PRODUCT DATASHEET

ES-HG-S18-F25-R80

Precision Transmission Component

Ultra-Thin Harmonic Gearboxes | Ultra-Short Gear Unit

Product Overview

Precision Transmission Component with rated Torque 44 N·m, instantaneous Maximum Torque 179 N·m and start/Stop Peak Torque 96 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	44	N·m
Instantaneous Maximum Torque	179	N·m
Start/Stop Peak Torque	96	N·m
Reduction Ratio	80	
Maximum Input Speed	5600	r/min
Allowable Average Torque	60	N·m
Backlash	≤20	arc sec
Frame Size	25	
Weight	0.95	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	44	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Instantaneous Maximum Torque	179	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Start/Stop Peak Torque	96	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	60	N·m	Frame Size: 25; Reduction Ratio: 80; Size: 25
Angular Transmission Accuracy	1	arc min	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
Hysteresis Loss	1	arc min	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25
MECHANICAL			
Frame Size	25		Frame Size: 25; Reduction Ratio: 80; Size: 25
Weight	0.95	kg	Frame Size: 25; Reduction Ratio: 80; Size: 25

Technical Specifications

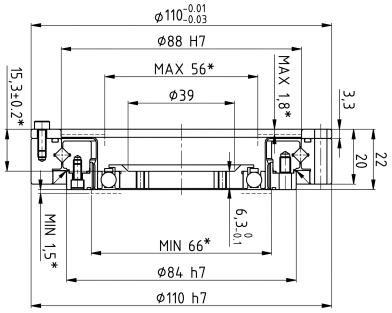
PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	10000	h	Frame Size: 25; Reduction Ratio: 80; Size: 25
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	80		Frame Size: 25; Reduction Ratio: 80; Size: 25
Maximum Input Speed	5600	r/min	Frame Size: 25; Reduction Ratio: 80; Size: 25
Average Input Speed	3500	r/min	Frame Size: 25; Reduction Ratio: 80; Size: 25
Torsional Rigidity K2	1.7	$\times 10^4$ N·m/rad	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25; Source Condition: ratio>50
Torsional Rigidity K1	1.3	$\times 10^4$ N·m/rad	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25; Source Condition: ratio>50
Torsional Rigidity K3	2.5	$\times 10^4$ N·m/rad	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25; Source Condition: ratio>50
Torsional Rigidity T2	25	N·m	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25; Source Condition: all ratios
Torsional Rigidity T1	7	N·m	Frame Size: 25; Ratio Bucket: >50; Reduction Ratio: 80; Reduction Ratio Min: 50; Size: 25; Source Condition: all ratios

Dimensional & Integration Overview

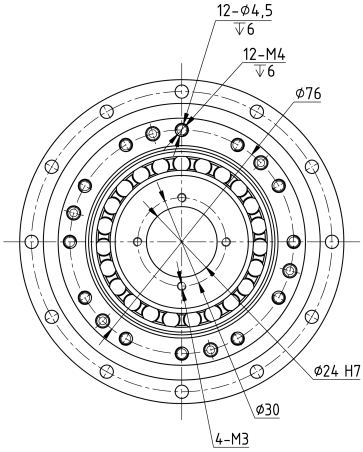
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	25	
Weight	0.95	kg

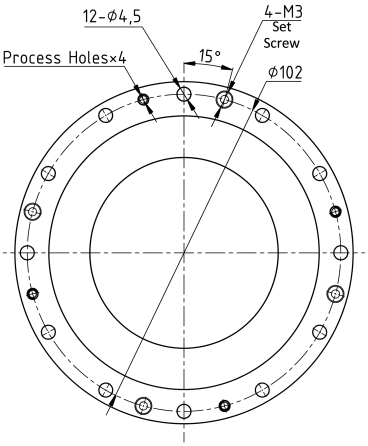
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Outer diameter with bilateral negative deviations	Diameter 110 mm, upper deviation -0.01 mm, lower deviation -0.03 mm
	Inner diameter fit size	Diameter 88 mm H7 fit
	Maximum length	Maximum 56 mm
	Maximum end height or protrusion	Maximum 1.8 mm
	Left side height dimension	15.3 mm ±0.2 mm
	Diameter size	Diameter 39 mm
	Local height dimension	3.3 mm
	Right side envelope height dimensions	Two visible vertical height values: 22 mm and 20 mm
	Minimum clearance or protrusion	Minimum 1.5 mm
	Local dimension with unilateral negative tolerance	6.3 mm, upper deviation 0 mm, lower deviation -0.1 mm
	Minimum length	Minimum 66 mm
	Outer diameter fit size	Diameter 84 mm h7 fit
		Diameter 110 mm h7 fit

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 2	12 holes diameter 4.5	12 × Ø4.5 holes
	Depth for 12 diameter 4.5 holes	Depth 6 for associated 12 × Ø4.5 holes
	12 M4 threaded holes	12 × M4 threaded holes
	Depth for 12 M4 threaded holes	Depth 6 for associated 12 × M4 threaded holes
	Diameter 76	Ø76
	Diameter 24 H7 bore	Ø24 H7
	Diameter 30	Ø30
	4 M3 threaded holes	4 × M3 threaded holes
Mechanical View 3	Mounting hole quantity and diameter	12 × Ø4.5 holes
	Process hole quantity	4 process holes
	Angular spacing	15 degrees
	Pitch circle diameter	Ø102 pitch circle diameter

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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.