

The USL FH construction is designed for those applications where the existing process connection is too small to use a flush diaphragm seal. The USL FH 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. USL FH 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	FACING
AISI 316(L)	AISI 316(L)	top (axial)	RF
TYPE	GASKET	BOLTS	
B1	Virgin PTFE	M10 – A2-70	

FLANGED PROCESS CONNECTIONS

ASME B16.5

size	rating	dD
1/2"	cl. 150 – cl. 600	81mm
1"	cl. 150 – cl. 600	81mm
1.5"	cl. 150 – cl. 600	81mm
2"	cl. 150 – cl. 600	81mm
3"	cl. 150 – cl. 600	81mm

EN 1092-1

size	rating	dD
DN15	PN10 – PN100	81mm
DN25	PN10 – PN100	81mm
DN40	PN10 – PN100	81mm
DN50	PN10 – PN100	81mm
DN80	PN10 – PN100	81mm

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

diaphragm mat.	body material	lowerpart material
AISI 316(L)	AISI 316(L)	AISI 316(L)
AISI 304(L)		
AISI 321		
AISI 316 UG		
Hastelloy C-276		
Hastelloy C-276	AISI 316(L)	Hastelloy C-276
Monel 400	AISI 316(L)	Monel 400
Tantalum	AISI 316(L)	Tantalum*
Nickel 201	AISI 316(L)	Nickel 201
Duplex 2205	AISI 316(L)	Duplex
Inconel 600	AISI 316(L)	Inconel 600
Titanium Gr.1	Titanium Gr.2	Titanium Gr.2

*Note: material AISI 316(L) with Tantaline treatment

facing (ASME B16.5)

RF	Ra 3.2-6.3 µm
RJF	Ra <1.6 µm
LMF	Ra 3.2-6.3 µm
SMF	Ra <3.2 µm
FF	Ra 3.2-6.3 µm
LTF	Ra <3.2 µm
STF	Ra <3.2 µm
LGF	Ra <3.2 µm
SGF	Ra <3.2 µm
LFF	Ra 3.2-6.3 µm
SFF	Ra <3.2 µm

facing type (EN 1092-1)

B1	Ra 3.2-12.5 µm
A	Ra 3.2-12.5 µm
B2	Ra 0.8-3.2 µm
C	Ra 0.8-3.2 µm
D	Ra 0.8-3.2 µm
E	Ra 3.2-12.5 µm
F	Ra 3.2-12.5 µm
G	Ra 0.8-3.2 µm
H	Ra 0.8-3.2 µm

COATING AND OTHER OPTIONS

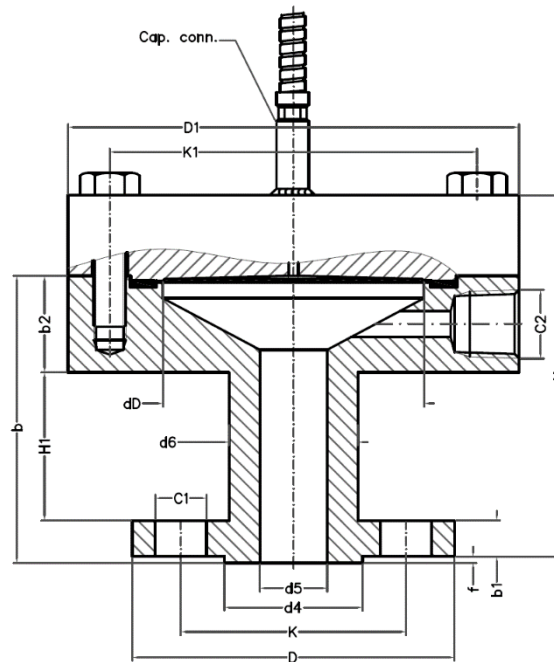
COATINGS

- gold: 25 µm / 40 µm hydrogen permeation protection (diaphragm – page 120)
- PTFE / ECTFE for anti stick purpose only (upper part)
- FEP / PFA (upper part)
- Tantaline lower part
- PTFE lining (lower part)

OTHER OPTIONS

- heavy duty capillary tube page 113/123
- TR - temperature reducer page 114
- TC - temperature compensator page 114/121
- PTFE sheet for anti-stick purpose only (no vacuum)
- flushing ports in lower part (not in combination with lining)
- LGP – execution for low pressures page 119
- degreasing of wetted parts

DRAWING AND DIMENSIONS STANDARD EXECUTIONS



ASME B16.5 - RF FACING

size	rating	facing	b	b1	b2	dD	D	D1	d4	d5	d6	f	H	H1	K	K1	C1	C2
0.5"	cl. 150	RF	90	10	30	81	90	140	35	15	33	2	113	48	60	114	15.9x4	1/2"
0.5"	cl. 300	RF	92	13	30	81	95	140	35	15	33	2	115	47	67	114	15.9x4	1/2"
0.5"	cl. 400-600	RF	98	14	30	81	95	140	35	15	33	7	116	46	67	114	15.9x4	1/2"
3/4"	cl. 150	RF	90	11	30	81	100	140	43	20	40	2	113	47	70	114	15.9x4	1/2"
3/4"	cl. 300	RF	90	14	30	81	115	140	43	20	44	2	113	43	83	114	19.1x4	1/2"
3/4"	cl. 400-600	RF	94	16	30	81	115	140	43	20	44	7	112	41	83	114	19.1x4	1/2"
1"	cl. 150	RF	90	13	30	81	110	140	51	25	52	2	113	45	79	114	15.9x4	1/2"
1"	cl. 300	RF	92	16	30	81	125	140	51	25	54	2	115	44	89	114	19.1x4	1/2"
1"	cl. 400-600	RF	104	18	30	81	125	140	51	25	54	7	122	49	89	114	19.1x4	1/2"
1.5"	cl. 150	RF	89	16	30	81	125	140	73	40	65	2	112	41	98	114	15.9x4	1/2"
1.5"	cl. 300	RF	89	19	30	81	155	140	73	40	65	2	112	38	114	114	22.3x4	1/2"
1.5"	cl. 400-600	RF	90	22	30	81	155	140	73	40	65	7	108	31	114	114	22.3x4	1/2"
2"	cl. 150	RF	90	18	30	81	150	140	92	50	78	2	113	41	121	114	19.1x4	1/2"
2"	cl. 300	RF	92	21	30	81	165	140	92	50	80	2	115	39	127	114	19.1x8	1/2"
2"	cl. 400-600	RF	105	25	30	81	165	140	92	50	80	7	123	43	127	114	19.1x8	1/2"
3"	cl. 150	RF	100	22	30	81	190	140	127	81	80	2	123	46	152	114	19.1x4	1/2"
3"	cl. 300	RF	100	27	30	81	210	140	127	81	80	2	123	41	168	114	22.3x8	1/2"
3"	cl. 400-600	RF	110	32	30	81	210	140	127	81	80	7	128	41	168	114	22.3x8	1/2"

All dimensions in mm

EN 1092-1 - TYPE B1

size	rating	type	b	b1	b2	dD	D	D1	d4	d5	d6	f	H	H1	K	K1	C1	C2
DN15	PN10-40	B1	80	14	30	81	95	140	45	15	40	2	103	34	65	114	14x4	1/2"
DN15	PN63-100	B1	90	18	30	81	105	140	45	15	40	2	113	40	75	114	14x4	1/2"
DN20	PN10-40	B1	90	16	30	81	105	140	58	20	45	2	113	42	75	114	14x4	1/2"
DN20	PN63-100	B1	90	20	30	81	130	140	58	20	45	2	113	38	90	114	18x4	1/2"
DN25	PN10-40	B1	92	16	30	81	115	140	68	25	46	2	115	44	85	114	14x4	1/2"
DN25	PN63-100	B1	100	22	30	81	140	140	68	25	46	2	123	46	100	114	18x4	1/2"
DN40	PN10-40	B1	90	15	30	81	150	140	88	40	52	3	112	42	110	114	18x4	1/2"
DN40	PN63-100	B1	90	23	30	81	170	140	88	40	52	3	112	34	125	114	22x4	1/2"
DN50	PN10	B1	90	15	30	81	165	140	102	50	52	3	112	42	125	114	18x4	1/2"
DN50	PN25-40	B1	90	17	30	81	165	140	102	50	52	3	112	40	125	114	18x4	1/2"
DN50	PN63	B1	90	23	30	81	180	140	102	50	52	3	112	34	135	114	22x4	1/2"
DN50	PN100	B1	100	25	30	81	195	140	102	50	52	3	122	42	145	114	26x4	1/2"
DN80	PN10	B1	90	17	30	81	200	140	138	81	52	3	112	40	160	114	18x8	1/2"
DN80	PN25-40	B1	90	21	30	81	200	140	138	81	52	3	112	36	160	114	18x8	1/2"
DN80	PN63	B1	90	25	30	81	215	140	138	81	52	3	112	32	170	114	22x8	1/2"
DN80	PN100	B1	100	29	30	81	230	140	138	81	52	3	122	38	180	114	26x8	1/2"

All dimensions in mm



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