BE UP TO GLOBAL STANDARD

GTR gearmotors contribute to customers around the globe.
We support “global demands” that will expand in the future.

NISSEI CORPORATION
Headquarters and Main Plant

BROTHER INTERNATIONAL KOREA CO., LTD.
Brother Group’s sales subsidiary in South Korea

Nissei Gear Motor Mfg. (Changzhou) Co., Ltd.
(manufacturing subsidiary in China)

BROTHER INDUSTRIES (U.S.A.) INC.
Brother Group’s manufacturing subsidiary in the U.S.A.

BROTHER INTERNATIONAL CORPORATION (U.S.A.)
Brother Group’s sales subsidiary in the U.S.A.

NISSEI TRADING (SHANGHAI) CO., Ltd
(sales subsidiary in China)

NISSEI CORPORATION

Company Overview

Trade name	NISSEI CORPORATION
Capital	3.475 billion yen
Location of headquarters	Anjo City, Aichi Prefecture
Plants	Main plant, Anjo Minami Plants, Gearmotors No.2 Plant
Description of business	Reducers, variable speed reducers, small gears (made-to-order gears), etc.

Sales and Marketing Management

Overseas Sales Sect.
1-1, Inoue, Izumi-cho, Anjo City, Aichi Prefecture
TEL: <0566>92-5312
FAX: <0566>92-7002
E-mail: oversea@nissei-gtr.co.jp

https://www.nissei-gtr.global/en/

If you have any problems, or need any further information, please visit the NISSEI CORPORATION website.

NISSEI CORPORATION website
For introduciton website of NISSEI CORPORATION

Selection Tool
For product search or CAD data download

High Stiffness Reducers
For introduciton website of High Stiffness Reducers

Digital catalog
For browsing the comprehensive catalog of gearmotors

2026.7

SERVO GEARBOXES GUIDE

Optimal reducers for evolving servo motors.

Two brands offering optimal reducers compatible with the evolution of servo motors.

GTR

High Precision Reducers for Servo Motors

Power Class 100 W to 3000 W
Reduction Ratio 1/3 to 1/240

Parallel Shaft/Planetary (APG)

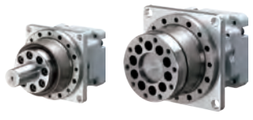
Right Angle Hollow Bore/ Right Angle Shaft (AFC)

Low Backlash Specification (AG3,AH2,AF3)

UXiMO

High Stiffness Reducers

Power Class 100 W to 750 W
Reduction Ratio 1/19 to 1/119



Gear Head Type

NISSEI CORPORATION

GTR

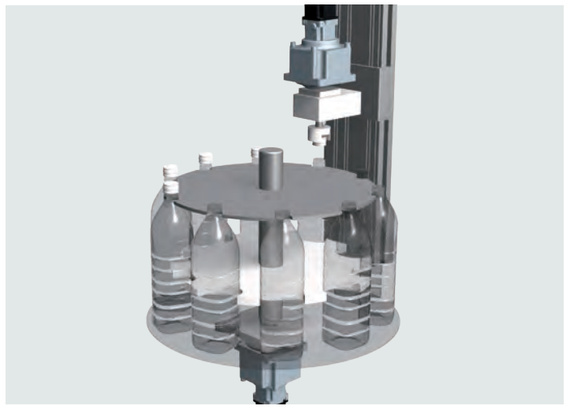
A wide range of power classes and reduction ratios to accommodate various applications.

Supporting motor power from 100 to 3000 W and instantaneous input speeds of up to 7000 r/min, the APG and AFC types deliver high torque and high efficiency, making them suitable for diverse industries—from food and distribution (conveyors, packaging) to manufacturing (printing, cutting).

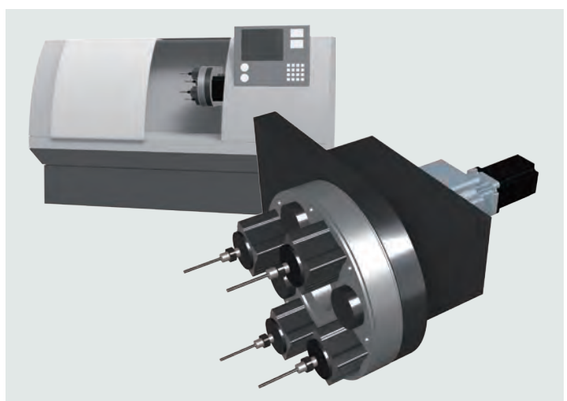
■ **Examples of mountable servo motors manufacturers:** [Japan] SANYO DENKI, Mitsubishi Electric, YASKAWA Electric, KEYENCE, FANUC, etc.
[International] Rockwell Automation, INOVANCE, etc.

Examples of application (APG type)

Liquid filling machine (rotary pump)

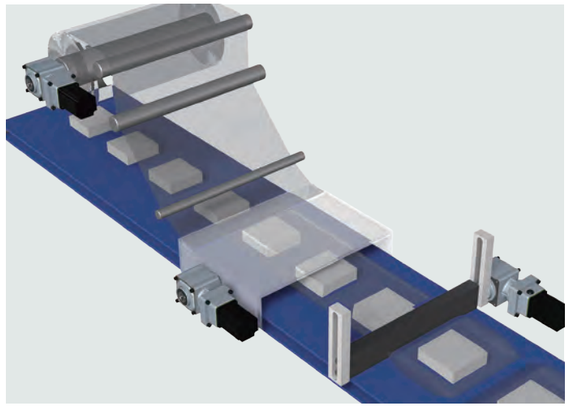


Liquid filling machine (bottle alignment/cap tightening)

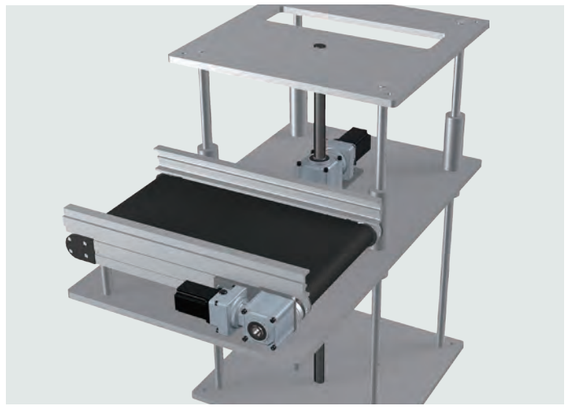


Machine tool (turret head rotation on a automatic lathe)

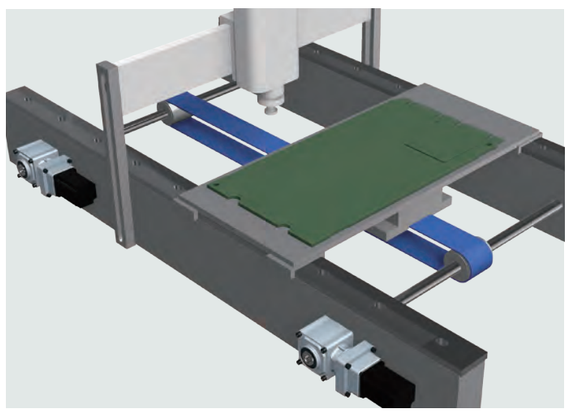
Examples of application (AFC type)



Horizontal pillow packaging machine (roll feeding/conveyor transport)



Lifting Machine (Material lift)



PCB Printing Machines (Automated PCB transfer)

UXiMO

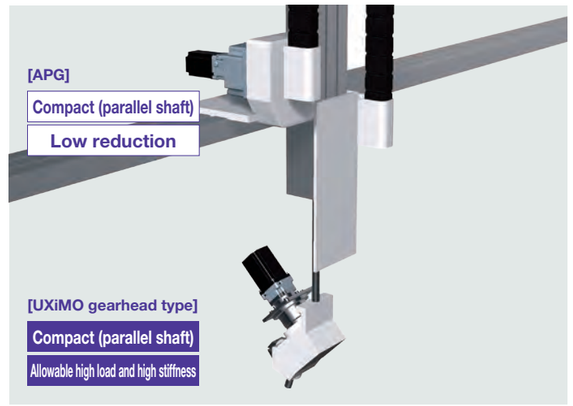
Achieving high precision drive with high stiffness and high torque.

Making precision equipment such as machine tools, semiconductor manufacturing equipment, and industrial robots powerful and speedy.
In addition, the compact design allows flexible mounting to devices and configurations. Optimal for applications requiring high-precision performance.

■ **Examples of mountable servo motors manufacturers:** [Japan] SANYO DENKI, Mitsubishi Electric, YASKAWA Electric, KEYENCE, FANUC, etc.
[International] Allen Bradley, Kinco, etc.

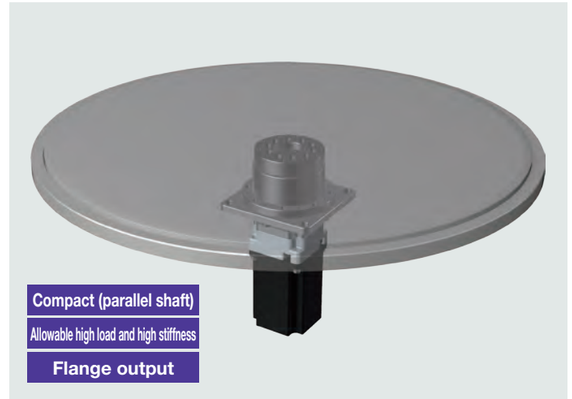
Examples of application (GearHead type)

Hoist device

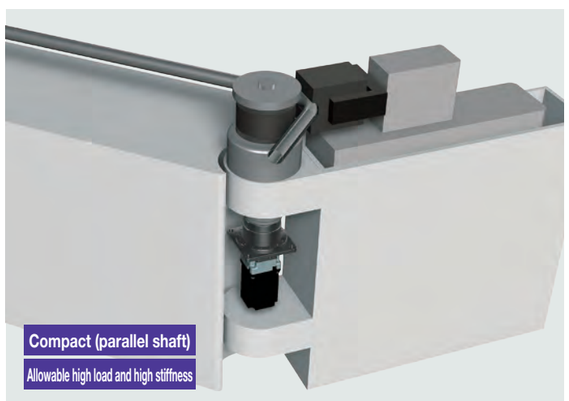


Loading device (X, Y, Θ axes)

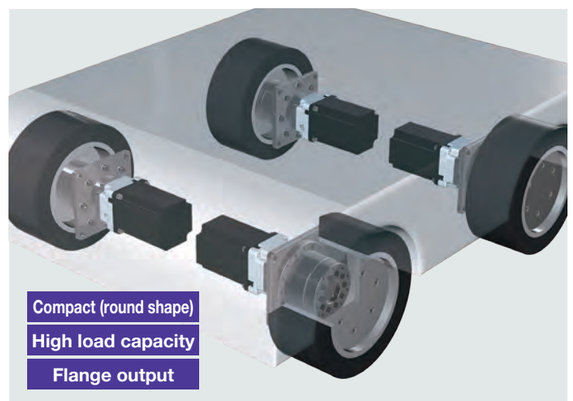
Robot transport system (rack and pinion drive)



Turntable (rotation axes)



Molding machine (bender)

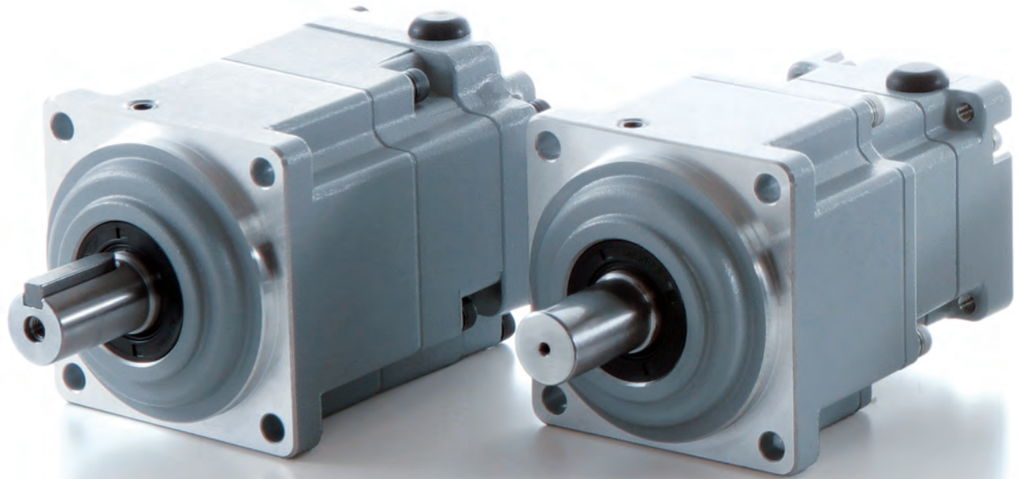


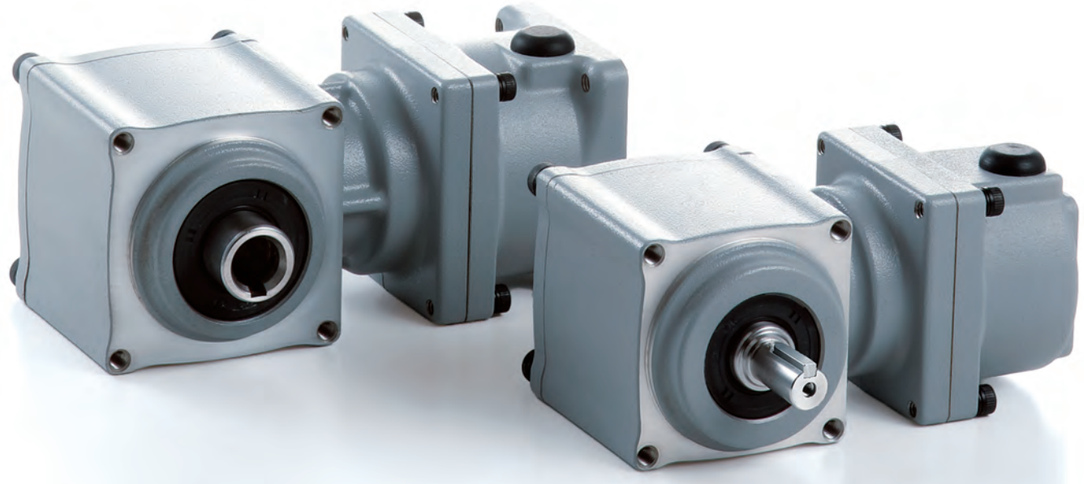
AGV / AMR (wheel drive unit)

APG and AFC Types

Catch up with evolution of servo motors Seeking Speed and Torque at the same time.

The speed and performance of servo motors is improving year by year.
To fully harness that power, our APG and AFC types High Precision Gearboxes for Servo Motors have evolved.
Delivering high speed, high torque, and high efficiency, these models contribute to faster cycle times in production equipment such as food packaging machines, enabling a dramatic increase in production output.





The output shaft has also evolved through shape changes and additions.

We changed the standard specifications to include shaft end tapped hole and added the much-requested straight shaft to the standard lineup.

■ Shaft End Tap Sizes

Frame Size	Tap size	
	APG Type	AFC Type
10	—	M3 × 8
12	M5 × 12	M5 × 12
15	—	M5 × 12
18	M6 × 15	M6 × 15
22	M8 × 20	M8 × 20
28	M8 × 20	M8 × 20
32	—	M10 × 25

High speed

Allowable maximum
7000r/min

Supporting instantaneous input rotational speed of 7,000 r/min contributes to speed increases and takt improvement.

Supporting high rotational speeds of 7,000 r/min significantly improves the driving speeds of equipment. These upgrades enable operation at high rotational speeds that could not be supported previously. The increase in equipment productivity leads to the expectation of more items produced per hour.

High torque

Allowable maximum rate
350%

Allowable peak torque of startup/stop, maximum up to 350 % supported.

The peak torque at startup and stop is improved to a maximum of 350 %. They provide stable acceleration/deceleration and high-precision positioning, even under high-inertia loads.
In addition to improving cycle times by shortening acceleration/deceleration times, they help reduce the risk of overload and enable motor downsizing.

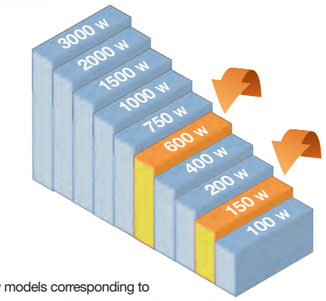
High efficiency

Maximum point increase
APG **10point** AFC **13point**

Transmission efficiency improved by 10+ Points

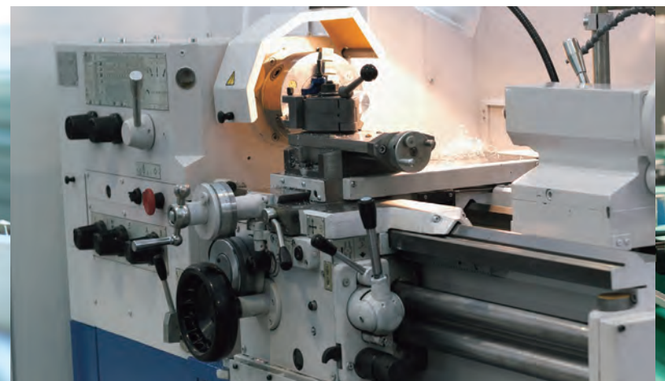
Transmission efficiency has improved by an average of 4 points for the APG type and 5 points for the AFC type.
This enables reduced energy costs, more compact equipment, and extended service life.
These models have evolved to deliver not only higher performance but also enhanced environmental sustainability.

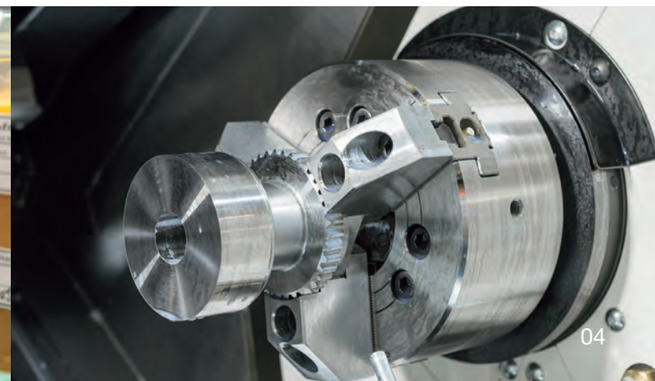
Add applicable motor power (APG only)

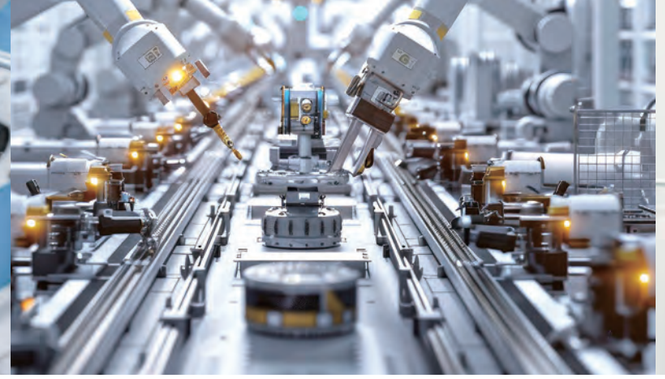


New models corresponding to 150 W and 600 W has joined a lineup

Full utilization of the power of the servo motor contributes to productivity improvement.







Efficient motion transforms cycle times

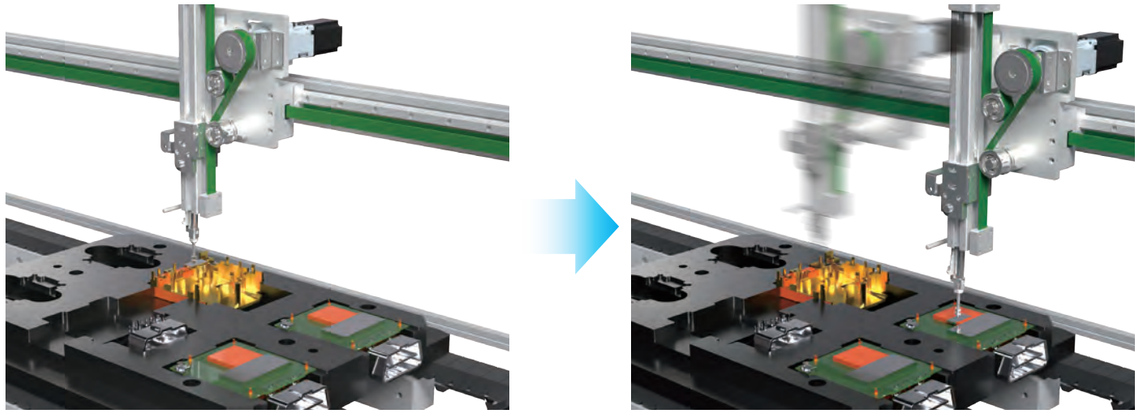
High-precision gearboxes for servo motors maximize servo motor performance by enabling higher speed, higher torque, and higher efficiency, thereby significantly improving productivity and stability.

Improved cycle times through reduced acceleration/deceleration times

Exceptional stability even under high-inertia loads

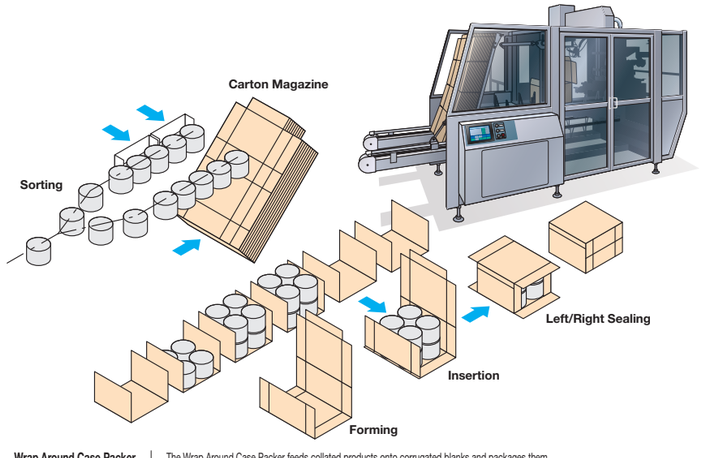
**The lineup includes the APG type (parallel shaft) with a planetary mechanism and the AFC type (right angle shaft) featuring tapered roller bearings, allowing you to select the optimal type for your application.
Furthermore, because these performance improvements are achieved while maintaining the same dimensions as conventional types, they offer easy drop-in replacement for existing equipment. This enables higher-performance systems without the need for design changes.**

APG Type Application Examples



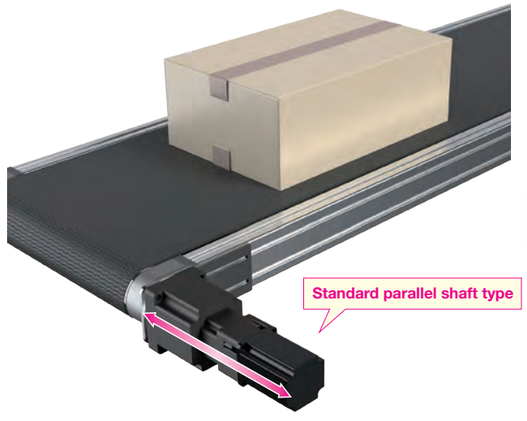
High-Speed Pick-and-Place Equipment

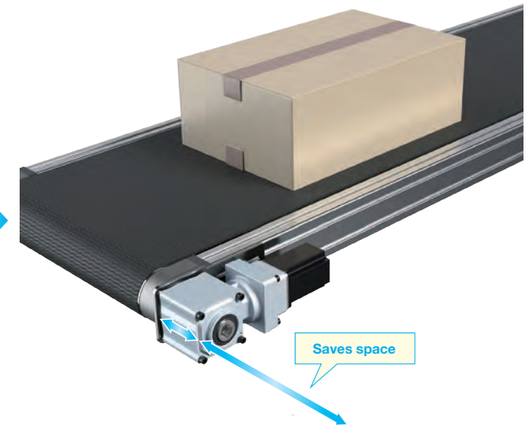
Vertical pillow packaging (roll feeding/conveyor transport)



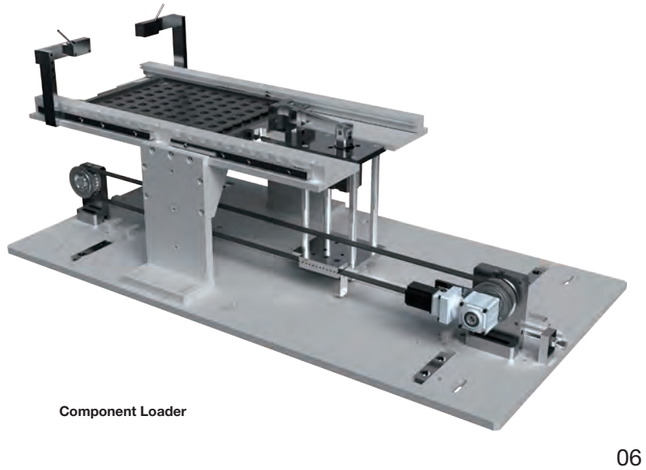
Wrap Around Case Packer (Operation Diagram) | The Wrap Around Case Packer feeds collated products onto corrugated blanks and packages them. Since multiple processes are integrated into a single machine, high precision motors are required to keep every step perfectly synchronized.

AFC Type Application Examples

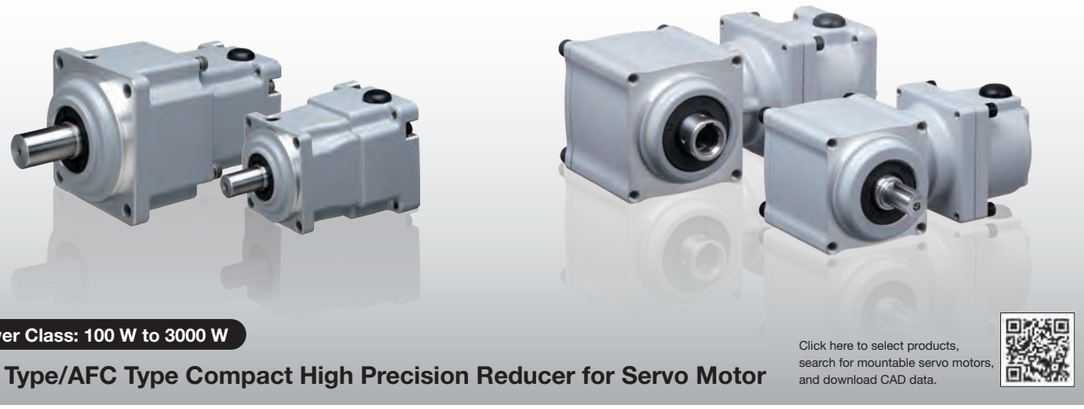




Lifting Machine (Material lift)



Component Loader



Power Class: 100 W to 3000 W

APG Type/AFC Type Compact High Precision Reducer for Servo Motor

Click here to select products, search for mountable servo motors, and download CAD data.

Compact high precision reducer for servo motors

The high precision reducer APG type is compact and highly stiff thanks to the planetary mechanism, which contributes to making the devices smaller. In addition, the AFC type is made smaller thanks to the specially designed gear case. As it can be installed to the device at a right angle, it helps save space on the device.

Compact High Precision Reducer

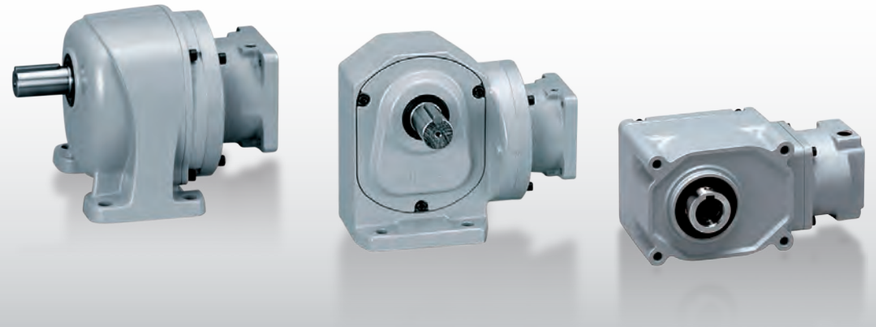
Parallel Shaft/Planetary (APG) Reduction Ratio : 1/3 to 1/100 Backlash Precision : 3 minutes/15 minutes

Power Class	Precision	Reduction Ratio									
		3	5	10	15	20	30	40	50	60	100
100 W	3 minutes 15 minutes	Frame Size 12 (□52)						Frame Size 18 (□78)			
150 W		Frame Size 12 (□52)						Frame Size 18 (□78)			
200 W		Frame Size 12 (□52)						Frame Size 18 (□78)			Frame Size 22 (□98)
400 W		Frame Size 12 (□52)		Frame Size 18 (□78)				Frame Size 22 (□98)			Frame Size 28 (□120)
600 W		Frame Size 18 (□78)			Frame Size 22 (□98)			Frame Size 28 (□120)			
750 W		Frame Size 18 (□78)			Frame Size 22 (□98)			Frame Size 28 (□120)			
1000 W		Frame Size 22 (□98)			Frame Size 28 (□120)						
1500 W		Frame Size 22 (□98)			Frame Size 28 (□120)						
2000 W		Frame Size 22 (□98)			Frame Size 28 (□120)						
3000 W		Frame Size 28 (□120)									

Right Angle Hollow Bore/Right Angle Shaft (AFC) Reduction Ratio : 1/3 to 1/60 Backlash Precision : 3 minutes/30 minutes

Power Class	Precision	Reduction Ratio											
		3	5	7.5	10	10	12	15	20	25	30	40	50	60
100 W	3 minutes 30 minutes	Frame Size 10 (□56)		Frame Size 12 (□62)		Frame Size 15 (□72)						Frame Size 18 (□78)		
200 W		Frame Size 12 (□62)	Frame Size 12 (□62)	Frame Size 15 (□72)		Frame Size 18 (□78)						Frame Size 22 (□98)		
400 W		Frame Size 15 (□72)		Frame Size 18 (□82)		Frame Size 22 (□98)						Frame Size 28 (□120)		
750 W		Frame Size 18 (□82)		Frame Size 22 (□102)		Frame Size 28 (□120)						Frame Size 32 (□135)		
1000 W		Frame Size 22 (□102)		Frame Size 28 (□120)		Frame Size 32 (□135)								
2000 W		Frame Size 28 (□120)		Frame Size 32 (□135)										
3000 W		Frame Size 32 (□135)												

Even more compact sizes—frame sizes 10 (□56) and 12 (□62)—have been added to the lineup.



Power Class: 100 W to 2000 W

AG3/AH2/AF3 Type High Precision Reducer for Servo Motor

Click here to select products, search for mountable servo motors, and download CAD data.

Wide range of mounting variations can be easily replaced with induction models.

As the induction gear motor and gear head are common, no extra design changes are needed when changing specifications. The concentric hollow shaft / concentric center pole shaft (AF3) is available with backlash accuracy of 1 minute and 3 minutes. Provides highly accurate positioning control.

High Precision Reducer

AG3 Type (Parallel Shaft) Reduction Ratio : 1/5 to 1/200 Backlash Precision: 30 arc min (Excluding some models)
AH2 Type (Right Angle Shaft) Reduction Ratio : 1/5 to 1/240 Backlash Precision: 30 arc min (Excluding some models)
AF3 Type (Concentric Hollow Bore/Concentric Solid Shaft) Reduction Ratio: 1/10 to 1/180 / 1/5 to 1/240 Backlash Precision: 1 arc min / 3 arc min / 30 arc min (Excluding some models)

	Accuracy 1 minutes / 3 minutes specification	Accuracy 30 minutes specification (excludes some models)
Parallel Shaft (leg mounting) AG3L		Reduction Ratio : 1/5 to 1/200
Parallel Shaft (flange mounting) AG3K		Reduction Ratio : 1/5 to 1/200
Orthogonal shaft (leg mounting) AH2L		Reduction Ratio : 1/5 to 1/240
Concentric hollow shaft / concentric solid shaft AF3S AF3F	Reduction Ratio 1/10 to 1/180 (Up to 1/120 only for 100 W)	Reduction Ratio : 1/5 to 1/240

UXiMO

Click here to select products, search for mountable servo motors, and download CAD data.

Gear Head type Easy connection to the motor

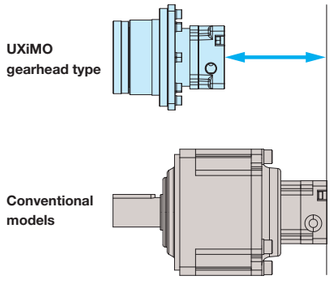
3 Frame Sizes OD: 73mm / 79mm / 93mm 6 stage Reduction 1/19, 1/29, 1/49, 1/79, 1/99, 1/119 *The 1/119 reduction ratio is only available on frame sizes 030 and 050.

Our compact reducers, which represent the highest standard, combine high precision and high stiffness through the adoption of an eccentric oscillation type reduction mechanism and high-load-capable bearings.
A variety of output shaft shapes and reduction ratios enables flexible compatibility with devices pursuing enhanced performance.

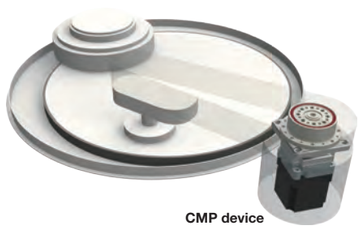
Model configuration table

Type	Frame Size	Reduction Ratio
Gear Head	010	1/19, 1/29, 1/49, 1/79, 1/99
	030	1/19, 1/29, 1/49, 1/79, 1/99,1/119
	050	1/19, 1/29, 1/49, 1/79, 1/99,1/119

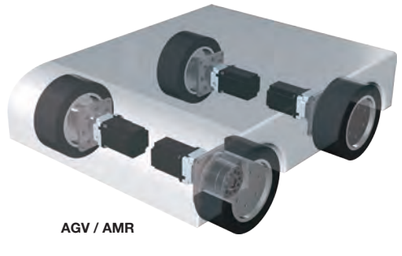
Comparison with conventional servo models



Application example



CMP device



AGV / AMR

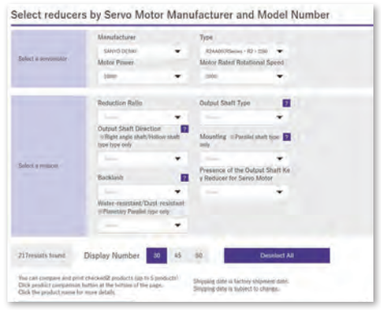
Select products, search for mountable servo motors, and download files such as CAD data from our website.

Find your reducer by searching for specific application or part number.
Download CAD data, instruction manuals, and catalogs by filtering conditions and entering usage condition values.

You can access the tool from any page via Nissei NAVI or the menu, but clicking the banner on our top page is the quickest way.

01. Search by servo motors

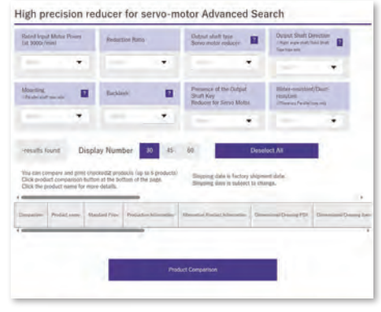
› Select reducers by Servo Motor Manufacturer and Model Number



If you already know which servo motor to use:
Select the servo motor manufacturer and specifications to find the optimal gearbox.

02. Search by spec of high precision reducer for servo motor

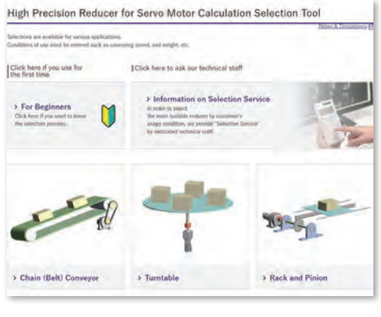
› Filter Search of High Precision Reducer for Servo Motor and High Stiffness Reducer



To narrow down by gearbox specifications:
Find the right gearbox by filtering by reduction ratio or shaft type.

03. Search using calculations based on usage conditions

› High Precision Reducer for Servo Motor Calculation Selection Tool
Select the most suitable Product based on the usage conditions of your Device



If you know your target application/equipment:
Simply enter your operating conditions, such as speed and workpiece weight, to find the optimal gearbox.