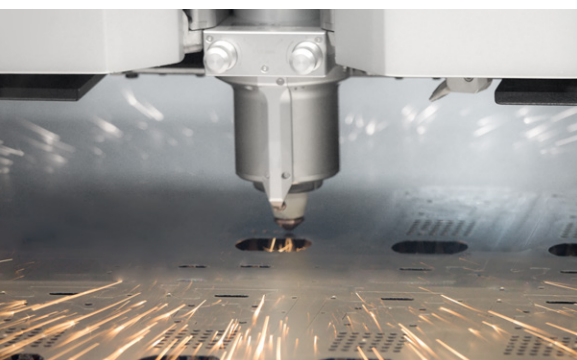


Nidec

FLEXWAVE

An evolution in strain wave gear technology



NIDEC-SHIMPO CORPORATION

FLEXWAVE

Take your robot to the next level with FLEXWAVE

NIDEC-SHIMPO has a history of supplying the leading robotics and machine tool manufacturers in Japan. Our loyal customers within these industries strongly urged us to develop our own harmonic gear technology and leverage our primary competencies – modularity and flexibility of the core design and highly consistent production in mass volume – to help them become more competitive in the global marketplace. After extensive effort to refine harmonic gear technology and to manufacture at a level that exceeds customer expectations, NIDEC-SHIMPO has released FLEXWAVE.

FLEXWAVE is a compact harmonic gear reduction mechanism that achieves zero backlash, as well as exceptional positioning accuracy, torque density and repeatability. FLEXWAVE consists of three internal elements – the flexspline, the circular spline and the wave generator. The elasticity properties of the flexspline and the teeth differential between the flexspline and the circular spline result in its unique reduction characteristics.

FLEXWAVE comes in various form factors, including component sets, simple contained assemblies and complete gear units. Cup, hat, solid and hollow input shaft configurations give engineers true freedom in design. FLEXWAVE is also available in Ultra-Flat and High Torque variations for applications with demanding footprint and performance requirements. Dimensions are interchangeable against industry standards, making it easier to implement in legacy equipment. When compared with other gear technologies, FLEXWAVE offers the following advantages:

- › *Exceptional Repeatability and Positional Accuracy*
- › *Zero Backlash*
- › *High Torque Density*
- › *High Efficiency Ratings*
- › *High Reduction Ratios in a Single Stage*
- › *Lightweight and Compact*
- › *High Torsional Stiffness*
- › *Fully Back Drivable*

These characteristics enable FLEXWAVE to be the superior choice for Robotics, Machine Tool, Medical Equipment, Semiconductor Manufacturing, Satellite Communications and Assembly Automation applications.

WPC SERIES

Component Sub-assembly

The core strain wave gear elements without any supplemental components that provide additional bearing support, the structure for containment, and specialized input or output configurations.

Series Features

- › Simplest and most flexible design option
- › Cost effective at high volumes
- › Allows complete integration into equipment
- › Most compact of all series
- › High torque option available

Frame Sizes	28, 35, 42, 50, 63, 80
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Reduction Ratios	50, 80, 100, 120, 160
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Max. Torque Output	8.3Nm - 346Nm
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Form Factors	Cup, Ultra-Flat
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WPS SERIES

Simple Contained Assembly

The core strain wave gear elements, with additional cross roller bearing support is included within this assembly. No housing is provided for containment, requiring the designer to integrate into their equipment substructure.

Series Features

- › Self-supported output section
- › Versatile to allow for total integration
- › Variety of output mounting options
- › Compact design
- › High torque option available

Frame Sizes	28, 35, 42, 50, 63, 80
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Reduction Ratios	50, 80, 100, 120, 160
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Max. Torque Output	8.3Nm - 346Nm
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Form Factors	Hat, Hollow, Ultra-Flat
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WPU SERIES

Complete Unit Assembly

The core strain wave gear elements and cross roller bearing completely contained within a substructure. Also included is an output flange to enable a variety of mounting configurations. The Complete Unit Assembly would be partially integrated into machinery.

Series Features

- › Simplified configuration for installation
- › A stand-alone structurally rigid assembly
- › Self-supported output section
- › Hollow, solid or flange input
- › High torque option available

Frame Sizes	28, 35, 42, 50, 63, 80
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Reduction Ratios	50, 80, 100, 120, 160
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Max. Torque Output	8.3Nm - 346Nm
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Form Factors	Cup, Hollow, Input Shaft, Ultra-Flat
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FLEXWAVE FORM FACTORS AND MOUNTING CONFIGURATIONS



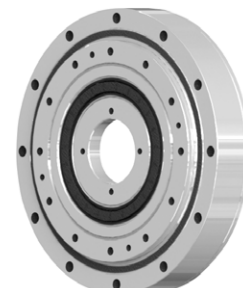
WPC SERIES
Component Sub-assembly
Cup Housing Style



WPC SERIES
Component Sub-assembly
Cup Housing Style, Ultra-flat



WPS SERIES
Simple Contained Assembly
Hat Housing Style



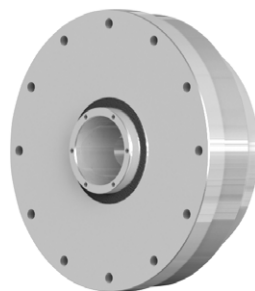
WPS SERIES
Simple Contained Assembly
Hat Housing Style, Ultra-flat



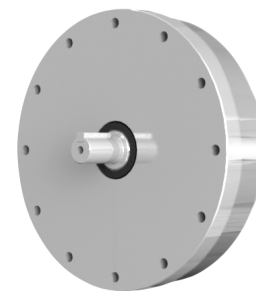
WPU SERIES
Complete Unit Assembly
Cup Housing Style



WPU SERIES
Complete Unit Assembly
Cup Housing Style, Ultra-flat



WPU SERIES
Complete Unit Assembly
Hat Housing Style, Hollow Shaft



WPU SERIES
Complete Unit Assembly
Hat Housing Style, Solid Shaft Input

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