

HarmonicDrive®

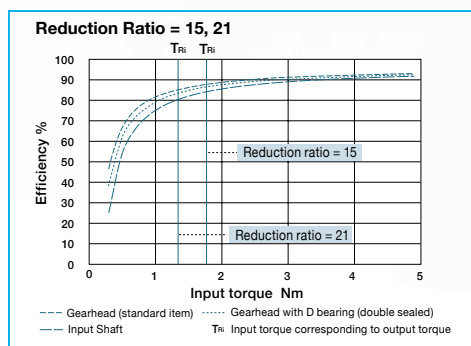
Servo Gearheads for AMR/AGV Propulsion

Drive wheels on Autonomous Mobile Robot platforms benefit from the inherent characteristics of Harmonic Planetary® technology... primarily smoothness of travel, backdrivability, and an efficiency curve that does not degrade over time. An integral cross-roller bearing construction contributes to an excellent balance of torque density, stiffness and radial load support in a compact and reliable package. Available in dozens of standard reduction ratios, these low backlash drive trains include motor adaptation as required.

HPG Gearheads

High Efficiency

Up to 95% Efficiency*



Low Backlash for Life

Innovative ring gear inherently compensates for interference between meshing parts, ensuring consistent, low backlash for the life of the gearhead.

High Load Capacity Output Bearing

A cross-roller bearing is integrated with the output flange to provide high moment stiffness, high load capacity and precise positioning accuracy.

Easy Mounting to a wide variety of Servomotors

Quick Connect® motor adaptation system includes a clamshell style servo coupling and piloted adapter flange.

Flange Output Standard

Flanged output is standard for convenient, stable wheel mounting.

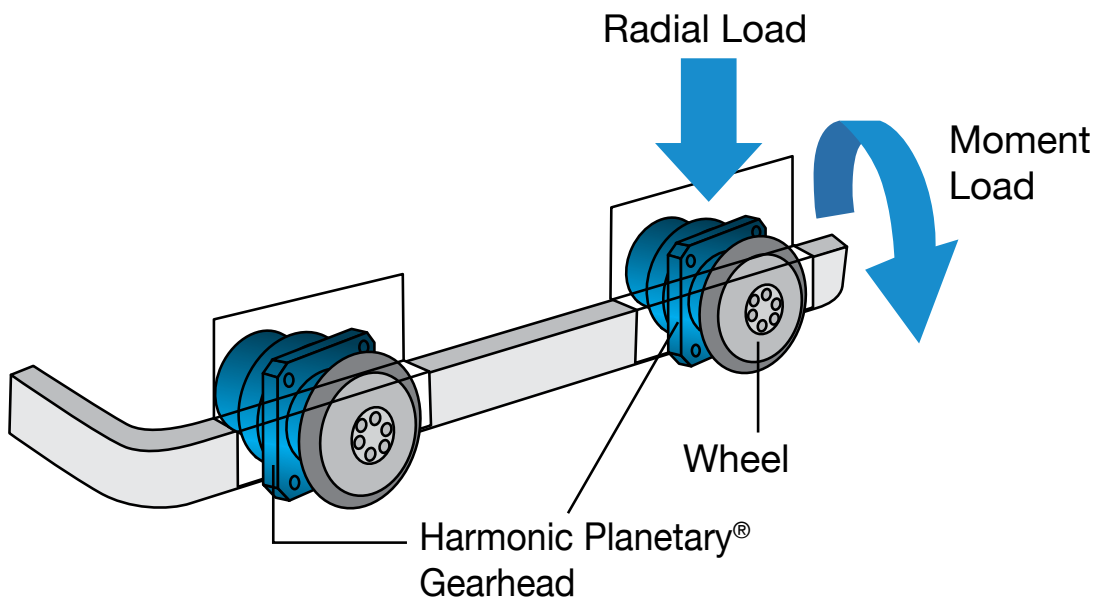
* Efficiency ratings are graphically illustrated in relation to input torque. Please refer to the main catalog for detailed information.

Rating Table for HPG and HPGP Gearheads - more sizes and ratios available!

Size*	Ratio	Rated Torque L10		Peak Torque L10	Max. Average Input Speed	Allowable Radial Load	Allowable Moment Load
		HPG	HPGP	Nm	rpm	N	Nm
		Nm					
14	3	2.9	-	37	3000	400	32.3
	5	5.9	7.8	56		470	
	11	7.8	10	63		600	
	15	9	12			650	
	21	8.8	12			720	
	33	10	12			830	
	45	10	13			910	
20	3	8.8	-	124	3000	840	183
	5	16	21	217		980	
	11	20	26			1240	
	15	24	32			1360	
	21	25	33			1510	
	33	29	39			1729	
	45	29	39			1890	
32	3	31	-	507	3000	1630	452
	5	66	87	650		1900	
	11	88	104			2410	
	15	92	122			2640	
	21	98	130			2920	
	33	108	143			3340	
	45	108	143			3670	

* Other sizes available, please contact us for details.

Drive Trains for AMR/AGV Propulsion with Harmonic Drive® Gears



Rating Table for HPG-R Helical Gearheads - more sizes and ratios available!

Size*	Ratio	Rated Torque L10	Peak Torque L10	Max. Average Input Speed	Allowable Radial Load	Allowable Moment Load
		Nm	Nm	rpm	N	Nm
14	3	4	37	3000	400	32.3
	4	7	56		440	
	5	7.2			470	
	6	7.3			490	
	7	7.8			520	
	8	7.8			540	
	9	7.9			560	
	10	8.5			580	
	15	10			650	
	20	11			710	
	25	12			760	
	30	12			810	
	35	13			840	
	40	13			880	
	45	14			910	
	50	14			940	
20	3	11	124	3000	840	183
	4	23	217		910	
	5	23			980	
	6	23			1030	
	7	25			1080	
	8	25			1130	
	9	25			1170	
	10	27			1200	
	15	32			1360	
	20	35			1480	
	25	38			1590	
	30	40			1680	
	35	42			1760	
	40	43			1830	
	45	45			1890	
	50	46			1950	
32	3	50	507	3000	1630	452
	4	77	650		1770	
	5	80			1900	
	6	80			2000	
	7	85			2100	
	8	85			2180	
	9	86			2260	
	10	92			2330	
	15	111			2640	
	20	121			2880	
	25	130			3080	
	30	137			3250	
	35	143			3400	
	40	149			3540	
	45	155			3670	
	50	160			3790	

* Other sizes available, please contact us for details.

HPG Cross-Roller Bearing Construction



Integrated cross-roller bearing and planet carrier provides a compact solution with excellent load and rigidity characteristics.



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