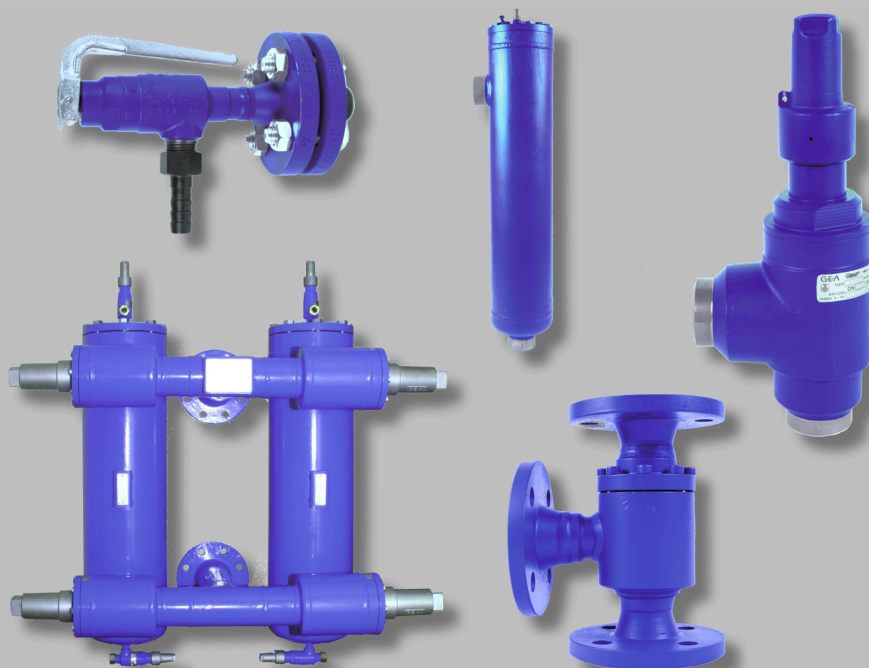


# OIL MANAGEMENT VALVES FOR REFRIGERATION

SSO, UVU, ORV, OF, DOF, TR, TRplus

02.07.2026





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# 1 SSO / UVU / ORV / OF / DOF / TR

SSO: Quick-closing valve for oil drainage

| SSO                           | Connection   | Form         | Material | Valve type             |
|-------------------------------|--------------|--------------|----------|------------------------|
| SSO                           | Materials    |              |          |                        |
| SSO<br>PS25 / PS40 / PS63     | Welding ends |              | St       | SSO AE                 |
|                               |              |              | NIRO     | SSO AE NIRO            |
| SSO-AVR<br>PS25 / PS40 / PS63 | Welding ends | Straight-way | St       | SSO-AVR D AE / DV      |
|                               |              |              | NIRO     | SSO-AVR D AE / DV NIRO |
|                               | Angle        |              | St       | SSO-AVR E AE / DV      |
|                               |              |              | NIRO     | SSO-AVR E AE / DV NIRO |
|                               | Flanged ends | Straight-way | St       | SSO-AVR D FL / DV      |
|                               |              |              | St       | SSO-AVR E FL / DV      |

UVU: Overflow valve - back-pressure independent

| UVU                       | Connection   | Form | Material | Valve type     |
|---------------------------|--------------|------|----------|----------------|
| UVU                       | Materials    |      |          |                |
| UVU<br>PS25 / PS40 / PS63 | Welding ends |      | St       | UVUA/B AE      |
|                           |              |      | NIRO     | UVUA/B AE NIRO |
|                           | Flanged ends |      | St       | UVUA/B FL      |
|                           |              |      | NIRO     | UVUA/B FL NIRO |
|                           | Solder End   |      | St       | UVUA/B LE      |
|                           |              |      | NIRO     | UVUA/B LE NIRO |
|                           | Screwed ends |      | St       | UVUA/B SE      |
|                           |              |      | NIRO     | UVUA/B SE NIRO |

ORV: Oil pressure-regulating valve

| ORV                | Connection   | Form | Material | Valve type |
|--------------------|--------------|------|----------|------------|
| ORV                | Materials    |      |          |            |
| ORV<br>PS25 / PS40 | Welding ends |      | St       | ORVA AE    |
|                    | Flanged ends |      | St       | ORVA FL    |

OF: Oil filter

| OF                | Connection     | Form | Material | Valve type |
|-------------------|----------------|------|----------|------------|
| OF                | Materials      |      |          |            |
| OF<br>PS25 / PS40 | Welding ends   |      | St       | OF AE      |
|                   | Flanged ends   |      | St       | OF FL      |
|                   | Soldering ends |      | St       | OF LE      |

DV = optional bonnet extension, St = steel NIRO = stainless steel

## 2 SSO / UVU / ORV / OF / DOF / TR

DOF: Double oil filter

| DOF                   | Connection   | Form | Material | Valve type   |
|-----------------------|--------------|------|----------|--------------|
| DOF                   | Materials    |      |          |              |
| DOF FL<br>PS25 / PS40 | Flanged ends |      | St       | DOF FL / EPE |

TR: Temperature regulator

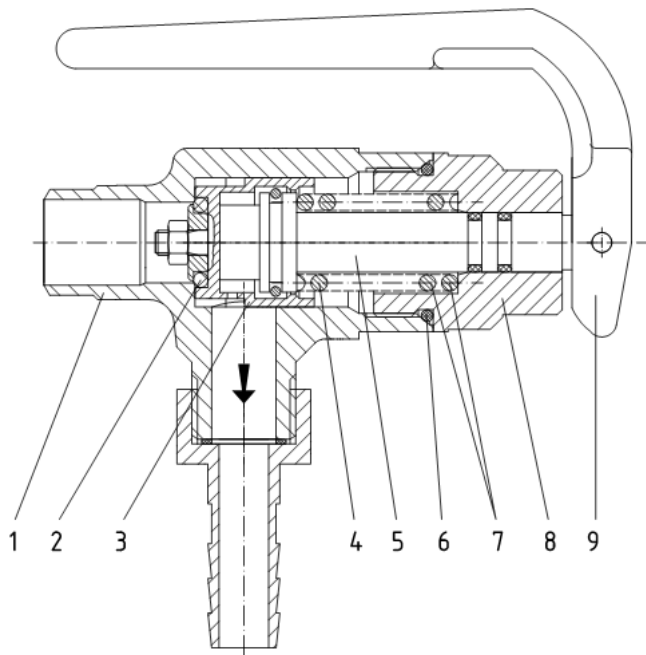
| TR                           | Connection                                         | Form | Material | Valve type           |
|------------------------------|----------------------------------------------------|------|----------|----------------------|
| TR                           | Materials                                          |      |          |                      |
| TR<br>PS25 / PS40 / PS63     | Welding ends                                       |      | St       | TR AE / NH3          |
|                              | Welding ends                                       |      | NIRO     | TR AE / NH3 NIRO     |
|                              | Flanged ends                                       |      | St       | TR FL / NH3          |
|                              | Flanged ends                                       |      | NIRO     | TR FL / NH3 NIRO     |
| TRplus                       | Materials                                          |      |          |                      |
| TRplus<br>PS25 / PS40 / PS63 | Welding ends                                       |      | St       | TRplus AE / NH3      |
|                              | Welding ends                                       |      | NIRO     | TRplus AE / NH3 NIRO |
|                              | Flanged ends                                       |      | St       | TRplus FL / NH3      |
|                              | Flanged ends                                       |      | NIRO     | TRplus FL / NH3 NIRO |
| Information                  | UV UM + ST screwed ends                            |      |          |                      |
|                              | Pressure range springs                             |      |          |                      |
|                              | Comparison of European/American materials          |      |          |                      |
|                              | Coding of connections for small and service valves |      |          |                      |
|                              | DIN-FL welding neck flanges - DIN                  |      |          |                      |
|                              | EN-FL welding neck flanges - EN                    |      |          |                      |
|                              | ANSI-FL welding neck flanges - smooth              |      |          |                      |
|                              | AWP-FL welding neck flanges - AWP                  |      |          |                      |
|                              | Legal notices                                      |      |          |                      |

St = steel , SS = stainless steel

### 3 SSO materials

Designation and materials

SSO - quick-closing valve for oil drainage



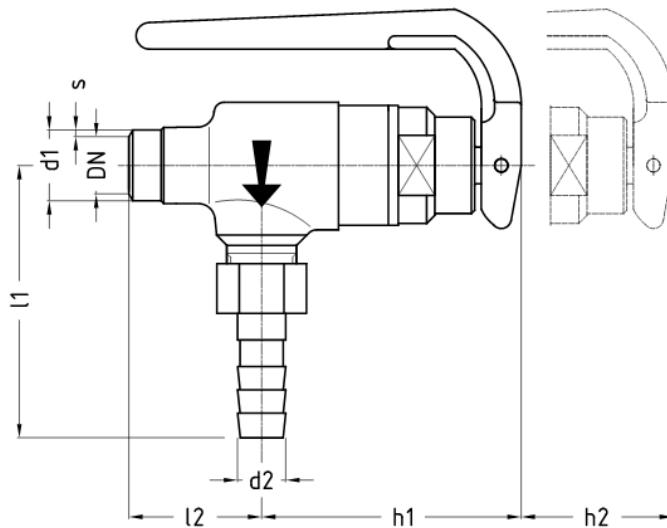
| Part                | Material for steel valves | Material for stainless steel valves |
|---------------------|---------------------------|-------------------------------------|
| 1 Body              | S355J2 1.0577             | X5CrNi18-10 1.4301                  |
| 2 Valve disc O-ring | CR, NBR, HNBR, EPDM, FPM* | CR, NBR, HNBR, EPDM, FPM*           |
| 3 Sealing piston    | X8CrNiS18-9 1.4305        | X8CrNiS18-9 1.4305                  |
| 4 Tongue            | SH                        | SH                                  |
| 5 Stem              | X8CrNiS18-9 1.4305        | X8CrNiS18-9 1.4305                  |
| 6 Bonnet O-ring     | CR, NBR, HNBR, EPDM, FPM* | CR, NBR, HNBR, EPDM, FPM*           |
| 7 Valve stem O-ring | CR, NBR, HNBR, EPDM, FPM* | CR, NBR, HNBR, EPDM, FPM*           |
| 8 Bonnet            | S355J2 1.0577             | X8CrNiS18-9 1.4305                  |
| 9 Hand lever        | Aluminium AlSi10Mg        | Aluminium AlSi10Mg                  |

\* depending on the refrigerant used

## 4 SSO AE

**AE:** Welding ends

SSO steel quick-closing valve for oil drainage for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

Table 1: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

Table 2: With O-ring HNBR

| DN / INCH     | Opening pressure [bar] |                           |
|---------------|------------------------|---------------------------|
| DN 15<br>1/2" | 26 - 28                |                           |
|               | 46 - 50                | (customer-spec. solution) |

Table 3: Opening pressure

| Nominal size: |      | Welding ends acc. to: |     |     |                  |     |    |    |      |    |    |
|---------------|------|-----------------------|-----|-----|------------------|-----|----|----|------|----|----|
|               |      | ISO Series 1          |     |     | ANSI<br>Sched 40 |     |    |    |      |    |    |
| DN            | INCH | d1                    | s1) | s2) | d1               | s   | l1 | l2 | d2   | h1 | h2 |
| 15            | 1/2" | 21.3                  | 2.0 | 2.0 | 21.3             | 2.8 | 82 | 40 | 14.5 | 78 | 40 |

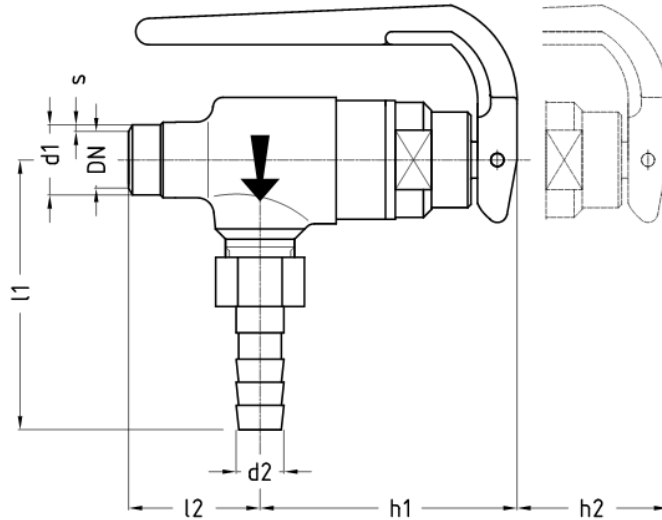
Table 4: Dimensions

1) PN25 / PN40 2) PN63 h2 = dismantling dimension

## 5 SSO AE NIRO

**AE:** Welding ends

SSO stainless steel quick-closing valve for oil drainage for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35 | -10 | +50 | +120 | TS [°C]  |
|---------------|------|-----|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

Table 5: With O-ring CR

| DN / INCH     | PN   | -40 | -10 | +50 | +150 | TS [°C]  |
|---------------|------|-----|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

Table 6: With O-ring HNBR

| DN / INCH | Opening pressure [bar] |                           |
|-----------|------------------------|---------------------------|
| DN 15     | 26 - 28                |                           |
| 1/2"      | 46 - 50                | (customer-spec. solution) |

Table 7: Opening pressure

| Nominal size: |      | Welding ends acc. to: |     |     |      |               |    |    |      |    |    |
|---------------|------|-----------------------|-----|-----|------|---------------|----|----|------|----|----|
|               |      | ISO Series 1          |     |     |      | ANSI Sched 40 |    |    |      |    |    |
| DN            | INCH | d1                    | s1) | s2) | d1   | s             | l1 | l2 | d2   | h1 | h2 |
| 15            | 1/2" | 21.3                  | 2.0 | 2.0 | 21.3 | 2.8           | 82 | 40 | 14.5 | 78 | 40 |

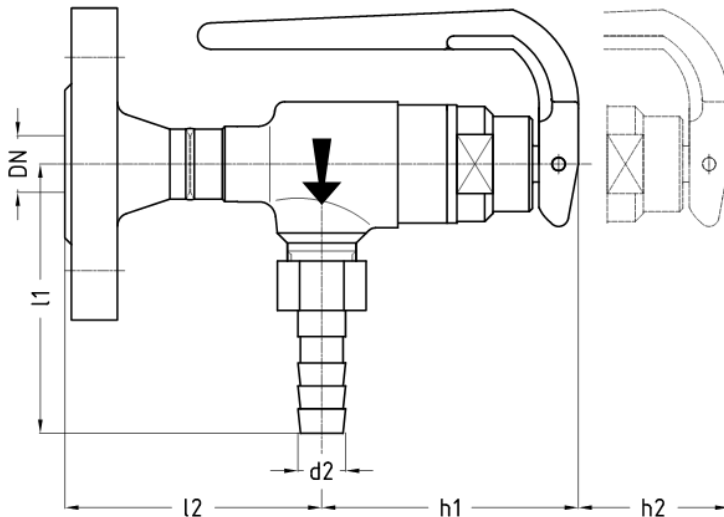
Table 8: Dimensions

1) PN25 / PN40 2) PN63 h2 = dismantling dimension

## 6 SSO FL

**FL:** Flanged ends

SSO steel quick-closing valve for oil drainage for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

Table 9: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

Table 10: With O-ring HNBR

| DN / INCH | Opening pressure [bar] |                           |
|-----------|------------------------|---------------------------|
| DN 15     | 26 - 28                |                           |
| 1/2"      | 46 - 50                | (customer-spec. solution) |

Table 11: Opening pressure

| Nominal size: |      | Flanged ends acc. to: |                              |                              |                              |                |    |      |    |    |
|---------------|------|-----------------------|------------------------------|------------------------------|------------------------------|----------------|----|------|----|----|
|               |      | AWP<br>DN15 PN25      | PN25<br>DIN 2634<br>EN1092-1 | PN40<br>DIN 2635<br>EN1092-1 | PN63<br>DIN 2636<br>EN1092-1 | ANSI<br>300 RF |    |      |    |    |
| DN            | INCH | l2                    | l2                           | l2                           | l2                           | l2             | l1 | d2   | h1 | h2 |
| 15            | 1/2" | 72.5                  | 79                           | 79                           | 86                           | 94             | 82 | 14.5 | 78 | 40 |

Table 12: Dimensions

h2 = dismantling dimension, DIN/EN flange facings as standard: groove DIN 2512

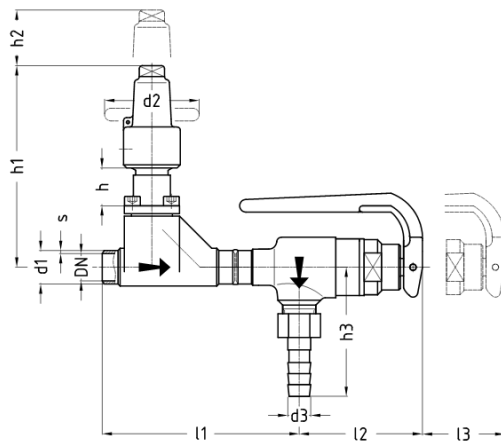
## 7 SSO-AVR D AE / SSO-AVR D AE DV

**D:** Straight-way, **AE:** Welding ends, **DV:** Bonnet extension

SSO-AVR steel quick-closing valve for oil drainage - with shut-off valve for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

! AVR um 90° gedreht gezeichnet !

! AVR drawing turn in 90° !



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 13: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 14: With O-ring HNBR

| DN / INCH | Opening pressure [bar] |                           |
|-----------|------------------------|---------------------------|
| DN 15     | 26 - 28                |                           |
| 1/2"      | 46 - 50                | (customer-spec. solution) |

Table 15: Opening pressure

| Nominal size: Welding ends acc. to: |      |    |      |              |     |      |               |  |     |    |    |    |     |     |      |    |    |      |    |
|-------------------------------------|------|----|------|--------------|-----|------|---------------|--|-----|----|----|----|-----|-----|------|----|----|------|----|
|                                     |      |    |      | ISO Series 1 |     |      | ANSI Sched 40 |  |     |    |    |    |     |     |      |    |    |      |    |
| DN                                  | INCH | PN | d1   | s1)          | s2) | d1   | s             |  | l1  | l2 | l3 | h  | h*) | h1  | h1*) | h2 | h3 | d3   | d2 |
| 15                                  | 1/2" | 25 | 21.3 | 2.0          |     | 21.3 | 2.8           |  | 125 | 78 | 40 | 22 | 54  | 128 | 160  | 35 | 82 | 14.5 | 60 |
|                                     |      | 40 |      | 2.0          |     |      |               |  | 125 | 78 | 40 | 22 | 54  | 128 | 160  | 35 | 82 | 14.5 | 60 |

| Nominal size: Welding ends acc. to: |  |    |  |  |     |  |  |     |    |    |    |    |     |     |    |    |      |    |
|-------------------------------------|--|----|--|--|-----|--|--|-----|----|----|----|----|-----|-----|----|----|------|----|
|                                     |  | 63 |  |  | 2.0 |  |  | 151 | 78 | 40 | 31 | 68 | 148 | 185 | 45 | 82 | 14.5 | 60 |

Table 16: Dimensions

\*) = for valves with bonnet extension, l3 + h2 = dismantling dimension

1) PN25 / PN40 2) PN63

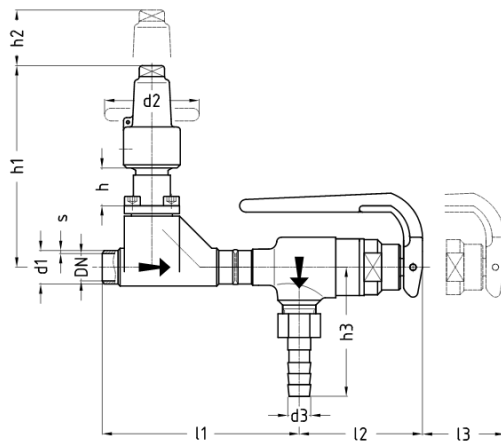
## 8 SSO-AVR D AE NIRO / SSO-AVR D AE DV NIRO

**D:** Straight-way, **AE:** Welding ends, **DV:** Bonnet extension

SSO-AVR stainless steel quick-closing valve for oil drainage - with shut-off valve for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

! AVR um 90° gedreht gezeichnet !

! AVR drawing turn in 90° !



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35 | -10 | +50 | +120 | TS [°C]  |
|---------------|------|-----|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

Table 17: With O-ring CR

| DN / INCH     | PN   | -40 | -10 | +50 | +150 | TS [°C]  |
|---------------|------|-----|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

Table 18: With O-ring CR

| DN / INCH | Opening pressure [bar] |                           |
|-----------|------------------------|---------------------------|
| DN 15     | 26 - 28                |                           |
| 1/2"      | 46 - 50                | (customer-spec. solution) |

Table 19: Opening pressure

| Nominal size: Welding ends acc. to: |      |    |      |               |     |      |     |     |    |    |    |     |     |      |    |    |      |    |  |
|-------------------------------------|------|----|------|---------------|-----|------|-----|-----|----|----|----|-----|-----|------|----|----|------|----|--|
| ISO Series 1                        |      |    |      | ANSI Sched 40 |     |      |     |     |    |    |    |     |     |      |    |    |      |    |  |
| DN                                  | INCH | PN | d1   | s1)           | s2) | d1   | s   | l1  | l2 | l3 | h  | h*) | h1  | h1*) | h2 | h3 | d3   | d2 |  |
| 15                                  | 1/2" | 25 | 21.3 | 2.0           |     | 21.3 | 2.8 | 125 | 78 | 40 | 22 | 54  | 128 | 160  | 35 | 82 | 14.5 | 60 |  |
|                                     |      | 40 |      | 2.0           |     |      |     | 151 | 78 | 40 | 31 | 68  | 148 | 185  | 45 | 82 | 14.5 | 60 |  |

| Nominal size: Welding ends acc. to: |  |    |  |  |     |  |  |     |    |    |    |    |     |     |    |    |      |    |
|-------------------------------------|--|----|--|--|-----|--|--|-----|----|----|----|----|-----|-----|----|----|------|----|
|                                     |  | 63 |  |  | 2.0 |  |  | 151 | 78 | 40 | 31 | 68 | 148 | 185 | 45 | 82 | 14.5 | 60 |

Table 20: Dimensions

\*) = for valves with bonnet extension, l3 + h2 = dismantling dimension

1) PN25 / PN40 2) PN63

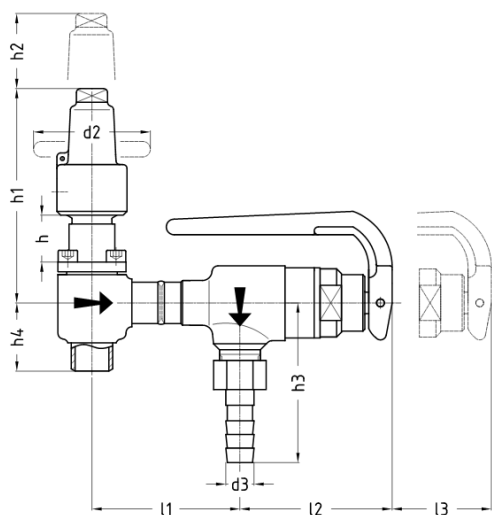
## 9 SSO-AVR E AE / SSO-AVR E AE DV

**E:** Angle, **AE:** Welding ends, **DV:** Bonnet extension

SSO-AVR steel quick-closing valve for oil drainage - with shut-off valve for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

! AVR um 90° gedreht gezeichnet !

! AVR drawing turn in 90° !



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 21: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 22: With O-ring HNBR

| DN / INCH | Opening pressure [bar] |                           |
|-----------|------------------------|---------------------------|
| DN 15     | 26 - 28                |                           |
| 1/2"      | 46 - 50                | (customer-spec. solution) |

Table 23: Opening pressure

| Nominal size: Welding ends acc. to: |      |    |      |               |     |      |     |    |    |    |    |     |     |      |    |    |      |    |  |
|-------------------------------------|------|----|------|---------------|-----|------|-----|----|----|----|----|-----|-----|------|----|----|------|----|--|
| ISO Series 1                        |      |    |      | ANSI Sched 40 |     |      |     |    |    |    |    |     |     |      |    |    |      |    |  |
| DN                                  | INCH | PN | d1   | s1)           | s2) | d1   | s   | l1 | l2 | l3 | h  | h*) | h1  | h1*) | h2 | h3 | d3   | d2 |  |
| 15                                  | 1/2" | 25 | 21.3 | 2.0           |     | 21.3 | 2.8 | 76 | 78 | 40 | 22 | 54  | 110 | 143  | 35 | 82 | 14.5 | 60 |  |
|                                     |      | 40 |      | 2.0           |     |      |     | 76 | 78 | 40 | 22 | 54  | 110 | 143  | 35 | 82 | 14.5 | 60 |  |

| Nominal size: Welding ends acc. to: |  |    |  |  |     |  |  |    |    |    |    |    |     |     |    |    |      |    |
|-------------------------------------|--|----|--|--|-----|--|--|----|----|----|----|----|-----|-----|----|----|------|----|
|                                     |  | 63 |  |  | 2.0 |  |  | 82 | 78 | 40 | 31 | 68 | 125 | 162 | 45 | 82 | 14.5 | 60 |

Table 24: Dimensions

l3 + h2 = dismantling dimension, \*) = for valves with bonnet extension

1) PN25 / PN40 2) PN63

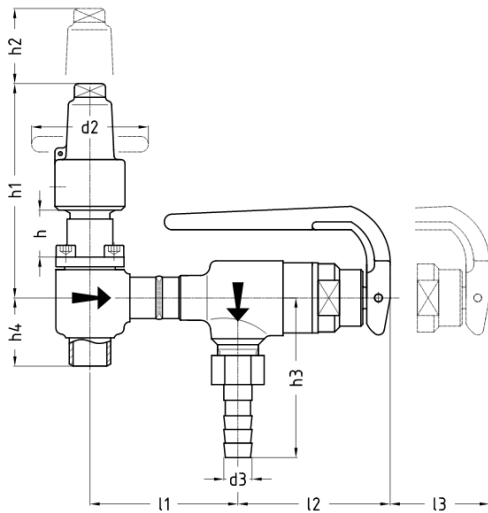
## 10 SSO-AVR E AE NIRO / SSO-AVR E AE DV NIRO

**E:** Angle, **AE:** Welding ends, **DV:** Bonnet extension

SSO-AVR stainless steel quick-closing valve for oil drainage - with shut-off valve for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

! AVR um 90° gedreht gezeichnet !

! AVR drawing turn in 90° !



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.3 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 29.4 | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 46.3 | 63  | 63  | 63   | PS [bar] |

Table 25: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 18.3 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 29.4 | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 46.3 | 63  | 63  | 63   | PS [bar] |

Table 26: With O-ring HNBR

| DN / INCH     | Opening pressure [bar] |                           |
|---------------|------------------------|---------------------------|
| DN 15<br>1/2" | 26 - 28                |                           |
|               | 46 - 50                | (customer-spec. solution) |

Table 27: Opening pressure

| Nominal size: Welding ends acc. to: |      |    |              |     |     |                  |     |    |    |    |    |     |     |      |    |    |      |    |  |  |  |
|-------------------------------------|------|----|--------------|-----|-----|------------------|-----|----|----|----|----|-----|-----|------|----|----|------|----|--|--|--|
|                                     |      |    | ISO Series 1 |     |     | ANSI<br>Sched 40 |     |    |    |    |    |     |     |      |    |    |      |    |  |  |  |
| DN                                  | INCH | PN | d1           | s1) | s2) | d1               | s   | l1 | l2 | l3 | h  | h*) | h1  | h1*) | h2 | h3 | d3   | d2 |  |  |  |
| 15                                  | 1/2" | 25 | 21.3         | 2.0 |     | 21.3             | 2.8 | 76 | 78 | 40 | 22 | 54  | 110 | 143  | 35 | 82 | 14.5 | 60 |  |  |  |

| Nominal size: Welding ends acc. to: |  |    |  |     |     |  |  |    |    |    |    |    |     |     |    |    |      |    |
|-------------------------------------|--|----|--|-----|-----|--|--|----|----|----|----|----|-----|-----|----|----|------|----|
|                                     |  | 40 |  | 2.0 |     |  |  | 82 | 78 | 40 | 31 | 68 | 125 | 162 | 45 | 82 | 14.5 | 60 |
|                                     |  | 63 |  |     | 2.0 |  |  | 82 | 78 | 40 | 31 | 68 | 125 | 162 | 45 | 82 | 14.5 | 60 |

Table 28: Dimensions

\*) = for valves with bonnet extension, l3 + h2 = dismantling dimension

1) PN25 / PN40 2) PN63

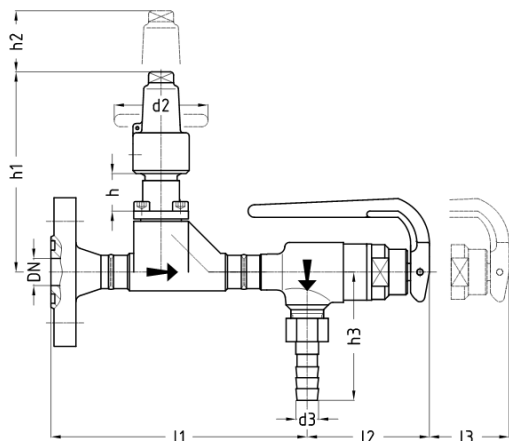
## 11 SSO-AVR D FL / SSO-AVR D FL DV

**AVR:** Shut-off valve, **D:** Straight-way, **FL:** Flanged ends, **DV:** Bonnet extension

SSO steel quick-closing valve for oil drainage with shut-off valve - stem seal with resilient PTFE ring for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

! AVR um 90° gedreht gezeichnet !

! AVR drawing turn in 90° !



Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -35  | -10 | +50 | +120 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 29: With O-ring CR

| DN / INCH     | PN   | -40  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|-----|-----|------|----------|
| DN 15<br>1/2" | PN25 | 12.5 | 25  | 25  | 25   | PS [bar] |
|               | PN40 | 20   | 40  | 40  | 40   | PS [bar] |
|               | PN63 | 31.5 | 63  | 63  | 63   | PS [bar] |

Table 30: With O-ring HNBR

| DN / INCH     | Opening pressure [bar] |                           |
|---------------|------------------------|---------------------------|
| DN 15<br>1/2" | 26 - 28                |                           |
|               | 46 - 50                | (customer-spec. solution) |

Table 31: Opening pressure

| Nominal size: Welding ends acc. to: |      |    |                     |                              |                              |                              |                |    |    |    |     |     |      |    |    |      |    |
|-------------------------------------|------|----|---------------------|------------------------------|------------------------------|------------------------------|----------------|----|----|----|-----|-----|------|----|----|------|----|
|                                     |      |    | AWP<br>DN15<br>PN25 | PN25<br>DIN 2634<br>EN1092-1 | PN40<br>DIN 2635<br>EN1092-1 | PN63<br>DIN 2636<br>EN1092-1 | ANSI<br>300 RF |    |    |    |     |     |      |    |    |      |    |
| DN                                  | INCH | PN | I1                  | I1                           | I1                           | I1                           | I1             | I2 | I3 | h  | h*) | h1  | h1*) | h2 | h3 | d3   | d2 |
| 15                                  | 1/2" | 25 | 158                 | 164                          | 164                          | ---                          | 179            | 78 | 40 | 22 | 54  | 128 | 160  | 35 | 82 | 14.5 | 60 |

| Nominal size: Welding ends acc. to: |  |    |     |     |     |     |     |    |    |    |    |     |     |    |    |      |    |
|-------------------------------------|--|----|-----|-----|-----|-----|-----|----|----|----|----|-----|-----|----|----|------|----|
|                                     |  | 40 | --- | 164 | 164 | --- | 179 | 78 | 40 | 22 | 54 | 128 | 160 | 35 | 82 | 14.5 | 60 |
|                                     |  | 63 | --- | --- | --- | 197 | 205 | 78 | 40 | 31 | 68 | 148 | 185 | 45 | 82 | 14.5 | 60 |

Table 32: Dimensions

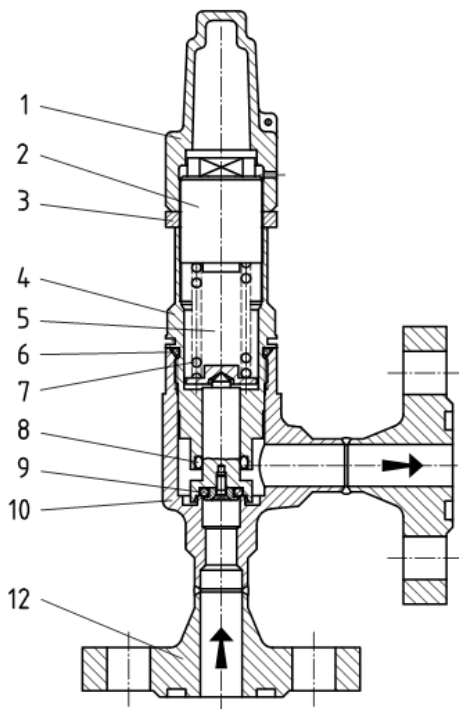
\*) for valves with bonnet extension, l3/h2 = dismantling dimension

DIN/EN flange facings with DIN 2512 groove as standard

## 12 UVU materials

Designation and materials

UVU - overflow valves



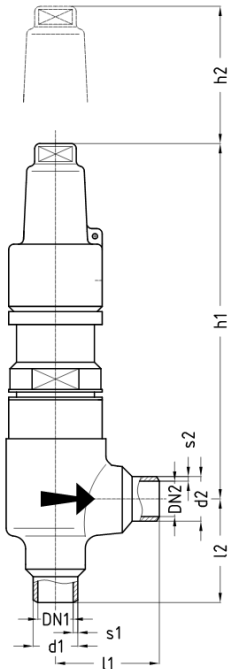
| Part                    | Material for steel valves  | Material for stainless steel valves |
|-------------------------|----------------------------|-------------------------------------|
| 1 Cap                   | Aluminium AlSi10Mg         | Aluminium AlSi10Mg                  |
| 2 Adjustment screw      | X8CrNiS18-9 1.4305         | X8CrNiS18-9 1.4305                  |
| 3 Bonnet                | S355J2 1.0577              | X8CrNiS18-9 1.4305                  |
| 4 Tongue                | SH                         | SH                                  |
| 8 Valve disc O-ring     | CR, NBR, HNBR, EPDM, PTFE* | CR, NBR, HNBR, EPDM, PTFE*          |
| 9 Body                  | X5CrNi18-10 1.4301         | X5CrNi18-10 1.4301                  |
| 12 Flange               | P250GH 1.0460              | X6CrNiTi18-10 1.4541                |
| 14 Bonnet O-ring        | CR, NBR, HNBR, EPDM, FPM*  | CR, NBR, HNBR, EPDM, FPM*           |
| 15 Spring-loaded U-ring | PTFE                       | PTFE                                |

\* depending on the refrigerant used

### 13 UVUA AE / UVUB AE

**O:** PTFE seat seal, **B:** elastomer seat seal, **AE:** Welding ends

UVU steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA         | PN   | -60  | -10 | +50 | +180 | TS [°C]  |
|------------------------|------|------|-----|-----|------|----------|
| DN / INCH UVUB         | PN   | -50  | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 8...15 | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                        | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|                        | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Welding ends acc. to: |      |      |      |      |      |                  |     |      |     | Response pressure range |    |     |      |    |      |       |             |
|---------------|-----|-----------------------|------|------|------|------|------|------------------|-----|------|-----|-------------------------|----|-----|------|----|------|-------|-------------|
|               |     | ISO Series 1          |      |      |      |      |      | ANSI<br>Sched 40 |     |      |     |                         |    |     |      |    |      |       | h1*)<br>for |
| DN1           | DN2 | d1                    | s11) | s12) | d2   | s21) | s22) | d1               | s1  | d2   | s2  | l1                      | l2 | h1  | h1*) | h2 | bar  | bar   |             |
| 8             | 8   | 13.5                  | 1.8  | 1.8  | 13.5 | 1.8  | 1.8  | 13.7             | 2.2 | 13.7 | 2.2 | 40                      | 40 | 148 | 175  | 32 | 4-63 | 28-63 |             |
| 10            | 10  | 17.2                  | 1.8  | 1.8  | 17.2 | 1.8  | 1.8  | 17.1             | 2.3 | 17.1 | 2.3 | 40                      | 40 | 148 | 175  | 32 | 4-63 | 28-63 |             |
| 15            | 15  | 21.3                  | 2.0  | 2.0  | 21.3 | 2.0  | 2.0  | 21.3             | 2.8 | 21.3 | 2.8 | 40                      | 40 | 148 | 175  | 32 | 4-63 | 28-63 |             |

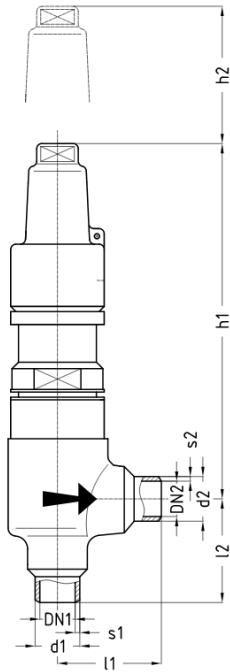
Table 33: Dimensions

1) PN25 / PN40 2) PN63 h1\*) = only for response pressures 28-63 bar h2 = dismantling dimension

## 14 UVUA AE NIRO / UVUB AE NIRO

**O:** PTFE seat seal, **B:** elastomer seat seal, **AE:** Welding ends

UVU stainless steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1 as well as refrigeration machine oils



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA         | PN   | -60 | -10 | +50 | +180 | TS [°C]  |
|------------------------|------|-----|-----|-----|------|----------|
| DN / INCH UVUB         | PN   | -50 | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 8...15 | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                        | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                        | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Welding ends acc. to: |      |      |      |      |      |                  |     |      |     |    |    |     |      | Response pressure range |      |             |
|---------------|-----|-----------------------|------|------|------|------|------|------------------|-----|------|-----|----|----|-----|------|-------------------------|------|-------------|
|               |     | ISO Series 1          |      |      |      |      |      | ANSI<br>Sched 40 |     |      |     |    |    |     |      |                         |      | h1*)<br>for |
| DN1           | DN2 | d1                    | s11) | s12) | d2   | s21) | s22) | d1               | s1  | d2   | s2  | l1 | l2 | h1  | h1*) | h2                      | bar  | bar         |
| 8             | 8   | 13.5                  | 1.8  | 1.8  | 13.5 | 1.8  | 1.8  | 13.7             | 2.2 | 13.7 | 2.2 | 40 | 40 | 148 | 175  | 32                      | 4-63 | 28-63       |
| 10            | 10  | 17.2                  | 1.8  | 1.8  | 17.2 | 1.8  | 1.8  | 17.1             | 2.3 | 17.1 | 2.3 | 40 | 40 | 148 | 175  | 32                      | 4-63 | 28-63       |
| 15            | 15  | 21.3                  | 2.0  | 2.0  | 21.3 | 2.0  | 2.0  | 21.3             | 2.8 | 21.3 | 2.8 | 40 | 40 | 148 | 175  | 32                      | 4-63 | 28-63       |

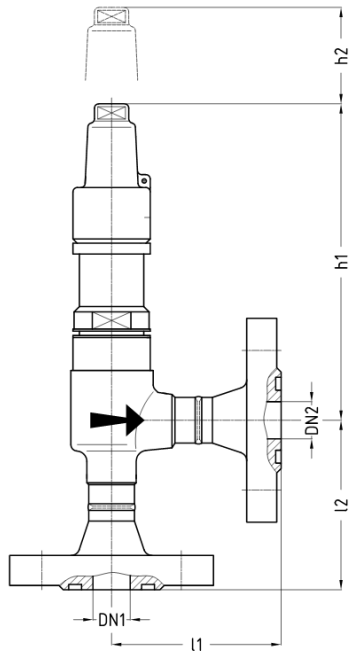
Table 34: Dimensions

1) PN25 / PN40 2) PN63 h1\*) = only for response pressures 28-63 bar h2 = dismantling dimension

## 15 UVUA FL / UVUB FL

**O:** PTFE seat seal, **B:** elastomer seat seal, **FL:** Flanged ends

UVU steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA          | PN   | -60  | -10 | +50 | +180 | TS [°C]  |
|-------------------------|------|------|-----|-----|------|----------|
| DN / INCH UVUB          | PN   | -50  | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 10...15 | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                         | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|                         | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Flanged ends acc. to: |    |                              |    |                              |    |                              |    |                |    | Response pressure range |      |    |      |       |             |
|---------------|-----|-----------------------|----|------------------------------|----|------------------------------|----|------------------------------|----|----------------|----|-------------------------|------|----|------|-------|-------------|
|               |     | AWP<br>DN10-15 PN25   |    | PN25<br>DIN 2634<br>EN1092-1 |    | PN40<br>DIN 2635<br>EN1092-1 |    | PN63<br>DIN 2636<br>EN1092-1 |    | ANSI<br>300 RF |    |                         |      |    |      |       | h1*)<br>for |
| DN1           | DN2 | l1                    | l2 | l1                           | l2 | l1                           | l2 | l1                           | l2 | l1             | l2 | h1                      | h1*) | h2 | bar  | bar   |             |
| 10            | 10  | 72                    | 72 | 76                           | 76 | 76                           | 76 | 86                           | 86 |                |    | 148                     | 175  | 32 | 4-63 | 28-63 |             |
| 15            | 15  | 72                    | 72 | 79                           | 79 | 79                           | 79 | 86                           | 86 | 93             | 93 | 148                     | 175  | 32 | 4-63 | 28-63 |             |

Table 35: Dimensions

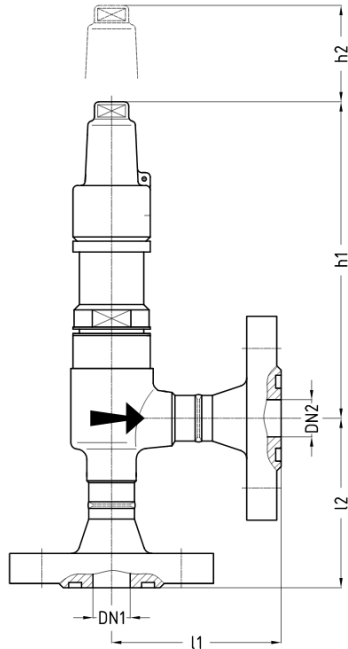
h1\*) only for response pressures 28-63 bar, h2 = dismantling dimension

DIN/EN flange facings with DIN 2512 groove as standard

## 16 UVUA FL NIRO / UVUB FL NIRO

**O:** PTFE seat seal, **B:** elastomer seat seal, **FL:** Flanged ends

UVU stainless steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1 as well as refrigeration machine oils



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA          | PN   | -60 | -10 | +50 | +180 | TS [°C]  |
|-------------------------|------|-----|-----|-----|------|----------|
| DN / INCH UVUB          | PN   | -50 | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 10...15 | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                         | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                         | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Flanged ends acc. to: |    |                              |    |                              |    |                              |    |                |    | Response pressure range |      |    |      |             |
|---------------|-----|-----------------------|----|------------------------------|----|------------------------------|----|------------------------------|----|----------------|----|-------------------------|------|----|------|-------------|
|               |     | AWP<br>DN10-15 PN25   |    | PN25<br>DIN 2634<br>EN1092-1 |    | PN40<br>DIN 2635<br>EN1092-1 |    | PN63<br>DIN 2636<br>EN1092-1 |    | ANSI<br>300 RF |    |                         |      |    |      | h1*)<br>for |
| DN1           | DN2 | l1                    | l2 | l1                           | l2 | l1                           | l2 | l1                           | l2 | l1             | l2 | h1                      | h1*) | h2 | bar  | bar         |
| 10            | 10  | 72                    | 72 | 76                           | 76 | 76                           | 76 | 86                           | 86 |                |    | 148                     | 175  | 32 | 4-63 | 28-63       |
| 15            | 15  | 72                    | 72 | 79                           | 79 | 79                           | 79 | 86                           | 86 | 93             | 93 | 148                     | 175  | 32 | 4-63 | 28-63       |

Table 36: Dimensions

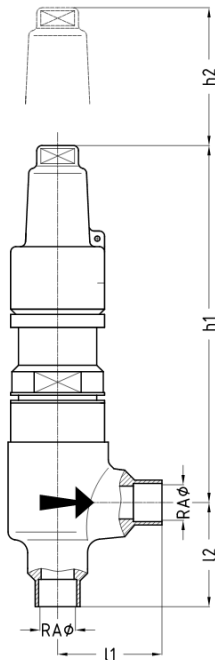
h1\*) only for response pressures 28-63 bar, h2 = dismantling dimension

DIN/EN flange facings with DIN 2512 groove as standard

## 17 UVUA LE / UVUB LE

**O:** PTFE seat seal, **B:** elastomer seat seal, **LE:** Soldering ends

UVU steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA          | PN   | -60  | -10 | +50 | +180 | TS [°C]  |
|-------------------------|------|------|-----|-----|------|----------|
| DN / INCH UVUB          | PN   | -50  | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 10...15 | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                         | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|                         | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Soldering ends acc. to: |    |    |     |      |    | Response pressure range |             |
|---------------|-----|-------------------------|----|----|-----|------|----|-------------------------|-------------|
|               |     |                         |    |    |     |      |    |                         | h1*)<br>for |
| DN1           | DN2 | RAØ                     | l1 | l2 | h1  | h1*) | h2 | bar                     | bar         |
| 10            | 10  | 12                      | 40 | 40 | 148 | 175  | 32 | 4-63                    | 28-63       |
| 15            | 15  | 15                      | 40 | 40 | 148 | 175  | 32 | 4-63                    | 28-63       |
| 15            | 15  | 18                      | 40 | 40 | 148 | 175  | 32 | 4-63                    | 28-63       |

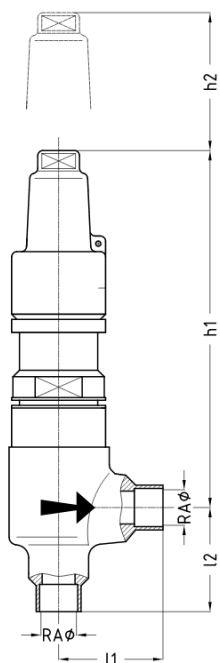
Table 37: Dimensions

h1\*) = only for response pressures 28-63 bar, h2 = dismantling dimension

## 18 UVUA LE NIRO / UVUB LE NIRO

**O:** PTFE seat seal, **B:** elastomer seat seal, **LE:** Soldering ends

UVU stainless steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1 as well as refrigeration machine oils



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA          | PN   | -60 | -10 | +50 | +180 | TS [°C]  |
|-------------------------|------|-----|-----|-----|------|----------|
| DN / INCH UVUB          | PN   | -50 | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 10...15 | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                         | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                         | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |     | Soldering ends acc. to: |    |    | Response pressure range |      |    |      |             |
|---------------|-----|-------------------------|----|----|-------------------------|------|----|------|-------------|
| DN1           | DN2 | RAØ                     | l1 | l2 | h1                      | h1*) | h2 | bar  | h1*)<br>for |
| 10            | 10  | 12                      | 40 | 40 | 148                     | 175  | 32 | 4-63 | 28-63       |
| 15            | 15  | 15                      | 40 | 40 | 148                     | 175  | 32 | 4-63 | 28-63       |
| 15            | 15  | 18                      | 40 | 40 | 148                     | 175  | 32 | 4-63 | 28-63       |

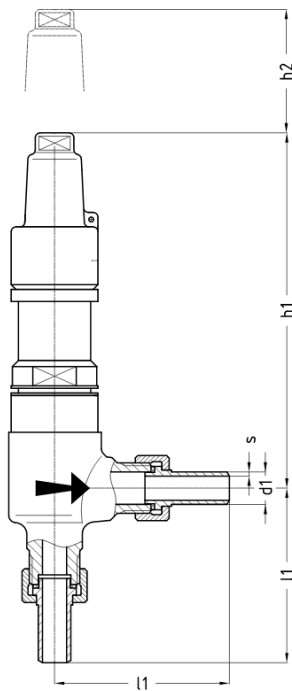
Table 38: Dimensions

h1\*) = only for response pressures 28-63 bar, h2 = dismantling dimension

## 19 UVUA SE / UVUB SE

**O:** PTFE seat seal, **B:** elastomer seat seal, **SE:** Screwed ends

UVU steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA     | PN   | -60  | -10 | +50 | +180 | TS [°C]  |
|--------------------|------|------|-----|-----|------|----------|
| DN / INCH UVUB     | PN   | -50  | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 15 | PN25 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                    | PN40 | 30   | 40  | 40  | 40   | PS [bar] |
|                    | PN63 | 47.2 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |             | Soldering ends acc. to: |      |     |    |     |      |    | Response pressure range |             |
|---------------|-------------|-------------------------|------|-----|----|-----|------|----|-------------------------|-------------|
|               |             |                         |      |     |    |     |      |    |                         | h1*)<br>for |
| DN            | DN          | Thread / pipe diameter  | d1   | s   | l1 | h1  | h1*) | h2 | bar                     | bar         |
| 15            | G 1/2"      | M22x1.5 RA15            | 15.0 | 2.0 | 73 | 148 | 175  | 32 | 4-63                    | 28-63       |
| 15            | G 1/2"/G 1" | G1/2"                   |      |     | 40 | 148 | 175  | 32 | 4-63                    | 28-63       |

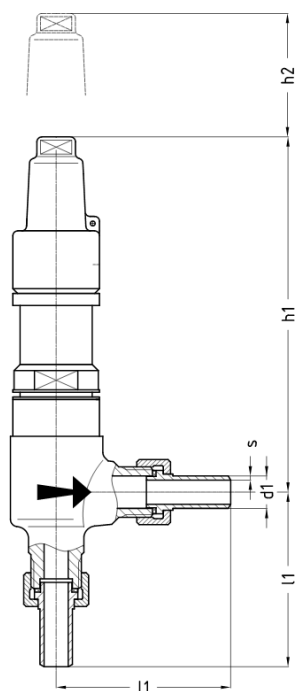
Table 39: Dimensions

h1\*) = only for response pressures 28-63 bar, h2 = dismantling dimension

## 20 UVUA SE NIRO / UVUB SE NIRO

**O:** PTFE seat seal, **B:** elastomer seat seal, **SE:** Screwed ends

UVU stainless steel overflow valve - back-pressure independent for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1 as well as refrigeration machine oils



Note: The UVU is an overflow valve that has also proven itself excellently in the oil circuit.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH UVUA     | PN   | -60 | -10 | +50 | +180 | TS [°C]  |
|--------------------|------|-----|-----|-----|------|----------|
| DN / INCH UVUB     | PN   | -50 | -10 | +50 | +110 | TS [°C]  |
| UVUA/UVUB<br>DN 15 | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                    | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                    | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |             | Soldering ends acc. to: |  |      |     | Response pressure range |     |      |    |             |       |
|---------------|-------------|-------------------------|--|------|-----|-------------------------|-----|------|----|-------------|-------|
|               |             |                         |  |      |     |                         |     |      |    | h1*)<br>for |       |
| DN            | DN          | Thread / pipe diameter  |  | d1   | s   | l1                      | h1  | h1*) | h2 | bar         | bar   |
| 15            | G 1/2"      | M22x1.5 RA15            |  | 15.0 | 2.0 | 73                      | 148 | 175  | 32 | 4-63        | 28-63 |
| 15            | G 1/2"/G 1" | G1/2"                   |  |      |     | 40                      | 148 | 175  | 32 | 4-63        | 28-63 |

Table 40: Dimensions

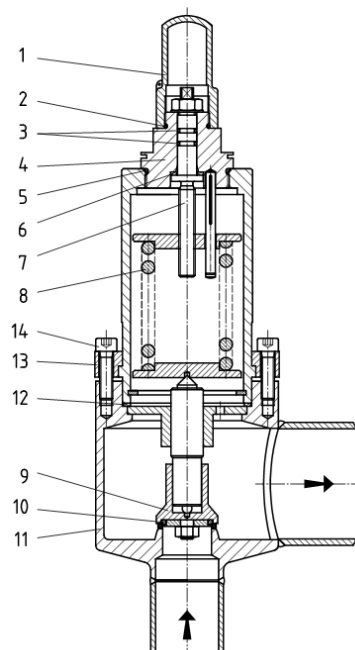
h1\*) = only for response pressures 28-63 bar, h2 = dismantling dimension

## 21 ORV materials

Designation and materials

ORV - oil pressure-regulating valves

DN 40 - 50



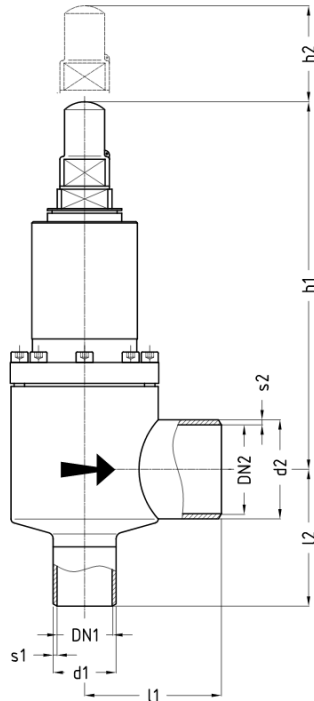
|    | Part                         | Material for steel valves      | Material for stainless steel valves                            |
|----|------------------------------|--------------------------------|----------------------------------------------------------------|
| 1  | Cap                          | Aluminium AlSi10Mg             | Aluminium AlSi10Mg                                             |
| 2  | Valve cap O-ring             | CR, NBR, HNBR, EPDM, FPM*      | CR, NBR, HNBR, EPDM, FPM*                                      |
| 3  | Valve stem O-ring            | CR, NBR, HNBR, EPDM, FPM*      | CR, NBR, HNBR, EPDM, FPM*                                      |
| 4  | Bonnet                       | S355J2 1.0577                  | X8CrNiS18-9 1.4305<br>X5CrNi18-10 1.4301<br>X2CrNi19-11 1.4306 |
| 5  | Bonnet O-ring                | CR, NBR, HNBR, EPDM, PTFE*     | CR, NBR, HNBR, EPDM, PTFE*                                     |
| 6  | Back seal                    | PTFE                           | PTFE                                                           |
| 7  | Stem                         | X8CrNiS18-9 1.4305             | X8CrNiS18-9 1.4305                                             |
| 8  | Tongue                       | SH                             | SH                                                             |
| 9  | Sealing piston               | X8CrNiS18-9 1.4305             | X8CrNiS18-9 1.4305                                             |
| 10 | Valve disc O-ring            | CR, NBR, HNBR, EPDM, PTFE*     | CR, NBR, HNBR, EPDM, PTFE*                                     |
| 11 | Body                         | S355J2 1.0577<br>P235GH 1.0345 | X5CrNi18-10 1.4301<br>GX5CrNiMoNb19-11-2 1.4581                |
| 12 | Flat sealing ring for bonnet | AFM30                          | AFM30                                                          |
| 13 | Loose ring                   | S355J2 1.1.0570                | X8CrNiS18-9 1.4305                                             |
| 14 | Screws                       | 8.8                            | A2-70                                                          |

\* depending on the refrigerant used

## 22 ORVA AE

**O:** PTFE seat seal, **AE:** Welding ends

ORV steel oil pressure-regulating valve for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The ORV is a back-pressure dependent overflow valve. For DN15 – 32 select UVAB.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH    | PN   | -60  | -40  | -25  | -10 | +50 | +150 | TS [°C]  |
|--------------|------|------|------|------|-----|-----|------|----------|
| DN 40...50   | PN25 | 6.25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 1 1/2" ...2" | PN40 | 10   | 20   | 30   | 40  | 40  | 40   | PS [bar] |

| Nominal size: |     | Welding ends acc. to: |     |      |     |      |               |    |     |     |     |     |     |               |  |
|---------------|-----|-----------------------|-----|------|-----|------|---------------|----|-----|-----|-----|-----|-----|---------------|--|
|               |     | ISO Series 1          |     |      |     |      | ANSI Sched 40 |    |     |     |     |     |     |               |  |
| DN1           | DN2 | d1                    | s1  | d2   | s2  | d1   | s1            | d2 | s2  | l1  | l2  | h1  | h2  | Setting range |  |
| 40            | 65  | 48.3                  | 2.6 | 76.1 | 2.9 | 48.3 | 3.7           | 73 | 5.2 | 105 | 105 | 295 | 100 | 1-6           |  |
| 50            | 65  | 60.3                  | 2.9 | 76.1 | 2.9 | 60.3 | 3.9           | 73 | 5.2 | 115 | 115 | 295 | 100 | 1-6           |  |

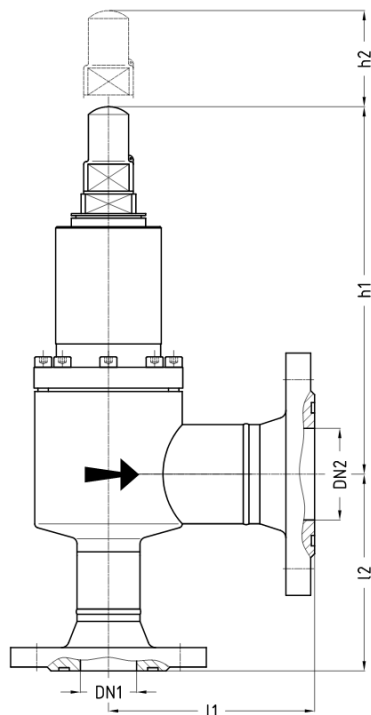
Table 41: Dimensions

h2 = dismantling dimension

## 23 ORVA FL

**O:** PTFE seat seal, **FL:** Flanged ends

ORV steel oil pressure-regulating valve for natural refrigerants (NH<sub>3</sub>, CO<sub>2</sub>) and non-corrosive gases according to EN 378-1



Note: The ORV is a back-pressure dependent overflow valve. For DN15 – 32 select UVAB.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH     | PN   | -60  | -40  | -25  | -10 | +50 | +150 | TS [°C]  |
|---------------|------|------|------|------|-----|-----|------|----------|
| DN 40...50    | PN25 | 6.25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 1 1/2" ... 2" | PN40 | 10   | 20   | 30   | 40  | 40  | 40   | PS [bar] |

| Nominal size: |     | Flanged ends acc. to: |     |                              |     |                              |     |                |     |     |     |               |  |
|---------------|-----|-----------------------|-----|------------------------------|-----|------------------------------|-----|----------------|-----|-----|-----|---------------|--|
|               |     | AWP<br>DN40-50 PN40   |     | PN25<br>DIN 2634<br>EN1092-1 |     | PN40<br>DIN 2635<br>EN1092-1 |     | ANSI<br>300 RF |     |     |     | Setting range |  |
| DN1           | DN2 | l1                    | l2  | l1                           | l2  | l1                           | l2  | l1             | l2  | h1  | h2  | bar           |  |
| 40            | 65  | 160                   | 145 | 158                          | 151 | 158                          | 151 | 183            | 175 | 295 | 100 | 1-6           |  |
| 50            | 65  | 170                   | 159 | 168                          | 164 | 168                          | 164 | 193            | 186 | 295 | 100 | 1-6           |  |

Table 42: Dimensions

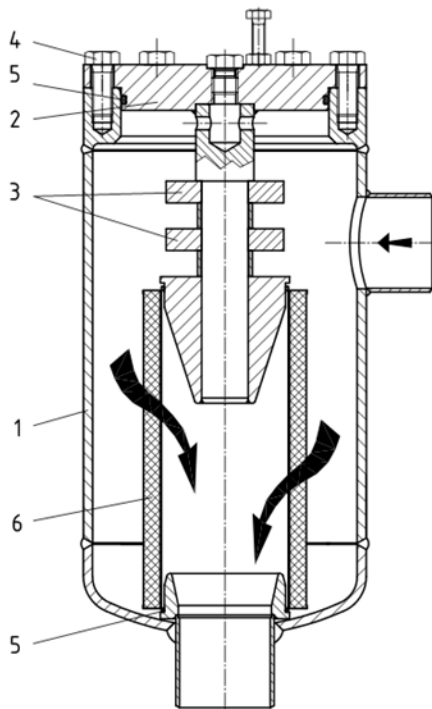
h2 = dismantling dimension

DIN/EN flange facings as standard: groove DIN 2512

## 24 OF materials

Designation and materials

OF - oil filter



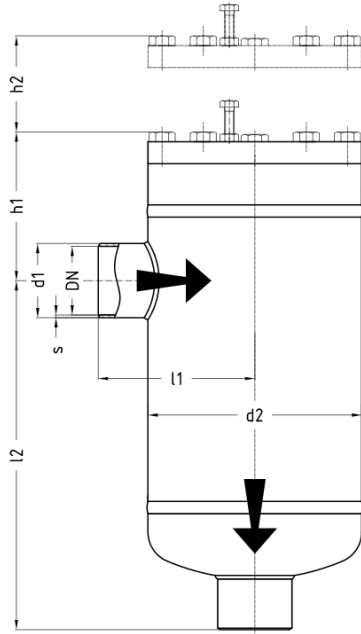
| Part |        | Material for steel valves                      | Material for stainless steel valves |
|------|--------|------------------------------------------------|-------------------------------------|
| 1    | Body   | P235GH 1.0345<br>S355J2 1.0577<br>P355N 1.0562 |                                     |
| 2    | Bonnet | S355J2 1.0577                                  |                                     |
| 3    | Magnet | Hard ferrite Ox                                |                                     |
| 4    | Screw  | 8.8; A2-70                                     |                                     |
| 5    | O-ring | CR, NBR, HNBR, EPDM, FPM*                      |                                     |
| 6    | Filter | Stainless steel mesh<br>Paper fleece           |                                     |

\* depending on the refrigerant used

## 25 OF AE

**AE:** Welding ends

OF steel oil filter for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Optional: Stainless steel mesh in 25µm or glass fibre fleece 10µm.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH  | PN   | -35  | -25  | -10 | +50 | +120 | TS [°C]  |
|------------|------|------|------|-----|-----|------|----------|
| DN 20...80 | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 3/4" ...3" | PN40 | 20   | 30   | 40  | 40  | 40   | PS [bar] |

| Nominal size: Welding ends acc. to: |        |              |     |              |     |               |     |     |     |     |     |     |               |       |                   |
|-------------------------------------|--------|--------------|-----|--------------|-----|---------------|-----|-----|-----|-----|-----|-----|---------------|-------|-------------------|
|                                     |        | ISO Series 1 |     | ISO Series 2 |     | ANSI Sched 40 |     |     |     |     |     |     | Filter volume |       | Filter cartridges |
| DN                                  | INCH   | d1           | s   | d1           | s   | d1            | s   | l1  | l2  | h1  | h2  | d2  | 3.5l          | 13.8l | Type              |
| 15                                  | 1/2"   | 21.3         | 2.0 | 20.0         | 2.5 | 21.3          | 2.8 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 20                                  | 3/4"   | 26.9         | 2.3 | 25.0         | 2.5 | 26.7          | 2.9 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 25                                  | 1"     | 33.7         | 2.6 | 32.0         | 3.0 | 33.4          | 3.4 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 32                                  | 1 1/4" | 42.4         | 2.6 | 38.0         | 3.0 | 42.2          | 3.6 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 40                                  | 1 1/2" | 48.3         | 2.6 | 45.0         | 3.0 | 48.3          | 3.7 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 50                                  | 2"     | 60.3         | 2.9 | 57.0         | 3.2 | 60.3          | 3.9 | 120 | 230 | 115 | 200 | 140 | x             |       | A90               |
| 50                                  | 2"     | 60.3         | 2.9 | 57.0         | 3.2 | 60.3          | 3.9 | 160 | 360 | 155 | 260 | 219 |               | x     | A160              |
| 65                                  | 2 1/2" | 76.1         | 2.9 | 76.1         | 3.6 | 73.0          | 5.2 | 160 | 360 | 155 | 260 | 219 |               | x     | A160              |
| 80                                  | 3"     | 88.9         | 3.2 | 88.9         | 4.0 | 88.9          | 5.5 | 160 | 360 | 155 | 260 | 219 |               | x     | A160              |
| 100                                 | 4"     | 114.3        | 3.6 | 108.0        | 4.0 | 114.3         | 6.0 | 200 | 360 | 180 | 260 | 219 |               | x     | A160              |

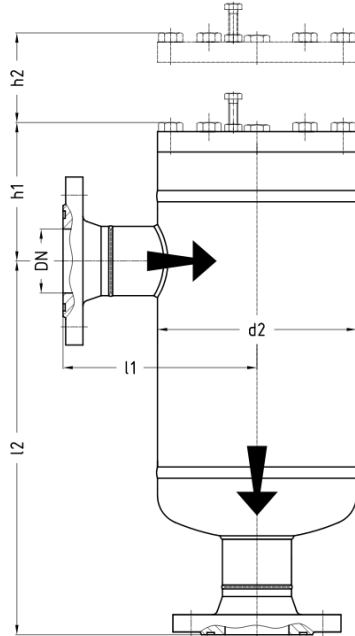
Table 43: Dimensions

h2 = dismantling dimension

## 26 OF FL

**FL:** Flanged ends

OF steel oil filter for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Optional: Stainless steel mesh in 25µm or glass fibre fleece 10µm.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH  | PN   | -35  | -25  | -10 | +50 | +120 | TS [°C]  |
|------------|------|------|------|-----|-----|------|----------|
| DN 20...80 | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 3/4" ...3" | PN40 | 20   | 30   | 40  | 40  | 40   | PS [bar] |

| Nominal size: |        | Flanged ends acc. to:        |     |                              |     |                |     |     |     |     |      | Filter volume |      | Filter cartridges |
|---------------|--------|------------------------------|-----|------------------------------|-----|----------------|-----|-----|-----|-----|------|---------------|------|-------------------|
|               |        | PS25<br>DIN 2634<br>EN1092-1 |     | PS40<br>DIN 2635<br>EN1092-1 |     | ANSI<br>300 RF |     |     |     |     |      |               |      |                   |
| DN            | INCH   | l1                           | l2  | l1                           | l2  | l1             | l2  | h1  | h2  | d2  | 3.5l | 13.8l         | Type |                   |
| 15            | 1/2"   | 159                          | 269 | 159                          | 269 | 173            | 283 | 115 | 200 | 140 | x    |               | A90  |                   |
| 20            | 3/4"   | 161                          | 271 | 161                          | 271 | 179            | 288 | 115 | 200 | 140 | x    |               | A90  |                   |
| 25            | 1"     | 161                          | 271 | 161                          | 271 | 183            | 293 | 115 | 200 | 140 | x    |               | A90  |                   |
| 32            | 1 1/4" | 163                          | 273 | 163                          | 273 | 186            | 296 | 115 | 200 | 140 | x    |               | A90  |                   |
| 40            | 1 1/2" | 166                          | 276 | 166                          | 276 | 189            | 299 | 115 | 200 | 140 | x    |               | A90  |                   |
| 50            | 2"     | 169                          | 279 | 169                          | 279 | 191            | 301 | 115 | 200 | 140 | x    |               | A90  |                   |
| 50            | 2"     | 209                          | 409 | 209                          | 409 | 231            | 431 | 155 | 260 | 219 |      | x             | A160 |                   |
| 65            | 2 1/2" | 213                          | 413 | 213                          | 413 | 237            | 437 | 155 | 260 | 219 |      | x             | A160 |                   |
| 80            | 3"     | 219                          | 419 | 219                          | 419 | 240            | 440 | 155 | 260 | 219 |      | x             | A160 |                   |
| 100           | 4"     | 266                          | 326 | 266                          | 326 | 282            | 342 | 180 | 260 | 219 |      | x             | A160 |                   |

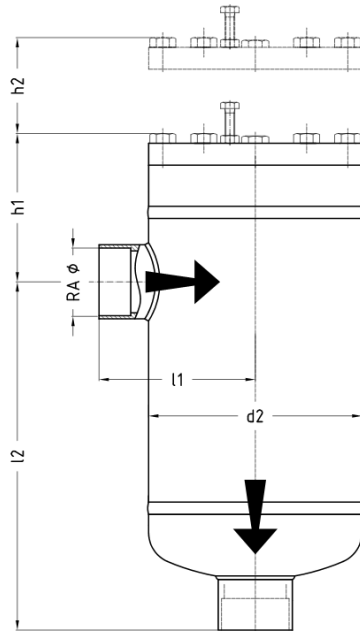
Table 44: Dimensions

h2 = dismantling dimension

## 27 OF LE

**LE:** Soldering ends

OF steel oil filter for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Optional: Stainless steel mesh in 25µm or glass fibre fleece 10µm.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH  | PN   | -35  | -25  | -10 | +50 | +120 | TS [°C]  |
|------------|------|------|------|-----|-----|------|----------|
| DN 20...80 | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 3/4" ...3" | PN40 | 20   | 30   | 40  | 40  | 40   | PS [bar] |

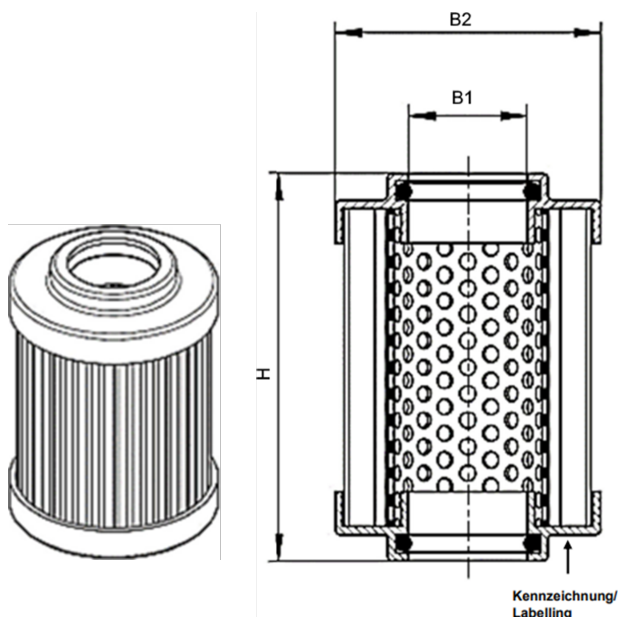
| Nominal size: | Soldering ends acc. to: |            |     |     |     |     |   | Filter volume |       | Filter cartridges |  |
|---------------|-------------------------|------------|-----|-----|-----|-----|---|---------------|-------|-------------------|--|
| DN            | RAØ                     | l1         | l2  | h1  | h2  | d2  |   | 3.5l          | 13.8l | Type              |  |
| 15            | 18                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 20            | 22                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 25            | 28                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 32            | 35                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 40            | 42                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 50            | 54                      | 120        | 230 | 115 | 200 | 140 | x |               |       | A90               |  |
| 50            | 54                      |            |     |     |     |     |   | x             |       | A160              |  |
| 65            | 64                      |            |     |     |     |     |   | x             |       | A160              |  |
| 65            | 76                      | on request |     |     |     |     |   | x             |       | A160              |  |
| 80            | 89                      |            |     |     |     |     |   | x             |       | A160              |  |
| 100           | 108                     |            |     |     |     |     |   | x             |       | A160              |  |

Table 45: Dimensions

h2 = dismantling dimension

## 28 OF filter elements

Filter elements for oil filters for refrigeration oils containing natural refrigerants according to EN 378-1  
Stainless steel wire mesh in 25µm or glass fibre fleece 10µm.



|        | 575001 | 575008 | 575044 | 575045 |
|--------|--------|--------|--------|--------|
| B1 (Ø) | 95.5   | 42.2   | 42.2   | 95.5   |
| B2 (Ø) | 160    | 90     | 90     | 160    |
| H      | 250    | 128    | 128    | 250    |

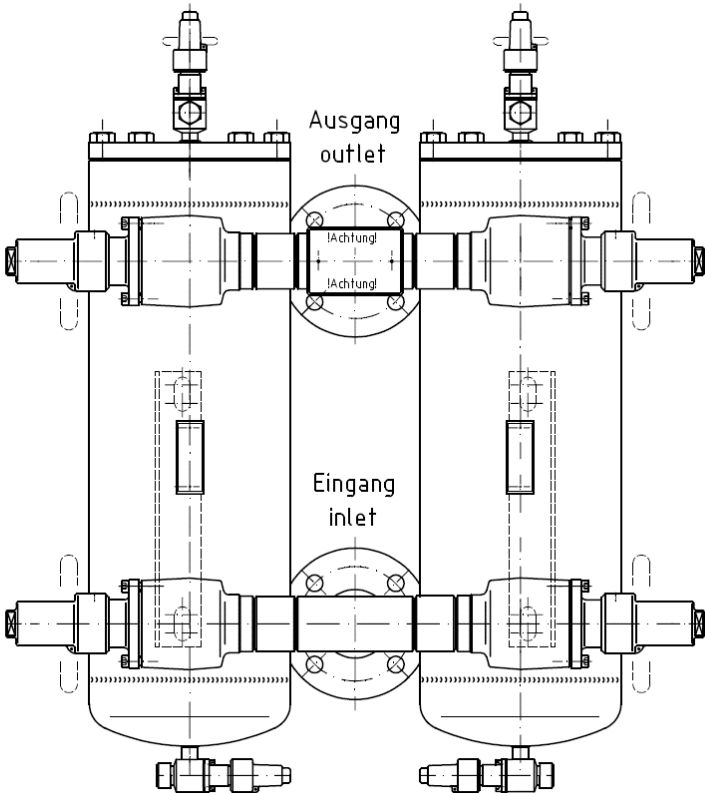
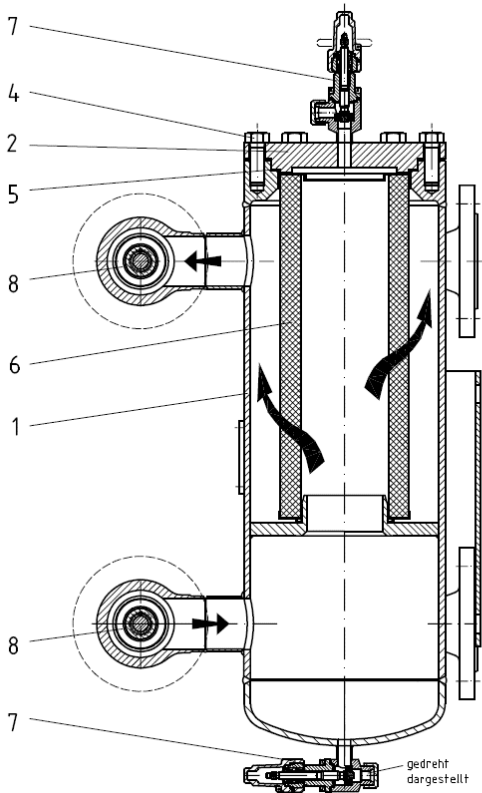
Table 46: Dimensions in mm

|                        | 575001                                 | 575008                                     | 575044                                     | 575045                                 |
|------------------------|----------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------|
| Filter material        | Stainless steel mesh                   |                                            | Multi-layered glass fibre material         |                                        |
| Filter area            | 0.93 m <sup>2</sup>                    | 0.22 m <sup>2</sup>                        | 0.22 m <sup>2</sup>                        | 0.93 m <sup>2</sup>                    |
| Pressure resistance    | 30 bar                                 | 10 bar                                     | 10 bar                                     | 30 bar                                 |
| Temperature resistance | -40 °C to +100 °C                      | -40 °C to +100 °C                          | -40 °C to +100 °C                          | -40 °C to +100 °C                      |
| Filtration rating      | 25 µm                                  | 25 µm                                      | 10 µm                                      | 10 µm                                  |
| Filtration ratio       | -                                      | β10(c) ≥ 200 (ISO 16889)                   | β10(c) ≥ 200 (ISO 16889)                   | β10(c) ≥ 200 (ISO 16889)               |
| Sealing material       | Neoprene ISO3601-1-XXXX-94X5-N-CR90    | Neoprene ISO3601-1-223A-40,87X3,5 3-N-CR70 | Neoprene ISO3601-1-223A-40,87X3,5 3-N-CR70 | Neoprene ISO3601-1-XXXX-94X5-N-CR90    |
| Max. NH3 content       | 10% NH3 and 90% Reflo 68A @80°C; -40°C | 10% NH3 and 90% Reflo 68A @80°C; -40°C     | 10% NH3 and 90% Reflo 68A @80°C; -40°C     | 10% NH3 and 90% Reflo 68A @80°C; -40°C |
| Max. water content     | 1000 ppm H2O in mineral oil            | 1000 ppm H2O in mineral oil                | 1000 ppm H2O in mineral oil                | 1000 ppm H2O in mineral oil            |

Table 47: Technical parameters

# 29 DOF materials

## Designation and materials

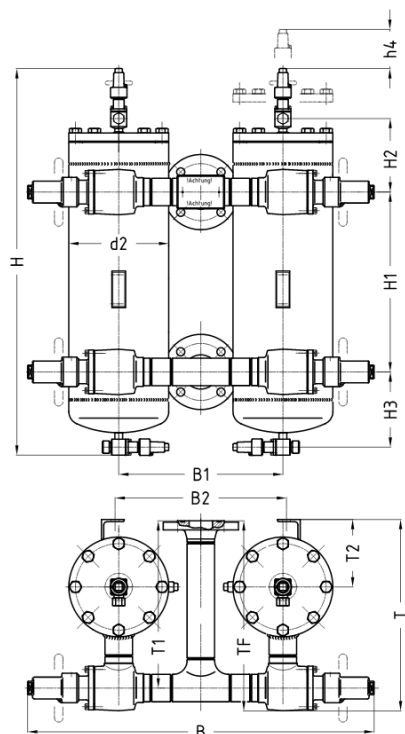


| Part |                    | Material for steel valves                      | Material for stainless steel valves |
|------|--------------------|------------------------------------------------|-------------------------------------|
| 1    | Body               | P235GH 1.0345<br>S355J2 1.0577<br>P355N 1.0562 |                                     |
| 2    | Bonnet             | S355J2 1.0577                                  |                                     |
| 4    | Screw              | 8.8; A2-70                                     |                                     |
| 5    | Flat gasket        | AFM asbestos-free                              |                                     |
| 6    | Filter             | Paper fleece                                   |                                     |
| 7    | Service valve HRS  | See Chapter 1                                  |                                     |
| 8    | Shut-off valve AVR | See Chapter 2                                  |                                     |

### 30 DOF FL / DOF FL EPE

**FL:** Flanged ends **EPE:** EPE elements

DOF steel double oil filter for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Equipment: Filter elements with glass fibre fleece 10µm.

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH  | PN   | -60  | -40  | -25  | -10 | +50 | +150 | TS [°C]  |
|------------|------|------|------|------|-----|-----|------|----------|
| DN 20...80 | PN25 | 6.25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
| 3/4" ...3" | PN40 | 10   | 20   | 30   | 40  | 40  | 40   | PS [bar] |

| Nominal size: Flanged ends acc. to: |        |                              |     |                              |     |             |     |     |     |     |     |     |     |     |     |     |     |     |                 |  |
|-------------------------------------|--------|------------------------------|-----|------------------------------|-----|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|--|
|                                     |        | PS25<br>DIN 2634<br>EN1092-1 |     | PS40<br>DIN 2635<br>EN1092-1 |     | ANSI 300 RF |     |     |     |     |     |     |     |     |     |     |     |     | Filter elements |  |
| DN                                  | INCH   | TF                           | T1  | TF                           | T1  | TF          | T1  | H   | H1  | H2  | H3  | h4  | B   | B1  | B2  | T   | T2  | d2  | No.:            |  |
| 20                                  | 3/4"   | 303                          | 273 | 303                          | 273 | 320         | 290 | 575 | 235 | 126 | 135 | 245 | 580 | 308 | 340 | 302 | 122 | 170 | EPE 361         |  |
| 25                                  | 1"     | 311                          | 273 | 311                          | 273 | 333         | 295 | 575 | 235 | 126 | 135 | 245 | 530 | 308 | 340 | 306 | 122 | 170 | EPE 361         |  |
| 32                                  | 1 1/4" | 311                          | 273 | 311                          | 273 | 334         | 296 | 575 | 235 | 126 | 135 | 245 | 530 | 308 | 340 | 306 | 122 | 170 | EPE 361         |  |
| 40                                  | 1 1/2" | 406                          | 358 | 406                          | 358 | 429         | 381 | 655 | 250 | 161 | 165 | 270 | 570 | 330 | 376 | 414 | 148 | 220 | EPE 561         |  |
| 40                                  | 1 1/2" | 406                          | 358 | 406                          | 358 | 429         | 381 | 800 | 395 | 161 | 165 | 395 | 570 | 330 | 376 | 414 | 148 | 220 | EPE 901         |  |
| 50                                  | 2"     | 413                          | 365 | 413                          | 365 | 435         | 387 | 655 | 250 | 161 | 165 | 270 | 600 | 360 | 376 | 426 | 154 | 220 | EPE 561         |  |
| 50                                  | 2"     | 413                          | 365 | 413                          | 365 | 435         | 387 | 800 | 395 | 161 | 165 | 395 | 600 | 360 | 376 | 426 | 154 | 220 | EPE 901         |  |
| 65                                  | 2 1/2" | 405                          | 347 | 405                          | 347 | 429         | 371 | 800 | 395 | 161 | 165 | 395 | 685 | 324 | 376 | 402 | 148 | 220 | EPE 901         |  |
| 65                                  | 2 1/2" | 405                          | 347 | 405                          | 347 | 429         | 371 | 945 | 520 | 171 | 175 | 520 | 685 | 324 | 376 | 402 | 148 | 220 | EPE 1401        |  |
| 80                                  | 3"     | 421                          | 350 | 421                          | 350 | 442         | 371 | 945 | 520 | 171 | 175 | 520 | 745 | 374 | 376 | 438 | 156 | 220 | EPE 1401        |  |

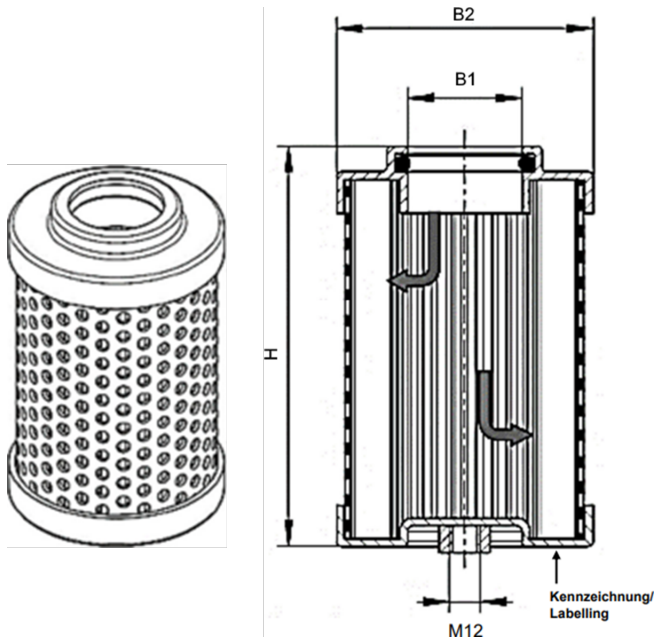
Table 48: Dimensions

h4 = dismantling dimension

Caution! Please specify the volume flow l/min, oil viscosity, required pressure drop and the flow direction when ordering! \* 2 EPE elements are required per DOF, O-ring is included in the element, bonnet gasket must be ordered separately.

### 31 DOF filter elements

Filter elements for duplex oil filters for refrigeration oils containing natural refrigerants according to EN 378-1  
Glass fibre fleece 10µm



|        | 575048 | 575046 | 575049 | 575047 |
|--------|--------|--------|--------|--------|
| B1 (Ø) | 93.7   | 60.2   | 93.7   | 93.7   |
| B2 (Ø) | 142.5  | 100    | 142.5  | 142.5  |
| H      | 378    | 255    | 505    | 255    |

Table 49: Dimensions in mm

|                        | 575048                                 | 575046                                 | 575049                                 | 575047                                 |
|------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| Filter material        | Multi-layered glass fibre material     |                                        |                                        |                                        |
| Filter area            | 1.03 m <sup>2</sup>                    | 0.39 m <sup>2</sup>                    | 1.38 m <sup>2</sup>                    | 0.54 m <sup>2</sup>                    |
| Pressure resistance    | 4 bar                                  | 4 bar                                  | 4 bar                                  | 4 bar                                  |
| Temperature resistance | -40 °C to +100 °C                      | -40 °C to +100 °C                      | -40 °C to +100 °C                      | -40 °C to +100 °C                      |
| Filtration rating      | 10 µm                                  | 10 µm                                  | 10 µm                                  | 10 µm                                  |
| Filtration ratio       | β10(c) ≥ 200 (ISO 16889)               | β10(c) ≥ 200 (ISO 16889)               | β10(c) ≥ 200 (ISO 16889)               | β10(c) ≥ 200 (ISO 16889)               |
| Sealing material       | Neoprene ISO3601-1-XXXXA-94X5-N-CR90   | Neoprene ISO3601-1-XXXXA-94X5-N-CR90   | Neoprene ISO3601-1-XXXXA-94X5-N-CR90   | Neoprene ISO3601-1-XXXXA-94X5-N-CR90   |
| Max. NH3 content       | 10% NH3 and 90% Reflo 68A @80°C; -40°C | 10% NH3 and 90% Reflo 68A @80°C; -40°C | 10% NH3 and 90% Reflo 68A @80°C; -40°C | 10% NH3 and 90% Reflo 68A @80°C; -40°C |
| Max. water content     | 1000 ppm H2O in mineral oil            | 1000 ppm H2O in mineral oil            | 1000 ppm H2O in mineral oil            | 1000 ppm H2O in mineral oil            |

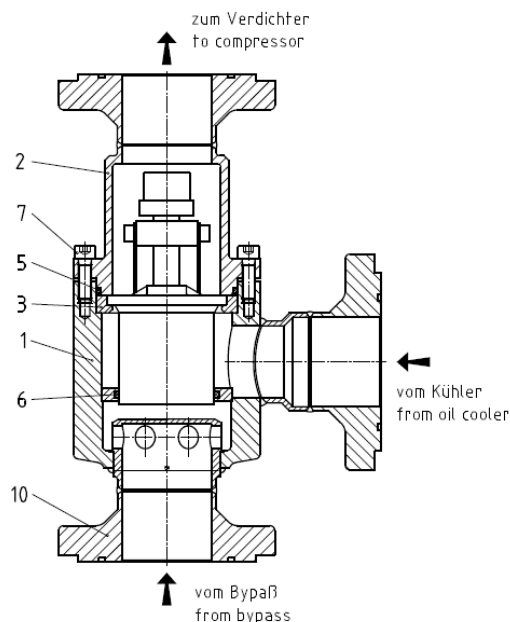
Table 50: Technical parameters

## 32 TR materials

Designation and materials

TR - temperature regulator

DN 15 - 50



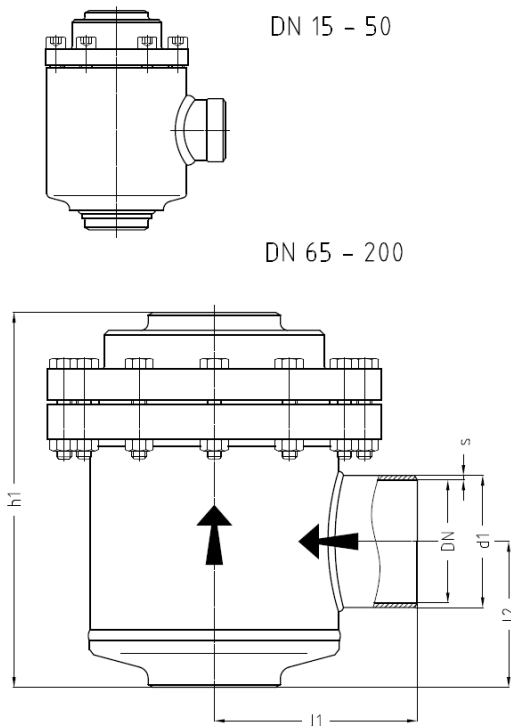
|    | Part           | Material for steel valves                      | Material for stainless steel valves |
|----|----------------|------------------------------------------------|-------------------------------------|
| 1  | Body           | P235GH 1.0345<br>S355J2 1.0577<br>P355N 1.0562 | X5CrNi18-10 1.4301                  |
| 2  | Bonnet         | S355J2 1.0577<br>P265GH 1.0425                 | X5CrNi18-10 1.4301                  |
| 3  | Guide ring     | S235JR 1.0038                                  | X5CrNi18-10 1.4301                  |
| 4  | Clamping plate | S235JR 1.0038                                  | X5CrNi18-10 1.4301                  |
| 5  | O-ring         | CR, NBR, HNBR, EPDM, FPM*                      | CR, NBR, HNBR, EPDM, FPM*           |
| 6  | Piston ring    | PTFE                                           | PTFE                                |
| 7  | Bonnet screw   | 8.8                                            | A2-70                               |
| 8  | Bonnet flange  | S355J2 1.0570                                  | X8CrNiS18-9 1.4305                  |
| 9  | Bonnet nut     | 8                                              | A2                                  |
| 10 | Flange         | P250GH 1.0460<br>P355NL1 1.0566                | X6CrNiTi18-10 1.4541                |

\* depending on the refrigerant used

### 33 TR AE / TR AE NH3

**AE:** Welding ends, **NH3:** Control elements

TR steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                 | PN   | -35  | -25  | -10 | +50 | +120 | TS [°C]  |
|---------------------------|------|------|------|-----|-----|------|----------|
| DN 15...150<br>1/2" ...6" | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                           | PN40 | 20   | 30   | 40  | 40  | 40   | PS [bar] |
|                           | PN63 | 31.5 | 47.2 | 63  | 63  | 63   | PS [bar] |
| DN 200<br>8"              | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |

| Nominal size: Welding ends acc. to: |        |       |     |     |                  |      |       |       |       |                            |
|-------------------------------------|--------|-------|-----|-----|------------------|------|-------|-------|-------|----------------------------|
| ISO Series 1                        |        |       |     |     | ANSI<br>Sched 40 |      |       |       |       | Number of control elements |
| DN                                  | INCH   | d1    | s1) | s2) | d1               | s    | l1    | l2    | h1    | pcs                        |
| 15                                  | 1/2"   | 21.3  | 2.0 | 2.0 | 21.3             | 2.77 | 66.0  | 77.0  | 158.0 | 1                          |
| 20                                  | 3/4"   | 26.9  | 2.3 | 2.6 | 26.7             | 2.9  | 66.0  | 77.0  | 158.0 | 1                          |
| 25                                  | 1"     | 33.7  | 2.6 | 2.6 | 33.4             | 3.4  | 66.0  | 80.0  | 161.0 | 1                          |
| 32                                  | 1 1/4" | 42.4  | 2.6 | 2.9 | 42.2             | 3.6  | 73.0  | 67.0  | 148.0 | 1                          |
| 40                                  | 1 1/2" | 48.3  | 2.6 | 2.9 | 48.3             | 3.7  | 75.0  | 67.0  | 148.0 | 1                          |
| 50                                  | 2"     | 60.3  | 2.9 | 2.9 | 60.3             | 3.9  | 87.0  | 78.0  | 211.0 | 1                          |
| 65                                  | 2 1/2" | 76.1  | 2.9 | 3.2 | 73.0             | 5.2  | 135.0 | 90.0  | 238.0 | 2                          |
| 80                                  | 3"     | 88.9  | 3.2 | 3.6 | 88.9             | 5.5  | 137.0 | 99.0  | 253.0 | 2                          |
| 100                                 | 4"     | 114.3 | 3.6 | 4.0 | 114.3            | 6.0  | 213.5 | 130.5 | 318.0 | 4                          |
| 125                                 | 5"     | 139.7 | 4.0 | 4.5 | 141.3            | 6.6  | 230.0 | 229.0 | 443.0 | 6                          |
| 150                                 | 6"     | 168.3 | 4.5 | 5.6 | 168.3            | 7.1  | 259.0 | 271.0 | 498.0 | 8                          |

| Nominal size: Welding ends acc. to: |    |       |     |     |       |     |       |       |       |    |
|-------------------------------------|----|-------|-----|-----|-------|-----|-------|-------|-------|----|
| 200                                 | 8" | 219.1 | 6.3 | 7.1 | 219.1 | 8.2 | 344.0 | 264.0 | 617.0 | 16 |

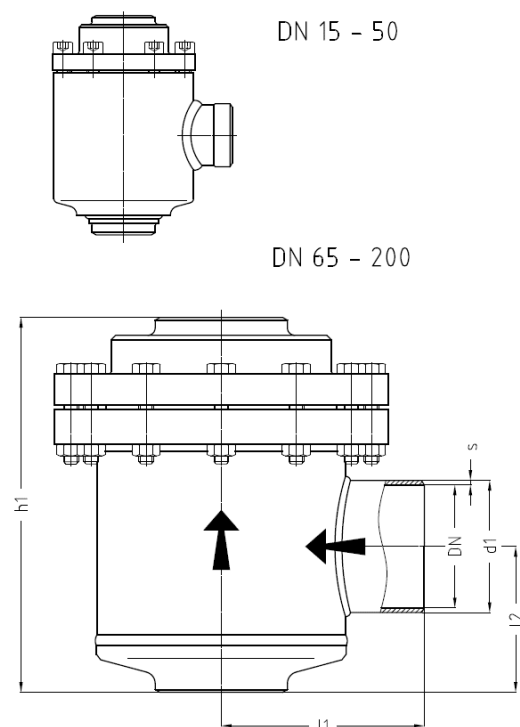
Table 51: Dimensions

1) PN25 / PN40 2) PN63

### 34 TR AE NIRO / TR AE NH3 NIRO

**AE:** Welding ends, **NH3:** Control elements

TR stainless steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                 | PN   | -35 | -25 | -10 | +50 | +120 | TS [°C]  |
|---------------------------|------|-----|-----|-----|-----|------|----------|
| DN 15...150<br>1/2" ...6" | PN25 | 25  | 25  | 25  | 25  | 25   | PS [bar] |
|                           | PN40 | 40  | 40  | 40  | 40  | 40   | PS [bar] |
|                           | PN63 | 63  | 63  | 63  | 63  | 63   | PS [bar] |
| DN 200<br>8"              | PN25 | 25  | 25  | 25  | 25  | 25   | PS [bar] |

| Nominal size: Welding ends acc. to: |        |       |     |     |                  |      |       |       |       |                            |
|-------------------------------------|--------|-------|-----|-----|------------------|------|-------|-------|-------|----------------------------|
| ISO Series 1                        |        |       |     |     | ANSI<br>Sched 40 |      |       |       |       | Number of control elements |
| DN                                  | INCH   | d1    | s1) | s2) | d1               | s    | l1    | l2    | h1    | Pcs                        |
| 15                                  | 1/2"   | 21.3  | 2.0 | 2.0 | 21.3             | 2.77 | 66.0  | 77.0  | 158.0 | 1                          |
| 20                                  | 3/4"   | 26.9  | 2.3 | 2.6 | 26.7             | 2.9  | 66.0  | 77.0  | 158.0 | 1                          |
| 25                                  | 1"     | 33.7  | 2.6 | 2.6 | 33.4             | 3.4  | 66.0  | 80.0  | 161.0 | 1                          |
| 32                                  | 1 1/4" | 42.4  | 2.6 | 2.9 | 42.2             | 3.6  | 73.0  | 67.0  | 148.0 | 1                          |
| 40                                  | 1 1/2" | 48.3  | 2.6 | 2.9 | 48.3             | 3.7  | 75.0  | 67.0  | 148.0 | 1                          |
| 50                                  | 2"     | 60.3  | 2.9 | 2.9 | 60.3             | 3.9  | 87.0  | 78.0  | 211.0 | 1                          |
| 65                                  | 2 1/2" | 76.1  | 2.9 | 3.2 | 73.0             | 5.2  | 135.0 | 90.0  | 238.0 | 2                          |
| 80                                  | 3"     | 88.9  | 3.2 | 3.6 | 88.9             | 5.5  | 137.0 | 99.0  | 253.0 | 2                          |
| 100                                 | 4"     | 114.3 | 3.6 | 4.0 | 114.3            | 6.0  | 213.5 | 130.5 | 318.0 | 4                          |
| 125                                 | 5"     | 139.7 | 4.0 | 4.5 | 141.3            | 6.6  | 230.0 | 229.0 | 443.0 | 6                          |
| 150                                 | 6"     | 168.3 | 4.5 | 5.6 | 168.3            | 7.1  | 259.0 | 271.0 | 498.0 | 8                          |

| Nominal size: Welding ends acc. to: |    |       |     |     |       |     |       |       |       |    |
|-------------------------------------|----|-------|-----|-----|-------|-----|-------|-------|-------|----|
| 200                                 | 8" | 219.1 | 6.3 | 7.1 | 219.1 | 8.2 | 344.0 | 264.0 | 617.0 | 16 |

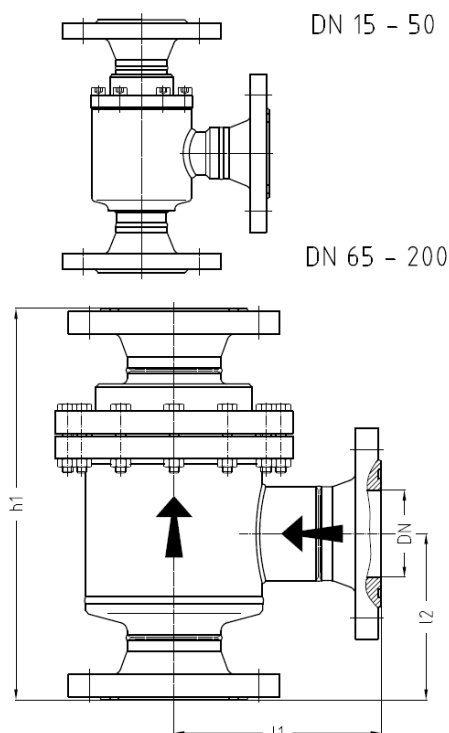
Table 52: Dimensions

1) PN25 / PN40 2) PN63

### 35 TR FL / TR FL NH3

**FL:** Flanged ends, **NH3:** Control elements

TR steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                 | PN   | -35  | -25  | -10 | +50 | +120 | TS [°C]  |
|---------------------------|------|------|------|-----|-----|------|----------|
| DN 15...150<br>1/2" ...6" | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |
|                           | PN40 | 20   | 30   | 40  | 40  | 40   | PS [bar] |
|                           | PN63 | 31.5 | 47.2 | 63  | 63  | 63   | PS [bar] |
| DN 200<br>8"              | PN25 | 12.5 | 18.7 | 25  | 25  | 25   | PS [bar] |

| Nominal size: |        | Flanged ends acc. to:               |       |                              |       |                              |       |                              |       |                |       |       |                      |             |             |                               |  |  |  |  |  |
|---------------|--------|-------------------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|----------------|-------|-------|----------------------|-------------|-------------|-------------------------------|--|--|--|--|--|
|               |        | AWP<br>DN15-20 PN25<br>DN25-80 PN40 |       | PN25<br>DIN 2634<br>EN1092-1 |       | PN40<br>DIN 2635<br>EN1092-1 |       | PN63<br>DIN 2636<br>EN1092-1 |       | ANSI<br>300 RF |       | AWP   | DIN<br>PN25/<br>PN40 | DIN<br>PN63 | ANSI<br>300 | Number of control<br>elements |  |  |  |  |  |
| DN            | INCH   | I1                                  | I2    | I1                           | I2    | I1                           | I2    | I1                           | I2    | I1             | I2    | h1    | h1                   | h1          | h1          | Pcs                           |  |  |  |  |  |
| 15            | 1/2"   | 98.5                                | 91.5  | 105.0                        | 98.0  | 105.0                        | 98.0  | 112.0                        | 105.0 | 120.0          | 113.0 | 205.0 | 218.0                | 232.0       | 248.0       | 1                             |  |  |  |  |  |
| 20            | 3/4"   | 98.5                                | 91.5  | 107.0                        | 100.0 | 107.0                        | 100.0 | 115.0                        | 108.0 | 125.0          | 118.0 | 205.0 | 222.0                | 248.0       | 258.0       | 1                             |  |  |  |  |  |
| 25            | 1"     | 111.0                               | 104.0 | 107.0                        | 100.0 | 107.0                        | 100.0 | 125.0                        | 118.0 | 129.0          | 122.0 | 230.0 | 222.0                | 258.0       | 266.0       | 1                             |  |  |  |  |  |
| 32            | 1 1/4" | 118.0                               | 112.0 | 116.0                        | 110.0 | 116.0                        | 110.0 | 134.0                        | 128.0 | 140.0          | 134.0 | 238.0 | 234.0                | 270.0       | 282.0       | 1                             |  |  |  |  |  |
| 40            | 1 1/2" | 114.5                               | 106.5 | 121.0                        | 113.0 | 121.0                        | 113.0 | 138.0                        | 130.0 | 145.0          | 137.0 | 227.0 | 240.0                | 274.0       | 288.0       | 1                             |  |  |  |  |  |
| 50            | 2"     | 131.0                               | 122.0 | 136.0                        | 127.0 | 136.0                        | 127.0 | 150.0                        | 141.0 | 158.0          | 149.0 | 299.0 | 309.0                | 337.0       | 353.0       | 1                             |  |  |  |  |  |
| 65            | 2 1/2" | 189.5                               | 144.5 | 188.0                        | 143.0 | 188.0                        | 143.0 | 204.0                        | 159.0 | 213.0          | 168.0 | 347.0 | 344.0                | 376.0       | 394.0       | 2                             |  |  |  |  |  |
| 80            | 3"     | 191.5                               | 153.5 | 196.0                        | 158.0 | 196.0                        | 158.0 | 210.0                        | 172.0 | 218.0          | 180.0 | 362.0 | 371.0                | 399.0       | 415.0       | 2                             |  |  |  |  |  |
| 100           | 4"     |                                     |       | 279.5                        | 196.5 | 279.5                        | 196.5 | 292.5                        | 209.5 | 300.5          | 217.5 |       | 450.0                | 476.0       | 492.0       | 4                             |  |  |  |  |  |

| Nominal size: |    | Flanged ends acc. to: |  |       |       |       |       |       |       |       |       |  |                 |       |       |    |
|---------------|----|-----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|--|-----------------|-------|-------|----|
| 125           | 5" |                       |  | 299.0 | 298.0 | 299.0 | 298.0 | 319.0 | 318.0 | 330.0 | 329.0 |  | 581.0           | 621.0 | 643.0 | 6  |
| 150           | 6" |                       |  | 336.0 | 348.0 | 336.0 | 348.0 | 356.0 | 368.0 | 360.0 | 372.0 |  | 652.0           | 692.0 | 700.0 | 8  |
| 200           | 8" |                       |  | 427.0 | 346.0 | 435.0 | 354.0 | 457.0 | 376.0 | 459.0 | 378.0 |  | 782.0/<br>798.0 | 842.0 | 846.0 | 16 |

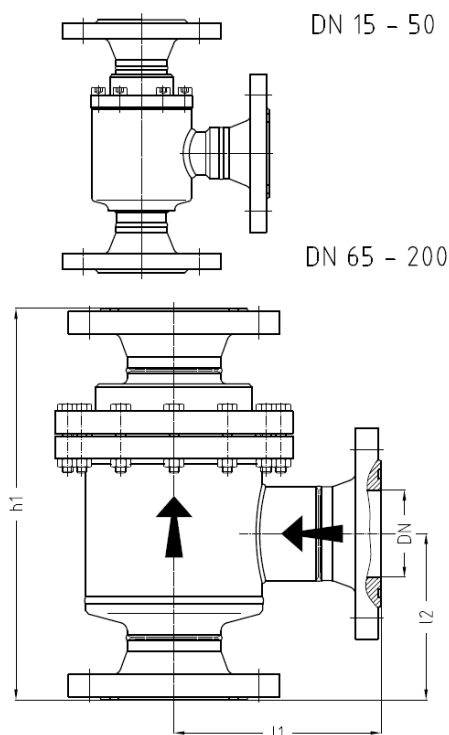
Table 53: Dimensions

DIN/EN flange facings as standard: tongue/groove DIN 2512

### 36 TR FL NIRO / TR FL NH3 NIRO

**FL:** Flanged ends, **NH3:** Control elements

TR stainless steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                 | PN   | -35 | -25 | -10 | +50 | +120 | TS [°C]  |
|---------------------------|------|-----|-----|-----|-----|------|----------|
| DN 15...150<br>1/2" ...6" | PN25 | 25  | 25  | 25  | 25  | 25   | PS [bar] |
|                           | PN40 | 40  | 40  | 40  | 40  | 40   | PS [bar] |
|                           | PN63 | 63  | 63  | 63  | 63  | 63   | PS [bar] |
| DN 200<br>8"              | PN25 | 25  | 25  | 25  | 25  | 25   | PS [bar] |

| Nominal size: |        | Flanged ends acc. to:               |       |                              |       |                              |       |                              |       |                |       |       |                      |             |             | Number of control elements |
|---------------|--------|-------------------------------------|-------|------------------------------|-------|------------------------------|-------|------------------------------|-------|----------------|-------|-------|----------------------|-------------|-------------|----------------------------|
|               |        | AWP<br>DN15-20 PN25<br>DN25-80 PN40 |       | PN25<br>DIN 2634<br>EN1092-1 |       | PN40<br>DIN 2635<br>EN1092-1 |       | PN63<br>DIN 2636<br>EN1092-1 |       | ANSI<br>300 RF |       | AWP   | DIN<br>PN25/<br>PN40 | DIN<br>PN63 | ANSI<br>300 |                            |
| DN            | INCH   | l1                                  | l2    | l1                           | l2    | l1                           | l2    | l1                           | l2    | l1             | l2    | h1    | h1                   | h1          | h1          | pcs                        |
| 15            | 1/2"   | 98.5                                | 91.5  | 105.0                        | 98.0  | 105.0                        | 98.0  | 112.0                        | 105.0 | 120.0          | 113.0 | 205.0 | 218.0                | 232.0       | 248.0       | 1                          |
| 20            | 3/4"   | 98.5                                | 91.5  | 107.0                        | 100.0 | 107.0                        | 100.0 | 115.0                        | 108.0 | 125.0          | 118.0 | 205.0 | 222.0                | 248.0       | 258.0       | 1                          |
| 25            | 1"     | 111.0                               | 104.0 | 107.0                        | 100.0 | 107.0                        | 100.0 | 125.0                        | 118.0 | 129.0          | 122.0 | 230.0 | 222.0                | 258.0       | 266.0       | 1                          |
| 32            | 1 1/4" | 118.0                               | 112.0 | 116.0                        | 110.0 | 116.0                        | 110.0 | 134.0                        | 128.0 | 140.0          | 134.0 | 238.0 | 234.0                | 270.0       | 282.0       | 1                          |
| 40            | 1 1/2" | 114.5                               | 106.5 | 121.0                        | 113.0 | 121.0                        | 113.0 | 138.0                        | 130.0 | 145.0          | 137.0 | 227.0 | 240.0                | 274.0       | 288.0       | 1                          |
| 50            | 2"     | 131.0                               | 122.0 | 136.0                        | 127.0 | 136.0                        | 127.0 | 150.0                        | 141.0 | 158.0          | 149.0 | 299.0 | 309.0                | 337.0       | 353.0       | 1                          |
| 65            | 2 1/2" | 189.5                               | 144.5 | 188.0                        | 143.0 | 188.0                        | 143.0 | 204.0                        | 159.0 | 213.0          | 168.0 | 347.0 | 344.0                | 376.0       | 394.0       | 2                          |
| 80            | 3"     | 191.5                               | 153.5 | 196.0                        | 158.0 | 196.0                        | 158.0 | 210.0                        | 172.0 | 218.0          | 180.0 | 362.0 | 371.0                | 399.0       | 415.0       | 2                          |
| 100           | 4"     |                                     |       | 279.5                        | 196.5 | 279.5                        | 196.5 | 292.5                        | 209.5 | 300.5          | 217.5 |       | 450.0                | 476.0       | 492.0       | 4                          |

| Nominal size: |    | Flanged ends acc. to: |  |       |       |       |       |       |       |       |       |  |                 |       |       |    |
|---------------|----|-----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|--|-----------------|-------|-------|----|
| 125           | 5" |                       |  | 299.0 | 298.0 | 299.0 | 298.0 | 319.0 | 318.0 | 330.0 | 329.0 |  | 581.0           | 621.0 | 643.0 | 6  |
| 150           | 6" |                       |  | 336.0 | 348.0 | 336.0 | 348.0 | 356.0 | 368.0 | 360.0 | 372.0 |  | 652.0           | 692.0 | 700.0 | 8  |
| 200           | 8" |                       |  | 427.0 | 346.0 | 435.0 | 354.0 | 457.0 | 376.0 | 459.0 | 378.0 |  | 782.0/<br>798.0 | 842.0 | 846.0 | 16 |

Table 54: Dimensions

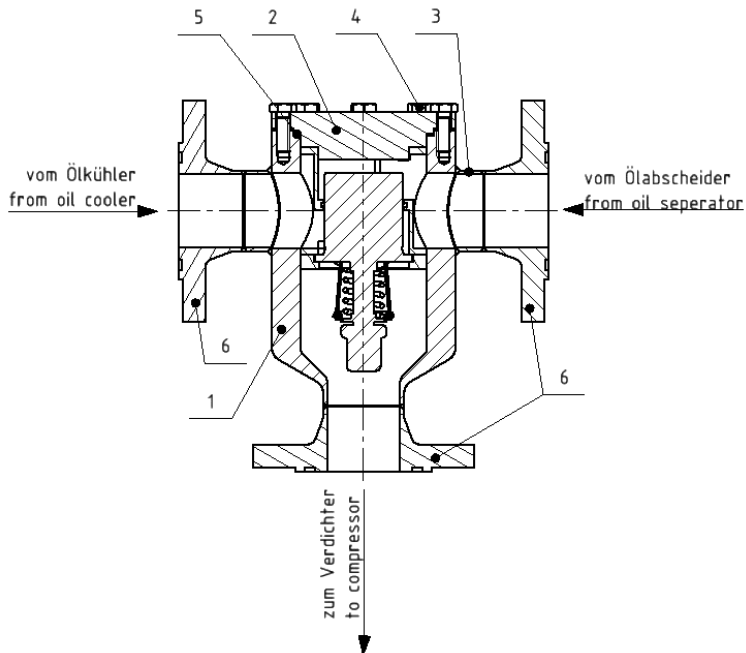
DIN/EN flange facings as standard: tongue/groove DIN 2512

### 37 TRplus materials

Designation and materials

TRplus HT - temperature regulator

DN 20 - 50



| Part |              | Material for steel valves       | Material for stainless steel valves |
|------|--------------|---------------------------------|-------------------------------------|
| 1    | Body         | S355J2 1.0577<br>P235GH 1.0345  | X5CrNi18-10 1.4301                  |
| 2    | Bonnet       | S355J2 1.0577<br>P265GH 1.0425  | X5CrNi18-10 1.4301                  |
| 3    | Pipe port    | P235GH 1.0345                   | X5CrNi18-10 1.4301                  |
| 4    | Bonnet screw | 8.8                             | A2-70                               |
| 5    | Seal         | AFM                             | AFM                                 |
| 6    | Flange       | P250GH 1.0460<br>P355NL1 1.0566 | X6CrNiTi18-10 1.4541                |

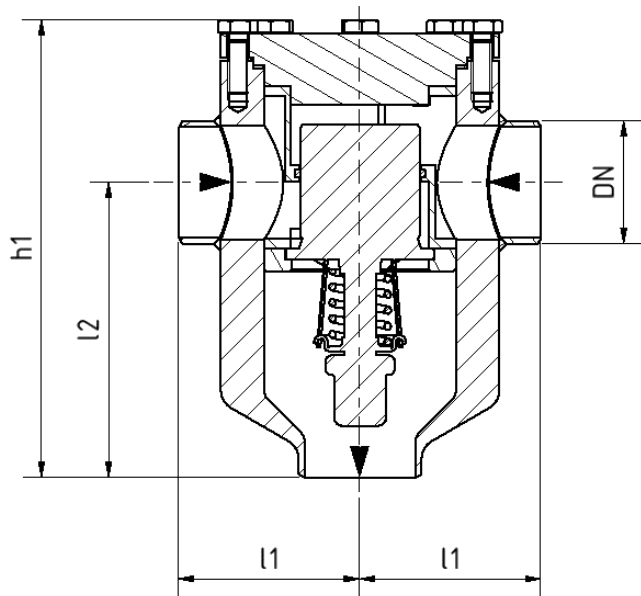
\* depending on the refrigerant used

### 38 TRplus AE / TRplus AE NH3

**AE:** Welding ends, **NH3:** Control elements

TRplus steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

DN 20 - 50



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                | PN   | -60  | -40  | -10 | +50 | +150 | TS [°C]  |
|--------------------------|------|------|------|-----|-----|------|----------|
| DN 20...50<br>3/4" ...2" | PN25 | 6.3  | 12.5 | 25  | 25  | 25   | PS [bar] |
|                          | PN40 | 10   | 20   | 40  | 40  | 40   | PS [bar] |
|                          | PN63 | 15.8 | 31.5 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |        | Welding ends acc. to: |     |     |                  |     |    |     |     |                            |
|---------------|--------|-----------------------|-----|-----|------------------|-----|----|-----|-----|----------------------------|
|               |        | ISO Series 1          |     |     | ANSI<br>Sched 40 |     |    |     |     | Number of control elements |
| DN            | INCH   | d1                    | s1) | s2) | d1               | s   | l1 | l2  | h1  | pcs                        |
| 20            | 3/4"   | 26.9                  | 2.3 | 2.6 | 26.7             | 2.9 | 85 | 105 | 174 | 1                          |
| 25            | 1"     | 33.7                  | 2.6 | 2.6 | 33.4             | 3.4 | 85 | 105 | 174 | 1                          |
| 32            | 1 1/4" | 42.4                  | 2.6 | 2.9 | 42.2             | 3.6 | 85 | 105 | 174 | 1                          |
| 40            | 1 1/2" | 48.3                  | 2.6 | 2.9 | 48.3             | 3.7 | 85 | 105 | 174 | 1                          |
| 50            | 2"     | 60.3                  | 2.9 | 2.9 | 60.3             | 3.9 | 89 | 145 | 225 | 1                          |

Table 55: Dimensions

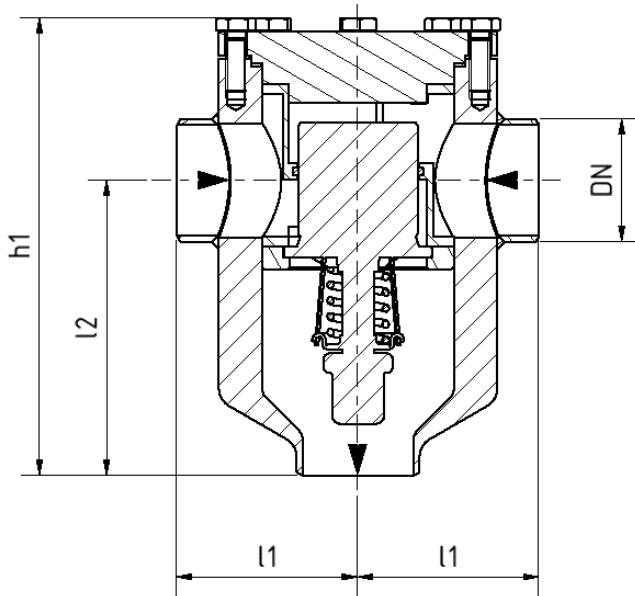
1) PN25 / PN40 2) PN63

### 39 TRplus AE NIRO / TRplus AE NH3 NIRO

**AE:** Welding ends, **NH3:** Control elements

TRplus stainless steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

DN 20 - 50



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                | PN   | -60 | -10 | +50 | +150 | TS [°C]  |
|--------------------------|------|-----|-----|-----|------|----------|
| DN 20...50<br>3/4" ...2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                          | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                          | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |        | Welding ends acc. to: |     |     |                  |     |    |     |     | Number of control elements |  |
|---------------|--------|-----------------------|-----|-----|------------------|-----|----|-----|-----|----------------------------|--|
|               |        | ISO Series 1          |     |     | ANSI<br>Sched 40 |     |    |     |     |                            |  |
| DN            | INCH   | d1                    | s1) | s2) | d1               | s   | l1 | l2  | h1  | pcs                        |  |
| 20            | 3/4"   | 26.9                  | 2.3 | 2.6 | 26.7             | 2.9 | 85 | 105 | 174 | 1                          |  |
| 25            | 1"     | 33.7                  | 2.6 | 2.6 | 33.4             | 3.4 | 85 | 105 | 174 | 1                          |  |
| 32            | 1 1/4" | 42.4                  | 2.6 | 2.9 | 42.2             | 3.6 | 85 | 105 | 174 | 1                          |  |
| 40            | 1 1/2" | 48.3                  | 2.6 | 2.9 | 48.3             | 3.7 | 85 | 105 | 174 | 1                          |  |
| 50            | 2"     | 60.3                  | 2.9 | 2.9 | 60.3             | 3.9 | 89 | 145 | 225 | 1                          |  |

Table 56: Dimensions

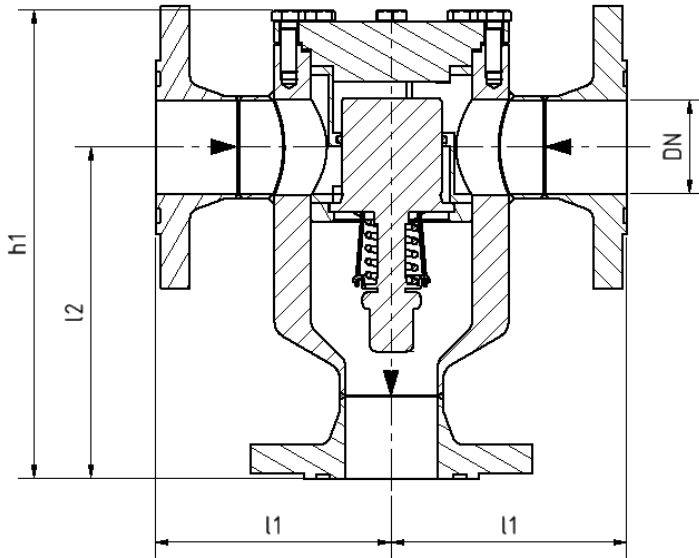
1) PN25 / PN40 2) PN63

## 40 TRplus FL / TRplus FL NH3

**FL:** Flanged ends, **NH3:** Control elements

TRplus steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

DN 20 - 50



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH                | PN   | -60  | -40  | -10 | +50 | +150 | TS [°C]  |
|--------------------------|------|------|------|-----|-----|------|----------|
| DN 20...50<br>3/4" ...2" | PN25 | 6.3  | 12.5 | 25  | 25  | 25   | PS [bar] |
|                          | PN40 | 10   | 20   | 40  | 40  | 40   | PS [bar] |
|                          | PN63 | 15.8 | 31.5 | 63  | 63  | 63   | PS [bar] |

| Nominal size: |        | Flanged ends acc. to:               |       |                              |     |                              |     |                              |     |                |     |       |                      |             |             |                            |  |
|---------------|--------|-------------------------------------|-------|------------------------------|-----|------------------------------|-----|------------------------------|-----|----------------|-----|-------|----------------------|-------------|-------------|----------------------------|--|
|               |        | AWP<br>DN15-20 PN25<br>DN25-80 PN40 |       | PN25<br>DIN 2634<br>EN1092-1 |     | PN40<br>DIN 2635<br>EN1092-1 |     | PN63<br>DIN 2636<br>EN1092-1 |     | ANSI<br>300 RF |     | AWP   | DIN<br>PN25/<br>PN40 | DIN<br>PN63 | ANSI<br>300 | Number of control elements |  |
| DN            | INCH   | l1                                  | l2    | l1                           | l2  | l1                           | l2  | l1                           | l2  | l1             | l2  | h1    | h1                   | h1          | h1          | pcs                        |  |
| 20            | 3/4"   | 118                                 | 138   | 126                          | 146 | 126                          | 146 | 134                          | 154 | 144            | 164 | 207   | 215                  | 223         | 233         | 1                          |  |
| 25            | 1"     | 130                                 | 150   | 126                          | 146 | 126                          | 146 | 144                          | 164 | 148            | 168 | 219   | 215                  | 233         | 237         | 1                          |  |
| 32            | 1 1/4" | 130                                 | 150   | 128                          | 148 | 128                          | 148 | 146                          | 166 | 152            | 170 | 219   | 217                  | 235         | 239         | 1                          |  |
| 40            | 1 1/2" | 124.5                               | 144.5 | 131                          | 151 | 131                          | 151 | 148                          | 168 | 155            | 175 | 213.5 | 220                  | 237         | 244         | 1                          |  |
| 50            | 2"     | 133                                 | 189   | 138                          | 194 | 138                          | 194 | 152                          | 208 | 160            | 216 | 269   | 274                  | 288         | 296         | 1                          |  |

Table 57: Dimensions

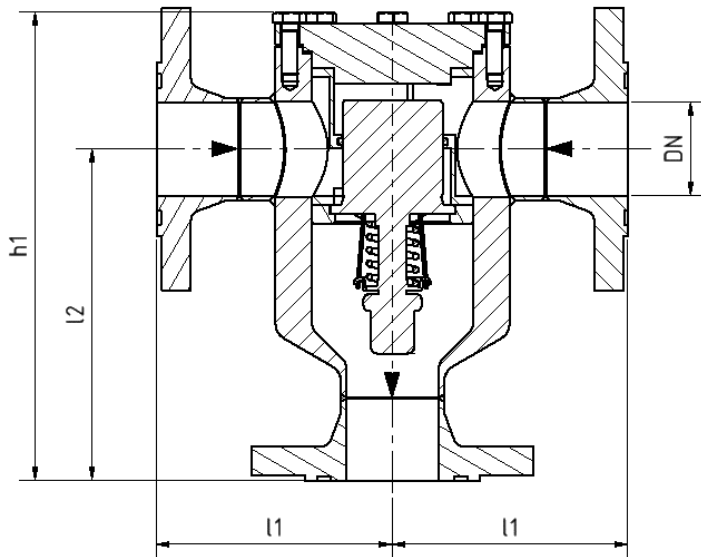
DIN/EN flange facings as standard: tongue/groove DIN 2512

## 41 TRplus FL NIRO / TRplus FL NH3 NIRO

**FL:** Flanged ends, **NH3:** Control elements

TRplus stainless steel temperature regulator for refrigeration machine oils containing proportions of natural refrigerants according to EN 378-1

DN 20 - 50



Note: State the nominal temperature when ordering!

Pressure/temperature operating limits:

**PS:** Max. allowable operating pressure in bar

**TS:** Permissible operating temperature in °C corresponding to the permissible operating pressures (PS)

**PN:** Nominal pressure rating

| DN / INCH               | PN   | -60 | -10 | +50 | +150 | TS [°C]  |
|-------------------------|------|-----|-----|-----|------|----------|
| DN 20...50<br>3/4"...2" | PN25 | 25  | 25  | 25  | 25   | PS [bar] |
|                         | PN40 | 40  | 40  | 40  | 40   | PS [bar] |
|                         | PN63 | 63  | 63  | 63  | 63   | PS [bar] |

| Nominal size: |        | Flanged ends acc. to:               |       |                              |     |                              |     |                              |     |                |     |       |                      |             |             |                               |
|---------------|--------|-------------------------------------|-------|------------------------------|-----|------------------------------|-----|------------------------------|-----|----------------|-----|-------|----------------------|-------------|-------------|-------------------------------|
|               |        | AWP<br>DN15-20 PN25<br>DN25-80 PN40 |       | PN25<br>DIN 2634<br>EN1092-1 |     | PN40<br>DIN 2635<br>EN1092-1 |     | PN63<br>DIN 2636<br>EN1092-1 |     | ANSI<br>300 RF |     | AWP   | DIN<br>PN25/<br>PN40 | DIN<br>PN63 | ANSI<br>300 | Number of control<br>elements |
| DN            | INCH   | I1                                  | I2    | I1                           | I2  | I1                           | I2  | I1                           | I2  | I1             | I2  | h1    | h1                   | h1          | h1          | pcs                           |
| 20            | 3/4"   | 118                                 | 138   | 126                          | 146 | 126                          | 146 | 134                          | 154 | 144            | 164 | 207   | 215                  | 223         | 233         | 1                             |
| 25            | 1"     | 130                                 | 150   | 126                          | 146 | 126                          | 146 | 144                          | 164 | 148            | 168 | 219   | 215                  | 233         | 237         | 1                             |
| 32            | 1 1/4" | 130                                 | 150   | 128                          | 148 | 128                          | 148 | 146                          | 166 | 152            | 170 | 219   | 217                  | 235         | 239         | 1                             |
| 40            | 1 1/2" | 124.5                               | 144.5 | 131                          | 151 | 131                          | 151 | 148                          | 168 | 155            | 175 | 213.5 | 220                  | 237         | 244         | 1                             |
| 50            | 2"     | 133                                 | 189   | 138                          | 194 | 138                          | 194 | 152                          | 208 | 160            | 216 | 269   | 274                  | 288         | 296         | 1                             |

Table 58: Dimensions

DIN/EN flange facings as standard: tongue/groove DIN 2512

## 42 Accessories

UV UM + ST screwed ends

GEA AWP – valves with screwed ends can be ordered with a variety of screw connections to meet the respective requirements. The list below shows fittings / valve combinations that are currently manufactured.

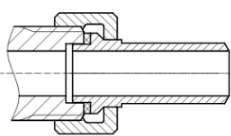
| Fitting group                                                                     | Valve designation     | Code fittings    | Connections |                                  |
|-----------------------------------------------------------------------------------|-----------------------|------------------|-------------|----------------------------------|
| UM + ST Union nut with welding nipple                                             |                       |                  |             |                                  |
|  | UVUA SE G1/2" / G1/2" | 00060F07A5A0A101 | I:          | G1/2" with UM + ST 13.5 x 1.8 mm |
|                                                                                   | UVUB SE G1/2" / G1/2" |                  | O:          |                                  |
|                                                                                   | UVUA SE G1/2" / G1"   | 00060F07A5A0A101 | I:          | G1/2" with UM + ST 13.5 x 1.8 mm |
|                                                                                   | UVUB SE G1/2" / G1"   | 00060F07A5A0B601 | O:          | G1" with UM + ST 21.3 x 2.0 mm   |

Table 59: Fittings overflow valves

I: = inlet/ O: = outlet

### 43 Set pressure ranges of springs for overflow valves and oil pressure-regulating valves

|    | Valve type<br>UVAA / UVAB |          | Valve type<br>UVUA / UVUB | Valve type<br>UVUB (installation<br>length F) | Valve type<br>UVR/UVRK | Valve type<br>ORVA |          |
|----|---------------------------|----------|---------------------------|-----------------------------------------------|------------------------|--------------------|----------|
| PS | DN 6/15                   | DN 20/32 | all DN                    | Replacement ORVA                              | DN 20                  | DN40/65            | DN 50/65 |
| 25 | 1-1.9                     | 1-1.9    | 4-7.9 (bar)               | 1-6                                           | 2-8                    | 1-6                | 1-6      |
|    | 2-4.9                     | 2-4.9    | 8-11.9                    |                                               |                        |                    |          |
|    | 5-7.9                     | 5-9.9    | 12-19.9                   |                                               |                        |                    |          |
|    | 8-13.9                    | 10-15.9  | 20-25.0                   |                                               |                        |                    |          |
|    | 14-19.9                   | 16-19.9  |                           |                                               |                        |                    |          |
|    | 20-25                     | 20-25    |                           |                                               |                        |                    |          |
| 40 |                           |          | 20-27.9                   |                                               |                        |                    |          |
|    |                           |          | 28-35.9                   |                                               |                        |                    |          |
|    |                           |          | 36-40.0                   |                                               |                        |                    |          |
| 63 |                           |          | 36-44.9                   |                                               |                        |                    |          |
|    |                           |          | 45-63                     |                                               |                        |                    |          |

Table 60: Response pressure range in bar

## 44 Comparison of European / American materials

GEA AWP valves contain individual parts in different materials. The following table contains all materials that GEA AWP uses for pressure-retaining parts and lists the equivalent American materials.

| European material                    |                | American equivalent material                                        |                                           |                      |
|--------------------------------------|----------------|---------------------------------------------------------------------|-------------------------------------------|----------------------|
| Material number                      | Short name     | Standard                                                            | Material standard                         | Grade                |
| Valves made of carbon steel          |                |                                                                     |                                           |                      |
| 1.0345                               | P235GH, TC1 +N | DIN EN 10216-2                                                      | ASME SA-106                               | A + B                |
| 1.0038                               | S235JR +N      | DIN EN 10025-2                                                      | ASME SA-570                               | 36                   |
| 1.0425                               | P265GH         | DIN EN 10028-2                                                      | ASME SA-516                               | 60                   |
| 1.0577                               | S355J2 +N      | DIN EN 10025-2                                                      | ASME SA-516                               | 65                   |
| 1.0562                               | P355N          | DIN EN 10028-3                                                      |                                           |                      |
| 1.0460                               | C22.8          | VdTÜV 350/3                                                         | ASME SA-105                               | -                    |
| Valves made of low-temperature steel |                |                                                                     |                                           |                      |
| 1.0451                               | P215NL +N      | DIN EN 10216-4                                                      | ASME SA-333                               | 6                    |
| 1.0452                               | P255QL +QT     | DIN EN 10216-4                                                      |                                           |                      |
| 1.0566                               | P355NL1 +N     | DIN EN 10028-3<br>DIN 17103<br>VdTÜV 354/3                          | ASME SA-662<br>ASME SA-420<br>ASME SA-350 | B<br>WPL6<br>LF2     |
| 1.0488                               | TStE 285       | DIN 17103<br>VdTÜV 352/3                                            | ASME SA-662<br>ASME SA-350                | A<br>LF2             |
| Valves made of stainless steel       |                |                                                                     |                                           |                      |
| 1.4301                               | X5CrNi18-10    | DIN EN 10216-5<br>DIN EN 10028-7<br>DIN EN 10222-5<br>DIN EN 1092-1 | ASME SA-312<br>ASME SA-240<br>ASME SA-182 | TP304<br>304<br>F304 |

Straight-way valves in non-standard design (e.g. deviating materials, third-party inspection) are only available in angle-seat form.

## 45 Coding of connections for small and service valves

GEA AWP valves can be manufactured with a variety of connection variants:

| DN   | Thread        | Code | Welding ends |                             | Dimensions | Code |
|------|---------------|------|--------------|-----------------------------|------------|------|
| DN8  | M12x1.5 RA6   | AL   | DN6          | R1                          | Ø10.2x1.6  | C0   |
| DN8  | M12x1.5-taper | AY   |              | ANSI 40                     | Ø1/8"x1.7  | C1   |
| DN8  | M14x1.5 RA8   | A4   |              | ANSI 80                     | Ø1/8"x2.4  | C2   |
| DN8  | M16x1.5 RA8   | A5   |              |                             |            |      |
| DN8  | M16x1.5 RA10  | A6   | DN8          | R1                          | Ø13.5x1.8  | D0   |
| DN8  | M16x1.5-i     | AZ   |              | ANSI 40                     | Ø1/4"x2.2  | D1   |
| DN8  | M16x1.5-taper | AC   |              | ANSI 80                     | Ø1/4"x3.0  | D2   |
| DN8  | M18x1.5 RA10  | A7   |              | 12x2                        | Ø12x2.0    | D3   |
| DN8  | M18x1.5 RA12  | A8   |              | 12x3                        | Ø12x3.0    | D4   |
| DN8  | M20x1.5 RA12  | A9   |              | R1 ext.<br>L2=130<br>Niro   | Ø13.5x1.8  | D5   |
| DN8  | M22x1.5 RA14  | AA   |              | R1 ext.<br>L2=130<br>C-St.  | Ø13.5x1.8  | D6   |
| DN8  | M22x1.5 RA15  | AB   |              |                             |            |      |
| DN8  | M22x1.5       | A0   | DN10         | R1                          | Ø17.2x1.8  | E0   |
| DN8  | M22x1.5-taper | AD   |              | ANSI 40                     | Ø3/8"x2.3  | E1   |
| DN20 | M26x1.5 RA18  | AS   |              | ANSI 80                     | Ø3/8"x3.2  | E2   |
| DN20 | M30x2 RA22    | AT   |              | R2                          | Ø15x2.5    | E3   |
| DN8  | G1/4"         | AF   |              | 18x3                        | Ø18x3.0    | E4   |
| DN8  | G1/4"-taper   | AG   |              | R1 ext.<br>L2=130<br>Niro   | Ø17.2x1.8  | E5   |
| DN8  | G1/4"-i       | AH   |              | R1 ext.<br>L2=130<br>C-St.  | Ø17.2x1.8  | E6   |
| DN8  | G3/8"         | AK   |              | 16x4<br>ext.L2=130<br>NIRO  | Ø16x4.0    | E7   |
| DN8  | G3/8"-i       | AM   |              | 17,2x2                      | Ø17.2x2.0  | E8   |
| DN8  | G3/8" RA10    | AJ   |              | R1 ext.<br>L2=120<br>C-St.  | Ø17.2x1.8  | E9   |
| DN8  | G1/2"         | A1   |              | R1 ext.<br>L2=140<br>Niro   | Ø17.2x1.8  | EA   |
| DN8  | G1/2"-LH      | A2   |              | R1 ext.<br>L2=140<br>C-St.  | Ø17.2x1.8  | EB   |
| DN8  | G1/2" RA12    | AN   |              | R1 ext.<br>L2=60<br>Niro    | Ø17.2x1.8  | EC   |
| DN8  | G1/2"-i       | AU   |              | R1 ext.<br>L2=60 C-<br>St.  | Ø17.2x1.8  | ED   |
| DN8  | G1/2" UM *)   | AV   |              | 18x4<br>ext.L2=140<br>Niro  | Ø18x4.0    | EE   |
| DN8  | G1/2" **)     | AW   |              | 18x4<br>ext.L2=140<br>OC-St | Ø18x4.0    | EF   |

| DN   | Thread            | Code | Welding ends                 |                            | Dimensions | Code |
|------|-------------------|------|------------------------------|----------------------------|------------|------|
| DN8  | G1/2"-taper       | AX   |                              | 18x4<br>ext.L2=60<br>Niro  | Ø18x4.0    | EG   |
| DN20 | G3/4"             | AE   |                              | 18x4<br>ext.L2=60<br>C-St. | Ø18x4.0    | EH   |
| DN20 | G3/4" RA18        | AP   |                              |                            |            |      |
| DN8  | 1/4"NPT-male      | A3   | DN15                         | R1                         | Ø21.3x2.0  | F0   |
| DN8  | 1/4"NPT-female    | AR   |                              | ANSI 40                    | Ø1/2"x2.8  | F1   |
| DN8  | 3/8"NPT-male      | AI   |                              | ANSI 80                    | Ø1/2"x3.7  | F2   |
| DN8  | 3/8"NPT-female    | B2   |                              | R2                         | Ø20x2.5    | F3   |
| DN8  | 1/2"NPT-male      | B0   |                              | R1 ext.<br>L2=130<br>Niro  | Ø21.3x2.0  | F5   |
| DN8  | 1/2"NPT-female    | B1   |                              | R1 ext.<br>L2=130<br>C-St. | Ø21.3x2.0  | F6   |
| DN20 | 3/4"NPT-male      | B3   |                              | R1 ext.<br>L2=180<br>NIRO  | Ø21.3x2.0  | F7   |
| DN8  | M10-a             | B4   |                              | ANSI 80<br>L2=130<br>C-St  | Ø21.3x3.7  | F8   |
| DN20 | G1"               | B6   | *) rotatable, welded to body |                            |            |      |
| DN8  | G3/8" BSPT-male   | B7   |                              |                            |            |      |
| DN8  | G3/8" BSPT-female | B8   | **) for one-piece blind nut  |                            |            |      |
| DN8  | 3/8-18 NPTF-male  | B9   |                              |                            |            |      |
| DN8  | R3/8"-taper       | BA   |                              |                            |            |      |

i = female thread, a = male thread

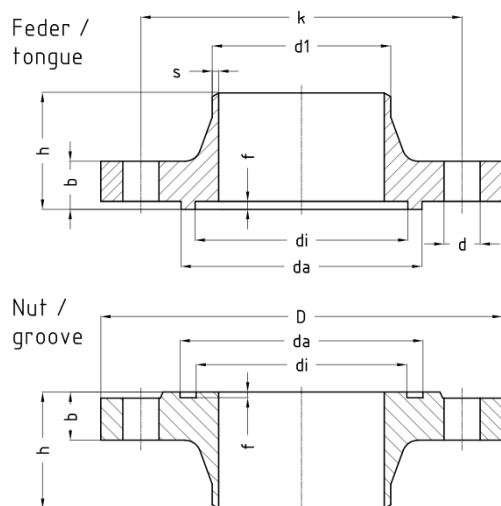
These connections can be equipped with accessories.

| Accessories |                                         | Short designation | Code |
|-------------|-----------------------------------------|-------------------|------|
| UM+ST       | Union nut with welding nipple           | UM+ST             | 1    |
| BM          | Blind nut                               | BM                | 2    |
| DM          | Double nut left/right                   | DM                | 3    |
| UM+SKB      | Union nut with weld ball nipple         | UM+SKB            | 4    |
| UM+SR       | Union nut with cutting ring             | UM+SR             | 5    |
| UM+SLT      | Union nut with hose nipple              | UM+SLT            | 6    |
| DM+adapter  | Double nut with adapter G1/2"-a/G1/4"-i | DM+adapter        | 7    |
| UM+KKR      | Union nut with clamping ring            | UM+KKR            | 9    |

## 46 Welding neck flanges - DIN 2634/2635

- DIN-FL
- DIN-FL N
- DIN-FL F
- DIN-FL C
- DIN-FL D
- FL - flange
- Form N - groove, DIN 2512
- Form F - tongue, DIN 2512
- Form C - smooth flange facing, (Rz 160) DIN 2526
- Form D - smooth flange facing (Rz 40) DIN 2526

DN 10-150 DIN 2635 PN 40,  
DN 200 DIN 2634 PN 25



| DIN2634 PN25 DN10-150 / DIN 2635 PN40 DN10-400 |       |          |       |     |                      |     |    |    |     |     |     |     |     |     |     |                   |        |        |                          |     |
|------------------------------------------------|-------|----------|-------|-----|----------------------|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-------------------|--------|--------|--------------------------|-----|
| Welding ends                                   |       |          |       |     | Flange facing design |     |    |    |     |     |     |     |     |     |     | Screws<br>DIN 931 |        |        | Sealing ring<br>DIN 2691 |     |
| Series 1                                       |       | Series 2 |       |     | Groove               |     |    |    |     |     |     |     |     |     |     | Tongue            |        |        |                          |     |
| DN                                             | d1    | s        | d1    | s   | b                    | k   | h  | d  | D   | di  | da  | f   | di  | da  | f   | Quantity          | Thread | Length | di                       | da  |
| 10                                             | 17.2  | 1.8      | 15.0  | 2.5 | 16                   | 60  | 35 | 14 | 90  | 23  | 35  | 2.5 | 24  | 34  | 4.0 | 4                 | M 12   | 45     | 24                       | 34  |
| 15                                             | 21.3  | 2.0      | 20.0  | 2.5 | 16                   | 65  | 38 | 14 | 95  | 28  | 40  | 2.5 | 29  | 39  | 4.0 | 4                 | M 12   | 45     | 29                       | 39  |
| 20                                             | 26.9  | 2.3      | 25.0  | 2.5 | 18                   | 75  | 40 | 14 | 105 | 35  | 51  | 2.5 | 36  | 50  | 4.0 | 4                 | M 12   | 50     | 36                       | 50  |
| 25                                             | 33.7  | 2.6      | 32.0  | 3.0 | 18                   | 85  | 40 | 14 | 115 | 42  | 58  | 2.5 | 43  | 57  | 4.0 | 4                 | M 12   | 50     | 43                       | 57  |
| 32                                             | 42.4  | 2.6      | 38.0  | 3.0 | 18                   | 100 | 42 | 18 | 140 | 50  | 66  | 2.5 | 51  | 65  | 4.0 | 4                 | M 16   | 55     | 51                       | 65  |
| 40                                             | 48.3  | 2.6      | 45.0  | 3.0 | 18                   | 110 | 45 | 18 | 150 | 60  | 76  | 2.5 | 61  | 75  | 4.0 | 4                 | M 16   | 55     | 61                       | 75  |
| 50                                             | 60.3  | 2.9      | 57.0  | 3.2 | 20                   | 125 | 48 | 18 | 165 | 72  | 88  | 2.5 | 73  | 87  | 4.0 | 4                 | M 16   | 60     | 73                       | 87  |
| 65                                             | 76.1  | 2.9      | 76.1  | 3.6 | 22                   | 145 | 52 | 18 | 185 | 94  | 110 | 2.5 | 95  | 109 | 4.0 | 8                 | M 16   | 60     | 95                       | 109 |
| 80                                             | 88.9  | 3.2      | 88.9  | 4.0 | 24                   | 160 | 58 | 18 | 200 | 105 | 121 | 2.5 | 106 | 120 | 4.0 | 8                 | M 16   | 65     | 106                      | 120 |
| 100                                            | 114.3 | 3.6      | 108.0 | 4.0 | 24                   | 190 | 65 | 22 | 235 | 128 | 150 | 3.0 | 129 | 149 | 4.5 | 8                 | M 20   | 70     | 129                      | 149 |
| 125                                            | 139.7 | 4.0      | 133.0 | 4.0 | 26                   | 220 | 68 | 26 | 270 | 154 | 176 | 3.0 | 155 | 175 | 4.5 | 8                 | M 24   | 80     | 155                      | 175 |
| 150                                            | 168.3 | 4.5      | 159.0 | 4.5 | 28                   | 250 | 75 | 26 | 300 | 182 | 204 | 3.0 | 183 | 203 | 4.5 | 8                 | M 24   | 80     | 183                      | 203 |

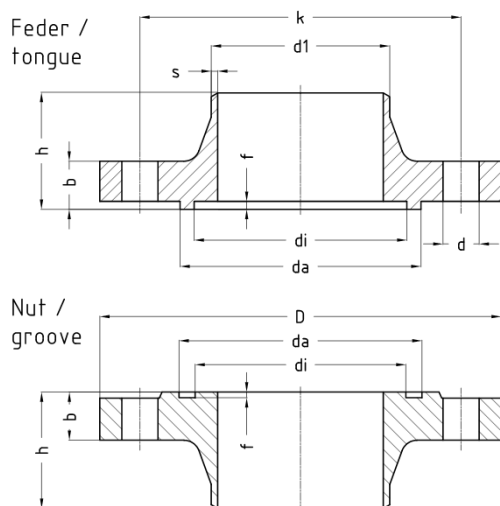
| DIN2634 PN25 DN10-150 / DIN 2635 PN40 DN10-400 |       |      |  |  |    |     |     |    |     |     |     |     |     |     |     |    |  |      |     |     |     |
|------------------------------------------------|-------|------|--|--|----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|--|------|-----|-----|-----|
| 200                                            | 219.1 | 6.3  |  |  | 34 | 320 | 88  | 30 | 375 | 238 | 260 | 3.0 | 239 | 259 | 4.5 | 12 |  | M 27 | 100 | 239 | 259 |
| 250                                            | 273.0 | 7.1  |  |  | 38 | 385 | 105 | 33 | 450 | 291 | 313 | 3.0 | 292 | 312 | 4.5 | 12 |  | M 30 | 110 | 292 | 312 |
| 300                                            | 323.9 | 8.0  |  |  | 42 | 450 | 115 | 33 | 515 | 342 | 364 | 3.0 | 343 | 363 | 4.5 | 16 |  | M 30 | 120 | 343 | 363 |
| 350                                            | 355.6 | 8.8  |  |  | 46 | 510 | 125 | 36 | 580 | 394 | 422 | 3.5 | 395 | 421 | 5.0 | 16 |  | M 33 | 130 | 395 | 421 |
| 400                                            | 406.4 | 11.0 |  |  | 50 | 585 | 135 | 39 | 660 | 446 | 474 | 3.5 | 447 | 473 | 5.0 | 16 |  | M 36 | 140 | 447 | 473 |

Table 61: Installation lengths

## 47 Welding neck flanges - DIN 2634/2636/2637

- DIN-FL
- DIN-FL N
- DIN-FL F
- DIN-FL C
- DIN-FL D
- FL - flange
- Form N - groove, DIN 2512
- Form F - tongue, DIN 2512
- Form C - smooth flange facing, (Rz 160) DIN 2526
- Form D - smooth flange facing (Rz 40) DIN 2526

DN 10-150 DIN 2635 PN 40,  
DN 200 DIN 2634 PN 25



| DIN 2634 PN25 DN200-500                       |       |      |                      |     |     |    |     |     |     |     |     |     |     |                   |        |        |                          |     |
|-----------------------------------------------|-------|------|----------------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-------------------|--------|--------|--------------------------|-----|
| Welding ends                                  |       |      | Flange facing design |     |     |    |     |     |     |     |     |     |     | Screws<br>DIN 931 |        |        | Sealing ring<br>DIN 2691 |     |
| Series 1                                      |       |      | Groove               |     |     |    |     |     |     |     |     |     |     |                   |        |        |                          |     |
| DN                                            | d1    | s    | b                    | k   | h   | d  | D   | di  | da  | f   | di  | da  | f   | Quantity          | Thread | Length | di                       | da  |
| 200                                           | 219.1 | 6.3  | 30                   | 310 | 80  | 26 | 360 | 238 | 260 | 3.0 | 239 | 259 | 4.5 | 12                | M 24   | 90     | 239                      | 259 |
| 250                                           | 273.0 | 7.1  | 32                   | 370 | 88  | 30 | 425 | 291 | 313 | 3.0 | 292 | 312 | 4.5 | 12                | M 27   | 90     | 292                      | 312 |
| 300                                           | 323.9 | 8.0  | 34                   | 430 | 92  | 30 | 485 | 342 | 364 | 3.0 | 343 | 363 | 4.5 | 16                | M 27   | 100    | 343                      | 363 |
| 350                                           | 355.6 | 8.0  | 38                   | 490 | 100 | 33 | 555 | 394 | 422 | 3.5 | 395 | 421 | 5.0 | 16                | M 30   | 110    | 395                      | 421 |
| 400                                           | 406.4 | 8.8  | 40                   | 550 | 110 | 36 | 620 | 446 | 474 | 3.5 | 447 | 473 | 5.0 | 16                | M 33   | 120    | 447                      | 473 |
| 500                                           | 508.0 | 10.0 | 44                   | 660 | 125 | 36 | 730 | 548 | 576 | 3.5 | 549 | 575 | 5.0 | 20                | M 33   | 130    | 549                      | 575 |
| DIN2636 PN63 DN10-40 / DIN 2637 PN100 DN10-40 |       |      |                      |     |     |    |     |     |     |     |     |     |     |                   |        |        |                          |     |
| DN                                            | d1    | s    | b                    | k   | h   | d  | D   | di  | da  | f   | di  | da  | f   | Quantity          | Thread | Length | di                       | Da  |
| 10                                            | 17.2  | 2.0  | 20                   | 70  | 45  | 14 | 100 | 23  | 35  | 2.5 | 24  | 34  | 4.0 | 4                 | M 12   | 55     | 24                       | 34  |
| 15                                            | 21.3  | 2.0  | 20                   | 75  | 45  | 14 | 105 | 28  | 40  | 2.5 | 29  | 39  | 4.0 | 4                 | M 12   | 55     | 29                       | 39  |
| 20                                            | 26.9  | 2.6  | 22                   | 90  | 48  | 18 | 130 | 35  | 51  | 2.5 | 36  | 50  | 4.0 | 4                 | M 16   | 60     | 36                       | 50  |
| 25                                            | 33.7  | 2.6  | 24                   | 100 | 58  | 18 | 140 | 42  | 58  | 2.5 | 43  | 57  | 4.0 | 4                 | M 16   | 65     | 43                       | 57  |

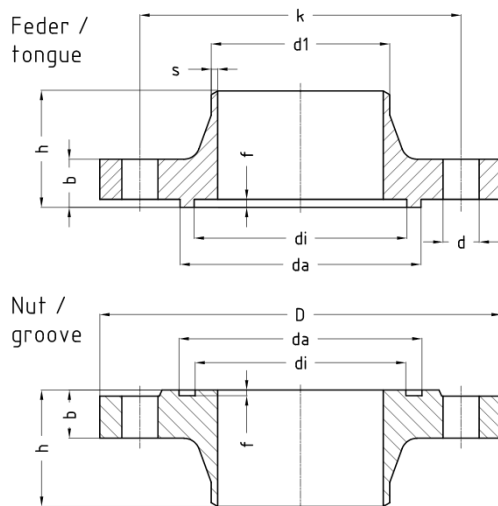
| DIN 2634 PN25 DN200-500 |       |     |    |     |    |    |     |     |     |     |     |     |     |          |        |        |     |     |  |
|-------------------------|-------|-----|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|----------|--------|--------|-----|-----|--|
| 32                      | 42.4  | 2.9 | 24 | 110 | 60 | 22 | 155 | 50  | 66  | 2.5 | 51  | 65  | 4.0 | 4        | M 20   | 70     | 51  | 65  |  |
| 40                      | 48.3  | 2.9 | 26 | 125 | 62 | 22 | 170 | 60  | 76  | 2.5 | 61  | 75  | 4.0 | 4        | M 20   | 70     | 61  | 75  |  |
| DIN 2636 PN63 DN50-125  |       |     |    |     |    |    |     |     |     |     |     |     |     |          |        |        |     |     |  |
| DN                      | d1    | S   | b  | k   | h  | d  | D   | di  | da  | f   | di  | da  | f   | Quantity | Thread | Length | di  | da  |  |
| 50                      | 60.3  | 2.9 | 26 | 135 | 62 | 22 | 180 | 72  | 88  | 2.5 | 73  | 87  | 4.0 | 4        | M 20   | 75     | 73  | 87  |  |
| 65                      | 76.1  | 3.2 | 26 | 160 | 68 | 22 | 205 | 94  | 110 | 2.5 | 95  | 109 | 4.0 | 8        | M 20   | 75     | 95  | 109 |  |
| 80                      | 88.9  | 3.6 | 28 | 170 | 72 | 22 | 215 | 105 | 121 | 2.5 | 106 | 120 | 4.0 | 8        | M 20   | 75     | 106 | 120 |  |
| 100                     | 114.3 | 4.0 | 30 | 200 | 78 | 26 | 250 | 128 | 150 | 3.0 | 129 | 149 | 4.5 | 8        | M 24   | 90     | 129 | 149 |  |
| 125                     | 139.7 | 4.5 | 34 | 240 | 88 | 30 | 295 | 154 | 176 | 3.0 | 155 | 175 | 4.5 | 8        | M 27   | 100    | 155 | 175 |  |

Table 62: Installation lengths

## 48 Welding neck flanges - DIN EN 1092-1

- DIN EN-FL
- DIN EN-FL D
- DIN EN-FL C
- DIN EN-FL B1
- DIN EN-FL B2
- FL - flange
- Form D - groove, DIN EN 1092-1
- Form C - tongue, DIN EN 1092-1
- Form B1 - raised face (Rz 50) DIN EN 1092-1
- Form B2 - raised face (Rz 12.5) DIN EN 1092-1

DN 10-150 DIN 2635 PN 40,  
DN 200 DIN 2634 PN 25



| DIN EN 1092-1 PN25 DN10-150 / PN40 DN10-400 |       |          |       |     |                      |     |    |    |     |     |     |     |     |     |     |                   |        |        |                          |     |
|---------------------------------------------|-------|----------|-------|-----|----------------------|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-------------------|--------|--------|--------------------------|-----|
| Welding ends                                |       |          |       |     | Flange facing design |     |    |    |     |     |     |     |     |     |     | Screws<br>DIN 931 |        |        | Sealing ring<br>DIN 2691 |     |
| Series 1                                    |       | Series 2 |       |     | Groove               |     |    |    |     |     |     |     |     |     |     | Tongue            |        |        |                          |     |
| DN                                          | d1    | s        | d1    | s   | b                    | k   | h  | d  | D   | di  | da  | f   | di  | da  | f   | Quantity          | Thread | Length | di                       | da  |
| 10                                          | 17.2  | 1.8      | 15.0  | 2.5 | 16                   | 60  | 35 | 14 | 90  | 23  | 35  | 4.0 | 24  | 34  | 4.5 | 4                 | M 12   | 45     | 24                       | 34  |
| 15                                          | 21.3  | 2.0      | 20.0  | 2.5 | 16                   | 65  | 38 | 14 | 95  | 28  | 40  | 4.0 | 29  | 39  | 4.5 | 4                 | M 12   | 45     | 29                       | 39  |
| 20                                          | 26.9  | 2.3      | 25.0  | 2.5 | 18                   | 75  | 40 | 14 | 105 | 35  | 51  | 4.0 | 36  | 50  | 4.5 | 4                 | M 12   | 50     | 36                       | 50  |
| 25                                          | 33.7  | 2.6      | 32.0  | 3.0 | 18                   | 85  | 40 | 14 | 115 | 42  | 58  | 4.0 | 43  | 57  | 4.5 | 4                 | M 12   | 50     | 43                       | 57  |
| 32                                          | 42.4  | 2.6      | 38.0  | 3.0 | 18                   | 100 | 42 | 18 | 140 | 50  | 66  | 4.0 | 51  | 65  | 4.5 | 4                 | M 16   | 55     | 51                       | 65  |
| 40                                          | 48.3  | 2.6      | 45.0  | 3.0 | 18                   | 110 | 45 | 18 | 150 | 60  | 76  | 4.0 | 61  | 75  | 4.5 | 4                 | M 16   | 55     | 61                       | 75  |
| 50                                          | 60.3  | 2.9      | 57.0  | 3.2 | 20                   | 125 | 48 | 18 | 165 | 72  | 88  | 4.0 | 73  | 87  | 4.5 | 4                 | M 16   | 60     | 73                       | 87  |
| 65                                          | 76.1  | 2.9      | 76.1  | 3.6 | 22                   | 145 | 52 | 18 | 185 | 94  | 110 | 4.0 | 95  | 109 | 4.5 | 8                 | M 16   | 60     | 95                       | 109 |
| 80                                          | 88.9  | 3.2      | 88.9  | 4.0 | 24                   | 160 | 58 | 18 | 200 | 105 | 121 | 4.0 | 106 | 120 | 4.5 | 8                 | M 16   | 65     | 106                      | 120 |
| 100                                         | 114.3 | 3.6      | 108.0 | 4.0 | 24                   | 190 | 65 | 22 | 235 | 128 | 150 | 4.5 | 129 | 149 | 5.0 | 8                 | M 20   | 70     | 129                      | 149 |
| 125                                         | 139.7 | 4.0      | 133.0 | 4.0 | 26                   | 220 | 68 | 26 | 270 | 154 | 176 | 4.5 | 155 | 175 | 5.0 | 8                 | M 24   | 80     | 155                      | 175 |
| 150                                         | 168.3 | 4.5      | 159.0 | 4.5 | 28                   | 250 | 75 | 26 | 300 | 182 | 204 | 4.5 | 183 | 203 | 5.0 | 8                 | M 24   | 80     | 183                      | 203 |

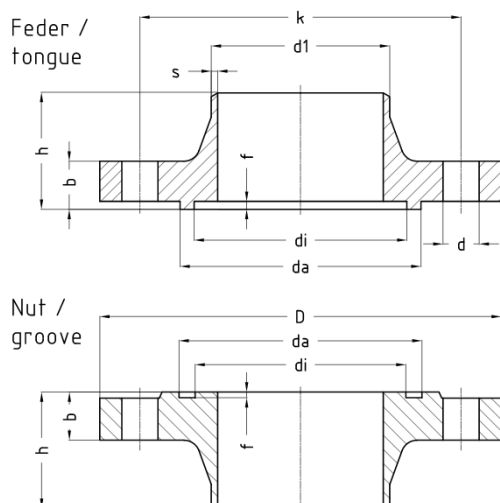
| DIN EN 1092-1 PN25 DN10-150 / PN40 DN10-400 |       |      |  |  |    |     |     |    |     |     |     |     |     |     |     |    |  |      |     |     |     |
|---------------------------------------------|-------|------|--|--|----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|--|------|-----|-----|-----|
| 200                                         | 219.1 | 6.3  |  |  | 34 | 320 | 88  | 30 | 375 | 238 | 260 | 4.5 | 239 | 259 | 5.0 | 12 |  | M 27 | 100 | 239 | 259 |
| 250                                         | 273.0 | 7.1  |  |  | 38 | 385 | 105 | 33 | 450 | 291 | 313 | 4.5 | 292 | 312 | 5.0 | 12 |  | M 30 | 110 | 292 | 312 |
| 300                                         | 323.9 | 8.0  |  |  | 42 | 450 | 115 | 33 | 515 | 342 | 364 | 4.5 | 343 | 363 | 5.0 | 16 |  | M 30 | 120 | 343 | 363 |
| 350                                         | 355.6 | 8.8  |  |  | 46 | 510 | 125 | 36 | 580 | 394 | 422 | 5.0 | 395 | 421 | 5.5 | 16 |  | M 33 | 130 | 395 | 421 |
| 400                                         | 406.4 | 11.0 |  |  | 50 | 585 | 135 | 39 | 660 | 446 | 474 | 5.0 | 447 | 473 | 5.5 | 16 |  | M 36 | 140 | 447 | 473 |

Table 63: Installation lengths

## 49 Welding neck flanges - DIN EN 1092-1

- DIN EN-FL
- DIN EN-FL D
- DIN EN-FL C
- DIN EN-FL B1
- DIN EN-FL B2
- FL - flange
- Form D - groove, DIN EN 1092-1
- Form C - tongue, DIN EN 1092-1
- Form B1 - raised face, (Rz 50) DIN EN 1092-1
- Form B2 - raised face, (Rz 12.5) DIN EN 1092-1

DN 10-150 DIN 2635 PN 40,  
DN 200 DIN 2634 PN 25



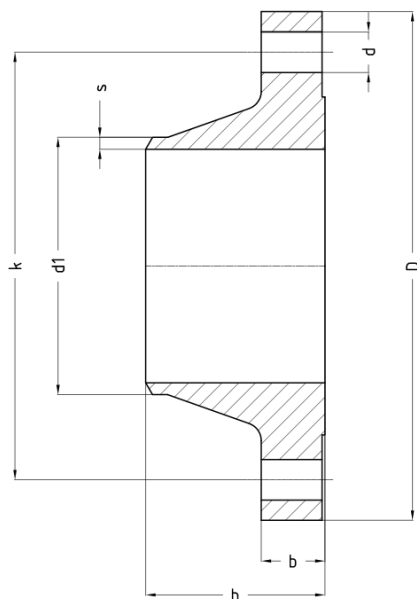
| DIN EN 1092-1 PN25 DN200-500               |              |      |    |     |     |    |     |                      |     |     |        |     |     |                   |        |        |                          |     |
|--------------------------------------------|--------------|------|----|-----|-----|----|-----|----------------------|-----|-----|--------|-----|-----|-------------------|--------|--------|--------------------------|-----|
|                                            | Welding ends |      |    |     |     |    |     | Flange facing design |     |     |        |     |     | Screws<br>DIN 931 |        |        | Sealing ring<br>DIN 2691 |     |
|                                            | Series 1     |      |    |     |     |    |     | Groove               |     |     | Tongue |     |     |                   |        |        |                          |     |
| DN                                         | d1           | s    | b  | k   | h   | d  | D   | di                   | da  | f   | di     | da  | f   | Quantity          | Thread | Length | di                       | da  |
| 200                                        | 219.1        | 6.3  | 30 | 310 | 80  | 26 | 360 | 238                  | 260 | 4.5 | 239    | 259 | 5.0 | 12                | M 24   | 90     | 239                      | 259 |
| 250                                        | 273.0        | 7.1  | 32 | 370 | 88  | 30 | 425 | 291                  | 313 | 4.5 | 292    | 312 | 5.0 | 12                | M 27   | 90     | 292                      | 312 |
| 300                                        | 323.9        | 8.0  | 34 | 430 | 92  | 30 | 485 | 342                  | 364 | 4.5 | 343    | 363 | 5.0 | 16                | M 27   | 100    | 343                      | 363 |
| 350                                        | 355.6        | 8.0  | 38 | 490 | 100 | 33 | 555 | 394                  | 422 | 5.0 | 395    | 421 | 5.5 | 16                | M 30   | 110    | 395                      | 421 |
| 400                                        | 406.4        | 8.8  | 40 | 550 | 110 | 36 | 620 | 446                  | 474 | 5.0 | 447    | 473 | 5.5 | 16                | M 33   | 120    | 447                      | 473 |
| 500                                        | 508.0        | 10.0 | 44 | 660 | 125 | 36 | 730 | 548                  | 576 | 5.0 | 549    | 575 | 5.5 | 20                | M 33   | 130    | 549                      | 575 |
| DIN EN 1092-1 PN63 DN10-40 / PN100 DN10-40 |              |      |    |     |     |    |     |                      |     |     |        |     |     |                   |        |        |                          |     |
| DN                                         | d1           | s    | b  | k   | h   | d  | D   | di                   | da  | F   | di     | da  | f   | Quantity          | Thread | Length | di                       | Da  |
| 10                                         | 17.2         | 2.0  | 20 | 70  | 45  | 14 | 100 | 23                   | 35  | 4.0 | 24     | 34  | 4.5 | 4                 | M 12   | 55     | 24                       | 34  |
| 15                                         | 21.3         | 2.0  | 20 | 75  | 45  | 14 | 105 | 28                   | 40  | 4.0 | 29     | 39  | 4.5 | 4                 | M 12   | 55     | 29                       | 39  |
| 20                                         | 26.9         | 2.6  | 22 | 90  | 48  | 18 | 130 | 35                   | 51  | 4.0 | 36     | 50  | 4.5 | 4                 | M 16   | 60     | 36                       | 50  |
| 25                                         | 33.7         | 2.6  | 24 | 100 | 58  | 18 | 140 | 42                   | 58  | 4.0 | 43     | 57  | 4.5 | 4                 | M 16   | 65     | 43                       | 57  |

| DIN EN 1092-1 PN25 DN200-500 |       |     |    |     |    |    |     |     |     |     |     |     |     |          |        |        |     |     |
|------------------------------|-------|-----|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|----------|--------|--------|-----|-----|
| 32                           | 42.4  | 2.9 | 24 | 110 | 60 | 22 | 155 | 50  | 66  | 4.0 | 51  | 65  | 4.5 | 4        | M 20   | 70     | 51  | 65  |
| 40                           | 48.3  | 2.9 | 26 | 125 | 62 | 22 | 170 | 60  | 76  | 4.0 | 61  | 75  | 4.5 | 4        | M 20   | 70     | 61  | 75  |
| DIN EN 1092-1 PN63 DN50-125  |       |     |    |     |    |    |     |     |     |     |     |     |     |          |        |        |     |     |
| DN                           | d1    | S   | b  | k   | h  | d  | D   | di  | da  | f   | di  | da  | F   | Quantity | Thread | Length | di  | da  |
| 50                           | 60.3  | 2.9 | 26 | 135 | 62 | 22 | 180 | 72  | 88  | 4.0 | 73  | 87  | 4.5 | 4        | M 20   | 75     | 73  | 87  |
| 65                           | 76.1  | 3.2 | 26 | 160 | 68 | 22 | 205 | 94  | 110 | 4.0 | 95  | 109 | 4.5 | 8        | M 20   | 75     | 95  | 109 |
| 80                           | 88.9  | 3.6 | 28 | 170 | 72 | 22 | 215 | 105 | 121 | 4.0 | 106 | 120 | 4.5 | 8        | M 20   | 75     | 106 | 120 |
| 100                          | 114.3 | 4.0 | 30 | 200 | 78 | 26 | 250 | 128 | 150 | 4.5 | 129 | 149 | 5.0 | 8        | M 24   | 90     | 129 | 149 |
| 125                          | 139.7 | 4.5 | 34 | 240 | 88 | 30 | 295 | 154 | 176 | 4.5 | 155 | 175 | 5.0 | 8        | M 27   | 100    | 155 | 175 |

Table 64: Installation lengths

## 50 Welding neck flanges - ANSI B16.5 raised face

- ANSI-FL
- ANSI-FL 150lbs RF
- ANSI-FL 300lbs RF
- FL - flange
- Facing with large and small male / female
- Facing with large and small tongue / groove according to ANSI B16.5

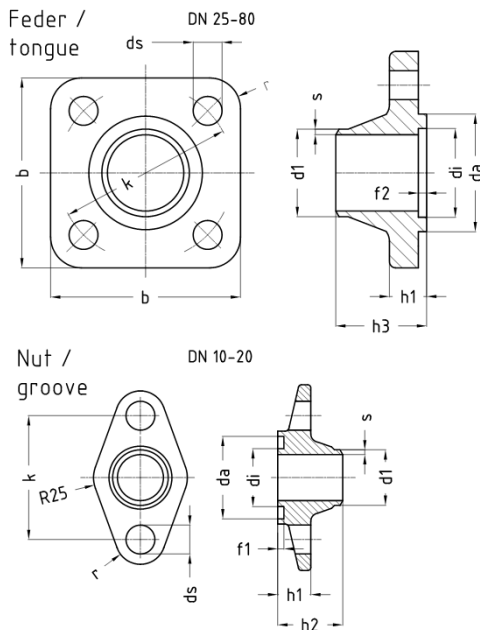


| Nominal size |        | Welding ends acc. to: |      |                            |       |       |      |       |                   |                            |       |       |      |       |                   |  |
|--------------|--------|-----------------------|------|----------------------------|-------|-------|------|-------|-------------------|----------------------------|-------|-------|------|-------|-------------------|--|
|              |        | ANSI                  |      | ANSI-FL 150lbs RF / sq. in |       |       |      |       | Screws<br>DIN 931 | ANSI-FL 300lbs RF / sq. in |       |       |      |       | Screws<br>DIN 931 |  |
| DN           | INCH   | d1                    | s    | b                          | k     | h     | d    | D     | Quantity          | b                          | k     | h     | d    | D     | Quantity          |  |
| 15           | 1/2"   | 21.3                  | 2.8  | 11.2                       | 60.5  | 47.8  | 15.7 | 88.9  | 4                 | 14.2                       | 66.5  | 52.3  | 15.7 | 95.2  | 4                 |  |
| 20           | 3/4"   | 26.7                  | 2.9  | 12.7                       | 69.9  | 52.3  | 15.7 | 98.6  | 4                 | 15.7                       | 82.5  | 57.1  | 19.0 | 117.3 | 4                 |  |
| 25           | 1"     | 33.4                  | 3.4  | 14.2                       | 79.2  | 55.6  | 15.7 | 108.0 | 4                 | 17.5                       | 88.9  | 62.0  | 19.0 | 123.9 | 4                 |  |
| 32           | 1 1/4" | 42.2                  | 3.6  | 15.7                       | 88.9  | 57.2  | 15.7 | 117.3 | 4                 | 19.0                       | 98.5  | 65.0  | 19.0 | 133.3 | 4                 |  |
| 40           | 1 1/2" | 48.3                  | 3.7  | 17.5                       | 98.6  | 62.0  | 15.7 | 127.0 | 4                 | 20.6                       | 114.3 | 68.3  | 22.3 | 155.4 | 4                 |  |
| 50           | 2"     | 60.3                  | 3.9  | 19.1                       | 120.7 | 63.5  | 19.1 | 152.4 | 4                 | 22.3                       | 127.0 | 69.8  | 19.0 | 165.1 | 6                 |  |
| 65           | 2 1/2" | 73.0                  | 5.2  | 22.4                       | 139.7 | 69.9  | 19.1 | 177.8 | 4                 | 25.4                       | 149.3 | 76.2  | 22.3 | 190.5 | 8                 |  |
| 80           | 3"     | 88.9                  | 5.5  | 23.9                       | 152.4 | 69.9  | 19.1 | 190.5 | 4                 | 28.4                       | 168.1 | 79.2  | 22.3 | 209.5 | 8                 |  |
| 100          | 4"     | 114.3                 | 6.0  | 23.9                       | 190.5 | 76.2  | 19.1 | 228.6 | 8                 | 31.7                       | 200.1 | 85.8  | 22.3 | 254.0 | 8                 |  |
| 125          | 5"     | 141.3                 | 6.6  | 23.9                       | 215.9 | 88.9  | 22.4 | 254.0 | 8                 | 35.0                       | 234.9 | 98.5  | 22.3 | 279.4 | 8                 |  |
| 150          | 6"     | 168.3                 | 7.1  | 25.4                       | 241.3 | 88.9  | 22.4 | 279.4 | 8                 | 36.5                       | 269.7 | 98.5  | 22.3 | 317.5 | 12                |  |
| 200          | 8"     | 219.1                 | 8.2  | 28.4                       | 298.5 | 101.6 | 22.4 | 342.9 | 8                 | 41.1                       | 330.2 | 111.2 | 25.4 | 381.0 | 12                |  |
| 250          | 10"    | 273.0                 | 9.3  | 30.2                       | 362.0 | 101.6 | 25.4 | 406.4 | 12                | 47.7                       | 387.3 | 117.3 | 28.4 | 444.5 | 16                |  |
| 300          | 12"    | 323.8                 | 10.3 | 31.8                       | 431.8 | 114.3 | 25.4 | 482.6 | 12                | 50.8                       | 450.8 | 130.0 | 31.7 | 520.7 | 16                |  |
| 350          | 14"    | 355.6                 | 11.1 | 35.1                       | 476.3 | 127.0 | 28.4 | 533.4 | 12                | 53.8                       | 514.3 | 142.7 | 31.7 | 584.2 | 20                |  |
| 400          | 16"    | 406.4                 | 12.7 | 36.6                       | 539.8 | 127.0 | 28.4 | 596.9 | 16                | 57.1                       | 571.5 | 146.0 | 35.0 | 647.7 | 20                |  |

Table 65: Installation lengths

## 51 Welding neck flanges - AWP

- AWP-FL
- AWP-FL N
- AWP-FL F
- FL - flange
- N - groove
- F - tongue



| AWP-FL PN25 DN10-20 / PN40 DN25-80 |      |          |      |      |      |     |     |     |    |                      |    |    |    |    |        |    |    |    |      |                        |                   |                    |                       |    |
|------------------------------------|------|----------|------|------|------|-----|-----|-----|----|----------------------|----|----|----|----|--------|----|----|----|------|------------------------|-------------------|--------------------|-----------------------|----|
| Welding ends                       |      |          |      |      |      |     |     |     |    | Flange facing design |    |    |    |    |        |    |    |    |      | Bolts / screws DIN 931 |                   |                    | Sealing ring DIN 2691 |    |
| Series 1                           |      | Series 2 |      | ANSI |      |     |     |     |    | Groove               |    |    |    |    | Tongue |    |    |    |      | Quantity/<br>Quantity  | Thread/<br>Thread | Length<br>/ Length |                       |    |
| DN                                 | d1   | s        | d1   | s    | d1   | s   | b   | k   | r  | h1                   | ds | di | da | f1 | h2     | di | da | f2 | h3   |                        |                   |                    | di                    | da |
| 10                                 | 17.2 | 1.8      | 15.0 | 2.5  | 17.1 | 2.3 | 88  | 60  | 13 | 16                   | 14 | 28 | 40 | 3  | 31.5   | 29 | 39 | 4  | 32.0 | 2                      | M 12              | 45                 | 29                    | 39 |
| 15                                 | 21.3 | 2.0      | 20.0 | 2.5  | 21.3 | 2.8 | 88  | 60  | 13 | 16                   | 14 | 28 | 40 | 3  | 31.5   | 29 | 39 | 4  | 32.0 | 2                      | M 12              | 45                 | 29                    | 39 |
| 20                                 | 26.9 | 2.3      | 25.0 | 2.5  | 26.7 | 2.9 | 88  | 60  | 13 | 16                   | 14 | 28 | 40 | 3  | 31.5   | 29 | 39 | 4  | 32.0 | 2                      | M 12              | 45                 | 29                    | 39 |
| 25                                 | 33.7 | 2.6      | 32.0 | 3.0  | 33.4 | 3.4 | 92  | 85  | 15 | 18                   | 14 | 42 | 58 | 3  | 44.0   | 43 | 57 | 4  | 44.0 | 4                      | M 12              | 50                 | 43                    | 57 |
| 32                                 | 42.4 | 2.6      | 38.0 | 3.0  | 42.2 | 3.6 | 92  | 85  | 15 | 18                   | 14 | 42 | 58 | 3  | 44.0   | 43 | 57 | 4  | 44.0 | 4                      | M 12              | 50                 | 43                    | 57 |
| 40                                 | 48.3 | 2.6      | 45.0 | 3.0  | 48.3 | 3.7 | 92  | 85  | 15 | 18                   | 14 | 42 | 58 | 3  | 38.5   | 43 | 57 | 4  | 38.5 | 4                      | M 12              | 50                 | 43                    | 57 |
| 50                                 | 60.3 | 2.9      | 57.0 | 3.2  | 60.3 | 3.9 | 132 | 135 | 20 | 28                   | 18 | 84 | 96 | 3  | 43.0   | 85 | 95 | 4  | 43.0 | 4                      | M 16              | 75                 | A85x95*               |    |
| 65                                 | 76.1 | 2.9      | 76.1 | 3.6  | 73.0 | 5.2 | 132 | 135 | 20 | 28                   | 18 | 84 | 96 | 3  | 53.5   | 85 | 95 | 4  | 53.5 | 4                      | M 16              | 75                 | A85x95*               |    |
| 80                                 | 88.9 | 3.2      | 88.9 | 4.0  | 88.9 | 5.5 | 132 | 135 | 20 | 28                   | 18 | 84 | 96 | 3  | 53.5   | 85 | 95 | 4  | 53.5 | 4                      | M 16              | 75                 | A85x95*               |    |

Table 66: Installation lengths

\* = acc. to DIN 7603

## 52 Legal notices

- GEA AWP valves must be handled in accordance with the GEA AWP operating regulations.
- The safety instructions mentioned in the operating regulations must be observed.
- A hazard analysis is available for GEA AWP valves.
- GEA AWP valves must only be handled by authorised persons.
- The instructions for the use of personal protective equipment (PPE) must be observed.
- GEA AWP valves must be used for their intended purpose.
- This catalogue has been carefully created and checked; however, it may still contain errors. The technical specifications given in the catalogue are not contractually guaranteed properties. Technical specifications are only binding if they have been confirmed by us in writing.
- We reserve the right to make technical changes.
- Further information on our declarations of conformity, operating regulations, calculation software and the general terms and conditions can be found on our website [www.awpvalves.com](http://www.awpvalves.com) under the Tools/Downloads tab.
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