

## Frameless Servo Motors

Parker核心代理商



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**Frameless Servo Motor - K Series**



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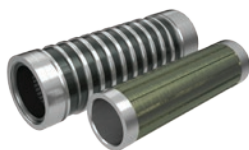
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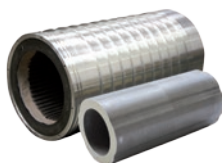
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# Parker Hannifin

## The global leader in motion and control technologies

### A world class player on a local stage

#### Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

#### Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

#### Manufacturing to Meet Our Customers' Needs

Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

#### Electromechanical Worldwide Manufacturing Locations

##### Europe

Littlehampton, United Kingdom  
Dijon, France  
Offenburg, Germany  
Filderstadt, Germany  
Milan, Italy

##### Asia

Wuxi, China  
Jangan, Korea  
Chennai, India

##### North America

Rohnert Park, California  
Irwin, Pennsylvania  
Charlotte, North Carolina  
New Ulm, Minnesota



Offenburg, Germany

#### Local Manufacturing and Support in Europe

Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

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Milan, Italy



Littlehampton, UK



Filderstadt, Germany



Dijon, France

## Description

Frameless servomotor is an innovative and comprehensive approach enabling the complete integration of the permanent magnets AC motor in a simplified mechanical system.

This approach ensures that the size constraints of the machine are utilized to maximum effect. This delivers a more accurate, reliable and robust solution than traditional construction methods.

Different ranges of products are available to meet the design needs of many different mechanical systems in a host of different applications. Other more bespoke adaptations can be developed upon request.

## Advantages

- Global cost reduction
- Increased reliability
- Compact footprint of the machine
- High stiffness and robustness of the system
- Direct drive for more accurate and dynamic motion
- Simple machine design
- Reduced weight of the system
- Reduced maintenance
- Integration assistance

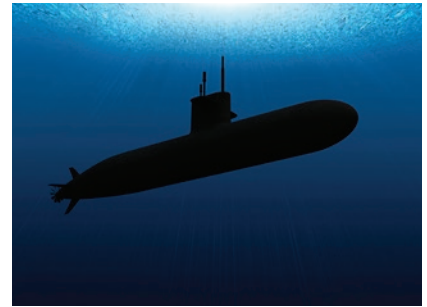
## Applications



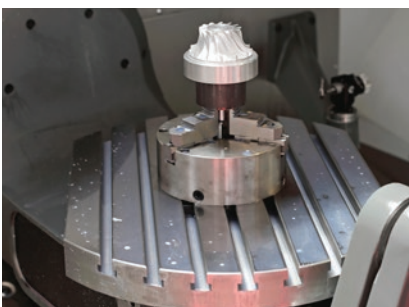
Machine Tools



Medical



Marine & Submarine



Rotating table



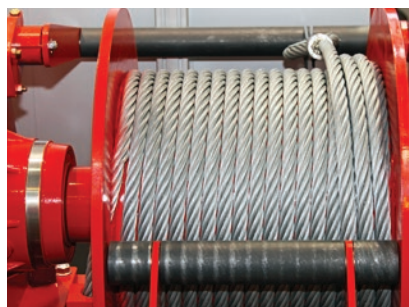
Special machine



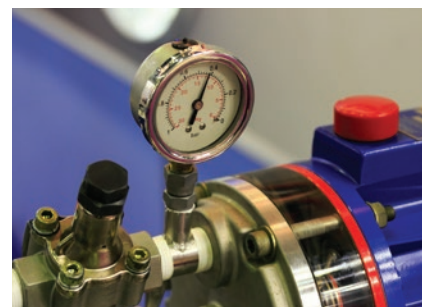
Handling & Robotics



Mixer



Winch



Compressor

|  |  |  |   |
|--|--|--|---|
| <p><b>Series</b></p>                                 | <p style="text-align: center;"><b>NK</b></p>                              |  | <p style="text-align: center;"><b>K</b></p>    |
|  | <p style="text-align: center;"><a href="http://www.parker.com/eme/nk">www.parker.com/eme/nk</a></p> <p style="text-align: center;">page 9</p>              |  | <p style="text-align: center;"><a href="http://www.parker.com/eme/k">www.parker.com/eme/k</a></p> <p style="text-align: center;">page 15</p>  |
| <p><b>Cooling</b></p>                                | <p style="text-align: center;"><b>Natural Cooling</b></p>  | <p style="text-align: center;"><b>Water Cooling</b></p>    | <p style="text-align: center;"><b>Natural Cooling</b></p>   |
| <p><b>Power</b></p>                                  | <p style="text-align: center;">0.2 to 7.5 kW</p>   | <p style="text-align: center;">3.8 to 34 kW</p>            | <p style="text-align: center;">0.06 to 2 kW</p>   |
| <p><b>Torque</b></p>                                 | <p style="text-align: center;">0.45 to 41 Nm</p>   | <p style="text-align: center;">3.1 to 90 Nm</p>            | <p style="text-align: center;">0 .07 to 23 Nm</p>   |
| <p><b>Max Speed</b></p>                              | <p style="text-align: center;">8 900 min<sup>-1</sup></p>  | <p style="text-align: center;">15 000 min<sup>-1</sup></p> | <p style="text-align: center;">10 000 min<sup>-1</sup></p>  |
| <p><b>Diameter</b></p>                               | <p style="text-align: center;">42 - 56 - 62 - 80 -<br/>111 - 143 mm</p>  | <p style="text-align: center;">62 - 80 - 111 - 143 mm</p>  | <p style="text-align: center;">32 - 44 - 64 - 89 - 178 mm</p>   |
| <p><b>Power Supply</b></p>                           | <p style="text-align: center;">24 - 48 - 230 - 400 VAC</p>   | <p style="text-align: center;">24 - 48 - 230 - 400 VAC</p> | <p style="text-align: center;">12 - 24 - 48 - 96 VDC<br/>240 VAC only for size K178</p>   |
| <p><b>Main Characteristics/<br/>Performances</b></p> | <ul style="list-style-type: none"> <li>• Low cogging</li> <li>• Compact in diameter</li> <li>• Embedded magnets</li> <li>• Oil proof on request</li> </ul> |  | <ul style="list-style-type: none"> <li>• Low voltage</li> <li>• Compact in Length</li> <li>• Glued magnets</li> <li>• Integrated Hall Effect sensor as an option</li> <li>• Large hollow shaft</li> </ul> |

| SKW   | HKW   | TK   |                          |
|---|---|--|--------------------------|
|    |    |   |                          |
| <a href="http://www.parker.com/eme/skw">www.parker.com/eme/skw</a>  | <a href="http://www.parker.com/eme/hkw">www.parker.com/eme/hkw</a>  | <a href="http://www.parker.com/eme/tk">www.parker.com/eme/tk</a>   |                          |
| page 21   | page 27   | page 35  |                          |
| Water cooling   | Water Cooling   | Natural Cooling  | Water Cooling            |
| 0.2 to 7.5 kW   | 2.3 to 276 kW   | 2.8 to 58 kW   | 7 to 207 kW              |
| 4 to 36 Nm  | 4.5 to 1 250 Nm   | 41 to 10 100 Nm  | 90 to 21 900 Nm          |
| 12 000 min <sup>-1</sup>  | 50 000 min <sup>-1</sup>  | 870 min <sup>-1</sup>  | 2 500 min <sup>-1</sup>  |
| 73 - 82 - 91 - 96 mm  | 85 - 108 - 155 - 195 - 242 - 310 mm   | 230 - 385 - 565 - 795 mm   | 230 - 385 - 565 - 795 mm |
| 400 VAC   | 400 VAC   | 400 VAC  | 400 VAC                  |
| <ul style="list-style-type: none"> <li>• Medium speed</li> <li>• Glued magnets</li> <li>• Winding potted in epoxy resin</li> <li>• Large hollow shaft</li> <li>• Oil proof</li> </ul> | <ul style="list-style-type: none"> <li>• High speed</li> <li>• High power</li> <li>• Constant power running (Field weakening mode)</li> <li>• Embedded magnets</li> <li>• Winding potted in epoxy resin</li> <li>• Medium hollow shaft</li> <li>• Oil proof on request</li> </ul> | <ul style="list-style-type: none"> <li>• High torque</li> <li>• High power</li> <li>• Glued magnets</li> <li>• Winding potted in epoxy resin</li> <li>• Very large hollow shaft</li> <li>• Oil proof on request</li> <li>• Coating against corrosion on request</li> </ul> |                          |





# Frameless Servo Motor - NK Series

## Overview

### Description

NK Series Servo motors are an innovative direct drive solution designed for industrial applications. NK Series brushless servomotors combine exceptionally precise and quality motion, high dynamic performance with a compact footprint, allowing complete integration into a mechanical system.

NK motors are suitable for applications where constant speed is needed due to their low cogging characteristic. Support with customisation and integration are possible on request.



### Advantages

- Low cogging solution
- Compact diameter
- Oil-proof on request
- Global cost reduction
- Increased reliability and reduced maintenance
- High dynamic performance and power density: increased productivity and reduced size when compared to induction motors
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance

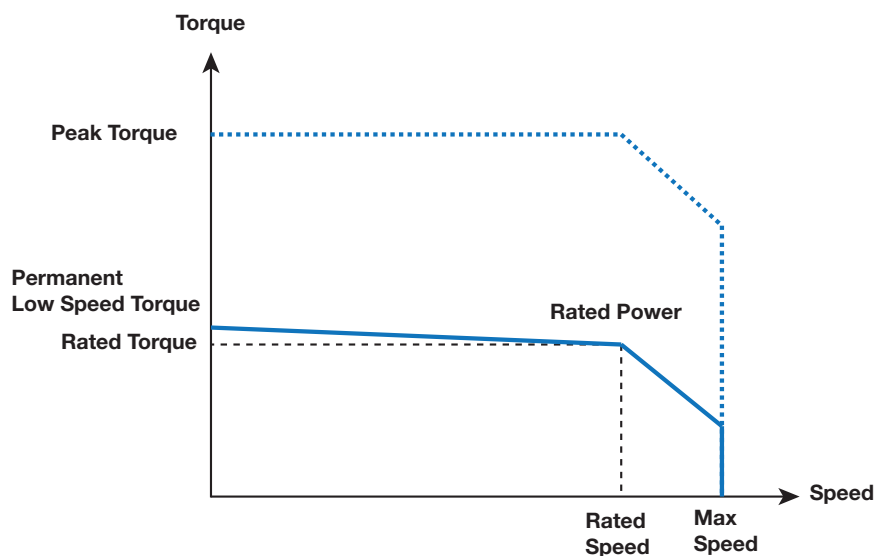
### Application

- Medical
- Machine Tools
- Submarine
- Packaging Machinery
- Pump
- Compressor
- Winch
- Special Machine
- Electric Cylinder

### Technical Characteristics - Overview

| Cooling         | Natural cooling                  | Water cooling            |
|-----------------|----------------------------------|--------------------------|
| Power           | 0.2...7.5 kW                     | 3.8...34 kW              |
| Torque          | 0.45...41 Nm                     | 3.1...90 Nm              |
| Max Speed       | 8 900 min <sup>-1</sup>          | 15 000 min <sup>-1</sup> |
| Number of poles | 10                               | 10                       |
| Diameter        | 42 – 56 – 62 – 80 – 111 – 143 mm | 62 – 80 – 111 – 143 mm   |
| Power supply    | 24 – 48 – 230 – 400 VAC          | 24 – 48 – 230 – 400 VAC  |

## Technical Data



| Motor   | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>0</sub> | Low Speed Current I <sub>0</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J  |
|---|----------------------------|-----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|----------------------|
|   | [kW]                       | [Nm]                        | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgmm <sup>2</sup> ] |
| <b>230VAC power supply - single or three-phased</b> |                            |                             |                              |                                 |                                  |                               |                                |                             |                        |                      |
| NK110E_P  | 0.21                       | 0.33                        | 0.79                         | 0.45                            | 1.0                              | 1.7                           | 4.0                            | 6000                        | 500                    | 13                   |
| NK210E_T  | 0.33                       | 0.80                        | 1.11                         | 1                               | 1.3                              | 3.4                           | 5.4                            | 4000                        | 333                    | 38                   |
| NK210E_P  | 0.39                       | 0.61                        | 1.32                         | 1                               | 2.0                              | 3.4                           | 8.0                            | 6000                        | 500                    | 38                   |
| NK310E_P  | 0.43                       | 1.8                         | 1.27                         | 2                               | 1.4                              | 6.6                           | 5.6                            | 2300                        | 192                    | 79                   |
| NK310E_K  | 0.69                       | 1.65                        | 2.06                         | 2                               | 2.4                              | 6.6                           | 9.7                            | 4000                        | 333                    | 79                   |
| NK420E_P  | 0.85                       | 3.53                        | 2.41                         | 4                               | 2.7                              | 13.4                          | 10.9                           | 2300                        | 192                    | 290                  |
| NK420E_J  | 1.31                       | 3.14                        | 3.74                         | 4                               | 4.7                              | 13.4                          | 18.9                           | 4000                        | 333                    | 290                  |
| NK430E_J  | 1.57                       | 4.68                        | 4.53                         | 5,5                             | 5.2                              | 18.7                          | 21.0                           | 3200                        | 267                    | 426                  |
| NK430E_F  | 1.80                       | 4.29                        | 5.28                         | 5,5                             | 6.6                              | 18.7                          | 26.6                           | 4000                        | 333                    | 426                  |
| NK620E_R  | 1.71                       | 7.42                        | 4.99                         | 8                               | 5.3                              | 26.6                          | 21.2                           | 2200                        | 183                    | 980                  |
| NK620E_J  | 2.55                       | 6.08                        | 7.82                         | 8                               | 9.9                              | 26.6                          | 39.5                           | 4000                        | 333                    | 980                  |
| NK630E_R  | 1.63                       | 10.7                        | 4.75                         | 12                              | 5.3                              | 39.9                          | 21.0                           | 1450                        | 121                    | 1470                 |
| NK630E_K  | 2.70                       | 9.21                        | 7.8                          | 12                              | 9.9                              | 39.9                          | 39.4                           | 2800                        | 233                    | 1470                 |
| NK630E_G  | 3.48                       | 8.31                        | 10.1                         | 12                              | 13.9                             | 39.9                          | 55.7                           | 4000                        | 333                    | 1470                 |
| NK820E_L  | 4.99                       | 13.2                        | 14.8                         | 16                              | 17.6                             | 49.9                          | 69.2                           | 3600                        | 300                    | 3200                 |
| NK840E_J  | 5.27                       | 22.9                        | 15.7                         | 28                              | 18.9                             | 91.8                          | 74.8                           | 2200                        | 183                    | 6200                 |
| NK860E_F  | 6.53                       | 32.8                        | 21.8                         | 41                              | 27.0                             | 136.0                         | 107.6                          | 1900                        | 158                    | 9200                 |
| NK860E_D  | 7.48                       | 27.5                        | 22.5                         | 41                              | 33.0                             | 136.0                         | 131.6                          | 2600                        | 217                    | 9200                 |

## Technical Data

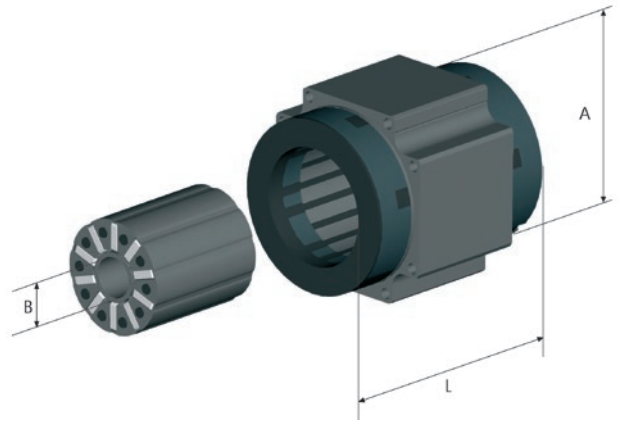
| Motor   | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>o</sub> | Low speed Current I <sub>o</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J  |
|---|----------------------------|-----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|----------------------|
|   | [kW]                       | [Nm]                        | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgmm <sup>2</sup> ] |
| <b>400VAC power supply - three-phased</b>                 |                            |                             |                              |                                 |                                  |                               |                                |                             |                        |                      |
| NK210E_T  | 0.385                      | 0.613                       | 0.9                          | 1                               | 1.3                              | 3.4                           | 5.4                            | 6000                        | 500                    | 38                   |
| NK310E_P  | 0.689                      | 1.65                        | 1.2                          | 2                               | 1.4                              | 6.6                           | 5.6                            | 4000                        | 333                    | 79                   |
| NK420E_V  | 0.753                      | 3.6                         | 1.2                          | 4                               | 1.4                              | 13.4                          | 5.5                            | 2000                        | 167                    | 290                  |
| NK420E_P  | 1.31                       | 3.14                        | 2.2                          | 4                               | 2.7                              | 13.4                          | 10.9                           | 4000                        | 333                    | 290                  |
| NK430E_V  | 0.563                      | 5.38                        | 1.4                          | 5.5                             | 1.4                              | 18.7                          | 5.6                            | 1000                        | 83                     | 426                  |
| NK430E_P  | 1.5                        | 4.77                        | 2.5                          | 5.5                             | 2.8                              | 18.7                          | 11.3                           | 3000                        | 250                    | 426                  |
| NK430E_L  | 1.8                        | 4.29                        | 3.0                          | 5.5                             | 3.8                              | 18.7                          | 15.1                           | 4000                        | 333                    | 426                  |
| NK620E_V  | 1.57                       | 7.52                        | 2.7                          | 8                               | 2.8                              | 26.6                          | 11.3                           | 2000                        | 167                    | 980                  |
| NK620E_R  | 2.52                       | 6.17                        | 4.3                          | 8                               | 5.3                              | 26.6                          | 21.2                           | 3900                        | 325                    | 980                  |
| NK620E_J  | 2.45                       | 4.1                         | 5.6                          | 8                               | 9.9                              | 26.6                          | 39.5                           | 5700                        | 475                    | 980                  |
| NK630E_V  | 1.53                       | 10.8                        | 2.4                          | 12                              | 2.6                              | 39.9                          | 10.5                           | 1350                        | 113                    | 1470                 |
| NK630E_R  | 2.64                       | 9.34                        | 4.2                          | 12                              | 5.3                              | 39.9                          | 21.0                           | 2700                        | 225                    | 1470                 |
| NK630E_N  | 3.18                       | 7.6                         | 5.3                          | 12                              | 7.9                              | 39.9                          | 31.7                           | 4000                        | 333                    | 1470                 |
| NK820E_X  | 2.93                       | 14.7                        | 4.8                          | 16                              | 5.2                              | 49.9                          | 20.3                           | 1900                        | 158                    | 3200                 |
| NK820E_R  | 5.29                       | 12.9                        | 9.1                          | 16                              | 11.0                             | 49.9                          | 43.2                           | 3900                        | 325                    | 3200                 |
| NK840E_Q  | 5.09                       | 23.2                        | 8.5                          | 28                              | 10.1                             | 91.8                          | 39.9                           | 2100                        | 175                    | 6200                 |
| NK840E_K  | 6.8                        | 18.6                        | 11.5                         | 28                              | 16.8                             | 91.8                          | 66.5                           | 3500                        | 292                    | 6200                 |
| NK860E_J  | 7.48                       | 27.5                        | 12.7                         | 41                              | 18.5                             | 136.0                         | 74.0                           | 2600                        | 217                    | 9200                 |
| <b>400 VAC power supply - three-phased - water cooled</b> |                            |                             |                              |                                 |                                  |                               |                                |                             |                        |                      |
| NK310W_F  | 3.8                        | 2.5                         | 7.4                          | 3.1                             | 8.9                              | 5.89                          | 18.0                           | 15000                       | 1250                   | 79                   |
| NK420W_D  | 4.9                        | 4.64                        | 12.6                         | 6.1                             | 16.3                             | 12.6                          | 36.4                           | 12000                       | 1000                   | 290                  |
| NK430W_D  | 7.4                        | 7.26                        | 14.1                         | 9.6                             | 18.3                             | 18.9                          | 38.9                           | 10000                       | 833                    | 420                  |
| NK620W_C  | 7.7                        | 10.7                        | 20.7                         | 15                              | 29                               | 23.5                          | 48.0                           | 10000                       | 833                    | 980                  |
| NK630W_D  | 11.8                       | 17.8                        | 31.2                         | 23                              | 40.1                             | 38.7                          | 72.8                           | 8000                        | 667                    | 1470                 |
| NK820W_G  | 12.6                       | 19                          | 35.2                         | 24                              | 44.1                             | 37.9                          | 75.0                           | 8000                        | 667                    | 3200                 |
| NK840W_D  | 26.4                       | 42.7                        | 52.7                         | 53                              | 65.3                             | 75.8                          | 100.0                          | 6500                        | 542                    | 6200                 |
| NK860W_D  | 34.8                       | 83.2                        | 64.6                         | 90                              | 70.2                             | 140                           | 123.2                          | 4000                        | 333                    | 9200                 |

## Associated Drives

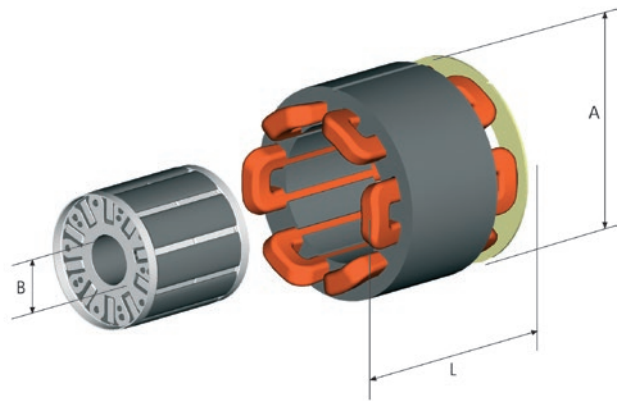
| Motor   | Compax3    | PSD1       | SLVD-N  | AC890            | AC30            |
|---|------------|------------|---------|------------------|-----------------|
| <b>230 VAC power supply - single or three-phased</b>      |            |            |         |                  |                 |
| NK110E_P..  | C3S025V2.. | PSD1SW1200 | SLVD1N  | 890SD-231300B... | -               |
| NK210E_T..  | C3S025V2.. | PSD1SW1200 | SLVD2N  | 890SD-231300B... | -               |
| NK210E_P..  | C3S025V2.. | PSD1SW1200 | SLVD2N  | 890SD-231300B... | -               |
| NK310E_P..  | C3S025V2.. | PSD1SW1200 | SLVD2N  | 890SD-231300B... | -               |
| NK310E_K..  | C3S025V2.. | PSD1SW1200 | SLVD2N  | 890SD-231550B... | -               |
| NK420E_P..  | C3S063V2.. | PSD1SW1300 | SLVD5N  | 890SD-231550B... | -               |
| NK420E_J..  | C3S063V2.. | -          | SLVD5N  | 890SD-231700B... | -               |
| NK430E_J..  | C3S063V2.. | PSD1SW1300 | SLVD7N  | 890SD-231700B... | -               |
| NK430E_F..  | C3S100V2.. | -          | SLVD7N  | 890SD-232165B... | -               |
| NK620E_R..  | C3S063V2.. | PSD1SW1300 | SLVD7N  | 890SD-231700B... | -               |
| NK620E_J..  | C3S100V2.. | -          | SLVD10N | 890SD-232165B... | -               |
| NK630E_R..  | C3S063V2.. | -          | SLVD7N  | 890SD-231700B... | -               |
| NK630E_K..  | C3S100V2.. | -          | SLVD10N | 890SD-232165B... | -               |
| NK630E_G..  | C3S150V2.. | -          | SLVD15N | 890SD-232240C... | -               |
| NK820E_L..  | -          | -          | -       | 890SD-232240C... | -               |
| NK840E_J..  | -          | -          | -       | 890SD-232240C... | -               |
| NK860E_F..  | -          | -          | -       | 890SD-232300C... | -               |
| NK860E_D..  | -          | -          | -       | -                | -               |
| <b>400 VAC power supply - three-phased</b>                |            |            |         |                  |                 |
| NK210E_T..  | C3S015V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK310E_P..  | C3S015V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK420E_V..  | C3S015V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK420E_P..  | C3S038V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK430E_V..  | C3S015V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK430E_P..  | C3S038V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK430E_L..  | C3S038V4.. | PSD1MW1300 | -       | 890SD-532100B... | 31V4-D0005-B... |
| NK620E_V..  | C3S038V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK620E_R..  | C3S075V4.. | PSD1MW1400 | -       | 890SD-532100B... | 31V4-D0006-B... |
| NK620E_J..  | C3S150V4.. | PSD1MW1600 | -       | 890SD-532160B... | 31V4-D0006-B... |
| NK630E_V..  | C3S038V4.. | PSD1MW1300 | -       | 890SD-531450B... | 31V4-D0004-B... |
| NK630E_R..  | C3S075V4.. | PSD1MW1400 | -       | 890SD-532100B... | 31V4-D0006-B... |
| NK630E_N..  | C3S150V4.. | PSD1MW1600 | -       | 890SD-532160B... | 31V4-D0010-B... |
| NK820E_X..  | C3S075V4.. | PSD1MW1400 | -       | 890SD-532100B... | 31V4-D0006-B... |
| NK820E_R..  | C3S150V4.. | PSD1MW1600 | -       | 890SD-532160B... | 31V4-D0012-B... |
| NK840E_Q..  | C3S150V4.. | PSD1MW1600 | -       | 890SD-532160B... | 31V4-D0012-B... |
| NK840E_K..  | C3S300V4.. | PSD1MW1800 | -       | 890SD-532240C... | 31V4-E0023-B... |
| NK860E_J..  | C3S300V4.. | PSD1MW1800 | -       | 890SD-532240C... | 31V4-E0023-B... |
| <b>400 VAC power supply - three-phased - water cooled</b> |            |            |         |                  |                 |
| NK310W_F..  | C3S150V4.. | PSD1MW1600 | -       | 890SD-532160B... | 31V4-E0016-B... |
| NK420W_D..  | C3S300V4.. | PSD1MW1800 | -       | 890SD-532240C... | 31V4-E0023-B... |
| NK430W_D..  | C3S300V4.. | PSD1MW1800 | -       | 890SD-532240C... | 31V4-F0032-B... |
| NK620W_C..  | C3S300V4.. | PSD1MW1800 | -       | 890SD-53230SC... | 31V4-G0045-B... |
| NK630W_D..  | C3H050V4.. | -          | -       | 890SD-532590D... | 31V4-G0060-B... |
| NK820W_G..  | C3H050V4.. | -          | -       | 890SD-532590D... | 31V4-G0060-B... |
| NK840W_D..  | C3H090V4.. | -          | -       | 890SD-432730E... | 31V4-H0105-B... |
| NK860W_D..  | C3H090V4.. | -          | -       | 890SD-432730E... | 31V4-G0073-B... |

## Dimensions

| Motor | Dimensions [mm] |    |    |
|-------|-----------------|----|----|
|       | A               | B  | L  |
| NK110 | 42              | 9  | 62 |
| NK210 | 56              | 12 | 65 |



| Motor  | Dimensions [mm] |    |     |
|--------|-----------------|----|-----|
|        | A               | B  | L   |
| NK310  | 62              | 14 | 77  |
| NK420  | 80              | 20 | 94  |
| NK430  |                 |    | 119 |
| NK620  | 111             | 26 | 106 |
| NK630  |                 |    | 135 |
| NK820  | 143             | 40 | 119 |
| NK840  |                 |    | 179 |
| NK860  |                 |    | 242 |
| NK310W | 82              | 14 | 85  |
| NK420W | 100             | 20 | 102 |
| NK430W |                 |    | 127 |
| NK620W | 131             | 26 | 114 |
| NK630W |                 |    | 143 |
| NK820W | 163             | 40 | 120 |
| NK840W |                 |    | 180 |
| NK860W |                 |    | 243 |



### Option

Several types of sensor are available for use with servo motor kits depending upon the needs of the application, such as environment, resolution and accuracy: resolver, high resolution sensor, optical encoder...

## Order Code

### NK Series

|               | 1            | 2        | 3        | 4        | 5         | 6        | 7         |
|---------------|--------------|----------|----------|----------|-----------|----------|-----------|
| Order example | <b>NK110</b> | <b>E</b> | <b>A</b> | <b>K</b> | <b>R1</b> | <b>0</b> | <b>00</b> |

|                                  |  |  |  |                                  |                            |
|----------------------------------|--|--|--|----------------------------------|----------------------------|
| <b>1 Motor type</b>              | <b>NK110</b><br><b>NK210</b><br><b>NK310</b> | see table "Technical Data"                                 | <b>4 Motor type</b>                        | <b>P</b><br><b>T</b><br><b>J</b> | see table "Technical Data" |
| <b>2 Cooling</b>                 | <b>E</b>                                     | Natural cooling  | <b>5 Fix code</b>                          | <b>R1</b>                        |                            |
|                                  | <b>W</b>                                     | Water cooling  | <b>6 Thermal protection + Brake/Motors</b> | <b>0</b>                         | Without (standard)         |
| <b>3 Feedback sensors/Motors</b> | <b>A</b>                                     | 2 pole resolver  |  | <b>1</b>                         | PTC (NK3-8 only)           |
|                                  | <b>K</b>                                     | Without sensor (standard)                                  |  | <b>2</b>                         | Thermo switch (NK3-8 only) |
|                                  | <b>P</b>                                     | Absolute single-turn encoder<br>HIPERFACE DSL SIL2 - EKS36 |  | <b>6</b>                         | KTY (NK3-8 only)           |
|                                  | <b>Q</b>                                     | Absolute multi-turn encoder<br>HIPERFACE DSL SIL2 - EKM36  | <b>7 Mechanical characteristics/Motors</b> | <b>00</b>                        | Standard                   |
|                                  | <b>R</b>                                     | Absolute single-turn HIPERFACE<br>encoder 128 ppt SKS36    |  | <b>XX</b>                        | Customization (on request) |
|                                  | <b>S</b>                                     | Absolute multi-turn HIPERFACE<br>encoder 128 ppt SKM36     |  |                                  |                            |

## Feedback Sensors

|   |
|---|
| <b>2 poles resolver - option A</b>  |
| <ul style="list-style-type: none"> <li>Accuracy: <math>\pm 10'</math> max</li> <li>Transformation ratio: <math>0.5 \pm 5\%</math></li> <li>Max. operating speed: <math>17\,000\text{ min}^{-1}</math></li> <li>Working temperature range: <math>-55\dots+155\text{ }^\circ\text{C}</math></li> <li>Compatibility: NK1 to NK8</li> </ul>   |
| <b>Single turn / Multiturn absolute encoder HIPERFACE SKS/SKM36 - option R/S</b>  |
| <ul style="list-style-type: none"> <li>Number of sine/cosine periods per revolution: 128</li> <li>Absolute position per revolution: 4096 (12 bits)</li> <li>Number of absolutely encodable revolutions: 4096 (SKM36)</li> <li>Max. operating speed SKS36: <math>12\,000\text{ min}^{-1}</math></li> <li>Max. operating speed SKM36: <math>9\,000\text{ min}^{-1}</math></li> <li>Working temperature range: <math>-20\dots+110\text{ }^\circ\text{C}</math></li> <li>Compatibility: NK2 to NK8</li> </ul> |
| <b>Single turn / Multiturn absolute encoder HIPERFACE EKS/EKM36 - option P/Q</b>  |
| <ul style="list-style-type: none"> <li>Up to 20 bit resolution per revolution</li> <li>Number of absolutely encodable revolutions: 4096 (EKM)</li> <li>SIL2 certified</li> <li>Max. operating speed: <math>12\,000\text{ min}^{-1}</math> (EKS), <math>9\,000\text{ min}^{-1}</math> (EKM)</li> <li>Working temperature range: <math>-20\dots+115\text{ }^\circ\text{C}</math></li> <li>Compatibility: NK1 to NK8</li> </ul>  |

# Frameless Servo Motor - K Series

## Overview

### Description

K Series frameless motor are the ideal solution for machine designs that require high performance at low voltages. Kit motors allow for direct integration without any mechanical transmission device, eliminating parts that add size and complexity. Use of Frameless Kit Motors results in a smaller, more reliable system.



### Advantages

- Low voltage
- Compact size (length)
- Large hollow shaft
- Integrated Hall Effect sensor as an option
- Global cost reduction
- Increased reliability and reduced maintenance
- High dynamic performance and power density: increased productivity and reduced size when compared to induction motors
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance available

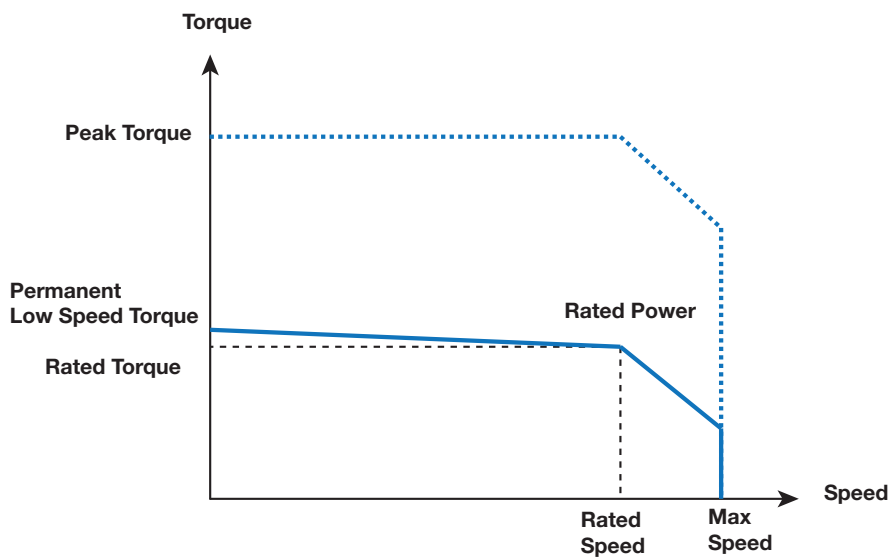
### Application

- Medical
- Hand Tool
- Packaging Machinery
- Rotating Table
- Special Machines
- Pump
- Compressor

### Technical Characteristics - Overview

|                        |  |
|------------------------|--|
| <b>Cooling</b>         | <b>Natural cooling</b>                             |
| <b>Power</b>           | 0.06...2 kW  |
| <b>Torque</b>          | 0.07...23 Nm                                       |
| <b>Max Speed</b>       | 10 000 min <sup>-1</sup>                           |
| <b>Number of poles</b> | 4 (K32) / 6 (K44) / 8 (K64) / 12 (K89) / 18 (K178) |
| <b>Diameter</b>        | 32 – 44 – 64 – 89 – 178 mm                         |
| <b>Power supply</b>    | 12 - 24 – 48 – 96 VDC<br>240VAC only for size K178 |

## Technical Data



| Motor                      | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Speed N <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>0</sub> | Low speed Current I <sub>0</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J  |
|----------------------------|----------------------------|-----------------------------|----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|----------------------|
|                            | [kW]                       | [Nm]                        | [min <sup>-1</sup> ]       | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgmm <sup>2</sup> ] |
| <b>24 VDC power supply</b> |                            |                             |                            |                              |                                 |                                  |                               |                                |                             |                        |                      |
| K032050-7Y_                | 0.059                      | 0.072                       | 7795                       | 3.1                          | 0.074                           | 3.2                              | 0.26                          | 11.2                           | 10000                       | 333                    | 0.32                 |
| K032050-8Y_                | 0.042                      | 0.074                       | 5473                       | 2.5                          | 0.075                           | 2.5                              | 0,26                          | 8.8                            | 8155                        | 272                    | 0.32                 |
| K032050-EY_                | 0.020                      | 0.074                       | 2515                       | 1.6                          | 0.075                           | 1.6                              | 0,26                          | 5.5                            | 5126                        | 171                    | 0.32                 |
| K032100-7Y_                | 0.049                      | 0.12                        | 3744                       | 2.7                          | 0.13                            | 2.7                              | 0.44                          | 9.6                            | 5320                        | 177                    | 0.63                 |
| K032100-8Y_                | 0.034                      | 0.13                        | 2572                       | 2.1                          | 0.13                            | 2.2                              | 0.45                          | 7.6                            | 4111                        | 137                    | 0.63                 |
| K032100-EY_                | 0.014                      | 0.13                        | 1071                       | 1.3                          | 0.13                            | 1.4                              | 0.45                          | 4.7                            | 2584                        | 86                     | 0.63                 |
| K032200-7Y_                | 0.036                      | 0.20                        | 1704                       | 2.2                          | 0.21                            | 2.2                              | 0.72                          | 7.8                            | 2649                        | 88                     | 1.3                  |
| K032200-8Y_                | 0.024                      | 0.21                        | 1118                       | 1.7                          | 0.21                            | 1.7                              | 0.73                          | 6.1                            | 2047                        | 68                     | 1.3                  |
| K032200-EY_                | 0.008                      | 0.21                        | 365                        | 1.1                          | 0.21                            | 1.1                              | 0.73                          | 3.9                            | 1287                        | 43                     | 1.3                  |
| K044050-7Y_                | 0.073                      | 0.19                        | 3763                       | 4.1                          | 0.19                            | 4,2                              | 0.66                          | 14.6                           | 5361                        | 268                    | 1.4                  |
| K044050-8Y_                | 0.053                      | 0.19                        | 2723                       | 3.3                          | 0.19                            | 3,3                              | 0.66                          | 11.6                           | 4288                        | 214                    | 1.4                  |
| K044050-EY_                | 0.023                      | 0.19                        | 1173                       | 2.1                          | 0.19                            | 2.1                              | 0.66                          | 7.3                            | 2680                        | 134                    | 1.4                  |
| K044100-7Y_                | 0.061                      | 0.33                        | 1771                       | 3.6                          | 0.33                            | 3.6                              | 1.16                          | 12.6                           | 2657                        | 133                    | 2.9                  |
| K044100-8Y_                | 0.043                      | 0.33                        | 1250                       | 2.8                          | 0.33                            | 2.9                              | 1.15                          | 10.1                           | 2126                        | 106                    | 2.9                  |
| K044100-EY_                | 0.016                      | 0.33                        | 474                        | 1.8                          | 0.33                            | 1.8                              | 1.16                          | 6.3                            | 1329                        | 66                     | 2.9                  |
| K044200-7Y_                | 0.045                      | 0.53                        | 804                        | 2.9                          | 0.54                            | 2.9                              | 1.88                          | 10.3                           | 1334                        | 67                     | 5.8                  |
| K044200-8Y_                | 0.030                      | 0.53                        | 539                        | 2.3                          | 0.53                            | 2.3                              | 1.87                          | 8.2                            | 1068                        | 53                     | 5.8                  |
| K044200-EY_                | 0.008                      | 0.54                        | 145                        | 1.5                          | 0.54                            | 1.5                              | 1.88                          | 5.1                            | 667                         | 33                     | 5.8                  |



## Technical Data

| Motor                       | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Speed N <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>o</sub> | Low speed Current I <sub>o</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J  |
|-----------------------------|----------------------------|-----------------------------|----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|----------------------|
|                             | [kW]                       | [Nm]                        | [min <sup>-1</sup> ]       | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgmm <sup>2</sup> ] |
| <b>24 VDC power supply</b>  |                            |                             |                            |                              |                                 |                                  |                               |                                |                             |                        |                      |
| K064050-8Y_                 | 0.058                      | 0.53                        | 1053                       | 4.0                          | 0.53                            | 4.0                              | 1.86                          | 14.0                           | 1830                        | 122                    | 9                    |
| K064050-9Y_                 | 0.039                      | 0.53                        | 700                        | 3.2                          | 0.53                            | 3.2                              | 1.85                          | 11.1                           | 1464                        | 98                     | 9                    |
| K064050-EY_                 | 0.022                      | 0.53                        | 396                        | 2.5                          | 0.53                            | 2.5                              | 1.87                          | 8.8                            | 1144                        | 76                     | 9                    |
| K064100-8Y_                 | 0.047                      | 0.93                        | 484                        | 3.5                          | 0.94                            | 3.5                              | 3.29                          | 12.3                           | 915                         | 61                     | 18                   |
| K064100-9Y_                 | 0.030                      | 0.93                        | 305                        | 2.8                          | 0.93                            | 2.8                              | 3.28                          | 9.8                            | 732                         | 49                     | 18                   |
| K064100-EY_                 | 0.015                      | 0.94                        | 152                        | 2.2                          | 0.94                            | 2.2                              | 3.30                          | 7.7                            | 572                         | 38                     | 18                   |
| K064200-8Y_                 | 0.033                      | 1.56                        | 204                        | 2.9                          | 1.57                            | 2.9                              | 5.50                          | 10.3                           | 457                         | 30                     | 36                   |
| K064200-9Y_                 | 0.018                      | 1.56                        | 113                        | 2.3                          | 1.56                            | 2.3                              | 5.47                          | 8.2                            | 366                         | 24                     | 36                   |
| K064200-EY_                 | 0.006                      | 1.57                        | 36                         | 1.8                          | 1.57                            | 1.8                              | 5.51                          | 6.5                            | 286                         | 19                     | 36                   |
| K089050-6Y_                 | 0.117                      | 1.33                        | 839                        | 7.5                          | 1.34                            | 7.6                              | 4.72                          | 26.6                           | 1373                        | 137                    | 37                   |
| K089050-7Y_                 | 0.082                      | 1.32                        | 597                        | 6.0                          | 1.33                            | 6.1                              | 4.66                          | 21.3                           | 1115                        | 112                    | 37                   |
| K089050-9Y_                 | 0.030                      | 1.31                        | 216                        | 3.8                          | 1.32                            | 3.9                              | 4.62                          | 13.5                           | 714                         | 71                     | 37                   |
| K089100-6Y_                 | 0.098                      | 2.35                        | 396                        | 6.6                          | 2.37                            | 6.7                              | 8.32                          | 23.4                           | 686                         | 69                     | 78                   |
| K089100-7Y_                 | 0.066                      | 2.33                        | 272                        | 5.3                          | 2.34                            | 5.4                              | 8.22                          | 18.8                           | 558                         | 56                     | 78                   |
| K089100-9Y_                 | 0.019                      | 2.32                        | 77                         | 3.4                          | 2.32                            | 3.4                              | 8.15                          | 11.9                           | 357                         | 36                     | 78                   |
| K089200-4Y_                 | 0.153                      | 3.9                         | 379                        | 8.8                          | 3.9                             | 8.9                              | 13.7                          | 31.3                           | 558                         | 56                     | 150                  |
| K089200-7Y_                 | 0.045                      | 3.9                         | 111                        | 4.4                          | 3.9                             | 4.5                              | 13.7                          | 15.6                           | 279                         | 28                     | 150                  |
| K089200-9Y_                 | 0.004                      | 3.9                         | 11                         | 2.8                          | 3.9                             | 2.8                              | 13.6                          | 9.9                            | 178                         | 18                     | 150                  |
| K178050-6Y_                 | 0.217                      | 7.0                         | 297                        | 13.9                         | 7.0                             | 14.0                             | 26.8                          | 53.3                           | 486                         | 73                     | 470                  |
| K178050-8Y_                 | 0.100                      | 7.0                         | 137                        | 8.8                          | 7.0                             | 8.8                              | 26.7                          | 33.6                           | 307                         | 46                     | 470                  |
| K178050-EY_                 | 0.024                      | 7.0                         | 33                         | 5.6                          | 7.0                             | 5.6                              | 26.6                          | 21.2                           | 194                         | 29                     | 470                  |
| K178100-8Y_                 | 0.077                      | 13.6                        | 54                         | 8.6                          | 13.7                            | 8.6                              | 48.0                          | 30.2                           | 153                         | 23                     | 920                  |
| K178100-9Y_                 | 0.035                      | 13.7                        | 24                         | 6.8                          | 13.7                            | 6.8                              | 48.0                          | 23.9                           | 121                         | 18                     | 920                  |
| K178200-8Y_                 | 0.047                      | 23.2                        | 19                         | 7.3                          | 23.2                            | 7.3                              | 81.5                          | 25.7                           | 77                          | 12                     | 1800                 |
| K178200-9Y_                 | 0.009                      | 23.2                        | 4                          | 5.8                          | 23.2                            | 5.8                              | 81.6                          | 20.3                           | 61                          | 9                      | 1800                 |
| <b>240 VAC power supply</b> |                            |                             |                            |                              |                                 |                                  |                               |                                |                             |                        |                      |
| K178050-6Y_                 | 1.43                       | 4.6                         | 3000                       | 9.1                          | 7.0                             | 14.0                             | 26.8                          | 53.3                           | 3000                        | 450                    | 470                  |
| K178050-8Y_                 | 1.43                       | 4.6                         | 3000                       | 5.7                          | 7.0                             | 8.8                              | 26.7                          | 33.6                           | 3000                        | 450                    | 470                  |
| K178050-EY_                 | 1.39                       | 5.4                         | 2477                       | 4.3                          | 7.0                             | 5.6                              | 26.6                          | 21.2                           | 2818                        | 423                    | 470                  |
| K178100-8Y_                 | 2.05                       | 9.8                         | 2006                       | 6.1                          | 13.7                            | 8.6                              | 48.0                          | 30.2                           | 2225                        | 334                    | 920                  |
| K178100-9Y_                 | 1.82                       | 11.3                        | 1531                       | 5.7                          | 13.7                            | 6.8                              | 48.0                          | 23.9                           | 1761                        | 264                    | 920                  |
| K178100-EY_                 | 1.51                       | 12.1                        | 1192                       | 4.8                          | 13.6                            | 5.4                              | 47.8                          | 19.1                           | 1409                        | 211                    | 920                  |
| K178200-8Y_                 | 2.00                       | 19.2                        | 994                        | 6.1                          | 23.2                            | 7.3                              | 81.5                          | 25.7                           | 1112                        | 167                    | 1800                 |
| K178200-9Y_                 | 1.66                       | 20.6                        | 768                        | 5.1                          | 23.2                            | 5.8                              | 81.6                          | 20.3                           | 881                         | 132                    | 1800                 |
| K178200-EY_                 | 1.34                       | 21.3                        | 601                        | 4.3                          | 23.1                            | 4.6                              | 81.3                          | 16.2                           | 705                         | 106                    | 1800                 |

Other power voltages are possible – see technical manual or consult us

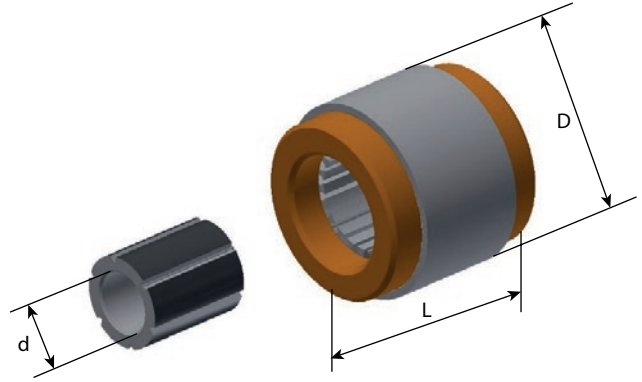
## Associated Drives

| Up to 80 VDC bus voltage |                         |             |                         |
|--------------------------|-------------------------|-------------|-------------------------|
| Motor                    | VIX                     | Motor       | VIX                     |
|                          | Low voltage servo drive |             | Low voltage servo drive |
| K032050-7Y_              | VIX 500 IE              | K064050-8Y_ | VIX 500 IE              |
| K032050-8Y_              | VIX 500 IE              | K064050-9Y_ | VIX 500 IE              |
| K032050-EY_              | VIX 250 IE              | K064050-EY_ | VIX 500 IE              |
| K032100-7Y_              | VIX 500 IE              | K064100-8Y_ | VIX 500 IE              |
| K032100-8Y_              | VIX 250 IE              | K064100-9Y_ | VIX 500 IE              |
| K032100-EY_              | VIX 250 IE              | K064100-EY_ | VIX 250 IE              |
| K032200-7Y_              | VIX 250 IE              | K064200-8Y_ | VIX 500 IE              |
| K032200-8Y_              | VIX 250 IE              | K064200-9Y_ | VIX 250 IE              |
| K032200-EY_              | VIX 250 IE              | K064200-EY_ | VIX 250 IE              |
| K044050-7Y_              | VIX 500 IE              | K089050-6Y_ | -                       |
| K044050-8Y_              | VIX 500 IE              | K089050-7Y_ | -                       |
| K044050-EY_              | VIX 250 IE              | K089050-9Y_ | VIX 500 IE              |
| K044100-7Y_              | VIX 500 IE              | K089100-6Y_ | -                       |
| K044100-8Y_              | VIX 500 IE              | K089100-7Y_ | -                       |
| K044100-EY_              | VIX 250 IE              | K089100-9Y_ | VIX 500 IE              |
| K044200-7Y_              | VIX 500 IE              | K089200-4Y_ | -                       |

| 230 VAC power supply - single or three-phased |             |                  |
|---|-------------|------------------|
| Motor   | Compax3     | AC890            |
| K178050-6Y_                                   | C3S150V2... | 890SD-232240C... |
| K178050-8Y_                                   | C3S100V2... | 890SD-232165B... |
| K178050-EY_                                   | C3S100V2... | 890SD-232110B... |
| K178100-8Y_                                   | C3S100V2... | 890SD-232165B... |
| K178100-9Y_                                   | C3S100V2... | 890SD-232110B... |
| K178100-EY_                                   | C3S063V2... | 890SD-232110B... |
| K178200-8Y_                                   | C3S100V2... | 890SD-232110B... |
| K178200-9Y_                                   | C3S063V2... | 890SD-232110B... |
| K178200-EY_                                   | C3S063V2... | 890SD-232110B... |

## Dimensions

| Motor   | Dimensions [mm] |       |       |
|---------|-----------------|-------|-------|
|         | D               | d     | L     |
| K032050 | 31.76           | 7.62  | 25.9  |
| K032100 |                 |       | 38.6  |
| K032200 |                 |       | 64.0  |
| K044050 | 44.45           | 13.96 | 29.15 |
| K044100 |                 |       | 41.85 |
| K044200 |                 |       | 67.25 |
| K064050 | 63.5            | 23.51 | 32.4  |
| K064100 |                 |       | 45.1  |
| K064200 |                 |       | 70.5  |
| K089050 | 88.9            | 40.63 | 33.0  |
| K089100 |                 |       | 45.7  |
| K089200 |                 |       | 71.1  |
| K178050 | 177.8           | 95.74 | 53.95 |
| K178100 |                 |       | 66.65 |
| K178200 |                 |       | 92.05 |



## Order Code

### K Series

|               | 1        | 2         | 3         | 4        | 5        | 6        |   | 7         |
|---------------|----------|-----------|-----------|----------|----------|----------|---|-----------|
| Order example | <b>K</b> | <b>32</b> | <b>50</b> | <b>E</b> | <b>Y</b> | <b>1</b> | - | <b>CE</b> |

|                             |                               |
|-----------------------------|-------------------------------|
| <b>1 Motor Series</b>       | <b>K</b>                      |
| <b>2 Motor Size</b>         | 32 see table "Technical Data" |
|                             | 44                            |
|                             | ...                           |
| <b>3 Motor Stack Length</b> | 50 0.50 in                    |
|                             | 100 1.00 in                   |
|                             | 200 2.00 in                   |

|   |                                     |
|---|-------------------------------------|
| <b>4 Winding</b>                          | 7                                   |
|   | 8 see table "Technical Data"        |
|   | ...                                 |
| <b>5 Connection</b>                       | <b>Y</b> Star connection            |
| <b>6 Commutation - Hall effect sensor</b> | <b>1</b> Without Hall effect sensor |
|   | <b>2</b> With Hall effect sensor    |
| <b>7 Certification</b>                    | <b>CE</b> CE Conformity             |



# Frameless Spindle Servo Motor - SKW Series

## Overview

### Description

SKW motors are compact and highly dynamic permanent magnet synchronous servomotors for mono and multi spindle applications up to 21 kW. Delivered as separate components to be integrated into the mechanical structure of the machine, SKW motors offer constant torque capabilities over a wide speed range with very small dimensions.



### Advantages

- Compactness (small external diameter)
- Large hollow shaft
- Increased internal diameter compared to other solutions: increased rigidity and greater capacity for bar stock handling in automatic lathes
- High resistance (Oil proof)
- Compatible with cost effective sensorless drives from Parker and third parties
- Accurate speed for the spindle
  - for the best surface finish
  - for a shorter cycle time
  - for a longer tool life time
- Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, low dilatation effect
- Global cost reduction
- Increased reliability and reduced maintenance
- High dynamic performance and power density: increased productivity and reduced size when compared to induction motors
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance available

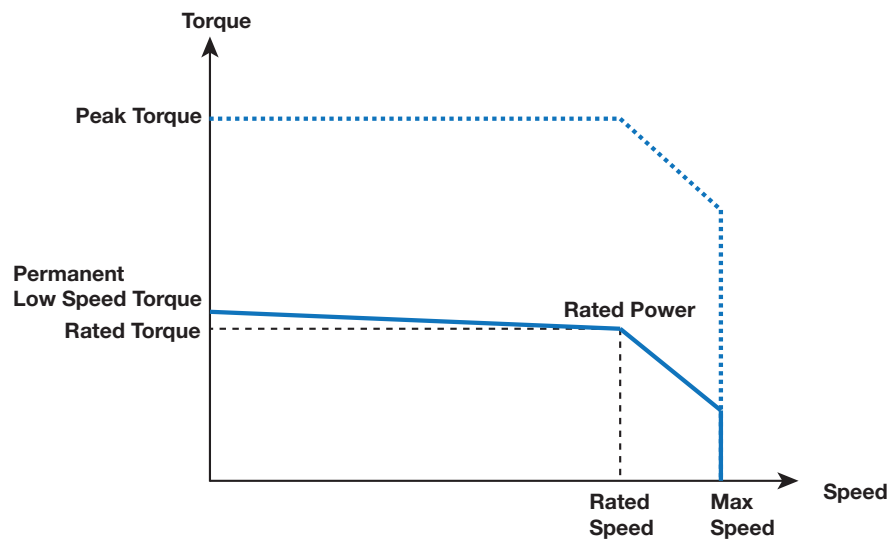
### Applications

- Machine Tools (electro spindle)
- Multi Spindle Lathes

### Technical Characteristics - Overview

|                 |                          |
|-----------------|--------------------------|
| Cooling         | Water cooling            |
| Power           | 0.2...7.5 kW             |
| Torque          | 4...36 Nm                |
| Speed           | 12 000 min <sup>-1</sup> |
| Number of poles | 10                       |
| Diameter        | 73 – 82 – 91 – 96 mm     |
| Power supply    | 400 VAC                  |

## Technical Data



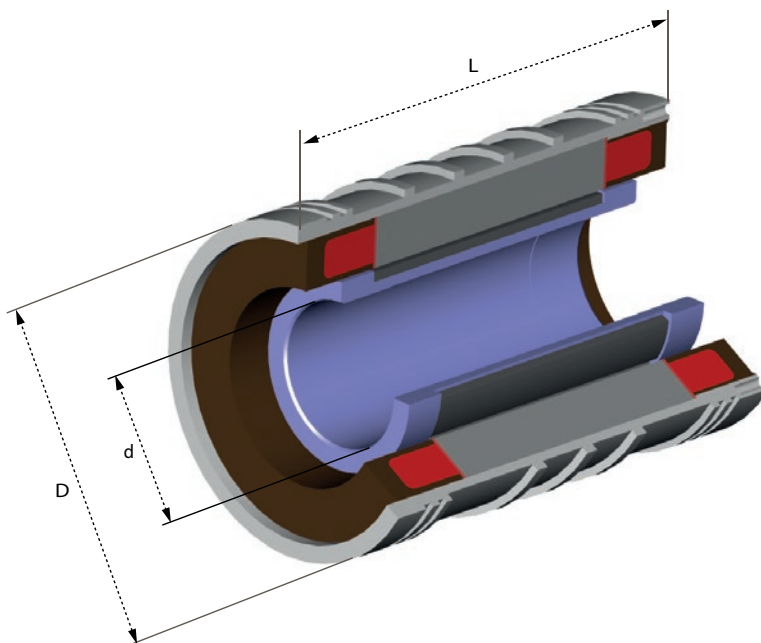
| Motor                                      | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Speed N <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>o</sub> | Low speed Current I <sub>o</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J  |
|--|----------------------------|-----------------------------|----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|----------------------|
|  | [kW]                       | (Nm)                        | [min <sup>-1</sup> ]       | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgmm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased</b> |                            |                             |                            |                              |                                 |                                  |                               |                                |                             |                        |                      |
| SKW073-050-LAM                             | 3.1                        | 4.0                         | 7470                       | 10.4                         | 4.0                             | 10.2                             | 8.3                           | 20.0                           | 12000                       | 1000                   | 170                  |
| SKW073-100-LAM                             | 6.3                        | 8.8                         | 6810                       | 21.1                         | 10.0                            | 23.2                             | 17.8                          | 40.0                           | 12000                       | 1000                   | 280                  |
| SKW073-150-LAM                             | 9.7                        | 13.5                        | 6820                       | 27.3                         | 15.4                            | 30.4                             | 28.4                          | 53.8                           | 11000                       | 917                    | 390                  |
| SKW073-200-LAM                             | 13.0                       | 19.3                        | 6450                       | 40.9                         | 21.8                            | 45.2                             | 37.8                          | 75.8                           | 11000                       | 917                    | 500                  |
| SKW082-046-LAM                             | 5.1                        | 4.0                         | 12000                      | 10.2                         | 4.4                             | 10.7                             | 8.6                           | 20.0                           | 12000                       | 1000                   | 370                  |
| SKW082-092-LAM                             | 10.7                       | 9.3                         | 11000                      | 21.6                         | 10.1                            | 22.8                             | 23.0                          | 48.6                           | 11000                       | 917                    | 670                  |
| SKW082-138-LAM                             | 15.3                       | 14.6                        | 10000                      | 30.6                         | 15.8                            | 32.3                             | 31.0                          | 60.0                           | 10000                       | 833                    | 970                  |
| SKW082-184-LAM                             | 21.2                       | 20.3                        | 10000                      | 44.7                         | 22.2                            | 47.7                             | 44.2                          | 90.0                           | 10000                       | 833                    | 1300                 |
| SKW091-046-LAM                             | 6.9                        | 5.5                         | 12000                      | 14.3                         | 6.5                             | 16.3                             | 10.7                          | 28.2                           | 12000                       | 1000                   | 370                  |
| SKW091-092-LAM                             | 15.4                       | 12.2                        | 12000                      | 29.4                         | 15.1                            | 35.4                             | 23.0                          | 55.6                           | 12000                       | 1000                   | 670                  |
| SKW091-138-LAM                             | 20.8                       | 19.9                        | 10000                      | 40.1                         | 23.8                            | 47.1                             | 36.1                          | 73.3                           | 10000                       | 833                    | 970                  |
| SKW091-184-LAM                             | 28.0                       | 26.8                        | 10000                      | 56.8                         | 31.9                            | 66.4                             | 48.1                          | 103.4                          | 10000                       | 833                    | 1300                 |
| SKW096-046-LAM                             | 3.6                        | 6.9                         | 5010                       | 12.9                         | 7.1                             | 13.1                             | 13.7                          | 26.0                           | 10000                       | 833                    | 1000                 |
| SKW096-092-LAM                             | 7.8                        | 16.3                        | 4570                       | 28.1                         | 16.8                            | 28.7                             | 33.8                          | 60.0                           | 10000                       | 833                    | 1800                 |
| SKW096-138-LAM                             | 11.7                       | 26.4                        | 4240                       | 41.4                         | 27.4                            | 42.4                             | 54.3                          | 87.9                           | 9000                        | 750                    | 2500                 |
| SKW096-184-LAM                             | 16.2                       | 36.0                        | 4300                       | 59.6                         | 37.4                            | 61.2                             | 70.6                          | 120.0                          | 9000                        | 750                    | 3300                 |

## Associated Drives

| Product Code  | Drive Reference                            |   |             |
|---------------|--|---|-------------|
|               | AC30                                       | AC890                                   | Compax3     |
| SKW073_050LAM | 31V-4E0023-B...<br>(16A@ , OL 180% /3s)    | 890SD-532240C<br>(16A@8kHz, OL 200%/4s) | C3S150V4... |
| SKW073_100LAM | 31V-4F0038-B...<br>(32A@ , OL 180% / 3s)   | 890SD-532390D<br>(26A@8kHz, OL 200%/4s) | C3S300V4... |
| SKW073_150LAM | 31V-4G0060-B...<br>(45A@ , OL 180% / 3s)   | 890SD-532450D<br>(28A@8kHz, OL 200%/4s) | C3S300V4... |
| SKW073_200LAM | 31V-4H0105-B...<br>(87A@ , OL 180% / 3s)   | 890SD-532590D<br>(50A@4kHz, OL 200%/4s) | C3H050V4... |
| SKW082_046LAM | 31V-4E0023-B...<br>(16A@ , OL 180% /3s)    | 890SD-532240C<br>(16A@8kHz, OL 200%/4s) | C3S150V4... |
| SKW082_092LAM | 31V-4F0038-B...<br>(32A@ , OL 180% / 3s)   | 890SD-532390D<br>(26A@8kHz, OL 200%/4s) | C3S300V4... |
| SKW082_138LAM | 31V-4G0060-B...<br>(45A@ , OL 180% / 3s)   | 890SD-532450D<br>(38A@4kHz, OL 200%/4s) | C3S300V4... |
| SKW082_184LAM | 31V-4H0105-B...<br>(87A@ , OL 180% / 3s)   | 890SD-532590D<br>(50A@4kHz, OL 200%/4s) | C3H050V4... |
| SKW091_046LAM | 31V-4F0032-B...<br>(23A@ , OL 180% / 3s)   | 890SD-532240C<br>(16A@8kHz, OL 200%/4s) | C3S300V4... |
| SKW091_092LAM | 31V-4G0073-B...<br>(60A@ , OL 180% / 3s)   | 890SD-532450D<br>(38A@4kHz, OL 200%/4s) | C3H050V4... |
| SKW091_138LAM | 31V-4H0105-B...<br>(87A@ , OL 180% / 3s)   | 890SD-532450D<br>(38A@4kHz, OL 200%/4s) | C3H050V4... |
| SKW091_184LAM | 31V-4H0145-B...<br>(145A@ , OL 110% / 60s) | 890SD-432730E<br>(76A@4kHz, OL110%/60s) | C3H090V4... |
| SKW096_046LAM | 31V-4F0032-B...<br>(23A@ , OL 180% / 3s)   | 890SD-532240C<br>(16A@8kHz, OL 200%/4s) | C3S150V4... |
| SKW096_092LAM | 31V-4G0060-B...<br>(45A@ , OL 180% / 3s)   | 890SD-532450D<br>(28A@8kHz, OL 200%/4s) | C3S300V4... |
| SKW096_138LAM | 31V-4G0073-B...<br>(60A@ , OL 180% / 3s)   | 890SD-532590D<br>(50A@4kHz, OL 200%/4s) | C3H050V4... |
| SKW096_184LAM | 31V-4H0145-B...<br>(145A@ , OL 110% / 60s) | 890SD-432730E<br>(76A@4kHz, OL110%/60s) | C3H090V4... |

## Dimensions

| Product Code  | Dimensions [mm]   |                               |                           |
|---------------|-------------------|-------------------------------|---------------------------|
|               | Total length<br>L | Hollow shaft<br>diameter<br>d | External<br>diameter<br>D |
| SKW073_050LAM | 114               | 35                            | 80                        |
| SKW073_100LAM | 164               | 35                            | 80                        |
| SKW073_150LAM | 219               | 35                            | 80                        |
| SKW073_200LAM | 274               | 35                            | 80                        |
| SKW082_046LAM | 104               | 44                            | 96                        |
| SKW082_092LAM | 150               | 44                            | 96                        |
| SKW082_138LAM | 201               | 44                            | 96                        |
| SKW082_184LAM | 252               | 44                            | 96                        |
| SKW091_046LAM | 104               | 44                            | 102                       |
| SKW091_092LAM | 155               | 44                            | 102                       |
| SKW091_138LAM | 206               | 44                            | 102                       |
| SKW091_184LAM | 262               | 44                            | 102                       |
| SKW096_046LAM | 104               | 60                            | 108                       |
| SKW096_092LAM | 155               | 60                            | 108                       |
| SKW096_138LAM | 206               | 60                            | 108                       |
| SKW096_184LAM | 262               | 60                            | 108                       |





# Order Code

## SKW Series

|               | 1         | 2        | 3          | 4        | 5          | 6          | 7        | 8        | 9          |
|---------------|-----------|----------|------------|----------|------------|------------|----------|----------|------------|
| Order example | <b>SK</b> | <b>W</b> | <b>073</b> | <b>S</b> | <b>050</b> | <b>LAM</b> | <b>R</b> | <b>3</b> | <b>000</b> |

|          |   |  |
|----------|---|--|
| <b>1</b> | <b>Product series</b>                         |  |
|          | <b>SK</b>                                     | Frameless permanent magnet servomotors           |
| <b>2</b> | <b>Cooling method</b>                         |  |
|          | <b>W</b>                                      | Water cooling (standard)                         |
| <b>3</b> | <b>External diameter without water jacket</b> |  |
|          | <b>073</b>                                    | 73 mm  |
|          | <b>082</b>                                    | 82 mm  |
|          | <b>091</b>                                    | 91 mm  |
|          | <b>096</b>                                    | 96 mm  |
| <b>4</b> | <b>Element</b>                                |  |
|          | -   | Motor (stator + rotor)                           |
|          | <b>S</b>                                      | Stator   |
|          | <b>R</b>                                      | Rotor  |
| <b>5</b> | <b>Active part length</b>                     |  |
|          | <b>050</b>                                    | See table "Dimensions"                           |
|          | ...   |  |
| <b>6</b> | <b>Torque/Speed characteristics</b>           |  |
|          | <b>LAM</b>                                    | See table "Technical Data"                       |
|          | ...   | (other characteristics on request)               |
| <b>7</b> | <b>Unused character</b>                       |  |
|          | <b>R</b>                                      |  |
| <b>8</b> | <b>Mechanical option</b>                      |  |
|          | <b>2</b>                                      | Without water jacket, with hub (only on request) |
|          | <b>3</b>                                      | With water jacket, with hub (standard)           |
| <b>9</b> | <b>Option</b>                                 |  |
|          | <b>000</b>                                    | Standard motor                                   |



# Frameless High Speed Motor - HKW Series

## Overview

### Description

HKW motors are high performance permanent magnet synchronous servomotors for spindle applications up to 276 kW.

Delivered as separate components to be integrated into the mechanical structure of the machine, HKW motors benefit from the use of field weakening, in order to achieve both high torque at slow speed, and very high maximum speed at constant power.



### Advantages

- High speed
- High power
- Large hollow shaft
- High resistance (oil proof on request)
- Compatible with Parker drives and third parties
- Accurate speed for the spindle
  - for the best surface finish
  - for a shorter cycle time
  - for a longer tool life time
- Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, low dilatation effect
- Global cost reduction
- Increased reliability and reduced maintenance
- High dynamic performance and power density: increased productivity and reduced size when compared to induction motors
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance available

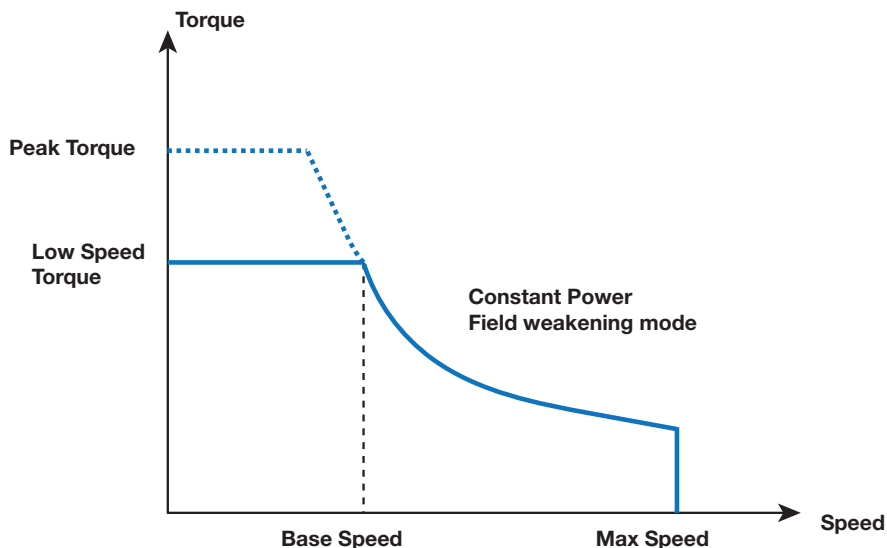
### Applications

- Machines Tools
- Special Machines
- Textile Machines
- Centrifuges
- Compressors

### Technical Characteristics - Overview

|                        |   |
|------------------------|---|
| <b>Cooling</b>         | Water cooling   |
| <b>Power</b>           | 2.3...276 kW  |
| <b>Torque</b>          | 4.5...1 250 Nm  |
| <b>Speed</b>           | 50 000 min <sup>-1</sup>  |
| <b>Number of poles</b> | 4 - HKW085<br>6 - HKW108 / HKW155 / HKW195<br>8 - HKW242<br>16 - HKW310 |
| <b>Diameter</b>        | 85 – 108 – 155 – 195 – 242 - 310mm                                      |

# Technical Data



| Motor   | S1 Power Ps1 | Max. Speed Nmax      | Frequency at max speed | Low speed torque Mo | Low speed Current Io | Peak Torque M peak | Peak Current I peak | Base Speed Nb        | Moment of Inertia J |
|---|--------------|----------------------|------------------------|---------------------|----------------------|--------------------|---------------------|----------------------|---------------------|
|   | [kW]         | [min <sup>-1</sup> ] | [Hz]                   | [Nm]                | [Arms]               | [Nm]               | [Arms]              | [min <sup>-1</sup> ] | [kgm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased - Water cooled</b> |              |                      |                        |                     |                      |                    |                     |                      |                     |
| HKW085_066BAU   | 2.3          | 50000                | 1667                   | 4.9                 | 6.8                  | 7.3                | 13.5                | 4480                 | 0.00049             |
| HKW085_066BAP   | 4.9          | 50000                | 1667                   | 4.5                 | 12.2                 | 7.3                | 27                  | 10400                | 0.00049             |
| HKW085_066BAK   | 10.2         | 50000                | 1667                   | 4.2                 | 22.4                 | 7.3                | 54                  | 23200                | 0.00049             |
| HKW085_099BAQ   | 4.7          | 50000                | 1667                   | 7.4                 | 12.6                 | 11                 | 25.1                | 6070                 | 0.00068             |
| HKW085_099BAL   | 10           | 50000                | 1667                   | 7.3                 | 24.7                 | 11                 | 50.2                | 13100                | 0.00068             |
| HKW085_099BAI   | 15.6         | 50000                | 1667                   | 6.8                 | 35                   | 11                 | 78.1                | 21900                | 0.00068             |
| HKW108_080CAN   | 4.9          | 30000                | 1500                   | 10                  | 9.6                  | 15                 | 14.5                | 4680                 | 0.00082             |
| HKW108_080CAI   | 10.4         | 30000                | 1500                   | 10                  | 19.2                 | 15                 | 28.9                | 9930                 | 0.00082             |
| HKW108_080CAF   | 16           | 30000                | 1500                   | 10                  | 28.9                 | 15                 | 43.4                | 15300                | 0.00082             |
| HKW108_140CAI   | 10.2         | 30000                | 1500                   | 20                  | 21.9                 | 30                 | 33                  | 4870                 | 0.00143             |
| HKW108_140CAF   | 15.6         | 30000                | 1500                   | 20                  | 32.9                 | 30                 | 49.6                | 7450                 | 0.00143             |
| HKW108_140CAD   | 25           | 30000                | 1500                   | 20                  | 49.4                 | 30                 | 74.3                | 11900                | 0.00143             |
| HKW108_200CAJ   | 9            | 30000                | 1500                   | 30                  | 20.7                 | 45                 | 31.2                | 2870                 | 0.00204             |
| HKW108_200CAF   | 15.5         | 30000                | 1500                   | 30                  | 34.5                 | 45                 | 52                  | 4940                 | 0.00204             |
| HKW108_200CAD   | 25           | 30000                | 1500                   | 30                  | 51.8                 | 45                 | 78                  | 7960                 | 0.00204             |
| HKW155_080CRR   | 8.8          | 24000                | 1200                   | 22                  | 18.2                 | 33                 | 27.6                | 3820                 | 0.0052              |
| HKW155_080CRP   | 14           | 24000                | 1200                   | 22                  | 28.5                 | 33                 | 43.1                | 6080                 | 0.0052              |
| HKW155_080CAR   | 10.3         | 18000                | 900                    | 28                  | 19                   | 42                 | 29.4                | 3510                 | 0.0052              |
| HKW155_080CAP   | 16           | 18000                | 900                    | 28                  | 29.6                 | 42                 | 46                  | 5500                 | 0.0052              |
| HKW155_120CAR   | 10           | 24000                | 1200                   | 48                  | 21.8                 | 75                 | 36.3                | 1990                 | 0.0078              |
| HKW155_120CAK   | 23           | 24000                | 1200                   | 48                  | 49.5                 | 75                 | 82.5                | 4600                 | 0.0078              |
| HKW155_120CAH   | 32           | 24000                | 1200                   | 46                  | 65.1                 | 75                 | 113                 | 6640                 | 0.0078              |
| HKW155_120CAF   | 43           | 24000                | 1200                   | 44                  | 82.9                 | 75                 | 151                 | 9330                 | 0.0078              |
| HKW155_160CAR   | 10           | 24000                | 1200                   | 68                  | 23.2                 | 100                | 36.3                | 1410                 | 0.0104              |
| HKW155_160CAP   | 16           | 24000                | 1200                   | 68                  | 36.3                 | 100                | 56.7                | 2250                 | 0.0104              |
| HKW155_160CAH   | 32           | 24000                | 1200                   | 68                  | 72.6                 | 100                | 113                 | 4500                 | 0.0104              |
| HKW155_160CAF   | 44           | 24000                | 1200                   | 66                  | 93.8                 | 100                | 151                 | 6370                 | 0.0104              |
| HKW155_160CAD   | 63           | 24000                | 1200                   | 58                  | 123                  | 100                | 227                 | 10300                | 0.0104              |
| HKW195_120CAV   | 7.2          | 18000                | 900                    | 80                  | 19.4                 | 120                | 35.1                | 860                  | 0.016               |
| HKW195_120CAP   | 16           | 20000                | 1000                   | 80                  | 42.1                 | 120                | 76                  | 1910                 | 0.016               |
| HKW195_120CAI   | 34           | 20000                | 1000                   | 80                  | 84.1                 | 120                | 152                 | 4050                 | 0.016               |
| HKW195_120CAF   | 52           | 20000                | 1000                   | 75                  | 117                  | 120                | 228                 | 6620                 | 0.016               |
| HKW195_120CAE   | 62           | 20000                | 1000                   | 75                  | 140                  | 120                | 274                 | 7900                 | 0.016               |

Frameless Permanent Magnet High Speed Motors - HKW Series  
Technical Data

| Motor   | S1 Power Ps1 | Max. Speed Nmax      | Frequency at max speed | Low speed torque Mo | Low speed Current Io | Peak Torque M peak | Peak Current I peak | Base Speed Nb        | Moment of Inertia J |
|---|--------------|----------------------|------------------------|---------------------|----------------------|--------------------|---------------------|----------------------|---------------------|
|   | [kW]         | [min <sup>-1</sup> ] | [Hz]                   | [Nm]                | [Arms]               | [Nm]               | [Arms]              | [min <sup>-1</sup> ] | [kgm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased - Water cooled</b> |              |                      |                        |                     |                      |                    |                     |                      |                     |
| HKW195_180CAT   | 10           | 16000                | 800                    | 120                 | 26.1                 | 180                | 47.2                | 795                  | 0.024               |
| HKW195_180CAP   | 16           | 20000                | 1000                   | 120                 | 42.1                 | 180                | 76                  | 1280                 | 0.024               |
| HKW195_180CAM   | 23           | 20000                | 1000                   | 120                 | 58.2                 | 180                | 105                 | 1830                 | 0.024               |
| HKW195_180CAJ   | 31           | 20000                | 1000                   | 120                 | 75.7                 | 180                | 137                 | 2470                 | 0.024               |
| HKW195_180CAF   | 52           | 20000                | 1000                   | 120                 | 126                  | 180                | 228                 | 4140                 | 0.024               |
| HKW195_180CAC   | 101          | 20000                | 1000                   | 110                 | 227                  | 180                | 456                 | 8770                 | 0.024               |
| HKW195_300CAM   | 23           | 20000                | 1000                   | 200                 | 58.2                 | 300                | 105                 | 1100                 | 0.04                |
| HKW195_300CAJ   | 30           | 20000                | 1000                   | 200                 | 75.7                 | 300                | 137                 | 1440                 | 0.04                |
| HKW195_300CAF   | 52           | 20000                | 1000                   | 200                 | 126                  | 300                | 228                 | 2490                 | 0.04                |
| HKW195_300CAE   | 63           | 20000                | 1000                   | 200                 | 151                  | 300                | 274                 | 3010                 | 0.04                |
| HKW195_300CAC   | 105          | 20000                | 1000                   | 200                 | 252                  | 300                | 456                 | 5010                 | 0.04                |
| HKW195_300CAX   | 175          | 20000                | 1000                   | 200                 | 454                  | 300                | 821                 | 8350                 | 0.04                |
| HKW195_300CBU   | 127          | 20000                | 1000                   | 270                 | 289                  | 350                | 419                 | 1500                 | 0.04                |
| HKW195_360CBU   | 135          | 20000                | 1000                   | 340                 | 308                  | 420                | 419                 | 3790                 | 0.048               |
| HKW195_420CBU   | 126          | 20000                | 1000                   | 400                 | 311                  | 490                | 419                 | 3000                 | 0.056               |
| HKW195_420CBX   | 230          | 18000                | 900                    | 390                 | 542                  | 490                | 754                 | 5630                 | 0.056               |
| HKW242_225DAN   | 15           | 11000                | 733                    | 280                 | 37.2                 | 360                | 49,9                | 510                  | 0.105               |
| HKW242_225DAF   | 33           | 13000                | 867                    | 280                 | 74.4                 | 360                | 99,7                | 1130                 | 0.105               |
| HKW242_225DAD   | 50           | 13000                | 867                    | 280                 | 112                  | 360                | 150                 | 1710                 | 0.105               |
| HKW242_225DAC   | 67           | 13000                | 867                    | 275                 | 146                  | 360                | 199                 | 2330                 | 0.105               |
| HKW242_225DAB   | 101          | 13000                | 867                    | 260                 | 206                  | 360                | 299                 | 3710                 | 0.105               |
| HKW242_375DAF   | 30           | 13000                | 867                    | 480                 | 76.8                 | 600                | 99,7                | 600                  | 0.175               |
| HKW242_375DAD   | 49           | 13000                | 867                    | 480                 | 115                  | 600                | 150                 | 975                  | 0.175               |
| HKW242_375DAC   | 67           | 13000                | 867                    | 480                 | 154                  | 600                | 199                 | 1330                 | 0.175               |
| HKW242_375DAB   | 101          | 13000                | 867                    | 480                 | 230                  | 600                | 299                 | 2010                 | 0.175               |
| HKW242_375DAA   | 200          | 13000                | 867                    | 460                 | 439                  | 600                | 598                 | 4150                 | 0.175               |
| HKW242_375DBB   | 195          | 13000                | 867                    | 620                 | 465                  | 800                | 653                 | 3000                 | 0.175               |
| HKW242_375DBY   | 276          | 13000                | 867                    | 585                 | 578                  | 800                | 870                 | 4500                 | 0.175               |
| HKW242_375DBW   | 158          | 10000                | 667                    | 630                 | 316                  | 800                | 435                 | 2400                 | 0.175               |
| HKW310_200HAJ   | 37           | 8000                 | 1067                   | 600                 | 87.1                 | 900                | 141                 | 590                  | 0.23                |
| HKW310_200HAH   | 46           | 8000                 | 1067                   | 580                 | 105                  | 900                | 177                 | 760                  | 0.23                |
| HKW310_200HAE   | 77           | 8000                 | 1067                   | 575                 | 166                  | 900                | 282                 | 1280                 | 0.23                |
| HKW310_200HAD   | 95           | 8000                 | 1067                   | 565                 | 204                  | 900                | 353                 | 1610                 | 0.23                |
| HKW310_200HAC   | 115          | 8000                 | 1067                   | 550                 | 265                  | 900                | 471                 | 2000                 | 0.23                |
| HKW310_300HAJ   | 35.4         | 8000                 | 1067                   | 940                 | 91.2                 | 1350               | 141                 | 360                  | 0.34                |
| HKW310_300HAH   | 45           | 8000                 | 1067                   | 940                 | 114                  | 1350               | 177                 | 460                  | 0.34                |
| HKW310_300HAE   | 76           | 8000                 | 1067                   | 930                 | 180                  | 1350               | 282                 | 780                  | 0.34                |
| HKW310_300HAD   | 95           | 8000                 | 1067                   | 920                 | 223                  | 1350               | 353                 | 990                  | 0.34                |
| HKW310_300HAC   | 120          | 8000                 | 1067                   | 900                 | 290                  | 1350               | 471                 | 1270                 | 0.34                |
| HKW310_400HAJ   | 34           | 6000                 | 800                    | 1250                | 91                   | 1800               | 141                 | 260                  | 0.45                |
| HKW310_400HAH   | 44.5         | 8000                 | 1067                   | 1250                | 114                  | 1800               | 177                 | 340                  | 0.45                |
| HKW310_400HAF   | 62           | 8000                 | 1067                   | 1250                | 152                  | 1800               | 235                 | 475                  | 0.45                |
| HKW310_400HAE   | 75           | 8000                 | 1067                   | 1250                | 182                  | 1800               | 282                 | 575                  | 0.45                |
| HKW310_400HAD   | 94           | 8000                 | 1067                   | 1250                | 227                  | 1800               | 353                 | 720                  | 0.45                |
| HKW310_400HAC   | 120          | 8000                 | 1067                   | 1250                | 303                  | 1800               | 471                 | 910                  | 0.45                |
| HKW310_400HAY   | 230          | 8000                 | 1067                   | 1080                | 520                  | 1800               | 942                 | 2030                 | 0.45                |
| HKW310_500HBX   | 160          | 5000                 | 667                    | 1890                | 380                  | 2700               | 569                 | 810                  | 0.56                |
| HKW310_500HBB   | 200          | 6000                 | 800                    | 1880                | 472                  | 2700               | 711                 | 1030                 | 0.56                |
| HKW310_500HBY   | 270          | 7000                 | 933                    | 1840                | 616                  | 2700               | 949                 | 1400                 | 0.56                |

## Associated Drives

| 540 VDC voltage supply |                        |  |
|------------------------|------------------------|--|
| Motor                  | PARKER AC890SD         |  |
|                        | Drive                  | Speed limit <sup>(1)</sup><br>N <sub>max</sub><br>[min <sup>-1</sup> ] |
| HKW085_066BAU          | 890SD-532160B0-B00-... | 13800  |
| HKW085_066BAP          | 890SD-232300C0-B00-... | 27500  |
| HKW085_066BAK          | 890SD-532450D0-B00-... | 30000  |
| HKW085_099BAQ          | 890SD-232300C0-B00-... | 17000  |
| HKW085_099BAL          | 890SD-532450D0-B00-... | 30000  |
| HKW085_099BAI          | 890SD-432730E0-0...    | 30000  |
| HKW108_080CAN          | 890SD-232240C0-B00-... | 9900   |
| HKW108_080CAI          | 890SD-532390D0-B00-... | 19800  |
| HKW108_080CAF          | 890SD-532590D0-B00-... | 20000  |
| HKW108_140CAI          | 890SD-532390D0-B00-... | 11300  |
| HKW108_140CAF          | 890SD-532590D0-B00-... | 17000  |
| HKW108_140CAD          | 890SD-432870E0-0...    | 20000  |
| HKW108_200CAJ          | 890SD-532390D0-B00-... | 7100   |
| HKW108_200CAF          | 890SD-532590D0-B00-... | 11900  |
| HKW108_200CAD          | 890SD-432870E0-0...    | 17800  |
| HKW155_080CRR          | 890SD-232300C0-B00-... | 8600   |
| HKW155_080CRP          | 890SD-532450D0-B00-... | 13500  |
| HKW155_080CAR          | 890SD-532390D0-B00-... | 7000   |
| HKW155_080CAP          | 890SD-532450D0-B00-... | 11000  |
| HKW155_120CAR          | 890SD-532390D0-B00-... | 4700   |
| HKW155_120CAP          | 890SD-532450D0-B00-... | 7300   |
| HKW155_120CAK          | 890SD-432730E0-0...    | 10700  |
| HKW155_120CAH          | 890SD-433105F...       | 14700  |
| HKW155_120CAF          | 890SD-433156F...       | 19600  |
| HKW155_160CAR          | 890SD-532390D0-B00-... | 3500   |
| HKW155_160CAP          | 890SD-532590D0-B00-... | 5500   |
| HKW155_160CAH          | 890SD-433105F...       | 11000  |
| HKW155_160CAF          | 890SD-433156F...       | 14700  |
| HKW155_160CAD          | 890SD-433316G...       | 20000  |
| HKW195_120CAV          | 890SD-232300C0-B00-... | 2400   |
| HKW195_120CAP          | 890SD-432730E0-0...    | 5200   |
| HKW195_120CAI          | 890SD-433156F...       | 10400  |
| HKW195_120CAF          | 890SD-433316G...       | 15500  |
| HKW195_120CAE          | 890SD-433361G...       | 18600  |
| HKW195_180CAT          | 890SD-532450D0-B00-... | 2100   |
| HKW195_180CAP          | 890SD-432730E0-0...    | 3500   |
| HKW195_180CAM          | 890SD-432870E0-0...    | 4800   |
| HKW195_180CAJ          | 890SD-433156F...       | 6200   |
| HKW195_180CAF          | 890SD-433316G...       | 10400  |
| HKW195_180CAC          | 890SD-433520H...       | 20000  |
| HKW195_300CAM          | 890SD-432870E0-0...    | 2900   |
| HKW195_300CAJ          | 890SD-433156F...       | 3700   |
| HKW195_300CAF          | 890SD-433316G...       | 6200   |
| HKW195_300CAE          | 890SD-433361G...       | 7500   |
| HKW195_300CAC          | 890SD-433520H...       | 12400  |
| HKW195_300CAX          | consult us             |  |
| HKW195_300CBU          | 890SD-433480H...       | 10300  |
| HKW195_360CBU          | 890SD-433520H...       | 8600   |
| HKW195_420CBU          | 890SD-433520H...       | 7400   |
| HKW195_420CBX          | consult us             |  |

(1) Due to the back emf or the maximal drive frequency

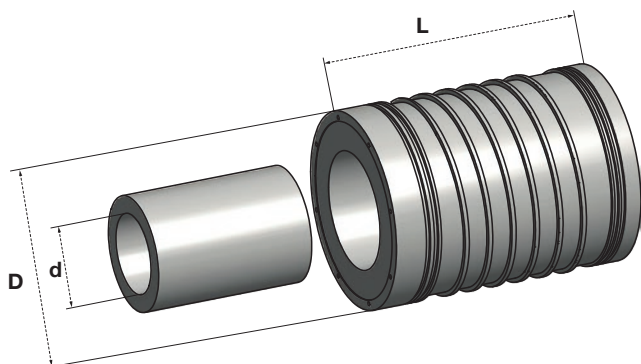
## Associated Drives

| 540 VDC voltage supply |                        |  |
|------------------------|------------------------|--|
| Motor                  | PARKER AC890SD         |  |
|                        | Drive                  | Speed limit <sup>(1)</sup><br>N <sub>max</sub><br>[min <sup>-1</sup> ] |
| HKW242_225DAN          | 890SD-532590D0-B00-... | 1300   |
| HKW242_225DAF          | 360 / 302              | 2600   |
| HKW242_225DAD          | 360 / 302              | 3800   |
| HKW242_225DAC          | 360 / 301              | 5100   |
| HKW242_225DAB          | 890SD-433361G...       | 7600   |
| HKW242_375DAF          | 890SD-433105F...       | 1500   |
| HKW242_375DAD          | 480 / 401              | 2300   |
| HKW242_375DAC          | 480 / 402              | 3100   |
| HKW242_375DAB          | 890SD-433375H...       | 4600   |
| HKW242_375DAA          | consult us             |  |
| HKW242_375DBB          | consult us             |  |
| HKW242_375DBY          | consult us             |  |
| HKW242_375DBW          | 890SD-433520H...       | 4700   |
| HKW310_200HAJ          | 890SD-433156F...       | 1400   |
| HKW310_200HAH          | 890SD-433216G...       | 1800   |
| HKW310_200HAE          | 890SD-433361G...       | 2900   |
| HKW310_200HAD          | 890SD-433375H...       | 3600   |
| HKW310_200HAC          | 890SD-433520H...       | 4800   |
| HKW310_300HAJ          | 890SD-433156F...       | 1000   |
| HKW310_300HAH          | 890SD-433216G...       | 1200   |
| HKW310_300HAE          | 890SD-433361G...       | 1900   |
| HKW310_300HAD          | 890SD-433375H...       | 2400   |
| HKW310_300HAC          | 890SD-433520H...       | 3200   |
| HKW310_400HAJ          | 890SD-433156F...       | 700  |
| HKW310_400HAH          | 890SD-433216G...       | 900  |
| HKW310_400HAF          | 890SD-433316G...       | 1200   |
| HKW310_400HAE          | 890SD-433361G...       | 1400   |
| HKW310_400HAD          | 890SD-433375H...       | 1800   |
| HKW310_400HAC          | 890SD-433520H...       | 2400   |
| HKW310_400HAY          | consult us             |  |
| HKW310_500HBX          | 890SD-532730E0-0...    | 1900   |
| HKW310_500HBB          | consult us             |  |
| HKW310_500HBY          | consult us             |  |

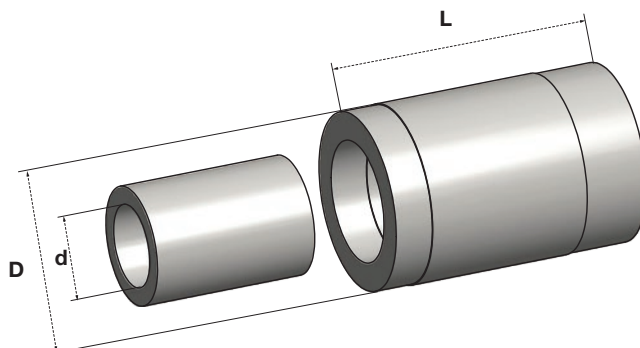
(1) Due to the back emf or the maximal drive frequency

# Dimensions

Stator with cooling jacket



Stator without housing



| Dimensions [mm] | Without housing |       |     | With cooling jacket |     |     |
|-----------------|-----------------|-------|-----|---------------------|-----|-----|
|                 | d               | D     | L   | d                   | D   | L   |
| Product         |                 |       |     |                     |     |     |
| HKW085_066      | 32              | 85    | 134 | 32                  | 100 | 136 |
| HKW085_099      |                 |       | 167 |                     |     | 169 |
| HKW108_080      | 47              | 108   | 148 | 47                  | 130 | 150 |
| HKW108_140      |                 |       | 208 |                     |     | 210 |
| HKW108_200      |                 |       | 268 |                     |     | 270 |
| HKW155_080      | 75              | 155.5 | 152 | 75                  | 180 | 154 |
| HKW155_120      |                 |       | 192 |                     |     | 194 |
| HKW155_160      |                 |       | 232 |                     |     | 234 |
| HKW155_160CAD   |                 |       | 241 |                     |     | 243 |
| HKW195_120CAX   | 90              | 195   | 214 | 90                  | 220 | 216 |
| HKW195_120CAF   |                 |       | 223 |                     |     | 225 |
| HKW195_120CAE   |                 |       | 231 |                     |     | 233 |
| HKW195_180CAx   |                 |       | 274 |                     |     | 276 |
| HKW195_180CAF   |                 |       | 283 |                     |     | 285 |
| HKW195_180CAC   |                 |       | 291 |                     |     | 293 |
| HKW195_300CAM/J |                 |       | 394 |                     |     | 396 |
| HKW195_300CAF   |                 |       | 403 |                     |     | 405 |
| HKW195_300CAE/C |                 |       | 411 |                     |     | 413 |
| HKW195_300CAX   |                 |       | 464 |                     |     | 466 |
| HKW195_300CBU   |                 |       | 464 |                     |     | 413 |
| HKW195_360CBU   |                 |       | 524 |                     |     | 499 |
| HKW195_420CBU   |                 |       | 584 |                     |     | 559 |
| HKW195_420CBX   |                 |       | 584 |                     |     | 559 |

| Dimensions [mm] | Without housing |     |     | With cooling jacket |     |     |
|-----------------|-----------------|-----|-----|---------------------|-----|-----|
|                 | d               | D   | L   | d                   | D   | L   |
| Product         |                 |     |     |                     |     |     |
| HKW242_225DAN/F | 130             | 242 | 313 | 130                 | 270 | 315 |
| HKW242_225DAD   |                 |     | 322 |                     |     | 324 |
| HKW242_225DAC   |                 |     | 330 |                     |     | 332 |
| HKW242_225DAB   |                 |     | 333 |                     |     | 335 |
| HKW242_375DAF   |                 |     | 463 |                     |     | 465 |
| HKW242_375DAD   |                 |     | 472 |                     |     | 474 |
| HKW242_375DAC   |                 |     | 480 |                     |     | 482 |
| HKW242_375DAB   |                 |     | 477 |                     |     | 479 |
| HKW242_375DAA   |                 |     | 513 |                     |     | 515 |
| HKW242_375DBB   |                 |     | 513 |                     |     | 515 |
| HKW242_375DBY   | 513             | 515 |     |                     |     |     |
| HKW310_200HAJ   | 180             | 310 | 308 | 180                 | 340 | 310 |
| HKW310_200HAH   |                 |     | 317 |                     |     | 319 |
| HKW310_200HAE   |                 |     | 328 |                     |     | 330 |
| HKW310_200HAD   |                 |     | 322 |                     |     | 324 |
| HKW310_200HAC   |                 |     | 325 |                     |     | 327 |
| HKW310_300HAJ   |                 |     | 408 |                     |     | 410 |
| HKW310_300HAH   |                 |     | 417 |                     |     | 419 |
| HKW310_300HAE   |                 |     | 428 |                     |     | 430 |
| HKW310_300HAD   |                 |     | 422 |                     |     | 424 |
| HKW310_300HAC   |                 |     | 425 |                     |     | 427 |
| HKW310_400HAJ   |                 |     | 508 |                     |     | 510 |
| HKW310_400HAH   |                 |     | 517 |                     |     | 519 |
| HKW310_400HAF   |                 |     | 525 |                     |     | 527 |
| HKW310_400HAE   |                 |     | 528 |                     |     | 530 |
| HKW310_400HAD   |                 |     | 522 |                     |     | 524 |
| HKW310_400HAC   |                 |     | 525 |                     |     | 527 |
| HKW310_400HAY   | 540             | 542 |     |                     |     |     |
| HKW310_500HBX   | 640             | 642 |     |                     |     |     |
| HKW310_500DBB   | 640             | 642 |     |                     |     |     |
| HKW310_500DBY   | 640             | 642 |     |                     |     |     |



## Order Code

### HKW Series

|               | 1         | 2        | 3          | 4        | 5          | 6          | 7        | 8        | 9          |
|---------------|-----------|----------|------------|----------|------------|------------|----------|----------|------------|
| Order example | <b>HK</b> | <b>W</b> | <b>155</b> | <b>-</b> | <b>080</b> | <b>CAP</b> | <b>R</b> | <b>0</b> | <b>000</b> |

|                                       |            |  |
|---------------------------------------|------------|--|
| <b>1 Motor type</b>                   | <b>HK</b>  | Frameless permanent magnet servomotors |
| <b>2 Cooling</b>                      | <b>W</b>   | Water cooling (standard)               |
| <b>3 External diameter</b>            | <b>085</b> | 85 mm                                  |
|                                       | <b>108</b> | 108 mm                                 |
|                                       | <b>155</b> | 155 mm                                 |
|                                       | <b>195</b> | 195 mm                                 |
|                                       | <b>242</b> | 242 mm                                 |
|                                       | <b>310</b> | 310 mm                                 |
| <b>4 Element</b>                      | <b>-</b>   | Motor (stator + rotor)                 |
|                                       | <b>S</b>   | Stator                                 |
|                                       | <b>R</b>   | Rotor                                  |
| <b>5 Length L [mm]</b>                | <b>080</b> |  |
|                                       | <b>140</b> | see table "Dimensions"                 |
|                                       | <b>200</b> |  |
|                                       | <b>...</b> |  |
| <b>6 Torque/Speed characteristics</b> | <b>BAU</b> |  |
|                                       | <b>BAP</b> | see table "Technical data"             |
|                                       | <b>BAK</b> |  |
|                                       | <b>...</b> |  |
| <b>7 Fix Code</b>                     | <b>R</b>   |  |
| <b>8 Mechanical options</b>           | <b>0</b>   | Without housing, without hub           |
|                                       | <b>1</b>   | With housing, without hub              |
|                                       | <b>2</b>   | Without housing, with hub              |
|                                       | <b>3</b>   | With housing, with hub                 |
| <b>9 Interface</b>                    | <b>000</b> | Standard motor                         |



# Frameless Servo Motor - TK Series

## Overview

### Description

TK Series torque motors, delivered as separate rotor and stator to be integrated into the mechanical structure of the machine, lead to simplified designs, reduced costs, and increased accuracy.

TK series is distinguished from existing solutions by their exceptional robustness, making them particularly suited to harsh environments.

Benefiting from Parker's unprecedented know-how in the design and manufacture of torque motors, TK series can also be delivered as complete sub-assemblies including frame, cooling system, bearings, feedback sensor, etc.



### Advantages

- Very high torque
- Very large hollow shaft
- Coating against corrosion (on request)
- High resistance (oil proof on request)
- Compatible with Parker drives and third parties
- Global cost reduction
- Increased reliability and reduced maintenance
- Simple, light and compact machine design
- No coupling systems needed
- Greater stiffness and robustness of the system
- Low noise level
- Integration assistance available

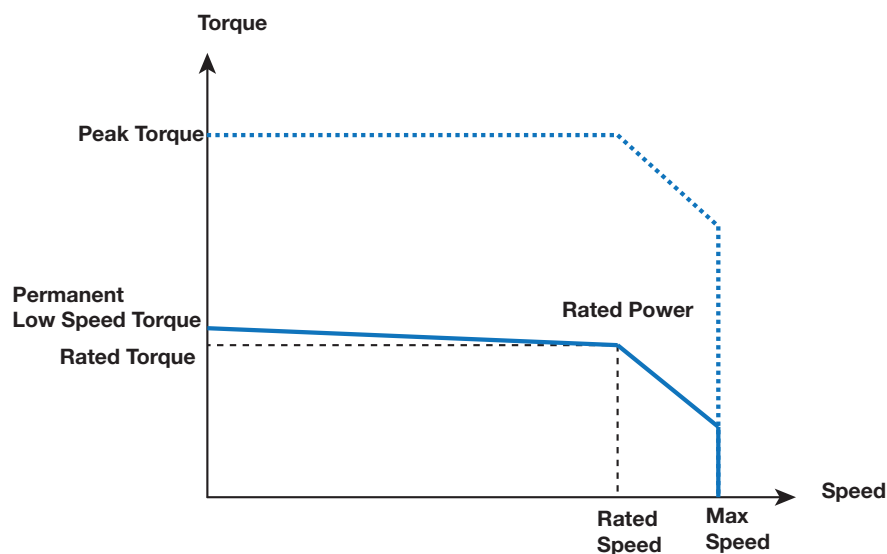
### Applications

- Rotating Table
- Mixer for Pulp & Paper
- Material Forming
- Material Handling
- Machine Tools
- Winch and Marine

### Technical Characteristics - Overview

| Cooling         | Natural cooling  | Water cooling           |
|-----------------|--|-------------------------|
| Power           | 2.8...58 kW  | 7...207 kW              |
| Torque          | 41...10 100 Nm   | 90...21 900 Nm          |
| Speed           | 870 min <sup>-1</sup>                                  | 2 500 min <sup>-1</sup> |
| Number of poles | 30 (TK_130) / 60 (TK_200) / 90 (TK_300) / 120 (TK_400) |                         |
| Diameter        | 230 – 385 – 565 - 795 mm                               |                         |
| Power supply    | 400 VAC  |                         |

## Technical Data



| Motor  | Rated Power P <sub>n</sub> | Rated Torque M <sub>n</sub> | Rated Speed N <sub>n</sub> | Rated Current I <sub>n</sub> | Low speed torque M <sub>0</sub> | Low speed Current I <sub>0</sub> | Peak Torque M <sub>peak</sub> | Peak Current I <sub>peak</sub> | Max. Speed N <sub>max</sub> | Frequency at max speed | Moment of Inertia J |
|--|----------------------------|-----------------------------|----------------------------|------------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------------------|-----------------------------|------------------------|---------------------|
|  | [kW]                       | (Nm)                        | [min <sup>-1</sup> ]       | [Arms]                       | [Nm]                            | [Arms]                           | [Nm]                          | [Arms]                         | [min <sup>-1</sup> ]        | [Hz]                   | [kgm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased - Natural cooling</b> |                            |                             |                            |                              |                                 |                                  |                               |                                |                             |                        |                     |
| TKA131HL   | 2.8                        | 28                          | 5.0                        | 940                          | 41                              | 7.0                              | 200                           | 38.2                           | 940                         | 235                    | 0.01                |
| TKA132HL   | 4.5                        | 70                          | 8.3                        | 610                          | 85                              | 9.8                              | 415                           | 54.2                           | 610                         | 153                    | 0.02                |
| TKA133HN   | 6.6                        | 108                         | 12.2                       | 580                          | 130                             | 14.4                             | 625                           | 78.8                           | 580                         | 145                    | 0.03                |
| TKA134HN   | 7.4                        | 154                         | 13.8                       | 460                          | 175                             | 15.4                             | 850                           | 85.9                           | 460                         | 115                    | 0.04                |
| TKA135HP   | 8.5                        | 198                         | 16                         | 410                          | 220                             | 17.6                             | 1060                          | 97.0                           | 410                         | 103                    | 0.05                |
| TKA136HP   | 10.0                       | 239                         | 18.6                       | 400                          | 265                             | 20.4                             | 1280                          | 113.0                          | 400                         | 100                    | 0.06                |
| TKA201HM   | 4.9                        | 109                         | 8.9                        | 430                          | 145                             | 11.4                             | 650                           | 63.6                           | 430                         | 215                    | 0.09                |
| TKA202HS   | 8.0                        | 246                         | 14.5                       | 310                          | 300                             | 17.3                             | 1300                          | 93.2                           | 310                         | 155                    | 0.18                |
| TKA203HR   | 9.8                        | 398                         | 18.1                       | 235                          | 455                             | 20.3                             | 1950                          | 108.0                          | 235                         | 118                    | 0.27                |
| TKA204HV   | 10.5                       | 558                         | 20                         | 180                          | 610                             | 21.6                             | 2600                          | 114.0                          | 180                         | 90                     | 0.35                |
| TKA205HU   | 12.5                       | 705                         | 23.5                       | 170                          | 770                             | 25.5                             | 3250                          | 134.0                          | 170                         | 85                     | 0.44                |
| TKA206HS   | 16.6                       | 832                         | 31.7                       | 190                          | 925                             | 34.7                             | 3900                          | 182.0                          | 190                         | 95                     | 0.52                |
| TKA208HS   | 17.0                       | 1160                        | 32.9                       | 140                          | 1240                            | 34.9                             | 5200                          | 182.0                          | 140                         | 70                     | 0.69                |
| TKA301HJ   | 7.1                        | 273                         | 13                         | 250                          | 350                             | 16.2                             | 1200                          | 57.6                           | 250                         | 188                    | 0.6                 |
| TKA302HP   | 11.4                       | 604                         | 20.7                       | 180                          | 720                             | 24.2                             | 2400                          | 83.6                           | 180                         | 135                    | 1.2                 |
| TKA303HN   | 14.9                       | 948                         | 27.9                       | 150                          | 1100                            | 31.8                             | 3600                          | 108.0                          | 150                         | 113                    | 1.7                 |
| TKA304HN   | 20.8                       | 1240                        | 38.6                       | 160                          | 1470                            | 45.0                             | 4800                          | 152.0                          | 160                         | 120                    | 2.3                 |
| TKA305HN   | 24.1                       | 1590                        | 44.8                       | 145                          | 1850                            | 51.4                             | 6000                          | 173.0                          | 145                         | 109                    | 2.9                 |
| TKA306HM   | 26.6                       | 1950                        | 49.1                       | 130                          | 2220                            | 55.0                             | 7200                          | 185.0                          | 130                         | 98                     | 3.4                 |
| TKA308HL   | 28.5                       | 2720                        | 55.1                       | 100                          | 2970                            | 59.5                             | 9600                          | 199.0                          | 100                         | 75                     | 4.6                 |
| TKA30AHL   | 29.3                       | 3490                        | 56.4                       | 80                           | 3710                            | 59.4                             | 12000                         | 199.0                          | 80                          | 60                     | 5.7                 |

| Motor  | Rated Power Pn | Rated Torque Mn | Rated Speed Nn       | Rated Current In | Low speed torque Mo | Low speed Current Io | Peak Torque M peak | Peak Current I peak | Max. Speed N max     | Frequency at max speed | Moment of Inertia J |
|--|----------------|-----------------|----------------------|------------------|---------------------|----------------------|--------------------|---------------------|----------------------|------------------------|---------------------|
|  | [kW]           | (Nm)            | [min <sup>-1</sup> ] | [Arms]           | [Nm]                | [Arms]               | [Nm]               | [Arms]              | [min <sup>-1</sup> ] | [Hz]                   | [kgm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased - Natural cooling</b> |                |                 |                      |                  |                     |                      |                    |                     |                      |                        |                     |
| TKA401HG   | 12.6           | 604             | 22.6                 | 200              | 820                 | 29.7                 | 3300               | 145.0               | 200                  | 200                    | 1.9                 |
| TKA402HP   | 20.4           | 1260            | 37                   | 155              | 1640                | 47.0                 | 6600               | 229.0               | 155                  | 155                    | 3.5                 |
| TKA403HL   | 27.4           | 1940            | 48.7                 | 135              | 2460                | 60.4                 | 9900               | 295.0               | 135                  | 135                    | 5.2                 |
| TKA404HR   | 30.5           | 2770            | 55.9                 | 105              | 3270                | 64.9                 | 13200              | 317.0               | 105                  | 105                    | 6.8                 |
| TKA405HQ   | 33.7           | 3570            | 62.2                 | 90               | 4070                | 70.0                 | 16500              | 344.0               | 90                   | 90                     | 8.5                 |
| TKA406HP   | 36.6           | 4370            | 69                   | 80               | 4880                | 76.3                 | 19800              | 375.0               | 80                   | 80                     | 10.1                |
| TKA408HN   | 46.0           | 5850            | 84.7                 | 75               | 6490                | 93.0                 | 26400              | 459.0               | 75                   | 75                     | 13.4                |
| TKA40AHM   | 49.3           | 7470            | 91.5                 | 63               | 8100                | 98.3                 | 33000              | 486.0               | 63                   | 63                     | 16.7                |
| TKA40CHK   | 58.1           | 9400            | 109                  | 59               | 10100               | 116.0                | 39600              | 550.0               | 59                   | 59                     | 20                  |
| <b>400 VAC power supply - three-phased - water cooled</b>    |                |                 |                      |                  |                     |                      |                    |                     |                      |                        |                     |
| TKW131HL   | 6.9            | 88.3            | 15.1                 | 750              | 90                  | 15.2                 | 200                | 38.2                | 1120                 | 280                    | 0.01                |
| TKW131HC   | 17.9           | 68.2            | 35.1                 | 2500             | 90                  | 44.3                 | 200                | 111.0               | 2800                 | 700                    | 0.01                |
| TKW132HL   | 10.1           | 201             | 23                   | 480              | 205                 | 23.4                 | 415                | 54.2                | 720                  | 180                    | 0.02                |
| TKW132HF   | 22.2           | 189             | 47.5                 | 1120             | 205                 | 50.6                 | 415                | 118.0               | 1680                 | 420                    | 0.02                |
| TKW133HN   | 14.8           | 314             | 34.7                 | 450              | 320                 | 35.2                 | 625                | 78.8                | 675                  | 169                    | 0.03                |
| TKW133HH   | 30.7           | 299             | 66.7                 | 980              | 320                 | 70.4                 | 625                | 158.0               | 1470                 | 368                    | 0.03                |
| TKW133HD   | 45.3           | 278             | 93.8                 | 1550             | 320                 | 106                  | 625                | 236.0               | 2320                 | 580                    | 0.03                |
| TKW134HN   | 15.3           | 431             | 37.9                 | 340              | 435                 | 38                   | 850                | 85.9                | 510                  | 128                    | 0.04                |
| TKW134HJ   | 27.8           | 422             | 63.2                 | 630              | 435                 | 64.6                 | 850                | 146.0               | 945                  | 236                    | 0.04                |
| TKW134HF   | 46.4           | 402             | 101                  | 1100             | 435                 | 108                  | 850                | 243.0               | 1650                 | 413                    | 0.04                |
| TKW135HM   | 27.7           | 540             | 64.8                 | 490              | 550                 | 65.4                 | 1060               | 146.0               | 735                  | 184                    | 0.05                |
| TKW135HG   | 54.0           | 515             | 116                  | 1000             | 550                 | 123                  | 1060               | 273.0               | 1500                 | 375                    | 0.05                |
| TKW136HM   | 31.0           | 656             | 72.9                 | 450              | 660                 | 72.7                 | 1280               | 163.0               | 675                  | 169                    | 0.06                |
| TKW136HF   | 71.2           | 616             | 155                  | 1100             | 660                 | 164                  | 1280               | 367.0               | 1650                 | 413                    | 0.06                |
| TKW201HF   | 20.6           | 219             | 39.9                 | 900              | 275                 | 48.6                 | 650                | 143.0               | 1000                 | 500                    | 0.09                |
| TKW201HM   | 10.0           | 262             | 20.8                 | 365              | 275                 | 21.6                 | 650                | 63.6                | 540                  | 270                    | 0.09                |
| TKW202HF   | 45.0           | 480             | 87.7                 | 895              | 610                 | 108                  | 1300               | 286.0               | 1040                 | 520                    | 0.18                |
| TKW202HS   | 15.8           | 592             | 34.5                 | 255              | 610                 | 35.3                 | 1300               | 93.2                | 380                  | 190                    | 0.18                |
| TKW203HD   | 57.5           | 819             | 115                  | 670              | 960                 | 133                  | 1950               | 334.0               | 940                  | 470                    | 0.27                |
| TKW203HE   | 53.7           | 835             | 108                  | 614              | 960                 | 123                  | 1950               | 308.0               | 905                  | 453                    | 0.27                |
| TKW203HR   | 18.2           | 936             | 42.2                 | 185              | 960                 | 43.2                 | 1950               | 108.0               | 275                  | 138                    | 0.27                |
| TKW204HI   | 71.1           | 1140            | 145                  | 595              | 1300                | 163                  | 2600               | 401.0               | 890                  | 445                    | 0.35                |
| TKW204HV   | 18.9           | 1280            | 46.1                 | 140              | 1300                | 46.5                 | 2600               | 114.0               | 170                  | 85                     | 0.35                |
| TKW205HH   | 80.7           | 1480            | 167                  | 520              | 1650                | 184                  | 3250               | 445.0               | 780                  | 390                    | 0.44                |
| TKW205HM   | 51.8           | 1570            | 113                  | 316              | 1650                | 118                  | 3250               | 286.0               | 470                  | 235                    | 0.44                |
| TKW205HU   | 22.2           | 1630            | 54.6                 | 130              | 1650                | 55.1                 | 3250               | 134.0               | 195                  | 98                     | 0.44                |
| TKW206HG   | 92.0           | 1810            | 192                  | 485              | 2000                | 209                  | 3900               | 501.0               | 725                  | 363                    | 0.52                |
| TKW206HM   | 51.3           | 1920            | 116                  | 255              | 2000                | 120                  | 3900               | 286.0               | 380                  | 190                    | 0.52                |
| TKW206HS   | 31.0           | 1960            | 75                   | 150              | 2000                | 76.1                 | 3900               | 182.0               | 225                  | 113                    | 0.52                |
| TKW208HF   | 106.0          | 2500            | 226                  | 405              | 2700                | 242                  | 5200               | 572.0               | 605                  | 303                    | 0.69                |
| TKW208HM   | 50.9           | 2630            | 119                  | 185              | 2700                | 121                  | 5200               | 286.0               | 275                  | 138                    | 0.69                |
| TKW208HS   | 29.4           | 2670            | 76.6                 | 105              | 2700                | 77.1                 | 5200               | 182.0               | 135                  | 68                     | 0.69                |
| TKW301HB   | 36.1           | 497             | 67.4                 | 695              | 680                 | 87.6                 | 1200               | 162.0               | 695                  | 521                    | 0.6                 |
| TKW301HJ   | 14.7           | 651             | 30.2                 | 215              | 680                 | 31.1                 | 1200               | 57.6                | 320                  | 240                    | 0.6                 |

Frameless Servo Motors - TK Series  
 Technical Data

| Motor   | Rated Power Pn | Rated Torque Mn | Rated Speed Nn       | Rated Current In | Low speed torque Mo | Low speed Current Io | Peak Torque M peak | Peak Current I peak | Max. Speed N max     | Frequency at max speed | Moment of Inertia J |
|---|----------------|-----------------|----------------------|------------------|---------------------|----------------------|--------------------|---------------------|----------------------|------------------------|---------------------|
|   | [kW]           | (Nm)            | [min <sup>-1</sup> ] | [Arms]           | [Nm]                | [Arms]               | [Nm]               | [Arms]              | [min <sup>-1</sup> ] | [Hz]                   | [kgm <sup>2</sup> ] |
| <b>400 VAC power supply - three-phased - water cooled</b> |                |                 |                      |                  |                     |                      |                    |                     |                      |                        |                     |
| TKW302HE  | 64.0           | 1290            | 124                  | 475              | 1520                | 143                  | 2400               | 235.0               | 605                  | 454                    | 1.2                 |
| TKW302HJ  | 46.0           | 1390            | 91.6                 | 315              | 1520                | 98.2                 | 2400               | 162.0               | 470                  | 353                    | 1.2                 |
| TKW302HP  | 23.2           | 1480            | 49.7                 | 150              | 1520                | 50.7                 | 2400               | 83.5                | 220                  | 165                    | 1.2                 |
| TKW303HC  | 83.2           | 2120            | 166                  | 375              | 2380                | 183                  | 3600               | 288.0               | 550                  | 413                    | 1.7                 |
| TKW303HJ  | 47.8           | 2270            | 99.1                 | 200              | 2380                | 103                  | 3600               | 162.0               | 295                  | 221                    | 1.7                 |
| TKW303HN  | 30.5           | 2330            | 67.4                 | 125              | 2380                | 68.4                 | 3600               | 108.0               | 185                  | 139                    | 1.7                 |
| TKW304HG  | 96.4           | 2970            | 196                  | 310              | 3250                | 211                  | 4800               | 324.0               | 465                  | 349                    | 2.3                 |
| TKW304HM  | 51.1           | 3150            | 110                  | 155              | 3250                | 112                  | 4800               | 173.0               | 230                  | 173                    | 2.3                 |
| TKW304HN  | 44.8           | 3160            | 97.1                 | 135              | 3250                | 99.1                 | 4800               | 152.0               | 195                  | 146                    | 2.3                 |
| TKW305HG  | 99.2           | 3870            | 203                  | 245              | 4100                | 213                  | 6000               | 324.0               | 360                  | 270                    | 2.9                 |
| TKW305HN  | 50.6           | 4030            | 112                  | 120              | 4100                | 113                  | 6000               | 173.0               | 175                  | 131                    | 2.9                 |
| TKW305HO  | 42.4           | 4050            | 99.3                 | 100              | 4100                | 100                  | 6000               | 152.0               | 125                  | 94                     | 2.9                 |
| TKW306HF  | 113.0          | 4710            | 235                  | 230              | 4950                | 245                  | 7200               | 370.0               | 340                  | 255                    | 3.4                 |
| TKW306HM  | 53.9           | 4900            | 122                  | 105              | 4950                | 122                  | 7200               | 185.0               | 150                  | 113                    | 3.4                 |
| TKW306HO  | 41.3           | 4930            | 101                  | 80               | 4950                | 101                  | 7200               | 152.0               | 120                  | 90                     | 3.4                 |
| TKW308HC  | 141.0          | 6400            | 296                  | 211              | 6740                | 309                  | 9600               | 457.0               | 315                  | 236                    | 4.6                 |
| TKW308HL  | 55.7           | 6650            | 133                  | 80               | 6740                | 135                  | 9600               | 199.0               | 115                  | 86                     | 4.6                 |
| TKW308HO  | 39.3           | 6690            | 103                  | 56               | 6740                | 103                  | 9600               | 152.0               | 80                   | 60                     | 4.6                 |
| TKW30AHD  | 162.0          | 8110            | 340                  | 190              | 8450                | 351                  | 12000              | 518.0               | 280                  | 210                    | 5.7                 |
| TKW30AHL  | 52.0           | 8420            | 135                  | 59               | 8450                | 135                  | 12000              | 199.0               | 70                   | 53                     | 5.7                 |
| TKW30AHO  | 35.4           | 8450            | 104                  | 40               | 8450                | 103                  | 12000              | 152.0               | 60                   | 45                     | 5.7                 |
| TKW401HA  | 45.6           | 1150            | 87.2                 | 380              | 1460                | 108                  | 3300               | 295.0               | 415                  | 415                    | 1.9                 |
| TKW401HG  | 24.4           | 1370            | 50.5                 | 169              | 1460                | 53                   | 3300               | 145.0               | 255                  | 255                    | 1.9                 |
| TKW402HG  | 78.8           | 2840            | 158                  | 265              | 3270                | 180                  | 6600               | 434.0               | 375                  | 375                    | 3.5                 |
| TKW402HI  | 69.0           | 2930            | 141                  | 225              | 3270                | 155                  | 6600               | 375.0               | 335                  | 335                    | 3.5                 |
| TKW402HP  | 42.5           | 3110            | 90.9                 | 130              | 3270                | 94.8                 | 6600               | 229.0               | 195                  | 195                    | 3.5                 |
| TKW403HC  | 106.0          | 4590            | 215                  | 220              | 5100                | 237                  | 9900               | 550.0               | 325                  | 325                    | 5.2                 |
| TKW403HJ  | 66.3           | 4860            | 142                  | 130              | 5100                | 148                  | 9900               | 344.0               | 195                  | 195                    | 5.2                 |
| TKW403HL  | 56.7           | 4910            | 123                  | 110              | 5100                | 127                  | 9900               | 295.0               | 160                  | 160                    | 5.2                 |
| TKW404HI  | 124.0          | 6400            | 260                  | 185              | 6900                | 278                  | 13200              | 635.0               | 275                  | 275                    | 6.8                 |
| TKW404HQ  | 63.7           | 6760            | 148                  | 90               | 6900                | 151                  | 13200              | 344.0               | 135                  | 135                    | 6.8                 |
| TKW404HR  | 60.3           | 6780            | 137                  | 84.9             | 6900                | 139                  | 13200              | 317.0               | 125                  | 125                    | 6.8                 |
| TKW405HH  | 134.0          | 8270            | 292                  | 155              | 8800                | 308                  | 16500              | 688.0               | 200                  | 200                    | 8.5                 |
| TKW405HQ  | 65.1           | 8630            | 152                  | 72               | 8800                | 154                  | 16500              | 344.0               | 105                  | 105                    | 8.5                 |
| TKW406HG  | 148.0          | 10100           | 324                  | 140              | 10600               | 338                  | 19800              | 750.0               | 210                  | 210                    | 10.1                |
| TKW406HP  | 71.4           | 10500           | 168                  | 65               | 10600               | 169                  | 19800              | 375.0               | 95                   | 95                     | 10.1                |
| TKW406HQ  | 63.9           | 10500           | 154                  | 58               | 10600               | 155                  | 19800              | 344.0               | 70                   | 70                     | 10.1                |
| TKW408HF  | 166.0          | 13800           | 365                  | 115              | 14400               | 379                  | 26400              | 825.0               | 170                  | 170                    | 13.4                |
| TKW408HN  | 84.8           | 14200           | 208                  | 57               | 14400               | 211                  | 26400              | 459.0               | 85                   | 85                     | 13.4                |
| TKW408HQ  | 59.9           | 14300           | 157                  | 40.1             | 14400               | 158                  | 26400              | 344.0               | 60                   | 60                     | 13.4                |
| TKW40AHE  | 184.0          | 17500           | 413                  | 100              | 18100               | 424                  | 33000              | 917.0               | 145                  | 145                    | 16.7                |
| TKW40AHM  | 88.3           | 17900           | 223                  | 47               | 18100               | 225                  | 33000              | 486.0               | 70                   | 70                     | 16.7                |
| TKW40AHQ  | 54.9           | 18100           | 159                  | 29               | 18100               | 159                  | 33000              | 344.0               | 40                   | 40                     | 16.7                |
| TKW40CHD  | 207.0          | 21200           | 469                  | 93               | 21900               | 482                  | 39600              | 1030.0              | 135                  | 135                    | 20                  |
| TKW40CHK  | 97.5           | 21700           | 255                  | 43               | 21900               | 257                  | 39600              | 550.0               | 60                   | 60                     | 20                  |

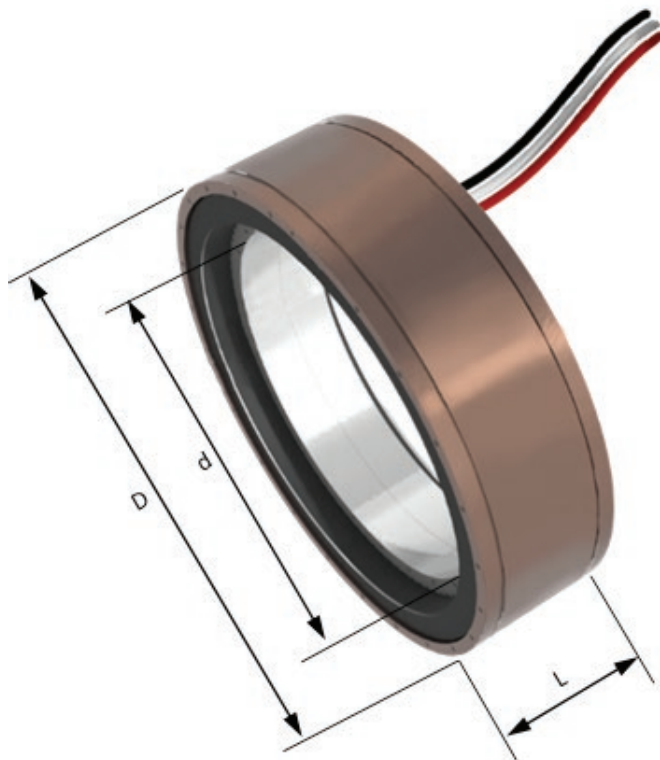
## Associated Drives

| Motor  | AC890           | Compax3  |
|--|-----------------|----------|
| <b>400 VAC power supply - three-phased - Natural cooling</b> |                 |          |
| TKA131HL   | AC890SD-531600B | C3S075V4 |
| TKA132HL   | AC890SD-532100B | C3S150V4 |
| TKA133HN   | AC890SD-532240C | C3S150V4 |
| TKA134HN   | AC890SD-532240C | C3S300V4 |
| TKA135HP   | AC890SD-532240C | C3S300V4 |
| TKA136HP   | AC890SD-532300C | C3S300V4 |
| TKA201HM   | AC890SD-532240C | C3S150V4 |
| TKA202HS   | AC890SD-532240C | C3S300V4 |
| TKA203HR   | AC890SD-532300C | C3S300V4 |
| TKA204HV   | AC890SD-532300C | C3S300V4 |
| TKA205HU   | AC890SD-532390D | C3S300V4 |
| TKA206HS   | AC890SD-532390D | C3H050V4 |
| TKA208HS   | AC890SD-532390D | C3H050V4 |
| TKA301HJ   | AC890SD-532240C | C3S300V4 |
| TKA302HP   | AC890SD-532300C | C3S300V4 |
| TKA303HN   | AC890SD-532390D | C3H050V4 |
| TKA304HN   | AC890SD-532590D | C3H050V4 |
| TKA305HN   | AC890SD-432730E | C3H090V4 |
| TKA306HM   | AC890SD-432730E | C3H090V4 |
| TKA308HL   | AC890SD-432730E | C3H090V4 |
| TKA30AHL   | AC890SD-432730E | C3H090V4 |
| TKA401HG   | AC890SD-532390D | C3S300V4 |
| TKA402HP   | AC890SD-532590D | C3H050V4 |
| TKA403HL   | AC890SD-432730E | C3H090V4 |
| TKA404HR   | AC890SD-432730E | C3H090V4 |
| TKA405HQ   | AC890SD-432730E | C3H090V4 |
| TKA406HP   | AC890SD-433105F | C3H090V4 |
| TKA408HN   | AC890SD-433145F | C3H125V4 |
| TKA40AHM   | AC890SD-433145F | C3H125V4 |
| TKA40CHK   | AC890SD-433156F | C3H125V4 |
| <b>400 VAC power supply - three-phased - Water cooled</b>    |                 |          |
| TKW131HL   | AC890SD-532240C | C3S300V4 |
| TKW131HC   | AC890SD-532590D | C3H050V4 |
| TKW132HL   | AC890SD-532300C | C3S300V4 |
| TKW132HF   | AC890SD-532590D | C3H090V4 |
| TKW133HN   | AC890SD-532390D | C3H050V4 |
| TKW133HH   | AC890SD-432730E | C3H090V4 |
| TKW133HD   | AC890SD-433145F | C3H125V4 |
| TKW134HN   | AC890SD-532450D | C3H050V4 |
| TKW134HJ   | AC890SD-432730E | C3H090V4 |
| TKW134HF   | AC890SD-433145F | C3H125V4 |
| TKW135HM   | AC890SD-432730E | C3H090V4 |
| TKW135HG   | AC890SD-433156F | C3H125V4 |
| TKW136HM   | AC890SD-432730E | C3H090V4 |
| TKW136HF   | AC890SD-433216G | -        |
| TKW201HF   | AC890SD-532590D | C3H050V4 |
| TKW201HM   | AC890SD-532300C | C3S300V4 |
| TKW202HF   | AC890SD-433145F | C3H125V4 |
| TKW202HS   | AC890SD-532450D | C3H090V4 |
| TKW203HD   | AC890SD-433156F | C3H155V4 |
| TKW203HE   | AC890SD-433156F | C3H125V4 |
| TKW203HR   | AC890SD-532590D | C3H050V4 |
| TKW204HI   | AC890SD-433250G | -        |
| TKW204HV   | AC890SD-532590D | C3H050V4 |

| Motor   | AC890           | Compax3  |
|---|-----------------|----------|
| <b>400 VAC power supply - three-phased - Water cooled</b> |                 |          |
| TKW205HH  | AC890SD-433316G | -        |
| TKW205HM  | AC890SD-433156F | C3H125V4 |
| TKW205HU  | AC890SD-432730E | C3H090V4 |
| TKW206HG  | AC890SD-433316G | -        |
| TKW206HM  | AC890SD-433156F | C3H125V4 |
| TKW206HS  | AC890SD-432870E | C3H090V4 |
| TKW208HF  | AC890SD-433361G | -        |
| TKW208HM  | AC890SD-433156F | C3H125V4 |
| TKW208HS  | AC890SD-432870E | C3H090V4 |
| TKW301HB  | AC890SD-433145F | C3H090V4 |
| TKW301HJ  | AC890SD-532390D | C3H050V4 |
| TKW302HE  | AC890SD-433216G | C3H155V4 |
| TKW302HJ  | AC890SD-433145F | C3H125V4 |
| TKW302HP  | AC890SD-432730E | C3H090V4 |
| TKW303HC  | AC890SD-433316G | -        |
| TKW303HJ  | AC890SD-433145F | C3H125V4 |
| TKW303HN  | AC890SD-432730E | C3H090V4 |
| TKW304HG  | AC890SD-433316G | -        |
| TKW304HM  | AC890SD-433156F | C3H125V4 |
| TKW304HN  | AC890SD-433145F | C3H125V4 |
| TKW305HG  | AC890SD-433316G | -        |
| TKW305HN  | AC890SD-433156F | C3H125V4 |
| TKW305HO  | AC890SD-433145F | C3H125V4 |
| TKW306HF  | AC890SD-433361G | -        |
| TKW306HM  | AC890SD-433156F | C3H125V4 |
| TKW306HO  | AC890SD-433145F | C3H125V4 |
| TKW308HC  | AC890SD-433480H | -        |
| TKW308HL  | AC890SD-433216G | C3H155V4 |
| TKW308HO  | AC890SD-433145F | C3H125V4 |
| TKW30AHD  | AC890SD-433520H | -        |
| TKW30AHL  | AC890SD-433216G | C3H155V4 |
| TKW30AHO  | AC890SD-433145F | C3H125V4 |
| TKW401HA  | AC890SD-433145F | C3H125V4 |
| TKW401HG  | AC890SD-432730E | C3H090V4 |
| TKW402HG  | AC890SD-433316G | -        |
| TKW402HI  | AC890SD-433250G | C3H155V4 |
| TKW402HP  | AC890SD-433145F | C3H125V4 |
| TKW403HC  | AC890SD-433361G | -        |
| TKW403HJ  | AC890SD-433216G | C3H155V4 |
| TKW403HL  | AC890SD-433156F | C3H155V4 |
| TKW404HI  | AC890SD-433420H | -        |
| TKW404HQ  | AC890SD-433250G | C3H155V4 |
| TKW404HR  | AC890SD-433216G | C3H155V4 |
| TKW405HH  | AC890SD-433480H | -        |
| TKW405HQ  | AC890SD-433250G | C3H155V4 |
| TKW406HG  | AC890SD-433520H | -        |
| TKW406HP  | AC890SD-433250G | -        |
| TKW406HQ  | AC890SD-433250G | C3H155V4 |
| TKW408HF  | AC890SD-433590J | -        |
| TKW408HN  | AC890SD-433316G | -        |
| TKW408HQ  | AC890SD-433250G | -        |
| TKW40AHE  | AC890SD/5/0685K | -        |
| TKW40AHM  | AC890SD-433361G | -        |
| TKW40AHQ  | AC890SD-433250G | -        |
| TKW40CHD  | AC890SD/5/0798K | -        |
| TKW40CHK  | AC890SD-433420H | -        |

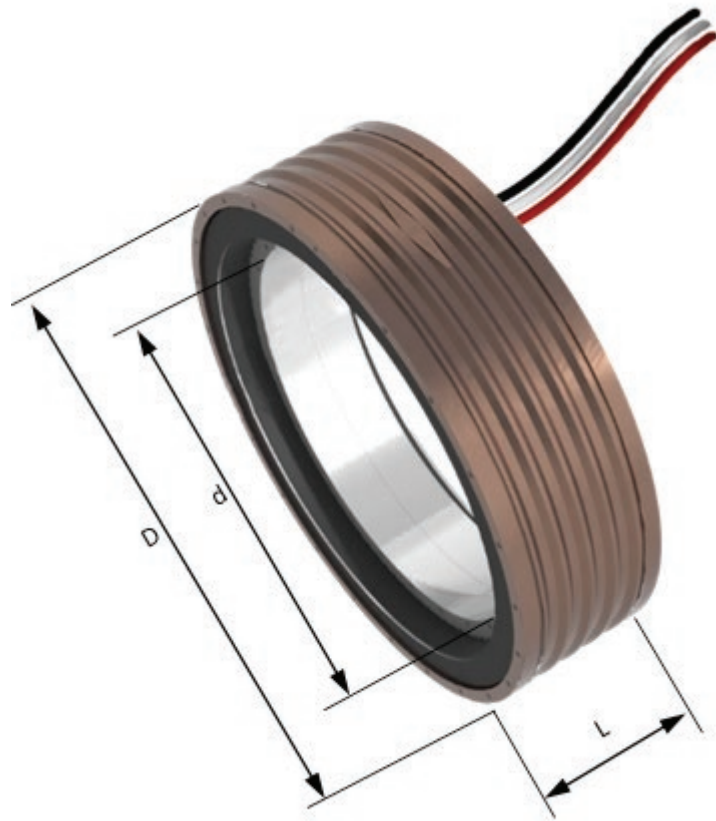
## Dimensions

| Motor    | Dimensions [mm] |     |     |
|----------|-----------------|-----|-----|
|          | d               | D   | L   |
| TKA131HL | 132             | 230 | 90  |
| TKA132HL |                 |     | 140 |
| TKA133HN |                 |     | 190 |
| TKA134HN |                 |     | 240 |
| TKA135HP |                 |     | 290 |
| TKA136HP |                 |     | 340 |
| TKA201HM | 250             | 385 | 110 |
| TKA202HS |                 |     | 160 |
| TKA203HR |                 |     | 210 |
| TKA204HV |                 |     | 260 |
| TKA205HU |                 |     | 320 |
| TKA206HS |                 |     | 370 |
| TKA208HS | 470             |     |     |
| TKA301HJ | 420             | 565 | 110 |
| TKA302HP |                 |     | 160 |
| TKA303HN |                 |     | 210 |
| TKA304HN |                 |     | 255 |
| TKA305HN |                 |     | 320 |
| TKA306HM |                 |     | 370 |
| TKA308HL | 470             |     |     |
| TKA30AHL | 580             |     |     |
| TKA401HG | 620             | 795 | 110 |
| TKA402HP |                 |     | 160 |
| TKA403HL |                 |     | 215 |
| TKA404HR |                 |     | 265 |
| TKA405HQ |                 |     | 330 |
| TKA406HP |                 |     | 385 |
| TKA408HN | 485             |     |     |
| TKA40AHM | 590             |     |     |
| TKA40CHK | 700             |     |     |





| Motor    | d   | D   | L   |
|----------|-----|-----|-----|
| TKW131HL | 132 | 230 | 90  |
| TKW131HC |     |     | 100 |
| TKW132HL |     |     | 140 |
| TKW132HF |     |     | 150 |
| TKW133HN |     |     | 190 |
| TKW133HH |     |     | 205 |
| TKW133HD |     |     | 225 |
| TKW134HN |     |     | 246 |
| TKW134HJ |     |     | 256 |
| TKW134HF |     |     | 276 |
| TKW135HM |     |     | 306 |
| TKW135HG |     |     | 326 |
| TKW136HM |     |     | 356 |
| TKW136HF |     |     | 376 |
| TKW201HF | 250 | 385 | 110 |
| TKW201HM |     |     | 110 |
| TKW202HF |     |     | 170 |
| TKW202HS |     |     | 160 |
| TKW203HD |     |     | 220 |
| TKW203HE |     |     | 220 |
| TKW203HR |     |     | 210 |
| TKW204HI |     |     | 270 |
| TKW204HV |     |     | 270 |
| TKW205HH |     |     | 340 |
| TKW205HM |     |     | 340 |
| TKW205HU |     |     | 340 |
| TKW206HG |     |     | 390 |
| TKW206HM |     |     | 390 |
| TKW206HS | 390 |     |     |
| TKW208HF | 420 | 565 | 480 |
| TKW208HM |     |     | 480 |
| TKW208HS |     |     | 480 |
| TKW301HB |     |     | 110 |
| TKW301HJ |     |     | 110 |
| TKW302HE |     |     | 170 |
| TKW302HJ |     |     | 160 |
| TKW302HP |     |     | 160 |
| TKW303HC |     |     | 220 |
| TKW303HJ |     |     | 210 |
| TKW303HN |     |     | 210 |
| TKW304HG |     |     | 275 |
| TKW304HM |     |     | 275 |
| TKW304HN |     |     | 275 |
| TKW305HG | 340 |     |     |
| TKW305HN | 340 |     |     |
| TKW305HO | 340 |     |     |
| TKW306HF | 395 |     |     |
| TKW306HM | 380 |     |     |
| TKW306HO | 380 |     |     |
| TKW308HC | 520 |     |     |
| TKW308HL | 485 |     |     |
| TKW308HO | 485 |     |     |
| TKW30AHD | 650 |     |     |
| TKW30AHL | 590 |     |     |
| TKW30AHO | 590 |     |     |



| Motor    | d   | D   | L   |
|----------|-----|-----|-----|
| TKW401HA | 620 | 795 | 130 |
| TKW401HG |     |     | 130 |
| TKW402HG |     |     | 180 |
| TKW402HI |     |     | 180 |
| TKW402HP |     |     | 180 |
| TKW403HC |     |     | 230 |
| TKW403HJ |     |     | 230 |
| TKW403HL |     |     | 230 |
| TKW404HI |     |     | 280 |
| TKW404HQ |     |     | 280 |
| TKW404HR |     |     | 280 |
| TKW405HH |     |     | 350 |
| TKW405HQ |     |     | 350 |
| TKW406HG |     |     | 400 |
| TKW406HP | 400 |     |     |
| TKW406HQ | 400 |     |     |
| TKW408HF | 500 |     |     |
| TKW408HN | 500 |     |     |
| TKW408HQ | 500 |     |     |
| TKW40AHE | 605 |     |     |
| TKW40AHM | 605 |     |     |
| TKW40AHQ | 605 |     |     |
| TKW40CHD | 710 |     |     |
| TKW40CHK | 710 |     |     |

## Order Code

### TK-Series

|               | 1         | 2        | 3         | 4          | 5        | 6        | 7        | 8        | 9        | 10       | 11       | 12        |
|---------------|-----------|----------|-----------|------------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Order example | <b>TK</b> | <b>W</b> | <b>20</b> | <b>4HG</b> | <b>Y</b> | <b>Z</b> | <b>B</b> | <b>2</b> | <b>R</b> | <b>9</b> | <b>0</b> | <b>00</b> |

|                                       |            |   |
|---------------------------------------|------------|---|
| <b>1 Motor type</b>                   | <b>TK</b>  | Frameless torque motors                                     |
| <b>2 Cooling method</b>               | <b>W</b>   | Water cooling (standard)                                    |
|                                       | <b>A</b>   | Natural convection<br>(available with derating, consult us) |
| <b>3 Shaft heights</b>                | <b>13</b>  | 130 mm  |
|                                       | <b>20</b>  | 200 mm  |
|                                       | <b>30</b>  | 315 mm  |
|                                       | <b>40</b>  | 400 mm  |
| <b>4 Torque/Speed characteristics</b> | <b>1HL</b> |   |
|                                       | <b>1HC</b> | see table TK-Series technical data                          |
|                                       | <b>2HL</b> |   |
|                                       | ...        |   |
| <b>5 Feedback sensor</b>              | <b>K</b>   | Without sensor  |
|                                       | <b>B</b>   | Direct Endat encoder  |
| <b>6 Transportation bridge</b>        | <b>B</b>   | Bridges on both sides                                       |
|                                       | <b>C</b>   | Bridges on cables output side                               |
|                                       | <b>D</b>   | Bridges on cables output opposite side                      |
|                                       | <b>Z</b>   | Without bridges (standard)                                  |
| <b>7 Cables output</b>                | <b>B</b>   | Output towards the rear                                     |
| <b>8 Cable length</b>                 | <b>2</b>   | 2 m   |
| <b>9 Fix code</b>                     | <b>R</b>   |   |
| <b>10 Connections</b>                 | <b>1</b>   | Flying cables (3 phases + ground)                           |
| <b>11 Thermal protection</b>          | <b>0</b>   | 1 PTC 140°C + 1 PTC 150°C + 1 KTY<br>(+1 in reserve)        |
| <b>12 Mechanical interface</b>        | <b>00</b>  | Standard motor  |



# Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



## Aerospace

### Key Markets

Aftermarket services  
Commercial transports  
Engines  
General & business aviation  
Helicopters  
Launch vehicles  
Military aircraft  
Missiles  
Power generation  
Regional transports  
Unmanned aerial vehicles

### Key Products

Control systems & actuation products  
Engine systems & components  
Fluid conveyance systems & components  
Fluid metering, delivery & atomization devices  
Fuel systems & components  
Fuel tank inerting systems  
Hydraulic systems & components  
Thermal management  
Wheels & brakes



## Climate Control

### Key Markets

Agriculture  
Air conditioning  
Construction Machinery  
Food & beverage  
Industrial machinery  
Life sciences  
Oil & gas  
Precision cooling  
Process  
Refrigeration  
Transportation

### Key Products

Accumulators  
Advanced actuators  
CO<sub>2</sub> controls  
Electronic controllers  
Filter driers  
Hand shut-off valves  
Heat exchangers  
Hose & fittings  
Pressure regulating valves  
Refrigerant distributors  
Safety relief valves  
Smart pumps  
Solenoid valves  
Thermostatic expansion valves



## Electromechanical

### Key Markets

Aerospace  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Paper machinery  
Plastics machinery & converting  
Primary metals  
Semiconductor & electronics  
Textile  
Wire & cable

### Key Products

AC/DC drives & systems  
Electric actuators, gantry robots & slides  
Electrohydraulic actuation systems  
Electromechanical actuation systems  
Human machine interface  
Linear motors  
Stepper motors, servo motors, drives & controls  
Structural extrusions



## Filtration

### Key Markets

Aerospace  
Food & beverage  
Industrial plant & equipment  
Life sciences  
Marine  
Mobile equipment  
Oil & gas  
Power generation & renewable energy  
Process  
Transportation  
Water Purification

### Key Products

Analytical gas generators  
Compressed air filters & dryers  
Engine air, coolant, fuel & oil filtration systems  
Fluid condition monitoring systems  
Hydraulic & lubrication filters  
Hydrogen, nitrogen & zero air generators  
Instrumentation filters  
Membrane & fiber filters  
Microfiltration  
Sterile air filtration  
Water desalination & purification filters & systems



## Fluid & Gas Handling

### Key Markets

Aerial lift  
Agriculture  
Bulk chemical handling  
Construction machinery  
Food & beverage  
Fuel & gas delivery  
Industrial machinery  
Life sciences  
Marine  
Mining  
Mobile  
Oil & gas  
Renewable energy  
Transportation

### Key Products

Check valves  
Connectors for low pressure fluid conveyance  
Deep sea umbilicals  
Diagnostic equipment  
Hose couplings  
Industrial hose  
Mooring systems & power cables  
PTFE hose & tubing  
Quick couplings  
Rubber & thermoplastic hose  
Tube fittings & adapters  
Tubing & plastic fittings



## Hydraulics

### Key Markets

Aerial lift  
Agriculture  
Alternative energy  
Construction machinery  
Forestry  
Industrial machinery  
Machine tools  
Marine  
Material handling  
Mining  
Oil & gas  
Power generation  
Refuse vehicles  
Renewable energy  
Truck hydraulics  
Turf equipment

### Key Products

Accumulators  
Cartridge valves  
Electrohydraulic actuators  
Human machine interfaces  
Hybrid drives  
Hydraulic cylinders  
Hydraulic motors & pumps  
Hydraulic systems  
Hydraulic valves & controls  
Hydrostatic steering  
Integrated hydraulic circuits  
Power take-offs  
Power units  
Rotary actuators  
Sensors



## Pneumatics

### Key Markets

Aerospace  
Conveyor & material handling  
Factory automation  
Life science & medical  
Machine tools  
Packaging machinery  
Transportation & automotive

### Key Products

Air preparation  
Brass fittings & valves  
Manifolds  
Pneumatic accessories  
Pneumatic actuators & grippers  
Pneumatic valves & controls  
Quick disconnects  
Rotary actuators  
Rubber & thermoplastic hose & couplings  
Structural extrusions  
Thermoplastic tubing & fittings  
Vacuum generators, cups & sensors



## Process Control

### Key Markets

Alternative fuels  
Biopharmaceuticals  
Chemical & refining  
Food & beverage  
Marine & shipbuilding  
Medical & dental  
Microelectronics  
Nuclear Power  
Offshore oil exploration  
Oil & gas  
Pharmaceuticals  
Power generation  
Pulp & paper  
Steel  
Water/wastewater

### Key Products

Analytical Instruments  
Analytical sample conditioning products & systems  
Chemical injection fittings & valves  
Fluoropolymer chemical delivery fittings, valves & pumps  
High purity gas delivery fittings, valves, regulators & digital flow controllers  
Industrial mass flow meters/controllers  
Permanent no-weld tube fittings  
Precision industrial regulators & flow controllers  
Process control double block & bleeds  
Process control fittings, valves, regulators & manifold valves



## Sealing & Shielding

### Key Markets

Aerospace  
Chemical processing  
Consumer  
Fluid power  
General industrial  
Information technology  
Life sciences  
Microelectronics  
Military  
Oil & gas  
Power generation  
Renewable energy  
Telecommunications  
Transportation

### Key Products

Dynamic seals  
Elastomeric o-rings  
Electro-medical instrument design & assembly  
EMI shielding  
Extruded & precision-cut, fabricated elastomeric seals  
High temperature metal seals  
Homogeneous & inserted elastomeric shapes  
Medical device fabrication & assembly  
Metal & plastic retained composite seals  
Shielded optical windows  
Silicone tubing & extrusions  
Thermal management  
Vibration dampening

Parker核心代理商

## 武汉普诺瑞达自动控制有限公司

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