

Hydraulic Orbital Motors

BMS, BMSS, BMSW Series

Description

Orbital hydraulic motors of BMS series are dedicated to continuous work. Distribution valve is of disc type, driven separately by a short cardan shaft. This reduces internal hydraulic losses by separation of output shaft loads from hydraulic oil distribution. The tapered roller bearings on output shaft enable for absorbing static and dynamic radial loads, that can be significantly higher than is spool valve models. Gearwheel is equipped with rollers.

Features

- Displacement: 80.5 - 476.5 cm³/rev;
- Rotational speed range: 5 - 805 rpm;
- Maximum inlet pressure: 23 MPa;
- Maximum power: 9 - 18 kW.

Advantages

- Low pressure start;
- Reinforced shaft seal;
- High startup torque and ability to withstand significant back pressures;
- The ability to transfer axial and radial loads;
- Compact size and easy installation.

BMS motor



Technical Data

Catalogue Number	Displacement	Maximum Power	Maximum Pressure Drop	Maximum Inlet Pressure	Maximum Torque	Maximum Speed	Maximum Flow
	cm ³	kW	MPa	MPa	Nm	1/min	dm ³ /min
BMS*80	80.5	16	20.5	23.0	226	805	65
BMS*100	100.5	18	20.5	23.0	282	745	75
BMS*125	126.3	18	20.5	23.0	355	590	75
BMS*160	160.8	18	20.5	23.0	451	465	75
BMS*200	200.9	18	20.5	23.0	564	370	75
BMS*250	252.6	18	20.0	23.0	684	295	75
BMS*315	321.5	17	20.0	23.0	870	230	75
BMS*400	401.9	11	15.5	23.0	813	185	75
BMS*500	476.5	9	12.0	23.0	728	155	75

* Wheel models BMSW, and short models BMSS are included.



Coding

1	2	3	4	5	6	7
BMS		80	E4	B	D	B

1	Type	BMS	disc valve type orbital motor
2	Variant	omit S W	standard short version (plug-in model) wheel version
3	Displacement	80 100 125 160 200 250 315 400 500	80,5 cm ³ 100,5 cm ³ 126,3 cm ³ 160,8 cm ³ 200,9 cm ³ 252,6 cm ³ 321,5 cm ³ 401,9 cm ³ 476,5 cm ³
4	Flange	E2 E4 E6 omit	oval flange 2 mounting holes ø 13.5, pilot ø 82.5 square flange 4 mounting holes ø 13.5, pilot ø 82.5 oval flange 4 mounting holes ø 13.5, pilot ø 82.5 BMSS, BMSW only standard flanges according to respective drawings
5	Shaft	A B C D E G H K T1 omit	ø 25 cylindrical shaft, parallel key 8x7x32, for BMS only ø 32 cylindrical shaft, parallel key 10x8x45, for BMS only ø 32 cylindrical shaft, parallel key 10x8x45 for BMSW only ø 25.4 cylindrical shaft, parallel key 6.35x6.35x32 ø 25.3 splined shaft, parallel key 8x7x32 ø 31.75 cylindrical shaft, parallel key 7.96x7.96x32 ø 34.85 splined shaft, 6-34.85x28.15x8.64 ø 35 tapered shaft, 1:10, parallel key 6x6x30, for BMSW only ø 35 tapered shaft, 1:10, parallel key 6x6x30, for BMS only BMSS only standard shaft according to respective drawing
6	Ports	D omit	A,B ports G 1/2" (15 deep), Drain port G 1/4" (12 deep) BMSS, BMSW only standard ports: A,B ports G 1/2" (15 deep), Drain port G 1/4" (12 deep)
7	Paint	B omit	black paint no painting

Preferred versions are bolded

Performance Data

BMS80

		Pressure [MPa]					Max cont.	Max int.
		3.5	7	10.5	14	17.5	20.5	22.5
Flow [l/min]	15	35 181	75 177	114 170	150 165	187 158	220 151	239 141
	30	35 363	75 355	115 346	152 340	190 330	222 322	240 310
	40	33 485	75 479	115 464	155 453	193 444	226 437	240 415
	50	30 610	73 602	113 594	153 580	190 565	223 556	237 530
	60	28 735	70 724	110 714	150 698	188 680	220 670	235 642
	Max cont. 65	27 801	68 790	108 775	148 760	186 742	215 727	233 704
Max int. 80		23 988	66 975	104 955	140 938	176 915	205 897	213 870

35
181 Torque: 35 [Nm]
Rotational speed: 181 [1/min]

**BMS100**

Pressure [MPa]					Max cont.	Max int.
3.5	7	10.5	14	17.5	20.5	22.5

Flow [l/min]	15	44 145	94 142	142 136	187 132	233 127	275 121	298 113
	30	42 291	93 284	144 277	190 272	237 264	278 258	300 248
	40	41 388	92 384	144 372	194 363	241 356	282 350	300 332
	50	37 489	91 482	141 476	191 465	237 453	278 445	296 425
	60	35 589	87 580	137 572	187 559	235 545	273 537	293 514
	75	34 740	85 730	135 716	185 702	232 686	268 672	291 651
Max cont.								
Max int.	90	29 890	82 879	130 861	175 845	222 825	258 808	266 784

44
145Torque: 45 [Nm]
Rotational speed: 145 [1/min]**BMS125**

Pressure [MPa]					Max cont.	Max int.
3.5	7	10.5	14	17.5	20.5	22.5

Flow [l/min]	15	54 115	117 113	179 108	235 105	293 101	348 96	375 90
	30	55 231	118 226	180 221	238 217	298 210	351 205	377 198
	40	54 309	120 305	180 296	243 289	303 283	355 279	377 265
	50	51 389	118 384	177 379	240 370	298 360	351 354	372 338
	60	48 468	114 461	173 455	235 445	295 433	347 427	369 409
	75	42 589	109 581	169 570	232 559	292 546	342 535	366 518
Max cont.								
Max int.	90	38 708	103 699	163 685	220 673	279 656	327 643	334 624

BMS160

Pressure [MPa]					Max cont.	Max int.
3.5	7	10.5	14	17.5	20.5	22.5

Flow [l/min]	15	70 91	147 89	228 85	300 83	374 79	444 76	477 71
	30	72 182	150 178	230 173	304 170	380 165	447 161	479 155
	40	74 243	151 240	230 232	310 227	366 222	451 219	479 208
	50	71 305	147 301	226 297	306 290	380 283	447 278	473 265
	60	68 368	143 362	220 357	300 349	376 340	442 335	469 321
	75	64 463	138 456	216 448	296 439	372 429	437 420	465 407
Max cont.								
Max int.	90	60 556	133 549	208 538	280 528	352 515	416 505	425 490



BMS200

		Pressure [MPa]					Max cont.	Max int.
		3.5	7	10.5	14	17.5	20.5	22.5
Flow [l/min]	15	87 73	184 71	285 68	374 66	467 63	557 61	596 56
	30	89 145	187 142	287 139	379 136	474 132	560 129	599 124
	40	92 194	187 192	287 186	387 182	482 178	564 175	599 166
	50	88 244	182 241	282 238	382 232	474 226	560 223	591 212
	60	84 295	175 290	275 286	374 280	469 272	555 268	586 257
Max cont.	75	77 370	170 365	270 358	369 351	464 343	550 336	581 325
Max int.	90	68 445	165 440	260 430	349 423	434 412	510 404	532 392

87
73
Torque: 87 [Nm]
Rotational speed: 73 [1/min]

BMS250

		Pressure [MPa]					Max cont.	Max int.
		3.5	7	10.5	14	17.5	20.5	22.5
Flow [l/min]	15	114 58	234 56	358 54	469 53	584 50	377 48	742 45
	30	115 116	235 113	361 110	471 108	587 105	680 103	746 100
	40	115 155	235 153	355 148	473 144	591 141	684 139	751 136
	50	114 194	230 192	355 189	474 185	587 180	680 175	746 169
	60	112 234	225 231	352 228	471 224	583 219	675 214	741 208
Max cont.	75	109 295	220 290	349 285	467 279	578 273	669 267	735 260
Max int.	90	103 354	213 350	343 342	460 334	568 326	654 320	715 310

BMS315

		Pressure [MPa]					Max cont.	Max int.
		3.5	7	10.5	14	17.5	20.5	22.5
Flow [l/min]	15	140 45	284 44	433 43	583 41	745 40	863 38	947 35
	30	140 91	288 89	437 87	586 85	748 83	866 81	951 78
	40	138 121	290 120	440 116	588 113	752 111	870 109	956 106
	50	136 153	291 151	439 149	587 145	748 141	866 139	951 136
	60	134 184	286 181	435 179	583 175	744 170	862 166	947 160
Max cont.	75	131 231	280 228	431 224	580 220	738 214	856 210	939 204
Max int.	90	125 278	272 275	421 269	570 264	718 258	826 253	899 243

**BMS400**

		Pressure [MPa]				Max cont.	Max int.
		3.5	7	10.5	14	15.5	17.5
Flow [l/min]	15	172 36	347 35	522 34	705 33	806 32	926 30
	30	174 73	350 71	526 69	708 68	809 66	930 64
	40	173 97	352 96	529 93	710 91	813 89	935 86
	50	171 122	350 121	531 119	710 116	809 113	930 110
	60	168 147	343 145	522 143	705 140	801 136	924 130
	75	164 185	339 183	517 179	700 176	791 171	916 163
	Max cont.						
	Max int.	160 223	325 220	503 215	680 211	766 206	886 196

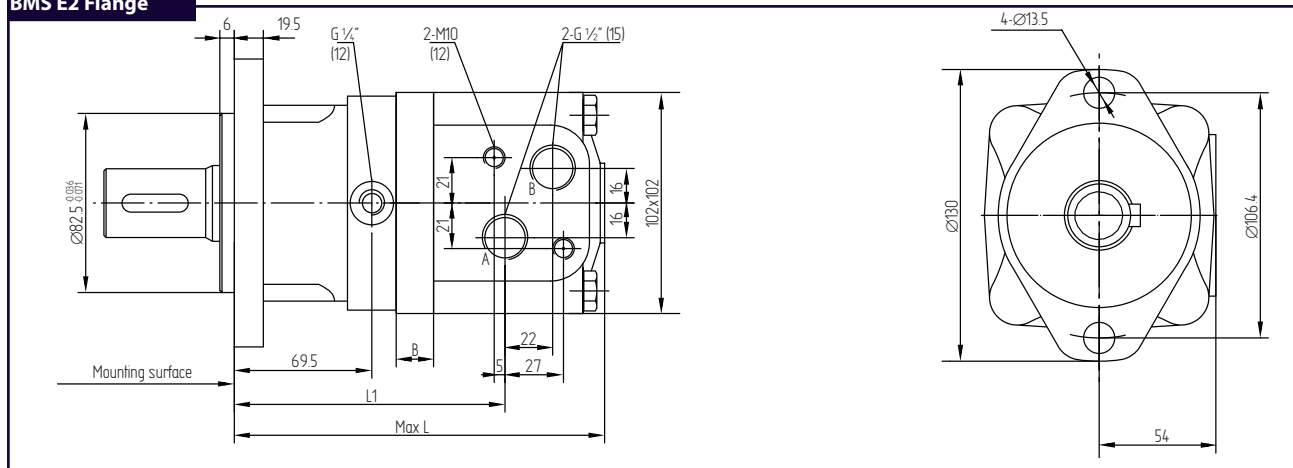
BMS500

		Pressure [MPa]			Max cont.	Max int.
		3.5	7	10.5	12	14
Flow [l/min]	15	180 31	403 30	607 29	721 28	816 27
	30	183 61	407 60	613 58	724 57	824 56
	40	185 82	409 81	617 78	728 77	832 75
	50	184 103	406 102	616 100	724 98	833 95
	60	182 124	403 122	609 121	719 118	819 115
	75	180 156	401 154	606 151	712 148	815 145
	Max cont.					
	Max int.	173 188	391 185	601 182	702 178	803 174

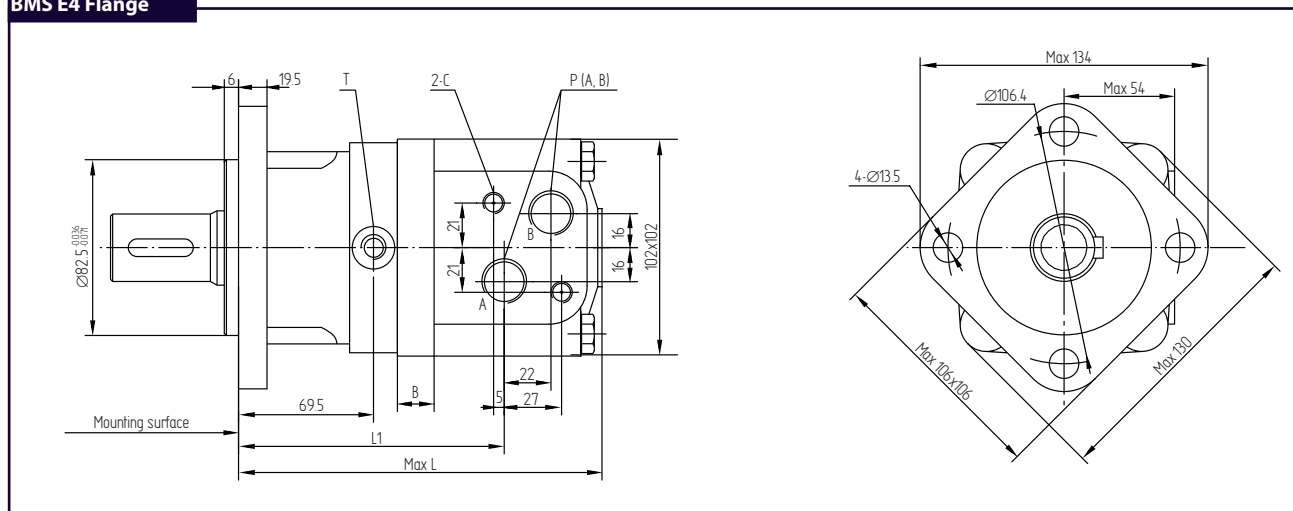


Dimensions and Flanges

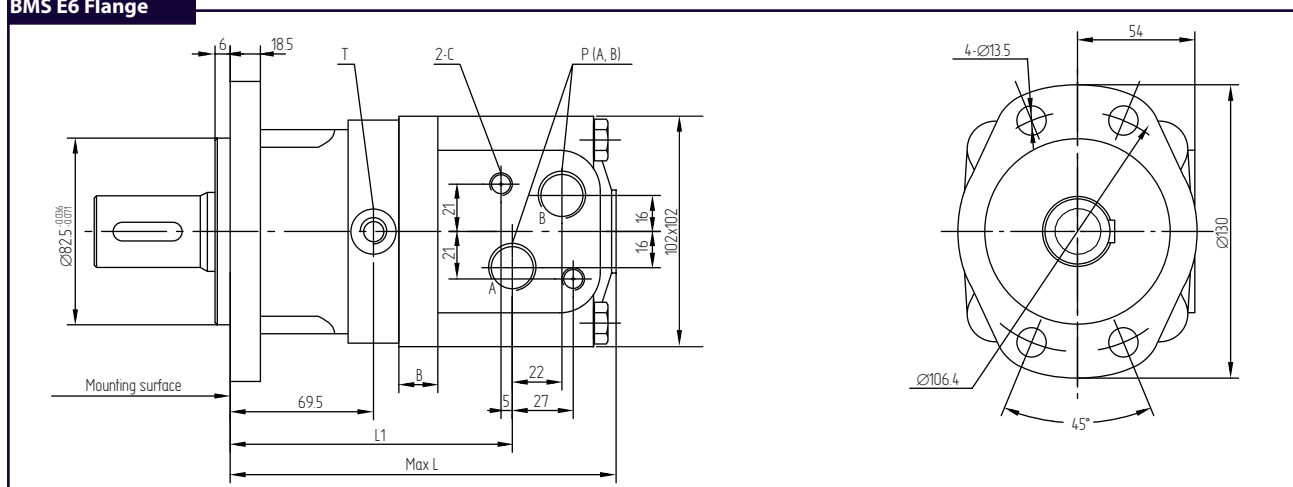
BMS E2 Flange



BMS E4 Flange



BMS E6 Flange

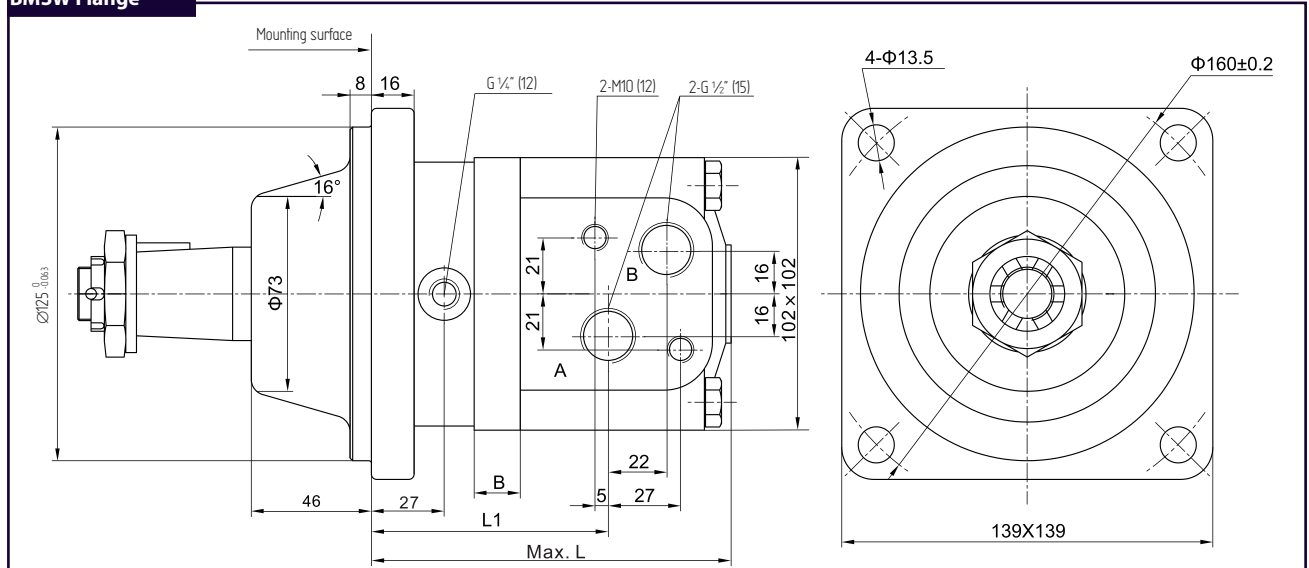




BMS Dimensions

Catalogue Number	L	L1	B	Weight
	mm	mm	mm	kg
BMS80	170.0	125.5	11.0	9.8
BMS100	173.5	129.0	14.5	10.0
BMS125	178.0	133.5	19.0	10.3
BMS160	184.0	139.5	25.0	10.7
BMS200	191.0	146.5	32.0	11.1
BMS250	200.0	155.5	41.0	11.6
BMS315	212.0	167.5	53.0	12.3
BMS400	226.0	181.5	67.0	13.2
BMS500	239.0	194.5	80.0	14.3

BMSW Flange



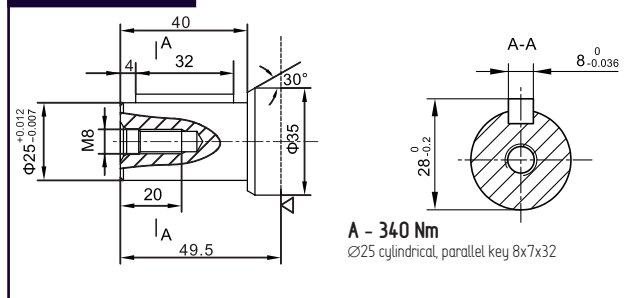
BMSW Dimensions

Catalogue Number	L	L1	B	Weight
	mm	mm	mm	kg
BMSW80	127.5	83.0	11.0	10.4
BMSW100	131.0	86.5	14.5	10.6
BMSW125	135.5	91.0	19.0	11.0
BMSW160	141.5	97.0	25.0	11.4
BMSW200	148.5	104.0	32.0	11.8
BMSW250	157.5	113.0	41.0	12.3
BMSW315	169.5	125.0	53.0	12.9
BMSW400	183.5	139.0	67.0	13.8
BMSW500	196.5	152.0	80.0	14.7

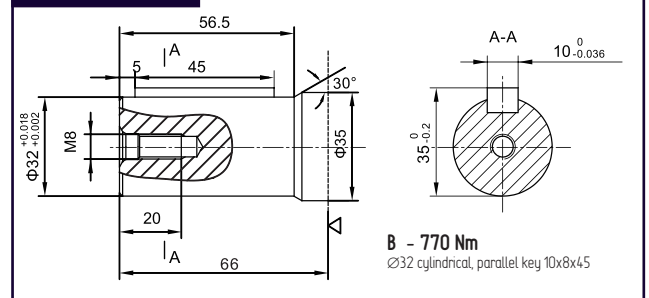


Shaft extensions

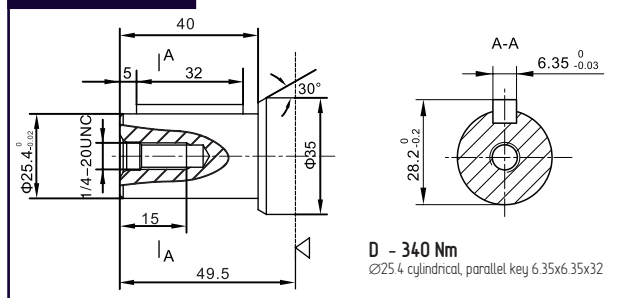
BMS Shaft A



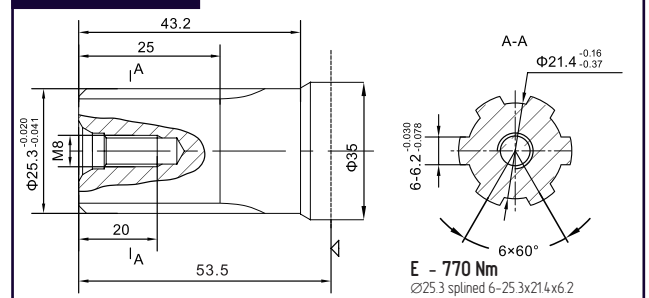
BMS Shaft B



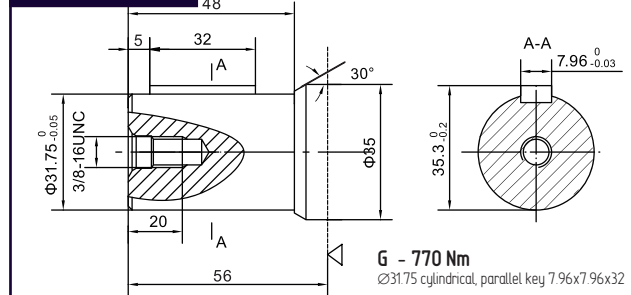
BMS Shaft D



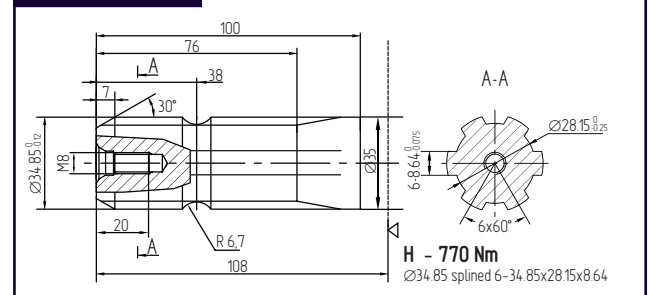
BMS Shaft E



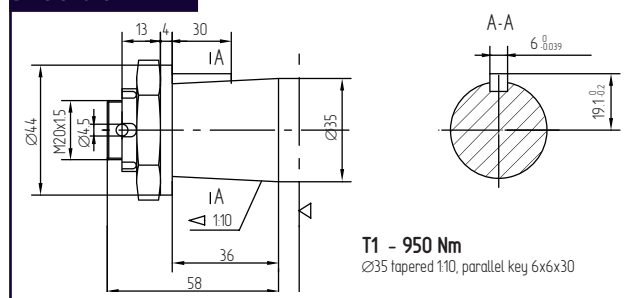
BMS Shaft G



BMS Shaft H

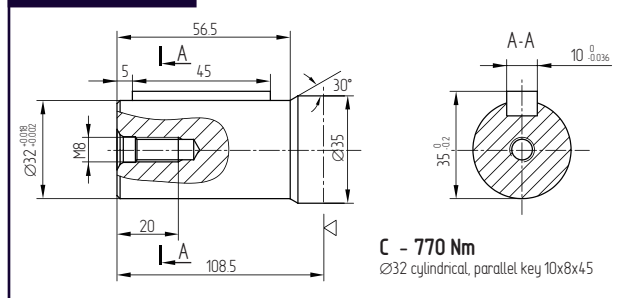


BMS Shaft T1

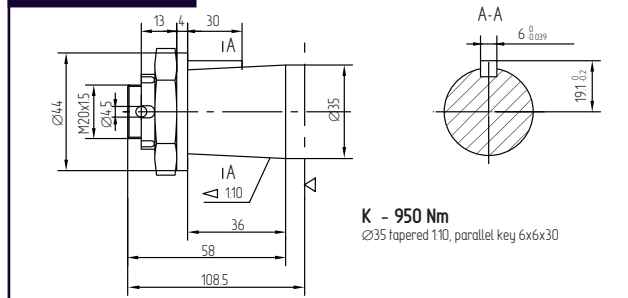




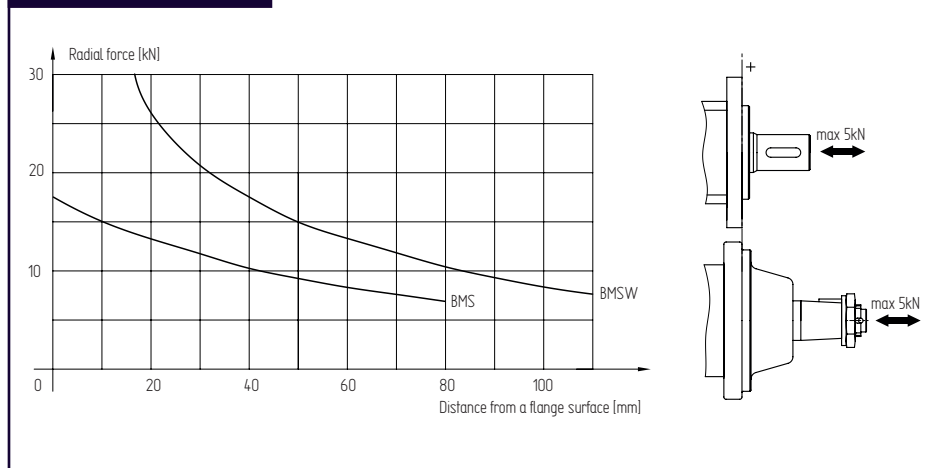
BMSW Shaft C



BMSW Shaft K



Axial and radial forces



Direction of rotation

