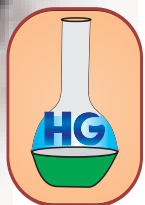


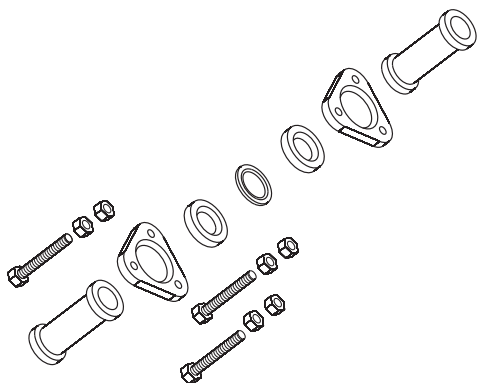
**Heta Glass
Industries**



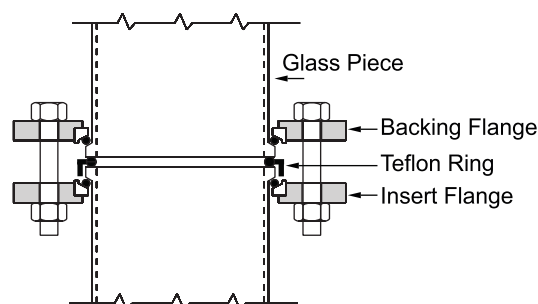
COUPLINGS AND GASKETS



COUPLINGS & GASKETS



ASSEMBLY OF STANDARD
FLAT JOINT ENDS



INTRODUCTION

In this section we have covered couplings to join glass process plant and pipeline components with other metal equipments.

The complete coupling includes two flanges, two inserts, the necessary numbers of nuts, and bolts to join them together.

The couplings designed for use with glass process plant and components are of major importance from two main points of view.

- F They must ensure that the bolt load applied to the joint is sufficient to make an effective seal whilst not inducing undue stress in the glass.
- F They must be totally reliable in all service conditions.

COMPLETE COUPLING

A Complete coupling consists of two backing flanges, two inserts and the appropriate number of nuts, bolts with PTFE 'O' ring. It is a complete set of flanges required to make a joint.

BACKING FLANGES			INSERT		NUT & BOLTS			CAT. REF.
DN	CAT. REF.	QTY.	CAT. REF.	QTY.	D	L	QTY.	
15	HCF07	2	HCN07	2	5/16"	2.5"	3	HCT07
25	HCF1	2	HCN1	2	5/16"	2.5"	3	HCT 1
40	HCF 1.5	2	HCN 1.5	2	5/16"	2.5"	3	HCT 1.5
50	HCF 2	2	HCN 2	2	5/16"	2.5"	3	HCT 2
80	HCF 3	2	HCN 3	2	5/16"	3.5"	6	HCT 3
100	H CF 4	2	HCN 4	2	5/16"	3.5"	6	HCT 4
150	HCF 6	2	HCN 6	2	3/8"	3.5"	6	HCT 6
225	HCF 9	2	HCN 9	2	3/8"	5"	8	HCT 9
300	HCF 12	2	HCN 12	2	3/8"	5"	12	HCT 12
400	HCF 16	2	HCN 16	2	1/2"	8"	12	HCT 16
450	HCF 18	2	HCN 18	2	1/2"	8"	12	HCT 18
600	HCF 24	2	HCN 24	2	1/2"	8"	12	HCT 24

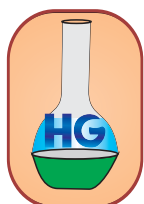
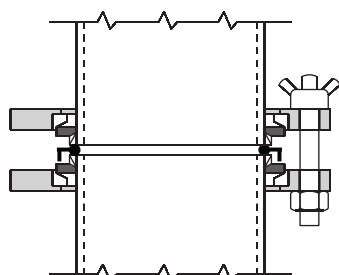
* DN is the nominal size of coupling .

QUICK RELEASE COUPLING

There are always applications where there is a need to open or close a coupling easily without using tools. Charging reaction vessels are an example of this. Quick release couplings provide this facility whilst securing the lower backing flange against falling down.

The flanges one of which has slotted bolt holes remains fixed on the glass and are separated by means of hinged quick release bolts and wingnuts.

Depending upon the frequency of opening, the sealing gasket may need regular renewal.



COUPLINGS & GASKETS

BACKING FLANGE

Backing flange forms an integral part of the complete couplings detailed earlier in this chapter. Up to and including DN 450 it is one -piece unit and for DN-600 the flange is available in two pieces.

Baking flange is made from cast iron and is used with insert.

DN	D	H	P.C.D.	d x N	TYPE	CAT. REF
15	70	10	50	6 X 3	A	HCF07
25	90	10	70	9 x 3	A	HCF1
40	105	10	86	9 x 3	A	HCF 1.5
50	120	11	98	9 x 3	A	HCF 2
80	155	12	133	9 x 6	A	HCF 3
100	200	14	178	9 x 6	A	HCF 4
150	280	15	254	11 x 6	A	HCF 6
225	335	29	310	11 x 8	B	HCF 9
300	420	35	394	11 x 12	B	HCF 12
400	525	22	495	12 x 12	A	HCF 16
450	630	38	585	14 x 12	B	HCF 18
600	745	48	710	14 x 12	B	HCF 24

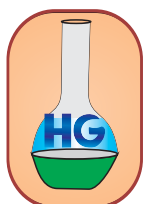
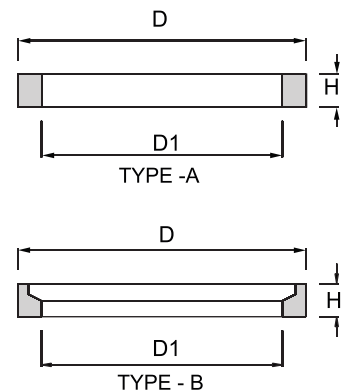
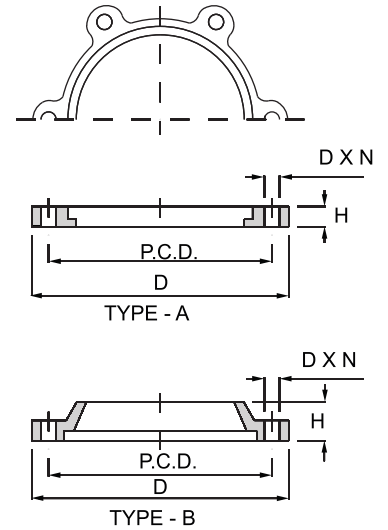
* Stainless steel (S.S.) flanges can be made on request basis.

INSERT

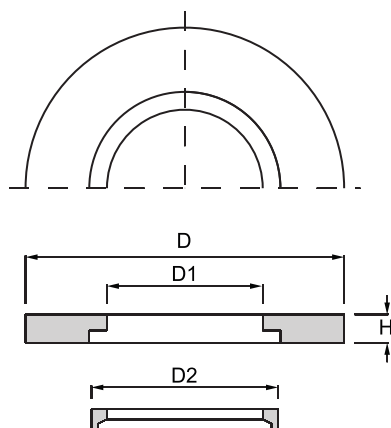
Insert is fitted between the flange and the glass buttress end and should always be renewed if a joint is dismantled.

Spilt ring type insert is used with backing flanges. It is made of cast iron asbestos rope. Non asbestos PTFE impregnated rope cab be supplied on request. Insert from ruber material can also be supplied on request.

DN MM	D MM	D1 MM	H MM	TYPE	CAT. REF
15	34	22	8	A	HCN07
25	50	36	8	A	HCN1
40	65	50	8	A	HCN 1.5
50	79	62	8	A	HCN 2
80	110	92	8	A	HCN 3
100	146	122	8	A	HCN 4
150	197	174	10	A	HCN 6
225	275	240	10	A	HCN 9
300	359	322	10	A	HCN 12
400	474	431	12	A	HCN 16
450	555	500	18	A	HCN 18
600	684	634	18	B	HCN 24



COUPLINGS & GASKETS



ADAPTOR BACKING FLANGE

This flange is used to connected glass component to flange on other equipment where different bolt configurations and/or drilled PCD'S are required. This flange is made of cast iron and supplied with a spilt ring.

Aluminium flange can also be supplied on request. Please mention Cat.Ref. HCFA for cast iron and HAFC for aluminium flange.

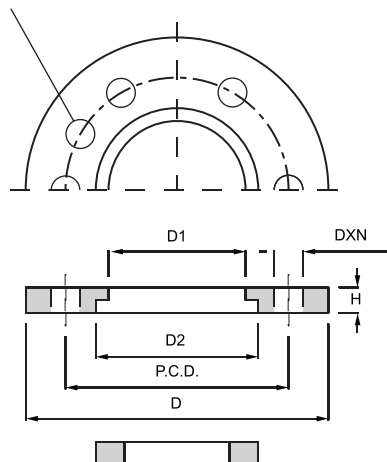
Adaptor backing flange is generally supplied un-drilled . However, if specified , this can be supplied drilled as per "Table E/F/ ASA150" standards.

UNDRILLED FLANGE

DN MM	D MM	D1 MM	D2 MM	H MM	CAT. REF
15	70	29	30	10	HCFA07
25	115	43	51	10	HCFA 1
40	150	58	66	10	HCFA 1.5
50	165	70	81	12	HCFA 2
80	200	101	112	12	HCFA 3
100	220	134	148	12	HCFA 4
150	285	186	196	15	HCFA 6
225	395	260	282	15	HCFA 9
300	445	342	363	18	HCFA 12

DRILLED TABLE -E			DRILLED TABLE -F			DRILLED TABLE -ASA150		
CAT.REF	PCD	n x Dø	CAT.REF	PCD	n x Dø	CAT.REF	PCD	n x Dø
HCFA07/E	67	4 x 12ø	HCFA07/F	67	4 x 16ø	HCFA07/A	60	4 x 12ø
HCFA 1/E	82	4 x 12ø	HCFA 1/F	87	4 x 16ø	HCFA 1/A	79	4 x 12ø
HCFA 1.5/E	98	4 x 12ø	HCFA 1.5/F	105	4 x 16ø	HCFA 1.5/A	98	4 x 12ø
HCFA 2/E	114	4 x 16ø	HCFA 2/F	127	4 x 16ø	HCFA 2/A	121	4 x 16ø
HCFA 3/E	146	4 x 16ø	HCFA 3/F	165	8 x 16ø	HCFA 3/A	152	4 x 16ø
HCFA 4/E	178	8 x 16ø	HCFA 4/F	190	8 x 16ø	HCFA 4/A	190	8 x 16ø
HCFA 6/E	235	8 x 19ø	HCFA 6/F	260	12 x 19ø	HCFA 6/A	241	8 x 19ø
HCFA 9/E	324	12 x 19ø	HCFA 9/F	356	12 x 23ø	HCFA 9/A	298	8 x 19ø
HCFA 12/E	406	12 x 23ø	HCFA 12/F	438	16 x 23ø	HCFA 12/A	432	12 x 23ø

Locking Bolt



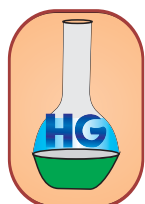
BELLOW FLANGE

Bellow flange is used to fit a bellow to a glass component . This is made of cast iron and is used in HFBN,HVB, HFB type of bellows.

This is provided with a spilt ring.

DN	D	D1	D2	PCD	d X N	H	CAT. REF
15	60	30	34	50	9 x 3	8	HBF07
25	90	44	54	70	9 x 3	8	HBF 1
40	105	59	66	86	9 x 3	9	HBF 1.5
50	121	71	80	98	9 x 3	10	HBF 2
80	155	102	115	133	9 x 6	10	HBF 3
100	200	135	146	178	9 x 6	10	HBF 4
150	274	186	202	254	10 x 6	10	HBF 6
225	340	260	275	310	10 x 8	11	HBF 9
300	425	340	363	394	11 x 12	15	HBF 12

Aluminum and S.S. flanges can be supplied on request .



COUPLINGS & GASKETS

ADAPTOR BELLOW FLANGE

This flange is made of cast iron and supplied with a spilt ring.

Aluminium flange can also be supplied on request. Please mention Cat.Ref.HCFA for cast iron and HAFC for aluminium flange.

Adaptor backing flange is generally supplied un-drilled . However, if specified , it can be supplied drilled as per "Table E/F/ ASA150" standards.

UNDRILLED FLANGE

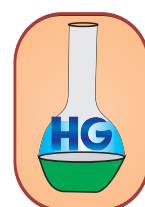
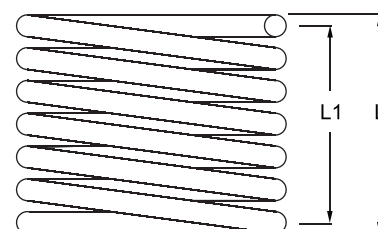
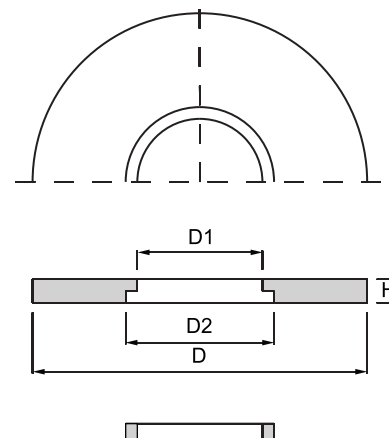
DN MM	D MM	D1 MM	D2 MM	H MM	CAT. REF.
15	70	29	30	7	HBFA07
25	115	44	53	7	HBFA 1
40	150	59	65	9	HBFA 1.5
50	165	70	81	8	HBFA 2
80	200	104	115	9	HBFA 3
100	220	133	149	9	HBFA 4
150	285	189	204	11	HBFA 6
225	395	261	280	12	HBFA 9
300	445	342	363	12	HBFA 12

DRILLED TABLE -E			DRILLED TABLE -F			DRILLED TABLE -ASA150		
CAT.REF	PCD	n x Dø	CAT.REF	PCD	n x Dø	CAT.REF	PCD	n x Dø
HBFA07/E	67	4 x 12ø	HBFA07/F	67	4 x 16ø	HBFA07/A	60	4 x 12ø
HBFA 1/E	82	4 x 12ø	HBFA 1/F	87	4 x 16ø	HBFA 1/A	79	4 x 12ø
HBFA 1.5/E	98	4 x 12ø	HBFA 1.5/F	105	4 x 16ø	HBFA 1.5/A	98	4 x 12ø
HBFA 2/E	114	4 x 16ø	HBFA 2/F	127	4 x 16ø	HBFA 2/A	121	4 x 16ø
HBFA 3/E	146	4 x 16ø	HBFA 3/F	165	8 x 16ø	HBFA 3/A	152	4 x 16ø
HBFA 4/E	178	8 x 16ø	HBFA 4/F	190	8 x 16ø	HBFA 4/A	190	8 x 16ø
HBFA 6/E	235	8 x 19ø	HBFA 6/F	260	12 x 19ø	HBFA 6/A	241	8 x 19ø
HBFA 9/E	324	12 x 19ø	HBFA 9/F	356	12 x 23ø	HBFA 9/A	298	8 x 19ø
HBFA 12/E	406	12 x 23ø	HBFA 12/F	438	16 x 23ø	HBFA 12/A	432	12 x 23ø

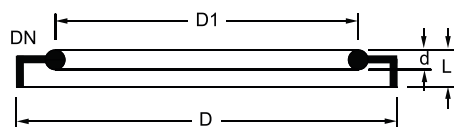
COMPRESSION SPRING

Compression spring is used to set the correct bolt load and to maintain it after the gasket has settled, thus ensuring that the coupling remains leak-free. Standard compression spring has a corrosion resistant coating and is also available in stainless steel.

DN	FREE L	INSTALLED L1	CAT. REF.
25 -100	14.5	11.0	HDF 8.5
150 - 300	22.0	18.0	HDF 10.5
450 - 600	28.7	22.7	HDF 13



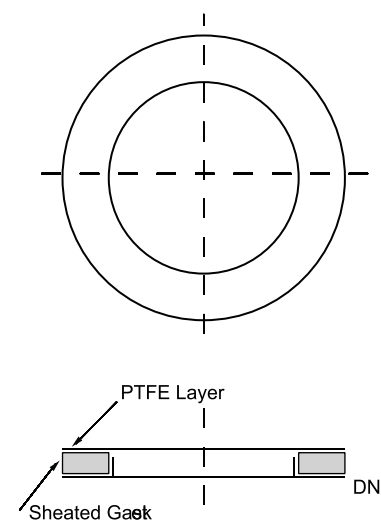
COUPLINGS & GASKETS



PTFE 'O' RING

PTFE 'O' ring is the most widely used gaskets in glass fittings. It is provided with a locking collar which helps to lock the two glass surfaces correctly.

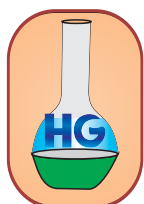
DN MM	D MM	D1 MM	d MM	L MM	CAT. REF
15	29	23	3	5	HTR07
25	42	33	3	5	HTR 1
40	57	48	3	5	HTR 1.5
50	70	59	3	5	HTR 2
80	100	88	3	5	HTR 3
100	134	119	4	6	HTR 4
150	186	168	4	6	HTR 6
225	260	236	4	7	HTR 9
300	342	318	4	7	HTR 12
400	467	455	6	7	HTR16
450	537	490	6	7	HTR 18
600	686	640	8	10	HTR 24



PTFE SHEATHED GASKET

This gasket takes the form of a PTFE sheath fitted over a compressed asbestos fiber gasket. When using this type of gasket, a higher bolting force is required for DN 450 and above. Please consult our Technical Department for further information.

DN	CAT. REF
25	HTMP 1
40	HTMP 1.5
50	HTMP 2
80	HTMP 3
100	HTMP 4
150	HTMP 6
225	HTMP 9
300	HTMP 12
450	HTMP 18
600	HTMP 24



COUPLINGS & GASKETS

PTFE BELLOW

PTFE bellow is an important support in the construction of glass plant and pipeline. It can be used to compensate for different thermal movement between glass and associated equipments, absorb vibrations from associated equipments or foundations. In particular, bellow can be used for connecting glass to other material.

When bellow is used, the support and restraint of the glass should be such that the force resulting from pressure/vacuum in the pipeline and forces resulting from movement of the bellows do not result in undue stresses in the glass.

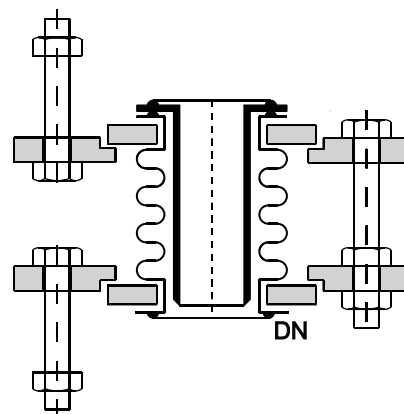
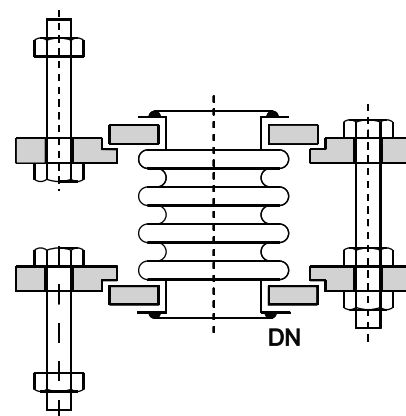
The maximum operating temperature for PTFE bellow is 200°C. Bellow DN 80 and above should not be used under vacuum. For such application we recommend the use of vacuum bellow as detailed on the following page.

Permissible operating conditions for HBFN bellow

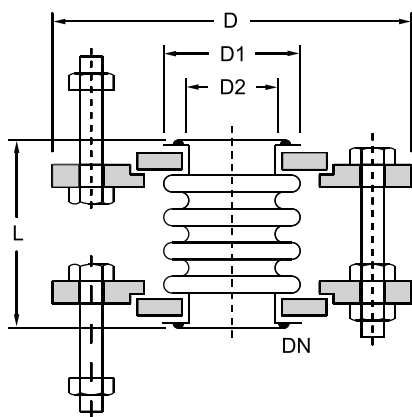
DN	Permissible operating pressures (bar. g)				
	20 °C	100 °C	160 °C	200 °C	
15	-1 / +4	-1 / +3	-1 / +1,5		unpressurised
25	-1 / +4	-1 / +3	-1 / +1,5		
40	-1 / +4	-1 / +3	-1 / +1,5		
50	-1 / +4	-1 / +2	-1 / +1		
80	-1 / +3	-1 / +2	0 / +1		
100	-1 / +2	-1 / +2	0 / +1		
150	-1 / +2	-1 / +1,5	0 / +0,7		
200	-1 / +1	-1 / +1	0 / +0,5		
300	-1 / +1	-1 / +0,7	0 / +0,3		

Permissible operating conditions for HVBN bellow

DN	Permissible operating pressures (bar. g)				
	20 °C	100 °C	160 °C	200 °C	
80	-1 / +3	-1 / +2	-1 / +1		unpressurised
100	-1 / +2	-1 / +2	-1 / +1		
150	-1 / +2	-1 / +1,5	-1 / +0,7		
200	-1 / +1	-1 / +1	-1 / +0,5		
300	-1 / +1	-1 / +0,7	-1 / +0,3		



COUPLINGS & GASKETS

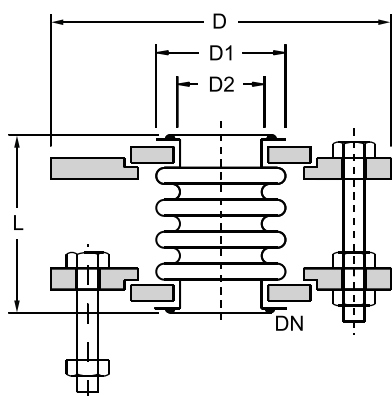


PTFE BELLOW FOR CONNECTING GLASS TO GLASS
(LINE BELLOW)

DN	D	D1	D2	L	CAT. REF
15	65	28	21	60	HFBN1
25	95	41	31	60	HFBN 1
40	105	56	43	60	HFBN 1.5
50	121	69	55	60	HFBN 2
80	155	98	82	65	HFBN 3
100	200	132	111	65	HFBN 4
150	274	184	162	65	HFBN 6
225	340	258	230	65	HFBN 9
300	425	340	308	65	HFBN 18

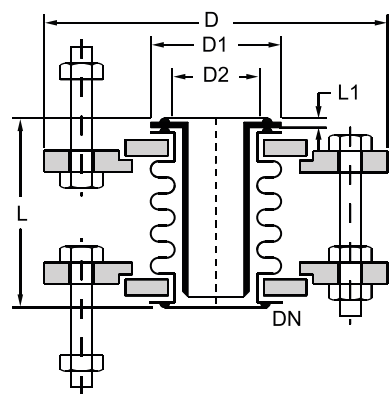
*Tolerances for above bellows in length is $\pm 3\text{mm}$.

PTFE BELLOW FOR CONNECTING GLASS TO OTHER MATERIALS
(LINE BELLOW)



DN	D	D1	D2	L	CAT. REF
15	65	28	21	60	HFBF1
25	95	41	31	60	HFBF 1
40	105	56	43	60	HFBF 1.5
50	121	69	55	60	HFBF 2
80	155	98	82	65	HFBF 3
100	200	132	111	65	HFBF 4
150	274	184	162	65	HFBF 6
225	340	258	230	65	HFBF 9
300	425	340	308	65	HFBF 18

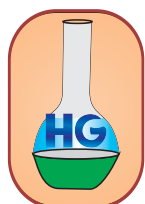
*Tolerances for above bellows in length is $\pm 3\text{mm}$.



PTFE VACUUM BELLOW FOR CONNECTING
GLASS TO GLASS (VACUUM BELLOW)

DN	D	D1	D2	L	L1	CAT. REF
80	155	98	82	70	5	HVBN 3
100	200	132	111	70	5	HVBN 4
150	275	184	162	70	5	HVBN 6
225	350	258	230	70	5	HVBN 9
300	425	340	308	70	5	HVBN 12

*Tolerances for above bellows in length is $\pm 3\text{mm}$.



COUPLINGS & GASKETS

PTFE VACUUM BELLOW FOR CONNECTING GLASS TO OTHER MATERIALS (VACUUM BELLOW)

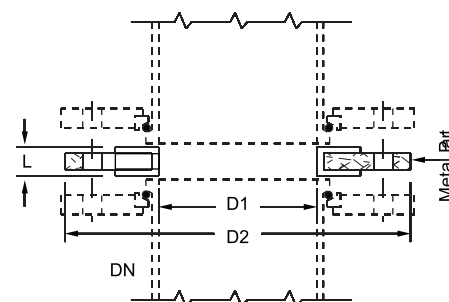
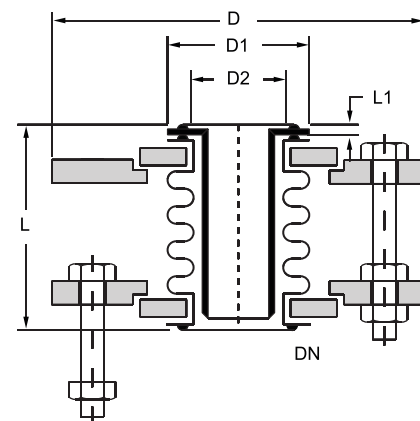
DN	D	D1	D2	L	L1	CAT. REF
80	155	98	82	70	5	HVBF 3
100	200	132	111	70	5	HVBF 4
150	275	184	162	70	5	HVBF 6
225	350	258	230	70	5	HVBF 9
300	425	340	308	70	5	HVBF 12

Note : Bellows can be supplied with undrilled adaptor flanges. However , if specified , these bellows can be supplied drilled as per " Table E" , Table F" and "ASA150 " Standards. *
Tolerances for above bellows in length is $\pm 3\text{mm}$ and diameter as per the glass buttress end tolerance.

ADAPTOR PLATE FOR REACTORS.

This component is used as interface spacer when connecting glass flat buttress end component to other process plant, pipeline and glass - lined reaction vessel. A combination of steel, rubber and PTFE provide an ideal sealing surface with only PTFE coming into contact with the process fluids to maintain resistance to corrosion.

DN	CAT. REF
25	HEMP 1
40	HEMP 1.5
50	HEMP 2
80	HEMP 3
100	HEMP 4
150	HEMP 6
225	HEMP 9
300	HEMP 12
450	HEMP 18
600	HEMP 24



HG

Honesty

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