

## Additional Data/Spec Sheet

### BMS Series Geroler Gear Type – Hydraulic Orbital Motors – Distribution Motors

Flange E4 = Ø13.5 Rhomb-flange Ø106.4, pilot Ø82.5x6.3 – Shaft B = Ø32 Cylindrical Shaft, parallel key 10x8x45

### BMS SERIES HYDRAULIC MOTOR

BMS series motor adapt the advanced Geroler gear set design 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		BMS BMSE 80	BMS BMSE 100	BMS BMSE 125	BMS BMSE 160	BMS BMSE 200	BMS BMSE 250	BMS BMSE 315	BMS BMSE 375
Geometric displacement (cm <sup>3</sup> /rev.)		80.6	100.8	125	157.2	200	252	314.5	370
Max. speed (rpm)	cont.	800	748	600	470	375	300	240	200
	int.	988	900	720	560	450	360	280	240
Max. torque (N•m)	cont.	190	240	310	316	400	450	560	536
	int.	240	300	370	430	466	540	658	645
	peak	260	320	400	472	650	690	740	751
Max. output (kW)	cont.	15.9	18.8	19.5	15.6	15.7	14.1	14.1	11.8
	int.	20.1	23.5	23.2	21.2	18.3	17.0	18.9	17
Max. pressure drop (MPa)	cont.	17.5	17.5	17.5	15	14	12.5	12	10
	int.	21	21	21	21	16	16	14	12
	peak	22.5	22.5	22.5	22.5	22.5	20	18.5	14
Max. flow (L/min)	cont.	65	75	75	75	75	75	75	75
	int.	80	90	90	90	90	90	90	90
Max. inlet pressure (MPa)	cont.	25	25	25	25	25	25	25	25
	int.	30	30	30	30	30	30	30	30
Weight (kg)		9.8	10	10.3	10.7	11.1	11.6	12.3	12.6

- \* 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

BMS 80 [80.6cm<sup>3</sup>/rev.]

Pressure (MPa)

	3.5	7	10.5	14	17.5	21	22.5
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Flow (L/min)	Max.cont.							Max.int.						
	3.5	7	10.5	14	17.5	21	22.5	3.5	7	10.5	14	17.5	21	22.5
15	35	80	120	158	195	235	249	<b>180</b>	<b>174</b>	<b>168</b>	<b>164</b>	<b>158</b>	<b>151</b>	<b>143</b>
30	35	80	120	158	195	240	260	<b>362</b>	<b>352</b>	<b>346</b>	<b>338</b>	<b>330</b>	<b>322</b>	<b>310</b>
40	35	79	119	155	193	234	250	<b>482</b>	<b>473</b>	<b>464</b>	<b>453</b>	<b>444</b>	<b>434</b>	<b>415</b>
50	30	77	117	153	192	232	248	<b>602</b>	<b>594</b>	<b>587</b>	<b>569</b>	<b>560</b>	<b>551</b>	<b>522</b>
60	28	77	117	153	192	232	247	<b>724</b>	<b>713</b>	<b>707</b>	<b>683</b>	<b>673</b>	<b>664</b>	<b>629</b>
65	25	75	114	152	190	230	245	<b>790</b>	<b>785</b>	<b>770</b>	<b>760</b>	<b>742</b>	<b>720</b>	<b>704</b>
80	22	70	110	140	170	200	220	<b>980</b>	<b>965</b>	<b>950</b>	<b>920</b>	<b>891</b>	<b>860</b>	<b>830</b>

BMS 100 [100.8cm<sup>3</sup>/rev.]

Pressure (MPa)

	3.5	7	10.5	14	17.5	21	22.5
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Flow (L/min)	Max.cont.							Max.int.						
	3.5	7	10.5	14	17.5	21	22.5	3.5	7	10.5	14	17.5	21	22.5
15	48	95	150	200	250	289	310	<b>146</b>	<b>144</b>	<b>139</b>	<b>135</b>	<b>130</b>	<b>120</b>	<b>105</b>
30	45	94	146	198	250	295	317	<b>291</b>	<b>289</b>	<b>278</b>	<b>274</b>	<b>269</b>	<b>258</b>	<b>242</b>
40	43	89	142	196	248	293	316	<b>387</b>	<b>384</b>	<b>374</b>	<b>359</b>	<b>350</b>	<b>335</b>	<b>320</b>
50	40	88	135	194	247	292	315	<b>486</b>	<b>483</b>	<b>473</b>	<b>462</b>	<b>450</b>	<b>430</b>	<b>420</b>
60	37	88	132	185	244	289	312	<b>588</b>	<b>584</b>	<b>574</b>	<b>562</b>	<b>550</b>	<b>538</b>	<b>520</b>
75	35	80	130	180	240	286	310	<b>740</b>	<b>735</b>	<b>720</b>	<b>705</b>	<b>696</b>	<b>676</b>	<b>653</b>
90	30	75	124	170	236	277	303	<b>850</b>	<b>840</b>	<b>810</b>	<b>787</b>	<b>770</b>	<b>750</b>	<b>747</b>

BMS 125 [125cm<sup>3</sup>/rev.]

Pressure (MPa)

	3.5	7	10.5	14	17.5	21	22.5
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Flow (L/min)	Max.cont.							Max.int.						
	3.5	7	10.5	14	17.5	21	22.5	3.5	7	10.5	14	17.5	21	22.5
15	55	120	176	245	309	349	375	<b>112</b>	<b>110</b>	<b>103</b>	<b>96</b>	<b>93</b>	<b>90</b>	<b>84</b>
30	55	120	175	250	324	375	408	<b>222</b>	<b>220</b>	<b>217</b>	<b>208</b>	<b>200</b>	<b>199</b>	<b>190</b>
40	55	120	175	250	324	370	408	<b>302</b>	<b>298</b>	<b>292</b>	<b>284</b>	<b>276</b>	<b>268</b>	<b>260</b>
50	50	115	176	248	320	370	406	<b>379</b>	<b>373</b>	<b>368</b>	<b>363</b>	<b>350</b>	<b>339</b>	<b>328</b>
60	45	113	171	245	324	368	406	<b>456</b>	<b>448</b>	<b>443</b>	<b>439</b>	<b>425</b>	<b>406</b>	<b>393</b>
75	45	110	167	240	314	370	401	<b>570</b>	<b>563</b>	<b>555</b>	<b>546</b>	<b>533</b>	<b>515</b>	<b>503</b>
90	40	105	162	237	309	365	398	<b>685</b>	<b>676</b>	<b>670</b>	<b>659</b>	<b>644</b>	<b>625</b>	<b>610</b>

BMS 160 [157.2cm<sup>3</sup>/rev.]

Pressure (MPa)

	3.5	7	10.5	14	17.5	21	22.5
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Flow (L/min)	Max.cont.							Max.int.						
	3.5	7	10.5	14	17.5	21	22.5	3.5	7	10.5	14	17.5	21	22.5
15	70	140	205	305	371	430	473	<b>91</b>	<b>88</b>	<b>84</b>	<b>78</b>	<b>76</b>	<b>74</b>	<b>58</b>
30	75	150	214	321	380	427	490	<b>185</b>	<b>182</b>	<b>176</b>	<b>168</b>	<b>164</b>	<b>162</b>	<b>152</b>
40	70	150	215	320	378	425	488	<b>248</b>	<b>244</b>	<b>239</b>	<b>229</b>	<b>224</b>	<b>217</b>	<b>204</b>
50	65	145	215	316	378	425	482	<b>312</b>	<b>308</b>	<b>304</b>	<b>294</b>	<b>288</b>	<b>280</b>	<b>270</b>
60	65	145	214	315	375	424	482	<b>375</b>	<b>371</b>	<b>365</b>	<b>357</b>	<b>346</b>	<b>336</b>	<b>323</b>
75	60	138	208	311	375	420		<b>470</b>	<b>465</b>	<b>458</b>	<b>447</b>	<b>436</b>	<b>426</b>	
90	56	130	200	308	370	414		<b>564</b>	<b>559</b>	<b>551</b>	<b>541</b>	<b>526</b>	<b>517</b>	

cont.  
 int.

Torque (N·m) 309  
 Speed (rpm) 644

## Performance Data

BMS 200 [200cm<sup>3</sup>/rev.]

		Pressure (MPa)					
		Max.cont.			Max.int.		
		3.5	7	10.5	14	17.5	22.5
Flow (L/min)	15	89	190	295	400	484	608
	30	<b>73</b>	<b>71</b>	<b>68</b>	<b>64</b>	<b>60</b>	<b>52</b>
	40	<b>193</b>	<b>191</b>	<b>189</b>	<b>186</b>	<b>181</b>	<b>172</b>
	50	<b>247</b>	<b>245</b>	<b>243</b>	<b>240</b>	<b>235</b>	<b>226</b>
	60	<b>298</b>	<b>295</b>	<b>293</b>	<b>290</b>	<b>284</b>	<b>273</b>
Max.cont.	75	58	160	275	375	460	570
Max.int.	90	49	148	260	355	445	555
	90	<b>440</b>	<b>435</b>	<b>430</b>	<b>422</b>	<b>411</b>	<b>401</b>

BMS 250 [252cm<sup>3</sup>/rev.]

		Pressure (MPa)						
		Max.cont.			Max.int.			
		3.5	7	10.5	14	17.5	22.5	
Flow (L/min)	15	117	230	355	52	450	554	652
	30	<b>58</b>	<b>55</b>	350	<b>51</b>	<b>47</b>	<b>46</b>	
	40	<b>118</b>	<b>117</b>	348	<b>109</b>	<b>107</b>	<b>106</b>	
	50	<b>160</b>	<b>156</b>	345	<b>150</b>	<b>146</b>	<b>142</b>	
	60	<b>202</b>	<b>200</b>	340	<b>196</b>	<b>195</b>	<b>192</b>	
Max.cont.	75	105	220	<b>237</b>	435	542	642	
Max.int.	90	95	215	<b>293</b>	430	537	638	
	90	<b>300</b>	<b>296</b>	332	<b>286</b>	<b>282</b>	<b>278</b>	
	90	<b>360</b>	<b>354</b>		<b>340</b>	<b>332</b>	<b>326</b>	

BMS 315 [314.5cm<sup>3</sup>/rev.]

		Pressure (MPa)					
		Max.cont.			Max.int.		
		3.5	7	10.5	12	14	18.5
Flow (L/min)	15	160	320	465	555	650	748
	30	<b>48</b>	<b>47</b>	<b>45</b>	<b>43</b>	<b>40</b>	<b>38</b>
	40	<b>125</b>	<b>123</b>	<b>120</b>	<b>118</b>	<b>116</b>	<b>115</b>
	50	<b>158</b>	<b>156</b>	<b>153</b>	<b>150</b>	<b>147</b>	<b>145</b>
	60	<b>175</b>	<b>174</b>	<b>170</b>	<b>164</b>	<b>162</b>	<b>159</b>
Max.cont.	75	145	295	436	525	628	726
Max.int.	90	132	280	430	520	622	723
	90	<b>285</b>	<b>282</b>	<b>280</b>	<b>276</b>	<b>273</b>	<b>270</b>

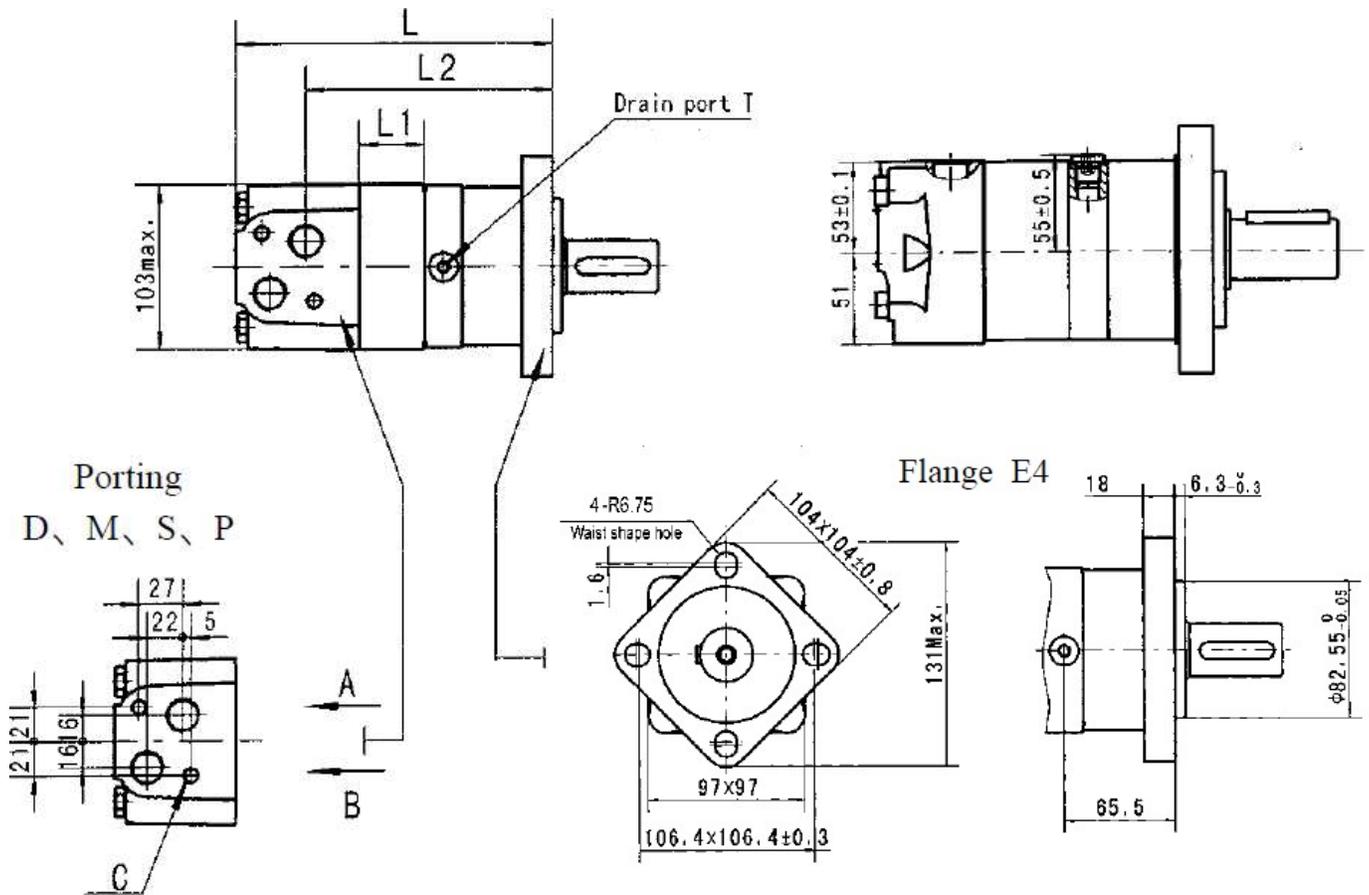
BMS 375 [370cm<sup>3</sup>/rev.]

		Pressure (MPa)					
		Max.cont.			Max.int.		
		3.5	7	9	10	12	14
Flow (L/min)	15	185	362	474	512	588	660
	30	<b>40</b>	<b>39</b>	<b>38</b>	<b>37</b>	<b>35</b>	<b>33</b>
	40	<b>80</b>	<b>78</b>	<b>77</b>	<b>76</b>	<b>74</b>	<b>72</b>
	50	<b>106</b>	<b>104</b>	<b>103</b>	<b>102</b>	<b>100</b>	<b>97</b>
	60	<b>133</b>	<b>131</b>	<b>130</b>	<b>129</b>	<b>128</b>	<b>125</b>
Max.cont.	75	150	359	471	510	585	657
Max.int.	90	130	353	465	504	584	651
	90	<b>200</b>	<b>198</b>	<b>196</b>	<b>195</b>	<b>194</b>	<b>193</b>
	90	<b>238</b>	<b>235</b>	<b>234</b>	<b>232</b>	<b>230</b>	<b>227</b>

Torque (N•m) 520  
Speed (rpm) 276

□ cont.  
■ int.

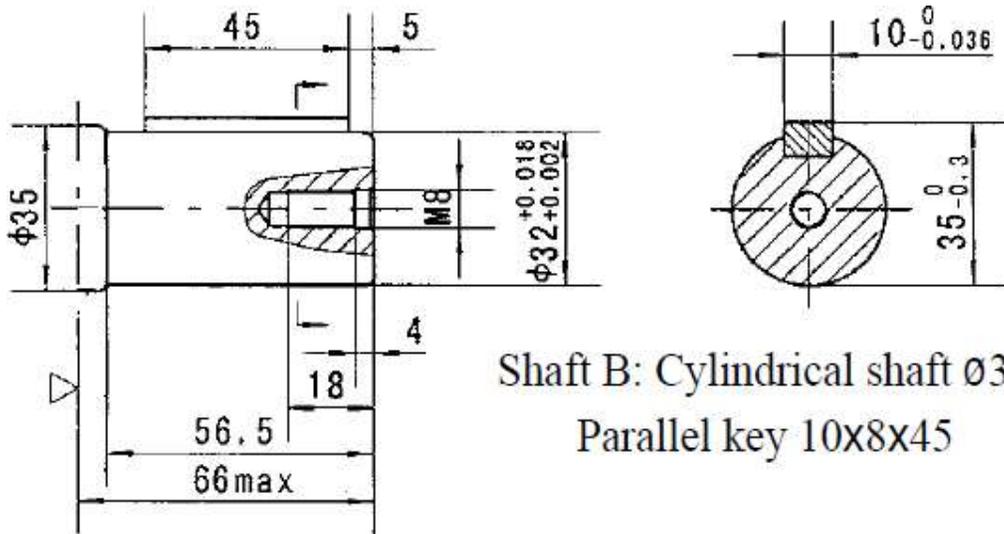
### BMS DIMENSIONS AND MOUNTING DATA



Model	L	L1	L2
BMS-80	167	13	123.2
BMS-100	171	17	127.2
BMS-125	176	22	132.2
BMS-160	181.5	27.5	137.7
BMS-200	189	35.1	145.2
BMS-250	201	47	157.2
BMS-315	213	59	169.2
BMS-375	225	71	181.2

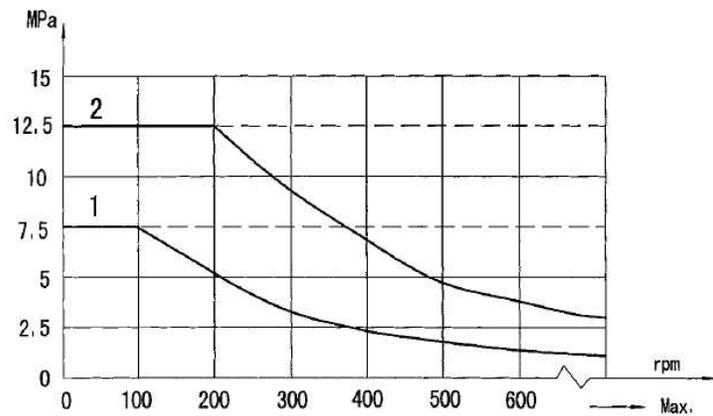
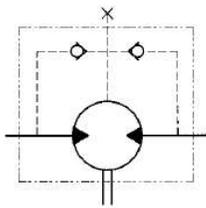
Code Mounting	D (depth)
P(A,B)	G1/2(18)
T	G1/4(12)
C	2-M10(13)

### BMS SHAFT EXTENSIONS DIMENSIONS DATA



Shaft B: Cylindrical shaft  $\phi 32$   
Parallel key 10X8X45

### Permissible shaft seal pressure

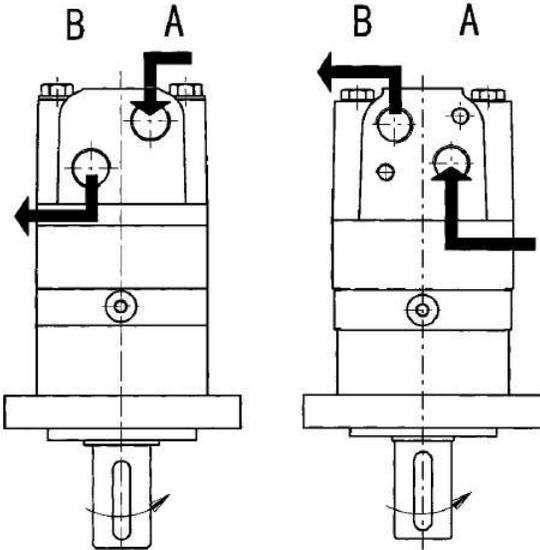


Note: 1. Chart for standard shaft seal;  
2. Chart for high pressure shaft seal.

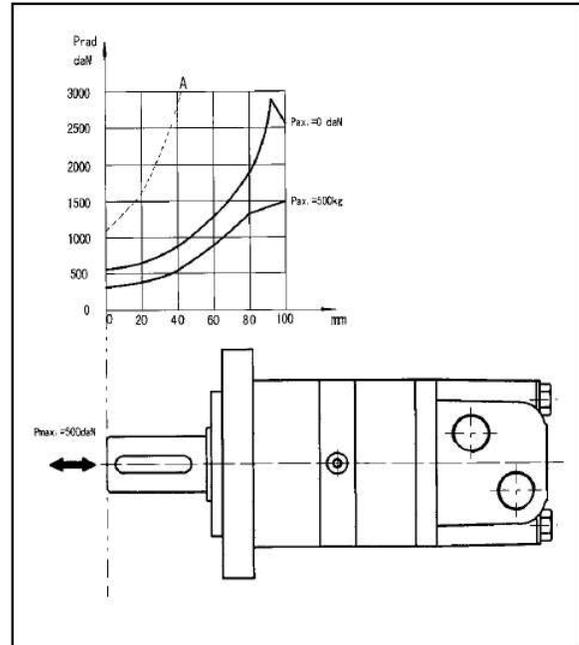
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

## Standard direction of shaft rotation: Standard

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



## Axial and Radial forces



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.