

Tuning-Free AC Servo Motor Unit

NX Series



Features

● Easy Operation

As with a stepping motor, stable operation can be achieved in high inertia drive and belt mechanism drive applications without gain adjustment. Also, adjusting the gain manually enables operation under even more stringent load conditions.

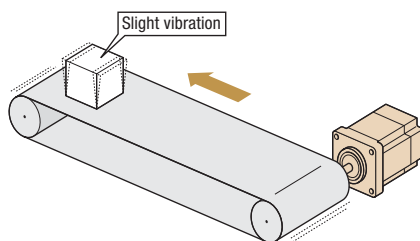
◇ Achieves High Inertia Drive

With automatic tuning, operation up to 50 times the rotor inertia is possible. With manual tuning, operation up to 100 times the rotor inertia is possible.

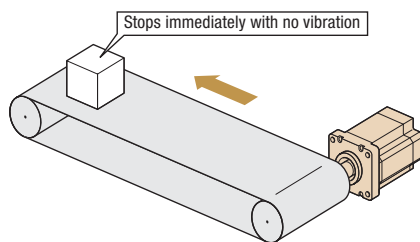
◇ Achieves Smooth Operation with Belt Mechanisms

Belt mechanisms can be operated with the same feel as a stepping motor. Operation without the occurrence of phenomena such as vibration before stopping is possible.

● Conventional Models



● NX Series



● Easy Handling

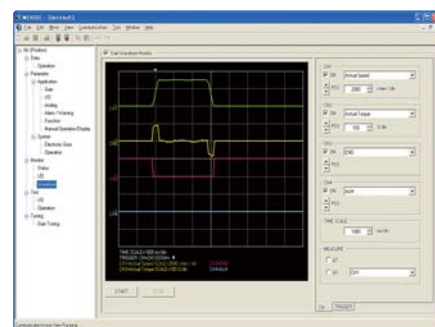
Basic settings and adjustments are made with switches and potentiometers on the front panel. This design allows for easy control without a computer and even saves the hassle of complicated UP and DOWN key operations.



● Easy Setting and Easy Monitoring

By using the separately sold control module (**OPX-2A**) or data setting software (**MEXE02**), it is possible to perform changing of parameters, function setting, and monitoring that is better suited to your system.

● Operating Status Waveform Monitoring*



*Monitoring the operating status waveform requires the data setting software (**MEXE02**), which is sold separately.

4 Control Modes

This servo unit can operate in 4 control modes. Also, with the separately sold control module (**OPX-2A**) or data setting software (**MEXE02**), the functions of each control mode can be extended.

Extended functions → Page 32

◇ Position Control

The built-in high-resolution 20-bit absolute encoder enables highly accurate positioning.

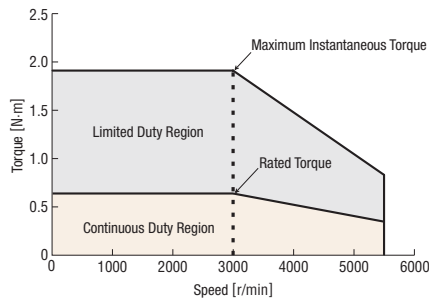
● High Speed and High Response

High-speed positioning can be performed utilizing the high-speed and high-response characteristics.

Maximum Speed **5500** r/min

Factory Settling Time **60 to 70** ms

NX620AA-◇

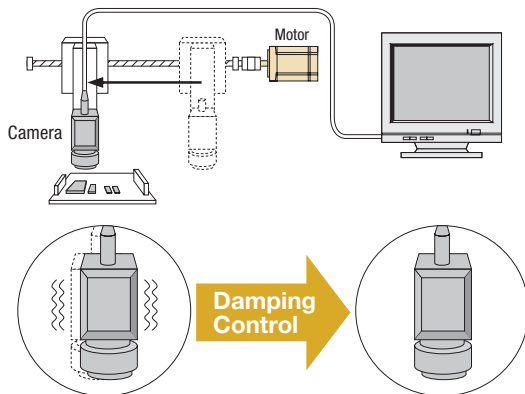


● Damping Control

Eliminates load resonance by adjusting the potentiometer. This adjustment can be made easily and without any bothersome work such as searching for the resonance frequency.

<Application Example: Image inspection equipment>

Camera vibration during stopping can be suppressed by using the damping control.

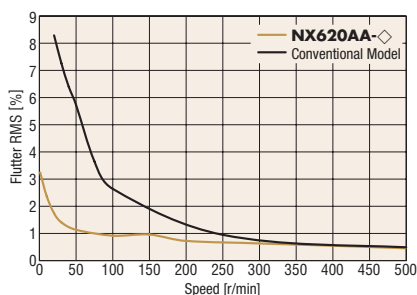


● Absolute System

Use as an absolute system by attaching an optional battery (sold separately) is possible. The current position of the encoder can be stored, so resetting after a blackout or similar occurrence is easy.

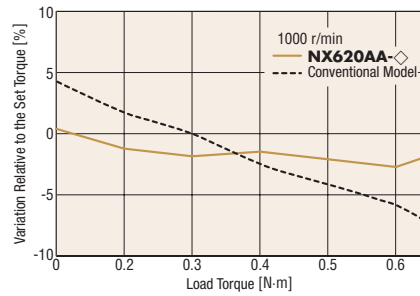
◇ Speed Control

The reduction of motor cogging torque and the use of a high-resolution encoder have substantially reduced variation in rotation in the low-speed range (the flutter characteristic), resulting in smooth operation even at low speeds.



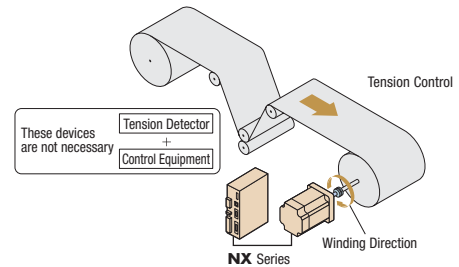
◇ Torque Control

Variation of the generated torque relative to the set torque (torque accuracy) has been improved, resulting in highly accurate torque control.



◇ Tension Control

Tension control such as winding films can be easily performed without using a detector or control equipment.



● Degree of Protection IP65

These motors conform to IP65 and they are ideal for use in environments requiring dust resistance and water resistance to protect against cutting dust suspended in air, splashed water droplets, etc.

(Standard type, electromagnetic brake type, **PS** geared type: excluding installation surface and connector locations, **PJ** geared type: excluding connector locations)

● Simple Connections with Included Cables

The **NX** Series comes with cables to connect the motor and driver. You can select from 1 m, 2 m, or 3 m cables. If you need cables longer than 3 m or cables offering superior flexibility, appropriate cables are available as accessories (sold separately).



● Separate Main Power Supply and Control Power Supply

A control power supply terminal that is separate from the main power supply is provided. Even when the main power supply is cut off in the case of, for example, an emergency stop, operations such as position detection and alarm contents checking can be performed if 24 VDC power is supplied to the control power supply terminal. (Operation with only the main power supply is also possible.)

● Conforms to Semiconductor Equipment and Materials International Standards "SEMI F47"

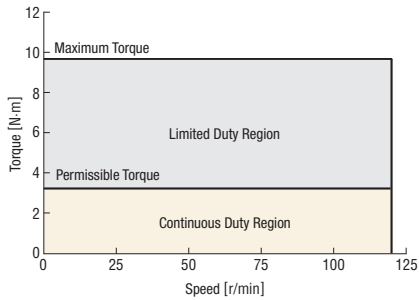
- Conforms to SEMI Standards regarding power supply voltage drop.
- Effective for use in semiconductor equipment. (Always evaluate the product with it mounted on actual equipment.)

● **High Performance Geared Motors**

◇ **High Permissible Torque and Wide Permissible Speed Range**

Geared motors with high permissible torque that fully utilize the motor output torque.

NX65AA-PS25 ◇



● **PS Geared Type**

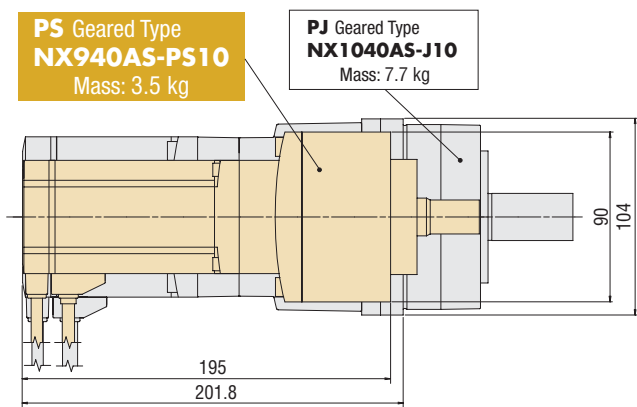
PS geared motors with a new planetary gear mechanism are available.

◇ **Low Backlash**

The backlash is 15 arc minutes max. These motors can be used in wide-ranging applications.

◇ **Compact and Lightweight Design**

Compared to **PJ** geared types, these are compact, lightweight geared motors.



● **PJ Geared Type**

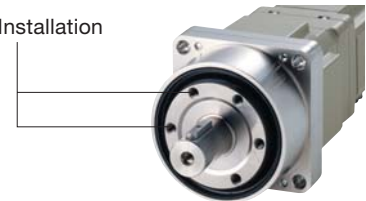
◇ **Non-Backlash**

Geared motors that use high accuracy gears with an angular transmission accuracy of 4 arc minutes and backlash of 3 arc minutes.

◇ **Surface Installation is Possible**

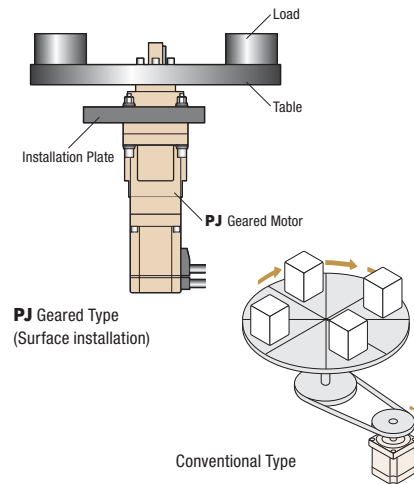
There are screw holes that permit installation of a load directly on the rotating surface integrated with the shaft. Since the load can be installed here directly (surface installation), the design is simple when using an index table.

Screw Hole for Load Installation



● **Application Example with an Index Table**



Parts that had been necessary, such as pulleys and belts, are no longer necessary.



● **Characteristics Comparison for Geared Motor**

The motor and driver package comes in 4 geared motor frame sizes ranging from 60 to 104 mm.

(□60: indicates a frame size of 60 mm.)

Geared Type	Features	Power Supply Input	Output Power				
			50 W	100 W	200 W	400 W	750 W
PS Geared Type (Planetary gear mechanism) 	<ul style="list-style-type: none"> High Speed (Low gear ratio) High Permissible Torque/Maximum Torque Center Shaft Gear Ratio Types 1:5, 1:10, 1:25 	Single-Phase 100-115 VAC	□60	□60	□90		
		Single-Phase/Three-Phase 200-230 VAC	□60	□60	□90		
		Three-Phase 200-230 VAC				□90	
PJ Geared Type (Planetary gear mechanism) 	<ul style="list-style-type: none"> High Speed (Low gear ratio) High Positioning Accuracy High Permissible Torque/Maximum Torque Center Shaft Surface installation is possible Gear Ratio Types 1:5, 1:10, 1:25 	Single-Phase 100-115 VAC		□80	□80		
		Single-Phase/Three-Phase 200-230 VAC		□80	□80		
		Three-Phase 200-230 VAC				□104	□104