

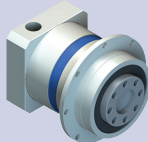
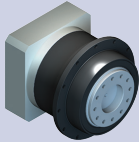
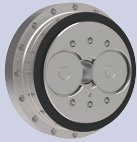
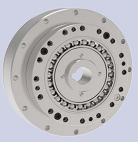
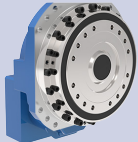


Quick Reference Guide

Robotic & Servo Gearbox Selection

Planetary? Cycloidal? Strain Wave? What is the best technology for your application?

Each has its advantages from high ratios to quiet operation to zero-backlash. A quick comparison of features and advantages can point to the best solution.

INCREASING PRECISION - DECREASING BACKLASH					
Gearbox	Planetary	Helical Planetary	Cycloidal	Strain Wave	Robotic Planetary
					
	Precision Inline for general servo applications	High precision inline for demanding servo applications	Zero-backlash cycloidal Available with integral pre-stage	Zero-backlash strain wave with high torque density and small, lightweight design for easy integration	Zero-backlash planetary with the lowest backlash. Vibration-free for high positional accuracy.
Gearbox Type	Servo	Servo	Zero-Backlash Robotic Flange	Zero-Backlash Robotic Flange	Zero-Backlash Robotic Flange
Features	Easily customizable	Precision Inline	Impact Resistance 5x nominal torque. Precision positioning and point-to-point motion	Small, lightweight design	High precision during motion Unique, revolutionary design maintains lifetime zero-backlash - no adjustment needed
Advantages	Shaft, hollow or flange output Very high ratio	Quiet operation	Available with integral pre-stage for higher ratios	Quiet operation Easy integration	Very high precision Quiet operation Smooth, vibration-free motion
Applications	Servo	Servo	Zero-Backlash	Zero-Backlash	Zero-Backlash
Backlash	≤ 8-20 arcmin	≤ 1 - 3 arcmin	≤1 arcmin	≤0.5 arcmin (≤30 arcsec)	≤0.1 arcmin (≤6 arcsec)
Ratio:	3:1 - 1000:1	3:1 - 1000:1	57:1 - 258:1 Integral pre-stage option for additional ratio	50:1 - 160:1	50:1 - 200:1 Integral pre-stage option for additional ratio
Service Life	30,000 hours	20,000 hours	6000 hours	7000-15,000 hours	20,000 hours
Torque Range (Nm)	GAM Series				
	EPL	SPH	GCL	GSL	GPL
0 - 50	EPL-F-047 / 064			GSL-CS-014 / 017 GSL-HS-014 to 040	
51 -250	EPL-F-090 / 110	SPH-F-075 / 100	GCL-F-020	GSL-CS-020 to 032	
251 - 1000	EPL-F-140	SPH-F-140	GCL-F-040 / 080		GPL-F-056 / 080
1001 - 2500			GCL-F-110 / 160		GPL-F-112 / 160 / 224
2501 - 5000			GCLC-F-320 / 450		GPL-F-300 / 400