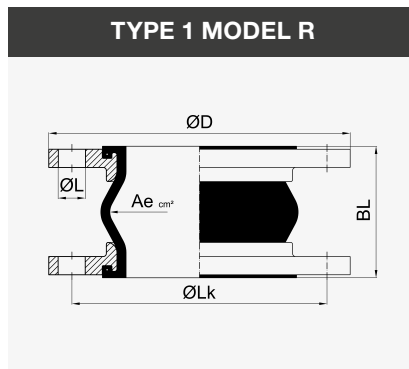


# RUBBER EXPANSION JOINTS

## Type 1 MODEL R



### Areas of application in industry and trade:

- › Absorbing axial, lateral and angular movements and (heat/cold) expansions
- › Vibration-reducing connection of machines and units
- › Reducing noise transfer
- › Compensation of installation inaccuracies
- › Reduction of forces and moments in connections
- › Mechanical engineering, plant engineering, pipeline construction and ship building
- › Water supply and building technology
- › Energy and offshore technology
- › Steel, printing, paper and chemical industry

### Version

The HKS rubber expansion joint **type 1 model R** consists of a rubber bellows and two rotating flanges.

### Design Gummibalg:

- Inner layer: Butyl (IIR) / EPDM, seamless, low diffusion
- Pressure support: PA textile cord, butyl rubber coating
- Outer layer: EPDM, ozone-resistant, heat-resistant
- Identification: Red ring, DN..., PN..., date of manufacture

### Flange design:

Rotating steel flanges made of material S235JR, galvanised, DIN PN 10, with integrated rubber bead (self-sealing), additional seals are not required.

### Properties and areas of application:

The HKS rubber expansion joint type 1 model R is suitable for water, drinking water (certifications DVGW W 270 as well as ACS), cold and hot wastewater, seawater, cooling water (also with chemical additives for water processing), weak acids and lyes, saline solutions, technical alcohol, ester and ketones. It can be used in a temperature range (depending on media) from -40 °C to +100 °C (briefly up to +120) and is electrically dissipative.

### Additional equipment:

- › PTFE linings
- › Vacuum support rings
- › Tensioning/tension rod length limiters
- › Hinged tensioners
- › Inner sleeves
- › Flame protection covers
- › Soil protection covers

### Special versions:

- › Flanges: Other materials, flange standards and dimensions according to DIN, ASA, JIS, etc. are possible.
- › Rubber bellows: On request, other expansion joints are available with Nominal diameters, pressure stages and lengths which exceed the standard listed in the tables. DN 32 bellows are used for DN 25 rubber expansion joints.

### Temperature-dependent pressure and movement ranges

Max. operating temperature	Max. movement range	Temperature-dependent operating pressure for bellows	
		PN 10	PN 16
50 °C	100 %	10 bar	16 bar
70 °C	80 %	8 bar	12 bar
100 °C	60 %	6 bar	10 bar

Subject to technical modifications

- 1) DN 32 bellows are used for DN 25 rubber expansion joints.
- 2) VSD ... vacuum support ring made of material 1.4571
- 3) VSD+S ... vacuum support ring with lock (screw fitting) made of 1.4571
- 4) Axial movement absorption  $\Delta x_c$  ... compression and  $\Delta x_e$  ... extension
- 5)  $\Delta x_c/\Delta x_e$ ,  $\Delta y$  and  $\Delta \alpha$  have to be reduced proportionately for simultaneous movement absorption. The sum of all parts must not exceed 100 %.

Nominal diameter		LGTH	Bellows		Permitted movement absorption nominal <sup>5)</sup>				Permitted negative pressure (vacuum stability)			Flange					Weight			
			Nominal pressure	Effective diameter	Axial <sup>4)</sup>		Lateral	Angular	Without VSD	With VSD <sup>2)</sup>	With VSD+S <sup>3)</sup>	Outside diameter	Bore-hole pattern acc. to EN 1092	Pitch circle diameter	No. of holes	Hole diameter				
DN	BL	PN	Ae	$\Delta x_c$	$\Delta x_e$	$\Delta y$	$\Delta \alpha$	mbar									mbar	mbar	D	PN
mm	in	mm	bar	cm <sup>2</sup>	mm	mm	mm	De-grees				mm	-	mm	-	mm	kg			
25 <sup>1)</sup>	1"	130	16	15	-30	+20	±30	±30	max. -1000			115	40	85	4	14	1.9			
32	1 1/4"	130	16	15	-30	+20	±30	±30				140	40	100	4	18	3.4			
32	1 1/4"	160	16	15	-30	+35	±35	±15				140	40	100	4	18	3.6			
40	1 1/2"	130	16	20	-30	+20	±30	±30				150	40	110	4	18	4.0			
40	1 1/2"	160	16	20	-30	+35	±35	±15				150	40	110	4	18	4.2			
50	2"	130	16	30	-30	+20	±30	±30				165	16	125	4	18	4.6			
50	2"	150	16	30	-35	+30	±30	±15				165	16	125	4	18	4.7			
50	2"	160	16	30	-30	+35	±35	±15				165	16	125	4	18	4.8			
65	2 1/2"	130	16	50	-30	+20	±30	±30				-700	max. -1000		185	16	145	4	18	5.3
65	2 1/2"	150	16	50	-35	+30	±30	±15				-700			185	16	145	4	18	5.4
65	2 1/2"	160	16	50	-30	+35	±35	±15	-700	185	16	145			4	18	5.5			
80	3"	130	16	85	-30	+20	±30	±30	-600	200	16	160			8	18	6.9			
80	3"	150	16	85	-35	+30	±30	±15	-600	200	16	160			8	18	7.0			
80	3"	160	16	85	-30	+35	±35	±15	-600	200	16	160			8	18	7.1			
100	4"	130	16	125	-30	+20	±30	±20	-400	max. -1000		220			16	180	8	18	8.0	
100	4"	150	16	125	-35	+30	±30	±15	-400			220			16	180	8	18	8.1	
100	4"	160	16	125	-30	+35	±35	±15	-400			220			16	180	8	18	8.2	
125	5"	130	16	185	-30	+20	±30	±20	-300			250			16	210	8	18	9.9	
125	5"	150	16	185	-35	+30	±30	±15	-300			250	16	210	8	18	10.1			
125	5"	160	16	185	-30	+35	±35	±15	-300			250	16	210	8	18	10.2			
150	6"	130	16	250	-30	+20	±30	±20	-300			285	16	240	8	22	12.3			
150	6"	150	16	250	-35	+30	±30	±15	-300			285	16	240	8	22	12.4			
150	6"	160	16	250	-30	+35	±35	±15	-300			285	16	240	8	22	12.5			
200	8"	130	16	400	-25	+30	±30	±10	-300			340	10	295	8	22	16.5			
200	8"	150	16	400	-35	+30	±30	±15	-300	340	10	295	8	22	16.6					
200	8"	160	16	400	-30	+35	±35	±5	-300	340	10	295	8	22	16.7					
200	8"	175	16	400	-15	+35	±15	±5	-300	340	10	295	8	22	16.8					
250	10"	130	16	600	-10	+30	±15	±5	-200	395	10	350	12	22	21.6					
250	10"	175	16	600	-15	+35	±10	±5	-200	395	10	350	12	22	21.9					
250	10"	200	10	600	-40	+35	±30	±10	-200	395	10	350	12	22	22.1					
300	12"	130	16	800	-10	+30	±15	±5	-100	445	10	400	12	22	29.3					
300	12"	200	10	800	-40	+35	±30	±10	-100	445	10	400	12	22	29.8					
350	14"	200	16	1000	-40	+35	±30	±8	-	505	10	460	16	22	43.0					
400	16"	200	16	1375	-40	+35	±30	±8	-	565	10	515	16	26	46.0					
450	18"	200	10	1780	-40	+35	±30	±8	-	615	10	565	20	26	50.0					
450	18"	250	10	1780	-40	+35	±35	±10	-	615	10	565	20	26	53.0					
500	20"	200	10	2185	-40	+35	±30	±8	-	670	10	620	20	26	57.0					
600	24"	200	10	3080	-40	+35	±30	±8	-	780	10	725	20	30	70.0					
700	28"	260	10	4800	-40	+30	±30	±5	-	895	10	840	24	30	117.0					
800	32"	250	10	5440	-40	+35	±35	±5	-	1015	10	950	24	33	129.5					
900	36"	300	10	7100	-40	+40	±40	±5	-	1115	10	1050	28	33	184.0					
1000	40"	300	10	8700	-40	+40	±40	±5	-	1230	10	1160	28	36	245.0					