

The FSO-BF construction has a seal body that is made of bar stock or forged material. The weld between the seal body and the diaphragm is a wetted part and therefore diaphragm materials are mostly chosen the same as the body material. The FSO-BF is recommended when special body or flange material grades are required. FSO-BF 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	
RF	B1	

FLANGED PROCESS CONNECTIONS

ASME B16.5

size	rating	dD
1"	cl. 150 - cl. 2500	23.0mm
1.5"	cl. 150 - cl. 600	44.0mm
1.5"	cl. 900 - cl. 2500	32.0mm
2"	cl. 150 - cl. 600	57.0mm
2"	cl. 900 - cl. 2500	44.0mm
2.5"	cl. 150 - cl. 2500	57.0mm
3"	cl. 150 - cl. 2500	81.0mm
4"	cl. 150 - cl. 2500	81.0mm

EN 1092-1

size	rating	dD
DN15	PN10 - PN100	20.0mm
DN20	PN10 - PN100	23.0mm
DN25	PN10 - PN100	32.0mm
DN32	PN10 - PN100	32.0mm
DN40	PN10 - PN100	44.0mm
DN50	PN10 - PN100	57.0mm
DN80	PN10 - PN100	81.0mm
DN100	PN10 - PN100	81.0mm

API 6A ISO 10423

size	rating	facing	dD
1-13/16"	69 – 138 MPa	6BX - RJF	32.0mm
2-1/16"	13.8 MPa	6B - RJF	44.0mm
2-1/16"	20.7 – 34.5 MPa	6B - RJF	44.0mm
2-1/16"	69 – 138 MPa	6BX - RJF	44.0mm
2-9/16"	13.8 MPa	6B - RJF	72.0mm
2-9/16"	20.7 – 34.5 MPa	6B - RJF	81.0mm
2-9/16"	69 – 138 MPa	6BX - RJF	57.0mm
3-1/8"	13.8 – 34.5 MPa	6B - RJF	72.0mm
3-1/16"	39 – 138 MPa	6BX - RJF	81.0mm

JIS B2220

Size	rating	facing	dD
25 (1")	10K – 20K	RF	32.0mm
32 (1.25")	10K – 20K	RF	44.0mm
40 (1.5")	10K – 20K	RF	44.0mm
50 (2")	10K – 20K	RF	57.0mm
80 (3")	10K – 20K	RF	81.0mm
100 (4")	10K – 20K	RF	81.0mm

Note: JIS RF facing roughness is Ra 3.2-6.3 µm

WETTED PARTS, BODY MATERIALS, AND FACING OPTIONS

body material	diaphragm material
AISI 316(L)	AISI 316(L) AISI 304L AISI 321 AISI 316 UG Hastelloy C-276
AISI 904(L)	AISI 904(L)
Hastelloy B2	Hastelloy B2
Hastelloy C-276	Hastelloy C-276
Duplex F44	6Mo
Duplex F51/F60	Duplex 2205
Duplex F53	Super Duplex 2507
Duplex F55	Super Duplex 2507
Inconel 600	Inconel 600
Inconel 625	Inconel 625
Inconel 825	Inconel 825
Monel 400	Monel 400
Nickel 201	Nickel 201
Titanium Gr. 2	Titanium Gr. 1
Zirconium 702	Zirconium 702

Note: cover flange is always AISI 316(L), unless otherwise requested

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
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
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

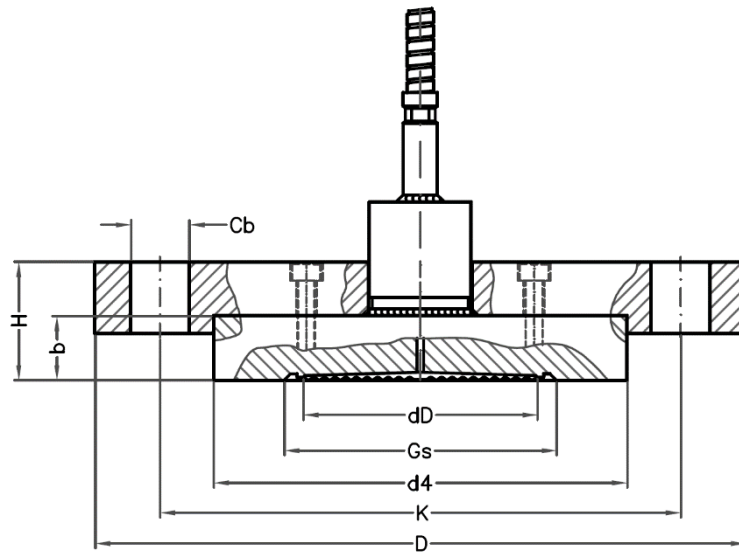
COATINGS

- gold: 25 μm / 40 μm chemical resistance and/or hydrogen permeation protection (facing and/or diaphragm)
- PTFE / ECTFE for anti-stick purpose only
- FEP / PFA
- thermal spray

OTHER OPTIONS

- set of handles welded on side of flange
- heavy duty capillary tube
- TR - temperature reducer
- TC - temperature compensator
- cover flange in exotic material
- degreasing of wetted parts

DRAWING AND DIMENSIONS STANDARD EXECUTIONS



ASME B16.5 - RF FACING

size	rating	facing	dD	b	D	d4	Gs	H	K	Cb / pcs
1"	150#	RF	23.0	20.0	110.0	50.8	31.8	30.7	79.4	15.9 / 4x
1"	300#	RF	23.0	20.0	125.0	50.8	31.8	33.9	88.9	19.1 / 4x
1"	400-600#	RF	23.0	20.0	125.0	50.8	31.8	35.5	88.9	19.1 / 4x
1"	900-1500#	RF	23.0	20.0	150.0	50.8	31.8	46.6	101.6	25.4 / 4x
1.5"	2500#	RF	23.0	20.0	160.0	50.8	31.8	53.0	108.0	25.4 / 4x
1.5"	150#	RF	44.0	20.0	125.0	73.0	52.4	33.9	98.4	15.9 / 4x
1.5"	300#	RF	44.0	20.0	155.0	73.0	52.4	37.1	114.3	22.3 / 4x
1.5"	400-600#	RF	44.0	20.0	155.0	73.0	52.4	40.3	114.3	22.3 / 4x
1.5"	900-1500#	RF	32.0	20.0	180.0	73.0	41.5	49.8	123.8	28.6 / 4x
1.5"	2500#	RF	32.0	20.0	205.0	73.0	41.5	62.5	146.0	31.8 / 4x
2"	150#	RF	57.0	20.0	150.0	92.1	70.2	30.5	120.7	19.1 / 4x
2"	300#	RF	57.0	20.0	165.0	92.1	70.2	33.7	127.0	19.1 / 8x
2"	400-600#	RF	57.0	20.0	165.0	92.1	70.2	38.4	127.0	19.1 / 8x
2"	900-1500#	RF	44.0	20.0	215.0	92.1	55.4	51.1	165.1	25.4 / 8x
2"	2500#	RF	44.0	20.0	235.0	92.1	55.4	63.9	171.4	28.6 / 8x
2.5"	150#	RF	57.0	20.0	180.0	104.8	70.2	33.7	139.7	19.1 / 4x
2.5"	300#	RF	57.0	20.0	190.0	104.8	70.2	36.9	149.2	22.3 / 8x
2.5"	400-600#	RF	57.0	20.0	190.0	104.8	70.2	41.6	149.2	22.3 / 8x
2.5"	900-1500#	RF	57.0	20.0	245.0	104.8	70.2	54.3	190.5	28.6 / 8x
2.5"	2500#	RF	57.0	20.0	265.0	104.8	70.2	70.2	196.8	31.8 / 8x
3"	150#	RF	81.0	20.0	190.0	127.0	101.0	35.3	152.4	19.1 / 4x
3"	300#	RF	81.0	20.0	210.0	127.0	101.0	40.0	168.3	22.3 / 8x
3"	400-600#	RF	81.0	20.0	210.0	127.0	101.0	44.8	168.3	22.3 / 8x
3"	900#	RF	81.0	20.0	240.0	127.0	93.0	51.1	190.5	25.4 / 8x
3"	1500#	RF	81.0	20.0	265.0	127.0	93.0	60.7	203.2	31.8 / 8x
3"	2500#	RF	81.0	20.0	305.0	127.0	93.0	79.7	228.6	34.9 / 8x
4"	150#	RF	81.0	20.0	230.0	157.2	101.0	35.3	190.5	19.1 / 8x
4"	300#	RF	81.0	20.0	255.0	157.2	101.0	43.2	200.0	22.3 / 8x
4"	400#	RF	81.0	20.0	255.0	157.2	101.0	48.0	200.0	25.4 / 8x
4"	600#	RF	81.0	20.0	275.0	157.2	101.0	51.1	215.9	25.4 / 8x
4"	900#	RF	81.0	20.0	290.0	157.2	101.0	57.5	235.0	31.8 / 8x
4"	1500#	RF	81.0	20.0	310.0	157.2	101.0	67.0	241.3	34.9 / 8x
4"	2500#	RF	81.0	20.0	355.0	157.2	101.0	89.2	273.0	41.3 / 8x

All dimensions in mm

Note: dimensions cover flange are equal to seal BF

EN 1092-1 - TYPE B1

size	rating	type	dD	b	D	d4	Gs	H	K	Cb / pcs
DN15	PN10-40	B1	20.0	20.0	95.0	45.0	27.3	32.0	65.0	14.0 / 4x
DN15	PN63-100	B1	20.0	20.0	105.0	45.0	27.3	36.0	75.0	14.0 / 4x
DN20	PN10-40	B1	23.0	20.0	105.0	58.0	33.8	34.0	75.0	14.0 / 4x
DN20	PN63-100	B1	23.0	20.0	130.0	58.0	33.8	38.0	90.0	18.0 / 4x
DN25	PN10-40	B1	32.0	20.0	115.0	68.0	41.0	34.0	85.0	14.0 / 4x
DN25	PN63-100	B1	32.0	20.0	140.0	68.0	41.0	40.0	100.0	18.0 / 4x
DN32	PN10-40	B1	32.0	20.0	140.0	78.0	41.5	34.0	100.0	18.0 / 4x
DN32	PN63-100	B1	32.0	20.0	155.0	78.0	41.5	40.0	110.0	22.0 / 4x
DN40	PN10-40	B1	44.0	20.0	150.0	88.0	55.4	33.0	110.0	18.0 / 4x
DN40	PN63-100	B1	44.0	20.0	170.0	88.0	55.4	41.0	125.0	22.0 / 4x
DN50	PN10-16	B1	57.0	20.0	165.0	102.0	70.2	33.0	125.0	18.0 / 4x
DN50	PN25-40	B1	57.0	20.0	165.0	102.0	70.2	35.0	125.0	18.0 / 4x
DN50	PN63	B1	57.0	20.0	180.0	102.0	70.2	41.0	135.0	22.0 / 4x
DN50	PN100	B1	57.0	20.0	195.0	102.0	70.2	43.0	145.0	26.0 / 4x
DN80	PN10-16	B1	81.0	20.0	200.0	138.0	93.0	30.0	160.0	18.0 / 8x
DN80	PN25-40	B1	81.0	20.0	200.0	138.0	93.0	34.0	160.0	18.0 / 8x
DN80	PN63	B1	81.0	20.0	215.0	138.0	93.0	38.0	170.0	22.0 / 8x
DN80	PN100	B1	81.0	20.0	230.0	138.0	93.0	42.0	180.0	26.0 / 8x
DN100	PN10-16	B1	81.0	20.0	220.0	158.0	101.0	30.0	180.0	18.0 / 8x
DN100	PN25-40	B1	81.0	20.0	235.0	162.0	101.0	34.0	190.0	22.0 / 8x
DN100	PN63	B1	81.0	20.0	250.0	162.0	101.0	40.0	200.0	26.0 / 8x
DN100	PN100	B1	81.0	20.0	265.0	162.0	101.0	46.0	210.0	30.0 / 8x

All dimensions in mm

Note: dimensions cover flange are equal to seal BF

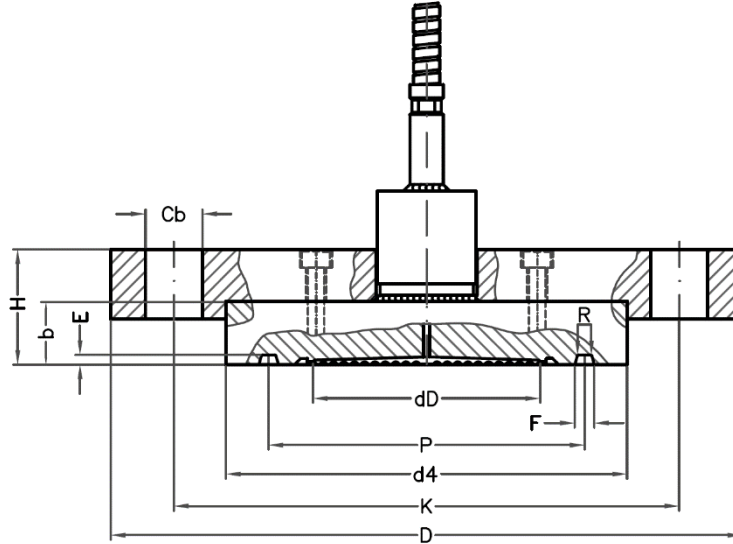
JIS B2220 - RF FACING

size	rating	facing	dD	b	D	d4	Gs	H	K	Cb / pcs
25	10K	RF	32.0	20.0	125.0	67.0	40.0	31.0	90.0	19.0 / 4x
25	16K	RF	32.0	20.0	125.0	67.0	40.0	31.0	90.0	19.0 / 4x
25	20K	RF	32.0	20.0	125.0	67.0	40.0	33.0	90.0	19.0 / 4x
32	10K	RF	44.0	20.0	135.0	76.0	50.6	32.0	100.0	19.0 / 4x
32	16K	RF	44.0	20.0	135.0	76.0	50.6	32.0	100.0	19.0 / 4x
32	20K	RF	44.0	20.0	135.0	76.0	50.6	34.0	100.0	19.0 / 4x
40	10K	RF	44.0	20.0	140.0	81.0	55.4	32.0	105.0	19.0 / 4x
40	16K	RF	44.0	20.0	140.0	81.0	55.4	32.0	105.0	19.0 / 4x
40	20K	RF	44.0	20.0	140.0	81.0	55.4	34.0	105.0	19.0 / 4x
50	10K	RF	57.0	20.0	155.0	96.0	68.5	32.0	120.0	19.0 / 4x
50	16K	RF	57.0	20.0	155.0	96.0	68.5	32.0	120.0	19.0 / 8x
50	20K	RF	57.0	20.0	155.0	96.0	68.5	34.0	120.0	19.0 / 8x
80	10K	RF	81.0	20.0	185.0	126.0	93.0	29.0	150.0	19.0 / 8x
80	16K	RF	81.0	20.0	200.0	132.0	93.0	31.0	160.0	23.0 / 8x
80	20K	RF	81.0	20.0	200.0	132.0	93.0	33.0	160.0	23.0 / 8x
100	10K	RF	81.0	20.0	210.0	151.0	101.0	29.0	175.0	19.0 / 8x
100	16K	RF	81.0	20.0	225.0	160.0	101.0	33.0	185.0	23.0 / 8x
100	20K	RF	81.0	20.0	225.0	160.0	101.0	35.0	185.0	23.0 / 8x

All dimensions in mm

Note: dimensions cover flange are equal to seal BF

DRAWING AND DIMENSIONS RJF FACING AND API



ASME B16.5 - RJF FACING

size	rating	facing	dD	b	D	d4	E	F	H	K	P	R	Ring #	Cb / pcs
1"	150#	RJF	32.0	20.0	110.0	63.5	6.4	8.7	26.7	38.2	79.4	47.6	0.8	15.9 / 4x
1"	300#	RJF	32.0	20.0	125.0	70.0	6.4	8.7	29.9	40.0	88.9	50.8	0.8	19.1 / 4x
1"	400-600#	RJF	32.0	20.0	125.0	70.0	6.4	8.7	31.5	40.0	88.9	50.8	0.8	19.1 / 4x
1"	900-1500#	RJF	32.0	20.0	150.0	71.5	6.4	8.7	42.6	40.0	101.6	50.8	0.8	25.4 / 4x
1"	2500#	RJF	32.0	20.0	160.0	82.5	6.4	8.7	49.0	41.5	108.0	60.3	0.8	25.4 / 4x
1.5"	150#	RJF	44.0	20.0	125.0	82.5	6.4	8.7	29.9	55.4	98.4	65.1	0.8	15.9 / 4x
1.5"	300#	RJF	44.0	20.0	155.0	90.5	6.4	8.7	33.1	55.4	114.3	68.3	0.8	22.3 / 4x
1.5"	400-600#	RJF	44.0	20.0	155.0	90.5	6.4	8.7	36.3	55.4	114.3	68.3	0.8	22.3 / 4x
1.5"	900-1500#	RJF	44.0	20.0	180.0	92.0	6.4	8.7	45.8	55.4	123.8	68.3	0.8	28.6 / 4x
1.5"	2500#	RJF	44.0	20.0	205.0	114.0	7.9	11.9	58.5	78.8	146.0	95.3	0.8	31.8 / 4x
2"	150#	RJF	57.0	20.0	150.0	102.0	6.4	8.7	31.5	68.5	120.7	82.6	0.8	19.1 / 4x
2"	300#	RJF	57.0	20.0	165.0	108.0	7.9	11.9	34.7	68.5	127.0	82.6	0.8	19.1 / 8x
2"	400-600#	RJF	57.0	20.0	165.0	108.0	7.9	11.9	39.4	68.5	127.0	82.6	0.8	19.1 / 8x
2"	900-1500#	RJF	57.0	20.0	215.0	124.0	7.9	11.9	52.1	78.8	165.1	95.3	0.8	25.4 / 8x
2"	2500#	RJF	57.0	20.0	235.0	133.0	7.9	11.9	64.9	83.7	171.4	101.6	0.8	28.6 / 8x
3"	150#	RJF	81.0	20.0	190.0	133.0	6.4	8.7	36.3	101.0	152.4	114.3	0.8	19.1 / 4x
3"	300#	RJF	81.0	20.0	210.0	146.0	7.9	11.9	41.0	101.0	168.3	123.8	0.8	22.3 / 8x
3"	400-600#	RJF	81.0	20.0	210.0	146.0	7.9	11.9	45.8	101.0	168.3	123.8	0.8	22.3 / 8x
3"	900#	RJF	81.0	20.0	240.0	156.0	7.9	11.9	52.1	101.0	190.5	123.8	0.8	25.4 / 8x
3"	1500#	RJF	81.0	20.0	265.0	168.0	7.9	11.9	61.7	101.0	203.2	136.5	0.8	31.8 / 8x
3"	2500#	RJF	81.0	20.0	305.0	168.0	9.5	13.5	80.7	101.0	228.6	127.0	1.5	34.9 / 8x
4"	150#	RJF	81.0	20.0	230.0	171.0	6.4	8.7	36.3	101.0	190.5	149.2	0.8	19.1 / 8x
4"	300#	RJF	81.0	20.0	255.0	175.0	7.9	11.9	44.2	101.0	200.0	149.2	0.8	22.3 / 8x
4"	400#	RJF	81.0	20.0	255.0	175.0	7.9	11.9	49.0	101.0	200.0	149.2	0.8	25.4 / 8x
4"	600#	RJF	81.0	20.0	275.0	175.0	7.9	11.9	52.1	101.0	215.9	149.2	0.8	25.4 / 8x
4"	900#	RJF	81.0	20.0	290.0	181.0	7.9	11.9	58.5	101.0	235.0	149.2	0.8	31.8 / 8x
4"	1500#	RJF	81.0	20.0	310.0	194.0	7.9	11.9	68.0	101.0	241.3	161.9	0.8	34.9 / 8x
4"	2500#	RJF	81.0	20.0	355.0	203.0	11.1	16.7	90.2	101.0	273.0	157.2	1.5	41.3 / 8x

All dimensions in mm

Note: dimensions cover flange are equal to seal BF

API 6A ISO 10423 - TYPE 6BX

size	rating	dD	b	D	d4	E	F	H	K	P	R	Cb / pcs	ring
1-13/16"	6BX 69MPa	32.0	25.0	185.0	105.0	5.6	11.8	50.6	146.1	65.9	0.8	23.0 / 8x	BX-151
1-13/16"	6BX 103.5MPa	32.0	25.0	210.0	106.0	5.6	11.8	50.6	160.3	65.9	0.8	26.0 / 8x	BX-151
1-13/16"	6BX 138MPa	32.0	25.0	255.0	117.0	5.6	11.8	50.6	203.2	65.9	0.8	29.0 / 8x	BX-151
2-1/16"	6BX 69MPa	44.0	25.0	200.0	111.0	6.0	12.7	55.4	158.8	73.6	0.8	23.0 / 8x	BX-152
2-1/16"	6BX 103.5MPa	44.0	25.0	220.0	114.0	6.0	12.7	55.4	174.6	73.6	0.8	26.0 / 8x	BX-152
2-1/16"	6BX 138MPa	44.0	25.0	285.0	132.0	6.0	12.7	55.4	230.2	73.6	0.8	32.0 / 8x	BX-152
2-9/16"	6BX 69MPa	57.0	25.0	230.0	132.0	6.8	14.1	70.2	184.2	88.7	0.8	26.0 / 8x	BX-153
2-9/16"	6BX 103.5MPa	57.0	25.0	255.0	133.0	6.8	14.1	70.2	200.0	88.7	0.8	29.0 / 8x	BX-153
2-9/16"	6BX 138MPa	57.0	25.0	325.0	151.0	6.8	14.1	70.2	261.9	88.7	0.8	35.0 / 8x	BX-153
3-1/16"	6BX 69MPa	72.0	25.0	270.0	152.0	7.5	15.4	83.7	215.9	103.6	0.8	29.0 / 8x	BX-154
3-1/16"	6BX 103.5MPa	72.0	25.0	290.0	154.0	7.5	15.4	83.7	230.2	103.6	0.8	32.0 / 8x	BX-154
3-1/16"	6BX 138MPa	72.0	25.0	355.0	171.0	7.5	15.4	83.7	287.3	103.6	0.8	39.0 / 8x	BX-154

All dimensions in mm

Note: dimensions cover flange are equal to seal BF

API 6A ISO 10423 - TYPE 6BX

size	rating	dD	b	D	d4	E	F	H	K	P	R	Cb / pcs	ring
2-1/16"	6B 13.8MPa	44.0	25.0	165.0	108.0	7.9	11.9	67.2	127.0	82.6	0.8	20.0 / 8x	R or RX-23
2-1/16"	6B 20.7MPa	44.0	25.0	215.0	124.0	7.9	11.9	78.8	165.1	95.2	0.8	26.0 / 8x	R or RX-24
2-1/16"	6B 34.5MPa	44.0	25.0	215.0	124.0	7.9	11.9	78.8	165.1	95.2	0.8	23.0 / 8x	R or RX-24
2-9/16"	6B 13.8MPa	72.0	25.0	190.0	127.0	7.9	11.9	83.7	149.2	101.6	0.8	29.0 / 8x	R or RX-26
2-9/16"	6B 20.7MPa	72.0	25.0	245.0	137.0	7.9	11.9	93.0	190.5	107.9	0.8	23.0 / 8x	R or RX-27
2-9/16"	6B 34.5MPa	72.0	25.0	245.0	137.0	7.9	11.9	93.0	190.5	107.9	0.8	26.0 / 8x	R or RX-27
3-1/8"	6B 13.8MPa	81.0	25.0	210.0	146.0	7.9	11.9	101.0	168.3	123.8	0.8	32.0 / 8x	R or RX-31
3-1/8"	6B 20.7MPa	81.0	25.0	240.0	156.0	7.9	11.9	101.0	190.5	123.8	0.8	20.0 / 8x	R or RX-31
3-1/8"	6B 34.5MPa	81.0	25.0	265.0	168.0	7.9	11.9	101.0	203.2	136.5	0.8	26.0 / 8x	R or RX-35

All dimensions in mm

Note: dimensions cover flange are equal to seal BF



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

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