



### BMSY SERIES HYDRAULIC MOTOR

BMSY new 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 offers 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.
- \* The new series motor is suitable for vehicles with greater loads and pressure drop.

#### Main Specification

| Type   |       | BMSY<br>BMSYS<br>80 | BMSY<br>BMSYS<br>100 | BMSY<br>BMSYS<br>125 | BMSY<br>BMSYS<br>160 | BMSY<br>BMSYS<br>200 | BMSY<br>BMSYS<br>250 | BMSY<br>BMSYS<br>315 | BMSY<br>BMSYS<br>400 | BMSY<br>BMSYS<br>475 |
|--|-------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Geometric displacement (cm <sup>3</sup> /rev.) |       | 80.6                | 100.8                | 125                  | 154                  | 194                  | 243                  | 311                  | 394                  | 475                  |
| Max. speed (rpm)                               | cont. | 800                 | 748                  | 600                  | 470                  | 375                  | 300                  | 240                  | 185                  | 155                  |
|  | int.  | 988                 | 900                  | 720                  | 560                  | 450                  | 360                  | 280                  | 225                  | 185                  |
| Max. torque (N•m)                              | cont. | 225                 | 290                  | 365                  | 485                  | 586                  | 708                  | 880                  | 880                  | 910                  |
|  | int.  | 305                 | 390                  | 480                  | 590                  | 705                  | 860                  | 1000                 | 980                  | 990                  |
| Max. output (kW)                               | cont. | 16                  | 18                   | 18                   | 18.1                 | 18.1                 | 18                   | 17                   | 11                   | 9                    |
|  | int.  | 20                  | 22                   | 23                   | 25                   | 24                   | 23.8                 | 20.2                 | 12                   | 11                   |
| Max. pressure drop (MPa)                       | cont. | 20.5                | 20.5                 | 20.5                 | 21                   | 21                   | 20                   | 20                   | 16                   | 14                   |
|  | int.  | 27.5                | 27.5                 | 27.5                 | 26                   | 25                   | 25                   | 24                   | 19                   | 15                   |
|  | peak  | 29.5                | 29.5                 | 29.5                 | 28                   | 27                   | 27                   | 26                   | 21                   | 17.5                 |
| Max. flow (L/min)                              | cont. | 65                  | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   | 75                   |
|  | int.  | 80                  | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   | 90                   |
| Max. inlet pressure (MPa)                      | cont. | 25                  | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   | 25                   |
|  | int.  | 30                  | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   | 30                   |
| Weight (kg)                                    |       | 9.8                 | 10                   | 10.3                 | 10.7                 | 11.1                 | 11.6                 | 12.3                 | 13.2                 | 14.3                 |

\* 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

BMSY80 [80.6cm<sup>3</sup>/rev.]

Pressure (MPa)

|  | 3.5 | 7 | 10.5 | 14 | 17.5 | 20.5 | 22.5 |
|--|-----|---|------|----|------|------|------|
|--|-----|---|------|----|------|------|------|

| Flow (L/min) | Max.cont. |    |      |     |      |      |      | Max.int.   |            |            |            |            |            |            |
|--------------|-----------|----|------|-----|------|------|------|------------|------------|------------|------------|------------|------------|------------|
|              | 3.5       | 7  | 10.5 | 14  | 17.5 | 20.5 | 22.5 |            |            |            |            |            |            |            |
| 15           | 35        | 80 | 120  | 158 | 195  | 228  | 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  | 232  | 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  | 227  | 250  | <b>487</b> | <b>480</b> | <b>468</b> | <b>457</b> | <b>446</b> | <b>438</b> | <b>425</b> |
| 50           | 30        | 77 | 117  | 153 | 192  | 224  | 248  | <b>612</b> | <b>603</b> | <b>592</b> | <b>581</b> | <b>572</b> | <b>558</b> | <b>542</b> |
| 60           | 28        | 77 | 117  | 153 | 192  | 224  | 243  | <b>735</b> | <b>726</b> | <b>718</b> | <b>703</b> | <b>687</b> | <b>673</b> | <b>646</b> |
| Max.cont.    | 26        | 75 | 116  | 151 | 188  | 217  | 236  | <b>794</b> | <b>786</b> | <b>773</b> | <b>760</b> | <b>744</b> | <b>722</b> | <b>706</b> |
| Max.int.     | 24        | 72 | 109  | 142 | 176  | 206  | 227  | <b>981</b> | <b>968</b> | <b>955</b> | <b>925</b> | <b>893</b> | <b>870</b> | <b>832</b> |

BMSY100 [100.8cm<sup>3</sup>/rev.]

Pressure (MPa)

|  | 3.5 | 7 | 10.5 | 14 | 17.5 | 20.5 | 22.5 |
|--|-----|---|------|----|------|------|------|
|--|-----|---|------|----|------|------|------|

| Flow (L/min) | Max.cont. |    |      |     |      |      |      | Max.int.   |            |            |            |            |            |            |
|--------------|-----------|----|------|-----|------|------|------|------------|------------|------------|------------|------------|------------|------------|
|              | 3.5       | 7  | 10.5 | 14  | 17.5 | 20.5 | 22.5 |            |            |            |            |            |            |            |
| 15           | 48        | 95 | 150  | 200 | 250  | 282  | 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  | 290  | 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  | 288  | 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  | 286  | 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  | 283  | 312  | <b>588</b> | <b>584</b> | <b>574</b> | <b>562</b> | <b>550</b> | <b>538</b> | <b>520</b> |
| Max.cont.    | 35        | 80 | 130  | 180 | 240  | 279  | 310  | <b>740</b> | <b>735</b> | <b>720</b> | <b>705</b> | <b>696</b> | <b>676</b> | <b>653</b> |
| Max.int.     | 30        | 75 | 124  | 170 | 236  | 271  | 303  | <b>850</b> | <b>840</b> | <b>810</b> | <b>787</b> | <b>770</b> | <b>750</b> | <b>747</b> |

BMSY125 [125cm<sup>3</sup>/rev.]

Pressure (MPa)

|  | 3.5 | 7 | 10.5 | 14 | 17.5 | 20.5 | 22.5 |
|--|-----|---|------|----|------|------|------|
|--|-----|---|------|----|------|------|------|

| Flow (L/min) | Max.cont. |     |      |     |      |      |      | Max.int.   |            |            |            |            |            |            |
|--------------|-----------|-----|------|-----|------|------|------|------------|------------|------------|------------|------------|------------|------------|
|              | 3.5       | 7   | 10.5 | 14  | 17.5 | 20.5 | 22.5 |            |            |            |            |            |            |            |
| 15           | 55        | 120 | 176  | 245 | 309  | 345  | 375  | <b>115</b> | <b>113</b> | <b>110</b> | <b>104</b> | <b>98</b>  | <b>90</b>  | <b>84</b>  |
| 30           | 55        | 120 | 175  | 250 | 315  | 364  | 404  | <b>231</b> | <b>228</b> | <b>223</b> | <b>214</b> | <b>202</b> | <b>188</b> | <b>172</b> |
| 40           | 53        | 118 | 178  | 250 | 315  | 364  | 403  | <b>312</b> | <b>309</b> | <b>290</b> | <b>289</b> | <b>278</b> | <b>262</b> | <b>235</b> |
| 50           | 50        | 115 | 176  | 248 | 315  | 362  | 397  | <b>391</b> | <b>386</b> | <b>378</b> | <b>365</b> | <b>352</b> | <b>339</b> | <b>308</b> |
| 60           | 45        | 113 | 171  | 241 | 308  | 358  | 397  | <b>469</b> | <b>461</b> | <b>450</b> | <b>437</b> | <b>425</b> | <b>400</b> | <b>372</b> |
| Max.cont.    | 45        | 110 | 167  | 240 | 306  | 352  | 389  | <b>588</b> | <b>574</b> | <b>560</b> | <b>544</b> | <b>526</b> | <b>505</b> | <b>481</b> |
| Max.int.     | 40        | 105 | 162  | 237 | 301  | 343  | 378  | <b>710</b> | <b>696</b> | <b>680</b> | <b>661</b> | <b>646</b> | <b>628</b> | <b>610</b> |

BMSY160 [154cm<sup>3</sup>/rev.]

Pressure (MPa)

|  | 3.5 | 7 | 10.5 | 14 | 17.5 | 21 | 22.5 |
|--|-----|---|------|----|------|----|------|
|--|-----|---|------|----|------|----|------|

| Flow (L/min) | Max.cont. |     |      |     |      |     |      | Max.int.   |            |            |            |            |            |            |
|--------------|-----------|-----|------|-----|------|-----|------|------------|------------|------------|------------|------------|------------|------------|
|              | 3.5       | 7   | 10.5 | 14  | 17.5 | 21  | 22.5 |            |            |            |            |            |            |            |
| 15           | 70        | 142 | 215  | 298 | 372  | 435 | 476  | <b>93</b>  | <b>91</b>  | <b>89</b>  | <b>85</b>  | <b>80</b>  | <b>76</b>  | <b>58</b>  |
| 30           | 73        | 151 | 225  | 312 | 382  | 456 | 492  | <b>189</b> | <b>187</b> | <b>181</b> | <b>176</b> | <b>170</b> | <b>162</b> | <b>153</b> |
| 40           | 75        | 152 | 228  | 314 | 383  | 454 | 488  | <b>252</b> | <b>250</b> | <b>246</b> | <b>239</b> | <b>234</b> | <b>228</b> | <b>212</b> |
| 50           | 70        | 148 | 225  | 305 | 372  | 445 | 480  | <b>313</b> | <b>310</b> | <b>306</b> | <b>298</b> | <b>293</b> | <b>285</b> | <b>272</b> |
| 60           | 68        | 143 | 218  | 296 | 370  | 442 | 480  | <b>378</b> | <b>376</b> | <b>370</b> | <b>362</b> | <b>353</b> | <b>346</b> | <b>332</b> |
| Max.cont.    | 62        | 140 | 211  | 291 | 365  | 439 | 475  | <b>475</b> | <b>469</b> | <b>461</b> | <b>450</b> | <b>441</b> | <b>432</b> | <b>414</b> |
| Max.int.     | 59        | 131 | 202  | 286 | 357  | 425 | 460  | <b>567</b> | <b>561</b> | <b>554</b> | <b>543</b> | <b>532</b> | <b>520</b> | <b>509</b> |

TORQUE(N•m) 301  
SPEED (r/min) 646

□ cont.  
■ int.



## Performance Data

BMSY200 [194cm³/rev.]

|              |           | Pressure (MPa)   |                   |                   |                   |                   |                   |                   |
|--------------|-----------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              |           | 3.5              | 7                 | 10.5              | 14                | 17.5              | 21                | 22.5              |
| Flow (L/min) | 15        | 87<br><b>74</b>  | 179<br><b>73</b>  | 273<br><b>71</b>  | 371<br><b>68</b>  | 471<br><b>64</b>  | 562<br><b>60</b>  | 610<br><b>48</b>  |
|              | 30        | 91<br><b>150</b> | 190<br><b>148</b> | 288<br><b>143</b> | 386<br><b>140</b> | 489<br><b>134</b> | 572<br><b>128</b> | 618<br><b>119</b> |
|              | 40        | 94<br><b>198</b> | 193<br><b>195</b> | 296<br><b>192</b> | 394<br><b>188</b> | 498<br><b>183</b> | 584<br><b>178</b> | 645<br><b>167</b> |
|              | 50        | 90<br><b>248</b> | 191<br><b>246</b> | 292<br><b>241</b> | 389<br><b>236</b> | 493<br><b>230</b> | 580<br><b>223</b> | 634<br><b>212</b> |
|              | 60        | 85<br><b>300</b> | 185<br><b>295</b> | 279<br><b>288</b> | 382<br><b>281</b> | 483<br><b>273</b> | 575<br><b>263</b> | 622<br><b>251</b> |
|              | Max.cont. | 75               | 78<br><b>374</b>  | 176<br><b>370</b> | 271<br><b>364</b> | 370<br><b>360</b> | 472<br><b>352</b> | 561<br><b>340</b> |
| Max.int.     | 90        | 68<br><b>443</b> | 163<br><b>440</b> | 265<br><b>435</b> | 361<br><b>428</b> | 456<br><b>424</b> | 545<br><b>413</b> | 599<br><b>400</b> |

BMSY250 [243cm³/rev.]

|              |           | Pressure (MPa)    |                   |                   |                   |                   |                   |                   |
|--------------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              |           | 3.5               | 7                 | 10.5              | 14                | 17.5              | 20                | 22.5              |
| Flow (L/min) | 15        | 110<br><b>59</b>  | 231<br><b>58</b>  | 351<br><b>56</b>  | 462<br><b>53</b>  | 585<br><b>50</b>  | 681<br><b>46</b>  | 778<br><b>35</b>  |
|              | 30        | 116<br><b>119</b> | 236<br><b>117</b> | 359<br><b>114</b> | 475<br><b>108</b> | 597<br><b>102</b> | 700<br><b>92</b>  | 790<br><b>80</b>  |
|              | 40        | 118<br><b>162</b> | 241<br><b>159</b> | 363<br><b>156</b> | 480<br><b>150</b> | 599<br><b>143</b> | 706<br><b>134</b> | 796<br><b>121</b> |
|              | 50        | 111<br><b>203</b> | 234<br><b>201</b> | 352<br><b>197</b> | 472<br><b>191</b> | 591<br><b>182</b> | 693<br><b>173</b> | 788<br><b>158</b> |
|              | 60        | 106<br><b>244</b> | 224<br><b>242</b> | 345<br><b>237</b> | 462<br><b>230</b> | 582<br><b>220</b> | 685<br><b>208</b> | 772<br><b>194</b> |
|              | Max.cont. | 75                | 101<br><b>303</b> | 214<br><b>299</b> | 340<br><b>294</b> | 454<br><b>285</b> | 570<br><b>272</b> | 670<br><b>260</b> |
| Max.int.     | 90        | 93<br><b>363</b>  | 209<br><b>359</b> | 335<br><b>354</b> | 447<br><b>348</b> | 559<br><b>340</b> | 657<br><b>328</b> | 749<br><b>303</b> |

BMSY315 [311cm³/rev.]

|              |           | Pressure (MPa)    |                   |                   |                   |                   |                   |                   |
|--------------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              |           | 3.5               | 7                 | 10.5              | 14                | 17.5              | 20                | 22.5              |
| Flow (L/min) | 15        | 148<br><b>48</b>  | 304<br><b>47</b>  | 456<br><b>45</b>  | 613<br><b>43</b>  | 762<br><b>41</b>  | 879<br><b>39</b>  | 978<br><b>27</b>  |
|              | 30        | 155<br><b>95</b>  | 314<br><b>93</b>  | 465<br><b>91</b>  | 635<br><b>89</b>  | 778<br><b>86</b>  | 884<br><b>82</b>  | 988<br><b>67</b>  |
|              | 40        | 160<br><b>127</b> | 321<br><b>125</b> | 479<br><b>121</b> | 650<br><b>117</b> | 796<br><b>115</b> | 906<br><b>109</b> | 997<br><b>91</b>  |
|              | 50        | 155<br><b>159</b> | 314<br><b>157</b> | 465<br><b>153</b> | 638<br><b>149</b> | 780<br><b>145</b> | 886<br><b>142</b> | 988<br><b>128</b> |
|              | 60        | 151<br><b>187</b> | 306<br><b>185</b> | 453<br><b>181</b> | 620<br><b>176</b> | 765<br><b>169</b> | 886<br><b>157</b> | 976<br><b>143</b> |
|              | Max.cont. | 75                | 146<br><b>238</b> | 300<br><b>236</b> | 445<br><b>232</b> | 613<br><b>227</b> | 755<br><b>224</b> | 875<br><b>220</b> |
| Max.int.     | 90        | 135<br><b>286</b> | 284<br><b>283</b> | 436<br><b>278</b> | 601<br><b>272</b> | 740<br><b>265</b> | 863<br><b>257</b> | 952<br><b>232</b> |

BMSY400 [394cm³/rev.]

|              |           | Pressure (MPa)    |                   |                   |                   |                   |                   |
|--------------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              |           | 3.5               | 7                 | 10.5              | 14                | 16                | 17.5              |
| Flow (L/min) | 15        | 186<br><b>37</b>  | 379<br><b>36</b>  | 578<br><b>35</b>  | 779<br><b>33</b>  | 896<br><b>31</b>  | 986<br><b>29</b>  |
|              | 30        | 190<br><b>75</b>  | 388<br><b>73</b>  | 590<br><b>71</b>  | 791<br><b>68</b>  | 905<br><b>65</b>  | 991<br><b>61</b>  |
|              | 40        | 195<br><b>99</b>  | 394<br><b>97</b>  | 596<br><b>95</b>  | 797<br><b>93</b>  | 912<br><b>90</b>  | 998<br><b>85</b>  |
|              | 50        | 191<br><b>125</b> | 388<br><b>123</b> | 587<br><b>118</b> | 785<br><b>114</b> | 904<br><b>109</b> | 983<br><b>102</b> |
|              | 60        | 186<br><b>149</b> | 388<br><b>146</b> | 587<br><b>142</b> | 785<br><b>137</b> | 904<br><b>131</b> | 983<br><b>122</b> |
|              | Max.cont. | 75                | 181<br><b>187</b> | 372<br><b>183</b> | 576<br><b>177</b> | 770<br><b>171</b> | 891<br><b>164</b> |
| Max.int.     | 90        | 176<br><b>226</b> | 367<br><b>221</b> | 571<br><b>214</b> | 766<br><b>208</b> | 883<br><b>199</b> | 965<br><b>183</b> |

BMSY475 [475cm³/rev.]

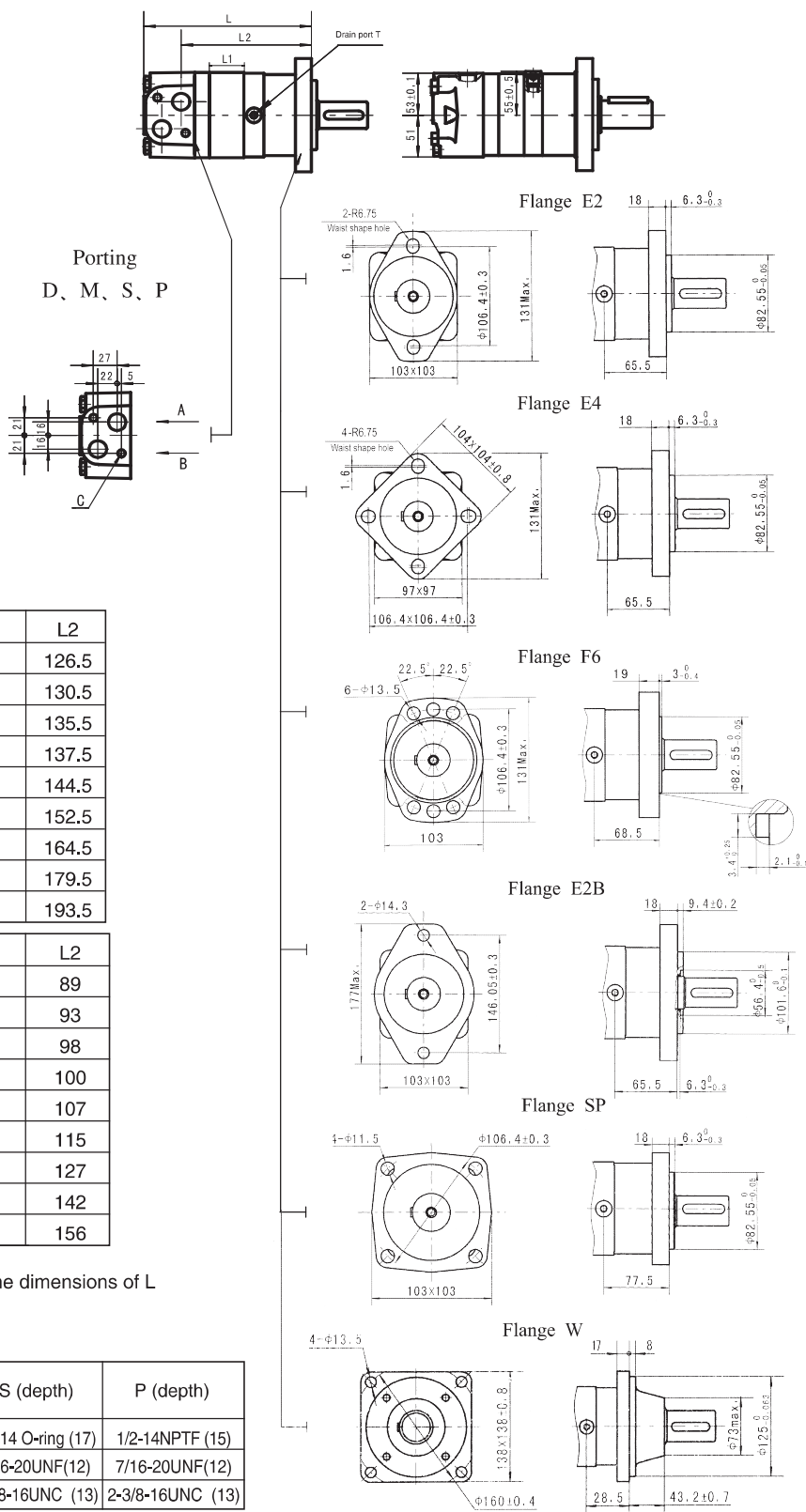
|              |           | Pressure (MPa)    |                   |                   |                   |                   |
|--------------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|
|              |           | 3.5               | 7                 | 10.5              | 14                | 15                |
| Flow (L/min) | 15        | 218<br><b>30</b>  | 439<br><b>29</b>  | 661<br><b>28</b>  | 892<br><b>27</b>  | 995<br><b>25</b>  |
|              | 30        | 223<br><b>61</b>  | 450<br><b>60</b>  | 676<br><b>58</b>  | 910<br><b>56</b>  | 1002<br><b>53</b> |
|              | 40        | 228<br><b>82</b>  | 461<br><b>80</b>  | 689<br><b>77</b>  | 927<br><b>74</b>  | 1017<br><b>68</b> |
|              | 50        | 224<br><b>103</b> | 456<br><b>101</b> | 682<br><b>97</b>  | 920<br><b>92</b>  | 1008<br><b>86</b> |
|              | 60        | 220<br><b>123</b> | 451<br><b>121</b> | 677<br><b>118</b> | 913<br><b>112</b> | 998<br><b>105</b> |
|              | Max.cont. | 75                | 212<br><b>155</b> | 443<br><b>153</b> | 664<br><b>147</b> | 901<br><b>140</b> |
| Max.int.     | 90        | 196<br><b>186</b> | 421<br><b>184</b> | 643<br><b>178</b> | 877<br><b>170</b> | 959<br><b>157</b> |

TORQUE (N\*m) 766  
SPEED (rpm) 208

□ cont.  
■ int.



## BMSY DIMENSIONS AND MOUNTING DATA



| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| BMSY-80  | 170 | 16 | 126.5 |
| BMSY-100 | 174 | 20 | 130.5 |
| BMSY-125 | 179 | 25 | 135.5 |
| BMSY-160 | 181 | 27 | 137.5 |
| BMSY-200 | 188 | 34 | 144.5 |
| BMSY-250 | 196 | 42 | 152.5 |
| BMSY-315 | 208 | 54 | 164.5 |
| BMSY-400 | 223 | 69 | 179.5 |
| BMSY-475 | 237 | 83 | 193.5 |

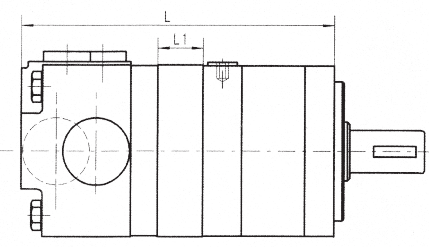
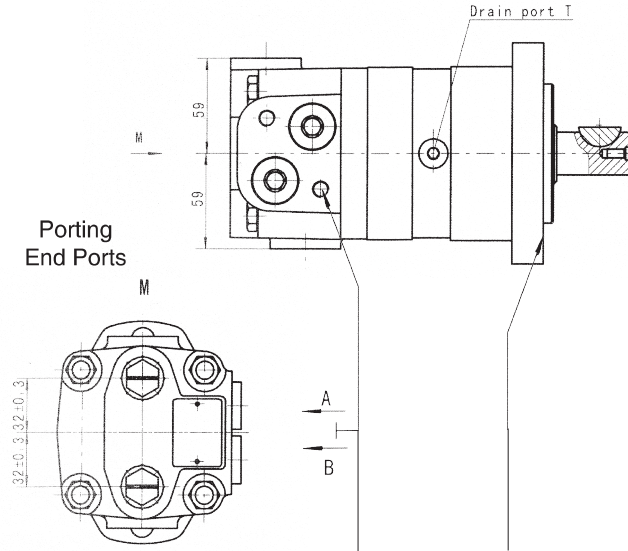
| Model      | L     | L1 | L2  |
|------------|-------|----|-----|
| BMSY-80-W  | 132.5 | 16 | 89  |
| BMSY-100-W | 136.5 | 20 | 93  |
| BMSY-125-W | 141.5 | 25 | 98  |
| BMSY-160-W | 143.5 | 27 | 100 |
| BMSY-200-W | 150.5 | 34 | 107 |
| BMSY-250-W | 158.5 | 42 | 115 |
| BMSY-315-W | 170.5 | 54 | 127 |
| BMSY-400-W | 185.5 | 69 | 142 |
| BMSY-475-W | 199.5 | 83 | 156 |

Note: If the mounting SP is used, the dimensions of L and L2 should plus 12mm.

| Code<br>Mounting | D (depth) | M (depth)   | S (depth)          | P (depth)        |
|------------------|-----------|-------------|--------------------|------------------|
| P(A,B)           | G1/2(15)  | M22x1.5(15) | 7/8-14 O-ring (17) | 1/2-14NPTF (15)  |
| T                | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)     | 7/16-20UNF(12)   |
| C                | 2-M10(13) | 2-M10 (13)  | 2-3/8-16UNC (13)   | 2-3/8-16UNC (13) |



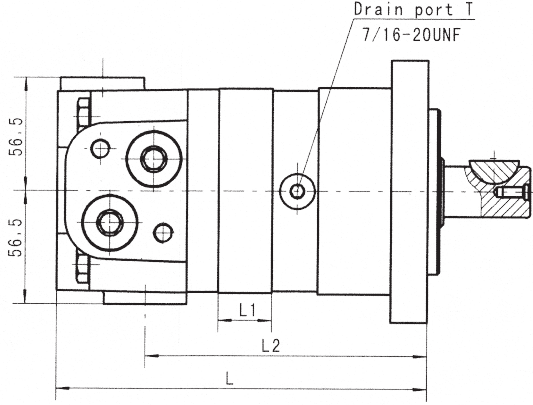
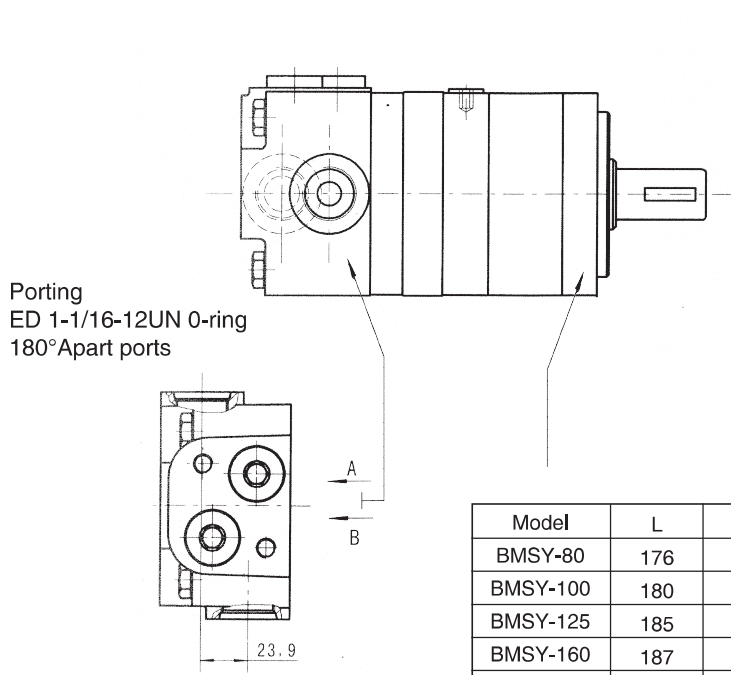
BMSY DIMENSIONS AND MOUNTING DATA



End Ports P(A/B)

| Model    | L   | L1 | Model       | L   | L1 |
|----------|-----|----|-------------|-----|----|
| BMSY-80  | 176 | 16 | BMSY-80-WE  | 148 | 16 |
| BMSY-100 | 180 | 20 | BMSY-100-WE | 152 | 20 |
| BMSY-125 | 185 | 25 | BMSY-125-WE | 157 | 25 |
| BMSY-160 | 187 | 27 | BMSY-160-WE | 159 | 27 |
| BMSY-200 | 194 | 34 | BMSY-200-WE | 166 | 34 |
| BMSY-250 | 202 | 42 | BMSY-250-WE | 174 | 42 |
| BMSY-315 | 214 | 54 | BMSY-315-WE | 186 | 54 |
| BMSY-400 | 229 | 69 | BMSY-400-WE | 201 | 69 |
| BMSY-475 | 243 | 83 | BMSY-475-WE | 215 | 83 |

| Code<br>Mounting | EE-D (depth) | EE-M2 (depth)  | EE-S2 (depth)  |
|------------------|--------------|----------------|----------------|
|                  | P(A,B)       | G1/2 (15)      | M22 x 1.5 (15) |
| T                | G1/4 (12)    | M14 x 1.5 (12) | 7/16-20UNF(12) |



Porting  
ED 1-1/16-12UN O-ring  
180° Apart ports

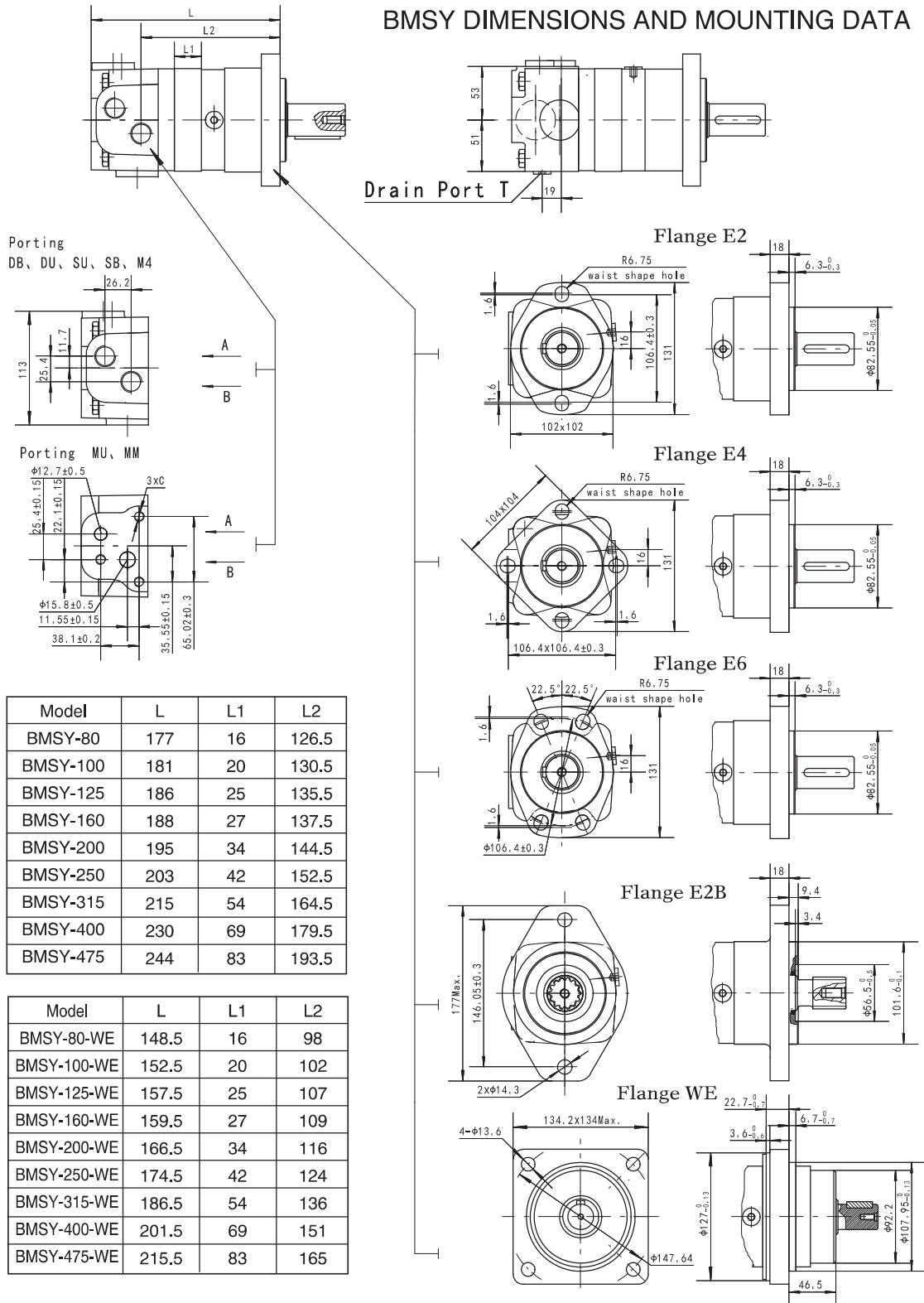
| Model    | L   | L1 | L2  |
|----------|-----|----|-----|
| BMSY-80  | 176 | 16 | 130 |
| BMSY-100 | 180 | 20 | 134 |
| BMSY-125 | 185 | 25 | 139 |
| BMSY-160 | 187 | 27 | 141 |
| BMSY-200 | 194 | 34 | 148 |
| BMSY-250 | 202 | 42 | 156 |
| BMSY-315 | 214 | 54 | 168 |
| BMSY-400 | 229 | 69 | 183 |
| BMSY-475 | 243 | 83 | 197 |

| Model       | L   | L1 | L2  |
|-------------|-----|----|-----|
| BMSY-80-WE  | 148 | 16 | 102 |
| BMSY-100-WE | 152 | 20 | 106 |
| BMSY-125-WE | 157 | 25 | 111 |
| BMSY-160-WE | 159 | 27 | 113 |
| BMSY-200-WE | 166 | 34 | 119 |
| BMSY-250-WE | 178 | 42 | 127 |
| BMSY-315-WE | 190 | 54 | 139 |
| BMSY-400-WE | 205 | 69 | 154 |
| BMSY-475-WE | 219 | 83 | 168 |

| Code<br>Mounting | ED (depth)      |
|------------------|-----------------|
|                  | P(A,B)          |
| T                | 7/16-20UNF (12) |



## BMSY DIMENSIONS AND MOUNTING DATA



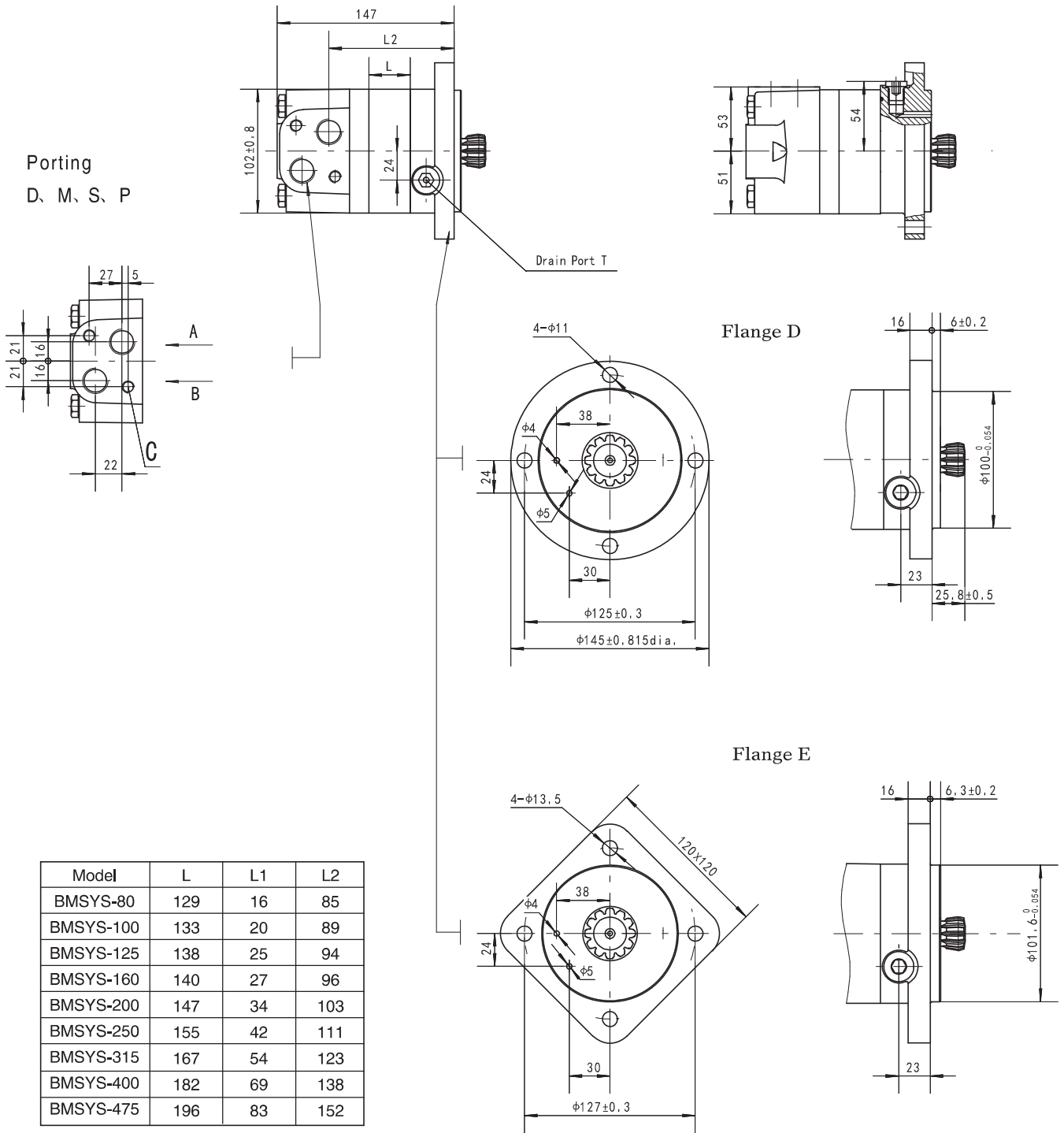
| Model    | L   | L1 | L2    |
|----------|-----|----|-------|
| BMSY-80  | 177 | 16 | 126.5 |
| BMSY-100 | 181 | 20 | 130.5 |
| BMSY-125 | 186 | 25 | 135.5 |
| BMSY-160 | 188 | 27 | 137.5 |
| BMSY-200 | 195 | 34 | 144.5 |
| BMSY-250 | 203 | 42 | 152.5 |
| BMSY-315 | 215 | 54 | 164.5 |
| BMSY-400 | 230 | 69 | 179.5 |
| BMSY-475 | 244 | 83 | 193.5 |

| Model       | L     | L1 | L2  |
|-------------|-------|----|-----|
| BMSY-80-WE  | 148.5 | 16 | 98  |
| BMSY-100-WE | 152.5 | 20 | 102 |
| BMSY-125-WE | 157.5 | 25 | 107 |
| BMSY-160-WE | 159.5 | 27 | 109 |
| BMSY-200-WE | 166.5 | 34 | 116 |
| BMSY-250-WE | 174.5 | 42 | 124 |
| BMSY-315-WE | 186.5 | 54 | 136 |
| BMSY-400-WE | 201.5 | 69 | 151 |
| BMSY-475-WE | 215.5 | 83 | 165 |

| Code   | DB(depth) | DU (depth)     | SU (depth)       | SB (depth)       | M4 (depth)  | MU             | MM          |
|--------|-----------|----------------|------------------|------------------|-------------|----------------|-------------|
| P(A,B) | G1/2(15)  | G1/2(15)       | 7/8-14O-ring(17) | 7/8-14O-ring(17) | M22x1.5(15) | Φ12.7,Φ15.8    | Φ12.7,Φ15.8 |
| T      | G1/4(12)  | 7/16-20UNF(12) | 7/16-20UNF(12)   | G1/4(12)         | M14x1.5(12) | 7/16-20UNF(12) | G1/4(12)    |
| C      |           |                |                  |                  |             | 3/8-16UNC      | M10         |



BMSYS DIMENSIONS AND MOUNTING DATA



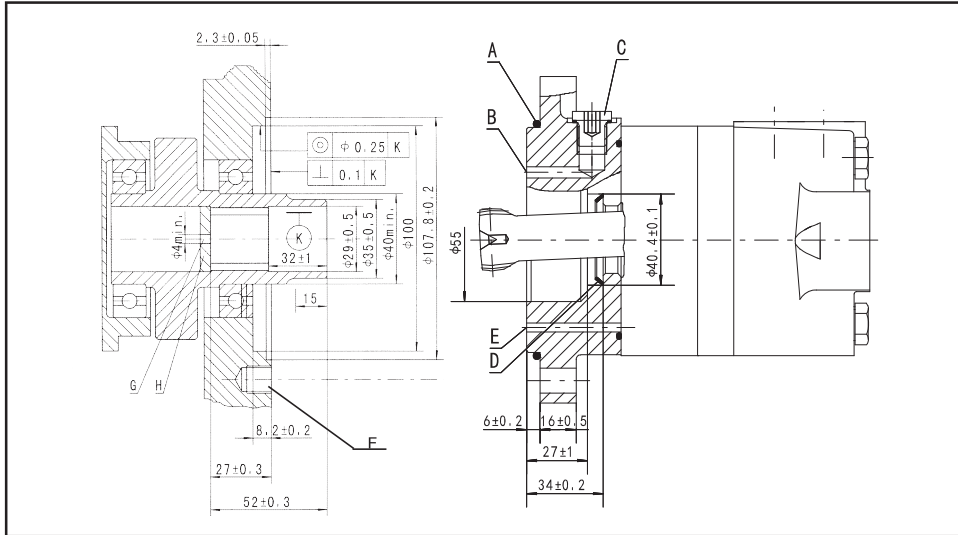
Porting  
D、M、S、P

| Model     | L   | L1 | L2  |
|-----------|-----|----|-----|
| BMSYS-80  | 129 | 16 | 85  |
| BMSYS-100 | 133 | 20 | 89  |
| BMSYS-125 | 138 | 25 | 94  |
| BMSYS-160 | 140 | 27 | 96  |
| BMSYS-200 | 147 | 34 | 103 |
| BMSYS-250 | 155 | 42 | 111 |
| BMSYS-315 | 167 | 54 | 123 |
| BMSYS-400 | 182 | 69 | 138 |
| BMSYS-475 | 196 | 83 | 152 |

| Code   | D (depth) | M (depth)   | S (depth)        | P (depth)       |
|--------|-----------|-------------|------------------|-----------------|
| P(A,B) | G1/2(15)  | M22x1.5(15) | 7/8-14O-ring(17) | 1/2-14NPTF(15)  |
| T      | G1/4(12)  | M14x1.5(12) | 7/16-20UNF(12)   | 7/16-20UNF(12)  |
| C      | 2-M10(13) | 2-M10(13)   | 2-3/8-16UNC(13)  | 2-3/8-16UNC(13) |



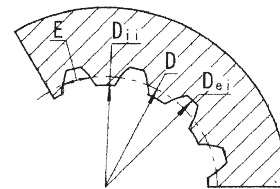
BMSYS DIMENSIONS AND MOUNTING DATA



- A: O-ring:100x3
- B: External drain channel
- C: Drain connection G 1/4;12 mm deep
- D: Conical seal ring
- E: Internal drain channel
- F: M10;min. 15mm deep
- G: Oil circulation hole
- H: Hardened stop plate

INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

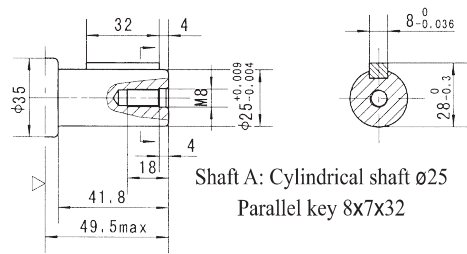
| Fillet Root Side Fit   |            | mm                                 |
|------------------------|------------|------------------------------------|
| Number of Teeth        | Z          | 12                                 |
| Diametral Pitch        | DP         | 12/24                              |
| Pressure Angle         | $\alpha_D$ | 30°                                |
| Pitch Dia.             | D          | ø25.4                              |
| Major Dia.             | $D_{ei}$   | ø28 <sup>0</sup> <sub>-0.1</sub>   |
| Minor Dia.             | $D_{ii}$   | ø23 <sup>+0.033</sup> <sub>0</sub> |
| Space Width [Circular] | E          | 4.308±0.02                         |



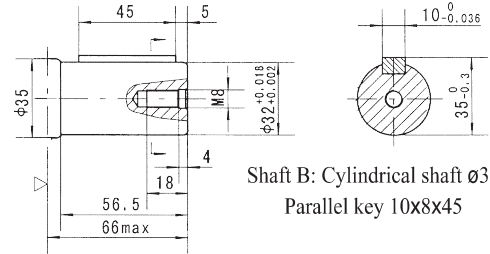
Hardening Specification: HRC 62±2  
Effective case depth 0.7±0.2



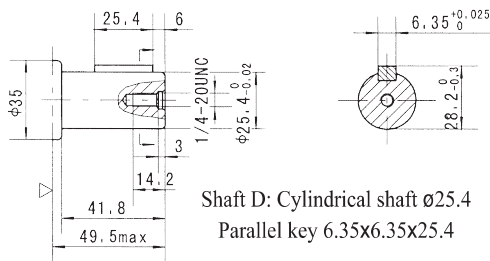
SHAFT EXTENSIONS FOR BMSY MOTORS



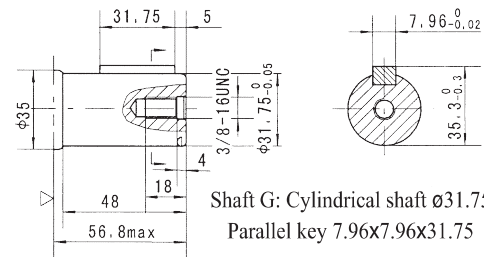
Shaft A: Cylindrical shaft ø25  
Parallel key 8x7x32



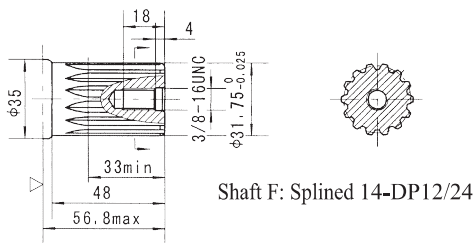
Shaft B: Cylindrical shaft ø32  
Parallel key 10x8x45



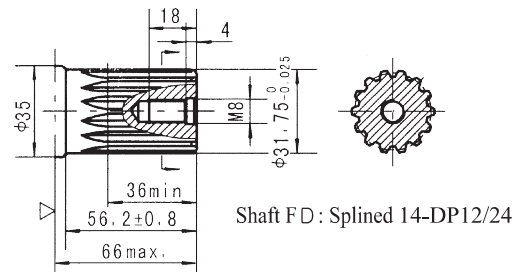
Shaft D: Cylindrical shaft ø25.4  
Parallel key 6.35x6.35x25.4



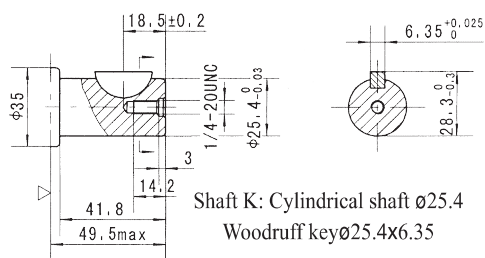
Shaft G: Cylindrical shaft ø31.75  
Parallel key 7.96x7.96x31.75



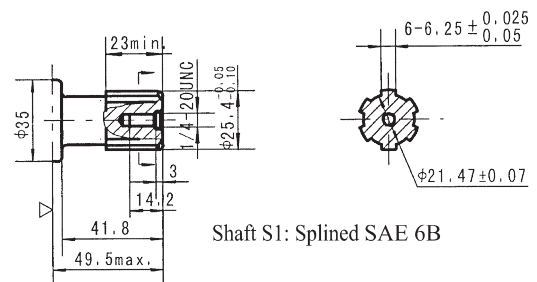
Shaft F: Splined 14-DP12/24



Shaft F D: Splined 14-DP12/24



Shaft K: Cylindrical shaft ø25.4  
Woodruff key ø25.4x6.35

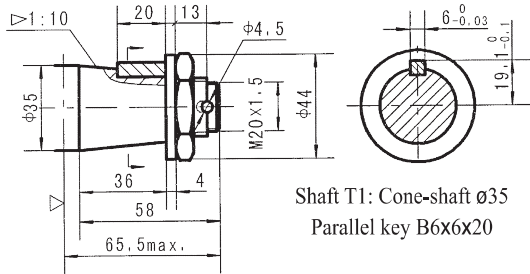


Shaft S1: Splined SAE 6B

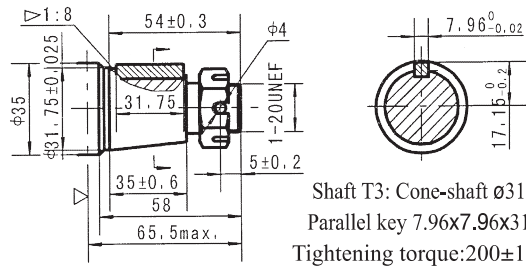
▷ Motor Mounting Surface(Dimension corresponding mounting E2, by analogy with others)



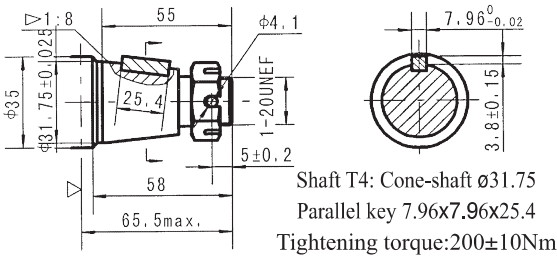
SHAFT EXTENSIONS FOR BMSY MOTORS



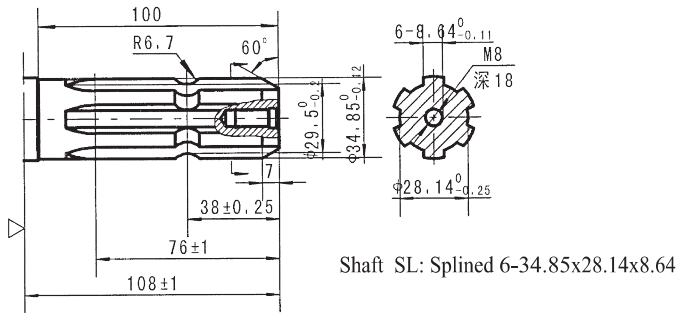
Shaft T1: Cone-shaft ø35  
Parallel key B6x6x20



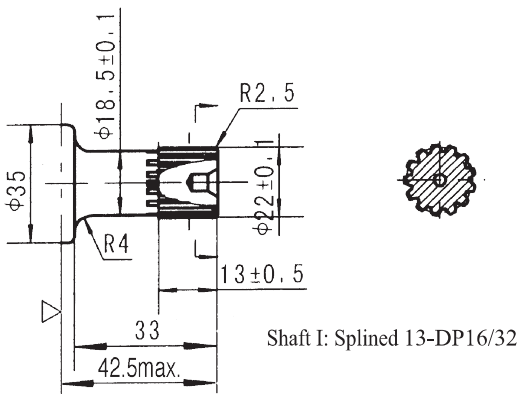
Shaft T3: Cone-shaft ø31.75  
Parallel key 7.96x7.96x31.75  
Tightening torque:200±10Nm



Shaft T4: Cone-shaft ø31.75  
Parallel key 7.96x7.96x25.4  
Tightening torque:200±10Nm



Shaft SL: Splined 6-34.85x28.14x8.64



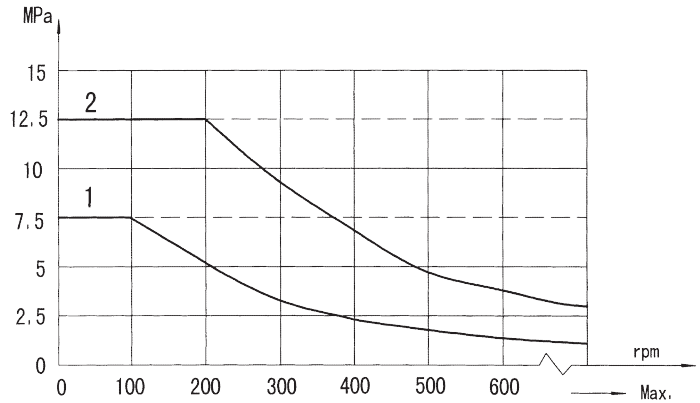
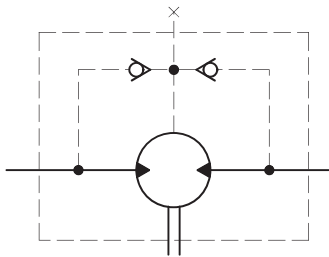
Shaft I: Splined 13-DP16/32

- ▷ Motor Mounting Surface(Dimension corresponding mounting E2, by analogy with others)  
Note:Mounting SP is the same with shaft modle T1、D、B、F and G.



BMSY Series Hydraulic Motor

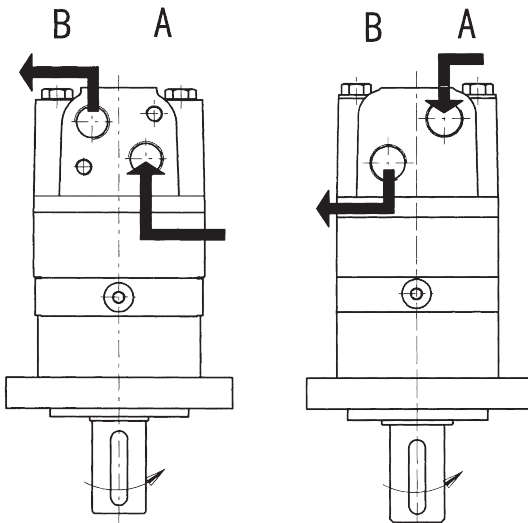
Permissible shaft seal pressure



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

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.



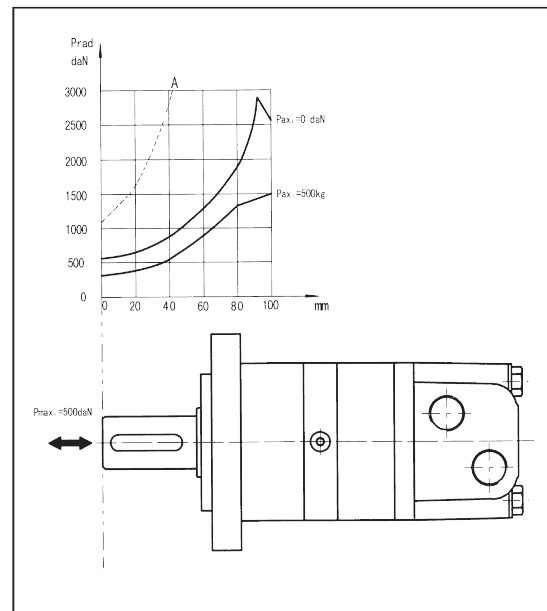
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

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                             | 1.5                                 |
|                     | 35                             | 1                                   |
| 21                  | 20                             | 3                                   |
|                     | 35                             | 2                                   |

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.

