# On Top of your pressure Tank

## Access Tank Cover - Circular Cover Type HLSD-2



### Application
Outward opening manhole cover type HLSD-2 is used on top of pressurized tanks and containers where closeable means of access to the interior of the vessel is required. HLSD-2 is approved and can be used on pressure vessels according to PED 97/23/EC.

### Working principle
HLSD-2 is secured in the closed position by swingbolts, which, together with the seal in the cover, ensure complete tightness. The cover is attached to the frame by a rigid hinge, giving exact location of the cover in the closed position and designed to stop the cover at an angle of 20-30º beyond the vertical position when opening.

### TECHNICAL DATA

### Sizes
200 mm, 300 mm, 400 mm, 450 mm, 500 mm and 600 mm.

### Pressure
Max. allowable pressure: . . . . . According to selection table
Min. allowable negative pressure: . . . Full vacuum
Max. test pressure Ptest: . . . . . According to selection table

### Certificates
- 3.1 Certificate (EN10204)
- EC unit verification module G according to PED 97/23/EC
- FDA declaration §177.2600 for seal material (except FPM seal)
- ASME BPE Certificate (option)

### Standard design
The HLSD-2 pressure cover is designed according to Merkblätter AD 2000 newest edition and designed for installation in pressure vessels until hazard category IV. The cover is not pressure tested and must be tested as a part of the pressure vessel.

- HLSD-2 is designed for fluid group 1 and 2.

### PHYSICAL DATA

### Materials
Product wetted steel parts: . . . . . 1.4404 (AISI 316L)
Other steel parts: . . . . . 1.4301 (AISI 304)
Seal: . . . . . EPDM, FPM, Silicone, FEP covered silicone, FEP covered FPM, PFA covered silicone
Standard surface finish: . . . . . Semi bright. Outside Ra 1.6µm, inside Ra 0.8µm

### Temperature
Temperature range: . . . . . -10°C to + 250°C

**Options**

A. Spring to assist opening.
B. Arrangement for securing cover in open and closed position.
C. Bracket for indication unit.
D. Handle in stainless steel.
E. Guide for cover for vertical installation. Please define positioning of the hinge (right or left hand side).
F. Sight glass DIN 28120.
G. Sight glass DIN 11851.
H. Safety grid.
I. Special surface finish.
J. Frame height G = 300 mm.
K. Seal of Q (silicone), FPM, FEP covered silicone, PFA covered silicone, FEP covered FPM.
L. Conical frame, different frame thickness and frame height available on request.

**Selection table**

| Size | A | Number of bolts | Max. allowable pressure PS (bar) at design temperature Td (°C) | | | | | Max. test pressure Ptest | Cover thickness (SL) | Cover radius |
|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | | 50 °C | 100 °C | 150 °C | 200 °C | 250 °C | | | |
| | | | bar | bar | bar | bar | bar | bar | mm | mm |
| 200 | 208 | 4 | 14.7 | 13.0 | 11.8 | 10.8 | 10.0 | 21.1 | 8 | 500 |
| 300 | 308 | 4 | 7.6 | 6.7 | 6.4 | 6.1 | 6.0 | 13.5 | 5 | 500 |
| | | 6 | 9.4 | 8.4 | 7.5 | 6.9 | 6.4 | 13.5 | 6 | 500 |
| 400 | 408 | 4 | 4.4 | 3.8 | 3.7 | 3.5 | 3.4 | 10.1 | 4 | 500 |
| | | 6 | 6.6 | 5.8 | 5.5 | 5.3 | 5.2 | 14.3 | 5 | 500 |
| | | 8 | 8.7 | 7.7 | 7.4 | 7.1 | 6.8 | 14.3 | 6 | 500 |
| 450 | 458 | 6 | 5.2 | 4.6 | 4.4 | 4.2 | 4.1 | 12.0 | 4 | 500 |
| | | 8 | 7.0 | 6.1 | 5.9 | 5.7 | 5.5 | 12.5 | 5 | 500 |
| | | 10 | 8.7 | 7.7 | 7.1 | 7.0 | 6.8 | 14.5 | 6 | 500 |
| 500 | 508 | 6 | 4.2 | 3.7 | 3.6 | 3.4 | 3.3 | 9.8 | 4 | 500 |
| | | 8 | 5.7 | 5.0 | 4.8 | 4.6 | 4.5 | 10.7 | 4 | 500 |
| | | 10 | 7.5 | 6.9 | 6.6 | 6.3 | 6.2 | 12.0 | 5 | 500 |
| 600 | 608 | 6 | 3.0 | 2.6 | 2.5 | 2.4 | 2.3 | 6.9 | 4 | 500 |
| | | 8 | 4.0 | 3.5 | 3.3 | 3.2 | 3.1 | 7.7 | 4 | 500 |
| | | 10 | 5.0 | 4.4 | 4.2 | 4.0 | 3.9 | 7.7 | 4 | 500 |
| | | 12 | 6.0 | 5.3 | 5.0 | 4.9 | 4.7 | 8.8 | 5 | 500 |
| | | 14 | 7.0 | 6.1 | 5.9 | 5.7 | 5.4 | 10.0 | 5 | 500 |

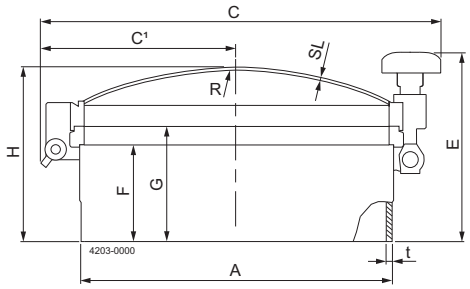


Fig. 2. Dimensions

**Dimensions (mm)**

| Size | 200 mm | 300 mm | 400 mm | 450 mm | 500 mm | 600 mm |
|---|---|---|---|---|---|---|
| A | 208 | 308 | 408 | 458 | 508 | 608 |
| $C_1$ | 154 | 204 | 254 | 279 | 309 | 359 |
| C | 320 | 420 | 520 | 570 | 625 | 725 |
| E | 237 | 237 | 247 | 247 | 247 | 247 |
| F | 125 | 125 | 125 | 125 | 125 | 125 |
| G | 150 | 150 | 150 | 150 | 150 | 150 |
| H | 185 | 198 | 226 | 240 | 251 | 285 |
| R | 500 | 500 | 500 | 500 | 500 | 500 |
| SL see selection table | | | | | | |
| t | 4 | 4 | 4 | 4 | 4 | 4 |

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ESE00694EN 1201

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