

MR Hydraulic orbit motor



Main specifications:

Technical data for MR with 25mm shaft

Type		MR 50	MR 80	MR 100	MR 125	MR 160	MR 200	MR 250	MR 315	MR 400
Geometric 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.	960	750	600	475	378	310	240	190	155
	int.	1150	940	750	600	475	385	300	240	190
Max. torque (Nm)	cont.	100	195	240	300	360	360	390	390	365
	int.	126	220	280	340	430	440	490	535	495
	peak	165	270	320	370	460	560	640	650	680
Max. output (KW)	cont.	9.5	12.5	13	12.5	12.5	10	7	6	5
	int.	11.2	15	15	14.5	14	13	9.5	9	8
Max. pressure drop (Bar)	cont.	140	175	175	175	165	130	110	90	70
	int.	175	200	200	200	200	175	150	130	100
	peak	225	225	225	225	225	225	200	175	150
Max flow (L/min)	cont.	50	60	60	60	60	60	60	60	60
	int.	60	75	75	75	75	75	75	75	75
Weight (kg)		6.7	6.9	7	7.3	7.6	8	8.5	9.0	9.5

* Continuous pressure: Max. value of operating motor continuously.

* Intermittent pressure: Max. value of operating motor in 6 seconds per minute.

* Peak pressure: Max. value of operating motor in 0.6 second per minute

MR series motor adapt the advanced Geroler 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.

Characteristic features:

- Advanced manufacturing devices for the Gerolor 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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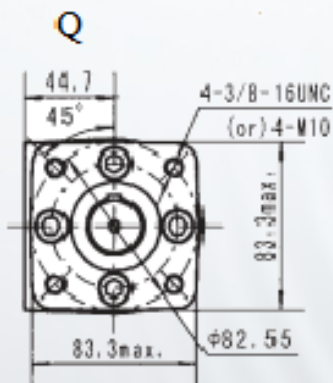
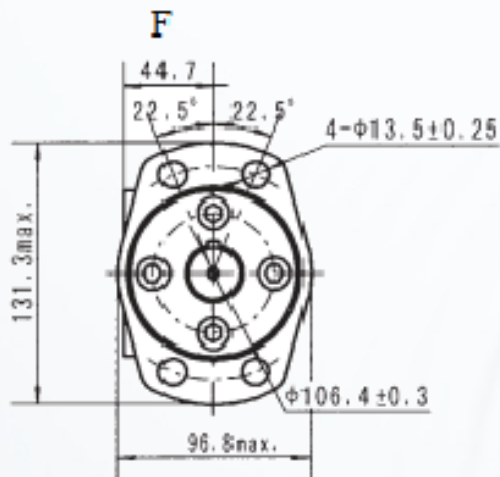
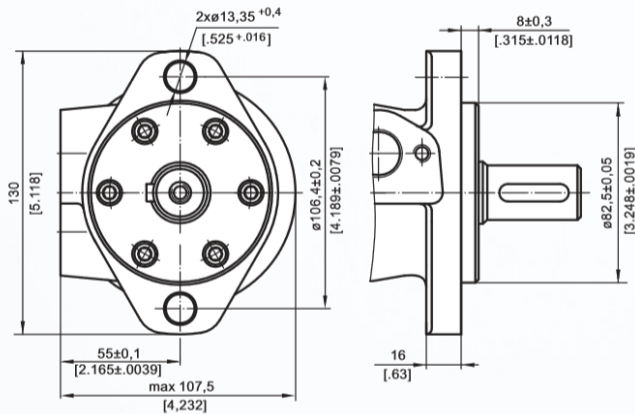
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Standard

Oval Mount (2 Holes)



MR Hydraulic orbit motor



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	
Max. cont.		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	
Max. int.	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	
	50	26	37	53	60	73	85	99	114	
		950	940	925	906	880	852	832	801	
	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	64	88	108	133				
		59	56	50	44	38				
	10	54	77	99	108	129	150	173		
		118	113	106	97	86	79	56		
	20	57	78.0	102	111	134	155	177	196	225
Max. cont.		238	234	227	216	203	190	178	154	135
	30	54	75	100	108	131	152	176	195	223
		360	352	340	332	316	302	290	274	250
	40	48	73	96	105	127	148	172	190	220
		480	470	458	445	430	418	403	388	359
Max. int.	50	42	70	93	102	124	147	170	188	218
		604	595	582	570	556	540	521	504	487
	60	37	66	89	98	121	144	166	184	213
		726	715	704	692	678	663	647	622	594
	70	32	60	83	95	116	140	160	177	208
		845	834	820	802	789	767	754	730	705
	75	21	50	78	90	111	135	154	171	200
		910	895	881	867	852	830	806	787	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
Max. cont.		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. int.	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

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
Max. cont.		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. int.	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
	75	32	79	126	148	180	208	234	262	300
		586	583	578	570	560	546	532	520	480

□ cont.
■ int.

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Performance Data

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

Torque (N·m) 481
Speed (rpm) 200

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Performance Data

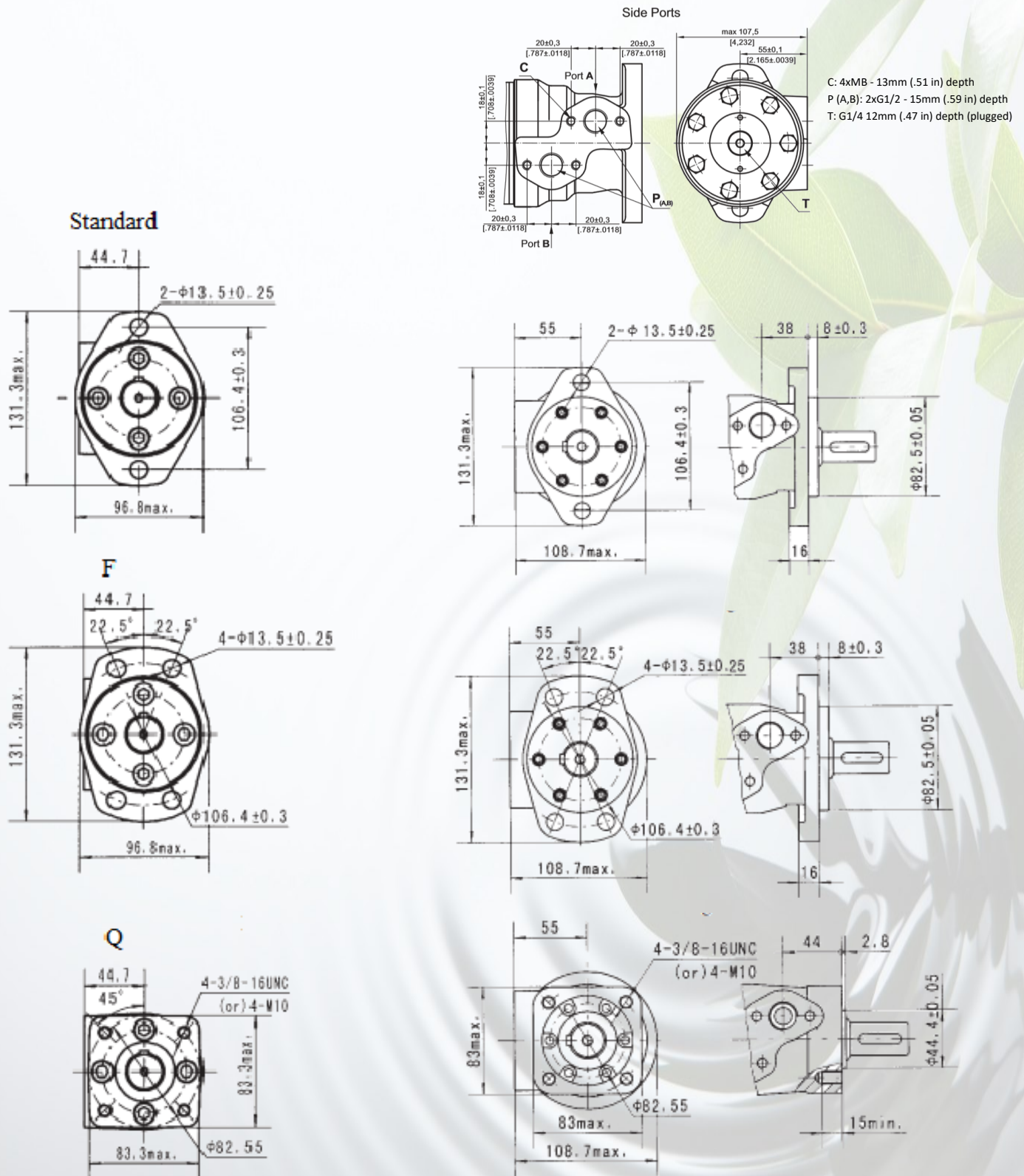
MR 400 [381.4cm³/rev.]

		Pressure (MPa)							
		3	4.5	5.5	6.5	8	10	12.5	14
Flow (L/min)	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
	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
	75	56 195	125 194	182 193	241 191	320 189	408 185	524 178	565 170

☐ cont.
☒ int.

MR Hydraulic orbit motor

MR Dimensions and Mounting data



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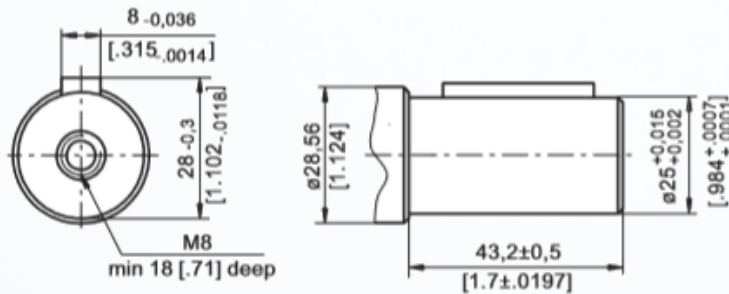
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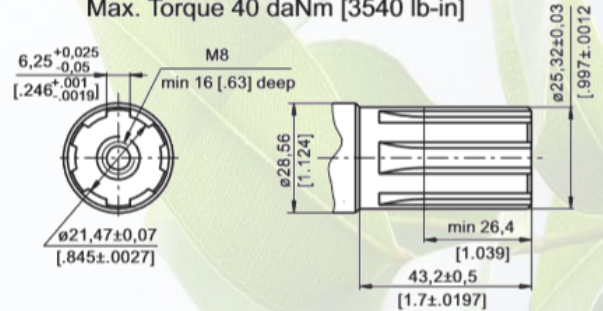


Shaft extensions

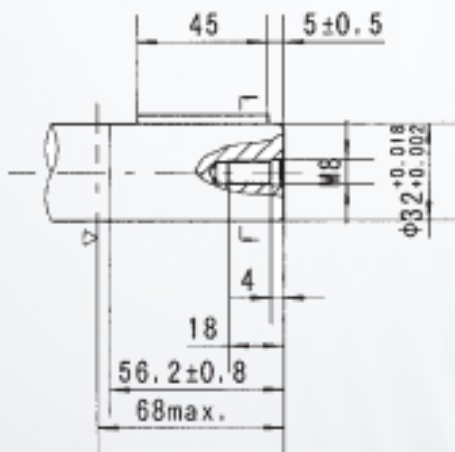
C - $\varnothing 25$ straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



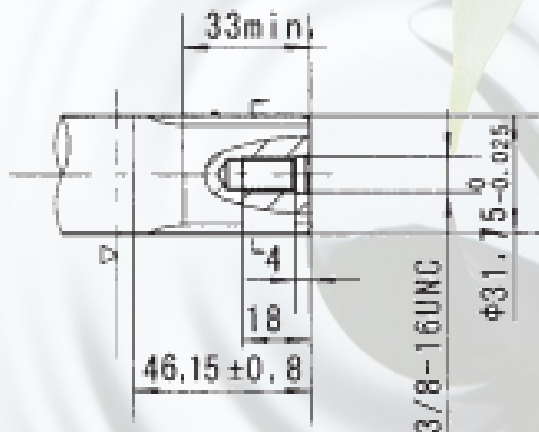
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



CB



HB



Shaft F: Splined
14-DP12/24

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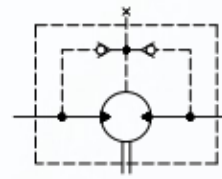
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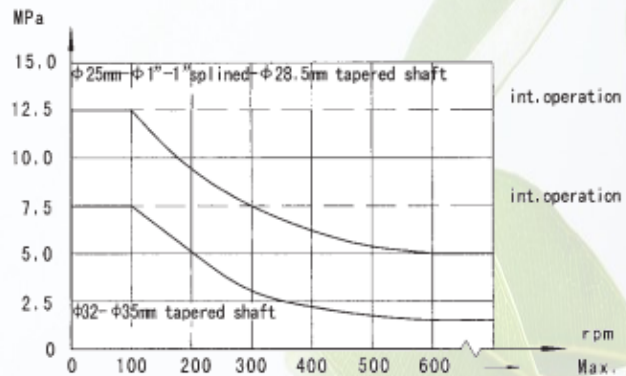
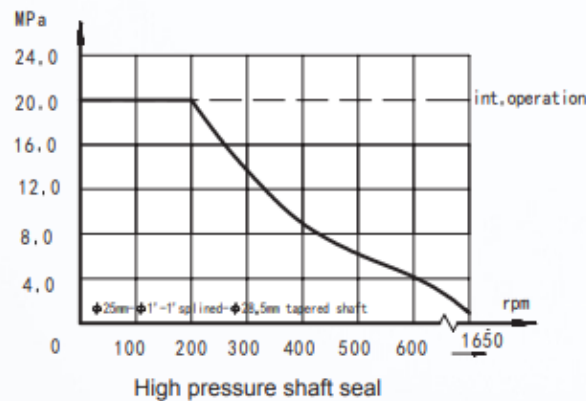
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MR, MRS Series Hydraulic Motor

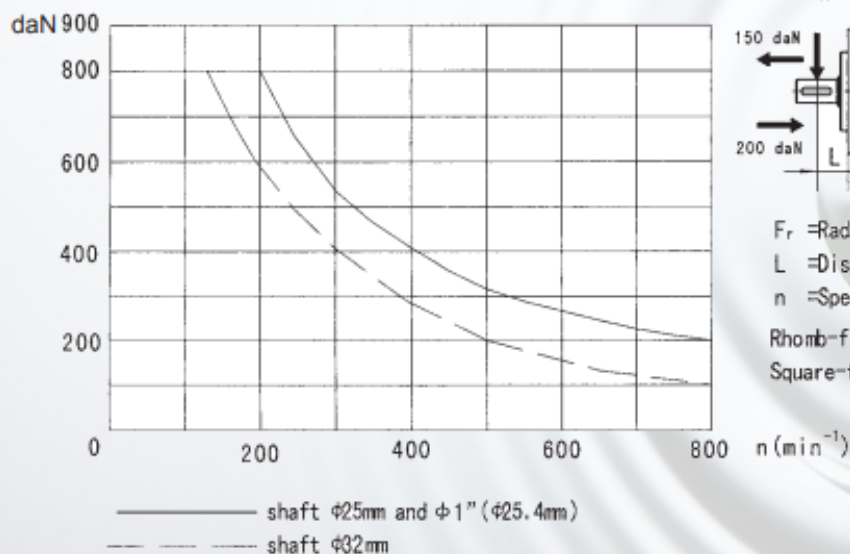


Permissible shaft seal pressure

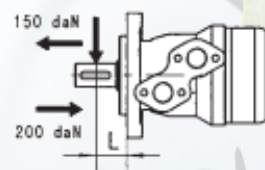


In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

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



$$F_r = \frac{800 \cdot 25000}{n \cdot 95 + L} \text{ daN}$$



F_r = Radial Force (daN)
 L = Distance (mm)
 n = Speed (rpm)
 Rhomb-flange $L=30\text{mm}$
 Square-flange $L=24\text{mm}$

Oil flow in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

Pressure drop (MPa)	Viscosity (mm ² /s)	Oil flow in the drain line (L/min.)
10	20	2.5
	35	1.8
14	20	3.5
	35	2.8

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