620 | 22850 | 38600 | 58500 | | 120000 | 166900 | 311743 | |
| | 26 | (barg) | 1983 | 3800 | 5930 | 9850 | 15190 | 23730 | 40100 | | | 124600 | 173300 | | |
| | 27 | (barg) | 2057 | 3930 | 6160 | 10240 | 15770 | 24630 | 41650 | | | 129350 | | | |
| | 28 | (barg) | 2130 | 4080 | 6370 | 10600 | 16320 | 25500 | 43100 | | | | | | |
| | 30 | (barg) | 2277 | 4360 | 6810 | 11320 | 17450 | 27250 | 46100 | | | | | | |
| | 32 | (barg) | 2425 | 4640 | 7250 | 12050 | 18570 | 29000 | 49100 | | | | | | |
| | 34 | (barg) | 2572 | 4925 | 7700 | 12790 | 19700 | 30800 | 52050 | | | | | | |
| ↓ max. set pressure stainless steel version - Spring | 40 | (barg) | 3014 | 5770 | 9030 | 14477 | 23810 | 36100 | 61000 | | | | | | |

**Capacity water (incl. 10% overpressure)**

| DN1 / DN2 | | | 15 / 25 | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 | 200 / 300 | 250 / 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Water 20°C (t/h) | | | | | | | | | | | | |
| | 0,2 | (bar) | 1,63 | 3,28 | 5,13 | 8,53 | 13,1 | 20,5 | 30,8 | 46,7 | 73 | 94,9 | 132 | 286 | 390 |
| | 0,5 | (bar) | 2,60 | 5,19 | 8,12 | 13,5 | 20,8 | 32,5 | 48,8 | 73,9 | 115 | 150 | 209 | 452 | 616 |
| | 1 | (bar) | 3,68 | 7,35 | 11,5 | 19,1 | 29,4 | 45,9 | 69 | 104 | 163 | 212 | 295 | 639 | 872 |
| | 2 | (bar) | 5,20 | 10,4 | 16,2 | 27 | 41,6 | 64,9 | 97,5 | 148 | 231 | 300 | 417 | 903 | 1233 |
| | 3 | (bar) | 6,38 | 12,7 | 19,9 | 33 | 50,9 | 79,5 | 119 | 181 | 283 | 368 | 511 | 1106 | 1510 |
| | 4 | (bar) | 7,36 | 14,7 | 22,9 | 38,1 | 58,7 | 91,8 | 138 | 209 | 326 | 424 | 590 | 1278 | 1743 |
| | 5 | (bar) | 8,24 | 16,4 | 25,7 | 42,6 | 65,5 | 102 | 154 | 233 | 365 | 474 | 660 | 1428 | 1949 |
| | 6 | (bar) | 9,02 | 18 | 28,1 | 46,7 | 72 | 112 | 169 | 256 | 400 | 520 | 723 | 1565 | 2135 |
| | 7 | (bar) | 9,75 | 19,4 | 30,4 | 50,4 | 77,7 | 121 | 182 | 276 | 432 | 562 | 781 | 1690 | 2306 |
| | 8 | (bar) | 10,41 | 20,8 | 32,5 | 53,9 | 83,1 | 130 | 195 | 295 | 461 | 600 | 835 | 1807 | 2465 |
| | 9 | (bar) | 11,05 | 22 | 34,4 | 57,2 | 88,1 | 138 | 207 | 313 | 490 | 637 | 885 | 1917 | 2615 |
| | 10 | (bar) | 11,64 | 23,2 | 36,3 | 60,3 | 92,9 | 145 | 218 | 330 | 516 | 671 | 933 | 2020 | 2756 |
| | 11 | (bar) | 12,21 | 24,4 | 38 | 63,2 | 97,4 | 152 | 229 | 346 | 540 | 703 | 977 | 2119 | 2891 |
| | 12 | (bar) | 12,76 | 25,4 | 39,7 | 66 | 102 | 159 | 239 | 362 | 565 | 735 | 1022 | 2213 | 3019 |
| | 13 | (bar) | 13,28 | 26,5 | 41,4 | 68,7 | 106 | 165 | 249 | 376 | 587 | 764 | 1062 | 2303 | 3143 |
| | 14 | (bar) | 13,78 | 27,5 | 42,9 | 71,3 | 110 | 172 | 258 | 391 | 611 | 794 | 1104 | 2390 | 3261 |
| | 16 | (bar) | 14,73 | 29,4 | 45,9 | 76,3 | 117 | 184 | 276 | 418 | 653 | 849 | 1181 | 2555 | 3486 |
| | 18 | (bar) | 15,62 | 31,2 | 48,7 | 80,9 | 125 | 195 | 293 | 443 | 692 | 900 | 1252 | 2710 | 3698 |
| | 19 | (bar) | 16,05 | 32 | 49,9 | 82,9 | 128 | 200 | 300 | 454 | 710 | 923 | 1284 | 2785 | 3799 |
| | 20 | (bar) | 16,47 | 32,8 | 51,3 | 85,3 | 131 | 205 | 308 | 467 | 730 | 949 | 1320 | 2857 | 3898 |
| | 21 | (bar) | 16,87 | 33,7 | 52,6 | 87,4 | 135 | 210 | 316 | 479 | 748 | 973 | 1350 | 2928 | |
| | 24 | (bar) | 18,04 | 36 | 56,2 | 93,4 | 144 | 225 | 338 | 512 | 800 | 1040 | 1443 | 3130 | |
| | 25 | (bar) | 18,41 | 36,7 | 57,4 | 95,3 | 147 | 229 | 345 | 522 | | 1059 | 1473 | 3194 | |
| | 26 | (bar) | 18,78 | 37,4 | 58,5 | 97,2 | 150 | 234 | 352 | | | 1080 | 1502 | | |
| | 27 | (bar) | 19,13 | 38,2 | 59,6 | 99 | 153 | 238 | 358 | | | 1100 | | | |
| | 28 | (bar) | 19,49 | 38,9 | 60,7 | 101 | 155 | 243 | 365 | | | | | | |
| | 30 | (bar) | 20,17 | 40,2 | 62,9 | 104 | 161 | 251 | 375 | | | | | | |
| | 32 | (bar) | 20,83 | 41,5 | 64,8 | 108 | 166 | 259 | 380 | | | | | | |
| | 34 | (bar) | 21,47 | 42,8 | 66,9 | 111 | 171 | 268 | 400 | | | | | | |
| ↓ max. set pressure stainless steel version - Spring | 40 | (bar) | 23,29 | 46,4 | 72,5 | 124,8 | 185,4 | 289,7 | 435 | | | | | | |

## ARI-SAFE-SN ANSI (Semi-Nozzle) - Full lift safety valve D/G, Standard safety valve F

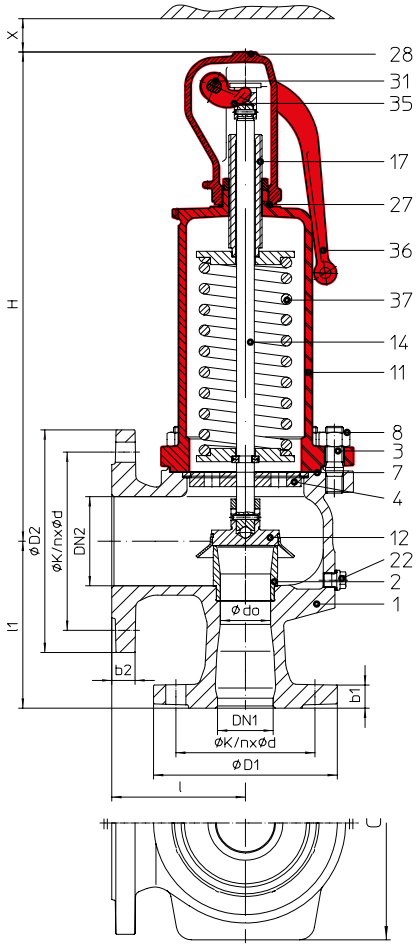



**Fig. ... .901**
**closed lifting device,**
**closed bonnet**

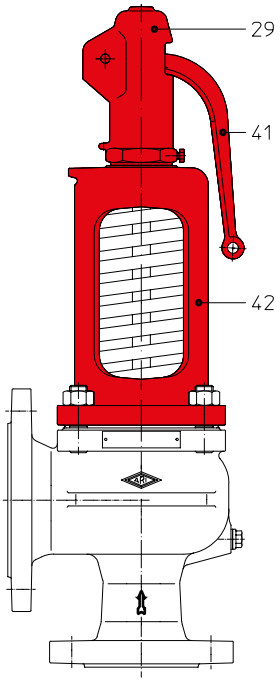



**Fig. ... .902**
**open lifting device,**
**open bonnet**

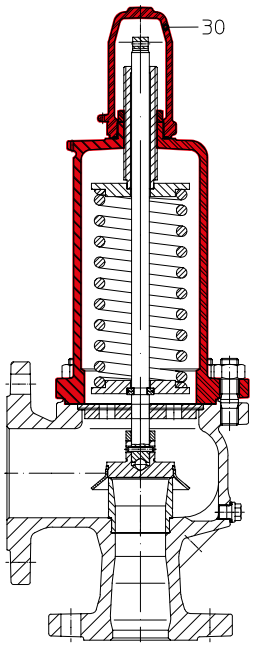



**Fig. ... .911**
**gastight cap,**
**closed bonnet**

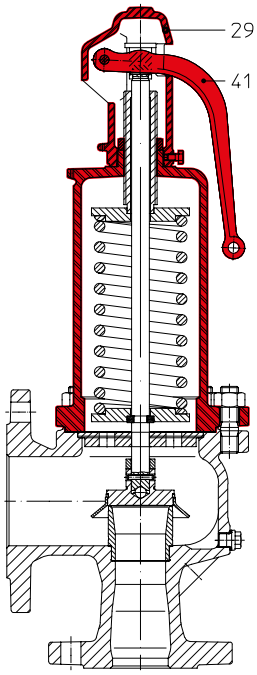



**Fig. ... .912**
**open lifting device,**
**closed bonnet**

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Flange |
|---|---|---|---|---|---|
| 32.901 / 902 / 911 / 912 | ANSI150/150 | SA216 WCB | 1" x 2" - 6" x 10" | -29°C to +425°C | ASME B16.5 |
| 35.901 / 902 / 911 / 912 | ANSI300/150 | SA216 WCB | 1" x 2" - 6" x 10" | -29°C to +425°C | ASME B16.5 |
| 52.901 / 911 | ANSI150/150 | SA351 CF8M | 1" x 2" - 6" x 10" | -60°C to +400°C | ASME B16.5 |
| 55.901 / 911 | ANSI300/150 | SA351 CF8M | 1" x 2" - 6" x 10" | -60°C to +400°C | ASME B16.5 |

| **Type-test approval** | | |
|---|---|---|
| Full lift safety valve:<br>(acc. to VdTÜV-leaflet 663) | Fig. 901/902/911/912 | **TÜV · SV · . . -663 · D/G** |
| Standard safety valve: | Fig. 901/911 | **TÜV · SV · . . -663 · F** |
| **Construction / Application** | | |
| Safety valve, spring loaded, direct loaded; steam, gases, vapours and liquids | | |
| **Requirement** | | |
| acc. to DIN EN ISO 4126-1 / TRD 421 / AD2000-A2 | | |

| **Sizing** | |
|---|---|
| Calculation acc. to EN ISO 4126-1, TRD 421 and AD-leaflet A2 | |
| **Details required** | |
| Medium: Gas | Mass flow (kg/h), molar mass (kg/kmol), temperature (°C), set pressure (bar), back gauge pressure (bar) |
| Medium: Liquid | Mass flow (kg/h), density (kg/m$^3$), viscosity, temperature (°C), set pressure (bar), back gauge pressure (bar) |
| **Order data:** | |
| ARI-SAFE-SN ANSI - safety valve, Figure ..., Nominal diameter .../..., ANSI ..., Material ..., Set pressure ... bar | |

| | **standard: without metal bellows** | **1" x 2" - 6" x 10" optional: with metal bellows** (refer to page 42) |
|---|---|---|
| **Superimposed back pressure** | no backpressure allowed | on request |
| **Built up back pressure** | max. 10% from set pressure (gauge) (higher on request) | on request |

| Parts | | | | |
|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 32.901/902/911/912; 35.901/902/911/912** | **Fig. 52.901/911; 55.901/911** |
| 1 | | Body | SA216 WCB | SA351 CF8M |
| 2 | | Seat | SA479 Gr.316 Ti | SA479 Gr.316 Ti |
| 3 | | Studs | SA193 B7 | SA193 B8 |
| 4 | x | Spindle guide | NPS ≤ 2": SA276 Gr.420; NPS > 2": SA395 / SA276 Gr.440 | NPS ≤ 2": SA479 Gr.316 Ti; NPS > 2": SA351 CF8M |
| 7 | x | Gasket | GRAPHIT (CrNi laminated with graphite) | |
| 8 | | Hexagon nut | SA194 2H | SA194 8 |
| 11 | | Bonnet, closed | SA395 | SA351 CF8M |
| 12 | x | Disc | SA276 Gr.440 | SA479 Gr.316 Ti |
| 14 | x | Spindle | SA276 Gr.420 [1)] | SA479 Gr.316 Ti |
| 17 | | Adjusting screw | SA276 Gr.420 [1)] | SA479 Gr.316 L |
| 22 | | Plug screw (optional) | SA193-B7 | SA193-B8 |
| 27 | x | Sealing ring | CuFA | SA479 Gr.316 Ti |
| 28 | | Cap, closed | SA395 | SA351 CF8M |
| 29 | | Cap, open | SA395 | -- |
| 30 | | Cap, gastight | SA395 | SA351 CF8M |
| 31 | x | Packing ring | GRAPHIT | |
| 35 | | Lift fork | SA395 | SA351 CF8M |
| 36 | | Lever, closed | SA395 | SA351 CF8M |
| 37 | x | Spring | SA401 Gr.9254, SA29 Gr.6150 | SA313 Gr.316 (AISI 9254, AISI 6150) [2)] |
| 41 | | Lever, open | SA395 | -- |
| 42 | | Bonnet, open | SA395 | -- |
| 43 | | Bellows (optional) | EPDM 70 Shore A | |
| 55 | | Stainless steel bellows unit (optional) | SA240 / SA479 Gr.316 Ti | SA240 / SA479 Gr.316 Ti |
| 70 | | Balanced piston | SA240 Gr.316 Ti | SA479 Gr.316 Ti |
| | └ Spare parts | | | |

[1)] Heat treatment acc. to EN
[2)] Special coating

| **Coefficient of discharge Kdr** | | **VdTÜV** (Values for D/G variabel: 1" - 4" < 3,5 bar, 6" < 4,0 bar) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NPS** | | **1"x2"** | **1 1/2"x2" 1 1/2"x2 1/2"** | **1 1/2"x3"** | **2"x3"** | **3"x4"** | **4"x6"** | **6"x8"** | **6"x10"** |
| TÜV · SV · . . -663 · D/G | (bar) | 0,74 | | | | | | 0,70 | |
| TÜV · SV · . . -663 · F | (bar) | 0,54 | | | | 0,48 | | 0,45 | |

| **Pressure-temperature-ratings** | | | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **acc. to ASME 16.34** | | | **-29°C to 38°C** | **50°C** | **100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **325°C** | **350°C** | **375°C** | **400°C** | **425°C** |
| SA216WCB | ANSI150 | (bar) | 19,6 | 19,2 | 17,7 | 15,8 | 13,8 | 12,1 | 10,2 | 9,3 | 8,4 | 7,4 | 6,5 | 5,5 |
| SA216WCB | ANSI300 | (bar) | 51,1 | 50,1 | 46,6 | 45,1 | 43,8 | 41,9 | 39,8 | 38,7 | 37,6 | 36,4 | 34,7 | 38,8 |

| **acc. to ASME 16.34** | | | **-60°C to 38°C** | **50°C** | **100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **325°C** | **350°C** | **375°C** | **400°C** | **425°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SA351CF8M | ANSI150 | (bar) | 19 | 18,4 | 16,2 | 14,8 | 13,7 | 12,1 | 10,2 | 9,3 | 8,4 | 7,4 | 6,5 | -- |
| SA351CF8M | ANSI300 | (bar) | 49,6 | 48,1 | 42,2 | 38,5 | 35,7 | 33,4 | 31,6 | 30,9 | 30,3 | 29,9 | 29,4 | -- |

Information / restriction of technical rules need to be observed!
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

# ARI-SAFE-SN ANSI (Semi-Nozzle-TÜV) 901 / 902 / 911 / 912

## Technical data / Spring ranges

| NPS | | 1"x2" | 1 1/2"x2" | 1 1/2"x2 1/2" | 1 1/2"x3" | 2"x3" | 3"x4" | 4"x6" | 4"x6" | 6"x8" | 6"x10" |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Center-to-face dimensions acc. to API 526** (dedicated to API-Orifice) | | | | | | | | | | | |
| **Bodysize** | | D, E | F | G | H | J | L | M | P | Q | R |
| l | (mm) | 114,3 | 120,7 | 120,7 | 123,8 | 123,8 | 165,1 | 184,2 | 228,6 | 241,3 | 266,7 |
| l1 | (mm) | 104,8 | 123,8 | 123,8 | 130,2 | 136,5 | 155,6 | 177,8 | 181 | 239,7 | 239,7 |

| **Dimensions** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d0 | (mm) | 22,5 | 29 | 29 | 36 | 45 | 58,5 | 90 | 90 | 106 | 125 |
| A0 | (mm²) | 398 | 661 | 661 | 1018 | 1590 | 2688 | 6362 | 6362 | 8825 | 12272 |
| H | (mm) | 280 | 330 | 330 | 390 | 435 | 545 | 690 | 690 | 845 | 890 |
| H (with stainless steel bellows) | (mm) | 335 | 390 | 390 | 445 | 500 | 620 | 808 | 808 | 919 | 953 |
| X | (mm) | 150 | 200 | 200 | 250 | 300 | 350 | 500 | | 500 | 500 |
| C (Width of support tongues) | (mm) | -- | -- | -- | -- | 204 | 242 | 332 | | 362 | 405 |
| Drainhole with plug | (inch) | G1/4" | | | | | G3/8" | | | | |
| | Optional, not standard | | | | | | | | | | |

| **Weights** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard | (kg) | 12 | 18 | 18 | 23 | 30 | 47 | 80 | 82 | 140 | 170 |
| Option: stainless steel bellows | (kg) | 13,5 | 20 | 20 | 25,5 | 34 | 54 | 90 | 92 | 155 | 185 |

| **Standard-flange dimensions** | | | | | | | | | | | Flanges acc. to ASME / ANSI B16.5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | ANSI150 | (mm) | 108 | 127 | 127 | 127 | 153 | 191 | 229 | 280 | 280 |
| | ANSI300 | (mm) | 124 | 156 | 156 | 156 | 165 | 210 | 254 | 318 | 318 |
| ØD2 | ANSI150 | (mm) | 153 | 153 | 178 | 191 | 191 | 229 | 280 | 343 | 407 |
| b1 | ANSI150 | (mm) | 17,5 | 20,6 | 20,6 | 20,6 | 22,3 | 28,6 | 31,8 | 36,5 | 36,5 |
| | ANSI300 | (mm) | 17,5 | 20,6 | 20,6 | 20,6 | 22,3 | 28,6 | 31,8 | 36,5 | 36,5 |
| b2 | ANSI150 | (mm) | 19,1 | 19,1 | 22,3 | 23,8 | 23,8 | 23,8 | 25,4 | 28,6 | 30,2 |

| **Standard-Flangeholes** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **NPS** | | | 1" | 1 1/2" | 2" | 2 1/2" | 3" | 4" | 6" | 8" | 10" |
| ØK | ANSI150 | (mm) | 79 | 98 | 120,5 | 140 | 152,5 | 190,5 | 241,5 | 298,5 | 362 |
| n x Ød | | (mm) | 4 x 16 | 4 x 16 | 4 x 19 | 4 x 19 | 4 x 19 | 8 x 19 | 8 x 22 | 8 x 22 | 12 x 25 |
| ØK | ANSI300 | (mm) | 89 | 114,5 | 127 | -- | 168 | 200 | 270 | -- | -- |
| n x Ød | | (mm) | 4 x 19 | 4 x 22 | 8 x 19 | -- | 8 x 22 | 8 x 22 | 12 x 22 | -- | -- |

| NPS | | 1"x2" | 1 1/2"x2" 1 1/2"x2 1/2" | 1 1/2"x3" | 2"x3" | 3"x4" | 4"x6" | 6"x8" | 6"x10" |
|---|---|---|---|---|---|---|---|---|---|
| **Spring ranges: Standard design** | | | | | | | | | |
| Full lift safety valve Fig. 901902/911/912 | (barü) | 0,2 - 0,5 | | | | | 0,2 - 0,5 | 0,2 - 0,4 | 0,2 - 0,5 |
| | (barü) | > 0,5 - 1 | | | | | > 0,5 - 1 | > 0,4 - 0,75 | > 0,5 - 1 |
| | (barü) | > 1 - 1,5 | | | | | > 1 - 1,5 | > 0,75 - 1,1 | > 1 - 1,5 |
| | (barü) | > 1,5 - 2 | | | | | > 1,5 - 2 | > 1,1 - 1,5 | > 1,5 - 1,9 |
| | (barü) | > 2 - 2,7 | | | | | > 2 - 2,5 | > 1,5 - 1,9 | > 1,9 - 2,3 |
| | (barü) | > 2,7 - 3,6 | | | | | > 2,5 - 3 | > 1,9 - 2,5 | > 2,3 - 2,7 |
| | (barü) | > 3,6 - 5 | | | | | > 3 - 3,6 | > 2,5 - 2,95 | > 2,7 - 3,3 |
| | (barü) | > 5 - 9 | | | | | > 3,6 - 5 | > 2,95 - 4 | > 3,3 - 4,1 |
| | (barü) | > 9 - 16 | | | | | > 5 - 9 | > 4 - 5,7 | > 4,1 - 5,5 |
| | (barü) | > 16 - 22 | | | | | > 9 - 14 | > 5,7 - 8,2 | > 5,5 - 7,4 |
| | (barü) | > 22 - 28 | | | | | > 14 - 19 | > 8,2 - 12 | > 7,4 - 11 |
| | (barü) | > 28 - 34 | | | | | > 19 - 24 | > 12 - 17 | > 11 - 16 |
| | (barü) | > 34 - 40 | | | | | | > 17 - 24 | > 16 - 21 |
| | (barü) | | | | | | | > 24 - 27 | > 21 - 26 |

| **Spring ranges: Stainless steel bellows (optional)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Standard safety valve Fig. 901/911 | (barü) | 2,5 - 3,3 | 2,5 - 3,2 | 2,6 - 3,6 | 2,8 - 3,4 | 2,5 - 3,7 | 2,5 - 3,5 | 1,1 - 1,5 | 1,1 - 1,3 |
| | (barü) | > 3,3 - 4,6 | > 3,3 - 4 | > 3,6 - 4,5 | > 3,4 - 4,5 | > 3,7 - 4,6 | > 3,5 - 4,2 | > 1,5 - 2 | > 1,3 - 1,7 |
| | (barü) | > 4,6 - 5,4 | > 4 - 5,5 | > 4,5 - 5,6 | > 4,5 - 8,4 | > 4,6 - 5,9 | > 4,2 - 4,9 | > 2 - 2,5 | > 1,7 - 2,1 |
| | (barü) | > 5,4 - 7 | > 5,5 - 6,4 | > 5,6 - 7,5 | > 8,4 - 10 | > 5,9 - 8 | > 4,9 - 5,6 | > 2,5 - 2,9 | > 2,1 - 2,4 |
| | (barü) | > 7 - 9 | > 6,4 - 7,9 | > 7,5 - 10 | > 10 - 11,5 | > 8 - 10 | > 5,6 - 7 | > 2,9 - 3,5 | > 2,4 - 2,8 |
| | (barü) | > 9 - 11,7 | > 7,9 - 11,5 | > 10 - 12,5 | > 11,5 - 16 | > 10 - 18 | > 7 - 8 | > 3,5 - 4,2 | > 2,8 - 3,1 |
| | (barü) | > 11,7 - 16 | > 11,5 - 18,5 | > 12,5 - 16 | > 16 - 18,5 | > 18 - 24 | > 8 - 9,3 | > 4,2 - 5,1 | > 3,1 - 3,4 |
| | (barü) | > 16 - 22 | > 18,5 - 25 | > 16 - 22 | > 18,5 - 23 | > 24 - 26 | > 9,3 - 11,5 | > 5,1 - 6,5 | > 3,4 - 3,9 |
| | (barü) | > 22 - 30 | | | | | > 11,5 - 14 | > 6,5 - 7,5 | > 3,9 - 4,8 |
| | (barü) | | | | | | > 14 - 20 | > 7,5 - 9 | > 4,8 - 5,8 |
| | (barü) | | | | | | | > 9,0 - 10,5 | > 5,8 - 6,8 |
| | (barü) | | | | | | | > 10,5 - 12,6 | > 6,8 - 8,1 |
| | (barü) | | | | | | | > 12,6 - 17 | > 8,1 - 9,7 |
| | (barü) | | | | | | | > 17 - 25 | > 9,7 - 11,3 |
| | (barü) | | | | | | | | > 11,3 - 13 |
| | (barü) | | | | | | | | > 13 - 15 |
| | (barü) | | | | | | | | > 15 - 18 |

**Capacity saturated steam (incl. 10% overpressure)**

| NPS | | | 1"x2" | 1 1/2"x2" | 1 1/2"x2 1/2" | 1 1/2"x3" | 2"x3" | 3"x4" | 4"x6" | 6"x8" | 6"x10" |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Saturated steam kg/h | | | | | | | | |
| | 0,2 | (barg) | 126 | 210 | 210 | 324 | 506 | 855 | 2024 | 2510 | 3490 |
| | 0,4 | (barg) | 185 | 307 | 307 | 473 | 739 | 1250 | 2960 | 3630 | 5050 |
| | 0,5 | (barg) | 207 | 344 | 344 | 529 | 827 | 1400 | 3310 | 4070 | 5660 |
| | 0,6 | (barg) | 230 | 383 | 383 | 590 | 923 | 1560 | 3690 | 4470 | 6220 |
| | 0,8 | (barg) | 272 | 453 | 453 | 698 | 1090 | 1840 | 4360 | 5240 | 7280 |
| | 1 | (barg) | 317 | 526 | 526 | 811 | 1270 | 2140 | 5070 | 6030 | 8385 |
| | 1,5 | (barg) | 425 | 707 | 707 | 1090 | 1700 | 2875 | 6800 | 8050 | 11200 |
| | 2 | (barg) | 477 | 792 | 792 | 1220 | 1900 | 3220 | 7625 | 10125 | 14080 |
| | 2,5 | (barg) | 572 | 950 | 950 | 1460 | 2285 | 3865 | 9145 | 11990 | 16660 |
| | 3 | (barg) | 662 | 1100 | 1100 | 1695 | 2645 | 4475 | 10600 | 13880 | 19300 |
| | 4 | (barg) | 837 | 1390 | 1390 | 2140 | 3350 | 5650 | 13400 | 17550 | 24400 |
| | 5 | (barg) | 1000 | 1665 | 1665 | 2565 | 4000 | 6770 | 16000 | 21000 | 29250 |
| | 6 | (barg) | 1165 | 1940 | 1940 | 2990 | 4665 | 7890 | 18650 | 24500 | 34050 |
| | 7 | (barg) | 1330 | 2210 | 2210 | 3400 | 5320 | 9000 | 21300 | 27900 | 38800 |
| | 8 | (barg) | 1495 | 2485 | 2485 | 3820 | 5980 | 10100 | 23900 | 31350 | 43600 |
| | 9 | (barg) | 1660 | 2755 | 2755 | 4245 | 6630 | 11200 | 26500 | 34800 | 48400 |
| | 10 | (barg) | 1820 | 3025 | 3025 | 4665 | 7290 | 12300 | 29150 | 38250 | 53200 |
| | 11 | (barg) | 1985 | 3300 | 3300 | 5080 | 7940 | 13400 | 31750 | 41600 | 58000 |
| | 12 | (barg) | 2150 | 3570 | 3570 | 5500 | 8590 | 14500 | 34350 | 45100 | 62700 |
| | 13 | (barg) | 2310 | 3840 | 3840 | 5920 | 9250 | 15600 | 37000 | 48500 | 67500 |
| | 14 | (barg) | 2475 | 4110 | 4110 | 6340 | 9900 | 16700 | 39600 | 52000 | 72300 |
| | 15 | (barg) | 2640 | 4385 | 4385 | 6760 | 10550 | 17800 | 42200 | 55400 | 77000 |
| | 16 | (barg) | 2800 | 4655 | 4655 | 7170 | 11200 | 18950 | 44800 | 58800 | 81800 |
| | 17 | (barg) | 2965 | 4930 | 4930 | 7590 | 11850 | 20050 | 47400 | 62200 | 86600 |
| | 18 | (barg) | 3130 | 5200 | 5200 | 8010 | 12500 | 21150 | 50100 | 65700 | 91400 |
| | 19 | (barg) | 3295 | 5470 | 5470 | 8430 | 13150 | 22250 | 52700 | 69100 | 96200 |
| | 20 | (barg) | 3460 | 5750 | 5750 | 8850 | 13800 | 23350 | 55300 | 72600 | 101000 |
| | 21 | (barg) | 3620 | 6020 | 6020 | 9250 | 14500 | 24500 | 57900 | 76000 | 105800 |
| | 22 | (barg) | 3790 | 6290 | 6290 | 9700 | 15150 | 25600 | 60600 | 79500 | 110900 |
| | 24 | (barg) | 4120 | 6840 | 6840 | 10500 | 16450 | 27850 | 65900 | 86500 | 120600 |
| | 25 | (barg) | 4280 | 7120 | 7120 | 10950 | 17100 | 28950 | | 90200 | 125500 |
| | 26 | (barg) | 4450 | 7390 | 7390 | 11350 | 17800 | 30050 | | 93700 | 130300 |
| | 27 | (barü) | 4620 | 7670 | 7670 | 11820 | 18460 | 31220 | | 96950 | |
| | 28 | (barg) | 4780 | 7950 | 7950 | 12250 | 19100 | 32300 | | | |
| ↓ max. set pressure stainless steel version- Spring | 30 | (barg) | 5120 | 8500 | 8500 | 13100 | 20450 | 34550 | | | |
| | 32 | (barg) | 5450 | 9060 | 9060 | 13950 | 21800 | 36800 | | | |
| | 34 | (barg) | 5800 | 9650 | 9650 | 14850 | 23250 | 39100 | | | |
| | 40 | (barg) | | | | | | | | | |

# ARI-SAFE-SN ANSI (Semi-Nozzle-TÜV) 901 / 902 / 911 / 912

## Capacity: Air

**Capacity air (incl. 10% overpressure)**

| NPS | | | 1"x2" | 1 1/2"x2" | 1 1/2"x2 1/2" | 1 1/2"x3" | 2"x3" | 3"x4" | 4"x6" | 6"x8" | 6"x10" |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Air in $Nm^3/h$ (0°C; 1,013 bara) | | | | | | | | |
| | 0,2 | (barg) | 148 | 246 | 246 | 380 | 594 | 1003 | 2375 | 2945 | 4100 |
| | 0,4 | (barg) | 223 | 370 | 370 | 570 | 891 | 1505 | 3565 | 4380 | 6090 |
| | 0,5 | (barg) | 252 | 419 | 419 | 646 | 1009 | 1705 | 4035 | 4970 | 6910 |
| | 0,6 | (barg) | 284 | 472 | 472 | 728 | 1135 | 1920 | 4545 | 5520 | 7675 |
| | 0,8 | (barg) | 341 | 567 | 567 | 873 | 1365 | 2305 | 5460 | 6555 | 9115 |
| | 1 | (barg) | 398 | 661 | 661 | 1019 | 1590 | 2690 | 6370 | 7575 | 10530 |
| | 1,5 | (barg) | 538 | 894 | 894 | 1378 | 2150 | 3640 | 8610 | 10195 | 14180 |
| | 2 | (barg) | 607 | 1008 | 1008 | 1550 | 2425 | 4100 | 9700 | 12890 | 17920 |
| | 2,5 | (barg) | 731 | 1215 | 1215 | 1870 | 2925 | 4945 | 11700 | 15330 | 21300 |
| | 3 | (barg) | 850 | 1410 | 1410 | 2175 | 3400 | 5750 | 13600 | 17840 | 24800 |
| | 4 | (barg) | 1080 | 1800 | 1800 | 2770 | 4330 | 7310 | 17300 | 22725 | 31600 |
| | 5 | (barg) | 1300 | 2160 | 2160 | 3330 | 5210 | 8800 | 20840 | 27350 | 38000 |
| | 6 | (barg) | 1520 | 2530 | 2530 | 3900 | 6090 | 10300 | 24370 | 31900 | 44400 |
| | 7 | (barg) | 1745 | 2900 | 2900 | 4465 | 6970 | 11790 | 27900 | 36600 | 50900 |
| | 8 | (barg) | 1965 | 3260 | 3260 | 5030 | 7860 | 13280 | 31430 | 41200 | 57300 |
| | 9 | (barg) | 2185 | 3630 | 3630 | 5590 | 8740 | 14770 | 34960 | 45800 | 63800 |
| | 10 | (barg) | 2400 | 3990 | 3990 | 6150 | 9610 | 16250 | 38500 | 50500 | 70200 |
| | 11 | (barg) | 2625 | 4360 | 4360 | 6720 | 10500 | 17750 | 42000 | 55100 | 76600 |
| | 12 | (barg) | 2845 | 4730 | 4730 | 7290 | 11380 | 19240 | 45500 | 59700 | 83100 |
| | 13 | (barg) | 3070 | 5090 | 5090 | 7850 | 12270 | 20730 | 49000 | 64400 | 89500 |
| | 14 | (barg) | 3290 | 5460 | 5460 | 8400 | 13150 | 22200 | 52600 | 69000 | 96000 |
| | 15 | (barg) | 3500 | 5830 | 5830 | 8980 | 14030 | 23700 | 56100 | 73600 | 102400 |
| | 16 | (barg) | 3725 | 6190 | 6190 | 9540 | 14900 | 25200 | 59600 | 78200 | 108800 |
| | 17 | (barg) | 3950 | 6560 | 6560 | 10100 | 15800 | 26700 | 63100 | 82900 | 115300 |
| | 18 | (barg) | 4170 | 6920 | 6920 | 10670 | 16650 | 28100 | 66700 | 87500 | 121700 |
| | 19 | (barg) | 4390 | 7300 | 7300 | 11240 | 17550 | 29600 | 70200 | 92100 | 128100 |
| | 20 | (barg) | 4610 | 7660 | 7660 | 11800 | 18400 | 31150 | 73700 | 96800 | 134600 |
| | 21 | (barg) | 4830 | 8020 | 8020 | 12370 | 19300 | 32650 | 77300 | 101400 | 141000 |
| | 22 | (barg) | 5050 | 8390 | 8390 | 12930 | 20200 | 34150 | 80800 | 106000 | 147500 |
| | 24 | (barg) | 5490 | 9120 | 9120 | 14060 | 21970 | 37100 | 87900 | 115300 | 160400 |
| | 25 | (barg) | 5710 | 9490 | 9490 | 14620 | 22850 | 38600 | | 120000 | 166900 |
| | 26 | (barg) | 5930 | 9850 | 9850 | 15190 | 23730 | 40100 | | 124600 | 173300 |
| | 27 | (barü) | 6160 | 10240 | 10240 | 15770 | 24630 | 41650 | | 129350 | |
| | 28 | (barg) | 6370 | 10600 | 10600 | 16320 | 25500 | 43100 | | | |
| ↓ max. set pressure stainless steel version- Spring | 30 | (barg) | 6810 | 11320 | 11320 | 17450 | 27250 | 46100 | | | |
| | 32 | (barg) | 7250 | 12050 | 12050 | 18570 | 29000 | 49100 | | | |
| | 34 | (barg) | 7700 | 12790 | 12790 | 19700 | 30800 | 52050 | | | |
| | 40 | (barg) | 9030 | 14477 | 14477 | 23810 | 36100 | 61000 | | | |

**Capacity water (incl. 10% overpressure)**

| NPS | | | 1"x2" | 1 1/2"x2" | 1 1/2"x2 1/2" | 1 1/2"x3" | 2"x3" | 3"x4" | 4"x6" | 6"x8" | 6"x10" |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Water $m^3/h$ | | | | | | | | |
| max. set pressure stainless steel version- Spring ↓ | 0,2 | (barg) | 5,13 | 8,53 | 8,53 | 13,1 | 20,5 | 30,8 | 73 | 94,9 | 132 |
| | 0,5 | (barg) | 8,12 | 13,5 | 13,5 | 20,8 | 32,5 | 48,8 | 115 | 150 | 209 |
| | 1 | (barg) | 11,5 | 19,1 | 19,1 | 29,4 | 45,9 | 69 | 163 | 212 | 295 |
| | 2 | (barg) | 16,2 | 27 | 27 | 41,6 | 64,9 | 97,5 | 231 | 300 | 417 |
| | 3 | (barg) | 19,9 | 33 | 33 | 50,9 | 79,5 | 119 | 283 | 368 | 511 |
| | 4 | (barg) | 22,9 | 38,1 | 38,1 | 58,7 | 91,8 | 138 | 326 | 424 | 590 |
| | 5 | (barg) | 25,7 | 42,6 | 42,6 | 65,5 | 102 | 154 | 365 | 474 | 660 |
| | 6 | (barg) | 28,1 | 46,7 | 46,7 | 72 | 112 | 169 | 400 | 520 | 723 |
| | 7 | (barg) | 30,4 | 50,4 | 50,4 | 77,7 | 121 | 182 | 432 | 562 | 781 |
| | 8 | (barg) | 32,5 | 53,9 | 53,9 | 83,1 | 130 | 195 | 461 | 600 | 835 |
| | 9 | (barg) | 34,4 | 57,2 | 57,2 | 88,1 | 138 | 207 | 490 | 637 | 885 |
| | 10 | (barg) | 36,3 | 60,3 | 60,3 | 92,9 | 145 | 218 | 516 | 671 | 933 |
| | 11 | (barg) | 38 | 63,2 | 63,2 | 97,4 | 152 | 229 | 540 | 703 | 977 |
| | 12 | (barg) | 39,7 | 66 | 66 | 102 | 159 | 239 | 565 | 735 | 1022 |
| | 13 | (barg) | 41,4 | 68,7 | 68,7 | 106 | 165 | 249 | 587 | 764 | 1062 |
| | 14 | (barg) | 42,9 | 71,3 | 71,3 | 110 | 172 | 258 | 611 | 794 | 1104 |
| | 16 | (barg) | 45,9 | 76,3 | 76,3 | 117 | 184 | 276 | 653 | 849 | 1181 |
| | 18 | (barg) | 48,7 | 80,9 | 80,9 | 125 | 195 | 293 | 692 | 900 | 1252 |
| | 19 | (barg) | 49,9 | 82,9 | 82,9 | 128 | 200 | 300 | 710 | 923 | 1284 |
| | 20 | (barg) | 51,3 | 85,3 | 85,3 | 131 | 205 | 308 | 730 | 949 | 1320 |
| | 21 | (barg) | 52,6 | 87,4 | 87,4 | 135 | 210 | 316 | 748 | 973 | 1350 |
| | 24 | (barg) | 56,2 | 93,4 | 93,4 | 144 | 225 | 338 | 800 | 1040 | 1443 |
| | 25 | (barg) | 57,4 | 95,3 | 95,3 | 147 | 229 | 345 | | 1059 | 1473 |
| | 26 | (barg) | 58,5 | 97,2 | 97,2 | 150 | 234 | 352 | | 1080 | 1502 |
| | 27 | (barg) | 59,6 | 99 | 99 | 153 | 238 | 358 | | 1100 | |
| | 28 | (barg) | 60,7 | 101 | 101 | 155 | 243 | 365 | | | |
| | 30 | (barg) | 62,9 | 104 | 104 | 161 | 251 | 375 | | | |
| | 32 | (barg) | 64,8 | 108 | 108 | 166 | 259 | 390 | | | |
| | 34 | (barg) | 66,9 | 111 | 111 | 171 | 268 | 400 | | | |
| | 40 | (barü) | 72,5 | 124,8 | 124,8 | 185,4 | 289,7 | 435 | | | |

## ARI-SAFE - Heating-safety valve

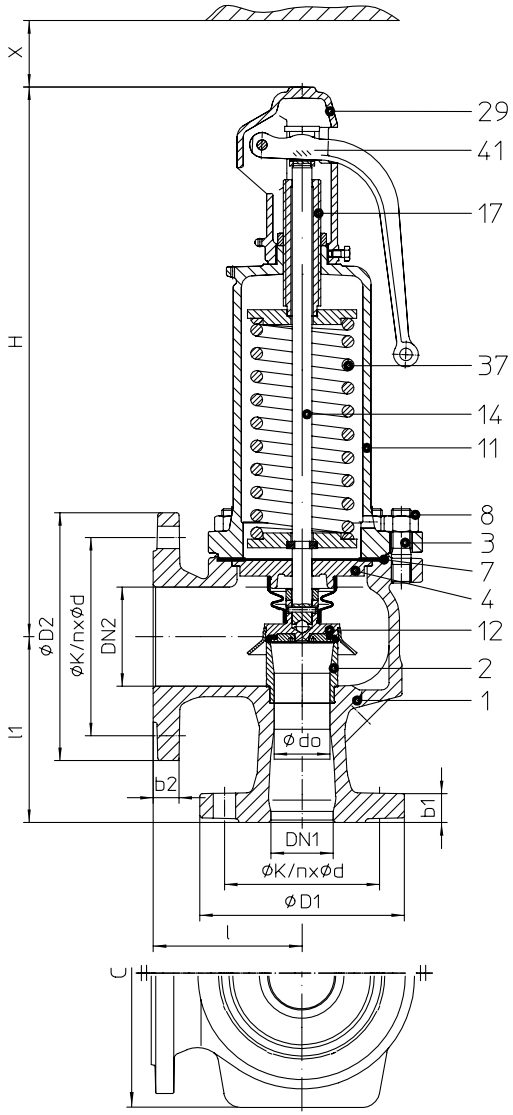
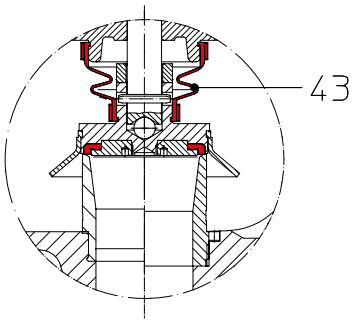



**Fig. ... .903**
**open lifting device, closed bonnet**




(Construction DN 20-100) (Construction DN125-150)
**EPDM-disc, soft seal insert; EPDM-bellows**

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Flange | Flangeholes / -thickness tolerances |
|---|---|---|---|---|---|---|
| 12.903 (max. 10 bar) | PN16/16 | EN-JL1040 | DN20/32 - 150/250 | -10°C to +120°C | DIN EN 1092-2 | DIN 2533/2533 |
| 25.903 | PN40/16 | EN-JS1049 | DN20/32 - 150/250 | -10°C to +120°C | DIN EN 1092-2 | DIN 2535/2533 |
| 35.903 | PN40/16 | 1.0619+N | DN20/32 - 150/250 | -10°C to +120°C | DIN EN 1092-1 | DIN 2545/2543 |

| **Construction** | | |
|---|---|---|
| Standard safety valve, spring loaded, direct loaded metal seat with EPDM insert, EPDM-bellows, closed spring bonnet with control hole, open lifting device, stainless steel seat and spindle | | |
| **Application** | | |
| Acc. to DIN EN 12828 Heating systems in buildings | | |
| **Requirement** | | |
| acc. to DIN EN ISO 4126-1 / TRD 721 Part 6, material selection observe TRD!<br>**• Fig. 12.903 (EN-JL1040) max. 10 bar**<br>**• > 10 bar Fig. 25.903 (EN-JS1049) or Fig. 35.903 (1.0619+N)** | | |
| **Type-test approval** | | |
| Spring loaded: | Fig. 903 | TÜV · SV · . . -688 · D/G/H |

| **Sizing** |
|---|
| acc. to TRD Part 6.2.5 (see capacity-tables Figure 903) |
| **Order data:** |
| ARI-SAFE-spring loaded, Figure ..., DN .../..., PN ..., Material ..., Set pressure ...barg |

| Parts | | | | | |
|---|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 12.903** | **Fig. 25.903** | **Fig. 35.903** |
| 1 | | Body | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | GP240GH+N, 1.0619+N |
| 2 | | Seat | X20Cr13+QT, 1.4021+QT | X6CrNiMoTi17-12-2, 1.4571 | |
| 3 | | Studs | 25CrMo4, 1.7218 | | |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT | | |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | | |
| 8 | | Hexagon nut | C35E, 1.1181 | | |
| 11 | | Bonnet, closed | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | |
| 12 | | Disc | X20Cr13+QT, 1.4021+QT / EPDM | | |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT | | |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT | X14CrMoS17+QT, 1.4104+QT | |
| 29 | | Cap, open | EN-GJS-400-15, EN-JS1030 | | |
| 37 | x | Compression spring | FDSiCr / 51CrV4, 1.8159 | | |
| 41 | | Lever, open | EN-GJS-400-15, EN-JS1030 | | |
| 43 | | Bellows | EPDM 70 Shore A | | |
| | └ Spare parts | | | | |

| **DN1 / DN 2** | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** |
|---|---|---|---|---|---|---|---|---|---|---|

| **Spring ranges: Standard design** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Spring loaded **Fig. 903** | (barü) | 1 | 1 | | | 1 | 1 | 1 | | 1 |
| | (barü) | > 1 - 1,5 | > 1 - 1,5 | | | > 1 - 1,5 | > 1 - 1,5 | > 1 - 1,5 | 1 - 1,1 | > 1 - 1,5 |
| | (barü) | > 1,5 - 2,5 | > 1,5 - 2 | | | > 1,5 - 2 | > 1,5 - 2 | > 1,5 - 2 | > 1,1 - 1,5 | 1,5 - 1,9 |
| | (barü) | > 2,5 - 4,5 | > 2 - 2,7 | | | > 2 - 2,7 | > 2 - 2,7 | > 2 - 2,5 | > 1,5 - 1,9 | 1,9 - 2,3 |
| | (barü) | > 4,5 - 8,5 | > 2,7 - 3,6 | | | > 2,7 - 3,6 | > 2,7 - 3,6 | > 2,5 - 3 | > 1,9 - 2,5 | 2,3 - 2,7 |
| | (barü) | > 8,5 - 19 [1)] | > 3,6 - 5 | | | > 3,6 - 5 | > 3,6 - 5 | > 3 - 3,6 | > 2,5 - 2,95 | 2,7 - 3,3 |
| | (barü) | > 19 - 28 | > 5 - 9 | | | > 5 - 9 | > 5 - 9 | > 3,6 - 5 | > 2,95 - 4 | 3,3 - 4,1 |
| | (barü) | > 28 - 35 | > 9 - 16 [1)] | | | > 9 - 16 [1)] | > 9 - 14 [1)] | > 5 - 9 | > 4 - 5,7 | 4,1 - 5,5 |
| | (barü) | > 35 - 40 | > 16 - 22 | | | > 16 - 22 | > 14 - 19 | > 9 - 14 [1)] | > 5,7 - 8,2 | 5,5 - 7,4 |
| | (barü) | | > 22 - 28 | | | > 22 - 28 | > 19 - 25 | > 14 - 19 | > 8,2 - 12 [1)] | 7,4 - 11 [1)] |
| | (barü) | | > 28 - 34 | | | | | > 19 - 24 | > 12 - 16 | 11 - 16 |

[1)] **Fig. 12.903 max. 10 bar; > 10 bar 25.903 or 35.903**

Information / restriction of technical rules need to be observed!

ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN1 / DN 2 | | | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | | | | | | |
| d0 | | (mm) | 18 | 22,5 | 29 | 36 | 45 | 58,5 | 72 | 90 | 106 | 125 |
| A0 | | ($mm^2$) | 254 | 398 | 661 | 1018 | 1590 | 2688 | 4072 | 6362 | 8825 | 12272 |
| l | | (mm) | 85 | 100 | 110 | 115 | 120 | 140 | 160 | 180 | 200 | 225 |
| l1 | | (mm) | 95 | 105 | 115 | 140 | 150 | 170 | 195 | 220 | 250 | 285 |
| H | | (mm) | 270 | 280 | 330 | 390 | 435 | 545 | 610 | 690 | 845 | 890 |
| X | | (mm) | 150 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 500 | 500 |
| C (Width support tongues) | EN-JL1040 | (mm) | -- | -- | -- | -- | -- | -- | 280 | 332 | 362 | 408 |
| | EN-JS1049 | (mm) | -- | -- | -- | -- | -- | -- | 280 | 332 | 362 | 408 |
| | 1.0619+N | (mm) | -- | -- | -- | -- | 204 | 242 | 280 | 332 | 362 | 408 |
| Drainhole with plug (optional) | | (inch) | G1/4" | | | | | G3/8" | | | | |
| **Weights** | | | | | | | | | | | | |
| standard | | (kg) | 8,5 | 9,5 | 13,5 | 20 | 26 | 39 | 53 | 82 | 125 | 165 |
| **Flanges** | | | | | | | | | | | | |
| ØD1 | PN16 | (mm) | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 |
| | PN40 | (mm) | | | | | | | | 235 | 270 | 300 |
| ØD2 | PN16 | (mm) | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 | 340 | 405 |
| b1 | EN-JL1040 | (mm) | 16 | 16 | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 |
| | EN-JS1049 | (mm) | 18 | 18 | 18 | 19 | 20 | 22 | 24 | 24 | 27 | 29 |
| | 1.0619+N | (mm) | 20 | 20 | 20 | 21 | 22 | 24 | 26 | 28 | 31 | 34 |
| b2 | EN-JL1040 | (mm) | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 | 30 | 32 |
| | EN-JS1049 | (mm) | 19 | 19 | 20 | 20 | 20 | 20 | 22 | 22 | 31 | 33 |
| | 1.0619+N | (mm) | 19 | 19 | 20 | 20 | 20 | 20 | 22 | 22 | 27 | 29 |
| Flanges acc. to DIN EN 1092-1 / -2, Flangeholes/-thickness tolerances acc. to DIN 2533 / 2543 / 2545 / 28605 / 28607, raised face, facing acc. to DIN EN 1092-1 form B1 | | | | | | | | | | | | |

| **Standard-Flangeholes** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | | | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| ØK | PN16 DIN 2533 | (mm) | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 180 | 210 | 240 | 295 | 355 |
| n x Ød | | (mm) | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4x18 [1] | 8x18 | 8x18 | 8x18 | 8x22 | 12x22 | 12x26 |
| ØK | PN40 DIN 2545 | (mm) | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 190 | 220 | 250 | -- | -- |
| n x Ød | | (mm) | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x22 | 8x26 | 8x26 | -- | -- |
| [1] also with 8 bore holes acc. to DIN EN 1092-1/-2 possible. | | | | | | | | | | | | | | |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JL1040 | PN16 | (bar) | -- | 16 | 14,4 | 12,8 | 11,2 | 9,6 | -- | -- | -- |
| EN-JS1049 | PN40 | (bar) | on request | 40 | 38,8 | 36,8 | 34,8 | 32 | 28 | -- | -- |

| **acc. to manufacturers standard** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0619+N | PN40 | (bar) | 30 | 40 | 38,1 | 35 | 32 | 28 | 25,7 | 23,8 | 13,1 |

[1] Studs and nuts made of A4-70 (at temperatures below -10°C)

**Capacity water (incl. 10% overpressure)**

**Sizing safety valves for the volume flow of water expansion** (DIN 4751 T2 - item 8.1 / DIN EN 12828 - item E.3)

| **Set pressure** | | | | **DN1 (inlet) / DN2 (outlet)** | |
|---|---|---|---|---|---|
| | | | | **20 / 32** | **25 / 40** |
| 1 | (barg) | Water 20°C (kg/h) | (kg/h) | 7300 | 11500 |
| 2 | (barg) | | (kg/h) | 10400 | 16000 |
| 3 | (barg) | | (kg/h) | 12700 | 20000 |
| 4 | (barg) | | (kg/h) | 14700 | 23000 |
| 5 | (barg) | | (kg/h) | 16400 | 25500 |
| 6 | (barg) | | (kg/h) | 18000 | 28000 |
| 7 | (barg) | | (kg/h) | 19400 | 30500 |
| 8 | (barg) | | (kg/h) | 21000 | 32500 |
| 9 | (barg) | | (kg/h) | 22000 | 34500 |
| 10 | (barg) | | (kg/h) | 23000 | 36500 |
| 11 | (barg) | | (kg/h) | 24500 | 38000 |
| 12 | (barg) | | (kg/h) | 25500 | 40000 |
| 13 | (barg) | | (kg/h) | 26500 | 41500 |
| 14 | (barg) | | (kg/h) | 27500 | 42500 |
| 15 | (barg) | | (kg/h) | 28000 | 44000 |
| 16 | (barg) | | (kg/h) | 29500 | 46000 |
| Sizing: 1 l/h ≙ 1 kW | | | | | |

**Capacity saturated steam incl. 10% overpressure**

**Calculated acc. to TRD 721 Part 6 and AD2000-A2**

| Set pressure | | | | DN1 (inlet) / DN2 (outlet) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 20 / 32 | 25 / 40 | 32 / 50 | 40 / 65 | 50 / 80 | 65 / 100 | 80 / 125 | 100 / 150 | 125 / 200 | 150 / 250 |
| 1 | barg | Saturated steam (kg/h) Heating capacity (kW) | (kg/h) | 203 | 317 | 526 | 811 | 1270 | 2140 | 3245 | 5070 | 6030 | 8385 |
| | | | **(kW)** | **124** | **193** | **321** | **495** | **774** | **1310** | **1980** | **3095** | **3680** | **5120** |
| 1,5 | barg | | (kg/h) | 272 | 425 | 707 | 1090 | 1700 | 2875 | 4355 | 6800 | 8050 | 11200 |
| | | | **(kW)** | **164** | **257** | **427** | **658** | **1030** | **1740** | **2630** | **4110** | **4870** | **6770** |
| 2 | barg | | (kg/h) | 305 | 477 | 792 | 1220 | 1900 | 3220 | 4880 | 7625 | 10125 | 14080 |
| | | | **(kW)** | **183** | **285** | **474** | **731** | **1140** | **1930** | **2920** | **4570** | **6060** | **8430** |
| 2,5 | barg | | (kg/h) | 366 | 572 | 950 | 1460 | 2285 | 3865 | 5855 | 9145 | 11990 | 16660 |
| | | | **(kW)** | **217** | **340** | **565** | **870** | **1360** | **2300** | **3480** | **5440** | **7120** | **9900** |
| 3 | barg | | (kg/h) | 424 | 662 | 1100 | 1695 | 2645 | 4475 | 6775 | 10600 | 13880 | 19300 |
| | | | **(kW)** | **250** | **391** | **649** | **1000** | **1560** | **2640** | **4000** | **6250** | **8190** | **11400** |
| 3,5 | barg | | (kg/h) | 482 | 754 | 1250 | 1930 | 3015 | 5100 | 7720 | 12050 | 15600 | 21700 |
| | | | **(kW)** | **283** | **442** | **735** | **1130** | **1770** | **2990** | **4530** | **7070** | **9150** | **12700** |
| 4 | barg | | (kg/h) | 535 | 837 | 1390 | 2140 | 3350 | 5650 | 8570 | 13400 | 17550 | 24400 |
| | | | **(kW)** | **312** | **488** | **810** | **1250** | **1950** | **3300** | **5000** | **7800** | **10200** | **14200** |
| 4,5 | barg | | (kg/h) | 588 | 920 | 1530 | 2355 | 3680 | 6215 | 9410 | 14710 | 19300 | 26850 |
| | | | **(kW)** | **341** | **533** | **885** | **1360** | **2130** | **3600** | **5460** | **8520** | **11100** | **15600** |
| 5 | barg | | (kg/h) | 640 | 1000 | 1665 | 2565 | 4000 | 6770 | 10260 | 16000 | 21000 | 29250 |
| | | | **(kW)** | **370** | **578** | **960** | **1480** | **2310** | **3900** | **5910** | **9240** | **12100** | **16900** |
| 5,5 | barg | | (kg/h) | 694 | 1085 | 1800 | 2775 | 4340 | 7330 | 11100 | 17350 | 22770 | 31660 |
| | | | **(kW)** | **398** | **622** | **1030** | **1590** | **2490** | **4200** | **6370** | **9950** | **13000** | **18200** |
| 6 | barg | | (kg/h) | 745 | 1165 | 1940 | 2990 | 4665 | 7890 | 11950 | 18650 | 24500 | 34050 |
| | | | **(kW)** | **426** | **666** | **1100** | **1700** | **2660** | **4500** | **6820** | **10600** | **14000** | **19400** |
| 6,5 | barg | | (kg/h) | 800 | 1250 | 2075 | 3200 | 4995 | 8440 | 12790 | 20000 | 26220 | 36450 |
| | | | **(kW)** | **454** | **709** | **1180** | **1810** | **2840** | **4790** | **7260** | **11300** | **14900** | **20700** |
| 7 | barg | | (kg/h) | 850 | 1330 | 2210 | 3400 | 5320 | 9000 | 13600 | 21300 | 27900 | 38800 |
| | | | **(kW)** | **481** | **752** | **1250** | **1930** | **3000** | **5080** | **7700** | **12000** | **15800** | **22000** |
| 7,5 | barg | | (kg/h) | 904 | 1415 | 2345 | 3615 | 5650 | 9550 | 14470 | 22600 | 29660 | 41250 |
| | | | **(kW)** | **509** | **795** | **1320** | **2030** | **3180** | **5370** | **8140** | **12700** | **16700** | **23200** |
| 8 | barg | | (kg/h) | 957 | 1495 | 2485 | 3820 | 5980 | 10100 | 15300 | 23900 | 31350 | 43600 |
| | | | **(kW)** | **536** | **837** | **1390** | **2140** | **3350** | **5660** | **8580** | **13400** | **17600** | **24500** |
| 9 | barg | | (kg/h) | 1060 | 1660 | 2755 | 4245 | 6630 | 11200 | 16950 | 26500 | 34800 | 48400 |
| | | | **(kW)** | **590** | **921** | **1530** | **2360** | **3685** | **6230** | **9435** | **14740** | **19340** | **26900** |
| 10 | barg | | (kg/h) | 1165 | 1820 | 3025 | 4665 | 7290 | 12300 | 18650 | 29150 | 38250 | 53200 |
| | | | **(kW)** | **643** | **1000** | **1670** | **2570** | **4010** | **6790** | **10300** | **16000** | **21100** | **29300** |
| 11 | barg | | (kg/h) | 1270 | 1985 | 3300 | 5080 | 7940 | 13400 | 20300 | 31750 | 41600 | 58000 |
| | | | **(kW)** | **695** | **1085** | **1800** | **2780** | **4340** | **7340** | **11100** | **17400** | **22800** | **31700** |
| 12 | barg | | (kg/h) | 1375 | 2150 | 3570 | 5500 | 8590 | 14500 | 22000 | 34350 | 45100 | 62700 |
| | | | **(kW)** | **745** | **1165** | **1940** | **2990** | **4670** | **7890** | **12000** | **18700** | **24500** | **34000** |
| 13 | barg | | (kg/h) | 1480 | 2310 | 3840 | 5920 | 9250 | 15600 | 23650 | 37000 | 48500 | 67500 |
| | | | **(kW)** | **798** | **1250** | **2070** | **3190** | **4990** | **8430** | **12800** | **20000** | **26200** | **36400** |
| 14 | barg | | (kg/h) | 1580 | 2475 | 4110 | 6340 | 9900 | 16700 | 25350 | 39600 | 52000 | 72300 |
| | | | **(kW)** | **850** | **1325** | **2200** | **3390** | **5300** | **8970** | **13600** | **21200** | **27900** | **38700** |
| 15 | barg | | (kg/h) | 1690 | 2640 | 4385 | 6760 | 10550 | 17800 | 27000 | 42200 | 55400 | 77000 |
| | | | **(kW)** | **900** | **1405** | **2330** | **3590** | **5620** | **9500** | **14400** | **22500** | **29500** | **41000** |
| 16 | barg | | (kg/h) | 1790 | 2800 | 4655 | 7170 | 11200 | 18950 | 28700 | 44800 | 58800 | 81800 |
| | | | **(kW)** | **950** | **1480** | **2460** | **3790** | **5930** | **10000** | **15200** | **23700** | **31100** | **43300** |

| **Certified coefficient of discharge Kdr** (Values for D/G/H variable: DN20-100 < 3,5 bar / DN125-150 < 4 bar) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN1 / DN2** | | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** |
| TÜV · SV · . . - 688 · D/G/H | (bar) | 0,74 | | | | | | | | 0,70 | |

## ARI-SAFE - Low pressure steam - safety valve

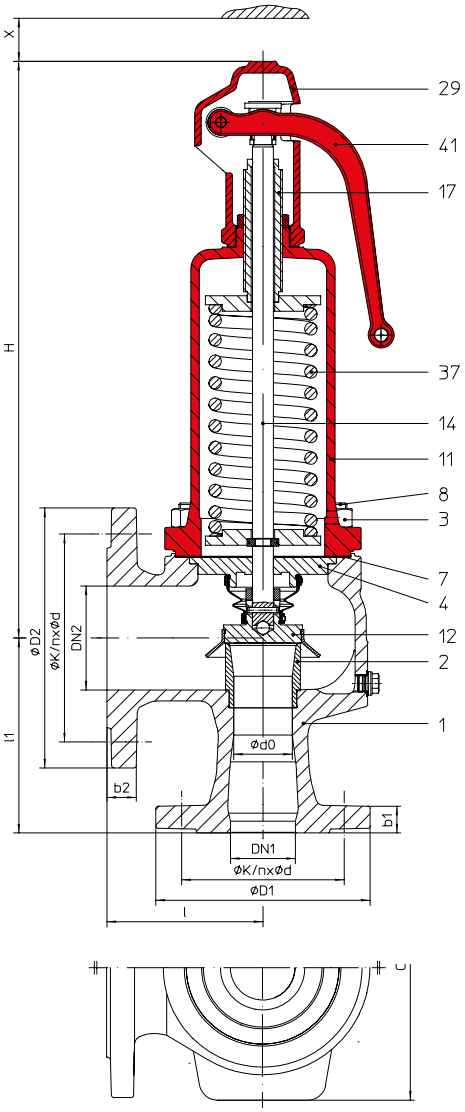
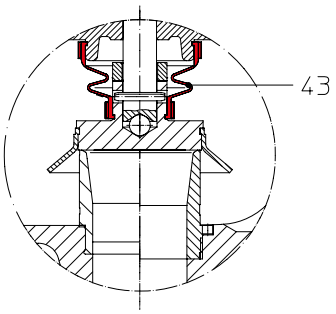



Fig. ... .904
**open lifting device, closed bonnet**




(Construction DN 20-100) (Construction DN125-150)
**Disc metal seat; EPDM-Bellows seal**

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Flange | Flangeholes / -thickness tolerances |
|---|---|---|---|---|---|---|
| 12.904 | PN16/16 | EN-JL1040 | DN20/32 - 150/250 | -10°C to +120°C | DIN EN 1092-2 | DIN 2533/2533 |

| **Construction** |
|---|
| Standard safety valve, spring loaded, direct loaded, EPDM-bellows, closed bonnet with control hole, open lifting device, stainless steel seat and spindle |
| **Application** |
| For low pressure steamgenerators up to 1 bar,<br>acc. to DIN 4750 and DIN EN 12828 Heating systems in buildings |
| **Requirement** |
| acc. to TRD 721 Part 5 |
| **Type-test approval** |

| | | |
|---|---|---|
| Low pressure steam - safety valve: | Fig. 904 | TÜV · SV · . . -688 · D |

| **Sizing** |
|---|
| refer to "Capacity". |
| **Order data:** |
| ARI-SAFE-Low pressure steam - safety valve, Figure ..., DN .../..., PN ..., Material ..., Set pressure ...barg |

| Parts | | | |
|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 12.904** |
| 1 | | Body | EN-GJL-250 , EN-JL1040 |
| 2 | | Seat | X6CrNiMoTi17-12-2, 1.4571 |
| 3 | | Studs | 25CrMo4, 1.7218 |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) |
| 8 | | Hexagon nut | C35E, 1.1181 |
| 11 | | Bonnet, closed | EN-GJL-250 , EN-JL1040 |
| 12 | | Disc | X39CrMo17-1+QT, 1.4122+QT |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT |
| 29 | | Cap, open | EN-GJL-250 , EN-JL1040 |
| 37 | x | Spring | FDSiCr |
| 41 | | Lever, open | EN-GJS-400-18U-LT, EN-JS1049 |
| 43 | | Bellows | EPDM 70 Shore A |
| | └ Spare parts | | |

| **DN1 / DN2** | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** |
|---|---|---|---|---|---|---|---|---|---|---|

| **Dimensions** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| d0 | (mm) | 18 | 22,5 | 29 | 36 | 45 | 58,5 | 72 | 90 | 106 | 125 |
| A0 | ($mm^2$) | 254 | 398 | 661 | 1018 | 1590 | 2688 | 4072 | 6362 | 8825 | 12272 |
| l | (mm) | 85 | 100 | 110 | 115 | 120 | 140 | 160 | 180 | 200 | 225 |
| l1 | (mm) | 95 | 105 | 115 | 140 | 150 | 170 | 195 | 220 | 250 | 285 |
| H | (mm) | 270 | 280 | 330 | 390 | 435 | 545 | 610 | 690 | 845 | 890 |
| X | (mm) | 150 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 500 | 500 |
| C (Width support tongues) | (mm) | -- | -- | -- | -- | -- | -- | 280 | 332 | 362 | 408 |
| Drainhole with plug | (inch) | G 1/4" | | | | | G 3/8" | | | | |

| **Weights** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| standard | (kg) | 8,5 | 9,5 | 13,5 | 20 | 26 | 39 | 53 | 82 | 125 | 165 |

| **Flanges** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ØD1 | PN16 | (mm) | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 |
| ØD2 | PN16 | (mm) | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 | 340 | 405 |
| b1 | EN-JL1040 | (mm) | 16 | 16 | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 |
| b2 | EN-JL1040 | (mm) | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 26 | 30 | 32 |
| Flanges acc. to DIN EN 1092-1 / -2, Flangeholes/-thickness tolerances acc. to DIN 2533, raised face, facing acc. to DIN EN 1092-1 form B1 | | | | | | | | | | | |

| **Standard-Flangeholes** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | | | **20** | **25** | **32** | **40** | **50** | **65** | **80** | **100** | **125** | **150** | **200** | **250** |
| ØK | PN16 | (mm) | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 180 | 210 | 240 | 295 | 355 |
| n x Ød | | (mm) | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x18 | 8x22 | 12x22 | 12x26 |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C*** | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JL1040 | PN16 | (bar) | -- | 16 | 14,4 | 12,8 | 11,2 | 9,6 | -- | -- | -- |

**Capacity Saturated steam (incl. 10% overpressure)**

| **Set pressure** | | | | **DN1 (inlet) / DN2 (outlet)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **20 / 32** | **25 / 40** | **32 / 50** | **40 / 65** | **50 / 80** | **65 / 100** | **80 / 125** | **100 / 150** | **125 / 200** | **150 / 250** |
| 0,2 | barg | **Saturated steam (kg/h)** | (kg/h) | 72 | 113 | 187 | 289 | 451 | 763 | 1155 | 1805 | 2241 | 3116 |
| 0,3 | barg | | (kg/h) | 92 | 144 | 239 | 368 | 575 | 972 | 1472 | 2300 | 2867 | 3986 |
| 0,4 | barg | | (kg/h) | 110 | 172 | 286 | 440 | 688 | 1163 | 1762 | 2753 | 3380 | 4700 |
| 0,5 | barg | | (kg/h) | 125 | 196 | 325 | 501 | 783 | 1325 | 2006 | 3135 | 3858 | 5365 |
| 0,6 | barg | | (kg/h) | 142 | 223 | 370 | 569 | 889 | 1503 | 2277 | 3557 | 4317 | 6004 |
| 0,7 | barg | | (kg/h) | 158 | 248 | 412 | 634 | 990 | 1675 | 2537 | 3964 | 4748 | 6603 |
| 0,8 | barg | | (kg/h) | 173 | 271 | 450 | 693 | 1082 | 1830 | 2772 | 4331 | 5201 | 7233 |
| 0,9 | barg | | (kg/h) | 179 | 292 | 485 | 746 | 1166 | 1971 | 2986 | 4666 | 5616 | 7809 |
| 1 | barg | | (kg/h) | 203 | 317 | 526 | 811 | 1270 | 2140 | 3245 | 5070 | 6030 | 8385 |
| Conversionrates: 1 kW = 860 kcal/h* = 0,86 Mcal/h* = 3,6 MJ/h * not lawful units<br>1 Mcal/h* = 1000 kcal/h* = 1,163 kW | | | | | | | | | | | | | |

Information / restriction of technical rules need to be observed!

ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

## ARI-SAFE-P - Standard safety valve D/G/F

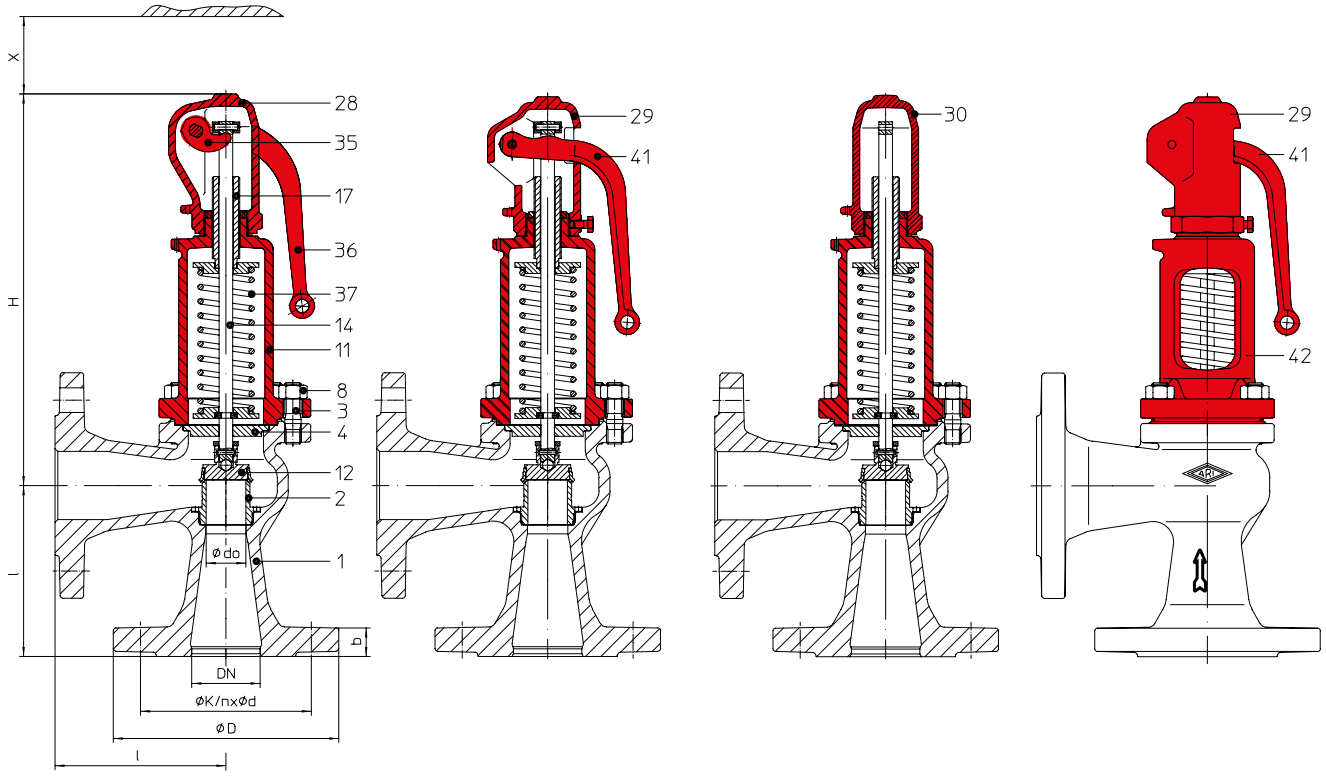



**Fig. ... .921**
**closed lifting device, closed bonnet**

**Fig. ... .922**
**open lifting device, closed bonnet**

**Fig. ... .923**
**gastight cap, closed bonnet**

**Fig. ... .924**
**open lifting device, open bonnet**

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Flange | Flangeholes / -thickness tolerances |
|---|---|---|---|---|---|---|
| 12.921 / 922 / 923 / 924 | PN16 | EN-JL1040 | DN15 - 100 | -10°C to +300°C | DIN EN 1092-2 | DIN 2533 |
| 22.921 / 922 / 923 / 924 | PN16 | EN-JS1049 | DN125 - 150 | -10°C to +350°C | DIN EN 1092-2 | DIN 2533 |
| 35.921 / 922 / 923 / 924 | PN40 | 1.0619+N | DN15 - 100 | -10°C to +450°C | DIN EN 1092-1 | DIN 2545 |
| 55.921 / 923 | PN40 | 1.4408 | DN15 - 100 | -60°C to +400°C | DIN EN 1092-1 | DIN 2545 |

| **Construction** | | |
|---|---|---|
| Safety valve, spring loaded, direct loaded | | |
| **Requirement** | | |
| Acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2, TRD 421, observe TRB 801 No. 45 at material selection! | | |
| **Type-test approval** | | |
| Standard safety valve: | Fig. 921/923 | TÜV · SV · . . -811 · D/G |
| Standard safety valve: | Fig. 921/923 | TÜV · SV · . . -811 · F |

| **Sizing** | |
|---|---|
| for steam, air and water refer to capacity tables, calculations acc. to EN ISO 4126-1 and AD2000-A2. | |
| **Details required** | |
| Medium gasform: | Mass flow (kg/h), molar mass (kg/kmol), Isotropic exponent, temperature (°C), set pressure (barg), back pressure (barg) |
| Medium liquid: | Mass flow (kg/h), density (kg/m3), viscosity, temperature (°C), set pressure (barg), back pressure (barg) |
| **Order data:** | |
| ARI-SAFE-P - Safety valve, Figure ....., DN ..., PN .. , Material ....., Set pressure .... barg | |

| | **standard: without metal bellows** | **optional: with metal bellows** (refer to page 42) |
|---|---|---|
| **Superimposed back pressure** | no backpressure allowed | on request |
| **Built up back pressure** | max. 10% from set pressure (higher on request) | on request |

| Parts | | | | | | |
|---|---|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 12.921/922/923/924** | **Fig. 22.921/922/923/924** | **Fig. 35.921/922/923/924** | **Fig. 55.921/923** |
| 1 | | Body | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | GP240GH+N, 1.0619+N | GX5CrNiMo19-11-2, 1.4408 |
| 2 | | Seat | X6CrNiMoTi17-12-2, 1.4571 | | | |
| 3 | | Studs | 25CrMo4, 1.7218 | | | A4 - 70 |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT | | | X6CrNiMoTi17-12-2, 1.4571 |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | | | |
| 8 | | Hexagon nut | C35E, 1.1181 | | | A4 |
| 11 | | Bonnet, closed | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 12 | | Disc | X39CrMo17-1+QT, 1.4122+QT | | | X6CrNiMoTi17-12-2, 1.4571 |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT | | | X6CrNiMoTi17-12-2, 1.4571 |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT | | | X2CrNiMo17-12-2, 1.4404 |
| 27 | x | Sealing ring | CuFA | | | X6CrNiMoTi17-12-2, 1.4571 |
| 28 | | Cap, closed | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 29 | | Cap, open | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | | -- |
| 30 | | Cap, gastight | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 [1] | | GX5CrNiMo19-11-2, 1.4408 |
| 31 | x | Packingrings | Pure graphite | | | |
| 35 | | Lift fork | EN-GJS-400-15, EN-JS1030 | | | GX5CrNiMo19-11-2, 1.4408 |
| 36 | | Lever, closed | EN-GJS-400-18U-LT, EN-JS1049 | | | GX5CrNiMo19-11-2, 1.4408 |
| 37 | x | Spring | FDSiCr / 51CrV4, 1.8159 | | | X10CrNi18-8, 1.4310 |
| 41 | | Lever, open | EN-GJS-400-18U-LT, EN-JS1049 | | | -- |
| 42 | | Bonnet, open | EN-GJL-250 , EN-JL1040 | EN-GJS-400-18U-LT, EN-JS1049 | | -- |
| 43 | | Bellows (optional) | EPDM 70 Shore A | | | |
| 55 | | Bellows unit (optional) | X6CrNiMoTi17-12-2, 1.4571 | | | |
| 70 | | Balanced piston (optional) | X6CrNiMoTi17-12-2, 1.4571 | | | |
| | | └ Spare parts | | | | |

[1] Optional: GP240GH, 1.0619

| **DN** | | **15** | **20** | **25** | **32** | **40** | **50** | **65** | **80** | **100** | **125** | **150** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Spring ranges: Standard design** | | | | | | | | | | | | |
| Standard safety valve Fig. 921/922/923/924 | (barg) | 0,3 - 0,5 | 0,3 - 0,5 | 0,2 - 0,6 | 0,2 - 0,55 | 0,2 - 0,4 | 0,2 - 0,4 | 0,2 - 0,5 | 0,2 - 0,6 | 0,2 - 0,5 | 0,2 - 0,6 | 0,2 - 0,4 |
| | (barg) | > 0,5 - 1 | > 0,5 - 1 | > 0,6 - 1,1 | > 0,55 - 0,8 | > 0,4 - 0,6 | > 0,4 - 0,6 | > 0,5 - 1,2 | > 0,6 - 1,2 | > 0,5 - 1,1 | > 0,6 - 1,1 | > 0,4 - 0,6 |
| | (barg) | > 1 - 1,4 | > 1 - 1,4 | > 1,1 - 2 | > 0,8 - 1,2 | > 0,6 - 1,1 | > 0,6 - 1,2 | > 1,2 - 2 | > 1,2 - 2,1 | > 1,1 - 1,7 | > 1,1 - 2 | > 0,6 - 1 |
| | (barg) | > 1,4 - 1,9 | > 1,4 - 1,9 | > 2 - 2,7 | > 1,2 - 2 | > 1,1 - 1,8 | > 1,2 - 1,8 | > 2 - 2,7 | > 2,1 - 2,6 | > 1,7 - 2,4 | > 2 - 2,6 | > 1 - 1,9 |
| | (barg) | > 1,9 - 2,5 | > 1,9 - 2,5 | > 2,7 - 3,7 | > 2 - 3,3 | > 1,8 - 2,7 | > 1,8 - 2,5 | > 2,7 - 3,4 | > 2,6 - 3,2 | > 2,4 - 3,1 | > 2,6 - 3,7 | > 1,9 - 2,5 |
| | (barg) | > 2,5 - 3,5 | > 2,5 - 3,5 | > 3,7 - 5 | > 3,3 - 5,2 | > 2,7 - 4,3 | > 2,5 - 3,2 | > 3,4 - 4,5 | > 3,2 - 4,2 | > 3,1 - 4 | > 3,7 - 4,3 | > 2,5 - 3,5 |
| | (barg) | > 3,5 - 5 | > 3,5 - 4 | > 5 - 8 | > 5,2 - 8 | > 4,3 - 6 | > 3,2 - 4,5 | > 4,5 - 5,5 | > 4,2 - 5,5 | > 4 - 5 | > 4,3 - 7 | > 3,5 - 4,3 |
| | (barg) | > 5 - 7 | > 4 - 5,5 | > 8 - 10,5 | > 8 - 11,5 | > 6 - 9 | > 4,5 - 8,5 | > 5,5 - 6,8 | > 5,5 - 6,5 | > 5 - 8 | > 7 - 9 | > 4,3 - 5,5 |
| | (barg) | > 7 - 10 | > 5,5 - 7 | > 10,5 - 15 | > 11,5 - 16,5 | > 9 - 12 | > 8,5 - 13 | > 6,8 - 8,5 | > 6,5 - 9 | > 8 - 11 | > 9 - 15 | > 5,5 - 6,5 |
| | (barg) | > 10 - 16 | > 7 - 10,5 | > 15 - 23 | > 16,5 - 22 | > 12 - 17 | > 13 - 17 | > 8,5 - 14 | > 9 - 12 | > 11 - 17,5 | > 15 - 22 | > 6,5 - 11 |
| | (barg) | > 16 - 25 | > 10,5 - 17 | > 23 - 35 | > 22 - 30 | > 17 - 30 | > 17 - 23 | > 14 - 23 | > 12 - 16,5 | > 17,5 - 27,5 | > 22 - 28 | > 11 - 16 |
| | (barg) | > 25 - 33 | > 17 - 25 | > 35,1 - 40 | > 30 - 40 | > 30 - 40 | > 23 - 34 | > 23 - 34 | > 16,5 - 20 | > 27,5 - 40 | > 28 - 33 | > 16 - 25 |
| | (barg) | > 33 - 40 | > 25 - 37 | | | | > 34 - 40 | > 34 - 40 | > 20 - 33 | | > 33 - 40 | |
| | (barg) | | > 37 - 40 | | | | | | > 33 - 40 | | | |
| **Spring ranges: Bellows design (optional)** | | | | | | | | | | | | |
| Standard safety valve Fig. 921/923 | (barg) | 4 - 5 | 3 - 5,5 | 3 - 4,8 | 3 - 4,5 | 3 - 4,5 | 3 - 3,5 | 3 - 3,5 | 3 - 3,5 | 3 - 4,5 | 5 - 7 | 5 - 5,3 |
| | (barg) | > 5 - 6 | > 5,5 - 8 | > 4,8 - 6 | > 4,5 - 8 | > 4,5 - 5,7 | > 3,5 - 5 | > 3,5 - 4,3 | > 3,5 - 4,9 | > 4,5 - 6,5 | > 7 - 8 | > 5,3 - 7 |
| | (barg) | > 6 - 9 | > 8 - 12 | > 6 - 8 | > 8 - 11 | > 5,7 - 10 | > 5 - 7 | > 4,3 - 5,9 | > 5,9 - 7 | > 6,5 - 10 | > 8 - 9 | > 7 - 9 |
| | (barg) | > 9 - 14 | > 12 - 21 | > 8 - 12,5 | > 11 - 14,5 | > 10 - 16 | > 7 - 10,5 | > 6,9 - 7,5 | > 7 - 9 | > 10 - 18 | > 9 - 12,5 | > 9 - 12,5 |
| | (barg) | > 14 - 26 | > 21 - 27,5 | > 12,5 - 16 | > 14,5 - 21 | > 16 - 22 | > 10,5 - 15,5 | > 7,5 - 8,8 | > 9 - 11 | > 18 - 35 | > 12,5 - 18 | > 12,5 - 16 |
| | (barg) | > 26 - 30 | > 27,5 - 40 | > 16 - 20,5 | > 21 - 40 | > 22 - 31 | > 15,5 - 20 | > 8,8 - 14 | > 11 - 14,7 | | > 18 - 23 | > 16 - 18,5 |
| | (barg) | > 30 - 40 | | > 20,5 - 30 | | > 31 - 40 | > 20 - 40 | > 14 - 21 | > 14,7 - 18,8 | | > 23 - 29 | > 18,5 - 25 |
| | (barg) | | | > 30 - 40 | | | | > 21 - 30 | > 18,8 - 35 | | > 29 - 34 | |
| | (barg) | | | | | | | > 30 - 40 | | | > 34 - 40 | |

Information / restriction of technical rules need to be observed!

ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.

A production permission acc. to TRB 801 No. 45 is available (acc. to TRB 801 No. 45 EN-JL1040 is not allowed.)

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN 1 / DN 2 | | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | | | | | | | |
| d0 | | (mm) | 12 | 12 | 15 | 18 | 20 | 29 | 36 | 44 | 55 | 71 | 86 |
| A0 | | ($mm^2$) | 113 | 113 | 177 | 254 | 314 | 661 | 1018 | 1520 | 2376 | 3959 | 5808 |
| l | | (mm) | 90 | 95 | 100 | 105 | 115 | 125 | 145 | 155 | 175 | 200 | 225 |
| H | | (mm) | 260 | 260 | 270 | 285 | 290 | 290 | 340 | 400 | 450 | 563 | 631 |
| H (Bellows design) | | (mm) | 285 | 285 | 300 | 325 | 330 | 345 | 400 | 455 | 515 | 631 | 703 |
| X | | (mm) | 130 | 130 | 130 | 150 | 150 | 150 | 200 | 250 | 300 | 350 | 400 |
| Y (Width support tongues) | EN-JL1040 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | EN-JS1049 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 254 | 298 |
| | 1.0619+N | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 254 | 298 |
| | 1.4408 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Weights** | | | | | | | | | | | | | |
| standard | | (kg) | 5 | 5 | 5,5 | 8 | 9,5 | 11,5 | 15,5 | 20,5 | 33 | 57 | 66 |
| optional: Bellows design | | (kg) | 5,4 | 5,4 | 6 | 9 | 10,5 | 12,8 | 17,5 | 23 | 37 | 64 | 72 |
| **Flanges** | | | | | | | | | | | | | |
| ØD | PN16 | (mm) | 95 | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 220 | 250 | 285 |
| | PN40 | (mm) | 95 | 105 | 115 | 140 | 150 | 165 | 185 | 200 | 235 | 270 | 300 |
| b | EN-JL1040 | (mm) | 14 | 16 | 16 | 18 | 18 | 20 | 20 | 22 | 24 | -- | -- |
| | EN-JS1049 | (mm) | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26 | 26 |
| | 1.0619+N | (mm) | 16 | 18 | 18 | 18 | 18 | 20 | 20 | 22 | 24 | 26 | 28 |
| | 1.4408 | (mm) | 16 | 18 | 18 | 18 | 18 | 20 | 20 | 22 | 24 | -- | -- |
| Flanges acc. to DIN EN 1092-1 / -2, Flangeholes/-thickness tolerances acc. to DIN 2533 / 2545, raised face, facing acc. to DIN EN 1092-1 form B1 | | | | | | | | | | | | | |

| **Standard-Flangeholes** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | | | **15** | **20** | **25** | **32** | **40** | **50** | **65** | **80** | **100** | **125** | **150** |
| ØK | PN16 | (mm) | 65 | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 180 | 210 | 240 |
| n x Ød | PN16 | (mm) | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 4x18 [1] | 8x18 | 8x18 | 8x18 | 8x22 |
| ØK | PN40 | (mm) | 65 | 75 | 85 | 100 | 110 | 125 | 145 | 160 | 190 | 220 | 250 |
| n x Ød | PN40 | (mm) | 4x14 | 4x14 | 4x14 | 4x18 | 4x18 | 4x18 | 8x18 | 8x18 | 8x22 | 8x26 | 8x26 |
| [1] also with 8 bore holes acc. to DIN EN 1092-1/-2 possible. | | | | | | | | | | | | | |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JL1040 | PN16 | (bar) | -- | 16 | 14,4 | 12,8 | 11,2 | 9,6 | -- | -- | -- |
| EN-JS1049 | PN16 | (bar) | on request | 16 | 15,5 | 14,7 | 13,9 | 12,8 | 11,2 | -- | -- |

| **acc. to manufacturers standard** | | | **-60°C to <-10°C** [1] | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0619+N | PN40 | (bar) | 30 | 40 | 38,1 | 35 | 32 | 28 | 25,7 | 23,8 | 13,1 |

| **acc. to DIN EN 1092-1** | | | **-60°C to <-10°C** [1] | **-10°C to 100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4408 | PN40 | (bar) | 40 | 40 | 36,3 | 33,7 | 31,8 | 29,7 | 28,5 | 27,4 | -- |

[1] Studs and nuts made of A4-70 (at temperatures below -10°C)

| **Certified coefficient of discharge Kdr** (Values for D/G variable: < 3 bar) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | **15** | **20** | **25** | **32** | **40** | **50** | **65** | **80** | **100** | **125** | **150** |
| TÜV · SV · . . -811 · D/G | 0,37 | | 0,34 | | 0,37 | 0,34 | 0,37 | 0,34 | | 0,44 | 0,46 |
| TÜV · SV · . . -811 · F | 0,26 | | 0,23 | | 0,26 | 0,23 | 0,26 | 0,23 | | 0,28 | 0,32 |

**Capacity saturated steam (incl. 10% overpressure)**

| DN | | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Saturated steam (kg/h) | | | | | | | | | | |
| ↓ max. set pressure stainless steel version | **0,2** | (barg) | -- | -- | 22 | 33 | 44 | 85 | 142 | 195 | 305 | 710 | 1292 |
| | **0,3** | (barg) | 20 | 20 | 28 | 41 | 56 | 107 | 82 | 247 | 386 | 868 | 1333 |
| | **0,4** | (barg) | 23 | 23 | 34 | 48 | 65 | 126 | 209 | 290 | 450 | 1002 | 1581 |
| | **0,5** | (barg) | 27 | 27 | 39 | 55 | 74 | 144 | 239 | 332 | 520 | 1129 | 1765 |
| | **0,6** | (barg) | 30 | 30 | 43 | 62 | 82 | 162 | 267 | 372 | 580 | 1259 | 1959 |
| | **0,8** | (barg) | 36 | 36 | 51 | 73 | 100 | 189 | 323 | 435 | 680 | 1467 | 2289 |
| | **1** | (barg) | 41 | 41 | 59 | 84 | 114 | 218 | 370 | 500 | 785 | 1677 | 2613 |
| | **2** | (barg) | 68 | 68 | 99 | 139 | 188 | 362 | 610 | 830 | 1300 | 2789 | 4291 |
| | **3** | (barg) | 95 | 95 | 137 | 197 | 265 | 510 | 860 | 1180 | 1840 | 3846 | 5908 |
| | **4** | (barg) | 119 | 119 | 171 | 246 | 330 | 640 | 1070 | 1470 | 2300 | 4908 | 7532 |
| | **5** | (barg) | 142 | 142 | 205 | 295 | 396 | 765 | 1280 | 1760 | 2750 | 5943 | 9115 |
| | **6** | (barg) | 166 | 166 | 239 | 343 | 460 | 890 | 1495 | 2050 | 3200 | 6917 | 10611 |
| | **7** | (barg) | 189 | 189 | 272 | 391 | 525 | 1015 | 1700 | 2340 | 3650 | 7891 | 12103 |
| | **8** | (barg) | 213 | 213 | 306 | 440 | 590 | 1140 | 1910 | 2630 | 4100 | 8861 | 13593 |
| | **9** | (barg) | 236 | 236 | 339 | 490 | 655 | 1265 | 2120 | 2910 | 4550 | 9831 | 15080 |
| | **10** | (barg) | 259 | 259 | 370 | 535 | 720 | 1390 | 2330 | 3200 | 5000 | 10800 | 16567 |
| | **12** | (barg) | 306 | 306 | 440 | 630 | 850 | 1640 | 2750 | 3780 | 5900 | 12737 | 19537 |
| | **14** | (barg) | 352 | 352 | 505 | 730 | 980 | 1890 | 3170 | 4350 | 6800 | 14673 | 22507 |
| | **16** | (barg) | 400 | 400 | 570 | 825 | 1105 | 2140 | 3590 | 4920 | 7700 | 16612 | 25480 |
| | **18** | (barg) | 445 | 445 | 640 | 920 | 1235 | 2390 | 4000 | 5500 | 8600 | 18552 | 28456 |
| | **20** | (barg) | 490 | 490 | 705 | 1020 | 1365 | 2640 | 4430 | 6080 | 9500 | 20496 | 31438 |
| | **22** | (barg) | 540 | 540 | 775 | 1110 | 1495 | 2890 | 4850 | 6660 | 10400 | 22444 | 34425 |
| | **24** | (barg) | 585 | 585 | 840 | 1210 | 1630 | 3140 | 5270 | 7240 | 11300 | 24396 | 37421 |
| | **25** | (barg) | 609 | 609 | 875 | 1260 | 1690 | 3270 | 5480 | 7530 | 11760 | 25375 | 38921 |
| | **26** | (barg) | 630 | 630 | 910 | 1310 | 1760 | 3400 | 5700 | 7820 | 12200 | 26354 | |
| | **28** | (barg) | 680 | 680 | 975 | 1405 | 1890 | 3650 | 6120 | 8400 | 13100 | 28317 | |
| | **30** | (barg) | 730 | 730 | 1040 | 1505 | 2020 | 3900 | 6550 | 8990 | 14000 | 30286 | |
| | **32** | (barg) | 775 | 775 | 1110 | 1600 | 2150 | 4160 | 6980 | 9580 | 15000 | 32260 | |

**Capacity air (incl. 10% overpressure)**

| DN | | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Air 0°C and 1,013 bara (Nm³/h) | | | | | | | | | | |
| | **0,2** | (barg) | -- | -- | 27 | 27 | 51 | 100 | 167 | 229 | 358 | 835 | 1225 |
| | **0,3** | (barg) | 24 | 24 | 34 | 49 | 67 | 128 | 217 | 294 | 460 | 1035 | 1588 |
| | **0,4** | (barg) | 28 | 28 | 41 | 41 | 78 | 152 | 252 | 349 | 546 | 1209 | 1908 |
| | **0,5** | (barg) | 32 | 32 | 47 | 47 | 90 | 176 | 292 | 405 | 632 | 1379 | 2156 |
| | **0,6** | (barg) | 37 | 37 | 53 | 53 | 102 | 199 | 330 | 459 | 717 | 1555 | 2418 |
| | **0,8** | (barg) | 45 | 45 | 63 | 63 | 125 | 237 | 404 | 545 | 852 | 1839 | 2871 |
| | **1** | (barg) | 52 | 52 | 73 | 73 | 144 | 274 | 466 | 631 | 986 | 2110 | 3288 |
| | **2** | (barg) | 86 | 86 | 123 | 123 | 240 | 461 | 777 | 1061 | 1657 | 3556 | 5471 |
| | **3** | (barg) | 123 | 123 | 176 | 176 | 340 | 658 | 1103 | 1514 | 2365 | 4947 | 7601 |
| | **4** | (barg) | 154 | 154 | 221 | 221 | 428 | 826 | 1385 | 1902 | 2970 | 6355 | 9754 |
| | **5** | (barg) | 185 | 185 | 266 | 266 | 515 | 995 | 1665 | 2290 | 3580 | 7735 | 11865 |
| | **6** | (barg) | 217 | 217 | 311 | 311 | 602 | 1165 | 1950 | 2680 | 4180 | 9041 | 13868 |
| | **7** | (barg) | 248 | 248 | 356 | 356 | 689 | 1330 | 2230 | 3065 | 4790 | 10348 | 15872 |
| | **8** | (barg) | 279 | 279 | 401 | 401 | 776 | 1500 | 2515 | 3450 | 5390 | 11654 | 17876 |
| | **9** | (barg) | 311 | 311 | 446 | 446 | 863 | 1670 | 2800 | 3840 | 6000 | 12961 | 19880 |
| | **10** | (barg) | 342 | 342 | 491 | 491 | 950 | 1835 | 3080 | 4225 | 6600 | 14267 | 21884 |
| | **12** | (barg) | 405 | 405 | 581 | 581 | 1125 | 2170 | 3645 | 5000 | 7800 | 16880 | 25892 |
| | **14** | (barg) | 468 | 468 | 671 | 671 | 1300 | 2510 | 4200 | 5780 | 9000 | 19493 | 29899 |
| | **16** | (barg) | 530 | 530 | 761 | 761 | 1475 | 2845 | 4770 | 6550 | 10200 | 22106 | 33907 |
| | **18** | (barg) | 593 | 593 | 851 | 851 | 1645 | 3180 | 5340 | 7320 | 11450 | 24718 | 37915 |
| | **20** | (barg) | 656 | 656 | 941 | 941 | 1820 | 3520 | 5900 | 8100 | 12650 | 27331 | 41922 |
| | **22** | (barg) | 718 | 718 | 1031 | 1031 | 1995 | 3855 | 6465 | 8870 | 13850 | 29944 | 45930 |
| | **24** | (barg) | 781 | 781 | 1121 | 1121 | 2170 | 4190 | 7030 | 9650 | 15100 | 32557 | 49938 |
| | **25** | (barg) | 812 | 812 | 1167 | 1167 | 2250 | 4360 | 7310 | 10040 | 15680 | 33863 | 51942 |
| | **26** | (barg) | 844 | 844 | 1211 | 1211 | 2340 | 4530 | 7595 | 10400 | 16300 | 35170 | |
| | **28** | (barg) | 907 | 907 | 1302 | 1302 | 2520 | 4860 | 8160 | 11200 | 17500 | 37782 | |
| | **30** | (barg) | 969 | 969 | 1390 | 1390 | 2690 | 5200 | 8720 | 12000 | 18700 | 40395 | |
| | **32** | (barg) | 1032 | 1032 | 1480 | 1480 | 2870 | 5540 | 9290 | 12750 | 19900 | 43008 | |
| | **35** | (barg) | 1126 | 1126 | 1620 | 1620 | 3130 | 6040 | 10130 | 13900 | 21700 | 46927 | |
| | **36** | (barg) | 1155 | 1155 | 1665 | 1665 | 3215 | 6220 | 10420 | 14300 | 22360 | 48234 | |
| ← max. set pressure stainless steel version | **40** | (barg) | 1283 | 1283 | 1840 | 1840 | 3560 | 6880 | 11500 | 15850 | 24700 | 53459 | |

**Capacity water (incl. 10% overpressure)**

| DN | | | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100 | 125 | 150 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Set pressure | | | Water 20°C (t/h) | | | | | | | | | | |
| max. set pressure stainless steel version ↓ | **0,2** | (bar) | -- | -- | 0,97 | 1,4 | 1,95 | 3,63 | 6,33 | 8,36 | 13,06 | 26,4 | 44,3 |
| | **0,3** | (bar) | 0,84 | 0,84 | 1,16 | 1,67 | 2,33 | 4,30 | 7,46 | 9,80 | 15,22 | 32,3 | 54,3 |
| | **0,5** | (bar) | 1,11 | 1,11 | 1,54 | 2,21 | 3,09 | 5,74 | 10,0 | 13,22 | 20,6 | 41,8 | 70,1 |
| | **1** | (bar) | 1,57 | 1,57 | 2,17 | 3,13 | 4,37 | 8,12 | 14,15 | 18,69 | 29,2 | 59,1 | 99,1 |
| | **2** | (bar) | 2,22 | 2,22 | 3,07 | 4,42 | 6,17 | 11,48 | 20,0 | 26,4 | 41,3 | 83,6 | 140,2 |
| | **3** | (bar) | 2,72 | 2,72 | 3,76 | 5,42 | 7,56 | 14,07 | 24,5 | 32,4 | 50,6 | 102,4 | 171,7 |
| | **4** | (bar) | 3,14 | 3,14 | 4,35 | 6,26 | 8,73 | 16,24 | 28,3 | 37,4 | 58,4 | 118,2 | 198,3 |
| | **5** | (bar) | 3,51 | 3,51 | 4,86 | 7,0 | 9,76 | 18,16 | 31,6 | 41,8 | 65,3 | 132,2 | 221,7 |
| | **6** | (bar) | 3,85 | 3,85 | 5,32 | 7,66 | 10,69 | 19,89 | 34,6 | 45,8 | 71,6 | 144,8 | 242,9 |
| | **7** | (bar) | 4,16 | 4,16 | 5,75 | 8,28 | 11,55 | 21,5 | 37,4 | 49,5 | 77,3 | 156,4 | 262,3 |
| | **8** | (bar) | 4,45 | 4,45 | 6,14 | 8,85 | 12,35 | 23,0 | 40,0 | 52,9 | 82,6 | 167,2 | 280,4 |
| | **9** | (bar) | 4,72 | 4,72 | 6,52 | 9,39 | 13,1 | 24,4 | 42,4 | 56,1 | 87,6 | 177,4 | 297,5 |
| | **10** | (bar) | 4,97 | 4,97 | 6,87 | 9,89 | 13,81 | 25,7 | 44,7 | 59,1 | 92,4 | 187,0 | 313,5 |
| | **12** | (bar) | 5,44 | 5,44 | 7,53 | 10,84 | 15,12 | 28,1 | 49,0 | 64,8 | 100,2 | 204,8 | 343,5 |
| | **14** | (bar) | 5,88 | 5,88 | 8,13 | 11,71 | 16,34 | 30,4 | 52,9 | 69,9 | 109,3 | 221,2 | 371,0 |
| | **16** | (bar) | 6,29 | 6,29 | 8,69 | 12,51 | 17,46 | 32,5 | 56,6 | 74,8 | 116,8 | 236,5 | 396,6 |
| | **18** | (bar) | 6,67 | 6,67 | 9,22 | 13,27 | 18,52 | 34,4 | 60,0 | 79,3 | 123,9 | 250,9 | 420,7 |
| | **20** | (bar) | 7,03 | 7,03 | 9,72 | 14,0 | 19,53 | 36,3 | 63,3 | 83,6 | 130,6 | 264,4 | 443,4 |
| | **22** | (bar) | 7,37 | 7,37 | 10,19 | 14,7 | 20,5 | 38,1 | 66,3 | 87,7 | 137,0 | 277,4 | 465,1 |
| | **24** | (bar) | 7,7 | 7,7 | 10,64 | 15,33 | 21,4 | 39,8 | 69,3 | 91,6 | 143,1 | 289,7 | 485,8 |
| | **25** | (bar) | 7,86 | 7,86 | 10,86 | 15,64 | 21,8 | 40,6 | 70,7 | 93,3 | 146,0 | 295,7 | 495,8 |
| | **26** | (bar) | 8,0 | 8,0 | 11,06 | 15,92 | 22,2 | 41,3 | 72,0 | 95,1 | 148,6 | 301,5 | |
| | **28** | (bar) | 8,3 | 8,3 | 11,47 | 16,52 | 23,1 | 42,9 | 74,7 | 98,7 | 154,2 | 312,9 | |
| | **30** | (bar) | 8,6 | 8,6 | 11,88 | 17,1 | 23,9 | 44,4 | 77,3 | 102,2 | 159,7 | 323,9 | |
| | **35** | (bar) | 9,28 | 9,28 | 12,83 | 18,47 | 25,8 | 47,9 | 83,5 | 110,4 | 172,5 | 349,8 | |
| | **36** | (bar) | 9,4 | 9,4 | 13,0 | 18,7 | 26,1 | 48,7 | 84,7 | 111,9 | 174,9 | 354,8 | |
| | **40** | (bar) | 9,92 | 9,92 | 13,71 | 19,75 | 27,6 | 51,3 | 89,3 | 118,0 | 184,4 | 374,0 | |

## ARI-SAFE-TC - Full lift safety valve D/G, Standard safety valve F

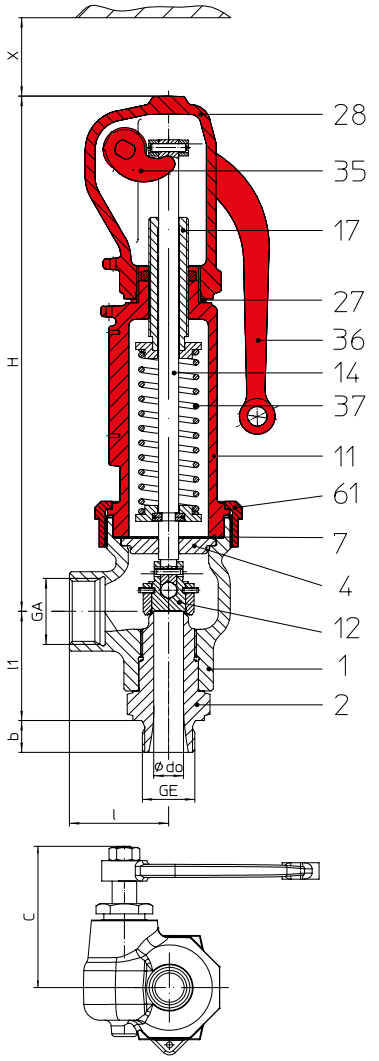



Fig. ... .941
closed lifting device,
closed bonnet

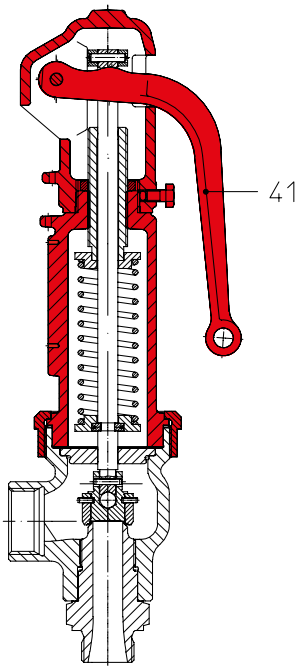



Fig. ... .942
open lifting device,
closed bonnet

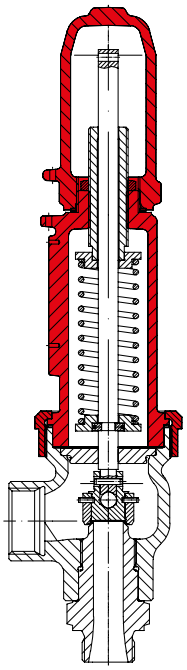


Fig. ... .943
gastight cap,
closed bonnet

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Thread |
|---|---|---|---|---|---|
| 25.941 / 942 / 943 | PN40 | EN-JS1049 | DN 15 - 25 | -10°C to +350°C | DIN ISO 228 Part 1 |
| 55.941 / 943 | PN40 | 1.4408 | DN15 - 25 | -60°C to +400°C | DIN ISO 228 Part 1 |

| **Construction** | | |
|---|---|---|
| Safety valve, spring loaded, direct loaded | | |
| **Requirement** | | |
| acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2, TRD 421 | | |
| **Type-test approval** | | |
| Full lift safety valve:<br>(acc. to VdTÜV-leaflet 995) | Fig. 941/942/943 | TÜV · SV · . . -995 · D/G |
| Standard safety valve: | Fig. 941/943 | TÜV · SV · . . -995 · F |

| **Sizing** | |
|---|---|
| for steam, air and water refer to capacity tables, calculations acc. to EN ISO 4126-1, TRD 421 and AD2000-A2. | |
| **Details required** | |
| Medium gasform: | Mass flow (kg/h), molar mass (kg/kmol), Isotropic exponent, temperature (°C), set pressure (barg), back pressure (barg) |
| Medium liquid: | Mass flow (kg/h), density (kg/m3), viscosity, temperature (°C), set pressure (barg), back pressure (barg) |
| **Order data:** | |
| ARI-SAFE-TC - Safety valve, Figure ....., DN ... / ..., PN .. / .., Material ....., Set pressure .... bar | |

| | **standard: without metal bellows** | **optional: with metal bellows** (refer to page 42) |
|---|---|---|
| **Superimposed back pressure** | no backpressure allowed | on request |
| **Built up back pressure** | max. 10% from set pressure (higher on request) | on request |

| Parts | | | | |
|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 25.941/942/943** | **Fig. 55.941/943** |
| 1 | | Body | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMo19-11-2, 1.4408 |
| 2 | | Screwed seat | X6CrNiMoTi17-12-2, 1.4571 | |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT | X6CrNiMoTi17-12-2, 1.4571 |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | |
| 11 | | Bonnet, closed | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMo19-11-2, 1.4408 |
| 12 | | Disc | X39CrMo17-1+QT, 1.4122+QT | X6CrNiMoTi17-12-2, 1.4571 |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT | X6CrNiMoTi17-12-2, 1.4571 |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT | X2CrNiMo17-12-2, 1.4404 |
| 27 | x | Sealing ring | CuFA | X6CrNiMoTi17-12-2, 1.4571 |
| 28 | | Cap, closed | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMo19-11-2, 1.4408 |
| 35 | | Lift fork | EN-GJS-400-15, EN-JS1030 | GX5CrNiMo19-11-2, 1.4408 |
| 36 | | Lever, closed | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMo19-11-2, 1.4408 |
| 37 | x | Spring | FDSiCr / 51CrV4, 1.8159 | X10CrNi18-8, 1.4310 |
| 41 | | Lever, open | EN-GJS-400-18U-LT, EN-JS1049 | -- |
| 43 | | Bellows (optional) | EPDM 70 Shore A | |
| 55 | | Bellows unit (optional) | X6CrNiMoTi17-12-2, 1.4571 | |
| 61 | | Coupling | X6CrNiMoTi17-12-2, 1.4571 | |
| 70 | | Balanced piston (optional) | X6CrNiMoTi17-12-2, 1.4571 | |
| | └ Spare parts | | | |

| **DN** | | **15** | **20** | **25** |
|---|---|---|---|---|
| **Spring ranges: Standard design** | | | | |
| Full lift safety valve Fig. 941/942/943 | (barg) | 0,3 - 0,6 | 0,3 - 0,48 | 0,2 - 0,4 |
| | (barg) | > 0,6 - 0,9 | > 0,48 - 0,68 | > 0,4 - 0,88 |
| | (barg) | > 0,9 - 1,35 | > 0,68 - 1,35 | > 0,88 - 1,5 |
| | (barg) | > 1,35 - 2,2 | > 1,35 - 2,1 | > 1,5 - 2,1 |
| | (barg) | > 2,2 - 3,3 | > 2,1 - 3 | > 2,1 - 2,6 |
| | (barg) | > 3,3 - 4,5 | > 3 - 4 | > 2,6 - 3,2 |
| | (barg) | > 4,5 - 5,5 | > 4 - 5,5 | > 3,2 - 4,2 |
| | (barg) | > 5,5 - 6,7 | > 5,5 - 7,7 | > 4,2 - 6,2 |
| | (barg) | > 6,7 - 8,2 | > 7,7 - 11,4 | > 6,2 - 8 |
| | (barg) | > 8,2 - 11 | > 11,4 - 15 | > 8 - 10 |
| | (barg) | > 11 - 13 | > 15 - 20 | > 10 - 15,5 |
| | (barg) | > 13 - 18,5 | > 20 - 28 | > 15,5 - 18 |
| | (barg) | > 18,5 - 32,4 | > 28 - 35 | > 18 - 29,9 |
| | (barg) | > 32,4 - 40 | > 35 - 40 | > 30 - 40 |
| **Spring ranges: Bellows design (optional)** | | | | |
| Standard safety valve Fig. 941/943 | (barg) | 5,7 - 6,5 | 4 - 5,7 | 4 - 5,4 |
| | (barg) | > 6,5 - 8 | > 5,7 - 7 | > 5,4 - 6,4 |
| | (barg) | > 8 - 9,3 | > 7 - 9,9 | > 6,4 - 7,4 |
| | (barg) | > 9,3 - 11 | > 9,9 - 14 | > 7,4 - 8,4 |
| | (barg) | > 11 - 15 | > 14 - 21 | > 8,4 - 10,4 |
| | (barg) | > 15 - 19 | > 21 - 28,9 | > 10,4 - 13,4 |
| | (barg) | > 19 - 29 | > 29,9 - 40 | > 13,4 - 16,4 |
| | (barg) | > 29 - 40 | | > 16,4 - 20,4 |
| | (barg) | | | > 20,4 - 28 |

Information / restriction of technical rules need to be observed!

A production permission acc. to TRB 801 No. 45 is available.

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN | | 15 | 20 | 25 |
|---|---|---|---|---|
| **Dimensions** | | | | |
| G | (inch) | 1/2" x 3/4" | 3/4" x 1" | 1" x 1 1/4" |
| d0 | (mm) | 12 | 15 | 18 |
| A0 | ($mm^2$) | 113 | 177 | 254 |
| GE | (inch) | 1/2" | 3/4" | 1" |
| GA | (inch) | 3/4" | 1" | 1 1/4" |
| b | (mm) | 15 | 16 | 18 |
| l | (mm) | 50 | 50 | 50 |
| l1 | (mm) | 53 | 55 | 58 |
| H | (mm) | 260 | 260 | 260 |
| H (Bellows design) | (mm) | 295 | 295 | 300 |
| X | (mm) | 120 | 120 | 120 |
| C | (mm) | 69 | 69 | 69 |
| **Weights** | | | | |
| standard | (kg) | 3,5 | 3,5 | 3,8 |
| optional: Bellows design | (kg) | 4,4 | 4,4 | 4,7 |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C** | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JS1049 | PN40 | (bar) | on request | 40 | 38,8 | 36,8 | 34,8 | 32 | 28 | -- | -- |

| **acc. to DIN EN 1092-1** | | | **-60°C to <-10°C** | **-10°C to 100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4408 | PN40 | (bar) | 40 | 40 | 36,3 | 33,7 | 31,8 | 29,7 | 28,5 | 27,4 | -- |

| **Certified coefficient of discharge Kdr** (Values for D/G variable: < 3,5 bar) | | | |
|---|---|---|---|
| **DN** | **15** | **20** | **25** |
| TÜV · SV · . . -995 · D/G | 0,64 | 0,60 | 0,75 |
| TÜV · SV · . . -995 · F | 0,45 | 0,42 | 0,53 |

**Capacity saturated steam / air / water (incl. 10% overpressure)**

| DN | | | 15 | 20 | 25 | |
|---|---|---|---|---|---|---|
| Inlet: Male | | (inch) | G1/2" | G3/4" | G1" | |
| Outlet: Female | | (inch) | G3/4" | G1" | G1 1/4" | G1 1/2" |
| do | | (mm) | 12 | 15 | 18 | |
| Set pressure | | | Saturated steam (kg/h) | | | |
| | 0,2 | (barg) | | | 75 | 75 |
| | 0,3 | (barg) | 35 | 47 | 94 | 94 |
| | 0,5 | (barg) | 46 | 65 | 124 | 124 |
| | 1 | (barg) | 72 | 103 | 188 | 188 |
| | 2 | (barg) | 120 | 172 | 320 | 320 |
| | 3 | (barg) | 162 | 238 | 430 | 430 |
| | 4 | (barg) | 206 | 300 | 545 | 545 |
| | 5 | (barg) | 246 | 360 | 650 | 650 |
| | 6 | (barg) | 285 | 420 | 755 | 755 |
| | 7 | (barg) | 325 | 480 | 860 | 860 |
| | 8 | (barg) | 370 | 540 | 970 | 970 |
| | 9 | (barg) | 410 | 600 | 1075 | 1075 |
| | 10 | (barg) | 450 | 655 | 1180 | 1180 |
| | 11 | (barg) | 490 | 715 | 1290 | 1290 |
| | 12 | (barg) | 530 | 775 | 1395 | 1395 |
| | 13 | (barg) | 570 | 835 | 1500 | 1500 |
| | 14 | (barg) | 610 | 890 | 1605 | 1605 |
| | 15 | (barg) | 650 | 950 | 1710 | 1710 |
| | 16 | (barg) | 690 | 1010 | 1820 | 1820 |
| | 17 | (barg) | 730 | 1070 | 1925 | 1925 |
| | 18 | (barg) | 770 | 1130 | 2030 | 2030 |
| | 19 | (barg) | 810 | 1190 | 2135 | 2135 |
| | 20 | (barg) | 850 | 1245 | 2245 | 2245 |
| | 22 | (barg) | 930 | 1365 | 2455 | 2455 |
| | 24 | (barg) | 1015 | 1485 | 2670 | 2670 |
| | 26 | (barg) | 1095 | 1600 | 2885 | 2885 |
| | 28 | (barg) | 1175 | 1725 | 3100 | 3100 |
| | 30 | (barg) | 1260 | 1845 | 3320 | 3320 |
| | 32 | (barg) | 1340 | 1965 | 3535 | 3535 |
| | 34 | (barg) | | | | |
| | 36 | (barg) | | | | |
| | 40 | (barg) | | | | |

| 15 | 20 | 25 | |
|---|---|---|---|
| G1/2" | G3/4" | G1" | |
| G3/4" | G1" | G1 1/4" | G1 1/2" |
| 12 | 15 | 18 | |
| Air 0°C and 1,013 bara ($Nm^3/h$) | | | |
| | | 88 | 88 |
| 41 | 56 | 112 | 112 |
| 57 | 79 | 151 | 151 |
| 91 | 129 | 237 | 237 |
| 153 | 219 | 405 | 405 |
| 209 | 305 | 552 | 552 |
| 266 | 390 | 702 | 702 |
| 320 | 469 | 845 | 845 |
| 375 | 549 | 988 | 988 |
| 429 | 628 | 1130 | 1130 |
| 483 | 708 | 1275 | 1275 |
| 537 | 787 | 1415 | 1415 |
| 592 | 867 | 1560 | 1560 |
| 646 | 946 | 1705 | 1705 |
| 700 | 1026 | 1845 | 1845 |
| 754 | 1105 | 1990 | 1990 |
| 809 | 1185 | 2130 | 2130 |
| 863 | 1265 | 2275 | 2275 |
| 917 | 1345 | 2420 | 2420 |
| 971 | 1420 | 2560 | 2560 |
| 1025 | 1500 | 2705 | 2705 |
| 1080 | 1580 | 2850 | 2850 |
| 1135 | 1660 | 2990 | 2990 |
| 1240 | 1820 | 3275 | 3275 |
| 1350 | 1980 | 3560 | 3560 |
| 1460 | 2140 | 3850 | 3850 |
| 1570 | 2300 | 4135 | 4135 |
| 1675 | 2455 | 4420 | 4420 |
| 1785 | 2615 | 4705 | 4705 |
| 1895 | 2775 | 4990 | 4990 |
| 2000 | 2940 | 5270 | 5270 |
| 2220 | 3250 | 5850 | 5850 |

| 15 | 20 | 25 | |
|---|---|---|---|
| G1/2" | G3/4" | G1" | |
| G3/4" | G1" | G1 1/4" | G1 1/2" |
| 12 | 15 | 18 | |
| Water 20°C (t/h) | | | |
| | | 3,22 | 3,22 |
| 1,49 | 2,17 | 3,94 | 3,94 |
| 1,92 | 2,80 | 5,10 | 5,10 |
| 2,72 | 3,96 | 7,19 | 7,19 |
| 3,85 | 5,60 | 10,17 | 10,17 |
| 4,71 | 6,86 | 12,46 | 12,46 |
| 5,44 | 7,92 | 14,39 | 14,39 |
| 6,08 | 8,85 | 16,10 | 16,10 |
| 6,66 | 9,70 | 17,62 | 17,62 |
| 7,20 | 10,47 | 19,04 | 19,04 |
| 7,69 | 11,20 | 20,30 | 20,30 |
| 8,16 | 11,88 | 21,60 | 21,60 |
| 8,60 | 12,52 | 22,70 | 22,70 |
| 9,02 | 13,13 | 23,80 | 23,80 |
| 9,42 | 13,72 | 24,90 | 24,90 |
| 9,81 | 14,27 | 25,90 | 25,90 |
| 10,18 | 14,81 | 26,90 | 26,90 |
| 10,54 | 15,33 | 27,90 | 27,90 |
| 10,88 | 15,84 | 28,80 | 28,80 |
| 11,22 | 16,32 | 29,70 | 29,70 |
| 11,54 | 16,80 | 30,50 | 30,50 |
| 11,86 | 17,26 | 31,40 | 31,40 |
| 12,17 | 17,71 | 32,20 | 32,20 |
| 12,76 | 18,57 | 33,70 | 33,70 |
| 13,33 | 19,40 | 35,20 | 35,20 |
| 13,87 | 20,20 | 36,70 | 36,70 |
| 14,40 | 20,90 | 38,10 | 38,10 |
| 14,90 | 21,70 | 39,40 | 39,40 |
| 15,39 | 22,40 | 40,70 | 40,70 |
| 15,86 | 23,10 | 41,90 | 41,90 |
| 16,28 | 23,8 | 43,1 | 43,1 |
| 17,21 | 25,00 | 45,50 | 45,50 |

## ARI-SAFE-TC - Spring loaded Fig. 945, Low pressure steam - safety valve Fig. 946

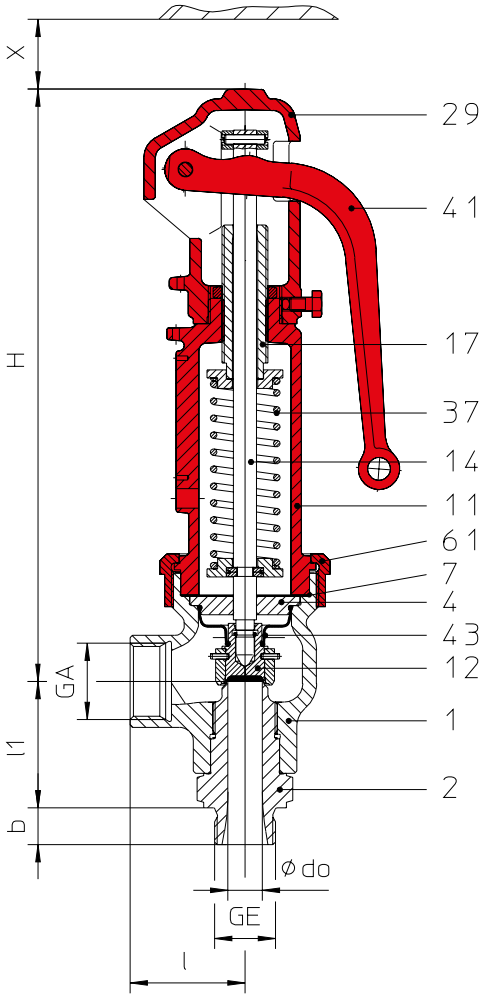



**Fig. ... .945**
**open lifting device, closed bonnet**

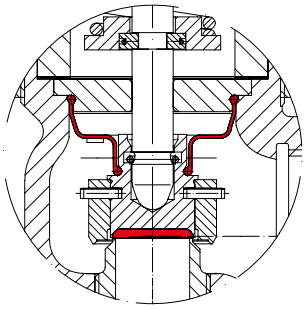


**Fig. ... .945**
**EPDM-disc, soft seal insert; EPDM-bellows**

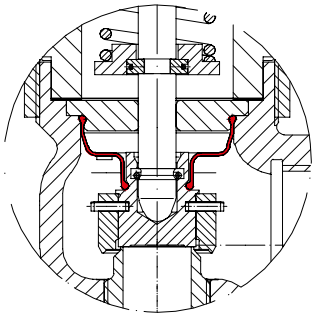


**Fig. ... .946**
**Disc metal seat, EPDM-Bellows seal**

| Figure | Nominal pressure | Material | Nominal diameter (inlet) | Temperature range | Thread |
|---|---|---|---|---|---|
| 25.945 | PN40 | EN-JS1049 | DN15 - 25 | -10°C to +120°C | DIN ISO 228 Part 1 |
| 25.946 | PN40 | EN-JS1049 | DN15 - 25 | -10°C to +120°C | DIN ISO 228 Part 1 |

| | Fig. 945 | Fig. 946 |
|---|---|---|
| **Construction** | | |
| | Standard safety valve, spring loaded, direct loaded disc with EPDM insert, EPDM-bellows, closed spring bonnet with control hole, open lifting device, stainless steel seat and spindle | Standard safety valve, spring-/weight loaded, direct loaded with EPDM-bellows, closed bonnet with control hole, open lifting device, stainless steel seat and spindle |
| **Application** | | |
| | acc. to DIN EN 12828 Heating systems in buildings | For low pressure steamgenerators up to 1 bar, acc. to DIN 4750 and DIN EN 12828 Heating systems in buildings |
| **Requirement** | | |
| | acc. to DIN EN ISO 4126-1 / TRD 721 Part 6 | acc. to DIN EN ISO 4126-1 / TRD 721 Part 5 |
| **Type-test approval** | | |
| | Spring loaded: TÜV · SV · . . -997 · D/G/H | Low pressure steam - safety valve: TÜV · SV · . . -997 · D |
| **Sizing** | | |
| | Acc. to TRD 721 Part 6.2.5, refer to "Capacity". | refer to "Capacity" |
| **Order data:** | | |
| | ARI-SAFE-TC - spring loaded, Figure ....., DN ... / ..., PN .. / .., Material ....., Set pressure .... barg | ARI-SAFE-TC - Low pressure steam - safety valve, Figure ..., DN ... / ..., PN .. / ..., Material ..., Set pressure ...barg |

| Parts | | | |
|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 25.945/946** |
| 1 | | Body | EN-GJS-400-18U-LT, EN-JS1049 |
| 2 | | Screwed seat | X6CrNiMoTi17-12-2, 1.4571 |
| 4 | | Spindle guide | X20Cr13+QT, 1.4021+QT |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) |
| 11 | | Bonnet, closed | EN-GJS-400-18U-LT, EN-JS1049 |
| 12 | x | Disc | X6CrNiMoTi17-12-2, 1.4571 |
| 14 | x | Spindle | X20Cr13+QT, 1.4021+QT |
| 17 | | Adjusting screw | X20Cr13+QT, 1.4021+QT |
| 29 | | Cap, open | EN-GJS-400-18U-LT, EN-JS1049 |
| 37 | x | Spring | FDSiCr |
| 41 | | Lever, open | EN-GJS-400-18U-LT, EN-JS1049 |
| 43 | | Bellows (optional) | EPDM 70 Shore A |
| 61 | | Coupling | X6CrNiMoTi17-12-2, 1.4571 |
| | └ Spare parts | | |

| **DN (inlet)** | | **15** | **20** | **25** |
|---|---|---|---|---|
| **Spring ranges: Standard design** | | | | |
| Low pressure steam - safety valve Fig. 946 | (barü) | 0,3 - 0,6 | 0,3 - 0,5 | 0,2 - 0,4 |
| | (barü) | > 0,6 - 0,9 | > 0,5 - 0,7 | > 0,4 - 0,9 |
| | (barü) | > 0,9 - 1 | > 0,7 - 1 | > 0,9 - 1 |
| Spring loaded Fig. 945 | (barü) | > 1 - 1,35 | > 1 - 1,35 | > 1 - 1,5 |
| | (barü) | > 1,35 - 2,2 | > 1,35 - 2,1 | > 1,5 - 2,1 |
| | (barü) | > 2,2 - 3,3 | > 2,1 - 3 | > 2,1 - 2,6 |
| | (barü) | > 3,3 - 4,5 | > 3 - 4 | > 2,6 - 3,2 |
| | (barü) | > 4,5 - 5,5 | > 4 - 5,5 | > 3,2 - 4,2 |
| | (barü) | > 5,5 - 6,7 | > 5,5 - 7,7 | > 4,2 - 6,2 |
| | (barü) | > 6,7 - 8,2 | > 7,7 - 11,5 | > 6,2 - 8 |
| | (barü) | > 8,2 - 11 | > 11,5 - 15 | > 8 - 10 |
| | (barü) | > 11 - 13 | > 15 - 16 | > 10 - 15,5 |
| | (barü) | > 13 - 16 | | > 15,5 - 16 |

Information / restriction of technical rules need to be observed!

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN (inlet) | | 15 | 20 | 25 | |
|---|---|---|---|---|---|
| **Dimensions** | | | | | |
| G | (inch) | 1/2" x 3/4" | 3/4" x 1" | 1" x 1 1/4" | 1" x 1 1/2" |
| d0 | (mm) | 12 | 15 | 18 | 18 |
| A0 | ($mm^2$) | 113 | 177 | 254 | 254 |
| GE | (inch) | 1/2" | 3/4" | 1" | 1" |
| GA | (inch) | 3/4" | 1" | 1 1/4" | 1 1/2" |
| b | (mm) | 15 | 16 | 18 | 18 |
| l | (mm) | 50 | 50 | 50 | 50 |
| l1 | (mm) | 53 | 55 | 58 | 58 |
| H | (mm) | 260 | 260 | 260 | 260 |
| X | (mm) | 120 | 120 | 120 | 120 |
| **Weights** | | | | | |
| standard | (kg) | 3,5 | 3,5 | 3,8 | 3,8 |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-2** | | | **-60°C to <-10°C*** | **-10°C to 120°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EN-JS1049 | PN40 | (bar) | on request | 40 | 38,8 | 36,8 | 34,8 | 32 | 28 | -- | -- |

| **Certified coefficient of discharge Kdr** (Values for D/G/H variable: < 3,5 bar) | | | | |
|---|---|---|---|---|
| **DN** | | **15** | **20** | **25** |
| TÜV · SV · . . - 997 · D/G/H | (bar) | 0,64 | 0,60 | 0,75 |

**Capacity water incl. 10% overpressure**

| **Sizing safety valves for the volume flow of water expansion** (DIN 4751 T2 - item 8.1 / DIN EN 12828 - item E.3) | | | | | | |
|---|---|---|---|---|---|---|
| **Differential pressure** | | | | **DN (inlet)** | | |
| | | | | **15** | **20** | **25** |
| 1 | (barg) | Water 20°C (kg/h) | (kg/h) | 2700 | 3900 | 7000 |
| 2 | (barg) | | (kg/h) | 3800 | 5600 | 10000 |
| 3 | (barg) | | (kg/h) | 4700 | 6800 | 12400 |
| 4 | (barg) | | (kg/h) | 5400 | 7900 | 14300 |
| 5 | (barg) | | (kg/h) | 6000 | 8800 | 16000 |
| 6 | (barg) | | (kg/h) | 6600 | 9700 | 17600 |
| 7 | (barg) | | (kg/h) | 7200 | 10400 | 19000 |
| 8 | (barg) | | (kg/h) | 7600 | 11200 | 20300 |
| 9 | (barg) | | (kg/h) | 8100 | 11800 | 21600 |
| 10 | (barg) | | (kg/h) | 8600 | 12500 | 22700 |
| 11 | (barg) | | (kg/h) | 9000 | 13000 | 23800 |
| 12 | (barg) | | (kg/h) | 9400 | 13700 | 24900 |
| 13 | (barg) | | (kg/h) | 9800 | 14200 | 25900 |
| 14 | (barg) | | (kg/h) | 10000 | 14800 | 26900 |
| 15 | (barg) | | (kg/h) | 10500 | 15300 | 27900 |
| 16 | (barg) | | (kg/h) | 10800 | 15800 | 28800 |
| Sizing: 1 l/h ≙ 1 kW | | | | | | |

**Fig. 945: Capacity saturated steam incl. 10% overpressure**

| Calculated acc. to TRD 721 Part 6 and AD2000-A2 | | | | | | |
|---|---|---|---|---|---|---|
| **Set pressure** | | | | **DN (inlet)** | | |
| | | | | **15** | **20** | **25** |
| 1 | (barg) | Saturated steam (kg/h) / **Heating capacity (kW)** | (kg/h) | 72 | 103 | 188 |
| | | | **(kW)** | **44** | **63** | **115** |
| 1,5 | (barg) | | (kg/h) | 97 | 136 | 254 |
| | | | **(kW)** | **58** | **82** | **154** |
| 2 | (barg) | | (kg/h) | 120 | 172 | 320 |
| | | | **(kW)** | **72** | **103** | **191** |
| 2,5 | (barg) | | (kg/h) | 142 | 205 | 376 |
| | | | **(kW)** | **85** | **122** | **224** |
| 3 | (barg) | | (kg/h) | 162 | 238 | 430 |
| | | | **(kW)** | **96** | **140** | **253** |
| 3,5 | (barg) | | (kg/h) | 185 | 272 | 489 |
| | | | **(kW)** | **109** | **159** | **287** |
| 4 | (barg) | | (kg/h) | 206 | 300 | 545 |
| | | | **(kW)** | **120** | **176** | **316** |
| 4,5 | (barg) | | (kg/h) | 226 | 331 | 596 |
| | | | **(kW)** | **131** | **192** | **346** |
| 5 | (barg) | | (kg/h) | 246 | 360 | 650 |
| | | | **(kW)** | **142** | **208** | **375** |
| 5,5 | (barg) | | (kg/h) | 267 | 391 | 703 |
| | | | **(kW)** | **153** | **224** | **403** |
| 6 | (barg) | | (kg/h) | 285 | 420 | 755 |
| | | | **(kW)** | **164** | **240** | **432** |
| 6,5 | (barg) | | (kg/h) | 307 | 450 | 810 |
| | | | **(kW)** | **174** | **256** | **460** |
| 7 | (barg) | | (kg/h) | 325 | 480 | 860 |
| | | | **(kW)** | **185** | **271** | **488** |
| 7,5 | (barg) | | (kg/h) | 348 | 509 | 917 |
| | | | **(kW)** | **195** | **286** | **516** |
| 8 | (barg) | | (kg/h) | 370 | 540 | 970 |
| | | | **(kW)** | **206** | **302** | **543** |
| 9 | (barg) | | (kg/h) | 410 | 600 | 1075 |
| | | | **(kW)** | **227** | **332** | **598** |
| 10 | (barg) | | (kg/h) | 450 | 655 | 1180 |
| | | | **(kW)** | **247** | **362** | **651** |
| 11 | (barg) | | (kg/h) | 490 | 715 | 1290 |
| | | | **(kW)** | **267** | **391** | **705** |
| 12 | (barg) | | (kg/h) | 530 | 775 | 1395 |
| | | | **(kW)** | **287** | **421** | **757** |
| 13 | (barg) | | (kg/h) | 570 | 835 | 1500 |
| | | | **(kW)** | **307** | **449** | **809** |
| 14 | (barg) | | (kg/h) | 610 | 890 | 1605 |
| | | | **(kW)** | **326** | **478** | **860** |
| 15 | (barg) | | (kg/h) | 650 | 950 | 1710 |
| | | | **(kW)** | **346** | **506** | **911** |
| 16 | (barg) | | (kg/h) | 690 | 1010 | 1820 |
| | | | **(kW)** | **365** | **534** | **962** |

**Fig. 946: Capacity saturated steam incl. 10% overpressure**

| **Set pressure** | | | | **DN (inlet)** | | |
|---|---|---|---|---|---|---|
| | | | | **15** | **20** | **25** |
| 0,2 | (barg) | Saturated steam (kg/h) | (kg/h) | -- | -- | 67 |
| 0,3 | (barg) | | (kg/h) | 32 | 43 | 86 |
| 0,4 | (barg) | | (kg/h) | 38 | 53 | 103 |
| 0,5 | (barg) | | (kg/h) | 44 | 62 | 117 |
| 0,6 | (barg) | | (kg/h) | 50 | 71 | 133 |
| 0,7 | (barg) | | (kg/h) | 56 | 78 | 146 |
| 0,8 | (barg) | | (kg/h) | 62 | 86 | 163 |
| 0,9 | (barg) | | (kg/h) | 67 | 95 | 175 |
| 1 | (barg) | | (kg/h) | 72 | 103 | 188 |

Conversionrates: 1 kW = 860 kcal/h* = 0,86 Mcal/h* = 3,6 MJ/h
1 Mcal/h* = 1000 kcal/h* = 1,163 kW

* not lawful units

## ARI-SAFE-TCP - Standard safety valve D/G/F

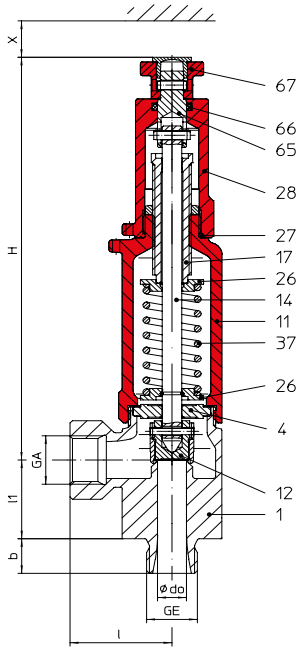



Fig. ... .961
closed lifting device

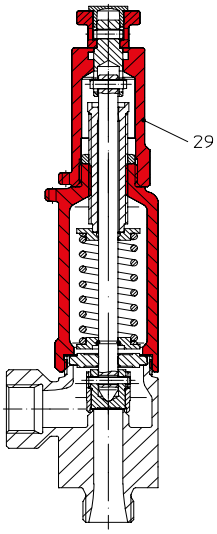



Fig. ... .962
open lifting device

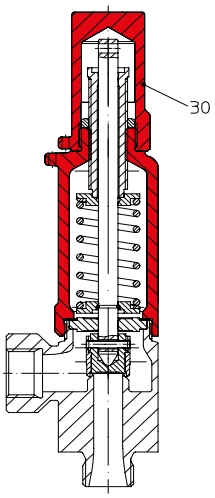



Fig. ... .963
gastight cap

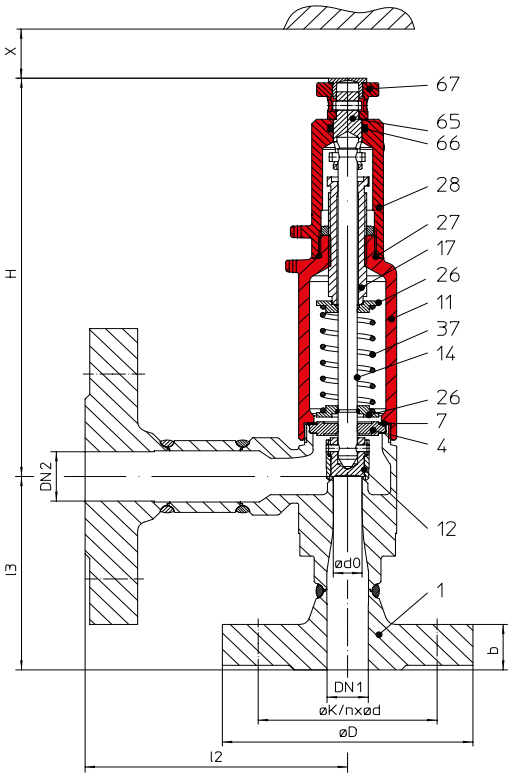



Fig. ... .961 / 962 / 963
optional with flange

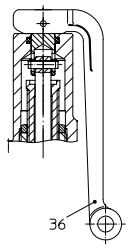



Fig. ... .961 / 962 / 963
optional with lever

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Connection |
|---|---|---|---|---|---|
| 67.961 / 962 / 963 | PN100 | 1.4581/EN-JS1049 | DN15 - 25 | -10°C to +300°C (up to +400°C on request) | Thread DIN ISO 228 Part 1 |
| 57.961 / 963 | PN100 | 1.4581 | DN15 - 25 | -60°C to +300°C (up to +400°C on request) | Thread DIN ISO 228 Part 1 |
| 67.961 / 962 / 963....1 | PN100* | 1.4581/1.4571/EN-JS1049 | DN15- 25 | -10°C to +300°C (up to +400°C on request) | Flange DIN EN 1092-1 |
| 57.961 / 963....1 | PN100* | 1.4581/1.4571 | DN15- 25 | -10°C to +300°C (up to +400°C on request) | Flange DIN EN 1092-1 |

* optional flange ANSI600 EN 1759-1

| **Construction** | | |
|---|---|---|
| Safety valve, spring loaded, direct loaded | | |
| **Requirement** | | |
| Acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2 | | |
| **Type-test approval** | | |
| Standard safety valve: | Fig. 961/962/963 | TÜV · SV · . . -1041 · D/G |
| Standard safety valve: | Fig. 961/963 | TÜV · SV · . . -1041 · F |

| **Sizing** | |
|---|---|
| for steam, air and water refer to capacity tables, calculations acc. to EN ISO 4126-1, TRD 421 and AD2000-A2 | |
| **Details required** | |
| Medium gasform: | Mass flow (kg/h), molar mass (kg/kmol), Isotropic exponent, temperature (°C), set pressure (barg), back pressure (barg) |
| Medium liquid: | Mass flow (kg/h), density (kg/m$^3$), viscosity, temperature (°C), set pressure (barg), back pressure (barg) |
| **Order data:** | |
| ARI-SAFE-TCP - Safety valve, Figure ....., DN ... / ..., PN .. / .., Material ....., Set pressure .... bar | |

| | **standard: without metal bellows** |
|---|---|
| **Superimposed back pressure** | no backpressure allowed |
| **Built up back pressure** | max. 10% from set pressure (higher on request) |

| Parts | | | | |
|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 67.961/962/963** | **Fig. 57.961/963** |
| 1 | | Body | GX5CrNiMoN19-11-2, 1.4581 | |
| 4 | | Spindle guide | X6CrNiMoTi17-12-2, 1.4571 | |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | |
| 11 | | Bonnet, closed | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMoN19-11-2, 1.4581 |
| 12 | | Disc | X6CrNiMoTi17-12-2, 1.4571 | |
| 14 | x | Spindle | X6CrNiMoTi17-12-2, 1.4571 | |
| 17 | | Adjusting screw | X2CrNiMo17-12-2, 1.4404 | |
| 27 | x | O-ring | FPM | |
| 28 | | Cap, closed | GX5CrNiMoN19-11-2, 1.4581 | |
| 29 | | Cap, open | GX5CrNiMoN19-11-2, 1.4581 | |
| 30 | | Cap, gastight | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMoN19-11-2, 1.4581 |
| 36 | | Lever, closed<br>(optional: Fig. ... .961 / Fig. ... .962) | EN AC-4420 (Al) | |
| 37 | x | Spring | FDSiCr | X10CrNi18-8, 1.4310 |
| 65 | | Coupling | X6CrNiMoTi17-12-2, 1.4571 | |
| 66 | | O-ring | FPM | |
| 67 | | Lift button | X6CrNiMoTi17-12-2, 1.4571 | |
| | └ Spare parts | | | |

| DN | | 15 | 20 | 25 |
|---|---|---|---|---|
| **Spring ranges: Standard design** | | | | |
| Standard safety valve<br>Fig. 961/962/963 | (barg) | 0,2 - 0,25 | | |
| | (barg) | > 0,25 - 0,5 | | |
| | (barg) | > 0,5 - 1 | | |
| | (barg) | > 1 - 1,4 | | |
| | (barg) | > 1,4 - 2,95 | | |
| | (barg) | > 2,95 - 4,9 | | |
| | (barg) | > 4,9 - 12 | | |
| | (barg) | > 12 - 20 | | |
| | (barg) | > 20 - 27 | | |
| | (barg) | > 27 - 35 | | |
| | (barg) | > 35 - 45 | | |
| | (barg) | > 45 - 59 | | |
| | (barg) | > 59 - 100 | | |

Information / restriction of technical rules need to be observed!

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN | | 15 | | | 20 | | | 25 |
|---|---|---|---|---|---|---|---|---|
| NPS | | 1/2 x 1/2 | 1/2 x 3/4 | | 3/4 x 1/2 | 3/4 x 3/4 | 3/4 x 1 | 1 x 1 |
| DN1 / DN2 | | DN 15 / 15 | DN 15 / 20 | DN15 / 25 | | DN 20 / 20 | DN 20 / 25 | DN 25 / 25 |
| **Dimensions** | | | | | | | | |
| d0 | (mm) | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| A0 | ($mm^2$) | 113 | 113 | 113 | 113 | 113 | 113 | 113 |
| GE | (inch) | 1/2 | 1/2 | -- | 3/4 | 3/4 | 3/4 | 1 |
| GA | (inch) | 1/2 | 3/4 | -- | 1/2 | 3/4 | 1 | 1 |
| b | (mm) | 15 | 15 | -- | 16 | 16 | 16 | 18 |
| l | (mm) | 42 | 47 | -- | 42 | 47 | 50 | 50 |
| l1 | (mm) | 34 | 34 | -- | 34 | 34 | 34 | 34 |
| l2 | (mm) | 110 | 110 | 110 | -- | 110 | 110 | 110 |
| l3 | (mm) | 85 | 85 | 85 | -- | 85 | 85 | 120 |
| H | (mm) | 189 | 189 | 110 | 189 | 189 | 189 | 189 |
| X | (mm) | 100 | 100 | 85 | 100 | 100 | 100 | 100 |
| **Weights** | | | | | | | | |
| standard | (kg) | 1,2 | 1,2 | -- | 1,2 | 1,2 | 1,2 | 1,2 |
| optional: flange design | (kg) | 3,7 | 4,5 | 5,0 | -- | 5,4 | 5,9 | 6,6 |

| DN | | 15 | 20 | 25 |
|---|---|---|---|---|
| **Flange acc. to DIN EN 1092-1** | | | | |
| ØD | (mm) | 105 | 130 | 140 |
| b | (mm) | 20 | 22 | 24 |
| **Standard-Flangeholes** | | | | |
| ØK | (mm) | 75 | 90 | 100 |
| n x Ød | (mm) | 4x14 | 4x18 | 4x18 |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

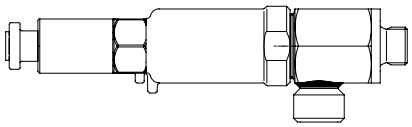
| acc. to DIN EN 1092-1 | | | -60°C to <-10°C | -10°C to 100°C | 150°C | 200°C | 250°C | 300°C | 350°C | 400°C | 450°C |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4581 | PN100 | (bar) | 75 | 100 | 98 | 93,3 | 88,5 | 83,3 | 80,4 | 78 | -- |

| **Certified coefficient of discharge Kdr** (Values for D/G variable: < 4 bar) | | | |
|---|---|---|---|
| DN | 15 | 20 | 25 |
| TÜV · SV · . . - 1041 · D/G | 0,30 | | |
| TÜV · SV · . . - 1041 · F | 0,23 | | |

**Capacity saturated steam / Air / Water (incl. 10% overpressure)**

| DN | | | | 15 | 20 | 25 | 15 | 20 | 25 | 15 | 20 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | | DIN EN 228-1 | (inch) | G1/2 x 1/2 | G3/4 x 1/2 | G1 x 1 | G1/2 x 1/2 | G3/4 x 1/2 | G1 x 1 | G1/2 x 1/2 | G3/4 x 1/2 | G1 x 1 |
| | | | (inch) | G1/2 x 3/4 | G3/4 x 3/4 | | G1/2 x 3/4 | G3/4 x 3/4 | | G1/2 x 3/4 | G3/4 x 3/4 | |
| | | | (inch) | | G3/4 x 1 | | | G3/4 x 1 | | | G3/4 x 1 | |
| | | DIN EN 1092-1 | (mm) | DN15/15 | DN20/20 | DN25/25 | DN15/15 | DN20/20 | DN25/25 | DN15/15 | DN20/20 | DN25/25 |
| | | | (mm) | DN15/20 | DN20/25 | | DN15/20 | DN20/25 | | DN15/20 | DN20/25 | |
| | | | (mm) | DN15/25 | | | DN15/25 | | | DN15/25 | | |
| do | | | (mm) | 12 | | | 12 | | | 12 | | |
| Set pressure | | | | Saturated steam (kg/h) | | | Air 0°C and 1,013 bara ($Nm^3/h$) | | | Water 20°C (t/h) | | |
| ↓ max. set pressure stainless steel version | 0,2 | | (barg) | 14 | 14 | 14 | 16 | 16 | 16 | 0,62 | 0,62 | 0,62 |
| | 0,5 | | (barg) | 24 | 24 | 24 | 29 | 29 | 29 | 0,98 | 0,98 | 0,98 |
| | 1 | | (barg) | 35 | 35 | 35 | 44 | 44 | 44 | 1,39 | 1,39 | 1,39 |
| | 2 | | (barg) | 56 | 56 | 56 | 71 | 71 | 71 | 1,97 | 1,97 | 1,97 |
| | 3 | | (barg) | 75 | 75 | 75 | 96 | 96 | 96 | 2,41 | 2,41 | 2,41 |
| | 4 | | (barg) | 96 | 96 | 96 | 125 | 125 | 125 | 2,78 | 2,78 | 2,78 |
| | 5 | | (barg) | 116 | 116 | 116 | 150 | 150 | 150 | 3,11 | 3,11 | 3,11 |
| | 6 | | (barg) | 135 | 135 | 135 | 176 | 176 | 176 | 3,41 | 3,41 | 3,41 |
| | 7 | | (barg) | 153 | 153 | 153 | 201 | 201 | 201 | 3,68 | 3,68 | 3,68 |
| | 8 | | (barg) | 172 | 172 | 172 | 227 | 227 | 227 | 3,93 | 3,93 | 3,93 |
| | 9 | | (barg) | 191 | 191 | 191 | 252 | 252 | 252 | 4,17 | 4,17 | 4,17 |
| | 10 | | (barg) | 210 | 210 | 210 | 277 | 277 | 277 | 4,40 | 4,40 | 4,40 |
| | 11 | | (barg) | 229 | 229 | 229 | 303 | 303 | 303 | 4,61 | 4,61 | 4,61 |
| | 12 | | (barg) | 248 | 248 | 248 | 328 | 328 | 328 | 4,82 | 4,82 | 4,82 |
| | 13 | | (barg) | 267 | 267 | 267 | 354 | 354 | 354 | 5,01 | 5,01 | 5,01 |
| | 14 | | (barg) | 286 | 286 | 286 | 379 | 379 | 379 | 5,20 | 5,20 | 5,20 |
| | 15 | | (barg) | 304 | 304 | 304 | 405 | 405 | 405 | 5,39 | 5,39 | 5,39 |
| | 16 | | (barg) | 323 | 323 | 323 | 430 | 430 | 430 | 5,56 | 5,56 | 5,56 |
| | 17 | | (barg) | 342 | 342 | 342 | 455 | 455 | 455 | 5,73 | 5,73 | 5,73 |
| | 18 | | (barg) | 361 | 361 | 361 | 481 | 481 | 481 | 5,90 | 5,90 | 5,90 |
| | 19 | | (barg) | 380 | 380 | 380 | 506 | 506 | 506 | 6,06 | 6,06 | 6,06 |
| | 20 | | (barg) | 399 | 399 | 399 | 532 | 532 | 532 | 6,22 | 6,22 | 6,22 |
| | 25 | | (barg) | 494 | 494 | 494 | 659 | 659 | 659 | 6,95 | 6,95 | 6,95 |
| | 30 | | (barg) | 590 | 590 | 590 | 786 | 786 | 786 | 7,62 | 7,62 | 7,62 |
| | 35 | | (barg) | 686 | 686 | 686 | 913 | 913 | 913 | 8,23 | 8,23 | 8,23 |
| | 40 | | (barg) | 784 | 784 | 784 | 1040 | 1040 | 1040 | 8,79 | 8,79 | 8,79 |
| | 45 | | (barg) | 883 | 883 | 883 | 1165 | 1165 | 1165 | 9,33 | 9,33 | 9,33 |
| | 50 | | (barg) | 983 | 983 | 983 | 1295 | 1295 | 1295 | 9,83 | 9,83 | 9,83 |
| | 55 | | (barg) | 1085 | 1085 | 1085 | 1420 | 1420 | 1420 | 10,31 | 10,31 | 10,31 |
| | 60 | | (barg) | 1185 | 1185 | 1185 | 1550 | 1550 | 1550 | 10,77 | 10,77 | 10,77 |
| | 65 | | (barg) | 1290 | 1290 | 1290 | 1675 | 1675 | 1675 | 11,21 | 11,21 | 11,21 |
| | 70 | | (barg) | 1400 | 1400 | 1400 | 1800 | 1800 | 1800 | 11,63 | 11,63 | 11,63 |
| | 75 | | (barg) | 1500 | 1500 | 1500 | 1930 | 1930 | 1930 | 12,04 | 12,04 | 12,04 |
| | 80 | | (barg) | | | | 2055 | 2055 | 2055 | 12,44 | 12,44 | 12,44 |
| | 85 | | (barg) | | | | 2185 | 2185 | 2185 | 12,82 | 12,82 | 12,82 |
| | 90 | | (barg) | | | | 2310 | 2310 | 2310 | 13,19 | 13,19 | 13,19 |
| | 95 | | (barg) | | | | 2438 | 2438 | 2438 | 13,5 | 13,5 | 13,5 |
| | 100 | | (barg) | | | | 2565 | 2565 | 2565 | 13,76 | 13,76 | 13,76 |

## ARI-SAFE-TCS - Standard safety valve D/G/F



**ALSO FOR HORIZONTAL APPLICATION**

(please indicate installation position horizontal/vertical up to 5 bar set pressure with your order)

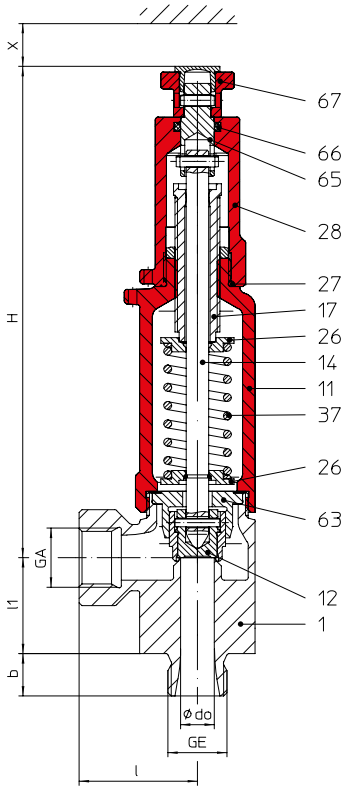



**Fig. ... .951**
**closed lifting device**

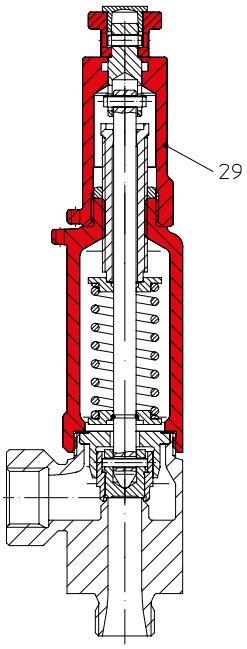



**Fig. ... .952**
**open lifting device**

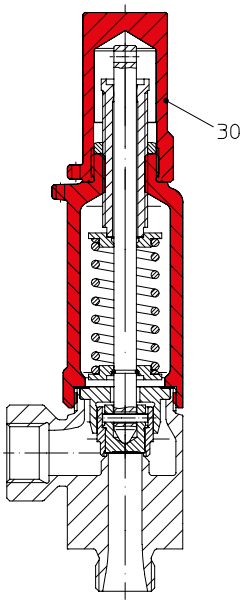



**Fig. ... .953**
**gastight cap**

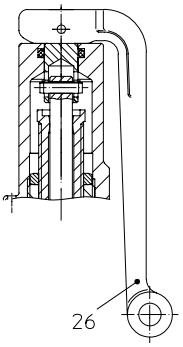



**Fig. ... .951 / Fig. ... .952**
**optional with lever**

| Figure | Nominal pressure | Material | Nominal diameter | Temperature range | Thread |
|---|---|---|---|---|---|
| 67.951 / 952 / 953 | PN100 | 1.4581/EN-JS1049 | DN15 - 25 | -10°C to +300°C (up to +400°C on request) | DIN ISO 228 Part 1 |
| 57.951 / 953 | PN100 | 1.4581 | DN15 - 25 | -60°C to +300°C (up to +400°C on request) | DIN ISO 228 Part 1 |
| Flange design on request. | | | | | |

| **Construction** | | |
|---|---|---|
| Safety valve, spring loaded, direct loaded | | |
| **Requirement** | | |
| acc. to EN ISO 4126-1, VdTÜV-leaflet 100, AD2000-A2 | | |
| **Type-test approval** | | |
| Standard safety valve: | Fig. 951/952/953 | TÜV · SV · . . -1041 · D/G |
| Standard safety valve: | Fig. 951/953 | TÜV · SV · . . -1041 · F |

| **Sizing** | |
|---|---|
| for steam, air and water refer to capacity tables, calculations acc. to EN ISO 4126-1, TRD 421 and AD2000-A2 | |
| **Details required** | |
| Medium gasform: | Mass flow (kg/h), molar mass (kg/kmol), Isotropic exponent, temperature (°C), set pressure (barg), back pressure (barg) |
| Medium liquid: | Mass flow (kg/h), density (kg/m$^3$), viscosity, temperature (°C), set pressure (barg), back pressure (barg) |
| **Order data:** | |
| ARI-SAFE-TCS - Safety valve, Figure ....., DN ... / ..., PN .. / .., Material ....., Set pressure .... bar, Installation position .... | |

| | **standard: without metal bellows** |
|---|---|
| **Superimposed back pressure** | no backpressure allowed |
| **Built up back pressure** | max. 10% from set pressure (higher on request) |

| Parts | | | | |
|---|---|---|---|---|
| **Pos.** | **Sp.p.** | **Description** | **Fig. 67.961/962/963** | **Fig. 57.961/963** |
| 1 | | Body | GX5CrNiMoN19-11-2, 1.4581 | |
| 7 | x | Gasket | Pure graphite (CrNi laminated with graphite) | |
| 11 | | Bonnet, closed | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMoN19-11-2, 1.4581 |
| 12 | | Disc | X6CrNiMoTi17-12-2, 1.4571 | |
| 14 | x | Spindle | X6CrNiMoTi17-12-2, 1.4571 | |
| 17 | | Adjusting screw | X2CrNiMo17-12-2, 1.4404 | |
| 27 | | O-ring | FPM | |
| 28 | | Cap, closed | GX5CrNiMoN19-11-2, 1.4581 | |
| 29 | | Cap, open | GX5CrNiMoN19-11-2, 1.4581 | |
| 30 | | Cap, gastight | EN-GJS-400-18U-LT, EN-JS1049 | GX5CrNiMoN19-11-2, 1.4581 |
| 36 | | Lever, closed<br>(optional: Fig. ... .951 / Fig. ... .952) | EN AC-4420 (Al) | |
| 37 | x | Spring | FDSiCr | X10CrNi18-8, 1.4310 |
| 63 | | Guide bush | X6CrNiMoTi17-12-2, 1.4571 | |
| 65 | | Coupling | X6CrNiMoTi17-12-2, 1.4571 | |
| 66 | | O-ring | FPM | |
| 67 | | Lift button | X6CrNiMoTi17-12-2, 1.4571 | |
| | └ Spare parts | | | |

| **DN** | **15** | **20** | **25** |
|---|---|---|---|

| **Spring ranges: Standard design** | | |
|---|---|---|
| Standard safety valve<br>Fig. 951/952/953 | (barg) | 0,5 |
| | (barg) | > 0,5 - 1 |
| | (barg) | > 1 - 1,4 |
| | (barg) | > 1,4 - 2,95 |
| | (barg) | > 2,95 - 4,9 |
| | (barg) | > 4,9 - 12 |
| | (barg) | > 12 - 20 |
| | (barg) | > 20 - 27 |
| | (barg) | > 27 - 35 |
| | (barg) | > 35 - 45 |
| | (barg) | > 45 - 59 |
| | (barg) | > 59 - 100 |

Information / restriction of technical rules need to be observed!

The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

| DN | | 15 | | 20 | | | 25 |
|---|---|---|---|---|---|---|---|
| **Dimensions** | | | | | | | |
| G | (inch) | 1/2" x 1/2" | 1/2" x 3/4" | 3/4" x 1/2" | 3/4" x 3/4" | 3/4" x 1" | 1" x 1" |
| d0 | (mm) | 12 | 12 | 12 | 12 | 12 | 12 |
| A0 | ($mm^2$) | 113 | 113 | 113 | 113 | 113 | 113 |
| GE | (inch) | 1/2" | 1/2" | 3/4" | 3/4" | 3/4" | 1" |
| GA | (inch) | 1/2" | 3/4" | 1/2" | 3/4" | 1" | 1" |
| b | (mm) | 15 | 15 | 16 | 16 | 16 | 18 |
| l | (mm) | 42 | 47 | 42 | 47 | 50 | 50 |
| l1 | (mm) | 34 | 34 | 34 | 34 | 34 | 34 |
| H | (mm) | 189 | 189 | 189 | 189 | 189 | 189 |
| X | (mm) | 100 | 100 | 100 | 100 | 100 | 100 |
| **Weights** | | | | | | | |
| standard | (kg) | 1,2 | 1,2 | 1,2 | 1,2 | 1,2 | 1,2 |

| **Pressure-temperature-ratings** | Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart. |
|---|---|

| **acc. to DIN EN 1092-1** | | | **-60°C to <-10°C** | **-10°C to 100°C** | **150°C** | **200°C** | **250°C** | **300°C** | **350°C** | **400°C** | **450°C** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.4581 | PN100 | (bar) | 75 | 100 | 98 | 93,3 | 88,5 | 83,3 | 80,4 | 78 | -- |

| **Certified coefficient of discharge Kdr** (Values for D/G variable: < 3 bar) | | | |
|---|---|---|---|
| **DN** | **15** | **20** | **25** |
| TÜV · SV · . . - 1041 · D/G | 0,26 | | |
| TÜV · SV · . . - 1041 · F | 0,19 | | |

**Capacity saturated steam / air / water (incl. 10% overpressure)**

| DN | | | 15 | 20 | 25 | 15 | 20 | 25 | 15 | 20 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Connections | | (inch) | G1/2" x 1/2" | G3/4" x 1/2" | G1" x 1" | G1/2" x 1/2" | G3/4" x 1/2" | G1" x 1" | G1/2" x 1/2" | G3/4" x 1/2" | G1" x 1" |
| | | (inch) | G1/2" x 3/4" | G3/4" x 3/4" | | G1/2" x 3/4" | G3/4" x 3/4" | | G1/2" x 3/4" | G3/4" x 3/4" | |
| | | | | G3/4" x 1" | | | G3/4" x 1" | | | G3/4" x 1" | |
| do | | (mm) | 12 | | | 12 | | | 12 | | |
| Set pressure | | | Saturated steam (kg/h) | | | Air 0°C and 1,013 bara ($Nm^3/h$) | | | Water 20°C (t/h) | | |
| ↓ horizontal application | 0,5 | (barg) | *20* | *20* | *20* | *24* | *24* | *24* | *0,81* | *0,81* | *0,81* |
| | 1 | (barg) | *30* | *30* | *30* | *37* | *37* | *37* | *1,15* | *1,15* | *1,15* |
| | 2 | (barg) | *48* | *48* | *48* | *62* | *62* | *62* | *1,62* | *1,62* | *1,62* |
| | 3 | (barg) | *68* | *68* | *68* | *86* | *86* | *86* | *1,99* | *1,99* | *1,99* |
| | 4 | (barg) | *84* | *84* | *84* | *108* | *108* | *108* | *2,30* | *2,30* | *2,30* |
| ↓ max. set pressure stainless steel version | 5 | (barg) | 100 | 100 | 100 | 130 | 130 | 130 | 2,57 | 2,57 | 2,57 |
| | 6 | (barg) | 117 | 117 | 117 | 152 | 152 | 152 | 2,81 | 2,81 | 2,81 |
| | 7 | (barg) | 133 | 133 | 133 | 174 | 174 | 174 | 3,04 | 3,04 | 3,04 |
| | 8 | (barg) | 149 | 149 | 149 | 196 | 196 | 196 | 3,25 | 3,25 | 3,25 |
| | 9 | (barg) | 166 | 166 | 166 | 218 | 218 | 218 | 3,45 | 3,45 | 3,45 |
| | 10 | (barg) | 182 | 182 | 182 | 240 | 240 | 240 | 3,63 | 3,63 | 3,63 |
| | 11 | (barg) | 198 | 198 | 198 | 262 | 262 | 262 | 3,81 | 3,81 | 3,81 |
| | 12 | (barg) | 215 | 215 | 215 | 284 | 284 | 284 | 3,98 | 3,98 | 3,98 |
| | 13 | (barg) | 231 | 231 | 231 | 306 | 306 | 306 | 4,14 | 4,14 | 4,14 |
| | 14 | (barg) | 247 | 247 | 247 | 328 | 328 | 328 | 4,3 | 4,3 | 4,3 |
| | 15 | (barg) | 264 | 264 | 264 | 351 | 351 | 351 | 4,45 | 4,45 | 4,45 |
| | 16 | (barg) | 280 | 280 | 280 | 373 | 373 | 373 | 4,59 | 4,59 | 4,59 |
| | 17 | (barg) | 297 | 297 | 297 | 395 | 395 | 395 | 4,74 | 4,74 | 4,74 |
| | 18 | (barg) | 313 | 313 | 313 | 417 | 417 | 417 | 4,87 | 4,87 | 4,87 |
| | 19 | (barg) | 329 | 329 | 329 | 439 | 439 | 439 | 5,01 | 5,01 | 5,01 |
| | 20 | (barg) | 346 | 346 | 346 | 461 | 461 | 461 | 5,14 | 5,14 | 5,14 |
| | 25 | (barg) | 428 | 428 | 428 | 571 | 571 | 571 | 5,74 | 5,74 | 5,74 |
| | 30 | (barg) | 512 | 512 | 512 | 681 | 681 | 681 | 6,29 | 6,29 | 6,29 |
| | 35 | (barg) | 595 | 595 | 595 | 791 | 791 | 791 | 6,80 | 6,80 | 6,80 |
| | 40 | (barg) | 680 | 680 | 680 | 901 | 901 | 901 | 7,26 | 7,26 | 7,26 |
| | 45 | (barg) | 765 | 765 | 765 | 1010 | 1010 | 1010 | 7,71 | 7,71 | 7,71 |
| | 50 | (barg) | 852 | 852 | 852 | 1120 | 1120 | 1120 | 8,12 | 8,12 | 8,12 |
| | 55 | (barg) | 940 | 940 | 940 | 1230 | 1230 | 1230 | 8,52 | 8,52 | 8,52 |
| | 60 | (barg) | 1030 | 1030 | 1030 | 1340 | 1340 | 1340 | 8,90 | 8,90 | 8,90 |
| | 65 | (barg) | 1120 | 1120 | 1120 | 1450 | 1450 | 1450 | 9,26 | 9,26 | 9,26 |
| | 70 | (barg) | 1200 | 1200 | 1200 | 1560 | 1560 | 1560 | 9,61 | 9,61 | 9,61 |
| | 75 | (barg) | 1300 | 1300 | 1300 | 1675 | 1675 | 1675 | 9,95 | 9,95 | 9,95 |
| | 80 | (barg) | | | | 1785 | 1785 | 1785 | 10,27 | 10,27 | 10,27 |
| | 85 | (barg) | | | | 1895 | 1895 | 1895 | 10,59 | 10,59 | 10,59 |
| | 90 | (barg) | | | | 2005 | 2005 | 2005 | 10,90 | 10,90 | 10,90 |
| | 95 | (barg) | | | | 2110 | 2110 | 2110 | 11,16 | 11,16 | 11,16 |
| | 100 | (barg) | | | | 2220 | 2220 | 2220 | 11,36 | 11,36 | 11,36 |

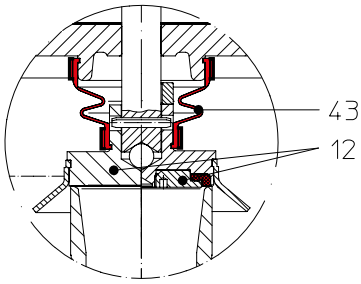
| Soft sealing disc | | | | | | |
|---|---|---|---|---|---|---|
| **Body design** | **Pos.** | **Description** | **P min.** | **Material** | **Temperature range** | **Abbreviation** |
| EN-JL1040, EN-JS1049, 1.0619+N | 12 | Disc | 0,5 bar | X20Cr13+QT, 1.4021+QT / **EPDM** | -40 °C to +150 °C | **E** |
| | | | 0,5 bar | X20Cr13+QT, 1.4021+QT / **FPM Viton (FKM)** | -20 °C to +180 °C | **V** |
| | | | 0,5 bar | X20Cr13+QT, 1.4021+QT / **CR Neoprene** | -30 °C to +100 °C | **N** |
| | | | 1,0 bar [1] | X20Cr13+QT, 1.4021+QT / **SHR** [2] | -20 °C to +220 °C | **S** |
| 1.4408, 1.4581 | 12 | Disc | 0,5 bar | X6CrNiMoTi17-12-2, 1.4571 / **EPDM** | -40 °C to +150 °C | **E** |
| | | | 0,5 bar | X6CrNiMoTi17-12-2, 1.4571 / **FPM Viton (FKM)** | -20 °C to +180 °C | **V** |
| | | | 0,5 bar | X6CrNiMoTi17-12-2, 1.4571 / **CR Neoprene** | -30 °C to +100 °C | **N** |
| | | | 1,0 bar [1] | X6CrNiMoTi17-12-2, 1.4571 / **SHR** [2] | -20 °C to +220 °C | **S** |
| SA216WCB | 12 | Disc | 0,5 bar | SA276 Gr. 440 / **EPDM** | -40 °C to +150 °C | **E** |
| | | | 0,5 bar | SA276 Gr. 440 / **FPM Viton (FKM)** | -20 °C to +180 °C | **V** |
| | | | 0,5 bar | SA276 Gr. 440 / **CR Neoprene** | -30 °C to +100 °C | **N** |
| | | | 1,0 bar | SA276 Gr. 440 / **SHR** | -20 °C to +220 °C | **S** |

(lower values on request)

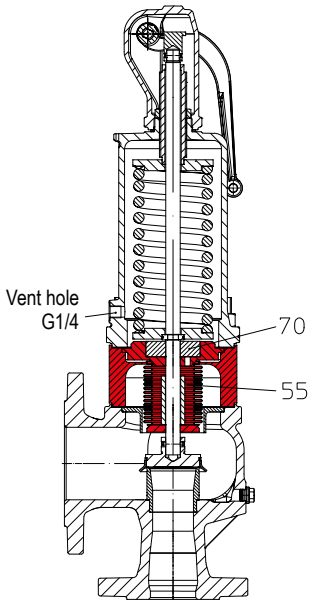
Fig. 950/960 with soft sealing disc max. 40 bar

[1] DN20/32 min. 2,0 bar [2] only Fig. 900

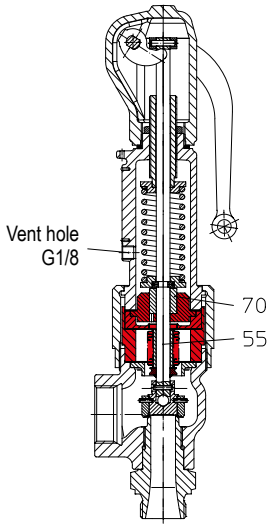
| EPDM-Bellows seal (DN15 - 150) | | | |
|---|---|---|---|
| **Pos.** | **Description** | **Material** | **Temperature range** |
| 43 | EPDM-Bellows seal | EPDM 70 Shore A | -10 °C to +120 °C |



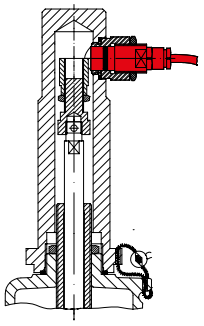

| Balanced stainless steel-bellows (Only for closed version!) | | |
|---|---|---|
| **Pos.** | **Description** | **Material** |
| 55 | Bellows unit | X6CrNiMoTi17-12-2, 1.4571; SA240 / SA479 Gr.316 Ti (SAFE-SN ANSI) |
| 70 | Balanced piston (DN15-100) | X6CrNiMoTi17-12-2, 1.4571; SA479 Gr.316 Ti (SAFE-SN ANSI) |
| Test: German "TA-Luft | | |



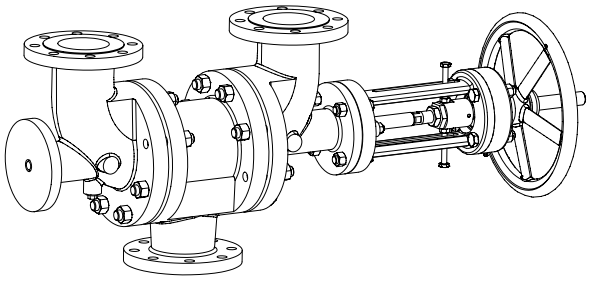

SAFE 900



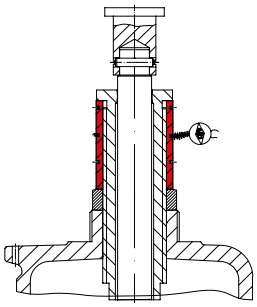

SAFE-TC 940



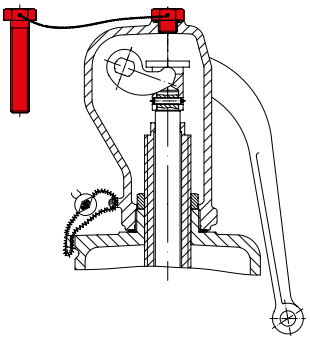
Proximity switch



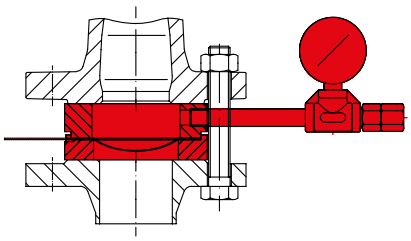
Changeover valve



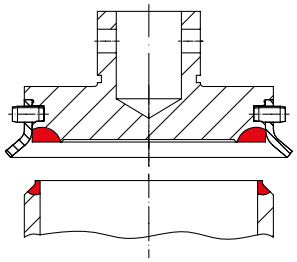
Lock bushing



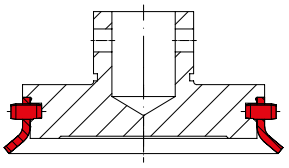
Test gag



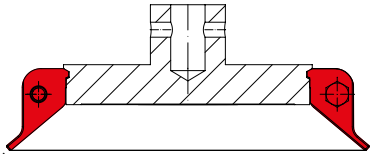
Rupture disc
(Sizing refer to page 40.)



Seat 1.4571 / Stellite No. 21
Disc 1.4571 / Stellite No. 6
Sitz SA479Gr.316Ti / Stellit No. 21 (SAFE-SN ANSI)
Kegel SA479Gr.316Ti / Stellit No. 6 (SAFE-SN ANSI)
removable lifting aid

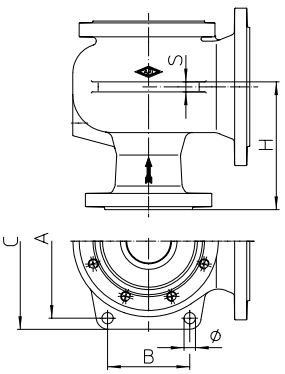


DN15-100



DN125-250

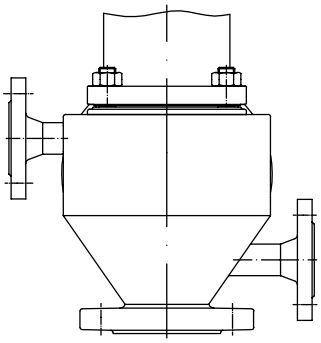
removable lifting aid




| Body-Material | DN1 x DN2 | A | B | C | Ø | S | H |
|---|---|---|---|---|---|---|---|
| | (mmxmm) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) |
| 1.0619+N<br>1.4408 | 50 x 80 | 176 | 70 | 204 | 14 | 12 | 155 |
| | 65 x 100 | 212 | 90 | 242 | | | 175 |
| EN-JL1040<br>EN-JS1049<br>1.0619+N<br>1.4408 | 80 x 125 | 245 | 130 | 280 | 18 | 16 | 205 |
| | 100 x 150 | 295 | 165 | 332 | | | 230 |
| EN-JL1040<br>1.0619+N | 125 x 200 | 318 | 183 | 362 | 22 | 20 | 260 |
| | 150 x 250 | 360 | 200 | 408 | | 22 | 295 |
| EN-JS1049<br>1.0619+N | 125 x 125 | 226 | 110 | 254 | 14 | 10 | 205 |
| | 150 x 150 | 262 | 146 | 298 | 18 | 14 | 232 |
| | 200 x 300 | 465 | 256 | 521 | 26 | 22 | 305 |
| | 250 x 350 | 544 | 300 | 600 | 26 | 24 | 337 |

| Body-Material | NPS | A | B | C | Ø | S | H |
|---|---|---|---|---|---|---|---|
| | (inch) | (mm) | (mm) | (mm) | (mm) | (mm) | (mm) |
| SA216WCB | 2" x 3" | 176 | 70 | 204 | 14 | 12 | 143 |
| | 3" x 4" | 212 | 90 | 242 | | | 162 |
| | 4" x 6" | 295 | 165 | 332 | 18 | 16 | 186 |
| | 6" x 8" | 318 | 183 | 362 | 22 | 20 | 248 |
| | 6" x 10" | 360 | 200 | 405 | 22 | 22 | 251 |

Support tongues, drilled



Heating jacket

| | SAFE Fig. 900 | | | SAFE-SN BR 900 | SAFE-P Fig. 920 | SAFE-TC Fig. 940 | | | SAFE- TCS/ TCP Fig. 950 / 960 |
|---|---|---|---|---|---|---|---|---|---|
| | Fig. 901-912 | Fig. 903 | Fig. 904 | Fig. 901-912 | Fig. 921-924 | Fig. 941-943 | Fig. 945 | Fig. 946 | Fig. 951-953 Fig. 961-963 |
| Pressure equipment directive PED 2014/68/EU Module H1, B+D | X | X | X | X | X | X | X | X | X |
| BV Bureau Veritas Frankreich / France | X | -- | -- | X | X | X | -- | -- | X |
| DNV Det Norske Veritas Norwegen / Norway | X | -- | -- | X | X | X | X | X | X |
| GL Germanischer Lloyd | X | -- | -- | X | X | X | -- | -- | X |
| LROS (LRS) Lloyds Register of Shipping | X | -- | -- | X | X | X | -- | -- | -- |
| SELO (SQLO) China / Chine | X | X | X | X | X | X | X | X | X |
| ASME Code Section XIII (UV-stamp) | -- | -- | -- | X | -- | -- | -- | -- | -- |
| Canada Registration (UV-stamp) | -- | -- | -- | X | -- | -- | -- | -- | -- |
| EAC Russland / Russia | X | X | X | X | X | X | X | X | X |
| RMROS (RS) Russian Maritime Register of Shipping | X | X | X | X | X | X | X | X | X |
| Promatomnadzor White russia (Rep. of Belarus) | X | X | X | X | X | X | X | X | X |
| Prombezpeka Ukraine | X | X | X | X | X | X | X | X | X |
| Rostechnadzor (Gosgortechnadsor) Russland / Russia | X | X | X | X | X | X | X | X | X |

## Single approvals

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Arbejdstilsynet Danish emploment protection | X | X | X | X | X | X | X | X | X |
| ABS American Bureau of Shipping | X | X | X | X | X | X | X | X | X |
| AIB Vincotte Belgien / Belgium | X | X | X | X | X | X | X | X | X |
| IBR Indien Boiler Regulations | X | -- | -- | X | X | X | -- | -- | -- |
| ISPESL Italien / Italy | X | X | X | X | X | X | X | X | X |
| RINA Italien / Italy | X | -- | -- | X | X | X | -- | -- | -- |
| Stoomwezen Niederlande / Netherlands | X | X | X | X | X | X | X | X | X |
| NK Japan | X | X | X | X | X | X | X | X | X |
| UDT Polen / Poland | X | X | X | X | X | X | X | X | X |

## myValve® - Your Valve Sizing-Program.

myValve® is a powerful software tool that not only helps you size your system components; it also gives you instant access to all other data about the selected product, such as order information, spare parts drawings, operating instructions, data sheets, etc., whenever you need it.

**Contents:**

**Module ARI-Safety valve SAFE-Calculation**

- Sizing of valve-size with given capacity, temperature, set pressure and back pressure;
- Sizing acc. to SAFE DIN EN, AD2000, ASME XIII, API520.

**Media:**

**Integrated media-databank (more than 160 media) with conditions:**

- Vapours / gases
- Steam (saturated and superheated)
- Liquids

**Special features:**

- Project administration of the calculation and product data incl. spare part drawings concerning to project and tag number.
- Direct output or calculation and product data in PDF format.
- Product data could be taken for a direct order.
- SI- and ANSI-units with direct conversion to another databank.
- Settings with over pressure or absolute pressure.
- All ARI valves are integrated in a databank.
- Direct access relating to the product on data sheets, operating instructions, pressure-temperature-diagram, controller characteristics, spare part drawings and CAD-symbols on the website.
- Operation in company networks possible (no complex installations on individually PC's necessary).
- Extensive catalogue extending over several product groups.

**System requirements:**

Windows operating systems, Linux, etc.

**To ARI-Armaturen to the att. of Mrs./Mr. ..... Fax No. +49 52 07 / 994 - .....**

**If the type of bursting disc is not yet determined, we are offering our assistance for sizing.**
**Please send us the questionnaire containing the appropriate data.**

| | | | |
|---|---|---|---|
| **Customer:** | ..... | **Telephone:** | ..... |
| | ..... | **Fax:** | ..... |
| **Handled by:** | ..... | **E-mail:** | ..... |
| **Date:** | ..... | | ..... |

## Necessary data

**Medium**:

.....

□ liquid □ gas

**Temperature**: .....°C

**Safety valve**

Type / Figure: ..... Set pressure: ..... bar(g)

Nominal diameter: (Input / Output) DN ..... / ..... Flow diameter $d_0$: ..... mm

Nominal pressure: (Input / Output) PN ..... / ..... Flow cross-section $A_0$: ..... $mm^2$

Certified coefficient of discharge Kdr (αw): .....

**Rupture disc**

Bursting pressure: ..... bar(g) Material: □ 1.4401

(Bursting pressure = Set pressure of the safety valve) □ Nickel

Tolerance: □ + 10% □ Inconel

□ .....% □ Monel

□ Aluminium

Quantity: piece □ Teflon foil medium side

(incl. reserve) (minimum 3 pieces recommended)

TÜV-approval: □ yes □ no □ other .....

**Halter** (incl. 1/4"-vent)

Nominal pressure: PN ..... Material: □ 1.4571

Quantity (Holder): ..... piece □ other .....

**Indication device** (Pressure gauge / excess flow valve)

Quantity: ..... piece

**Burst disc alarm**

Quantity: ..... piece

## Bursting disc selection

**Construction**

□ Reverse buckling bursting disc

□ other .....

**Manufacturer / Type:** □ .....

**Nominal size selection of the bursting disc**

DN

• Acc. to DIN EN ISO 4126-3 and API 520 „90%-determination“
Example:
Max. capacity SAFE 900, DN 50, 10 bar without bursting disc = 9610 Nm³/h
Max. capacity SAFE 900, DN 50, 10 bar with bursting disc = 0,9 x 9610 Nm³/h = 8649 Nm³/h

Remark:

• Acc. to AD2000-A1 (5.4.2.2)
$A_{geom} \times \alpha > 1{,}5 \times A_0 \times \alpha_w$

ARI-Armaturen Albert Richter GmbH & Co. KG, D-33750 Schloß Holte-Stukenbrock,
Tel. +49 52 07 / 994-0, Telefax +49 52 07 / 994-158 or 159 Internet: https://www.ari-armaturen.com E-mail: info.vertrieb@ari-armaturen.com