

# Technology for Drive Systems and Automation



Components  
and application  
solutions



**STÖBER**

# Optimized drive technology for automation, processes and machines



**SMS PE Planetary Geared Motor**  
Acceleration torque: 11 – 310 Nm  
Backlash:  $\leq 8 - 10$  arcmin  
Standard helical geared motor

The wide range of STOBER hardware makes it possible to configure the right actuator technology consistently for every specification. So costs can be optimized without having to accept technical risks.

All SMS synchronous servo motors with solid shaft can be supplied with a pinion output as an option. An adjustable mounting plate or mounting bracket ensures that the necessary mounting precision is maintained.



## STOBER control



**Motion Controller MC6**  
Processor: 1.6 GHz Intel® Atom™ (Z530 series)  
Frontside Bus 533 MHz  
L2 cache 512 kB  
With CODESYS SoftMotion or CODESYS SoftMotion CNC

## STOBER power electronics



**SD6 Drive Controller**  
Designed for Controller Based Mode (CBM)  
Rated current 1.7 to 72 A  
DriveControlSuite commissioning software



**POSIDYN® SDS 5000 servo inverter**  
Fully digital, for SMS synchronous servo geared motors  
Rated current 1.7 to 60 A  
POSITool commissioning software



**POSIDRIVE® FDS 5000 frequency inverter**  
MGS asynchronous geared motors  
Motor power 0.37 to 7.5 kW  
POSITool commissioning software

## SMS Synchronous servo geared motors



**SMS P/PA Planetary Geared Motor**  
Acceleration torque P: 11 – 3 000 Nm  
Acceleration torque PA: 20 – 1 600 Nm  
Backlash P:  $\leq 3 - 8$  arcmin  
Backlash PA:  $\leq 1 - 3$  arcmin  
Precision for positioning and synchronisation



**SMS PH(A) Planetary Geared Motor**  
Acceleration torque PH(A): 27 – 7 500 Nm  
Backlash PH:  $\leq 3 - 4$  arcmin  
Backlash PHA:  $\leq 1 - 2$  arcmin  
Designed for high-performance servo drives



**SMS PHQ(A) Planetary Geared Motor**  
Acceleration torque PHQ: 72 – 22 000 Nm  
Acceleration torque PHQA: 72 – 10 000 Nm  
Backlash PHQ:  $\leq 3$  arcmin  
Backlash PHQA:  $\leq 1 - 1.5$  arcmin  
The ultimate servo quattro drive



**SMS KL Helical Bevel Geared Motor**  
Acceleration torque: 11 – 65 Nm  
Backlash:  $\leq 16 - 25$  arcmin  
Super compact drive solution for small servo drives



**SMS F Offset Helical Geared Motor**  
Acceleration torque: 19 – 1 100 Nm  
Backlash: Reduziert  $\leq 5 - 8$  arcmin  
Servo axis with parallel shaft offset



**SMS S Helical Worm Geared Motor**  
Acceleration torque: 28 – 960 Nm  
Compact and cost efficient

## Linear Drives

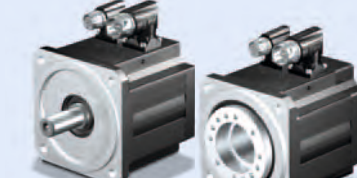


**ZTR-PH(A), PHV(A) Rack and Pinion Drive**  
Module 2 – 8  
Feed force: 5.5 – 56 kN  
Feed velocity: to 4.7 m/s  
Helical and spur gearing



**EZS Synchronous Servo Motor**  
Rotating threaded screw drive  
Motor shaft as blind hole hollow shaft  
Feed force at standstill: 923 – 26 138 N  
Designed for high thrust forces

## Motors

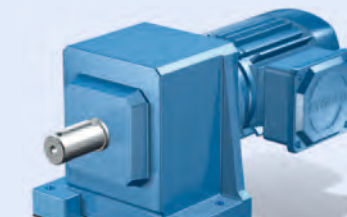


**EZ/EZF Synchronous Servo Motor**  
Super compact, with maximum power density  
Stall torque EZ: 0.95 – 94.0 Nm  
Stall torque EZF: 4.30 – 27.6 Nm  
Super compact, also with hollow shaft



**MGS IE2 Asynchronous Motor**  
14 selection parameters (standard)  
Motor power: 0.75 – 45 kW  
Optional: brake, forced cooling fan, incremental encoder or multitrans absolute encoder

## MGS Asynchronous Geared Motors



**MGS C Helical Geared Motor**  
Motor power: 0.12 – 45 kW  
Backlash:  $\leq 10 - 20$  arcmin  
Versatile, with different housing options



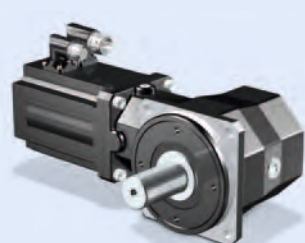
**MGS S Helical Worm Geared Motor**  
Motor power: 0.12 – 5.5 kW  
Compact and cost efficient for standard tasks



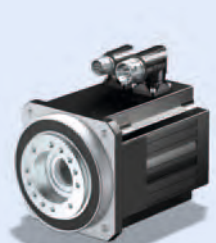
**SMS PK/PKX Right-Angle Planetary Geared Motor**  
Acceleration torque PK: 68 – 2 700 Nm  
Acceleration torque PKX: 11 – 3 000 Nm  
Backlash PK:  $\leq 3.5 - 5$  arcmin  
Backlash PKX:  $\leq 4 - 8.5$  arcmin  
Large ratio range



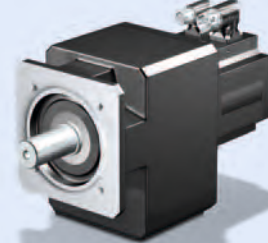
**SMS PH(Q)K/PHKX Right-Angle Planetary Geared Motor**  
Acceleration torque PHK: 89 – 7 500 Nm  
Acceleration torque PHQK: 123 – 22 000 Nm  
Acceleration torque PKX: 11 – 3 000 Nm  
Backlash PHK:  $\leq 3.5 - 4.5$  arcmin  
Backlash PHQK:  $\leq 3.5 - 4$  arcmin  
Backlash PHKX:  $\leq 3 - 6$  arcmin  
Lots of variations with low backlash



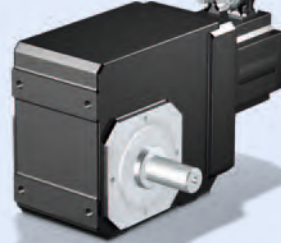
**SMS Right-Angle Servo Geared Motor**  
Acceleration torque: 40 – 400 Nm  
Backlash:  $\leq 4 - 6$  arcmin  
The drive type for high demands



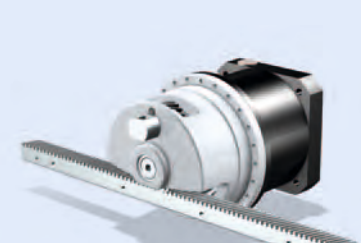
**SMS PY Planetary Geared Motor with Hollow Shaft**  
Acceleration torque: 47 – 500 Nm  
Backlash:  $\leq 3 - 4$  arcmin  
Super compact, maximum power density



**SMS C Helical Geared Motor**  
Acceleration torque: 8.3 – 6 500 Nm  
Backlash:  $\leq 10 - 20$  arcmin  
Different housing options



**SMS K Helical Bevel Geared Motor**  
Acceleration torque: 23 – 13 200 Nm  
Backlash: reduced class I  $\leq 1.5 - 6$  arcmin  
Versatile with flanged, solid or hollow shaft



**ZTRS-PH(A) PHV(A), PHQ(A) HighForce Rack and Pinion Drive**  
Module: 2 – 10, Feed force: 16 – 124 kN  
Feed velocity: to 4.7 m/s  
Helical and spur gearing



**EZM Synchronous Servo Motor**  
Screw nut driven by flanged hollow shaft  
Feed force at standstill: 923 – 26 138 N  
For any threaded screw length



**ED Synchronous Servo Motor**  
Slim design, high torque  
6 sizes: ED 202 – ED 808  
Stall torque: 0.48 – 86.4 Nm  
Optimized for applications with high dynamics



**EK Synchronous Servo Motor**  
Compact design, high power density  
3 sizes: EK 501 – EK 803  
Stall torque: 3.36 – 35 Nm  
Excellent runout at low speeds



**MGS K Helical Bevel Geared Motor**  
Motor power: 0.12 – 45 kW  
Backlash:  $\leq 10 - 12$  arcmin  
Highly rigid geared motor



**MGS F Offset Helical Geared Motor**  
Motor power: 0.12 – 9.2 kW  
Backlash:  $\leq 10 - 11$  arcmin  
Particularly suitable as travel drive

# STOBER industrial automation for complete motion control solution

## The fusion of drive control and drive engineering systems

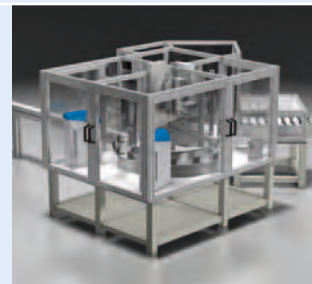
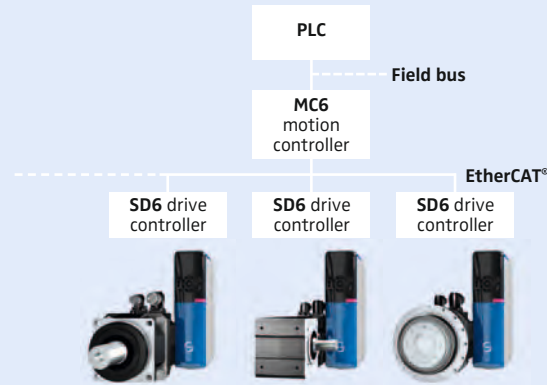
With the development of the new MC6 motion controller and its integration in the STOBER product portfolio user friendly engineering solutions can be offered for drive engineering systems from a single source.

At STOBER software-aided automation know-how is combined with the expertise in selecting the best solution for each individual axis.

## Motion control makes some things easier and many things possible

The centralization of all the control engineering drive functions in one program makes programming of several axes easier in many cases.

For complex interlocking automation functions with high positioning or setting accuracy requirements the use of one or more motion controllers is a necessary pre-condition (embedded systems).



# MC6 Motion Controller with CODESYS programming system

## The new control system for highly dynamic precision axes

The super compact, powerful motion controller is optimized for operation with the CODESYS V3 programming system.

Programming of the application is carried out on a PC (CODESYS programming level).

The technical features are impressive: With the efficient convection cooling, a fan is not required. A solid state drive (SSD) is used as the storage medium. With this hardware rotating parts could be completely eliminated.

HMI panels from other manufacturers can also be connected.

Computing power: Up to 10 axes with complex robotic functions (path control)

Up to 100 axes for cyclic cams and automatic functions to a certain extent

## Touch screen panel design

For applications with a parameterization requirement, the panel version is particularly suitable as a visual sensitive interface and represents a contemporary form of user-friendly interaction.

This user interface offers

- Large selection of ready-made visualization elements
- Generation of graphical user screens in the IEC 61131-3 tool with integrated visualization editor
- Reuse of complete graphical user screens as an individual visualization element
- Portraying of complex visualization elements through interface for parameter transfer



MC6 motion controller cabinet PC version (DIN rail mounting)



MC6 motion controller touch screen panel version

# SD6 drive controller for motion control applications

## 32-bit Dual-Core control performance for maximum motion precision and smoothness

The processor of the SD6 drive controller processes the EnDat® 2.2 encoder data with maximum accuracy. It allows about 33 million positions per revolution to be determined.

Position, speed and torque control of the servo axes are calculated at a cycle time of 62.5 µs (16 kHz).

The new drive controller allows extremely high dynamics and precision of the servo axes due to very short settling times for fast reference value and load changes.

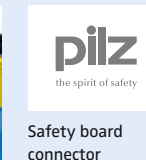
## Modular flexibility and options

The SD6 drive controller stands out for its proven board architecture and its universal options.

So every single system axis in the configuration can have the best design.

A control for a 24 V holding brake is integrated (<= 2.5 A)

A non-wearing, fully electronic interface is provided as standard for the *Safe Torque Off (STO)* safety function (response time < 10 ms). The safety relevant functions were developed jointly with Pilz GmbH & Co. KG.



Safety board connector



Central commissioning of a CODESYS multiaxis application



STOBER multiaxis operation

# Components for rack and pinion drives and screw drives

## Rack and pinion drives for tooling machines, robotics and automation

Linear drives with gear racks are used in many different applications.

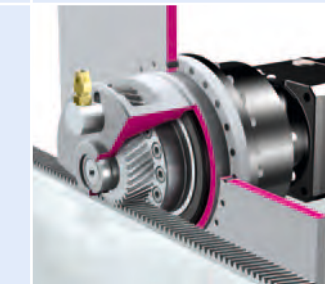
The permissible linear backlash of the rack and pinion system is basically determined by the factors gear unit backlash, diameter of the output pinion and the design and quality class of the gear rack.

Depending on the shaft design and the backlash of the suitable gear unit STOBER offers pinion systems for flanged shaft mounting and another version for solid shaft gear units.

For fine-tuned accurate installation of the pinion adjustable system mounting plates are used.



Pinion for solid shaft Mounting plate

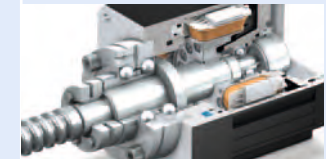


ZTRS-PH(A), PHV(A), PHQ(A) HighForce Rack and Pinion Drive Other versions: ZTR-PH(A), PHV(A) and ZR (pinion attached to flanged shaft)

## Synchronous servo motors for superior screw drives

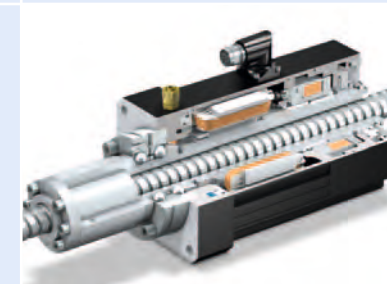
The ultra-compact synchronous servo motors for screw drives are designed for universal mounting to screws from many different manufacturers.

The EZS version comes with a clamping set for fixing the threaded screw. The motor shaft is in the form of a blind hole hollow shaft. A clamping set connects the threaded screw and the motor shaft.



EZS Synchronous Servo Motor

The EZM synchronous servo motor is suitable for direct drive of the screw nut. With its generously sized flanged hollow shaft taking up the screw this synchronous servo motor can be used for screw of any length.



EZM Synchronous Servo Motor Driven screw nut

[www.stober.com](http://www.stober.com)

**STOBER hotline**

+ 49 180 5 786323

(+ 49 180 5 STOEBER)

For a global telephone presence 24/7 and out of hours emergencies, expert STOBER technology advisers are available to offer help and advice to customers and users at any time.

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**STOBER AUSTRIA**

[www.stoeber.at](http://www.stoeber.at)

+43 7613 7600-0

[sales@stoeber.at](mailto:sales@stoeber.at)

**STOBER CHINA**

[www.stoeber.cn](http://www.stoeber.cn)

+86 10 6590 7391

[sales@stoeber.cn](mailto:sales@stoeber.cn)

**STOBER FRANCE**

[www.stober.fr](http://www.stober.fr)

+33 4 78.98.91.80

[sales@stober.fr](mailto:sales@stober.fr)

**STOBER GERMANY**

[www.stoeber.de](http://www.stoeber.de)

+49 7231 582-0

[sales@stoeber.de](mailto:sales@stoeber.de)

**STOBER ITALY**

[www.stober.it](http://www.stober.it)

+39 02 93909570

[sales@stober.it](mailto:sales@stober.it)

**STOBER JAPAN**

[www.stober.co.jp](http://www.stober.co.jp)

+81 3 5395 6788

[sales@stober.co.jp](mailto:sales@stober.co.jp)

**STOBER SOUTH EAST ASIA**

[www.stober.sg](http://www.stober.sg)

+65 65112912

[sales@stober.sg](mailto:sales@stober.sg)

**STOBER SWITZERLAND**

[www.stoeber.ch](http://www.stoeber.ch)

+41 56 496 96 50

[sales@stoeber.ch](mailto:sales@stoeber.ch)

**STOBER UNITED KINGDOM**

[www.stober.co.uk](http://www.stober.co.uk)

+44 1543 458 858

[sales@stober.co.uk](mailto:sales@stober.co.uk)

**STOBER USA**

[www.stober.com](http://www.stober.com)

+1 606 759 5090

[sales@stober.com](mailto:sales@stober.com)

