

CATEGORY SELECTION GUIDE

High-Precision RV Reducer Category Selection Guide

High-precision RV gearboxes distribute load through their internal reduction mechanism to convert high-speed servo-motor input into a lower-speed, higher-torque coaxial output for robot joints and precision rotary axes. Product Platform and SKU differences include installation envelope, ratio, stage count, torque, speed, precision, shaft interface and external-load capability.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
High-Precision RV Reducers	4 Product Platforms / 63 SKUs	R01 2026-09-04

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01 | Category Scope and Objective

Product catalog and suitable use

Item	Category scope
Product catalog	4 Product Platforms / 63 SKUs
Suitable use	Compact coaxial reduction for servo-driven rotary axes where envelope, ratio, torque, speed, precision and external shaft loads must be considered together.

02 | Operating Principle and Typical Applications

RV reduction principle

The servo motor drives the input member while the reduction mechanism distributes load through internal rolling elements to provide a lower-speed, higher-torque coaxial output. Stage count, ratio and output connection shape the usable operating window and must be confirmed at SKU level.

Typical applications

Servo positioning axes Compact reduction for rotary axes that require controlled speed, torque multiplication and repeatable positioning.	Robot and automation joints Rotary joints where package envelope, backlash, rigidity and external shaft loads influence the drivetrain.	Indexing and transfer axes Repeated indexing or motion-transfer duties where ratio, speed, duty cycle and load path must be resolved together.
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03 | Application Record Checklist

Record before shortlisting

01	Installation envelope	Record frame size, flange space, total length, output-shaft geometry and assembly clearances.
02	Servo motor interface	Record motor power, shaft geometry, pilot, bolt pattern and adapter interface.
03	Motion profile	Record input speed, target output speed, ratio, acceleration, dwell time and cycles.
04	Torque demand	Separate continuous output torque from acceleration, deceleration and emergency-stop events.
05	Precision and stiffness	Record permitted backlash, positioning response and torsional-rigidity requirement.
06	External loads	Record radial load, axial load, load direction and overhung distance.

04 | Product Platform Directory

Four Product Platforms

 RV Reducer Product Platform H01 9 SKUs	 RV Reducer Product Platform H02 6 SKUs
 RV Reducer Product Platform H03 29 SKUs	 RV Reducer Product Platform H04 19 SKUs

05 | Product Platform Selection Path

Screen in this order

01	Installation envelope Filter by Frame Size, flange and shaft geometry before comparing performance.
02	Continuous motion point Match Reduction Ratio, Rated Output Torque and Maximum Output Speed to the continuous duty.
03	Peak events and load path Check Instantaneous Max Torque, Start-Stop Allowable Torque, Allowable Output Axial Force and Allowable Output Bending Moment.
04	Motor and output interfaces Confirm Input Shaft Type, Output Shaft Type, Input Shaft Diameter and Adapter Thread.
05	Product Platform navigation Use the platform directory to organize the remaining candidates; overlapping ranges are not automatic exclusions.
06	Exact SKU confirmation Confirm the exact SKU and its complete parameter set before design freeze.

06 | Product Platform Parameter Comparison

Published standard-parameter ranges by Product Platform

Values are distinct standard display values or spans derived from SKU records. Values in one row are not necessarily combinable; confirm the exact SKU.

Product Platform	SKUs	Frame Size	Reduction ratio	Stage count	Rated Output Torque	Instantaneous Max Torque	Backlash
RV Reducer Product Platform H01	9	320 / 200 / 50 / 100	220.8 / 104.6, 122, 156, 281 / 80, 107, 125, 151, 177 / 76.3, 100.2, 124.7, 151.6, 214.3, 264.6 / 80, 107, 125, 151, 177, 234	—	3136 / 1916 / 490 / 980	15680 / 9800 / 2450 / 4900	1
RV Reducer Product Platform H02	6	35 / 280 / 320	—	2	—	—	—
RV Reducer Product Platform H03	29	190 / 250 / 35 / 150 / 280 / 320 / 370 / 65 / 220	—	—	—	—	—
RV Reducer Product Platform H04	19	150 / 190 / 280 / 35	—	—	—	—	—

07 | Platform Comparison and Engineering Trade-offs

Ratio, stage count and speed Higher reduction can change stage count, package length and output speed. Confirm the exact ratio-stage combination at SKU level.	Continuous torque versus peak events Rated Output Torque supports continuous screening; peak fields are required for acceleration, deceleration and emergency events.
Backlash versus torsional rigidity Backlash and torsional rigidity describe different behaviors and must be checked together for reversal and settling.	External load path Radial and axial limits depend on the stated measurement point, direction and overhung distance.

08 | SKU Refinement and Integration Checklist

Five-step SKU refinement

Use these dimensions after the Product Platform shortlist. Parameter values remain SKU-specific and must not be recombined across rows.

Refinement step	Initial filter	Confirm at SKU	Selection purpose
Installation and motor fit	Frame Size / Input Shaft Type	Input Shaft Diameter / Adapter Thread	Retain SKUs that fit the envelope and motor interface.
Ratio and architecture	Reduction Ratio / Available Reduction Ratios	Stage Count	Select the ratio-stage combination as one SKU configuration.
Torque and speed	Rated Output Torque / Maximum Output Speed	Instantaneous Max Torque	Match continuous duty, then check transient capability.
Precision behavior	Backlash	Torsional Rigidity / Transmission Accuracy	Confirm reversal and loaded positioning behavior.
External load path	Allowable Output Axial Force	Allowable Output Bending Moment	Confirm both load directions and the installation load path.

Integration checklist

01	Confirm operating point	Confirm the exact SKU against continuous torque, peak events, input speed, duty cycle and service-life requirements.
02	Confirm mechanical fit	Confirm frame, output geometry, adapter, shaft fit, alignment, fasteners, clearances and external load path.
03	Confirm precision behavior	Check backlash and torsional rigidity under actual reversal and load conditions.
04	Request controlled documents	Obtain the current 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 datasheet for exact-SKU ratings, limits, units and operating conditions.
02	Dimensional & Integration Guide	Use the current guide for dimensions, tolerances, motor adapter, output connection, alignment, lubrication, sealing and installation details.
03	2D and controlled 3D resources	Use released 2D drawings and controlled STEP or native CAD resources for interface validation and packaging checks.

Final verification statement

Before design freeze, verify the selected SKU against its current Product Datasheet and Dimensional & Integration Guide, including frame and flange dimensions, motor-shaft fit, ratio and stage count, continuous and peak torque, backlash, torsional rigidity, radial and axial loads, speed, lubrication, sealing, mounting orientation and controlled drawing/CAD revision. Values not stated in the standard parameter set must be resolved from controlled engineering documents; they must not be inferred from a public SKU code or another Product Platform.