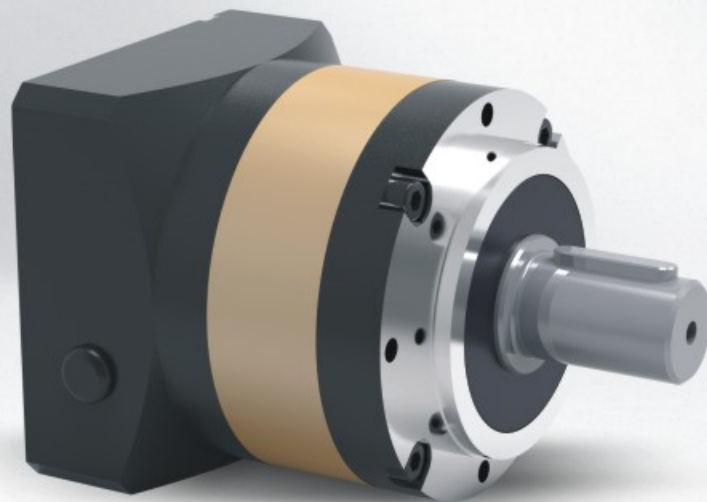


# KPE

Powerful. High Precision. Reliable

▶ Servo Planetary Gearbox

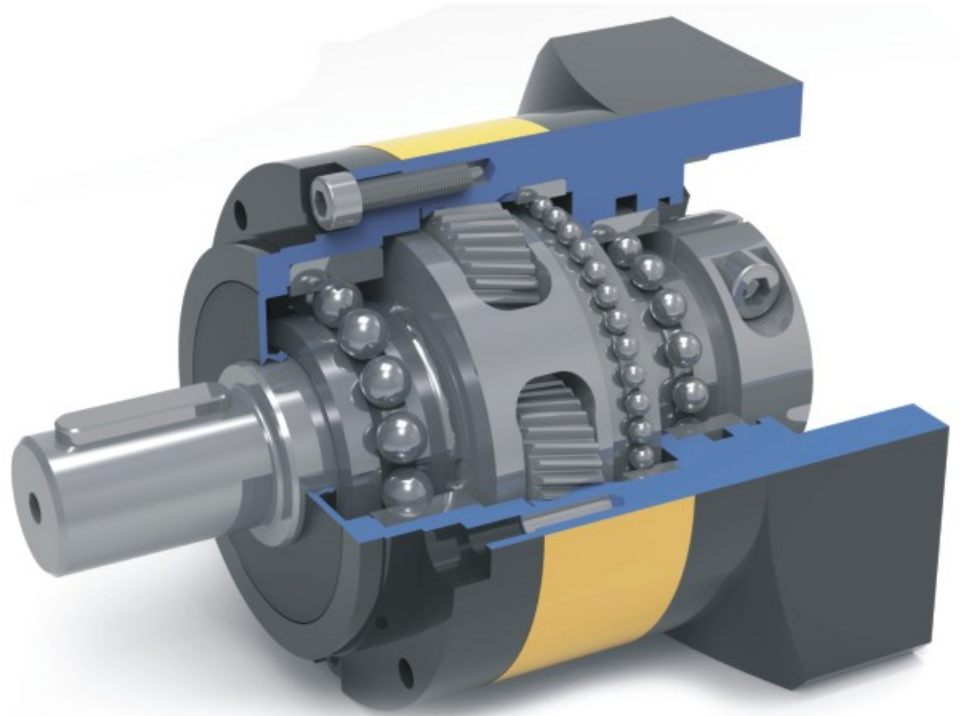
Advanced Gearbox Solution





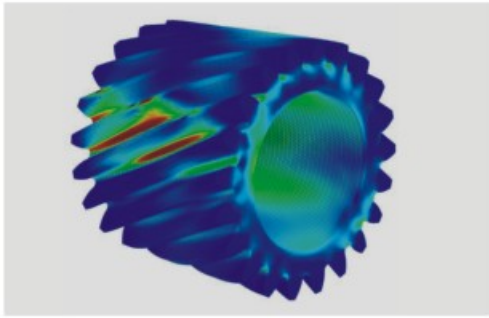
### Helical Gear System Technology

Thanks to the tooth to tooth compact ratio more than 60%. The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency.



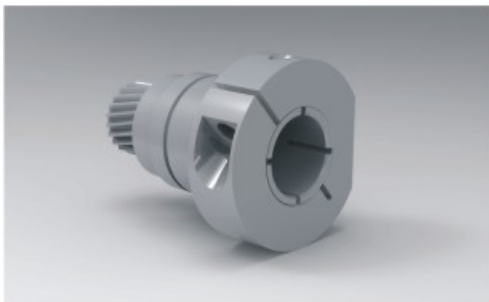
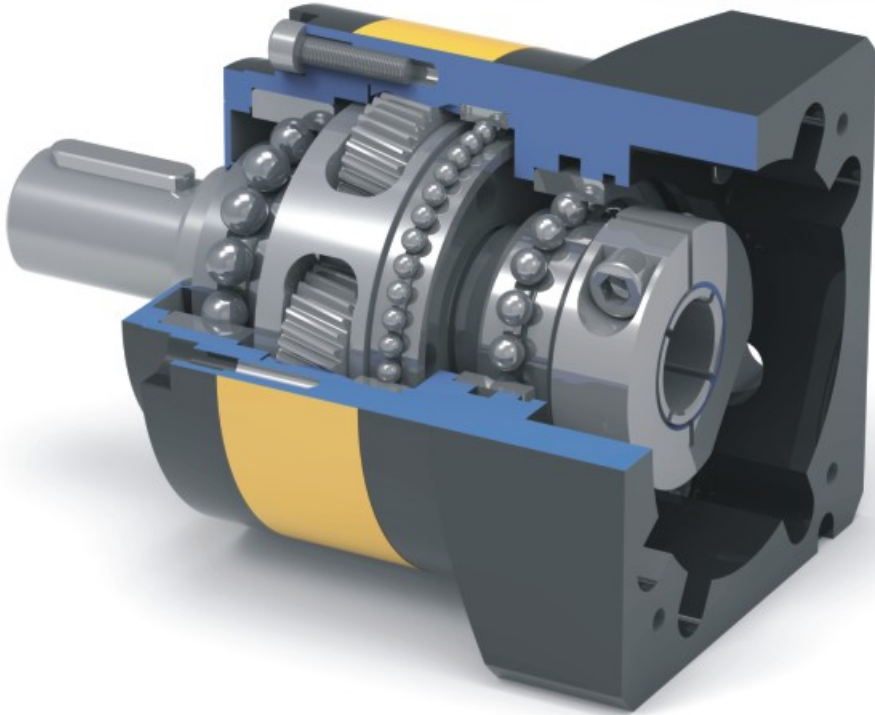
### Master CageSpindle Planetary Carrier

The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



**Super Gear Grinding and Heat Treatment Technology**

The global leading gear grinding technology brings the great improvement for the tooth profile optimization, with the high level carburizing and quenching heat treatment technology to reach high precision and gear harden performance.



**Dynamic Balance Clamping and Sealing System**

For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.

## Order Instructions

### Order Code:

**KPE — 120 — 02 — 015 — S1 — P1 — Servo Motor**



**KPE**

Gearbox Series: KPE



**120**

Gearbox Size



**02**

Gearbox Stage



**015**

Gearbox Ratio



**S1**

S1: Output shaft with key  
S2: Output shaft without key



**P1**

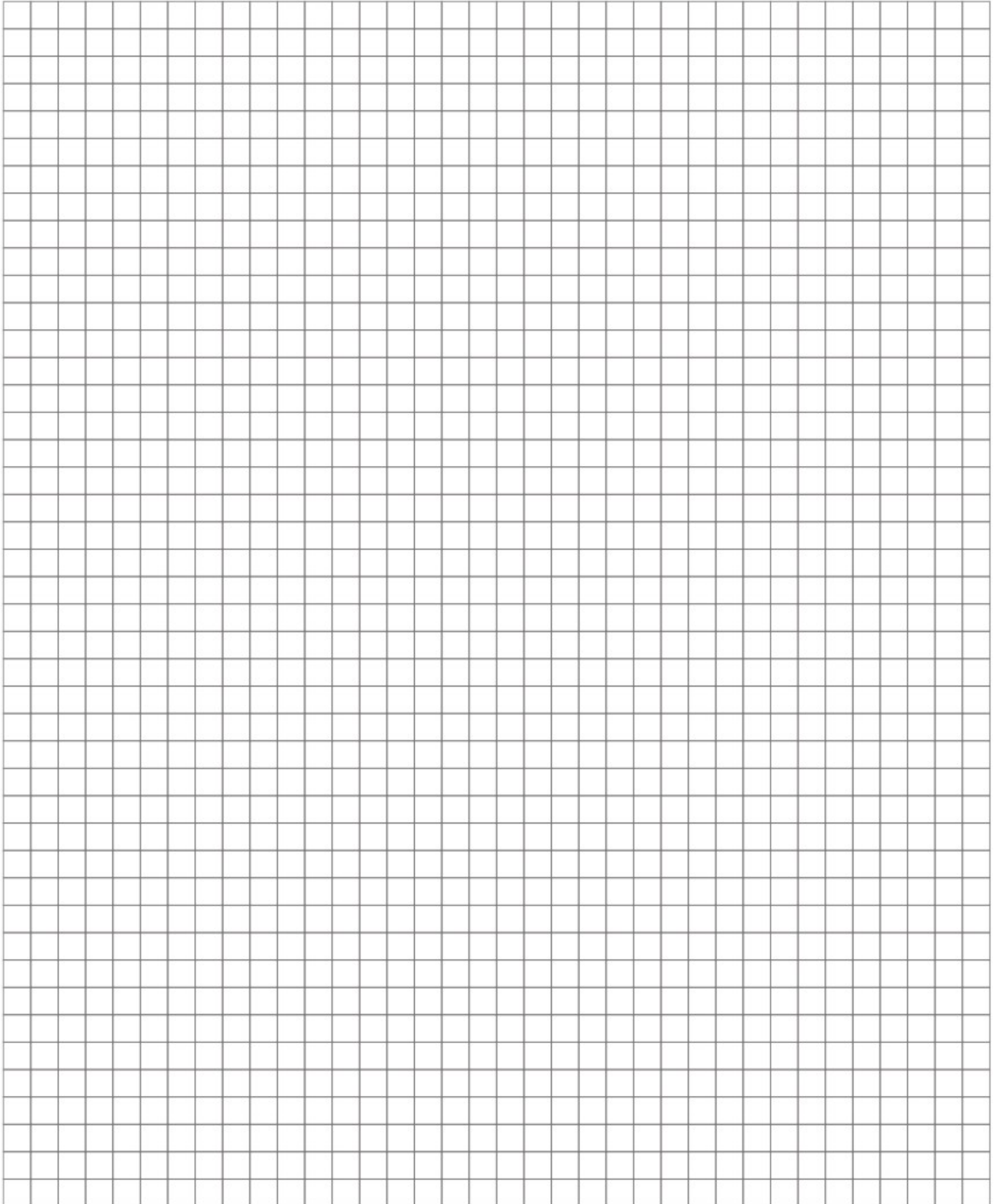
Gearbox Precision



**Servo Motor**

Motor Manufacturer and model

Technical Memo



### KPE050 1-stage

|                               |              |                   | 1-stage                      |       |       |       |       |       |       |       |
|-------------------------------|--------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i            |                   | 3                            | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| Nominal Output Torque         |              | Nm                | 20                           | 21    | 21    | 20    | 19    | 18    | 14    | 14    |
|                               |              | in.lb             | 177                          | 186   | 186   | 177   | 168   | 159   | 124   | 124   |
| Emergency Stop Torque         | $T_{2Max}$   | Nm                | 60                           | 63    | 63    | 60    | 57    | 54    | 42    | 42    |
|                               |              | in.lb             | 531                          | 558   | 558   | 531   | 504   | 478   | 372   | 372   |
| Maximum Acceleration Torque   | $T_{2a}$     | Nm                | 36                           | 37.8  | 37.8  | 36    | 34.2  | 32.4  | 25.2  | 25.2  |
|                               |              | in.lb             | 319                          | 335   | 335   | 319   | 303   | 287   | 223   | 223   |
| Maximum Torque                | $T_{2a}$     | Nm                | 40                           | 42    | 42    | 40    | 38    | 36    | 28    | 28    |
|                               |              | in.lb             | 354                          | 372   | 372   | 354   | 336   | 319   | 248   | 248   |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 4000                         |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 8000                         |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 0.11                         | 0.1   | 0.09  | 0.09  | 0.08  | 0.08  | 0.08  | 0.08  |
|                               |              | in.lb             | 0.97                         | 0.89  | 0.80  | 0.80  | 0.71  | 0.71  | 0.71  | 0.71  |
| Maximum Torsional Backlash    | $j_i$        | arcmin            | ≤ 7                          |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 2.7-3                        |       |       |       |       |       |       |       |
|                               |              | in.lb/arcmin      | 23.89-26.55                  |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 770                          |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 173                          |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 380                          |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 85                           |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2AMMax}$ | Nm                | 17.65                        |       |       |       |       |       |       |       |
|                               |              | in.lb             | 156.21                       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 0.031                        | 0.022 | 0.019 | 0.017 | 0.017 | 0.017 | 0.017 | 0.017 |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 56                         |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |       |       |       |       |       |       |       |
| Operating Temperature         |              | °C                | -25 to +90                   |       |       |       |       |       |       |       |
|                               |              | F                 | -13 to +194                  |       |       |       |       |       |       |       |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |
| Mouting Position              |              |                   | Any Directions               |       |       |       |       |       |       |       |
| Protection Class              |              |                   | IP 65                        |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$        | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |
| Weight                        | $m$          | kg                | 0.6                          |       |       |       |       |       |       |       |
|                               |              | lb <sub>m</sub>   | 1.3                          |       |       |       |       |       |       |       |

## KPE050 2-stage

|                               |             | 2-stage           |                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|-------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i           |                   | 12                           | 15    | 16    | 20    | 25    | 30    | 35    | 40    | 45    | 50    | 60    | 64    | 80    | 90    | 100   |       |
| Nominal Output Torque         |             | Nm                | 20                           | 20    | 21    | 21    | 21    | 20    | 21    | 21    | 21    | 21    | 20    | 18    | 21    | 14    | 21    |       |
|                               |             | in.lb             | 177                          | 177   | 186   | 186   | 186   | 177   | 186   | 186   | 186   | 186   | 177   | 159   | 186   | 124   | 186   |       |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 60                           | 60    | 63    | 63    | 63    | 60    | 63    | 63    | 63    | 63    | 60    | 54    | 63    | 42    | 63    |       |
|                               |             | in.lb             | 531                          | 531   | 558   | 558   | 558   | 531   | 558   | 558   | 558   | 558   | 531   | 478   | 558   | 372   | 558   |       |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 36                           | 36    | 37.8  | 37.8  | 37.8  | 36    | 37.8  | 37.8  | 37.8  | 37.8  | 36    | 32.4  | 37.8  | 25.2  | 37.8  |       |
|                               |             | in.lb             | 319                          | 319   | 335   | 335   | 335   | 319   | 335   | 335   | 335   | 335   | 319   | 287   | 335   | 223   | 335   |       |
| Maximum Torque                | $T_{2a}$    | Nm                | 40                           | 40    | 42    | 42    | 42    | 40    | 42    | 42    | 42    | 42    | 40    | 36    | 42    | 28    | 42    |       |
|                               |             | in.lb             | 354                          | 354   | 372   | 372   | 372   | 354   | 372   | 372   | 372   | 372   | 354   | 319   | 372   | 248   | 372   |       |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 4000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 8000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 0.1                          | 0.1   | 0.1   | 0.1   | 0.1   | 0.09  | 0.09  | 0.09  | 0.09  | 0.09  | 0.09  | 0.08  | 0.08  | 0.08  | 0.08  | 0.08  |
|                               |             | in.lb             | 0.89                         | 0.89  | 0.89  | 0.89  | 0.89  | 0.80  | 0.80  | 0.80  | 0.80  | 0.80  | 0.80  | 0.71  | 0.71  | 0.71  | 0.71  | 0.71  |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 10                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$   | Nm/arcmin         | 2.8-3                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb/arcmin      | 24.78-26.55                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 770                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 173                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2CMax}$ | N                 | 380                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 85                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2CMax}$ | Nm                | 13                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb             | 115                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$       | kgcm <sup>2</sup> | 0.029                        | 0.027 | 0.022 | 0.019 | 0.017 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| Operating Noise Level         | $L_{pA}$    | dB(A)             | < 56                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Operating Temperature         |             | °C                | -25 to +90                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | F                 | -13 to +194                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mouting Position              |             |                   | Any Directions               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Protection Class              |             |                   | IP 65                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Weight                        | $m$         | kg                | 0.9                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>m</sub>   | 2                            |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

### KPE070 1-stage

|                               |              |                   | 1-stage                      |      |      |      |      |      |      |      |
|-------------------------------|--------------|-------------------|------------------------------|------|------|------|------|------|------|------|
| Ratio                         | i            |                   | 3                            | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| Nominal Output Torque         |              | Nm                | 46                           | 52   | 55   | 50   | 50   | 45   | 42   | 42   |
|                               |              | in.lb             | 407                          | 460  | 487  | 443  | 443  | 398  | 372  | 372  |
| Emergency Stop Torque         | $T_{290t}$   | Nm                | 138                          | 156  | 165  | 150  | 150  | 135  | 126  | 126  |
|                               |              | in.lb             | 1221                         | 1381 | 1460 | 1328 | 1328 | 1195 | 1115 | 1115 |
| Maximum Acceleration Torque   | $T_{22}$     | Nm                | 82.8                         | 93.6 | 99   | 90   | 90   | 81   | 75.6 | 75.6 |
|                               |              | in.lb             | 733                          | 828  | 876  | 797  | 797  | 717  | 669  | 669  |
| Maximum Torque                | $T_{2a}$     | Nm                | 92                           | 104  | 110  | 100  | 100  | 90   | 84   | 84   |
|                               |              | in.lb             | 814                          | 920  | 974  | 885  | 885  | 797  | 743  | 743  |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 3000                         |      |      |      |      |      |      |      |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 6000                         |      |      |      |      |      |      |      |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 0.24                         | 0.2  | 0.17 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
|                               |              | in.lb             | 2.12                         | 1.77 | 1.50 | 1.33 | 1.33 | 1.33 | 1.33 | 1.33 |
| Maximum Torsional Backlash    | $j_i$        | arcmin            | ≤ 6                          |      |      |      |      |      |      |      |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 6.5-7                        |      |      |      |      |      |      |      |
|                               |              | in.lb/arcmin      | 57.52-61.95                  |      |      |      |      |      |      |      |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 1500                         |      |      |      |      |      |      |      |
|                               |              | lb <sub>r</sub>   | 337                          |      |      |      |      |      |      |      |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 760                          |      |      |      |      |      |      |      |
|                               |              | lb <sub>r</sub>   | 171                          |      |      |      |      |      |      |      |
| Max. Tilting Moment           | $M_{20MMax}$ | Nm                | 28                           |      |      |      |      |      |      |      |
|                               |              | in.lb             | 248                          |      |      |      |      |      |      |      |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 0.16                         | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 58                         |      |      |      |      |      |      |      |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |      |      |      |      |      |      |      |
| Operating Temperature         |              | °C                | -25 to +90                   |      |      |      |      |      |      |      |
|                               |              | F                 | -13 to +194                  |      |      |      |      |      |      |      |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |      |      |      |      |      |      |      |
| Mouting Position              |              |                   | Any Directions               |      |      |      |      |      |      |      |
| Protection Class              |              |                   | IP 65                        |      |      |      |      |      |      |      |
| Service lifetime              | $L_n$        | h                 | 20,000(Continuous Operation) |      |      |      |      |      |      |      |
| Weight                        | $m$          | kg                | 1.4                          |      |      |      |      |      |      |      |
|                               |              | lb <sub>m</sub>   | 3.1                          |      |      |      |      |      |      |      |



## KPE070 2-stage

|                               |             | 2-stage           |                              |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|-------------|-------------------|------------------------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i           |                   | 12                           | 15    | 16   | 20    | 25    | 30    | 32    | 35    | 40    | 45    | 50    | 60    | 64    | 80    | 90    | 100   |       |
| Nominal Output Torque         |             | Nm                | 56                           | 50    | 52   | 55    | 55    | 46    | 52    | 55    | 55    | 55    | 55    | 50    | 45    | 52    | 42    | 52    |       |
|                               |             | in.lb             | 496                          | 443   | 460  | 487   | 487   | 407   | 460   | 487   | 487   | 487   | 487   | 487   | 443   | 398   | 460   | 372   | 460   |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 168                          | 150   | 156  | 165   | 165   | 138   | 156   | 165   | 165   | 165   | 165   | 150   | 135   | 156   | 126   | 156   |       |
|                               |             | in.lb             | 1487                         | 1328  | 1381 | 1460  | 1460  | 1221  | 1381  | 1460  | 1460  | 1460  | 1460  | 1328  | 1195  | 1381  | 1115  | 1381  |       |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 100.8                        | 90    | 93.6 | 99    | 99    | 82.8  | 93.6  | 99    | 99    | 99    | 99    | 90    | 81    | 93.6  | 75.6  | 93.6  |       |
|                               |             | in.lb             | 892                          | 797   | 828  | 876   | 876   | 733   | 828   | 876   | 876   | 876   | 876   | 797   | 717   | 828   | 669   | 828   |       |
| Maximum Torque                | $T_{2a}$    | Nm                | 112                          | 100   | 104  | 110   | 110   | 92    | 104   | 110   | 110   | 110   | 110   | 100   | 90    | 104   | 84    | 104   |       |
|                               |             | in.lb             | 991                          | 885   | 920  | 974   | 974   | 814   | 920   | 974   | 974   | 974   | 974   | 885   | 797   | 920   | 743   | 920   |       |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 6000                         |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 0.2                          | 0.17  | 0.2  | 0.17  | 0.17  | 0.15  | 0.2   | 0.15  | 0.15  | 0.15  | 0.17  | 0.15  | 0.15  | 0.15  | 0.15  | 0.15  |       |
|                               |             | in.lb             | 1.77                         | 1.50  | 1.77 | 1.50  | 1.50  | 1.33  | 1.77  | 1.33  | 1.33  | 1.33  | 1.33  | 1.50  | 1.33  | 1.33  | 1.33  | 1.33  |       |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$   | Nm/arcmin         | 6.6-7                        |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb/arcmin      | 58.41-61.95                  |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 1500                         |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 337                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 760                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 171                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 28                           |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb             | 248                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$       | kgcm <sup>2</sup> | 0.127                        | 0.124 | 0.12 | 0.075 | 0.075 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.064 | 0.075 | 0.064 | 0.064 | 0.064 |
| Operating Noise Level         | $L_{PA}$    | dB(A)             | < 58                         |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Operating Temperature         |             | °C                | -25 to +90                   |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | F                 | -13 to +194                  |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mouting Position              |             |                   | Any Directions               |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Protection Class              |             |                   | IP 65                        |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Weight                        | $m$         | kg                | 1.6                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>m</sub>   | 3.5                          |       |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

### KPE090 1-stage

|                               |              |                   | 1-stage                      |      |      |      |      |      |      |      |
|-------------------------------|--------------|-------------------|------------------------------|------|------|------|------|------|------|------|
| Ratio                         | i            |                   | 3                            | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| Nominal Output Torque         |              | Nm                | 125                          | 145  | 155  | 145  | 135  | 115  | 105  | 105  |
|                               |              | in.lb             | 1106                         | 1283 | 1372 | 1283 | 1195 | 1018 | 929  | 929  |
| Emergency Stop Torque         | $T_{290t}$   | Nm                | 375                          | 435  | 465  | 435  | 405  | 345  | 315  | 315  |
|                               |              | in.lb             | 3319                         | 3850 | 4116 | 3850 | 3585 | 3053 | 2788 | 2788 |
| Maximum Acceleration Torque   | $T_{22}$     | Nm                | 225                          | 261  | 279  | 261  | 243  | 207  | 189  | 189  |
|                               |              | in.lb             | 1991                         | 2310 | 2469 | 2310 | 2151 | 1832 | 1673 | 1673 |
| Maximum Torque                | $T_{2a}$     | Nm                | 250                          | 290  | 310  | 290  | 270  | 230  | 210  | 210  |
|                               |              | in.lb             | 2213                         | 2567 | 2744 | 2567 | 2390 | 2036 | 1859 | 1859 |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 3000                         |      |      |      |      |      |      |      |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 6000                         |      |      |      |      |      |      |      |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 0.38                         | 0.36 | 0.31 | 0.29 | 0.25 | 0.25 | 0.25 | 0.25 |
|                               |              | in.lb             | 3.36                         | 3.19 | 2.74 | 2.57 | 2.21 | 2.21 | 2.21 | 2.21 |
| Maximum Torsional Backlash    | $j_t$        | arcmin            | ≤ 6                          |      |      |      |      |      |      |      |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 12-14                        |      |      |      |      |      |      |      |
|                               |              | in.lb/arcmin      | 106.2-123.90                 |      |      |      |      |      |      |      |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 3200                         |      |      |      |      |      |      |      |
|                               |              | lb <sub>r</sub>   | 719                          |      |      |      |      |      |      |      |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 1600                         |      |      |      |      |      |      |      |
|                               |              | lb <sub>r</sub>   | 360                          |      |      |      |      |      |      |      |
| Max. Tilting Moment           | $M_{20MMax}$ | Nm                | 142.4                        |      |      |      |      |      |      |      |
|                               |              | in.lb             | 1260                         |      |      |      |      |      |      |      |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 0.61                         | 0.48 | 0.47 | 0.47 | 0.47 | 0.45 | 0.44 | 0.44 |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 60                         |      |      |      |      |      |      |      |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |      |      |      |      |      |      |      |
| Operating Temperature         |              | °C                | -25 to +90                   |      |      |      |      |      |      |      |
|                               |              | F                 | -13 to +194                  |      |      |      |      |      |      |      |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |      |      |      |      |      |      |      |
| Mouting Position              |              |                   | Any Directions               |      |      |      |      |      |      |      |
| Protection Class              |              |                   | IP 65                        |      |      |      |      |      |      |      |
| Service lifetime              | $L_h$        | h                 | 20,000(Continuous Operation) |      |      |      |      |      |      |      |
| Weight                        | $m$          | kg                | 3.3                          |      |      |      |      |      |      |      |
|                               |              | lb <sub>m</sub>   | 7.3                          |      |      |      |      |      |      |      |

## KPE090 2-stage

|                               |             | 2-stage           |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------|-------------|-------------------|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Ratio                         | i           |                   | 12                           | 15   | 16   | 20   | 25   | 30   | 32   | 35   | 40   | 45   | 50   | 60   | 64   | 80   | 90   | 100  |
| Nominal Output Torque         |             | Nm                | 125                          | 125  | 145  | 145  | 155  | 125  | 145  | 155  | 155  | 155  | 155  | 145  | 115  | 155  | 105  | 155  |
|                               |             | in.lb             | 1106                         | 1106 | 1283 | 1283 | 1372 | 1106 | 1283 | 1372 | 1372 | 1372 | 1372 | 1283 | 1018 | 1372 | 929  | 1372 |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 375                          | 375  | 435  | 435  | 465  | 375  | 435  | 465  | 465  | 465  | 465  | 435  | 345  | 465  | 315  | 465  |
|                               |             | in.lb             | 3319                         | 3319 | 3850 | 3850 | 4116 | 3319 | 3850 | 4116 | 4116 | 4116 | 4116 | 3850 | 3053 | 4116 | 2788 | 4116 |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 225                          | 225  | 261  | 261  | 279  | 225  | 261  | 279  | 279  | 279  | 279  | 261  | 207  | 279  | 189  | 279  |
|                               |             | in.lb             | 1991                         | 1991 | 2310 | 2310 | 2469 | 1991 | 2310 | 2469 | 2469 | 2469 | 2469 | 2310 | 1832 | 2469 | 1673 | 2469 |
| Maximum Torque                | $T_{2a}$    | Nm                | 250                          | 250  | 290  | 290  | 310  | 250  | 290  | 310  | 310  | 310  | 310  | 290  | 230  | 310  | 210  | 310  |
|                               |             | in.lb             | 2213                         | 2213 | 2567 | 2567 | 2744 | 2213 | 2567 | 2744 | 2744 | 2744 | 2744 | 2567 | 2036 | 2744 | 1859 | 2744 |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 6000                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 0.36                         | 0.31 | 0.36 | 0.31 | 0.31 | 0.31 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
|                               |             | in.lb             | 3.19                         | 2.74 | 3.19 | 2.74 | 2.74 | 2.74 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 | 2.21 |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Torsional Rigidity            | $C_{21}$    | Nm/arcmin         | 13-14                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | in.lb/arcmin      | 115.06-123.91                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 3200                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>f</sub>   | 719                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 1600                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>f</sub>   | 360                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 142.4                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | in.lb             | 1260                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mass Moment of Inertia        | $j_1$       | kgcm <sup>2</sup> | 0.44                         | 0.44 | 0.43 | 0.44 | 0.44 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 | 0.39 |
| Operating Noise Level         | $L_{PA}$    | dB(A)             | < 60                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Operating Temperature         |             | °C                | -25 to +90                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | F                 | -13 to +194                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mouting Position              |             |                   | Any Directions               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Protection Class              |             |                   | IP 65                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Weight                        | $m$         | kg                | 4.5                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>m</sub>   | 9.9                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

## KPE120 1-stage

|                               |             |                   | 1-stage                      |      |      |      |      |      |      |      |
|-------------------------------|-------------|-------------------|------------------------------|------|------|------|------|------|------|------|
| Ratio                         | i           |                   | 3                            | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
| Nominal Output Torque         |             | Nm                | 210                          | 300  | 320  | 300  | 290  | 255  | 220  | 220  |
|                               |             | in.lb             | 1859                         | 2655 | 2832 | 2655 | 2567 | 2257 | 1947 | 1947 |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 630                          | 900  | 960  | 900  | 870  | 765  | 660  | 660  |
|                               |             | in.lb             | 5576                         | 7966 | 8497 | 7966 | 7700 | 6771 | 5841 | 5841 |
| Maximum Acceleration Torque   | $T_{2a}$    | Nm                | 378                          | 540  | 576  | 540  | 522  | 459  | 396  | 396  |
|                               |             | in.lb             | 3346                         | 4779 | 5098 | 4779 | 4620 | 4062 | 3505 | 3505 |
| Maximum Torque                | $T_{2s}$    | Nm                | 420                          | 600  | 640  | 600  | 580  | 510  | 440  | 440  |
|                               |             | in.lb             | 3717                         | 5310 | 5664 | 5310 | 5133 | 4514 | 3894 | 3894 |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |      |      |      |      |      |      |      |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 6000                         |      |      |      |      |      |      |      |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 1                            | 0.95 | 0.85 | 0.81 | 0.78 | 0.78 | 0.78 | 0.78 |
|                               |             | in.lb             | 8.85                         | 8.41 | 7.52 | 7.17 | 6.90 | 6.90 | 6.90 | 6.90 |
| Maximum Torsional Backlash    | $j_t$       | arcmin            | ≤ 6                          |      |      |      |      |      |      |      |
| Torsional Rigidity            | $C_{121}$   | Nm/arcmin         | 22-26                        |      |      |      |      |      |      |      |
|                               |             | in.lb/arcmin      | 194.72-230.12                |      |      |      |      |      |      |      |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 6700                         |      |      |      |      |      |      |      |
|                               |             | lb <sub>r</sub>   | 1506                         |      |      |      |      |      |      |      |
| Maximum Axial Load            | $F_{2CMax}$ | N                 | 3300                         |      |      |      |      |      |      |      |
|                               |             | lb <sub>r</sub>   | 742                          |      |      |      |      |      |      |      |
| Max. Tilting Moment           | $M_{2MMax}$ | Nm                | 406.2                        |      |      |      |      |      |      |      |
|                               |             | in.lb             | 3595.15                      |      |      |      |      |      |      |      |
| Mass Moment of Inertia        | $j_i$       | kgcm <sup>2</sup> | 3.25                         | 2.74 | 2.71 | 2.62 | 2.62 | 2.62 | 2.62 | 2.57 |
| Operating Noise Level         | $L_{pA}$    | dB(A)             | < 63                         |      |      |      |      |      |      |      |
| Efficiency at Full loading    | $\eta$      | %                 | 97                           |      |      |      |      |      |      |      |
| Operating Temperature         |             | °C                | -25 to +90                   |      |      |      |      |      |      |      |
|                               |             | F                 | -13 to +194                  |      |      |      |      |      |      |      |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |      |      |      |      |      |      |      |
| Mouting Position              |             |                   | Any Directions               |      |      |      |      |      |      |      |
| Protection Class              |             |                   | IP 65                        |      |      |      |      |      |      |      |
| Service lifetime              | $L_h$       | h                 | 20,000(Continuous Operation) |      |      |      |      |      |      |      |
| Weight                        | $m$         | kg                | 5.5                          |      |      |      |      |      |      |      |
|                               |             | lb <sub>m</sub>   | 12.1                         |      |      |      |      |      |      |      |

## KPE120 2-stage

|                               |             | 2-stage           |                              |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------|-------------|-------------------|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Ratio                         | i           |                   | 12                           | 15   | 16   | 20   | 25   | 30   | 32   | 35   | 40   | 45   | 50   | 60   | 64   | 80   | 90   | 100  |
| Nominal Output Torque         |             | Nm                | 310                          | 310  | 300  | 300  | 320  | 210  | 305  | 320  | 320  | 320  | 320  | 300  | 255  | 255  | 220  | 220  |
|                               |             | in.lb             | 2744                         | 2744 | 2655 | 2655 | 2832 | 1859 | 2699 | 2832 | 2832 | 2832 | 2832 | 2655 | 2257 | 2257 | 1947 | 1947 |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 930                          | 930  | 900  | 900  | 960  | 630  | 915  | 960  | 960  | 960  | 960  | 900  | 765  | 765  | 660  | 660  |
|                               |             | in.lb             | 8231                         | 8231 | 7966 | 7966 | 8497 | 5576 | 8098 | 8497 | 8497 | 8497 | 8497 | 7966 | 6771 | 6771 | 5841 | 5841 |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 558                          | 558  | 540  | 540  | 576  | 378  | 549  | 576  | 576  | 576  | 576  | 540  | 459  | 459  | 396  | 396  |
|                               |             | in.lb             | 4939                         | 4939 | 4779 | 4779 | 5098 | 3346 | 4859 | 5098 | 5098 | 5098 | 5098 | 4779 | 4062 | 4062 | 3505 | 3505 |
| Maximum Torque                | $T_{2a}$    | Nm                | 620                          | 620  | 600  | 600  | 640  | 420  | 610  | 640  | 640  | 640  | 640  | 600  | 510  | 510  | 440  | 440  |
|                               |             | in.lb             | 5487                         | 5487 | 5310 | 5310 | 5664 | 3717 | 5399 | 5664 | 5664 | 5664 | 5664 | 5310 | 4514 | 4514 | 3894 | 3894 |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 6000                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 0.95                         | 0.85 | 0.95 | 0.85 | 0.85 | 0.81 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.81 | 0.78 | 0.78 | 0.78 | 0.78 |
|                               |             | in.lb             | 8.41                         | 7.52 | 8.41 | 7.52 | 7.52 | 7.17 | 6.90 | 6.90 | 6.90 | 6.90 | 6.90 | 7.17 | 6.90 | 6.90 | 6.90 | 6.90 |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Torsional Rigidity            | $C_{21}$    | Nm/arcmin         | 23-26                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | in.lb/arcmin      | 203.57-230.12                |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 6700                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>f</sub>   | 1506                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 3300                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>f</sub>   | 742                          |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 406.2                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | in.lb             | 3595.15                      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mass Moment of Inertia        | $j_1$       | kgcm <sup>2</sup> | 2.56                         | 2.58 | 1.75 | 1.5  | 1.49 | 1.3  | 1.3  | 1.3  | 1.3  | 1.3  | 1.3  | 1.3  | 1.5  | 1.3  | 1.3  | 1.3  |
| Operating Noise Level         | $L_{pA}$    | dB(A)             | < 63                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Operating Temperature         |             | °C                | -25 to +90                   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | F                 | -13 to +194                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Mouting Position              |             |                   | Any Directions               |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Protection Class              |             |                   | IP 65                        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| Weight                        | $m$         | kg                | 8                            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|                               |             | lb <sub>m</sub>   | 17.6                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |

## KPE160 1-stage

|                               |              |                   | 1-stage                      |       |       |       |       |       |       |       |
|-------------------------------|--------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i            |                   | 3                            | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| Nominal Output Torque         |              | Nm                | 450                          | 550   | 650   | 610   | 540   | 510   | 440   | 440   |
|                               |              | in.lb             | 3983                         | 4868  | 5753  | 5399  | 4779  | 4514  | 3894  | 3894  |
| Emergency Stop Torque         | $T_{2Max}$   | Nm                | 1350                         | 1650  | 1950  | 1830  | 1620  | 1530  | 1320  | 1320  |
|                               |              | in.lb             | 11948                        | 14604 | 17259 | 16197 | 14338 | 13542 | 11683 | 11683 |
| Maximum Acceleration Torque   | $T_{2a}$     | Nm                | 810                          | 990   | 1170  | 1098  | 972   | 918   | 792   | 792   |
|                               |              | in.lb             | 7169                         | 8762  | 10355 | 9718  | 8603  | 8125  | 7010  | 7010  |
| Maximum Torque                | $T_{2a}$     | Nm                | 900                          | 1100  | 1300  | 1220  | 1080  | 1020  | 880   | 880   |
|                               |              | in.lb             | 7966                         | 9736  | 11506 | 10798 | 9559  | 9028  | 7789  | 7789  |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 3000                         |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 6000                         |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 2.55                         | 2.45  | 2.3   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   |
|                               |              | in.lb             | 22.57                        | 21.68 | 20.36 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 |
| Maximum Torsional Backlash    | $j_i$        | arcmin            | ≤ 6                          |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 45-52                        |       |       |       |       |       |       |       |
|                               |              | in.lb/arcmin      | 398.28-460.24                |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 9600                         |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 2158                         |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 4800                         |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 1079                         |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2AMMax}$ | Nm                | 830.4                        |       |       |       |       |       |       |       |
|                               |              | in.lb             | 7349.62                      |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 12.31                        | 7.54  | 7.42  | 7.25  | 7.25  | 7.14  | 7.14  | 7.14  |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 65                         |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |       |       |       |       |       |       |       |
| Operating Temperature         |              | °C                | -25 to +90                   |       |       |       |       |       |       |       |
|                               |              | F                 | -13 to +194                  |       |       |       |       |       |       |       |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |
| Mouting Position              |              |                   | Any Directions               |       |       |       |       |       |       |       |
| Protection Class              |              |                   | IP 65                        |       |       |       |       |       |       |       |
| Service lifetime              | $L_h$        | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |
| Weight                        | $m$          | kg                | 20                           |       |       |       |       |       |       |       |
|                               |              | lb <sub>m</sub>   | 44.1                         |       |       |       |       |       |       |       |

## KPE160 2-stage

|                               |             |                   | 2-stage                      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|-------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i           |                   | 12                           | 15    | 16    | 20    | 25    | 30    | 32    | 35    | 40    | 45    | 50    | 60    | 64    | 80    | 90    | 100   |
| Nominal Output Torque         |             | Nm                | 500                          | 500   | 550   | 650   | 650   | 450   | 550   | 650   | 550   | 650   | 650   | 610   | 510   | 510   | 440   | 440   |
|                               |             | in.lb             | 4425                         | 4425  | 4868  | 5753  | 5753  | 3983  | 4868  | 5753  | 4868  | 5753  | 5753  | 5399  | 4514  | 4514  | 3894  | 3894  |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 1500                         | 1500  | 1650  | 1950  | 1950  | 1350  | 1650  | 1950  | 1650  | 1950  | 1950  | 1830  | 1530  | 1530  | 1320  | 1320  |
|                               |             | in.lb             | 13276                        | 13276 | 14604 | 17259 | 17259 | 11948 | 14604 | 17259 | 14604 | 17259 | 17259 | 16197 | 13542 | 13542 | 11683 | 11683 |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 900                          | 900   | 990   | 1170  | 1170  | 810   | 990   | 1170  | 990   | 1170  | 1170  | 1098  | 918   | 918   | 792   | 792   |
|                               |             | in.lb             | 7966                         | 7966  | 8762  | 10355 | 10355 | 7169  | 8762  | 10355 | 8762  | 10355 | 10355 | 9718  | 8125  | 8125  | 7010  | 7010  |
| Maximum Torque                | $T_{2a}$    | Nm                | 1000                         | 1000  | 1100  | 1300  | 1300  | 900   | 1100  | 1300  | 1100  | 1300  | 1300  | 1220  | 1020  | 1020  | 880   | 880   |
|                               |             | in.lb             | 8851                         | 8851  | 9736  | 11506 | 11506 | 7966  | 9736  | 11506 | 9736  | 11506 | 11506 | 10798 | 9028  | 9028  | 7789  | 7789  |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 6000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 2.45                         | 2.3   | 2.45  | 2.3   | 2.3   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   |
|                               |             | in.lb             | 21.68                        | 20.36 | 21.68 | 20.36 | 20.36 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{21}$    | Nm/arcmin         | 45-52                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb/arcmin      | 398.28-460.24                |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 9600                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 2158                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 4800                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 1079                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 830.4                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb             | 7349.62                      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$       | kgcm <sup>2</sup> | 12.35                        | 12.35 | 7.47  | 6.65  | 5.81  | 6.34  | 6.34  | 5.36  | 4.08  | 5.36  | 4.08  | 7.40  | 7.50  | 7.40  | 7.40  | 7.40  |
| Operating Noise Level         | $L_{PA}$    | dB(A)             | < 65                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Operating Temperature         |             | °C                | -25 to +90                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | F                 | -13 to +194                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mouting Position              |             |                   | Any Directions               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Protection Class              |             |                   | IP 65                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Weight                        | $m$         | kg                | 25                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>m</sub>   | 55.1                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

### KPE205 1-stage

|                               |              |                   | 1-stage                      |       |       |       |       |       |       |       |
|-------------------------------|--------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i            |                   | 3                            | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| Nominal Output Torque         |              | Nm                | 650                          | 1250  | 1200  | 1000  | 1000  | 1000  | 910   | 910   |
|                               |              | in.lb             | 5753                         | 11063 | 10621 | 8851  | 8851  | 8851  | 8054  | 8054  |
| Emergency Stop Torque         | $T_{290t}$   | Nm                | 1950                         | 3750  | 3600  | 3000  | 3000  | 3000  | 2730  | 2730  |
|                               |              | in.lb             | 17259                        | 33190 | 31863 | 26552 | 26552 | 26552 | 24162 | 24162 |
| Maximum Acceleration Torque   | $T_{2a}$     | Nm                | 1170                         | 2250  | 2160  | 1800  | 1800  | 1800  | 1638  | 1638  |
|                               |              | in.lb             | 10355                        | 19914 | 19118 | 15931 | 15931 | 15931 | 14497 | 14497 |
| Maximum Torque                | $T_{2a}$     | Nm                | 1300                         | 2500  | 2400  | 2000  | 2000  | 2000  | 1820  | 1820  |
|                               |              | in.lb             | 11506                        | 22127 | 21242 | 17701 | 17701 | 17701 | 16108 | 16108 |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 3000                         |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 4000                         |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 3.5                          | 3.3   | 3.15  | 3     | 3     | 3     | 3     | 3     |
|                               |              | in.lb             | 30.98                        | 29.21 | 27.88 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 |
| Maximum Torsional Backlash    | $j_i$        | arcmin            | ≤ 6                          |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 120-138                      |       |       |       |       |       |       |       |
|                               |              | in.lb/arcmin      | 1062.08-1221.40              |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 14000                        |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 3147                         |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 7000                         |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 1574                         |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{20MMax}$ | Nm                | 1386                         |       |       |       |       |       |       |       |
|                               |              | in.lb             | 12267.07                     |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 28.98                        | 23.67 | 22.75 | 22.48 | 22.48 | 22.59 | 22.59 | 22.55 |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 67                         |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |       |       |       |       |       |       |       |
| Operating Temperature         |              | °C                | -25 to +90                   |       |       |       |       |       |       |       |
|                               |              | F                 | -13 to +194                  |       |       |       |       |       |       |       |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |
| Mouting Position              |              |                   | Any Directions               |       |       |       |       |       |       |       |
| Protection Class              |              |                   | IP 65                        |       |       |       |       |       |       |       |
| Service lifetime              | $L_h$        | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |
| Weight                        | $m$          | kg                | 31                           |       |       |       |       |       |       |       |
|                               |              | lb <sub>m</sub>   | 68.3                         |       |       |       |       |       |       |       |



## KPE205 2-stage

|                               |             | 2-stage           |                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|-------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i           |                   | 12                           | 15    | 16    | 20    | 25    | 30    | 32    | 35    | 40    | 45    | 50    | 60    | 64    | 80    | 90    | 100   |
| Nominal Output Torque         |             | Nm                | 650                          | 850   | 1250  | 1200  | 1200  | 650   | 1250  | 1200  | 1200  | 1200  | 1200  | 1000  | 1000  | 1000  | 910   | 910   |
|                               |             | in.lb             | 5753                         | 7523  | 11063 | 10621 | 10621 | 5753  | 11063 | 10621 | 10621 | 10621 | 10621 | 8851  | 8851  | 8851  | 8054  | 8054  |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 1950                         | 2550  | 3750  | 3600  | 3600  | 1950  | 3750  | 3600  | 3600  | 3600  | 3600  | 3000  | 3000  | 3000  | 2730  | 2730  |
|                               |             | in.lb             | 17259                        | 22569 | 33190 | 31863 | 31863 | 17259 | 33190 | 31863 | 31863 | 31863 | 31863 | 26552 | 26552 | 26552 | 24162 | 24162 |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 1170                         | 1530  | 2250  | 2160  | 2160  | 1170  | 2250  | 2160  | 2160  | 2160  | 2160  | 1800  | 1800  | 1800  | 1638  | 1638  |
|                               |             | in.lb             | 10355                        | 13542 | 19914 | 19118 | 19118 | 10355 | 19914 | 19118 | 19118 | 19118 | 19118 | 15931 | 15931 | 15931 | 14497 | 14497 |
| Maximum Torque                | $T_{2a}$    | Nm                | 1300                         | 1700  | 2500  | 2400  | 2400  | 1300  | 2500  | 2400  | 2400  | 2400  | 2400  | 2000  | 2000  | 2000  | 1820  | 1820  |
|                               |             | in.lb             | 11506                        | 15046 | 22127 | 21242 | 21242 | 11506 | 22127 | 21242 | 21242 | 21242 | 21242 | 17701 | 17701 | 17701 | 16108 | 16108 |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 3000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 4000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 2.45                         | 2.3   | 2.45  | 2.3   | 2.3   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   | 2.2   |
|                               |             | in.lb             | 21.68                        | 20.36 | 21.68 | 20.36 | 20.36 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 | 19.47 |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$   | Nm/arcmin         | 125-138                      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb/arcmin      | 1106.34-1221.40              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 14000                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 3147                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 7000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 1574                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 1386                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb             | 12267.07                     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_1$       | kgcm <sup>2</sup> | 12.35                        | 12.30 | 7.54  | 7.42  | 7.54  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  | 7.14  |
| Operating Noise Level         | $L_{PA}$    | dB(A)             | < 67                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Operating Temperature         |             | °C                | -25 to +90                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | F                 | -13 to +194                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mouting Position              |             |                   | Any Directions               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Protection Class              |             |                   | IP 65                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Weight                        | $m$         | kg                | 39                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>m</sub>   | 86                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

### KPE235 1-stage

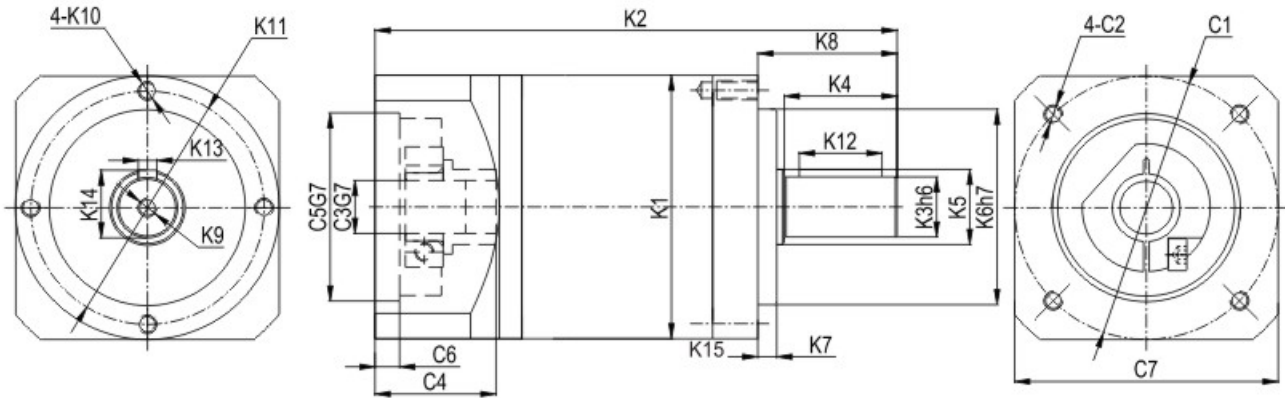
|                               |              |                   | 1-stage                      |       |       |       |       |       |       |       |
|-------------------------------|--------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i            |                   | 3                            | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| Nominal Output Torque         |              | Nm                | 1200                         | 1800  | 2050  | 1850  | 1750  | 1550  | 1500  | 1500  |
|                               |              | in.lb             | 10621                        | 15931 | 18144 | 16374 | 15489 | 13719 | 13276 | 13276 |
| Emergency Stop Torque         | $T_{2Max}$   | Nm                | 3600                         | 5400  | 6150  | 5550  | 5250  | 4650  | 4500  | 4500  |
|                               |              | in.lb             | 31863                        | 47794 | 54432 | 49121 | 46466 | 41156 | 39828 | 39828 |
| Maximum Acceleration Torque   | $T_{2a}$     | Nm                | 2160                         | 3240  | 3690  | 3330  | 3150  | 2790  | 2700  | 2700  |
|                               |              | in.lb             | 19118                        | 28676 | 32659 | 29473 | 27880 | 24693 | 23897 | 23897 |
| Maximum Torque                | $T_{2s}$     | Nm                | 2400                         | 3600  | 4100  | 3700  | 3500  | 3100  | 3000  | 3000  |
|                               |              | in.lb             | 21242                        | 31863 | 36288 | 32748 | 30977 | 27437 | 26552 | 26552 |
| Permitted Average Input Speed | $n_{1N}$     | rpm               | 2000                         |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$   | rpm               | 4000                         |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$    | Nm                | 5.2                          | 5     | 4.85  | 4.67  | 4.67  | 4.67  | 4.67  | 4.67  |
|                               |              | in.lb             | 46.02                        | 44.25 | 42.93 | 41.33 | 41.33 | 41.33 | 41.33 | 41.33 |
| Maximum Torsional Backlash    | $j_i$        | arcmin            | ≤ 6                          |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$    | Nm/arcmin         | 200–220                      |       |       |       |       |       |       |       |
|                               |              | in.lb/arcmin      | 1770.14–1947.15              |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$  | N                 | 16000                        |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 3597                         |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2CMMax}$ | N                 | 8000                         |       |       |       |       |       |       |       |
|                               |              | lb <sub>f</sub>   | 1798                         |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2AMMax}$ | Nm                | 2350                         |       |       |       |       |       |       |       |
|                               |              | in.lb             | 20800                        |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_i$        | kgcm <sup>2</sup> | 69.61                        | 54.37 | 53.27 | 50.84 | 50.84 | 50.84 | 50.84 | 50.56 |
| Operating Noise Level         | $L_{pA}$     | dB(A)             | < 70                         |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$       | %                 | 97                           |       |       |       |       |       |       |       |
| Operating Temperature         |              | °C                | -25 to +90                   |       |       |       |       |       |       |       |
|                               |              | F                 | -13 to +194                  |       |       |       |       |       |       |       |
| Lubrication                   |              |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |
| Mouting Position              |              |                   | Any Directions               |       |       |       |       |       |       |       |
| Protection Class              |              |                   | IP 65                        |       |       |       |       |       |       |       |
| Service lifetime              | $L_h$        | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |
| Weight                        | $m$          | kg                | 53                           |       |       |       |       |       |       |       |
|                               |              | lb <sub>m</sub>   | 117                          |       |       |       |       |       |       |       |

## KPE235 2-stage

|                               |             | 2-stage           |                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------------|-------------|-------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                         | i           |                   | 12                           | 15    | 16    | 20    | 25    | 30    | 32    | 35    | 40    | 45    | 50    | 60    | 64    | 80    | 90    | 100   |
| Nominal Output Torque         |             | Nm                | 1200                         | 1200  | 1800  | 2050  | 2050  | 1200  | 1800  | 2050  | 2050  | 2050  | 2050  | 1850  | 1550  | 1550  | 1500  | 1500  |
|                               |             | in.lb             | 10621                        | 10621 | 15931 | 18144 | 18144 | 10621 | 15931 | 18144 | 18144 | 18144 | 18144 | 16374 | 13719 | 13719 | 13276 | 13276 |
| Emergency Stop Torque         | $T_{2Max}$  | Nm                | 3600                         | 3600  | 5400  | 6150  | 6150  | 3600  | 5400  | 6150  | 6150  | 6150  | 6150  | 5550  | 4650  | 4650  | 4500  | 4500  |
|                               |             | in.lb             | 31863                        | 31863 | 47794 | 54432 | 54432 | 31863 | 47794 | 54432 | 54432 | 54432 | 54432 | 49121 | 41156 | 41156 | 39828 | 39828 |
| Maximum Acceleration Torque   | $T_{2B}$    | Nm                | 2160                         | 2160  | 3240  | 3690  | 3690  | 2160  | 3240  | 3690  | 3690  | 3690  | 3690  | 3330  | 2790  | 2790  | 2700  | 2700  |
|                               |             | in.lb             | 19118                        | 19118 | 28676 | 32659 | 32659 | 19118 | 28676 | 32659 | 32659 | 32659 | 32659 | 29473 | 24693 | 24693 | 23897 | 23897 |
| Maximum Torque                | $T_{2a}$    | Nm                | 2400                         | 2400  | 3600  | 4100  | 4100  | 2400  | 3600  | 4100  | 4100  | 4100  | 4100  | 3700  | 3100  | 3100  | 3000  | 3000  |
|                               |             | in.lb             | 21242                        | 21242 | 31863 | 36288 | 36288 | 21242 | 31863 | 36288 | 36288 | 36288 | 36288 | 32748 | 27437 | 27437 | 26552 | 26552 |
| Permitted Average Input Speed | $n_{1N}$    | rpm               | 2000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Input Speed           | $n_{1Max}$  | rpm               | 4000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mean No Load Running Torque   | $T_{012}$   | Nm                | 3.3                          | 3.15  | 3.3   | 3.15  | 3.15  | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     | 3     |
|                               |             | in.lb             | 29.21                        | 27.88 | 29.21 | 27.88 | 27.88 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 | 26.55 |
| Maximum Torsional Backlash    | $j_i$       | arcmin            | ≤ 8                          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Torsional Rigidity            | $C_{121}$   | Nm/arcmin         | 205–220                      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb/arcmin      | 1814.39–1947.15              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Radial Load           | $F_{2AMax}$ | N                 | 16000                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 3597                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Maximum Axial Load            | $F_{2OMax}$ | N                 | 8000                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>f</sub>   | 1798                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Max. Tilting Moment           | $M_{2OMax}$ | Nm                | 1936                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | in.lb             | 17134.96                     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mass Moment of Inertia        | $j_1$       | kgcm <sup>2</sup> | 28.98                        | 28.92 | 23.67 | 22.75 | 22.75 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 | 22.59 |
| Operating Noise Level         | $L_{PA}$    | dB(A)             | < 70                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Efficiency at Full loading    | $\eta$      | %                 | 95                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Operating Temperature         |             | °C                | –25 to +90                   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | F                 | –13 to +194                  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Lubrication                   |             |                   | Synthetic Lubrication Grease |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Mouting Position              |             |                   | Any Directions               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Protection Class              |             |                   | IP 65                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Service lifetime              | $L_n$       | h                 | 20,000(Continuous Operation) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Weight                        | $m$         | kg                | 66                           |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|                               |             | lb <sub>m</sub>   | 145.5                        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |

KPE Series Servo Planetary Gearbox

**KPE Dimensions**



| Model | KPE050 |       | KPE070 |       | KPE090 |       | KPE120 |       | KPE160 |        | KPE205 |        | KPE235 |        |
|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|
|       | 1      | 2     | 1      | 2     | 1      | 2     | 1      | 2     | 1      | 2      | 1      | 2      | 1      | 2      |
| K1    | 50     |       | 70     |       | 89     |       | 120    |       | 160    |        | 205    |        | 235    |        |
|       | 1.969  |       | 2.756  |       | 3.504  |       | 4.724  |       | 6.299  |        | 8.071  |        | 9.252  |        |
| K2    | 88.5   | 103.5 | 115    | 138.7 | 138    | 169.3 | 198    | 239.8 | 275.5  | 336.5  | 288    | 348    | 357.5  | 402    |
|       | 3.484  | 4.075 | 4.528  | 5.461 | 5.433  | 6.665 | 7.795  | 9.441 | 10.846 | 13.248 | 11.339 | 13.701 | 14.075 | 15.827 |
| K3    | 12     |       | 16     |       | 22     |       | 32     |       | 40     |        | 55     |        | 75     |        |
|       | 0.472  |       | 0.630  |       | 0.866  |       | 1.260  |       | 1.575  |        | 2.165  |        | 2.953  |        |
| K4    | 23     |       | 30     |       | 36     |       | 50     |       | 80     |        | 82     |        | 105    |        |
|       | 0.906  |       | 1.181  |       | 1.417  |       | 1.969  |       | 3.150  |        | 3.228  |        | 4.134  |        |
| K5    | 15     |       | 20     |       | 30     |       | 40     |       | 50     |        | 60     |        | 85     |        |
|       | 0.591  |       | 0.787  |       | 1.181  |       | 1.575  |       | 1.969  |        | 2.362  |        | 3.346  |        |
| K6    | 35     |       | 52     |       | 68     |       | 90     |       | 130    |        | 160    |        | 180    |        |
|       | 1.378  |       | 2.047  |       | 2.677  |       | 3.543  |       | 5.118  |        | 6.299  |        | 7.087  |        |
| K7    | 4      |       | 5      |       | 10     |       | 12     |       | 15     |        | 20     |        | 30     |        |
|       | 0.157  |       | 0.197  |       | 0.394  |       | 0.472  |       | 0.591  |        | 0.787  |        | 1.181  |        |
| K8    | 28     |       | 37     |       | 48     |       | 65     |       | 97     |        | 105    |        | 126    |        |
|       | 1.102  |       | 1.457  |       | 1.890  |       | 2.559  |       | 3.819  |        | 4.134  |        | 4.961  |        |
| K9    | M3X9   |       | M5X12  |       | M6X16  |       | M10X22 |       | M12X25 |        | M20X40 |        | M20X40 |        |
| K10   | M4X10  |       | M5X11  |       | M6X15  |       | M8X19  |       | M12X20 |        | M12X22 |        | M16X28 |        |
| K11   | 44     |       | 62     |       | 80     |       | 108    |       | 145    |        | 184    |        | 210    |        |
|       | 1.732  |       | 2.441  |       | 3.150  |       | 4.252  |       | 5.709  |        | 7.244  |        | 8.268  |        |
| K12   | 16     |       | 22     |       | 28     |       | 40     |       | 70     |        | 70     |        | 90     |        |
|       | 0.630  |       | 0.866  |       | 1.102  |       | 1.575  |       | 2.756  |        | 2.756  |        | 3.543  |        |
| K13   | 4      |       | 5      |       | 6      |       | 10     |       | 12     |        | 16     |        | 20     |        |
|       | 0.157  |       | 0.197  |       | 0.236  |       | 0.394  |       | 0.472  |        | 0.630  |        | 0.787  |        |
| K14   | 13.5   |       | 18     |       | 24.5   |       | 35     |       | 43     |        | 59     |        | 79.5   |        |
|       | 0.531  |       | 0.709  |       | 0.965  |       | 1.378  |       | 1.693  |        | 2.323  |        | 3.130  |        |
| C1    | 46     |       | 70     |       | 90     |       | 145    |       | 200    |        | 215    | 200    | 235    | 215    |
|       | 1.811  |       | 2.756  |       | 3.543  |       | 5.709  |       | 7.874  |        | 8.465  | 7.874  | 9.252  | 8.465  |
| C2    | M4X10  |       | M5X12  |       | M6X15  |       | M8X20  |       | M12X25 |        | M12X25 | M12X25 | M12X25 | M12X25 |
| C3    | 8      |       | 14     |       | 19     |       | 24     |       | 35     |        | 42     | 35     | 55     | 42     |
|       | 0.315  |       | 0.551  |       | 0.748  |       | 0.945  |       | 1.378  |        | 1.654  | 1.378  | 2.165  | 1.654  |
| C4    | 26.1   |       | 32.1   |       | 41.6   |       | 61.3   |       | 82     |        | 82.5   | 82     | 115.5  | 82.5   |
|       | 1.028  |       | 1.264  |       | 1.638  |       | 2.413  |       | 3.228  |        | 3.248  | 3.228  | 4.547  | 3.248  |
| C5    | 30     |       | 50     |       | 70     |       | 110    |       | 114.3  |        | 180    | 114.3  | 200    | 180    |
|       | 1.181  |       | 1.969  |       | 2.756  |       | 4.331  |       | 4.500  |        | 7.087  | 4.500  | 7.874  | 7.087  |
| C6    | 5      |       | 6.5    |       | 6.5    |       | 8      |       | 8      |        | 8      | 8      | 8      | 8      |
|       | 0.197  |       | 0.256  |       | 0.256  |       | 0.315  |       | 0.315  |        | 0.315  | 0.315  | 0.315  | 0.315  |
| C7    | 50     |       | 70     |       | 89     |       | 120    |       | 175    |        | 190    | 175    | 220    | 190    |
|       | 1.969  |       | 2.756  |       | 3.504  |       | 4.724  |       | 6.890  |        | 7.480  | 6.890  | 8.661  | 7.480  |

The dimensions modified as per the applied motor flanges.

You can get the specific gearbox drawing solution by KDP(Kofon Design Programme) on line from our website: [www.kofon-motion.com](http://www.kofon-motion.com)



## Technical Memo

