

PRODUCT DATASHEET

ES-HG-S07-F17-R120

Precision Transmission Component

Hat Harmonic Gearboxes | High-Torque Hat Unit Type I

Product Overview

Precision Transmission Component with rated Torque 31 Nm, instantaneous Maximum Torque 112 Nm and start/Stop Peak Torque 70 Nm.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	31	Nm
Instantaneous Maximum Torque	112	Nm
Start/Stop Peak Torque	70	Nm
Reduction Ratio	120	
Maximum Input Speed	7300	r/min
Allowable Average Torque	51	Nm
Backlash	≤20	arc sec
Frame Size	17	
Weight	0.54	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	31	Nm	Frame Size: 17; Reduction Ratio: 120; Size: 17
Instantaneous Maximum Torque	112	Nm	Frame Size: 17; Reduction Ratio: 120; Size: 17
Start/Stop Peak Torque	70	Nm	Frame Size: 17; Reduction Ratio: 120; Size: 17
Backlash	≤20	arc sec	Reduction Ratio: 120; Size: 17; Frame Size: 17
Allowable Average Torque	51	Nm	Frame Size: 17; Reduction Ratio: 120; Size: 17
Starting Torque	3.4 / 0.034	Nm	Frame Size: 17; Reduction Ratio: 120; Size: 17 / Reduction Ratio: 120; Size: 17; Frame Size: 17
Angular Transmission Accuracy	1.5	arcmin	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
Hysteresis Loss	1	arcmin	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
MECHANICAL			
Frame Size	17		Frame Size: 17; Reduction Ratio: 120; Size: 17
Weight	0.54	kg	Frame Size: 17; Reduction Ratio: 120
Wave Generator Dimension T	12.8+0.10 / 9.4+0.10	mm	Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ 11; Reduction Ratio: 120; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ 8; Reduction Ratio: 120; Wave Generator Option: wave-generator-e6e55a341aa3
Wave Generator Bore U	φ11H7 / φ8H7		Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ 11; Reduction Ratio: 120; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ 8; Reduction Ratio: 120; Wave Generator Option: wave-generator-e6e55a341aa3
Wave Generator Keyway W	4JS9/P9 / 3JS9/P9		Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ 11; Reduction Ratio: 120; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ 8; Reduction Ratio: 120; Wave Generator Option: wave-generator-e6e55a341aa3

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	15000	h	Frame Size: 17; Reduction Ratio: 120; Size: 17
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	120		Frame Size: 17; Reduction Ratio: 120; Size: 17
Maximum Input Speed	7300	r/min	Frame Size: 17; Reduction Ratio: 120; Size: 17
Average Input Speed	3500	r/min	Frame Size: 17; Reduction Ratio: 120; Size: 17
Wave Generator T	$12.8^{+0.1}_0 / 9.4^{+0.1}_0$	mm	Reduction Ratio: 120; Size: 17; Frame Size: 17; Option Index: 1 / Reduction Ratio: 120; Size: 17; Frame Size: 17
Wave Generator U	$\phi 11H7 / \phi 8H7$		Reduction Ratio: 120; Size: 17; Frame Size: 17; Option Index: 1 / Reduction Ratio: 120; Size: 17; Frame Size: 17
Wave Generator W	3JS9/P9 / 4JS9/P9		Reduction Ratio: 120; Size: 17; Frame Size: 17 / Reduction Ratio: 120; Size: 17; Frame Size: 17; Option Index: 1
Torsional Rigidity K2	1.4	$\times 10^4$ Nm/rad	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
Torsional Rigidity K1	1	$\times 10^4$ Nm/rad	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
Torsional Rigidity K3	1.6	$\times 10^4$ Nm/rad	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
Torsional Rigidity T2	12	Nm	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17
Torsional Rigidity T1	3.9	Nm	Frame Size: 17; Reduction Ratio: 120; Reduction Ratio Min: 50; Size: 17

Dimensional & Integration Overview

Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	17	
Weight	0.54	kg
Wave Generator Dimension T	12.8+0.10 / 9.4+0.10	mm
Wave Generator Bore U	φ11H7 / φ8H7	
Wave Generator Keyway W	4JS9/P9 / 3JS9/P9	

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01 Specifications are subject to change without notice. Verify the current product configuration before final design release.

02 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.