

PRODUCT DATASHEET

ES-HG-S08-F32-R160

Precision Transmission Component

Hat Harmonic Gearboxes | High-Torque Hat Unit Type II

Product Overview

Precision Transmission Component with rated Torque 178 N·m, instantaneous Maximum Torque 892 N·m and start/Stop Peak Torque 484 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	178	N·m
Instantaneous Maximum Torque	892	N·m
Start/Stop Peak Torque	484	N·m
Reduction Ratio	160	
Maximum Input Speed	4800	r/min
Allowable Average Torque	281	N·m
Backlash	≤20	arc sec
Frame Size	32	
Weight	2.54	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	178	Nm	Frame Size: 32; Reduction Ratio: 160; Size: 32
Instantaneous Maximum Torque	892	Nm	Frame Size: 32; Reduction Ratio: 160; Size: 32
Start/Stop Peak Torque	484	Nm	Frame Size: 32; Reduction Ratio: 160; Size: 32
Backlash	≤20	arc sec	Reduction Ratio: 160; Size: 32; Frame Size: 32
Allowable Average Torque	281	Nm	Frame Size: 32; Reduction Ratio: 160; Size: 32
Starting Torque	15 / 0.15	Nm	Frame Size: 32; Reduction Ratio: 160; Size: 32 / Reduction Ratio: 160; Size: 32; Frame Size: 32
Angular Transmission Accuracy	1	arcmin	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
Hysteresis Loss	1	arcmin	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
MECHANICAL			
Frame Size	32		Frame Size: 32; Reduction Ratio: 160; Size: 32
Weight	2.54	kg	Frame Size: 32; Reduction Ratio: 160

Technical Specifications

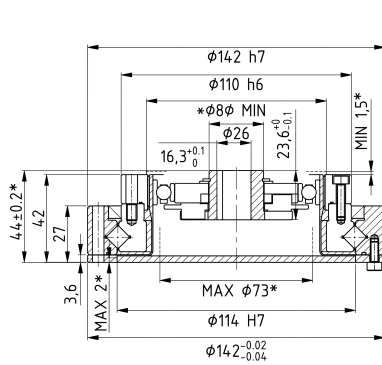
PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	15000	h	Frame Size: 32; Reduction Ratio: 160; Size: 32
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	160		Frame Size: 32; Reduction Ratio: 160; Size: 32
Maximum Input Speed	4800	r/min	Frame Size: 32; Reduction Ratio: 160; Size: 32
Average Input Speed	3500	r/min	Frame Size: 32; Reduction Ratio: 160; Size: 32
Torsional Rigidity K2	11	$\times 10^4$ Nm/rad	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
Torsional Rigidity K1	6.7	$\times 10^4$ Nm/rad	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
Torsional Rigidity K3	12	$\times 10^4$ Nm/rad	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
Torsional Rigidity T2	108	Nm	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32
Torsional Rigidity T1	29	Nm	Frame Size: 32; Reduction Ratio: 160; Reduction Ratio Min: 50; Size: 32

Dimensional & Integration Overview

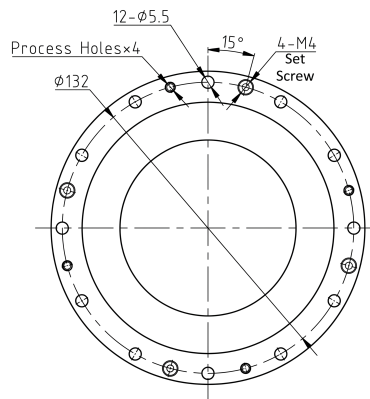
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	32	
Weight	2.54	kg

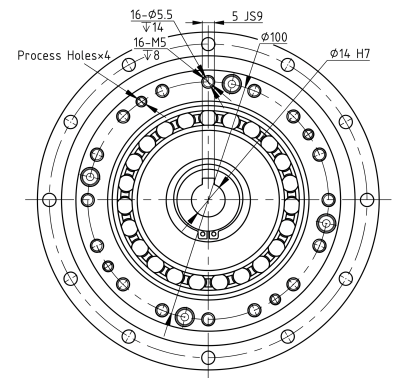
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Maximum outer diameter	Φ142 h7
	Mounting flange bore diameter	Φ110 h6
	Minimum dimension notation	MIN 1.5
	Minimum bore diameter	Φ8 MIN
	Shaft segment length	23.6 +0/-0.1
	Shaft diameter	Φ26
	Shaft segment length	16.3 +0.1/0
	Overall height	44±0.2
	Local height dimension	42
		27
	Maximum base diameter	MAX Φ73
	Local dimension	3.6
	Maximum count or dimension	MAX 2
	Mounting flange outer diameter	Φ114 H7
	Overall outer diameter with tolerance	Φ142 -0.02/-0.04

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 2	Process hole diameter and quantity	12× Φ5.5 mm process holes
	Process holes description	Process Holes ×4
	Outer circle diameter	Φ132 mm
	Hole angular spacing	15°
	Mounting threaded hole specification and quantity	4× M4 threaded holes
	Set screw note	Set Screw
Mechanical View 3	Mounting hole diameter	16 holes of Φ5.5 mm
	Mounting hole depth	Depth 14 mm
	Keyway width tolerance	5 mm JS9 tolerance
	Outer diameter	Φ100 mm
	Threaded hole specification	16 holes of M5 thread
	Thread hole depth	Depth 8 mm
	Process holes	4 process holes
	Hole diameter and tolerance	Φ14 H7

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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.