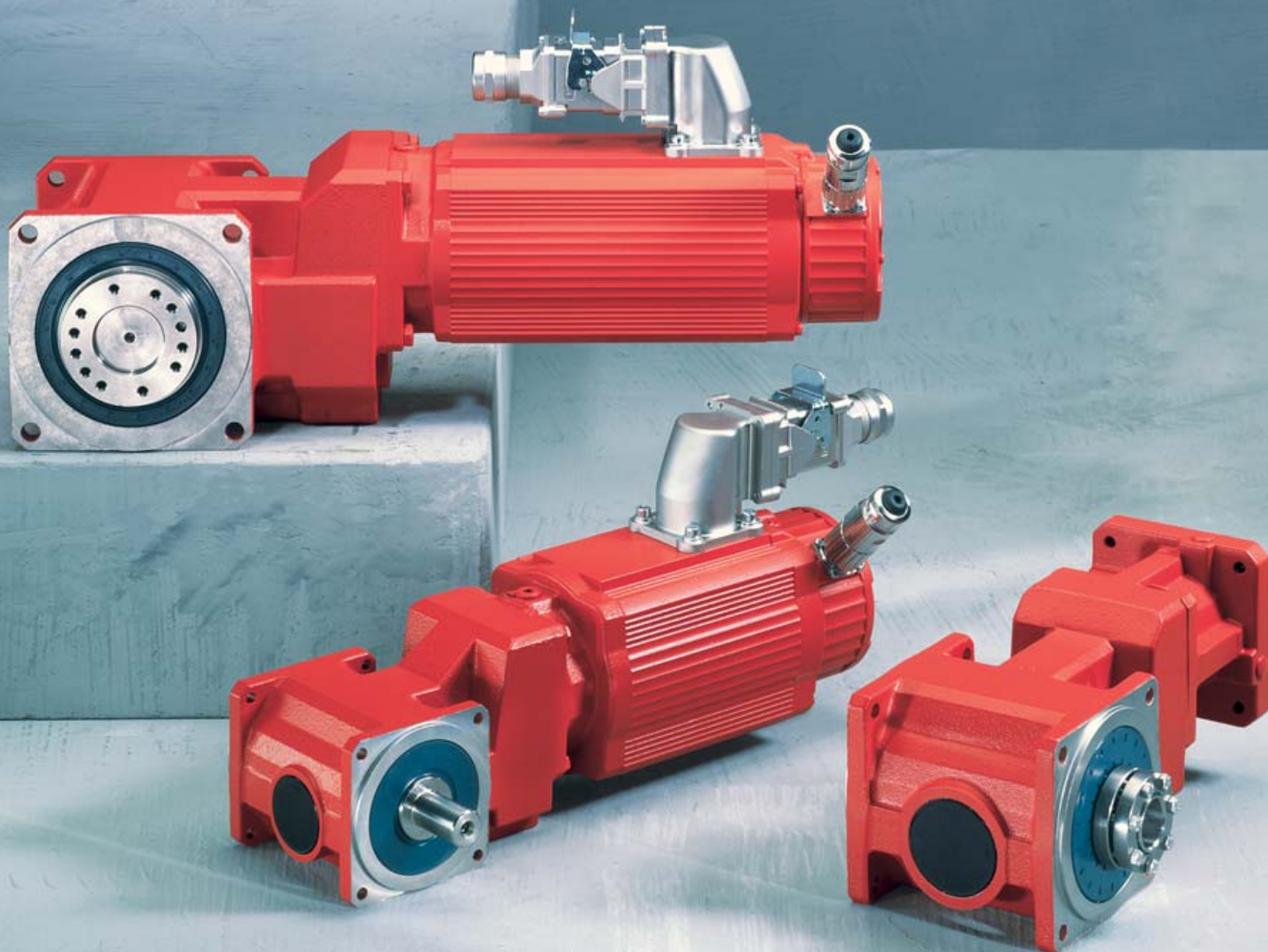


Highest degree of precision, torque and overhung load

Low backlash planetary servo gear units and helical-bevel servo gear units from SEW-EURODRIVE



Select the optimum drive for each application from more than 6,000 synchronous geared servomotors

Short cycle times and high processing speeds demand electromechanical drives of highest accuracy in position and speed at consistently low circumferential backlash and high stiffness. Motors and gear units are being operated at high speeds, acceleration speeds are increasing, larger torque ratings have to be transferred and greater overhung loads absorbed. The safety-related requirements for machines are getting more demanding all the time. To meet these diverse requirements, SEW-EURODRIVE has extended its range of products for servo applications to include highly precise and powerful servo gear units. These requirements have resulted in the **new design** of low backlash **BS.F** helical-bevel servo gear units and an **enhanced development for** low backlash **PS.F** planetary servo gear units.

The new modular principle enables the combination of servo gear units directly with synchronous servomotors. The new servo gear units are combined directly and without adapter with the dynamic synchronous servomotors of the DS or CM series from SEW-EURODRIVE. The motor shaft directly carries the input pinion of the gear unit via frictional and positive connection free from backlash.

There is no longer any need for an adapter with clamp coupling. In addition, a low backlash geared servomotor from SEW-EURODRIVE offers a completely positive design from the motor shaft to the gear unit output shaft. Therefore, SEW-EURODRIVE is setting new standards in the safety of electromechanical drivelines. In comparison with a corresponding drive with adapter and clamp coupling, the geared servomotor in direct mounting offers major advantages. Elimination of the adapter makes the entire drive:

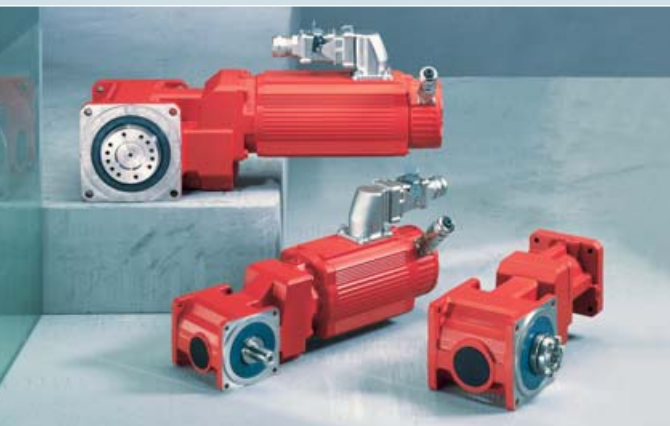
- completely positive
- higher torsional rigidity
- more dynamic
- more lightweight
- shorter
- less mass moment of inertia
- more affordable

The smaller and more lightweight drives make for a compact design of the system. Most importantly, each system is safer thanks to the completely positive connection in the driveline and there is no longer a risk that non-positive connections could become loose.

Overview of servo gear units

Together with the servomotors from SEW-EURODRIVE, these new servo gear units form the basis for innumerable options to create highly-dynamic drive solutions in axial and coaxial design. The compact and very powerful servo gear unit series can be operated at high speeds and offer the following advantages:

- Highest permitted torques and overhung loads
- High efficiency levels
- High torsional rigidity
- Finely stepped, integer gear ratios
- Wear-free operating performance of running gears
- Constantly low circumferential backlash
- Low operating temperatures
- Low noise generation
- Synthetic lubricants
- Compact, lightweight design
- Extremely high level of reliability, availability and a long service life



The new **BS.F helical-bevel servo gear units** are available in six sizes with acceleration torques of up to 1,910 Nm. BS.F helical-bevel servo gear units are the first angular servo gear units in the market that are available in four drive versions. Solid shaft (BS.F), solid shaft with key (BSK.F), flange block shaft to EN ISO 9409 (BSB.F) and hollow shaft with shrink disc (BSH.F). This range of available designs always makes for optimum integration of drive units into an existing system. Using the combination of a helical input stage and a hypoid output stage, the BS.F gear units can cover the operating ranges of helical-bevel and hypoid gear units as well as helical-worm gear units in a compact, one-piece housing. The optional circumferential backlash (< 6' in the standard version and < 3' in the reduced backlash version) remains constantly low throughout the gear unit's service life.

Low backlash helical-bevel servo gear units BS.F / BSK.F / BSB.F / BSH.F

Size	M _{rated} [Nm]	Ratios Double stage	Circumferential backlash [']
202	40	3, 4, 6, 8, 10, 15, 20, 25	6, 3
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	1,500		



The new **PS.F planetary servo gear units** are available in eight sizes with acceleration torques of up to 4,200 Nm. PS.F planetary servo gear units are available in three drive versions: Solid shaft (PS.F), solid shaft with key (PSK.F) and flange block shaft (PSB.F). You also have the option of three circumferential backlash classes: Standard < 6', reduced < 3' and minimized < 1'. SEW-EURODRIVE offers one of the most powerful and most reliable planetary gear units for servo technology in the market.

Low backlash planetary servo gear units PS.F / PSK.F with solid shaft

Size	M _{rated} [Nm]	Ratios		Circumferential backlash [']
		Single stage	Double stage	
120	25	3, 4, 5, 7, 10	16, 20, 25, 28,	8, 4, 2
220	55		35, 40, 49, 70,	6, 3, 1
320	110		100	
520	300			
620	600	4, 5, 7, 10		4, 2, 1
720	1,000			
820	1,750			
920	3,000			



Low backlash planetary servo gear units PSB.F with flange block shaft

Size	M _{rated} [Nm]	Ratios		Circumferential backlash [']
		Single stage	Double stage	
220	55	5, 7, 10	20, 25, 28, 35, 40, 49, 70, 100	6, 3, 1
320	110		15, 20, 25, 28, 35,	
520	300		40, 49, 70	
620	600		20, 25, 28, 35, 40,	4, 2, 1
820	1,750		49, 70, 100	

