

BE UP TO GLOBAL STANDARD

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



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



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



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



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



NISSEI CORPORATION
Headquarters and Main Plant



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/>

NISSEI CORPORATION website
For introduciton website of NISSEI CORPORATION



High Stiffness Reducers
For introduciton website of High Stiffness Reducers



Selection Tool
For product search or CAD data download



Digital catalog
For browsing the comprehensive catalog of gearmotors



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

SERVO GEARBOXES GUIDE



Optimal reducers for evolving servo motors.

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



High Precision Reducers for Servo Motors

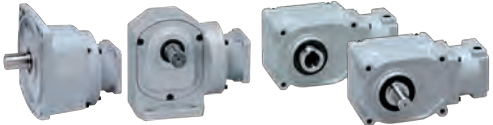
Power Class	100 W to 3000 W
Reduction Ratio	1/3 to 1/240



Parallel Shaft/Planetary (APG)



Right Angle Hollow Bore/Right Angle Shaft (AFC)

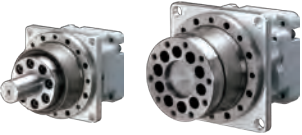


Low Backlash Specification (AG3,AH2,AF3)



High Stiffness Reducers

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



Gear Head Type

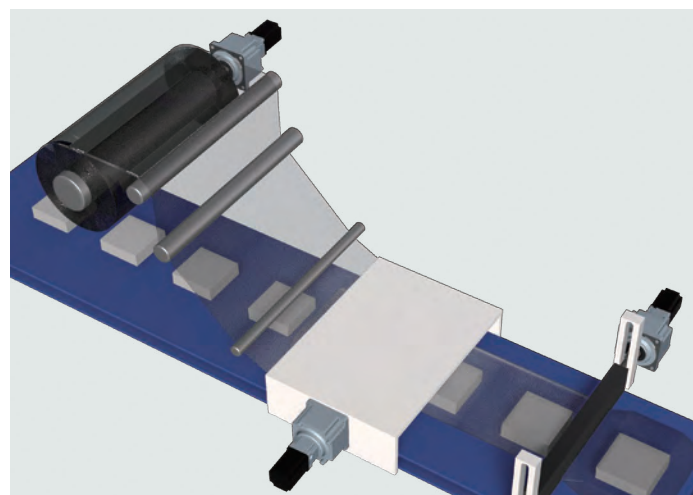
NISSEI CORPORATION

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

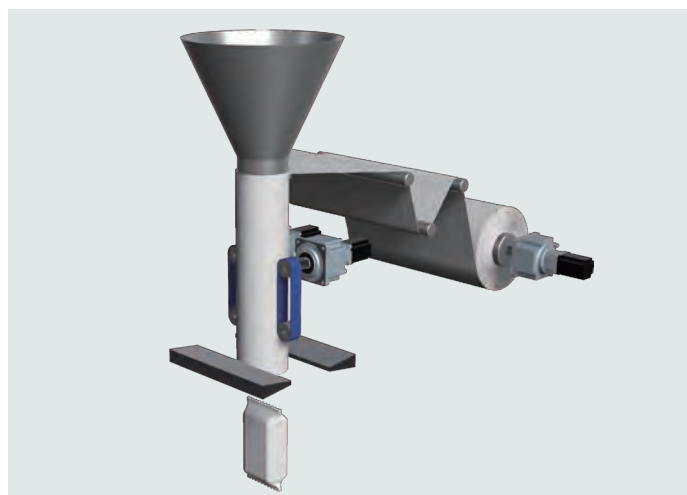
Supporting motor power ranging from 100 to 3000 W and instantaneous input rotation speed of up to 7000 r/min (APG type) are suitable for various industries, including the food industry (conveyors, packaging machines, etc.), the logistics industry (transport machines, etc.), and the manufacturing industry (printers, cutters, etc.), among others.

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

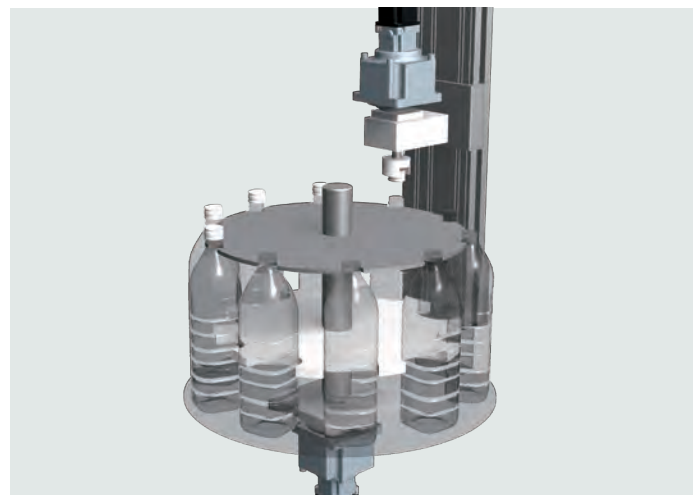
Examples of application (APG type)



Horizontal pillow packaging machine (roll feeding/conveyor transport)



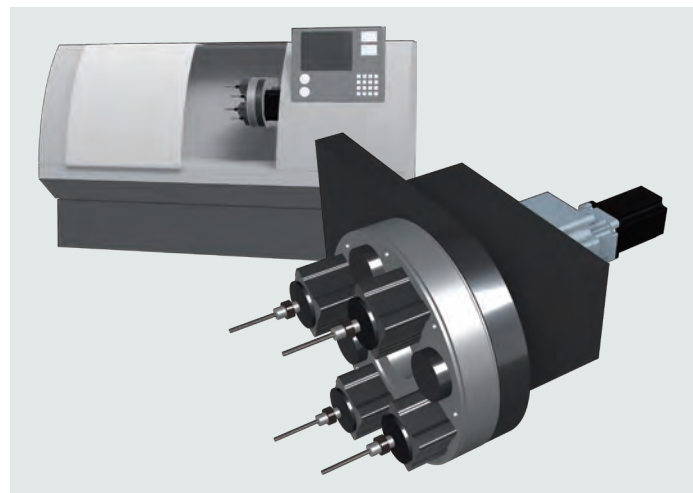
Vertical pillow packaging (roll feeding/conveyor transport)



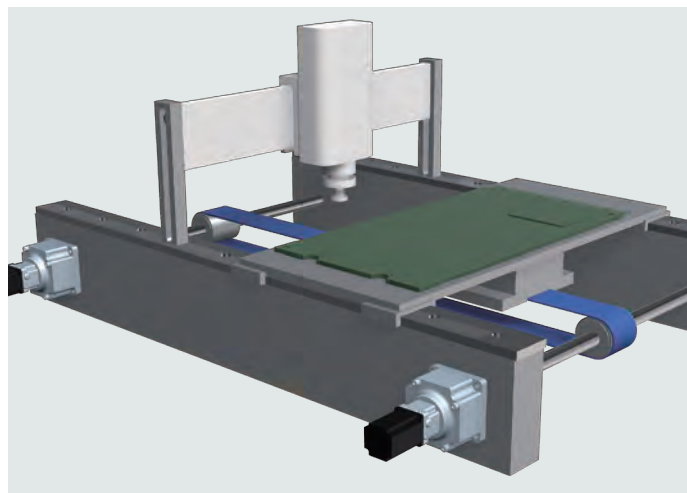
Liquid filling machine (bottle alignment/cap tightening)



Liquid filling machine (rotary pump)



Machine tool (turret head rotation on a automatic lathe)



PC printing machine (circuit board automatic transport)

Achieving high precision drive with high stiffness and high torque.

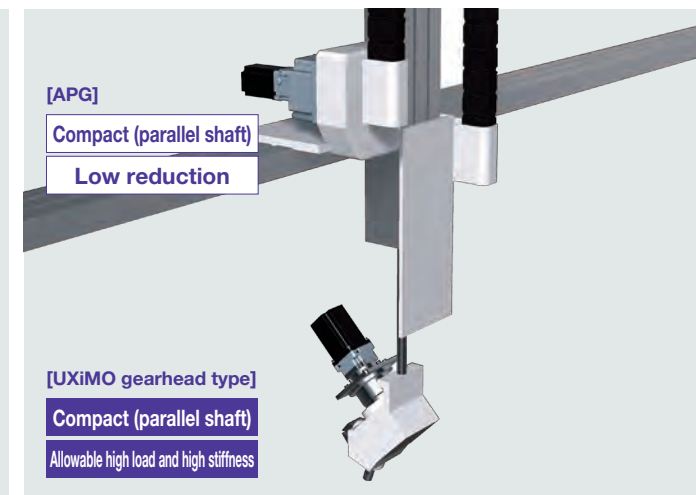
Making precision equipment such as machine tools, semiconductor manufacturing equipment, and industrial robots powerful and speedy. In addition, the compact design allows flexible mounting to devices and configurations. Optimal for applications requiring high-precision performance.

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

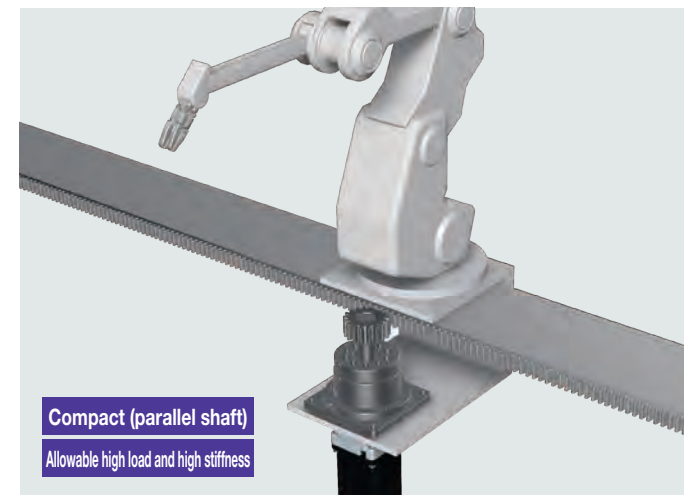
Examples of application (GearHead type)



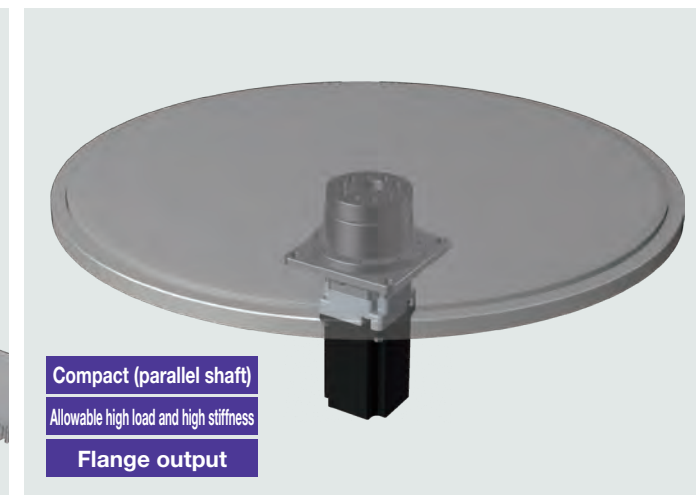
Hoist device



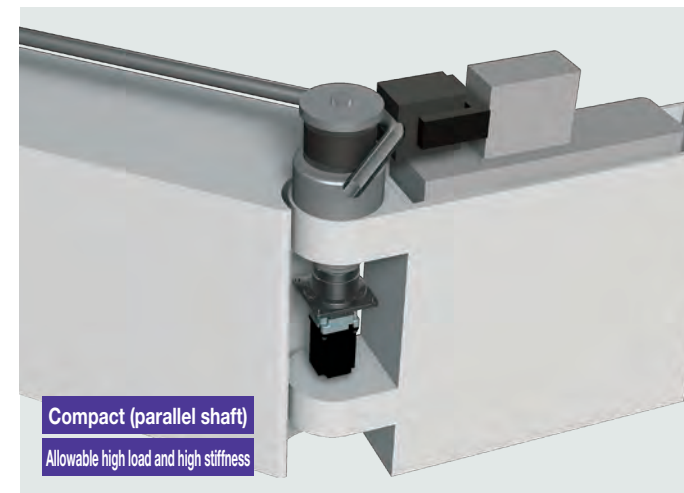
Loading device (X, Y, Θ axes)



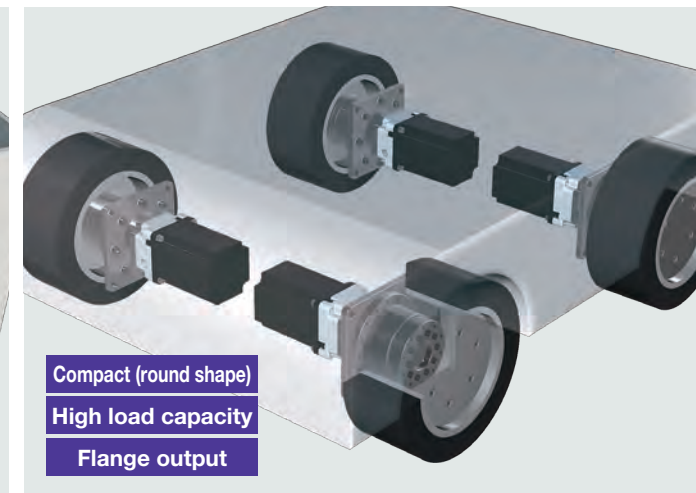
Robot transport system (rack and pinion drive)



Turntable (rotation axes)



Molding machine (bender)



AGV / AMR (wheel drive unit)

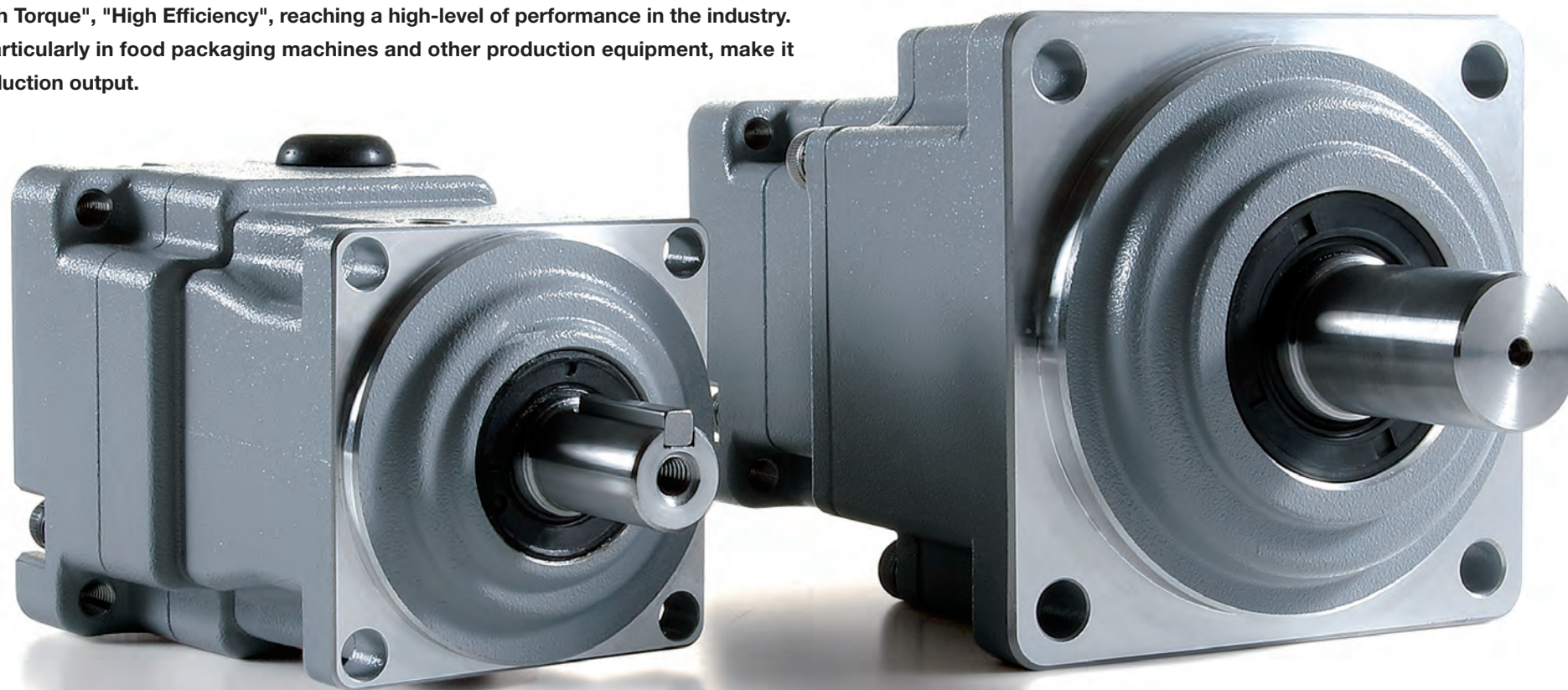
APG Type

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.

Servo Reducer APG type has evolved to obtain full-performance of the servo motors.

This has achieved "High Speed", "High Torque", "High Efficiency", reaching a high-level of performance in the industry. It contributes to takt improvement particularly in food packaging machines and other production equipment, make it possible to dramatically increase production output.



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 %. This increases the power of the equipment and expands the scope of machining, enabling the optimal selection for the application.

High
efficiency

Maximum point increase

10point

**Compared with our current models, transmission
efficiency is increased by 4 points on average
and 10 points at maximum.**

The increased transmission efficiency reduces energy costs and contributes to keeping equipment compact and extending its lifespan.

This simultaneously achieves environmental responsivity and increased performance, ideal for equipment that prioritizes efficiency.

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.

**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
12	M5 × 12
18	M6 × 15
22	M8 × 20
28	M8 × 20



Current
Output shaft with key and
no end tapped

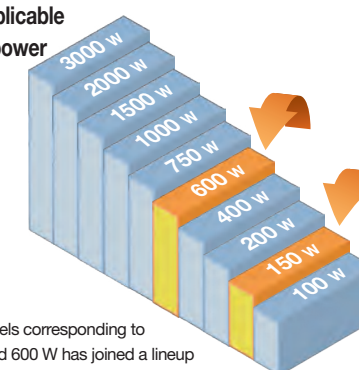


Changes
Output shaft with key
and end tapped



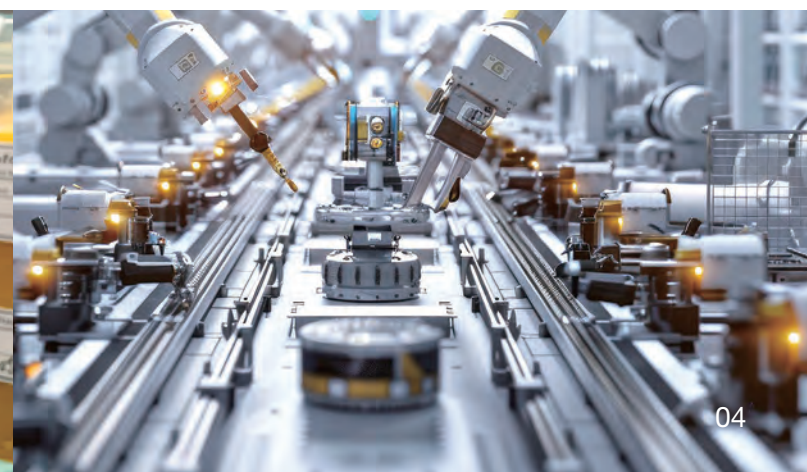
New
Straight shaft

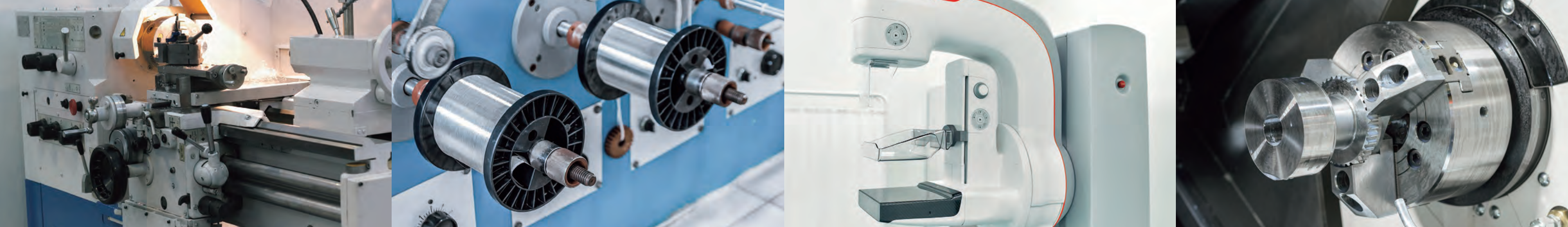
**Add applicable
motor power**



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.

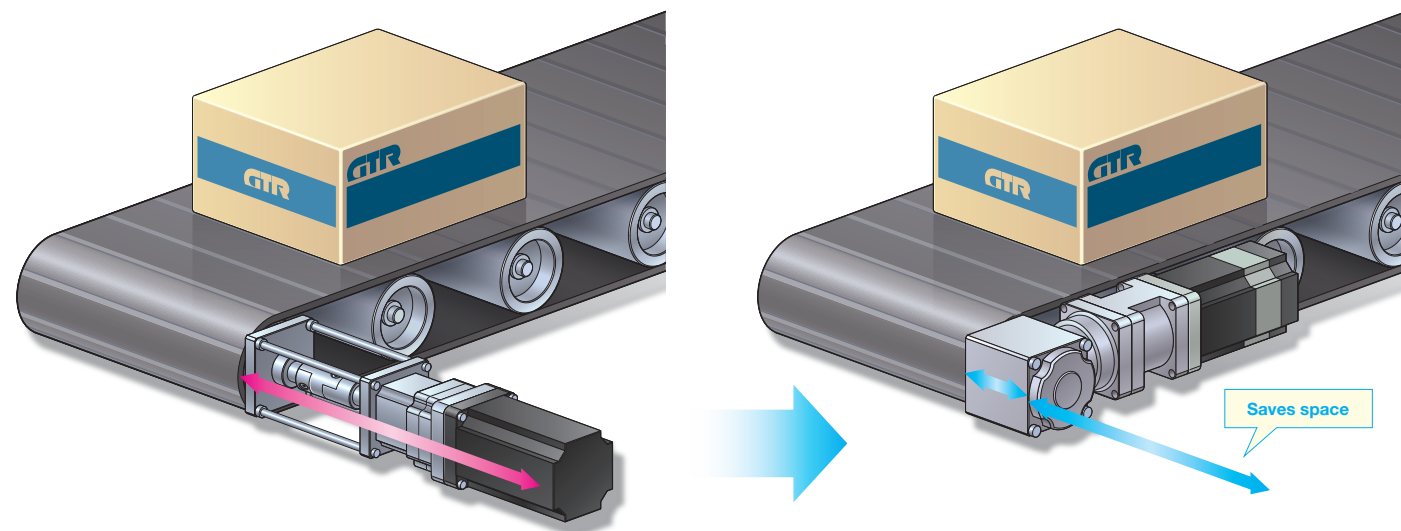




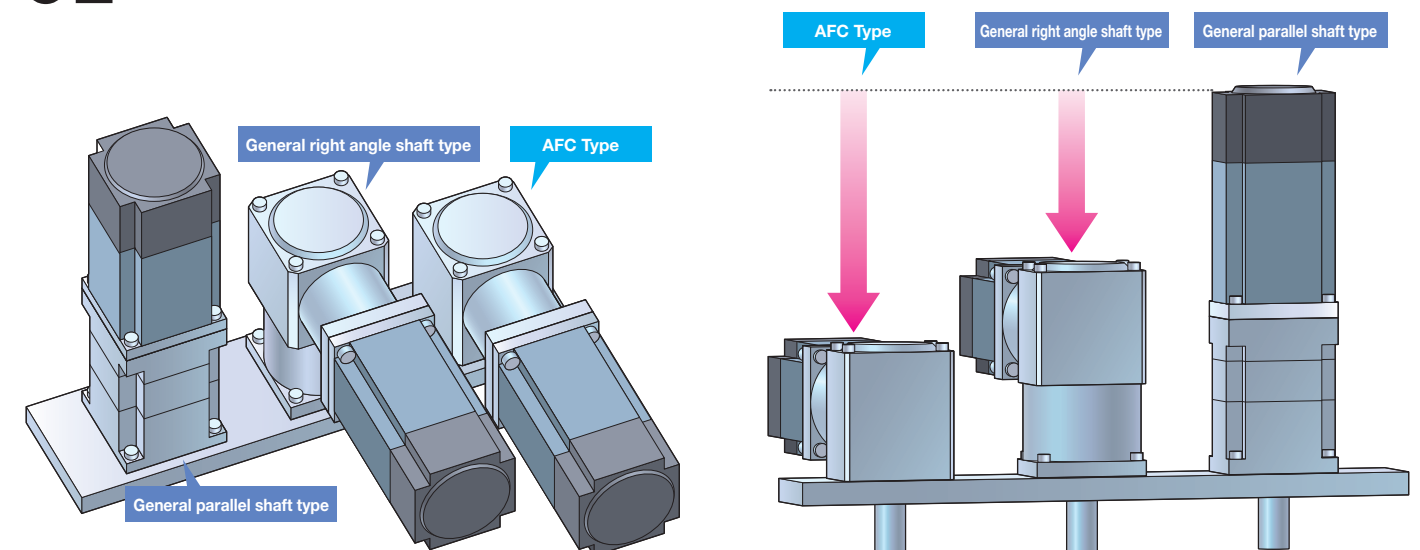
AFC Type Compact design, Versatile reducers for many applications.

The right angle shaft type of the high precision reducer can be mounted perpendicularly to the device, so that the motor does not protrude from the device, which results in space saving design of your device. Compared to reducers made by other companies, we have achieved formidable compactness. Our reducers can help save installation space and are suitable for various applications, such as lifting/reversing machines, medical devices (mammography and x-ray equipment), rotary drive machines, grinders and reverse mechanisms.

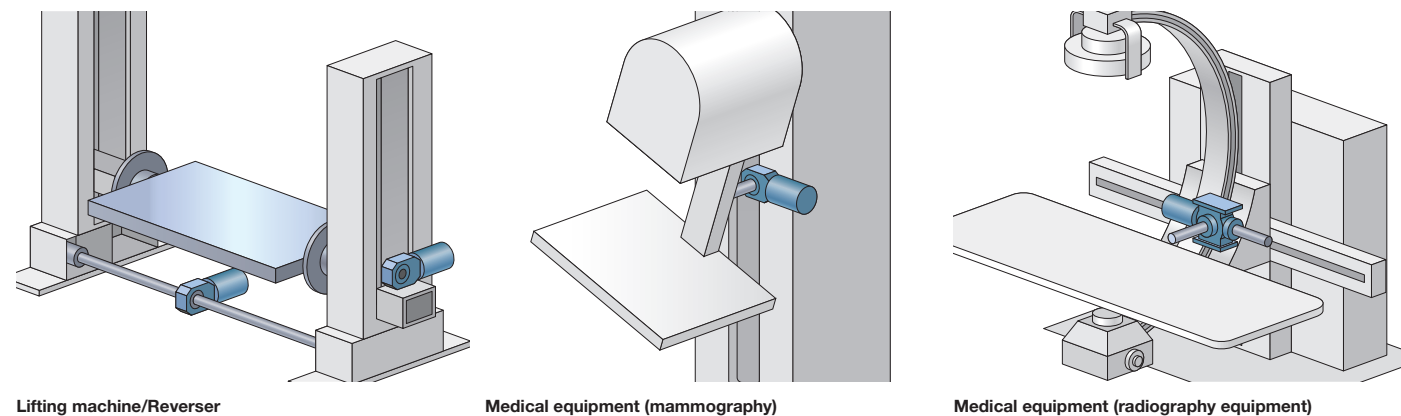
FEATURE 01 Orthogonal shaft type that helps save space



FEATURE 02 A shape that allows smaller designs



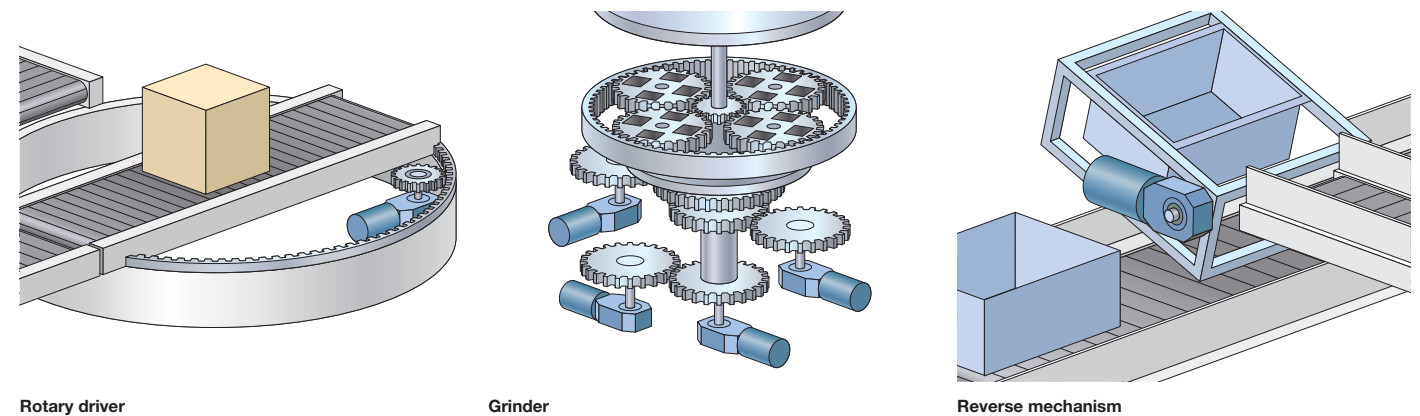
FEATURE 03 Can be installed in limited space for various applications



Lifting machine/Reverser

Medical equipment (mammography)

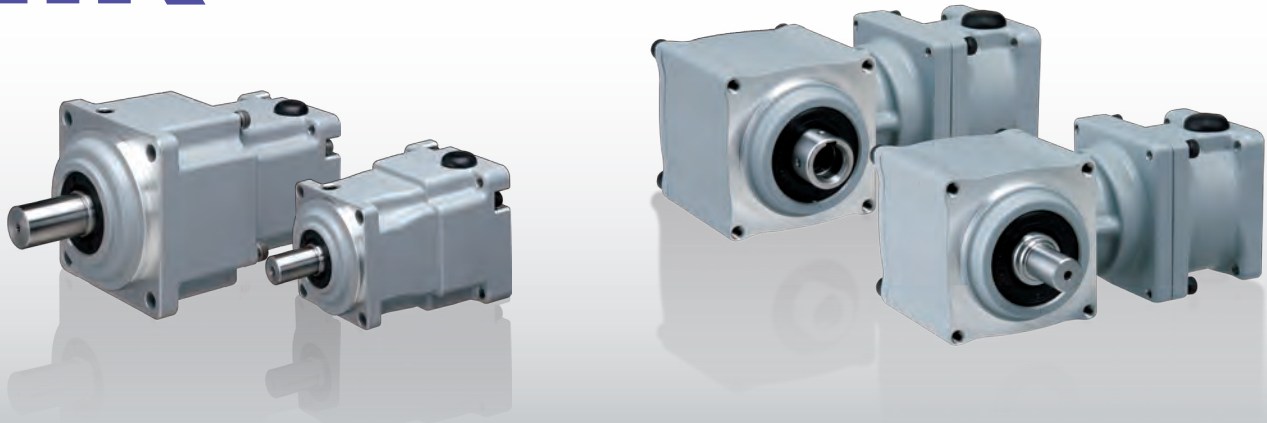
Medical equipment (radiography equipment)



Rotary driver

Grinder

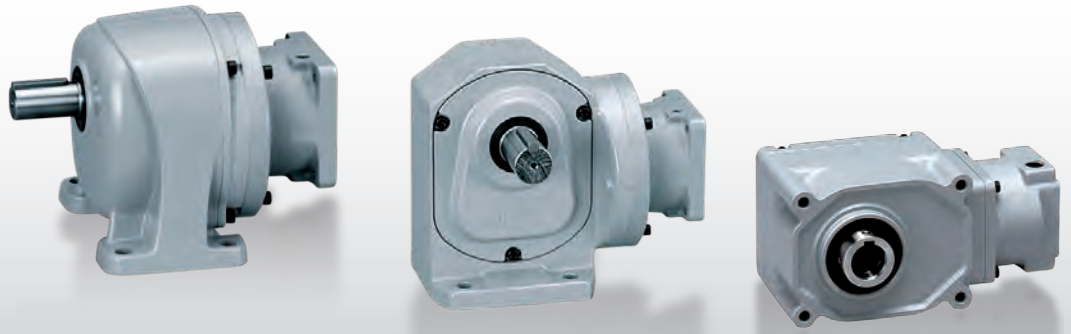
Reverse mechanism



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.



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.



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 12 (□52)		Frame Size 15 (□72)						Frame Size 18 (□78)		
200 W			Frame Size 12 (□52)	Frame Size 15 (□72)		Frame Size 18 (□78)						Frame Size 22 (□98)		
400 W		Frame Size 15 (□72)		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)						Frame Size 32 (□135)		
1000 W		Frame Size 22 (□98)		Frame Size 28 (□120)		Frame Size 32 (□135)								
2000 W		Frame Size 28 (□120)		Frame Size 32 (□135)										
3000 W		Frame Size 32 (□135)												

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

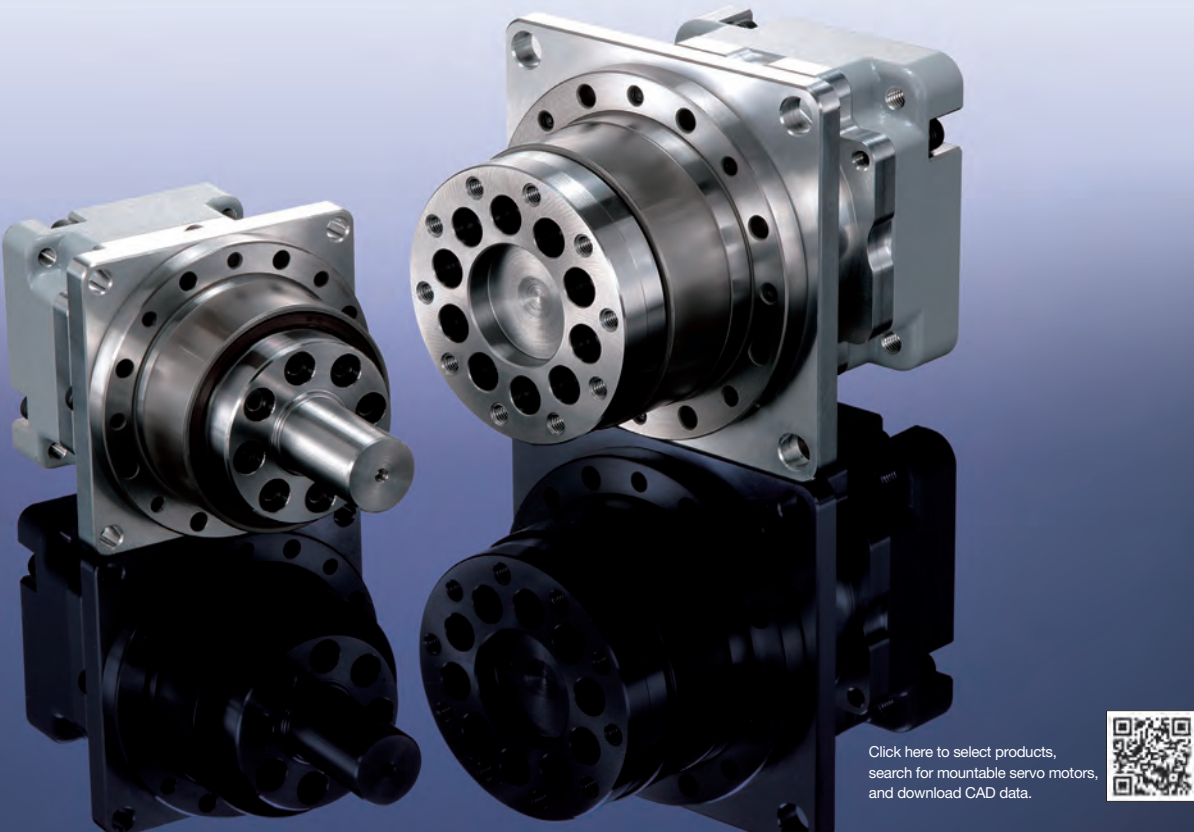
Reduction Ratio : 1/5 to 1/240

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




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

Gear Head type Easy connection to the motor

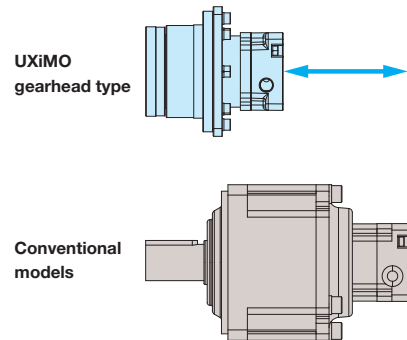
3 Frame Sizes OD: 73mm / 79mm / 93mm 6 stage Reduction 1/19, 1/29, 1/49, 1/79, 1/99, 1/119 *The 1/119 reduction ratio is only available on frame sizes 030 and 050.

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.

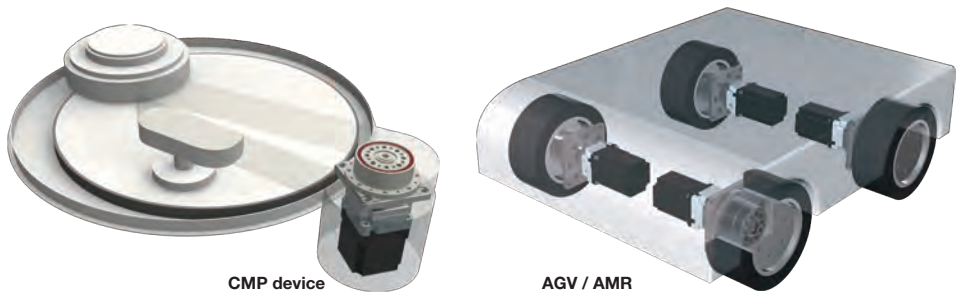
Model configuration table

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



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.



Selection of High precision reducer for servo-motor

Start selection from below

01

[Select reducers by Servo Motor Manufacturer and Model Number](#)



02

[Select reducers by Servo Motor mounting dimensions](#)



03

[High precision reducer for servo-motor Advanced Search](#)



04

[High Precision Reducer for Servo Motor Calculation Selection Tool](#)

Select the most suitable Product based on the usage conditions of your Device



01 Search by servo motors

Select reducers by Servo Motor Manufacturer and Model Number

Select a servomotor

Manufacturer

RAYO DENG

Type

R2A/R5Series R2 + CH6

Motor Power

100W

Motor Rated Rotational Speed

3000

Select a reducer

Reduction Ratio

1

Output Shaft Type

1

Output Shaft Direction

1

Mounting

1

Backlash

1

Water-resistant/Dust-resistant

1

21 results found

Display Number

30

45

60

Delect All

You can compare and print checked products (up to 5 products). Click product comparison button at the bottom of the page. Click the product name for more details.

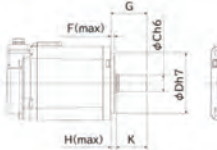
Shipping date is factory shipment date. Shipping date is subject to change.


Comparison	Product name	Standard Price	Production Information	Alternative Product Information	Dimensional Drawing PDF	Dimensional Drawing Item
<input checked="" type="checkbox"/>	R2A/R5Series R2 + CH6	Please contact us.	Current products		PDF	
<input checked="" type="checkbox"/>	R2A/R5Series R2 + CH6	Please contact us.	Current products		PDF	

02 Search by mounting dimensions of servo motor

Select reducers by Servo Motor mounting dimensions

This selection tool enables you to search model number of a reducer attachable to your motor based on its mounting dimensions. The Performance gaps between the motor and reducer are not considered, so please check each catalog for performance matching.





Note

- We can NOT apply this tool to motors with optional specification such as "with oil seals". Please make sure whether your motor can be attachable to our reducers on "Detailed Dimensions of Input Shaft and Flange Shapes".
- This tool does not determine whether the size of your motor flange matches input side of the reducer.
- This tool targets motors with straight shaft. If your motor has a key, it can be removed and attached to the reducer.
- We assume H6 on motor shaft and h7 on motor flange as Dimensional Tolerance of fitting part.

Please enter dimension of each point.

φA =

mm

φB =

mm

φCh6 =

mm

φDh7 =

mm

F =

mm(Maximum value)

Gmax =

mm(Maximum value)

Gmin =

mm(Minimum value)

03 Search by spec of high precision reducer for servo motor

High precision reducer for servo-motor Advanced Search

Rated Input Motor Power (at 3000/min)

Reduction Ratio

Output shaft type Servo motor reducer

Output Shaft Direction

Mounting

Backlash

Presence of the Output Shaft Key Reducer for Servo Motor

Water-resistant/Dust-resistant

1 results found

Display Number

30

45

60

Delect All

You can compare and print checked products (up to 5 products). Click product comparison button at the bottom of the page. Click the product name for more details.

Shipping date is factory shipment date. Shipping date is subject to change.

Comparison	Product name	Standard Price	Production Information	Alternative Product Information	Dimensional Drawing PDF	Dimensional Drawing Item
<input checked="" type="checkbox"/>	R2A/R5Series R2 + CH6	Please contact us.	Current products		PDF	
<input checked="" type="checkbox"/>	R2A/R5Series R2 + CH6	Please contact us.	Current products		PDF	

Product Comparison

04 Search using calculations based on usage conditions

High Precision Reducer for Servo Motor Calculation Selection Tool

Selections are available for various applications. Conditions of use must be entered such as conveying speed, and weight, etc.

Click here if you use for the first time


For Beginners


Click here if you want to know the selection process.

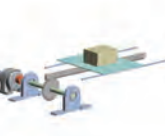
Click here to ask our technical staff

Information on Selection Service

In order to select the most suitable reducer by customer's usage condition, we provide "Selection Service" by dedicated technical staff.







Chain (Belt) Conveyor

Turntable

Rack and Pinion

09

10