

B-MR Hydraulic Orbit Motor



Technical data for B-MR

Type		B-MR 50	B-MR 80	B-MR 100	B-MR 125	B-MR 160	B-MR 200	B-MR 250	B-MR 315	B-MR 400
Displacement (cm ³ /rev)		51.7	81.5	102	127.2	157.2	194.5	253.3	317.5	381.4
Max. speed (RPM)	cont.	509	502	497	459	372	301	231	184	166
	int*	603	598	574	574	465	376	289	230	192
Max. Torque (Nm)	cont.	104	164	205	256	316	335	437	456	465
	int*	103	203	254	317	391	359	437	456	465
	Peak**	88.6	160	200	250	308	333	473	502	520
Max. Output (kW)	cont.	5.5	10.7	13.2	15.2	15.2	11.3	10.6	8.8	8.1
	*int	5.6	10	12	15	15	13.1	14.3	12.1	10.5
Max. Pressure Drop (Bar)	cont.	140	140	140	140	140	120	120	100	85
	*int	140	175	175	175	175	130	120	100	85
	Peak**	175	200	200	200	200	175	130	110	95
Max Oil Flow (lpm)	cont.	27	42	52	60	60	60	60	60	65
	*int	32	50	60	75	75	75	75	75	75
Min. opening pressure (bar)		17—22								
Max. Inlet pressure (bar)		250								
Max. brake release port pressure (bar)		250								
Max. static torque		500—550								
Weight (kg)		11.7	11.9	11.9	12.2	12.5	13	13.5	14	14.5

*Intermittent operation: the permissible values may occur for max. 10% of every minute.

** Peak load: the permissible values may occur for max. 1% of every minute.

1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HM (ISO 6743/4).
4. Recommended minimum oil viscosity 70 SUS [13 mm²/s] at 122°F [50°C].
5. Recommended maximum system operating temperature is 180°F [82°C].
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.
7. Suck kind of brake is only used in static parking brake. Dynamic braking is not recommended. When the motor integrated with brake is working, the pressure at releasing port must be more than 2.2MPa. In the status of braking, the pressure at releasing port must be less than 1.7MPa., optimally 0MPa. It is attention in use that the back pressure of the oil circuit is the best 0 MPa.



MR series motor adapt the advanced Gerolol gear set design with shaft distribution flow, which can automatically compensate in operating with high pressure, provide reliable and smooth operation, high efficiency and long life.

CHARACTERISTICS FEATURES

- * Advanced manufacturing devices for the Gerolol gear set, which use low pressure of start-up, provide smooth, reliable operation and high efficiency.
- * Shaft seal can bear high pressure of back and the motor can be used in parallel or in series.
- * Special design in the driver-linker and prolong operating life
- * Compact volume and easy installation.

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PERFORMANCE DATA

MR 50 [51.7cm³/rev.]

Pressure (MPa)

						Max. cont.		Max. int.	
		5	7	9	10	12	14	16	17.5
Flow (L/min)	5	35	45	61	67	77	88		
		93	84	76	73	69	46		
10		36	46	62	69	80	95	108	120
		186	178	166	162	153	136	118	97
15		35	49	63	73	88	100	109	123
		283	277	269	261	250	230	211	185
20		34.5	47	61	69	83	96	109	126
		377	375	365	361	346	330	302	270
30		33	44	60	67	80	95	108	126
		576	569	561	554	542	531	500	465
40		30	41	58	66	79	92	106	122
		760	758	753	750	738	724	700	670
45		29.5	40	57	65	78	90	105	121
		856	853	849	845	835	815	796	770
Max. cont.	50	26	37	53	60	73	85	99	114
		950	940	925	906	880	852	832	801
Max. int.	60	20	33	48	56	69	81	95	109
		1138	1124	1100	1075	1056	1028	1006	970

MR 80 [81.5cm³/rev.]

Pressure (MPa)

						Max. cont.		Max. int.		
		5	7	9	10	12	14	16	17.5	20
Flow (L/min)	5	50 59	64 56	88 50	108 44	133 38				
	10	54 118	77 113	99 106	108 97	129 86	150 79	173 56		
	20	57 238	78.0 234	102 227	111 216	134 203	155 190	177 178	196 154	225 135
	30	54 360	75 352	100 340	108 332	131 316	152 302	176 290	195 274	223 250
	40	48 480	73 470	96 458	105 445	127 430	148 418	172 403	190 388	220 359
	50	42 604	70 595	93 582	102 570	124 556	147 540	170 521	188 504	218 487
	60	37 726	66 715	89 704	98 692	121 678	144 663	166 647	184 622	213 594
	70	32 845	60 834	83 820	95 802	116 789	140 767	160 754	177 730	208 705
	75	21 910	50 895	78 881	90 867	111 852	135 830	154 806	171 787	200 756

Torque (N·m) 135
Speed (rpm) 830

MR 100 [102cm³/rev.]

Pressure (MPa)

		Max. cont.									Max. int.		
		5	7	9	10	12	14	16	17.5	20			
Flow (L/min)	5	66	92	120	135	156							
		45	42	38	34	27							
	10	68	96	125	138	159	188	212					
		93	90	86	81	74	57	42					
	20	65	94.0	123	137	155	186	210	238	274			
		189	185	180	173	165	158	150	139	118			
	30	63	92	120	133	153	185	209	235	270			
		286	281	275	266	257	246	237	225	207			
	40	57	88	117	130	152	185	208	233	267			
		385	378	365	355	345	332	320	314	297			
Max. cont.	50	48	79	110	123	150	183	204	228	260			
		482	477	470	460	448	435	420	405	389			
	60	38	70	105	120	144	178	200	220	252			
		580	572	560	548	535	523	510	500	478			
	70	32	65	100	118	141	176	197	215	246			
		678	670	660	648	638	626	615	606	580			
	75	23	59	93	111	136	170	192	210	240			
		728	720	710	695	681	667	650	634	618			
	Max. int.												

□ cont.
■ int.

MR 125 [127.2cm³/rev.]

Pressure (MPa)

		Max. cont.									Max. int.		
		5	7	9	10	12	14	16	17.5	20			
Flow (l/min)	5	76	110	145	167	189							
		36	31	25	19	13							
	10	84	118	155	176	202	228	253					
		73	70	60	48	36	25	19					
	20	82	117	153	174	200	230	259	294	332			
		153	151	148	144	138	128	117	104	73			
	30	79	116	151	171	198	228	257	292	329			
		231	228	224	218	210	201	183	168	137			
	40	72	114	148	168	196	226	256	290	327			
		309	307	303	298	292	280	270	252	218			
Max. cont.	50	62	105	143	165	195	223	254	287	323			
		389	386	382	378	370	360	344	328	292			
	60	52	98	136	160	191	220	250	282	319			
		467	463	459	456	448	427	410	399	352			
	70	41	90	130	156	187	215	242	278	313			
		545	542	538	534	529	520	508	486	430			
	Max. int.	75	32	79	126	148	180	208	234	262	300		
		586	583	578	570	560	546	532	520	480			

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PERFORMANCE DATA (continued)

MR 160 [157.2cm³/rev.]

Pressure (MPa)

	5	7	9	10	12	14	16	17.5	20
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Flow (L/min)	Max. cont.									Max. int.	
	5	7	9	10	12	14	16	17.5	20		
5	104	146	190	210	245						
	26	23	20	16	10						
10	107	150	195	216	250	290	335				
	59	56	50	45	37	30	22				
20	102	151	198	220	257	298	342	370	420		
	121	118	115	113	108	102	97	90	78		
30	97	146	190	217	256	295	340	368	416		
	184	178	173	170	164	155	143	128	103		
40	89	140	185	210	252	290	335	363	412		
	246	241	235	228	220	210	194	177	150		
50	72	128	179	202	244	284	327	358	409		
	310	307	300	295	287	278	262	247	210		
Max. cont.	60	60	116	170	198	240	279	321	352	400	
	374	367	359	354	346	338	323	306	265		
70	49	107	164	193	233	271	309	344	390		
	437	430	421	415	403	393	381	365	318		
Max. int.	75	36	98	152	185	226	265	300	334	379	
	472	463	450	441	431	420	405	389	365		

MR 200 [194.5cm³/rev.]

Pressure (MPa)

	5	7	9	10	12	14	16	17.5	20
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Flow (L/min)	Max. cont.									Max. int.	
	5	7	9	10	12	14	16	17.5	20		
5	132	181	238	262	310						
	24	22	18	13	10						
10	135	186	240	264	315	356	403				
	49	47	45	43	38	33	24				
20	131	183	238	260	314	358	404	438	498		
	99	97	94	92	88	83	74	64	56		
30	126	178	233	254	311	355	402	431	486		
	149	147	144	141	135	126	113	105	91		
40	112	169	228	250	307	352	400	426	477		
	200	197	194	191	185	174	160	151	127		
50	95	156	221	246	300	350	398	421	470		
	252	249	246	243	238	228	212	194	161		
Max. cont.	60	78	145	213	238	289	342	386	412	459	
	304	301	298	294	286	276	262	243	218		
70	67	135	206	228	277	336	375	408	453		
	355	353	349	340	329	316	300	288	257		
Max. int.	75	58	125	197	220	270	321	360	398	442	
	382	379	373	362	350	337	322	312	278		

cont.
int.

MR 250 [253.5cm³/rev.]

Pressure (MPa)

	5	7	9	10	12	14	16	17.5	20
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Flow (L/min)	Max. cont.									Max. int.	
	5	7	9	10	12	14	16	17.5	20		
5	175	243	304	342	407						
	17	16	14	12	10						
10	178	246	310	344	409	465	525				
	37	35	31	28	23	18	11				
20	175	244	308	340	408	463	520	558	636		
	75	73	72	70	66	58	53	50	42		
30	162	235	304	332	400	455	516	550	621		
	114	111	108	106	100	92	83	77	65		
40	143	223	300	329	396	447	512	546	617		
	154	152	150	147	143	132	120	110	90		
50	124	208	289	323	384	440	503	535	600		
	193	190	187	174	168	160	149	140	116		
Max. cont.	60	103	192	280	314	371	426	489	514	578	
	233	230	227	224	218	205	190	181	155		
70	88	178	264	301	356	418	479	498	560		
	273	270	267	263	252	242	226	209	173		
Max. int.	75	62	165	256	288	347	412	474	486	542	
	294	291	287	283	274	263	249	236	211		

Torque (N·m) 256
Speed (rpm) 287

MR 315 [317.5cm³/rev.]

Pressure (MPa)

	5	7	9	10	12	14	16	17.5
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Flow (L/min)	5	215 13	302 11						
	10	218 28	305 27	383 25	422 24	488 21	551 18	622 13	
	20	215 60	303 59	380 57	418 55	485 52	549 49	620 45	660 42
	30	204 91	296 89	375 86	413 84	480 81	542 78	613 72	654 67
	40	196 122	287 120	368 117	410 112	477 106	539 100	609 94	650 85
	50	176 154	270 151	356 147	393 140	461 131	526 120	597 109	645 100
	60	162 185	246 182	339 177	374 172	446 163	511 152	586 140	628 134
	70	143 217	235 213	324 208	358 201	430 190	493 178	562 166	614 158
	75	125 232	212 228	303 222	339 216	417 208	481 200	543 183	582 171
	Max. cont.								
Max. int.									

Torque (N·m) 481
Speed (rpm) 200

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PERFORMANCE DATA (continued)

MR 400 [381.4cm³/rev.]

Pressure (MPa)

	3	4.5	5.5	6.5	8	Max.cont. 10	12.5	Max.int. 14
5	153 12	232 10						
10	157 24	236 23	284 22	337 21	406 19	497 17	612 15	668 12
20	150 49	232 48	280 47	332 46	401 44	490 41	606 38	660 32
30	142 76	215 75	274 74	327 73	398 71	483 67	603 63	652 50
40	126 103	212 101	268 99	320 97	393 95	477 92	593 88	635 70
50	105 128	187 126	242 124	302 121	376 118	455 115	583 111	608 96
Max.cont. 60	90 154	167 152	229 150	281 148	362 145	444 138	566 130	600 121
70	90 180	149 179	200 178	258 176	341 173	425 168	546 160	580 148
Max.int. 75	56 195	125 194	182 193	241 191	320 189	408 185	524 178	565 170

☐ cont.
☐ int.

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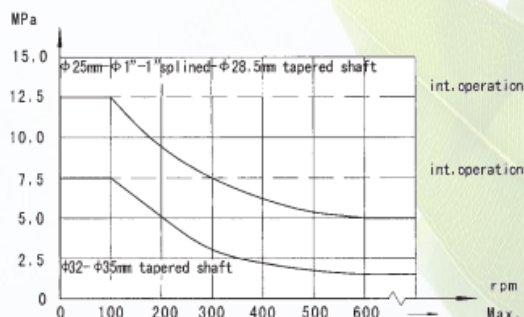
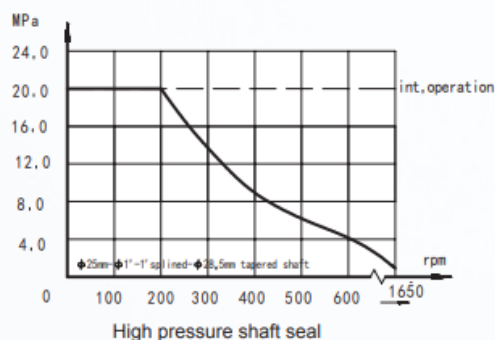
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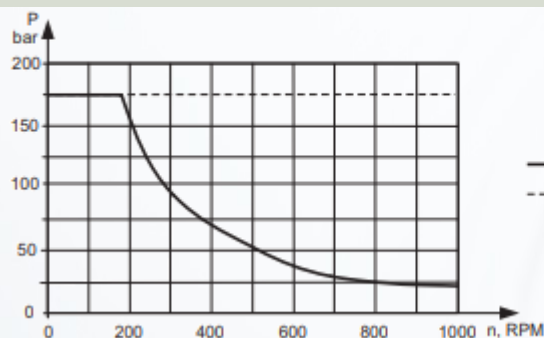
B-MR, B-MRS SERIES HYDRAULIC MOTOR

Permissible shaft seal pressure

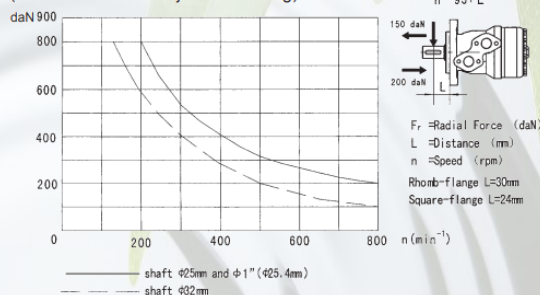


In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

MAX. PERMISSIBLE SHAFT PRESSURE



Status of the shaft's radial force
(Standard motor with journal bearing)



OIL FLOW IN DRAIN LINE

The table shows the Max. oil flow in the drain line at the return pressure less than 5-10 Bar.

Pressure drop (Bar)	Viscosity (mm ² /s)	Oil flow in the drain line (L/min.)
100	20	2.5
	35	1.8
100	20	3.5
	35	2.8

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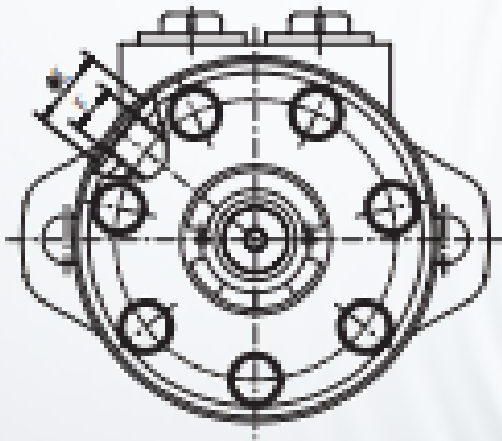
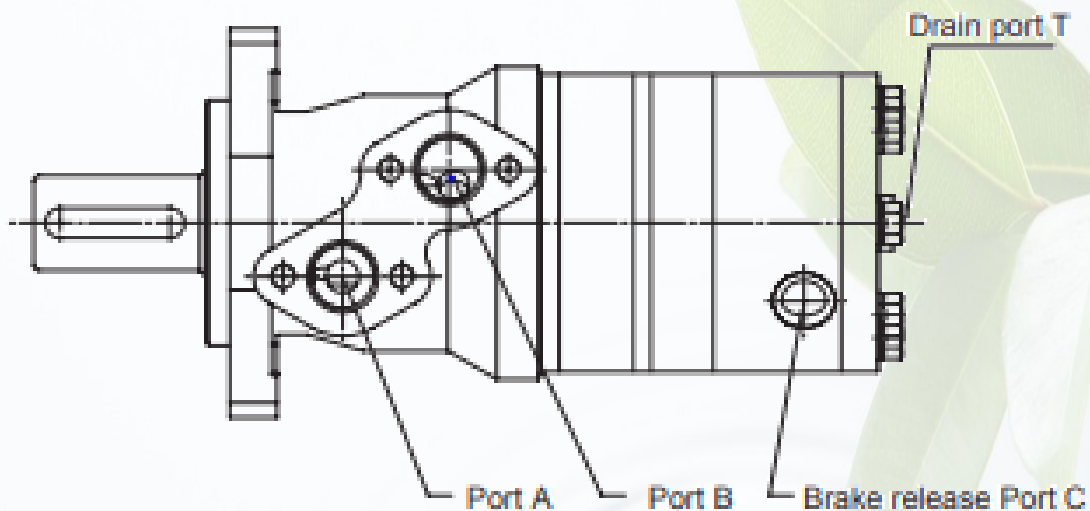
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B-MR DIMENSIONS AND MOUNTING DATA



Model	L	L1
B-MR50	215	10
B-MR80	221	16
B-MR100	225	20
B-MR125	230	25
B-MR160	235.5	30.5
B-MR200	243	38.1
B-MR250	255	50
B-MR315	267	62
B-MR400	279	74

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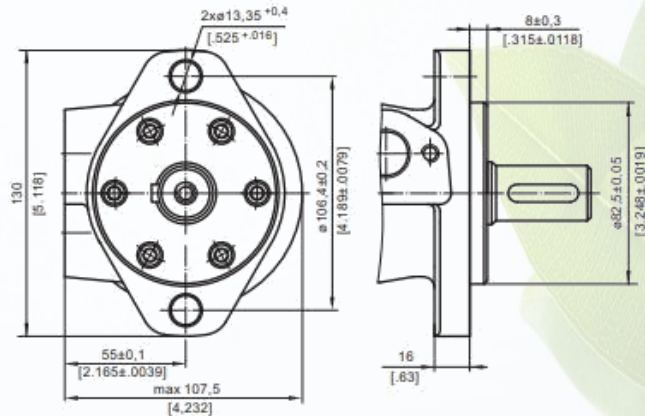
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MOUNTING

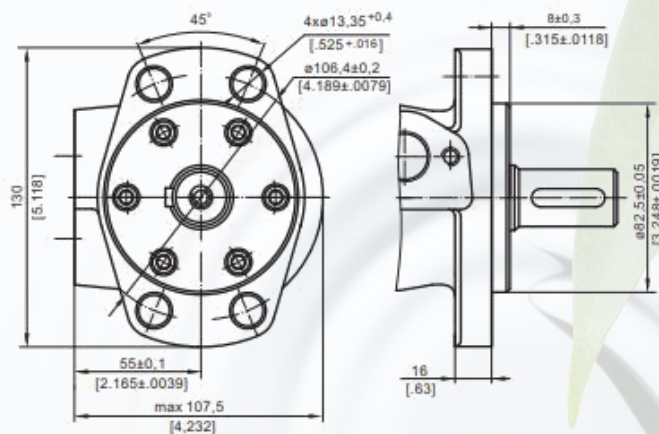
STANDARD

Oval Mount (2 Holes)



F

Oval Mount (4 Holes)



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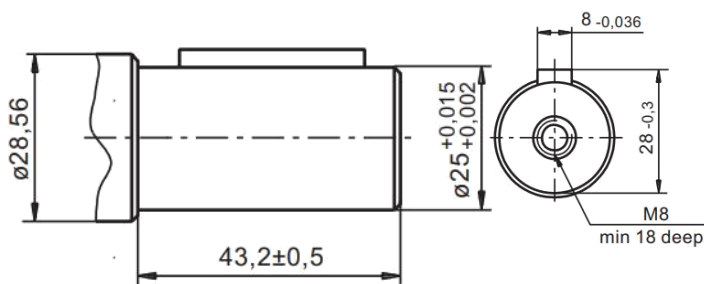
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SHAFT EXTENSIONS

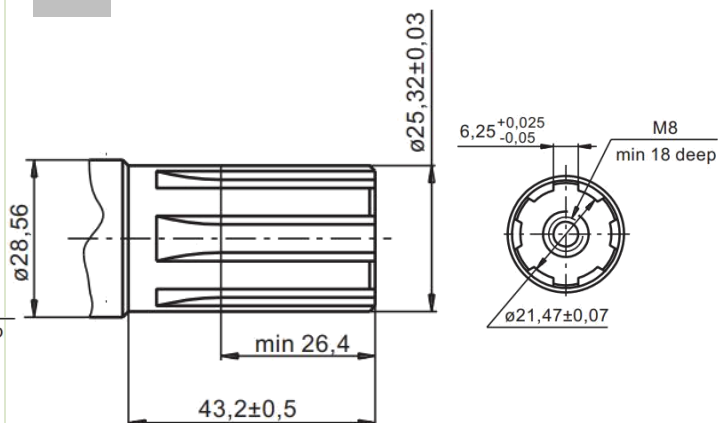
C

Ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm

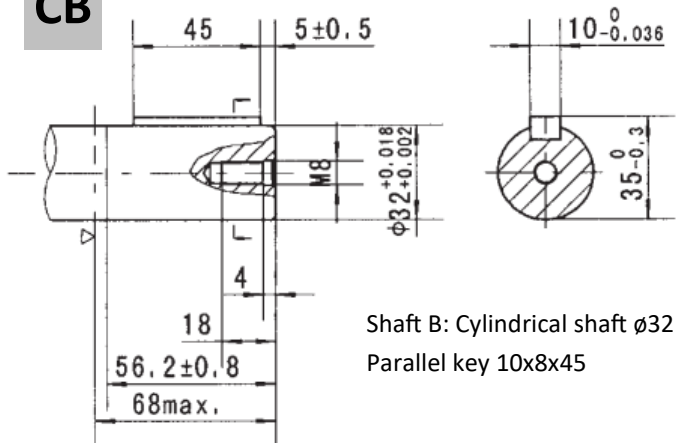


SH

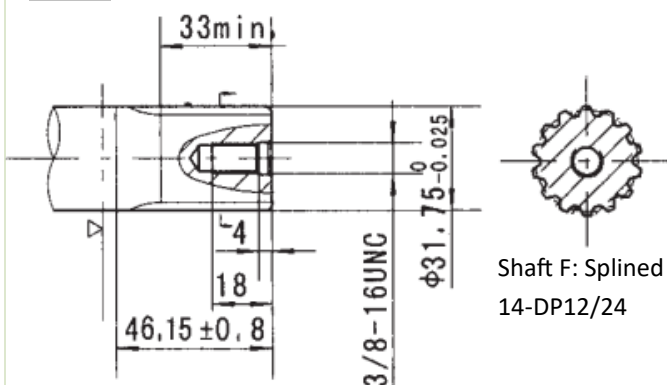
Splined, BS 2059 (SAE 6B)
Max. Torque 400 Nm



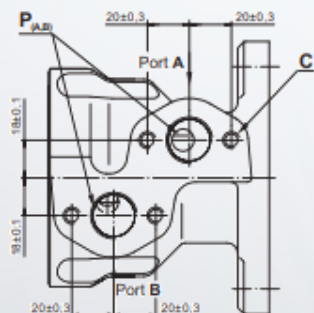
CB



HB



PORTS



Standard Rotation

Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation

Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

C : 4xM8 - 13 mm depth
P (A, B) : 2xG1/2 - 16 mm depth
T : G1/4 - 12mm depth (plugged)

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