

Koganei Desktop Robot **Creceed** Desktop Robot **CELL MASTER DTHB Series**

Environment friendly
RoHS directive compliant products!



Renewal of the high-performance version!

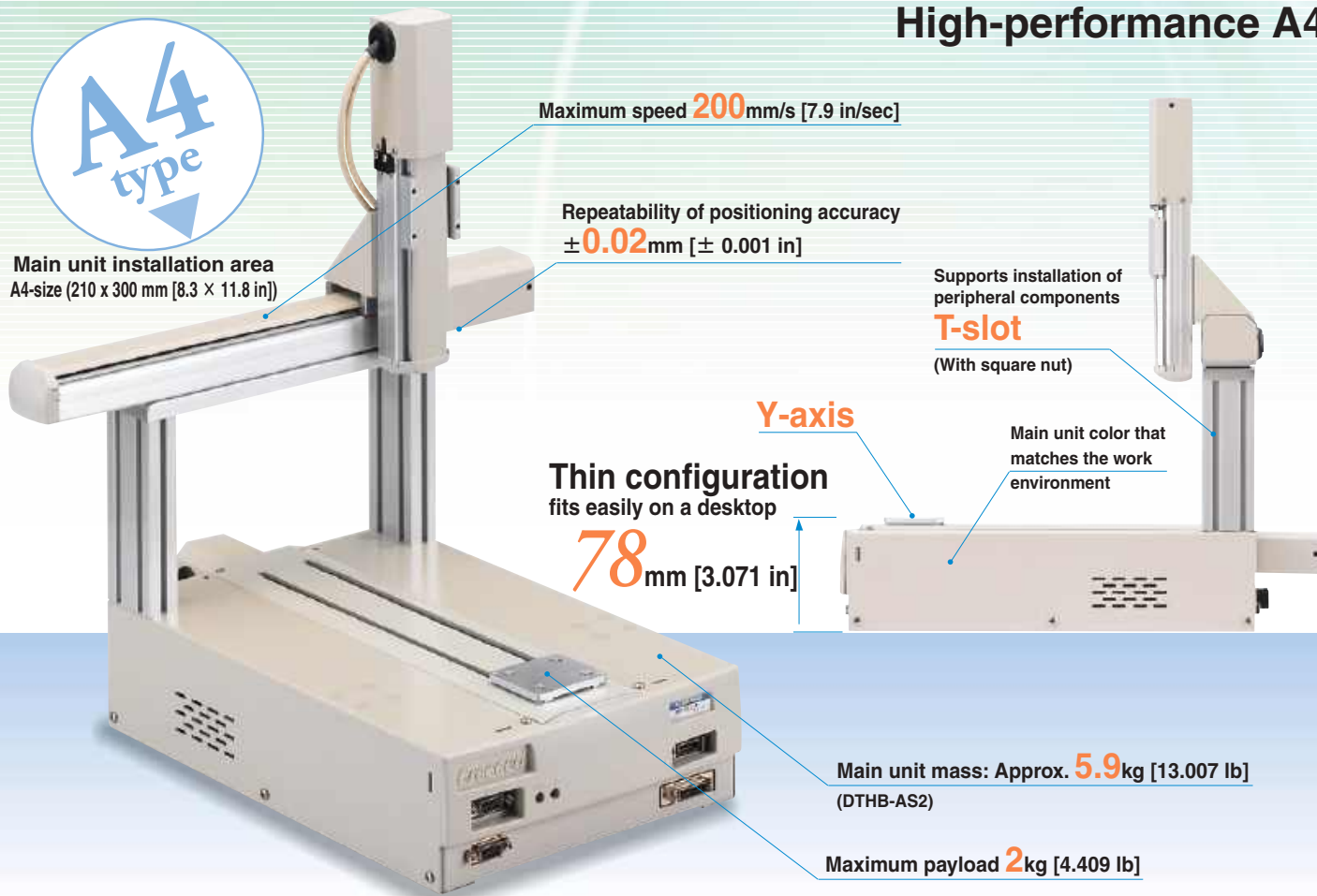
Addition of step out detection, direct teaching function

Creceed Koganei desktop robot CELL MASTER DTHB Series



Environment friendly **RoHS** directive compliant products

High-performance A4 type



Step out detection

Generation of step out is detected as an error, which automatically stops operation.

Direct teaching

Axes can be moved manually to register position points.

Powerful editor functions

A comment field has been added to programs and points.
Continuous program send/receive, program batch save and load are now supported.

Multi task function (10 tasks)

This function allows simultaneous parallel execution of multiple tasks by desktop robot peripheral devices, etc. A simple overall system control structure improves operation efficiency.

Functions for communicating with a computer, and other peripherals

An RS232C interface (two channels for DTHB, one channel for DTHKB) comes equipped. Communication commands and a high data rate of 38.4 kbps improves data communication with a computer.

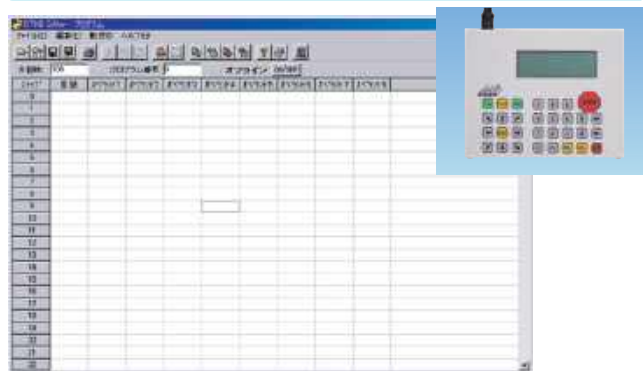
High-level motion control

- Interpolation speed (200 mm/s [7.9 in/sec] maximum speed)
- Constant linear speed
- Triangle acceleration/deceleration prevention function, S-curve control settings, micro step, individual acceleration and deceleration settings

Large memory capacity

10,000 total steps. 10,000 total points. 1 to 1000 programs (depending on parameters).

Programming box and computer support makes work more efficient





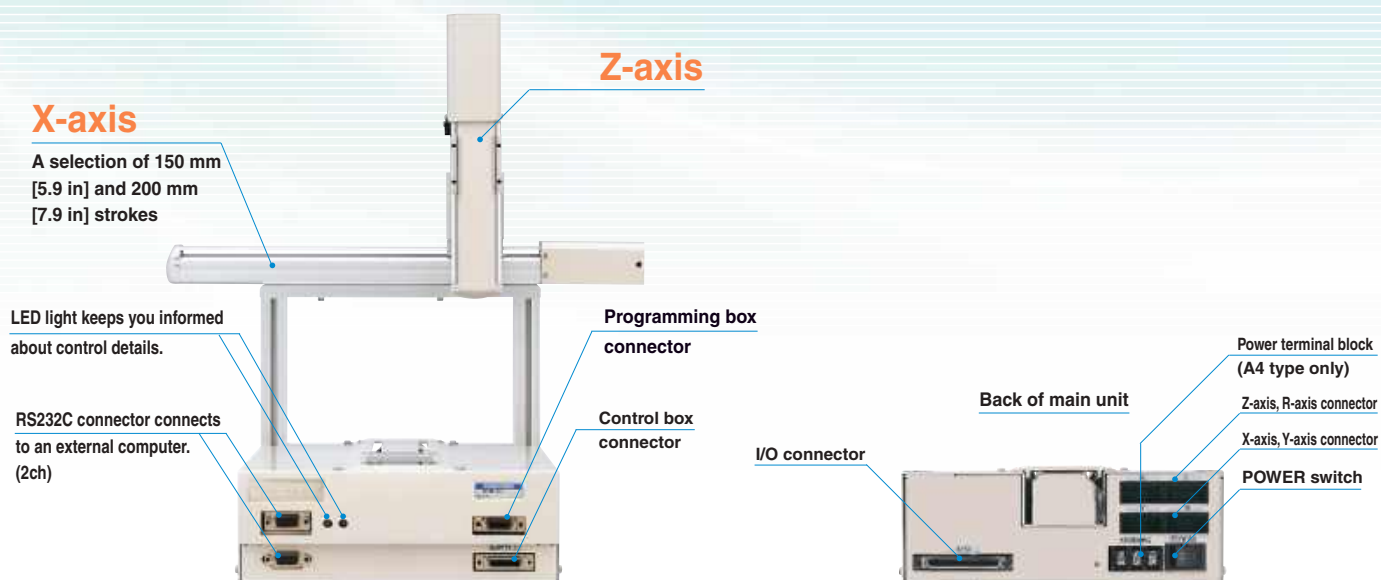
CAUTION

Before use, be sure to read the instruction manual that comes with the product.
Also be sure to read the safety precautions on page ③.

INDEX

Safety precautions	③
A4 main unit specification	⑤
A3 main unit specification	⑥
Included accessories, options	⑧
Dimensions	⑨

and A3 type robots that support creation of original items

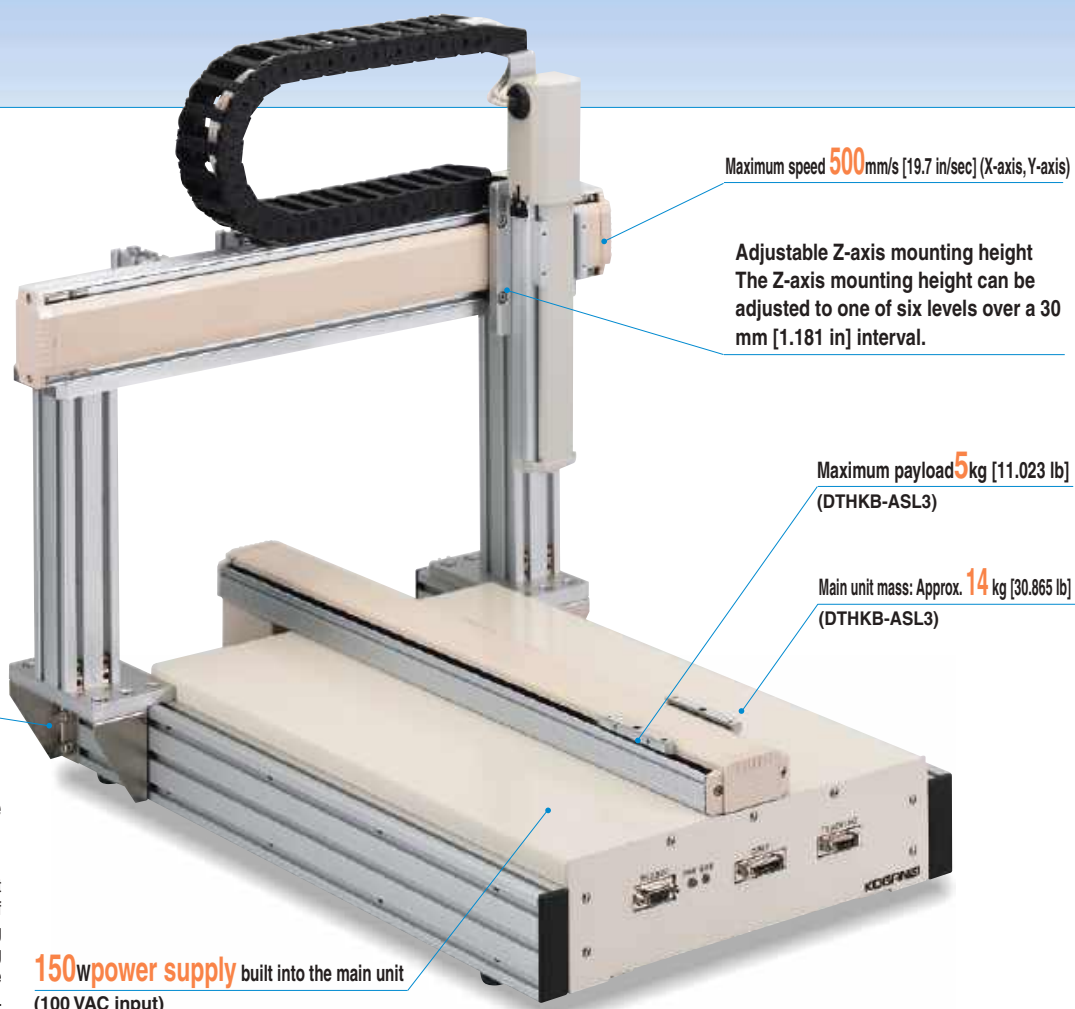


Main unit installation area
Equivalent to A3-size



A T-slot is used to enable adjustable movement of the X-axis and Y-axis mounting positions.

NOTE
Note: Guarantees concerning insufficient rigidity cannot be made in the case of assembly defects caused by mounting adjustment movements. Also, depending on the adjustment movement range, the cable length may need to be changed. Contact us for details.



Before selecting and using the products, please read all the safety precautions carefully to ensure proper product use.
 The safety precautions described below are to help you use the product safely and correctly, and to prevent injury or damage to you, other people, and assets.
 Be sure to comply with JIS B 8433 (safety standards for industrial robots).

The directions are ranked according to degree of potential danger or damage: **DANGER, WARNING, CAUTION, and ATTENTION**

 DANGER	Indicates situations that can be clearly predicted as dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 WARNING	Indicates situations that, while not immediately dangerous, could become dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 CAUTION	Indicates situations that, while not immediately dangerous, could become dangerous. Minor or semi-serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets.
 ATTENTION	While there is no chance of injury, these points should be observed for appropriate use of the product.

- This product was designed and manufactured for use in general industrial machinery.
- When selecting and handling equipment, the system designer or another person with sufficient knowledge and experience should always read the safety precautions, catalog and other literature before commencing operation. Improper handling is dangerous.
- It is up to you to verify the fitness of compatible parts on your system, and any decisions concerning use of such parts is your responsibility.
- After reading the instruction manual, catalog, and other documentation, always store them in a location that allows easy availability for reference to users of this product.
- Whenever transferring or lending the product to another person, always attach the catalog, instruction manual, and other information, to the product where they are easily visible in order to ensure that the new user can use the product safely and properly. Attach in a clearly visible location on the product to provide information on correct use.
- The danger, warning, and caution items listed under these safety precautions do not cover all possible contingencies. Read the catalog and instruction manual carefully, and always keep safety first.

DANGER

- Do not use the product for the purposes listed below:
 1. Medical equipment related to maintenance or management of human lives or bodies
 2. Mechanical devices or equipment designed for the purpose of moving or transporting people.
 3. Critical safety components in mechanical devices
 This product has not been planned or designed for purposes that require advanced stages of safety. It could cause injury to human life.
- Do not use the product in locations with or near dangerous substances such as flammable or ignitable substances. It could ignite or burst into flames.
- Do not enter the machine's operating area while the product is in operation, or in an operation-ready state. The actuator can move suddenly, possibly resulting in injury.
- Persons who use a pacemaker, etc., should keep a distance of at least 1 meter away from the product. There is a possibility that the pacemaker will malfunction due to the strong magnet built into the product.
- Always place the main unit on a flat, level, and sturdy surface and ensure there is adequate working space around it. Dropping or falling of the product or improper operation could result in injury.
- Never attempt to remodel the product. It could result in abnormal operation leading to injury, electric shock, fire, etc.
- Never attempt inappropriate disassembly, assembly of the product relating to basic construction, or to its performance or to functions. Doing so creates the risk of injury, electric shock, fire, etc.
- Do not splash water on the product. Spraying water on the product, washing the product, or using the product under water creates the risk of malfunction, leading to injury, electric shock, fire, etc.

WARNING

- Do not use the product in excess of its specification range. Such use could result in product breakdowns, function stop, damage, or drastically reduce the operating life.
- Use safety circuits or design a system that prevents damage to machinery and personal injury when the machine is shut down due to an emergency stop or electrical power failure.
- Always implement D-class grounding work (ground resistance 100Ω or less). Current leakage could cause electric shock or erratic operation.

- Before supplying electricity to the device and before starting operation, always conduct a safety check of the area where the machine is operating. Unintentional supply of electricity creates the risk of electric shock or injury due to contact with moving parts.
- Do not touch the terminals and the miscellaneous switches, etc., while the device is powered on. There is a possibility of electric shock and abnormal operation.
- Avoid scratching the cords of cables, etc. Letting the cords be subject to scratching, excessive bending, pulling, rolling up, or being placed under heavy objects or squeezed between two objects, may result in current leaks or defective continuity that could lead to fire, electric shock, or abnormal operation.
- If abnormal noise occurs or vibrations are excessive, immediately cease operation. Continued use in this condition may result in abnormal operation or runaway that could lead to product damage or destruction.
- Do not throw the product into fire. The product could explode and/or release toxic gases.
- Do not sit on the product, place your foot on it, or place other objects on it. Accidents such as falling and tripping over could result in injury. Dropping or toppling the product may result in injury, or it might also damage or break it, resulting in abnormal or erratic operation, runaway, etc.
- For inspection, maintenance, replacement, or other kinds of operations related to the product, always completely turn off the power supply before beginning.
- Operate within the recommended loads and specified speeds.

CAUTION

- When transporting or installing the product, support it securely with a lift or support tool, and avoid injuries by having multiple people, etc., do the work.
- Do not use the product in locations that are subject to direct sunlight (ultraviolet rays), dust, salt, iron powder, high humidity, or in the media and/or the ambient atmospheres that include organic solvents, phosphate ester type hydraulic oil, sulphur dioxide, chlorine gas, acids, etc. It could lead to an early shutdown of some functions or a sudden degradation of performance, and result in a reduced operating life.
- Do not use the product in atmospheres subject to corrosive gases, flammable gases, flammable liquids, etc. It could lead to a decrease in strength due to rust, or to a risk of the motor igniting or the product exploding.

- If using the product in the locations listed below, implement adequate shielding measures.
Failure to take these measures may lead to erratic operation:
 1. Locations subject to large electric current or magnetic fields
 2. Locations subject to noise due to static electricity, etc.
 3. Locations with the possibility of exposure to radiation
- Do not bring magnetic media, etc., within 1 m [3.281 ft] of the product.
There is a possibility that the data in the magnetic media will be destroyed due to the magnetism of the magnet built into the product.
- Install the main unit in locations with as little dust or dirt as possible.
Installation in locations subject to lots of dust or dirt can lead to erratic operation.
- Do not install the product in locations subject to heavy vibrations (4.9m/s² [0.5G] or more). Transmission of heavy vibrations to the product could lead to erratic operation.
- When installing the product, leave room for adequate working space around it. Failure to ensure adequate working space will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- Do not scratch, dent, or deform the driving portion by climbing on the product, using it as a scaffold, or placing objects on it. It could lead to damaged or broken products that result in operation shutdown or degraded performance.
- Always post an "operations in progress" sign for installations, adjustments, or other operations, to avoid unintentional supplying of electrical power, etc. Such accidental supplies may cause electrical shock, or sudden activation of the actuator that could result in physical injury.



ATTENTION

- When considering the possibility of using this product in situations or environments not specifically noted in the Catalog or Owner's Manual, or in applications where safety is an important requirement such as in an airplane facility, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as an application with enough margins for ratings and performance or fail-safe measure.
Be sure to consult us about such applications.
- Use a protective cover, etc., to ensure that the operating portions of mechanical devices, etc., are isolated and do not come into direct contact with human bodies.
- Do not control the product in a way that would cause a workpiece to fall during a power failure.
Take control measures so that they prevent the table and the workpiece, etc., from falling during a power failure or an emergency stop of the mechanical devices.
- Always check the Owner's Manual and other reference materials for product wiring.
- When handling the product, wear protective gloves, safety glasses, safety shoes, etc., to keep safety.
- When the product can no longer be used, or is no longer necessary, dispose of it appropriately as industrial waste.
- For inquiries about the product, consult Koganei Overseas Department. The telephone number is shown on the back cover of this owner's manual.



Other

- Always observe the following items.
 1. When using this product in a system, use only genuine Koganei parts or compatible parts (recommended parts).
Use only authentic Koganei parts or compatible parts (recommended parts) to do maintenance or repairs.
Always observe the prescribed methods and procedures.
 2. Never inappropriately disassemble or modify the product in relation to its basic construction, performance, or functions.

Koganei cannot be held responsible for any problems that occur as a result of these safety precautions not being properly observed.

Handling instructions and precautions



CAUTION

Read these precautions carefully before use.

Mounting

Read the precautions below for better table linear motion accuracy and to ensure smooth sliding screw movement.

1. Locate the main unit on a surface that is level, flat, and stable.
2. To obtain rigidity of the robot, be sure to provide an adequately large setup and mounting area.

Environment

1. Avoid use in locations where there is the chance of water droplets, oil droplets, or other liquids getting onto the main unit, where large amounts of dust are present.
2. Avoid use in locations where sulfur dioxide, hydrochloric acid, or other corrosive gases are generated.
3. Avoid locations subjected to strong vibration and/or impact.

Other

Before use, be sure to read the instruction manual that comes with the product.

Main unit

A4_{type}

3-axis gantry type
DTHB-AL3



3-axis Cartesian type
DTHB-CS3



2-axis gantry type
DTHB-AL2



2-axis Cartesian type
DTHB-CS2



Main unit specification

Main unit type		DTHB-AS2	DTHB-AS3	DTHB-ASL3	DTHB-AL2	DTHB-AL3	DTHB-ALL3	DTHB-CS2	DTHB-CS3	DTHB-CSL3
Operating range (mm [in])	X	150 [5.9]			200 [7.9]			100 [3.9]		
	Y	200 [7.9]			200 [7.9]			200 [7.9]		
	Z	—	50 [1.969]	50 [1.969]	—	50 [1.969]	50 [1.969]	—	50 [1.969]	50 [1.969]
Drive method	X•Y•Z	2-phase stepping motor (micro step control) + Encoder								
Drive mechanism	X•Y•Z	Slide screw drive								
Maximum speed (mm/s [in/sec])	X•Y	200 [7.9]			200 [7.9]			200 [7.9]		
	Z	—	200 [7.9]	70 [2.756]	—	200 [7.9]	70 [2.756]	—	200 [7.9]	70 [2.756]
Repeatability (mm [in])	X•Y	±0.02 [±0.001]								
	Z	—	±0.02 [±0.001]		—	±0.02 [±0.001]		—	±0.02 [±0.001]	
Maximum payload (kg [lb]) ^{Note 7}	X•Y	2 [4.409]							—	
	Z	—	1 [2.205]	2 [4.409]	—	1 [2.205]	2 [4.409]	—	1 [2.205] ^{Note1}	1 [2.205] ^{Note1}
Lead (mm [in])	X•Y	6 [0.236]								
	Z	—	6 [0.236]	2 [0.079]	—	6 [0.236]	2 [0.079]	—	6 [0.236]	2 [0.079]
Interpolation speed (mm/s [in/sec])	Straight line (Linear)	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9] ^{Note2}
	Arc	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9] ^{Note2}
(Constant speed)	Continuous	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9] ^{Note2}
Axis control method	Number of control axes	Simultaneous 4-axis control								
	Position setting unit	mm setting								
	Operating method	PTP operation, CP operation								
	Interpolation function	4-axis linear interpolation, 2-axis circular interpolation, ^{Note3} 2-axis continuous interpolation ^{Note3}								
	Position control	Open loop + Step out detection								
	Speed setting	One robot language operation setting, parameter settings								
	Acceleration setting	Setting by acceleration/deceleration parameters								
Program	Programming method	Robot language								
	Multi task function	10 tasks								
	Number of programs	1 to 1000 (Number of programs depends on parameters.) ^{Note 4}								
	Number of steps in a program	Total number of steps: 10,000								
	Number of points	10,000 points								
Input/output	Point input method	Manual data input (coordinate input) using programming box; Off-line programming by teaching playback, direct teaching, and computer								
	General purpose I/O	IN 24 points, OUT 24 points (By parameter settings: pin number assignment, special input/output assignment, dedicated input 5 points ^{Note 5} , dedicated output 5 points ^{Note 6})								
	External connection	RS232C (1 channel), programming box connector, control box connector, I/O connector								
General specifications	COM port (transmission rate)	RS232C(38.4kbps)								
	Power supply	24VDC ±10% (No DC power supply is provided. A 24VDC 3A 75W or more external power supply is required.)								
	Operating temperature	0~40°C[32 ~ 104°F]								
	Operating humidity	35~85% (no condensation)								
	Storage temperature	-10~50°C [14 ~ 122°F]								
	Mass	Approx. 5.9 kg [13.007 lb]	Approx. 6.4 kg [14.110 lb]	Approx. 6.4 kg [14.110 lb]	Approx. 6.1 kg [13.448 lb]	Approx. 6.6 kg [14.551 lb]	Approx. 6.6 kg [14.551 lb]	Approx. 6.3 kg [13.889 lb]	Approx. 6.8 kg [14.991 lb]	Approx. 6.8 kg [14.991 lb]

Note 1: Point settings that take into consideration the deflection at the end of the Y axis are required.

2: Interpolation speed when the Z axis is used, 1 to 70 mm/s [0.039 to 2.756 in/sec].

3: These are XY axes and ZR axis combinations.

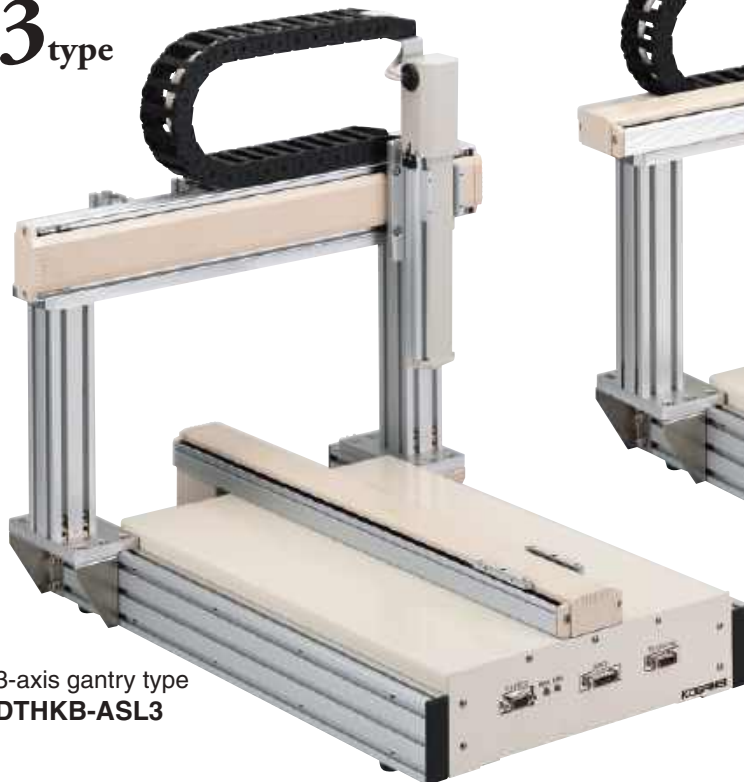
Note 4: Program selection from the operation box is 0 to 99.

5: COUNTER RESET, AUTO-RUN, RESET, ORG-START, EMG

6: READY, BUSY, END, RETURN TO ORIGIN COMPLETE OUTPUT, ALM OUTPUT

7: Workpiece mount

A3_{type}



3-axis gantry type
DTHKB-ASL3



3-axis Cartesian coordinate type
DTHKB-CSL3

Main unit specification

Main unit type		DTHKB-ASL3	DTHKB-CSL3
Operating range (mm [in])	X	300 [11.8]	300 [11.8]
	Y	350 [13.8]	300 [11.8]
	Z	100 [3.9]	100 [3.9]
Drive method	X·Y·Z	2-phase stepping motor (micro step control) + Encoder	
Drive mechanism	X·Y	Timing belt drive	
	Z	Slide screw drive	
Maximum speed (mm/s [in/sec])	X·Y	500 [19.7]	500 [19.7]
	Z	70 [2.756]	70 [2.756]
Repeatability (mm [in])	X·Y	±0.05 [±0.002]	±0.05 [±0.002]
	Z	±0.02 [±0.001]	±0.02 [±0.001]
Maximum payload (kg [lb])	Y	5 [11.023]	—
	Z	2 [4.409]	2 [4.409] ^{Note1}
Lead (mm [in])	X·Y	48 [1.890]	48 [1.890]
	Z	2 [0.079]	2 [0.079]
Interpolation speed (Constant speed) (mm/s [in/sec])	Straight line	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9] ^{Note2}
	Arc	1 ~ 200 [0.039 ~ 7.9]	1 ~ 200 [0.039 ~ 7.9]
	Continuous	1 ~ 200 [0.039 ~ 7.9] ^{Note2}	1 ~ 200 [0.039 ~ 7.9] ^{Note2}
Axis control method	Number of control axes	Simultaneous 4-axis control	
	Position setting unit	mm setting	
	Operating method	PTP operation, CP operation	
	Interpolation function	4-axis linear interpolation, 2-axis circular interpolation ^{Note3} , 2-axis continuous interpolation ^{Note3}	
	Position control	Open loop + Step out detection	
	Speed setting	One robot language operation setting, parameter settings	
	Acceleration setting	Setting by acceleration/deceleration parameters	
Program	Program method	Robot language	
	Multi task function	10 tasks	
	Number of programs	1 to 1000 (Number of programs depends on parameters.) ^{Note 4}	
	Number of steps in a program	Total number of steps: 10,000	
	Number of points	10,000 points	
Input/output	Point input method	Manual data input (coordinate input) by programming box; Off-line programming by teaching playback, direct teaching, and computer	
	General purpose I/O	IN24 points, OUT24 points (In the parameter settings, pin No. allocation, custom input/output allocation, custom input 5 points ^{Note 5} , custom output 5 points ^{Note 6})	
	External connection	RS232C (1ch), programming box connector, operation box connector, I/O connector	
General specifications	COM port (transmission rate)	RS232C(38.4kbps)	
	Power supply	100 ~ 240 VAC 50/60 Hz ^{Note 7}	
	Operating temperature	0 ~ 40°C [32 ~ 104°F]	
	Operating humidity	35 ~ 85% RH (no condensation)	
	Storage temperature	-10 ~ 50°C [14 ~ 122°F]	
	Mass	Approx. 14 kg [30.865 lb]	Approx. 15 kg [33.069 lb]

Note 1: Point settings that take into consideration the deflection at the end of the Y axis are required.

2: Interpolation speed when the Z axis is used, 1 to 70 mm/s [0.039 to 2.756 in/sec].

3: These are XY axes and ZR axis combinations.

Note 4: Program selection from the operation box is 0 to 99.

5: COUNTER RESET, AUTO-RUN, RESET, ORG-START, EMG

6: READY, BUSY, END, RETURN TO ORIGIN COMPLETE OUTPUT, ALM OUTPUT

7: The power cord provided is for 100VAC.

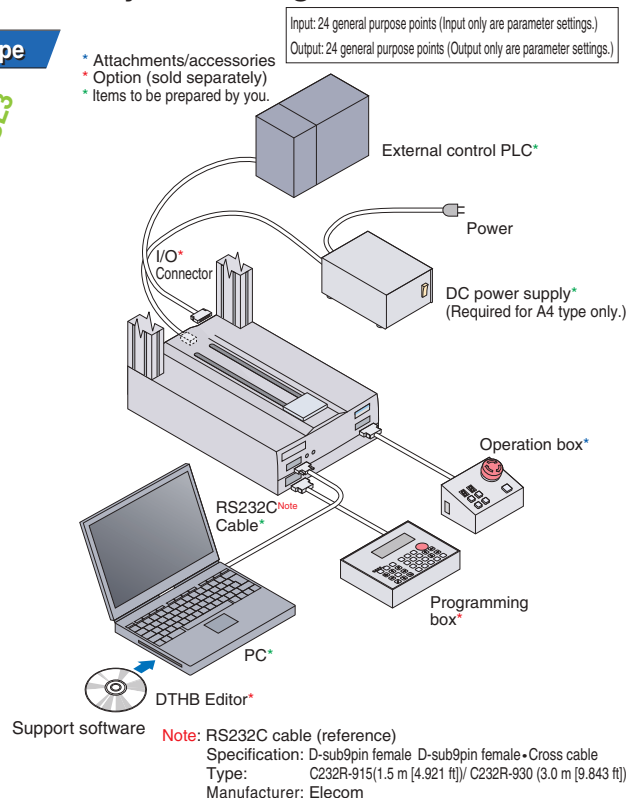
● Main unit order codes

A4 _{type}	Gantry type						Cartesian type		
	DTHB-AS2	DTHB-AS3	DTHB-ASL3	DTHB-AL2	DTHB-AL3	DTHB-ALL3	DTHB-CS2	DTHB-CS3	DTHB-CSL3
X-axis stroke	150 mm [5.9 in]			200 mm [7.9 in]			100 mm [3.9 in]		
Number of 2-axis	●			●			●		
axis ^{Note} 3-axis		●	●		●	●		●	●

A3 _{type}	Gantry type		Cartesian type	
	DTHKB-ASL3		DTHKB-CSL3	
X-axis stroke	300 mm [11.8 in]			
Number of axis ^{Note} 3-axis				

Note: Contact Koganei separately when using a 4th axis.

● System configuration



Robot language list

No.	Command (Operation code)	Description and Operand Format
000	ORG	Executes return to origin.
001	ORGM	Specifies the speed and sequence when executing return to origin. <speed>, <X axis sequence>, <Y axis sequence>, <Z axis sequence>, <R axis sequence>
022	MOVD	Moves to the direct coordinate entry position. <speed>, <X position data>, <Y position data>, <Z position data>, <R position data>
023	MOVA	Moves to the absolute point data position. <speed>, <point No.>
024	MOVI	Moves to the relative point data position. <speed>, <point No.>
025	MOVF	Moves until the specified DI matches the state. <speed>, <point No.>, <DI No.>, <DI state>
028	DRVD	Moves to the coordinate specified position on the specified axis. <speed>, <specified axis>, <position data>, <position data>
029	DRVA	Moves to the absolute point data position on the specified axis. <speed>, <specified axis>, <point No.>
030	DRVI	Moves to the relative point data position on the specified axis. <speed>, <specified axis>, <point No.>
031	DRVF	Moves until the specified DI matches the state on the specified axis. <speed>, <specified axis>, <point No.>, <DI No.>, <DI state>
032	DO	Turns DO output on and off. <DO No.>, <DO state>
033	WAIT	Waits for DI input. <DI No.>, <DI state>
034	TIMR	Waits for the specified time. <time>
035	MAT	Defines the matrix. <pallet No.>, <row (Y)>, <column (X)>
036	SHFT	Shifts the position data. <point No.>
037	SHFR	Resets the position data shift.
039	?POS	Substitutes current position data into the specified point. <point No.>
066	MDO	Turns DO output during movement. <point No.>, <range>, <pass count>, <DO No.>, <DO state>
069	P	Sets a point variable. <point variable No.>, <point No.>
070	P+	Adds to the point variable. <point variable No.>, <data>
071	P-	Subtracts from the point variable. <point variable No.>, <data>
072	C	Sets a counter variable. <counter variable No.>, <data>
073	C+	Adds to the counter variable. <counter variable No.>, <data>
074	C-	Subtracts from the counter variable. <counter variable No.>, <data>
077	TON	Starts multitask program. <task No.>, <program No.>, <start type>
078	TOFF	Stops multitask program. <task No.>
079	JMPC	Counter jump. <program No.>, <label No.>, <counter No.>, <data>
080	VCHG	Changes the speed. <speed>, <point No.>, <axis pattern>
083	STOP	Stops all axes.

No.	Command (Operation code)	Description and Operand Format
086	END	Ends program.
087	ACHA	Executes arched movement by the absolute point data. <speed>, <point No.>, <avoid position>, <interpolation start position>, <X>, <Y>, <Z>, <R>
088	ACHI	Executes arched movement by the relative point data. <speed>, <point No.>, <avoid position>, <interpolation start position>, <X>, <Y>, <Z>, <R>
089	MOLA	Moves by linear interpolation to the absolute point data position (4 axes). <speed>, <point No.>, <specified axis>
090	MOLI	Moves by linear interpolation to the relative point data position (4 axes). <speed>, <point No.>, <specified axis>
091	MOLF	Moves by linear interpolation until the specified DI matches the state (4 axes). <speed>, <point No.>, <DI No.>, <DI state>, <specified axis>
092	MOLD	Moves by linear interpolation to the coordinate specified position (4 axes). <speed>, <X>, <Y>, <Z>, <R>, <specified axis>
093	COLA	Moves around the circular interpolation defined by the absolute point data positions (2 axes). <speed>, <center point No.>, <start point No.>, <end point No.>, <direction>, <specified axis>
094	COLI	Moves around the circular interpolation defined by the relative point data positions (2 axes). <speed>, <center point No.>, <start point No.>, <end point No.>, <direction>, <specified axis>
095	COLF	Moves around the circular interpolation until the specified DI matches the state (2 axes). <speed>, <center point No.>, <start point No.>, <end point No.>, <direction>, <specified axis>, <DI No.>, <DI state>
096	PALP	Moves the pallet. <speed>, <pallet No.>, <matrix No.>
097	PALL	Executes linear interpolation movement of the pallet. <speed>, <pallet No.>, <matrix No.>
099	L	Defines the label. <label No.>
100	CALL	Calls another program. <program No.>, <label No.>, <count>
101	JMP	Jumps to a specified program. <program No.>, <label No.>
102	DSET	Sets DI to a variable. <variable No.>, <bit No.>
103	DVEN	Energizes a specified axis. <specified axis>, <driver current/hold current>
104	SET	Sets variable. <variable No.>, <data>
105	ADD	Adds variable. <variable No.>, <data>
106	SUB	Subtracts variable. <variable No.>, <data>
110	AND	Executes logic product of the variables. <variable No.>, <data>
111	OR	Executes logic sum of the variables. <variable No.>, <data>
112	JMPB	Jumps when DI input matches the specified DI state. <program No.>, <label No.>, <DI No.>, <DI state>
120	TOS	Starts a continuous interpolation. <specified axis>
121	TOC	Continues the continuous interpolation. <specified axis>
122	TOE	Ends the continuous interpolation. <specified axis>
236	SRVO	Turns the driver output ON/OFF. <X>, <Y>, <Z>, <R>
240	ACK	Responds to communication. <port No.>

Accessories, options (For both A3 and A4 type)

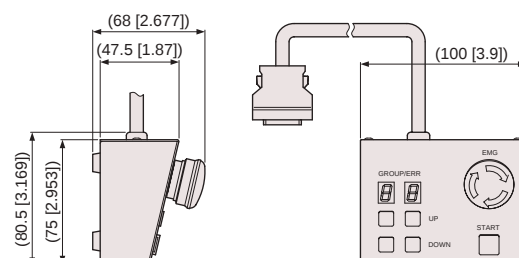
● Accessories

Operation box

DTHBM-OB (Cable length: 1 m [3.281 ft])



■ Dimensions mm [in]



100 VAC power cable

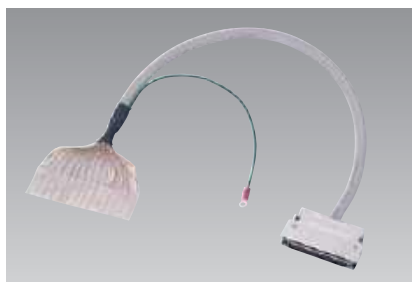
(Cable length: 2 m [6.562 ft])

* Included with A3 type only.

● Options

I/O cable^{Note}

DTHBP-CTA (Cable length: 0.5 m [1.640 ft])



Programming box

DTHBP-PB (Cable length: 1 m [3.281 ft])

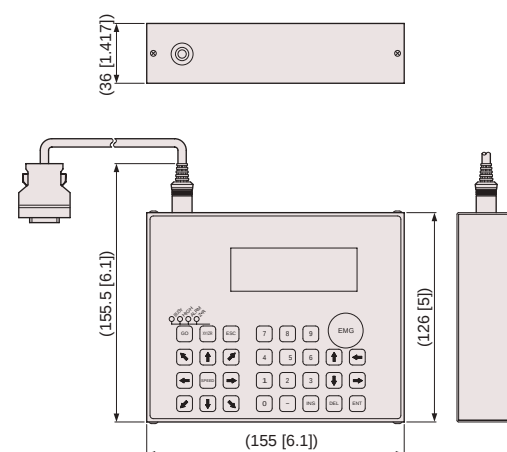


Simple teaching parameter setting configuration and program input operations.

DTHBP-CTB (Cable length: 0.5 m [1.640 ft]; with wiring terminal)

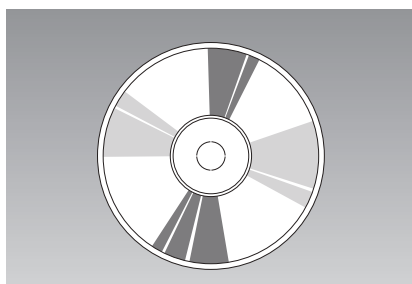


■ Dimensions mm [in]



Support software **DTHB Editor**

(For Windows 95, 98, Me, NT4.0, 2000, XP)



DTHBP-SW-HTA (Japanese)

DTHBP-SW-HTC (English)

* Windows is a registered trademark of Microsoft Corporation of the United States.

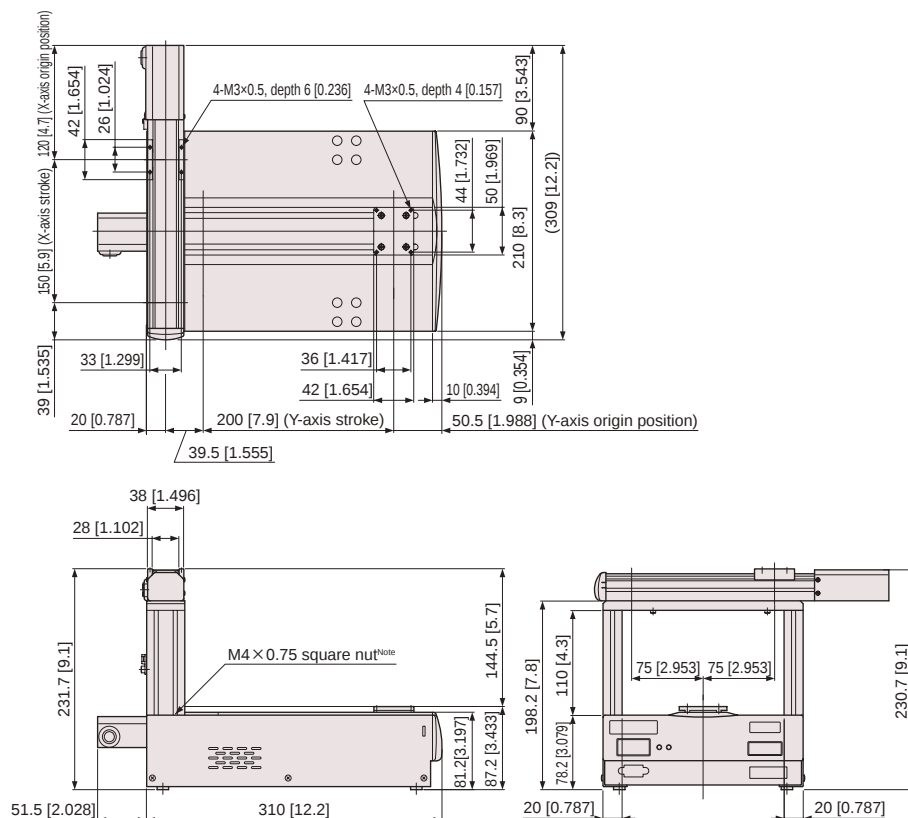
Note: An I/O connector for connecting with external control equipment is not included with the controller. Either order an optional I/O connector or provide a separate IEEE1284 standard connector.

Gantry
2-axis

A4
type

DTHB-AS2

X-axis: 150 mm [5.906 in]



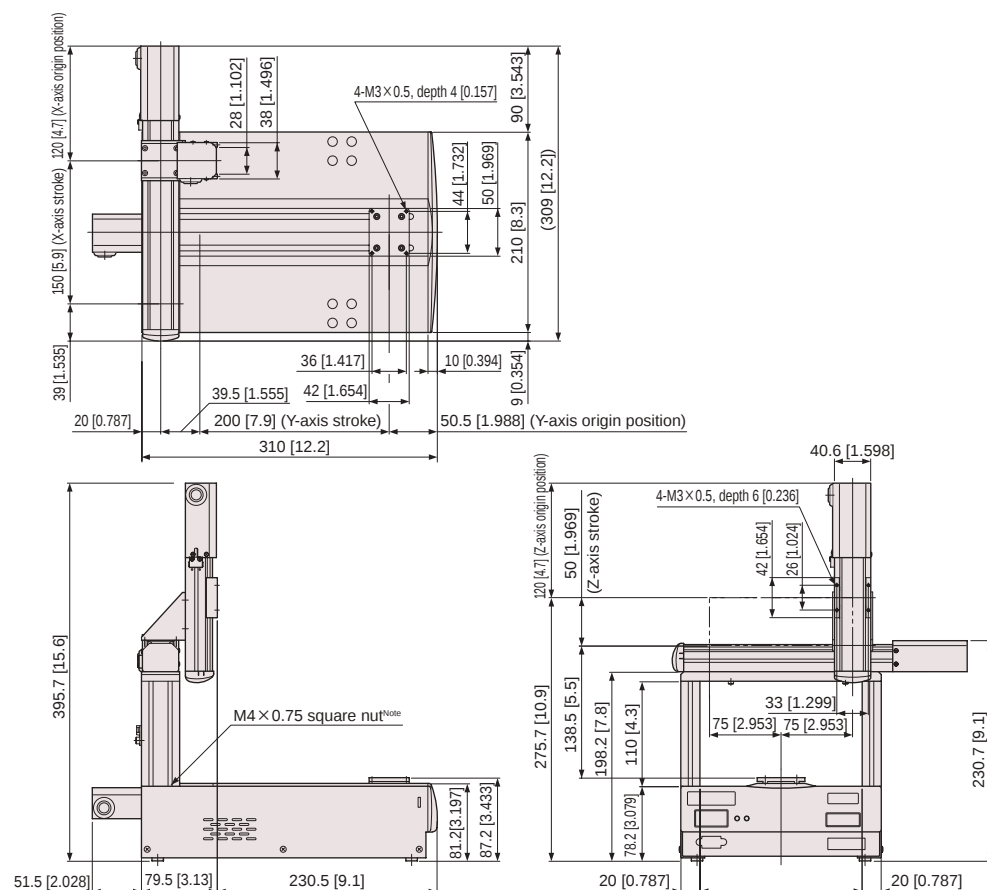
Note: A total of six square nuts on stand sides and back.

Gantry
3-axis

A4
type

DTHB-AS3
DTHB-ASL3

X-axis: 150 mm [5.906 in]



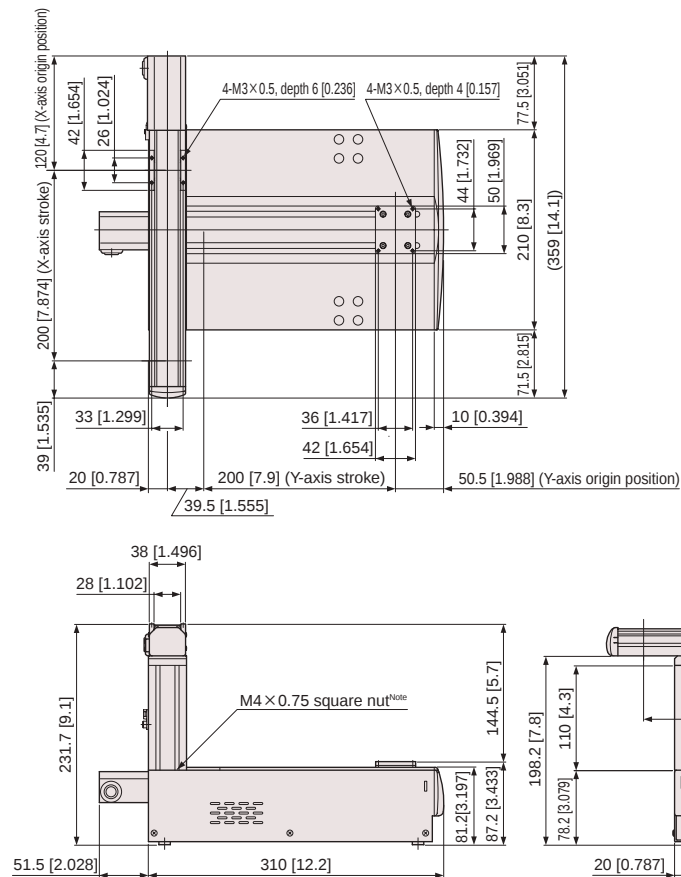
Note: A total of six square nuts on stand sides and back.

Gantry
2-axis

A4
type

DTHB-AL2

X-axis: 200 mm [7.874 in]



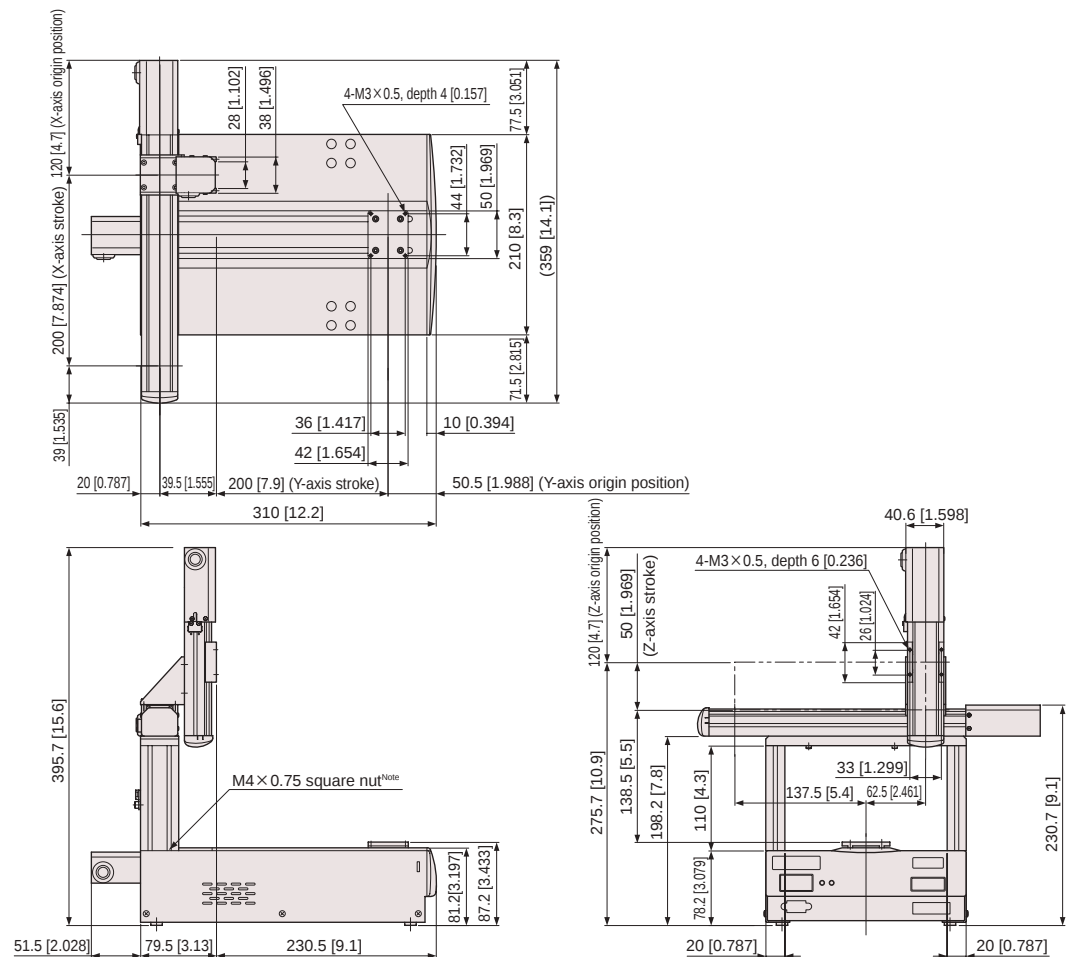
Note: A total of six square nuts on stand sides and back.

Gantry
3-axis

A4
type

DTHB-AL3
DTHB-ALL3

X-axis: 200 mm [7.874 in]

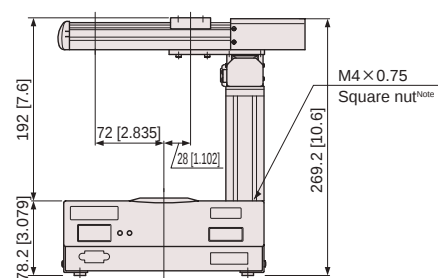
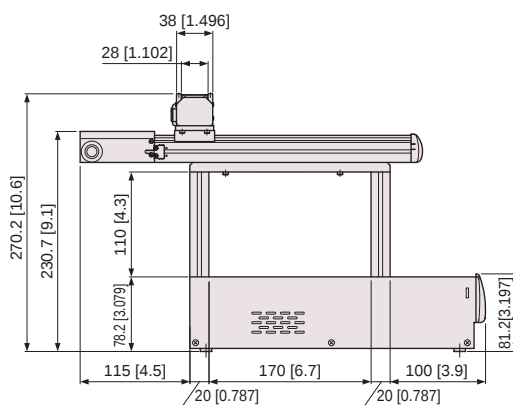
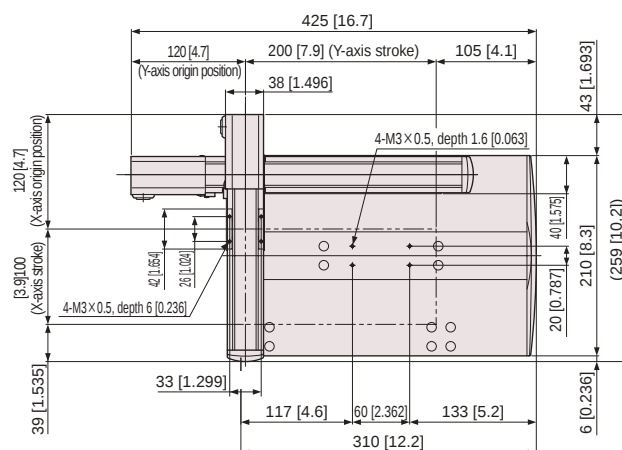


Note: A total of six square nuts on stand sides and back.

Cartesian
2-axis

A4
type

DTHB-CS2

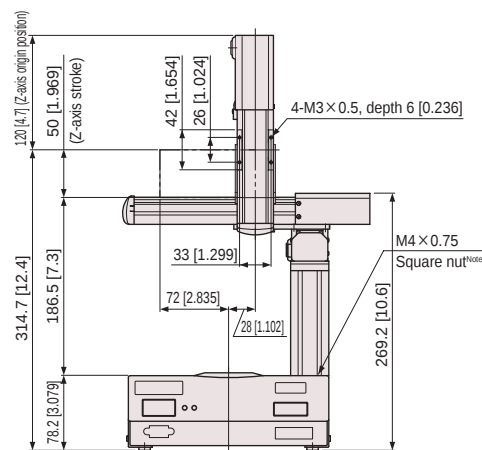
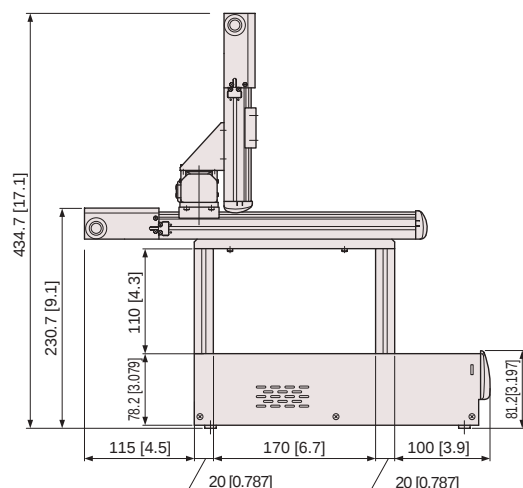
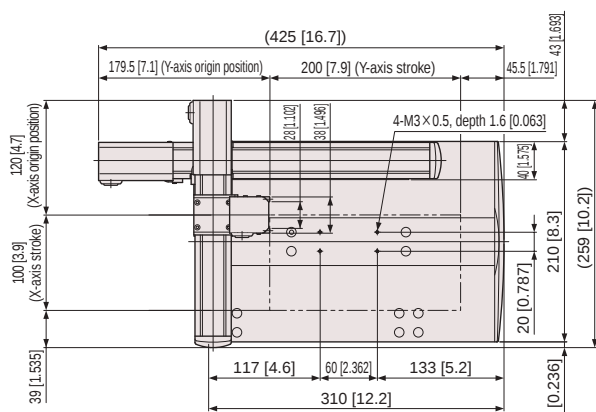


Note: A total of six square nuts on stand front, back, and right side.

Cartesian
3-axis

A4
type

DTHB-CS3
DTHB-CSL3

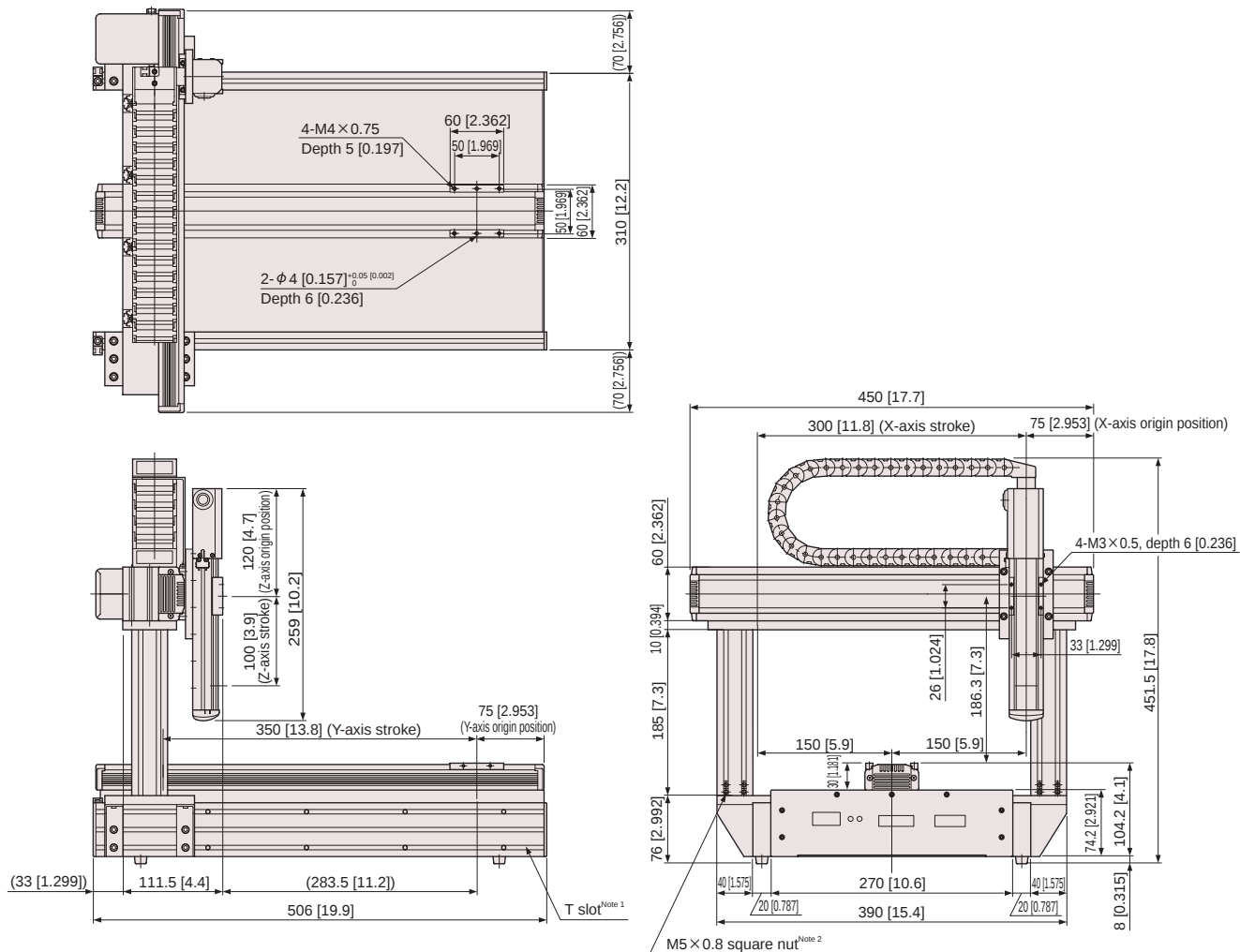


Note: A total of six square nuts on stand front, back, and right side.

Gantry
3-axis

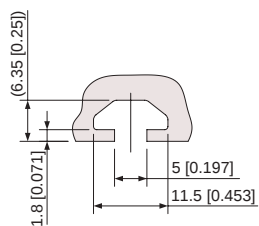
A3
type

DTHKB-ASL3



Note 2: A total of eight square nuts on stand front.

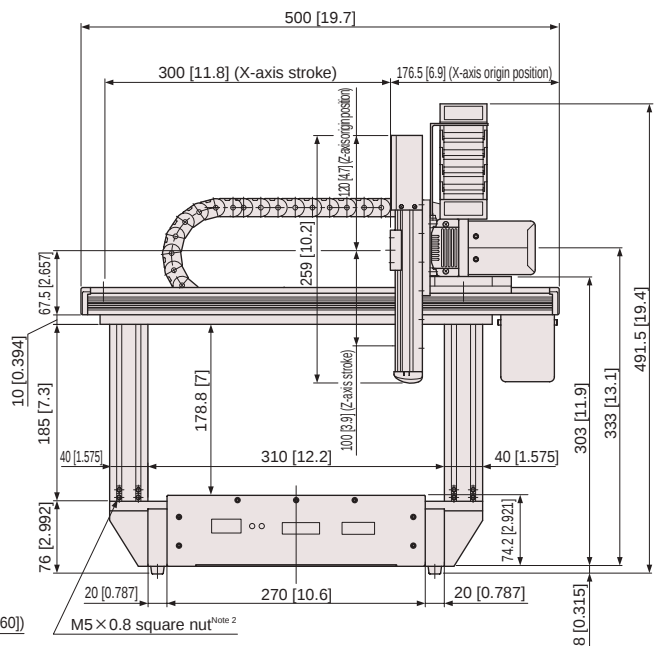
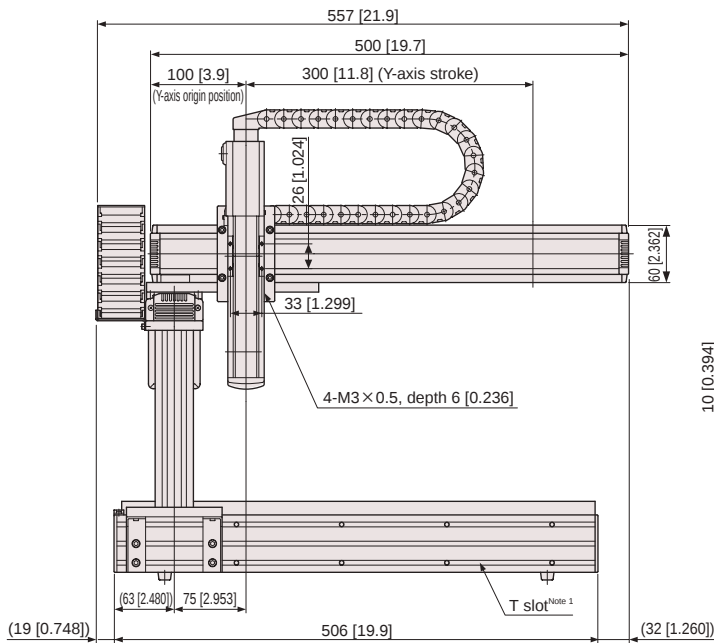
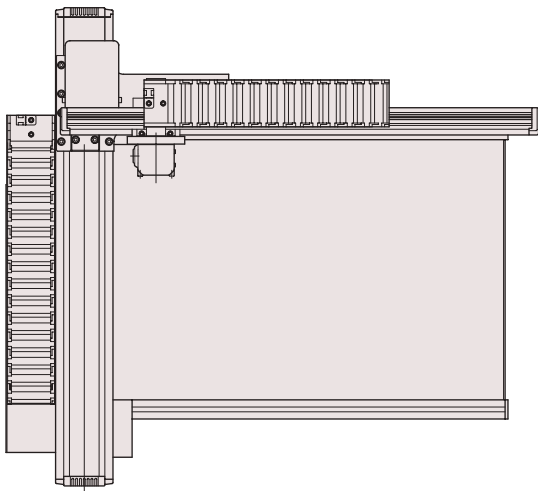
Note 1: T-slot cross section



Cartesian
3-axis

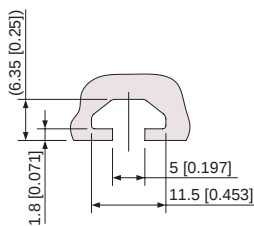
A3
type

DTHKB-CSL3



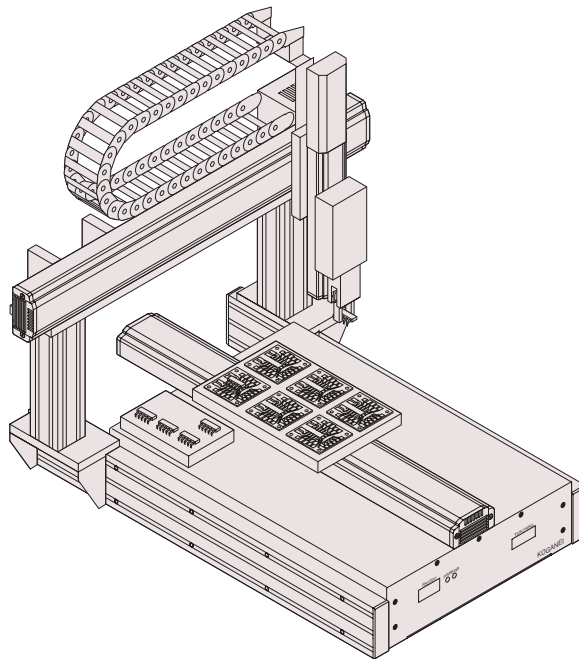
Note 2: A total of eight square nuts on stand front.

Note 1: T-slot cross section



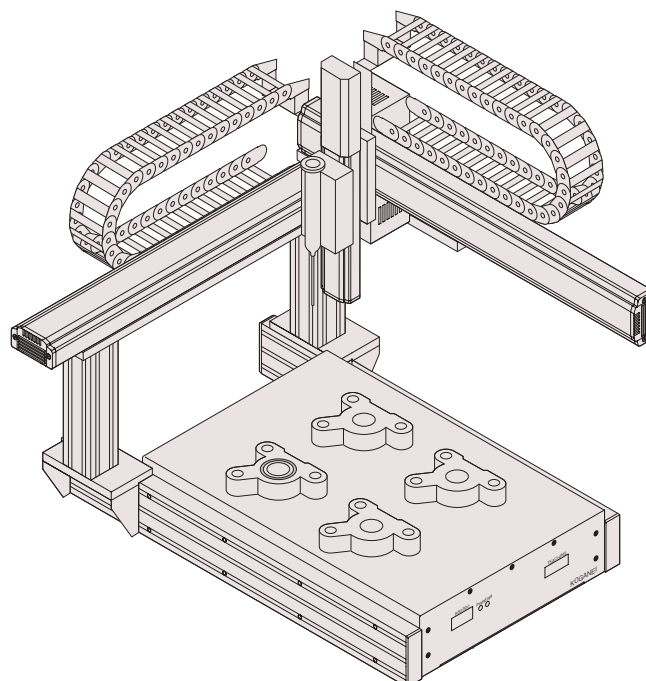
Pick and press function

- Low cost pick and place unit using the Cell Master DTHB Series on the X-axis and Y-axis.



Sealant application mechanism

- Applies sealant to the workpiece application surface.



Overview of changes by renewal of DTH (K) - DTH (K) B

- The main changes resulting from renewal from the DTH (K) Series to the DTH (K) B Series are shown below.
For details about DTH (K) B Series specifications and functions, refer to the instruction manual.

Changed item	DTH(K)	DTH(K)B
Gantry type Y-axis stroke (A4-size only)	180 mm [7.1 in]	200 mm [7.9 in] (top cover change)
Position of control box mounting connector	Main unit back, lower left side	Main unit front, lower right side
RS232C connector (communication cable)	Female (male-female cross cable)	Male (female-female cross cable)
Motor cover length (Each A4-size axis, A3-size Z-axis)	70 mm [2.756 in]	78 mm [3.071 in]
Motor cover height (A3-size, X- and Y-axes)	67 mm [2.638 in]	70 mm [2.756 in]
Encoder mounting	None	Available
Step out detection function		
Direct teaching function		
Editor/program point comments		
Editor/program batch save and load		
Editor/program continuous send and receive		