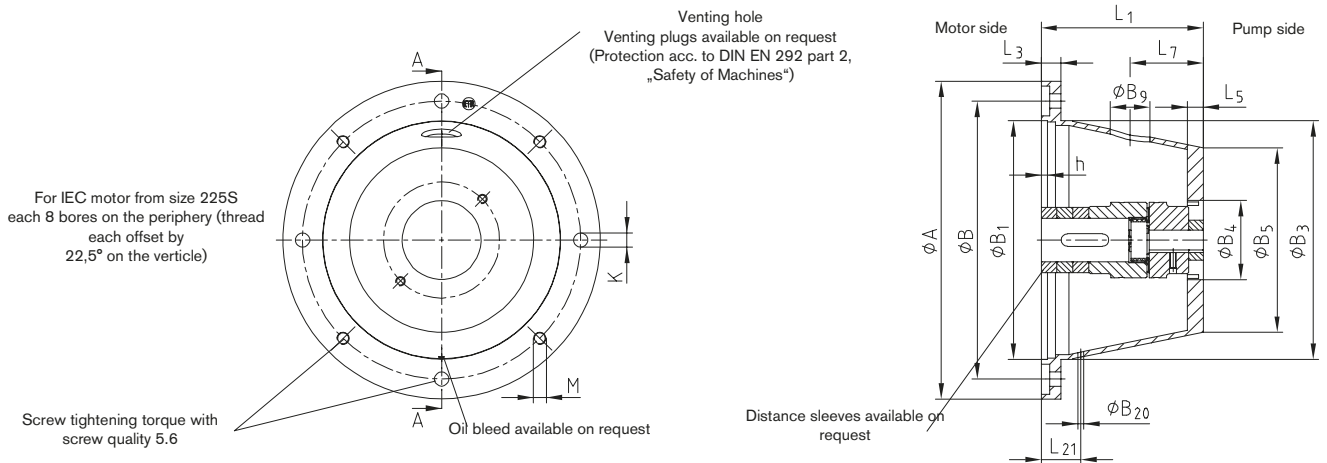
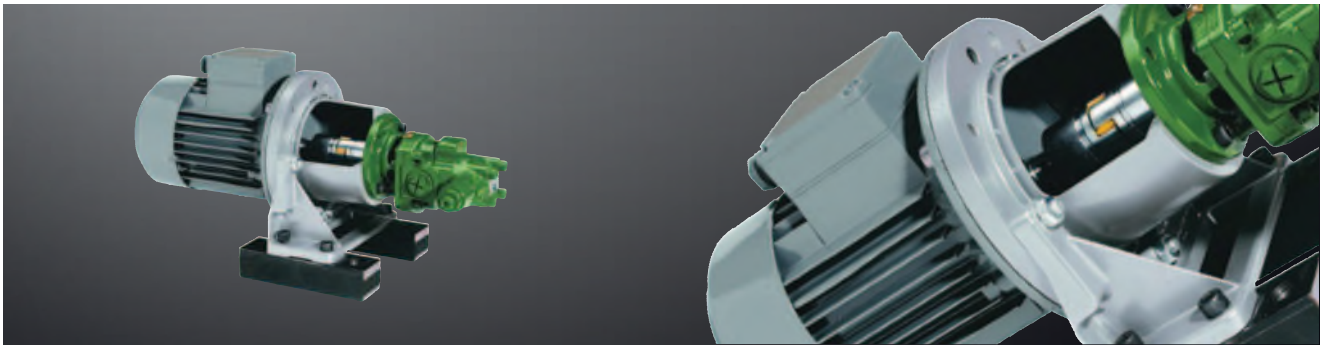


BELLHOUSINGS HYDRAULIC COMPONENTS

Bellhousings made of aluminium



Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

Bellhousings according to VDMA 24561 type A																					
IEC motor size (shaft end) d1 x l3	kW with n = 1500 rpm	Bellhousing size	Gasket DP size	Foot flange PTFL/PTFS	Dimensions [mm]											min.		Venting hole		Oil bleed	
					A	B	B1	B3	h	K	M	L1	L3	L5 ¹⁾	B5	B4	B9	L7	B20	L21	
71 (14 x 30)	0,25	PK 160/5/..	160	160	160	130	110	110	4	9	M8	80	13	8	105	29	25	33	7,5	28	
	0,37	PL 160/5/..										90			102	29		38			
80 (19 x 40) 90S/90L (24 x 50)	0,55	PK 200/3/..	200	200	200	165	130	145	4	11	M10	100	16	12	124	40	36	43	60	36	
	0,75	PL 200/3/..										110			140	37		47			
	1,1	PL 200/8/..										124			143	40		60			
	1,5	PFL 200/6/..										140			180	47		62			
100L/112M (28 x 60)	2,2	PK 250/6/..	250	250	250	215	180	190	5	14	M12	120	19	12	177	49	40	54	7,5	43	
	3	PL 250/3/..										124			126	42		52			
	3	PL 250/6/..										135			180	42		57			
	4	PL 250/4/..										148			180	76		64			
132S/132M (38 x 80)	5,5	PFL 250/18/..	300	300	300	265	230	234	5	14	M12	175	20	15	250	57	50	77	7,5	45	
	5,5	PK 300/5/..										144			205	57		63			
	7,5	PL 300/15/..										150			231	77		66			
	7,5	PK 300/4/..										155			205	56		68			
160M/160L (42 x 110) 180M/180L (48 x 110)	11	PL 300/4/..	350	350	350	300	250	260	6	17	M16	168	26	15	225	59	50	82	7,5	51	
	15	PK 350/6/..										188			225	56		87			
	18,5	PK 350/10/..										204			248	97		102			
	22	PL 350/7/..										228			255	88		115			
200L (55 x 110)	30	PK 400/4/..	400	400	400	350	300	300	6	17	M16	204	26	20	230	75	50	92	7,5	51	
	30	PK 400/5/..										228			279	95		104			
225S/225M (60 x 140)	37	PL 400/5/..	450	450	450	400	350	350	6	17	M16	256	25	20	290	97	50	118	7,5	51	
	45	PK 450/2/..										234			260	107					
250M (65 x 140) 280S/280M (75 x 140)	55	PK 450/3/..	550	550	550	500	450	450 ²⁾	6	17	M16	262	26	25	315	97	50	121	7,5	51	
	55	PL 450/3/..										285			325	133					
	75	PK 550/1/..										248			340	97		116			
	75	PL 550/3/..										265			360	120		125			
315S/315M (80 x 170)	90	PK 550/3/..	660	660	660	600	550	550 ²⁾	8	22	M20	275	26	30	340	97	50	130	7,5	60	
	90	PL 550/3/..										295			360	123		140			
	110	PK 660/2/..										315			400	150		135			
	132	PL 660/5/..										310			410	120		147			
355L/400M (100 x 210)	160	PK 660/2/..	880	880	880	740	680	680 ²⁾	8	22	M20	330	32	36	400	120	50	157	7,5	70	
	160	PL 660/2/..										343			490	174		163			
	200	PK 800/1/..										395			500	197		190			
	200	PL 660/4/..										370			500	197		190			

Other types of bellhousings

IEC motor size (shaft end) d ₁ x l ₃	kW with n = 1500 rpm	Bellhousing size	Gasket DP size	Foot flange PTFE/PTFS*)	Dimensions [mm]															
					A	B	B ₁	B ₃	h	K	M	L ₁	L ₃	L ₅ ¹⁾	B ₅	Min.	Venting hole		Oil bleed	
																	B ₄	B ₉	L ₇	B ₂₀
71 (14 x 30)	0,25	PFK 160/6/..	160	160	160	130	110	110	4	9	M8	79	13	13	140	30	25	35	7,5	28
	0,37	PFL 160/6/..										101				60		46		
80 (19 x 40)	0,55	PK 200/11/..	200	200	200	165	130	145	4	11	M10	45	16	12	144	97	10	15	7,5	30
	0,75	PL 200/11/..										55				30		18		
90S/90L (24 x 50)	1,1	PK 200/30/..	200	200	200	165	130	145	4	11	M10	79	16	12	142	30	36	71	7,5	36
	1,5	PL 200/30/..										90				37		30		
100L/112M (28 x 60)	2,2	PK 250/13/..	250	250	250	215	180	190	5	14	M12	159	18	12	186	77	40	69	7,5	
	3	PK 250/15/..										61				97		20		
	3	PL 250/15/..										79				20		29		
	4	PK 250/17/..										100				74		40		
132S/132M (38 x 80)	5,5	PK 300/8/..	300	300	300	265	230	234	5	14	M12	110	20	15	225	95	40	45	7,5	
	5,5	PK 300/9/..										85				97		30		
	5,5	PL 300/9/..										99				40		37		
	7,5	PL 300/13/..										210				57		95		
160M/160L (42 x 110)	11	PK 350/8/..	350	350	350	300	250	260	6	17	M16	204	25	15	259	53	50	90	7,5	
	15	PK 350/11/..										130				97		52		
	18,5	PL 350/11/..										146				92		60		
	22	PK 350/18/..										159				77		67		
180M/180L (48 x 110)	22	PK 350/18/..	350	350	350	300	250	260	6	17	M16	184	25	15	244	77	50	80	7,5	
	22	PL 350/18/..										252				92		60		
	22	PK 400/3/..										165				97		73		
	30	PK 400/12/..										170				95		75		
200L (55 x 110)	30	PK 400/12/..	400	400	400	350	300	300	6	17	M16	184	25	20	290	97	50	82	7,5	51
	30	PL 400/12/..										165				97		73		
	30	PK 450/5/..										165				25		73		
	37	PL 450/5/..										185				120		83		
225S/225M (60 x 140)	45	PK 450/6/..	450	450	450	400	350	350	6	17	M16	176	26	20	259	98	50	80	7,5	51
	45	PFL 450/9/..										253				137		116		
	45	PK 450/12/..										204				97		90		
	45	PL 450/12/..										222				97		101		
250M (65 x 140)	55	PK 550/4/..	550	550	550	500	450	450 ²⁾	6	17	M16	190/192	26	26	355	129	50	88	7,5	
	55	PL 550/4/..										207				124		96		
280S/280M (75 x 140)	75	PK 550/8/..	800	900	800	740	680	680 ²⁾	8	22	M20	217	25	36	520	149	50	100	7,5	
	90	PL 550/8/..										340				97		100		
315S/315M (80 x 170)	110-	PK 660/3/..	660	660	660	600	550	550 ²⁾	8	22	M20	247	32	30	465	80	50	115	7,5	60
	160	PL 660/3/..										260				156		122		
355L/400M (100 x 210)	355	PK 800/1/..	800	900	800	740	680	680 ²⁾	8	22	M20	335	40	36	520	149	50	140	7,5	70
	710	P 800/3/..										443				37		38		

Venting hole and sealing plugs available on request
(Protection acc. to DIN EN 292 part 2, „Safety of Machines“)

Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

¹⁾ Bottom of pot does not consist of solid material → ribbed

²⁾ Passing from dimension B₃ to flange radius R=5

*) For vertical or lateral mounting on the tank, gaskets (type DP, see page 199) are available. For the detailed ordering description please refer to our selection program on the PC/Internet or specify the IEC motor size and the detailed pump type for a selection. Venting holes or oil bleeds have to be mentioned in the order, too.

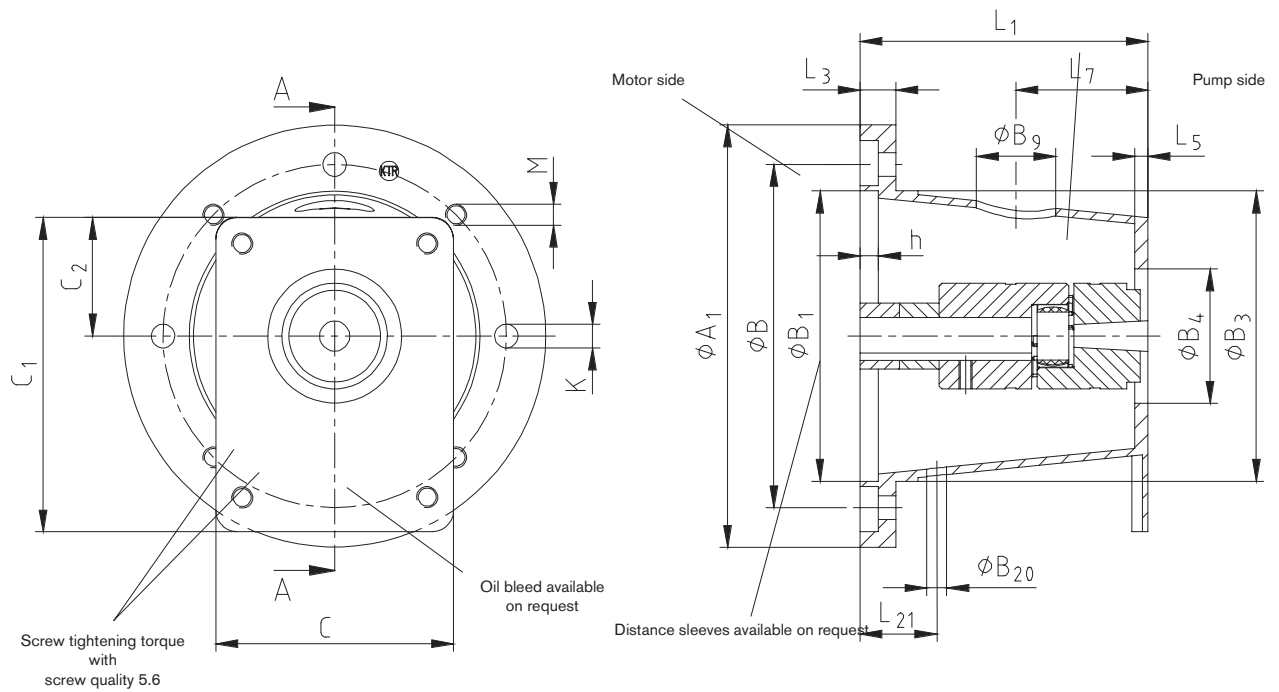
Ordering example:	PL	PK	P	450	3	8
	Bellhousing type, long	Bellhousing type, short,	Former bellhousing type	Flange diameter of IEC motor	Serial model code	In-house modification code

BELLHOUSINGS HYDRAULIC COMPONENTS

Bellhousings with rectangular flange



Bellhousings with rectangular flange



Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

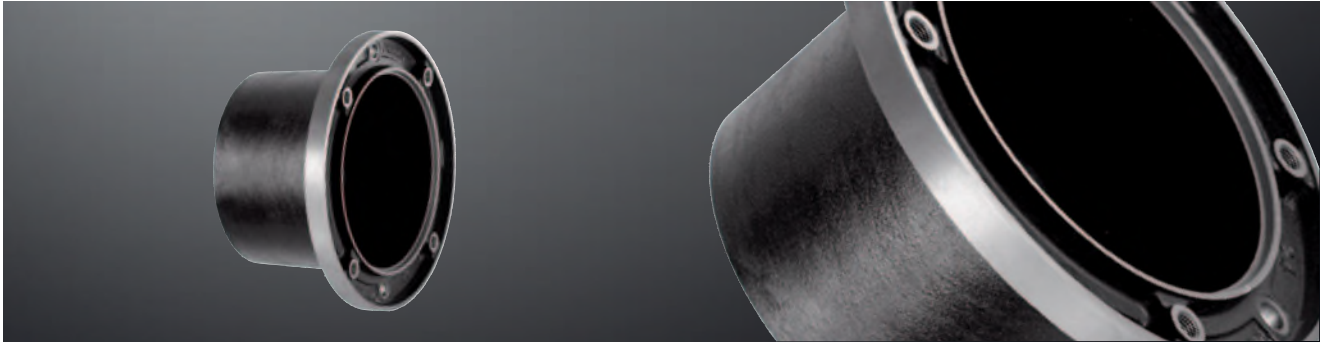
Bellhousings made of aluminium with rectangular pump connections																							
IEC motor size	kW w. n = 1500 rpm	Bellhousing size	Gasket DP size	Foot flange PTFE/PTFS	Dimensions [mm]																		
					A ₁	B	B ₁	B ₃	h	K	M	L ₁	L ₃	L ₅ ¹⁾	C	C ₁	C ₂	Min. B ₄	Venting hole		Oil bleed		
																		B ₉	L ₇	B ₂₀	L ₂₁		
71	0,25	PL 160/1/..			160	130	110	110	4	9	M8	70			8	70	91	35	20	16	27		
	0,37	PL 160/4/.. PK 160/4/..	160	160	160	130	110	110	4	9	M8	110 95	13	12	90	120	45	22	25	50 43	7,5	28	
80 90S/90L	0,55	PL 200/1/..			200	165	130	145	4	11	M10	90			70	91	35	22	25	37	7,5	36	
	- 1,5	PL 200/2/..	200	200	200	165	130	145	4	11	M10	100	16	12	90	120	45	22	25	42			
100L/112M	2,2	PL 250/1/..			250	215	180	190	5	14	M12	110			90	120	45	22		45			
	3 4	PL 250/2/.. PL 250/7/..	250	250	250	215	180	190	5	14	M12	115 125	18	12	145	180	64	46	36	47 52	7,5	43	
132S/132M	5,5	PL 300/1/..			300	265	230	234	5	14	M12	132			120	150	53	33		56			
	7,5	PK 300/2/..	300	300	300	265	230	234	5	14	M12	137	20	15	145	180	64	33	50	59	7,5	45	
160M/160L 180M/180L	11	PL 350/1/..			350	300	250	260	6	18	M16	171			120	156	59	33		73			
	- 22	PL 350/2/..	350	350	350	300	250	260	6	18	M16	181	25	15	145	180	64	31	50	78	7,5	51	

If venting holes or oil bleeds are required, please mention in your order.

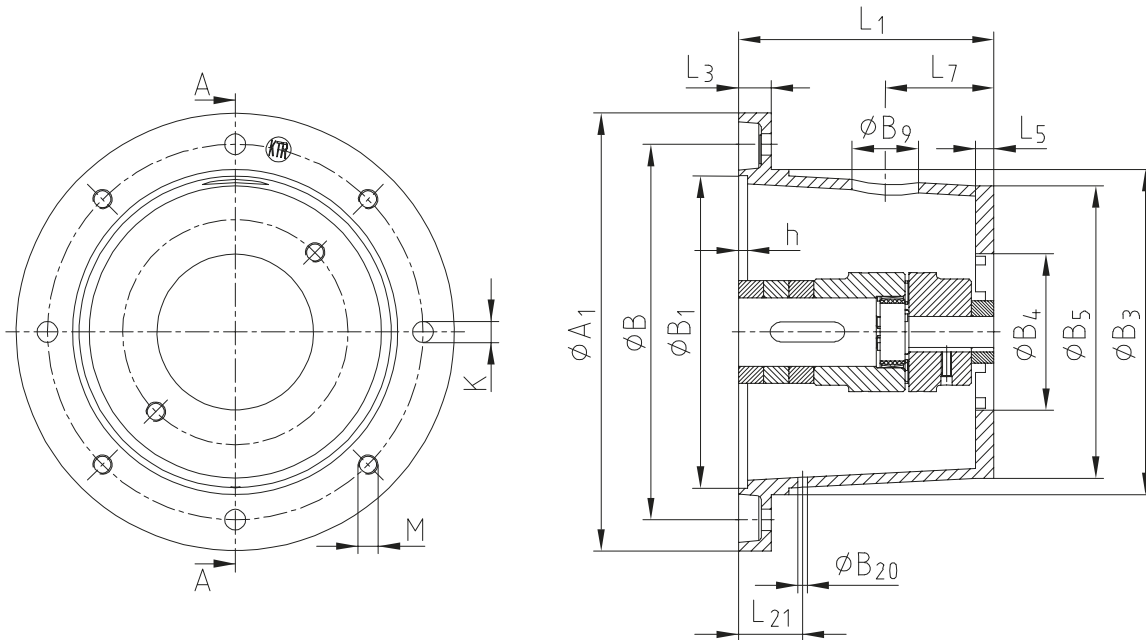
Ordering example:	PL	PK	KPT	250	2	8
		Bellhousing type, long	Bellhousing type, long	Bellhousing type made of nylon	Flange diameter of IEC motor	Serial model code

BELLHOUSINGS HYDRAULIC COMPONENTS

Bellhousings PG made of cast iron



Bellhousings made of cast iron (type PG)



Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

Bellhousings made of cast iron																							
IEC motor size	kW w. n = 1500 rpm	Bellhousing size	Gasket DP size	Foot flange PTFE/PTFS	Dimensions [mm]															Venting hole		Oil bleed	
					A ₁	B	B ₁	B ₃	h	K	M	L ₁	L ₃	L ₅	B ₅	min. B ₄	B ₉	L ₇	B ₂₀	L ₂₁			
132S/132M	5,5 7,5	PG 300/5/..	300	300	300	265	230	234	5	14	M12	144	20	15	215	30	50	63	7,5	45			
160M/160L 180M/180L	11 - 22	PG 350/4/..	350	350	350	300	250	260	7	17	M16	188	26	15	242	76	50	82	7,5	51			
		PG 350/6/..										204			235			87					
200L	30	PG 400/2/..	400	400	400	350	300	300	7	17	M16	256	26	20	280	97	50	118	7,5	51			
		PG 400/4/..										204			260			92					
225S/225M	37 45	PG 400/5/..	450	450	450	400	350	350	7	17	M16	228	26	24	280	97	50	104	7,5	51			
		PG 450/2/..										234			289			107					
250M 280S/280M	55,75 90	PG 450/3/..	550	550	550	500	450	450	7	17	M16	262	26	25	315	97	50	121	7,5	51			
		PG 550/1/..										265			360			125					
315S/315M	110 - 160	PG 550/8/..	660	660	660	600	550	550	8	22	M20	248	32	33	349	119	50	116	7,5	60			
		PG 660/5/..										265			349			116					

If venting holes or oil bleeds are required, please mention in your order.

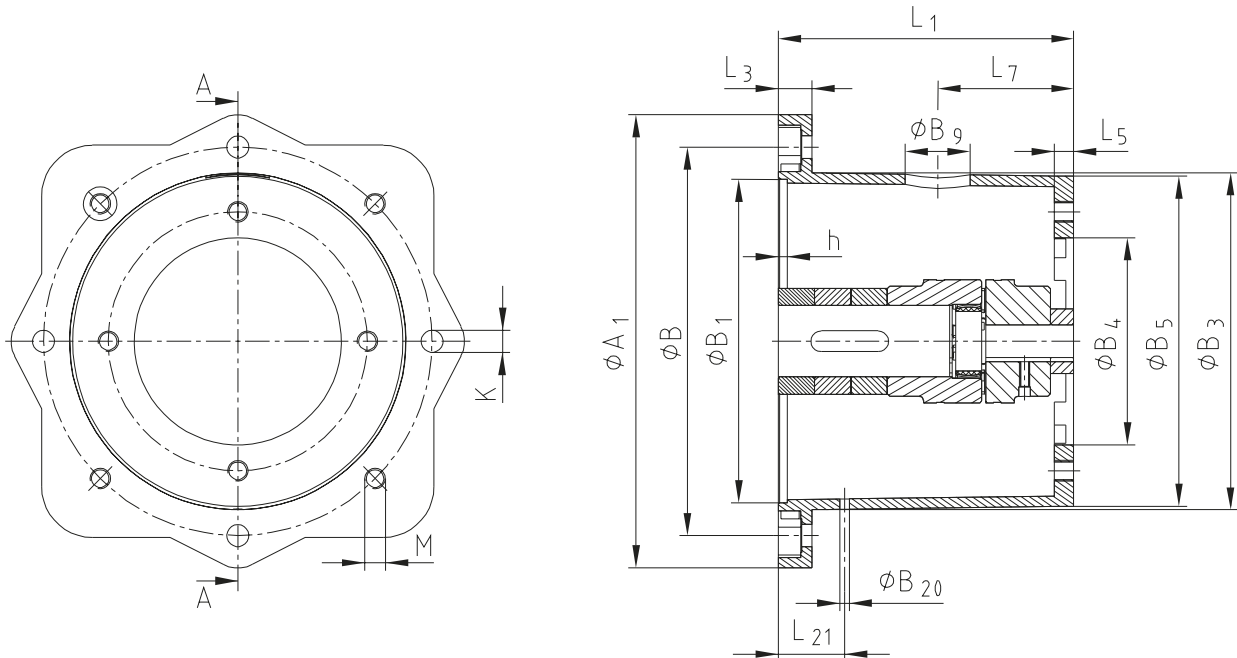
Ordering example:	PG	PSG	250	1	4
		Bellhousing type made of cast iron	Bellhousing type for servo drives	Flange diameter of IEC motor	Serial model code

BELLHOUSINGS HYDRAULIC COMPONENTS

Bellhousings PSG made of cast iron for servo motors



Bellhousings made of cast iron for servo motors (type PSG)



Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

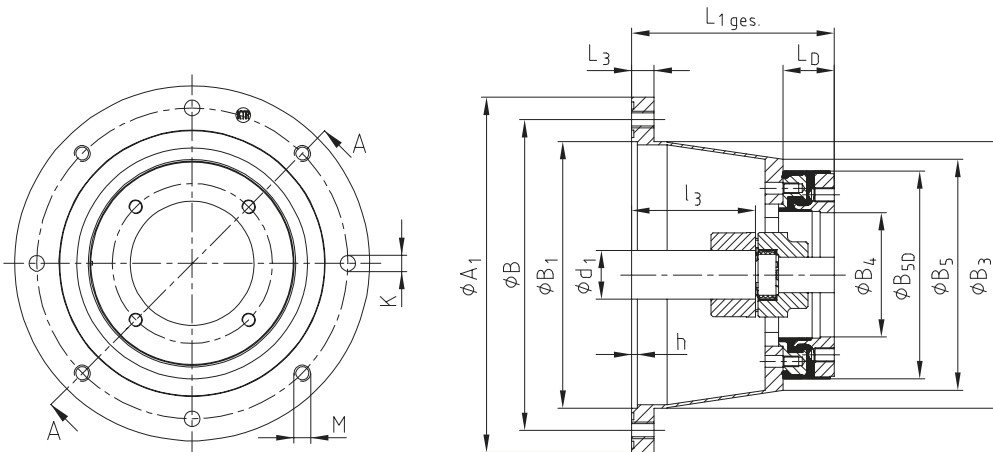
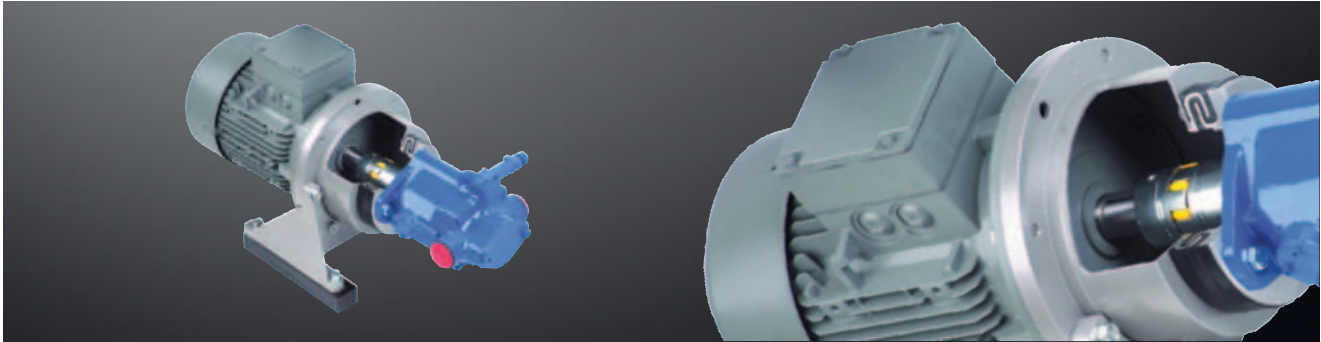
Bellhousings made of cast iron for servo motors																				
Bellhousing size	Gasket DZ size	Foot flange PTFE/PTFS	Dimensions [mm]													Min.	Venting hole		Oil bleed	
			A ₁	B	B ₁	B ₃	h	K	M	L ₁	L ₃	L ₅	B ₅	B ₄	B ₉		L ₇	B ₂₀	L ₂₁	
PSG 200/1/..	200	200	200	165	130	145	7	11	M10	124	16	12	170	55	36	60	7,5	36		
PSG 250/1/..	250	250	250	215	180	190	7	13,5	M12	175	19	12	225	70	40	77	7,5	43		
PSG 250/2/..	250	250	250	215	180	190	7	13,5	M12	155	19	14	180	69	40	65	7,5	43		
PSG 350/10/..	350	350	350	300	250	260	7	17,5	M16	228	26	17	255	95	50	102	7,5	51		
PSG 350/16/..	350	350	350	300	250	260	7	17,5	M16	204	26	17	350	139	50	87	7,5	51		

If venting holes or oil bleeds are required, please mention in your order.

Ordering example:	PG	PSG	250	1	4
		Bellhousing type made of cast iron	Bellhousing type for servo drives	Flange diameter of IEC motor	Serial model code

DAMPING RINGS HYDRAULIC COMPONENTS

Damping rings in combination with bellhousings



For IEC motor from size 225S/225M 8 tapped holes and through holes on the periphery (thread offset by 22.5° to the verticle).

Please mention in your order if a design with or without venting holes or oil bleeds, respectively, is requested
For dimensions see page 192/193.

Please specify in the order if the bellhousing is needed in oilproof design! (Extra charge)

Damping rings type D in combination with bellhousings																		
IEC motor size (shaft end) d ₁ x l ₃	kW with n = 1500 rpm	Bellhousing size	Damping ring size	Foot flange size	Dimensions (mm)													
					A ₁	B	B ₁	L _{1 ges.}	L ₃	K	M	h	L _D	B ₃	B ₄		B ₅	B _{5D}
															min.	max.		
90S/90L (24x50)	1,1 1,5	PK 200/11/..	D 150/..	PTFL 200	200	165	130	90	16	11	M10	4	45	145	18	83	145	148
		PL 200/11/..						100										
		PK 200/30/..						124										
100L/112M (28x60)	2,2 3	PK 250/15/..	D 150/..	PTFL 250	250	215	180	106	18	14	M12	5	45	190	18	83	187	190
		PL 250/15/..						124										
		PK 250/17/..	145															
		PK 250/15/..	106															
		PL 250/15/..	124															
132S/132M (38x80)	5,5 7,5	PK 300/8/..	D 150/..	PTFL 300	300	265	230	155	20	14	M12	5	45	234	30	121	231	190
		PK 300/9/..						130										
		PL 300/9/..						144										
		PK 300/15/..	179															
		PL 300/15/..	195															
		PK 300/8/..	155															
		PK 300/9/..	130															
		PL 300/9/..	144															
		PK 300/15/..	183															
		PL 300/15/..	195															
160M/160L (42x110)	11 15	PK 350/11/..	D 150/..	PTFL 350/ PTFS 350	350	300	250	175	26	17	M16	6	45	260	30	121	244	190
		PL 350/11/..						190										
		PK 350/18/..						204										
		PL 350/18/..	229															
		PK 350/18/..	175															
		PL 350/11/..	188															
		PK 350/18/..	204															
		PL 350/11/..	229															
		PK 350/11/..	188															
		PL 350/11/..	204															
180M/180L (48x110)	18,5 22	PK 350/18/..	D 190/..	PTFL 350/ PTFS 350	350	300	250	217	26	17	M16	6	45	260	30	121	244	190
		PL 350/18/..						204										
		PK 350/11/..	188															
		PL 350/11/..	204															
		PK 350/18/..	D 230/..					217	26									
		PL 350/18/..						242										

DAMPING RINGS HYDRAULIC COMPONENTS

Damping rings in combination with bellhousings

Damping rings type D in combination with bellhousings ¹⁾																			
IEC motor size (shaft end) d ₁ x l ₃	kW with n = 1500 rpm	Bellhousing size	Damping ring size	Foot flange size	Dimensions [mm]														
					A ₁	B	B ₁	L _{1 ges}	L ₃	K	M	h	L _D	B ₃	min.	max.	B ₅	B _{5D}	
160M/160L (42x110)	11	PK 350/11/..	D 260/..	PTFL 350/ PTFS 350	350	300	250	188	25	17	M16	6	58	260	97	143	252	264	
	15	PL 350/11/..						204	26										
	18,5	PK 350/18/..						217	25										
180M/180L (48x110)	22	PL 350/48/98						242											
		PL 400/3/..						210									290		
200L (55x110)	30	PK 400/12/..	D 190/..					215					45		30	121		190	
		PL 400/12/..						229											
		PK 400/12/..	D 230/..	PTFS 400	400	350	300	228	20	17	M16	6		300		143			
	PL 400/12/..						242										260		
	PK 400/12/..						228					58		97				264	
	PL 400/12/98	D 260/..					242									164			
225S/225M (60x140)	37	PL 450/5/94	D 190/..					230					45		30	121	325	190	
		PK 450/12/94						249									260		
		PL 450/5/96						243									325		
	45	PK 450/6/96	D 230/..					234								143		234	
		PK 450/12/96		PTFS 450	450	400	350	262	25	17	M16	6	58		97		260		
		PK 450/5/98						243									325		
		PK 450/6/98	D 260/..					234								164		265	
		PK 450/12/98						262									260		
250M (65x140)	55	PL 450/5/..	D 330/..					268					83		120	208	325	330	
		PK 550/4/94						237									355		
		PL 550/4/94	D 190/..					252					45		30	121	330	190	
		PK 550/8/94						262										340	
		PK 550/4/96						248										355	
		PL 550/4/96	D 230/..					265								143	330	234	
	280S/280M (75x140)	75	PK 550/8/96					275										340	
			PK 550/4/98		PTFS 550	550	500	450	248	26	17	M16	6	58	450	97		355	
		90	PL 550/4/98	D 260/..					265								164	330	264
			PK 550/8/98						275									340	
315S/315M (80x170)	110	PK 550/4/..					275										355		
		PL 550/4/..	D 330/..					290					83		120	208	330	330	
	132	PK 550/8/..						300									340		
		PK 660/3/98	D 260/..					310					58		97	164	500	264	
160 (80x170)	200	PL 660/3/98					318										340		
		PK 660/3/..	D 330/..	PTFS 660	660	600	550	330	32	22	M20	8	83	550	120	208	500	330	
85x170)		PL 660/3/..					343										340		
		PK 660/3/..	D 125/..					372					125		260	320	500	484	

¹⁾ Preferred combinations with short bellhousings, other combinations on request (see page 192 and 193), phone: +49 5971 798-0

* Passing from dimension B₃ to flange radius R=5

● Make sure your power pack provides for a separation of piping, e. g. by hoses or elastic flanges (see page 201). ● As another measure for noise reduction we recommend to use damping rods (from page 25) or DT/DTV rings (see page 24).

For the detailed order designation please see our PC/Internet selection programme or mention the IEC motor size and detailed pump type for selection.

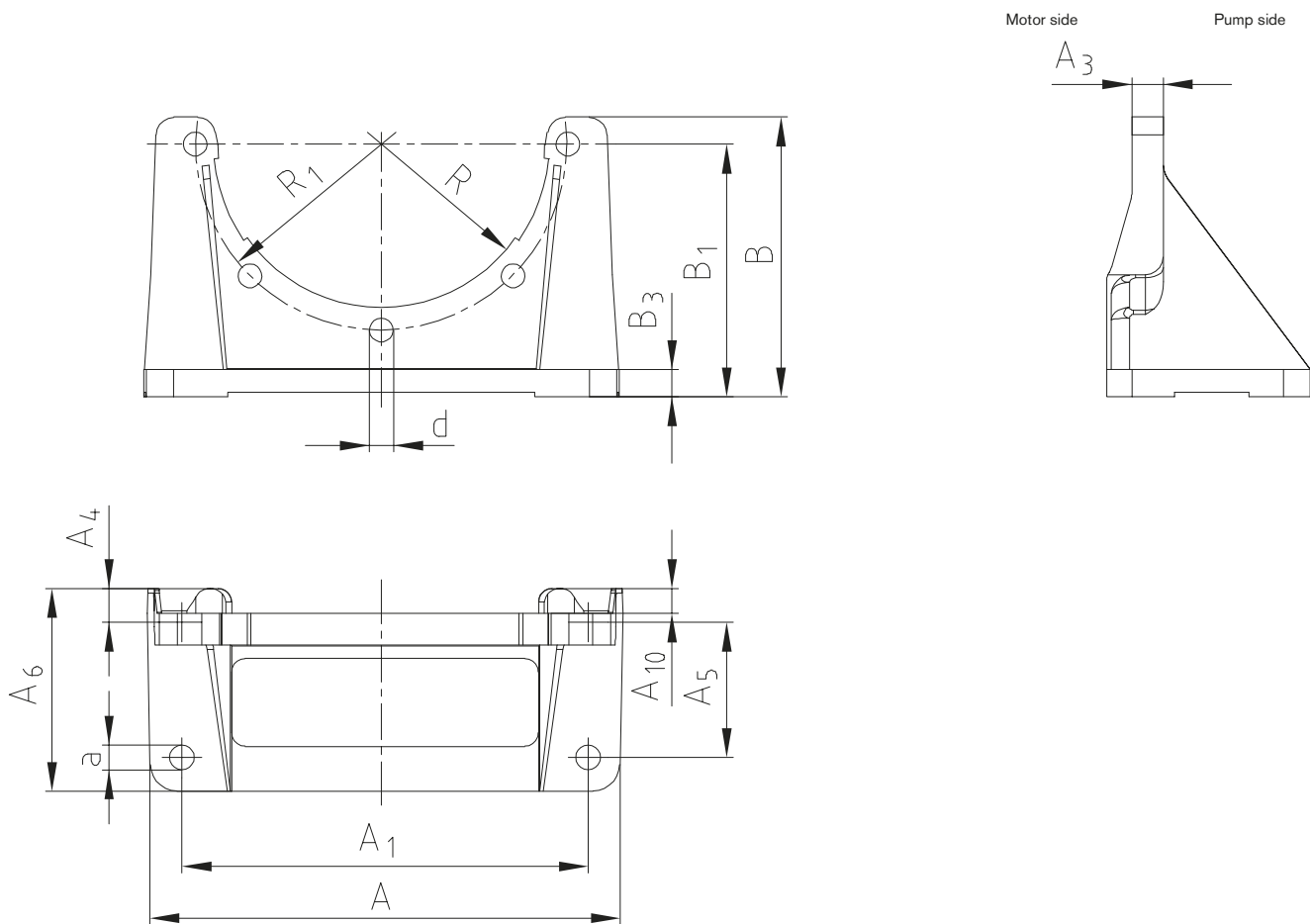
Ordering example:	PL	PK	250	15	92	D	150	23
	Bellhousing type, long	Bellhousing type, short	Flange diameter of IEC motor	Serial model code	In-house modification code	Damping ring	Size	In-house modification code

FOOT FLANGES PTFL HYDRAULIC COMPONENTS

Foot flange PTFL



Foot flange PTFL*



*according to VDMA standard 24561 part 1

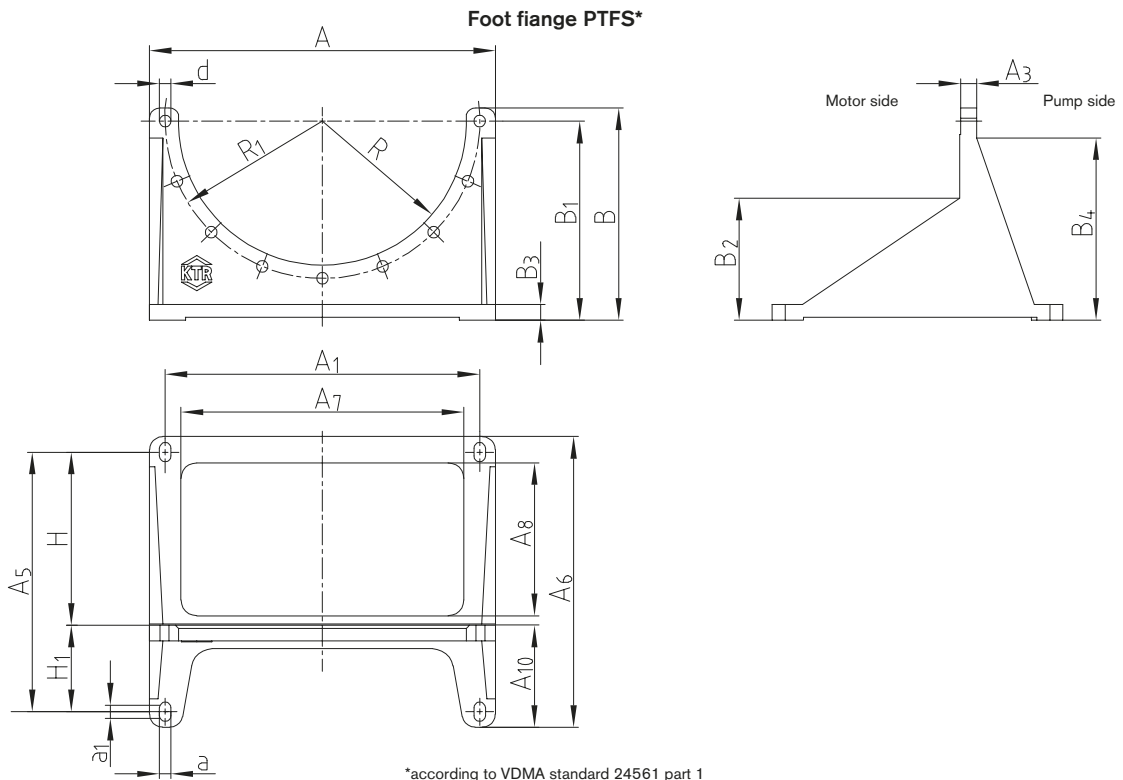
Foot flange type PTFL made of aluminium (Al)															
Foot flange size	For bellhousing size	Dimensions [mm]													
		A	A ₁	A ₃	A ₆	A ₄	A ₅	A ₁₀	B	B ₁	B ₃	R	R ₁	d	a
PTFL 160	160	160	140	12	80	15	50	8	110	100	10	55	65	9	9
PTFL 200	200	210	180	14	90	15	60	11	124	112	12	72,5	82,5	11	11
PTFL 250	250	250	220	16	97	21	60	-	145	132	15	95	107,5	13	13
PTFL 300	300	290	260	18	116	20	80	-	175	160	18	117	132,5	13	13
PTFL 350	350	340	300	20	150	20	110	-	195	180	22	130	150	18	16

In order to obtain the full loading capacity of the foot flanges all existing fastening bores have to be screwed up with the bellhousingfi

Ordering example:	PTFL	350	Al
	Foot flange design	Size	Material

FOOT FLANGES PTFL HYDRAULIC COMPONENTS

Foot flange PTFS



Foot flange type PTFS made of aluminium (Al)

Foot flange size	For bellhousing size	Dimensions [mm]																			
		A	A ₁	A ₃	A ₅	A ₆	A ₇	A ₈	A ₁₀	B	B ₁	B ₂	B ₃	B ₄	R	R ₁	a	a ₁	d	H	H ₁
PTFS 250	250	250	215	18	185	230	190	127	82	165	155	120	16	150	95	107,5	14	10	14	125	60
PTFS 300	300	300	265	20	225	270	240	152	92	200	185	149	19	184	117	132,5	14	10	14	150	75
PTFS 350	350	350	300	25	265	305	260	160	110	252	235	188	18	228	130	150	18	12	18	175	90
PTFS 400	400	400	350	20	300	350	300	185	125	277	260	193	20	241	150	175	18	12	18	200	100
PTFS 450	450	450	400	25	335	385	350	207	138	312	295	232	20	290	175	200	18	12	18	225	110

Foot flange type PTFS made of nodular iron (GJS)

Foot flange size	For bellhousing size	Dimensions [mm]																			
		A	A ₁	A ₃	A ₅	A ₆	A ₇	A ₈	A ₁₀	B	B ₁	B ₂	B ₃	B ₄	R	R ₁	a	a ₁	d	H	H ₁
PTFS 200 GGG	200	200	165	12	150	185	130	85	68	138	125	90	15	120	72,5	82,5	11	8	11,5	100	50
PTFS 250 GGG	250	250	215	17	185	230	190	—	82	165	155	120	15	150	95	107,5	14	10	14	125	60
PTFS 350 GGG	350	350	300	20	265	305	260	160	110	252	235	193	22	232	130	150	18	12	18	175	90
PTFS 400 GGG	400	405	350	20	300	350	300	192	125	277	260	220	22	175	150	175	18	12	18	200	100
PTFS 550 GGG	550	550	500	25	415	465	440	240	165	370	350	233	25	318	225	250	18	12	18	275	140
PTFS 660 GGG	660	660	600	30	495	555	540	292	195	405	380	233	30	348	275	300	22	15	22	330	165

PTFS 800 made of steel on request

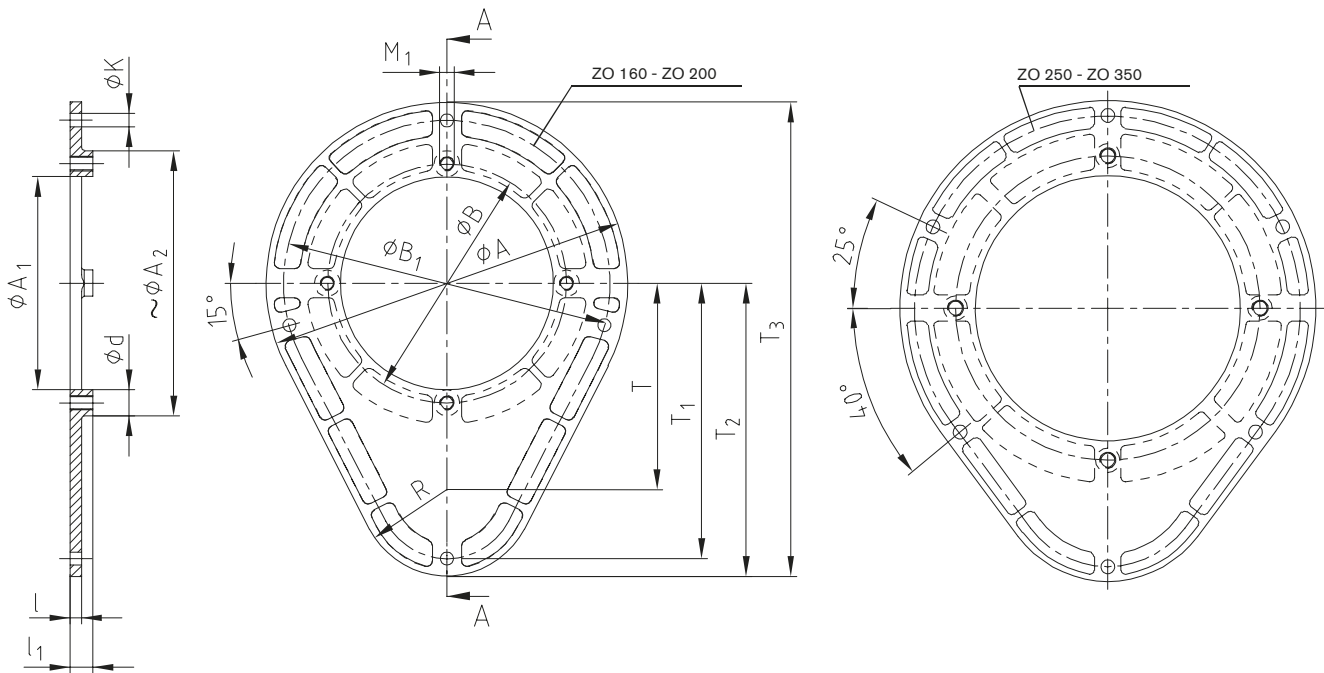
In order to obtain the full loading capacity of the foot flanges all existing fastening bores have to be screwed up with the bellhousingfi

Ordering example:

PTFL	350	Al
Foot flange design	Size	Material

ACCESSORIES FOR BELLHOUSINGS HYDRAULIC COMPONENTS

Mounting flange type ZO



Mounting flange type ZO																	
Size	Dimensions [mm]															Gasket DZ size	Gasket DP size
	A	A ₁	~A ₂	B	B ₁	K	M ₁	R	T	T ₁	T ₂	T ₃	d	l	l ₁		
ZO 160	210	112	150	130	185	9	M8	60	97,5	145	157,5	262,5	18	7	15	DZ 160	DP 160
ZO 200	250	147	187	165	225	9	M10	60	142,5	190	202,5	327,5	18	8	16	DZ 200	DP 200
ZO 250	300	192	239	215	275	9	M12	60	142,5	190	202,5	352,5	20	8	16	DZ 250	DP 250
ZO 300	360	236	289	265	330	14	M12	60	150	225	240	420	20	10	18	DZ 300	DP 300
ZO 350	410	262	332	300	380	14	M16	110	160	225	270	475	24	12	20	DZ 350	DP 350

Ordering
example:

ZO 300

Mounting flange size

ACCESSORIES FOR BELLHOUSINGS HYDRAULIC COMPONENTS

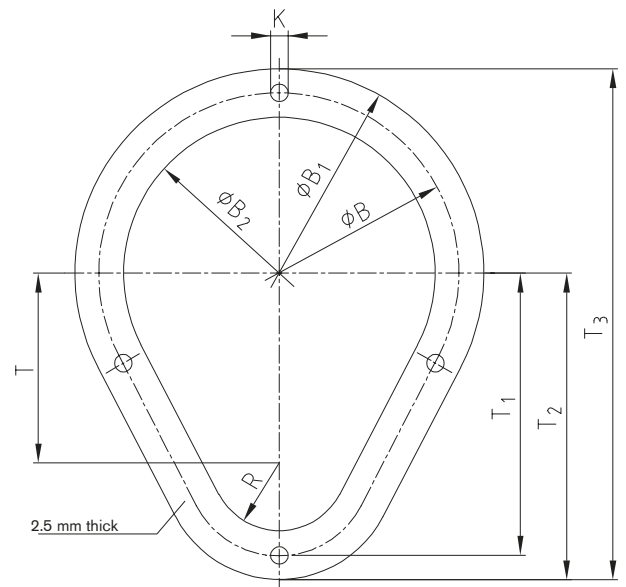
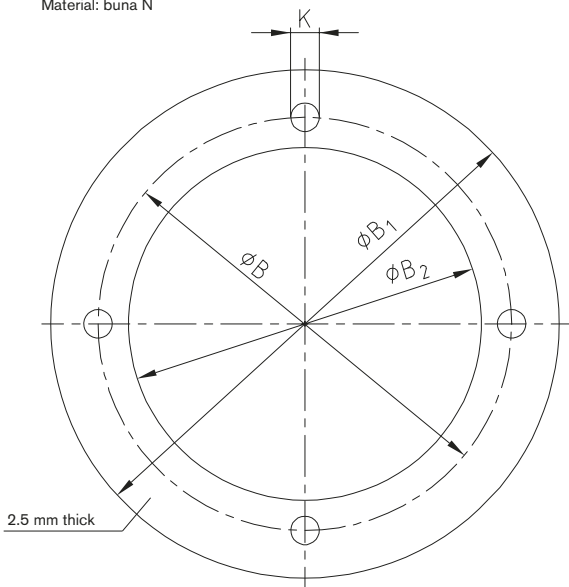
Gaskets DP and DZ for mounting flange ZO



Gasket DP

Gasket DZ

Material: buna N



Gaskets for bellhousings and mounting flanges

Size	Dimensions [mm]								
	B	B ₁	B ₂	T	T ₁	T ₂	T ₃	K	R
DP 160	130	160	111	–	–	–	–	4 x 9	–
DP 200	165	200	146	–	–	–	–	4 x 11	–
DP 250	215	250	191	–	–	–	–	4 x 13	–
DP 300	265	300	235	–	–	–	–	4 x 13	–
DP 350	300	350	261	–	–	–	–	4 x 17	–
DP 400	350	400	301	–	–	–	–	4 x 17	–
DP 450	400	450	351	–	–	–	–	4 x 17	–
DP 550	500	550	451	–	–	–	–	4 x 17	–
DZ 160	185	210	160	97,5	145	157,5	262,5	4 x 9	35
DZ 200	225	250	200	142,5	190	202,5	327,5	4 x 9	35
DZ 250	275	300	250	142,5	190	202,5	352,5	6 x 9	35
DZ 300	330	360	300	150	225	240	420	6 x 14	60
DZ 350	380	410	350	160	255	270	475	6 x 14	80

Ordering
example:

DP 300

Type and size of gasket

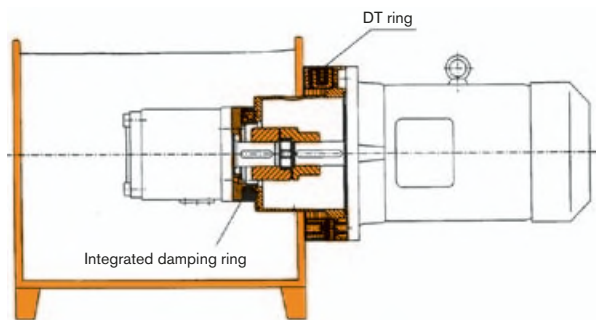
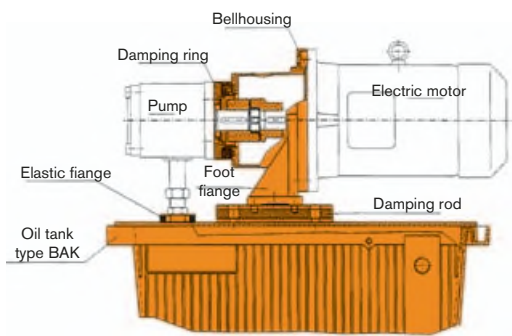
DAMPING ELEMENTS HYDRAULIC COMPONENTS

Damping elements



KTR has a sound measuring room integrated in the R + D test center allowing for low-reflecting testing conditions. Comparative measurements are performed on a realistic hydraulic power pack to test and optimize the efficiency of KTR damping elements. In addition to stationary measuring in the laboratory the efficiency of the damping measures used can be proven locally.

Examples of application



Potential noise reductions compared to the rigid arrangement:

- | | |
|---|------------|
| a) Damping ring only:: | 3 – 6 dBA |
| b) Damping rod only:: | 3 – 4 dBA |
| c) Damping ring and damping rod:: | 6 – 8 dBA |
| d) Damping ring, damping rod and elastic fiange:: | 7 – 10 dBA |
| e) Damping ring type DT/DTV:: | 3 – 6 dBA |
| f) DT/DTV damping ring and damping ring: | 6 – 8 dBA |

Efficiency:

The efficiency of the KTR damping elements is based on the reflection of the structure-borne noise vibrations by means of the vulcanized, non-prestressed rubber layer in the acoustic frequency range from about 200 Hz. The reduction of the structure-borne noise vibrations causes a reduced radiation of the airborne noise produced by the power pack.

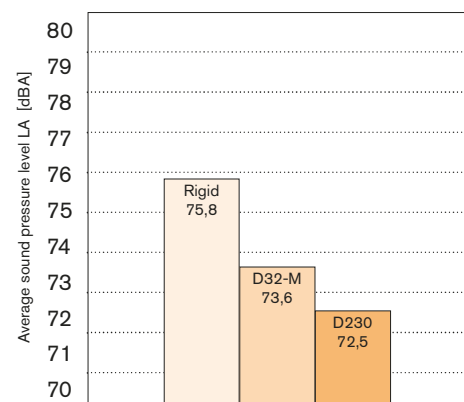
Result of a noise measurement

Test data:

Electric motor: Rotary current asynchronous 180M
18,5 kW, n = 1450 rpm
type B 3 / B 5

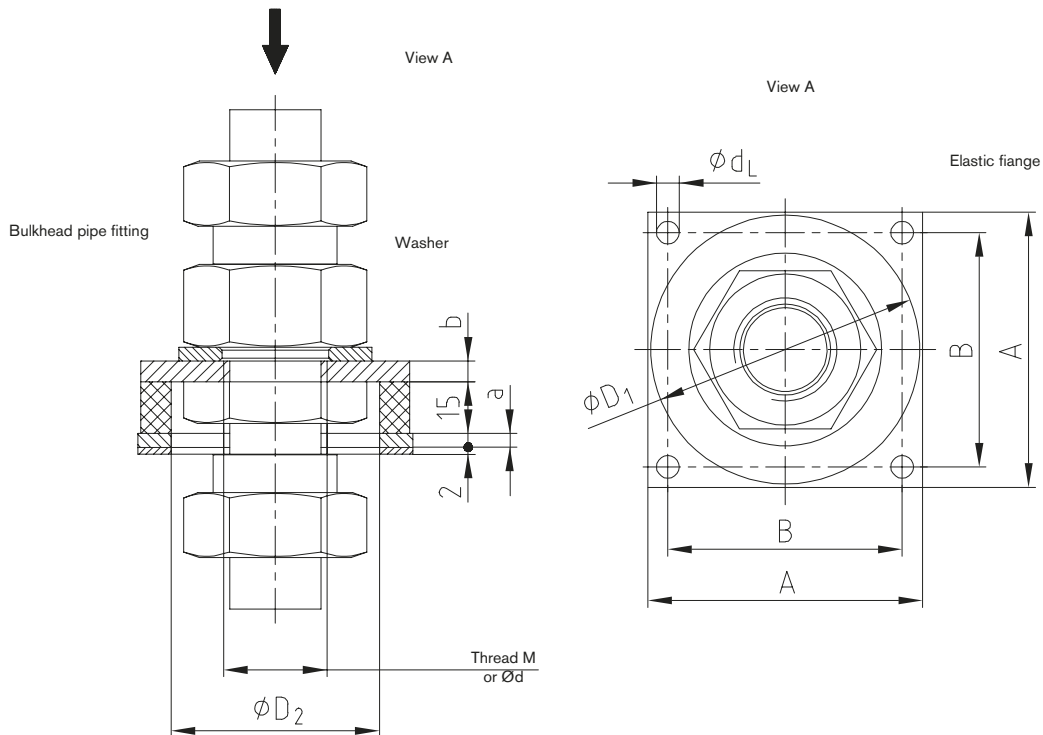
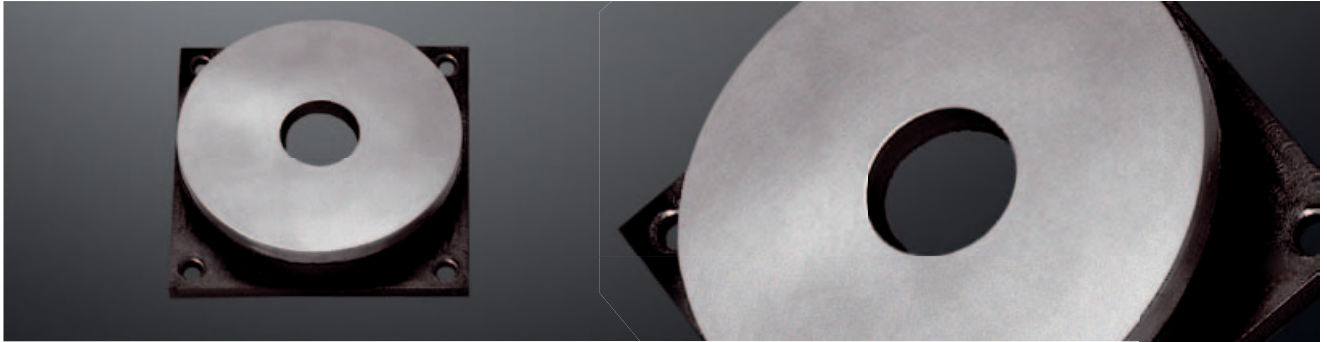
Pump: Axial piston pump

Coupling: ROTEX® 42 - 92 Shore A



DAMPING ELEMENTS HYDRAULIC COMPONENTS

Elastic flange



Elastic flange												
Elastic flange								Bulkhead pipe fitting *)			Comment	
Size	A	B	a	b	D ₁	D ₂	d _L	Type L light	Type S heavy	Thread M		Pilot bore for Ød
80-2.11								SV 28-L	SV 25-S	M36 x 2	Ø34	
80-2.10								SV 22-L	SV 20-S	M30 x 2	Ø28	
80-2.9								SV 18-L	–	M26 x 1,5	Ø24,5	
80-2.8								–	SV 16-S	M24 x 1,5	Ø22,5	
80-2.7								SV 15-L	–	M22 x 1,5	Ø20,5	
80-2.6	80	68	4	6	78	60	6,6	–	SV 12-S	M20 x 1,5	Ø18,5	
80-2.5								SV 12-L	SV 10-S	M18 x 1,5	Ø16,5	
80-2.4								SV 10-L	SV 8-S	M16 x 1,5	Ø14,5	
80-2.3								SV 8-L	SV 6-S	M14 x 1,5	Ø12,5	
80-2.2								SV 6-L	–	M12 x 1,5	Ø10,5	
80-2.1								–	–	–	Ø10	Standard design
100-2.5								SV 42-L **)	SV 38-S **)	M52 x 2	Ø50	
100-2.4								–	SV 30-S	M42 x 2	Ø40	
100-2.3	100	82	5	8	95	65	9	SV 28-L	SV 25-S	M36 x 2	Ø34	
100-2.2								SV 22-L	SV 20-S	M30 x 2	Ø28	
100-2.1								–	–	–	Ø25	Standard design
130-2.4								SV 42-L	SV 38-S	M52 x 2	Ø50	
130-2.3								SV 35-L	–	M45 x 2	Ø43	
130-2.2	130	110	6	10	125	95	9	–	SV 30-S	M42 x 2	Ø40	
130-2.1								–	–	–	Ø35	Standard design

Available from stock ■

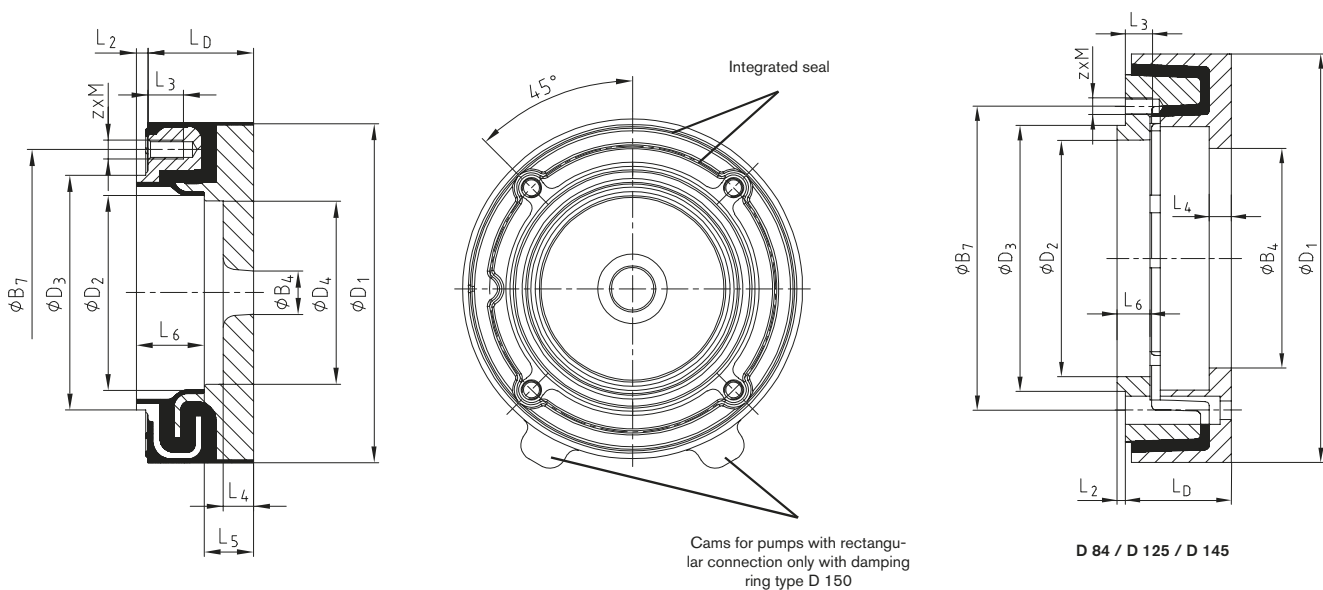
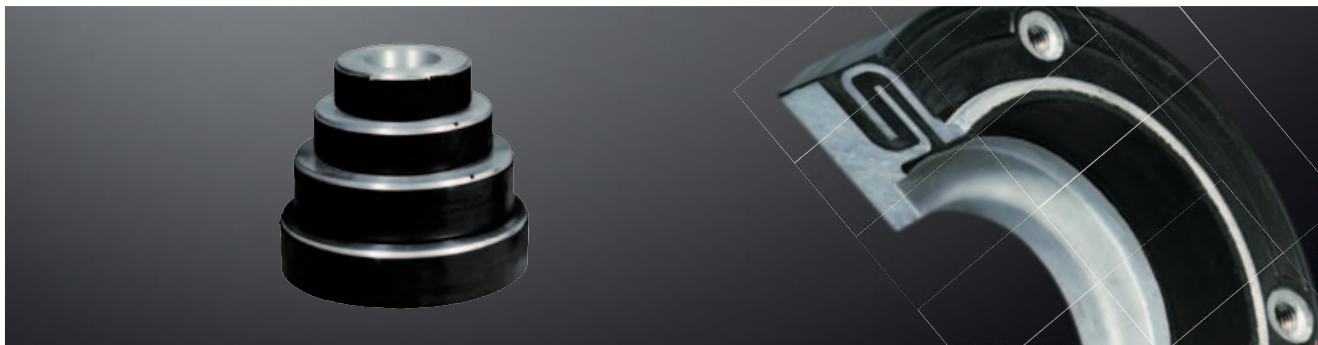
*) Bulkhead pipe fitting and washer do not form part of our supply.

**) Counter nut cannot be assembled

Ordering example:	ERD	100 – 2.3	
	Elastic flange	Size	Finish bore with thread M36 x 2

DAMPING ELEMENTS HYDRAULIC COMPONENTS

Damping ring type D



Damping ring type D														
Size	Dimensions [mm]													
	B ₄		B ₇	D ₁	D ₂	D ₃	D ₄	L _D	L ₂	L ₃	L ₄	L ₅	L ₆	z x M ²⁾
	min.	max.												
D 150/...	18	83	122	148	83	100	78	45	5	15	13	16	30	4 x M8
D 190/...	30	121	150	190	116	130	100	45	5	15	14	18	33	4 x M10
D 230/...	97	143	195	234	143	160	136	58	5	18	17	23	47	4 x M12
D 260/...	97	164	210	264	164	180	156	58	4	20	18	23	46	4 x M16
D 330/...	120	208	264	330	208	220	201	83	6	35	23	28	64	4 x M20
D 84/.../A	147	224	280	360	210	224	-	83	5	35	25	25	18	4 x M20
D 84/.../C														
D 125/.../A	260	320	360	484	285	315	-	125	10	33	25	25	40	M20 ³⁾
D 145/.../A	390	400	¹⁾	590	370	400	-	145	12	45	35	35	47	M24 ³⁾

¹⁾ Pitch circle diameter on request.

²⁾ Tightening torque of screw quality 5.6. ³⁾ Number of fixing holes on request.

Permissible radial and axial weight load of damping rings based on an ambient temperature of + 60 °C								
	D 150	D 190	D 230	D 260	D 330	D 84	D 125	D 145
Distance of center of gravity for radial load L [mm]	100	100	100	200	200	200	250	250
Perm. weight load F _{max.} [N]	650	1800	3000	2300	4100	4000	6000	10000

With a modified distance of center of gravity L_X the permissible weight load is converted. If L_X < L, then F_{max.} = F_{perm.}

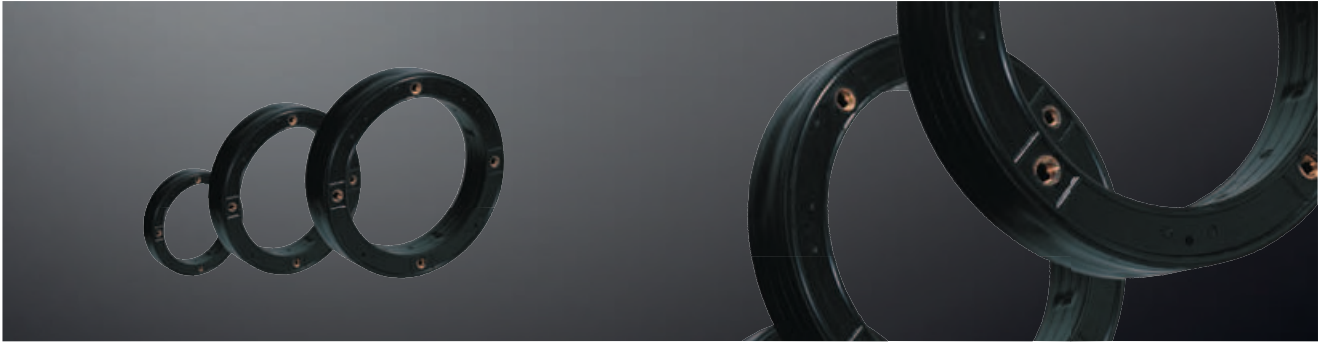
$$F_{perm.} = F_{max.} \cdot L / L_X \quad [N]$$

The permissible weight load F_{perm.} must not be exceeded by the existing weight load F_G (neither radially nor axially).

Ordering example:	D	230	14
	Damping ring	Size	In-house modification code

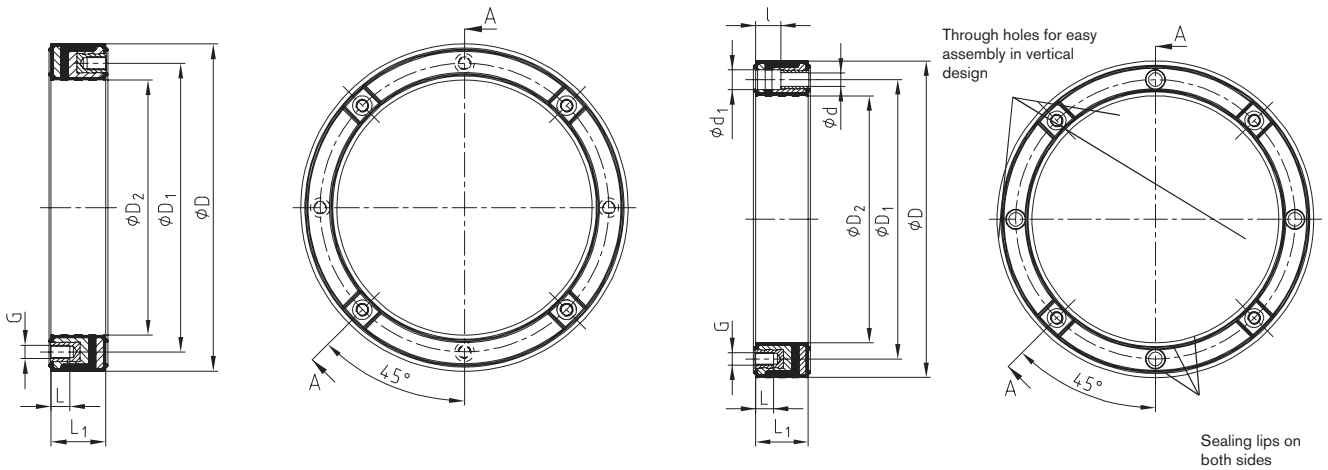
DAMPING ELEMENTS HYDRAULIC COMPONENTS

Damping rings type DT and DT.../2

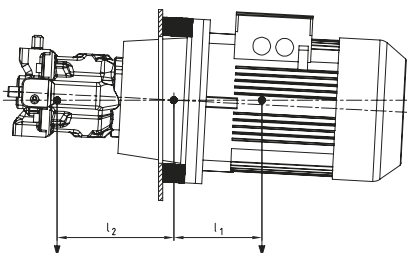


Damping ring type DT

Damping ring type DT.../2



Damping ring type DT (patent pending) and DTV											
IEC motor size	Damping ring size	Dimensions [mm]									Screw tightening torque [Nm]
		D	D ₁	D ₂	z x G	L	L ₁	z x d	z x d ₁	l	
71	DTV 160	160	130	111	4 x M8	16,5	35	4 x 9	4 x 14,5	18	12
80, 90S / 90L	DT 200	200	165	145,2	4 x M10	20	40	4 x 11	4 x 17,5	20	23
100L / 112M	DT 250	250	215	191	4 x M12	17,5	45	4 x 13	4 x 19,5	22	40
132S / 132M	DT 300	300	265	235	4 x M12	17,5	50	4 x 13	4 x 19	24	40
160M / 160L, 180M / 180L	DT 350	350	300	261	4 x M16	31	60	4 x 17	4 x 25	26	100
200L	DT 400	400	350	301	4 x M16	31	70	4 x 17	4 x 25	31	100
225S / 225M	DT 450	450	400	351	8 x M16	31	80	8 x 17	8 x 25	41	100
250M, 280S / 280M	DT 550	550	500	451	8 x M16	30	68	8 x 17	8 x 25	23	210
315S / 315M	DT 660	660	600	551	8 x M20	30	68	8 x 22	8 x 33	23	410



Permissible radial weight and bending load of damping rings type DT with an operating temperature of + 60 °C

DT size	200	250	300	350	400	450	550	660
F _{perm.} [N]	370	720	1450	3600	4800	6600	13000	24000
M _{b perm.} [Nm]	30	65	175	740	1100	1600	4400	9000

$$F_{perm.} \geq F_P + F_M$$

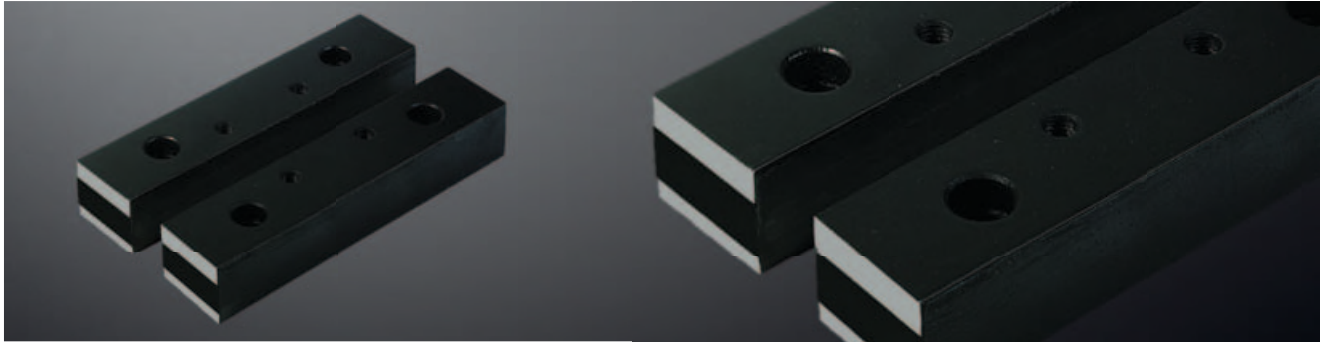
$$M_{b perm.} \geq F_M \cdot l_1 - F_P \cdot l_2$$

Ordering example:

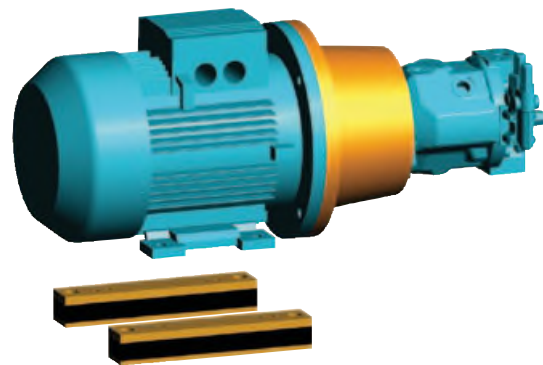
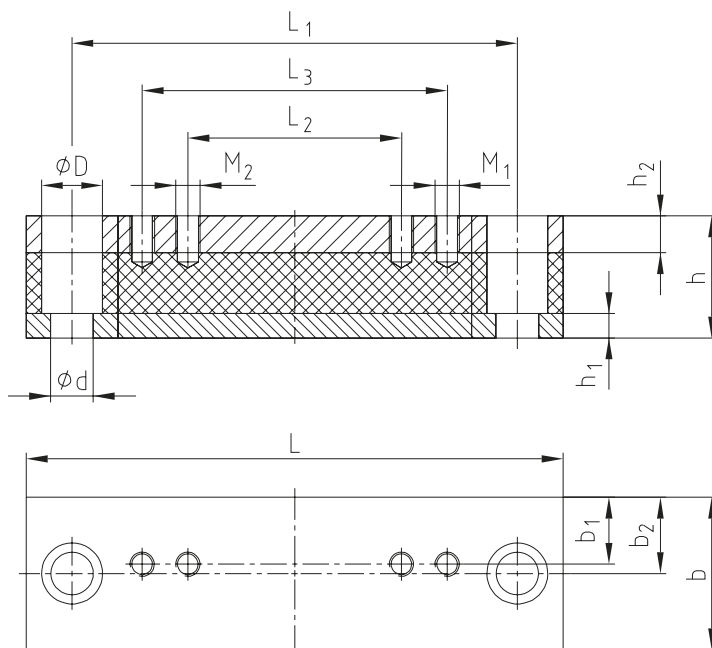
DT	250
Damping ring	Size

DAMPING ELEMENTS HYDRAULIC COMPONENTS

Damping rods type DSM



Type DSM



Damping rods type DSM for electric motors type IMB 35, protection category IP 54

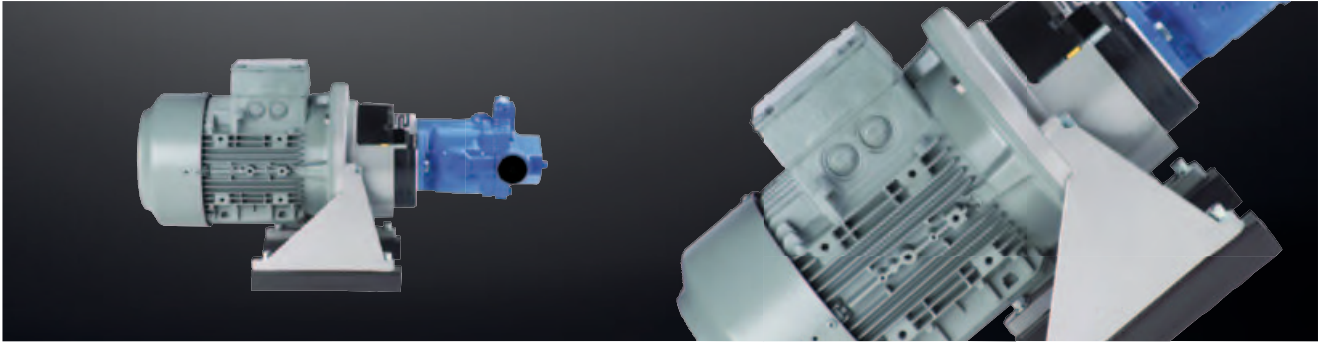
Damping rod size	For motor size	Dimensions [mm]													
		L	L ₁	L ₂	L ₃	h	h ₁	h ₂	b	b ₁	b ₂	d	D	M ₁	M ₂
DSM 71	71	196	156	90		40	8	12	50	21	25	14	20	M6	
DSM 80	80	176	146	100		40	8	12	50	22	25	14	20	M8	
DSM 90 S	90 S	196	156	100		40	8	12	50	24,5	25	14	20	M8	
DSM 90 L	90 L	240	205	125		40	8	12	50	24	25	14	20	M8	
DSM 100 L/112 M	100 L/112 M	240	205	140		40	8	12	50	22	25	14	20	M10	
DSM 132 S/132 M	132 S/132 M	280	245	140	178	45	8	12	50	20	25	14	20	M10	M10
DSM 160 M	160 M	340	300	210		60	15	15	70	28	35	18	26	M12	
DSM 160 L	160 L	416	370	254		60	15	15	70	28	35	18	26	M12	
DSM 180 M	180 M	416	370	241		60	15	15	70	35	35	18	26	M12	
DSM 180 L	180 L	446	400	279		60	15	15	70	35	35	18	26	M12	
DSM 200 L	200 L	492	430	305		60	15	15	70	35	35	22	33	M16	
DSM 225 S	225 S	492	430	286		60	15	15	70	35	35	22	33	M16	
DSM 225 M	225 M	492	445	311		60	15	15	70	35	35	22	33	M16	
DSM 250 M	250 M	492	445	349		60	15	15	100	50	50	22	33	M20	
DSM 280 S/280 M	280 S/280 M	614	570	368	419	60	15	15	100	50	50	22	33	M20	M20
DSM 315 S/315 M	315 S/315 M	614	570	406	457	60	15	15	120	60	60	22	33	M24	M24
DSM 315 L	315 L	704	660	508		60	15	15	120	60	60	22	33	M24	

Other sizes on request.

Ordering example:	DSM	100 L/112 M
	Damping rod	Size

DAMPING ELEMENTS HYDRAULIC COMPONENTS

Damping rods type DSFI, DSFS and DSK



Damping rods type DSFL for foot flange type PTFL

Damping rod size	For foot flange	Dimensions [mm]											
		L	L ₁	L ₂	h	h ₁	h ₂	b	b ₁	b ₂	d	D	M
DSFL 160	PTFL 160	176	130	50	40	8	12	50	10	25	14	20	M8
DSFL 200	PTFL 200	176	130	60	40	8	12	50	15	25	14	20	M10
DSFL 250	PTFL 250	230	140	60	40	8	12	50	15	25	14	20	M12
DSFL 300	PTFL 300	270	170	80	40	8	12	50	15	25	14	20	M12
DSFL 350	PTFL 350	305	200	110	60	15	15	70	25	35	18	26	M16

Damping rods type DSFS for foot flange type PTFS

Damping rod size	For foot flange	Dimensions [mm]												
		L	L ₁	L ₂	L ₃	h	h ₁	h ₂	b	b ₁	b ₂	d	D	M1/2
DSFS 250	PTFS 250	240	140	185		40	8	12	50	17,5	25	13	20	M12
DSFS 250/300L	PTFS 250/300	340	300	185	225	40	8	12	50	17,5	32,5	13	20	M12
DSFS 300	PTFS 300	280	180	225		40	8	12	50	17,5	25	13	20	M12
DSFS 350	PTFS 350	325	200	265		60	15	15	70	25	35	17	26	M16
DSFS 350/400L	PTFS 350/400	430	390	265	300	60	15	15	70	25	45	18	26	M16
DSFS 400	PTFS 400	350	234	300		60	15	15	70	25	35	17	26	M16
DSFS 450	PTFS 450	385	270	335		60	15	15	70	25	35	17	26	M16
DSFS 550	PTFS 550	490	350	415		60	15	15	100	25	50	18	26	M16
DSFS 660	PTFS 660	635	415	495		60	15	15	100	30	50	22	33	M20

Damping rods type DSK for bellhousings type PIK with integrated oil cooler with feet

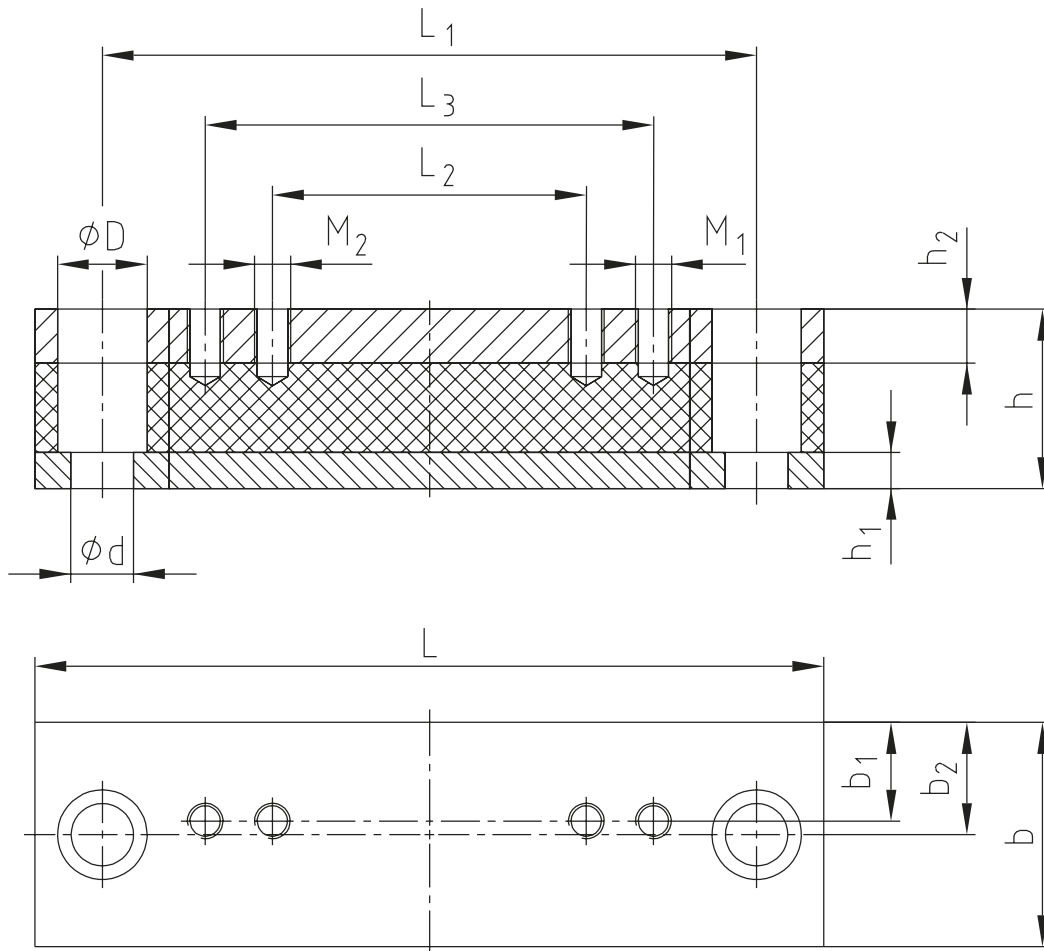
Damping rod size	For cooler size	Dimensions [mm]											
		L	L ₁	L ₂	h	h ₁	h ₂	b	b ₁	b ₂	d	D	M
DSK 200	PIK 200	240	210	154,5	40	8	12	50	25	25	14	20	M12
DSK 250	PIK 250	270	240	175,5	40	8	12	50	25	25	14	20	M12
DSK 300	PIK 300	280	250	199,5	45	8	12	50	25	25	14	20	M12
DSK 350	PIK 350	325	295	243,5	60	15	15	70	35	35	14	20	M12



- Damping rods reduce the noise level and dampen vibrations
- Special lengths or types available on request
- Damping rods are made of natural rubber (NR)
- Thrust loading (V1) not permissible
- Available from stock

Ordering
example:

DSFS	300
Damping rod	Size



Type DSFL

Type DSFS

Type DSK

