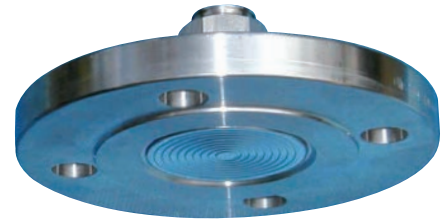


Diaphragm seals, flange connection, with internal or flush diaphragm, CITEC BF-BRF-BUSF Series, are designed for chemical and petrochemical industries on aggressive, viscous or hot media  
 According to standards : EN1092-1 (ISO), B1 facing type  
 ASME B 16.5 (ANSI), RF facing type  
 DN15 (1/2") to DN100 (4")

# Diaphragm seals flange connection BF - BRF - BUSF Series

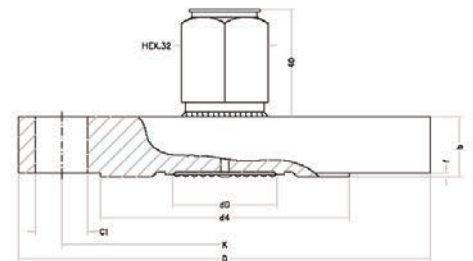
The three BF, BRF, BUSF Series allow to answer to different diameters DN15 (1/2") to DN100 (4") and to different materials used for diaphragm, according to the table below. The BUSF construction is designed for process connections too small to use flush diaphragm seals.



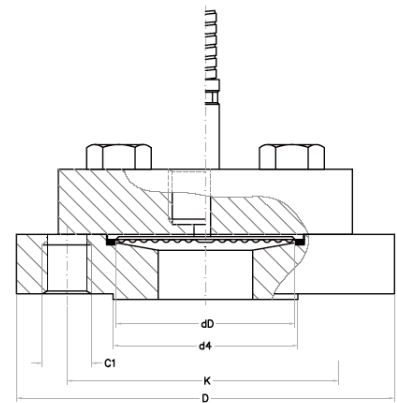
Size and material	Series		
	BUSF	BF	BRF
DN15 (1/2") and DN20 (3/4")	x		
DN25 (1") to DN100 (4")		x	x
AISI 316L SS diaphragm	x	x	
hastelloy C276 diaphragm			x
other materials	x		x

Two settings enable to determine flange's dimensions : DN (nominal diameter) and PN or Class (nominal pressure, which has to be compatible with pressure range's instrument).  
 Example : according to EN1092-1 standard : DN40 PN20 for a DN40 flange with 20 bar as nominal pressure  
 according to ASME B16.5 standard : 1" class 300 for a DN1" flange with 300 lbs as nominal pressure

In case of chemical processes including very aggressive media, all wetted parts have to be designed with the same material. The homogeneity of the material of the diaphragm and seal bearing ensures a perfect tightness, a good tear resistance and excellent temperature resistance performance.



BF-BRF



BUSF

## Product specifications

. Pressure	min : according to the table below max : according to flange's PN (nominal pressure).
. Design	. BF and BUSF Series, diaphragm and flange : AISI 316L stainless steel . BRF Series. flange : AISI 316L stainless steel diaphragm : hastelloy C276
. Process connection	standard flange according to : . EN 1092-1 (ISO), B1 type . ASME B 16.5 (ANSI), RF facing type
. Instrument connection	G1/2 female, stainless steel, capillary in option
. Filling liquid	FDA approved oil other liquids on request according to application
. Process temperature	-15°C to 200°C
. Flange dimensions	according to standard flanges dimension table

## Min / Max measuring range for pressure gauges

Process connection	1/2" - 3/4" DN15 - DN20	1" 1/4 DN25 - DN32	1 1/2" DN40	2" DN50	3" - 4" DN80 - DN100
Min. measuring range	0 1 bar	0 2.5 bar	0 1.6 bar	0 0.6 bar	0 0.6 bar

Max measuring range : given by nominal pressure or class of the chosen standards

## Order codes

### How to determinate the order code :

1- Select BF, BRF or BUSF according to table bellow

Size and material	Series		
	BUSF	BF	BRF
DN15 (1/2") and DN20 (3/4")	x		
DN25 (1") to DN100 (4")		x	x
316L SS diaphragm	x	x	
hastelloy C276 diaphragm			x
other materials	x		x

2- Select the flange according to the choosen standard :

. according to EN 1092-1, B1 type : DN (15 to 100) and PN (2.5 to 100 bar)

. according to ASME B 16.5, RF facing : DN (1/2" to 4") and class (150 to 2500 lbs)

3- To indicate if other material for the diaphragm

4- If capillary, indicate length

Serie	DN	P	PN or Class	Special diaphragm material	With capillary
BF	according to	or	according to	suffix according to material	<b>C</b>
BRF	dimensions table	<b>C</b>	dimensions table	diaphragm	followed by his
BUSF	(see next pages)	(1)	(see next pages)	(table bellow)	length in meters

(1) **P** for EN 1092-1 standard : B1 type, **C** for ASME B 16.5 standard : RF facing

### Other diaphragm materials for BRF and BUSF Series

Diaphragm material	Suffix
C276 Hastelloy	<b>H</b>
Monel 400	<b>M</b>
Tantale	<b>A</b>
Inconel 600	<b>I</b>
Duplex	<b>D</b>
Uranus B6	<b>U</b>
Titanium	<b>T</b>
PTFE coating (max. 260°C)	<b>P</b>
Gold coating (max. 400°C)	<b>O</b>

Coating is placed on AISI 316L stainless steel diaphragm

### Codification examples

- Diaphragm seal, BF Series, according to ASME B 16.5, flange 2"/class 300, order code : BF2P300

- Diaphragm seal, BRF Series according to EN 1092-1, flange DN100/PN20, monel 400 diaphragm, 2m SS capillary, order code : BRF100P20MC2

### Order codes abstract of BUSF - BF Series, DN15 to DN100, according to EN 1092-1, B1 type

DN	PN	Reference	CITEC code
DN15	10-40	BUSF 15P10-40	<b>411 945</b>
DN20	10-40	BUSF 20P10-40	<b>411 951</b>
DN25	10-40	BF 25P10-40	<b>411 961</b>
DN32	10-40	BF 32P10-40	<b>411 971</b>
DN40	10-40	BF 40P10-40	<b>411 981</b>
DN50	10-40	BF 50P10-40	<b>411 991</b>

### Options

. Material certificate 3.1B, **order code : 449 050**

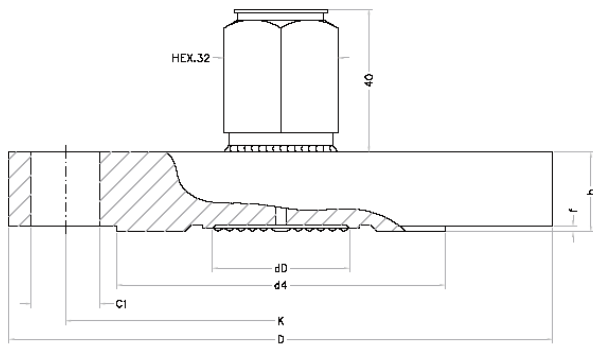
. Flanged connection according to JIS B220/1984 standard

. Flanged connection, with extension, EXT Series

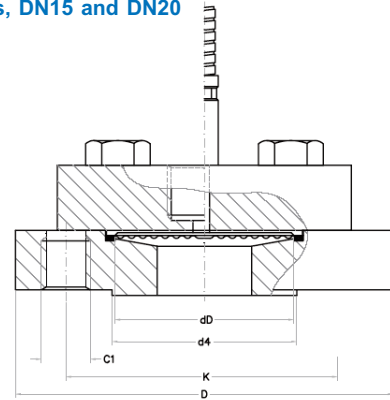
. Flush diaphragm, wafer type, BC Series

. Flush ring for flushing solution, FL Series

BF - BRF Series, DN25 to DN100



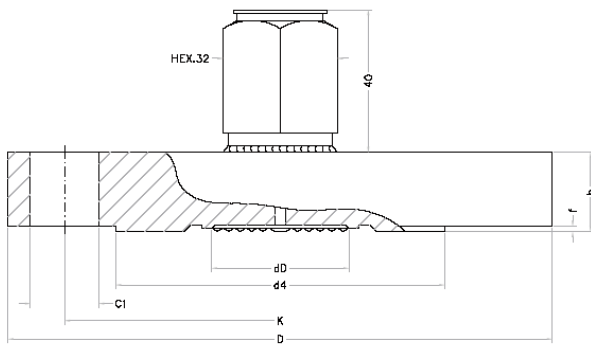
BUSF Series, DN15 and DN20



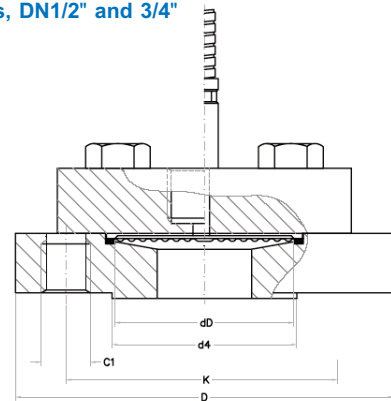
Flange connection according to DIN EN 1092-1 (ISO), B1 type

DN	PN (bar)	b	f	Ød4	ØdD	ØK	ØD	pc	C1 Ø	screw
15	2.5-6	12	2	40	51	55	80	4	11	M10
15	10-40	16	2	45	51	65	95	4	14	M12
15	20	12	1.6	34.9	51	60.3	89	4	15.8	M14
15	50	14	1.6	39.9	51	66.7	95	4	15.8	M14
15	63-100	20	2	45	51	75	105	4	14	M12
20	2.5-6	14	2	50	51	65	90	4	11	M10
20	10-40	18	2	58	51	75	105	4	14	M12
20	20	14	1.6	42.9	51	69.8	99	4	15.8	M14
20	50	15.7	1.6	42.9	51	82.6	117	4	19	M16
20	63-100	22	2	58	51	90	130	4	18	M16
25	2.5-6	14	2	60	32	75	100	4	11	M10
25	10-40	18	2	68	32	85	115	4	14	M12
25	20	16	1.6	50.8	32	79.4	108	4	15.8	M14
25	50	17.5	1.6	50.8	32	88.9	124	4	19	M16
25	63 -100	24	2	68	32	100	140	4	18	M16
32	2.5-6	14	2	70	32	90	120	4	14	M12
32	10-40	18	2	78	32	100	140	4	18	M16
32	20	18	1.6	63.5	32	88.9	117	4	15.8	M14
32	50	19	1.6	63.5	32	98.4	133	4	19	M16
32	63-100	26	2	78	32	110	155	4	22	M20
40	2.5-6	14	2	80	44	100	130	4	14	M12
40	10-40	18	2	88	44	110	150	4	18	M16
40	20	19	1.6	73	44	98.4	127	4	15.8	M14
40	50	20.6	1.6	73	44	114.3	156	4	22.2	M20
40	63-100	28	2	88	44	125	170	4	22	M20
50	2.5-6	14	2	90	57	110	140	4	14	M12
50	10-16	18	2	102	57	125	165	4	18	M16
50	20	21	1.6	92.1	57	120.6	152	4	19	M16
50	25-40	20	2	102	57	125	165	4	18	M16
50	50	22.4	1.6	92.1	57	127	165	8	19	M16
50	63	26	2	102	57	135	180	4	22	M20
50	100	30	2	102	57	145	195	4	26	M24
80	2.5-6	16	2	128	72	150	190	4	18	M16
80	10-16	20	2	138	72	160	200	8	18	M16
80	20	26	1.6	127	72	152.4	190	4	19	M16
80	25-40	24	2	138	72	160	200	8	18	M16
80	50	28.4	1.6	127	72	168.3	210	8	22.2	M20
80	63	28	2	138	72	170	215	8	22	M20
80	100	36	2	138	72	180	230	8	26	M24
100	2.5-6	16	2	148	89	170	210	4	18	M16
100	10-16	20	2	158	89	180	220	8	18	M16
100	20	27	1.6	157.2	89	190.5	229	8	19	M16
100	25-40	24	2	158	89	190	235	8	22	M20
100	50	31.8	1.6	157.2	89	200	254	8	22.2	M20
100	63	30	2	162	89	200	250	8	26	M24
100	100	40	2	162	89	210	265	8	30	M27

**BF - BRF Series, DN1" to DN4"**



**BUSF Series, DN1/2" and 3/4"**



**Flange connection according to ASME B 16.5 (ANSI), RF facing**

DN	Class (lbs)	b	f	Ød4	ØdD	ØK	ØD	pc	C1 Ø	screw
1/2"	150	11.2	1.6	35.1	51	60.5	88.9	4	15.7	1/2"-13UNC
1/2"	300	14.2	1.6	35.1	51	66.5	95.2	4	15.7	1/2"-13UNC
1/2"	400-600	20.6	6.4	35.1	51	66.5	95.3	4	15.7	1/2"-13UNC
1/2"	900-1500	28.7	6.4	35.1	51	82.5	120.6	4	22.3	3/4"-10UNC
1/2"	2500	36.6	6.4	35.1	51	88.5	133.4	4	22.3	3/4"-10UNC
3/4"	150	12.7	1.6	42.9	51	69.9	98.6	4	15.7	1/2"-13UNC
3/4"	300	15.7	1.6	42.9	51	82.5	117.3	4	19.1	5/8"-11UNC
3/4"	400-600	22.1	6.4	42.9	51	82.5	117.3	4	19.1	5/8"-11UNC
3/4"	900-1500	31.8	6.4	42.9	51	88.9	130.0	4	22.3	3/4"-10UNC
3/4"	2500	38.2	6.4	42.9	51	95.3	139.7	4	22.3	3/4"-10UNC
1"	150	14.2	1.6	50.8	32	79.2	108.0	4	15.7	1/2"-13UNC
1"	300	17.5	1.6	50.8	32	88.9	123.9	4	19.1	5/8"-11UNC
1"	400-600	23.9	6.4	50.8	32	88.9	124.0	4	19.1	5/8"-11UNC
1"	900-1500	34.8	6.4	50.8	32	101.6	149.3	4	25.4	7/8"- 9UNC
1"	2500	41.5	6.4	50.8	32	108.0	158.8	4	25.4	7/8"- 9UNC
1"1/4	150	15.7	1.6	63.5	32	88.9	117.3	4	15.7	1/2"-13UNC
1"1/4	300	19	1.6	63.5	32	98.5	133.3	4	19.1	5/8"-11UNC
1"1/4	400-600	27	6.4	63.5	32	98.5	133.4	4	19.1	5/8"-11UNC
1"1/4	900-1500	34.8	6.4	63.5	32	111.2	158.7	4	25.4	7/8"- 9UNC
1"1/4	2500	44.5	6.4	63.5	32	130	184.2	4	28.4	1"- 8UNC
1"1/2	150	17.5	1.6	73.2	44	98.6	127.0	4	15.7	1/2"-13UNC
1"1/2	300	20.6	1.6	73.2	44	114.3	155.4	4	22.3	3/4"-10UNC
1"1/2	400-600	28.8	6.4	73.2	44	114.3	155.4	4	22.3	3/4"-10UNC
1"1/2	900-1500	38.1	6.4	73.2	44	123.9	177.8	4	28.4	1"- 8UNC
1"1/2	2500	50.9	6.4	73.2	44	146.1	203.2	4	31.8	1"1/8 - 8UNC
2"	150	19.1	1.6	91.9	57	120.7	152.4	4	19.1	5/8"-11UNC
2"	300	22.4	1.6	91.9	57	127	165.1	8	19.1	5/8"-11UNC
2"	400-600	31.8	6.4	91.9	57	127	165.1	8	19.1	5/8"-11UNC
2"	900-1500	44.5	6.4	91.9	57	165.1	215.9	8	25.4	7/8"- 9UNC
2"	2500	57.2	6.4	91.9	57	171.5	235.0	8	28.4	1"- 8UNC
3"	150	23.9	1.6	127	72	152.4	190.5	4	19.1	5/8"-11UNC
3"	300	28.4	1.6	127	72	168.1	209.5	8	22.3	3/4"-10UNC
3"	400-600	38.2	6.4	127	72	168.1	209.6	8	22.3	3/4"-10UNC
3"	900	44.5	6.4	127	72	190.5	241.3	8	25.4	7/8"- 9UNC
3"	1500	54.1	6.4	127	72	203.2	266.7	8	31.8	1"1/8 - 8UNC
3"	2500	72.9	6.4	127	72	228.6	304.8	8	35.1	1"1/4 - 8UNC
4"	150	23.9	1.6	157.2	89	190.5	228.6	8	19.1	5/8"-11UNC
4"	300	31.7	1.6	157.2	89	200.1	254.0	8	22.3	3/4"-10UNC
4"	400	37.9	6.4	157.2	89	200.2	254.0	8	25.4	7/8"- 9UNC
4"	600	44.5	6.4	157.2	89	215.9	273.1	8	25.4	7/8"- 9UNC
4"	900	50.8	6.4	157.2	89	234.9	292.1	8	25.4	1"1/8 - 8UNC
4"	1500	50.2	6.4	157.2	89	241.3	311.1	8	35.1	1"1/4 - 8UNC
4"	2500	82.6	6.4	157.2	89	273.1	355.6	8	41.1	1"1/2 - 8UNC