

PRODUCT DATASHEET

ES-HG-S07-F17-R50

Precision Transmission Component

Hat Harmonic Gearboxes | High-Torque Hat Unit Type I

Product Overview

Precision Transmission Component with rated Torque 21 N·m, instantaneous Maximum Torque 91 N·m and start/Stop Peak Torque 44 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	21	N·m
Instantaneous Maximum Torque	91	N·m
Start/Stop Peak Torque	44	N·m
Reduction Ratio	50	
Maximum Input Speed	7300	r/min
Allowable Average Torque	34	N·m
Backlash	≤20	arc sec
Frame Size	17	
Weight	0.54	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	21	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17
Instantaneous Maximum Torque	91	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17
Start/Stop Peak Torque	44	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17
Backlash	≤20	arc sec	Reduction Ratio: 50; Size: 17; Frame Size: 17
Allowable Average Torque	34	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17
Starting Torque	6.7 / 0.067	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17 / Reduction Ratio: 50; Size: 17; Frame Size: 17
Angular Transmission Accuracy	1.5	arcmin	Frame Size: 17; Reduction Ratio: 50; Size: 17
Hysteresis Loss	2	arcmin	Frame Size: 17; Reduction Ratio: 50; Size: 17
MECHANICAL			
Frame Size	17		Frame Size: 17; Reduction Ratio: 50; Size: 17
Weight	0.54	kg	Frame Size: 17; Reduction Ratio: 50
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: 50; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ 8; Reduction Ratio: 50; 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: 50; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ 8; Reduction Ratio: 50; Wave Generator Option: wave-generator-e6e55a341aa3
Wave Generator Keyway W	3JS9/P9 / 4JS9/P9		Frame Size: 17; Option Label: Wave generator - A φ8; Reduction Ratio: 50; Wave Generator Option: wave-generator-e6e55a341aa3 / Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ11; Reduction Ratio: 50; Wave Generator Option: wave-generator-fd26f6670d9b

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	10000	h	Frame Size: 17; Reduction Ratio: 50; Size: 17
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	50		Frame Size: 17; Reduction Ratio: 50; Size: 17
Maximum Input Speed	7300	r/min	Frame Size: 17; Reduction Ratio: 50; Size: 17
Average Input Speed	3500	r/min	Frame Size: 17; Reduction Ratio: 50; Size: 17
Wave Generator T	12.8 ⁺ 0.1 ₀ / 9.4 ⁺ 0.1 ₀	mm	Reduction Ratio: 50; Size: 17; Frame Size: 17; Option Index: 1 / Reduction Ratio: 50; Size: 17; Frame Size: 17
Wave Generator U	φ11H7 / φ8H7		Reduction Ratio: 50; Size: 17; Frame Size: 17; Option Index: 1 / Reduction Ratio: 50; Size: 17; Frame Size: 17
Wave Generator W	3JS9/P9 / 4JS9/P9		Reduction Ratio: 50; Size: 17; Frame Size: 17 / Reduction Ratio: 50; Size: 17; Frame Size: 17; Option Index: 1
Torsional Rigidity K2	1.1	×10 ⁴ Nm/rad	Frame Size: 17; Reduction Ratio: 50; Size: 17
Torsional Rigidity K1	0.81	×10 ⁴ Nm/rad	Frame Size: 17; Reduction Ratio: 50; Size: 17
Torsional Rigidity K3	1.3	×10 ⁴ Nm/rad	Frame Size: 17; Reduction Ratio: 50; Size: 17
Torsional Rigidity T2	12	Nm	Frame Size: 17; Reduction Ratio: 50; Size: 17
Torsional Rigidity T1	3.9	Nm	Frame Size: 17; Reduction Ratio: 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	3JS9/P9 / 4JS9/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.