Solutions for Demanding Washdown Requirements

The HRL series from Nidec Drive Technology is a planetary product that excels in corrosive, high pressure washdown environments. Made completely from 303 grade austenitic stainless steel, HRL is a safe solution for servo drive systems close to or fully integrated in the process. A seamless, single piece housing helps reduce build-up of bacteria while its IP66 rating allows for high pressure cleaning with water, steam or caustic chemicals. HRL has flexible adaptation to standard B5 style servomotors as well as B14 style stainless servomotors. Available in three sizes and a complete range of reduction ratios, HRL is a robust, reliable, maintenance-free solution allowing our customers to reduce risk and increase productivity.

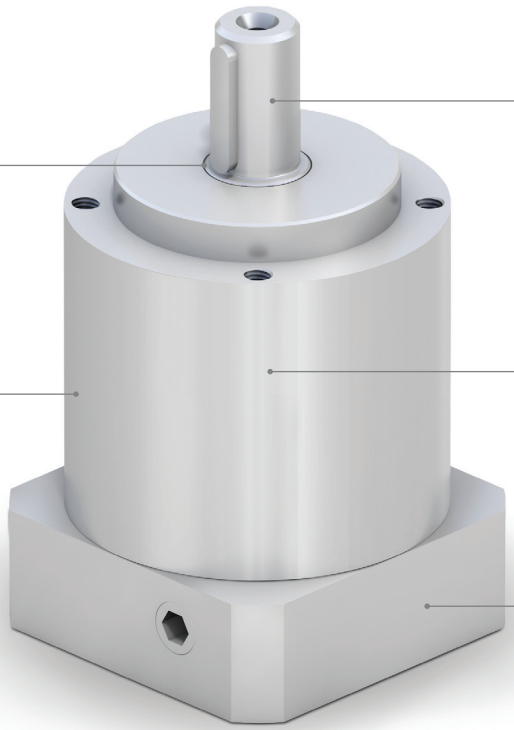
HRL Series at a glance

- Frame sizes 070, 090, 120
- Ratios from 3:1 – 100:1
- Backlash from ≤6 to ≤14 arc-min
- All-stainless construction
- IP66 Ingress Protection with Viton seals
- NSF H1 Synthetic Food Grade Grease
- Mounting for standard servomotors with B5 flanges or stainless servomotors with B14 flanges
- Cost-effective solution for highly corrosive environments with demanding washdown regimens

Design Features & Benefits

Viton input and output radial shaft seals provide IP66 protection against powerful, direct water jets.

303 grade austenitic stainless steel housing for excellent corrosion resistance. Cylindrical single-piece design with no seams or flat surfaces



303 grade austenitic stainless steel output shaft and key for high resistance to corrosion and oxidation

NSF H1 high performance 100% synthetic food grade lubrication allows incidental contact with food and can be used in processing areas. Allows flexible mounting in any orientation

Stainless steel motor adapter plates, plugs and fasteners. Mounting available for B5 or B14 servomotor flanges

Specifications and Materials

Frame Size	Unit	HRL-070	HRL-090	HRL-120
Reduction Ratios		Single Stage: 3, 4, 5, 7, 10 Two Stage: 12, 16, 20, 25, 30, 35, 40, 50, 70, 100	Single Stage: 3, 4, 5, 7, 10 Two Stage: 12, 16, 20, 25, 30, 35, 40, 50, 70, 100	Single Stage: 3, 4, 5, 7, 10 Two Stage: 12, 16, 20, 25, 30, 35, 40, 50, 70, 100
Nominal Output Torque	Nm	16 - 44	40 - 100	100 - 210
Maximum Output Torque	Nm	24 - 55	75 - 125	180 - 255
Emergency Stop Torque	Nm	62 - 84	160 - 216	200 - 480
Nominal Input Speed	rpm	3500	3000	2500
Maximum Input Speed	rpm	6000	6000	5000
No Load Running Torque	Nm	0.17	0.33	0.60
Maximum Radial Load	N	910	1500	3000
Maximum Axial Load	N	500	1000	1500
Moment of Inertia (≤ Ø 14)	kg/cm^2	0.32 - 0.43	0.69 - 1.15	--
Moment of Inertia (≤ Ø 19)	kg/cm^2	0.52 - 0.65	0.89 - 1.38	2.16 - 5.78
Moment of Inertia (≤ Ø 24)	kg/cm^2	--	1.81 - 2.67	2.59 - 6.25
Moment of Inertia (≤ Ø 32)	kg/cm^2	--	--	2.92 - 6.59
Efficiency	%	1-Stage: 92 / 2-Stage: 90	1-Stage: 92 / 2-Stage: 90	1-Stage: 92 / 2-Stage: 90
Torsional Rigidity	Nm/arc-min	1.3 - 2.4	3.4 - 7.1	8.3 - 17
Maximum Torsional Backlash	arc-min	Standard: ≤ 10 - ≤ 14 / Reduced: ≤ 7 - ≤ 9	Standard: ≤ 10 - ≤ 14 / Reduced: ≤ 6 - ≤ 8	Standard: ≤ 8 - ≤ 12 / Reduced: ≤ 6 - ≤ 8
Noise Level	dB[A]	≤ 64	≤ 65	≤ 68
Service Life	hrs	30,000	30,000	30,000
Protection Class	IP	IP66	IP66	IP66
Seal Material	--	Viton	Viton	Viton
Lubrication	--	NSF H1 Food Grade Grease	NSF H1 Food Grade Grease	NSF H1 Food Grade Grease
Output Shaft Material	--	303 Grade Stainless Steel	303 Grade Stainless Steel	303 Grade Stainless Steel
Housing Material	--	303 Grade Stainless Steel	303 Grade Stainless Steel	303 Grade Stainless Steel
Ambient Temperature	°C	-20 to +90	-20 to +90	-20 to +90
Permitted Housing Temperature	°C	90	90	90
Weight	kg	2.0 - 2.3	3.9 - 4.7	8.8 - 10.9

Ordering Codes

HRL	—	090	—	10	—	K	10	—	19HB16
Series Name		Frame Size		Ratio		Output Mounting Style	Backlash		Motor Mounting Code
HRL		070 090 120		1 Stage: 3 4 5 7 10 2 Stage: 12 16 20 25 30 35 40 45 50 70 100		K: Keyed Shaft S: Smooth shaft	Standard Backlast: ≤ 8-14 arc-min Reduced Backlash: ≤ 6-9 arc-min		Motor mounting code varies depending on the motor