

# STEV WITH ELECTRIC ACTUATOR ARI-PREMIO

Straight Through Control Valve DN 15-100

Fig. 440/441

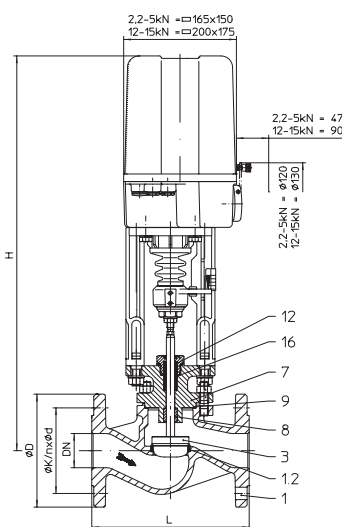


Fig. 440 Packing ring

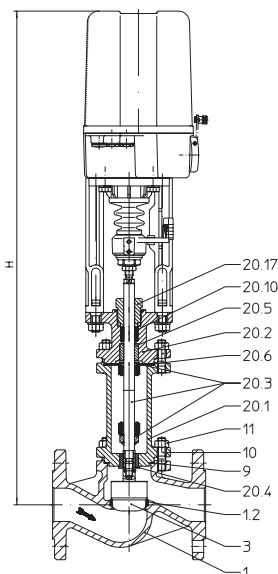


Fig. 441 Bellows seal

## Applications:

### Fig. 440

- Cooling water
- Cooling brine
- Warm water
- Hot water
- Steam
- Gas

### Fig. 441

- Refrigerant
- Cooling water
- Warm water
- Hot water
- Thermal oil
- Steam

## Features:

- Compact design
- Precision guided stem
- Burnished stem
- Tapered seat joint
- Positioning ratio 50:1
- Spring-loaded PTFE-V-ring packing unit
- Two-ply bellows seal
- Travel indicator



| Dimensions |        |                     | 15          | 20          | 25          | 32          | 40          | 50          | 65          | 80          | 100     |
|------------|--------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|
| ...440     | H      | (mm)                | 556         | 556         | 564         | 564         | 571         | 577         | 590         | 605         | 624     |
|            | 2.2 kN | PN16 / PN25-40 (kg) | 9 / 9.8     | 9.7 / 10.6  | 10.6 / 11.9 | 12.2 / 13.7 | 14.1 / 16.2 | 17 / 18.9   | 22.1 / 26.1 | 27.8 / 32.3 | 38 / 45 |
|            | 5 kN   |                     | 10.1 / 10.9 | 10.8 / 11.7 | 11.7 / 13   | 13.3 / 14.8 | 15.2 / 17.3 | 18.1 / 20   | 23.2 / 27.2 | 28.9 / 33.4 | 39 / 46 |
|            | H      |                     | -           | -           | -           | -           | 721         | 727         | 740         | 755         | 774     |
|            | 12 kN  | PN16 / PN25-40 (kg) | -           | -           | -           | -           | 19.2 / 21.3 | 22.1 / 24   | 27.2 / 31.2 | 32.9 / 37.4 | 43 / 50 |
|            | 15 kN  |                     | -           | -           | -           | -           | 19.2 / 21.3 | 22.1 / 24   | 27.2 / 31.2 | 32.9 / 37.4 | 43 / 50 |
| ...441     | H      | (mm)                | 741         | 741         | 749         | 749         | 740         | 742         | 826         | 838         | 854     |
|            | 2.2 kN | PN16 / PN25-40 (kg) | 13.4 / 15.4 | 13.4 / 16.9 | 14.4 / 19.4 | 16.9 / 22.4 | 19.4 / 28.4 | 21.9 / 30.9 | 24.9 / 37.9 | 35.9 / 47.9 | 51 / 64 |
|            | 5 kN   |                     | 14.5 / 16.5 | 14.5 / 18   | 15.5 / 20.5 | 18 / 23.5   | 20.5 / 29.5 | 23 / 32     | 26 / 39     | 37 / 49     | 53 / 66 |
|            | H      | (mm)                | -           | -           | -           | -           | 890         | 892         | 976         | 988         | 1004    |
|            | 12 kN  | PN16 / PN25-40 (kg) | -           | -           | -           | -           | 24.5 / 33.5 | 27 / 36     | 30 / 43     | 41 / 53     | 57 / 70 |
|            | 15 kN  |                     | -           | -           | -           | -           | 24.5 / 33.5 | 27 / 36     | 30 / 43     | 41 / 53     | 57 / 70 |

| KVS Value and Closing Pressure                             |                        |     |                                             |        |      |                              |      |      |      |      |      |      |     |  |     |
|------------------------------------------------------------|------------------------|-----|---------------------------------------------|--------|------|------------------------------|------|------|------|------|------|------|-----|--|-----|
| DN                                                         |                        |     | 15                                          | 20     | 25   | 32                           | 40   | 50   | 65   | 80   | 100  | 125  | 150 |  |     |
| Seat - Ø (mm)                                              |                        |     | 21                                          | 21     | 27   | 31                           | 41   | 51   | 66   | 81   | 101  | 126  | 151 |  |     |
| Standard Kvs-Values                                        |                        |     | 4                                           | 6.3    | 10   | 16                           | 25   | 40   | 63   | 100  | 160  | 250  | 400 |  |     |
| Reduced Kvs Values                                         |                        |     | 2.5                                         | 4; 2.5 | 6.3  | 10                           | 16   | 25   | 40   | 63   | 100  | 160  | 250 |  |     |
| Travel (mm)                                                |                        |     | 20                                          |        |      |                              |      |      | 30   |      |      | 50   |     |  |     |
| Actuator                                                   | Closing pressure (bar) | I   | 40                                          | 40     | 30.8 | 23.1                         | 12.8 | 8    | 4.3  | 2.7  | 1.5  | -    | -   |  |     |
| ARI-PREMIO                                                 |                        | II  | 40                                          | 40     | 28.8 | 21.6                         | 11.9 | 7.4  | 3.9  | 2.3  | 1.3  | -    | -   |  |     |
| 2.2 kN                                                     |                        | III | 30.7                                        | 30.7   | 27.1 | 20.4                         | 10.6 | 6.5  | 3.6  | 2.2  | 1.2  | -    | -   |  |     |
| Operating time <sup>2)</sup> Operating speed 0.38 mm/s (s) |                        |     |                                             |        |      |                              |      |      | 53   |      |      | 79   |     |  |     |
| Actuator                                                   | Closing pressure (bar) | I   | -                                           | -      | 40   | 40                           | 33.2 | 21.3 | 12.3 | 8    | 4.9  | 3    | 2   |  |     |
| ARI-PREMIO                                                 |                        | II  | -                                           | -      | 40   | 40                           | 32.3 | 20.7 | 11.9 | 7.6  | 4.7  | 2.9  | 1.9 |  |     |
| 5 kN                                                       |                        | III | 40                                          | 40     | 40   | 40                           | 31   | 19.8 | 11.6 | 7.5  | 4.6  | -    | -   |  |     |
| Operating time <sup>2)</sup> Operating speed 0.38 mm/s (s) |                        |     |                                             |        |      |                              |      |      | 53   |      |      | 79   |     |  | 132 |
| Actuator                                                   | Closing pressure (bar) | I   | -                                           | -      | -    | -                            | 40   | 40   | 32.3 | 21.2 | 13.5 | 8.5  | 5.9 |  |     |
| ARI-PREMIO                                                 |                        | II  | -                                           | -      | -    | -                            | 40   | 40   | 31.8 | 20.9 | 13.3 | 8.4  | 5.8 |  |     |
| 12 kN                                                      |                        | III | -                                           | -      | -    | -                            | 40   | 40   | 31.6 | 20.7 | 13.2 | -    | -   |  |     |
| Operating time <sup>2)</sup> Operating speed 0.79 mm/s (s) |                        |     |                                             |        |      |                              |      |      | 25   |      |      | 38   |     |  | 63  |
| Actuator                                                   | Closing pressure (bar) | I   | -                                           | -      | -    | -                            | -    | -    | 40   | 26.9 | 17.2 | 10.9 | 7.5 |  |     |
| ARI-PREMIO                                                 |                        | II  | -                                           | -      | -    | -                            | -    | -    | 40   | 26.6 | 17   | 10.8 | 7.4 |  |     |
| 15 kN                                                      |                        | III | -                                           | -      | -    | -                            | -    | -    | 40   | 26.4 | 16.9 | -    | -   |  |     |
| Operating time <sup>2)</sup> Operating speed 0.38 mm/s (s) |                        |     |                                             |        |      |                              |      |      | 79   |      |      | 132  |     |  |     |
| I. Fig. 440 : PTFE-V-ring unit                             |                        |     | II. Fig. 440 : PTFE-/ pure graphite-packing |        |      | III. Fig. 441 : Bellows seal |      |      |      |      |      |      |     |  |     |

I. Fig. 440 : PTFE-V-ring unit II. Fig. 440 : PTFE-/ pure graphite-packing III. Fig. 441 : Bellows seal

\*last updated 10/16





# STEV<sup>®</sup> WITH ELECTRIC ACTUATOR ARI-PREMIO

Straight Through Control Valve DN 15-100

Fig. 440/441

| Technical Data      |                                                       |                     |                |                                                                         |
|---------------------|-------------------------------------------------------|---------------------|----------------|-------------------------------------------------------------------------|
| Type                | Control Valve Fig. 440-441                            |                     | Plug design    | Standard : parabolic plug, metal seat                                   |
| Nominal diameter    | DN 15-100                                             |                     |                | Special design :                                                        |
| Nominal pressure    | PN 16, PN 25, PN 40                                   |                     |                | Parabolic plug with PTFE soft seat (max 200 °C)                         |
| Steam sealing       | Fig. 440                                              |                     | Rangability    | V-port plug, metal seat                                                 |
|                     | PTFE-V-ring unit                                      | -10 °C up to 220 °C |                | Parabolic pressure balanced plug, metal seat                            |
|                     | PTFE-packing                                          | -10 °C up to 250 °C |                | Material of piston seal : PTFE with stainless steel spring (max 200 °C) |
|                     | Pure graphite-packing                                 | -10 °C up to 450 °C |                |                                                                         |
|                     | Fig. 441                                              |                     |                |                                                                         |
| Guiding             | Stainless steel bellows seal with safety stuffing box |                     | Shut off class | 50 : 1 on parabolic plug                                                |
|                     | -60 °C up to +450 °C                                  |                     |                | 30 : 1 on V-port plug                                                   |
|                     | Parabolic plug : Stem guiding                         |                     |                | Metal seat-Leakage class IV acc. to DIN EN 1349 or IEC 60534-4          |
| Flow characteristic | V-port plug : Stem and port guiding                   |                     |                | Soft seat-Leakage class VI acc. to DIN EN 1349 or IEC 60534-4           |
|                     | Equal percentage or linear                            |                     |                |                                                                         |

| Material                                      |                      |                                              |                                                  |                                                  |                        |
|-----------------------------------------------|----------------------|----------------------------------------------|--------------------------------------------------|--------------------------------------------------|------------------------|
| Figure                                        |                      | PN16 - 12.440 / 12.441                       | PN16 - 22.440 / 22.441<br>PN25 - 23.440 / 23.441 | PN25 - 34.440 / 34.441<br>PN40 - 35.440 / 35.441 | PN40 - 55.440 / 55.441 |
| Part                                          | Description          | Material No.                                 |                                                  |                                                  |                        |
| 1                                             | Body                 | EN-JL1040                                    | EN-JS1049                                        | 1.0619+N                                         | 1.4408                 |
| 1.2                                           | Seat ring            | 1.4021+QT                                    |                                                  | 1.4021+QT <sup>5)</sup>                          | -                      |
| 3                                             | Plug*                | 1.4021+QT                                    |                                                  |                                                  | 1.4571                 |
| 7                                             | Mounting bonnet      | EN-JL1040                                    | EN-JS1049                                        | 1.0619+N                                         | 1.4408                 |
| 8                                             | Guiding bush         | 1.4021+QT (hardened)                         |                                                  |                                                  | 1.4571                 |
| 9                                             | Gasket*              | CrNi laminated both sides with pure graphite |                                                  |                                                  |                        |
| 12                                            | V-ring unit*         | PTFE                                         |                                                  |                                                  |                        |
| 16                                            | Bushing*             | Reinforced PTFE                              |                                                  |                                                  |                        |
| 20.1                                          | Bellows housing      | EN-JS1049                                    |                                                  | 1.0619+N                                         | 1.4408                 |
| 20.2                                          | Mounting bonnet      | EN-JS1049                                    |                                                  | 1.0619+N                                         | 1.4408                 |
| 20.3                                          | Stem / Bellows unit* | 1.4021+QT / 1.4541                           |                                                  |                                                  | 1.4571                 |
| 20.4                                          | Guide bushing        | 1.4021+QT (hardened)                         |                                                  |                                                  | 1.4571                 |
| 20.5                                          | Guide bushing        | 1.4021+QT (hardened)                         |                                                  |                                                  | 1.4571                 |
| 20.6                                          | Gasket*              | CrNi laminated both sides with pure graphite |                                                  |                                                  |                        |
| 20.10                                         | Packing ring*        | Pure graphite                                |                                                  |                                                  |                        |
| 20.17                                         | Screw joint*         | 1.4305                                       |                                                  |                                                  |                        |
| 23                                            | Packing ring*        | PTFE or pure graphite                        |                                                  |                                                  |                        |
| 25                                            | Screw joint*         | 1.4305                                       |                                                  |                                                  |                        |
| * Spare parts <sup>5)</sup> from DN 65 1.4551 |                      |                                              |                                                  |                                                  |                        |

| Pressure Temperature Ratings                                                                                                                             |    |                  |               |          |           |          |          |          |          |          |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------------|---------------|----------|-----------|----------|----------|----------|----------|----------|----------|
| acc. to DIN 1092-2                                                                                                                                       | PN | Temperature (°C) |               |          |           |          |          |          |          |          |          |
| Material                                                                                                                                                 |    | -60 up to <-10   | -10 up to 120 | 150      | 200       | 250      | 300      | 350      | 400      | 450      |          |
| EN-JL1040                                                                                                                                                | 16 | -                | 16 bar        | 14.4 bar | 12.8 bar  | 11.2 bar | 9.6 bar  | -        | -        | -        |          |
| EN-JS1049                                                                                                                                                | 16 | on request       | 16 bar        | 15.5 bar | 14.7 bar  | 13.9 bar | 12.8 bar | 11.2 bar | -        | -        |          |
|                                                                                                                                                          | 25 | on request       | 25 bar        | 24.3 bar | 23 bar    | 21.8 bar | 20 bar   | 17.5 bar | -        | -        |          |
| acc. to DIN 1092-1                                                                                                                                       | PN | Temperature (°C) |               |          |           |          |          |          |          |          |          |
| Material                                                                                                                                                 |    | -60 up to <-10*  | -10 up to 50  | 100      | 150       | 200      | 250      | 300      | 350      | 400      | 450      |
| 1.0619+N                                                                                                                                                 | 25 | 18.7 bar         | 25 bar        | 23.3 bar | 21.7 bar  | 19.4 bar | 17.8 bar | 16.1 bar | 15 bar   | 14.4 bar | 13.9 bar |
|                                                                                                                                                          | 40 | 30 bar           | 40 bar        | 37.3 bar | 34.7 bar  | 30.2 bar | 28.4 bar | 25.8 bar | 24 bar   | 23.1 bar | 22.2 bar |
| 1.4408                                                                                                                                                   | 40 | 40 bar           | 40 bar        | 37.3 bar | 33.81 bar | 31.1 bar | 29.3 bar | 27.6 bar | 26.7 bar | 25.6 bar | -        |
| Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart only. |    |                  |               |          |           |          |          |          |          |          |          |
| * Valve with extended bonnet, studs and nuts made of A4-70 (at temperature below -10 °C)                                                                 |    |                  |               |          |           |          |          |          |          |          |          |

\*last updated 10/16

