

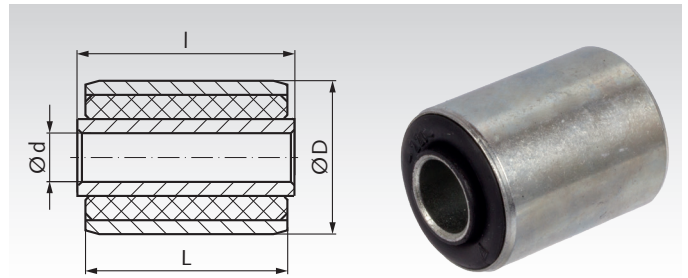
Heavy-Duty Steel Rubber Bushes PHO-P, Pressed-in-Version

Material: Metal Parts: Steel, zinc-plated.
Elastomer: Natural rubber,
hardness 55-75° Shore A, depending on the size.

Version: With hard rubber, pressed in between the inner bush and the outer bush. Suitable for high radial load, medium axial load and low torsion.

Mounting hole tolerance: Depending on the actual size of the outer bush diameter, the borehole tolerance must be determined, in accordance with the required fit.

Temperature resistant up to 80°C.



Ordering Details: e.g.: Product No. 685 102 230P, Heavy Duty Bush PHO-P, 10 mm

Product No.	Internal Ø d mm	External Ø D mm	Length of Internal Bush l mm	Length of External Bush L mm	Radial Load*		Axial Load*		Torsion*			Weight g
					perm. stat. Radial Load F _r N	radial Spring Rate C _r N/mm	perm. stat. Axial Load F _a N	axial Spring Rate C _a N/mm	perm. stat. Torsion Angle φ degrees	perm. stat. Torque M _d Nm	perm. Spring Rate C _f Nm/degrees	
685 102 230P	10 ^{+0,15}	22 ^{+0,1}	33 ^{+0,1}	30 ^{+0,3}	2800	5800	410	800	15	13,5	0,90	47
685 102 520P	10 ^{+0,15}	25 ^{+0,1}	24 ^{+0,1}	20 ^{+0,3}	4000	2500	410	350	15	7,5	0,50	36
685 122 435P	12 ^{+0,15}	24 ^{+0,1}	38 ^{+0,1}	35 ^{+0,3}	3000	5400	1330	750	10	170	17,00	61
685 122 525P	12 ^{+0,15}	25 ^{+0,1}	28 ^{+0,1}	25 ^{+0,3}	4920	5200	500	600	10	11	1,10	47
685 122 618P	12 ^{+0,15}	26 ^{+0,1}	24 ^{+0,1}	18 ^{+0,3}	690	2000	680	270	13	6	0,46	38
685 122 632P	12 ^{+0,15}	26 ^{+0,1}	36 ^{+0,1}	32 ^{+0,3}	1370	5000	840	530	13	14	1,15	61
685 133 040P	13 ^{+0,15}	30 ^{+0,1}	40 ^{+0,1}	40 ^{+0,3}	1570	5100	830	480	14	26	1,86	96
685 143 067P	14 ^{+0,15}	30 ^{+0,1}	76 ^{+0,1}	67 ^{+0,3}	3900	6800	2310	1200	15	42	2,80	157
685 163 216P	16 ^{+0,2}	32 ^{+0,15}	17 ^{+0,1}	16 ^{+0,3}	1900	1600	310	300	12,5	11,5	0,92	39
685 163 225P	16 ^{+0,2}	32 ^{+0,15}	28 ^{+0,1}	25 ^{+0,3}	3600	5800	770	580	15	27,3	1,82	77
685 163 250P	16 ^{+0,2}	32 ^{+0,15}	54 ^{+0,1}	50 ^{+0,3}	3900	7000	1230	1000	7,5	25	3,33	122
685 164 032P	16 ^{+0,2}	40 ^{+0,15}	38 ^{+0,1}	32 ^{+0,3}	1600	2400	320	480	15	21	1,40	121
685 183 432P	18 ^{+0,3}	34 ^{+0,15}	36 ^{+0,1}	32 ^{+0,3}	1670	6000	780	580	15	14	0,93	97
685 204 555P	20 ^{+0,3}	45 ^{+0,15}	62,5 ^{+0,1}	55 ^{+0,3}	3430	7000	1860	780	15	40	2,67	259
685 204 559P	20 ^{+0,3}	45 ^{+0,15}	62,5 ^{+0,1}	59,5 ^{+0,3}	3900	7300	910	950	15	36	2,40	268
685 244 290P	24 ^{+0,3}	42 ^{+0,15}	96 ^{+0,1}	90 ^{+0,3}	3900	9700	5040	2500	3	57	19,00	414
685 255 065P	25 ^{+0,3}	50 ^{+0,15}	67,5 ^{+0,1}	65,5 ^{+0,3}	6380	18000	760	2100	10	130	13,00	398
685 255 589P	25 ^{+0,3}	55 ^{+0,15}	93,5 ^{+0,1}	89,5 ^{+0,3}	9800	19000	1650	2200	15	85	5,67	688
685 264 040P	26 ^{+0,3}	40 ^{+0,15}	45 ^{+0,1}	40 ^{+0,3}	4900	10000	1000	1500	7	59,5	8,50	136
685 305 589P	30 ^{+0,4}	55 ^{+0,15}	94 ^{+0,1}	89,5 ^{+0,3}	13700	28000	2600	3700	13	97,5	7,50	635
685 325 650P	32 ^{+0,4}	56 ^{+0,15}	55 ^{+0,1}	50 ^{+0,3}	15000	8900	1300	1310	12,5	125	10,00	333
685 407 557P	40 ^{+0,4}	75 ^{+0,20}	70 ^{+0,1}	57 ^{+0,3}	5900	13000	4510	900	14	133	9,50	812
685 507 060P	50 ^{+0,4}	70 ^{+0,15}	60 ^{+0,1}	60 ^{+0,3}	11700	37000	5880	2900	6,5	330	50,80	626
685 508 095P	50 ^{+0,4}	80 ^{+0,20}	100 ^{+0,1}	95 ^{+0,3}	14700	19500	3430	2800	8	235,2	29,40	1130

* +/- 20%.

General

These premium rubber-metal, heavy-duty bushes are relative stiff and allow high radial load. The axial load and torsional deformation must not be too high, because the pressed-in rubber could move between the metal bushes. Minimal gimbal offset (tilting) of the axis of the inner tube in relation to the outer tube, or vice versa, is possible. Depending on the strength, hardness, and length of the rubber, the rubber parts are relatively stiff.

Can be used in machine building or car manufacture as elastic joints which at permanent operation have to withstand higher radial forces. The bushes are completely maintenance free, silent and vibration isolating along with a high fatigue strength. Spring element and joint are combined in one single element.

The grade of rubber used is not oil proof. An operating temperature of max. 80° must not be exceeded, otherwise the service life is shortened. The bushes are usually fixed to the outer tube by pressfit. The inner tube can, e.g., be fixed by applying pressure on the front face. In this case the bolt running through the bore of the bush presses the counter bearing against the front face of the inner tube.