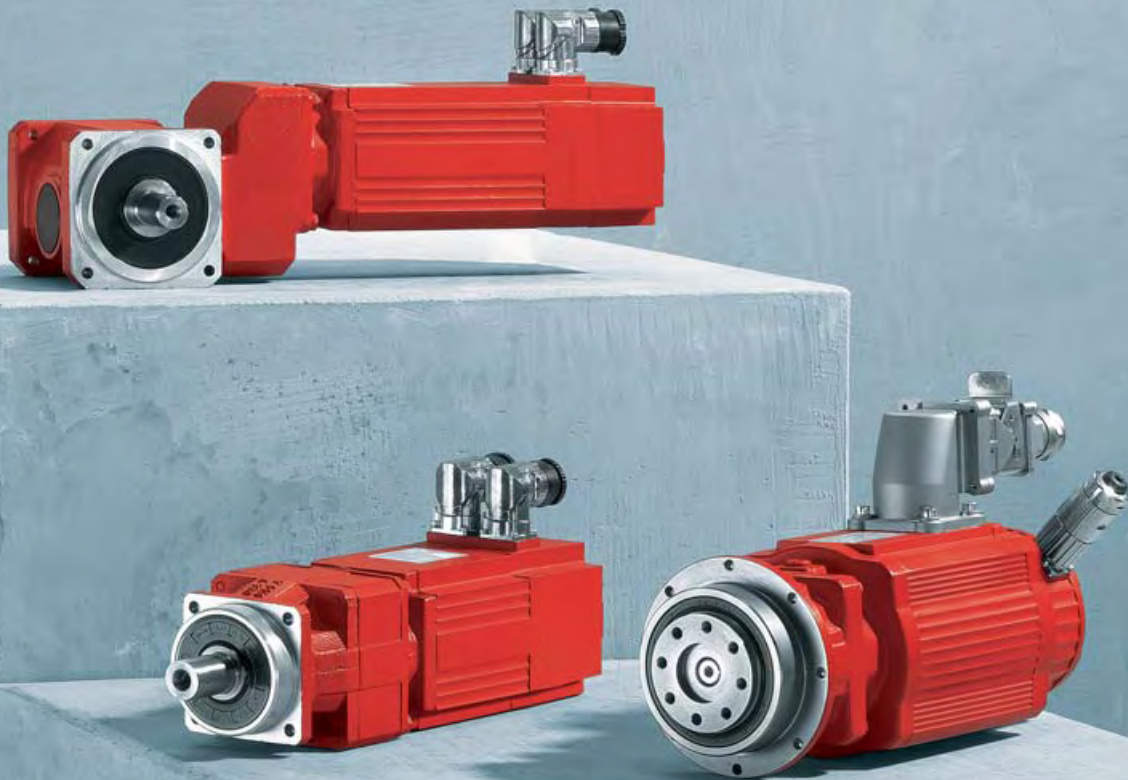


High speeds and high torque ratings
combined with precision and high economic efficiency

**Low backlash PS.F and PS.C planetary servo
gear units**

Low backlash BS.F helical-bevel servo gear units



Three series make for thousands of options

The technical trends of today are higher processing speeds, increased precision and greater acceleration. In addition to these already demanding trends, the safety-relevant requirements on electromechanical drives are becoming more and more stringent.

SEW-EURODRIVE meets these new and diverse requirements by offering products that transfer larger torque ratings at high speeds and accept higher radial loads. In conjunction with consistently low circumferential backlash, high stiffness, and a high level of cost efficiency, these highly precise and extremely powerful servo gear units form the basis for a variety of servo gear units:

- The new, exceptionally economical **PS.C** planetary servo gear units
- The improved, low backlash **PS.F** planetary servo gear units
- The versatile, low backlash **BS.F** helical-bevel gear units

The properties of the servo gear unit series at a glance

- Highest permitted torques
- High operating speeds
- High efficiency levels
- High torsional rigidity
- Finely stepped, integer gear ratios
- Wear-free operating performance of running gears
- Constantly low circumferential backlash
- Low noise generation
- Synthetic lubricants
- Compact, lightweight design
- Extremely high level of reliability, availability and a long service life
- Comprehensive and proven service based on manufacturer's expertise

Driving the world – with innovative drive solutions for all branches of industry and for every application. Products and systems from SEW-EURODRIVE for any application – worldwide. SEW-EURODRIVE products can be found in a variety of industries, e. g. automotive, building materials, food and beverage as well as metal-processing. The decision to use drive technology “made by SEW-EURODRIVE” stands for safety regarding functionality and investment.



Servo gear units for direct mounting

The modular system allows for directly combining low backlash servo gear units with the dynamic servomotors of the DS, CM and CMP series from SEW-EURODRIVE. The commonly used adapter with clamp coupling is not necessary any longer which means the entire drive forms a form fit connection – from the motor shaft through to the output shaft of the gear unit.

Therefore, SEW-EURODRIVE is setting new standards in the safety of electromechanical drivelines: There is no longer a risk of the frictional connection becoming loose. The trend-setting direct motor mounting results in more major advantages for the entire drive. These are ...

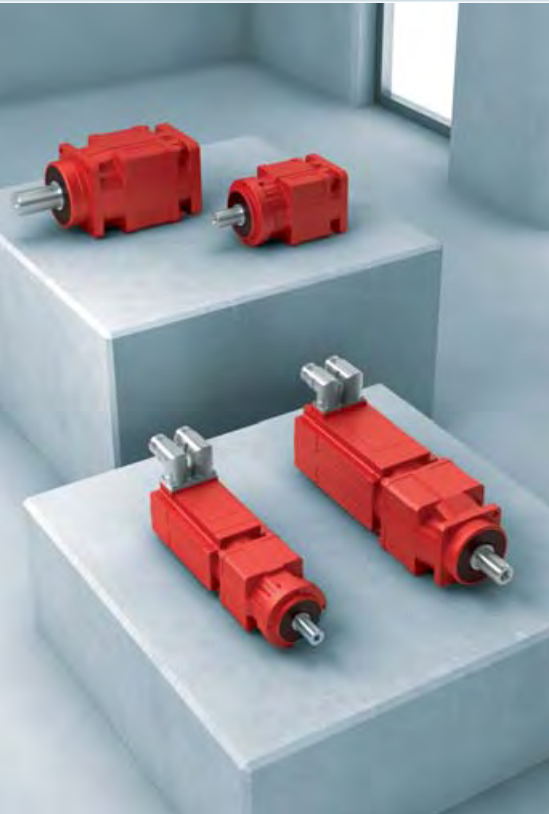
- higher torsional rigidity
- more dynamics
- less mass moment of inertia
- more compact
- more lightweight
- shorter
- completely form fit
- more cost-effective

The project planning data have been verified at SEW-EURODRIVE by diverse measurements and calculations. This provides additional confidence in an enduring and fault-free operation with low follow-up costs.



Low backlash PS.C planetary servo gear units

Profitability and flexibility



The low backlash **PS.C planetary servo gear units** are designed for torque classes from 30 to 320 Nm. They were designed to combine greatest possible flexibility with cost-efficiency as not every application demands components with maximum performance. These planetary servo gear units form the basis for versatile, dynamic, and above all cost optimized drive solutions. Additional particular properties:

- Compact, lightweight design
- Highest degree of reliability, availability and long service life
- Any mounting position is possible
- Synthetic lubricants
- Either oil or grease lubrication
- Lifetime lubrication
- Surface protection OS1 to OS4



PSC = B5 output, smooth output shaft
PSKC = B5 output with keyway



PSCZ = B14 output, smooth output shaft
PSKCZ = B14 output with keyway

Flexibility in motor mounting:

Apart from direct mounting to the motor, the gear unit can also be mounted using ECH adapters. Due to the modular system from SEW-EURODRIVE also the EPH adapters can be used for this purpose covering almost every motor application.

Technical data

Size	Torque class [Nm]	Gear ratios	
		1-stage [i]	2-stage [i]
PSC 220	30	3, 5, 7, 10	15, 21, 25, 30, 35, 49, 50, 70, 100
PSC 320	65		
PSC 520	160	5, 7, 10	25, 35, 49, 50, 70, 100
PSC 620	320		

Circumferential backlash for all designs: Max. 10' single-stage, or max. 15' two-stage

PS.F low backlash planetary servo gear units

Performance and reliability

The low backlash **PS.F planetary servo gear units** are designed for torque classes from 25 to 3000 Nm. The permitted acceleration torque ratings are significantly higher than these values.

Three output variants are available:

- PSF: Solid shaft
- PSKF: Solid shaft with key
- PSBF: Flange block shaft according to EN ISO 9409



PS.F with solid shaft



PSBF with flange block shaft



Technical data

Type	Size	Torque class [Nm]	Gear ratios ^⑥		Circumferential backlash [']	
			1-stage [i]	2-stage [i]	1-stage [i]	2-stage [i]
PSF	120	25	3 ¹⁾ , 4 ¹⁾ , 5, 7, 10	15 ²⁾ , 16 ¹⁾ , 20, 25, 28, 35, 40 ¹⁾ , 49, 70, 100	8, 4, 2	10, 6, 3
PSF / PSBF	220	55			6 ³⁾ , 3 ⁴⁾ , 1 ⁵⁾	8, 4, 2
PSF / PSBF	320	110				
PSF / PSBF	520	300				
PSF / PSBF	620	600				
PSF / PSBF	720	1000				
PSF / PSBF	820	1750				
PSF	920	3000				

¹⁾ PSF only, ²⁾ PSBF 322/522 only, ³⁾ standard, ⁴⁾ reduced, ⁵⁾ minimized, ⁶⁾ other gear ratios on request

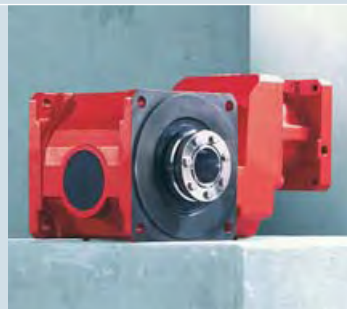
Low backlash BS.F helical-bevel servo gear units

Wide range of variants and compact design



The low backlash **BS.F helical-bevel servo gear units** are designed for torque classes from 40 to 1500 Nm. The permitted acceleration torque ratings are significantly higher than these values. These right-angle servo gear units are available in five output variants as standard:

- BSF: Solid shaft
- BSKF: Solid shaft with key
- BSBF: Flange block shaft (EN ISO 9409)
- BSHF: Hollow shaft with shrink disc
- BSAF: Hollow shaft with key (shaft mounted gear units)



Variants with hollow shaft are also available as shaft mounted gear units

All variants come equipped with a B5 mounting flange, or with foot mounting and torque arm as option. In this way, the drive units can be optimally integrated into the relevant application. The input stage with helical gearing and a hypoid bevel gear output stage result in gear ratio ranges that cover those of single-stage helical-bevel and hypoid gear units as well as those of single-stage helical-worm gear units with at the same time a high level of transmission quality. The circumferential backlash remains constantly low over the entire gear unit service life.

Technical data

Size	Torque class [Nm]	Gear ratios 2-stage [i]	Circumferential backlash [']
202	40	3, 4, 6, 8, 10, 15, 20, 25	6 ¹⁾ , 3 ²⁾
302	80	3, 4, 6, 8, 10, 15, 20, 25, 30	
402	160		
502	320	3, 4, 6, 8, 10, 12, 15, 20, 25, 30, 35	
602	640	3, 4, 6, 8, 10, 12, 15, 20, 25, 30, 35, 40	
802	1500		

¹⁾ standard, ²⁾ reduced

The fast way to perfect servo application solutions: The servo project planning tool

Applications from the servo field of drive engineering not only place high demands on the speed and precision of the drive technology implemented, but the project planning required for the applications is also very time-consuming and labor-intensive. The individual system solution provided by SEW-EURODRIVE not only

offers dynamic and precise drive technology, but also tailor-made software that guides the user quickly and simply to his or her goal: The servo project planning tool for optimum project planning of servo applications as part of the SEW Workbench.

Overview of features

Comprehensive:	A selection of 90 servo applications and 100 graphics support the project planning process
Structured:	Structured overview with tab pages
Easy to use:	Travel profiles can be defined using the drag & drop function
Automatic:	Optimum gear ratio of the drives can be determined. The drive is checked after each change the user makes
User-friendly:	A number of product combinations can be compared directly with one another and the project planning examples can be archived and sent to other user

Screenshots



Product	Speed	Acceleration	Time
SEW Servo	1000	10000	1.00
SEW Servo	2000	20000	0.50
SEW Servo	3000	30000	0.33
SEW Servo	4000	40000	0.25
SEW Servo	5000	50000	0.20
SEW Servo	6000	60000	0.17
SEW Servo	7000	70000	0.14
SEW Servo	8000	80000	0.13
SEW Servo	9000	90000	0.11
SEW Servo	10000	100000	0.10