BA-II

Controller Meeting Safety Category 3 Requirements

- "Safety Category 3" requirements satisfied by adding an external safety circuit
- Capable of simultaneous control up to 4 axes (1 axis - 4 axes)
- Linear interpolation and circular interpolation in two and three dimensions and pass function offered as standard
- Capable of input/output control in four independent tasks (Only one task for the axis operation)
- Use the new type teaching pendant "TPX-4A" equipped with an enable switch.

CA20–M01–□□

- Network Compatibility
  - O : Not available
  - C : CC-Link
  - D : DeviceNet
- VL Bus Interface
  - O : Not available
  - V : Available

Controller
CA20–M01

- Enable switch
  "Three position" switch to safely operate the robot

Teaching Pendant
TPX-4A

●Teaching Pendant

Capable of editing programs and parameters, and instructing the operation when connected to the controller

TPH-4C
Compatible models
Compatible to all master units and high function master units (except CA20-M01)
Also compatible to the old-type BA series

TPX-4A
Compatible models
Master unit
CA20-M10

●Controller Options

Options for further extending the function of controllers

Input/Output Extension Unit

Unit to extend the number of general purpose input/output points of each controller

CA20–EX–□□□

- Applicable controllers
  - A20 : CA20-M10, CA20-M40
  - CA20-S10, CA20-S40

CA20-EX-A20

Regeneration Discharge Unit

This unit absorbs the electric power energy generated by the motor
This unit is used when the load inertia exceeds a permissive value or when a large load is moved down for a long distance while using Z axis.

ABSU–□000

- Applicable controllers
  - 2 : CA20-M10, CA20-S10
  - 4 : CA20-M40, CA20-S40

ABSU-2000

Easy to learn

- Master programming with less than one day of training
- The simplicity of the new robot teaching system means you can be up and running in hours

Easy to integrate

- The complete plug and play solution saves time and money, and makes your system massively more efficient
- Hugely flexible with a massive range of stroke length and payload options
- A system solution with actuators, servomotors and controllers all included

Easy to use

- No calibration or complex setup required
- Compatible with the Toshiba Machine SCARA controller

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http://www.tmrobotics.co.uk
http://www.tmrobotics.com

Caution Carefully read and confirm the content of the operation manual before using these products to properly use them.

SM15031-1500-SO

TOSHIBA MACHINE

The Easy generation of Cartesian technology

catalog BA20016-CED-05

COMPO ARM

Controller

Offering a wide range of control units with a focus on compatibility, usability and compactness

●Master Unit

- Equipped with a servo amplifier for one-axis; usable as a master unit for a single or two-axis specification
- Pulse train input mode as standard
- Usable for multiple power sources (100 to 120 VAC, 200 to 240 VAC)
- Equipped with a multi-task function for up to four tasks

CA20–M□0

- Motor Power
  - 1 : 50W, 100W, 200W
  - 4 : 400W

CA20-M10

・Usable for BA-II series with motor power of 50 W to 400 W

CA20–M□0–□□

- Motor Power
  - 1 : 50W, 100W, 200W
  - 4 : 400W
- Network Compatibility
  - CC : CC-Link
  - DN: DeviceNet

CA20-M10-CC

・CC-Link or DeviceNet network compatible type
・Usable for BA-II series with motor power of 50 to 400 W

●Enhanced Master Unit

- Capable of simultaneous control up to 4 axes by connecting to Slave Unit
- Linear interpolation and circular interpolation in two and three dimensions, and pass function offered as standard
- Capable of performing ON/OFF control of a general purpose output at a designated position while the robot is moving

CA20–M00–□□

- Network Compatibility
  - O : Not available
  - C : CC-Link
  - D : DeviceNet
- VL Bus Interface
  - O : Not available
  - V : Available

・Usable for all configurations of BA-II series (Motor power of 50 W to 750 W, Liner Compo Arm)
・CC-Link or DeviceNet network compatible type models included in the lineup
・Synchronized control function offered as a standard option

●Slave Unit

- Usable as an auxiliary unit of a Master unit or High Function Master Unit
- One unit equipped with a servo amplifier for one axis

CA20–S□0

- Motor Power
  - 1 : 50W, 100W, 200W
  - 4 : 400W

CA20-S10

・Usable for BA-II series with motor power of 50 W to 400 W

VLASX Type

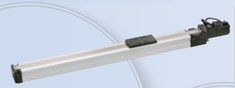
Dedicated to the motor power of 750 W

COMPO ARM

The line-up offers a wide range of configurations, from single-axis to multiple-Cartesian axes (2 to 4-axes), to meet your requirements.

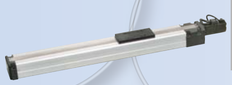
[Advantages]
- Fast Cycle Time <Maximum Speed> — · Ball-screw-driven: 1200mm/s · Timing-belt-driven 2000mm/s
- High-accuracy <Positioning repeatability> — · Ball-screw-driven: +/-0.01mm · Timing-belt-driven +/-0.05mm
- Absolute position for all — · All axis models are equipped with an absolute position detector, not requiring the home-position return.
- High-performance for all — · The controller is equipped with high-speed CPU to realize high level processing capability
- Rich variations — · Axis designs have 20 ball-screw-driven and 9 timing-belt types
  · Models for which the motor mounting position is selectable from 4 directions according to the installation space are available

Light-Load Use
◆ Maximum Payload 4 kg ▶ 30 kg



BA2-T5D (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 50
- Stroke (mm) · · · · · · · · · · · · · 50~500
- Maximum payload (kg) · · · · · · · 5~10 (Horizontal), 1.5~3 (Vertical)
- Maximum speed (mm/s) · · · · · · 800 (stroke 450mm or smaller, Lead : 12 mm)
- Positioning repeatability (mm) · · ±0.02

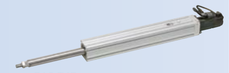
• Load mass and speed vary depending lead and stroke



BA2-T7D (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 50
- Stroke (mm) · · · · · · · · · · · · · 50~700
- Maximum payload (kg) · · · · · · · 12~30 (Horizontal), 4~8 (Vertical)
- Maximum speed (mm/s) · · · · · · 800 (stroke 550mm or smaller, Lead : 12 mm)
- Positioning repeatability (mm) · · ±0.02

• Load mass and speed vary depending lead and stroke

BA2-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



BA2-T4D type

BA2-T4D (Ball-screw Driven) Push-rod Type
- Motor Power (W) · · · · · · · · · · 50
- Stroke (mm) · · · · · · · · · · · · · 50~150
- Maximum payload (kg) · · · · · · · 7 (Horizontal), 3.1 (Vertical)
- Maximum speed (mm/s) · · · · · · 600
- Positioning repeatability (mm) · · ±0.02

BA2-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) · · · · · · 600 (stroke 250mm or smaller)
- Positioning repeatability (mm) · · ±0.02

BA2-00D (R-Axis) Harmonic Drive
- Motor Power (W) · · · · · · · · · · 50
- Stroke (mm) · · · · · · · · · · · · · 360
- Maximum payload (kg) · · · · · · · 5
- Maximum speed (° /s) · · · · · · · 360
- Positioning repeatability (°) · · · ±0.025

• Load mass and speed vary depending on lead and stroke

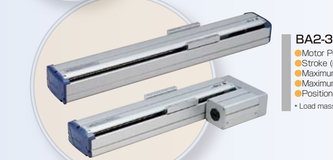
BA2-00D (R-Axis) Planet Gear
- Motor Power (W) · · · · · · · · · · 50
- Stroke (mm) · · · · · · · · · · · · · 360
- Maximum payload (kg) · · · · · · · 10
- Maximum speed (° /s) · · · · · · · 857
- Positioning repeatability (°) · · · ±0.125

• Load mass and speed vary depending on lead and stroke

Middle-Load Use
◆ Maximum Payload 15 kg ▶ 80 kg

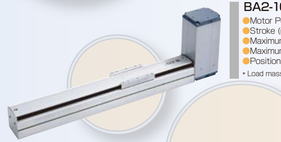
BA2-10 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 100
- Stroke (mm) · · · · · · · · · · · · · 100~1050
- Maximum payload (kg) · · · · · · · 15~50 (Horizontal), 3~22 (Vertical)
- Maximum speed (mm/s) · · · · · · 1200 (stroke 650mm or smaller, Lead : 20 mm)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead and stroke



BA2-30 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100~1050
- Maximum payload (kg) · · · · · · · 20~80 (Horizontal), 3~40 (Vertical)
- Maximum speed (mm/s) · · · · · · 1200 (stroke 650mm or smaller, Lead : 20 mm)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead, stroke, and motor power



BA2-10 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100~1850
- Maximum payload (kg) for horizontal position · · · 10~20
- Maximum speed (mm/s) · · · · · · 2000 (Motor power : 200 W, Lead : 42 mm)
- Positioning repeatability (mm) · · ±0.05

• Load mass and speed vary depending on lead, stroke, and motor power

BA2-30 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100~2500
- Maximum payload (kg) for horizontal position · · · 15~40
- Maximum speed (mm/s) · · · · · · 2000 (Motor power : 200 W, Lead : 42 mm)
- Positioning repeatability (mm) · · ±0.05

• Load mass and speed vary depending on lead, stroke, and motor power

BA2-50 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · 200, 400
- Stroke (mm) · · · · · · · · · · · · · 200~2500
- Maximum payload (kg) for horizontal position · · · 20~40
- Maximum speed (mm/s) · · · · · · 2000 (Motor power : 400 W)
- Positioning repeatability (mm) · · ±0.05

• Load mass and speed vary depending on stroke, and motor power

AGT Absolute Gauge Technologies

Presented by: Absolute Gauge Technologies
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Heavy-Load Use
◆ Maximum Payload 60 kg ▶ 250 kg

BA2-50 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 200, 400
- Stroke (mm) · · · · · · · · · · · · · 200~1500
- Maximum payload (kg) · · · · · · · 60~150 (Horizontal), 3~60 (Vertical)
- Maximum speed (mm/s) · · · · · · 1200 (stroke 600mm or smaller, Lead : 20 mm)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead, stroke, and motor power

BA2-60 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 400, 750
- Stroke (mm) · · · · · · · · · · · · · 150~1700
- Maximum payload (kg) · · · · · · · 100~250 (Horizontal), 25~100 (Vertical)
- Maximum speed (mm/s) · · · · · · 1200 (400 W specification), 900 (750 W specification)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead and stroke

BA2-60 type

BA2-50 (Ball-screw/nut Rotation Type)
- Motor Power (W) · · · · · · · · · · 200, 400
- Stroke (mm) · · · · · · · · · · · · · 1100~2500
- Maximum payload (kg) for horizontal position · · · 60~100
- Maximum speed (mm/s) · · · · · · 1000
- Positioning repeatability (mm) · · ±0.05

• Load mass varies depending on motor power.

BA2-60 (Ball-screw/nut Rotation Type)
- Motor Power (W) · · · · · · · · · · 750
- Stroke (mm) · · · · · · · · · · · · · 1000~4400
- Maximum payload (kg) for horizontal position · · · 200
- Maximum speed (mm/s) · · · · · · 1000
- Positioning repeatability (mm) · · ±0.05

BA2-50 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · 400
- Stroke (mm) · · · · · · · · · · · · · 150~4450
- Maximum payload (kg) for horizontal position · · · 100
- Maximum speed (mm/s) · · · · · · 1000
- Positioning repeatability (mm) · · ±0.05

BA2-60 (Timing Belt Driven)
- Motor Power (W) · · · · · · · · · · 750
- Stroke (mm) · · · · · · · · · · · · · 150~4450
- Maximum payload (kg) for horizontal position · · · 100~200
- Maximum speed (mm/s) · · · · · · 1000
- Positioning repeatability (mm) · · ±0.05

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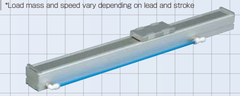
mBA-II

Clean-Room Specifications Class 10

- Class 10 (0.1 μm) achieved with the axis design dedicated for clean-room specifications
- Maximum speed of 1,200 mm/s, the fastest in Class 10!
- Sealing structure using low dust stir-up sheet
- Cleanliness ensured with low air consumption (BD1C: 60 Nl/min)
- Two Cartesian axes (X-Y table type) configurable

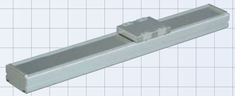
BA2-10 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 100
- Stroke (mm) · · · · · · · · · · · · · 100~1000
- Maximum payload (kg) for horizontal position · · · 20~50
- Maximum speed (mm/s) · · · · · · 200 (stroke 600mm or smaller)
- Positioning repeatability (mm) · · ±0.01

*Load mass and speed vary depending on lead and stroke



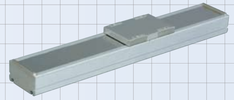
BA2-30 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 100, 200
- Stroke (mm) · · · · · · · · · · · · · 100~1000
- Maximum payload (kg) for horizontal position · · · 20~80
- Maximum speed (mm/s) · · · · · · 1200 (stroke 600mm or smaller)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead, stroke, and motor power



BA2-50 (Ball-screw Driven)
- Motor Power (W) · · · · · · · · · · 200, 400
- Stroke (mm) · · · · · · · · · · · · · 200~1500
- Maximum payload (kg) for horizontal position · · · 60~150
- Maximum speed (mm/s) · · · · · · 1200 (stroke 600mm or smaller)
- Positioning repeatability (mm) · · ±0.01

• Load mass and speed vary depending on lead, stroke, and motor power



[Cartesian Axes Specifications Examples]

Various additional combinations are possible

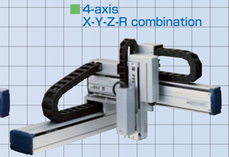
2-axis X-Y combination

2-axis X-Z combination

2-axis Y-Z combination

2-axis Z-Y combination

3-axis X-Y-Z combination



4-axis X-Y-Z-R combination