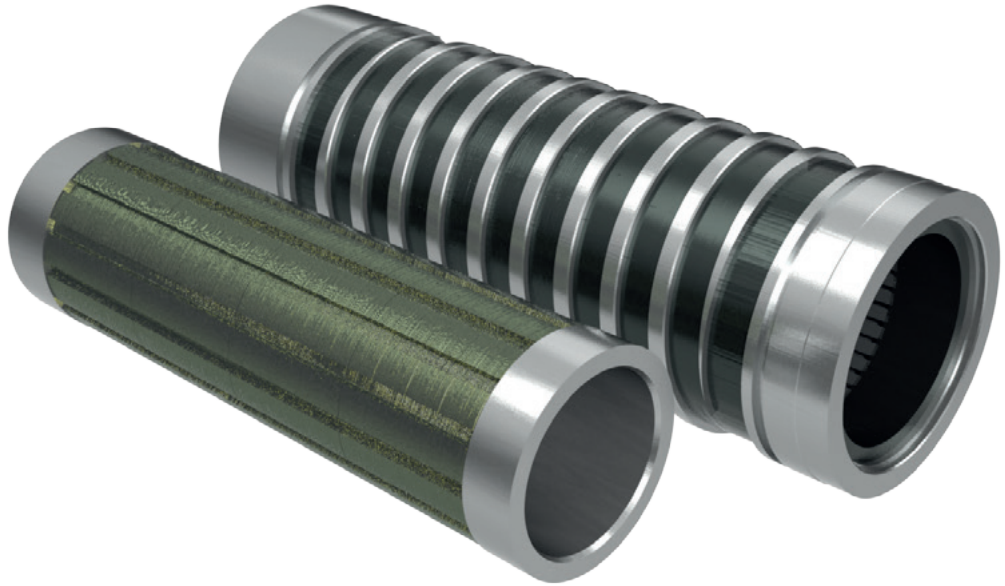


aerospace
climate control
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pneumatics
process control
sealing & shielding



SKW Series

Frameless Servo Motor for Multi-spindle



ENGINEERING YOUR SUCCESS.



WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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Overview 5

Technical Data 6

Associated Drives 7

Dimensions 8

Order Code..... 9

Parker Hannifin

The global leader in motion and control technologies

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.

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Offenburg, Germany
Filderstadt, Germany
Milan, Italy

Asia

Wuxi, China
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Chennai, India

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Littlehampton, UK



Filderstadt, Germany



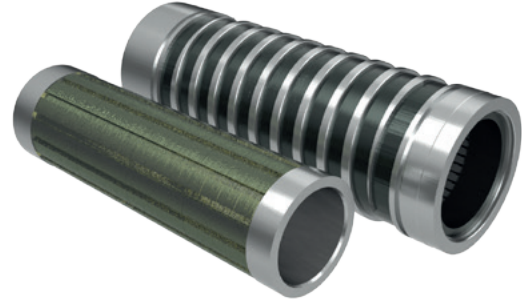
Dijon, France

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.



Features

- **Parker SKW Series frameless spindle motors include**
 - a rotor with permanent magnets with a kevlar sleeve.
 - a wound stator with a cooling jacket and an epoxy potting to protect the coils.
- **Kit motor solution enables simplified mechanical machine tool designs**
- **High dynamic performance and power density: increased productivity and reduced size compared to induction motors**
- **Cold permanent magnet technology: reduced heating in the bearings compared to induction motors, low dilatation effect**
- **Increased internal diameter compared to other solutions: increased rigidity and greater capacity for bar stock handling in automatic lathes**
- **Compatibility with cost effective sensorless drives from Parker**
- **Compactness (small external diameter)**
- **Dedicated speed for each spindle**
 - for the best surface finish
 - for a shorter cycle time
 - for a longer tool life time
- **Maintenance free (no gearing or belt due to the direct drive concept)**
- **Low noise level (no gear or lever sound)**
- **Compatible with third party drives**
- **High resistance (Oil proof)**

Applications

- Machine tools (electro spindle)
- Multi spindle lathes

Technical Characteristics - Overview

Motor Type	Permanent magnet synchronous motors
Power supply	3 ph - 400 VAC
Power range	up to 21 kW
Speed range	<ul style="list-style-type: none"> • up to 12 000 min⁻¹ • higher speeds on request
Insulation (CEI 60034-1)	Class F
Cooling	<ul style="list-style-type: none"> • Water cooling (standard) • Natural convection on request
Connections	2 m flying cables without connectors
Construction type	Individual components (rotor, stator, feedback sensor)

Technical Data

Electric characteristics - water cooled motors

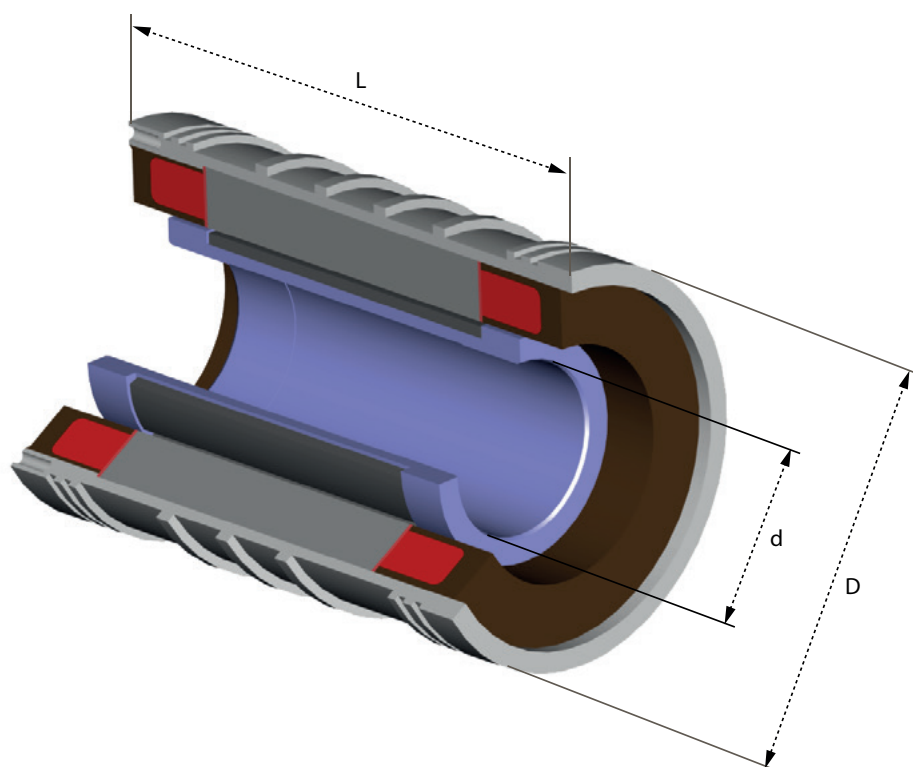
Product code	S1 Power P_{S1} [kW]	Low speed Torque M_0 [Nm]	Rated Torque M_N [Nm]	Peak Torque M_P [Nm]	Rated speed N_N [min ⁻¹]	Max speed N_P [min ⁻¹]	Current at low speed I_0 [A _{RMS}]	Rated current I_N [A _{RMS}]	Peak current I_P [A _{RMS}]
SKW073_050LAM	3.13	4	4	8.26	7470	12000	10.2	10.4	20.0
SKW073_100LAM	6.31	9.97	8.84	17.8	6810	12000	23.2	21.1	40.0
SKW073_150LAM	9.66	15.4	13.5	28.4	6820	11000	30.4	27.3	53.8
SKW073_200LAM	13	21.8	19.3	37.8	6450	11000	45.2	40.9	75.8
SKW082_046LAM	5.08	4.35	4.04	8.6	12000	12000	10.7	10.2	20.0
SKW082_092LAM	10.7	10.1	9.3	23	11000	11000	22.8	21.6	48.6
SKW082_138LAM	15.3	15.8	14.6	31	10000	10000	32.3	30.6	60.0
SKW082_184LAM	21.2	22.2	20.3	44.2	10000	10000	47.7	44.7	90.0
SKW091_046LAM	6.88	6.47	5.47	10.7	12000	12000	16.3	14.3	28.2
SKW091_092LAM	15.4	15.1	12.2	23	12000	12000	35.4	29.4	55.6
SKW091_138LAM	20.8	23.8	19.9	36.1	10000	10000	47.1	40.1	73.3
SKW091_184LAM	28	31.9	26.8	48.1	10000	10000	66.4	56.8	103.4
SKW096_046LAM	3.6	7.07	6.87	13.7	5010	10000	13.1	12.9	26.0
SKW096_092LAM	7.78	16.8	16.3	33.8	4570	10000	28.7	28.1	60.0
SKW096_138LAM	11.7	27.4	26.4	54.3	4240	9000	42.4	41.4	87.9
SKW096_184LAM	16.2	37.4	36	70.6	4300	9000	61.2	59.6	120.0

Associated Drives

Product Code	Drive Reference					
	AC30 Max. speed [min ⁻¹]		AC890 Max. speed [min ⁻¹]		Compax3 Max. speed [min ⁻¹]	
SKW073_050LAM	31V-4E0023-B... (16A@ , OL 180% /3s)	12000	890SD-532240C (16A@8kHz, OL 200%/4s)	12000	C3S150V4... / C3M100D6...	12000
SKW073_100LAM	31V-4F0038-B... (32A@ , OL 180% / 3s)	12000	890SD-532390D (26A@8kHz, OL 200%/4s)	12000	C3S150(300)V4... / C3M150(300)D6...	12000
SKW073_150LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	9600	890SD-532450D (28A@8kHz, OL 200%/4s)	11000	C3S300V4... / C3M300D6...	11000
SKW073_200LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	9600	890SD-532590D (50A@4kHz, OL 200%/4s)	11000	C3H050V4...	11000
SKW082_046LAM	31V-4E0023-B... (16A@ , OL 180% /3s)	12000	890SD-532240C (16A@8kHz, OL 200%/4s)	12000	C3S150V4... / C3M100D6...	12000
SKW082_092LAM	31V-4F0038-B... (32A@ , OL 180% / 3s)	12000	890SD-532390D (26A@8kHz, OL 200%/4s)	11000	C3S300V4... / C3M300D6...	11000
SKW082_138LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	9600	890SD-532450D (38A@4kHz, OL 200%/4s)	10000	C3S300V4... / C3M300D6...	10000
SKW082_184LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	9600	890SD-532590D (50A@4kHz, OL 200%/4s)	10000	C3H050V4...	10000
SKW091_046LAM	31V-4F0032-B... (23A@ , OL 180% / 3s)	12000	890SD-532240C (16A@8kHz, OL 200%/4s)	12000	C3S150(300)V4... / C3M150(300)D6...	12000
SKW091_092LAM	31V-4G0073-B... (60A@ , OL 180% / 3s)	9600	890SD-532450D (38A@4kHz, OL 200%/4s)	12000	C3S300V4... / C3M300D6... / C3H050V4...	12000
SKW091_138LAM	31V-4H0105-B... (87A@ , OL 180% / 3s)	9600	890SD-532450D (38A@4kHz, OL 200%/4s)	10000	C3H050V4...	10000
SKW091_184LAM	31V-4H0145-B... (145A@ , OL 110% / 60s)	9600	890SD-432730E (76A@4kHz, OL110%/60s)	10000	C3H090V4...	10000
SKW096_046LAM	31V-4F0032-B... (23A@ , OL 180% / 3s)	12000	890SD-532240C (16A@8kHz, OL 200%/4s)	10000	C3S150V4... / C3M150D6...	10000
SKW096_092LAM	31V-4G0060-B... (45A@ , OL 180% / 3s)	9600	890SD-532450D (28A@8kHz, OL 200%/4s)	10000	C3S300V4... / C3M300D6...	10000
SKW096_138LAM	31V-4G0073-B... (60A@ , OL 180% / 3s)	9600	890SD-532590D (50A@4kHz, OL 200%/4s)	9000	C3H050V4...	9000
SKW096_184LAM	31V-4H0145-B... (145A@ , OL 110% / 60s)	9600	890SD-432730E (76A@4kHz, OL110%/60s)	9000	C3H090V4...	9000

Dimensions

Product Code	Total length L [mm]	Hollow shaft diameter d [mm]	External diameter D [mm]
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	SK	W	073	S	050	LAM	R	3	000

1	Product series	
	SK	Frameless permanent magnet servomotors
2	Cooling method	
	W	Water cooling (standard)
3	External diameter without water jacket	
	073	73 mm
	082	82 mm
	091	91 mm
	096	96 mm
4	Element	
	-	Motor (stator + rotor)
	S	Stator
	R	Rotor
5	Active part length	
	050	See table "Dimensions"
	...	
6	Torque/Speed characteristics	
	LAM	See table "Technical Data"
	...	
7	Unused character	
	R	
8	Mechanical option	
	2	Without water jacket, with hub (only on request)
	3	With water jacket, with hub (standard)
9	Option	
	000	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
CO₂ 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

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US Product Information Centre

Toll-free number: 1-800-27 27 537

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