

The USLF construction is designed for those applications where the existing process connection is too small to use a flush diaphragm seal. The USLF consists of an upper and lower housing, the upper is the actual seal part with a diaphragm size that allows for measurement of low ranges (10 mbar 2 seals attached (dP); 80 mbar single seal attached). The lower housing creates the transition from the diaphragm size to the smaller process connection. USLF is typically used in combination with (differential) pressure transmitters for applications such as level, flow and (absolute) pressure measurement.



STANDARD EXECUTION

DIAPHRAGM	BODY	MOUNTING CONNECTION	
AISI 316(L)	AISI 316(L)	top (axial)	
FACING	FACING TYPE	GASKET	BOLTS
RF	B1	Virgin PTFE	M10 – A2-70

FLANGED PROCESS CONNECTIONS

ASME B16.5

size	rating	dD
1/2"	cl. 150 – cl. 600	81.0mm
3/4"	cl. 150 – cl. 600	81.0mm
1"	cl. 150 – cl. 600	81.0mm
1,5"	cl. 150 – cl. 600	81.0mm
2"	cl. 150 – cl. 600	81.0mm
2,5"	cl. 150 – cl. 600	81.0mm
3"	cl. 150 – cl. 600	81.0mm
4"	cl. 150 – cl. 600	81.0mm

EN 1092-1

size	rating	dD
DN15	PN10 – PN100	81.0mm
DN20	PN10 – PN100	81.0mm
DN25	PN10 – PN100	81.0mm
DN32	PN10 – PN100	81.0mm
DN40	PN10 – PN100	81.0mm
DN50	PN10 – PN100	81.0mm
DN80	PN10 – PN100	81.0mm
DN100	PN10 – PN100	81.0mm

UPPER AND LOWER PART ASSEMBLY

BOLTING

thread	material	mwp	pcs	rating (ASME)	rating (EN)
M10	A2-70	100 bar	8	cl. 150 – cl. 600	PN10 – PN100
M10	8.8	120 bar	8	cl. 150 – cl. 600	PN10 – PN100

Note: mwp (maximum working pressure) at 20 °C with AISI 316(L) body material

GASKET

material	operating temperature
Virgin PTFE	-200 / +260°C
Garfite N	-73 / +343°C
Camprofile ¹	-200 / + 500°C

¹ for steam applications

WETTED PARTS, BODY MATERIALS, AND FACING OPTIONS

upper part material	lower part material	diaphragm material	facing (ASME B16.5)		facing type (EN 1092-1)	
AISI 316(L)	AISI 316(L)	AISI 316(L)	RF	Ra 3.2-6.3 µm	B1	Ra 3.2-12.5 µm
		AISI 304(L)	RJF	Ra <1.6 µm	A	Ra 3.2-12.5 µm
		AISI 316 UG	LMF	Ra 3.2-6.3 µm	B2	Ra 0.8-3.2 µm
		AISI 321	SMF	Ra <3.2 µm	C	Ra 0.8-3.2 µm
		Hastelloy C-276	FF	Ra 3.2-6.3 µm	D	Ra 0.8-3.2 µm
AISI 316(L)	AISI 310 MoLn	25-22-2 LMN	LTF	Ra <3.2 µm	E	Ra 3.2-12.5 µm
AISI 316(L)	Duplex F44	254 SMO (6Mo)	STF	Ra <3.2 µm	F	Ra 3.2-12.5 µm
AISI 316(L)	Duplex F51/F60	Duplex 2205	LGF	Ra <3.2 µm	G	Ra 0.8-3.2 µm
AISI 316(L)	Duplex F53	Super Duplex 2507	SGF	Ra <3.2 µm	H	Ra 0.8-3.2 µm
AISI 316(L)	Duplex F55	Super Duplex 2507	LFF	Ra 3.2-6.3 µm		
AISI 316(L)	Hastelloy B2	Hastelloy B2	SFF	Ra <3.2 µm		
AISI 316(L)	Hastelloy C-276	Hastelloy C-276				
AISI 316(L)	Alloy 20	Alloy 20				
AISI 316(L)	Inconel 600	Inconel 600				
AISI 316(L)	Inconel 625	Inconel 625				
AISI 316(L)	Inconel 825	Inconel 825				
AISI 316(L)	Monel 400	Monel 400				
AISI 316(L)	Nickel 201	Nickel 201				
AISI 316(L)	Tantalum ¹	Tantalum				
Titanium Gr.2	Titanium Gr.2	Titanium Gr.1				

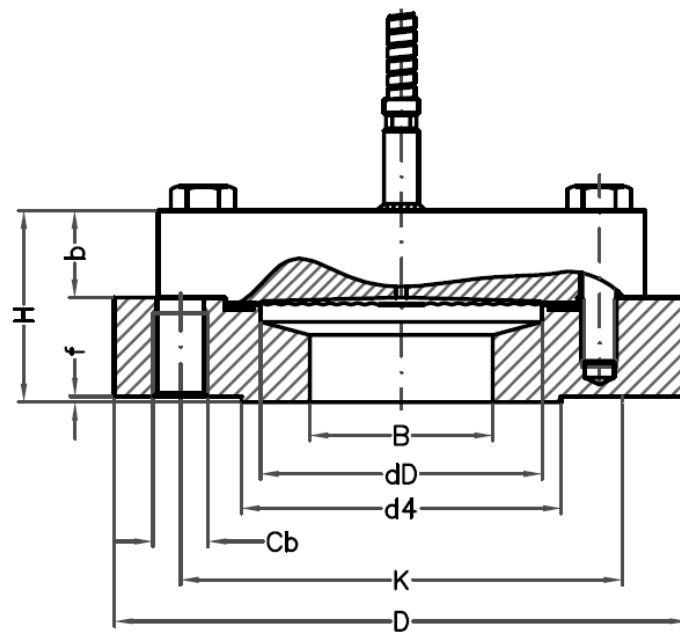
¹ material AISI 316(L) with Tantaline treatment

COATING AND OTHER OPTIONS
COATINGS

- gold: 25 μm / 40 μm hydrogen permeation protection (diaphragm)
- PTFE / ECTFE for anti-stick purpose only (upper part)
- FEP / PFA (upper part)
- Tantaline lower part
- PTFE lining lower part (not in combination with flush)

OTHER OPTIONS

- heavy duty capillary tube
- TR - temperature reducer
- TC - temperature compensator
- PTFE sheet for anti-stick purpose only (no vacuum)
- flushing ports in lower part (not in combination with lining)
- LGP – execution for low pressures
- degreasing of wetted parts

DRAWING AND DIMENSIONS STANDARD EXECUTIONS


ASME B16.5 - RF FACING

size	rating	facing	dD	B	b	D	d4	f	H	K	Cb / pcs
1/2"	cl. 150	RF	81.0	15.8	25.0	140.0	34.9	2.0	68.0	60.3	0.5"-13 UNC / 4x
1/2"	cl. 300	RF	81.0	15.8	25.0	140.0	34.9	2.0	69.0	66.7	0.5"-13 UNC / 4x
1/2"	cl. 400-600	RF	81.0	15.8	25.0	140.0	34.9	7.0	74.0	66.7	0.5"-13 UNC / 4x
3/4"	cl. 150	RF	81.0	21.0	25.0	140.0	42.9	2.0	66.0	69.9	0.5"-13 UNC / 4x
3/4"	cl. 300	RF	81.0	21.0	25.0	140.0	42.9	2.0	68.0	82.6	5/8"-11 UNC / 4x
3/4"	cl. 400-600	RF	81.0	21.0	25.0	140.0	42.9	7.0	74.0	82.6	5/8"-11 UNC / 4x
1"	cl. 150	RF	81.0	26.6	25.0	140.0	50.8	2.0	65.0	79.4	0.5"-13 UNC / 4x
1"	cl. 300	RF	81.0	26.6	25.0	140.0	50.8	2.0	68.0	88.9	5/8"-11 UNC / 4x
1"	cl. 400-600	RF	81.0	26.6	25.0	140.0	50.8	7.0	73.0	88.9	5/8"-11 UNC / 4x
1,5"	cl. 150	RF	81.0	40.9	25.0	140.0	73.0	2.0	65.0	98.4	0.5"-13 UNC / 4x
1,5"	cl. 300	RF	81.0	40.9	25.0	155.0	73.0	2.0	65.0	114.3	3/4"-10 UNC / 4x
1,5"	cl. 400-600	RF	81.0	40.9	25.0	155.0	73.0	7.0	77.0	114.3	3/4"-10 UNC / 4x
2"	cl. 150	RF	81.0	52.5	25.0	150.0	92.1	2.0	56.0	120.7	5/8"-11 UNC / 4x
2"	cl. 300	RF	81.0	52.5	25.0	165.0	92.1	2.0	56.0	127.0	5/8"-11 UNC / 8x
2"	cl. 400-600	RF	81.0	52.5	25.0	165.0	92.1	7.0	61.0	127.0	5/8"-11 UNC / 8x
2,5"	cl. 150	RF	81.0	62.7	25.0	180.0	104.8	2.0	55.0	139.7	5/8"-11 UNC / 4x
2,5"	cl. 300	RF	81.0	62.7	25.0	190.0	104.8	2.0	55.0	149.2	3/4"-10 UNC / 8x
2,5"	cl. 400-600	RF	81.0	62.7	25.0	190.0	104.8	7.0	62.0	149.2	3/4"-10 UNC / 8x
3"	cl. 150	RF	81.0	81.0	25.0	190.0	127.0	2.0	55.0	152.4	5/8"-11 UNC / 4x
3"	cl. 300	RF	81.0	81.0	25.0	210.0	127.0	2.0	59.0	168.3	3/4"-10 UNC / 8x
3"	cl. 400-600	RF	81.0	81.0	25.0	210.0	127.0	7.0	71.0	168.3	3/4"-10 UNC / 8x
4"	cl. 150	RF	81.0	81.0	25.0	230.0	157.2	2.0	56.0	190.5	19.1 / 8x
4"	cl. 300	RF	81.0	81.0	25.0	255.0	157.2	2.0	60.0	200.0	22.3 / 8x
4"	cl. 400	RF	81.0	81.0	25.0	255.0	157.2	7.0	74.0	200.0	25.4 / 8x
4"	cl. 600	RF	81.0	81.0	25.0	275.0	157.2	7.0	77.5	215.9	25.4 / 8x

All dimensions in mm
 Note: total height upper part = b + 1.5

EN 1092-1 - TYPE B1

size	Rating	type	dD	B	b	D	d4	f	H	K	Cb / pcs
DN15	PN10-40	B1	81.0	17.3	25.0	140.0	45.0	2.0	67.0	65.0	M12 / 4x
DN15	PN63-100	B1	81.0	17.3	25.0	140.0	45.0	2.0	67.0	75.0	M12 / 4x
DN20	PN10-40	B1	81.0	28.5	25.0	140.0	58.0	2.0	67.0	75.0	M12 / 4x
DN20	PN63-100	B1	81.0	28.5	25.0	140.0	58.0	2.0	67.0	90.0	M16 / 4x
DN25	PN10-40	B1	81.0	37.2	25.0	140.0	78.0	2.0	64.5	85.0	M12 / 4x
DN25	PN63-100	B1	81.0	37.2	25.0	155.0	78.0	2.0	67.0	100.0	M16 / 4x
DN32	PN10-40	B1	81.0	37.2	25.0	140.0	78.0	2.0	64.0	100.0	M16 / 4x
DN32	PN63-100	B1	81.0	37.2	25.0	155.0	78.0	2.0	67.0	110.0	M20 / 4x
DN40	PN10-40	B1	81.0	42.5	25.0	150.0	88.0	3.0	68.0	110.0	M16 / 4x
DN40	PN63-100	B1	81.0	42.5	25.0	170.0	88.0	3.0	69.0	125.0	M20 / 4x
DN50	PN10-40	B1	81.0	54.5	25.0	165.0	102.0	3.0	55.0	125.0	M16 / 4x
DN50	PN63	B1	81.0	54.5	25.0	180.0	102.0	3.0	58.0	135.0	M20 / 4x
DN50	PN100	B1	81.0	54.5	25.0	195.0	102.0	3.0	63.0	145.0	M24 / 8x
DN80	PN10-16	B1	81.0	81.0	25.0	200.0	138.0	3.0	56.4	160.0	M16 / 8x
DN80	PN25-40	B1	81.0	81.0	25.0	200.0	138.0	3.0	56.4	160.0	M20 / 8x
DN80	PN63	B1	81.0	81.0	25.0	215.0	138.0	3.0	63.0	170.0	M24 / 8x
DN80	PN100	B1	81.0	81.0	25.0	230.0	138.0	3.0	68.0	180.0	M24 / 8x
DN100	PN10-16	B1	81.0	81.0	25.0	220.0	158.0	3.0	55.0	180.0	M16 / 8x
DN100	PN25-40	B1	81.0	81.0	25.0	235.0	162.0	3.0	56.0	190.0	M20 / 8x
DN100	PN63	B1	81.0	81.0	25.0	250.0	162.0	3.0	62.0	200.0	M24 / 8x
DN100	PN100	B1	81.0	81.0	25.0	265.0	162.0	3.0	70.0	210.0	M27 / 8x

All dimensions in mm
 Note: total height upper part = b + 1.5



Holland – United Kingdom – Romania – India – Thailand – Dubai – USA

To our knowledge, the information contained herein is accurate as of the date of this document. However neither Badotherm, nor its affiliates makes any warranty, express or limited, or accepts any liability in connection with this information or its use. This information is for technical skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other product. The user alone finally determines suitability of any information or material in contemplated use, the manner of use and whether any patents are infringed. This information gives typical properties only.

Badotherm reserves the right to make changes to the specifications and materials without prior notice. The latest version of the datasheet can be found on www.badotherm.com.

© 2015 Badotherm, all rights reserved. Trademarks and/or other products referenced herein are either trademarks or registered trademarks of Badotherm.