# KinetiMax HPD Brushless DC Outer-Rotor Motors
# High Power Density, Frameless Stator-Rotor Sets

*62 to 125 mm diameter, 0.24 to 6.7 Nm continuous torque, up to 1170 Watts output*


The KinetiMax HPD range of outer-rotor brushless DC motors comes in frameless stator-rotor part sets. Available in six frame sizes and three stack-lengths each, the HPD series enables you to select an optimum configuration with an exact performance fit for your application.

These compact kit motors offer an ideal solution especially where total motor length is crucial in space-constrained applications.

Their large stator ID makes integration of larger ball-bearings possible, and the large clear aperture ID permits cabling to pass through the motor.

The HPD's excellent high torque-to-weight ratio is essential in applications where weight is critical. And with an efficiency ranging from 83% to 90% in a wide speed-torque range, our KinetiMax HPD frameless motors are ideal for battery-fed applications, where they help maximize the running time per battery charge.

Their low cogging torque combined with high peak torque improves motor behaviour in servo applications.

## Features & Benefits

- Winding selection for other Voltages
- Rated torque 0.24 to 6.7 Nm
- High torque-to-weight ratio
- Excellent efficiency from 83% up to 90% over a wide range around the nominal working point

## Options & Accessories

- Hall commutation sensor board
- Temperature sensor mounted on stator
- Aluminium mounting ring

## Typical Applications

- Autonomous Ground Vehicles (AGVs)
- Robotics (arms, joints)
- Handheld Hydraulic Power Tools
- Material Handling Systems
- Medical equipment
- Rotary Actuators
- Gimbals


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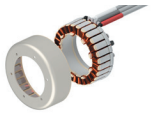
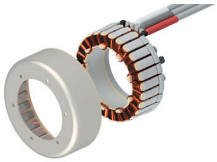
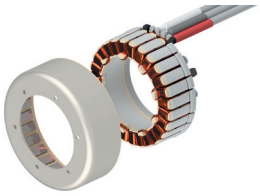
## KinetiMax HPD Specifications

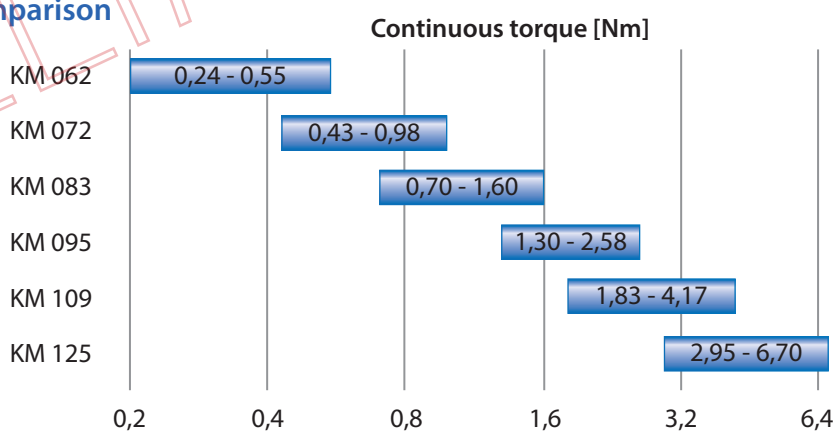




| | KM 062 | | | KM 072 | | | KM 083 | | |
|---|---|---|---|---|---|---|---|---|---|
| **Stack height** | 01 | 02 | 03 | 01 | 02 | 03 | 01 | 02 | 03 |
| **Winding Voltage** | 30 | 24 | 31 | 36 | 29 | 38 | 24 | 34 | 26 |
| **Operating Voltage** - Rated[1] | 17 | 14 | 18 | 21 | 16 | 22 | 14 | 19 | 15 |
| **Output Power Watt** – Rated | 108 | 131 | 150 | 166 | 202 | 232 | 245 | 299 | 345 |
| **Torque Nm** – Rated | 0.24 | 0.42 | 0.55 | 0.43 | 0.76 | 0.98 | 0.7 | 1.25 | 1.6 |
| **Torque Nm** – Peak | 0.8 | 1.6 | 2.4 | 1.3 | 2.6 | 3.9 | 2.0 | 4.0 | 6.0 |
| **Speed RPM** – Rated | 4320 | 2948 | 2617 | 3712 | 2545 | 2264 | 3327 | 2294 | 2046 |
| **Speed RPM – No-load** (@ winding voltage) | 8400 | 5820 | 5011 | 7310 | 5048 | 4409 | 6287 | 4453 | 3932 |
| **DC Current A** – Rated[2] | 7 | 11 | 9,3 | 9 | 14 | 12 | 19,4 | 17,1 | 25,5 |
| **Rotor Inertia** kgm$^2$ (x10$^{-6}$) | 44 | 61 | 79 | 93 | 131 | 169 | 189 | 266 | 343 |
| **Max Winding Temperature °C** | 160 | | | 160 | | | 160 | | |
| **Number of poles** | 30 | | | 30 | | | 30 | | |
| **Weight** kg | 0.11 | 0.16 | 0.22 | 0.18 | 0.27 | 0.37 | 0.27 | 0.41 | 0.56 |
| **External diameter** [C][3] mm | 62 | 62 | 62 | 72 | 72 | 72 | 83 | 83 | 83 |
| **Internal diameter** [D][3] mm | 38 | 38 | 38 | 44 | 44 | 44 | 51 | 51 | 51 |
| **Overall length** [A][3] mm | 21 | 27 | 33 | 23 | 31 | 38 | 28 | 36 | 44 |

*(1) Data is based upon 1 standard supply voltage. Additional windings are available per frame size and stack length.*
*(2) DC link current assuming a sinusoidal drive is used.*
*(3) See dimensions on following page.*



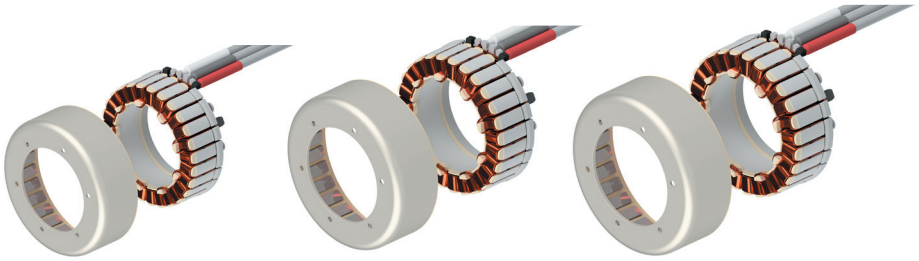
## KinetiMax HPD Performance Comparison




## Model Numbering

**KM XXX 01 - AA 00 - XXX**

- KinetiMax
- Framesize
- Stackheight 01 - 03
- Winding indentification
- Electr./Mech. Custom differentiation (hall's or PT1000)
- Additional features



KM 095 KM 109 KM 125

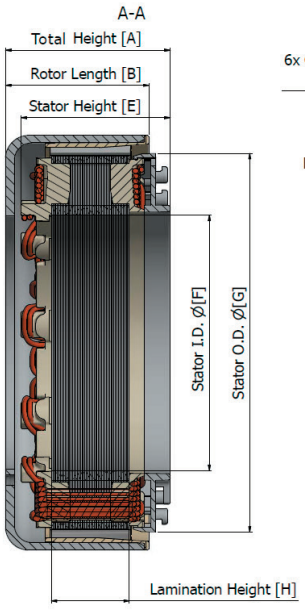
## KinetiMax HPD Specifications

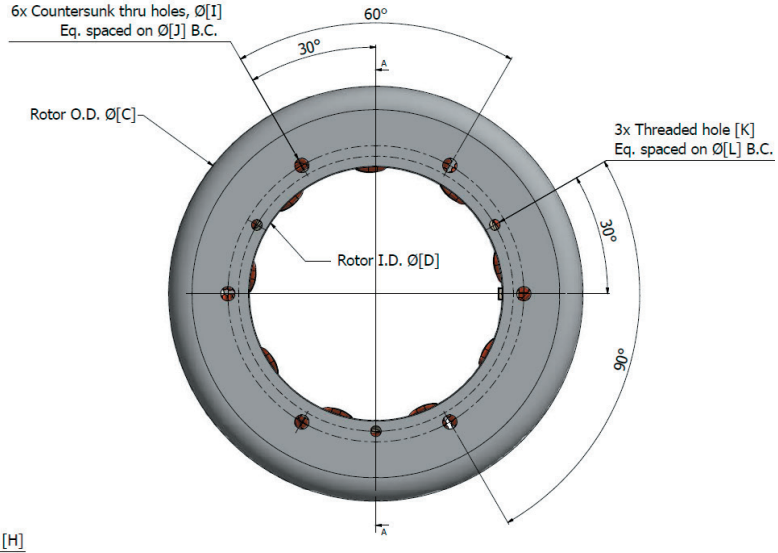
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 01 | 02 | 03 | 01 | 02 | 03 | 01 | 02 | 03 | **Stack height** |
| 29 | 24 | 32 | 21 | 29 | 40 | 25 | 40 | 49 | **Winding Voltage** |
| 17 | 14 | 18 | 12 | 16 | 22 | 15 | 20 | 27 | **Operating Voltage - Rated**[1] |
| 360 | 442 | 510 | 534 | 662 | 767 | 803 | 1006 | 1171 | **Output Power Watt** – Rated |
| 1.3 | 2.0 | 2.58 | 1.83 | 3.24 | 4.17 | 2.95 | 5.2 | 6.7 | **Torque Nm** – Rated |
| 3.0 | 6.0 | 9.0 | 4.5 | 9.1 | 13.6 | 6.8 | 13.7 | 20.5 | **Torque Nm** – Peak |
| 3038 | 2109 | 1886 | 2792 | 1954 | 1754 | 2598 | 1838 | 1658 | **Speed RPM** – Rated |
| 5799 | 4156 | 3694 | 5525 | 3815 | 3508 | 5001 | 4001 | 3267 | **Speed RPM – No-load** (@ winding voltage) |
| 24 | 36 | 34 | 51 | 45 | 38 | 62 | 55 | 47 | **DC Current A** – Rated[2] |
| 344 | 483 | 627 | 685 | 960 | 1246 | 1307 | 1879 | 2440 | **Rotor Inertia** kgm$^2$ (x10$^{-6}$) |
| 160 | | | 160 | | | 160 | | | **Max Winding Temperature °C** |
| 30 | | | 30 | | | 30 | | | **Number of poles** |
| 0.40 | 0.62 | 0.84 | 0.61 | 0.94 | 1.27 | 0.92 | 1.41 | 1.91 | **Weight** kg |
| 95 | 95 | 95 | 109 | 109 | 109 | 125 | 125 | 125 | **External diameter** [C][3] mm |
| 58 | 58 | 58 | 67 | 67 | 67 | 77 | 77 | 77 | **Internal diameter** [D][3] mm |
| 32 | 40 | 49 | 38 | 48 | 59 | 42 | 54 | 66 | **Overall length** [A][3] mm |



*(1) Data is based upon 1 standard supply voltage. Additional windings are available per frame size and stack length.*
*(2) DC link current assuming a sinusoidal drive is used.*
*(3) See dimensions in design below.*

## KinetiMax HPD Dimensions (mm)



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