CATEGORY SELECTION GUIDE

Hollow Shaft Harmonic Gearboxes Category Selection Guide

Hollow-shaft harmonic gearboxes combine compact precision rotary transmission with a central through-bore for cable or tubing routing. The catalog covers one Product Platform and 40 SKUs; start with the installation envelope and bore, compare ratio, torque and speed duty, then confirm the exact SKU and integration documents.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Hollow Shaft Harmonic Gearboxes	1 Product Platforms / 40 SKUs	R01	2026-09-04

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01 Category Scope and Objective

Product catalog and suitable use

Item	Current category
Product catalog	1 Product Platform / 40 SKUs
Suitable use	Compact precision rotary transmission with a through-bore for robotic joints, automation lines, semiconductor equipment, precision machinery and layouts that route cables or tubing through the axis.

02 Typical Applications and Selection Inputs

Typical applications

Robotic joints and rotary axes
Use the through-bore to route cables or tubing through a compact joint while matching reduction ratio, torque and speed to the motion duty.

Automation and precision machinery
For rotary positioning and indexing, retain candidates by mounting envelope and bore arrangement, then confirm torque, speed and backlash at SKU level.

Semiconductor and clean-layout equipment
Record routing space, environmental conditions and duty assumptions before selecting a Product Platform and exact SKU.

Inputs to record before shortlisting

01	**Installation envelope**	Record flange, frame, through-bore, coupling and surrounding bearing interfaces.
02	**Ratio, torque and speed duty**	Record required reduction ratio, rated torque, average torque, peak torque and input-speed profile.
03	**Accuracy and life**	Record backlash, transmission accuracy requirement and target design life.
04	**Integration strategy**	Record cable or tubing routing, lubrication, sealing, temperature and service constraints.

03 Product Platform Architecture

Through-bore navigation group

The Product Platform is organized by the public catalog grouping. The group supports navigation; reduction ratio, torque, speed, bore and integration conditions must still be checked at SKU level.

High-Torque Hollow Shaft Gear Unit Product Platform
This Product Platform contains 40 SKUs and combines a central through-bore with flange mounting for compact rotary transmission. Retain candidates by envelope, bore and duty, then confirm the exact SKU against published values and engineering documents.

04 Product Platform Directory

Current Product Platforms

High-Torque Hollow Shaft Gear Unit Product Platform
This Product Platform contains 40 SKUs with a central through-bore and flange-mounted compact transmission architecture. Use the published reduction ratio, torque, speed, frame and interface values to retain candidates, then confirm the exact SKU against bore, mounting, accuracy, duty and controlled engineering documents.
40 SKUs

05 Platform Comparison and Trade-offs

Published Product Platform selection inputs

Product Platform	Envelope / bore	Torque and speed	Integration focus
High-Torque Hollow Shaft Gear Unit Product Platform	Through-bore and flange envelope; confirm Frame Size and drawing dimensions at SKU level.	Compare Reduction Ratio, Rated Torque, Start/Stop Peak Torque, Allowable Average Torque, Maximum Input Speed and Average Input Speed.	Route cables or tubing through the bore; confirm backlash, design life, lubrication, sealing and mounting.

06 Application Sizing and Interface Planning

Recommended selection sequence

01 **Confirm the mechanical envelope**
Record frame, flange, through-bore and coupling requirements before screening candidates.

02 **Check ratio, torque and speed**
Use the published Reduction Ratio, Rated Torque, Start/Stop Peak Torque, Allowable Average Torque and speed values for preliminary screening.

03 **Check accuracy and service target**
Compare Backlash and Design Life against the motion and service requirement.

04 **Confirm routing and integration**
Confirm cable/tubing routing, lubrication, sealing, bearings and mounting details.

05 **Confirm the SKU**
Confirm the remaining SKU against its complete parameter set and controlled engineering documents.

07 SKU Refinement

Parameters used to move from Product Platform to SKU

Standard parameter	Refinement role	Published values
Frame Size	Use the published frame value to retain a mechanical envelope candidate.	14 / 17 / 20 / 25 / 32 / 40 / 45 / 50 / 58
Reduction Ratio	Match the reduction ratio to output speed and reflected load.	100 / 120 / 50 / 80 / 160
Rated Torque	Compare continuous output torque with the required operating torque.	10 / 7 / 31 / 21 / 29 / 52 / 33 / 44 / 87 / 51 / 82 / 178 / 99 / 153 / 345 / 382 / 268 / 459 / 523 / 407 / 611 / 688 / 484
Start/Stop Peak Torque	Check starting and stopping peaks against acceleration and reversal events.	36 / 23 / 30 / 70 / 44 / 56 / 107 / 113 / 120 / 73 / 96 / 204 / 217 / 229 / 127 / 178 / 433 / 459 / 484 / 281 / 395 / 738 / 802 / 841 / 523 / 675 / 982 / 1070 / 918 / 1247 / 1404 / 1223
Allowable Average Torque	Check the duty-cycle average torque; do not substitute it for a peak value.	14 / 9 / 51 / 34 / 35 / 64 / 44 / 61 / 140 / 72 / 113 / 281 / 217 / 484 / 586 / 255 / 369 / 650 / 806 / 507 / 866 / 1057 / 675
Maximum Input Speed	Confirm the input-speed ceiling for the selected ratio and duty.	8500 / 7300 / 6500 / 5600 / 4800 / 4000 / 3800 / 3500
Average Input Speed	Check expected average input speed over the duty cycle.	3500 / 3000 / 3500 / 3500 / 3000 / 2500 / 3500
Backlash	Use the published backlash value when assessing reversal accuracy and positioning behavior.	□20
Design Life	Compare design-life value with the project service target and duty assumptions.	15000 / 10000 / 10000 / 15000
Weight	Include exact SKU weight in moving-mass and mounting calculations where listed.	0.7 / 0.99 / 1.32 / 2.02 / 4.2 / 7.2 / 6.5 / 14.5

SKU confirmation sequence

01 **Filter by envelope and ratio**
Retain the Product Platform and SKUs that fit the mechanical envelope, through-bore and required reduction ratio.

02 **Check torque and speed duty**
Check rated, average and peak torque together with maximum and average input speed.

03 **Confirm accuracy and life**
Use exact SKU values for backlash and design-life checks.

04 **Confirm the SKU**
Confirm bore, mounting, lubrication, sealing and controlled documents for the exact SKU.

08 Engineering Information Checklist

Record before RFQ or engineering evaluation

01	**Motion function**	Axis function, direction, ratio, output speed and motion profile.
02	**Load and duty**	Continuous, average and peak torque, duty cycle and thermal assumptions.
03	**Mechanical interface**	Frame, flange, through-bore, mounting, bearing arrangement and coupling.
04	**Accuracy and life**	Backlash, transmission accuracy, repeatability target and design life.
05	**Environment and integration**	Cable/tubing routing, lubrication, sealing, contamination, temperature and service conditions.
06	**Required documents**	SKU Product Datasheet, Dimensional & Integration Guide, 2D drawing and controlled 3D resources.

09 Engineering Use and Verification Notice

Controlled engineering documents

01	**SKU Product Datasheet**	Use the current document for exact SKU parameters and configuration verification.
02	**Dimensional & Integration Guide**	Use the applicable guide and 2D drawing for envelope, mounting, bore, connector and installation details.
03	**Controlled 3D resources**	Request STEP or native CAD for the exact SKU through the controlled engineering-file process.

Final verification statement

This guide supports preliminary Product Platform and SKU selection. Before design freeze, procurement or use, verify the exact SKU, mechanical and electrical interfaces, application loads, environmental conditions and current controlled engineering documents. Do not derive missing torque, compatibility or performance values from a SKU code, Product Platform name, adjacent SKU or a single rated value.