

CATEGORY SELECTION GUIDE

Harmonic Component Sets Category Selection Guide

Harmonic component sets provide the wave generator, flexspline and circular spline for direct integration into a host mechanism. The catalog covers 2 Product Platforms and 62 SKUs. Retain candidates by flexspline form and installation architecture, then compare reduction ratio, torque duty, input speed and the exact integration dimensions before confirming the SKU.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Harmonic Component Sets	2 Product Platforms / 62 SKUs	R01 2026-09-04

CONTENTS

01	Category Scope and Objective
02	Typical Applications and Selection Inputs
03	Product Platform Architecture
04	Product Platform Directory
05	Platform Comparison and Trade-offs
06	Application Sizing and Interface Planning
07	SKU Refinement
08	Engineering Information Checklist
09	Engineering Use and Verification Notice

01 | Category Scope and Objective

Product catalog and suitable use

Item	Current category
Product catalog	2 Product Platforms / 62 SKUs
Suitable use	Directly integrated precision reduction for robotic joints, compact automation, semiconductor equipment, medical equipment and other motion axes where the surrounding bearing, housing and output structure are designed by the machine integrator.

02 | Typical Applications and Selection Inputs

Typical applications

Robotic joints and compact axes Use component sets where the transmission must be integrated directly into the joint structure and the project can define its own bearings, housing and output interface.	Precision automation and semiconductor equipment For positioning axes, retain candidates by installation architecture and ratio, then confirm backlash, torque, speed and component alignment at SKU level.	Medical and analytical equipment For compact precision mechanisms, record duty, environment, life target and integration tolerances before retaining a Product Platform.
---	---	--

Inputs to record before shortlisting

01	Integration architecture	Record the available axial and radial envelope, flexspline form, surrounding bearings, output structure and mounting stack.
02	Ratio and motion duty	Record reduction ratio, continuous torque, average torque, peak events, input speed and duty cycle.
03	Accuracy and life	Record backlash, positioning requirement, reversal behavior and target service life.
04	Assembly conditions	Record component alignment, wave-generator connection, lubrication, sealing, temperature and contamination limits.

03 | Product Platform Architecture

Flexspline-form navigation

The two Product Platforms are separated by cup-form and hat-form component architecture. This distinction guides mechanical integration; it is not a substitute for checking ratio, torque, speed, backlash, dimensions and life for the exact SKU.

High-Torque Cup Component Set Product Platform This Product Platform contains 28 SKUs. Published standard values include Frame Size: 14 / 17 / 20 / 25 / 32 / 40; Reduction Ratio: 100 / 120 / 50 / 80 / 160; Rated Torque: 10 / 7 / 31 / 21 / 29 / 52; Start/Stop Peak Torque: 36 / 23 / 30 / 70 / 44 / 56; Maximum Input Speed: 8500 / 7300 / 6500 / 5600 / 4800 / 4000; Backlash: $\square$ 20. Cup-form flexspline architecture for direct integration where the cup wall and rigid flange fit the host mechanism. Confirm wave-generator bore/keyway, alignment and the surrounding bearing arrangement.	High-Torque Hat Component Set Product Platform This Product Platform contains 34 SKUs. Published standard values include Frame Size: 14 / 17 / 20 / 25 / 32 / 40; Reduction Ratio: 100 / 120 / 50 / 80 / 160; Rated Torque: 10 / 7 / 31 / 21 / 29 / 52; Start/Stop Peak Torque: 36 / 23 / 30 / 70 / 44 / 56; Maximum Input Speed: 8500 / 7300 / 6500 / 5600 / 4800 / 4000; Backlash: $\square$ 20. Hat-form flexspline architecture for direct integration where the flanged hat geometry matches the output and housing arrangement. Confirm wave-generator bore/keyway, alignment and support structure.
---	--

04 | Product Platform Directory

Current Product Platforms



High-Torque Cup Component Set Product Platform

This Product Platform contains 28 SKUs. Published standard values include Frame Size: 14 / 17 / 20 / 25 / 32 / 40; Reduction Ratio: 100 / 120 / 50 / 80 / 160; Rated Torque: 10 / 7 / 31 / 21 / 29 / 52; Start/Stop Peak Torque: 36 / 23 / 30 / 70 / 44 / 56; Maximum Input Speed: 8500 / 7300 / 6500 / 5600 / 4800 / 4000; Backlash: ± 20 . Cup-form flexspline architecture for direct integration where the cup wall and rigid flange fit the host mechanism. Confirm wave-generator bore/keyway, alignment and the surrounding bearing arrangement.

28 SKUs



High-Torque Hat Component Set Product Platform

This Product Platform contains 34 SKUs. Published standard values include Frame Size: 14 / 17 / 20 / 25 / 32 / 40; Reduction Ratio: 100 / 120 / 50 / 80 / 160; Rated Torque: 10 / 7 / 31 / 21 / 29 / 52; Start/Stop Peak Torque: 36 / 23 / 30 / 70 / 44 / 56; Maximum Input Speed: 8500 / 7300 / 6500 / 5600 / 4800 / 4000; Backlash: ± 20 . Hat-form flexspline architecture for direct integration where the flanged hat geometry matches the output and housing arrangement. Confirm wave-generator bore/keyway, alignment and support structure.

34 SKUs

05 | Platform Comparison and Trade-offs

Architecture and integration comparison

Product Platform	SKUs	Selection focus
High-Torque Cup Component Set Product Platform	28 SKUs	Cup-form flexspline architecture for direct integration where the cup wall and rigid flange fit the host mechanism. Confirm wave-generator bore/keyway, alignment and the surrounding bearing arrangement.
High-Torque Hat Component Set Product Platform	34 SKUs	Hat-form flexspline architecture for direct integration where the flanged hat geometry matches the output and housing arrangement. Confirm wave-generator bore/keyway, alignment and support structure.

06 | Application Sizing and Interface Planning

From application inputs to SKU

01	Retain by integration architecture Use the available envelope, flexspline form and surrounding bearing/output structure to retain Product Platforms.
02	Match ratio and operating point Compare Reduction Ratio, Rated Torque, Allowable Average Torque and the required speed profile.
03	Check peak events and life Check Start/Stop Peak Torque, Instantaneous Maximum Torque and Design Life against the duty cycle.
04	Confirm component interfaces Confirm Wave Generator Bore U, Wave Generator Keyway W, Wave Generator Dimension T, mounting tolerances and lubrication.
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

[illegible]

Lightweight SKU confirmation sequence

- 01 Filter by architecture and frame**
Retain SKUs with the required flexspline form and frame value.
- 02 Filter by ratio and torque duty**
Check ratio, rated torque, average torque and peak events together.
- 03 Check speed, accuracy and life**
Use the exact SKU values for input speed, backlash and design life.

04 Confirm integration dimensions

Check wave-generator bore, keyway and axial dimensions before confirming the SKU.

08 | Engineering Information Checklist

Record before RFQ or engineering evaluation

01	Motion function	Axis function, direction, ratio, input speed and output motion profile.
02	Load and duty	Continuous, average and peak torque, reversals, duty cycle and thermal assumptions.
03	Mechanical integration	Envelope, flexspline form, mounting, bearing arrangement, output structure and shaft interface.
04	Accuracy and life	Backlash, positioning target, repeatability requirement and service-life target.
05	Assembly and environment	Alignment, tolerances, lubrication, sealing, contamination and temperature.
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 component interfaces, tolerances, mounting and lubrication 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, component alignment, bearing and housing design, torque and speed duty, lubrication, environmental conditions and current controlled engineering documents. Do not derive missing torque, compatibility, dimensions or performance values from a SKU code, Product Platform name, adjacent SKU or a single rated value.