PTFE Bellows, GAB HX Type (for DIN Graphite Block Nozzles)

Works Standard

Main Dimensions and Characteristics

DN	Neutral Length [mm]	Effective Area [cm²]	Flange Connection D1 [mm]	LK1 [mm]	d1 [mm]	D2 [mm]	LK2 [mm]	d2 [mm]
25	69	10	115	85	4xØ14	115	85	4xM12
40	69	22	150	110	4xØ18	150	110	4xM16
50	70	32	165	125	4xØ18	165	125	4xM16
65	85	52	185	145	4xØ18	185	145	4xM16
80	85	73	200	160	8xØ18	200	160	8xM16
100	91	101	220	180	8xØ18	220	180	8xM16
125	99	152	250	210	8xØ18	250	210	8xM16
150	103	207	285	240	8xØ22	285	240	8xM20
200	103	353	340	295	8xØ22	340	295	8xM20
250	107	566	395	350	12xØ22	395	350	12xM20
300	132	782	445	400	12xØ22	445	400	12xM20

DN	Full Vacuum Performance [up to ..°C]	Movements Length min./max. [mm]	Lateral max. [mm]	Angular max. [degree]	Spring Rate (at 20°C+/- 30%) Axial Compress. [N/mm]	Axial Extension [N/mm]	Lateral [N/mm]	Angular [Nm/deg]
25	200	+/- 10	4	8	60	36	72	1
40	200	+/- 10	4	8	96	60	128	2
50	200	+/- 10	7	9	102	70	150	3
65	200	+/- 10	7	8	126	96	195	4
80	200	+/- 13	9	9	172	112	240	5
100	200	+/- 15	10	8	268	166	300	7
125	200	+/- 15	10	7	294	192	375	9
150	200	+/- 16	10	6	330	204	450	11
200	200	+/- 18	10	6	260	200	590	12
250	100 [1])	+/- 20	10	5	280	220	560	17
300	100 [2])	+/- 20	11	4	340	250	680	25

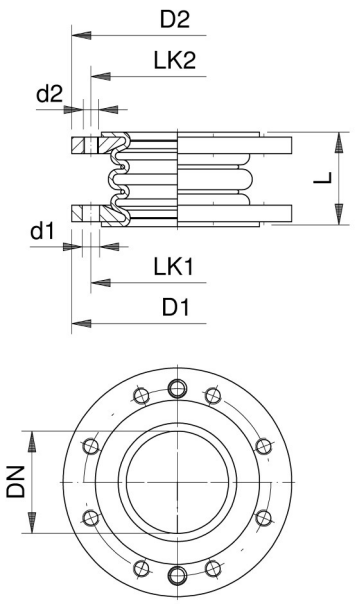
[1]) at 150°C/200°C: -0,85 bar/-0,72 bar, [2]) at 150°C/200°C: -0,75 bar/-0,64 bar

Combined Movements

- The max. movements (axial, lateral, angular) indicated in the tables are not independent movements. Avoid flexural stresses!
- The combined total of related movements must not exceed 100%.

Length Limitation

- Limit bolts / sleeves should not be used to connect GAB HX PTFE bellows to GAB Neumann heat exchangers.
- During pressure application and / or mechanical movement the extension must not exceed the max. allowed extension (as per data above).
- Please ensure that the heat exchanger and piping are adequately fastened to their bearing.



Spring Rate Correction Factors

Temperature [°C]	Factor
20	1,0
80	0,65
120	0,5
150	0,4

Examples:

- Spring rate at 120°C = spring rate at 20°C x 0,5
- Axial extension at DN 50 and 120°C by 5 mm: Force F = 5 mm x 70 N/mm x 0,5 = 175 N

Materials

Bellow: virgin paste extruded PTFE, black, anti-static (max. earth resistance <10^8 Ohm)

Flange: SA 516 (1.0425), alternative 316 L (1.4404)

Ultra high temperature paint with a silver finish

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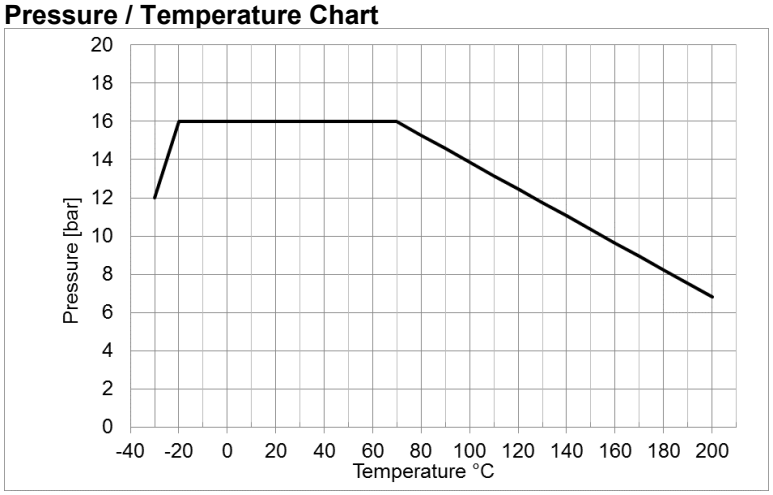
Graphite and SiC Heat Exchangers and Process Equipment

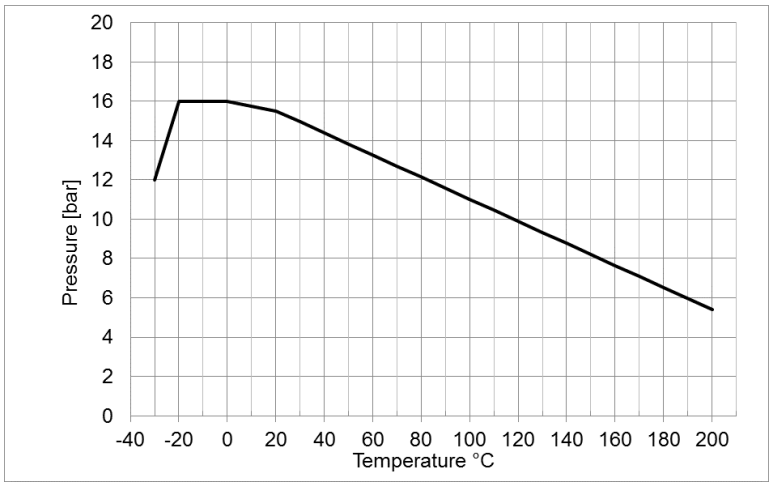
PTFE Bellows, GAB HX Type (for DIN Graphite Block Nozzles)

Pressure / Temperature Chart



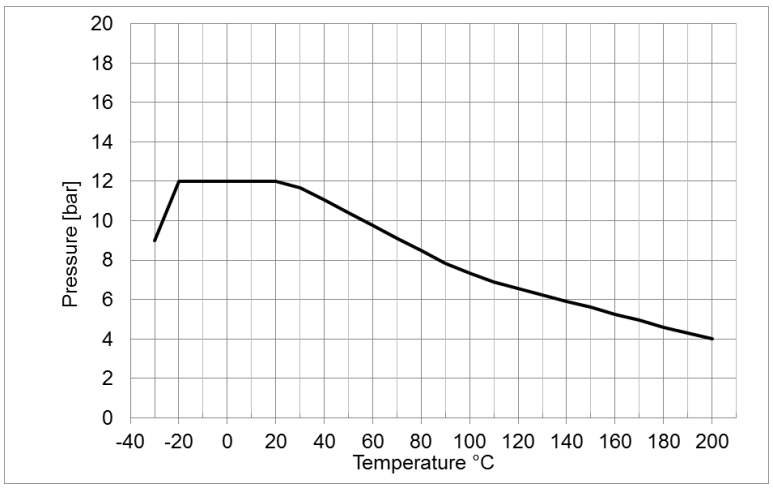
Nominal Diameter

- DN 25
- DN 40
- DN 50



Nominal Diameter

- DN 65
- DN 80
- DN 100
- DN 125
- DN 150



Nominal Diameter

- DN 200
- DN 250
- DN 300

Additional Information

- For further details on GAB HX PTFE bellows please refer to Technical Information TI 070 our website: www.gab-neumann.com

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