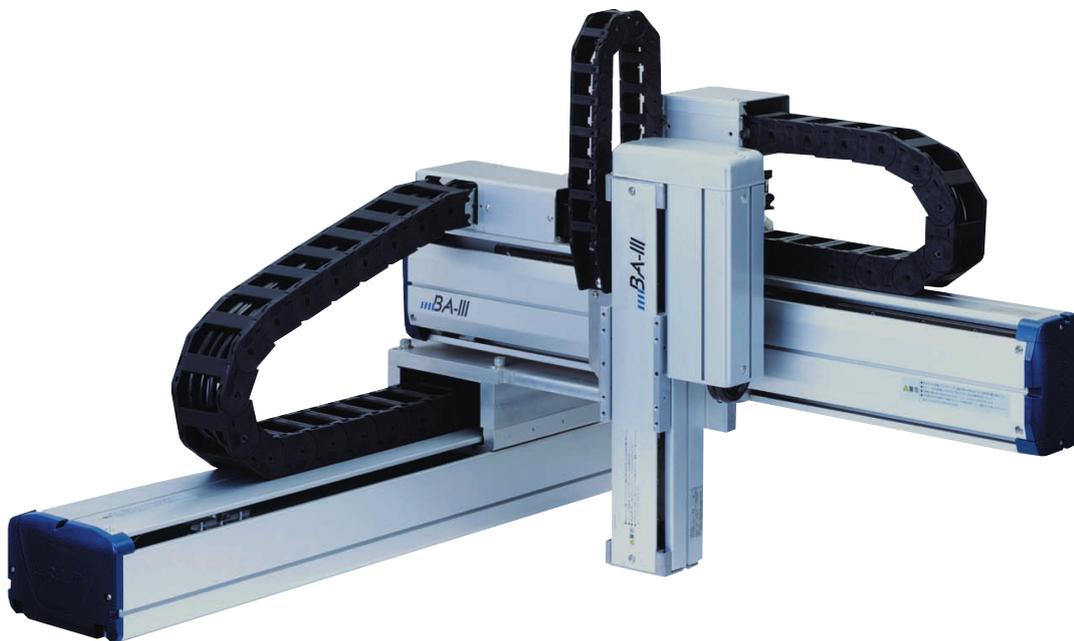**Shibaura Machine**

COMPO ARM
ARM ROBOT

BA-III SERIES

ABSOLUTE

COMPO ARM

The Cartesian Coordinate Robot "COMPO ARM" was first released in 1986 featuring "High Reliability" and "User Friendliness". Since its introduction, it has been selected by many customers for a variety of production lines.

Our new product, the BA-III series, inherits the features of the BA-II series with improved functionality especially in "User Friendliness". It offers a wide variety of models ranging from single axis to Cartesian combination axes (2 to 4 axes).

High load

High accuracy

Long stroke

Absolute encoder in all models
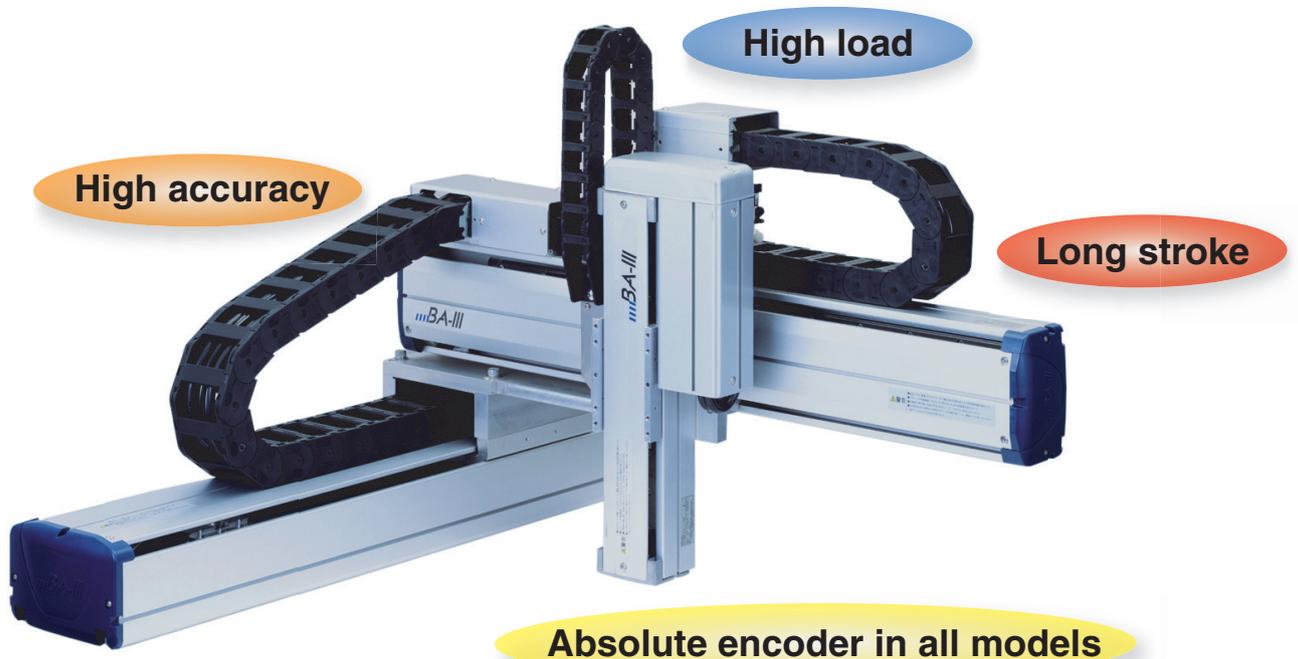
High cycle time

<Maximum loading mass> Single axis: Horizontal 250 kg, X-Y two-axis combination: 100 kg

<Maximum stroke> Maximum stroke: 4450 mm

<Maximum speed> Ball screw driven: 2300 mm/s, timing belt driven: 2000 mm/s

<Positioning repeatability> Ball screw driven: 0.01 mm, timing belt driven: 0.04 mm

Equipped with an AC servo motor (absolute encoder) not requiring home position return

The BA-III series pursues usability

- With the adoption of oil-free seals in the LM guides and the ball screws, the BA-III series does not require maintenance for an extended period of time.
- Equipped with a compact AC servo motor, the total axial length has been shortened.
- Models with longer effective strokes have been added to expand the operating ranges of the robots.

Controllers   Improved functionalities from the BA-II series controllers

- The adoption of high performance servo control engines has made complex sealing work possible.
- With the lineup of controllers dedicated to high load (supporting 750 W motor capacity), the cost reduction of high load models has been achieved.
- A high functional master unit required for three/four axis combinations is no longer necessary, achieving cost reduction and space saving (the maximum number of controlled axes is 4).
- The processing speeds of the controllers have improved, making it possible to further reduce the cycle time.
- "External Point Specification Mode" is enhanced. Point table number can be output after positioning is completed.

*"External Point Specification Mode" refers to the operating mode for performing positioning with output signals from a PLC or other device without using instructions.

Master Units

- A servo amp for one axis is built in. The master unit is used for single axis to four axis specifications.
- Multi power supplies (100 to 115VAC, 200 to 230VAC) are adopted.
  *400W and 750W motors require 200V power supply.

CA25–M☐0–☐☐C

Motor Capacity
1 : 50 to 200 W
4 : 400 W
8 : 750 W

I/O Type Selection
N : NPN input/output
P : PNP input/output

Extension Interface Unit
X : None
C : CC-Link Unit
D : DeviceNet Unit
I : EtherNet/IP Unit
B : Extension Input/Output Unit
    (Input and output are common
     between NPN and PNP)

CA25-M10

CA25-M40
CA25-M80

Slave Units

- A servo amp for one axis is built in. The slave unit is used for second axis to fourth axis.
- Multi power supplies (100 to 115VAC, 200 to 230VAC) are adopted.
  *400W and 750W require 200V power supply.

CA25–S☐0–☐XX

Motor Capacity
1 : 50 to 200 W
4 : 400 W
8 : 750 W

I/O Type Selection
N : NPN input/output
P : PNP input/output

CA25-S10

CA25-S40
CA25-S80

Other Optional Units

With extension I/F Unit

With extension I/O Unit   **With CC-Link Unit**

*DeviceNet Unit and EtherNet/IP Unit also available

Regenerative Discharge Unit

ABSU-2000
ABSU-4000

ABSU-8000

Teach Pendant

TPH-4C

COMPO ARM
Product Lineup

Light-Load Use
◆ Maximum Payload 4 kg ▦▦▦▦▦▦▶ 30 kg
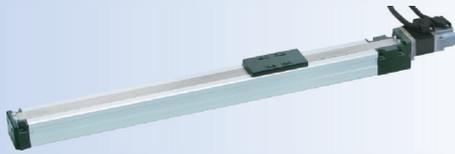
BA3-T5D (Ball-Screw Driven)
- Motor Power (W) ············· 50
- Stroke (mm) ················ 50~500
- Maximum payload (kg) [Note 1]·· 5~10 (Horizontal), 1.5~3 (Vertical)
- Maximum speed (mm/s) [Note 2]·· 800 (stroke 450 mm or smaller, Lead: 12 mm)
- Positioning repeatability (mm)·· ±0.02

BA3-T7D (Ball-Screw Driven)
- Motor Power (W) ············· 50
- Stroke (mm) ················ 50~700
- Maximum payload (kg) [Note 1]·· 12~30 (Horizontal), 4~8 (Vertical)
- Maximum speed (mm/s) [Note 2]·· 800 (stroke 550 mm or smaller, Lead: 12 mm)
- Positioning repeatability (mm)·· ±0.02

BA3-T3D (Ball-Screw Driven) Push-rod Type
- Motor Power (W) ············· 50
- Stroke (mm) ················ 50~150
- Maximum payload (kg)········· 4 (Horizontal), 1.9 (Vertical)
- Maximum speed (mm/s)······· 600
- Positioning repeatability (mm)·· ±0.02

BA3-T4D (Ball-Screw Driven) Push-rod Type
- Motor Power (W) ············· 50
- Stroke (mm) ················ 50~200
- Maximum payload (kg)········· 7 (Horizontal), 3.1 (Vertical)
- Maximum speed (mm/s)······· 600
- Positioning repeatability (mm)·· ±0.02

BA3-T5E (Ball-Screw Driven) Push-rod Type
- Motor Power (W) ············· 100
- Stroke (mm) ················ 50~300
- Maximum payload (kg)········· 25 (Horizontal), 6.5 (Vertical)
- Maximum speed (mm/s) [Note 2]·· 600 (stroke 250 mm or smaller)
- Positioning repeatability (mm)·· ±0.02

BA3-00D-RH (Harmonic Drive)
- Motor Power (W) ··············· 50
- Maximum payload (kg) ··········· 10
- Rotation range ··················· 360 degrees
- Maximum speed (degrees/s) ······· 360
- Positioning repeatability (degrees)·· ±0.025

BA3-00D-RP (Planet Gear)
- Motor Power (W) ··············· 50
- Maximum payload (kg)············ 10
- Rotation range ··················· 360 degrees
- Maximum speed (degrees/s) ······· 857
- Positioning repeatability (degrees)·· ±0.125

Note 1: The load mass varies with the lead pitch and the motor capacity.
Note 2: The speed varies with the lead pitch and the stroke.

Middle-Load Use

◆ Maximum Payload 15 kg ▭▭▭▭▭▶ 80 kg

BA3-10 (Ball-screw Driving)
- Motor Power (W) · · · · · · · · · · · · 100
- Stroke (mm) · · · · · · · · · · · · · · 100～1250
- Maximum payload (kg) [Note 1]· · 20～80 (Horizontal), 3～22 (Vertical)
- Maximum speed (mm/s) [Note 2]· · 1200 (stroke 600 mm or smaller, Lead: 20 mm)
- Positioning repeatability (mm)· · ±0.01

BA3-30 (Ball-screw Driving)
- Motor Power (W) · · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · · 100～1250
- Maximum payload (kg) [Note 1]· · 30～100 (Horizontal), 3～40 (Vertical)
- Maximum speed (mm/s) [Note 2]· · 1200 (stroke 600 mm or smaller, Lead: 20 mm)
- Positioning repeatability (mm)· · ±0.01

BA3-10 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100～2550
- Maximum payload (kg) [Note 1]· · 15～20 (Horizontal)
- Maximum speed (mm/s) [Note 2]· · 2000 (lead 42 mm)
- Positioning repeatability (mm)· · ±0.04

BA3-30 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100～3200
- Maximum payload (kg) [Note 1]· · 20～40 (Horizontal)
- Maximum speed (mm/s) [Note 2]· · 2000 (lead 42 mm)
- Positioning repeatability (mm)· · ±0.04

BA3-50 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · · 200, 400
- Stroke (mm) · · · · · · · · · · · · · 200～3500
- Maximum payload (kg) [Note 1]· · 20 ‾ 40 (Horizontal)
- Maximum speed (mm/s) [Note 2]· · 2000 (lead 42 mm)
- Positioning repeatability (mm)· · ±0.04

Note 1: The load mass varies with the lead pitch and the motor capacity.
Note 2: The speed varies with the lead pitch and the stroke.

Heavy-Load Use

◆ Maximum Payload 60 kg ▓▓▓▓▓▓▓▶ 250 kg

BA3-50 (Ball-screw Driven)
- ●Motor Power (W) ·············· 200, 400
- ●Stroke (mm) ················ 200～1600
- ●Maximum payload (kg) [Note 1]·· 60～150 (Horizontal), 3～60 (Vertical)
- ●Maximum speed (mm/s) [Note 2]·· 1200 (stroke 600 mm or smaller, Lead: 20 mm)
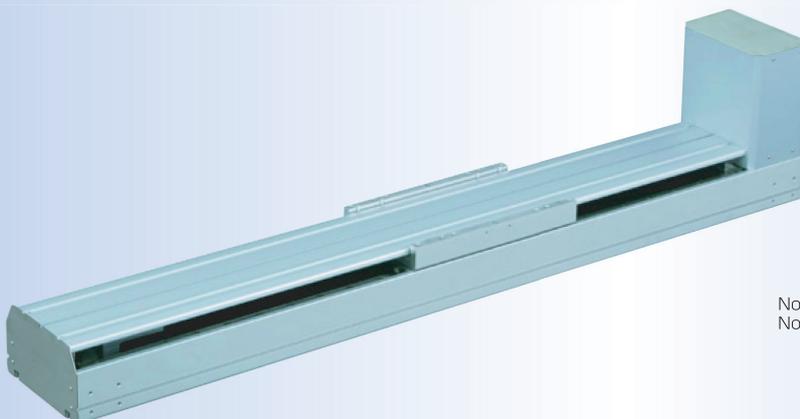- ●Positioning repeatability (mm)·· ±0.01

BA3-60 (Ball Screw Driving)
- ●Motor Power (W) ·············· 400, 750
- ●Stroke (mm) ················ 150～1700
- ●Maximum payload (kg) [Note 1]··· 25～250 (Horizontal), 25～100 (Vertical)
- ●Maximum speed (mm/s) [Note 2]·· 1200
  (stroke 700 mm or smaller, Lead 20 mm 400 W)
  2300
  (stroke 1000 mm or smaller, Lead 50 mm 750 W)
- ●Positioning repeatability (mm)·· ±0.01
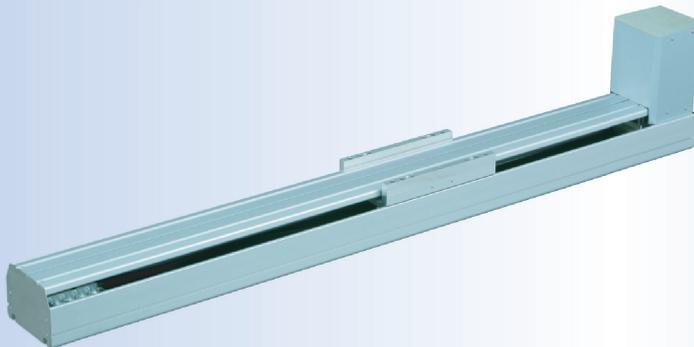
BA3-50 (Timing Belt Driven)
- ●Motor Power (W) ············ 400
- ●Stroke (mm) ················ 150～4450
- ●Maximum payload (kg)········· 100 (Horizontal)
- ●Maximum speed (mm/s)········ 1000
- ●Positioning repeatability (mm)·· ±0.05

BA3-60 (Timing Belt Driven)
- ●Motor Power (W) ············ 750
- ●Stroke (mm) ················ 150～4450
- ●Maximum payload (kg)········· 200 (Horizontal)
- ●Maximum speed (mm/s)········ 1000
- ●Positioning repeatability (mm)·· ±0.05

Note 1: The load mass varies with the lead pitch and the motor capacity.
Note 2: The speed varies with the lead pitch and the stroke.

Typical Examples of Cartesian Axes Specifications

*A variety of other combinations are possible.

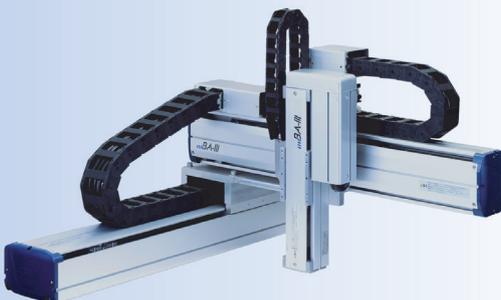### ■ 2-axis X-Y combination

■ 2-axis X-Z combination

■ 2-axis Z-Y combination

■ 2-axis Y-Z combination

■ 3-axis X-Y-Z combination

■ 4-axis X-Y-Z-R combination