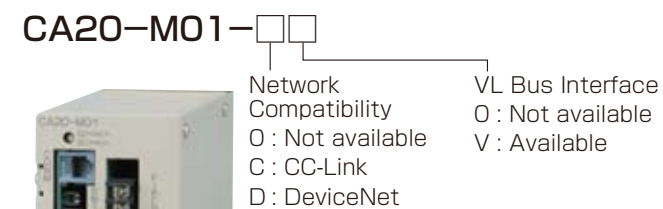


Controller Meeting Safety Category 3 Requirements

- "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.



Controller CA20-M01



Teaching Pendant TPX-4A

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

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



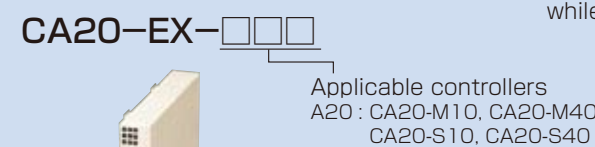
TPX-4C
Compatible models
Compatible to all master units and high function master units (except CA20-M01)
Also compatible to the old-type BA series



TPX-4A
Compatible models
Master unit CA20-M10

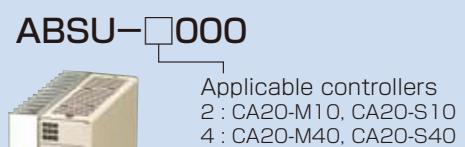
Controller Options Options for further extending the function of controllers

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



CA20-EX-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 permissible value or when a large load is moved down for a long distance while using Z axis.



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

The content described in this document is subject to change without notice, for which your understanding is requested.

SM15031-1500-S0

TOSHIBA MACHINE

The Easy generation of Cartesian technology



COMPO ARM
ARM ROBOT

BA-II SERIES

COMPO ARM

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

Master Unit

CA20-M□O

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



CA20-M10

- 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□O-□□

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



CA20-M10-CC

Network Compatibility
CC : CC-Link
DN : DeviceNet

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

Enhanced Master Unit

CA20-M00-□□

Network Compatibility
O : Not available
C : CC-Link
D : DeviceNet



- 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

- 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□O

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



CA20-S10

VLASX Type



- Usable for BA-II series with motor power of 50 W to 400 W
- Dedicated to the motor power of 750 W

catalog BA20016-CED-05

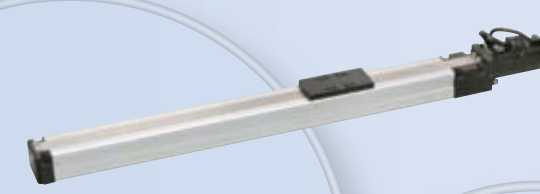
[Advantages]

- **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

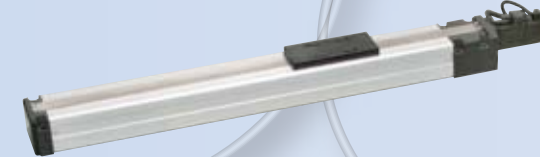
Light-Load Use

◆ Maximum Payload 4 kg 30 kg



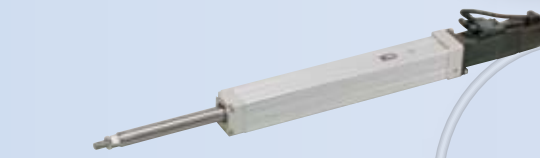
BA2-T5D (Ball-screw Driven)

- 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



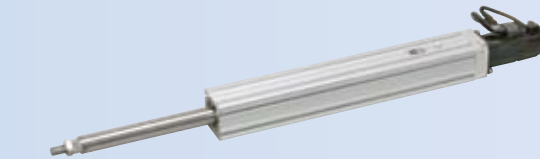
BA2-T7D (Ball-screw Driven)

- 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 (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, Lead : 42 mm)
 - Positioning repeatability (mm) ······ ±0.05
- * Load mass and speed vary depending on stroke, and motor power

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



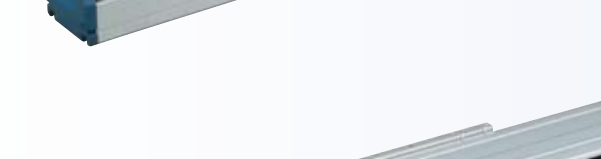
BA2-50 (Ball-screw/nut Rotation Type)

- 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)

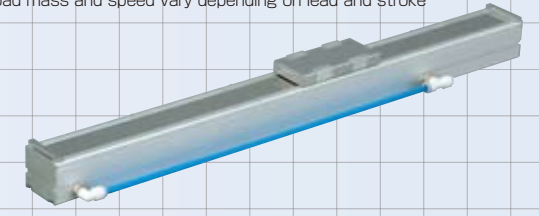
- Motor Power (W) ······ 750
- Stroke (mm) ······ 150~4450
- Maximum payload (kg) for horizontal position ······ 100~200
- Maximum speed (mm/s) ······ 1000
- Positioning repeatability (mm) ······ ±0.05

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 (BD10: 60 Nl/min)
- Two Cartesian axes (X-Y table type) configurable

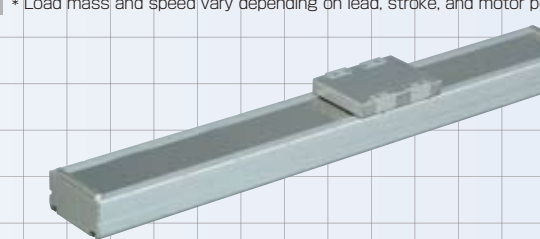
BA2-10 (Ball-screw Driven)

- 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



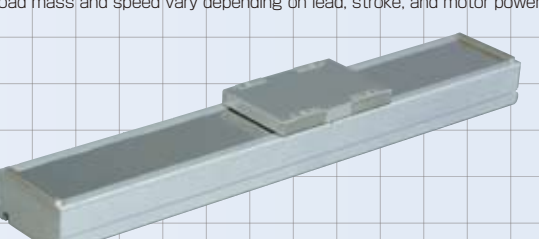
BA2-30 (Ball-screw Driven)

- 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

