



With weld-on nozzle according to DIN EN 1092-1 Type 11

## USAGE

Round sight glass fittings are used for observing and illuminating the interior of closed vessels (boilers, tanks, silos, etc.) or pipelines. Type 390 sight glass fittings are round flange housings with weld-on spigots according to DIN EN 1092-1, each completed with a sight glass plate inserted between the gaskets and firmly screwed in place.

## INSTALLATION NOTE

After welding the base flange, check whether the sealing faces have become distorted! If necessary, they must be reworked! Also observe the specified tightening torques for the bolting in accordance with the operating and maintenance manual.



From PN 250 always with additional mica protection disc

### Operating conditions

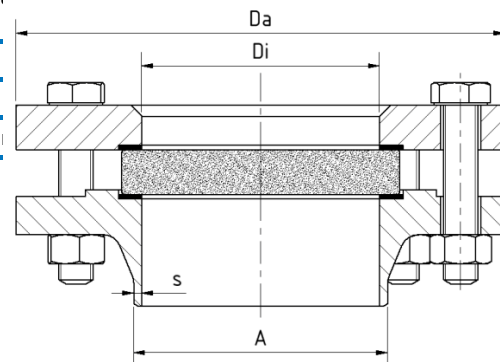
|  |  |  |
|--|--|--|
| Temperature: (depending on glass and gasket)                                       | $\leq 280\text{ }^{\circ}\text{C}$       | Borosilicate glass (DIN 7080 or similar) |
|  | $> 280\text{ }^{\circ}\text{C}$          | on request                               |
| Pressure:  | $\leq 16\text{ barg to }320\text{ barg}$ |  |
| Low-temperature applications as well as higher temperatures / pressures on request |  |  |

### Materials

|                              |  |
|------------------------------|--|
| Base flange:                 | 1.4571; 1.4404; 1.4539; 1.4435; 1.4541; 1.4301/7; 1.4876; 1.4828; 2.4602; 2.4610 |
| Glass:                       | Borosilicate glass (DIN 7080 or similar)   |
| Gasket <sup>1)</sup> :       | PTFE; FKM; NBR; C4400; Silicone; EPDM; Graphite                                  |
| Screws:                      | A2-70 / A4-70  |
| Special materials on request |  |

1) See "INFO Gaskets"

### INSTALLATION



| PN                 | DN  | Da [mm] | Di [mm] | A [mm] | s [mm] | Weight [kg] |
|--------------------|-----|---------|---------|--------|--------|-------------|
| 16                 | 15  | 95      | 17      | 21,3   | 2      | 1,6         |
|                    | 20  | 105     | 22      | 26,9   | 2,3    | 2,3         |
|                    | 25  | 115     | 28      | 33,7   | 2,6    | 2,7         |
|                    | 32  | 140     | 37      | 42,4   | 2,6    | 4,0         |
|                    | 40  | 150     | 43      | 48,3   | 2,6    | 4,5         |
|                    | 50  | 165     | 54      | 60,3   | 2,9    | 5,3         |
|                    | 65  | 185     | 70      | 76,1   | 2,9    | 6,4         |
|                    | 80  | 200     | 83      | 88,9   | 3,2    | 9,9         |
|                    | 100 | 220     | 107     | 114,3  | 3,6    | 9,7         |
|                    | 125 | 270     | 132     | 139,7  | 4      | 19,1        |
|                    | 150 | 300     | 160     | 168,3  | 4,5    | 24,9        |
| PS 10 <sup>1</sup> | 200 | 375     | 207     | 219,1  | 6,3    | 46,4        |
| PS 6 <sup>1</sup>  | 250 | 425     | 259     | 273    | 7,1    | 51,6        |
|                    | 300 | 485     | 308     | 323,9  | 8      | 69,1        |
|                    | 350 | 555     | 339     | 355,6  | 8      | 105,2       |
| 40                 | 15  | 95      | 17      | 21,3   | 2      | 1,6         |
|                    | 20  | 105     | 22      | 26,9   | 2,3    | 2,3         |
|                    | 25  | 115     | 8       | 33,7   | 2,6    | 2,7         |
|                    | 32  | 140     | 37      | 42,4   | 2,6    | 4,0         |
|                    | 40  | 150     | 43      | 48,3   | 2,6    | 4,5         |
|                    | 50  | 165     | 54      | 60,3   | 2,9    | 6,0         |
|                    | 65  | 185     | 70      | 76,1   | 2,9    | 8,0         |
|                    | 80  | 200     | 83      | 88,9   | 3,2    | 10,2        |
|                    | 100 | 235     | 107     | 114,3  | 3,6    | 13,9        |
|                    | 125 | 270     | 132     | 139,7  | 4      | 19,9        |
|                    | 150 | 300     | 160     | 168,3  | 4,5    | 25,8        |
|                    | 200 | 375     | 200     | 219,1  | 6,3    | 49,4        |
| 63                 | 15  | 105     | 17      | 21,3   | 2      | 2,5         |
|                    | 20  | 130     | 22      | 26,9   | 2,6    | 4,3         |
|                    | 25  | 140     | 28      | 33,7   | 2,6    | 5,5         |
|                    | 32  | 155     | 37      | 42,4   | 2,9    | 6,8         |
|                    | 40  | 170     | 43      | 48,3   | 2,9    | 8,7         |
|                    | 50  | 180     | 54      | 60,3   | 2,9    | 9,6         |
|                    | 65  | 205     | 70      | 76,1   | 3,2    | 12,2        |
|                    | 80  | 215     | 82      | 88,9   | 3,6    | 14,3        |
|                    | 100 | 250     | 106     | 114,3  | 4      | 20,3        |
|                    | 125 | 295     | 131     | 139,7  | 4,5    | 31,8        |
|                    | 150 | 345     | 157     | 168,3  | 5,6    | 46,8        |

| PN  | DN  | Da [mm] | Di [mm] | A [mm] | s [mm] | Weight [kg] |
|-----|-----|---------|---------|--------|--------|-------------|
| 100 | 15  | 105     | 17      | 21,3   | 2      | 2,5         |
|     | 20  | 130     | 22      | 26,9   | 2,6    | 4,4         |
|     | 25  | 140     | 28      | 33,7   | 2,6    | 5,5         |
|     | 32  | 155     | 37      | 42,4   | 2,9    | 6,8         |
|     | 40  | 170     | 43      | 48,3   | 2,9    | 8,7         |
|     | 50  | 195     | 54      | 60,3   | 3,2    | 12,5        |
|     | 65  | 220     | 69      | 76,1   | 3,6    | 16,7        |
|     | 80  | 230     | 81      | 88,9   | 4      | 19,1        |
|     | 100 | 265     | 104     | 114,3  | 5      | 28,4        |
|     | 125 | 315     | 127     | 139,7  | 6,3    | 45,0        |
| 160 | 15  | 105     | 17      | 21,3   | 2      | 2,5         |
|     | 25  | 140     | 28      | 33,7   | 2,9    | 5,5         |
|     | 40  | 170     | 41      | 48,3   | 3,6    | 9,4         |
|     | 50  | 195     | 52      | 60,3   | 4      | 13,5        |
|     | 65  | 230     | 60      | 76,1   | 8      | 26,4        |
|     | 80  | 225     | 79      | 88,9   | 11     | 34,8        |
| 250 | 15  | 130     | 16      | 21,3   | 2,6    | 5,3         |
|     | 25  | 150     | 27      | 33,7   | 3,6    | 7,6         |
|     | 40  | 185     | 38      | 48,3   | 5      | 14,0        |
|     | 50  | 200     | 48      | 60,3   | 6,3    | 17,8        |
|     | 65  | 230     | 60      | 76,1   | 8      | 26,5        |
| 320 | 15  | 130     | 15      | 21,3   | 3,2    | 5,3         |
|     | 25  | 160     | 24      | 33,7   | 5      | 10,6        |
|     | 40  | 195     | 36      | 48,3   | 6,3    | 17,6        |
|     | 50  | 210     | 48      | 63,5   | 8      | 22,2        |

## PRODUCT CODE

Example for Explaining the Code Composition

**11 - 390 - 9 - 16 - 2 - 1 - 4 - 0**

| GROUP | TYPE | NOMINAL SIZE | PN     | BASE FLANGE <sup>1</sup> | GLASS  | GASKET                | VARIANT     |
|-------|------|--------------|--------|--------------------------|--|-----------------------|-------------|
| 11    | 390  | 1) 15        | 1) 16  | 2) 1.4571                | 1) Borosilicate glass according to DIN 7080 or similar.<br>4) 4) Borosilicate glass <sup>2</sup> + PTFE-wiper SGW<br>5) Borosilicate glass <sup>2</sup> + silicone-wiper SGW<br>8) Borosilicate glass untempered | 1) PTFE               | 0) Standard |
|       |      | 2) 20        | 2) 40  | 3) 1.4404                |  | 2) FKM                |             |
|       |      | 3) 25        | 3) 63  | 4) 1.4301/7              |  | 3) NBR                |             |
|       |      | 4) 32        | 4) 100 | 5) 1.4539                |  | 4) C4400              |             |
|       |      | 5) 40        | 5) 160 | 7) 1.4435                |  | 5) Silicone           |             |
|       |      | 6) 50        | 6) 250 | 8) 1.4541                |  | 6) EPDM               |             |
|       |      | 7) 65        | 7) 320 | 9) Custom made design    |  | 7) Graphite           |             |
|       |      | 8) 80        |        |                          |  | 8) Custom made design |             |
|       |      | 9) 100       |        |                          |  |                       |             |
|       |      | 10) 125      |        |                          |  |                       |             |
|       |      | 11) 150      |        |                          |  |                       |             |
|       |      | 12) 200      |        |                          |  |                       |             |
|       |      | 13) 250      |        |                          |  |                       |             |
|       |      | 14) 300      |        |                          |  |                       |             |
|       |      | 15) 350      |        |                          |  |                       |             |



Unless otherwise specified, the highlighted factory standard will be delivered.

## EXAMPLE

The product code **11-390-9-1-2-1-4-0** corresponds to the standard configuration:

ACI type 390,  
DN 100

PN 16

Base flange made of 1.4571

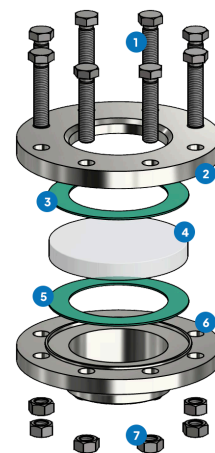
Cover flange made of 1.4571

Borosilicate glass in accordance with DIN 7080

Gasket KlingerSil® C4400

## STRUCTURE

1. Screws
2. Cover flange
3. Glass pads
4. Sight glass
5. Gasket
6. Base flange
7. Nuts



For aggressive media, FEP or Halar® coated sight glass plates can be used.

## QUICK OVERVIEW



max. 320 barg



heat-resistant up to 280 °C



for liquid media



for gaseous media



Nominal sizes  
DN 15 - 350



Custom-made designs  
possible



> 50 sealing materials



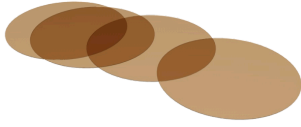
Accessories available

## OPERATING CONDITIONS

|             |                | SIGHT GLASS                                 |                     | GASKETS            |                   |                      |                         |                     |                      |
|-------------|----------------|---|---------------------|--------------------|-------------------|----------------------|-------------------------|---------------------|----------------------|
|             |                | Borosilicate glass<br>(DIN 7080 or similar) | PTFE<br>max. 200 °C | FKM<br>max. 200 °C | NBR<br>max. 80 °C | C4400<br>max. 175 °C | Silicone<br>max. 180 °C | EPDM<br>max. 130 °C | Graphite<br>> 400 °C |
| TEMPERATURE | up to 80 °C    | ✓   | ✓                   | ✓                  | ✓                 | ✓                    | ✓                       | ✓                   | ✓                    |
|             | up to 130 °C   | ✓   | ✓                   | ✓                  | ✗                 | ✓                    | ✓                       | ✓                   | ✓                    |
|             | up to 150 °C   | ✓   | ✓                   | ✓                  | ✗                 | ✓                    | ✓                       | ✗                   | ✓                    |
|             | up to 175 °C   | ✓   | ✓                   | ✓                  | ✗                 | ✓                    | ✓                       | ✗                   | ✓                    |
|             | up to 200 °C   | ✓   | ✓                   | ✓                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | up to 280 °C   | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | > 280 °C       | On request                                  |                     | On request         |                   |                      |                         |                     |                      |
| PRESSURE    | up to 16 barg  | ✓   | ✓                   | ✓                  | ✓                 | ✓                    | ✓                       | ✓                   | ✓                    |
|             | up to 40 barg  | ✓   | ✓                   | ✗                  | ✗                 | ✓                    | ✗                       | ✗                   | ✓                    |
|             | up to 63 barg  | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | up to 100 barg | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | up to 160 barg | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | up to 250 barg | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |
|             | up to 320 barg | ✓   | ✗                   | ✗                  | ✗                 | ✗                    | ✗                       | ✗                   | ✓                    |

✓ suitable   ✗ unsuitable

**OPTIONAL ACCESSORIES**



**Round mica discs**

- > up to 320 °C with Borosilicate glass DIN 7080

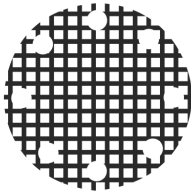


**Sight glass wiper**

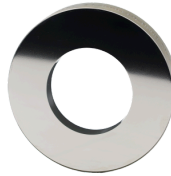
- > with PTFE, silicone, EPDM or FKM wipers



**PLEXIGLAS Impact protection window**



**Grid impact protection window**



**Metal fused safety sight glass**

- > for safety applications



**LED lights**

- > for Ex and non-Ex areas



**FEP protective screen / coating**

- > for high pH values