



# PATRIOT

## Low Speed High Torque Motors

### PHDM5E SERIES



Driven by Innovation  
Power Precision Performance  
734-479-9641 patriothyd.com



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# PHDM5E SERIES

## PHDM5E MOTOR CROSS REFERENCE GUIDE

| Brand           | Series   |
|-----------------|----------|
| Eaton Char-Lynn | 6000     |
| Danfoss         | OMT      |
| M+S             | MLHT, MT |

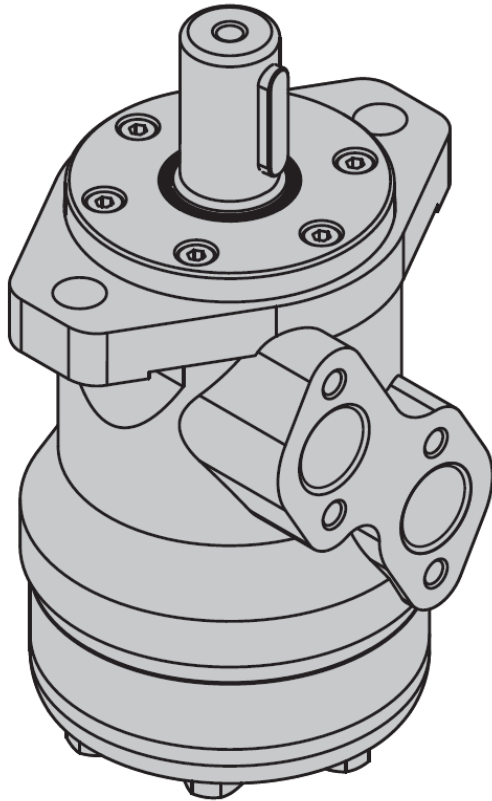
PHDM5E





# DESCRIPTION

**PHDM5E**



The PHDMS series orbital hydraulic motors epitomize efficiency in converting hydraulic energy to mechanical power, catering to the robust demands of driving machinery. Renowned for their compact design and impressive efficiency, these motors boast an extended service life, making them an ideal choice for a variety of applications. Offering a high starting torque and seamless operational smoothness, the PHDMS motors are tailored for diverse sectors such as mobile equipment, material handling, and construction machinery. They are available in various displacements and operating pressures, equipped with multiple mounting options to fulfill specific application needs.

## Applications

Constructed with premium materials like cast iron or aluminum for the body and precision-machined crankshafts, these motors are built to last. They also feature essential safety components including pressure relief valves to ensure dependable and safe operation.

In summary, the PHDMS series provides a versatile and reliable solution for hydraulic power needs, combining durability with compact and efficient design.





## PHDM5E MOTOR ORDERING CODE

|               |   |   |  |   |  |   |  |   |  |   |  |   |
|---------------|---|---|--|---|--|---|--|---|--|---|--|---|
| 1             |   | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 |
| <b>PHDM5E</b> | — |   |  |   |  |   |  |   |  |   |  |   |

| 2    | 3             |  | 4               |                                   | 5         |               | 6           |             | 7        |          |          |
|------|---------------|--|-----------------|-----------------------------------|-----------|---------------|-------------|-------------|----------|----------|----------|
| Disp | Shaft Options |  | Mounting Flange |                                   | Ports     | A&B           | Drain       | Special     |          | Rotation |          |
| 315  | <b>P</b>      | 50MM Keyed Shaft [14]x[9]x[70]               | <b>A</b>        | 4-18MM Hole Flange, Pilot [160]   | <b>Y</b>  | G 1"          | G 1/8       | <b>OMIT</b> | Standard | <b>L</b> | Standard |
| 400  | <b>P1</b>     | 40MM Keyed Shaft [12]x[8]x[45]               | <b>A1</b>       | 4-14MM Hole Flange, Pilot [125]   | <b>Y1</b> | G 3/4         | G 1/4       |             |          | <b>R</b> | Reversed |
| 500  | <b>P1</b>     | 40MM Keyed Shaft [12]x[8]x[45]               |                 |                                   |           |               |             |             |          |          |          |
| 630  | <b>P9</b>     | 1-1/2" Keyed Shaft [3/8]x[3/8]x[42]          | <b>A7</b>       | 4-15.4MM Hole Flange, Pilot [127] | <b>Y2</b> | M33 X 2       | M14 X 1.5   |             |          |          |          |
| 800  | <b>P10</b>    | 2-1/4" Keyed shaft [.5]x[.5]x[2.24]          |                 |                                   | <b>Y3</b> | M27 X 2       | M14 X 1.5   |             |          |          |          |
| 985  | <b>P10</b>    | 2-1/4" Keyed shaft [.5]x[.5]x[2.24]          |                 |                                   | <b>Y3</b> | M27 X 2       | M14 X 1.5   |             |          |          |          |
|      | <b>P99</b>    | 50MM Keyed Shaft [14]x[9]x[70]               |                 |                                   | <b>Y8</b> | 1 5/16-12 UNF | 9/16-18 UNF |             |          |          |          |
|      | <b>H4</b>     | 40MM Splined Shaft 8-[40]x[35]x[7]           |                 |                                   |           |               |             |             |          |          |          |
|      | <b>H5</b>     | 40MM Splined Shaft 6-[40]x[35]x[10]          |                 |                                   |           |               |             |             |          |          |          |
|      | <b>K2</b>     | 44MM Involute Splined Shaft M2.5, Z16, A=30° |                 |                                   |           |               |             |             |          |          |          |
|      | <b>K3</b>     | 45 Involute Splined Shaft M2.5, Z17, A=30°   |                 |                                   |           |               |             |             |          |          |          |

## PHDM5EW MOTOR ORDERING CODE

|                |   |   |  |   |  |   |  |   |  |   |  |   |
|----------------|---|---|--|---|--|---|--|---|--|---|--|---|
| 1              |   | 2 |  | 3 |  | 4 |  | 5 |  | 6 |  | 7 |
| <b>PHDM5EW</b> | — |   |  |   |  |   |  |   |  |   |  |   |

| 2    | 3             |  | 4               |                                 | 5        |      | 6     |             | 7        |          |          |
|------|---------------|--|-----------------|---------------------------------|----------|------|-------|-------------|----------|----------|----------|
| Disp | Shaft Options |  | Mounting Flange |                                 | Ports    | A&B  | Drain | Special     |          | Rotation |          |
| 315  | <b>P</b>      | 50MM Keyed Shaft [14]x[9]x[70]         | <b>A</b>        | 4-18MM Hole Flange, Pilot [180] | <b>Y</b> | G 1" | G 1/4 | <b>OMIT</b> | Standard | <b>L</b> | Standard |
| 400  | <b>Z</b>      | 60MM Tapered Shaft 1:10 [16]x[10]x[32] |                 |                                 |          |      |       |             |          | <b>R</b> | Reversed |
| 500  | <b>Z</b>      | 60MM Tapered Shaft 1:10 [16]x[10]x[32] |                 |                                 |          |      |       |             |          |          |          |
| 630  |               |  |                 |                                 |          |      |       |             |          |          |          |
| 800  |               |  |                 |                                 |          |      |       |             |          |          |          |
| 985  |               |  |                 |                                 |          |      |       |             |          |          |          |





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**PHDM5ES**

| 2                                      | 3       |          |
|--|---------|----------|
| Disp                                   | Special |          |
| 315<br>400<br>500<br>630<br>800<br>985 | OMIT    | Standard |

**PHDM5E MOTOR ORDERING CODE**

| PHDM5E              |                              | 315                | 400              | 500              | 630              | 800              | 985              |
|---------------------|------------------------------|--------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Displacement</b> | CC<br>[in <sup>3</sup> /rev] | 314.9<br>[19.22]   | 399.7<br>[24.39] | 496.6<br>[30.30] | 617.8<br>[37.70] | 787.4<br>[48.05] | 969.1<br>[59.14] |
|                     | <b>Max Input Pressure</b>    | cont. bar<br>[PSI] | 200<br>[2900]    | 200<br>[2900]    | 200<br>[2900]    | 180<br>[2610]    | 160<br>[2320]    |
| int. bar<br>[PSI]   |                              | 240<br>[3480]      | 240<br>[3480]    | 240<br>[3480]    | 210<br>[3045]    | 180<br>[2610]    | 160<br>[2320]    |
| peak. bar<br>[PSI]  |                              | 280<br>[4061]      | 280<br>[4061]    | 280<br>[4061]    | 240<br>[3480]    | 210<br>[3045]    | 180<br>[2610]    |
| <b>Max Torque</b>   | cont. N.M<br>[Lb.in]         | 873<br>[7726]      | 1108<br>[9806]   | 1385<br>[12258]  | 1570<br>[13895]  | 1773<br>[15692]  | 1900<br>[16816]  |
|                     | int. N.M<br>[Lb.in]          | 1119<br>[9903]     | 1440<br>[12745]  | 1783<br>[15780]  | 1951<br>[17267]  | 2122<br>[18781]  | 2133<br>[18878]  |
|                     | peak. n.m.<br>[Lb.in]        | 1293<br>[11444]    | 1650<br>[14603]  | 2060<br>[18232]  | 2249<br>[19905]  | 2481<br>[21958]  | 2399<br>[21232]  |
| <b>Max Speed</b>    | RPM                          | 475                | 375              | 300              | 240              | 190              | 150              |

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# Performance Data

## PHDM5 315 (314.9cc)

|       | [507]<br>35 | [1015]<br>70 | [1450]<br>100 | [2030]<br>140 | [2610]<br>180 | Max<br>cont.<br>[2900]<br>200 | Max<br>int.<br>[3480]<br>240 | [PSI]<br>BAR |
|-------|-------------|--------------|---------------|---------------|---------------|-------------------------------|------------------------------|--------------|
| (GPM) | [2.64]      | [1168]       | [2460]        | [3681]        | [5098]        | [6204]                        | [7071]                       | [8363]       |
| L/min | 10          | 132<br>28    | 278<br>25     | 416<br>24     | 576<br>23     | 701<br>21                     | 799<br>18                    | 945<br>15    |
|       | [5.28]      | [1283]       | [2628]        | [3894]        | [5319]        | [6584]                        | [7487]                       | [8948]       |
|       | 20          | 145<br>58    | 297<br>57     | 440<br>56     | 601<br>55     | 744<br>54                     | 846<br>51                    | 1011<br>47   |
|       | [13.20]     | [1247]       | [2610]        | [3885]        | [5496]        | [6815]                        | [7824]                       | [9302]       |
|       | 50          | 141<br>153   | 295<br>152    | 439<br>150    | 618<br>148    | 770<br>145                    | 884<br>141                   | 1051<br>134  |
|       | [19.81]     | [1194]       | [2540]        | [3832]        | [5372]        | [6823]                        | [7859]                       | [9355]       |
|       | 75          | 135<br>233   | 287<br>231    | 433<br>228    | 607<br>223    | 771<br>219                    | 888<br>214                   | 1057<br>206  |
|       | [26.42]     | [1141]       | [2487]        | [3779]        | [5319]        | [6770]                        | [7832]                       | [9266]       |
|       | 100         | 129<br>311   | 281<br>309    | 427<br>307    | 601<br>304    | 765<br>299                    | 885<br>294                   | 1047<br>286  |
|       | [33.02]     | [1026]       | [2389]        | [3699]        | [5239]        | [6682]                        | [7700]                       | [9142]       |
|       | 125         | 116<br>389   | 270<br>387    | 418<br>385    | 592<br>382    | 755<br>378                    | 870<br>372                   | 1033<br>365  |
|       | [39.62]     | [955]        | [2301]        | [3637]        | [5142]        | [6593]                        | [7576]                       | [9018]       |
|       | 150         | 108<br>471   | 260<br>469    | 411<br>467    | 581<br>462    | 745<br>455                    | 856<br>447                   | 1019<br>434  |
|       | [42.27]     | [893]        | [2239]        | [3593]        | [5089]        | [6523]                        | [7487]                       | [8948]       |
|       | 160         | 101<br>503   | 253<br>501    | 406<br>497    | 575<br>493    | 737<br>487                    | 846<br>478                   | 1011<br>465  |
|       | [52.83]     | [681]        | [2079]        | [3442]        | [4956]        | [6337]                        | [7284]                       | [8753]       |
|       | 200         | 77<br>631    | 235<br>629    | 389<br>624    | 560<br>618    | 716<br>610                    | 823<br>598                   | 989<br>576   |

## PHDM5 400(399.7cc)

|       | [507]<br>35 | [1015]<br>70 | [1450]<br>100 | [2030]<br>140 | [2610]<br>180 | Max<br>cont.<br>[2900]<br>200 | Max<br>int.<br>[3480]<br>240 | [PSI]<br>BAR |
|-------|-------------|--------------|---------------|---------------|---------------|-------------------------------|------------------------------|--------------|
| (GPM) | [2.64]      | [1548]       | [3248]        | [4797]        | [6549]        | [8169]                        | [9293]                       | [10912]      |
| L/min | 10          | 175<br>21    | 367<br>21     | 542<br>20     | 740<br>19     | 923<br>18                     | 1050<br>17                   | 1233<br>15   |
|       | [5.28]      | [1655]       | [3363]        | [4982]        | [6885]        | [8532]                        | [9726]                       | [11364]      |
|       | 20          | 187<br>46    | 380<br>46     | 563<br>45     | 778<br>44     | 964<br>42                     | 1099<br>41                   | 1284<br>39   |
|       | [13.20]     | [1690]       | [3398]        | [5089]        | [7107]        | [8779]                        | [10010]                      | [12072]      |
|       | 50          | 191<br>119   | 384<br>118    | 575<br>118    | 803<br>117    | 992<br>115                    | 1131<br>113                  | 1364<br>108  |
|       | [19.81]     | [1646]       | [3327]        | [5036]        | [7071]        | [8806]                        | [10027]                      | [12090]      |
|       | 75          | 186<br>183   | 376<br>181    | 569<br>178    | 799<br>174    | 995<br>171                    | 1133<br>165                  | 1366<br>159  |
|       | [26.42]     | [1451]       | [3248]        | [5009]        | [6983]        | [8744]                        | [10001]                      | [12028]      |
|       | 100         | 164<br>247   | 367<br>246    | 566<br>244    | 789<br>242    | 988<br>238                    | 1130<br>234                  | 1359<br>225  |
|       | [33.02]     | [1407]       | [3159]        | [4921]        | [6885]        | [8620]                        | [9939]                       | [11930]      |
|       | 125         | 159<br>310   | 357<br>308    | 556<br>305    | 778<br>302    | 974<br>296                    | 1123<br>288                  | 1348<br>281  |
|       | [39.62]     | [1336]       | [3044]        | [4717]        | [6761]        | [8514]                        | [9833]                       | [11736]      |
|       | 150         | 151<br>372   | 344<br>371    | 533<br>369    | 764<br>366    | 962<br>361                    | 1111<br>351                  | 1326<br>340  |
|       | [46.23]     | [1203]       | [2920]        | [4673]        | [6620]        | [8355]                        | [9665]                       | [11629]      |
|       | 175         | 136<br>436   | 330<br>434    | 528<br>431    | 748<br>427    | 944<br>422                    | 1092<br>415                  | 1314<br>407  |
|       | [52.83]     | [1000]       | [2796]        | [4522]        | [6505]        | [8178]                        | [9523]                       | [11452]      |
|       | 200         | 113<br>498   | 316<br>496    | 511<br>492    | 735<br>485    | 924<br>477                    | 1076<br>470                  | 1294<br>460  |

## PHDM5 500(496.6cc)

|       | [507]<br>35 | [1015]<br>70 | [1450]<br>100 | [2030]<br>140 | [2610]<br>180 | Max<br>cont.<br>[2900]<br>200 | Max<br>int.<br>[3480]<br>240 | [PSI]<br>BAR |
|-------|-------------|--------------|---------------|---------------|---------------|-------------------------------|------------------------------|--------------|
| (GPM) | [2.64]      | [2053]       | [3965]        | [5903]        | [8133]        | [10089]                       | [11470]                      | [13630]      |
| L/min | 10          | 232<br>18    | 448<br>18     | 667<br>17     | 919<br>17     | 1140<br>16                    | 1296<br>14                   | 1540<br>11   |
|       | [5.28]      | [2079]       | [4248]        | [6257]        | [8505]        | [10443]                       | [11815]                      | [14054]      |
|       | 20          | 235<br>38    | 480<br>37     | 707<br>37     | 961<br>35     | 1180<br>34                    | 1335<br>33                   | 1588<br>30   |
|       | [13.20]     | [2035]       | [4239]        | [6426]        | [8691]        | [10771]                       | [12284]                      | [14780]      |
|       | 50          | 230<br>97    | 479<br>96     | 726<br>95     | 982<br>94     | 1217<br>92                    | 1388<br>89                   | 1670<br>84   |
|       | [19.81]     | [1973]       | [4221]        | [6372]        | [8735]        | [10921]                       | [12506]                      | [14975]      |
|       | 75          | 223<br>146   | 477<br>145    | 720<br>143    | 987<br>141    | 1234<br>138                   | 1413<br>133                  | 1692<br>125  |
|       | [26.42]     | [1929]       | [4159]        | [6345]        | [8700]        | [10930]                       | [12479]                      | [14922]      |
|       | 100         | 218<br>197   | 470<br>195    | 717<br>193    | 983<br>190    | 1235<br>186                   | 1410<br>181                  | 1686<br>173  |
|       | [33.02]     | [1867]       | [4097]        | [6292]        | [8594]        | [10851]                       | [12382]                      | [14798]      |
|       | 125         | 211<br>247   | 463<br>246    | 711<br>244    | 971<br>241    | 1226<br>237                   | 1399<br>233                  | 1672<br>225  |
|       | [39.62]     | [1708]       | [3938]        | [6133]        | [8549]        | [10603]                       | [12116]                      | [14718]      |
|       | 150         | 193<br>300   | 445<br>299    | 693<br>296    | 966<br>293    | 1198<br>288                   | 1369<br>282                  | 1663<br>271  |
|       | [46.23]     | [1540]       | [3779]        | [6027]        | [8452]        | [10496]                       | [11921]                      | [14541]      |
|       | 175         | 174<br>350   | 427<br>349    | 681<br>347    | 955<br>343    | 1186<br>339                   | 1347<br>334                  | 1643<br>324  |
|       | [52.83]     | [1363]       | [3584]        | [5735]        | [8257]        | [10328]                       | [11744]                      | [14391]      |
|       | 200         | 154<br>401   | 405<br>400    | 648<br>398    | 933<br>395    | 1167<br>390                   | 1327<br>382                  | 1626<br>370  |

## PHDM5 630(617.8cc)

|       | [507]<br>35 | [870]<br>60 | [1305]<br>90 | [1740]<br>120 | [2175]<br>150 | [2610]<br>180 | Max<br>cont.<br>[3045]<br>210 | Max<br>int.<br>[PSI]<br>BAR |
|-------|-------------|-------------|--------------|---------------|---------------|---------------|-------------------------------|-----------------------------|
| (GPM) | [2.64]      | [2301]      | [4283]       | [6664]        | [9027]        | [10399]       | [12709]                       | [14639]                     |
| L/min | 10          | 260<br>15   | 484<br>14    | 753<br>14     | 1020<br>13    | 1175<br>13    | 1436<br>12                    | 1654<br>11                  |
|       | [5.28]      | [2363]      | [4531]       | [6885]        | [9036]        | [10789]       | [13187]                       | [15294]                     |
|       | 20          | 267<br>30   | 512<br>30    | 778<br>29     | 1021<br>29    | 1219<br>28    | 1490<br>26                    | 1728<br>24                  |
|       | [13.20]     | [2372]      | [4549]       | [7124]        | [9328]        | [11187]       | [13798]                       | [16046]                     |
|       | 50          | 268<br>78   | 514<br>78    | 805<br>77     | 1054<br>74    | 1264<br>73    | 1559<br>71                    | 1813<br>67                  |
|       | [19.81]     | [2212]      | [4496]       | [7080]        | [9187]        | [11089]       | [13780]                       | [16117]                     |
|       | 75          | 250<br>118  | 508<br>117   | 800<br>114    | 1038<br>112   | 1253<br>110   | 1557<br>107                   | 1821<br>101                 |
|       | [26.42]     | [2168]      | [4416]       | [7027]        | [8965]        | [11072]       | [13736]                       | [16126]                     |
|       | 100         | 245<br>157  | 499<br>156   | 794<br>154    | 1013<br>152   | 1251<br>149   | 1552<br>146                   | 1822<br>140                 |
|       | [33.02]     | [2062]      | [4230]       | [6868]        | [8788]        | [10957]       | [13612]                       | [16002]                     |
|       | 125         | 233<br>198  | 478<br>197   | 776<br>195    | 993<br>193    | 1238<br>191   | 1538<br>187                   | 1808<br>181                 |
|       | [39.62]     | [1964]      | [4062]       | [6700]        | [8717]        | [10912]       | [13541]                       | [15816]                     |
|       | 150         | 222<br>238  | 459<br>237   | 757<br>236    | 985<br>234    | 1233<br>232   | 1530<br>229                   | 1787<br>221                 |
|       | [46.23]     | [1725]      | [3982]       | [6531]        | [8629]        | [10665]       | [13426]                       | [15656]                     |
|       | 175         | 195<br>279  | 450<br>278   | 738<br>277    | 975<br>274    | 1205<br>270   | 1517<br>265                   | 1769<br>260                 |
|       | [52.83]     | [1495]      | [3850]       | [6160]        | [8355]        | [10505]       | [13214]                       | [15453]                     |
|       | 200         | 169<br>320  | 435<br>320   | 696<br>318    | 944<br>316    | 1187<br>313   | 1493<br>306                   | 1746<br>294                 |





# Performance Data

## PHDM5 800(787.4cc)

Max cont. Max int.

|           | [362]<br>25 | [725]<br>50 | [1160]<br>80 | [1450]<br>100 | [1885]<br>130 | [2320]<br>160 | [2610]<br>180 | [PSI]<br>BAR |
|-----------|-------------|-------------|--------------|---------------|---------------|---------------|---------------|--------------|
| [GPM]     | [2.64]      | [2416]      | [4912]       | [7222]        | [9523]        | [12222]       | [14895]       | [16657]      |
| L/min     | 10          | <b>273</b>  | <b>555</b>   | <b>816</b>    | <b>1076</b>   | <b>1381</b>   | <b>1683</b>   | <b>1882</b>  |
|           |             | 11          | 10           | 10            | 9             | 8             | 8             | 7            |
| [5.28]    | [2451]      | [4956]      | [7354]       | [10001]       | [12665]       | [15515]       | [17347]       |              |
|           | <b>277</b>  | <b>561</b>  | <b>831</b>   | <b>1130</b>   | <b>1431</b>   | <b>1753</b>   | <b>1960</b>   |              |
| 20        | 23          | 22          | 22           | 21            | 20            | 18            | 16            |              |
| [13.20]   | [2504]      | [5062]      | [7443]       | [10107]       | [12727]       | [15577]       | [17409]       |              |
|           | <b>283</b>  | <b>572</b>  | <b>841</b>   | <b>1142</b>   | <b>1438</b>   | <b>1760</b>   | <b>1967</b>   |              |
| 50        | 61          | 60          | 58           | 57            | 55            | 53            | 49            |              |
| [19.81]   | [2336]      | [5044]      | [7434]       | [10134]       | [12745]       | [15541]       | [17365]       |              |
|           | <b>264</b>  | <b>570</b>  | <b>840</b>   | <b>1145</b>   | <b>1440</b>   | <b>1756</b>   | <b>1962</b>   |              |
| 75        | 93          | 92          | 91           | 89            | 85            | 82            | 78            |              |
| [26.42]   | [2186]      | [4921]      | [7310]       | [9921]        | [12594]       | [15373]       | [17267]       |              |
|           | <b>247</b>  | <b>556</b>  | <b>826</b>   | <b>1121</b>   | <b>1423</b>   | <b>1737</b>   | <b>1951</b>   |              |
| 100       | 124         | 123         | 122          | 120           | 117           | 113           | 107           |              |
| [33.02]   | [2106]      | [4655]      | [7169]       | [9726]        | [12417]       | [15125]       | [17188]       |              |
|           | <b>238</b>  | <b>526</b>  | <b>810</b>   | <b>1099</b>   | <b>1403</b>   | <b>1709</b>   | <b>1942</b>   |              |
| 125       | 156         | 155         | 153          | 150           | 145           | 141           | 135           |              |
| [39.62]   | [2053]      | [4575]      | [7027]       | [9585]        | [12187]       | [14913]       | [17046]       |              |
|           | <b>232</b>  | <b>517</b>  | <b>794</b>   | <b>1083</b>   | <b>1377</b>   | <b>1685</b>   | <b>1926</b>   |              |
| Max cont. | 188         | 186         | 184          | 181           | 177           | 172           | 166           |              |
| [46.23]   | [1867]      | [4381]      | [6903]       | [9390]        | [11983]       | [14771]       | [16842]       |              |
|           | <b>211</b>  | <b>495</b>  | <b>780</b>   | <b>1061</b>   | <b>1354</b>   | <b>1669</b>   | <b>1903</b>   |              |
| 175       | 251         | 249         | 247          | 244           | 241           | 236           | 229           | Max cont.    |
| [52.83]   | [1717]      | [4071]      | [6655]       | [9249]        | [11851]       | [14621]       | [15993]       |              |
|           | <b>194</b>  | <b>460</b>  | <b>752</b>   | <b>1045</b>   | <b>1339</b>   | <b>1652</b>   | <b>1807</b>   |              |
| Max int.  | 302         | 301         | 300          | 298           | 293           | 288           | 282           | Max int.     |

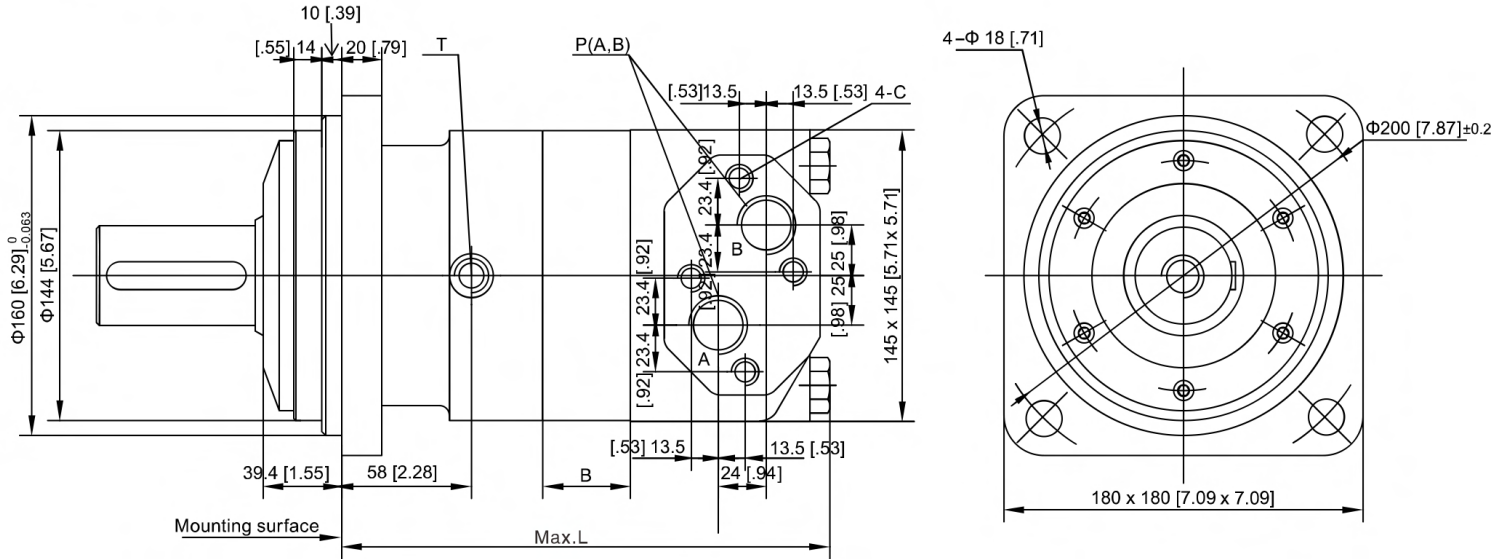
## PHDM5 985(969.1cc)

Max cont. Max int.

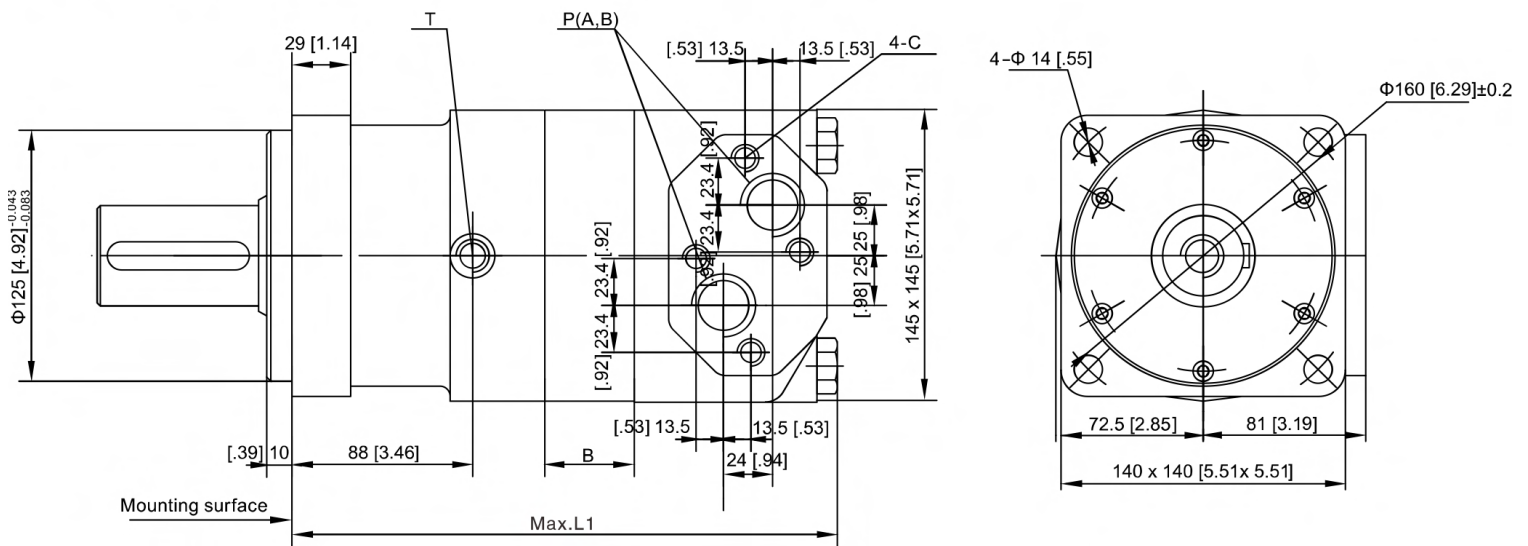
|           | [362]<br>25 | [725]<br>50 | [1015]<br>70 | [1450]<br>100 | [2030]<br>140 | [2320]<br>160 | [PSI]<br>BAR |
|-----------|-------------|-------------|--------------|---------------|---------------|---------------|--------------|
| [GPM]     | [2.64]      | [2699]      | [5549]       | [8417]        | [12134]       | [17135]       | [19577]      |
| L/min     | 10          | <b>305</b>  | <b>627</b>   | <b>951</b>    | <b>1371</b>   | <b>1936</b>   | <b>2212</b>  |
|           |             | 9           | 9            | 9             | 8             | 7             | 6            |
| [5.28]    | [2770]      | [5611]      | [8470]       | [12214]       | [17152]       | [19666]       |              |
|           | <b>313</b>  | <b>634</b>  | <b>957</b>   | <b>1380</b>   | <b>1938</b>   | <b>2222</b>   |              |
| 20        | 29          | 28          | 27           | 26            | 23            | 21            |              |
| [13.20]   | [2823]      | [5673]      | [8594]       | [12320]       | [17462]       | [19754]       |              |
|           | <b>319</b>  | <b>641</b>  | <b>971</b>   | <b>1392</b>   | <b>1973</b>   | <b>2232</b>   |              |
| 50        | 48          | 47          | 46           | 44            | 42            | 39            |              |
| [19.81]   | [2752]      | [5567]      | [8549]       | [12346]       | [17356]       | [19719]       |              |
|           | <b>311</b>  | <b>629</b>  | <b>966</b>   | <b>1395</b>   | <b>1961</b>   | <b>2228</b>   |              |
| 75        | 74          | 73          | 72           | 69            | 67            | 64            |              |
| [26.42]   | [2681]      | [5496]      | [8514]       | [12284]       | [17276]       | [19436]       |              |
|           | <b>303</b>  | <b>621</b>  | <b>962</b>   | <b>1388</b>   | <b>1952</b>   | <b>2196</b>   |              |
| 100       | 100         | 99          | 97           | 95            | 92            | 88            |              |
| [33.02]   | [2628]      | [5407]      | [8452]       | [12205]       | [17223]       | [19268]       |              |
|           | <b>297</b>  | <b>611</b>  | <b>955</b>   | <b>1379</b>   | <b>1946</b>   | <b>2177</b>   |              |
| 125       | 126         | 125         | 123          | 120           | 116           | 112           |              |
| [39.62]   | [2407]      | [5213]      | [8328]       | [11851]       | [17011]       | [19135]       |              |
|           | <b>272</b>  | <b>589</b>  | <b>941</b>   | <b>1339</b>   | <b>1922</b>   | <b>2162</b>   |              |
| Max cont. | 152         | 151         | 149          | 147           | 143           | 136           |              |
| [46.23]   | [2283]      | [5027]      | [8195]       | [11594]       | [16683]       | [18710]       |              |
|           | <b>258</b>  | <b>568</b>  | <b>926</b>   | <b>1310</b>   | <b>1885</b>   | <b>2114</b>   |              |
| 175       | 178         | 176         | 174          | 170           | 165           | 158           | Max cont.    |
| [52.83]   | [1442]      | [4443]      | [7514]       | [10974]       | [15816]       | [17621]       |              |
|           | <b>163</b>  | <b>502</b>  | <b>849</b>   | <b>1240</b>   | <b>1787</b>   | <b>1991</b>   |              |
| Max int.  | 245         | 242         | 238          | 234           | 230           | 223           | Max int.     |



### A: Square Flange

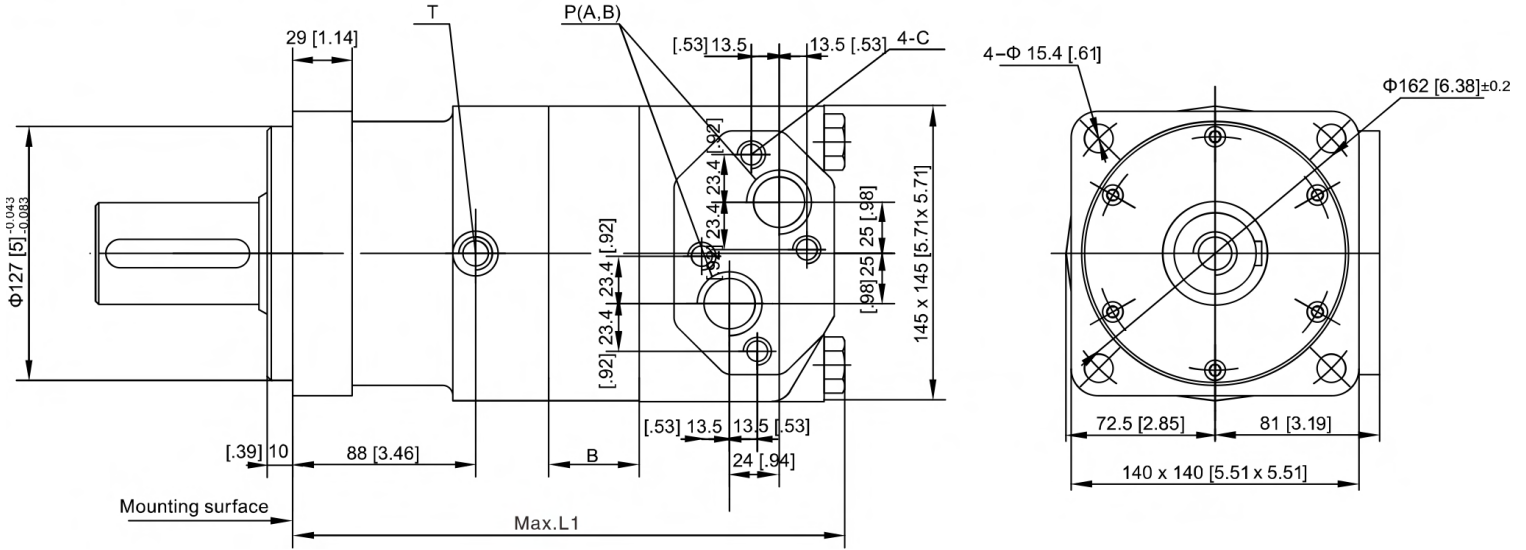


### A1 : Square Flange





A7 : Square Flange



PHDM5E Lengths

| PHDM5E | 315           | 400           | 500            | 630            | 800            | 985            |
|--------|---------------|---------------|----------------|----------------|----------------|----------------|
| L      | 216<br>[8.50] | 223<br>[8.78] | 231<br>[9.09]  | 241<br>[9.49]  | 255<br>[10.04] | 270<br>[10.63] |
| L1     | 246<br>[9.68] | 253<br>[9.96] | 261<br>[10.27] | 271<br>[10.67] | 285<br>[11.22] | 300<br>[11.81] |
| B      | 19<br>[.75]   | 26<br>[1.02]  | 34<br>[1.34]   | 44<br>[1.73]   | 58<br>[2.28]   | 73<br>[2.87]   |





| <i>Port Codes</i> | <i>Ports (A,B)</i> | <i>Mounting Thread</i> | <i>Drain Port</i> |
|-------------------|--------------------|------------------------|-------------------|
| Y                 | G 1                | M12                    | G 1/4             |
| Y1                | G 3/4              | M12                    | G 1/4             |
| Y2                | M33 X 2            | M12                    | M14 X 1.5         |
| Y3                | M27 X 2            | M12                    | M14 X 1.5         |
| Y8                | 1 5/16-12 UN       | ---                    | 9/16-18 UNF       |

**PHDM5E**



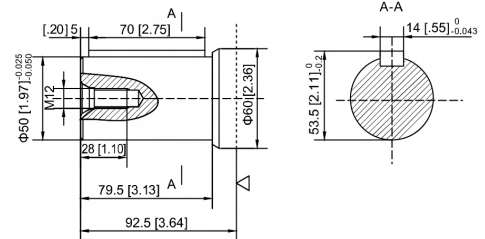


# SHAFTS

PHDM5E

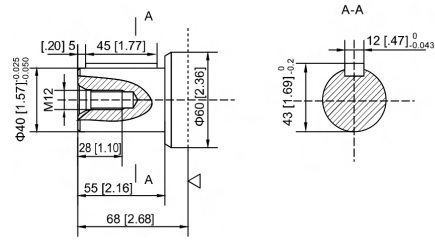
## PHD SHAFT P

50MM Keyed Shaft  
 Keyway [14]x[9]x[70]  
 1.97" Keyed Shaft  
 Keyway [.55]x[.35]x[2.75]



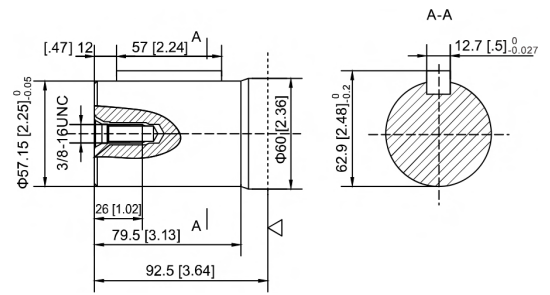
## PHD SHAFT P1

40MM Keyed Shaft  
 Keyway [12]x[8]x[45]  
 1.57" Keyed Shaft  
 Keyway [.47]x[.31]x[1.77]



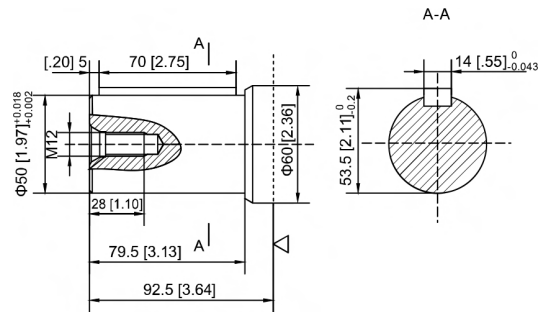
## PHD SHAFT P10

2-1/4" Keyed Shaft  
 Keyway [.5]x[.5]x[2.24]  
 57.15MM Keyed Shaft  
 Keyway [12.7]x[12.7]x[57]



## PHD SHAFT P99

50MM Keyed Shaft  
 Keyway [14]x[9]x[70]  
 1.97" Keyed Shaft  
 Keyway [.55]x[.35]x[2.75]



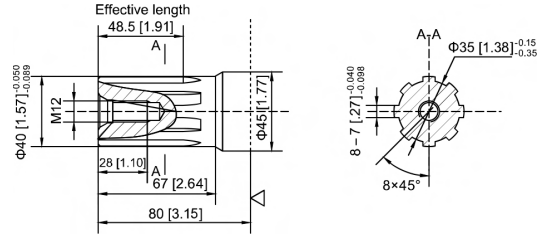
# SHAFTS

## PHD SHAFT H4

40MM 8-Splined Shaft

8-[40]x[35]x[7]

1.57" 8-Splined Shaft



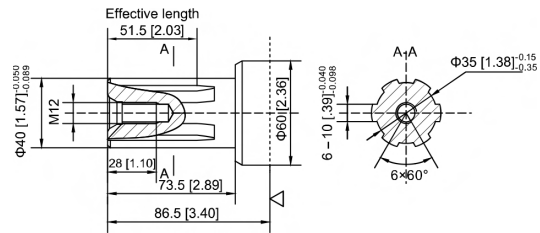
## PHD SHAFT H5

40MM 6 Splined Shaft

6-[40]x[35]x[10]

1.57" 6 Splined Shaft

6-[1.57]x[1.38]x[.39]



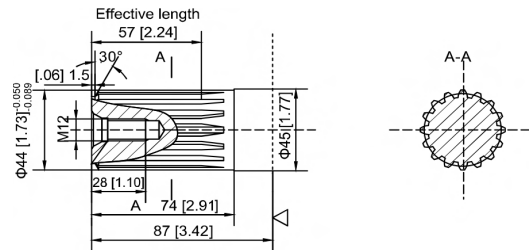
## PHD SHAFT K2

44MM Involute Splined Shaft

M2.5 Z16 A=30°

1.73" Involute Splined Shaft

M2.5 Z16 A=30°



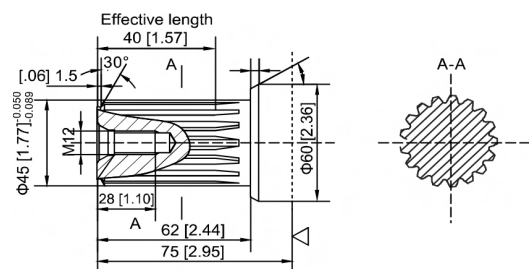
## PHD SHAFT K3

45MM Involute Splined Shaft

M2.5 Z17 A=30°

1.77" Involute Splined Shaft

M2.5 Z17 A=30°



PHDM5E



# SHAFTS

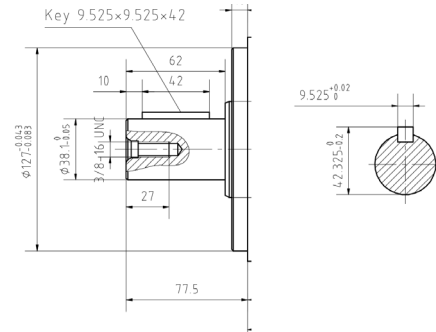
PHD SHAFT P11

1.5" Keyed Shaft

Keyway [3/8]x[3/8]x[1.6534]

38.1MM Keyed Shaft

Keyway [9.525]x[9.525]x[42]

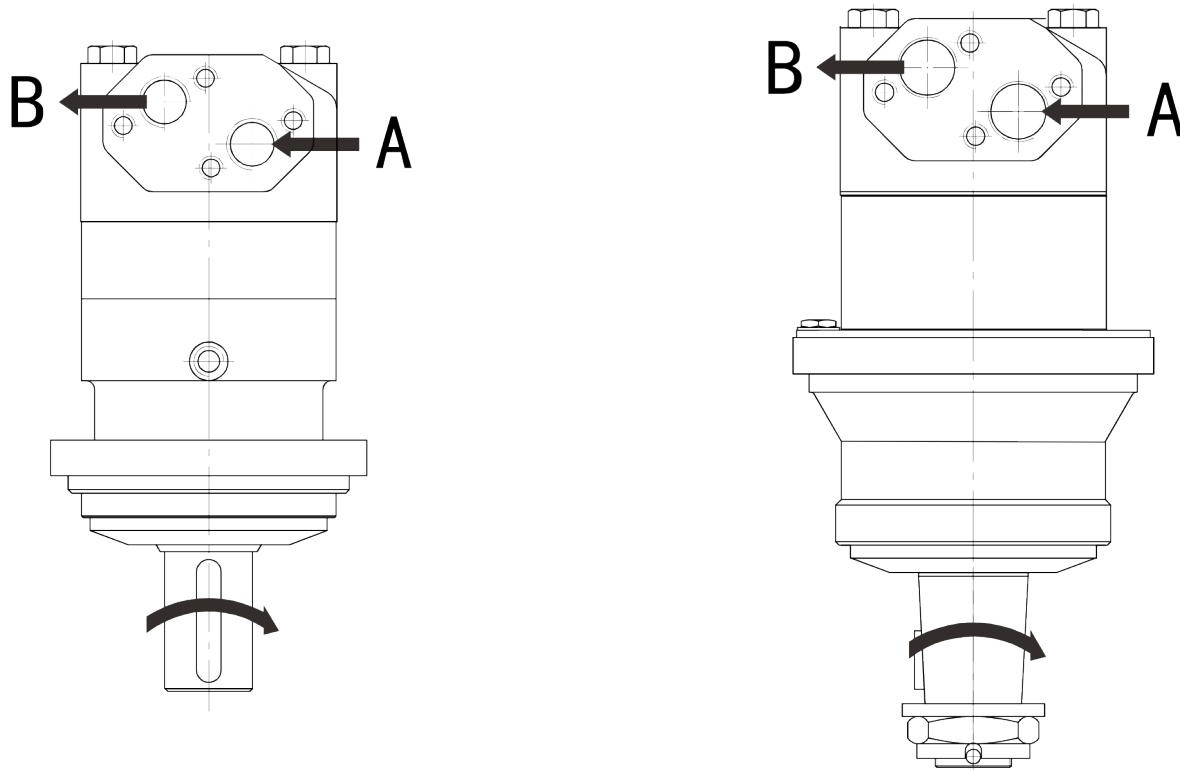


PHDM5E



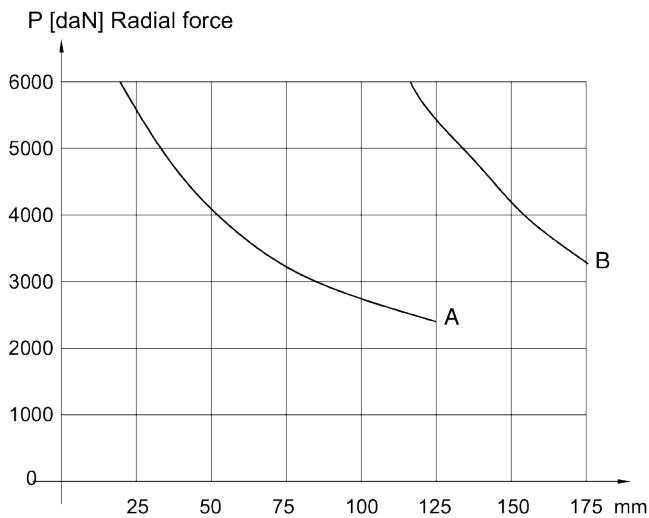
Direction of shaft rotation: Standard

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

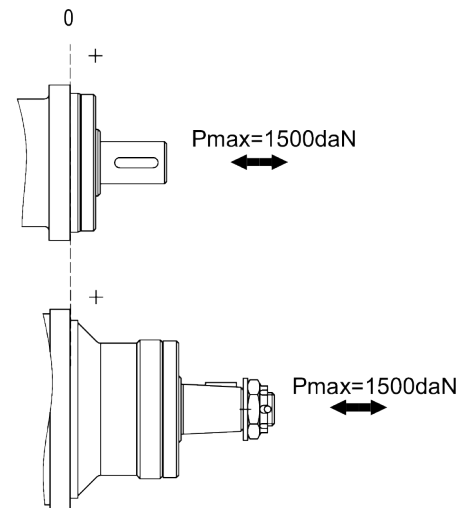


**PHDM5E**

**PERMISSIBLE SHAFT LOADS**

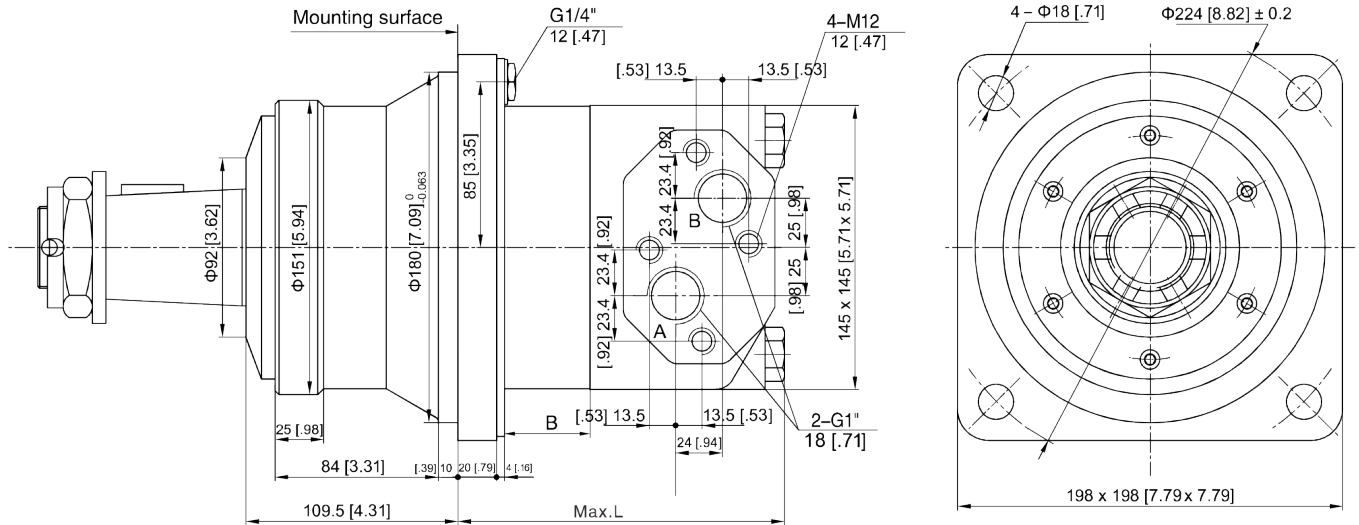


A--PHDM5  
 B--PHDM5W





**PHDM5EW**



### PHDM5EW Lengths

| PHDM5EW | 315           | 400           | 500           | 630           | 800           | 985           |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|
| L       | 148<br>[5.83] | 155<br>[6.10] | 163<br>[6.42] | 174<br>[6.85] | 187<br>[7.36] | 202<br>[7.95] |
| B       | 19<br>[.75]   | 26<br>[1.02]  | 34<br>[1.34]  | 44<br>[1.73]  | 58<br>[2.28]  | 73<br>[2.87]  |





# SHAFTS

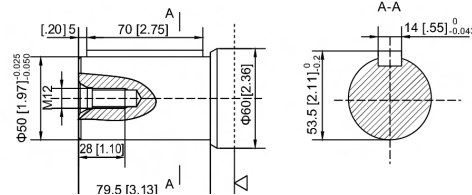
## PHD SHAFT P

50MM Keyed Shaft

Keyway [14]x[9]x[70]

1.97" Keyed Shaft

Keyway [.55]x[.35]x[2.75]



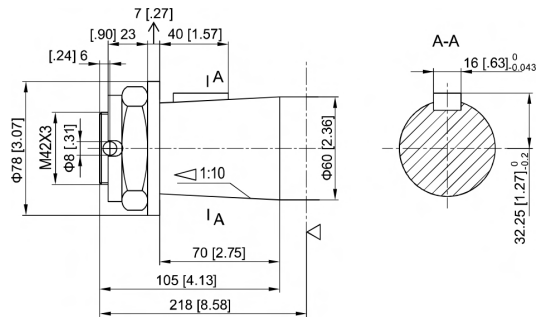
## PHD SHAFT Z

60MM 1:10 Tapered Keyed Shaft

Keyway [16]x[10]x[32]

2.36" 1:10 Tapered Keyed Shaft

Keyway [.63]x[.39]x[1.26]

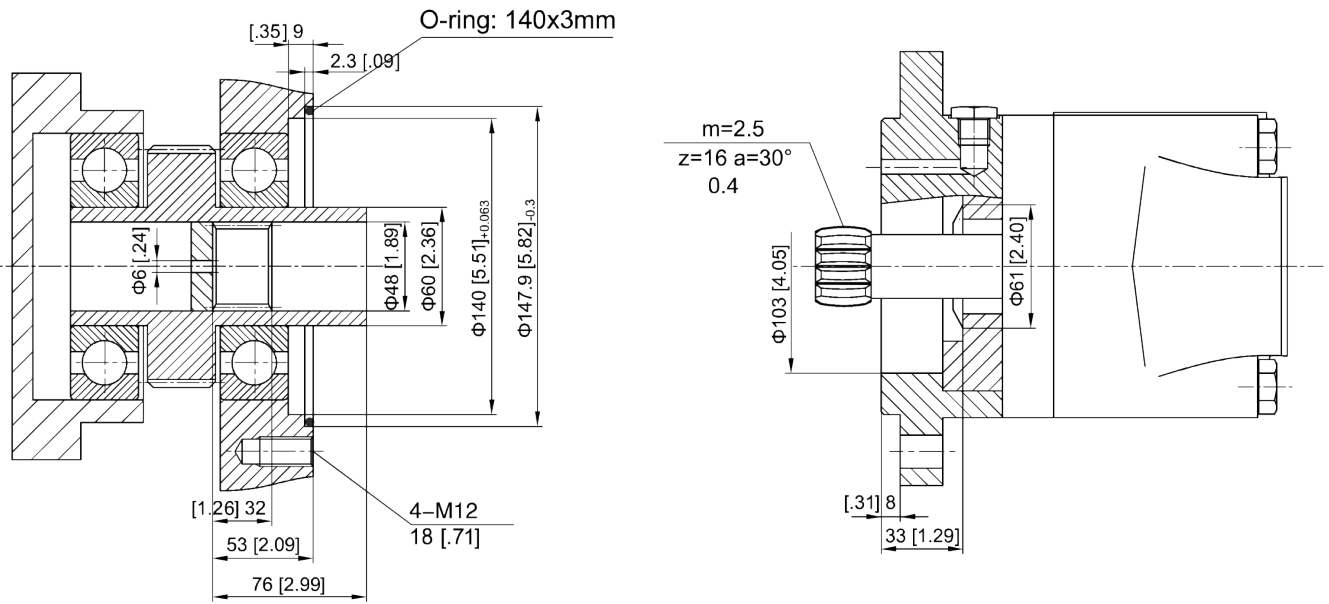


PHDM5EW





**PHDM5ES**

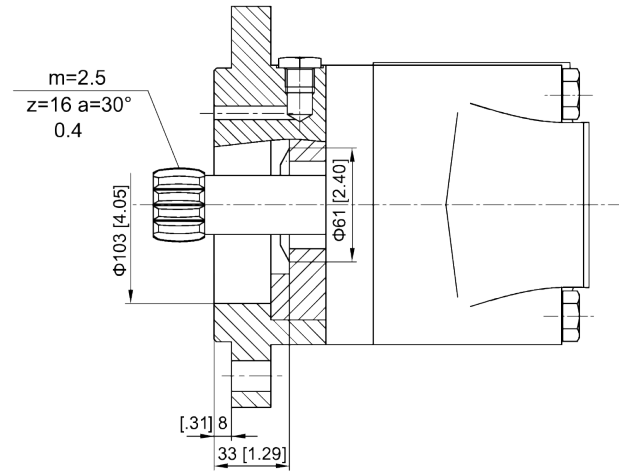
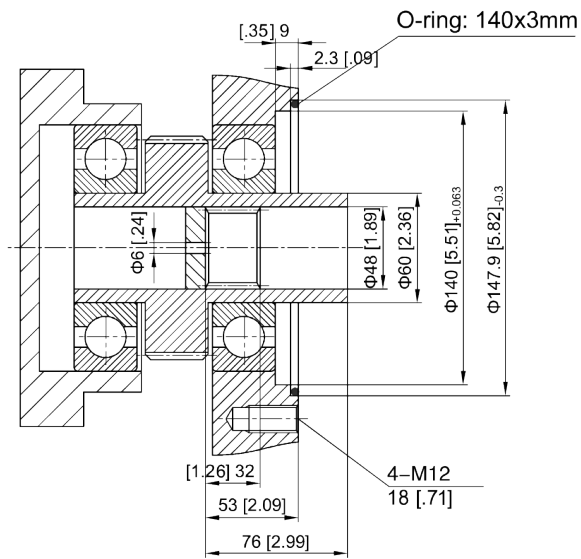


### PHDM5ES Lengths

| PHDM5ES | 315           | 400           | 500           | 630           | 800           | 985           |
|---------|---------------|---------------|---------------|---------------|---------------|---------------|
| L       | 170<br>[6.69] | 177<br>[6.97] | 185<br>[7.28] | 195<br>[7.68] | 209<br>[8.23] | 224<br>[8.82] |
| B       | 19<br>[.75]   | 26<br>[1.02]  | 34<br>[1.34]  | 44<br>[1.73]  | 58<br>[2.28]  | 73<br>[2.87]  |



**Component Dimensions**



**PHDM5ES**