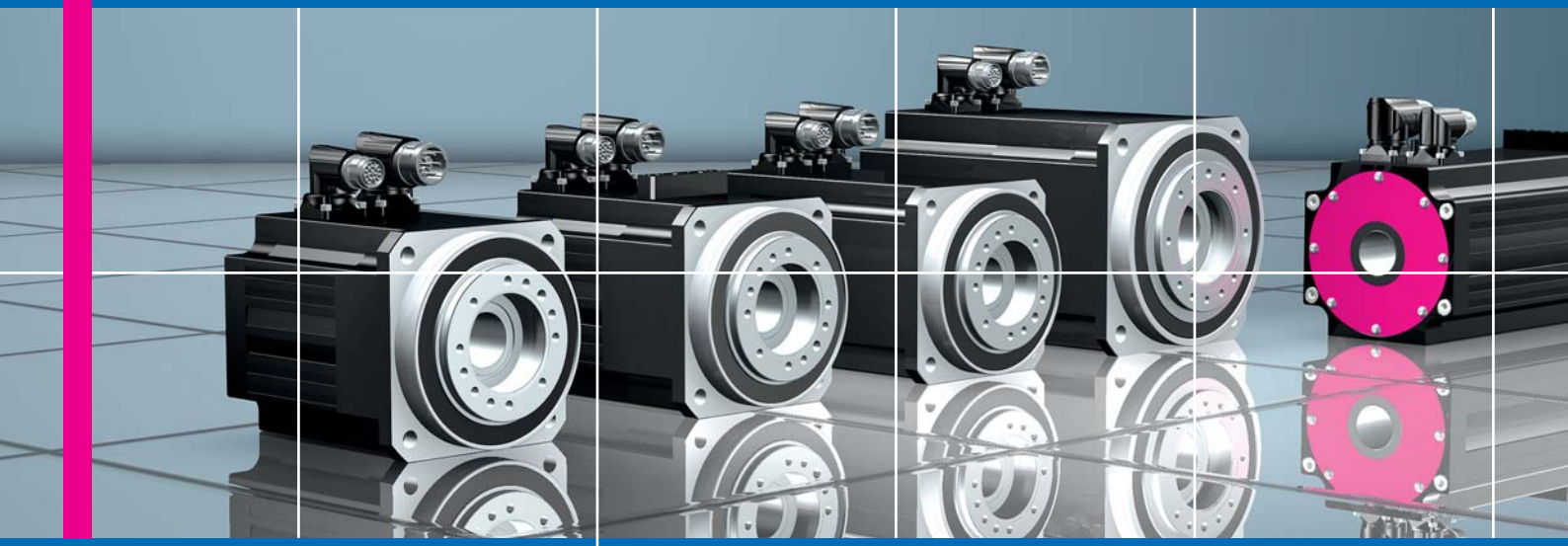
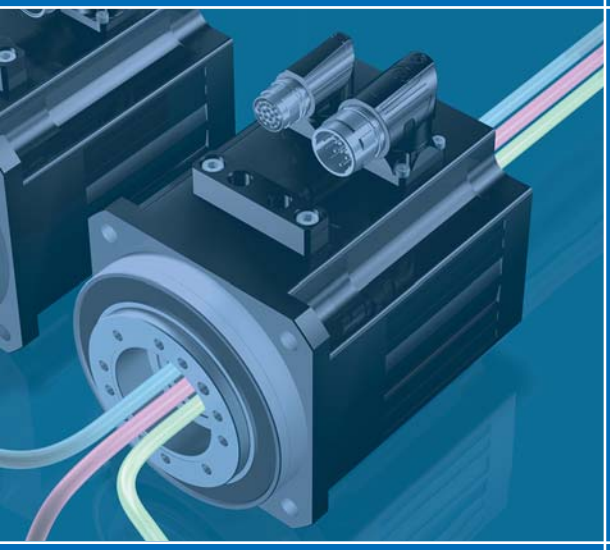
PipeDrive



Super compact planetary geared motors with flange hollow shaft for feeding through media and energy



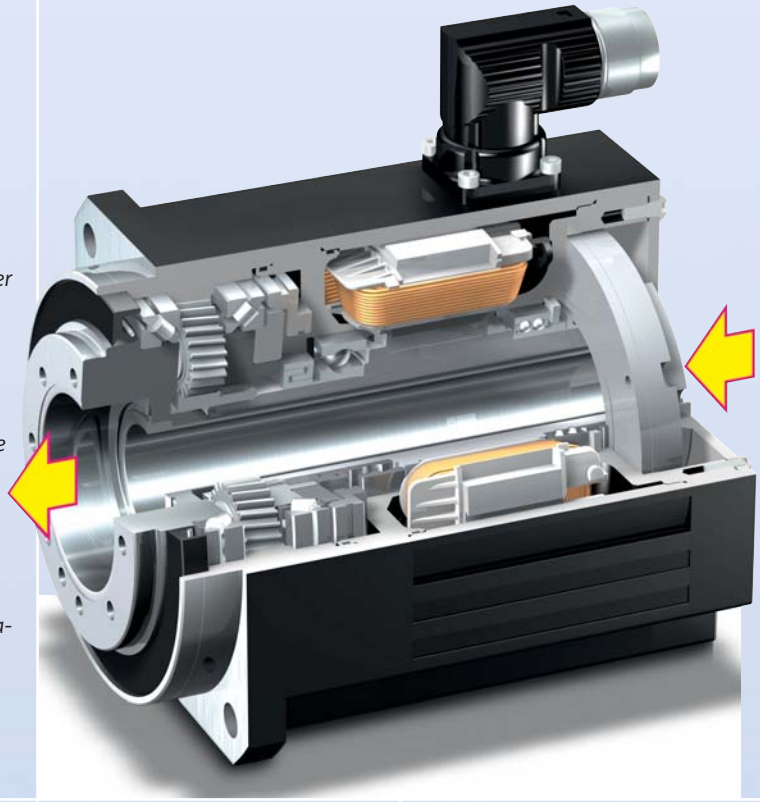
STÖBER

PipeDrive. Maximum power density

Servo drive with hollow bore

The central, generously designed flange mount hollow bore for this high-class servo drive makes it possible to provide supplies (power cables, pipes, hoses), shafts and laser light etc. through the motor. To protect these components and media the flange-mount hollow bore is clad with a continuous pipe rotating with the system.

The direct, central path through the complete drive simplifies typical designs for industrial robots, machinery, machine tools, automatic assembly machines, handling equipment and laser machine tools.



PY Planetary geared motor with flange hollow shaft and EnDat® inductive absolute encoder as a digital feedback system

New, super compact planetary geared motor with hollow shaft

A crucial element of the extremely short length of this new drive is the highly modern motor design.

A basic prerequisite for the super-short design of the new 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 new structural design of all components and a series of further computer-based fine tuning methods, it was possible to achieve balanced motor behavior with powerful torque, high dynamic performance and precise constant speed running.

Powerful torque, high stiffness, low total weight

Motor and gearbox are optimized for maximum torque. With the liquid cooling option even higher continuous and rated torques can be used.

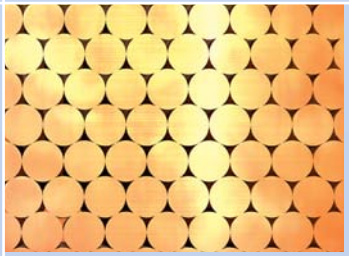
The extremely compact design of these servo drives provides very high torsional stiffness.

Due to the weight-saving design, the PipeDrive is particularly suitable for applications in which the motor is moving with the application itself.

New planetary gear unit with flange mount hollow bore

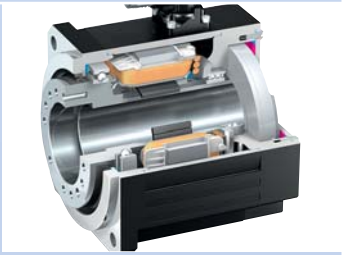
To match the short length of the hollow bore motor, an equally short hollow bore planetary gear unit with high quality bearing technology was developed.

This gear unit can be of a one, two or three-stage design. In all versions it provides rugged output bearing with very high tilting stiffness and a high permissible tilting moment.



Enlarged image of an orthocyclically wound motor coil

This complex precision winding technology is used by STÖBER for the series production of the EZ/EZF motors

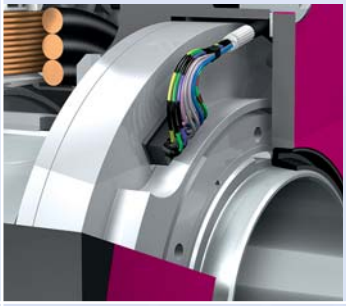


Also available as EZF synchronous servo motor with hollow shaft, without directly attached gear unit

Integrated system technology – from the start

Designed and developed from the know-how of the experienced system manufacturer

The design and manufacture of this innovate geared motor is based on decades of application experience, paired with mechatronic production know-how and the willingness to tread new paths in drive technology.



An EnDat® singleturn absolute encoder is used for the feedback system

Planetary geared motor PipeDrive, Type PY501 EZH501, one-stage gear unit, convection cooled

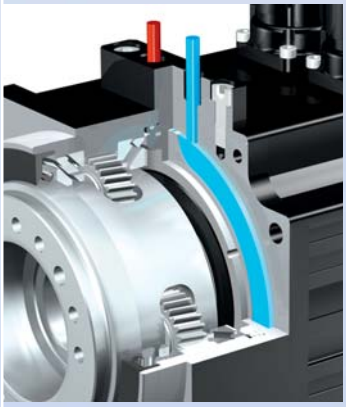
Planetary geared motor PipeDrive, Type PY702 EZH701, two-stage gear unit, with adapter for liquid cooling

The initial range:

The new planetary geared motors PipeDrive will initially be available in size 5 and 7.

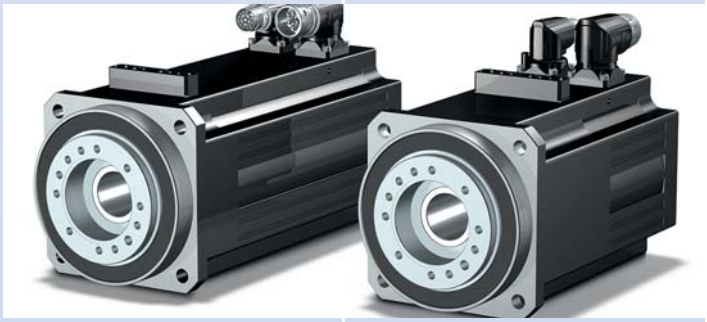
The hollow bore gear unit can be 1, 2 or 3-stage with the ratios 3, 9 and 27.

The hollow bore motors are available in lengths 1, 2, 3 and 5. This figure relates to the number of rotor segments in each case. Each segment is only 25 mm long.



As an option the flange between the motor and gear unit can be designed as a liquid cooling feature.
The section shows the cooling channel

The heat dissipated can be utilized elsewhere to increase energy efficiency



The torque and output speed of the geared motor can be optimized by selecting from four motor lengths and three gearbox stages

The highest possible power density is achieved with the compact design

In the figure on the left:
Planetary geared motor PipeDrive, Type PY701 EZH705, one-stage gear unit (relatively high torque with low ratio)

In the figure on the right:
Planetary geared motor PipeDrive, Type PY703 EZH701 with three gear unit stages

Planetary geared motor PipeDrive (PY)

Gear type		PY5								PY7							
Motor type		**EZH501**			**EZH502**		**EZH503**		**EZH505**	**EZH701**			**EZH702**		**EZH703**		**EZH705**
Length without brake	[mm]	165	189	213	190	214	215	239	265	186	213	241	211	238	236	263	291
Ratio i (1 to 3-stage)	[-]	3	9	27	3	9	3	9	3	3	9	27	3	9	3	9	3
Backlash	[arcmin]	3	4	4	3	4	3	4	3	3	4	4	3	4	3	4	3
Motor speed max.	[1/min]	2000	2700	3500	2000	2700	2000	2700	2000	1600	2000	3000	1600	2000	1600	2000	1600
Acceleration torque	[Nm]	47	140	200	90	200	130	200	190	58	170	500	120	350	190	500	300
Inside-Ø hollow bore	[mm]	28								38							
Weight	[kg]	8	9.6	11	9.2	11	11	13	15	14	17	20	17	20	20	23	26

Performance data at rated speed 3000 min^{-1}

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The consistent solution

As a system supplier, STÖBER has a complete product range for the digital drive technology. By fusing control and drive engineering systems, STÖBER can offer great potential for optimization.

① MC6 motion controller

The MC6 motion controller uses the CODESYS programming software to keep up with the trend towards open systems in the world of automation.

② SD6 drive controller

With its 32-bit Dual-Core processor, the SD6 drive controller is equipped for every requirement. For motion control solutions in combination with the MC6 motion controller, the SD6 drive controller is operated in Controller Based Mode (CBM).

③ Planetary geared motor PipeDrive (PY)

Ultra-compact, weight-saving design. The high-class servo drive with a large continuous flanged hollow shaft is well suited for supply line feedthrough.

④ Connection cable

STÖBER provides a specially preassembled power and encoder cable for quick, correct assembly.

Service

The STÖBER service system comprises 38 expert partners in Germany and more than 80 companies in the STÖBER SERVICE NETWORK worldwide.

This service concept guarantees local expertise and availability when needed.

The concept is supplemented by the remote maintenance concept for the servo inverters in the POSIDYN® SDS 5000 series.

In general, the service specialists in the Pforzheim factory can be reached at any time via a 24/7 service hotline.

When necessary, a problem can be addressed immediately.

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+49 180 5 786323

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