PRODUCT DATASHEET

ES-HG-S09-F25-R80

Precision Transmission Component

Hollow Shaft Harmonic Gearboxes | High-Torque Hollow Shaft Gear Unit

Product Overview

Precision Transmission Component with rated Torque 82 N·m, instantaneous Maximum Torque 332 N·m and start/Stop Peak Torque 178 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	82	N·m
Instantaneous Maximum Torque	332	N·m
Start/Stop Peak Torque	178	N·m
Reduction Ratio	80	
Maximum Input Speed	5600	r/min
Allowable Average Torque	113	N·m
Backlash	≤20	arc sec
Frame Size	25	
Weight	2.02	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	82	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Instantaneous Maximum Torque	332	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Start/Stop Peak Torque	178	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Backlash	≤20	arc sec	Reduction Ratio: 80; Size: 25; Frame Size: 25
Allowable Average Torque	113	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Angular Transmission Accuracy	1	arcmin	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Hysteresis Loss	1	arcmin	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
MECHANICAL			
Frame Size	25		Frame Size: 25; Reduction Ratio: 80; Size: 25
Weight	2.02	kg	Frame Size: 25; Reduction Ratio: 80; Size: 25

Technical Specifications

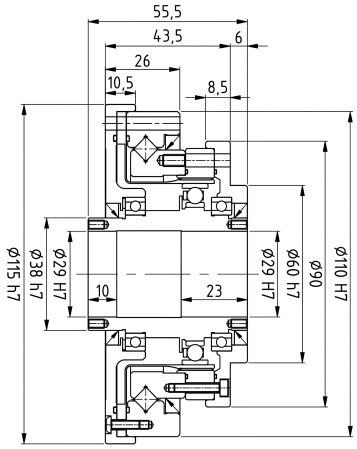
PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	15000	h	Frame Size: 25; Reduction Ratio: 80; Size: 25
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	80		Frame Size: 25; Reduction Ratio: 80; Size: 25
Maximum Input Speed	5600	r/min	Frame Size: 25; Reduction Ratio: 80; Size: 25
Average Input Speed	3500	r/min	Frame Size: 25; Reduction Ratio: 80; Size: 25
Torsional Rigidity K2	5	×10⁴ N·m/rad	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Torsional Rigidity K1	3.1	×10⁴ N·m/rad	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Torsional Rigidity K3	5.7	×10⁴ N·m/rad	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Torsional Rigidity T2	48	N·m	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Torsional Rigidity T1	14	N·m	Frame Size: 25; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25

Dimensional & Integration Overview

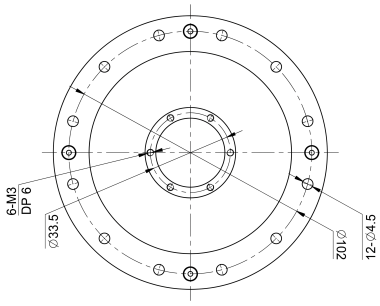
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	25	
Weight	2.02	kg

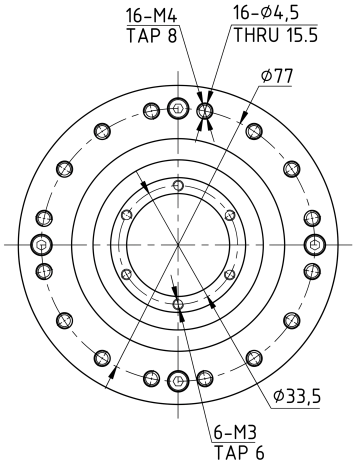
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Overall length	55.5 mm
	Middle section length	43.5 mm
	Right section length	6 mm
	Left section length	26 mm
	Lower left section length	10.5 mm
	Right section length	8.5 mm
	Outer mounting hole diameter with tolerance	Φ110 H7
		Φ115 h7
	Inner hole diameter with tolerance (upper right)	Φ29 H7
	Inner hole diameter with tolerance (lower left)	
	Middle hole diameter with tolerance	Φ60 h7
		Φ38 h7
	Middle ring diameter	Φ90
	Center section length	23 mm
	Lower left end length	10 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 2	Flange mounting threaded holes	6 × M3 threaded holes
	Pitch circle diameter of mounting holes	DP6 (likely designation or reference code)
	Center bore diameter	φ33.5 mm
	Outer mounting holes	12 × φ4.5 mm holes
	Flange outer diameter	φ102 mm
Mechanical View 3	Outer circle threaded holes (M4)	16 holes, M4 thread, tap depth 8 mm
	Outer circle through holes (Φ4.5)	16 holes, Φ4.5 mm, through depth 15.5 mm
	Outer circle diameter	Φ77 mm
	Inner circle diameter	Φ33.5 mm
	Inner circle threaded holes (M3)	6 holes, M3 thread, tap depth 6 mm

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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.