

## ServoFit™ / Motion Control Products



**Gearhead Series**



**Rack and Pinion Systems**



**PipeDrive Motors**



**STÖBER**  
Geared to a higher standard™

## STOBER Drives Inc., Maysville KY

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**Contact:**

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

1-800-711-3588

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



**Over 115  
people in  
Kentucky  
ready to serve  
you!**



**Take a virtual  
tour of STOBER!**





# Solutions for Your Industry

STOBER Drives has solutions for a variety of industries. From automation to food and beverage, our products can meet your requirements. Visit our website to learn more!

## Packaging

- Case Packing
- Pouching
- Filling

## Converting/Printing/Web

- Cutting and slitting
- Tension control
- Flexographic

## Process Control

- Chokes
- Valve control
- ATEX rated

## Automation

- Pick and Place
- Index tables
- Robotics



## Food and Beverage

- Mixing
- Conveying
- Processing

## Aerospace

- Assembly
- Fiber placement
- Drilling and forming

## Medical

- Imaging
- Radiation
- Centrifuge

## Machine Tool

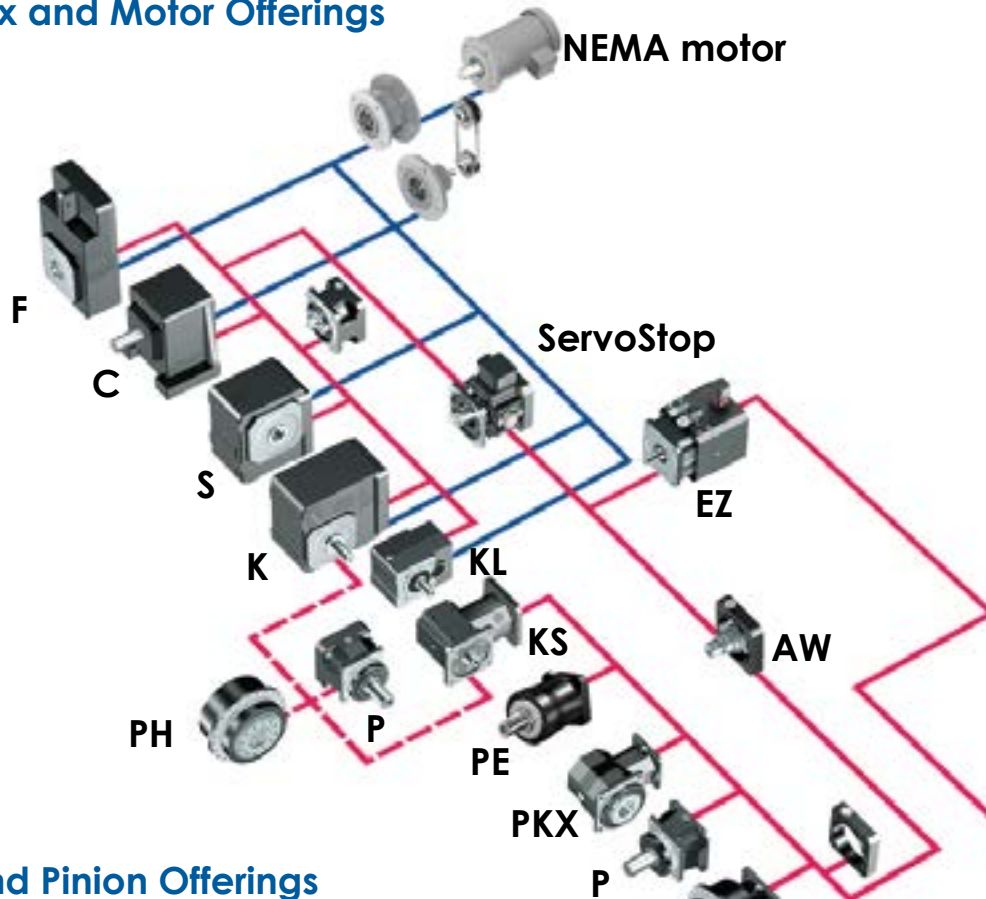
- Bending and forming
- Plasma cutting
- Gantry

**And more!**

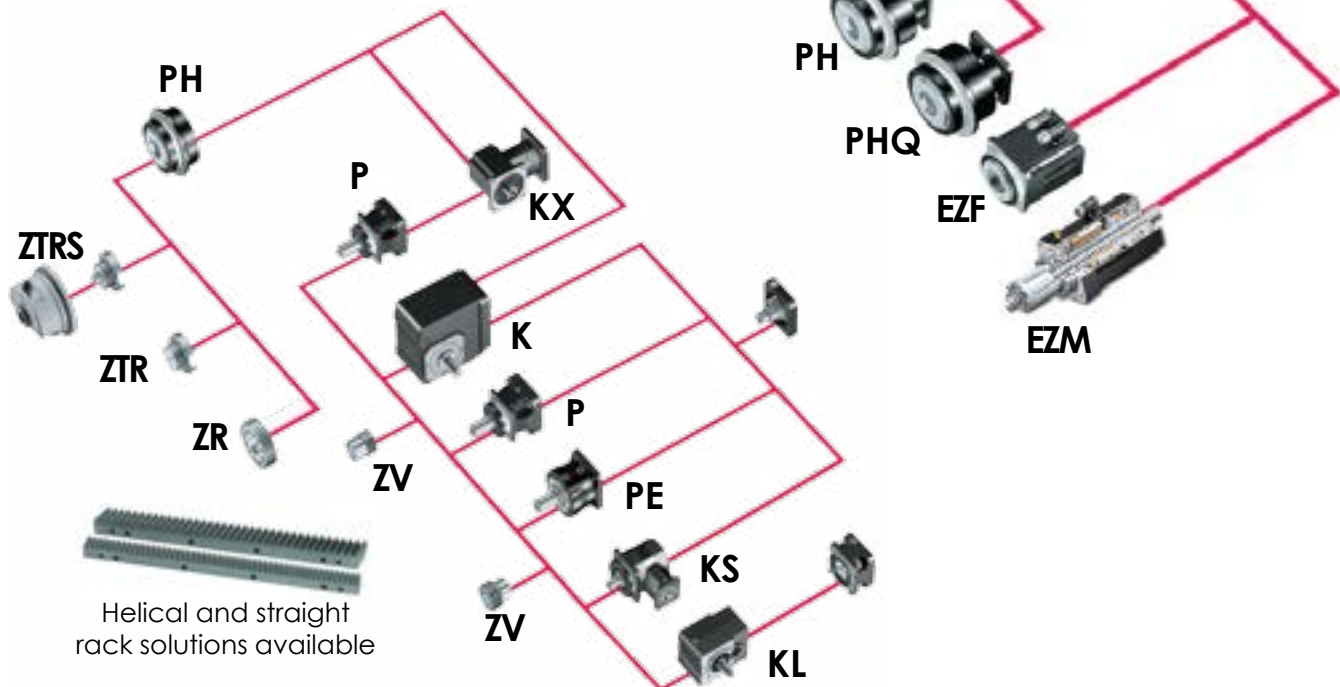
## Versatility

The STÖBER offering of ServoFit™ gearheads will fit all your servo needs. The ServoFit™ Precision Planetary Gearheads are ideal for compact, highly dynamic applications. The ServoFit™ Modular System was designed for those applications where compact size of a planetary gearhead is not needed. With these two lines, **STÖBER Drives** offers the world's largest variety of servo gearheads. The versatility and interchangeability of our components allow most products to be assembled and shipped in 1 day from our Maysville, Kentucky plant.

## Gearbox and Motor Offerings



## Rack and Pinion Offerings





# Unsurpassed Service Support

Our goal is to serve our clients with excellence and base every decision on our core values. Every STOBBER employee strives to deliver the gold standard of quality and service. STOBBER seeks the best in order to live up to being geared to a higher standard!

**SHIPS in  
1 DAY**

Most sizes are available with  
STANDARD 1 DAY SHIPPING.  
(Does not apply to PA and PHA.)



**SAME DAY  
EMERGENCY  
SHIPPING**

24 Hours – No expedite fee  
Daytime Phone: 606 759-5090  
On-Call Emergency: 606 563-6035



**Assembly**  
**Timmy Saunders**, MGS Team Leader  
Employed at STOBBER since 1995



**Manufacturing**  
**Philip Brown**, Machinist  
Employed at STOBBER since 2010



**Jamie Collins**, Product Support Team Leader  
Employed at STOBBER since 1997



**Rachael Jones**, Customer Service Rep.  
Employed at STOBBER since 2012

# Delivering the World's Best Gear Solutions

STOBER Drives has been assembling products in Kentucky for over twenty years. All reducer components (gears, covers, material, etc.) are backed by a **five year warranty**. Normal wear items (oil seals, bearings, etc.) are covered for two years.



## Helical and Spiral Bevel Gears

- Highest torque capacity
- Maximum efficiency
- Low noise level

5 YEAR LIMITED WARRANTY

## Paint Curing Oven

Allows for one day assembly and higher paint durability



## Fits Any Servo Motor

Motor plates will fit a variety of NEMA, IEC, or custom servo motors.



**Earl Bennington**, Warehouse Team Leader  
Employed at STOBER since 1992

**Anita Truesdell**, Picker  
Employed at STOBER since 2007



## Bearing Options

- Three bearing options for your application
- Options for axial and radial loads
- Ball, double row angular, and cylindrical roller bearings available

## Exceptional Performance

- Low noise level
- Cool running
- High speed capacity
- High torque capacity
- Low backlash



**Wayne Dugan**, Planetary Team Leader  
Employed at STOBER since 2003



**STOBER** Geared to a higher standard™

## InLine Gearheads

### C Series

- Backlash –  $\leq 14 - 20$  arcmins
- Ratios – 2:1 to 276:1\*
- Input RPM – up to 6,000
- Output Torque up to 6,300 Nm
- Available:
  - Inch or Metric Output
  - Washdown Food Duty



### F Series

- Backlash:
  - Standard  $\leq 10 - 11$  arcmins
  - Reduced  $\leq 6 - 8$  arcmins
- Ratios – 4:1 to 540:1\*
- Input RPM – up to 6,000
- Output Torque up to 1,100 Nm
- Available:
  - Inch or Metric Output
  - Solid, Hollow, Single and Double Bushing
  - Beverage and Food Duty



### P(A) Series

- **P** – Backlash –  $\leq 3 - 8$  arcmins
- **PA** – Backlash –  $\leq 1 - 3$  arcmins
- Ratios – 3:1 to 100:1
- Input RPM – up to 8,000
- **P** – Output Torque up to 2,000 Nm
- **PA** – Output Torque up to 1,000 Nm
- Available:
  - Washdown Food Duty



### PH(A) Series

- **PH** – Backlash –  $\leq 3$  arcmins
- **PHA** – Backlash –  $\leq 1 - 2$  arcmins
- Ratios – 4:1 to 121:1
- Input RPM – up to 8,000
- Output Torque up to 5,000 Nm



### PHQ(A) Series

- **PHQ** – Backlash –  $\leq 3$  arcmins
- **PHQA** – Backlash –  $\leq 1 - 1.5$  arcmins
- Ratios – 18:1 to 600:1
- Input RPM – up to 7,000
- **PHQ** – Output Torque up to 13,000 Nm
- **PHQA** – Output Torque up to 6,500 Nm



### PE Series

- Backlash –  $\leq 10 - 13$  arcmins
- Ratios – 3:1 to 100:1
- Input RPM – up to 8,000
- Output Torque up to 160 Nm



## Hollow and Right Angle Gearheads

### K / KL Series

- **K** – Standard Backlash –  $\leq 10 - 12$  arcmins  
Reduced –  $\leq 4 - 6$  arc/mins
- **KL** – Standard Backlash –  $\leq 20 - 25$  arcmins
- **K** – Ratios – 4:1 to 381:1\*
- **KL** – Ratios – 4:1 to 32:1
- Input RPM – up to 6,000
- **K** – Output Torque up to 12,000 Nm
- **KL** – Output Torque up to 50 Nm
- Available:
  - Inch or Metric Output
  - Solid, Hollow, Single, and Double Bushing
  - Beverage and Food Duty



### KS Series

- Backlash –  $\leq 4 - 6$  arcmins
- Ratios – 6:1 to 200:1
- Input RPM – up to 6,000
- Output Torque up to 250 Nm



### KSS Series

- Backlash –  $\leq 10 - 12$  arcmins
- Ratios – 4:1 to 272:1
- Input RPM – up to 6,000
- Output Torque up to 350 Nm
- Available:
  - Inch or Metric Output
  - Solid, Hollow, Single and Double Bushing



### PK Series

- Backlash –  $\leq 3.5 - 5$  arcmins
- Ratios – 12:1 to 561:1
- Input RPM – up to 6,000
- Output Torque up to 2,000 Nm
- Available:
  - Washdown Food Duty



### PHK Series

- Backlash –  $\leq 3.5 - 4.5$  arcmins
- Ratios – 16:1 to 561:1
- Input RPM – up to 6,000
- Output Torque up to 5,000 Nm



### PHQK Series

- Backlash:  $\leq 3.5 - 4$  arcmins
- Ratios – 22:1 to 591:1\*
- Input RPM – up to 6,000
- Output Torque up to 13,000 Nm



### PKX Series

- Backlash –  $\leq 4 - 8.5$  arcmins
- Ratios – 3:1 to 300:1
- Input RPM – up to 6,000
- Output Torque up to 2,000 Nm
- Available:
  - Washdown Food Duty



### PHKX Series

- Backlash –  $\leq 3.5 - 6$  arcmins
- Ratios – 4:1 to 300:1
- Input RPM – up to 6,000
- Output Torque up to 5,000 Nm



\* Ratios standard in one housing. Higher ratios available in compound units.



# Beverage and Food Duty

- Lubricated for Life – Double Output Seals (where possible)
- Maintenance Free – No Breather
- Stainless Output Bushing, Shaft, or Bore
- **5 Year Warranty**
- Multilayer Industrial 316 Stainless Steel Epoxy Coating (also available with White Epoxy (BISC approved))
- Heat cured



## “KSS” Series Stainless Steel Helical Bevel



## “C” Series Concentric Helical



## “F” Series Offset Helical

## “P,” “PK,” and “PKX” Series Planetary

## “K” Series Right Angle Helical/Bevel

Outside Closed Cover Cap – protects seals from high pressure washing  
Inside Split Cover Cap – enables easy assembly onto the shaft



O-ring on input – create tight seal between motor and gearbox



Sprayed at 100 bars or 1,450 PSI

Silver Bullet AM™ is a registered trademark of Burke Industrial Coatings.

# Explosion Proof

ATEX certified motors are often used to replace hydraulic actuators when speed, accuracy, and maintenance are considerations.

**ATEX** is a directive consisting of two European directives describing equipment or work allowed in an environment with an explosive atmosphere. ATEX derives its name from the **AT**mospheres **EX**plosible.

The following STÖBER gearboxes are ATEX rated:



C-Series



F-Series



K-Series



KS-Series



P(A)-Series



PH(A)-Series



PKX-Series



PHKX-Series



PHQ(A)(V)-Series



**Please consult our product support team for assistance selecting an ATEX gearbox.**



**STÖBER** Geared to a higher standard™



# ServoStop – Motor Adapter with Integrated Brake

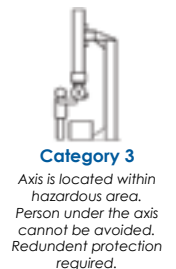
## Features

- Meets EN ISO 13849 safety standard
- Allows for redundant braking on the servo motor and gearbox
- Prevents accidental sliding or falling of vertical axis with gravity load absolutely reliable
- Plug-in coupling allows easy dismounting of servo motor in every position even with brake engaged
- Available with electrical or manual wear control for added safety
- Fits all standard servo motors
- Manual hand release available



Available with P, PA, PH, PHA, PK, PHK, and C, F, and K

Motor adapter integrated brake module provides redundant braking during power failures or emergency stops in hazardous situations.



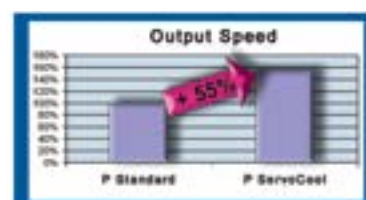
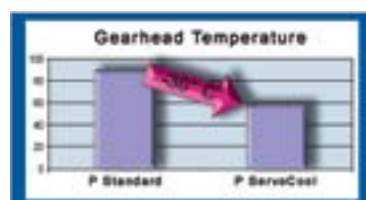
## ServoCool® Gearheads

The compact design of planetary gearhead allows very little area for heat dissipation. The ServoCool planetary gearhead is made possible by adding a ventilation module to the existing ServoFit Precision Planetary Gearhead. These units are currently available in P and PH Series.



Radial ventilator

- Forced air ventilation improves performance
- Modular design "fits" existing units
- Lower temperature means longer life
- Increased motor performance
- No additional wiring
- More compact than external motor fan



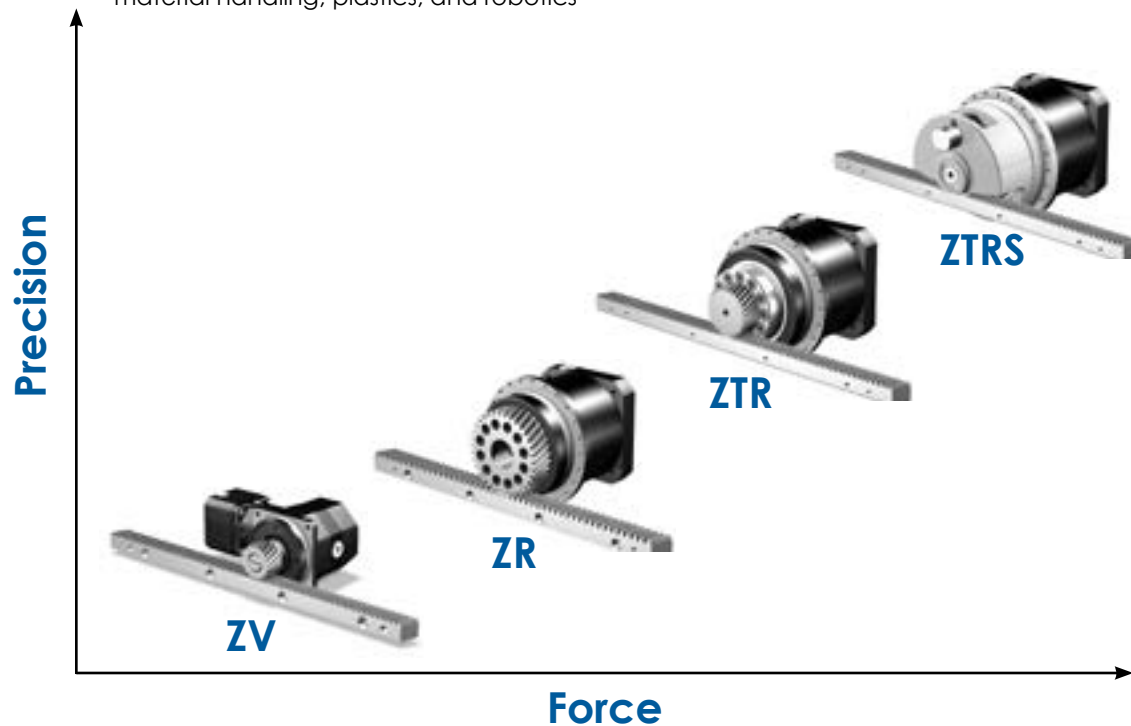
# Rack and Pinion Systems

In Partnership with **ATLANTA**



## Rack and Pinion Features

- Gear unit and rack optimally mated together as a system
- Ready to install drive solutions
- Easy selection and calculations done by STOBER for a total engineered solution
- Optimize inertia mismatch by changing the gear ratio or pinion tooth count
- Forces up to 122 kN or 27,400 lbs.
- Precision linear backlash as low as 7  $\mu\text{m}$
- Gearing size ranges from Mod. 2 – 10
- Ideal for automation, automotive manufacturing, building materials, machine tool, material handling, plastics, and robotics



The lubrication system is ready for immediate use. No tool is required to activate it and no external power supply is required. It is IP68 Certified.



The adjustment plate allows for easy installation and tooth engagement of the rack.

# Application Support

Application support is available in a variety of ways. Try our online configurator, STOBER FITS, to learn about STOBER products and find a solution that will fit your requirements. Need to talk to someone? Our consultative product support team is available to find a product to fit your application. After you know your STOBER solution, download drawings from our CAD site.



## STOBER FITS

- Choose your servo motor and find a gearbox to match your needs
- Browse and filter to learn about STOBER products
- Build your complete solution, including mounting position, output option, and more
- Request a quote
- Get started today at [fits.stober.com](https://fits.stober.com)
- ServoSoft Application Sizing Software is available for more precise sizings
- STOBER is also featured in Rockwell's Motion Analyzer.

**Brian Sharp**, Product Support Technician  
Employed at STOBER since 2003



**Tiffany Fryman**, Customer Service Rep.  
Employed at STOBER since 2012



## Consultative Product Support

- 24 Hour Service Hotline: 606 563-6035
- Over 80 years gearing experience
- 30 years motor and electronic experience
- Email product support at [tecsupport@stober.com](mailto:tecsupport@stober.com)

## Application Drawings

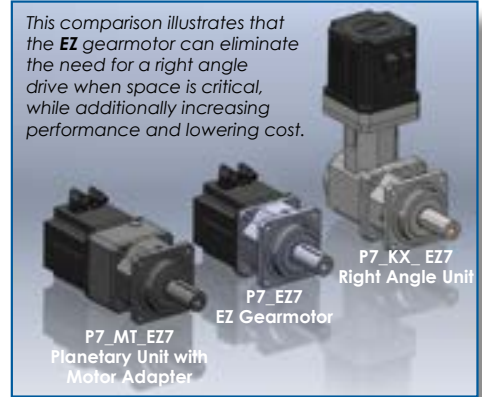
- Drawings available in variety of formats
- eDrawings, 2D, 3D, and more
- Visit [cad.stober.com](https://cad.stober.com)





# STOBER Servo Motors

- **Compact** – motor mounts directly to the gearbox, eliminating a motor coupling, coupling housing, adapter, or additional input seals and bearings.
- **Dynamic** – direct mounting reduces inertia up to 75%
- **Geared Motor Advantages** – smoother running for optimal performance, dynamic, minimal torque/speed ripple, UL/CE/CSA approved.
- Optional Magnetic **Brake**
- **High Inertia and Low Inertia** – provides motor specifications to fit unique applications
- **Water or Forced Air Cooling:** for higher rated power (approximately 35% torque increase) or at high ambient temperature. A fan can be added in the field.



Water Cooling



Air Cooling



## 3rd Party Drives Compatibility

- Rockwell Automation Technologies
- Bosch
- Siemens
- Kollmorgen
- Control Techniques
- B&R
- Many more

## Orthocyclically Wound Motor Coil

The industrial implementation of the tooth winding using orthocyclic linear winding technology makes it possible to manufacture the stator windings with the highest possible copper fill factor.

The winding technology increases the motor power output by approximately 80%. For this reason it is possible to shorten the length of the motor by almost half without reducing the power output.



# Hollow Servo Motor – PipeDrive PY and EZF



## Features

- Generously designed flange mount hollow bore
- Allows for media (power cables, pipes, hoses, etc.) to pass through the motor
- Direct, central path through the complete drive simplifies typical designs
- Compact due to the orthocyclic linear tooth winding
- Generates powerful torque and high stiffness with a low total weight, making it well suited for applications where the motor is also moving
- Easy connectivity with flange output or bolt on adapter
- Ideal for industrial robots, machinery, machine tools, automatic assembly machines, converting and printing, handling equipment, and laser machine tools

*The hollow servo motor is a balanced motor with powerful torque, high dynamic performance, and precise constant running speed.*

## Optional Features



**Manual Handwheel**  
allows for manual low power adjustments and improves safety.



**Liquid or air cooling channel**  
can increase torque and speed capacity of the unit through heat dissipation. This allows higher continuous and rated torques to be used.



**Clamp on coupling**  
easily connect to the shaft that drives the load.



*View of the EZF flange mount hollow bore motor with EnDat® absolute encoder digital feedback system*

# Hollow Servo Motor – PipeDrive PY and EZF

The hollow shaft motors are available in lengths specified as 1, 2, 3, and 5. This specification relates to the number of rotor segments in each case. Each additional segment adds 25 mm.

The EZF Series direct drive motor is available in 2 sizes and features torques up to 104 Nm.

The new PY Series PipeDrive geared motors is initially available in 2 sizes, 1, 2, or 3-stage, and ratios of 1:1, 3:1, 9:1, and 27:1.

## Size 5, 115mm Square

Model	EZF501	EZF502	EZF503	EZF505	PY5_EZH501			PY5_EZH502		PY5_EZH503		PY5_EZH505
Length (mm)	121.5	146.5	171.5	221.5	165	189	213	190	214	215	239	265
Nom. Torque (Nm)	3.9	7	9.3	13.1	14	40	118	23	68	32	95	47
Acc Torque (Nm)	16	31	43	67	47	140	200	90	200	130	200	190
Ratio			1		3	9	27	3	9	3	9	3
Backlash (arcmin)			0		3	4	4	3	4	3	4	3
Nom. Output Speed(RPM)			3000		1000	333	111	1000	333	1000	333	1000
Max Axial Load (N)			750						4150			
Rated Radial Load (N)			2400						5029			
Hollow Bore Dia. (mm)			42						28			

## Size 7, 145mm Square

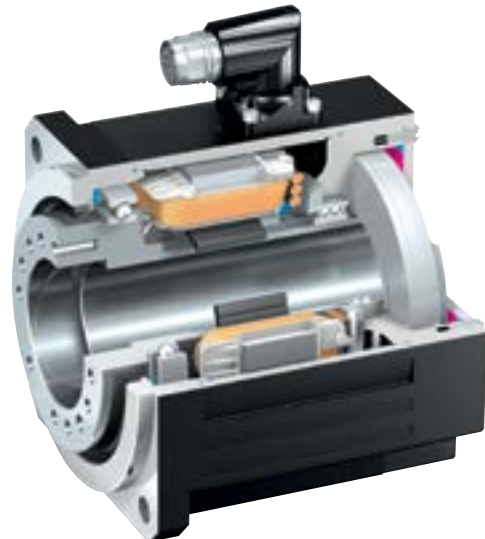
Model	EZF701	EZF702	EZF703	EZF705	PY7_EZH701			PY7_EZH702		PY7_EZH703		PY7_EZH705
Length (mm)	119	144	169	224	186	213	241	211	238	236	263	291
Nom. Torque (Nm)	6.7	11.3	15.8	20.6	24	71	208	42	123	61	178	88
Acc Torque (Nm)	20	41	65	104	58	170	500	120	350	190	500	300
Ratio			1		3	9	27	3	9	3	9	3
Backlash (arcmin)			0		3	4	4	3	4	3	4	3
Nom. Output Speed(RPM)			3000		1000	333	111	1000	333	1000	333	1000
Max Axial Load (N)			1300						5000			
Rated Radial Load (N)	3700	3900	4100	4200					9070			
Hollow Bore Dia. (mm)			45						38			

PipeDrive servo geared motor type PY702 EZH701, two-stage gear unit with flange mount hollow shaft, and adapter for liquid cooling.

EZF – Non-geared, Flange Mount, Hollow Shaft

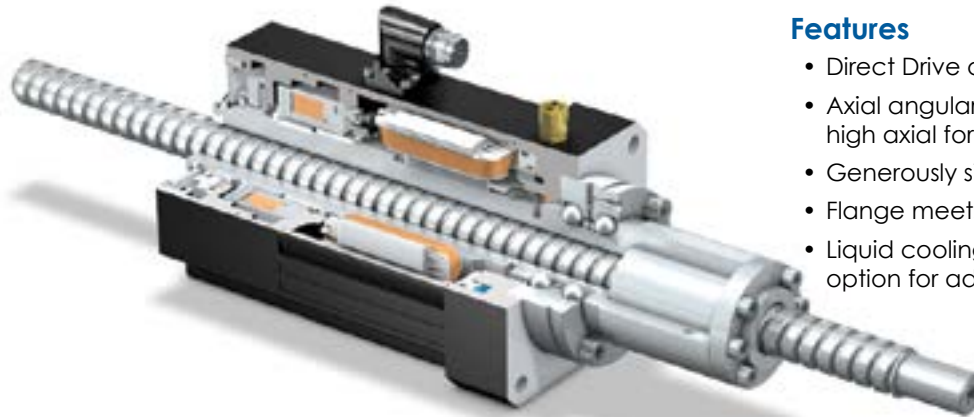


PipeDrive servo geared motor, type PY501 EZH501, one-stage gear unit with flange mount, hollow shaft, convection cooled.





# EZM – For Direct Drive of a Spindle Nut



STOBER EZM 502 ball screw motor with liquid cooling,  
Brake and EnDat® single turn absolute encoder feedback system

**Flanged hollow shafts for different nut designs on request.**

## Features

- Direct Drive of a spindle nut
- Axial angular contact ball bearing absorbs high axial forces from the ball screw
- Generously sized flanged hollow shaft
- Flange meets DIN 69051-5 requirements
- Liquid cooling channel available as an option for added performance

Cross-section: Liquid cooling channel



From left:  
STOBER ball screw motors EZM 501, EZM 501 rear view, EZM 502 with brake, EZM 701 with brake.

## EZM Ball Screw Motors

Model	Spindle Pitch		EZM501	EZM502	EZM503	EZM701	EZM702	EZM703
	Pitch (mm/rev)	Feed Rate (v (m/s) max.)						
Mountable Ball Screw Drive			25			32		
Center Hole Dia./Bolt Circle			40/51			56/71		
Standstill Feed Force F <sub>v0</sub> (N) Max. Feed Force F <sub>vmax</sub> = 2 * F <sub>v0</sub>	10	0.5	2,432	4,269	6,051	4,326	7,634	11,140
	20	1.0	1,216	2,135	3,025	2,163	3,817	5,570
	25	1.25	973	1,708	2,420	1,730	3,054	4,456
	32	1.6	760	1,334	1,891	1,352	2,386	3,481

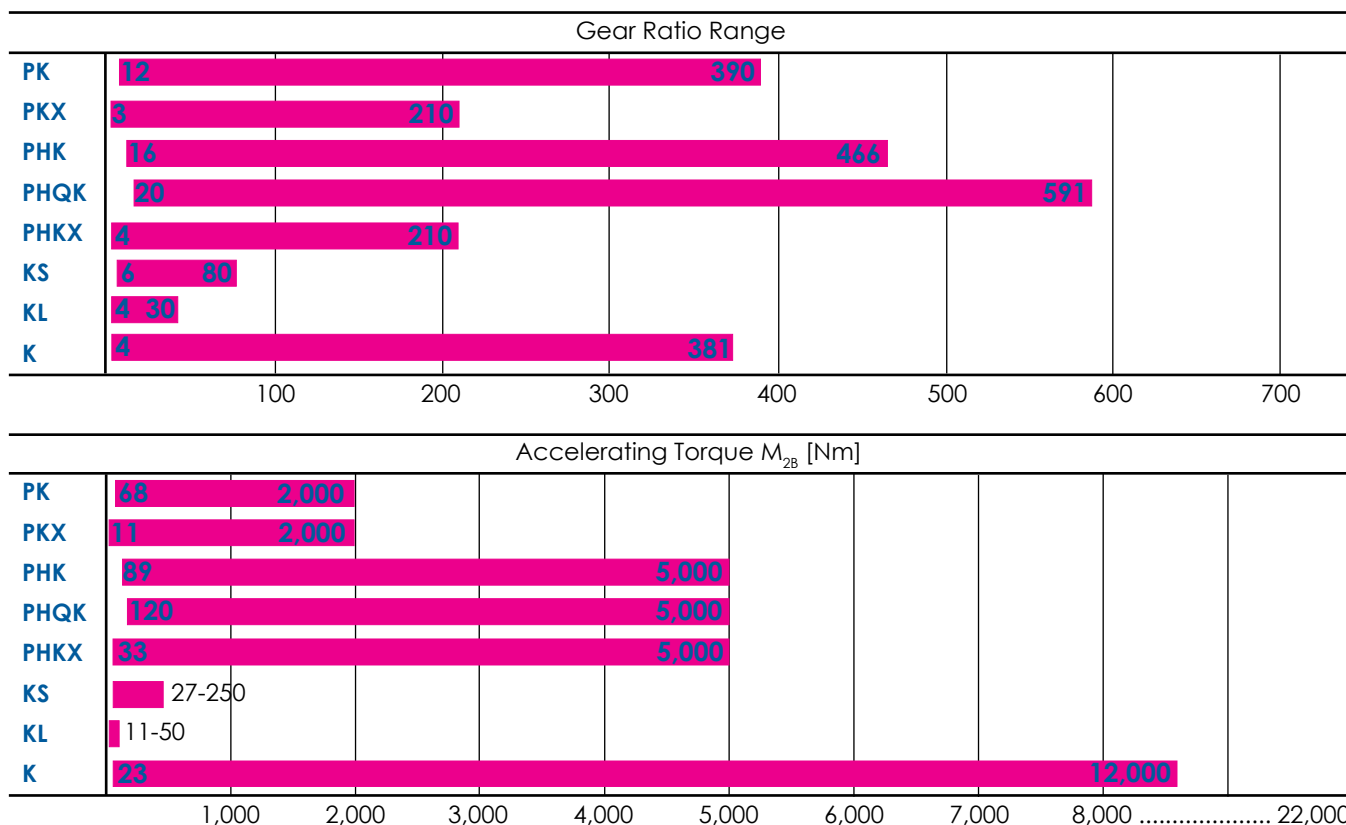
# Right Angle – EZ Geared Motor



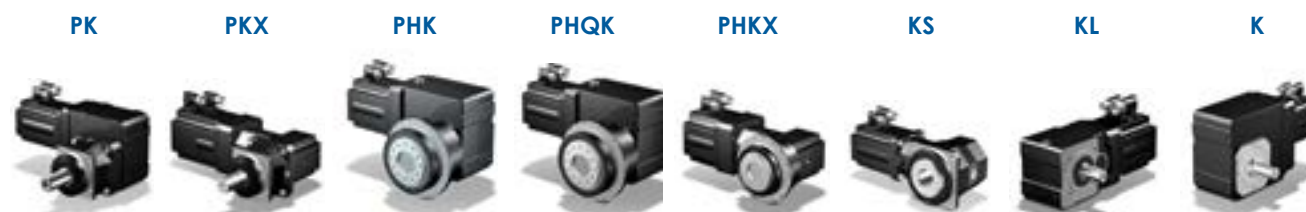
The eight gear units listed below can be combined with the super compact EZ series motors (with modifiable dynamic properties). Together, they offer a wide range of applications for servo right angle geared motors.

The PHQK right angle planetary gear unit and the extremely compact KL helical bevel gear unit widen the gear ratio range. The fully integrated servo right angle geared KS motor and the volume saving helical bevel geared KL motor open up new fields of application.

## Performance Data



## Right Angle Geared Motors EZ



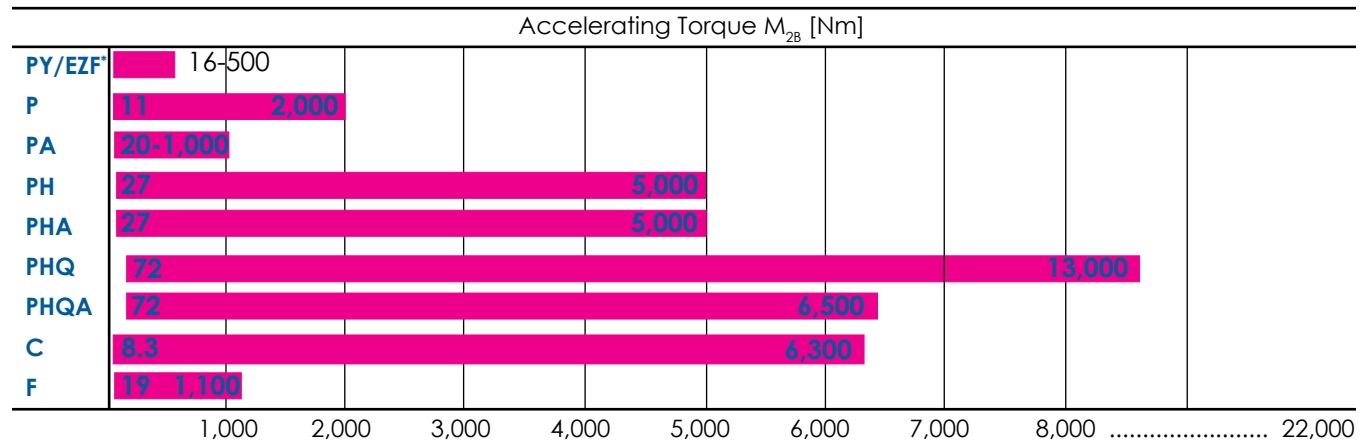
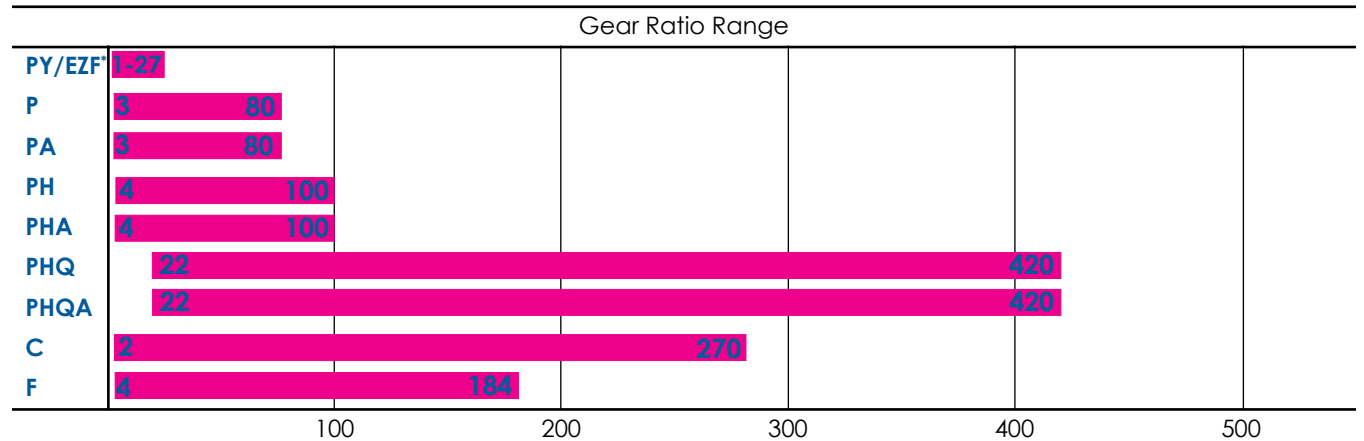
# Inline – EZ Geared Motor



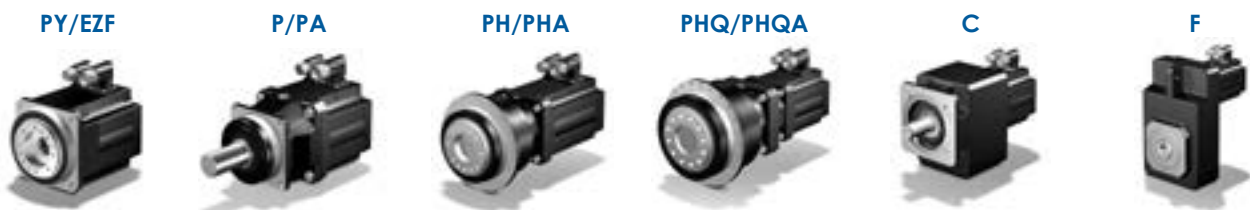
The nine gear units listed below with direct flange mounted EZ servo motors provide a particularly high level of flexibility due to their wide range of possible gear ratios and acceleration torques.

The EZ servo motor's dynamic properties are modifiable. This provides an additional opportunity for drive optimization.

## Performance Data



Inline Geared Motors EZ



\*Not direct mounted.



# NEMA Compatible Products



## Series "C" Concentric/Helical Speed Reducers

- 1/6 to 165 HP
- Output torques to 62,000 in. lbs.
- Output speeds from 875 to 6.3 RPM
- Ratios from 2:1 to 276:1
- Foot or flange mounting

## Series "F" Offset/Helical Speed Reducers

- 1/6 to 33 HP
- Output torques to 9,743 in. lbs.
- Output speeds from 406 to 3 RPM
- Ratios from 4.3:1 to 552:1
- Output flange
- Solid, hollow, and wobble free bushing output



## Series "K" – Right Angle Helical/Bevel Speed Reducers

- 1/6 to 165 HP
- Output torques to 106,296 in. lbs.
- Output speeds from 437 to 4.5 RPM
- Ratios from 4:1 to 381:1
- Foot mount and output flange
- Solid (single or double), hollow, and wobble free bushing (single or double side) output

## Series "S" – Right Angle Helical/Worm Speed Reducers

- 1/6 to 8 HP
- Output torques to 7,086 in. lbs.
- Output speeds from 318 to 2.5 RPM
- Ratios from 9.2:1 to 683:1
- Foot mount and output flange
- Solid (single or double) and hollow output



## "KSS" Stainless Steel Reducer



### Additional Product Offering

- ComTrac® Adjustable Speed Drives
- Food and Beverage Duty Speed Reducers
- Stainless Steel Right Angle Helical Bevel Reducers

5 YEAR WARRANTY



**STÖBER** Geared to a higher standard™



## Branches around the world!

- Austria
- China
- France
- Germany
- Italy
- Japan
- Singapore
- Switzerland
- Turkey
- United Kingdom
- United States

A graphic of several interlocking gears of different sizes, rendered in a light blue line-art style against a darker blue background. The gears are positioned in the upper left quadrant of the page.

Geared to  
a higher standard™



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