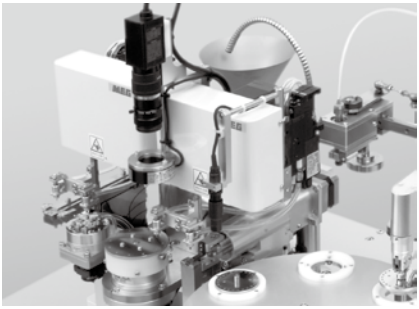
PPU
(Pick & place unit)

Using a PPU pulse control motor type enables fast stable feed of workpieces.

This is a product developed to achieve high speed, high accuracy, and small size. Besides smooth X/Y transition, X-axis secure-locking mechanisms during Z operations are presented. This is a highly reliable PPU resulted from condensation of technologies cultivated during many years development of mechanism products.



For auto assembly of workpieces at fast cycles, in many cases control motors are employed or low-inertia mechanisms which meet the specifications of machines are produced to achieve stable feed. Design and production of such a PPU are extremely labor-consuming, and the standardization of fast-feed mechanisms has been valued. We have successfully developed and produced stepping-motor-type PPUs by combining the technologies of cam-driven PPUs whose stable feed has been established during our many years experience in production of auto-assembly systems with other mechanical technologies which we have cultivated.
For auto-assembly system and FA planning, MEG's PPUs will be of your great help.

Time-proven loading unit produced with cam wisdom

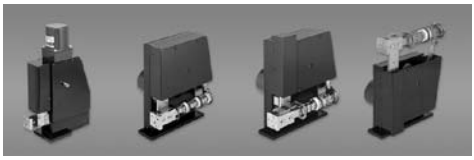
Robust design which enables high accuracy, high rigidity, and high load endurance. Smooth motions attributing to movement displacement curves. Convenient and incomparable for-the-site design. The nature of PPUs has been pursued, resulting in time-proven lineup.

Many of loading units for auto assembly have mechanisms with cylinders combined. However, their motions are not necessarily satisfactory in terms of operating characteristics, and large costs have to be anticipated for area and electricity control.
To completely solve problems relevant to the theories underlying many years design and production of auto-assembly systems and shortcomings of air-type PPUs, we have developed cam-use mechanical PPUs which present excellent quality and high cost-performance. Our PPUs have already been used for many assembly lines and highly evaluated.
Carry motions with cams completely solve various problems attributing to inertia and ensures high seed, high accuracy, and high reliability.
For auto-assembly system and FA planning, MEG's PPUs will be of your great help.

Compact type

Multi type

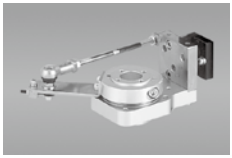
Economy type



Standard type

Semi-long type

Mecha-controller



Swivel attachment

External input

Pick and place unit

Index

Model selection Series introduction

■ Series

Pulse-control motor-driven type

Compact		C-12

Cam-driven type

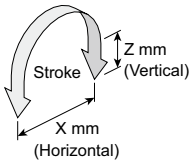
Multi		C-30
Economy		C-38
Standard		C-48
Semi-long		C-84
Long		See the web page.

- For the specifications, see C-112.
- For restriction of applications and safety precautions, see C-110.

■ Features

Pulse-control motor-driven type

Compact



- Fast stable feed is ensured starting with 0.3 second cycle time.
- A single motor serves for horizontal and vertical movements. Easy control and maintenance labor reduction are enabled.
- Three types (stepping, αSTEP, external input) are available. Selectable depending on the applications.
- Five different horizontal stroke distances available from 30 mm to 110 mm. Selectable from a wide variety of models.
- Due to movement of the arm under the body, there is free space around the arm.
- Z-axis stroke setting can be configured freely.
- Power consumption is much smaller than those having single-axis robot configuration.
- This is a long-life unit having a simple mechanism.
- A dedicated controller is available. No program is needed and setup is easy.

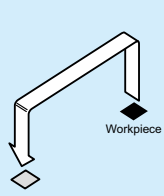
Cam-driven type

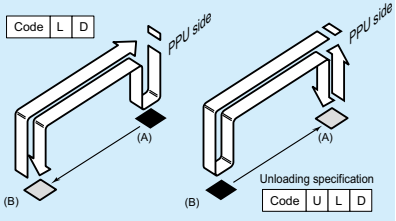
Center carry

- High-load stable feed is ensured starting with 0.8 second cycle time.
- A single motor serves for horizontal and vertical movements. Feed operation can be performed by one cam shaft rotation.
- Two cams induce operations, enabling desired motions.
- Selectable from a wide variety of models in the range of vertical strokes from 80 mm to 200 mm.
- Two standard motions are available depending on the feed style.
- Combining with swivel heads enables layout-conscious space-saving equipment installation.
- Power consumption is one tenth of those having air cylinder configuration. (According to our survey)
- Long-life unit which enables smooth operations with cams

Side carry

Basic motion	Standard operation motion

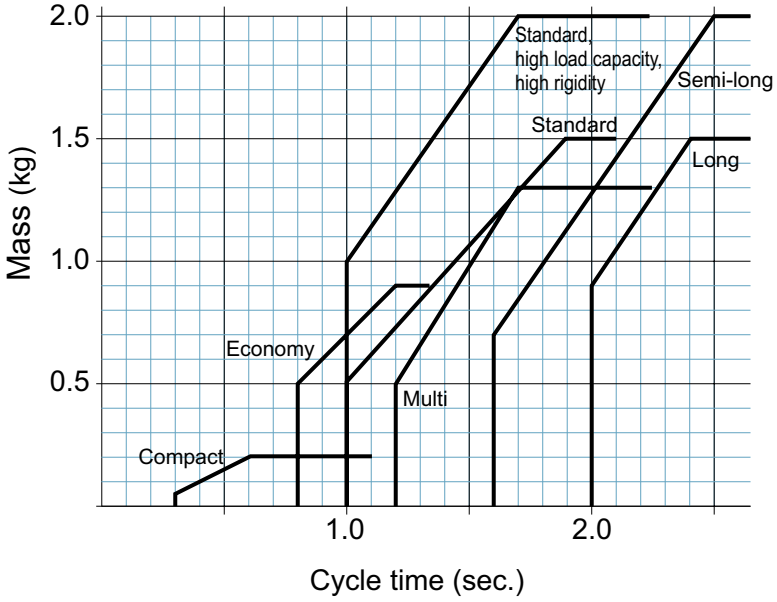


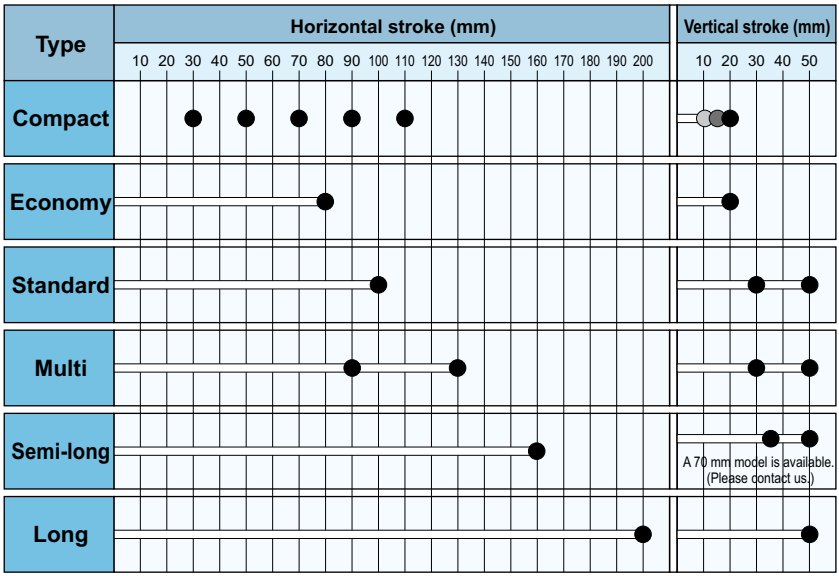


Model selection Cycle time and transportable mass

■ Cycle time and transportable mass

- Chuck mass is included.
- The values shown here are intended for rough indication. See the relevant specifications.
- The PPU cam-driven type model allows the usable range to be expanded through stroke reduction.
  Please contact us for detailed information.

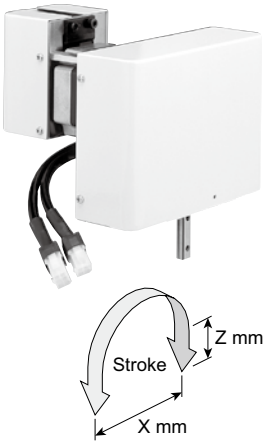




* The available models are indicated with ●. For information such as model Nos., see the model list (on page C-6-).
* The changeable range of the stroke is indicated with ▭. For details, see the specifications of the individual products.

Model selection

What is “compact”?

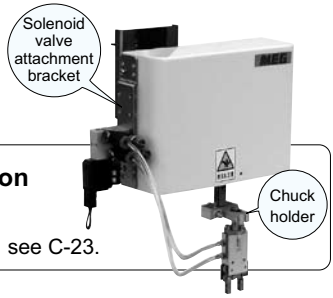


The loading arm is placed in the main body, and the tip of the arm is moved horizontally and vertically under the main body.
The main body does not take so much space for installation, resulting in compact machine configuration.
Drive can be selected from three types (stepping motor, αSTEP, and external input) depending on equipment specifications.
Moreover, because a dedicated controller is available, the equipment can be initiated smoothly.

Dedicated controller

Stepping, αSTEP

Stroke
30 to 110 mm (X: horizontal)
10, 15, 20 mm (Z: vertical)



Application

For details, see C-23.

■ Model list

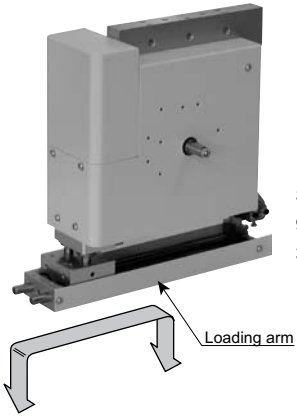
Pulse-control motor-driven PPU Compact series

Stroke Horizontal x vertical (mm)				
30 x 10	50 x 15	70 x 15	90 x 15	110 x 20
×				
	×			
		×		
			×	
				×

Stroke Horizontal x vertical (mm)			
Stepping	αSTEP	External input	
X6303A	X6303A-66S	X6303A-C08	X6303A-C10
X6305A	X6305A-66S	X6305A-C08	X6305A-C10
X6307A	X6307A-66S	X6307A-C08	X6307A-C10
X6309A	X6309A-66S	X6309A-C08	X6309A-C10
X6311A	X6311A-66S	X6311A-C08	X6311A-C10
Remarks	With a controller	With a controller	Hole diameter: φ8	Hole diameter: φ10

For details, see C-12.

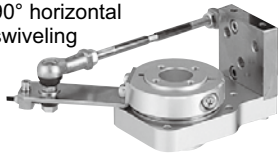
What is “multi” type?



This is a type whose loading arm is located under the main body. The loading arm moves vertically and horizontally. Suspending and backside mounting are possible, so that space under the arm can be used freely.
Three types of cams (plate cam, grooved cam, and ribbed cam) are available, and their combinations depending on such usages are possible as general usage and usage with secure movement and/or high speed valued.

Stroke
90 to 130 mm (X: horizontal)
30, 50 mm (Z: vertical)

Swivel attachment
90° horizontal swiveling



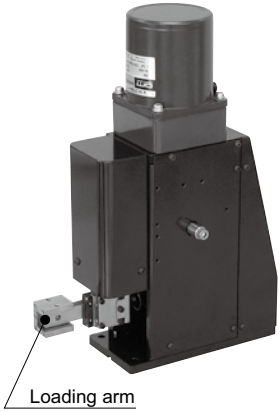
For details, see C-106.

■ Model list

	Stroke	X			Z			Model No.	Descriptions page	Specifications page
		Plate	Grooved	Ribbed	Plate	Grooved	Ribbed			
Pick & place unit Multi type	90 x 30	×			×			PPM09030PP	C-30	C-32
		×				×		PPM09030PG		
			×			×		PPM09030GG		
			×		×			PPM09030GP		
	130 x 30	×			×			PPM13030PP	C-30	C-32
		×				×		PPM13030PG		
			×			×		PPM13030GG		
			×		×			PPM13030GP		
				×			×	PPM13030R		
	130 x 50	×			×			PPM13050PP	C-30	C-32
		×				×		PPM13050PG		
			×			×		PPM13050GG		
			×		×			PPM13050GP		

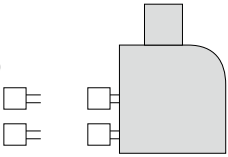
Model selection Center carry

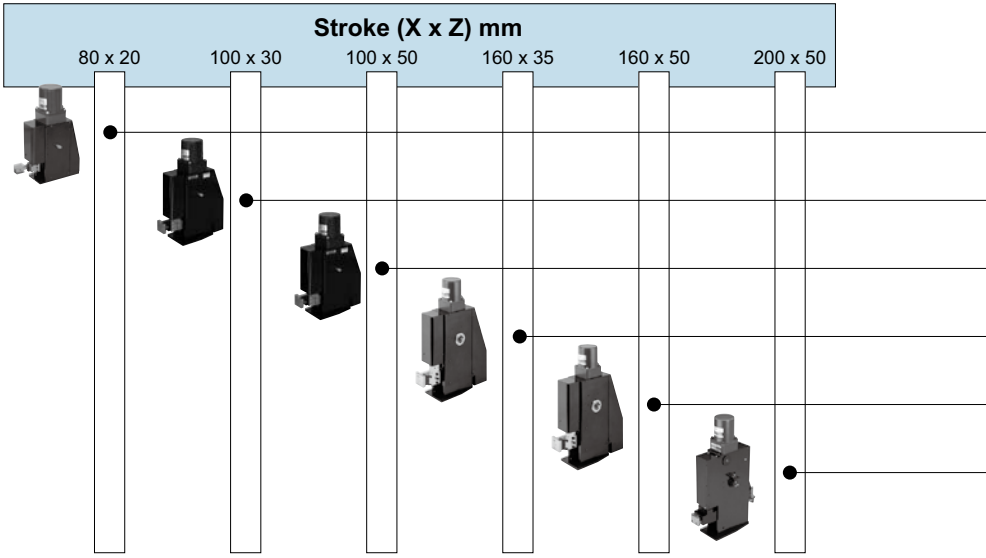
What is “center carry”?



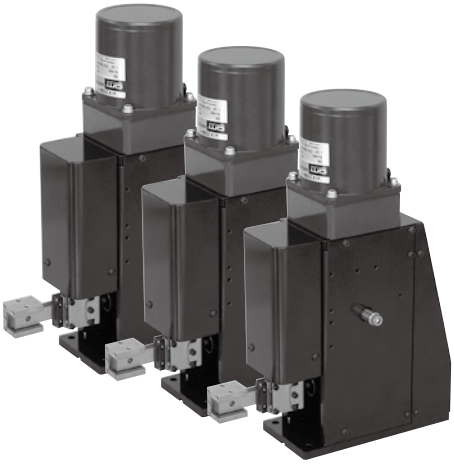
This is a type whose loading arm is located inside the body. The loading arm moves vertically and horizontally.
Inter-unit pitch can be reduced, resulting in compact machine configuration.

Stroke
80 to 200 mm (X: horizontal)
20 to 50 mm (Z: vertical)



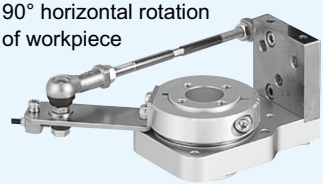


Installation example



Swivel attachment

90° horizontal rotation of workpiece

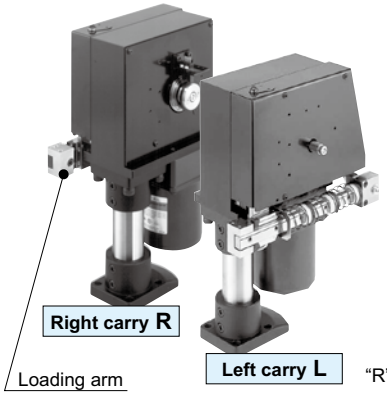


Supporting models: X6092A, X6091A, X6094, X6094S
For details, see C-106.

Feature	Type	Model No.	Descriptions page	Specifications page
Helpful also for fast feed of light workpieces	Economy	X6092A	C-38	C-40
For general use Various applications	Standard	X6091A	C-48	C-50
For general use Various applications Vertical long length	Standard special	X6091SA	C-48	C-54
Long enough for free flow conveyor	Semi-long	X6094	C-84	C-86
Helpful also for long-distance feed of tall workpieces	Semi-long special	X6094S	C-84	C-86
Inexpensive due to use of ball bushings Longest stroke	Long	X6085	Web page	Web page

Model selection Side carry

What is “side carry”?

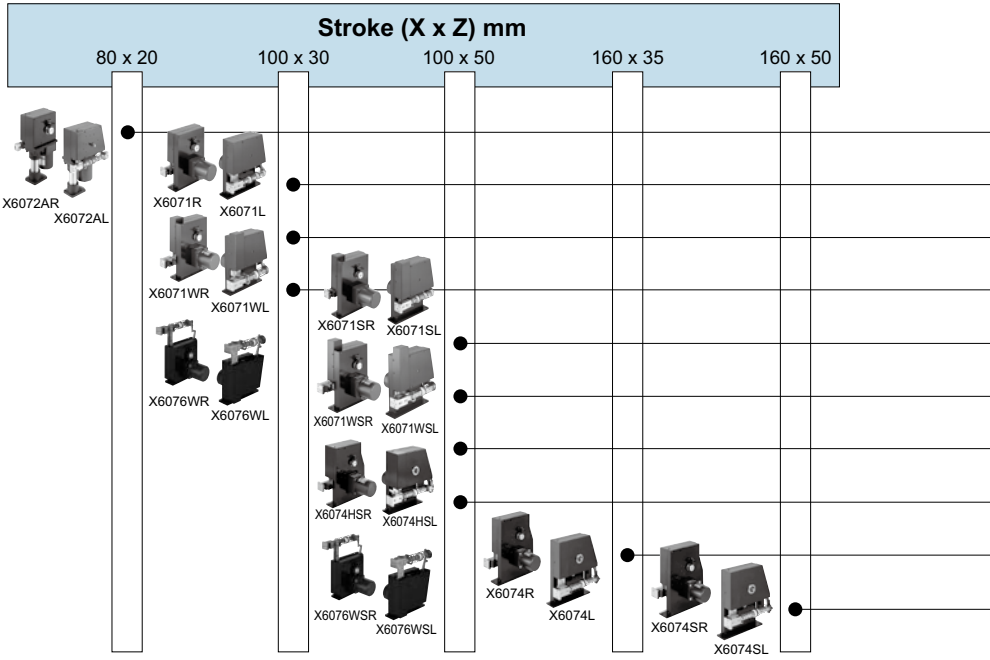


This is a type whose loading arm is installed at the bottom left or bottom right. A straight feeder or a conveyor can be placed in the space under the arm.

Stroke
80 to 160 mm (X: horizontal)
20 to 50 mm (Z: vertical)

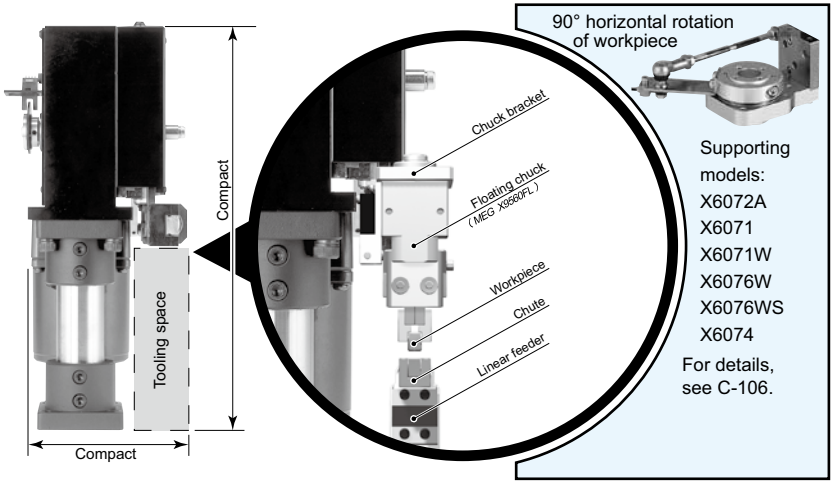
* For the left carry, its arm moves along the left side of the unit (when viewed from the rear of the unit). For the right carry, its arm moves along the right side.

“R” or “L” is added to the end of model Nos.



* X6074SS 160 mm x 70 mm
Please contact us for detailed information.

Installation example



Feature	Type	Model No.	Descriptions page	Specifications page
Helpful also for fast feed of light workpieces	Economy	**X6072A**	C-38	C-44
For general use Various applications	Standard	**X6071**	C-48	C-58
High rigidity which allows feed of heavy items	Standard high rigidity	**X6071W**	C-48	C-66
Contributing to reduction of machine installation space	Overhead high rigidity	**X6076W**	C-48	C-78
For general use Various applications Vertical long length	Standard special	**X6071S**	C-48	C-62
High rigidity which allows feed of heavy items	Standard high rigidity special	**X6071WS**	C-48	C-70
Faster feed of heavy items	High load capacity	**X6074HS**	C-48	C-74
Contributing to reduction of machine installation space	Overhead high rigidity	**X6076WS**	C-48	C-80
Long enough for free flow conveyor	Semi-long	**X6074**	C-84	C-90
Helpful also for long-distance feed of tall workpieces	Semi-long special	**X6074S**	C-84	C-90

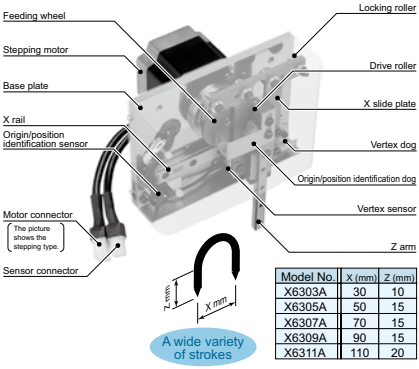
PPU (Pulse-control motor-driven pick & place unit)

Compact type X63□□A

The PPU X63 series are single-drive pick & place units which allow fast and accurate workpiece feed, and have been highly evaluated by a lot of customers due to their easy control and long-period stable feed.
The stroke can be selected from five choices (30 mm, 50 mm, 70 mm, 90 mm, and 110 mm) ensuring the selection of an optimal model.
Also, to meet a wide range of demands from customers, the α STEP and external-input types have been added to the lineup of the existing stepping motor type. The X63 series which now allow more motor and shape selections according to machine specifications will be great help for facilities in your company.

■ Fast feed & compact

The company's own mechanism driven by a pulse control motor allows 0.3 second fast cycle time despite its compact body size (palm size).



Model No.	X (mm)	Z (mm)
X6303A	30	10
X6305A	50	15
X6307A	70	15
X6309A	90	15
X6311A	110	20

■ High position repeat accuracy

For the linear guide, a precompression type is used. During Z-axis straight operations, the X-axis is securely locked, resulting in high position repeat accuracy.

■ Various sensors available

Origin and vertex detection sensors are built in. A model with a motor is equipped, as standard, with one dog & sensor on the rear. These serve to detect timing and interlock with external equipment. Up to three sensors can be included on the rear of the monitor.

■ Dedicated motion controller

NEW

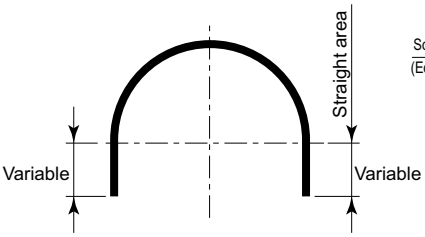
This is applicable to the stepping motor and αSTEP.

Motions selectable.
No need of programing.
Easy setup.

For details, see C-24.

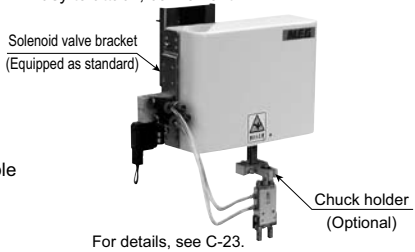
■ Flexible stroke (Z)

The Z-axis stroke is variable with a pulse control program. Convenient for usages such as fine workpiece and multi-height feed.



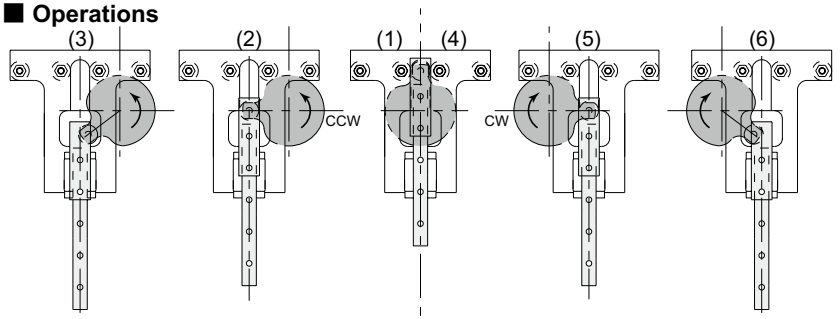
■ A wide variety of handling related parts

Items such as a chuck solenoid valve attachment bracket and parallel air chuck holder are available. Easy to attach, convenient.



For details, see C-23.

Operations



Position c
- Counter clockwise rotation of the motor beyond 90 degrees causes only the Z-axis to lower.

Position b
- Counterclockwise rotation of the motor causes the X-axis to move and the Z-axis to lower at the same time. The X-axis is locked at the position 90 degrees from the vertex.

Position a
- Vertex

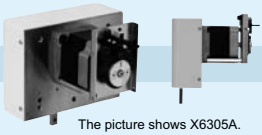
Position d
- Clockwise rotation of the motor causes the X-axis to move and the Z-axis to lower at the same time. The X-axis is locked at the position 90 degrees from the vertex.

Position e
- Clockwise rotation of the motor beyond 90 degrees causes only the Z-axis to lower.

Work on the left side | Work on the right side

Drive systems

Selectable from three drive systems.

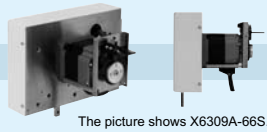


The picture shows X6305A.

Stepping

This is a time-proven basic model.

This is an economical product which presents high safety factor regarding feed capability and ensures secure operations.



The picture shows X6309A-66S.

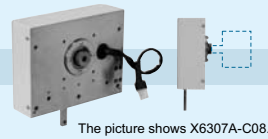
*α*STEP

NEW

Improved reliability with closed-loop control

The latest *α*STEP “AR series” DC power input type motors are employed.

* *α*STEP is a registered trademark of ORIENTAL MOTOR.



The picture shows X6307A-C08.

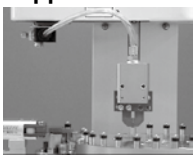
External input

NEW

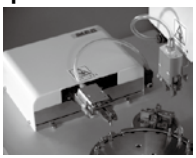
A motor prepared by a customer can be attached.

More variety of usages are ensured: for example, introduction of a control motor as standard equipment and motor layout changes depending on machine installation space.

Application examples



MEG-made chuck
Precision part handling



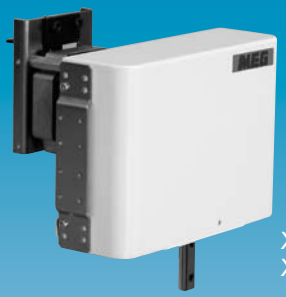
Side use
Precision part handling

Double vacuum pad
Electronic part handling

Single vacuum pad
Precision part handling

PPU (Pulse-control motor-driven pick & place unit)

X63□□A



X63□□A
X63□□A-66S

With a sensor cover

- Due to X-Z drive with a single motor, system simplification and cost reduction are possible.
- The company's unique mechanism allows fast cycle time despite compact body size.
- The X-axis (horizontal) is securely locked in the vertical straight area, resulting in high position repeat accuracy.

■ Variation

Model No.	Stroke X x Z (mm)				
	30 x 10	50 x 15	70 x 15	90 x 15	110 x 20
X6303A	×				
X6305A		×			
X6307A			×		
X6309A				×	
X6311A					× NEW

Product number configuration

X6305A-66S-AS-S1C-CHH1-MCB1

PPU model No.
X6303A
X6305A
X6307A
X6309A
X6311A

Drive system
No code: Stepping
66S: αSTEP
C08: External input (φ8)
C10: External input (φ10)

Built-in sensor
AS: Standard
LS: Special (CCW limit type)

No. of sensors
S1: 1 piece (standard)
S2: 2 pieces (standard)
S3: 3 pieces (standard)

Timing detection sensor (mecha-controller)

Sensor cover
No code: None
C: Included

Chuck holder bracket
No code: None
CHH1: Included

Motion controller bracket
No code: None
MCB1: Included

* "A" has been added as in X6303A and X6305A due to some changes of the internal components of the series. The external dimensions and quality are the same as X6303 and X6305.

* If built-in sensors having the "LS" specifications are needed, please contact us.

- Fill in the support sheet and contact us to let us provide support starting with selection. For the support sheet, see H-7.

■ Specifications

Drive system	Stepping	αSTEP	External input
	Stepping motor drive		(Control motor)
Standard motor	PK566NB	ARM66SBK	–
Built-in sensor	Origin/position identification sensor Vertex sensor		
Mecha-controller * Supplied as standard	Photo sensor & dog (1 piece) * To be mounted at the rear of the motor.		–
Standard paint color	Cream color		
Ambient temperature	5 to 50°C		
Ambient humidity	85% or less (No condensation)		
Lubricant	COSMO GREASE, DINAMAX EP No. 1		

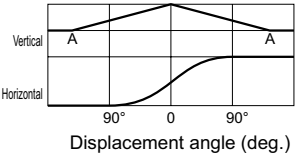
* The driver of the motor is provided by the customer.
* For external input, a motor is provided by the customer.

■ Performance (all types)

Model No.	Stroke (mm) X	Stroke (mm) Z Straight	Stroke (mm) Z Straight (mechanical end)	Stroke (mm) Z R operations included	Position repeat accuracy (mm)	Main body mass (kg)
X6303A	30	0 to 10	12	27	±0.01	2.4 (1.6)
X6305A	50	0 to 15	16.5	41.5		2.4 (1.6)
X6307A	70	0 to 15	17	52		2.8 (2.0)
X6309A	90	0 to 15	17	62		3.5 (2.7)
X6311A	110	0 to 20	21	76		3.5 (2.7)

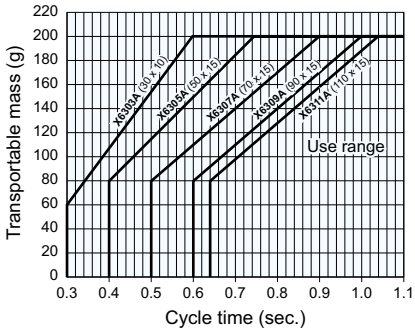
* The X stroke tolerance is -0.1, +0.2.
* The values in ( ) are presented for the external input type.

■ Timing of motion



Model No.	A
X6303A	143
X6305A	131
X6307A	119
X6309A	112
X6311A	

■ Cycle time and transportable mass

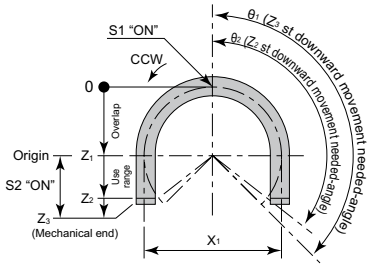


- The cycle time includes each 0.02 second stop duration at the bottom ends.
- Be careful not to use beyond the allowed mass limit. Using beyond the limit can result in a trouble.
- The values of drivers to be used are RKD514L for the stepping type and ARD-K for αSTEP.

Micro step 1/20	X6303A to X6309A	X6311A
Initiation pulse speed	8,000 Hz	2,000 Hz
Acceleration/deceleration time	0.05 sec.	0.07 sec.

- A full-stroke motion which starts from the vertex is the case.
- Set 0.1 second or longer stop time from the end of one cycle to the start of the next cycle.

■ Overlap amount



Model No.	X1	Z1	Z2	Z3	θ1	θ2
X6303A	30	15	25	27	143.0	131.8
X6305A	50	25	40	41.5	131.3	126.9
X6307A	70	35	50	52	119.0	115.4
X6309A	90	45	60	62	112.2	109.5
X6311A	110	55	75	76	112.4	111.3

X63□□A

■ Specifications of the built-in sensor (AS type) NPN Type

Applications	For vertex detection For origin/position identification/detection*
Name	Photo sensor with a built-in amplifier
Model/manufacturer	PM-L24/SUNX
Power supply voltage	5 to 24 VDC ±10% (Ripple P-P 10% or less)
Current consumption	15 mA or smaller
Indicator light	LED Turn on when light enters

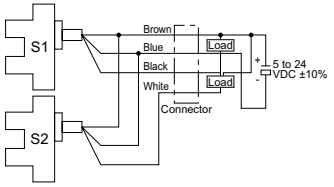
* The detection position is located at the upper end of the Z straight section at the CCW side.
* The detection position is not adjustable.

Connector table

Connector No.	Line color	Input/output
1	Brown	+V
2	Blue	0 V
3	Black (white)	Vertex output (Note 1)
4	White	Origin/position identification output (CCW side)

Note 1: Only X6303A and X6305A are available as black models with vertex output.
Note 2: The connector and terminal for the built-in sensor are supplied as standard.

Connection diagram



Output operation

Sensor	Output operation	Remarks
S1	Turned on when light enters.	Vertex (X6303A, X6305A)
	Turned on when light is blocked.	Vertex (models other than above)
S2	Turned on when light is blocked.	Origin/position identification

■ Return to origin

- For return to origin, use an origin sensor. For motor-equipped models, mecha-controllers also can be used. For return to origin, follow the procedure below:

* Be sure to set the mechanical origin to the center in the x direction. This product does not have a brake mechanism. If you set the origin position to a position other than the center, the arm falls when the power is turned off.

- When the origin (position identification) sensor is turned on Turn clockwise. Then, when the origin sensor is turned off, turn counterclockwise. Quit when the origin sensor is turned on. Offset to the central position in the X direction as the mechanical origin and turn on the vertex sensor.
- The vertex detection slit has 3 mm width (for X6303A and X6305A, 1 mm). Stopping at the center of the slit must be resulted.
- When the origin (position identification) sensor is OFF Turn counterclockwise and quit when the origin sensor is turned on. Offset to the central position in the X direction as the mechanical origin and turn on the vertex sensor.

■ Timing detection sensor (mecha-controller)

The PPU repeats determined operations through positive and negative rotations of the motor. Various timing detections are possible following those operations: for example, origin position; peripheral equipment's operation timing such as chunk; and interlock. For a motor-equipped model, one sensor is attached as standard. Up to three sensors can be attached.

Detection sensor specifications NPN Type

Sensor type	EE-SX673A (OMRON) connector EE-1001
Power supply voltage	5 to 24 VDC ±10% (Ripple P-P 10% or less)
Power consumption	35 mA or smaller
Control output	5 to 24 VDC load current (Ic) 0.8 V or less 100 mA residual voltage
Light-sensitive element	Si phototransistor

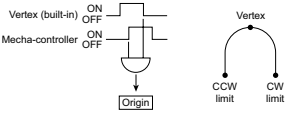
Note 1: For the time chart wiring diagram, see C-98.
Note 2: For the mecha-controller, see C-102.

■ Detection timing of the mecha-controller

For the standard specifications of motor-equipped models, one set of sensor and dog are attached. Application examples are given below. Properly use taking special care for safety.

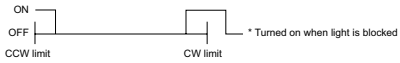
[1] Setting the origin (vertex) strictly

The detection width of the built-in vertex sensor is 3 mm (for X6303A. 1 mm for only X6305A). If strict detection is necessary, configure the setting as shown below.



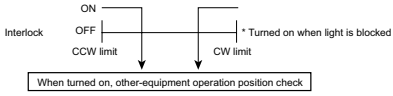
[2] Setting the limit

The body does not contain the limit. If detection is necessary for each operation, configure the setting as shown below.



[3] Setting an interference prevention timing with peripheral equipment

If other equipment operates simultaneously and the timing shifts, interference may occur. If the PPU's position is detected in the area and shift from other equipment occurs, stop other equipment. Configure the setting as shown below.



■ Stepping type

- The driver and controller are provided by the customer. Please contact us for detailed information.
- The capacity of this product changes depending on the used driver. Use a recommended driver. Using a driver not recommended may fail to support full transportable mass. (A 24 VDC power driver may present extremely low capacity.)
- Using the full or half step causes strong oscillations, possibly resulting in unstable feeding and vibration problems as well.
  Use with the micro step.

Name	5-phase stepping motor (double-shaft)
Model	PK566NB (PK566H-B, five leads, 1.4 A)
Basic step angle	0.72°
Max. holding torque	8.3 kg•cm
Current	1.4 A/phase
Manufacturer	ORIENTAL MOTOR

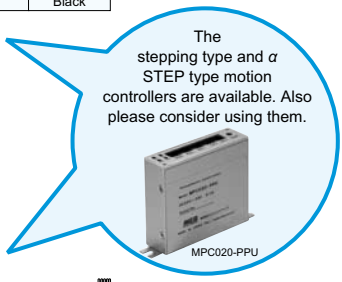
Connector table

Connector No.	Motor line color
1	Blue
2	Red
3	Orange
4	Green
5	Black

Recommended driver

Manufacturer: ORIENTAL MOTOR

Power supply	Name [model]
100 V	RK series [RKD514L-A]
200 V	RK series [RKD514L-C]

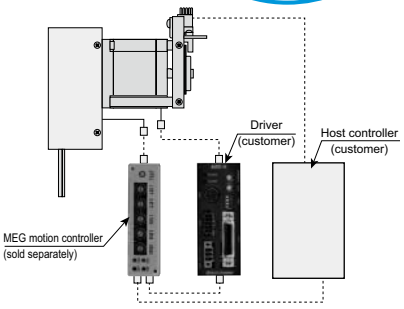


■ α STEP type

- The driver and controller are provided by the customer.
- Use with the micro step. Using the full or half step causes strong oscillations, possibly resulting in unstable feeding.
- Do not use at the mechanical end. Failure to observe this instruction may result in premature failure of the product.
- Do not have press operations be induced through motor thrust. Failure to observe this instruction may result in premature failure of the product.

Name	AR series
Motor model	ARM66SBK
Driver type	ARD-K (to be prepared by the customer)
Power supply input	24 VDC ±10%, 3.1 A
Manufacturer	ORIENTAL MOTOR

* The connection cable between the motor and the driver is to be provided by the customer. See the "AR series DC power input" catalog of ORIENTAL MOTOR.



* For the motion controller (MPC020-PPU), a commercially available connection cable can be used. Please contact us for detailed information.

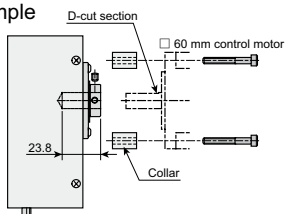
■ External input type

- The motor needs to be prepared by the customer.
- Use a motor whose torque is equivalent to that of a stepping type. [For 0.8 N·m, 500 rpm]
- Do not use at the mechanical end. Failure to observe this instruction may result in premature failure of the product.
- Do not have press operations be induced through motor thrust. Failure to observe this instruction may result in premature failure of the product.

Motor shaft hole diameter	φ8 H7	φ10 H7
Securing method	Set screw (M4, two positions)	
Pulley connection	Possible (A reference CAD diagram is available.)	

* Do not additionally modify the hole.
* Use a motor shaft having two D-cut planes by preference, and use the D-cut planes to secure. If using a motor shaft having a single D-cut plane, put a plunger between the round shaft section and the set screw.
* Use caution so that the motor attachment screw length should not exceed 7 mm.
* Be sure to use the origin sensor together.
* Do not use an air-type actuator.

Example



The variation of the thickness of the collar (or the spacer) must be kept within 0.02 so that the parallel level relative to the motor mounting plane is ensured.

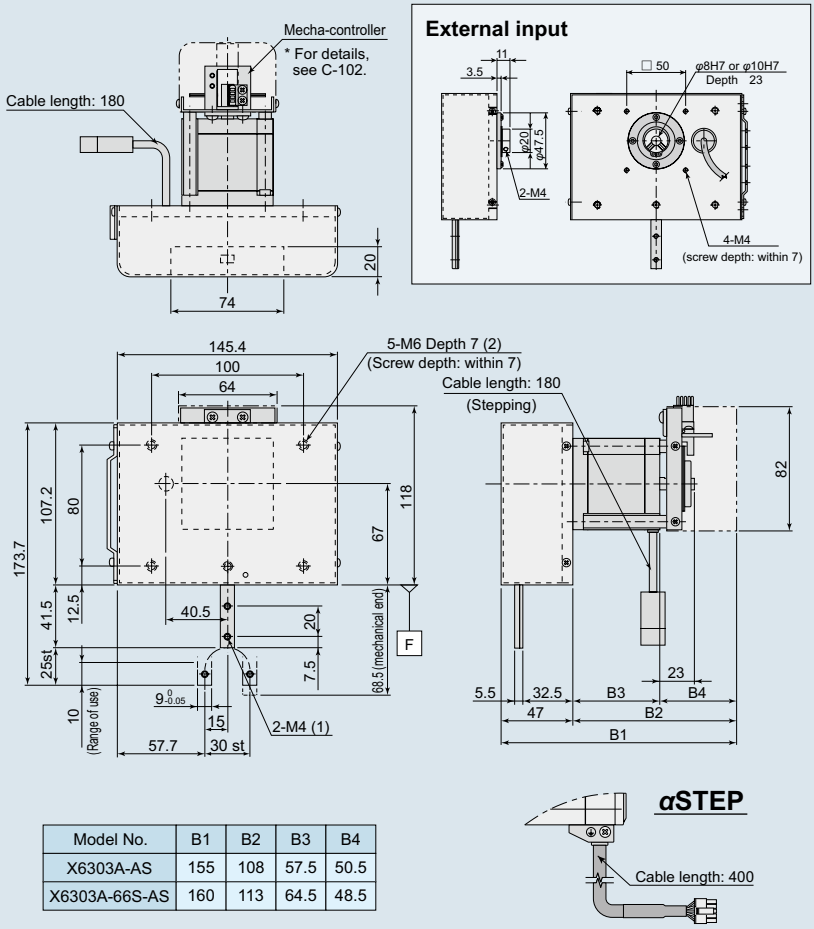
* Also please consider coupling connections as necessary.

X630□

■ Dimensional drawing (mm)

X6303A

* For precautions, see C-28.



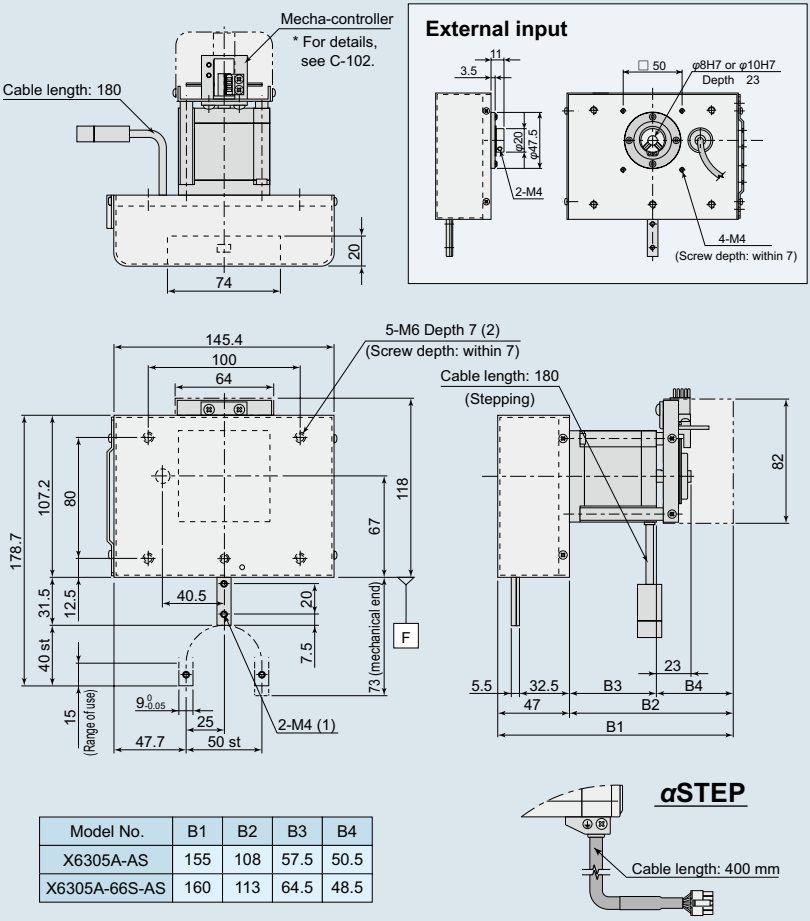
Model No.	B1	B2	B3	B4
X6303A-AS	155	108	57.5	50.5
X6303A-66S-AS	160	113	64.5	48.5

- For tools such as a chuck and vacuum pad, use the tap holes (1) of the arm tip (dimensional drawing) to secure.
- For the body, use the mounting tap holes (2) to secure.
- The F plane (bottom of the body) can be the location face.

■ Dimensional drawing (mm)

X6305A

* For precautions, see C-28.



Model No.	B1	B2	B3	B4
X6305A-AS	155	108	57.5	50.5
X6305A-66S-AS	160	113	64.5	48.5

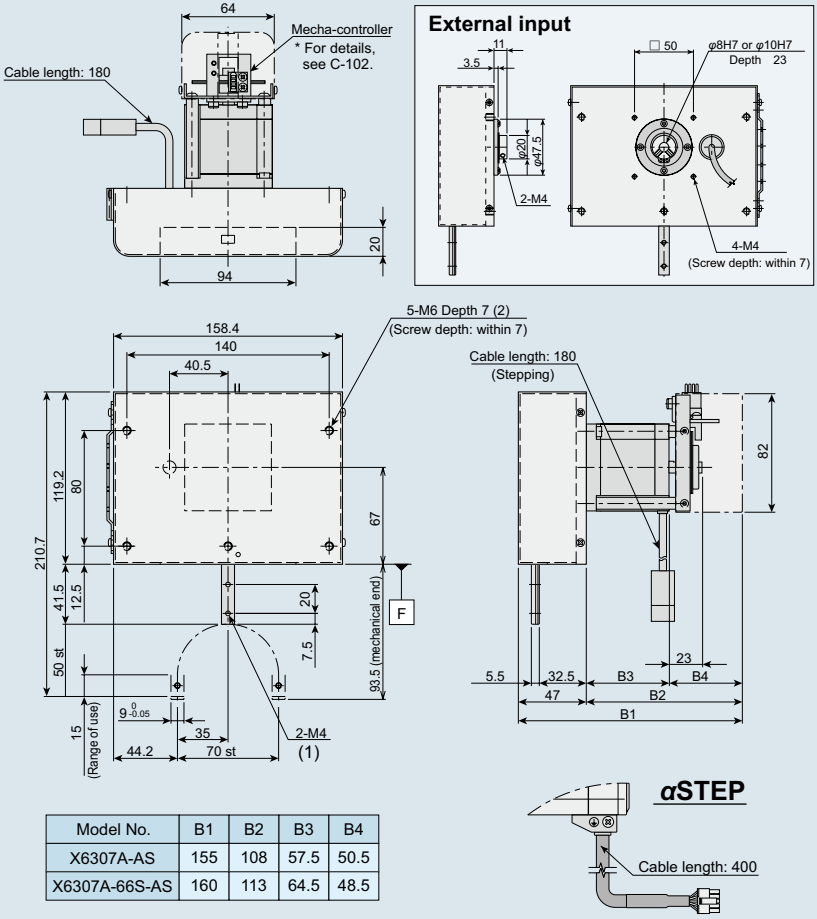
- For tools such as a chuck and vacuum pad, use the tap holes (1) of the arm tip (dimensional drawing) to secure.
- For the body, use the mounting tap holes (2) to secure.
- The F plane (bottom of the body) can be the location face.

X630□

■ Dimensional drawing (mm)

X6307A

* For precautions, see C-28.



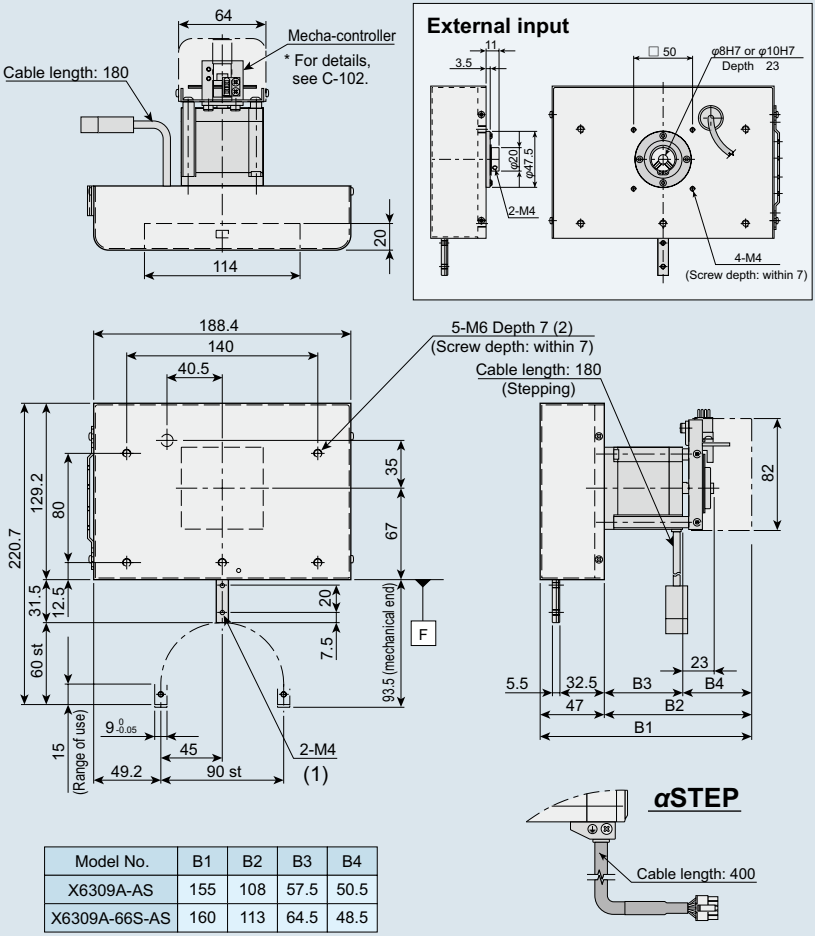
Model No.	B1	B2	B3	B4
X6307A-AS	155	108	57.5	50.5
X6307A-66S-AS	160	113	64.5	48.5

- For tools such as a chuck and vacuum pad, use the tap holes (1) of the arm tip (dimensional drawing) to secure.
- For the body, use the mounting tap holes (2) to secure.
- The F plane (bottom of the body) can be the location face.

■ Dimensional drawing (mm)

X6309A

* For precautions, see C-28.



Model No.	B1	B2	B3	B4
X6309A-AS	155	108	57.5	50.5
X6309A-66S-AS	160	113	64.5	48.5

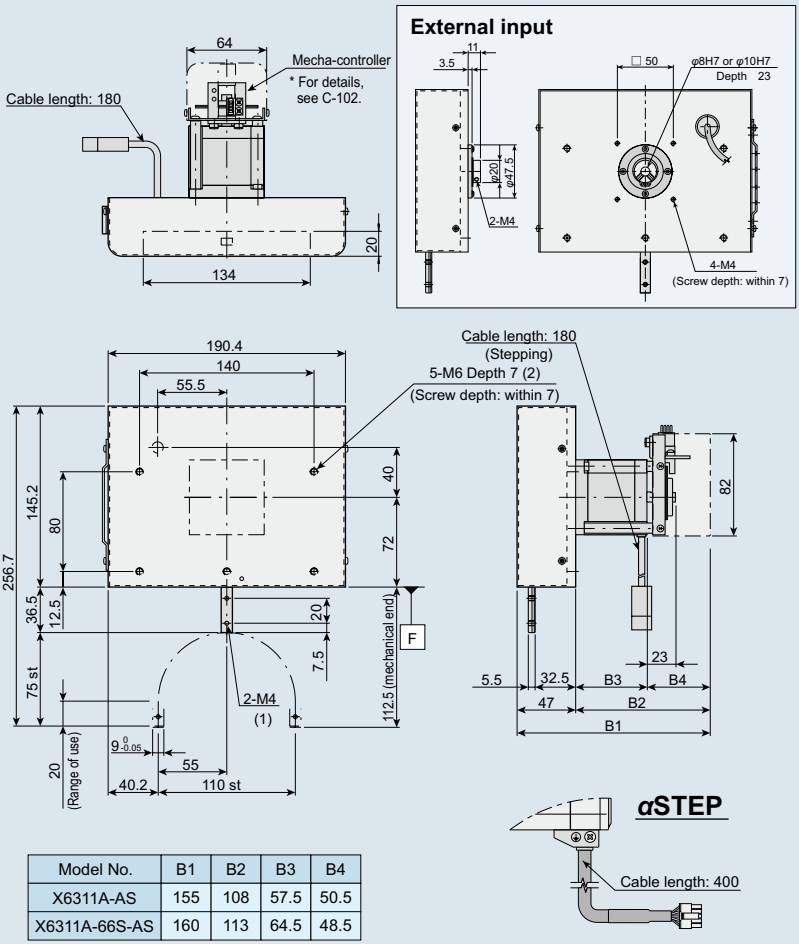
- For tools such as a chuck and vacuum pad, use the tap holes (1) of the arm tip (dimensional drawing) to secure.
- For the body, use the mounting tap holes (2) to secure.
- The F plane (bottom of the body) can be the location face.

X630□

■ Dimensional drawing (mm)

X6311A

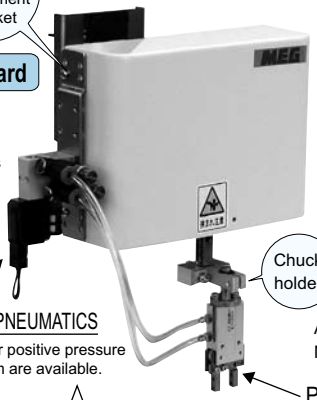
* For precautions, see C-28.



Model No.	B1	B2	B3	B4
X6311A-AS	155	108	57.5	50.5
X6311A-66S-AS	160	113	64.5	48.5

- For tools such as a chuck and vacuum pad, use the tap holes (1) of the arm tip (dimensional drawing) to secure.
- For the body, use the mounting tap holes (2) to secure.
- The F plane (bottom of the body) can be the location face.

X630□ Handling related parts



Equipped as standard

A bracket for attaching a solenoid valve made by KURODA PNEUMATICS is available.

When workpiece supply with a PPU is intended, much consideration has been required for selection of peripheral equipment, attachment, and control. For the compact type, a variety of peripheral items are available. Building up is easy and undemanding.

Recommended

Solenoid valve: KURODA PNEUMATICS

Fast response Products for positive pressure and vacuum are available.

For chuck: VA01PSC24

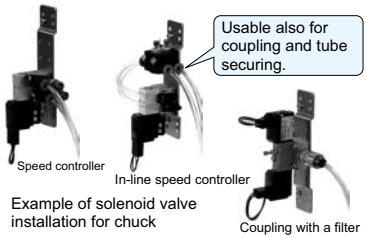
For vacuum: VA01PEP34A

Option

A dedicated holder for attaching the MEG ECO-Multi type X9608 is available.

Parallel air chuck: ECO-Multi type

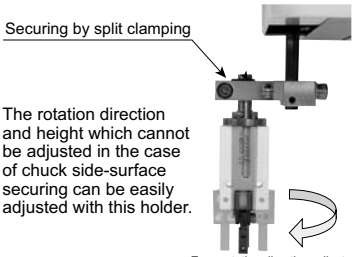
High-accuracy, high-response hand



Example of solenoid valve installation for chuck

Example of solenoid valve installation for vacuum contact

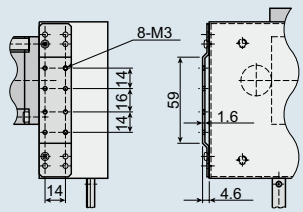
(The solenoid valve, coupling, and piping are to be prepared/carried out by the customer.)



The rotation direction and height which cannot be adjusted in the case of chuck side-surface securing can be easily adjusted with this holder.

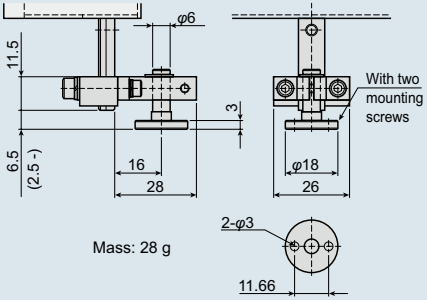
■ Dimensional drawing (mm)

Solenoid valve attachment bracket (supplied)



Product code: SVB1

Parallel air chuck holder (option)



Mass: 28 g

Product code: CHH1

PPU (Pulse-control motor-driven pick & place unit)

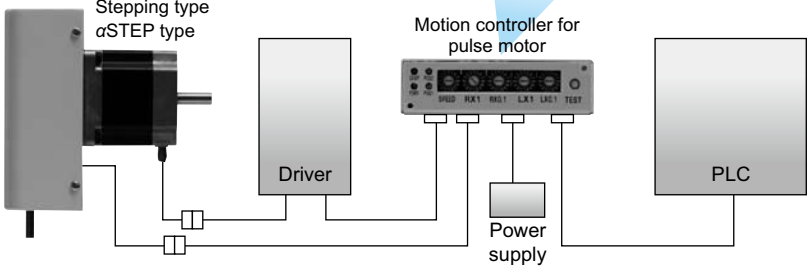
A motion controller is now available.
Motions selectable. No need of programing. Easy setup.

For many years in sales of X63 series PPUs, requests were received from customers for handy motion controllers to avoid difficulty of control equipment selection and large burden of programming work. This controller is designed to introduce various twists so that it can be easily handled by customers who use a PPU for the first time and that fast feed can be performed through easy operations. For auto-assembly system and FA planning, this controller will be of great help if used with MEG's PPUs.

NEW

MPC020-PPU

Entire configuration



Features

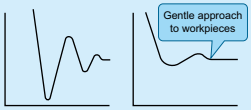
Allows significantly easy control

(mm)

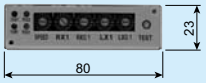
Super easy setup with switch settings only

Motion programs need not be created.
The position and cycle time can be changed with switches only.

Having a function which reduces the amount of deflection at the bottom end.



Small body size but well-prepared easy setup functions



The operation can be checked using the TEST switch with the power turned on.

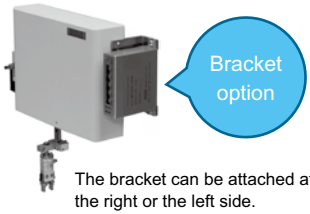
■ Supporting all stroke variations

(mm)

Model No.	Horizontal	Vertical
X6303A	30	10
X6305A	50	15
X6307A	70	15
X6309A	90	15
X6311A	110	20

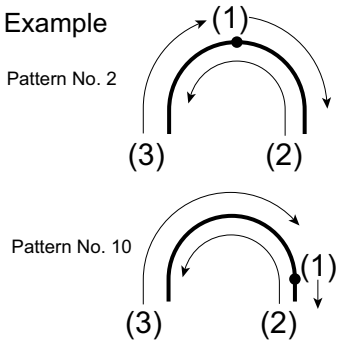
The model can be switched with the built-in switch.
Also compatible with the ones equipped with an α step motor.

■ Attachable to the side of the PPU



The bracket can be attached at either the right or the left side.

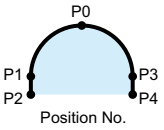
■ Abundant, 12 kinds of operational patterns



Patterns are switchable with the built-in switch.
Operation changes sequentially each time a step signal is sent.

Operational pattern

No.	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	Origin
1	P0	P2	P4			P0
2	P0	P4	P2			
3	P0	P1	P2	P4		
4	P0	P2	P3	P4		
5	P0	P3	P4	P2		
6	P0	P4	P1	P2		
7	P0	P1	P2	P3	P4	
8	P0	P3	P4	P1	P2	
9	P1	P2	P4			Primary origin
10	P3	P4	P2			
11	P1	P2	P3	P4		
12	P3	P4	P1	P2		
13	P2	P4				
14	P4	P2				

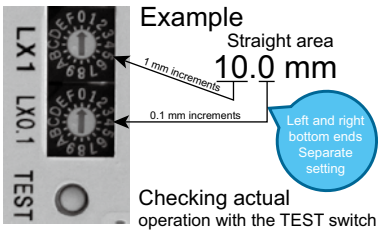


* See the “Position No.” diagram.
* The operational sequence is as follows: STEP 1, STEP 2 then STEP 3.
* Sequentially operates each time a step feed signal is input (each time the TEST switch is pressed).
* Use the upper controller to set the dwell period at the bottom end.
* The primary origin is the STEP 1's position.

■ Both the cycle time and stoke can be finely adjusted.

0.3 to 1.4 second

0.1 mm increments

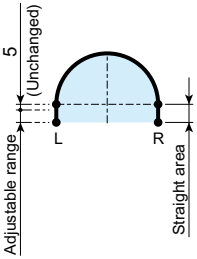


Stroke adjustable range

(mm)

Model	Adjustment range
X6303A	0 to 5
X6305A, X6307A X6309A	0 to 10
X6311A	0 to 15

* Configurable in 0.1 mm increments.
* Configurable for L and R separately.



PPU (Pulse-control motor-driven pick & place unit)

Compact type Dedicated motion controller

- Compatible with the PPU X63 series stepping type and *α*STEP type models.
- Supporting stroke variations of all the five models.
- The operational patterns, positions and cycle time can be set with the switch.
- Because of a function which suppresses the head's bound at the time of fast approach, troublesome adjustment is not needed.

■ Specifications

Product code	MPC020-PPU
Power supply	22 to 24 VDC
Power consumption	Max. 2.4 W
Number of control axes	1 axis
Control method	Open loop
Operation program	Not necessary (Various operation patterns have already been installed.)
Operational pattern	14 types (switchable with the built-in switch)
Designation point	2, 3, 4 points (depending on operation patterns) Note 1
PPU model selection	5 models (switchable with the built-in switch)
Speed setting	0.32 to 1.4 second (cycle time) Note 2, 3
Return to origin	By input of origin restoration signals
Main body mass	93 g

Note 1: The position can be changed with the stroke adjustment switch.
Note 2: The speed cannot be faster than the basic specification of the PPU.
Note 3: The value presented is resulted when operational pattern No. 1 or No. 2 is selected.
(When the dwell period at the bottom end is set to 0.02 second with the host controller)

Product number configuration

MPC020-PPU

Pulse motor controller for the PPU X63 series

■ Input/output specifications

Name	Function
Position output 1	Movement points (P0 to P4) are returned to the controller.
Position output 2	
Ready output	Position output, position error output
Return-to-origin input	Return to P0 (Return to origin)
Step feed input	Step feed operation occurs.
Primary-origin input	Shift from P0 to start position of P1, P2, P3, or P4
	Shift to P0 from P1, P2, P3, or P4

Position	P0	P1	P2	P3	P4	Fault
Output 1	×	×	×			
Output 2	×			×	×	
Output 3	×	×		×		×

■ Cycle time list

Cycle time (sec.)	X6303A	X6305A	X6307A	X6309A	X6311A
0.32	×				
0.36	×				
0.4	×	×			
0.45	×	×			
0.5	×	×	×		
0.55	×	×	×		
0.6	×	×	×	×	
0.65	×	×	×	×	×
0.7	×	×	×	×	×
0.75	×	×	×	×	×
0.8	×	×	×	×	×
0.85	×				
0.9	×	×	×	×	×
1.0	×	×	×	×	×
1.1		×	×	×	×
1.2		×	×	×	×
1.4		×	×	×	×

* The value presented is resulted when operational pattern No. 1 or No. 2 is selected.

■ Return to origin

Return to origin by means of external signals

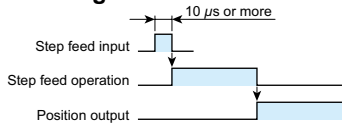
(in case of X63□□AS)

- The arm moves to CCW. Then the origin/position identification sensor is turned on, and the arm moves to CW. It stops when the vertex sensor at the P0 position is turned on. (Mechanical origin)
- For operation patterns whose origins are P1 to P4 (in the "Position No." diagram), be sure to put primary-origin input signals after return to the mechanical origin. Operation cannot start with the P0 position.
  * When the primary-origin input signals are put again, return to the P0 position occurs.
- Return from individual positions during step operations to the origin is also possible.
- For X63□□LS, movement stops when the CCW limit sensor is turned on. Take care not to cause interference with the unit side.

Return to origin using the TEST switch

- Returns to the origin when you press and hold the TEST switch for 1.5 second.

■ Timing chart

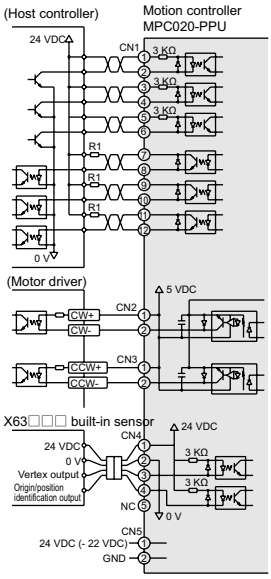


Once the unit returns to the origin, it becomes ready for operation.

■ Error indication

Error LED indication	Content
Origin/position identification sensor error	Sensor not responding
Vertex sensor error	Sensor not responding
Vertex position error (mispositioning detected)	The sensor is turned off when the vertex position is reached.

■ Input/output circuits



Code	I/O	Pin No.	Signal name
CN1	Input	1	Return-to-origin signal
		2	
		3	Step feed signal
		4	
		5	Primary-origin input
		6	
	Output	7	Position output 1
		8	
		9	Position output 2
		10	
		11	Ready output
		12	

In a case where the current value is 10 mA or more, connect external register R1.

Code	I/O	Pin No.	Signal name
CN2	Output	1	CW+
		2	CW-
CN3	Output	1	CCW+
		2	CCW-

Code	Pin No.	Signal name
CN4	1	+V
	2	0 V
	3	Vertex input
	4	Origin/position identification input
	5	Not used

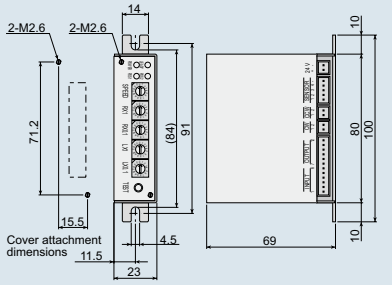
Stepping motor drivers recommended

Manufacturer: ORIENTAL MOTOR

Power supply	Name (model)	Number-of-divisions setting
100 V	RK series (RKD514L-A)	20
200 V	RK series (RKD514L-C)	20

* The number of divisions designates the number of step angle division.

■ Dimensional drawing (mm)



CAD data also is available. Also see the web page.

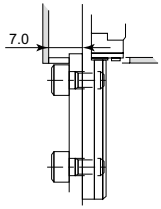
Precautions X63□□A/MPC020-PPU

■ Precautions for selection

- Reversing and using the product may deteriorate its performance. If such use is considered, consult us.
- The cycle time differs depending on the feed mass. Check the feed mass with the cycle time needed. If operating with specifications beyond the allowed values of the graph, supply failure and damage may be resulted through step-out and oscillation deterioration. Before selecting a product, check specifications and consider safety.
- The X stroke cannot be changed.
- The Z stroke can be changed by changing the shift amount.
- Do not use the product in a place where it is exposed to large oscillation. Factors such as resonance may largely lower the capability.
- When in use in the high-speed range, response speed delay at the controller side may result in supply mistakes and timing shift. Carefully choose peripheral equipment also.

■ Mounting precautions

- Secure tools such as the chuck and vacuum pad, using the tap holes (1) (dimensional drawing) at the tip of the arm.
- Secure the body using the mounting tap holes (2).
  The F plane (bottom of the body) can be the location face.
- The support must be rigid enough. If the rigidity is insufficient, the accuracy and capability are adversely affected.
- The overhang amount of the tool must be within “stroke x 1/2” in the horizontal stroke direction, with the center of the arm used as the reference, and it must be within 30 mm in the vertical direction.
- If the bracket comes into the main unit when attaching the tool to the tip of the z axis, set the thickness within the dimension shown in the diagram.



■ Precautions for use

- The heat of the motor must be within 70°C.
  If the heat exceeds this level, internal components deteriorate quickly, resulting in life decrease and fault occurrence.
- The acceleration/deceleration time should be 50 ms or more; use this value as a guideline. Applying excessive load to the product can result in early damage occurrence.
- The number of initiation pulses of the motor-equipped models must be within the value presented in “Cycle time and transportable mass”. Large impact adversely affects the life and feed capability.
- For return to the origin, use the origin sensor. For a stepping type, a mecha-controller also can be used. For return to the origin, follow the procedure below:

  The origin (direction identification) sensor is OFF: Turn counterclockwise and stop when the origin sensor is turned ON. As the mechanical origin, offset to the central position in the x direction and turn the vertex sensor ON.

  The origin (direction identification) sensor is ON: Turn clockwise and then when the origin sensor is turned OFF, turn counterclockwise. Stop when the origin sensor is turned ON. As the mechanical origin, offset to the central position in the x direction and turn the vertex sensor ON.

  The vertex detection slit is 3 mm (for the X6303A and X6305A, 1 mm). Set so that the stoppage occurs at the center of the slit.
  Be sure to set the mechanical origin to the center in the x direction. This product does not have a brake mechanism. If you set the origin position to a position other than the center, the arm falls when the power is turned off.
- The vertex sensor is turned ON when the X6307A, X6309A, or X6311A is blocked. For the other models, it is turned ON when light enters.
- When chuck is to be opened/closed within stay duration at the pick and place positions, set 50 ms or longer. If the duration is shorter than 50 ms, open/close control by a controller or mecha-controller is needed during feeding. The responsiveness of the chuck (etc.) also is concerned. Set the stay duration having safety considered.
- When in use in the high-speed range, the cycle time is affected also by the pipe length of the chuck and the capability and air pressure of the solenoid valve. Therefore, be careful with the selection and installation locations of peripheral equipment. Attach the solenoid valve as close to a product (such as a PPU mount) as possible.
- Attach a vertical floating mechanism to the tool. Factors such as variation of supply height may result in damage of workpieces, products, or peripheral equipment.
- The maximum vertical floating load must be within 5N. As the load becomes larger, there is more chance of product damage and life decrease. Therefore, attempt to minimize the load. For the stepping type, extreme decrease of the current during stoppage of the driver causes the excitation torque to be weakened. See the table below, for the reference. (For the X6311A, within 3N)

Maximum floating load when using the RKD514L

Current decrease ratio (%)	Maximum floating load (N)
50	5
30	3
20	2

- If interference with peripheral equipment which operates at the same time may occur, interlock must be set to prevent interference.
  (Also see the section for the detection timing of the mecha-controller.)
- The stay duration at the origin must be 0.1 second or longer, and intermittent operations must be performed. (If continuous operations are performed, the motor temperature may exceed the allowable range.)

- After completion of one cycle, be sure to check the vertex with the sensor. Using a stepping type can result in product and equipment damage at the time of overrun.
- A limit sensor is not built in. If needed, set it with a mecha-controller.
- For control equipment such as a motor and sensor, perform proper wiring in accordance with the instruction manual.
- The z rail is held with a liner guide, and thus scatter of grease may take place. If adherence to workpieces and peripheral components is likely to occur, take preventive measures such as overhang and cover attachment.
- For the sensor, avoid a transient state (50 ms) when the power is turned on.
- Take measures so that a load by bending and pulling is not applied to the sensor cord. Use caution to avoid a load to the base of the sensor cord, in particular, by securing the sensor cord or by other means.
- For the stepping type, extreme decrease of the current during stoppage of the driver causes the excitation torque to be weakened, resulting in supply failure and damage through oscillation and step-out.

■ Wiring precautions

- The sensor power supply reverse connection protection circuit and output short circuit protection circuit are not provided on the sensor. So use added caution to make the wiring connection correctly.
- If a commercially available switching regulator is used for the power supply, be sure to ground the frame ground (F. G.) terminal.
- When a device (switching regulator, inverter motor, etc.) which could become a noise source is used near the sensor installation place, be sure to ground the frame ground (F. G.) terminal of the device.
- Avoid parallel arrangement and use of the same raceway with a high-voltage line and power line. Otherwise, malfunction may be caused due to induction.
- The motor and the built-in sensor are equipped with connectors. Please wire properly according to the connection table. Inappropriate wiring results in performance deterioration and malfunction.
- For the built-in sensor and stepping type motor connector terminals, use the specified crimp tool.
  Molex 57026-5000 (for UL1007)
  Molex 57027-5000 (for UL1015)
- For an extension cable for the stepping motor, use a lead wire having the following thickness:
  • Cross sectional area of lead wire: 0.519 mm^2
  • AWG No.20

■ Motion controller

■ Precautions for selection

- For an operation motion, select one of the 14 types.
- Only a power cable comes with the product. Please prepare the other connectors and cables by yourself. Commercially available cables can be used. Please contact us for detailed information.

Name	Number of pins	Connector	Terminal
I/O	12	51103-1200	50351-8100
CW	2	51103-0200	
CCW	2	51103-0200	
SENSER	5	51103-0500	
24 VDC (power supply)	2	51103-0200 (300 mm cable also supplied)	

Manufacturer: Molex

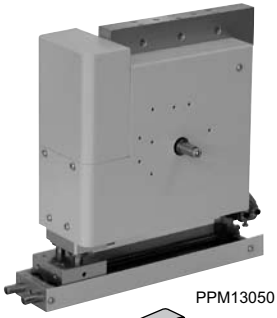
- Use a driver with 1/20 micro step setting. Depending on the performance of drivers, problems such as an operation failure are resulted. Use the recommended driver.
- Solenoid valve control for the chuck and vacuum pad must be performed with the high-order controller.
- The PPU built-in sensor is used for this product. For control of components such as the solenoid valve and interlock, use the mecha-controller (sensor & dog).

■ Precautions for use

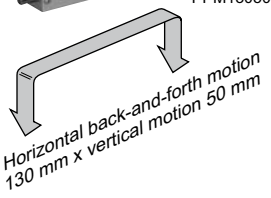
- Before use, be sure to read and understand the instruction manual for safe and proper operation.
- Perform product wiring in accordance with the instruction manual.
- Also carefully read the instruction manual for the motor driver and PPU and perform proper wiring before using.
- Settings for the model and pattern selection switch must be made before the body is installed.
- For the stroke and cycle time switch settings, repeat test operations for proper use.
- If switches may be mistakenly turned after switch settings are made, make and attach a cover using two tap holes (M2.6). CAD data is available.
- Depending on the dwell period at the bottom end, switch to hold current is made and the arm is lowered by approximately 0.1 mm. (Also see the catalog and instruction manual for the driver.)
- Error resetting method
  • When vertex fault occurs, stop the operation and check interference and damage. Vertex fault error resetting can be performed by holding and pressing the TEST switch for 1.5 second or longer or with origin restoration signals. (Return to the origin is resulted in any case.)
  • When sensor fault occurs, the sensor has to be replaced.

Multi type *Stroke: 90 x 30, 130 x 30, 130 x 50 (mm)*

Perfect-fitting to mounting and transfer specifications for your equipment style



PPM13050



In our long experience of selling PPUs, we have encountered customer cases where a PPU did not fit in the equipment layout, causing the head to overhang or requiring a wide space for mounting. To solve such problems of customers, our multi-type PPUs incorporate a variety of ideas, such as the improvement of mounting efficiency, the selection of a cam according to the application, and the improvement of centering. Use our PPUs when planning a factory automation system, including automated assembly systems.

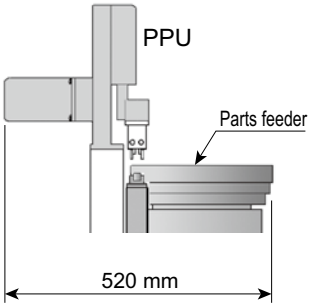
Model No.	Cam		Cam	Stroke (mm)
	Plate	Grooved	Ribbed	
PPM09030	×	×		90 x 30
PPM13030	×	×	×	130 x 30
PPM13050	×	×		130 x 50

A combination of the plate cam and the grooved cam is available.

For example

Feed workpieces from a parts feeder.

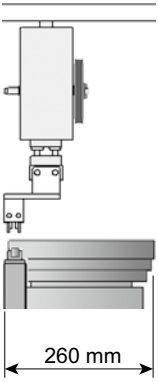
Until now...

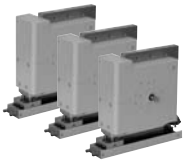


The equipment layout was decided according to the shape of the PPU.

From now on

Space-saving 1/2





Multi type

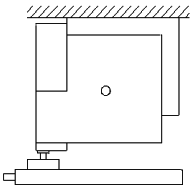
Using the new PPU will result space saving, allowing a simple equipment layout.

New product

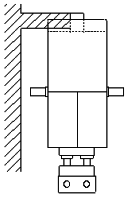
Various mounting choices

The external input specification provides a higher degree of flexibility in layout.
The motor can be positioned according the equipment.

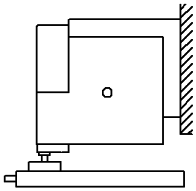
Suspending mounting



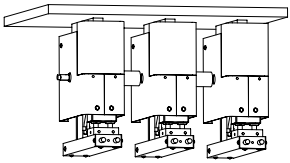
Side mounting



Backside mounting



Multiple mounting



Perfect-fitting feeding specification

A cam from three types (see below) can be selected according to your application. The structure allows easy cam replacement.

Plate cam PPM09030PP
PPM130□□PP

Inexpensive version with a simple structure.

Grooved cam PPM09030GG
PPM130□□GG

The forcible feed ensures operations such as feed to and removal from a mold.

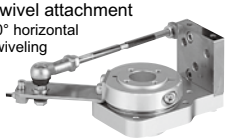
Ribbed cam PPM13030R

The high-speed operations with a minimum of 1.3 seconds improves production efficiency. (PAT. PEND)

Wide choice of options

Hollow shaft specification of the back-and-forth motion arm for air piping.
Addition of a back-and-forth stroke adjustment mechanism. (End of forward motion ±2mm)
Special motion. (plate and grooved cams only)
Mounting of a swiveling head (90°).
Provision of a motor bracket.
Provision of a top plate.
Provision of a mecha-controller.

Swivel attachment
90° horizontal swiveling



For details, see C-106.

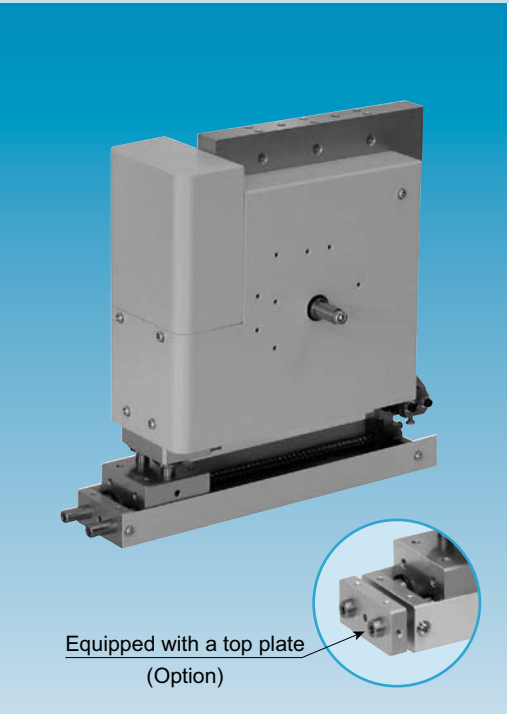
High maintainability

- Tough but reasonable: mechanism with 30 years on market
- First in its class! Replaceable cam: field replacement of the plate cam
- Assuring parts replacement: field replacement with repair parts

■ Example of use

PPU (Cam-driven pick & place unit)

Multi type Stroke: 90 x 30, 130 x 30, 130 x 50 (mm)



- The external input specification provides a higher degree of flexibility in layout.
- The motor can be positioned according the equipment.
- A cam can be selected from three types according to your application. A wide selection of options is available.

Specifications

	PPM090	PPM130	
Cam type	Plate cam, grooved cam	Plate cam, grooved cam	Ribbed cam
Horizontal stroke (maximum)	90 mm	130 mm	
Vertical stroke (max)	30 mm	50 mm	30 mm
Position repeat accuracy	±0.015 mm	±0.02 mm	
Driver	External input (equivalent to a 25 W induction motor)		
Supplied sensor	Origin photomicrosensor		
Main body mass	Plate cam 5.8 kg (grooved cam 7.3 kg)	Plate cam 7 kg (grooved /ribbed cam 8.5 kg)	
Standard paint color	Cream color		
Operating ambient temperature/humidity	5 to 50°C/85% or less (No condensation)		
Lubricant	COSMO GREASE, DYNAMAX EP No. 1		

Options

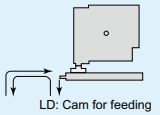
Provision of a top plate
Hollow shaft specification of the back-and-forth motion arm for air piping.
Provision of a motor bracket
Addition of a horizontal stroke adjustment mechanism (End of forward motion ±2 mm)
Provision of a mecha-controller (No. of sensors: 2 to 6)
Special motion (plate and grooved cams only)
Mounting of a swiveling head (90°)

Product number configuration

PPM13050 PP - LD - 1.6 - □ (Reference No.)

Model No.	Stroke mm (max)		Stroke mm (max)		
	Horizontal motion	Vertical motion	Plate cam	Grooved cam	Ribbed cam
PPM09030	90	30	×	×	
PPM13030	130	30	×	×	×
PPM13050	130	50	×	×	

Code	Horizontal motion cam	Vertical motion cam
PP	Plate	Plate
PG	Plate	Grooved
GG	Grooved	Grooved
GP	Grooved	Plate
R	Ribbed	



Cycle time (sec.)

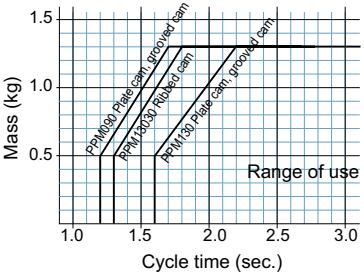
* "R" is available only for PPM13030.

Enter other specification requests on the Technical support sheet on H-6 for inquiry.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.

New product

■ Cycle time and transportable mass (including chuck mass)

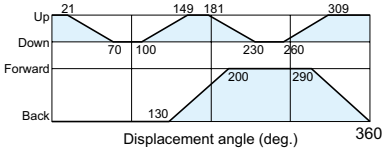
Please note that using the device for a mass that exceeds the specification can cause trouble.



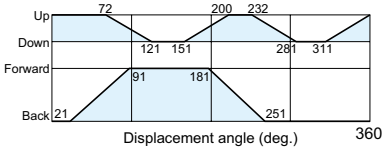
* In the case of an induction motor equipped with brake (25 W)

■ Timing of motion

(1) Cam for feeding (LD) (Not including PPM13030R)

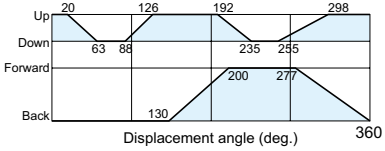


(2) Cam for ejection (ULD)

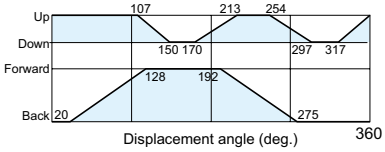


● **PPM13030R**

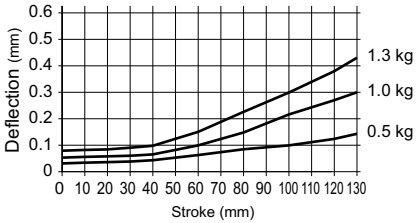
(1) Cam for feeding (LD)



(2) Cam for ejection (ULD)



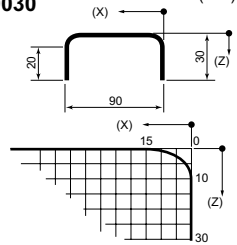
■ Deflection amount (reference value)



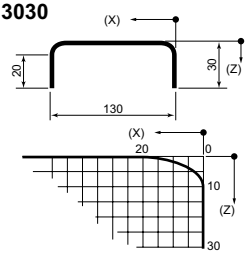
■ Overlap

(mm)

PPM09030

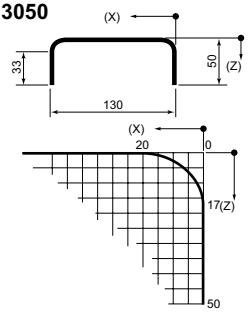


PPM13030



* PPM13030R is different.

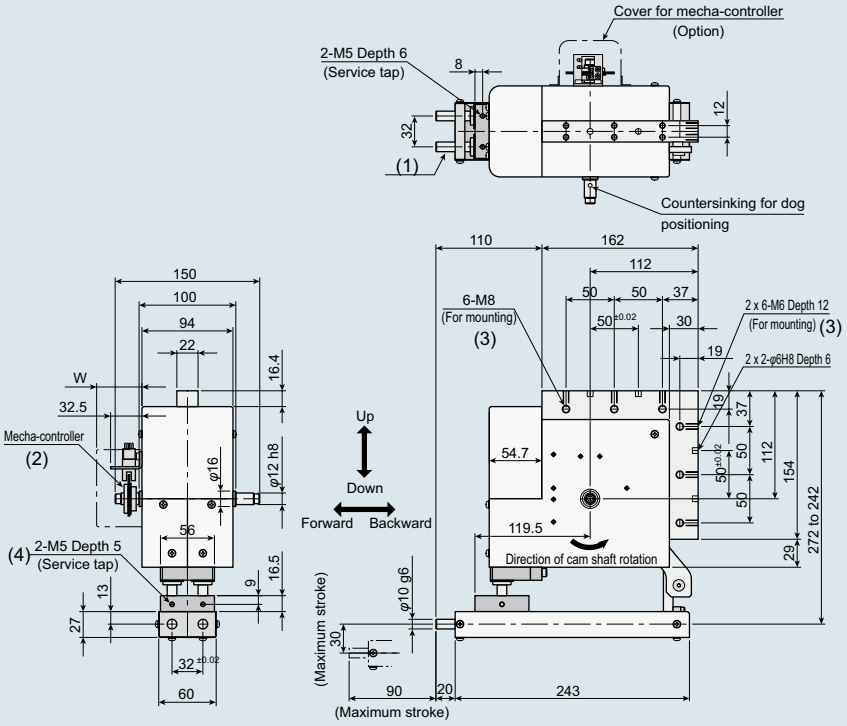
PPM13050



Enter specification requests on the Technical support sheet on H-6 for order.

PPM090

■ Dimensional drawing (mm)

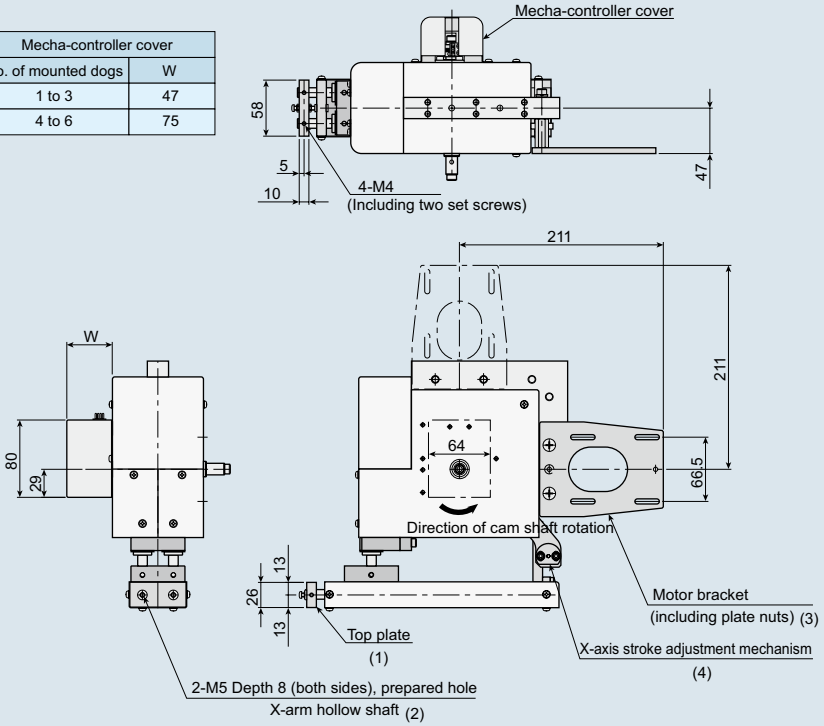


- A tool such as a chuck or a vacuum pad is secured by mounting the top plate on the shaft (1) at the tip of the arm.
- The detection of the origin is performed by the mecha-controller (2) mounted on the cam shaft. (For details, refer to C-102.)
- The body is secured by using the mounting hole (3).
- When mounting an attachment on the Z-axis shaft, the 2-M5 tap (4) of the Z-axis shaft is used.
- This product requires external input for operation. A motor and transmission parts are provided by the customer.

■ Dimensional drawing for products with options attached (mm)

Enter optional specification requests on the Technical Support Sheet on H-6 for order.

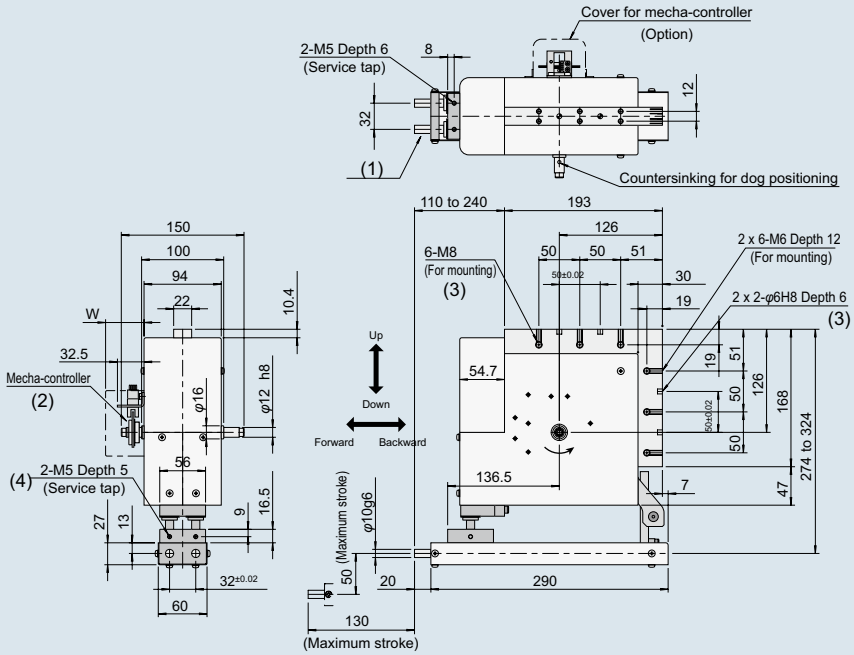
Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



- The top plate (1) can be used to mount a tool such as a chuck.
- The X-arm hollow shaft (2) can be used to take out an air pipe from the back of the arm.
- The motor bracket (3) can be used to mount a 25-W induction motor. A motor, pulley, belt, etc. are provided by the customer.
- The X-axis adjustment mechanism (4) allows changing the end position of forward motion while maintaining the end position of backward motion. The adjustment can be carried out within the range of 90±2 mm. For a shorter stroke specification, the range of adjustment is narrower.

PPM130

■ Dimensional drawing (mm)

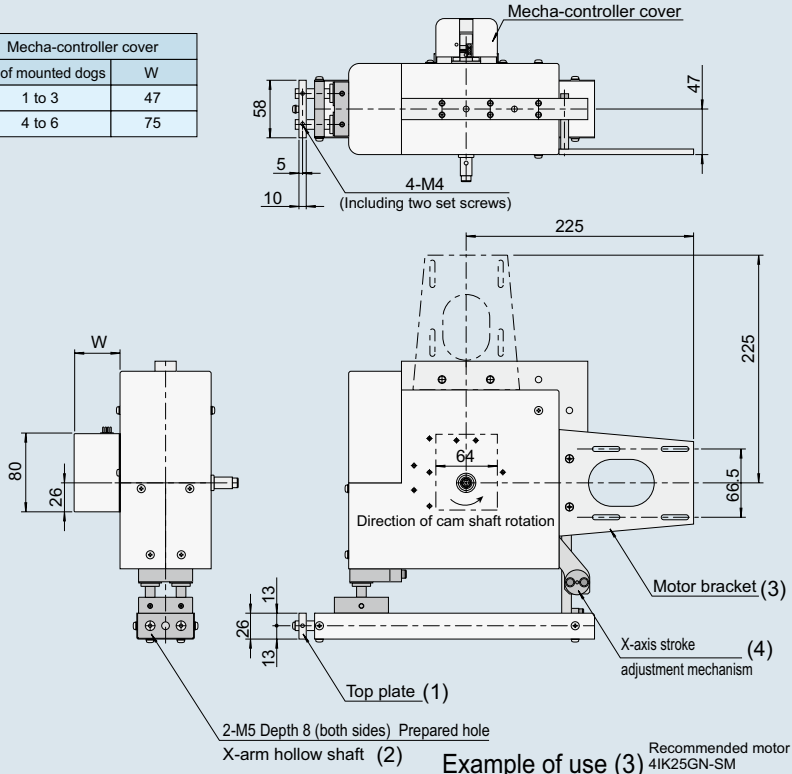


- A tool such as a chuck or a vacuum pad is secured by mounting the top plate on the shaft (1) at the tip of the arm.
- The detection of the origin is performed by the mecha-controller (2) mounted on the cam shaft. (For details, refer to C-102.)
- The body is secured by using the mounting hole (3).
- When mounting an attachment on the Z-axis shaft, the 2-M5 tap (4) of the Z-axis shaft is used.
- This product requires external input for operation. A motor and transmission parts are provided by the customer.

■ Dimensional drawing for products with options attached (mm)

Enter optional specification requests on the Technical Support Sheet on H-6 for order.

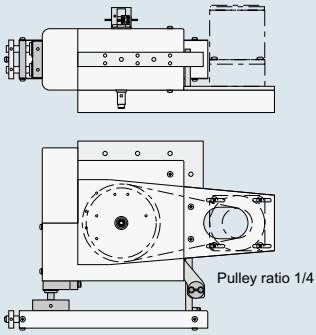
Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



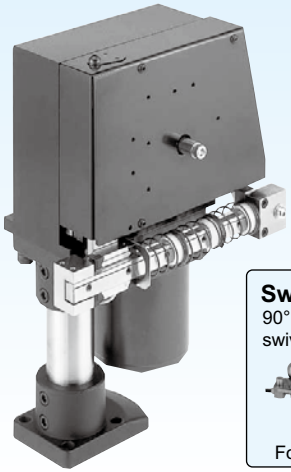
- The top plate (1) can be used to mount a tool such as a chuck.
- The X-arm hollow shaft (2) can be used to take out an air pipe from the back of the arm.
- The motor bracket (3) can be used to mount a 25-W induction motor. A motor, pulley, belt, etc. are provided by the customer.
- The X-axis adjustment mechanism allows changing the end position of forward motion while maintaining the end position of backward motion. The adjustment can be carried out within the range of 130±2 mm. For a shorter stroke specification, the range of adjustment is narrower.
- In the example of use on the right, when the gear head is 1/9, the cycle time is 1.25 sec. When the gear head is 1/12.5, the cycle time is 1.74 sec. The cycle time is adjustable by using an inverter together.

Example of use (3)

Recommended motor
4IK25GN-SM
(Oriental Motor)



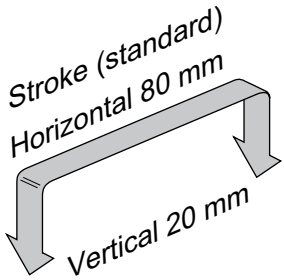
Economy type Stroke: 80 x 20 (mm)



Swivel attachment
90° horizontal swiveling

For details, see C-106.

Center: X6092A **Side (left): X6072AL**



Model No. \ Carry method	Center	Side		Page
		Left	Right	
X6092A	×			C-40
X6072AL		×		C-44
X6072AR			×	C-44

* For the X6092A, an external input option is available. Please contact us for detailed information.

■ Compact

The arm employs a liner guide and is compact to save space despite its high rigidity.

■ Plate cam drive mechanism

Smooth change of the acceleration speed prevents saltation at the time of high-speed operations and enables efficient operations through fine timing control. Operation and timing changes can be made through cam order production.

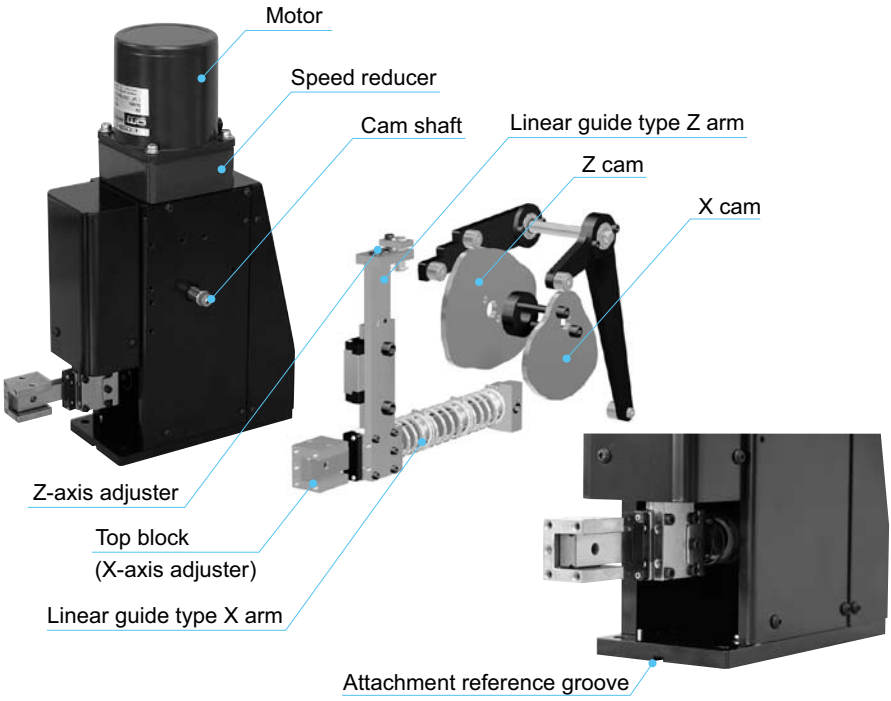
■ Inexpensive prices

The prices have been lowered due to thorough cost reduction.
High cost effectiveness is presented.

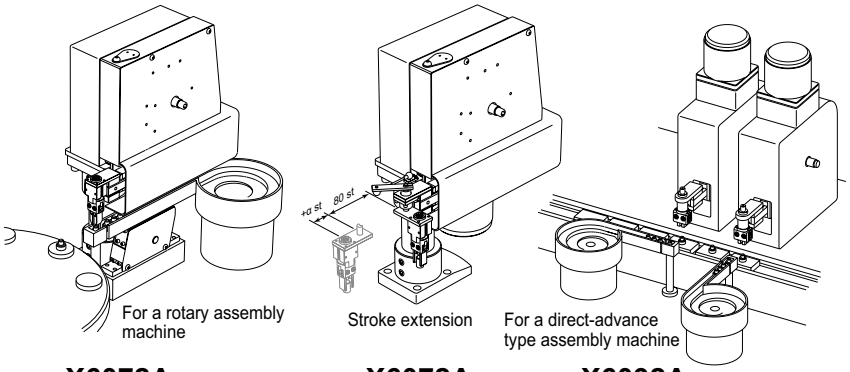
■ Convenient to use

This is an arm mechanism which allows various attachments (such as workpiece posture change) to be mounted on the top block. Attachment holes have been prepared as standard.
For the motor, 25W size is supplied as standard. Special order items regarding electronic/electromagnetic brake equipped ones and inverter control are easier to purchase.
A key groove is added to the attachment section. The reproducibility is improved by using it as the reference for attachment. (X6092A)

■ Mechanism description (X6092A)



■ Application



For a rotary assembly machine

X6072A

Stroke extension

X6072A

For a direct-advance type assembly machine

X6092A

PPU (Cam-driven pick & place unit)

X6092A Stroke: 80 x 20 (mm)

- **Further speed increase**
  The fastest cycle time has been improved from 1.0 second to 0.8 second.
- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- Employment of the cam drive method enables fast and stable motions.

Renewal

The body has been changed from casting to plate structure, so that body attachment reference demanded a lot is presented.
The attachment dimensions do not change.

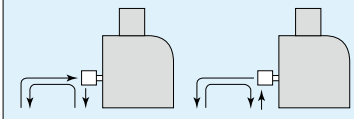
Specifications

Model No.	X6092A
Stroke (maximum)	Horizontal 80 mm, vertical 20 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25W
Supplied sensor	Origin photomicrosensor
Main body mass	8.6 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6092A- LD - 200 - 60 - 1.0 - □ (Reference No.)

PPU model No.



Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

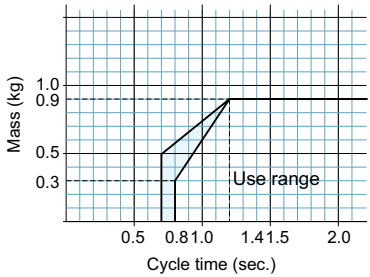
Cycle time	50 Hz	60 Hz
0.8	×	×
1.0	×	×
1.2	×	×
1.4	×	
1.6		×
1.9	×	×
2.3	×	×
2.7	×	
3.2		×

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

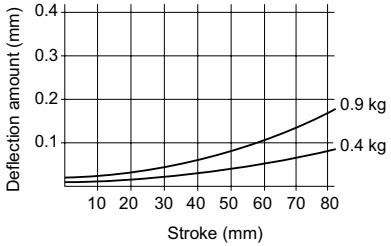
Be careful that use with excess mass can cause a problem.



* The area which can be examined is shown with ▭. Please contact us for detailed information.
* For stoppage, an optional brake is needed.

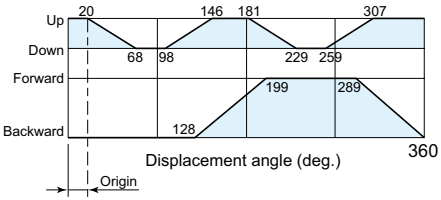
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 0.9 kg and 0.4 kg load are attached to the head.

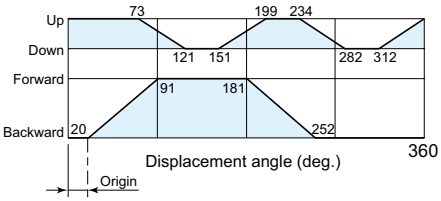


■ Timing of motion

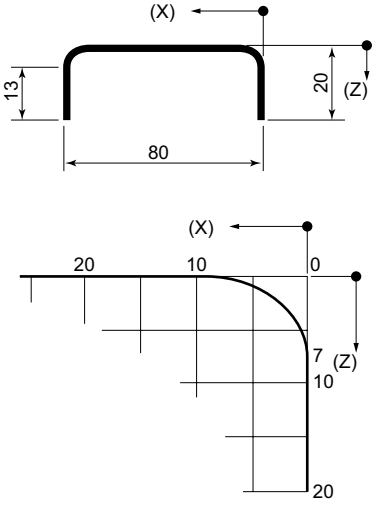
(1) Cam for feeding (LD)



(2) Cam for ejection (ULD)



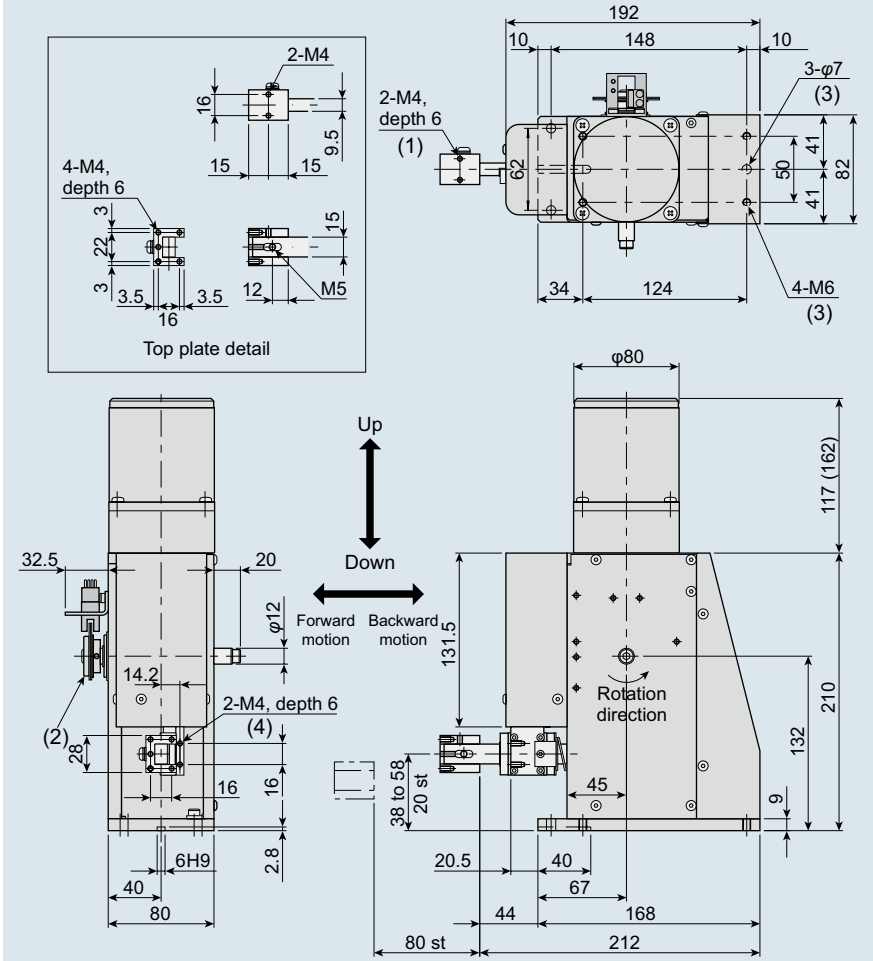
■ Overlap amount (mm)



Write down needed specifications in the technical support sheet of H-5 and place an order.

X6092A

■ Dimensional drawing (mm)



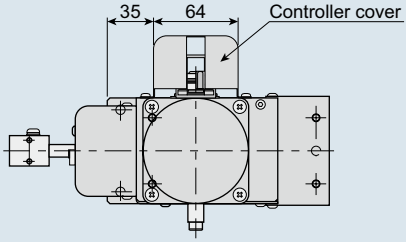
- Secure tools such as the chuck and vacuum pad, using the top block (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the attachment holes on the main-unit base plate (3) to secure.
- When mounting the attachment on the z axis, use 2-M4 tap holes (4) on the z axis. (For details, see C-94.)

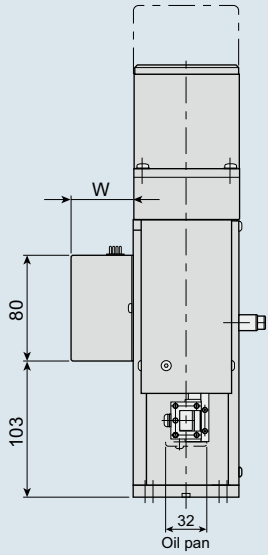
* The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

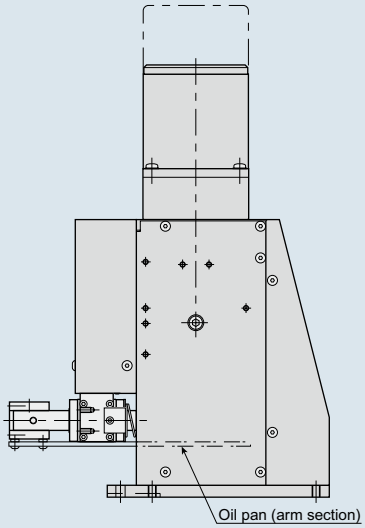
■ Dimensional drawing for products with options attached (mm)

Write down specifications needed for the option in the technical support sheet of H-5 and place an order.

Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



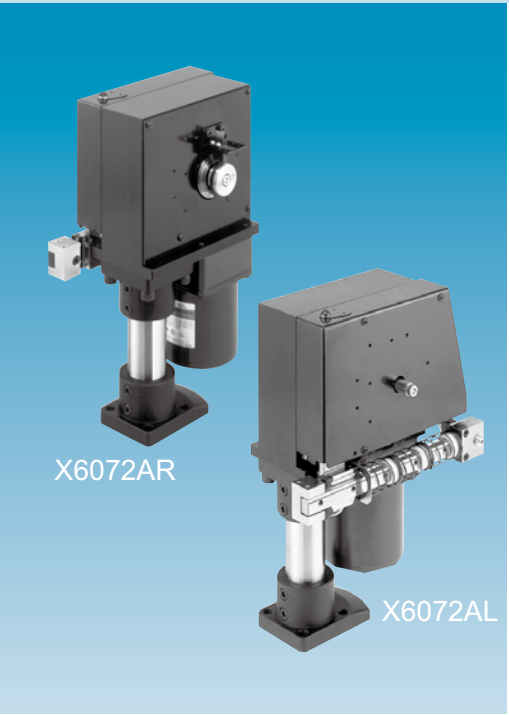




* For external input specifications, contact us.

PPU (Cam-driven pick & place unit)

X6072A Stroke: 80 x 20 (mm)



- Further speed increase
  The fastest cycle time has been improved from 1.0 second to 0.8 second.
- Swivel attachment
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- Employment of the cam drive method enables fast and stable motions.
- For the X6072A, the specifications of the X6072 are kept and the casting body has been changed to plate structure.
- The prices have been lowered due to thorough cost reduction.

Specifications

Model No.	X6072A
Stroke (maximum)	Horizontal 80 mm, vertical 20 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	9.8 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6072A **L** - **LD** - **200** - **60** - **1.0** - ☐ (Reference No.)

PPU model No.

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

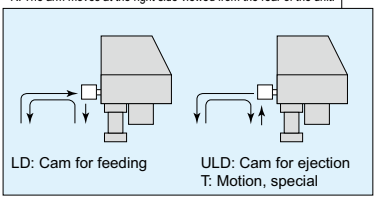
Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

Cycle time	50 Hz	60 Hz
0.8	×	×
1.0	×	×
1.2	×	×
1.4	×	
1.6		×
1.9	×	×
2.3	×	×
2.7	×	
3.2		×

(second)

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.

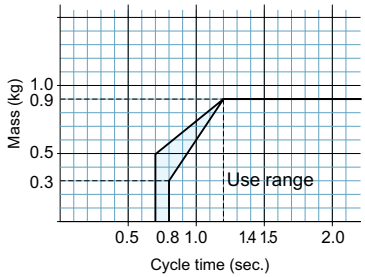


LD: Cam for feeding
ULD: Cam for ejection
T: Motion, special

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

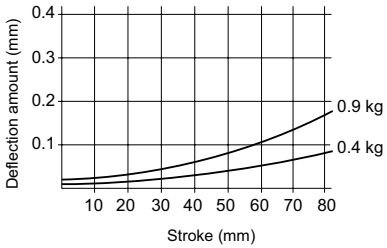
Be careful that use with excess mass can cause a problem.



* The area which can be examined is shown with ▭. Please contact us for detailed information.
* For stoppage, an optional brake is needed.

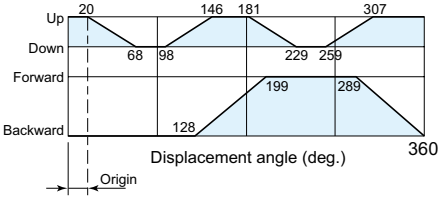
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 0.4 kg and 0.9 kg load are attached to the head.

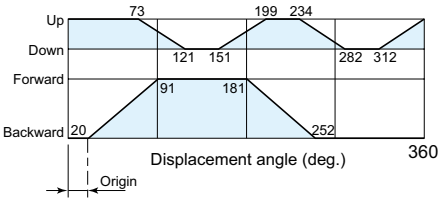


■ Timing of motion

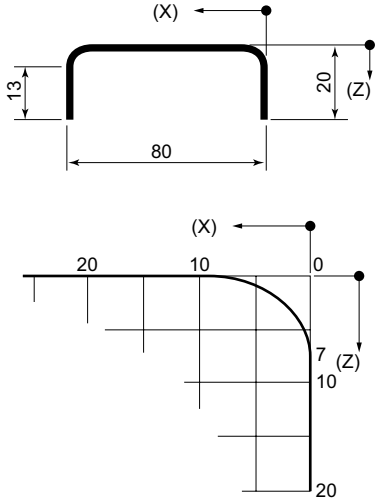
(1) Cam for feeding (LD)



(2) Cam for ejection (ULD)



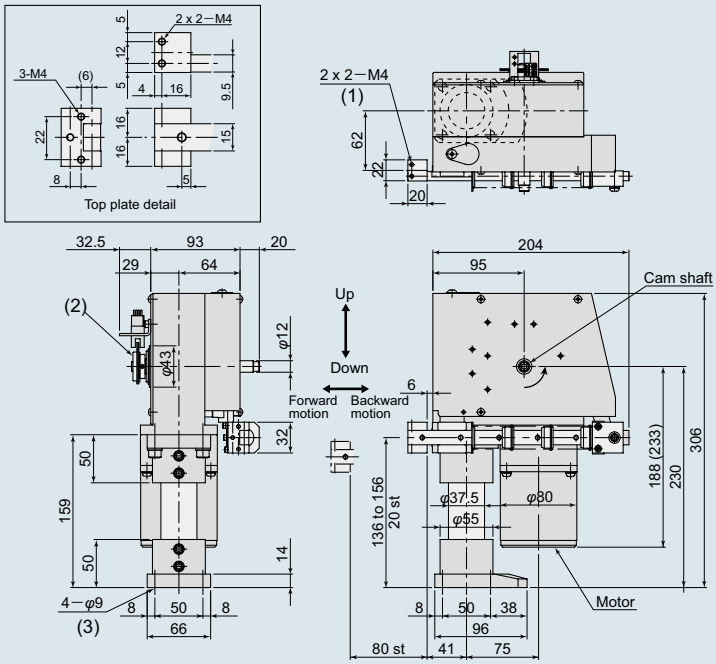
■ Overlap amount (mm)



Write down needed specifications in the technical support sheet of H-5 and place an order.

X6072AL

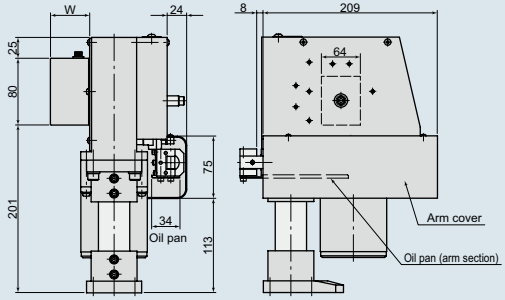
■ Dimensional drawing (left carry) (mm)



- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- The body is secured by using the mounting hole (3).
- When mounting the attachment on the z axis, use 2-M4 tap holes on the z axis. (For details, see C-94.)
- For a motor equipped with an electromagnetic brake, the standard pole is extended by 50 mm.
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

■ Dimensional drawing for products with options attached (left carry)

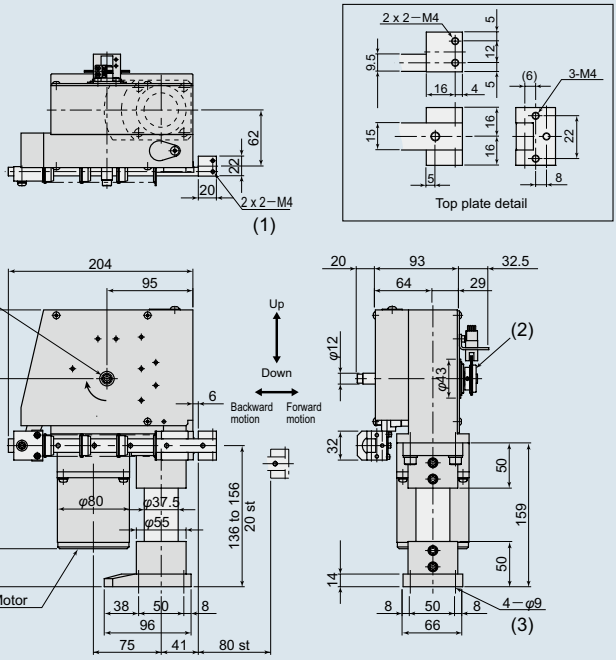
Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

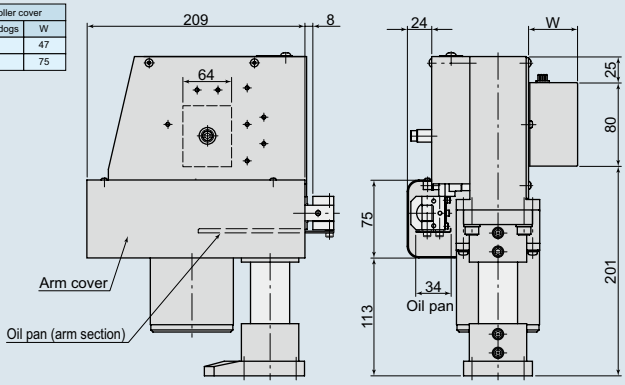
X6072AR

■ Dimensional drawing (right carry) (mm)



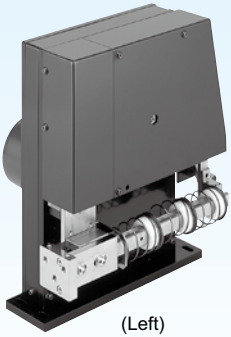
■ Dimensional drawing for products with options attached (right carry)

Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



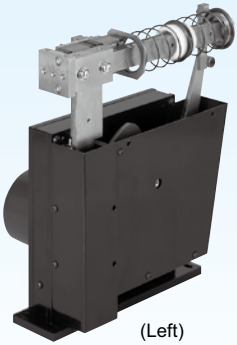
Standard type Stroke: 100 x 30, 100 x 50 (mm)

Center carry



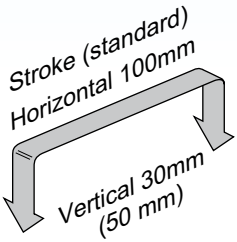
(Left)

Side carry

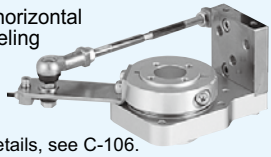


(Left)

Side carry overhead



Swivel attachment
90° horizontal swiveling



For details, see C-106.

■ Variation (numeric values: stroke)

Carry method / Model No.		Center (mm)	Side (mm) Left	Side (mm) Right	Page
X6091A		100 x 30			C-50
X6091SA		100 x 50			C-54
X6071L			100 x 30		C-58
X6071R				100 x 30	C-58
X6071SL			100 x 50		C-62
X6071SR				100 x 50	C-62
X6071WL	High rigidity		100 x 30		C-66
X6071WR	High rigidity			100 x 30	C-66
X6071WSL	High rigidity		100 x 50		C-70
X6071WSR	High rigidity			100 x 50	C-70
X6074HSL	High load capacity		100 x 50		C-74
X6074HSR	High load capacity			100 x 50	C-74
X6076WL	Overhead		100 x 30		C-78
X6076WR	Overhead			100 x 30	C-78
X6076WSL	Overhead		100 x 50		C-80
X6076WSR	Overhead			100 x 50	C-80

* For the side carry type, an external input option is available.

■ Linear guide

Using a linear guide for the x and z axises Compared with a ball bush guide, the rigidity and position repetition accuracy are improved. More stable supply and ejection workpieces are possible.

■ Reference groove for main-unit attachment

A key groove is added to the attachment section. The reproducibility is improved by using it as the reference for attachment.

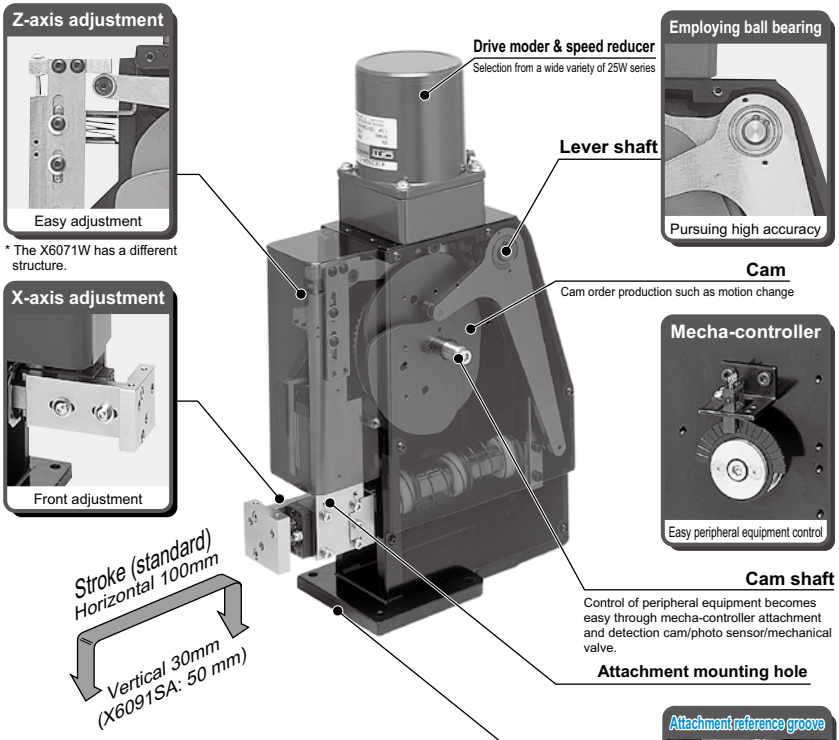
■ Plate cam drive mechanism

Smooth change of the acceleration speed prevents saltation at the time of high-speed operations and enables efficient operations through fine timing control. Operation and timing changes can be made through cam order production.

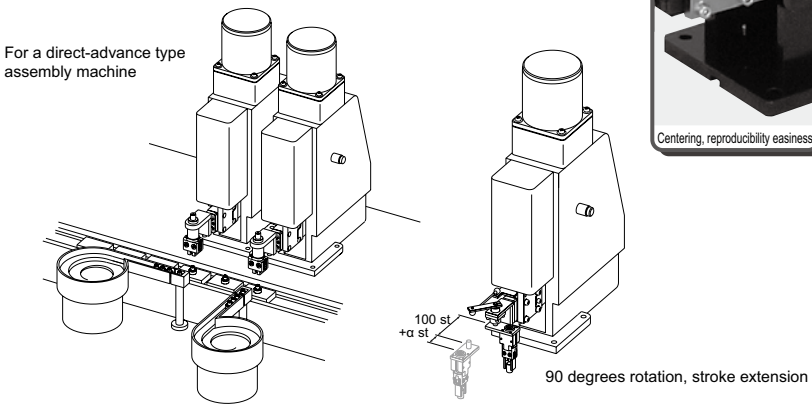
■ Convenient to use

This is an arm mechanism which allows various attachments (such as workpiece posture change) to be mounted on the top block. Attachment holes have been prepared as standard. For motors, special order items regarding electronic/electromagnetic brake equipped ones and inverter control are acceptable.

■ Mechanism description X6091A (The appearance differs partially.)



■ Application



PPU (Cam-driven pick & place unit)

X6091A Stroke: 100 x 30 (mm)

- **Further speed increase**
  The fastest cycle time has been improved from 1.2 second to 1.0 second.
- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- Employment of the cam drive method enables fast and stable motions.

Renewal

The body has been changed from casting to plate structure, so that body attachment reference demanded a lot is presented.
The attachment dimensions do not change.

Specifications

Model No.	X6091A
Stroke (maximum)	Horizontal 100 mm, vertical 30 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase/three phase 100 V/200 V 25 W (*)
Supplied sensor	Origin photomicrosensor
Main body mass	11.2 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

* The motor type differs depending on use conditions.

Product number configuration

X6091A - LD - 200 - 60 - 1.2 - H - (Reference No.)

PPU model No.

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

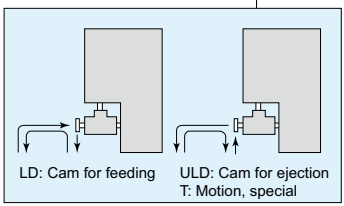
Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

Cycle time	50 Hz	60 Hz
1.2	×	×
1.4	×	
1.6		×
1.9	×	×
2.3	×	×
2.7	×	
3.2		×

(second)

Code	Top plate
	Standard attachment
H	H size

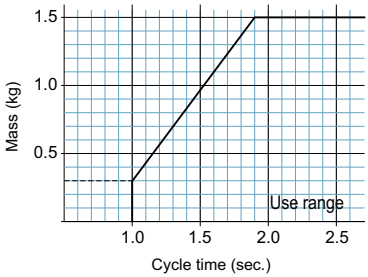


LD: Cam for feeding
ULD: Cam for ejection
T: Motion, special

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

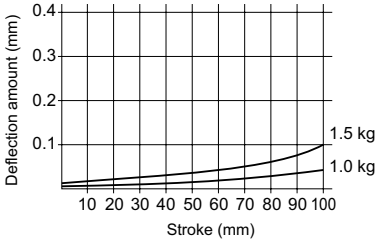
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

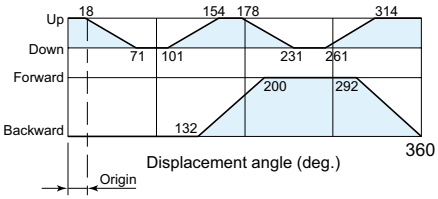
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 1.5 kg load are attached to the head.

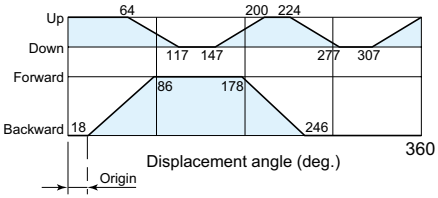


■ Timing of motion

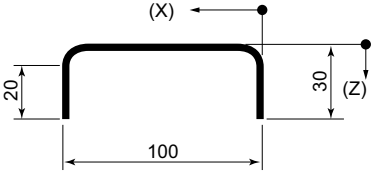
(1) Cam for feeding (LD)

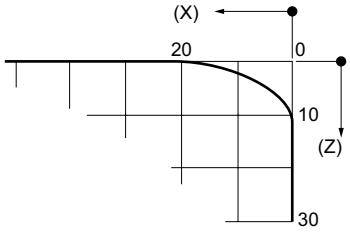


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

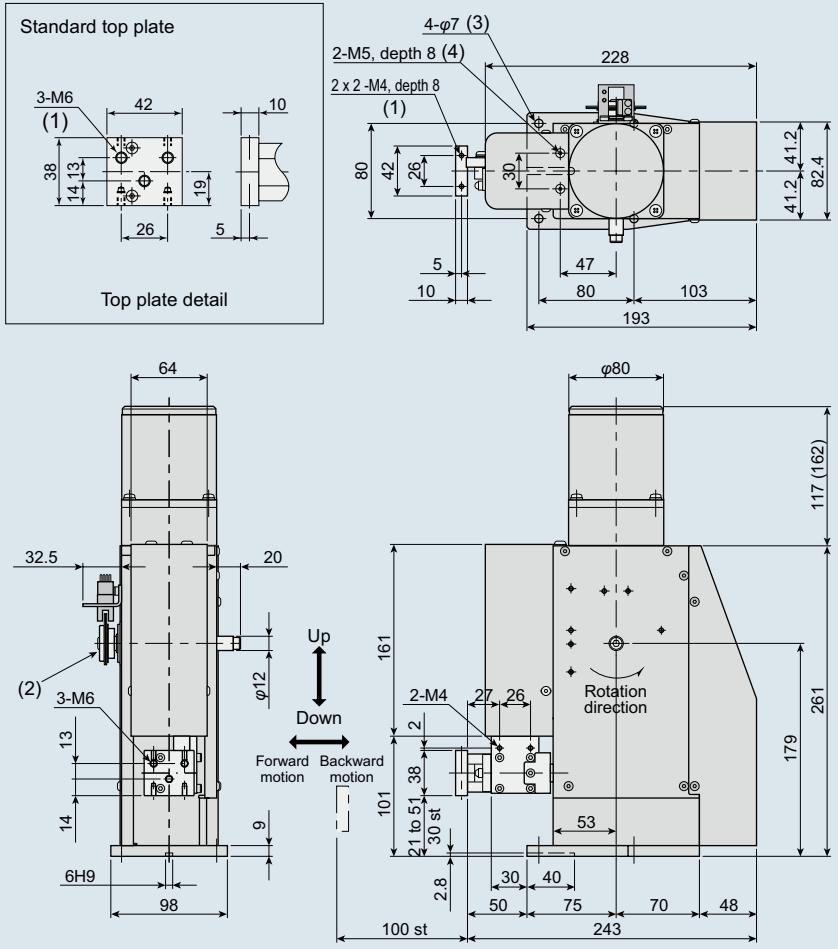




Write down needed specifications in the technical support sheet of H-5 and place an order.

X6091A

■ Dimensional drawing (mm)



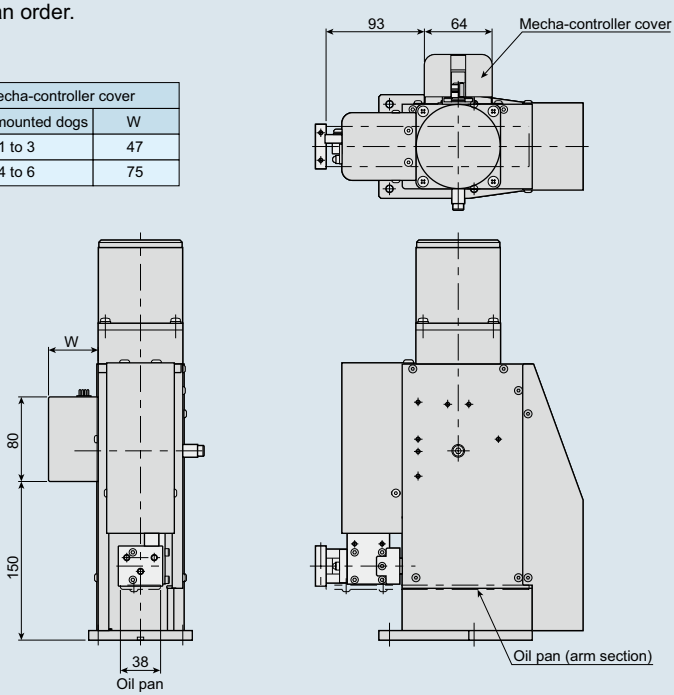
- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- For items such as a vacuum generator and vacuum switch, use the attachment holes (4) to secure.
- When mounting the attachment on the z axis, use 2-M4 tap holes on the z axis. (For details, see C-94.)

* The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

■ Dimensional drawing for products with options attached (mm)

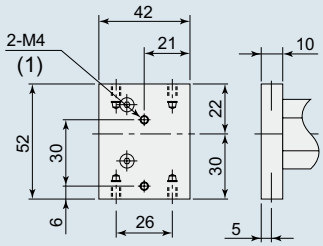
Write down specifications needed for the option in the technical support sheet of H-5 and place an order.

Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

■ H size top plate (mm)



Top plate detail

PPU (Cam-driven pick & place unit)

X6091SA Stroke: 100 x 50 (mm)

(The appearance differs partially.)

- **Further speed increase**
  The fastest cycle time has been improved from 1.5 second to 1.3 second.
- Employment of the cam drive method enables fast and stable motions.
- The prices have been lowered due to thorough cost reduction, than the conventional models.

Renewal

The body has been changed from casting to plate structure, so that body attachment reference demanded a lot is presented.
The attachment dimensions do not change.

Specifications

Model No.	X6091SA
Stroke (maximum)	Horizontal 100 mm, vertical 50 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase/ three phase 100 V/200 V 25 W (*)
Supplied sensor	Origin photomicrosensor
Main body mass	11.2 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

* The motor type differs depending on use conditions.

Product number configuration

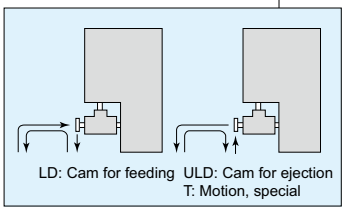
X6091SA - LD - 200 - 60 - 1.6 - H - (Reference No.)

PPU model No.

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

Code	Top plate
	Standard attachment
H	H size



LD: Cam for feeding ULD: Cam for ejection
T: Motion, special

(Note 1)

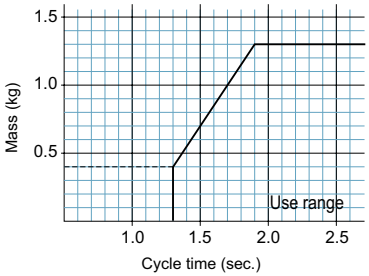
Cycle time	50 Hz	60 Hz
1.6		×
1.9	×	×
2.3	×	×
2.7	×	
3.2		×

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

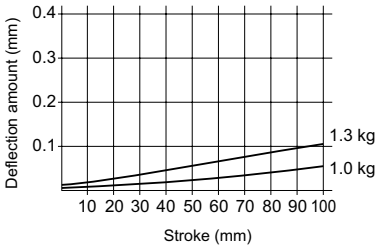
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

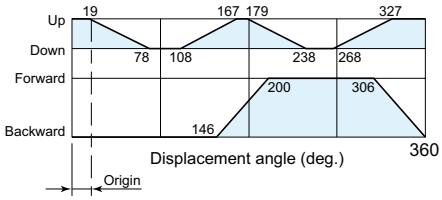
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 1.3 kg load are attached to the head.

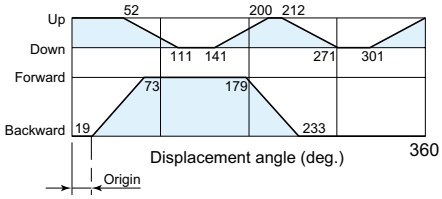


■ Timing of motion

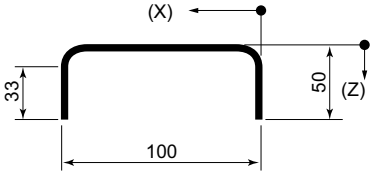
(1) Cam for feeding (LD)

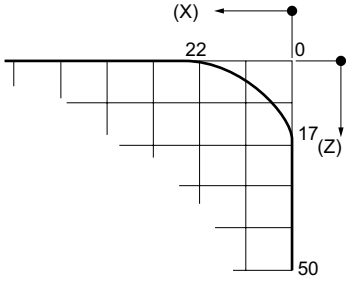


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

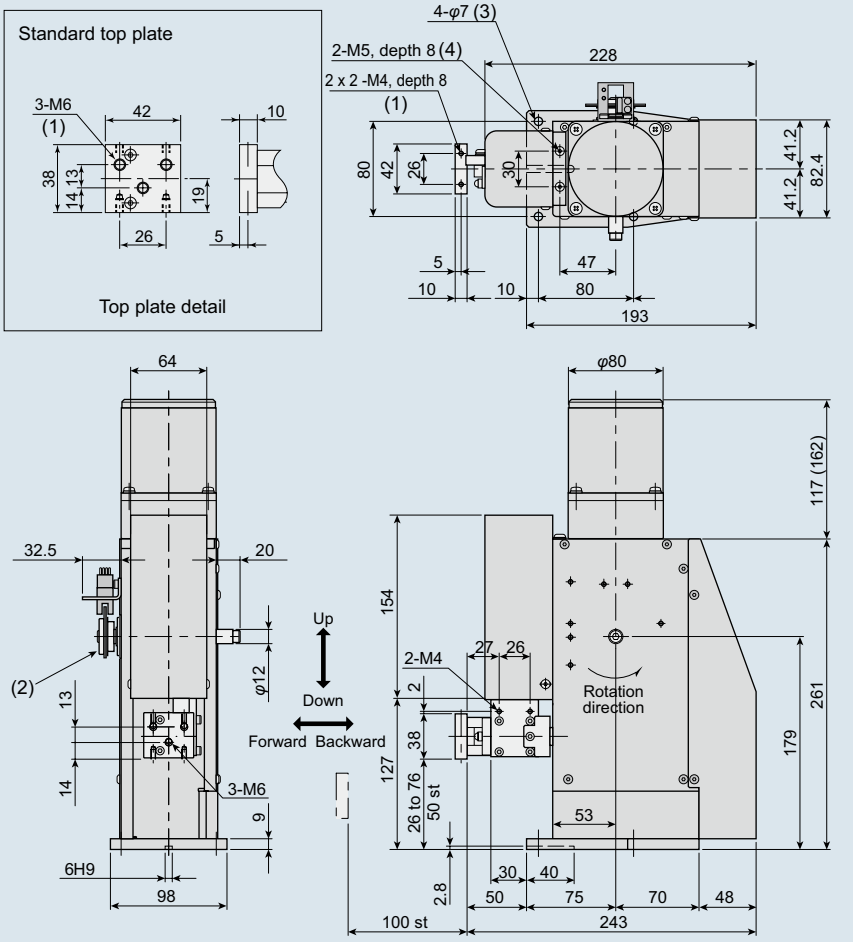




Write down needed specifications in the technical support sheet of H-5 and place an order.

X6091SA

■ Dimensional drawing (mm)



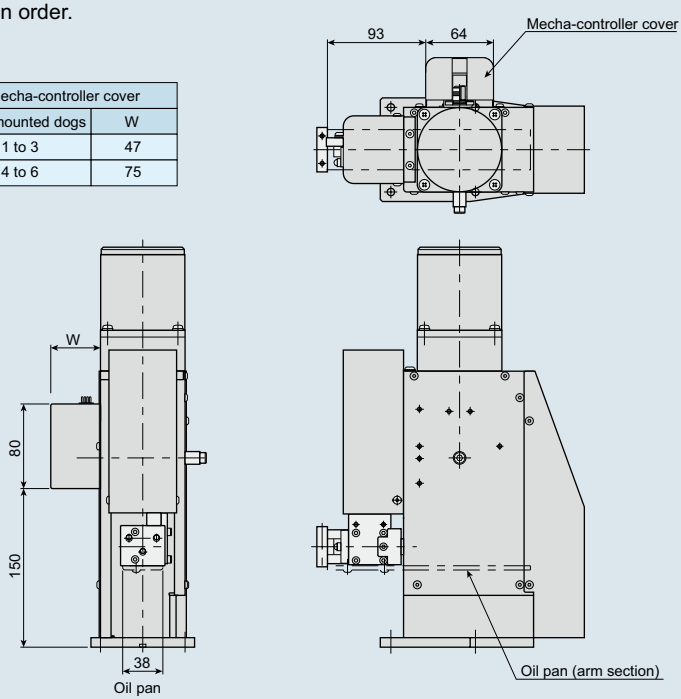
- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- For items such as a vacuum generator and vacuum switch, use the attachment holes (4) to secure.
- When mounting the attachment on the z axis, use 2-M4 tap holes on the z axis. (For details, see C-94.)

* The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

■ Dimensional drawing for products with options attached (mm)

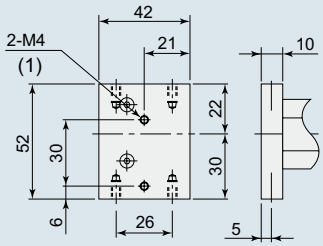
Write down specifications needed for the option in the technical support sheet of H-5 and place an order.

Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

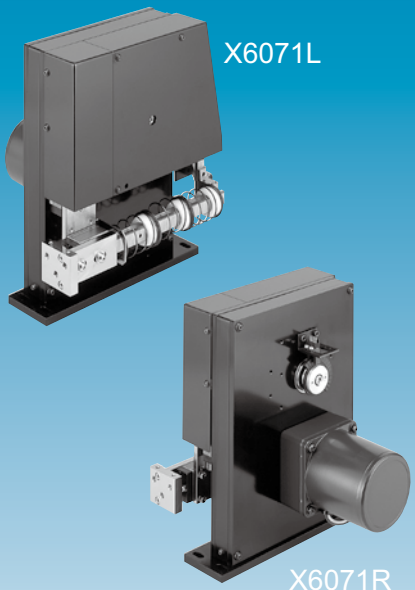
■ H size top plate (mm)



Top plate detail

PPU (Cam-driven pick & place unit)

X6071 Stroke: 100 x 30 (mm)



An external input option also is available.

- **Further speed increase**
  The fastest cycle time has been improved from 1.2 second to 1.0 second.
- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- **External input option**
  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.
  * Please contact us for detailed information.
- Employment of the cam drive method enables fast and stable motions.
- The GD^2 of the working section is small and high speed and high accuracy are maintained.
- The prices have been lowered due to thorough cost reduction, than the conventional models.

Specifications

Model No.	X6071
Stroke (maximum)	Horizontal 100 mm, vertical 30 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.0 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6071 [L] - [LD] - [200] - [60] - [1.2] - [H] - [ ] (Reference No.)

PPU model No.

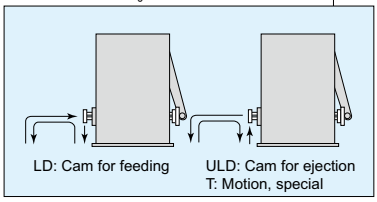
Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

Code	Top plate
	Standard attachment
H	H size

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



(Note 1)

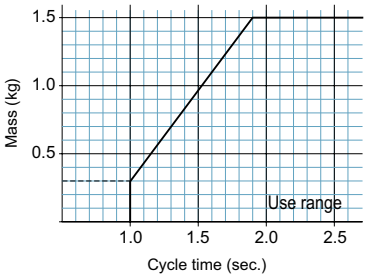
Cycle time	50 Hz	60 Hz
1.2		×
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

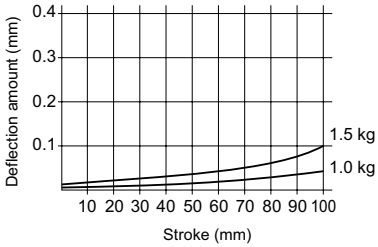
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

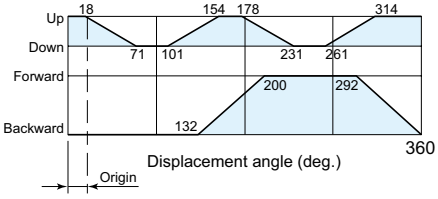
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0kg and 1.5kg load are attached to the head.

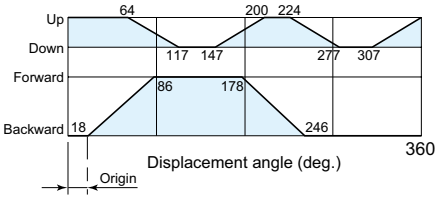


■ Timing of motion

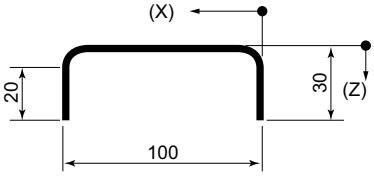
(1) Cam for feeding (LD)

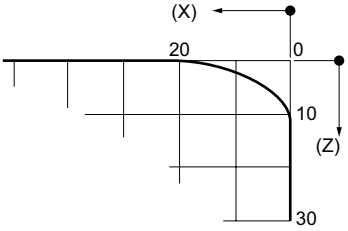


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

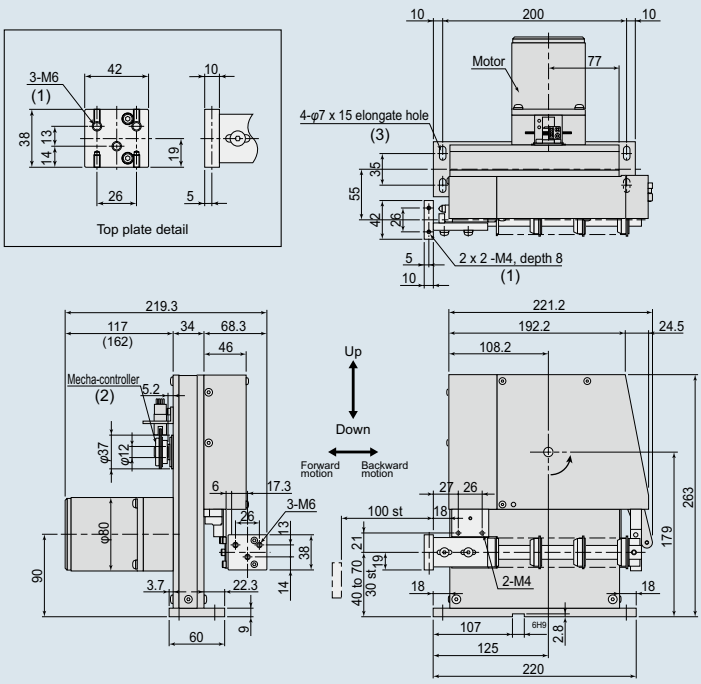




Write down needed specifications in the technical support sheet of H-5 and place an order.

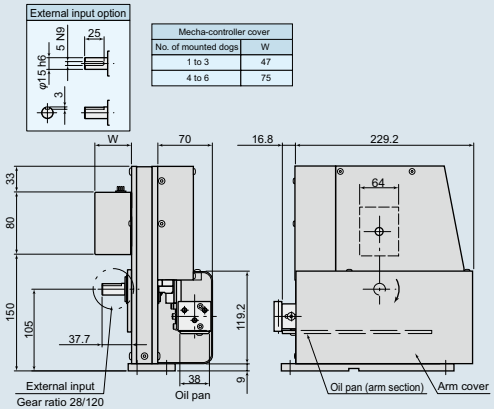
X6071L

■ Dimensional drawing (left carry) (mm)



- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- When mounting the attachment on the z axis, use 2-M4 tap holes on the z axis. (For details, see C-94.)
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

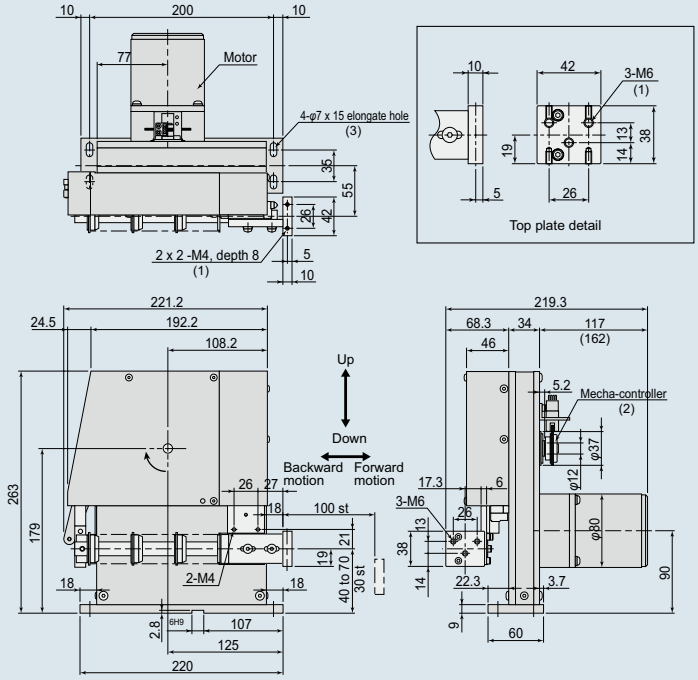
■ Dimensional drawing for products with options attached (left carry)



- Horizontally turning the workpiece by 90 degrees. For the swivel attachment, see C-106.

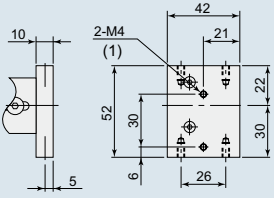
X6071R

■ Dimensional drawing (right carry) (mm)



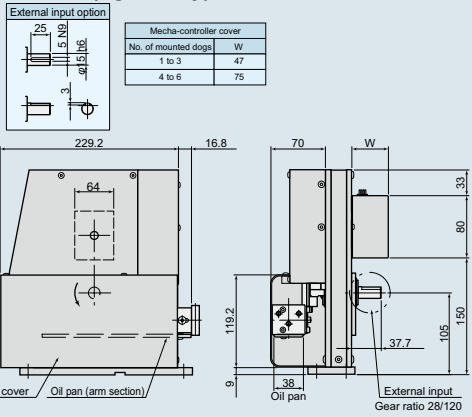
■ H size top plate

(Left/right: same dimensions)



Top plate detail

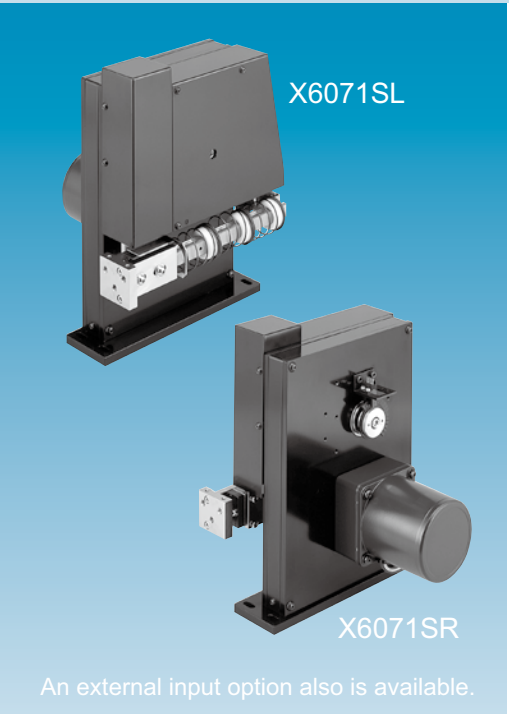
■ Dimensional drawing for products with options attached (right carry)



- Horizontally turning the workpiece by 90 degrees. For the swivel attachment, see C-106.

PPU (Cam-driven pick & place unit)

X6071S Stroke: 100 x 50 (mm)



- **Further speed increase**
  The fastest cycle time has been improved from 1.5 second to 1.3 second.
- **External input option**
  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.
  * Please contact us for detailed information.
- Employment of the cam drive method enables fast and stable motions.
- The GD^2 of the working section is small and high speed and high accuracy are maintained.
- The prices have been lowered due to thorough cost reduction, than the conventional models.

Specifications

Model No.	X6071S
Stroke (maximum)	Horizontal 100 mm, vertical 50 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.0 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6071S **L** - **LD** - **200** - **60** - **1.6** - **H** - [ ] (Reference No.)

PPU model No.

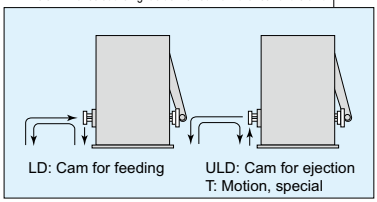
Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

Code	Top plate
	Standard attachment
H	H size

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



(Note 1)

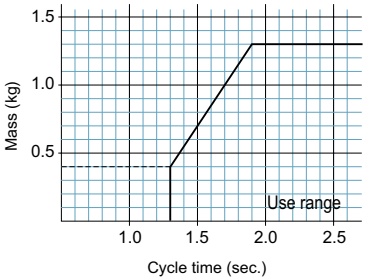
Cycle time	50 Hz	60 Hz
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.7		×

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

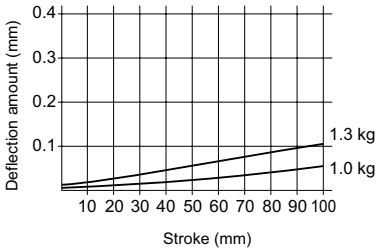
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

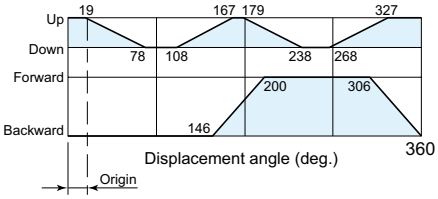
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 1.3 kg load are attached to the head.

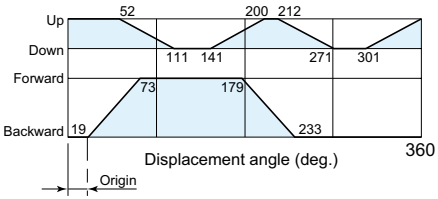


■ Timing of motion

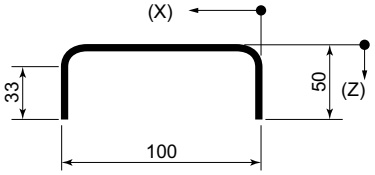
(1) Cam for feeding (LD)

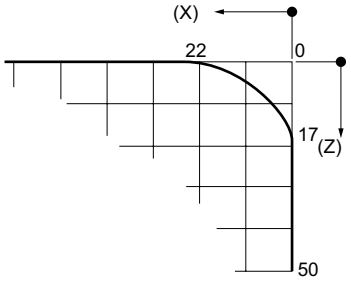


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

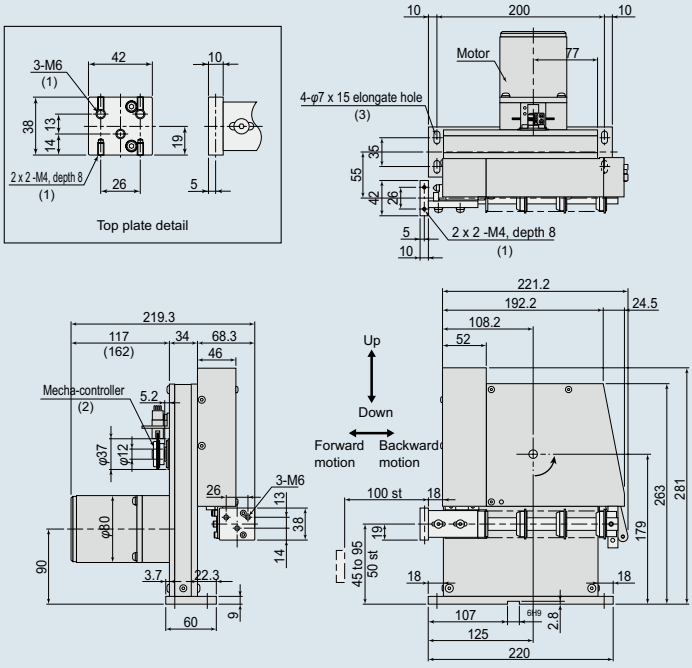




Write down needed specifications in the technical support sheet of H-5 and place an order.

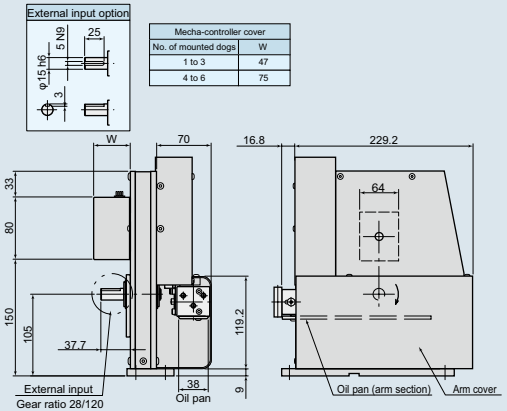
X6071SL

■ Dimensional drawing (left carry) (mm)



- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- When mounting the attachment on the z axis, use 2-M4 tap holes on the z axis. (For details, see C-94.)
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

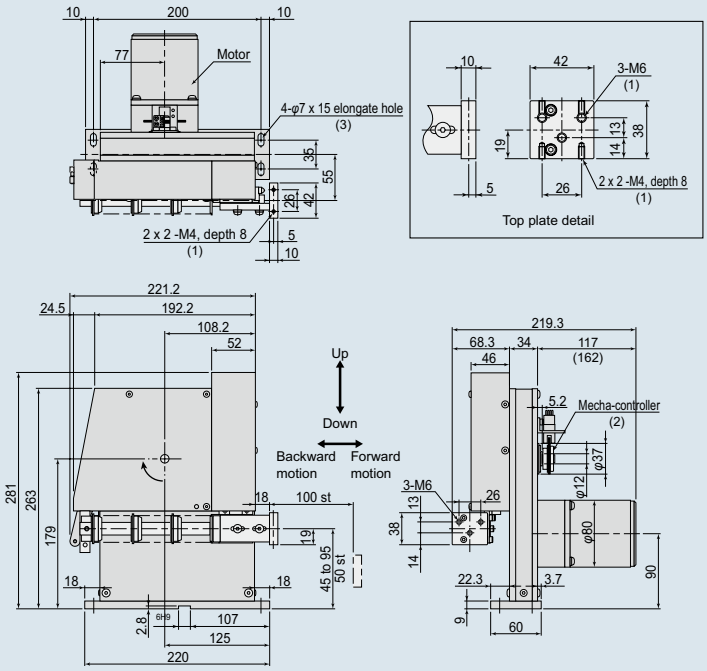
■ Dimensional drawing for products with options attached (left carry)



- Horizontally turning the workpiece by 90 degrees. For the swivel attachment, see C-106.

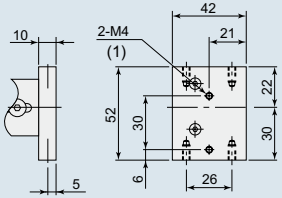
X6071SR

■ Dimensional drawing (right carry) (mm)



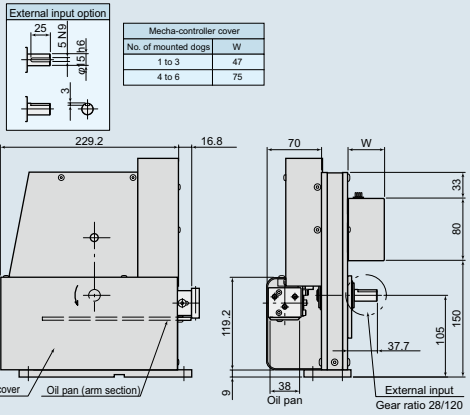
■ H size top plate

(Left/right: same dimensions)



Top plate detail

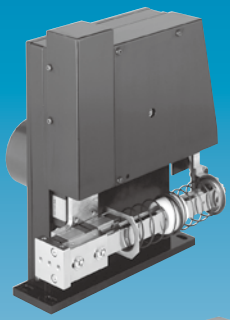
■ Dimensional drawing for products with options attached (right carry)



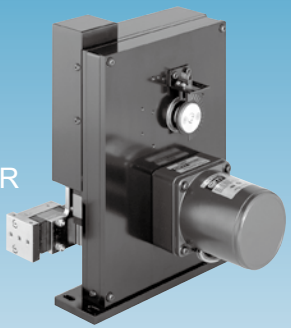
- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

PPU (Cam-driven pick & place unit)

X6071W Stroke: 100 x 30 (mm)



X6071WL



X6071WR

An external input option also is available.

- **High rigidity type which can feed twice as much load as conventional models**

  Simultaneous supply of multiple items with a fast takt time is possible.

  Simultaneous supply and ＿ with a fast takt time is possible.

  ↓

  Inspection, measurement, screw tightening, coating, etc.

- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- **External input option**
  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.
  Please contact us for detailed information.

Specifications

Model No.	X6071W
Stroke (maximum)	Horizontal 100 mm, vertical 30 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.5 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6071W **L** - **LD** - **200** - **60** - **1.2** - ☐ (Reference No.)

PPU model No.

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

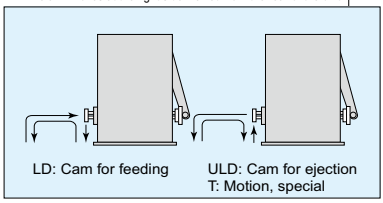
Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

Cycle time	50 Hz	60 Hz
1.2		×
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	

(second)

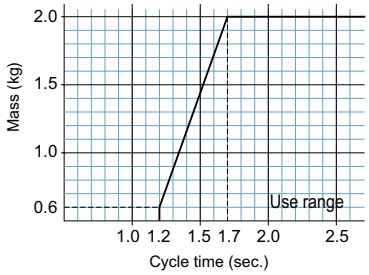
* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

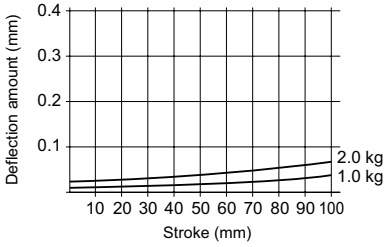
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

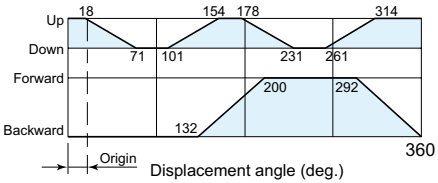
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 2.0 kg load are attached to the head.

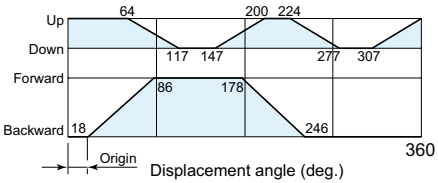


■ Timing of motion

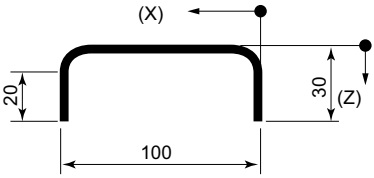
(1) Cam for feeding (LD)

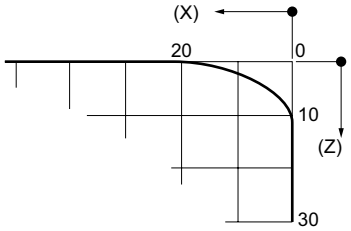


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

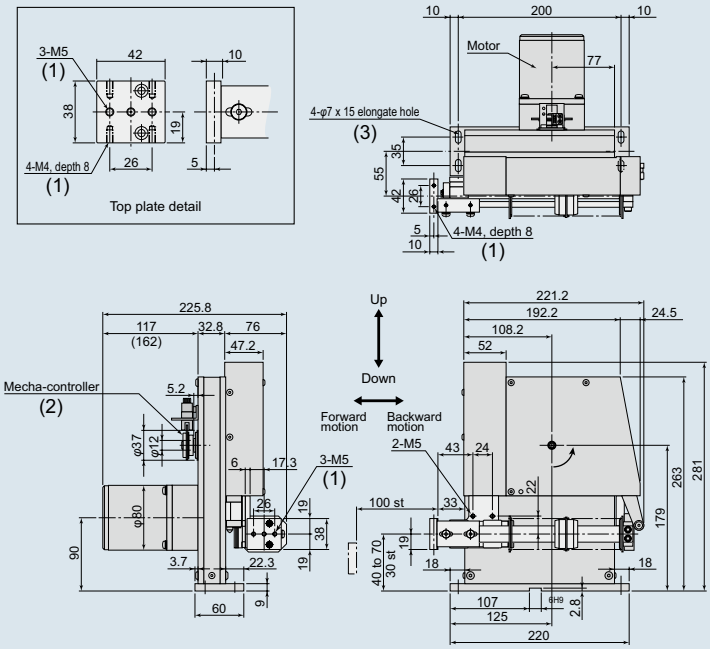




Write down needed specifications in the technical support sheet of H-5 and place an order.

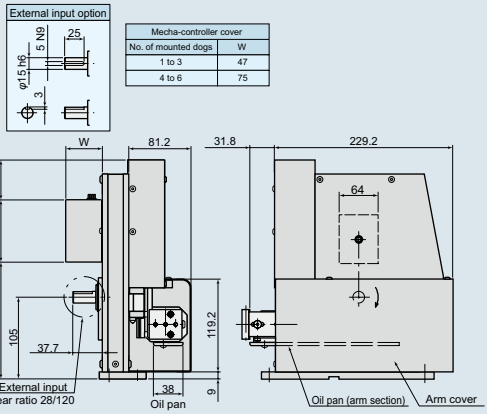
X6071WL

■ Dimensional drawing (left carry) (mm)



- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- When mounting the attachment on the Z axis, use 2-M4 tap holes on the Z axis. (For details, see C-94.)
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

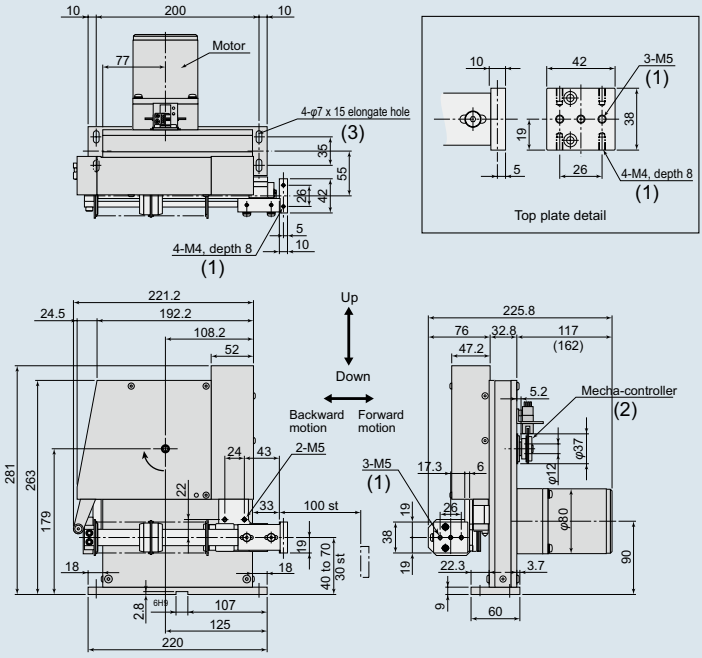
■ Dimensional drawing for products with options attached (left carry)



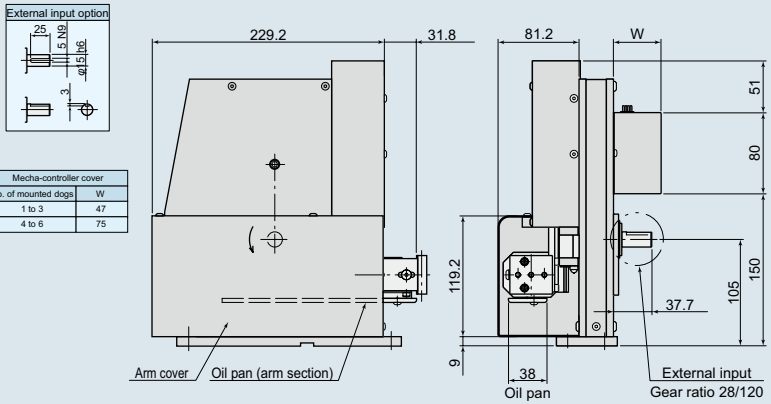
- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.
- Combinations of an oil pan and under-cover are exposed to some restrictions.

X6071WR

■ Dimensional drawing (right carry) (mm)



■ Dimensional drawing for products with options attached (right carry)

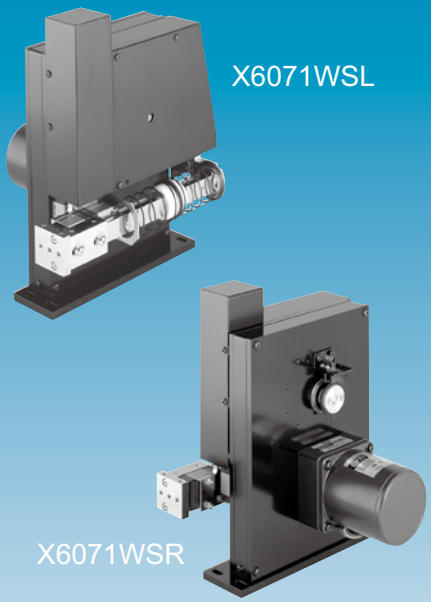


Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75

- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.
- Combinations of an oil pan and under-cover are exposed to some restrictions.

PPU (Cam-driven pick & place unit)

X6071WS Stroke: 100 x 50 (mm)



An external input option also is available.

- **High rigidity type which can feed twice as much load as conventional models**

Simultaneous supply of multiple items with a fast takt time is possible.

Simultaneous supply and ⬇ with a fast takt time is possible.

Inspection, measurement, screw tightening, coating, etc.

- **External input option**

An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.
Please contact us for detailed information.

Specifications

Model No.	X6071WS
Stroke (maximum)	Horizontal 100 mm, vertical 50 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.5 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6071WS **L** - **LD** - **200** - **60** - **1.6** - ☐ (Reference No.)

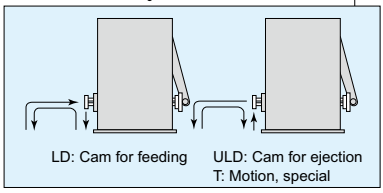
PPU model No.

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



(Note 1)

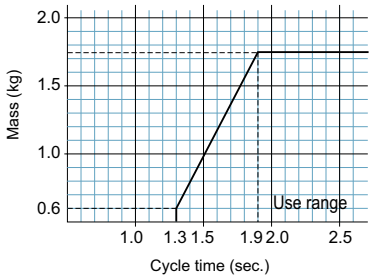
Cycle time	50 Hz	60 Hz
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

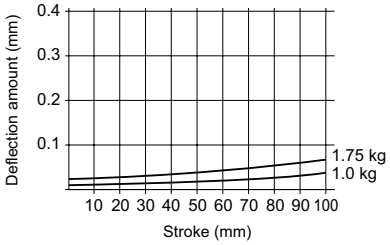
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

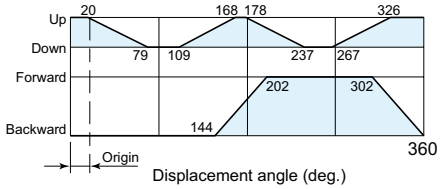
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 1.75 kg load are attached to the head.

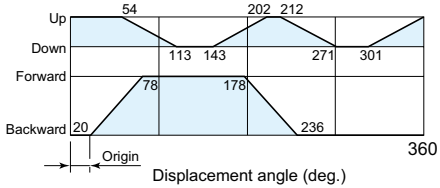


■ Timing of motion

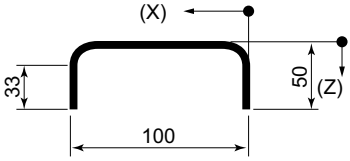
(1) Cam for feeding (LD)

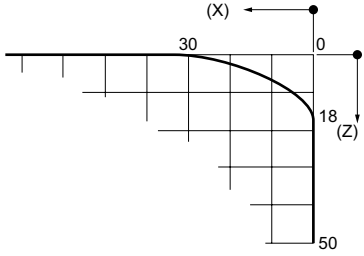


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

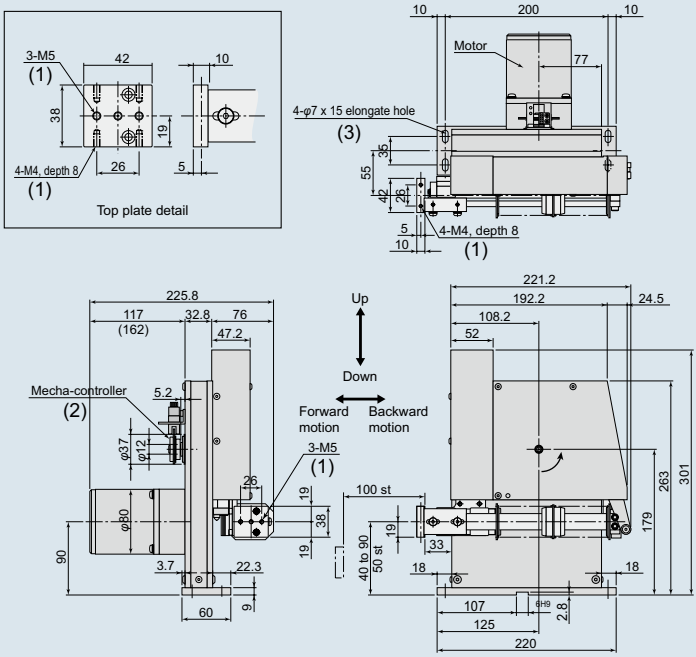




Write down needed specifications in the technical support sheet of H-5 and place an order.

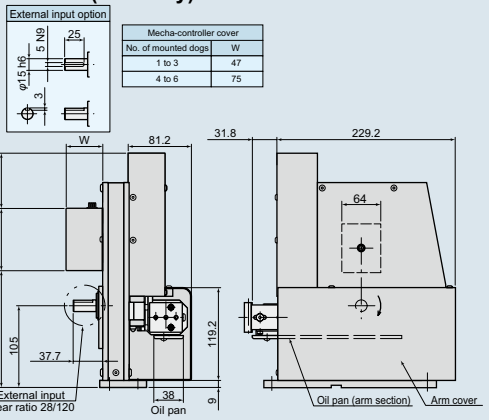
X6071WSL

■ Dimensional drawing (left carry) (mm)



- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.

■ Dimensional drawing for products with options attached (left carry)

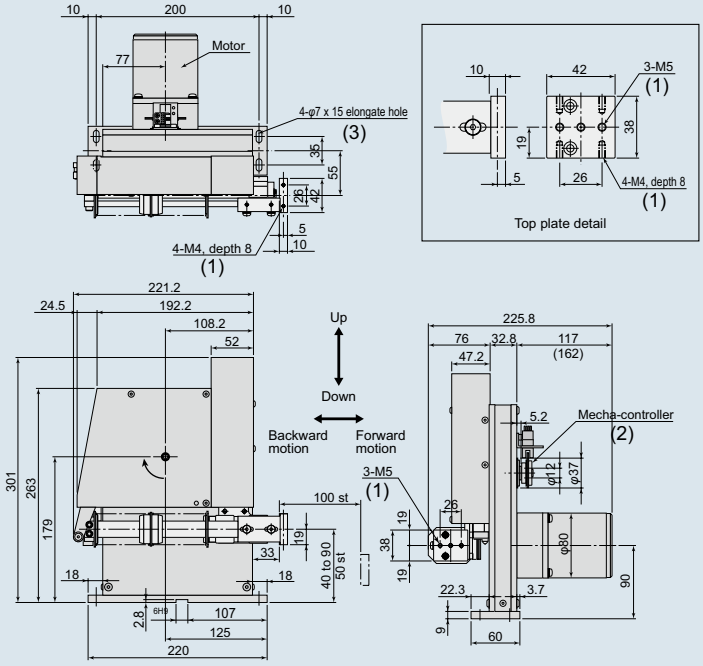


Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75

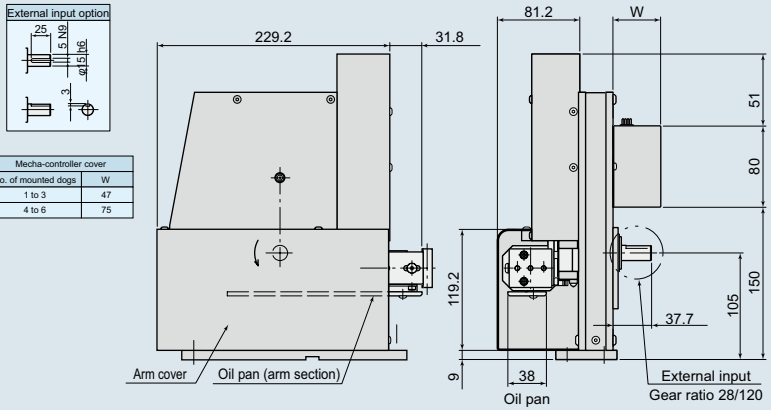
- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.
- Combinations of an oil pan and under-cover are exposed to some restrictions.

X6071WSR

■ Dimensional drawing (right carry) (mm)



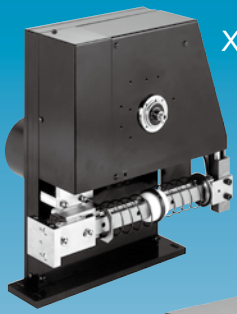
■ Dimensional drawing for products with options attached (right carry)

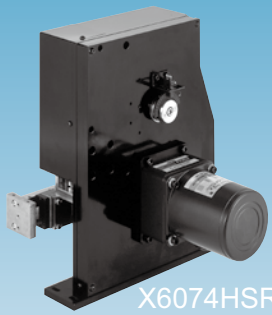


- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.
- Combinations of an oil pan and under-cover are exposed to some restrictions.

PPU (Cam-driven pick & place unit)

X6074HS Stroke: 100 x 50 (mm)





- Employment of the cam drive method enables fast and stable motions.
- Using a precompression-type linear guide for the x and z axises
  High repetition accuracy is presented.
- The GD^2 of the working section is small and high speed and high accuracy are maintained.
- Design through thorough waste elimination has enabled inexpensive prices.

Specifications

Model No.	X6074HS
Stroke (maximum)	Horizontal 100 mm, vertical 50 mm
Position repeat accuracy	±0.015 mm
X mechanism	Groove cam plus spring
Z mechanism	Plate cam plus spring
Standard motor	Induction, single-phase 100 V/200 V 40 W
Supplied sensor	Origin photomicrosensor
Main body mass	22.0 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6074HS **L** - **LD** - **200** - **60** - **1.9** - [ ]

PPU model No.

(Reference No.)

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

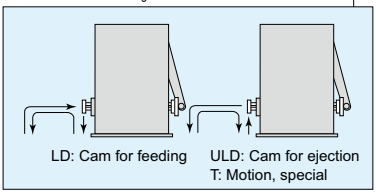
Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

Cycle time	50 Hz	60 Hz
1.1	×	
1.2		×
1.4	×	×
1.6	×	
1.9		×
2.3	×	×

(second)

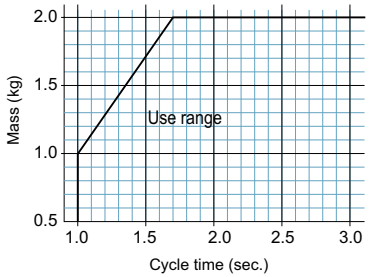
* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

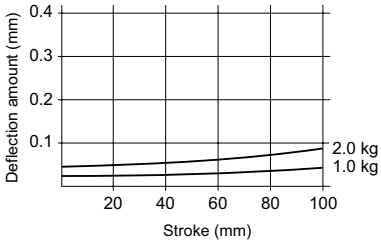
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

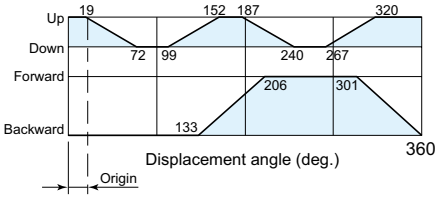
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 2.0 kg load are attached to the head.

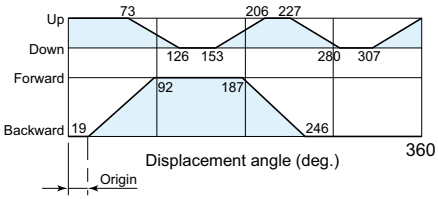


■ Timing of motion

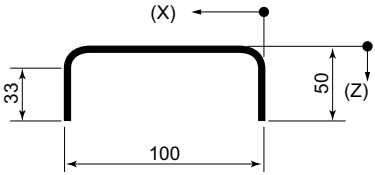
(1) Cam for feeding (LD)

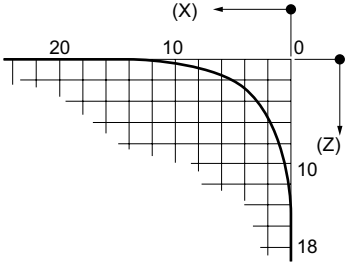


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

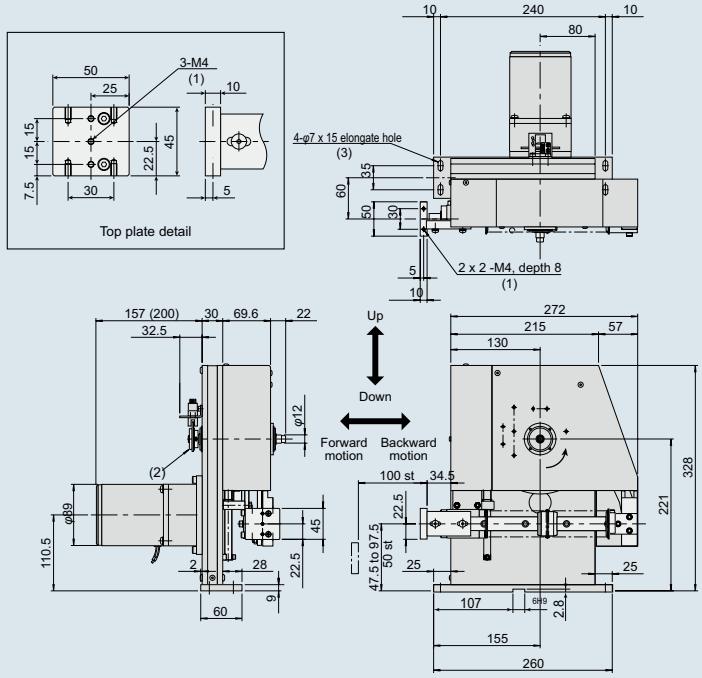




Write down needed specifications in the technical support sheet of H-5 and place an order.

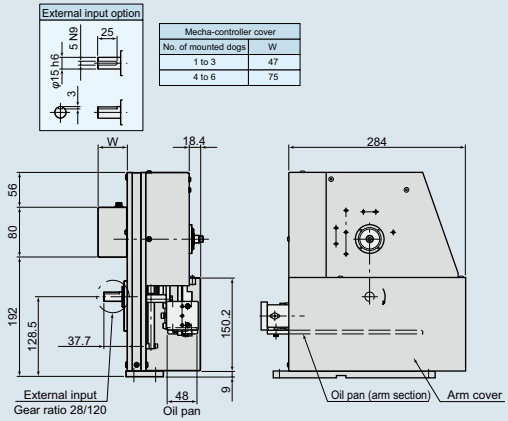
X6074HSL

■ Dimensional drawing (left carry) (mm)



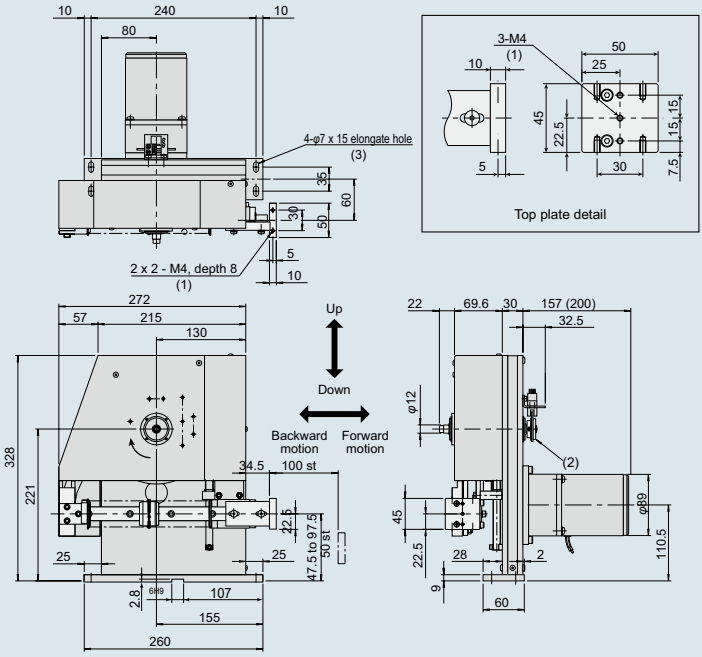
- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.

■ Dimensional drawing for products with options attached (left carry)

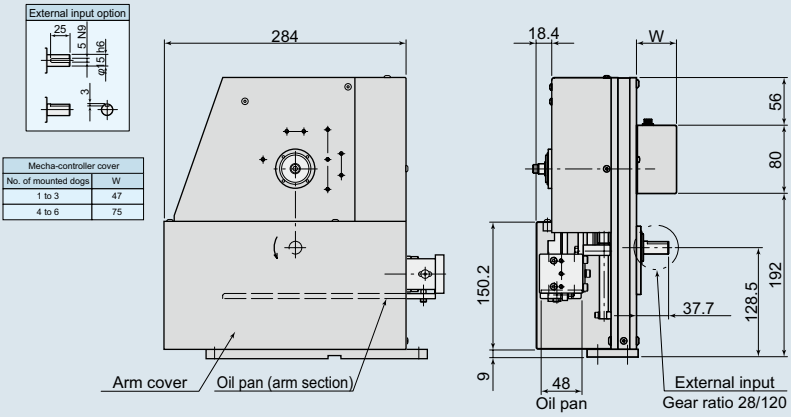


X6074HSR

■ Dimensional drawing (right carry) (mm)



■ Dimensional drawing for products with options attached (right carry)

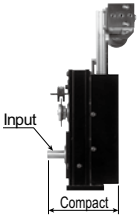


PPU (Cam-driven pick & place unit)

X6076W Stroke: 100 x 30 (mm)

An external input option also is available.

- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- **Space saving with decreased height**
  No component is projected above the X-arm, so that the height of the product is decreased. This contributes to maintenance performance increase and installation space reduction.
- **External input option**
  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout. Please contact us for detailed information.



Specifications

Model No.	X6076W
Stroke (maximum)	Horizontal 100 mm, vertical 30 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.0 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6076W [L] - [LD] - [200] - [60] - [1.2] - [ ]

(Reference No.)

PPU model No.

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

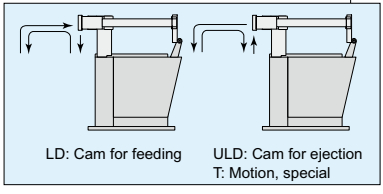
Code	Frequency
50	50 Hz
60	60 Hz

(Note 1)

Cycle time	50 Hz	60 Hz
1.2		×
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	

(second)

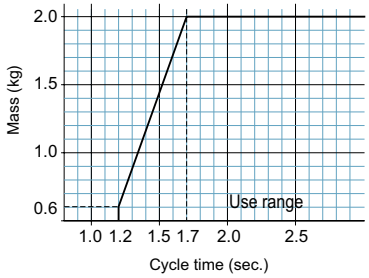
* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

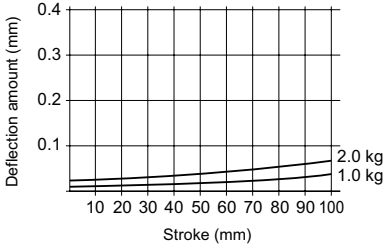
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

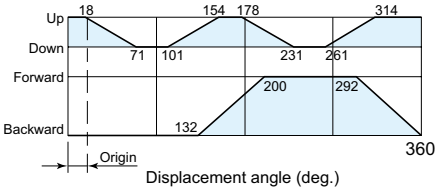
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 2.0 kg load are attached to the head.

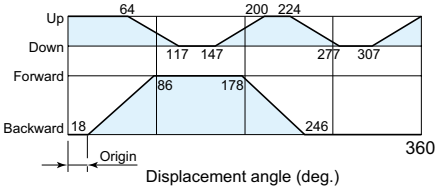


■ Timing of motion

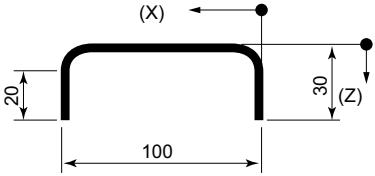
(1) Cam for feeding (LD)

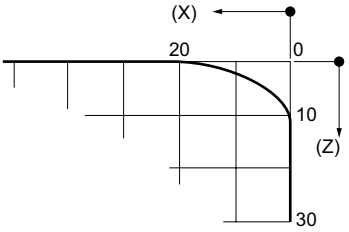


(2) Cam for ejection (ULD)



■ Overlap amount (mm)





* For the dimensional drawings, see C-82 and C-83.
Write down needed specifications in the technical support sheet of H-5 and place an order.

PPU (Cam-driven pick & place unit)

X6076WS Stroke: 100 x 50 (mm)

An external input option also is available.

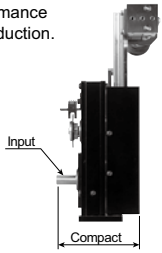
- **Space saving with decreased height**

  No component is projected above the X-arm, so that the height of the product is decreased. This contributes to maintenance performance increase and installation space reduction.

- **External input option**

  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.

  * Please contact us for detailed information.



Specifications

Model No.	X6076WS
Stroke (maximum)	Horizontal 100 mm, vertical 50 mm
Position repeat accuracy	±0.015 mm
Standard motor	Induction, single-phase 100 V/200 V 25 W
Supplied sensor	Origin photomicrosensor
Main body mass	12.0 kg
Standard paint color	Black (equivalent to Munsell N1)
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)
Lubricant	COSMO GREASE, DYNAMAX EP No. 1

Product number configuration

X6076WS **L** - **LD** - **200** - **60** - **1.2** - **[ ]**

PPU model No.

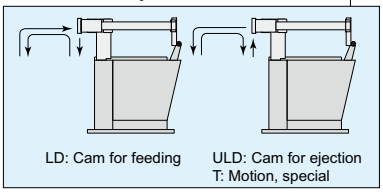
(Reference No.)

Code	Carry direction
L	Left
R	Right

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.



(Note 1)

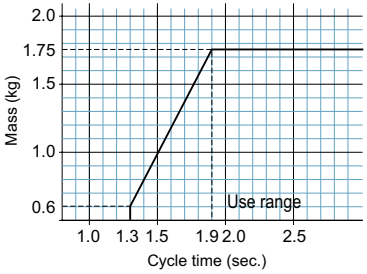
Cycle time	50 Hz	60 Hz
1.4	×	×
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

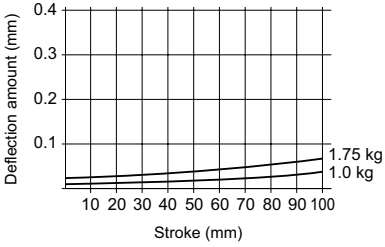
Be careful that use with excess mass can cause a problem.



* For stoppage, an optional brake is needed.

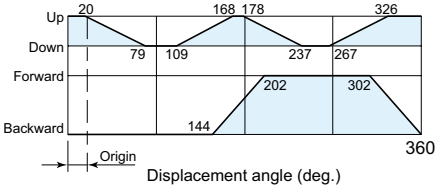
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 1.75 kg load are attached to the head.

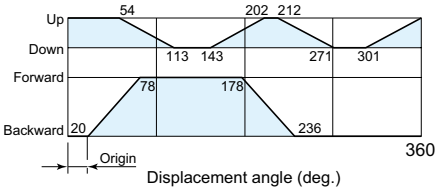


■ Timing of motion

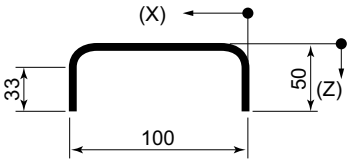
(1) Cam for feeding (LD)

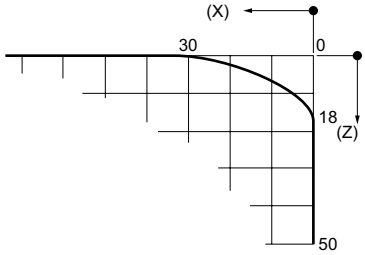


(2) Cam for ejection (ULD)



■ Overlap amount (mm)

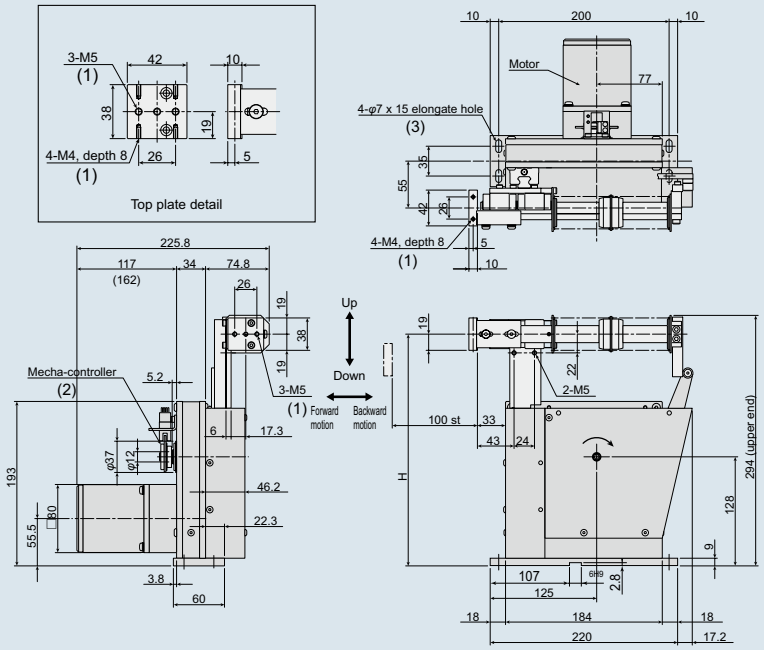




Write down needed specifications in the technical support sheet of H-5 and place an order.

X6076WL, X6076WSL

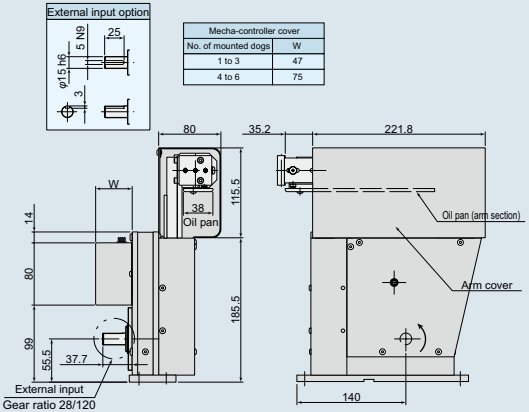
■ Dimensional drawing (left carry) (mm)



	H	Stroke
X6076W	242 to 272	30
X6076WS	222 to 272	50

- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- When mounting the attachment on the Z axis, use 2-M5 tap holes on the Z axis.
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

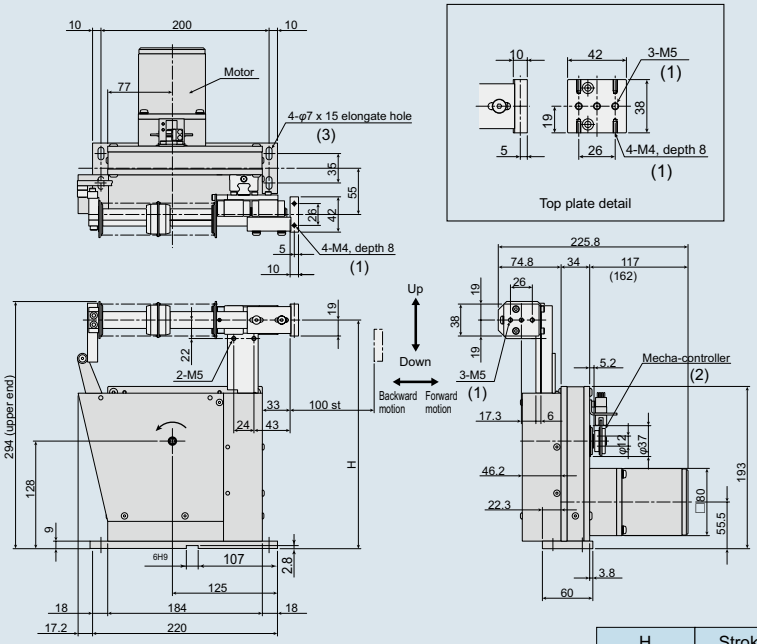
■ Dimensional drawing for products with options attached (left carry)



- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

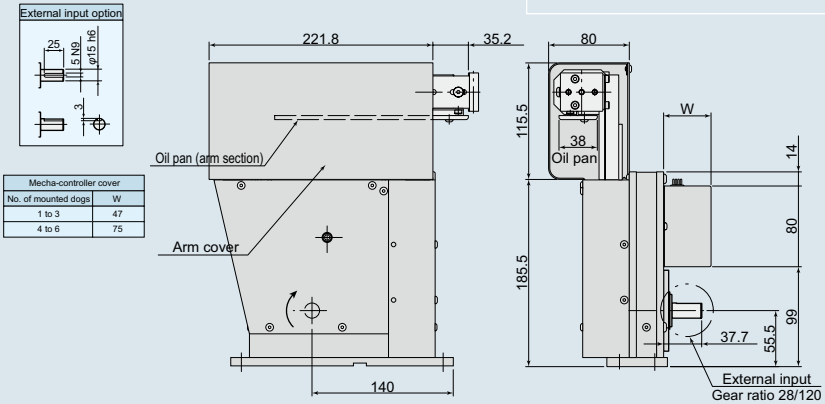
X6076WR, X6076WSR

■ Dimensional drawing (right carry) (mm)



	H	Stroke
X6076W	242 to 272	30
X6076WS	222 to 272	50

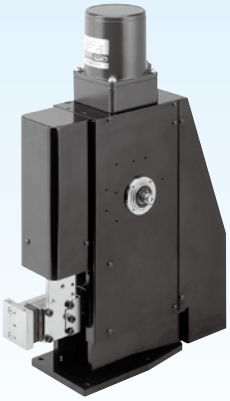
■ Dimensional drawing for products with options attached (right carry)



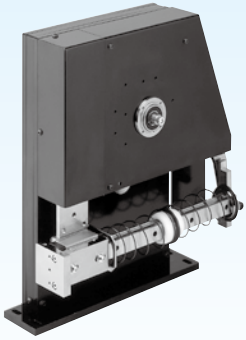
Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75

- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

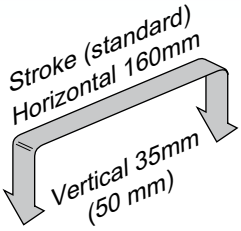
Semi-long type Stroke: 160 x 35, 160 x 50 (mm)



Center carry



Side carry
(The picture shows a left carry type.)



■ Variation (numeric values: stroke)

Model No. \ Carry method	Center (mm)	Side (mm) Left	Side (mm) Right	Page
X6094	160 x 35			C-86
X6094S	160 x 50			C-86
X6074L		160 x 35		C-90
X6074R			160 x 35	
X6074SL		160 x 50		C-90
X6074SR			160 x 50	

* For the side carry type, an external input option is available.
* For side carry, X6074SS with vertical 70 mm stroke also is available. Please contact us for detailed information.

■ High rigidity, long life

The metal bearing of the lever support has been changed to bearing guide. Increased size of the cam-side cam follower. Compared with the previous models, high rigidity has been pursued more thoroughly: for example, rigidity increase of the drive gear (X6094, 94S) and total reexamination of the X-Z arm structure.
The transportable mass and life have been increased from the previous models.

■ Easy position adjustment

Position alignment for the X-axis can be performed with the arm locking screw and workpieces are eased with respect to front adjustment.
Position alignment for the Z-axis can be easily performed with the adjustment screw at the upper section (inside).

■ Improved maintenance performance

For grease supply to a side carry type, all the covers needed to be removed. For the new model, grease can be easily supplied merely by removing the front cover. Also for a center carry type, grease can be easily supplied merely by removing the front cover; this was enabled also for the previous models.

■ Usage expansion with S types (vertical 50mm)

For the center carry, an S type was available only for the ball bush guide type. For the new model, an S type with linear guide is available. Moreover, addition is made also to the side carry type to meet a wide variety of needs.

■ Reference groove for main-unit attachment

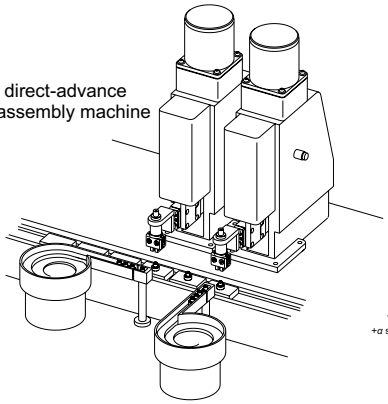
A key groove is added to the attachment section.
The reproducibility is improved by using it as the reference for attachment.

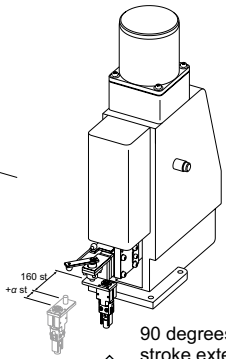
■ SS type, vertical 70 mm

The X6074SS with side carry allows up to vertical 70 mm motions. It is helpful for supply of long workpieces and supply to a deep location.
Please contact us for detailed information.

■ Application

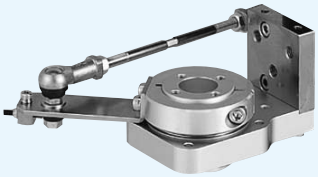
For a direct-advance type assembly machine





90 degrees rotation, stroke extension

Option addition



Swivel attachment

- Horizontal 90 degrees rotation -

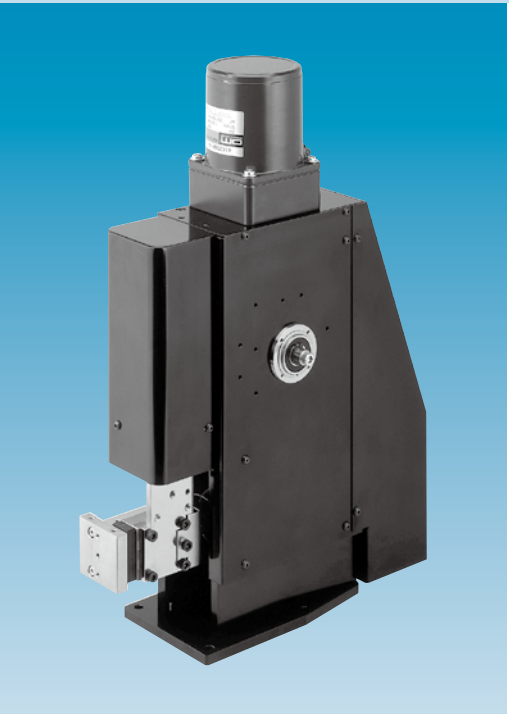
- Workpiece posture conversion
- Workpiece position conversion

Relevant models

- X6094, X6094S, X6074L, X6074R
  For details, see C-106.

PPU (Cam-driven pick & place unit)

X6094, X6094S Stroke: 160 x 35, 160 x 50 (mm)



- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- Employment of the cam drive method enables fast and stable motions.
- The GD^2 of the working section is small and high speed and high accuracy are maintained.
- Design through thorough waste elimination has enabled inexpensive prices.

Specifications

Model No.	X6094	X6094S
Horizontal stroke (maximum)	160 mm	
Vertical stroke (maximum)	35 mm	50 mm
Position repeat accuracy	±0.015 mm	
Standard motor	Induction, single-phase 100 V/200 V 25 W	
Supplied sensor	Origin photomicrosensor	
Main body mass	17.0 kg	
Standard paint color	Black (equivalent to Munsell N1)	
Operating ambient temperature	5 to 50°C	
Operating ambient humidity	85% or less (No condensation)	
Lubricant	COSMO GREASE, DYNAMAX EP No. 1	

Product number configuration

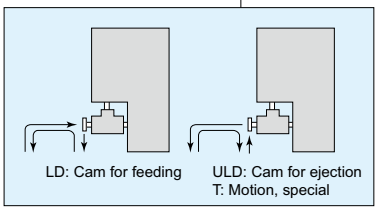
X6094 - LD - 200 - 60 - 1.6 - H - [ ] (Reference No.)

PPU model No.
X6094
X6094S

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

Code	Frequency
50	50 Hz
60	60 Hz

Code	Top plate
	Standard attachment
H	H type



(Note 1)

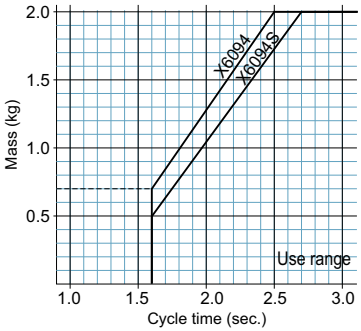
Cycle time	50 Hz	60 Hz
1.6		×
1.9	×	×
2.3	×	×
2.7	×	
3.2		×

(second)

Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

Be careful that use with excess mass can cause a problem.

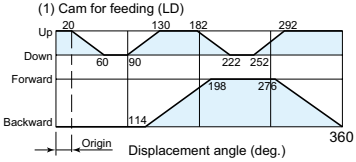


* For stoppage, an optional brake is needed.

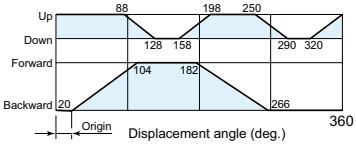
■ Timing of motion

X6094

(1) Cam for feeding (LD)

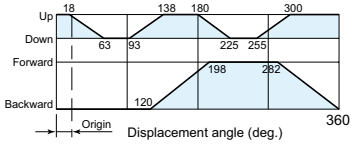


(2) Cam for ejection (ULD)

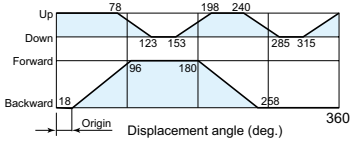


X6094S

(1) Cam for feeding (LD)

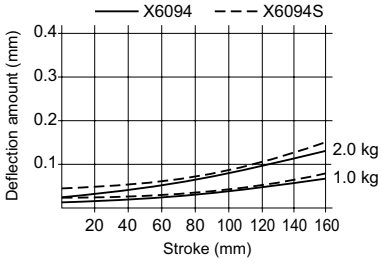


(2) Cam for ejection (ULD)



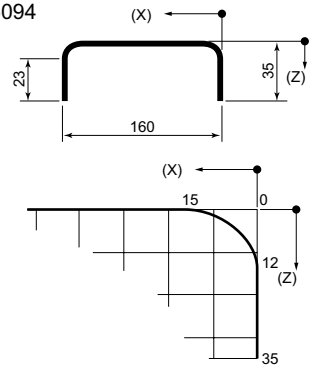
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 2.0 kg load are attached to the head.

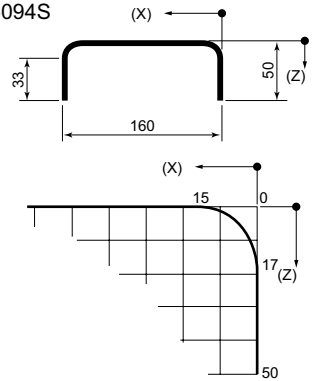


■ Overlap amount (mm)

X6094



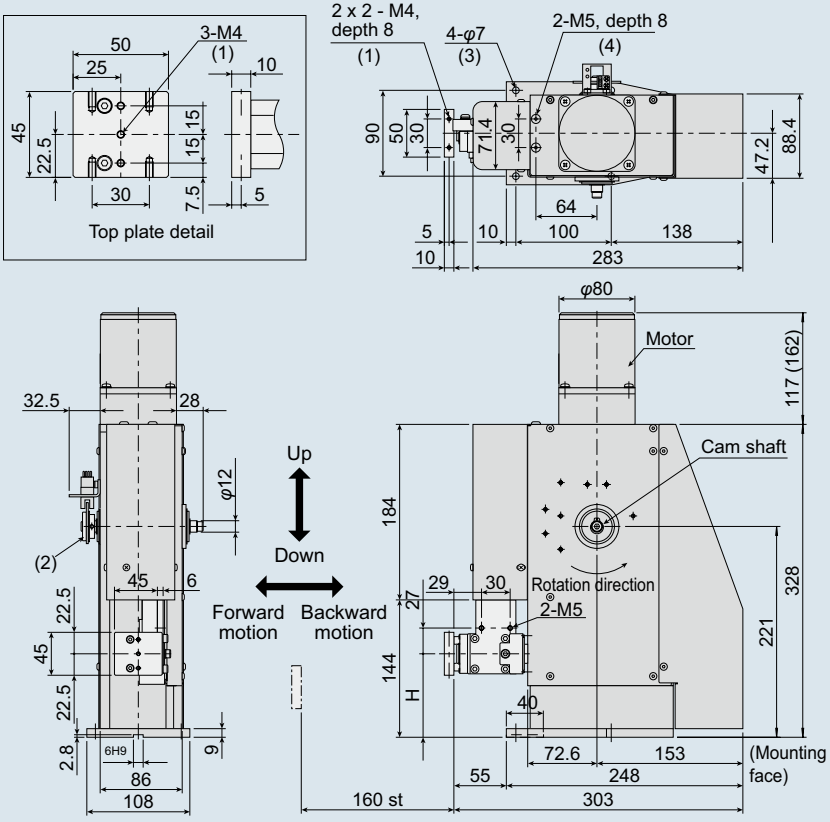
X6094S



Write down needed specifications in the technical support sheet of H-5 and place an order.

X6094, X6094S

■ Dimensional drawing (mm)



	H	Stroke
X6094	52.5 to 87.5	35
X6094S	47.5 to 97.5	50

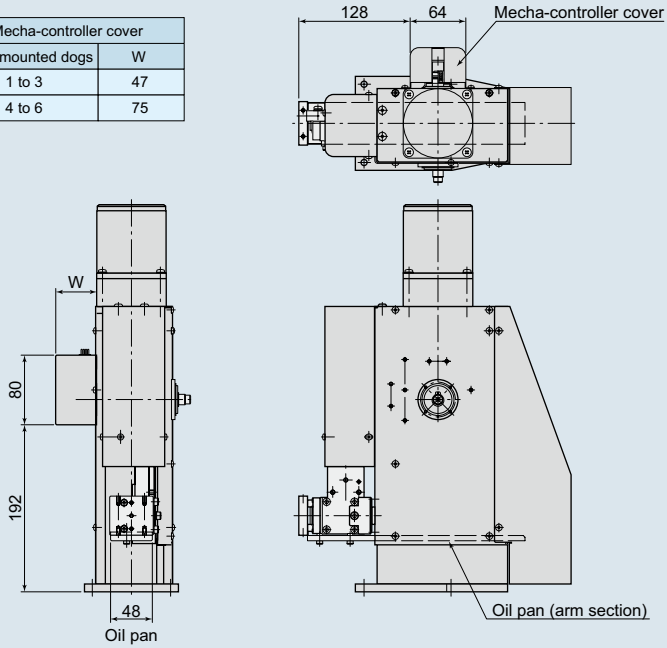
- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- For items such as a vacuum generator and vacuum switch, use the attachment holes (4) to secure. (Remove the cap screws to use.)
- When mounting the attachment on the Z axis, use 2-M5 tap holes on the Z axis. (For details, see C-94.)

* The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

■ Dimensional drawing for products with options attached (mm)

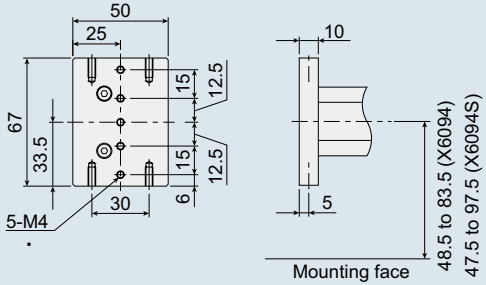
Write down specifications needed for the option in the technical support sheet of H-5 and place an order.

Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75



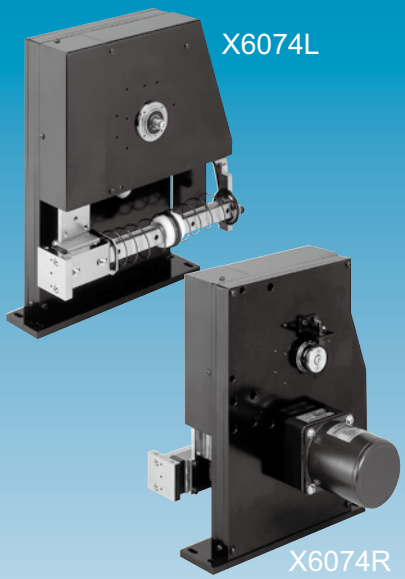
- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

■ H size top plate (mm)



PPU (Cam-driven pick & place unit)

X6074, X6074S Stroke: 160 x 35, 160 x 50 (mm)



An external input option also is available.

- **Swivel attachment**
  Horizontal 90 degrees rotation of workpieces can be performed during supply operations.
  * For details, see C-106.
- **External input option**
  An option for changing the motor section to external input is available. Changing the location of the motor enables space-saving layout.
  Please contact us for detailed information.
- Employment of the cam drive method enables fast and stable motions.
- The GD² of the working section is small and high speed and high accuracy are maintained.
- Design through thorough waste elimination has enabled inexpensive prices.

Specifications

Model No.	X6074	X6074S
Horizontal stroke (maximum)	160 mm	
Vertical stroke (maximum)	35 mm	50 mm
Position repeat accuracy	±0.015 mm	
Standard motor	Induction, single-phase 100 V/200 V 25 W	
Supplied sensor	Origin photomicrosensor	
Main body mass	18.0 kg	
Standard paint color	Black (equivalent to Munsell N1)	
Operating ambient temperature	5 to 50°C	
Operating ambient humidity	85% or less (No condensation)	
Lubricant	COSMO GREASE, DYNAMAX EP No. 1	

Product number configuration

X6074 L - LD - 200 - 60 - 1.9 - H ··· □ (Reference No.)

PPU model No.
X6074
X6074S

Code	Carry direction
L	Left
R	Right

* L: The arm moves at the left side viewed from the rear of the unit.
* R: The arm moves at the right side viewed from the rear of the unit.

Code	Working voltage
100	Single-phase 100 V
200	Single-phase 200 V
0.2	Three-phase 200 V

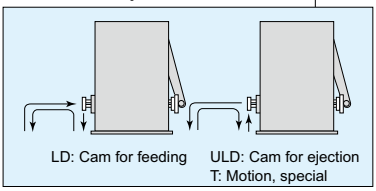
Code	Frequency
50	50 Hz
60	60 Hz

Code	Top plate
	Standard attachment
H	H type

(Note 1)

Cycle time	50 Hz	60 Hz
1.6	×	
1.9		×
2.3	×	×
2.7	×	×
3.3	×	
3.8		×
4.5	×	×

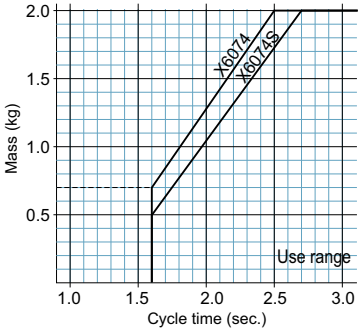
(second)



Write down other needed specifications in the technical support sheet of H-5 and contact us.
The reference number is our number of the specifications. Please let us know this number as well when you place an order.
For device configurations and precautions regarding selection, mounting, and use, please read C-94 and the subsequent pages.
Note 1: The table shows values for configuration including the standard motor and speed reducer. For values other than those with x's, the optional inverter is available to handle.

■ Cycle time and transportable mass (chuck mass included)

Be careful that use with excess mass can cause a problem.

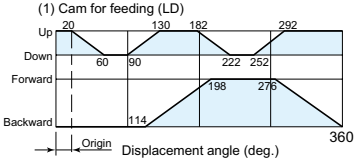


* For stoppage, an optional brake is needed.

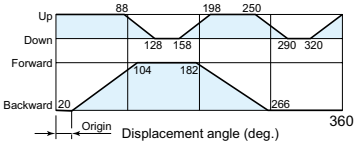
■ Timing of motion

X6074

(1) Cam for feeding (LD)

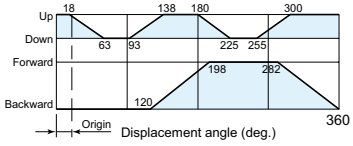


(2) Cam for ejection (ULD)

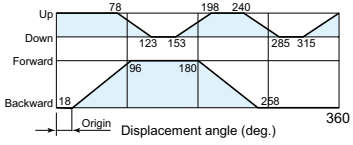


X6074S

(1) Cam for feeding (LD)

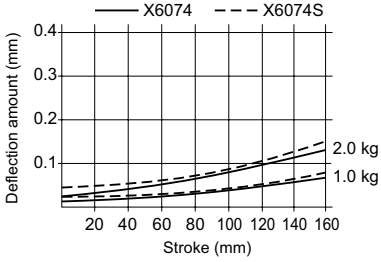


(2) Cam for ejection (ULD)



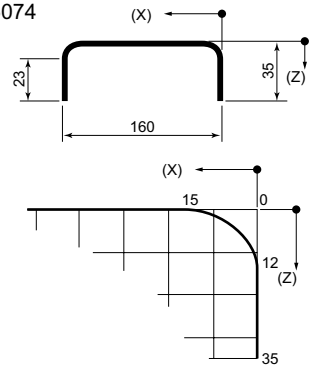
■ Deflection amount (reference value)

The figure below shows downward deflection amount resulted when 1.0 kg and 2.0 kg load are attached to the head.

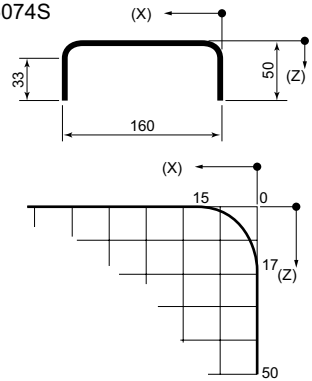


■ Overlap amount (mm)

X6074



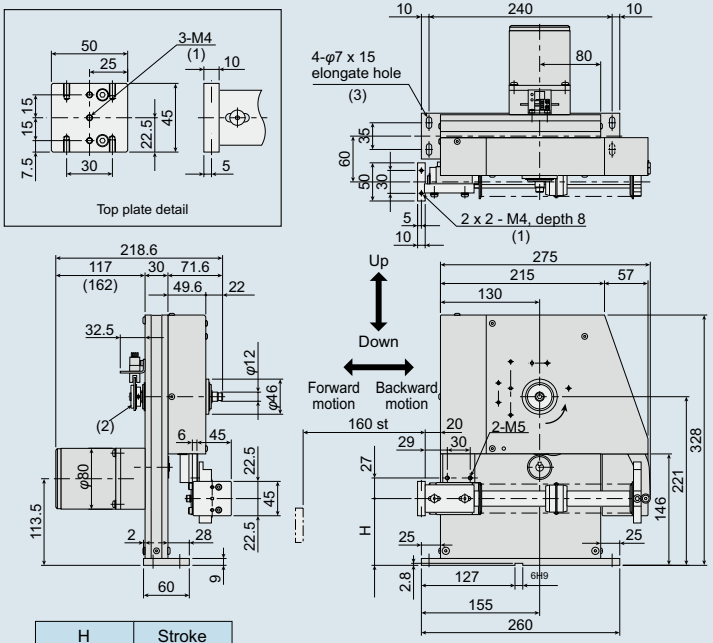
X6074S



Write down needed specifications in the technical support sheet of H-5 and place an order.

X6074L, X6074SL

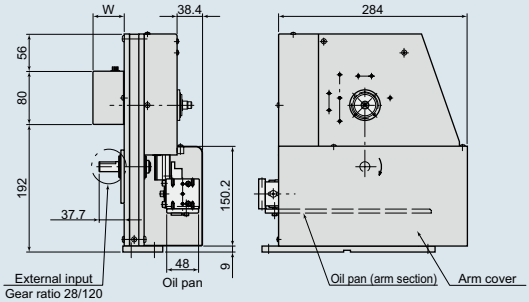
■ Dimensional drawing (left carry) (mm)

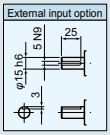


	H	Stroke
X6074	52.5 to 87.5	35
X6074S	47.5 to 97.5	50

- Secure tools such as the chuck and vacuum pad, using the top plate (1) attachment holes (dimensional drawing) at the tip of the arm.
- Origin detection is to be performed with mecha-controller (2) attached to the cam shaft. (For details, see C-102.)
- Use the mounting hole (3) to secure the body.
- When mounting the attachment on the Z axis, use 2-M5 tap holes on the Z axis. (For details, see C-94.)
  * The dimensions in the parentheses are presented for a motor equipped with an electromagnetic brake.

■ Dimensional drawing for products with options attached (left carry)



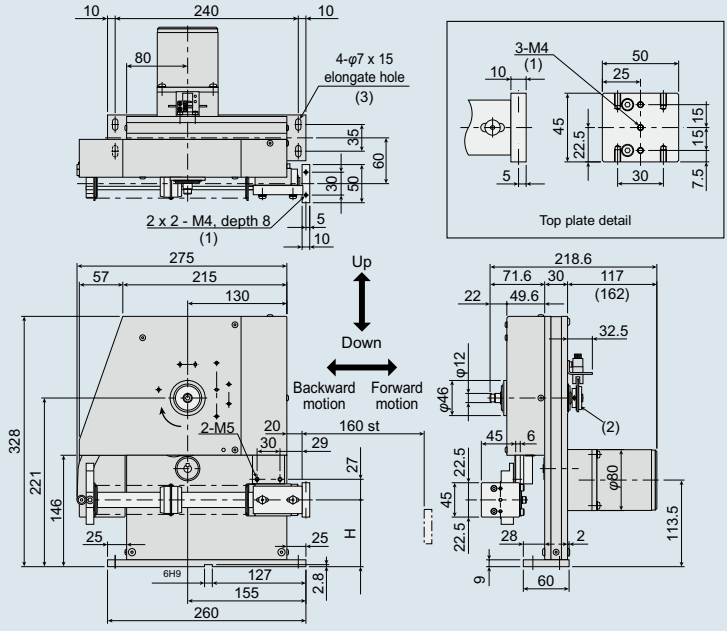


Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75

- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

X6074R, X6074SR

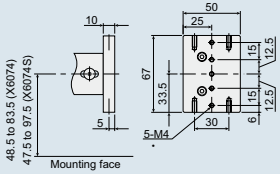
■ Dimensional drawing (right carry) (mm)

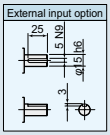


	H	Stroke
X6074	52.5 to 87.5	35
X6074S	47.5 to 97.5	50

■ H size top plate

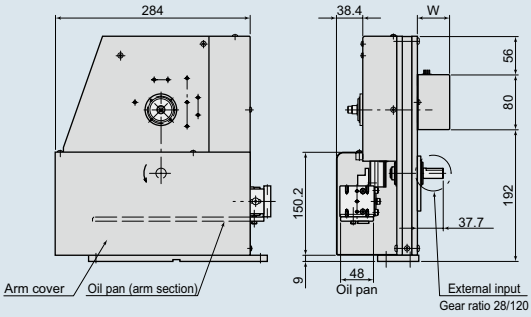
(Left/right: same dimensions)





Mecha-controller cover	
No. of mounted dogs	W
1 to 3	47
4 to 6	75

■ Dimensional drawing for products with options attached (right carry)

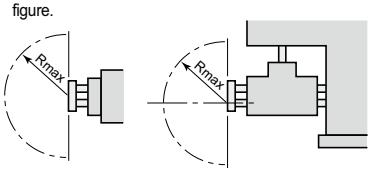


- For horizontal 90 degrees rotation of workpieces and swivel attachment, see C-106.

Precautions

1. Precautions for selection

- This product cannot be used in a toppled-over condition or upside down.
- This product is limited to indoor applications. Use the product within the ambient temperature range of 5 to 50°C and at an operating ambient humidity of 85% or less.
- Depending on the feed mass, the cycle time may vary. For a standard specification, calculate the feed mass and then obtain the cycle time from the correlation graphs shown for the product.
  If the product is operated exceeding the allowable value on the graph, a jump phenomenon may occur, leading to damage to the cam mechanism. Determine the specifications taking safety into consideration before selecting a product.
- A stroke can be shortened with a special specification, but cannot be extended. To change a stroke, motion, or timing, enter the details on the Technical Support Sheet (H-5 to 6) and consult with our sales representative in advance.
- The top plate position can be adjusted within the range of ±2 mm to the front or back and ±2 mm vertically.
- The bend indicated in the product specifications is a reference value and not a guaranteed value.
- Mount the body on a horizontal and smooth surface.
- Use an attachment equipped on the top plate within the limited range of overhanging shown in the following figure.



R max

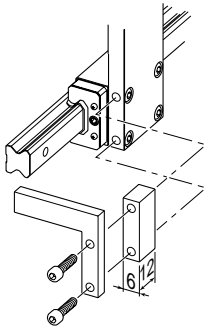
X6092A/72A	80 mm
PPM090/PPM130	100 mm
X6071/71S/71W/71WS X6076W/76WS/91A/91SA	115 mm
X6074/74S/94/94S/85	130 mm

- When the arm is to be stopped in the middle of every cycle, it is necessary to provide a stationary section for both the back-and-forth motion cam and the vertical motion cam and stop the arm within its range.
  Forcing the arm to stop during a movement can cause early wear of or damage to the internal parts.

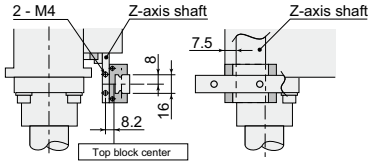
2. Mounting precautions

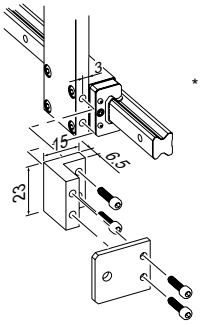
- When mounting an attachment or other parts on the Z-axis shaft, use the tap of the Z-axis shaft. (except X6071S and X6071WS)

X6092A (mm)



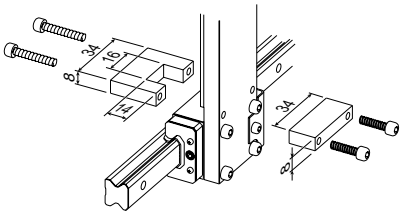
X6072A (mm)



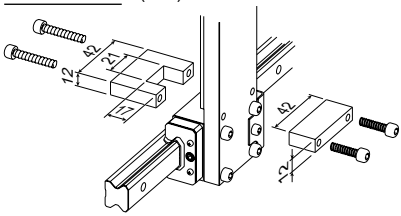


* The Z-axis shaft is withdrawn into the body. Take out the mounting surface using a spacer.

X6091A/91SA (mm)

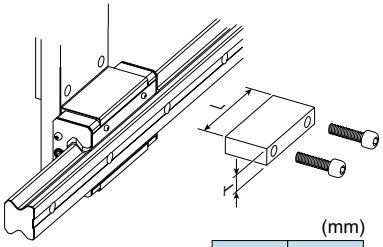


X6094/94S (mm)



* Do not loosen the screws that secure the parts that joint the linear guide on the front of the top plate.

X6071, X6071W, X6074, X6074S
X6076W, X6076WS



(mm)

	L	T
X6071	34	8
X6071W/76W	34	8
X6074	42	12
X6074S	42	12

* Do not loosen the screws that secure the parts that joint the linear guide on the front of the top plate.

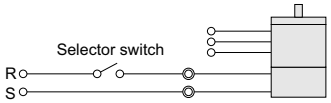
3. Precautions for use

- Before use, be sure to read and understand this instruction manual for safe and proper operation.
- Refer to the “instruction manual” when wiring the product.
- For control devices such as a motor, sensor, and mechanical vale, read the instruction manual of each device, and wire and pipe the devices properly according to the instructions for use.
- The origin stop position is provided with a stationary section for the cam (a section where the arm does not move frontward, backward, or vertically). Control the unit so that the arm starts and stops within its range.
- To adjust the timing of origin output signals, loosen the bolt of the clamper for the mecha-controller equipped on the cam shaft and adjust the detection cam in the direction of rotation. If the detection angle is too large, cut the detection cam with nippers.
- Do not construct control that causes the cam shaft to overrun.

  1. Take scan time into consideration when selecting a control device and designing
  2. circuitry.
     Provide anti-overrun control in preparation for
  3. a power outage or emergency stop.
     Take a sudden stop into consideration when selecting a motor and brake.

- To manually adjust loading, apply a hexagonal wrench on the cam shaft and turn the wrench so that the cam shaft rotates in the direction of the arrow.
  (Intermediate shaft for X6085)

* When using a motor with an electromagnetic brake, the cam shaft cannot be manually rotated when electricity is not supplied because the electromagnetic brake is activated. Release the brake by following the procedure shown in the following figure. (Take measures against electric shock on your own responsibility.)

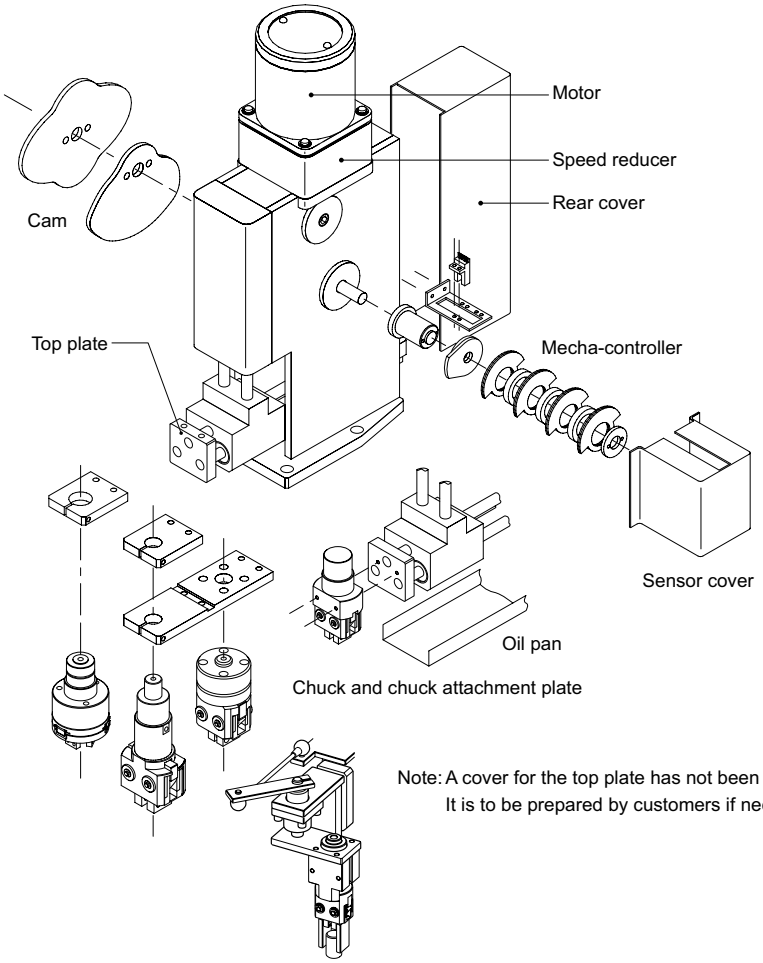


4IK25GN-SM

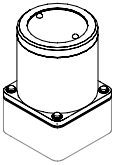
Device configuration

■ PPU device configuration

- The device configuration is as below:
  Individual components can be selected depending on customers' specifications.

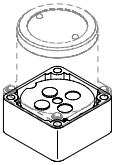


Note: A cover for the top plate has not been prepared.
It is to be prepared by customers if needed.



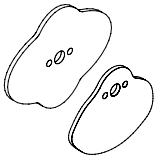
- **Motor**

  After the voltage to be used is specified, selection is to be made at MEG from ORIENTAL MOTOR-made induction motors of normal commercially-available types, followed by attachment. When using components such as an electromagnetic brake, inverter, and brake pack, consult the relevant manufacturer.
  * For details, see C-98 and subsequent pages.



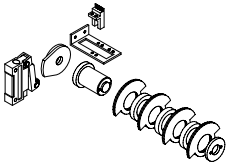
- **Speed reducer**

  After the cycle time is specified, selection is to be made at MEG from ORIENTAL MOTOR-made speed reducers of normal commercially-available types, followed by attachment.



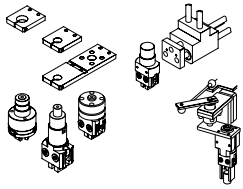
- **Cam**

  The specifications presented on the catalog are to be selected as standard. However, halfway stop and variational motion also can be chosen within standard-stroke 2-dimensional motions (X-Z). In this case, orders are to be dealt with as special orders. The pressure angle of the cam is exposed to some restrictions; contact us beforehand.



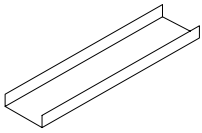
- **Mecha-controller**

  The PPU completes the determined operation during one rotation of the cam shaft. A mecha-controller attachment can be mounted on the cam shaft, so that ON/OFF instructions can be properly and easily performed regarding equipment and signals which need timing: for example, ON/OFF of this operation, chuck open/close, attached escapement, and auxiliary cylinder. Various controllers and attachments are available, so that you may order together with the PPU.
  * Detail descriptions C-98 -
  * Detail specifications C-102 -



- **Chuck and chuck attachment plate**

  Various chucks which exactly fit the PPU are available.
  See the MEPAC catalog, for selection.
  For the top plate for chuck attachment, a dimensional drawing is presented on the PPU catalog. The chuck attachment plate is determined at the tooling design, so it is not prepared as standard. It is to be designed and produced by customers together with application employment.
  A swivel attachment is available.
  * For details, see C-106.



- **Oil pan**

  The oil pan can be attached to the bottom of the top plate section.
  Please contact us for detailed information.

Device configuration

1. Motor

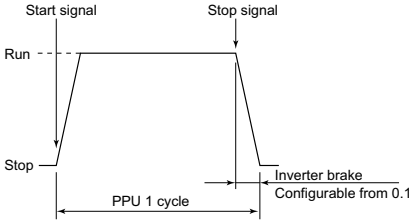
The motor is determined according to the operating condition of the PPU. Clarify the transfer specifications and basic specifications of the system before selection. We recommend the control that combines an induction motor equipped with an electromagnetic brake and an inverter.

[Benefits]

- The soft stop at the origin with the acceleration/deceleration time settings of the inverter provides a high-precision stop.
- The electromagnetic brake allows a sudden stop in emergency even in the middle of movement. (Stopping at the origin can be made to cause less wear and provide a long service life even with a high frequency by activating the electromagnetic brake after stopping with the inverter.)
- The cycle time can be changed by changing the operational frequency of the inverter.

► Motor with electromagnetic brake (Oriental Motor)
4IK25GN-SM (three-phase/200 V/25 W)
5IK40GN-SM (three-phase/200 V/40 W)
► Inverter (Mitsubishi Electric)
FR-D720-0.1K (three-phase/200 V)

* A motor with an electromagnetic brake cannot be connected to a single-phase 100-V inverter.



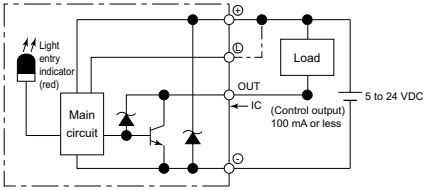
2. Timing detection sensor (Mecha-controller)

The rotation of the cam shaft allows the PPU to repeat the given movement. This movement can be utilized for various timing detections such as the origin position, a chuck, the operational timing of peripheral devices such as an auxiliary cylinder, and an interlock.
Up to six sensors can be mounted.

► Specifications of the detection sensor NPN Type

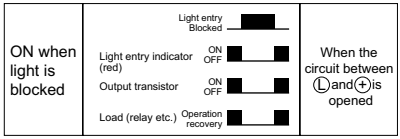
Sensor type	EE-SX673A (OMRON) Connector EE-1001
Power supply voltage	5 to 24 VDC ±10% (ripple (P-P) 10% or less)
Power consumption	35 mA or smaller
Control output	5 to 24 VDC Residual voltage 0.8 V or less with 100 mA loading current (Ic)
Light-sensitive element	Si phototransistor

► Wiring of sensor for mecha-controller



* The terminal position varies with the shape. Check the external dimensions.

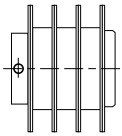
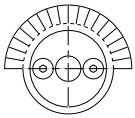
► Time chart



1) Specifications

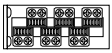
- The standard specification is equipped with one origin sensor and a detection dog.
- The sensor lights up when the light is blocked. Use the sensor in a circuit that outputs a signal when the light is blocked.
- A center carry type can be mounted on both sides.
- A safety cover is provided.
- Up to six detection dogs and sensors can be mounted.

2) Detection dog specification (angle adjustment type)

Type	MCR
	 (For quadruple dogs)

- By combining two detection dogs, the detection width can beflexibly adjusted.
- The detection dog has an angle of 180°. Cut it off according to the specification.

3) Sensor mounting plate

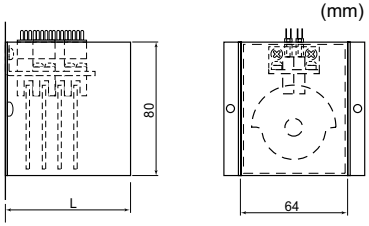
Type	No. of sensors	Sensor mounting plate
MSS6-6	6	
MSS5-5	5	
MSS4-4	4	
MSS3-3	3	
MSS2-2	1, 2	

* Sensor mounting plate shows the top view.

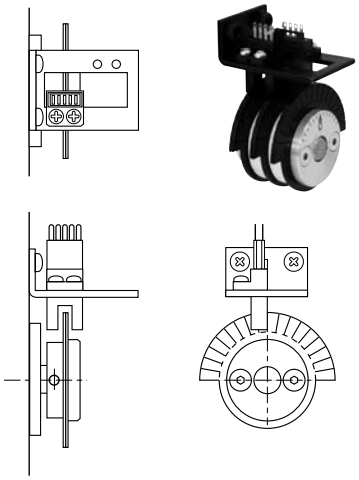
4) Safety cover

Scope of application	L
MSS2 MSS3	47
MSS4 MSS5 MSS6	75

(mm)

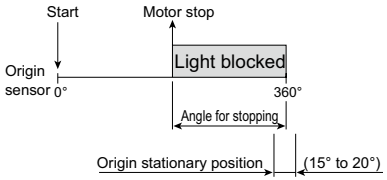


5) Standard configuration



6) Cam angle adjustment for the origin sensor

Start and stop the motor with the area from 0 to 15° of the timing chart of each PPU set as the origin. If the motor is started or stopped in the displacement area of the cam, jumping or vibrations may occur, which can reduce the accuracy or shorten the service life.



7) Precautions for selection

For detailed dimensions of the mecha-controller, refer to C-104.

Device configuration

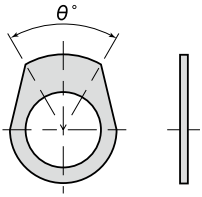
3. Mechanical valve (Mecha-controller section)

1) Applications

A rotation of the cam shaft completes the given movement of the PPU.
The air devices that operate during this movement can be controlled properly and easily.
(Opening/closing of a chuck, “ON” and “OFF” of a vacuum chuck, the forward/backward movement of an escapement and auxiliary cylinder)

2) Specifications

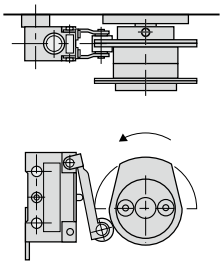
- Two, three, or five ports can be mounted.
- The control cams are of fixed-angle type. 10°, 15°, 20°, 30°, 45°, 90°, 120°, and 180° (θ) are available. Combine two cams for use.
- Mounting a mechanical valve requires a special spacer.
- When multiple mechanical valves are used, the width becomes larger due to the combination with the detection sensor. As a result, the mechanical valves need to be checked to see if they are not interfering with adjacent units.
- To order the specifications and quantity of mechanical valves and the operating angle of dogs, please enter them on the sheets on H-5 to 6 and send us your requests.
- If you request a safety cover, the type of some mechanical valves change.



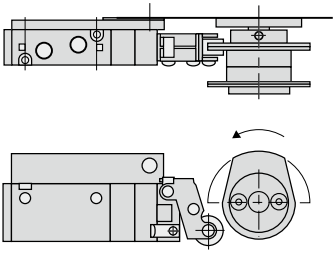
Specifications	Mechanical valve type	Manufacturer
2-port	VM121-01-01	SMC
3-port	VM131-01-01	SMC
5-port	VZM550-01-01	SMC

3) Specifications of detection sensor

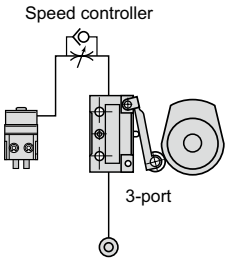
2-/3-port mechanical valve



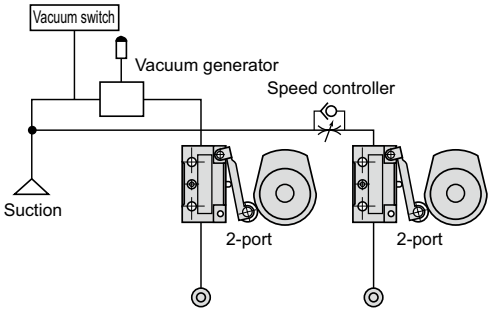
5-port mechanical valve



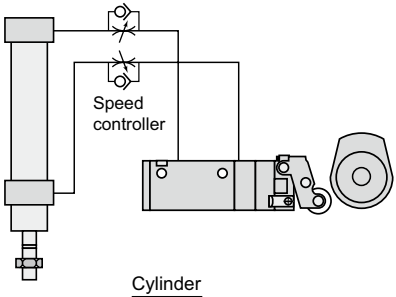
4) How to utilize



Chuck



Vacuum chuck & blow



Cylinder

MCR Mecha-controller (dogs for photosensor)

- The combination of two dogs allows easy angle adjustment.
- Angle adjustment does not cause the other dog to turn.
- The detection dog has an angle of 180°. It can be cut off according to the specification.
- Dogs are securely locked in place by tightening the screws on the clamper after angle adjustment. This keeps the dogs from moving out of position.
- Angle adjustment can be carried out more precisely than the conventional fixed shaft method that uses set screws.

Mecha-controller specifications

Model No.	MCR
Angle adjustment range	0 to 360°
Quantity of jointed detection cams	1, 2, 3, 4, 5, 6
Mounting hole diameter	φ8, φ10, φ12
Detection cam fixing method	Side clamp type
Operating ambient temperature	5 to 50°C
Operating ambient humidity	85% or less (No condensation)

Sensor specifications NPN Type

Manufacturer	OMRON
Type	EE-SX673A/Connector EE-1001

* For details of the sensor, refer to C-98.

Mecha-controller

Product number

MCR 4 - 10

- 4: Quantity of jointed cams (1 to 6)
- 10: Mounting hole diameter (φ8, φ10, φ12)

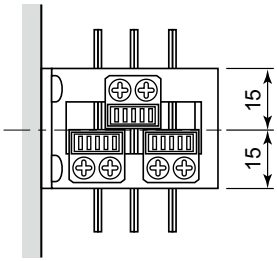
Sensor stay

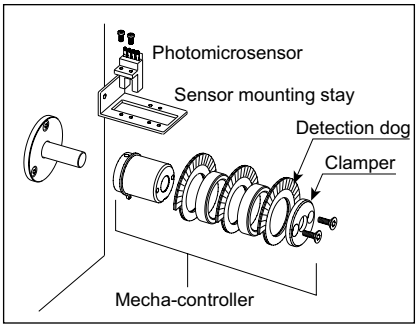
Product number

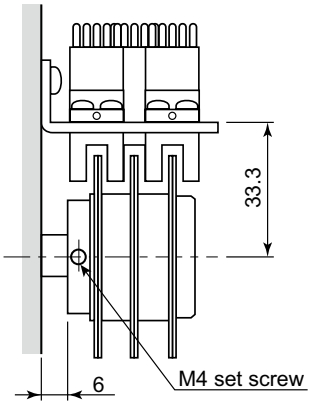
MSS 2 - 2

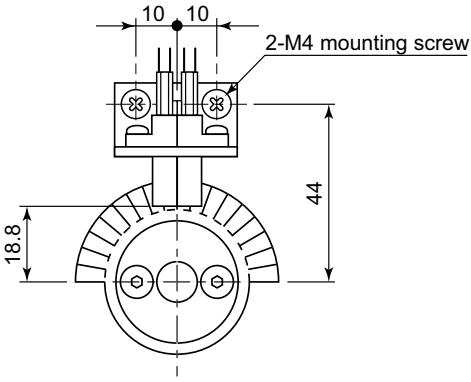
- 2: Quantity of jointed sensors (2 to 6)
- 2: Quantity of supplied sensors No symbol: no sensor

■ Drawing of a mounted unit (mm)









■ Precautions for selection

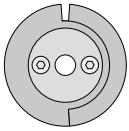
- Cams for mechanical valves that allow easy control of air devices are also available with a separate order.
- The sensor lights up when the light is blocked. Use the sensor in a circuit that outputs a signal when the light is blocked.

■ Precautions for use

- After angle adjustment, be sure to tighten the clamper bolts before use.

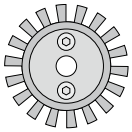
■ Example of use

- This device has wide applications other than PPUs.

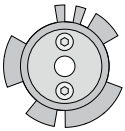


Slit for light entry

Light blocked



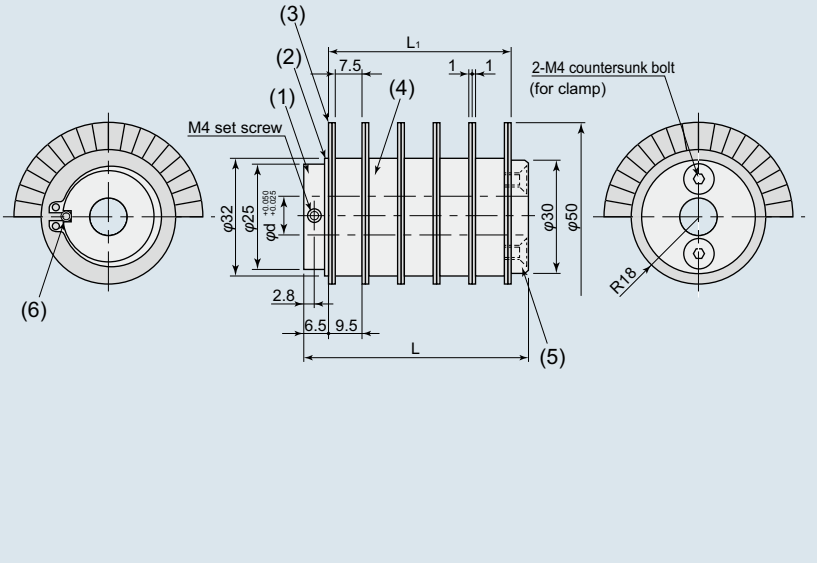
Counter



Timing

Mecha-controller

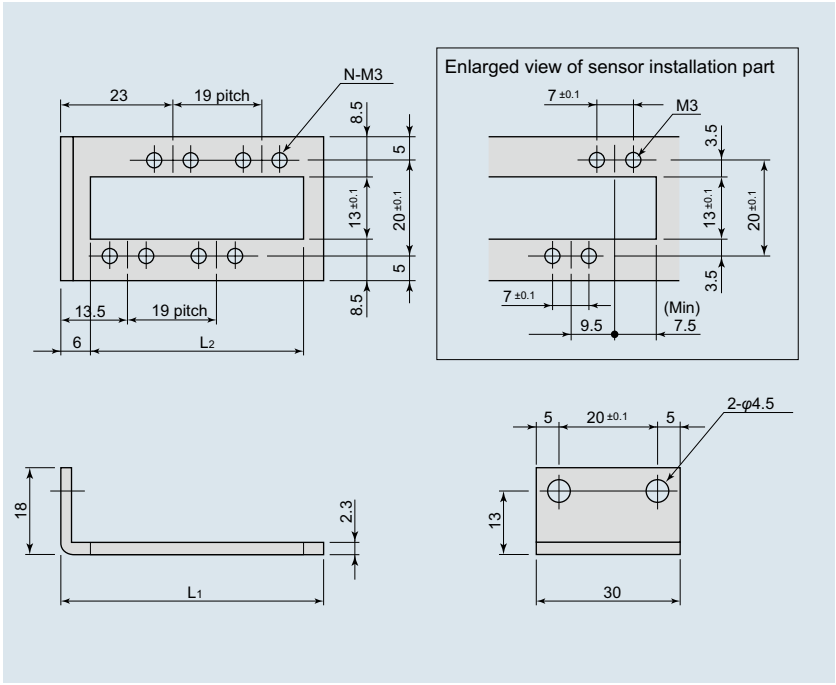
■ Dimensional drawing of mecha-controller (mm)



Model No.		d	L	L1
Type	No. of jointed cams			
MCR	1	8	12.5	2.0
	2		22.0	11.5
	3	10	31.5	21.0
	4		41.5	30.5
	5	12	50.5	40.0
	6		60.0	49.5

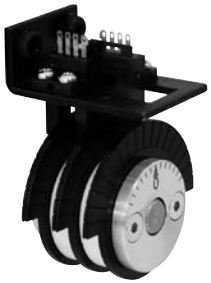
No.	Part name	Material
(1)	Holder	A5056
(2)	Stop ring	
(3)	Dog for photosensor	ABS
(4)	Collar	ABS
(5)	Clamper	A5056
(6)	Rotation stopper	Silicon rubber

■ Dimensional drawing of sensor stay (mm)

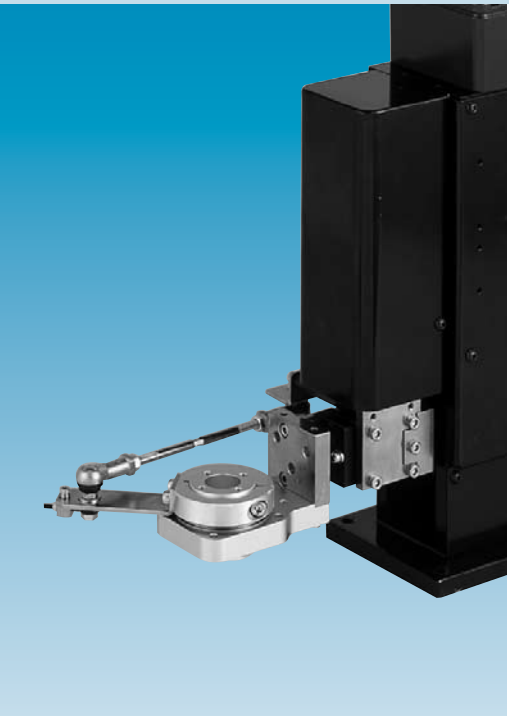


Model No.		L_1	L_2	N
Type	No. of jointed sensors			
MSS	2	32.5	24.5	4
	3	42.0	34.0	6
	4	51.5	43.5	8
	5	61.0	53.0	10
	6	70.5	62.5	12

Part name	Material
Sensor stay	SPCC



CWL/CWR Swivel attachment



MEG's PPU can not only accurately feed workpieces through gate motions but also perform workpiece posture conversion and position change simultaneously with supply. Among the usages, especially 90 degrees rotation has been used on a lot of machines and has been highly evaluated. This can serve for machine installation space saving, energy saving, and cost reduction. You may use the swivel attachment together with MEG' PPU.

Specifications

Model No.		CWL	CWR
Rotation direction	For forward movement	Counterclockwise	Clockwise
	For backward movement	Clockwise	Counterclockwise
Rotation drive		Cam synchronization link lever	
Relevant model (center)		X6092A, X6091A, X6094, X6094S	
Relevant model (multi)		PPM090, PPM130	
Relevant model (side)		X6072A, X6071, X6071W	
		X6076W, X6076WS, X6074	
PPU horizontal stroke		Various maximum strokes	
Mass		370 g (link ball excluded)*Note	
Chuck attachment		Option bracket setting is to be made.	
		Short type: X9560B, X9562B	
		Floating type: X9560FL, X9562FL	

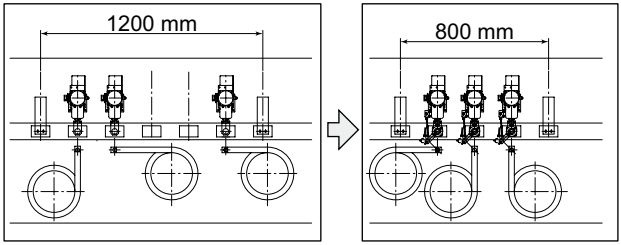
* The mass of this product is added to the load mass of the tooling head section.

Generally, the position of a parts feeder is determined depending on workpiece ejection posture and workpieces are supplied after posture conversion. However, MEG's PPU can perform horizontal rotation of ejected and arrayed workpieces with link during forward and backward movements, so that accurate movements are possible without extra control and the total cost can be reduced. As for layout of the facility, peripheral equipment can be orderly placed and less space is needed, resulting in improvement of work efficiency and maintenance performance.

Product number configuration

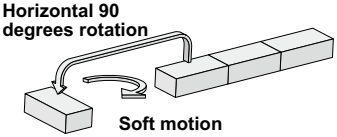
91 - CWL O - B560F

- 91: PPU model No. 91: X6091A
- CWL: Rotation direction CWR: Clockwise rotation at the time of forward movement CWR: counterclockwise ration at the time of forward movement (when viewed from the top)
- O: Head attachment position O: Over U: Under
- B560F: Chuck bracket attached B560F: For X9560FL-□□-□□ (page A-66) B562F: For X9562FL-□□-□□ B560B: For X9560B-□□-C (page A-60) B562B: For X9562B-□□-C No code: No bracket (The chuck is sold separately.)

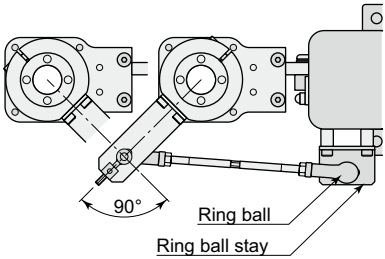


Write down needed specifications in the technical support sheet of H-5 and place an order.

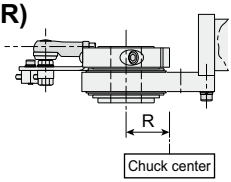
■ Operations



The swivel attachment is mounted on the top plate, the link ball stay is mounted on the Z-axis arm and the link ball is used for the connection. When the head is advanced, the lever is twisted 90 degrees.



■ Relevant model and overhung amount (R)



Center carry

PPU model No.	Stroke (X)	R (max)
X6092A	80 mm	40 mm
X6091A, X6091SA	100 mm	50 mm
X6094, X6094S	160 mm	80 mm

Side carry

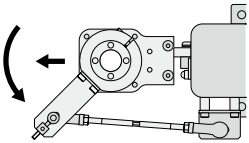
PPU model No.	Stroke (X)	R (max)
X6072A	80 mm	40 mm
X6071/71W	100 mm	50 mm
X6074	160 mm	80 mm
X6076W, X6076WS	100 mm	50 mm

Multi

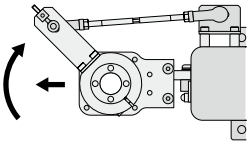
PPU model No.	Stroke (X)	R (max)
PPM090	90 mm	45 mm
PPM130	130 mm	65 mm

■ Rotation specifications

The rotation direction which meets the specifications can be selected through attachment at the left or right of the link lever.



Counterclockwise rotation during forward movement
Model: CWL



Clockwise rotation during forward movement
Model: CWR

■ Option

A handy flange which allows a MEG parallel air chuck to be attached is available.

X9560B/62B

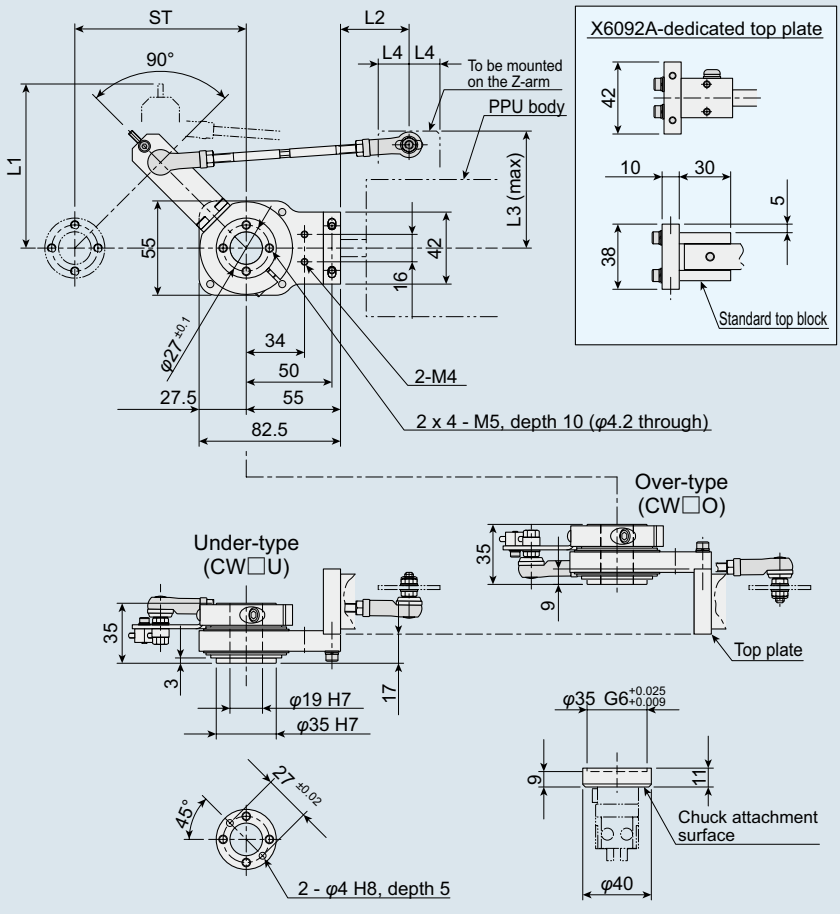
X9560FL/62FL

■ Precautions

- The chuck is sold separately. Prepare besides the swivel attachment.
- The PPU's horizontal stroke is restricted to the stroke presented to the left (maximum stroke).
- A maximum of 0.12 mm clearance is present in the radial direction in the link ball and backlash occurs.
- For the attachment pattern of the side carry type, visit our web page or contact us.

CWL/CWR

■ Dimensional drawing CAD data with PPU as a set is available. (For details, see H-2.) (mm)



Model No.	ST	L1	L2	L3	L4
X6092A	80	82	27	56	10
X6091A	100	96	40	68	18
X6094 (S)	160	139	44	105	20
X6072A	80	82	14	56	10
X6071	100	96	4.5	68	10

Model No.	ST	L1	L2	L3	L4
X6071W	100	96	19.5	68	10
X6074	160	139	8	104	10
X6076W (S)	100	96	19.5	68	10
PPM090	90	89	40	62	11.5
PPM130	130	117	40	86	11.5

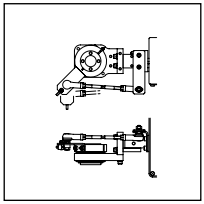
* For PPM (multi-type): Over-type only

■ Attachment pattern (center carry type)

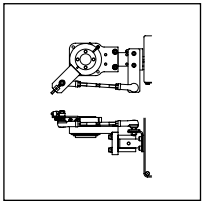
For the side carry, access our web page. (For details, see H-16.)

X6092A

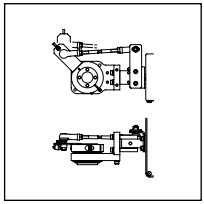
92-CWLU



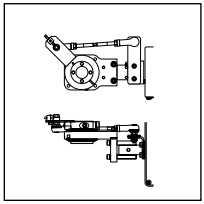
92-CWLO



92-CWRU

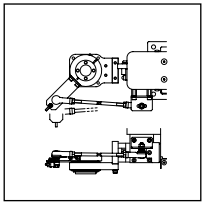


92-CWRO

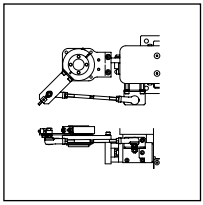


X6091A/91S

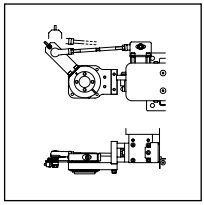
91-CWLU



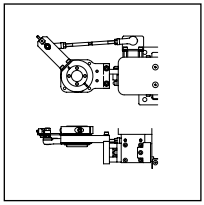
91-CWLO



91-CWRU

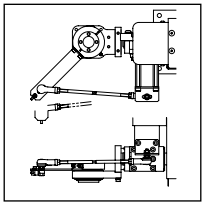


91-CWRO

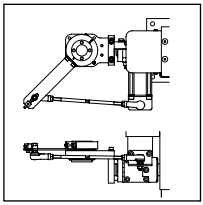


X6094/94S

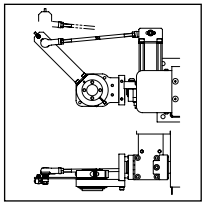
94-CWLU



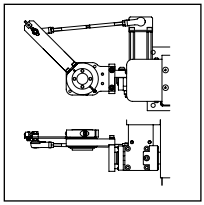
94-CWLO



94-CWRU

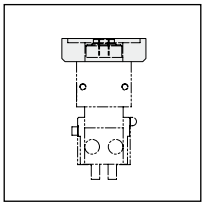


94-CWRO

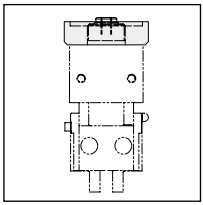


Chuck bracket

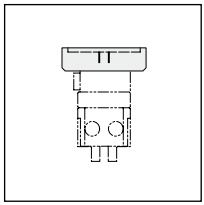
B560F



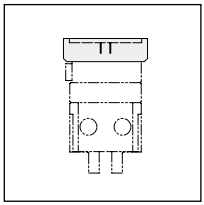
B562F



B560B



B562B



Applications

1. Restriction of applications

The PPU (pick & place unit) is a loading unit that controls the X- and Z-axes driven by reverse rotation of the plate cam or motor. The product is used for automatic feed and ejection of workpieces.

2. Safety precautions

⚠ DANGER

- Do not use the product for the following applications.
  1. Medical instruments related to maintaining life or a body
  2. Mechanism or machinery intended for transporting or transferring persons
  3. Critical safety parts of machinery
     This product is not planned or designed for applications that require a high degree of safety. There is a possibility of losing life.
- Do not use the product in the presence of an ignitable or flammable object or other hazardous objects.
  There is a possibility of igniting or catching fire.
- Never modify the product. It may cause a malfunction, potentially resulting in injury, electric shock, or a fire.
- Do not disassemble or assemble the product in an inappropriate way that concerns its basic structure, performance, or functions.
- Do not pour water over the product. Pouring water over, washing, or submerging the product can cause a malfunction, potentially resulting in injury, electric shock, or a fire.

⚠ WARNING

- When mounting the product, be sure to provide secure support and fixation. The product may trip over, drop, or abnormally operate, potentially causing injury.
- Be sure to perform class 3 grounding (a grounding resistance of 100 Ω or less). If an electric leak occurs, electric shock may result.
- Always perform a safety check on the operating area of the device before supplying electricity and operating the product. Inadvertently supplying electricity can cause electric shock or injury from contact with the movable parts.
- When the product is operating or ready to operate, do not enter the operating area of the machinery. The product may suddenly move, potentially causing injury.
- Do not touch the terminals or switches with power on. Electric shock or an abnormal operation may result.
- Do not damage the cords such as cables. Damaging, forcibly bending, pulling, winding, placing a heavy object on, or pinching a cord can cause an electric leak, a fire from poor continuity, electric shock, or an abnormal operation.
- Do not ride on, step on, or place an object on the product. It may cause an accidental fall, tripping over of the product, injury from a fall, damage to the product, or a malfunction from damage.
- Do not throw the product into fire. The product may explode or generate a toxic gas.
- Always shut off electric supply completely before performing maintenance, inspection, repair, replacement, or other operations that relate to the product.

⚠ CAUTION

- When transporting or mounting the product, exercise due caution and ensure the safety of persons by securely supporting the product with a lift, supporting equipment, or several persons.
- Sufficiently understand the structure of the product before use.
  1. The arm is driven by two means: spring return and weighted thrust. A detector of the motion of the arm itself is not provided. Incorrect use of the product can cause damage to the machine and physical injury.
  2. Do not stop a moving arm frequently. A strong shock is applied on the arm, potentially causing damage to the product or a workpiece to drop, which can cause damage to the machine and injury.
  3. Do not apply a sudden shock. An unintended force is applied on the arm, potentially causing damage to the product and injury.
- Do not use the product in a place exposed to direct sunlight (ultraviolet rays), dust, in the presence of iron or iron powder, or in an atmosphere that contains an organic solvent, a phosphoric acid ester hydraulic fluid, sulfur dioxide gas, chlorine gas, or acids.
  They may cause an early loss of the functions, sudden performance deterioration, or reduction of the service life.
- For a cam-driven product, select a motor taking into consideration a sudden stop in the case of emergency. In such a case, the PPU may overrun, potentially causing injury and damage.
- Make sure that workpieces are held when they are fed and ejected. Otherwise, slight vibrations of the unit can cause the workpiece to drop in the middle of the operation, potentially causing damage to the machine and injury.
- Isolate the moving parts of machinery with a protective cover to prevent direct physical contact.
- When handling the product, wear protective gloves, protective glasses, or safety shoes as necessary to ensure safety.
- If the product becomes unusable or unnecessary, dispose of it properly as an industrial waste.
- As you incorporate the products into your system, add all safety information to the instruction manual of your system and make sure the operators of the system follow the instructions.
  If the application requires additional safety precautions, add all of them to the instruction manual.

Specifications list

■ Basic specifications (compact type)

Type	Model No.	Stroke (X x Z) (mm)	Dynamic repeat accuracy (mm)	Origin sensor	Vertex sensor	Limit sensor	Dedicated driver	Solenoid valve bracket	Chuck holder	Page
Compact (stepping)	X6303A	30 x 10	±0.01	×	×			×	×	C-12
	X6305A	50 x 15	±0.01	×	×			×	×	C-12
	X6307A	70 x 15	±0.01	×	×			×	×	C-12
	X6309A	90 x 15	±0.01	×	×			×	×	C-12
	X6311A	110 x 20	±0.01	×	×			×	×	C-12
Remarks		*1, 2				*3, 4		*5	*6	

■ Remark description

*1. For the compact type, stroke in the X-direction cannot be adjusted.

*2. For the compact type, stroke in the Z-direction is valid and 2 mm margin to the mechanical end is present.

*3. For the compact (stepping) type, a mecha-controller (photo sensor & dog) is equipped as standard. Usages which meet customers' purposes are possible.

*4. For details about the old type fitted with a CCW limit sensor, contact us.

*5. The bracket fitted with a solenoid value is attached to the compact type as standard. A recommended solenoid valve can be attached for high-speed control of the chuck.
For details, see C-23.

*6. A dedicated holder for attaching parallel air chuck X9608 is available as an option.
For details, see C-23.

■ Basic specifications (multi-type)

Model No.	Stroke (X x Z) (mm)	Dynamic repeat accuracy (mm)	Origin sensor	Option						Page
				Photo sensor	Mecha-nical valve	Top plate	X-arm hollow shaft	Motor bracket	X-arm stroke adjustment	
PPM09030PP	90 x 30	±0.015	×	×	×	×	×	×	×	C-32
PPM09030PG										
PPM09030GP										
PPM09030GG										
PPM13030PP	130 x 30	±0.02	×	×	×	×	×	×	×	C-32
PPM13030PG										
PPM13030GP										
PPM13030GG										
PPM13030R										
PPM13050PP	130 x 50	±0.02	×	×	×	×	×	×	×	C-32
PPM13050PG										
PPM13050GP										
PPM13050GG										
Remarks	*1, 2		*3			*4		*5		

■ Remarks description

*1. With special orders, motions and strokes can be changed. (Plate and groove cams only)

*2. For the standard specifications, the stroke cannot be adjusted.

*3. Up to six photo sensors can be attached. For details, see C-102.

*4. The top plate is not included in the standard specifications.

*5. The motor, timing belt, and pulley are to be prepared by customers.

Specifications list

■ Basic specifications (Cam-driven type center carry & side carry)

	Center	Side	Model No.	Stroke (X x Z) mm	Dynamic repeat accuracy mm	Motor power W	Origin sensor (Photomicrosensor)	Page
Economy	×		X6092A	80 x 20	±0.015	25	Attached	C-40
		×	X6072AL					C-44
		×	X6072AR					C-44
Standard	×		X6091A	100 x 30	±0.015	25	Attached	C-50
		×	X6071L					C-58
		×	X6071R					C-58
		×	X6071WL					C-66
		×	X6071WR					C-66
		×	X6076WL					C-78
		×	X6076WR					C-78
	×		X6091SA	100 x 50	±0.015	25	Attached	C-54
		×	X6071SL					C-62
		×	X6071SR					C-62
		×	X6071WSL					C-70
		×	X6071WSR					C-70
		×	X6074HSL			40		C-74
		×	X6074HSR					C-74
		×	X6076WSL			25		C-80
		×	X6076WSR					C-80
Semi-long	×		X6094	160 x 35	±0.015	25	Attached	C-86
		×	X6074L		±0.015			C-90
		×	X6074R		±0.015			C-90
	×		X6094S	160 x 50	±0.015			C-86
		×	X6074SL		±0.015			C-90
		×	X6074SR		±0.015			C-90
Long	×		X6085	200 x 50	±0.035	40	Attached	Web page
Remarks				*1		*2	*3	

■ **Special specifications Operation change (separate cost)**

*1 The stroke is not adjustable. The stop point is adjustable.
*2 The standard motor is an induction motor made by ORIENTAL MOTOR.
*3 The origin sensor is equipped with a photomicrosensor and a detection cam.
*4 Up to six photomicrosensors can be attached.

	Option														
	Mecha-controller				Drive moder					Safety cover		Cam	Oil pan	Swivel attachment	
	Timing detection	Mechanical valve			Non (External input)	Reversible induction 25 W	Brake								
	Photo sensor	2-port	3-port	5-port			Inverter	Electronic type	Electroma-gnetic type	Cam & lever	Sensor section	Special	Arm		
	×	×	×	×	×	×	×	×	×		×	×	×	×	
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	×	×	×	×			×		×		×	×			
	*4	*5			*6							*7			

*5 The air equipment is controlled by the mechanical valve.
*6 Motor change and motor brake addition are possible as options.
*7 For “special” of cam, stroke reduction and motion change are possible.

- The specifications of the PPU deffer depending on the use conditions of customers. Fill in the PPU technology support sheet of H-5 as needed and contact us. A specifications document is to be generated and submitted by our company.