

PRODUCT DATASHEET

ES-HG-S10-F32-R160

Precision Transmission Component

Hat Harmonic Gearboxes | High-Torque Shaft-Input Gear Unit

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	4	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	23 / 0.23	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	4	kg	Frame Size: 32; Reduction Ratio: 160; Size: 32

Technical Specifications

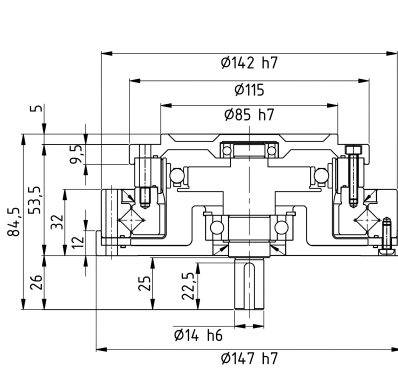
PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	15000	h	Frame Size: 32; Reduction Ratio: 160; Size: 32
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	160		Frame Size: 32; Reduction Ratio: 160; Size: 32
Maximum Input Speed	4800	r/min	Frame Size: 32; Reduction Ratio: 160; Size: 32
Average Input 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

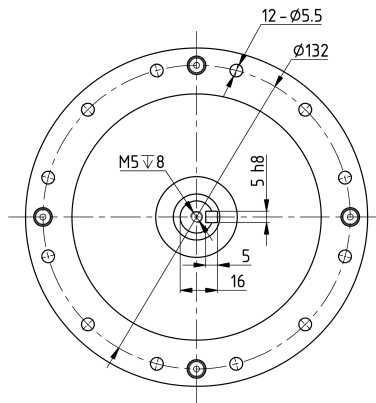
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	32	
Weight	4	kg

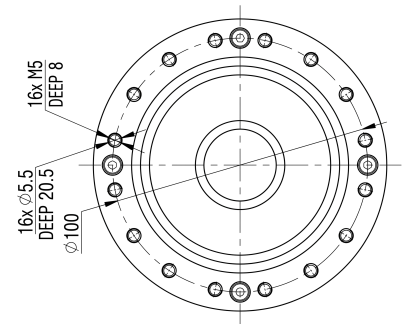
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Mounting flange outer diameter	Φ142 h7
	Mounting flange intermediate circle diameter	Φ115
	Shaft diameter	Φ85 h7
	Top boss height	5
	Upper step height	9.5
	Main body middle section height	53.5
	Middle step height	32
	Total height	84.5
	Lower step height	12
	Bottom flange height	26
	Bottom flange outer diameter	Φ147 h7
Mechanical View 2	Mounting holes - diameter and quantity	12 holes, Φ5.5 mm
	Bolt circle diameter (PCD)	Φ132 mm
	Center hole - thread and countersink	M5 thread with 8 mm countersink
	Center shaft bore diameter and tolerance	Φ5 h8
	Internal dimension (longitudinal)	5 mm
	Internal dimension (transverse)	16 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Mounting threaded hole specification	16 holes × M5 thread
	M5 threaded hole depth	8 mm depth
	Through hole diameter	16 holes × $\varnothing$ 5.5 mm
	Hole depth	20.5 mm depth
	Bolt circle diameter (PCD)	$\varnothing$ 100 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.