

## BMV SERIES HYDRAULIC MOTOR

BMV series motor adapt the advanced Geroler gear set designed with disc distribution flow and high pressure. The unit can be supplied the individual variant in operating multifunction in accordance with requirement of applications.

### Characteristic features:

- \* Advanced manufacturing devices for the Geroler gear set, which use low pressure of start-up, provide smooth and reliable operation and high efficiency.
- \* The output shaft adapts in tapered roller bearings that permit high axial and radial forces. The case can offer capacities of high pressure and high torque in the wide of applications.
- \* Advanced design in disc distribution flow, which can automatically compensate in operating with high volume efficiency and long life, provide smooth and reliable operation.

### Main Specification

Type		BMV 315	BMV 400	BMV 500	BMV 630	BMV 800	BMV 1000
Geometric displacement (cm <sup>3</sup> /rev.)		333	419	518	666	801	990
Max. speed (rpm)	cont.	510	500	400	320	250	200
	int.	630	600	480	380	300	240
Max. torque (N•m)	cont.	920	1180	1460	1660	1880	2015
	int.	1110	1410	1760	1940	2110	2280
	peak	1290	1640	2050	2210	2470	2400
Max. output (kW)	cont.	38.0	47.0	47.0	40.0	33.0	28.6
	int.	46.0	56.0	56.0	56.0	44.0	40.0
Max. pressure drop (MPa)	cont.	20	20	20	18	16	14
	int.	24	24	24	21	18	16
	peak	28	28	28	24	21	18
Max. flow (L/min)	cont.	160	200	200	200	200	200
	int.	200	240	240	240	240	240
Weight (kg)		31.8	32.6	33.5	34.9	36.5	38.6

\* 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.



### Performance Data

BMV 315 [333cm<sup>3</sup>/rev.]

Pressure (MPa)		Max.cont.		Max.int.		
3.5	7	10	14	18	20	24

Flow (L/min)	3.5		7		10		14		18		20		24	
	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.
10	140	26	294	24	440	23	610	22	742	20	845	17	1000	14
20	153	55	314	54	466	53	636	52	787	51	895	48	1070	44
50	149	145	312	144	465	142	654	140	815	137	935	133	1112	127
75	143	220	304	218	458	215	642	211	816	207	940	202	1119	195
100	136	294	297	292	452	290	636	287	810	283	936	278	1108	270
125	123	368	286	366	442	364	626	361	799	357	921	352	1093	345
150	114	445	275	443	435	441	615	437	788	430	906	422	1078	410
Max.cont. 160	107	475	268	473	430	470	608	466	780	460	895	452	1070	439
Max.int. 200	82	596	249	594	412	590	593	584	758	576	871	565	1047	544

BMV 400 [419cm<sup>3</sup>/rev.]

Pressure (MPa)		Max.cont.		Max.int.		
3.5	7	10	14	18	20	24

Flow (L/min)	3.5		7		10		14		18		20		24	
	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.
10	183	20	385	20	568	19	776	18	968	17	1101	16	1292	14
20	196	44	398	44	590	43	815	42	1010	40	1152	39	1346	37
50	200	114	402	113	603	113	842	112	1040	110	1186	108	1430	103
75	195	175	394	173	596	170	838	166	1043	163	1188	157	1432	152
100	172	236	385	235	593	233	827	231	1036	227	1184	223	1425	215
125	167	296	374	294	583	291	816	288	1021	282	1177	275	1413	268
150	158	355	361	354	559	352	801	349	1008	344	1165	335	1390	324
175	143	416	346	414	553	411	784	407	989	403	1145	396	1377	388
Max.cont. 200	118	475	331	473	536	469	770	463	969	455	1128	448	1356	439
Max.int. 240	82	571	301	569	506	565	740	548	943	539	1104	530	1332	520

BMV 500 [518cm<sup>3</sup>/rev.]

Pressure (MPa)		Max.cont.		Max.int.		
3.5	7	10	14	18	20	24

Flow (L/min)	3.5		7		10		14		18		20		24	
	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.
10	242	17	468	17	696	16	959	16	1190	15	1353	13	1607	11
20	245	36	501	35	738	35	1003	34	1232	33	1394	32	1658	29
50	240	93	500	92	758	91	1025	90	1270	88	1449	85	1743	80
75	233	140	498	139	752	137	1030	135	1288	132	1475	127	1766	120
100	228	189	491	187	748	185	1026	182	1289	178	1472	173	1760	166
125	220	237	483	236	742	234	1014	231	1280	227	1460	223	1745	216
150	201	287	465	286	723	284	1008	281	1250	276	1429	270	1736	260
175	182	335	446	334	711	332	997	329	1238	325	1406	320	1715	310
Max.cont. 200	161	384	423	383	676	381	974	378	1218	374	1385	366	1697	354
Max.int. 240	120	461	378	459	622	457	921	454	1172	450	1340	444	1650	432

BMV 630 [666cm<sup>3</sup>/rev.]

Pressure (MPa)		Max.cont.		Max.int.		
3.5	6	9	12	15	18	21

Flow (L/min)	3.5		6		9		12		15		18		21	
	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.	Max.cont.	Max.int.
10	280	14	522	13	812	13	1100	12	1268	12	1549	11	1784	10
20	288	28	552	28	839	27	1101	27	1315	26	1607	24	1864	22
50	289	72	555	72	868	71	1137	69	1364	68	1682	66	1956	62
75	270	109	548	108	863	106	1120	104	1352	102	1680	99	1964	94
100	264	146	538	145	856	143	1093	141	1350	138	1674	135	1965	130
125	251	184	516	183	837	181	1071	179	1336	177	1659	173	1950	168
150	240	221	495	220	817	219	1063	217	1330	215	1650	212	1928	205
175	210	259	485	258	796	257	1052	254	1300	250	1636	246	1908	241
Max.cont. 200	182	297	469	297	751	295	1018	293	1280	290	1611	284	1883	273
Max.int. 240	130	358	416	357	712	355	978	351	1237	346	1563	340	1835	332

Torque (N·m) 1340  
Speed (rpm) 444

□ cont.  
■ int.



## Performance Data

BMV 800 [801cm<sup>3</sup>/rev.]

Pressure (MPa) Max.cont. Max.int.

	2.5	5	8	10	13	16	18	
Flow (L/min)	10	278 <b>11</b>	565 <b>10</b>	830 <b>10</b>	1095 <b>9</b>	1405 <b>8</b>	1712 <b>8</b>	1915 <b>7</b>
	20	282 <b>23</b>	571 <b>22</b>	845 <b>22</b>	1150 <b>21</b>	1456 <b>20</b>	1783 <b>18</b>	1994 <b>16</b>
	50	288 <b>60</b>	582 <b>59</b>	856 <b>57</b>	1162 <b>56</b>	1463 <b>54</b>	1790 <b>52</b>	2001 <b>48</b>
	75	269 <b>91</b>	580 <b>90</b>	855 <b>89</b>	1165 <b>87</b>	1465 <b>84</b>	1786 <b>81</b>	1993 <b>77</b>
	100	251 <b>122</b>	566 <b>121</b>	840 <b>120</b>	1140 <b>118</b>	1448 <b>115</b>	1767 <b>111</b>	1985 <b>105</b>
	125	242 <b>153</b>	535 <b>152</b>	824 <b>150</b>	1118 <b>147</b>	1427 <b>143</b>	1739 <b>139</b>	1976 <b>133</b>
	150	236 <b>185</b>	526 <b>183</b>	808 <b>181</b>	1102 <b>178</b>	1401 <b>174</b>	1714 <b>169</b>	1959 <b>163</b>
	175	215 <b>216</b>	504 <b>214</b>	793 <b>212</b>	1079 <b>209</b>	1377 <b>206</b>	1698 <b>203</b>	1936 <b>196</b>
	Max.cont. 200	197 <b>247</b>	468 <b>245</b>	765 <b>243</b>	1063 <b>240</b>	1362 <b>237</b>	1681 <b>232</b>	1913 <b>225</b>
	Max.int. 240	118 <b>297</b>	388 <b>296</b>	713 <b>295</b>	1020 <b>293</b>	1318 <b>288</b>	1637 <b>283</b>	1838 <b>277</b>

BMV 1000 [990cm<sup>3</sup>/rev.]

Pressure (MPa) Max.cont. Max.int.

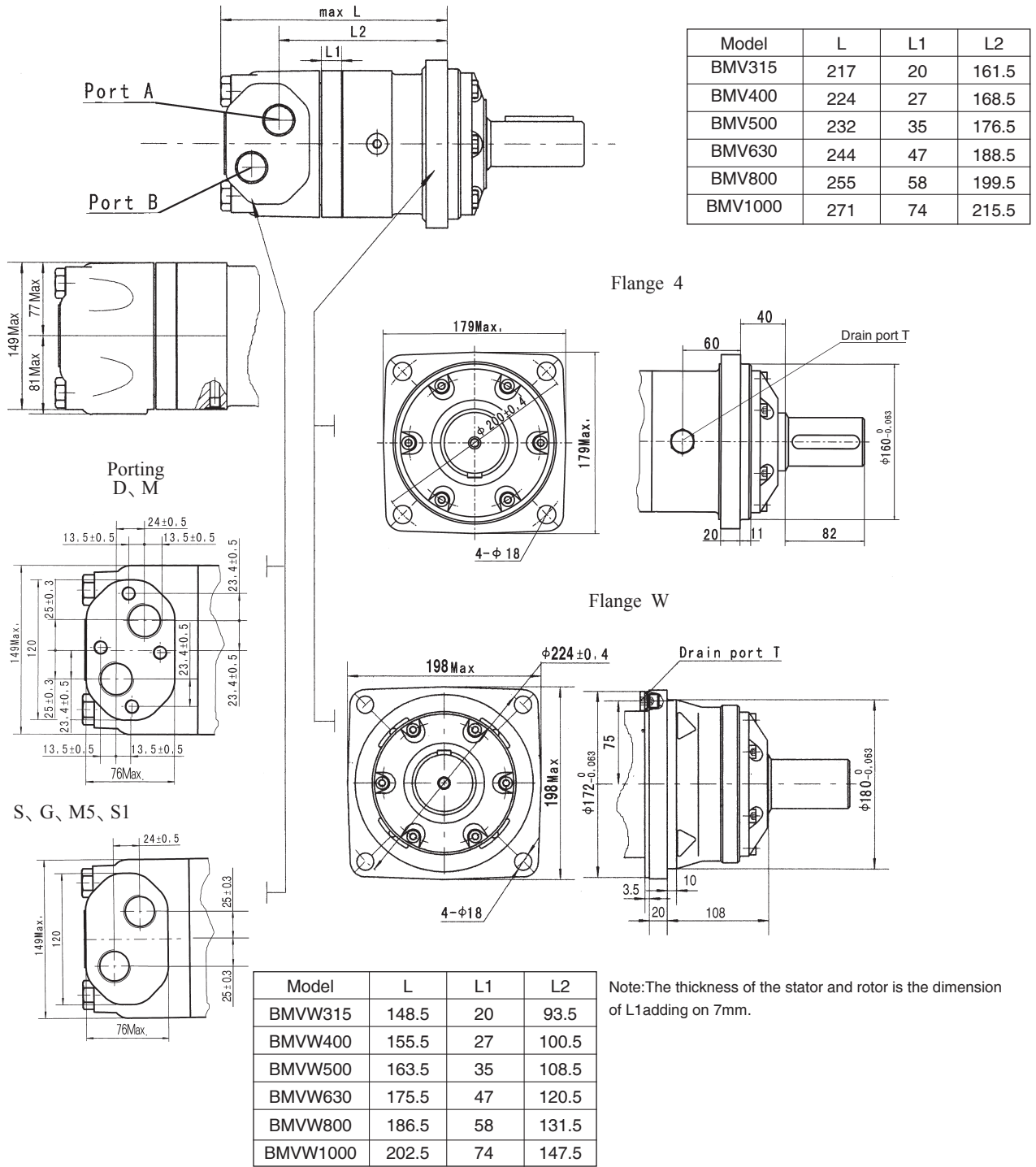
	2.5	5	7	10	14	16	
Flow (L/min)	10	312 <b>9</b>	640 <b>9</b>	971 <b>9</b>	1400 <b>8</b>	1978 <b>7</b>	2259 <b>6</b>
	20	320 <b>28</b>	648 <b>27</b>	978 <b>26</b>	1410 <b>25</b>	1980 <b>23</b>	2270 <b>21</b>
	50	326 <b>47</b>	655 <b>46</b>	992 <b>45</b>	1422 <b>43</b>	2015 <b>41</b>	2280 <b>38</b>
	75	318 <b>72</b>	642 <b>71</b>	987 <b>70</b>	1425 <b>68</b>	2003 <b>66</b>	2276 <b>63</b>
	100	309 <b>98</b>	634 <b>97</b>	983 <b>95</b>	1418 <b>93</b>	1994 <b>90</b>	2243 <b>86</b>
	125	303 <b>123</b>	624 <b>122</b>	975 <b>120</b>	1409 <b>117</b>	1988 <b>114</b>	2224 <b>110</b>
	150	278 <b>149</b>	602 <b>148</b>	961 <b>146</b>	1368 <b>144</b>	1963 <b>140</b>	2208 <b>133</b>
	175	264 <b>174</b>	580 <b>172</b>	946 <b>170</b>	1338 <b>166</b>	1925 <b>162</b>	2159 <b>155</b>
	Max.cont. 200	230 <b>199</b>	556 <b>196</b>	912 <b>193</b>	1300 <b>190</b>	1891 <b>185</b>	2105 <b>178</b>
	Max.int. 240	166 <b>240</b>	513 <b>237</b>	867 <b>233</b>	1267 <b>229</b>	1825 <b>225</b>	2034 <b>218</b>

□ cont.  
■ int.

Torque (N·m) 1825  
Speed (rpm) 225



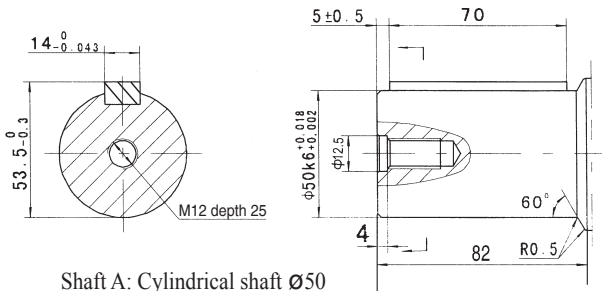
BMV DIMINSIONS AND MOUNTING DATA



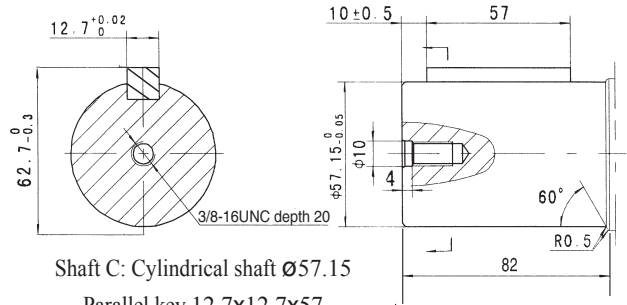
Content	Code					
	D (depth)	M (depth)	S (depth)	G (depth)	M5 (depth)	S1 (depth)
P(A,B)	G1 (18)	M33 x 2 (18)	1-5/16-12UN(18)	G1 (18)	M33 x 2 (18)	1-5/16-12UN(18)
T	G1/4 (12)	M14 x 1.5 (12)	9/16-18UNF(12)	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF(12)
C	4-M12 (10)	4-M12 (10)	--	--	--	--



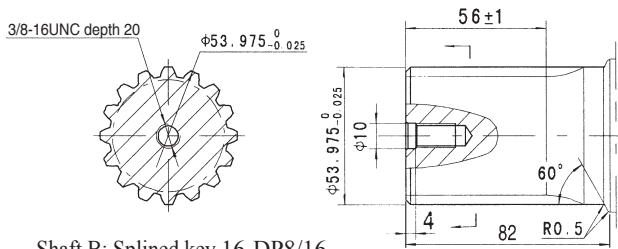
BMV SHAFT EXTENSIONS DIMENSIONS DATA



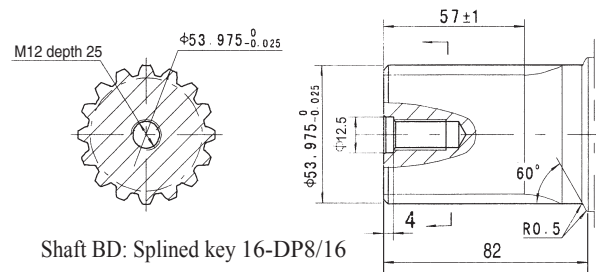
Shaft A: Cylindrical shaft Ø50  
Parallel key 14x9x70



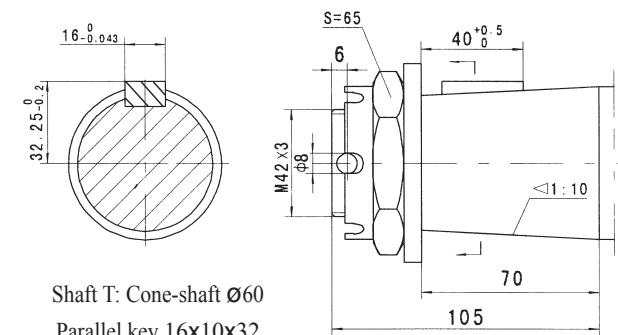
Shaft C: Cylindrical shaft Ø57.15  
Parallel key 12.7x12.7x57



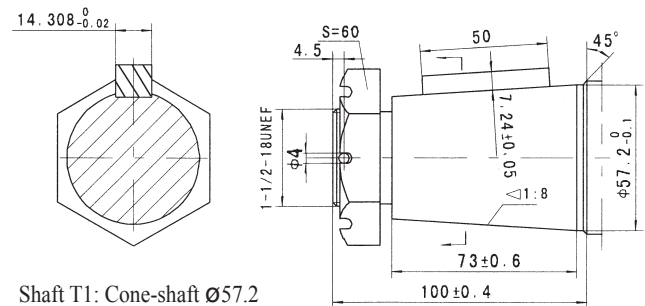
Shaft B: Splined key 16-DP8/16



Shaft BD: Splined key 16-DP8/16



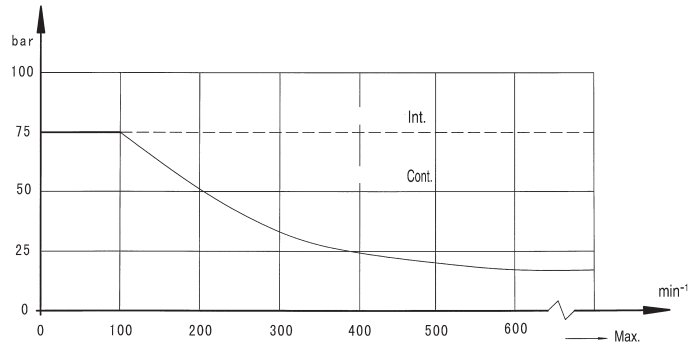
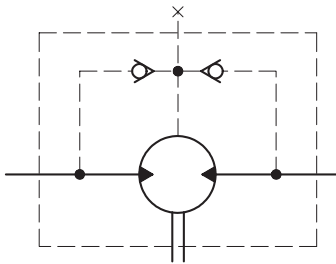
Shaft T: Cone-shaft Ø60  
Parallel key 16x10x32  
Tightening torque: 750±50Nm



Shaft T1: Cone-shaft Ø57.2  
Parallel key 14.308x14.308x50  
Tightening torque: 750±50Nm

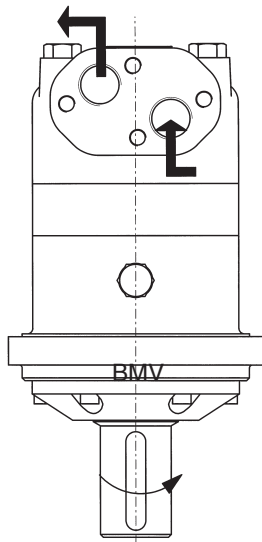


BMV Series Hydraulic Motor  
Permissible shaft seal pressure



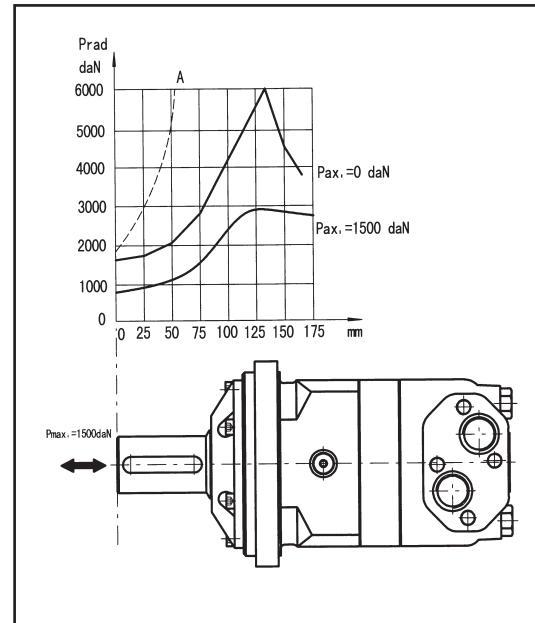
Standard direction of shaft rotation: Standard

When facing shaft end of motor, shaft to rotate:  
Clockwise when port "A" is pressurized.  
Counter-clockwise port "B" is pressurized.



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.

Axial and Radial forces



Oil flow in drain line

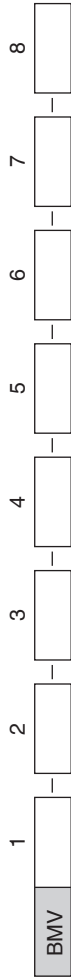
The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

Pressure drop (MPa)	Viscosity (mm <sup>2</sup> /s)	Oil flow in the drain line (L/min.)
14	20	3
	35	2
21	20	6
	35	4

The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.



### Order Information



Pos.1	2	3	4	5	6	7	8
Code	Displacement	Flange	Output shaft	Ports and drain port	Rotation direction	Paint	Unusually function
	315	4 4-Ø18 Square-flangeØ200, pilot Ø160x11	A Shaft Ø50 , parallel key 14x9x70	D G1 Manifold 4xM12, G1/4		00 No paint	
	400		BD Shaft Ø53.975, splined key 16-DP8/16				
Omit	500	W 4-Ø18 Wheel-flange Ø224, pilot Ø180x10	B Shaft Ø53.975, splined key 16-DP8/16	S 1-5/16-12UN, 9/16-18UNF	Omit Standard	Blue	Omit
	630		C Shaft Ø57.15, parallel key 12.7x12.7x57.15	G M33x2, M14x1.5			
	800		T Cone shaft Ø60, parallel key 16x10x32	M5 1-5/16-12UN		S Silver grey	Standard
	1000		T1 Cone shaft Ø57.2, parallel key 14.308x14.308x50.8	S1 7/16-20UNF			

Note: When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.