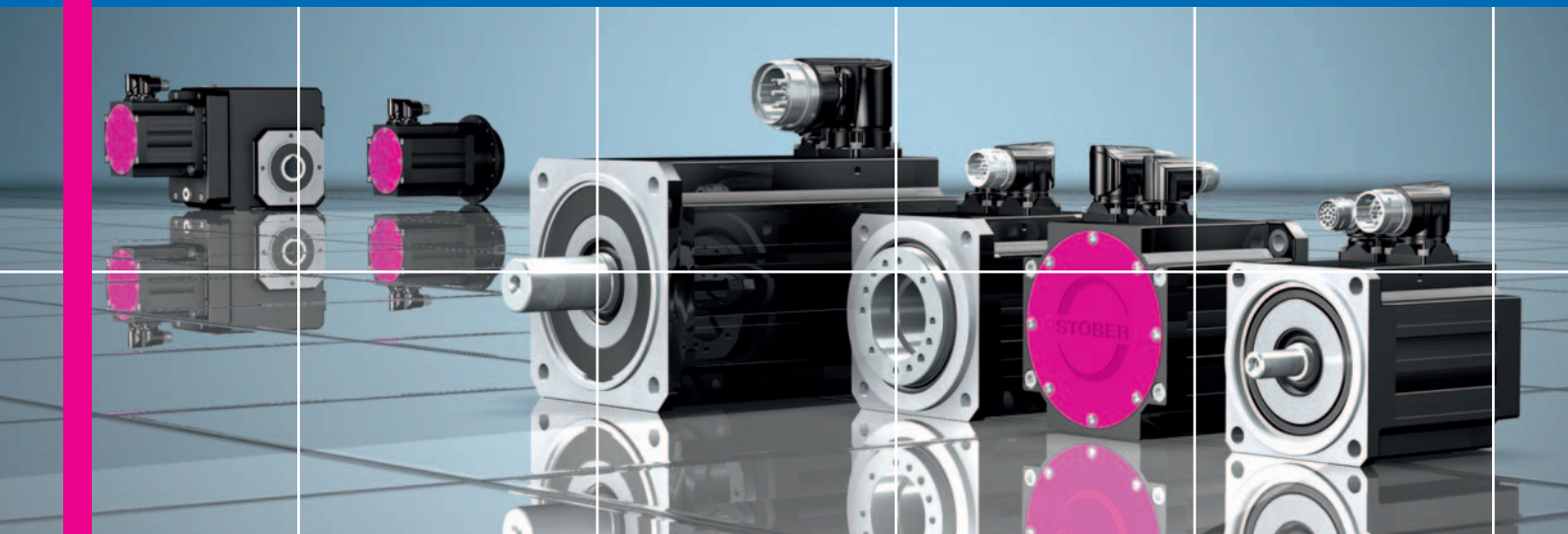


EZ/EZHD Synchronous Servo Motors



The convincing motor system
with a long service life –
super compact, flexible and sturdy



STÖBER

Power density re-defined

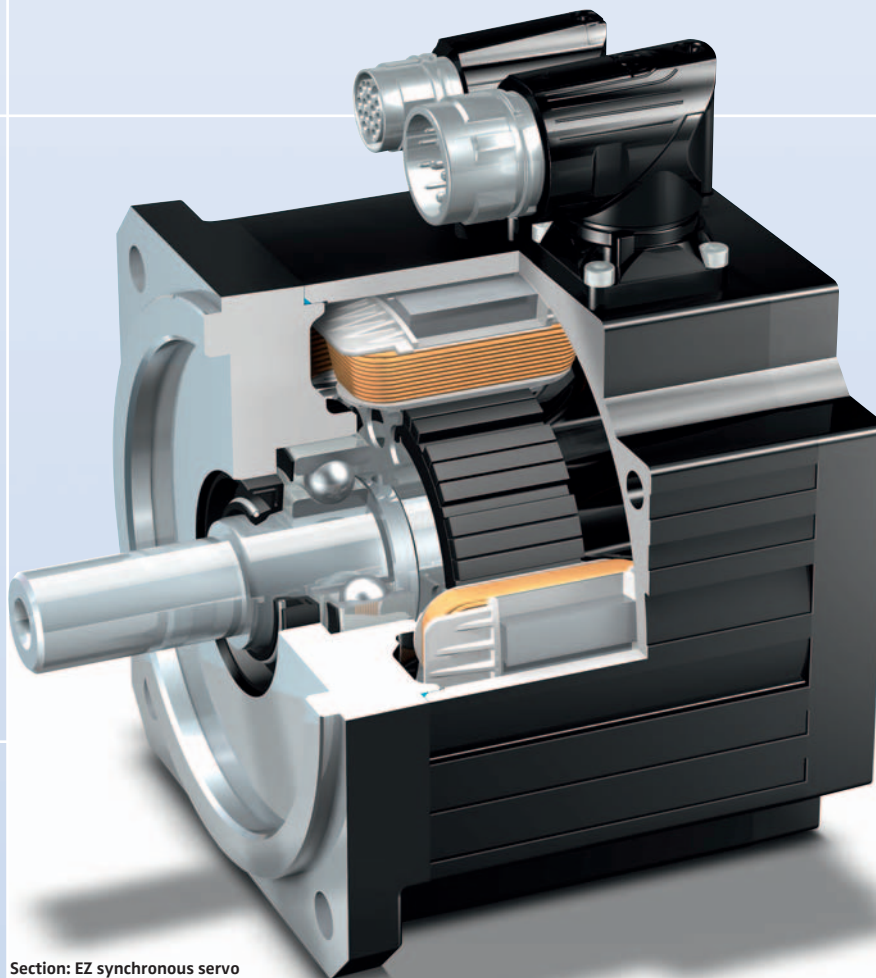
The high quality servo motor system for the solutions of tomorrow

Super compact design, maximum torque, combined with high dynamic performance – these are the special characteristics of the EZ and EZHD motor series.

A basic prerequisite for the super-short design of the series is the industrial implementation of a tooth winding using orthocyclic linear winding technology. This feature makes it possible to manufacture the stator windings with the highest possible copper fill factor. The winding technology increases the motor power output by approx. 80 %. For this reason it is possible to shorten the length of the motor by almost half without reducing the power output.

Due to the ideal structural design of all components and a series of further computer-based fine tuning methods, it was possible to achieve an excellent motor behavior with powerful torque, high dynamic performance and precise constant speed running.

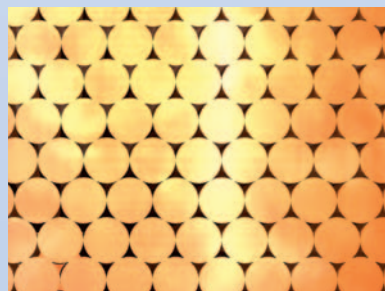
If necessary, the dynamic behavior can be modified



Section: EZ synchronous servo motor with solid shaft and EnDat® inductive absolute encoder in multiturn design as a digital feedback system.



Section: EZ synchronous servo motor in size 5 (5 rotor segments) with view of the epoxy-coated permanent magnets.



Enlarged image of a orthocyclically linear-wound motor coil.

This high quality precision winding technology is used by STÖBER for the series production of the EZ and EZHD synchronous servo motors.

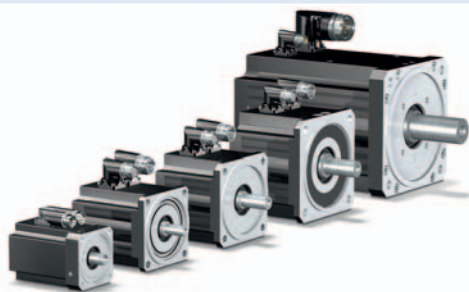
Open to your requirements

System variety for specific needs

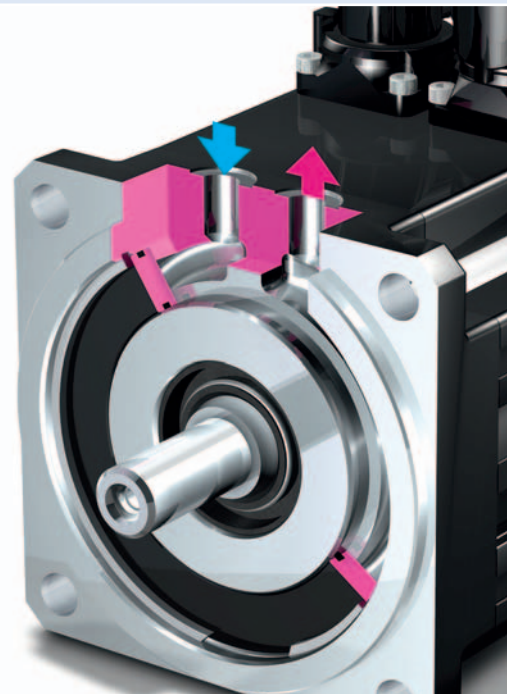
The features of this new design also impress in relation to the variety and the interfaces available from the various options.

"Developed with knowledge and experience"

The design and manufacture of this advanced generation of motors is based on extensive application experience, a rigorous focus on the future and mechatronic production know-how from decades of experience in the manufacture of reliable synchronous servo motors.

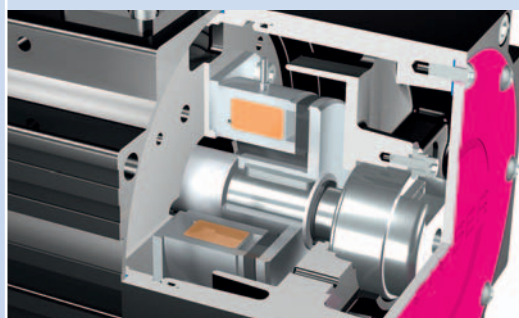


EZ synchronous servo motors are available in sizes 3 – 5, 7 and 8.



All motors are available in various lengths depending on the torque.

The output side of the motor is optionally available with a cooling channel for liquid cooling. For energy recovery, the dissipated heat loss can be fed to a heat exchanger and thus reused.



For the attachment of STÖBER planetary gear units, the output shaft is designed as a blind hole hollow shaft for fitting the STÖBER gear unit pinion.

The motor b-side is designed as a universal interface. On the left the section shows the optional permanent magnet holding brake and on the right an inductive multiturn encoder as a feedback unit.

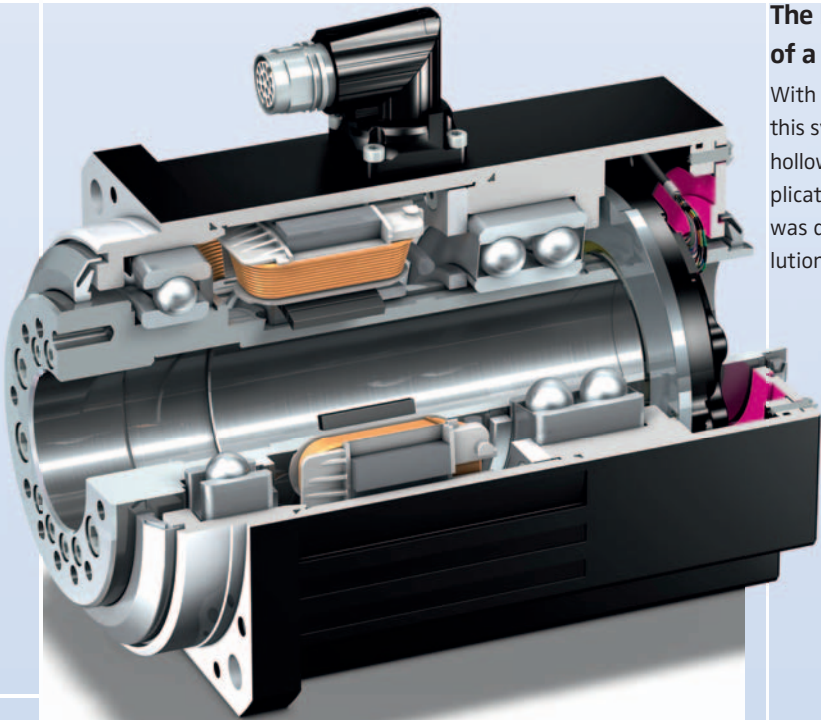
As an option, it is also possible to fit optical encoders with EnDat® or HIPERFACE® protocol.

EZ synchronous servo motor

Size			EZ301	EZ302	EZ303	EZ401	EZ402	EZ404	EZ501	EZ502	EZ503	EZ505	EZ701	EZ702	EZ703	EZ705	EZ802	EZ803	EZ805		
Length housing		[mm]	116.0	138.0	160.0	118.5	143.5	193.5	109.0	134.0	159.0	209.0	121.0	146.0	171.0	226.0	222.0	263.0	345.0		
Length with brake		[mm]	156.0	178.0	200.0	167.0	192.0	242.0	163.5	188.5	213.5	263.5	180.0	205.0	230.0	285.0	299.0	340.0	422.0		
Static torque M ₀		[Nm]	0.95	1.68	2.19	3.0	5.2	8.6	4.7	8.0	11.1	16.0	8.3	14.4	20.8	30.2	37.1	48.2	66.1		
Rated torque M _N		[Nm]	0.93	1.59	2.07	2.8	4.7	6.9	4.3	7.4	9.7	13.5	7.4	12.0	16.5	21.3	22.3	26.6	43.7		
Power rating P _N		[kW]	0.29	0.5	0.65	0.88	1.5	2.2	1.4	2.3	3.1	4.2	2.3	3.8	5.2	6.7	7.0	8.36	9.15		
Mass moment of inertia J	dynamic	[10 ⁻⁴ kgm ²]	0.19	0.29	0.4	0.93	1.63	2.98	2.9	5.2	7.58	12.2	8.5	13.7	21.6	34.0	58.04	83.45	132.68		
Weight		[kg]	1.5	2.1	2.6	4.0	5.1	7.2	5.0	6.5	8.0	10.9	8.3	10.8	12.8	18.3	31.6	32.7	51.8		
Mass moment of inertia J	mass-related	[10 ⁻⁴ kgm ²]	—	—	—	1.13	2.03	3.78	6.3			9.58	16.3	18.1			27.9	47.6	72.91	105.76	169.86
Weight		[kg]	—	—	—	4.08	5.25	7.51	6.72			8.43	11.77	11.21			13.61	19.9	32.9	39.6	55.0

Performance data at rated speed 3000 rpm (convection cooling), except EZ 805 (2000 rpm) | Higher torques using liquid cooling or external fan

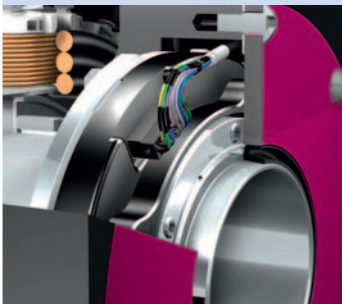
Version with flange hollow shaft



The brilliant implementation of a groundbreaking idea

With its unusually larger opening, this synchronous servo motor with hollow shaft covers a variety of applications for which in the past it was difficult to find a standard solution.

Synchronous servo motor with hollow shaft and EnDat® multiturn absolute encoder.



Section: View of the b-side of the synchronous servo motor with hollow shaft incl. EnDat® absolute encoder feedback system.



The synchronous servo motors with hollow shaft are available in the sizes 4, 5 and 7.



Synchronous servo motor with hollow shaft with five rotor segments and holding brake along the overall length.

EZHD synchronous servo motor with hollow shaft

Size		0411	0412	0414	0511	0512	0513	0515	0711	0712	0713	0715
Length housing	[mm]	145.8	170.8	220.8	156.1	181.1	206.1	256.1	172.2	197.2	222.2	277.2
Static torque M ₀	[Nm]	2.6	5.1	8.5	4.1	7.8	10.9	16.4	7.9	14.4	20.4	31.1
Rated torque M _N	[Nm]	1.9	4.2	7.7	3.0	7.0	8.3	14.0	7.3	11.6	17.8	24.6
Rated current I _N	[A]	2.4	4.3	6.3	3.3	5.6	7.0	9.5	7.5	8.2	13.4	17.2
Mass moment of inertia J Flange hollow shaft	[10 ⁻⁴ kgm ²]	9.35	10.1	11.6	22.3	25.1	27.9	33.6	63.6	72.5	81.4	100.0
Inside-Ø hollow bore	[mm]	28	28	28	40	40	40	40	45	45	45	45
Weight	[kg]	5.46	6.55	8.55	7.5	8.9	10.3	13.1	13.8	16.2	18.5	23.9

Performance data at rated speed 3000 rpm (convection cooling)

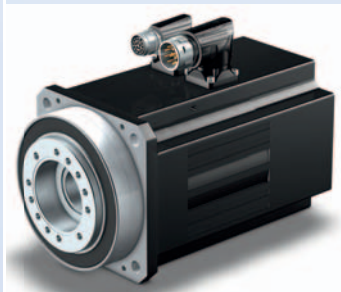
The complete servo axis

Optimized drive technology

As a system manufacturer, STOBER supplies an extensive product portfolio – from the controller to all components of a servo axis.

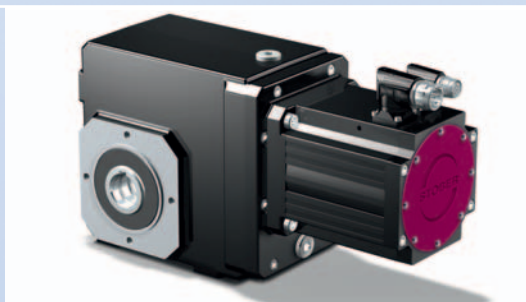
It includes motors, cables, gear units and digital drive controllers with modular software for programming and commissioning.

The complete solution:
MC6 motion controller,
SD6 drive controller and
synchronous servo geared motor.

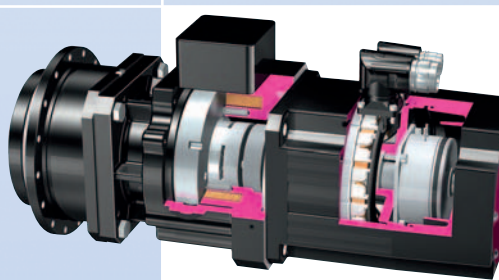


Synchronous servo geared motor with hollow shaft. This flange hollow shaft drive with fully integrated planetary gear unit was developed for feeding through energy and media (ratios from 3 to 27).

In many applications in which media and energy are fed through the motor, the usual right-angle drives can be replaced with the extremely compact synchronous servo geared motor with hollow shaft.

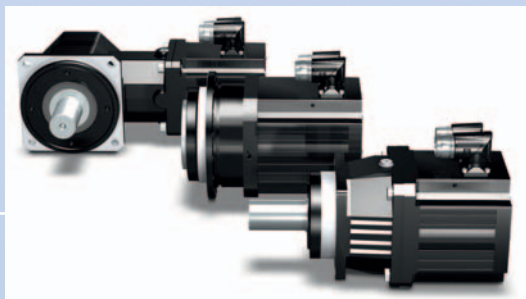


Motor adaptation on the helical bevel gear unit. The gear unit has a square connecting flange for the direct attachment of the motor (without a coupling).



PH...EZ planetary geared motor with ServoStop motor brake and gear unit brake. The two brakes act completely separately and together form a redundant system.

Both brakes are controlled using the brake management in the SD6 drive controller and POSIDYN® SDS 5000. The brake system complies with the requirements of Machine Directive 2006/42/EC.



EZ synchronous servo motors are generally suitable for direct attachment to all axial gear units and right-angled gear units from STOBER.

Energy-efficiency in drive technology

The basis for successful energy efficiency is the clarification of the exact requirement



for mechanical power. During the design of the synchronous servo geared motor, an excessive 'safety margin' should not be applied.

If motors with over-dimensioned power reserves are used, they will continuously operate below their power rating. In the context of energy efficiency this situation is counter-productive. In addition to the low efficiency with unutilized power consumption there are poor control characteristics, higher procurement costs and possibly unnecessary problems with excessive weight.

STOBER experts would be pleased to advise you on the dimensioning of your drive axes.

Energy optimized processes

Motion control and axis regulation are to be included in a holistic energy efficiency assessment of a machine or automation system.

Specific knowledge of drive controller functionality and software functionality as provided at STOBER trainings makes it possible to finely tune the axis control to exploit all the efficiency potential.

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STOBER service specialists can be reached 24/7 and can support you with expertise and assistance if service is required on-site or guide you through appropriate immediate measures on the telephone.

In addition STOBER offers maintenance by remote access for its drive controllers.

24/7 service hotline
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(14 cents/min. on German landline,
max. 42 cents/min. on mobile networks)



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