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Alfa Laval Access Tank Cover - Oval Cover Type LKD 440 x 320

When you need a High Quality Opening

Application

The Alfa Laval oval manhole cover LKD 440 x 320 is especially used on tanks or containers in the wine and juice industry. The main features are:

- Offered with or without hinge

Working principle

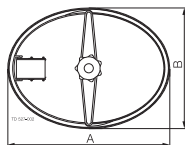
Open the cover by loosening the handle. For inspection purposes the cover can then be turned into the tank. If it is necessary to physically enter the tank, the cover can be removed at the double hinge or swung out of the tank, depending on the model. The seal is hygienically positioned and is not affected by positive or negative pressure in the tank.



TECHNICAL DATA

Pressure

Max. static pressure: 1.5 bar (150 kPa)
Max. positive working pressure: 0 bar (0 kPa)
Max. negative working pressure: 0.5 bar (50 kPa)
Test pressure: 2.25 bar (225 kPa)



Dimensions (mm)

Type	LKD 440 x 320
A	440
B	320
E	160
F	60
t	8
Cover thickness	2

PHYSICAL DATA

Materials

Steel parts: 1.4301 (304) or 1.4404 (316L)
Plastic parts: Nylon
Seals (FDA): EPDM, NBR, FPM or Q (silicone)

Standard lid surface finish:

Acid Pickled
Product wetted surfaces: Ra 0.8µm*
Other surfaces: Ra 3.0µm

*Weld zone excluded.

High hygienic (HH) surface

finish: Electropolished
Product wetted surfaces: Ra 0.8µm
Other surfaces: Ra 3.0µm

Temperature

Temperature range: -20°C to +90°C (NBR)

Weight: 7.5 kg

Certificates

3.1 (cover and frame are supplied with material certificate 3.1 according to EN10204)

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Alfa Laval Access Tank Cover - Circular Type LKDC

When you need a High Quality Opening

Application

The circular LKDC stainless steel manhole cover is used on top of tanks or containers, especially in the dairy industry, where a hygienic closeable mean of access to the interior of the tank is required.

Working principle

The LKDC cover is supplied with a unique replaceable, self-sealing double lip seal (see fig. 2.) to prevent fluids from spraying out, e.g. during CIP cleaning and similar processes or during travel on mobile tanks or road tankers. The seals are produced in compliance with 3A recommendations.

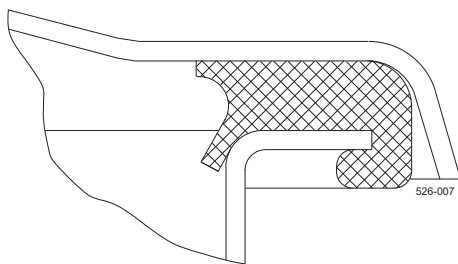


Fig. 2. Double lip seal

TECHNICAL DATA

Working pressure: No pressure

Certificates

3.1 certificate



PHYSICAL DATA

Materials

Lid and frame: 1.4301 (304) or 1.4404 (316L)

Plastic parts: Nylon

Seals: EPDM or NBR or FPM or Q
(silicone)

Surface finish: Acid Pickled

Product wetted surfaces: Ra 0.8µm (Excluding external welding zone)

Other frame and lid surfaces: Ra 0.8µm

3A surface finish: Electro polished

Product wetted surfaces: Ra 0.4µm

Other frame and lid surfaces: Ra 0.4µm (Excluding external welding zone)

Temperature

Min. temperature: - 20°C

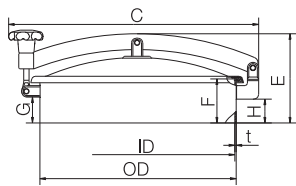
Max. temperature: + 90°C (NBR)

(Q) gasket + 100°C

(EPDM, not for oil and fat) + 140°C

(FPM flourinated rubber) + 140°C

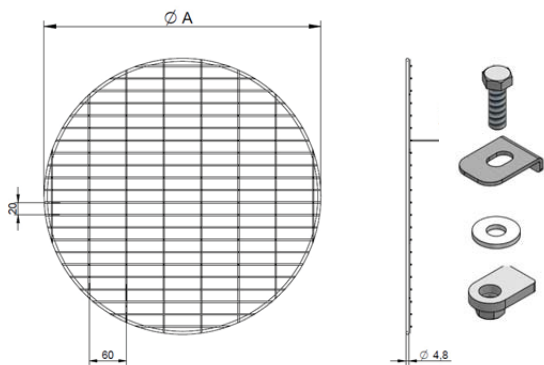
Dimensions (mm)



Size/OD	202	306	404	454	454	518	518	620	620
ID	198	302	400	448	448	512	512	614	614
F	85	100	100	100	200	100	200	100	200
t	2	2	2	3	3	3	3	3	3
C	354	457	555	609	609	675	675	778	778
G	48	64	64	60	160	55	155	64	164
H	43	64	59	60	160	56	156	59	159
E	156	146	178	201	301	197	297	203	303
Cover thickness	1.5	1.5	2	2	2	3	3	3	3
Weight (kg)	3.4	6.3	8.3	12.2	15.8	14.4	17.7	18.8	24.3

Option

Wire safety grid
For installation in non-3A approved LKDC manhole covers.



- 4 pcs screw, M8x25
- 4 pcs bracket
- 4 pcs washer
- 4 pcs support

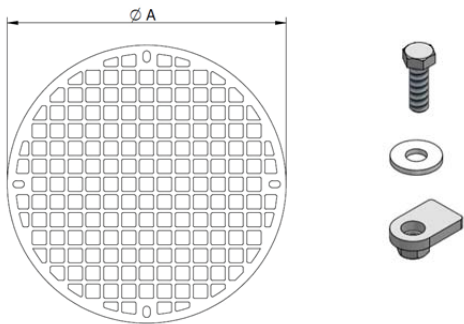
Dimensions:

LKDC	ØA	
	mm	inch
202	190	7.48
306	298	11.73
404	390	15.35
454	445	17.52
518	498	19.61
620	598	23.54

Material: 316L

Option

Laser-cut safety grid
For installation in non-3A approved LKDC manhole covers.



- 4 pcs screw, M8x25
- 4 pcs washer
- 4 pcs support

Dimensions:

LKDC	ØA	
	mm	inch
202	190	7.48
306	296	11.65
404	390	14.96
454	436	17.17
518	500	19.68
620	605	23.82

Material: 316L

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Alfa Laval Access Tank Cover - Circular Cover Type HLSD-2

On top of your pressure tank

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 2014/68/EU.

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 20-30° 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 2014/68/EU
- FDA declaration §177.2600 for seal material
- 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 DIN11851.
- 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 mm	A mm	Number of bolts	Max. allowable pressure PS (bar) at design temperature Td (°C)					Max. test pressure Ptest bar	Cover thickness (SL)* mm	Cover radius mm
			50	100	150	200	250			
			°C	°C	°C	°C	°C			
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

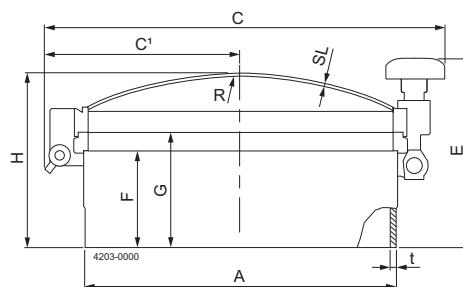


Fig. 2. Dimensions

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

* Dimension only for guidance, measured before grinding and polishing

O-ring gaskets (HLSD-2)

Silicone

Colour:transparent
Temperature:-50°C to +200°C FDA / USP Class VI

EPDM

Colour:black
Temperature:-50°C to +150°C FDA / USP Class VI

Viton (FPM)

Colour:green
Temperature:-20°C to +200°C FDA

FEP covered Silicone

Colour:shell: transparent, core: red
Temperature:-60°C to +200°C FDA / USP Class VI

FEP covered Viton (FPM)

Colour:shell: transparent, core: black
Temperature:-20°C to +200°C FDA / USP Class VI

PFA covered Silicone

Colour:shell: transparent, core: red
Temperature:-60°C to +230°C FDA / USP Class VI

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