

Vacuum Handling Unit VYP Series



- Light weight design to be mounted on small robots
- 3 types with different payloads available
- Wide variation of pads and robot adapters

Vacuum Handling Unit VYP Series

The VYP series has ejectors, pressure sensors, and vacuum pads integrated into a suction transport device. Select from full line-up of wide range of unit sizes, pads, and robot adapters to match your robots and workpieces.

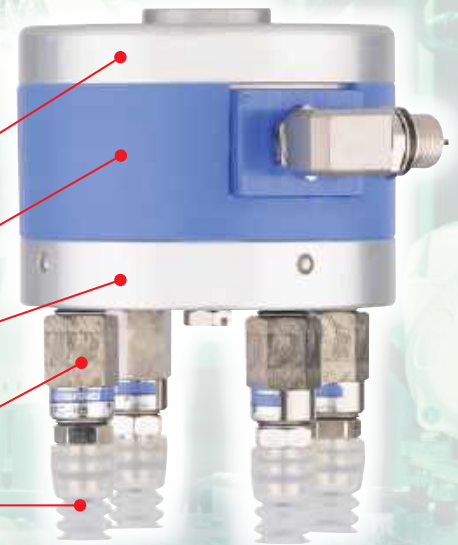
Robot adapter

Main unit with built-in ejector

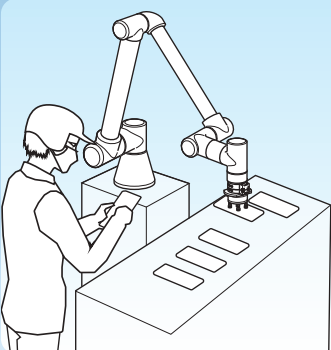
Pad mounting plate

Fall prevention check valve
(optional)

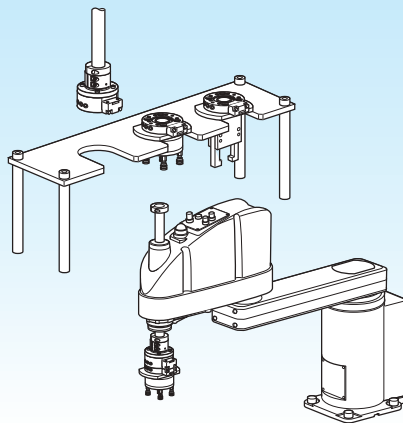
Vacuum pads



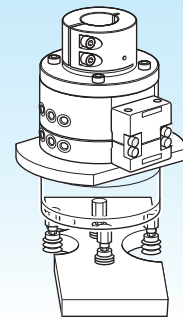
Application examples



① Collaborative robot



② Attach to auto hand changer



③ Fall prevention check valve (option) to prevent falling of workpieces due to suction failure

Ejectors, pressure sensors, and vacuum pads integrated to reduce piping volume, for:

Lower compressed air consumption!

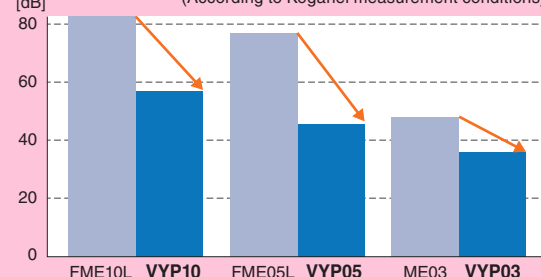
90% lower than existing Koganei products!

*When piping volume is 1/10



Less exhaust noise!

Comparison of sound from existing Koganei products
(According to Koganei measurement conditions)



Reduce CO₂

We can help you to reduce CO₂ (lower electric fees for compressors).

	Micro-ejector ME25 (existing Koganei products)		Suction unit VYP03
Annual power kWh	438.6	➔	42.9
Annual CO ₂ exhaust kg [lb]	190.3 [419.6]	➔	18.6 [41.013]
Annual electric bill Yen	13,248	➔	1,296

**For a reduction of
11,952 yen/year**

Remarks: <<Conditions for the above calculations>> Daily operating hours: 8 hours, yearly operating days: 240 days, CO₂ emission factor (TEPCO value in 2020): 0.434 kg [0.957 lb]-CO₂/kWh
Cost of electricity for compressed air per m³: 2.5 yen

Light weight design to be mounted on small robots

Simple installation of 1 air tube and 1 electric power cable

3 types with different payloads (small, medium, large) available

VYP03

Product weight 195 g [6.88 oz]
Payload 2.5 kg [5.513 lb]



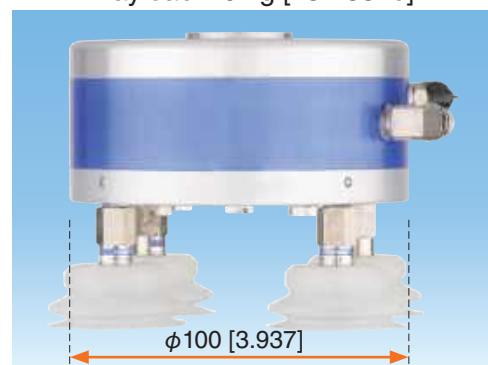
VYP05

Product weight 385 g [13.58 oz]
Payload 4.5 kg [9.923 lb]



VYP10

Product weight 590 g [20.81 oz]
Payload 7.0 kg [15.435 lb]



Wide variation of pads and robot adapters

Example of vacuum pad selection



1 vacuum pad
(ϕ 9 [0.354], 2.5 folds, silicone)



4 vacuum pads
(ϕ 9 [0.354], 2.5 folds, silicone)



4 vacuum pads
+ Fall prevention check valve
(ϕ 9 [0.354], 2.5 folds, silicone)

Suction is stable with fall prevention check valve!



Fall prevention check valve

CE marking-compliant

Before selecting and using an appropriate product, please read all the safety precautions carefully to ensure proper product use. The safety precautions described below are intended to help you use the product safely and correctly and to prevent injury to you or other people and damage to property.

Always adhere to ISO4414 (Pneumatic fluid power - General rules and safety requirements for systems and their components), JIS B 8370 (Pneumatic fluid power - General rules relating to systems), and other safety regulations.

The directions are classified according to the degree of potential danger or damage as **DANGER**, **WARNING**, **CAUTION**, and **ATTENTION**.

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

- This product was designed and manufactured as a part for use in general industrial machinery.
- Before selecting or handling this equipment, a system designer or other person with sufficient knowledge and experience should first read the "Safety Precautions", "Catalog", "Owner's Manual" and other documentation. Handling errors create dangerous situations.
- After reading the "Owner's Manual", catalog, and other documentation, store them in a location where they are easily available for reference by users of this product.
- Whenever transferring or lending the product to another person, always attach the instruction manual, and other information to the product where they are easily visible in order to ensure that the new user can use the product safely and properly.
- The danger, warning and caution items listed in these safety precautions do not cover all possible contingencies. Read the catalog and instruction manual carefully, and always keep safety first.

DANGER

- Do not use the product for the purposes listed below:
 1. Medical equipment related to maintenance or management of human life or health
 2. Machines or equipment designed for the purpose of moving or transporting people
 3. Critical safety components in mechanical devices
 This product has not been planned or designed for purposes that require high levels of safety. Using the product in any of the ways described above creates the risk of loss of human life.
- Do not use the product in locations with dangerous substances such as flammable or ignitable substances. This product is not explosion-proof. There is a risk of ignition and fire.
- When mounting the product, always make sure it is firmly supported and secured (including the workpiece). If the product tips over, drops, or malfunctions, there is a risk of personal injury.
- Never modify the product. Abnormal operation can lead to injury.
- Never inappropriately disassemble/assemble or repair the basic structure, performance, or functions of the product. Doing so may cause injury, electric shock, fire, etc.
- Do not splash water on the product. Splashing water on the product, washing the product, or using the product under water may cause abnormal operation leading to injury, electric shock, fire, etc.
- While the product is operating, avoid touching it with your hands or otherwise approaching too close. Also while the product is operating, do not attempt to adjust internal or attached mechanisms (such as pressing manual buttons, attaching/detaching connectors for wires, adjusting pressure switches, disconnecting tubes or sealed plugs, or adjusting the installation position of the product). If the product drops or malfunctions, there is a risk of personal injury.

WARNING

- Koganei products can be used under a variety of conditions. Therefore, the person responsible for system design must fully evaluate the products to determine compatibility with the system. The designer who determines the suitability of the system is responsible for guarantying the desired performance and safety of the system. Study and evaluate the latest catalogs, technical documents, and specifications sufficiently to configure a system that assures safety and reliability, such as by using fail-safes that anticipate possible device malfunctions.
- Do not use the product in excess of its specification range. Using the product outside its specified range causes it to malfunction, stop functioning, and break. Also, significantly reduced service life results.

- Before supplying air to the product and before starting operation, be sure to confirm that the operating range of the device is safe. Unintentional supply of air or electricity creates the risk of injury due to contact with moving parts.
- Do not touch terminals, switches, etc., while the power is turned on. Doing so creates the risk of electric shock and abnormal operation.
- Do not allow the product to be thrown into fire. Doing so creates the risk of the product exploding or the release of toxic gases.
- Do not sit, stand, or place objects on the product. Doing so creates the risk of injury due to tripping or the product tipping over or falling, resulting in product damage and abnormal, erratic, or runaway operation.
- Before various types of work on the product, such as maintenance inspections, repairs, or parts replacement, be sure to completely disconnect the air or vacuum supply, and confirm that pressure inside the product and piping connected to the product is zero. In particular, be aware that pressure remains in the compressor and air tank. Pressure remaining in the pipes could cause erratic operation resulting in injury.
- Before performing any kind of wiring work, be sure to turn off the electric power. It could result in erratic operation.
- Correctly apply the rated voltage to the product. Applying the wrong voltage will make it impossible to obtain the rated function, and create the risk of damage to and burnout of the product.
- Do not allow lead wires and other cords to become damaged. Allowing a cord to become damaged, bent excessively, pulled, rolled up, placed under heavy objects, or squeezed between two objects creates the risk of current leaks or defective continuity that can lead to fire, electric shock, or abnormal operation.
- Do not connect or disconnect connectors while the power is turned on. Also, never apply unnecessary force to connectors. Doing so creates the risk of personal injury, device damage, and electric shock due to abnormal machine operation.
- Always check the catalog and other reference materials for correct product wiring and piping. Improper wiring or piping creates the risk of abnormal operation.
- Design equipment, as well as safety circuits, so that people are not injured and equipment is not damaged if there is an emergency stop, power outage, or other system abnormality that stops the machinery.
- Take measures for heat dissipation so that the ambient temperature of the product is always within the specified temperature range.
- If the product is not used for long periods (over 30 days), it is possible that the sliding parts may have become stuck leading to slow operation or sudden movements, possibly resulting in injury. Check for proper operation a minimum of once every 30 days.

Safety precautions (vacuum handling unit)

- Do not use the product or its control wiring in locations near power lines through which large electric currents flow or that are subject to strong magnetic fields or surges. Doing so could result in unintended operation or malfunction.
- Do not use the product near the ocean, in direct sunlight, near mercury vapor lamps, or near equipment that generates ozone. Deterioration of rubber parts caused by ozone may reduce performance and functions, or stop functions.
- Do not use media other than the ones listed in the specification table. Using a medium not listed in the specification table could lead to a short-term stoppage of functions, sudden degradation in performance, or reduced operating life.
- When the product has been idle for over 48 hours or has been in storage, the sliding parts may have become stuck leading to operating delays or sudden movements at initial operation. Before initial operation, always run a test to check that operations are normal.
- After completing wiring work, check to make sure that all connections are correct before turning on the power.
- Do not use the product in locations subject to direct sunlight (ultraviolet radiation), dust, salt, or iron powder. Do not expose the product to a medium or an ambient atmosphere that is very humid or contains organic solvents, phosphate-based hydraulic fluid, sulphur dioxide gas, chlorine gas, acids, etc. Doing so could lead to short-term stoppage of functions, a sudden degradation in performance, or reduced operating life. Refer to Materials used in major parts for the various materials used.
- When energized, the internal pressure sensor head could be damaged by static electricity if you touch it with your hand.

CAUTION

- When mounting the product, leave room for adequate working space around it. Failure to do so will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- Do not deform, scratch, or mar the drive components by sitting, standing or placing objects on the product. Doing so could result in operations stopping or performance falling due to the product being damaged or broken.
- When transporting or mounting a heavy product, firmly support the product using a lift or support, or use multiple people to ensure personal safety.
- If any leakage current is produced on the control circuit, unintended operation may result depending on the product. Take measures against leakage current on the control circuit so that the allowable leakage current value in the product specifications is not exceeded.
- If dry air whose dew-point temperature exceeds minus 20°C [-4°F] is used, the quality of the lubricant used may change. This could lead to a degradation of performance, the shutdown of some functions, and other failures.
- When doing installation or adjustment work, clearly display work-in-progress signs so that the air source or electric power supply is not turned on unintentionally. Unintentional supply of air or electricity creates the risk of injury due to sudden operation or electric shock.
- Pneumatic equipment is not completely air-leak-free. Designs should take into consideration the capacity and retention time required for pressure (including vacuum) retention, etc. A reduction in retention force can lead to workpieces falling, position deviation, damage to equipment, and injury.

ATTENTION

- Whenever considering use of this product in situations or environments not specifically noted in the catalog or in manuals, or in applications where safety is an important requirement such as in aircraft facilities, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as allowing plenty of margin for ratings and performance, and fail-safe measures. Contact Koganei regarding use in such applications.
- Isolate the operating components of machinery, such as with protective covers, so there is no direct contact with people.
- Do not configure controls so that workpieces fall if there is a power outage. Configure measures to prevent workpieces from falling in case the equipment has a power outage or emergency stop.

- Wear protective gloves, safety glasses, safety shoes, and other protective clothing as necessary to be safe when handling the product.
- When the product can no longer be used or is no longer necessary, dispose of it appropriately as industrial waste.
- Pneumatic equipment can exhibit degraded performance and functions over its operating life. Always conduct daily inspections on pneumatic equipment and confirm that all requisite system functions are satisfied to prevent accidents from happening.
- For inquiries about the product, consult your nearest Koganei sales office or the Overseas Department. The addresses and telephone numbers are shown on the back cover of this catalog.

Other precautions

- Always observe the following items.
Koganei bears no responsibility if these safety precautions are not observed.
 1. When using this product in a pneumatic system, use only genuine Koganei parts or compatible parts (recommended parts).
Use only genuine Koganei parts or compatible parts (recommended parts) to do maintenance or repairs.
Use only specified procedures and methods.
 2. Never inappropriately disassemble or modify the product in relation to its basic construction, performance, or functions.
Koganei bears no responsibility if these safety precautions are not fully observed.

Warranty and disclaimer

1. Warranty Period

The warranty period of Koganei products is one year from the date of delivery.

* Some products have a two-year warranty period. For details, contact the nearest Koganei sales office or the Overseas Department.

2. Warranty scope and disclaimer

- (1) If a failure attributable to Koganei is found in a product purchased from Koganei or an authorized retailer/dealer during the warranty period, Koganei will repair or replace it free of charge. For some products, a service life, such as the number of operations, may be specified in their warranty periods. For details, contact the nearest Koganei sales office or the Overseas Department.
- (2) The warranty of each Koganei product shall apply to that product alone. Consequently, Koganei is not responsible for any incidental damage (including costs incurred for the repair and replacement of the product) attributable to any failure of the Koganei product, decrease in function, or decrease in performance.
- (3) Koganei is not responsible for any losses or for any damages to other machinery caused by breakdown, loss of function, or loss of performance of Koganei products.
- (4) Koganei is not responsible for any losses due to use or storage of the product in a way that is outside of the product specifications prescribed in Koganei catalogs and instruction manuals, and/or due to actions that violate the mounting, installation, adjustment, maintenance or other safety precautions.
- (5) Koganei is not responsible for any losses caused by breakdown of the product due to factors outside the responsibility of Koganei, including but not limited to fire, natural disaster, the actions of third parties, and intentional actions or errors by the purchaser.

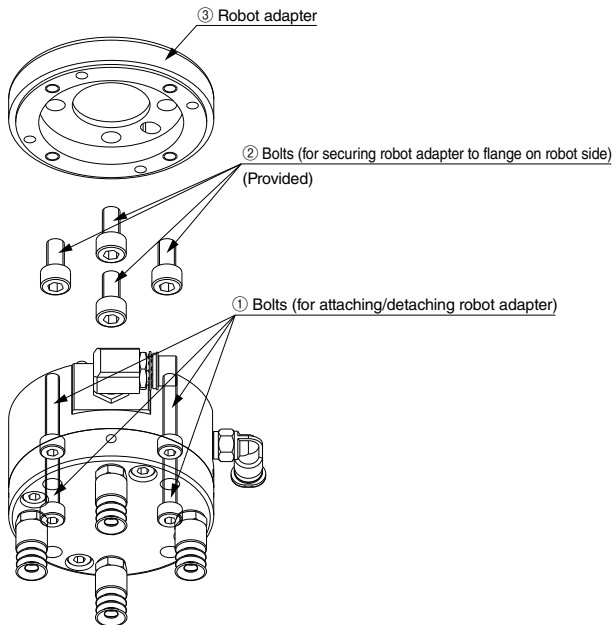


General precautions

Mounting

1. Follow the instructions below to securely mount the product on a robot, etc. Tighten the bolts to the tightening torques shown below.

1. Loosen bolts ① and remove the robot adapter ③.
2. Use the bolts ② to secure the robot adapter ③.
3. Secure the suction unit with the bolts ①.



● Tightening torque for bolts

Bolt size	Tightening torque N·m [in·lbf]
M4	1.5 [13.277]
M5	3.0 [26.553]
M6	5.2 [46.025]
M8	12.5 [110.6]

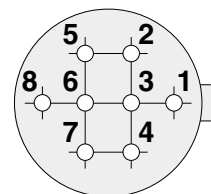
2. Do not subject the product directly to strong impact or vibration.
3. Avoid use in locations and environments like those described below, which can result in damage to internal valves. If such usage cannot be avoided, be sure to take sufficient protective measures, such as by installing covers.
 - Locations directly exposed to dripping water or oil
 - Environments in which condensation forms on the product
 - Locations directly exposed to cuttings or dust
 - Locations exposed to salt, corrosive gasses, or electroconductive powders
4. Before installing piping to the product, thoroughly flush the inside of the pipes (with compressed air). Cuttings, sealing tape, or rust produced while doing piping work that gets inside the product could cause air leaks or reduced performance.
5. When using air in the product, use clean air free of deteriorated compressor oil, etc. Install air filters (filtration rating: 40 μm or less) near the product to remove contaminants and dirt. Be sure to use a mist filter, especially if there is a lot of oil in the compressed air. Also, remove the collected contaminants periodically.
6. Use a regulator to adjust the pressure of the air supplied to the product. If the pipes to the product are long, set the pressure higher. Use a valve that can assure that air consumption is to specifications as the air supply valve.

7. Periodically replace or clean the standard filter (order code: **VYPZ-F**) installed in the product.
8. Do not use a corrosive gas or liquid as the pressure medium.
9. Do not apply pressure in excess of the product's withstand pressure.
10. Do not excessively twist or apply strong tensile force to the cables and connectors. Also, always carry the product by its body, and do not apply excessive force to the cables.
11. Keep sufficient space open near the ventilation slits. The exhaust air resonates and increases noise that could reduce performance of the product.

Wiring

1. Dedicated cables are provided with the product. The terminal positions of the cables, wiring colors, and items are shown below. We recommend the Koganei MSU Series Sensor Controller to connect sensor heads 5, 6, and 7.

● Cable terminal positions



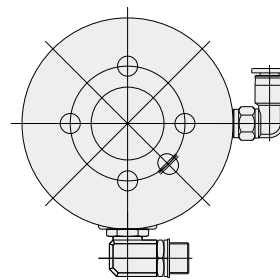
No.	Color	Item
1	-	-
2	Red	Valve COM (+)
3	Black	Vacuum valve (-)
4	White	Vacuum break side valve (-)
5	Green	Sensor head 0 V
6	Yellow	Analog voltage output
7	Brown	Sensor head +24 V
8	-	-

2. After finishing wiring, check that the connections are correct.

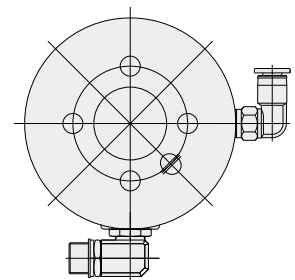
Direction of cable

You can select from 2 cable directions: facing the fitting side and facing opposite the fitting side.

This cannot be changed after purchase. Be sure to select this when you order.



Blank: Comes out on fitting side



A: Comes out opposite fitting side



Piping

Piping

1. Connect the air supply to the compressed air supply port and the vacuum pads to the vacuum generating port.
2. Use tubing with an interior diameter that cannot be constricted. A small diameter means the flow and pressure become insufficient, which reduces the achievable vacuum and lengthens the time to achieve it, resulting in reduced performance.
3. Avoid spiral piping, such as caused by coiled tubes.

Tubes

1. Connecting/disconnecting tubes

For tube connections, use appropriate size tubes and insert them up to the tube stopper, then lightly pull on the tube to check the connection.

When removing tubes, first, press the tube on, up to the tube stopper, then in that condition, press parallel on the release ring as you pull the tube out.

2. Either nylon or urethane tubes can be used.

Use tubes that have the following exterior diameter accuracy: Nylon tubes nominal dimensions within ± 0.1 mm [0.004 in.], urethane tubes nominal dimensions within ± 0.15 mm [0.006 in.], and ovalness (difference of long and short diameters) within 0.2 mm [0.008 in.]. (We recommend using Koganei tubes.)

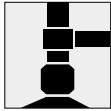
Note that if you use tubes other than Koganei genuine tubes or compatible tubes (recommended tubes), problems could occur, such as tubes detaching or air leaking, so be sure to check your compressed air system before assembling it.



1. Do not use extremely soft tubes, which need very little force to remove.
2. Be sure to use tubes that have no scratches on their outer surfaces. If they become scratched due to repeated use, replace those parts.
3. Do not allow tubing to become severely bent or twisted near the fitting. Doing so could cause air leakage. The following table shows the minimum bending radius when using nylon or urethane tubes.
4. Be sure to turn off the air supply before connecting/disconnecting tubes. Also, be sure to check that all the air has been exhausted from the manifold before starting.

Tube size	mm [in.]	
	Minimum bending radius	
	Nylon tube	Urethane tube 10
$\phi 4$ [0.157]	20 [0.787]	[0.394]
$\phi 6$ [0.236]	30 [1.181]	15 [0.591]

Handling instructions and precautions (vacuum handling unit)



Vacuum pads

Storage

1. The vacuum pads (including the rubber of the pads) use various types of rubber. Rubber degenerates when exposed to direct sunlight, oil, water, or ozone. Before use, store them indoors and keep them sealed in their polyethylene bags.
2. Set the storage temperature to room temperature.
3. As a guideline, the storage period is 2 years from manufacture.

Product

The outside circumference of the rubber of the pads may be uneven, due to the rubber mold, but this does not affect performance.

Mounting and replacing pad rubber

The method to change the pad rubber varies, either "Screw-on type" or "Insert type", depending on the size of the pads.

<Screw-on type>

The compatible pad sizes are TB 10 to 50, and TC 32 to 42. To mount the pads, gradually screw in the mounting screw, then after the pad rubber and the mounting screw come together, tighten the mounting screw another half turn (180 degrees).

<Insert type>

The compatible pad sizes are TB 6 to 8, and TC 5 to 19. To mount the pads, first mount the mounting screws (tightening torque of 1.47 N·m [13.011 in-lbf]), then attach the pads.

General precautions

1. If the pads are being used to press a workpiece, do not apply extreme force. Doing so causes the pads to deform, crack, and wear more quickly, so set the position within the range of pad deformation.
2. If the suction unit is traveling in a circle, the screws in the spacers and fall prevention check valve, and the pad mounting screws, may loosen and come off, so design a system with leeway for this. Also, suctioning a workpiece with a skewed center of gravity takes particular care, so check that carefully.
3. Because the vacuum pads are made of rubber, increasing the number of suction/release operations on the workpiece causes wear, or sticking to the workpiece or sticking to the pads. If harmful scratches, wear, or cracks occur on the pads, promptly replace them.

Tightening torque

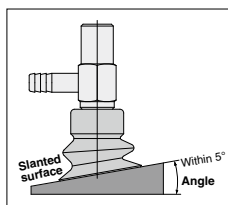
When mounting the fall prevention check valve and spacers, control the tightening torques according to the values shown in the following table.

Model	Screw size	Tightening torque N·m [in-lbf]
VPC-M5	M5×0.8	1.6 [14.162]
VPC-M6	M6×0.8	1.8 [15.932]
Spacer ^{Note}	M6×0.8	1.8 [15.932]

Note: Part provided with **TB30, 35, 40, 50, and TC32, 42**. For details, see page 22.

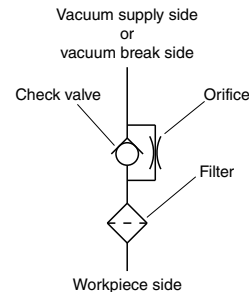
Supportable suction angle

If the suction surface is on a workpiece with a slanted surface, then you can use a bellows pad that can suction at an angle of about 5°, but this is just a reference value because it varies depending on the workpiece and usage conditions.

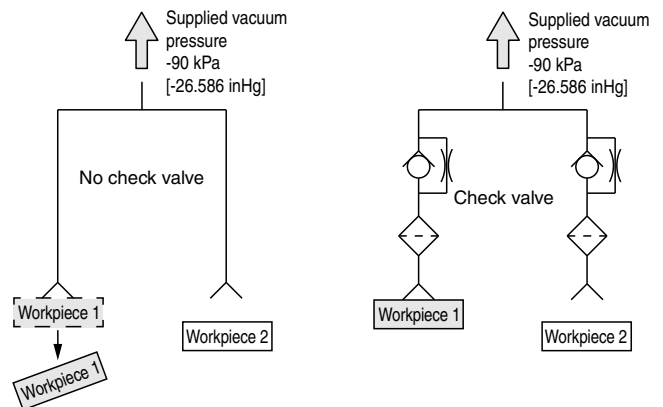


Fall prevention check valve

Air pressure symbols



Applicable examples



● Workpiece 1 and workpiece 2 were suctioned at the same time, but workpiece 2 was mis-suctioned and fell. The vacuum pressure in the pipes decreased at this time, so workpiece 1 also fell.

● Fall prevention check valves were installed in both vacuum pads. Workpiece 2 was mis-suctioned and fell, but workpiece 1 did not fall because the vacuum pressure in the pipes did not decrease excessively.

Vacuum Handling Unit

VYP Series



Specifications

● Main unit specifications

Standard model	VYP03		VYP05		VYP10		
Item							
Medium	Air						
Compressed air supply port	ϕ4 [0.157] quick fitting		ϕ6 [0.236] quick fitting				
Vacuum port (number of ports)	M5 (5)		M5 (9)		M6 (9)		
Lubrication	Not required						
Operating pressure range	MPa [psi]	0.2 to 0.7 [29 to 102]					
Operating temperature range	°C [°F]	5 to 50 [41 to 122]					
Proof pressure	MPa [psi]	0.9 [131]					
Mass	g [oz]	195 [6.88]	385 [13.58]		590 [20.81]		
Exterior diameter	mm [in.]	ϕ58 [2.283]	ϕ80 [3.150]		ϕ100 [3.937]		
Payload	kg [lb]	2.5 [5.513]	4.5 [9.923]		7 [15.435]		
Achieved vacuum ^{Note}	kPa [inHg]	-65 [-19.201]	-85 [-25.109]		-85 [-25.109]		
Vacuum side flow rate ^{Note}	L/min [ft³/min]	2.5 [0.088]	6 [0.212]		18 [0.636]		
Air consumption ^{Note}	L/min [ft³/min]	4.5 [0.159]	13 [0.459]		35 [1.236]		
Shock resistance	m/s² [G]	294.2 [30]	1373 [140] (horizontal 196.2 [20])				
Mounting direction	Pad mounting surface facing down, perpendicular						

Note: Value (estimated) when VYP03 has supply pressure of 0.5 MPa [73 psi], VYP05 has 0.3 MPa [44 psi], VYP10 has 0.36 MPa [52 psi].

● Solenoid valve specifications (electrical specifications)

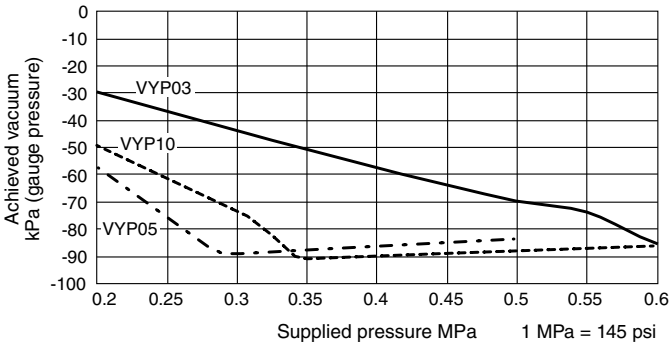
Standard model	VYP03	VYP05	VYP10
Item			
Mounted solenoid valve	A005E1	GA010E1	
Rated voltage	V	DC24	
Applicable voltage range	V	21.6 to 26.4 (24±10%)	
Current value	mA	21	42
Power consumption	W	0.5	1.0
Allowable circuit leakage current	mA	1.0	2.0
Startup state time	ms	-	-
Insulation resistance	MΩ	100 or more	
Surge protection (standard equipment)	MΩ	Flywheel diode	

● Pressure sensor head specifications

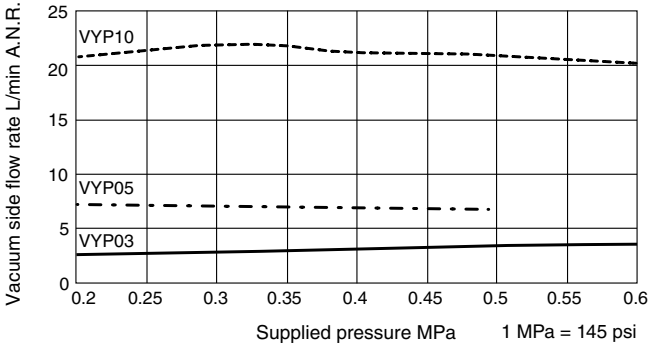
Standard model		MSU-PH-ER
Item		
Medium		Air or non-corrosive gas
Power supply	Power supply voltage	24 VDC±10%
	Consumption current	6mA MAX.
Analog output	Output voltage	1 to 5 V
	Zero point voltage	3.75V±0.05
	Span voltage	4.00 V ±0.07 (reference value)
	Thermal characteristics	Zero point: Within 30 mV, span: Within 2% FS
	Output current	1 mA or less (load resistance 5 kΩ or more)
General	Operating pressure range	-100.0 kPa to 220.0 kPa [-29.540 inHg to 64.988 inHg]
	Proof pressure	900 kPa [265.9 inHg]
	Operating temperature range	0 to 50°C [32 to 122°F], in storage -20 to 80°C [-4 to 176°F] (when stored in less than 65% RH humidity, in atmospheric pressure)
	Operating humidity range	35 to 85% RH
	Insulation resistance	At 500 VDC megger, then 100 MΩ or higher
	Withstand voltage	1 minute at 500 VAC
	Altitude	2000 m [6560 ft] or less
	Environment	Indoor operation, pollution degree 2
	Mass	40 g [1.41 oz]
	Standards	CE

Ejector performance

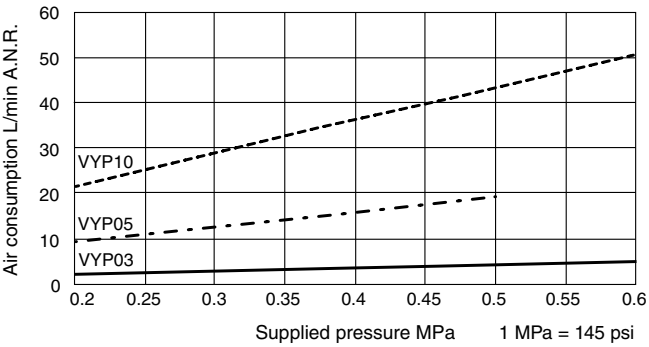
Supplied pressure - Achieved vacuum



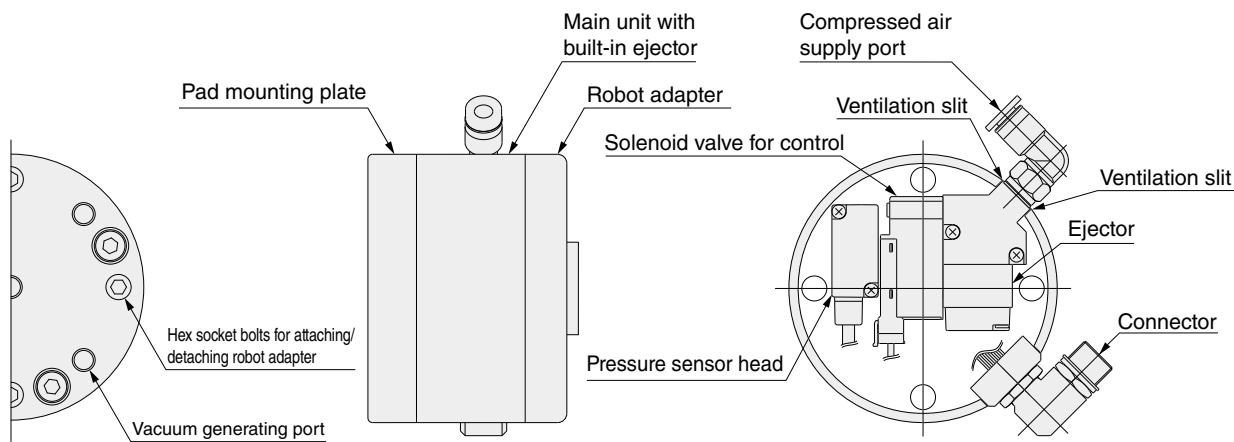
Supplied pressure - Vacuum side flow rate



Supplied pressure - Air consumption



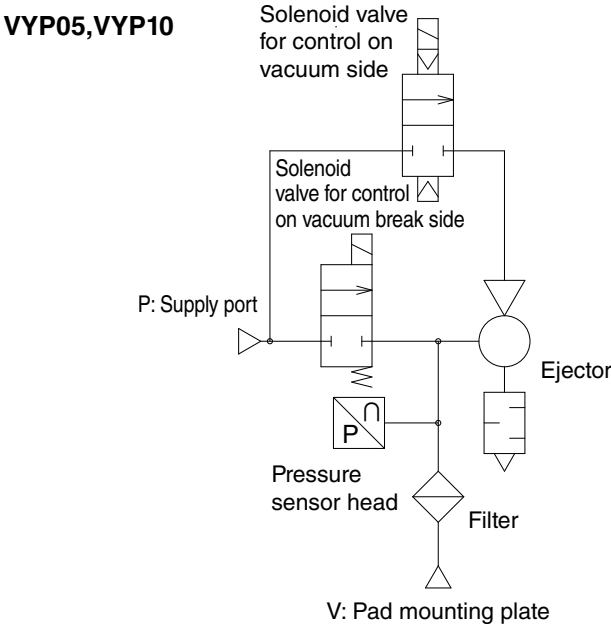
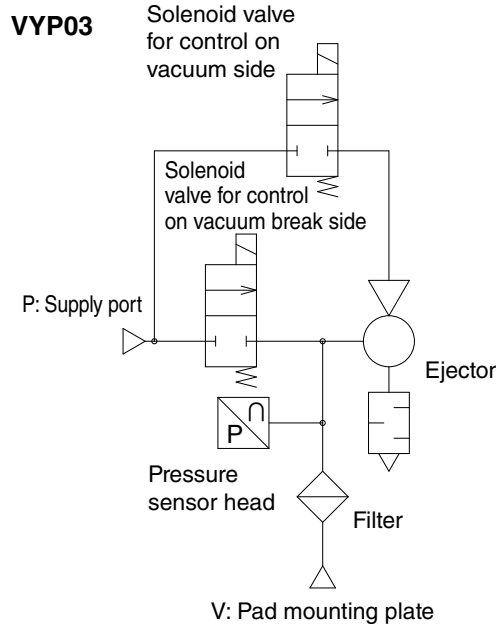
Internal configuration and names of parts



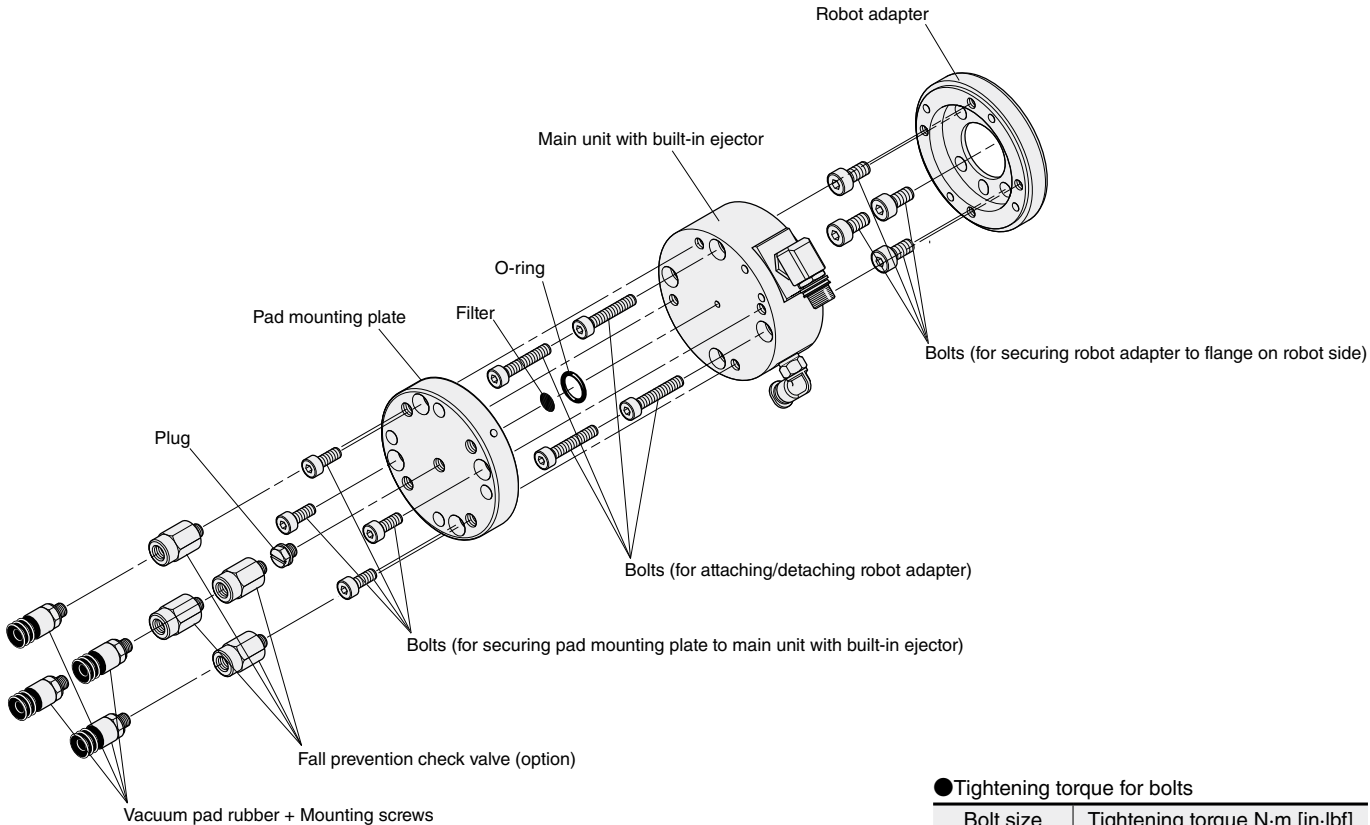
Materials of major parts

Name	Material
Robot adapter	Aluminum alloy (alumite)
Main unit with built-in ejector	VYP03: Resin VYP05, VYP10: Aluminum alloy (alumite)
Pad mounting plate	Aluminum alloy (alumite)

[Schematic of pressurized air circuit]



Configuration of components



●Tightening torque for bolts

Bolt size	Tightening torque N·m [in·lbf]
M4	1.5 [13.277]
M5	3.0 [26.553]
M6	5.2 [46.025]
M8	12.5 [110.6]

●Main unit type (for robot adapter shaped ISO standard flange)

VYP ☐ ☐ **L** ☐ - ☐ ☐ - ☐ ☐

Vacuum Handling Unit VYP Series

Number of vacuum pads
Blank: No vacuum pads
1 to 9: See page ⑬.

Vacuum pad model
Blank: No vacuum pads
For vacuum pad models, see page ⑬.
Note: Vacuum pads are all the same type, regardless of the number installed. (Provided when shipped)

Number of fall prevention check valves
Blank: None
1 to 9: 1 to 5 when VYP03 is selected

Fall prevention check valve
Blank: None
C: Yes (Provided when shipped)

Direction of cable
Blank: Comes out on fitting side
A: Comes out opposite fitting side

Fixed vacuum pad installation position
When mounted ejector 03 or 05 is selected, then vacuum pad mounting screws are M5
When mounted ejector 10 is selected, then vacuum pad mounting screws are M6

Robot adapter shape
S1: For mounting ISO standard flange 1, pitch diameter 25 [0.984] (VYP03 only)
S2: For mounting ISO standard flange 2, pitch diameter 31.5 [1.240] (VYP03 only)
S3: For mounting ISO standard flange 3, pitch diameter 40 [1.575] (VYP03, 05 only)
S4: For mounting ISO standard flange 4, pitch diameter 50 [1.969]
S5: For mounting ISO standard flange 5, pitch diameter 63 [2.480] (VYP05, 10 only)
S6: For mounting ISO standard flange 6, pitch diameter 80 [3.150] (VYP10 only)

Mounted ejector
03: ϕ 0.3 [0.012] nozzle ejector
05: ϕ 0.5 [0.020] nozzle ejector
10: ϕ 1.0 [0.039] nozzle ejector

Remarks: Cables and plugs are provided as standard with the suction unit.

●Main unit type (for robot adapter shaped auto hand changer MJC)

VYP ☐ ☐ **L** ☐ - ☐ ☐ - ☐ ☐

Vacuum Handling Unit VYP Series

Number of vacuum pads
Blank: No vacuum pads
1 to 9: See page ⑬.

Vacuum pad model
Blank: No vacuum pads
For vacuum pad models, see page ⑬.
Note: Vacuum pads are all the same type, regardless of the number installed. (Provided when shipped)

Number of fall prevention check valves
Blank: None
1 to 9: 1 to 5 when VYP03 is selected

Fall prevention check valve
Blank: None
C: Yes (Provided when shipped)

Direction of cable
Blank: Comes out on fitting side
A: Comes out opposite fitting side

Fixed vacuum pad installation position
When mounted ejector 03 or 05 is selected, then vacuum pad mounting screws are M5
When mounted ejector 10 is selected, then vacuum pad mounting screws are M6

Robot adapter shape
MJ3 : For mounting auto hand changer MJC3 (VYP03, 05 only)
MJ10 : For mounting auto hand changer MJC10 (VYP03, 05 only)
MJ20 : For mounting auto hand changer MJC20 (VYP03, 05 only)
MJ60 : For mounting auto hand changer MJC60
MJ100: For mounting auto hand changer MJC100 (VYP10 only)
MJ150: For mounting auto hand changer MJC150 (VYP10 only)

Mounted ejector
03: ϕ 0.3 [0.012] nozzle ejector
05: ϕ 0.5 [0.020] nozzle ejector
10: ϕ 1.0 [0.039] nozzle ejector

Remarks: Cables and plugs are provided as standard with the suction unit.

Order codes

•Number of vacuum pads to install

●For mounted ejector model **03** (pad mounting screws are M5)

		Vacuum pad diameter ϕ									
		5 [0.197]	6 [0.236]	7 [0.276]	8 [0.315]	9 [0.354]	10 [0.394]	15 [0.591]	19 [0.748]	20 [0.787]	25 [0.984]
Number to install	1	○	○	○	○	○	○	○	○	○	○
	2	○	○	○	○	○	○	○	○	○	○
	3	○	○	○	○	○	○	○	○	○	○
	4	○	○	○	○	○	○	○	○	○	○
	5	○	○	○	○	○	○	-	-	-	-

Example: Up to 4 ϕ 25 [0.984] vacuum pads can be mounted.

●For mounted ejector model **05** (pad mounting screws are M5)

		Vacuum pad diameter ϕ									
		5 [0.197]	6 [0.236]	7 [0.276]	8 [0.315]	9 [0.354]	10 [0.394]	15 [0.591]	19 [0.748]	20 [0.787]	25 [0.984]
Number to install	1	○	○	○	○	○	○	○	○	○	○
	2	○	○	○	○	○	○	○	○	○	○
	3	○	○	○	○	○	○	○	○	○	○
	4	○	○	○	○	○	○	○	○	○	○
	5	○	○	○	○	○	○	○	○	○	○
	6	○	○	○	○	○	○	-	-	-	-
	7	○	○	○	○	○	○	-	-	-	-
	8	○	○	○	○	○	○	-	-	-	-
	9	○	○	○	○	○	○	-	-	-	-

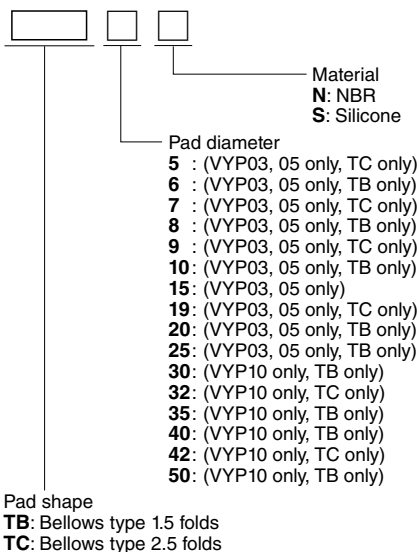
Example: Up to 5 ϕ 25 [0.984] vacuum pads can be mounted.

●For mounted ejector model **10** (pad mounting screws are M6)

		Vacuum pad diameter ϕ					
		30 [1.181]	32 [1.260]	35 [1.378]	40 [1.575]	42 [1.654]	50 [1.969]
Number to install	1	○	○	○	○	○	○
	2	○	○	○	○	○	○
	3	○	○	○	○	○	○
	4	○	○	○	○	○	○
	5	○	○	○	○	○	-

Example: Up to 4 ϕ 50 [1.969] vacuum pads can be mounted.

●Vacuum pad model



Remarks:
 Vacuum pads besides the models listed above can also be mounted to the product.
 For details, contact a Koganei sales office.

● Vacuum pads + Mounting screws set

KPZ -



Material
N: NBR
S: Silicone

Pad diameter

5 : (VYP03, 05 only, TC only)
6 : (VYP03, 05 only, TB only)
7 : (VYP03, 05 only, TC only)
8 : (VYP03, 05 only, TB only)
9 : (VYP03, 05 only, TC only)
10 : (VYP03, 05 only, TB only)
15 : (VYP03, 05 only)
19 : (VYP03, 05 only, TC only)
20 : (VYP03, 05 only, TB only)
25 : (VYP03, 05 only, TB only)
30 : (VYP10 only, TB only)
32 : (VYP10 only, TC only)
35 : (VYP10 only, TB only)
40 : (VYP10 only, TB only)
42 : (VYP10 only, TC only)
50 : (VYP10 only, TB only)

Pad shape

TB: Bellows type 1.5 folds

TC: Bellows type 2.5 folds

● Pad rubber shape (for replacements)

□ is the pad rubber material

N: NBR S: Silicone

Pad diameter

5 : KPTC-5-□
6 : KPTB-6-□
7 : KPTC-7-□
8 : KPTB-8-□
9 : KPTC-9-□
10 : KPTB-10-□
15 : KPTB-15-□ KPTC-15-□
19 : KPTC-19-□
20 : KPTB-20-□
25 : KPTB-25-□
30 : KPTB-30-□
32 : KPTC-32-□
35 : KPTB-35-□
40 : KPTB-40-□
42 : KPTC-42-□
50 : KPTB-50-□

● Fall prevention check valve

VPC -



Connecting screws

M5: Pad side M5 female threads, vacuum source side M5 male screws (for VYP03, VYP05)

M6: Pad side M6 female threads, vacuum source side M6 male screws (for VYP10)

● Replacement filter (1 in each bag)

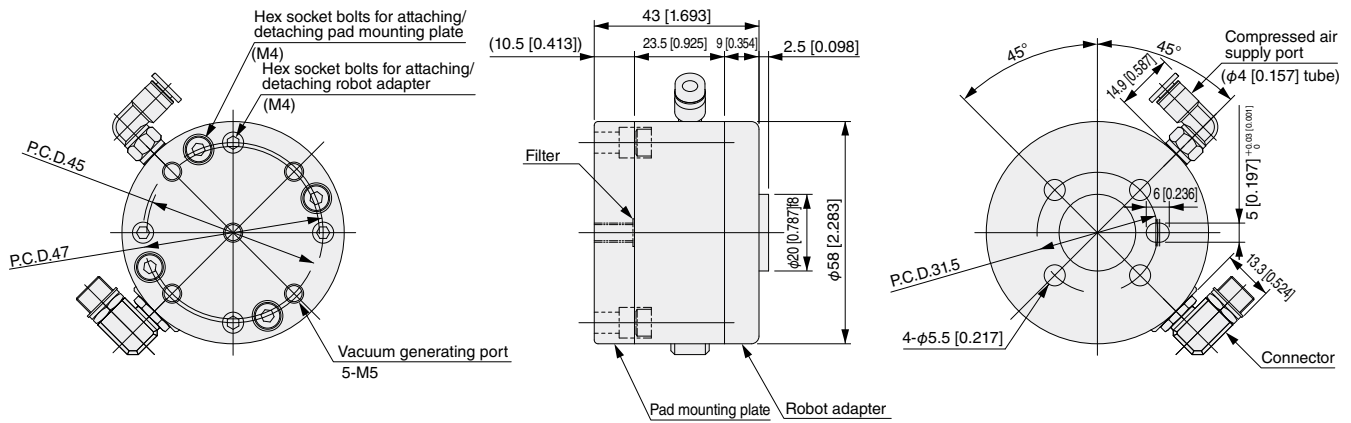
VYPZ -F

● Replacement cable (cable length: 3000 mm [118.1 in.])

VYPZ -K

VYP03□□

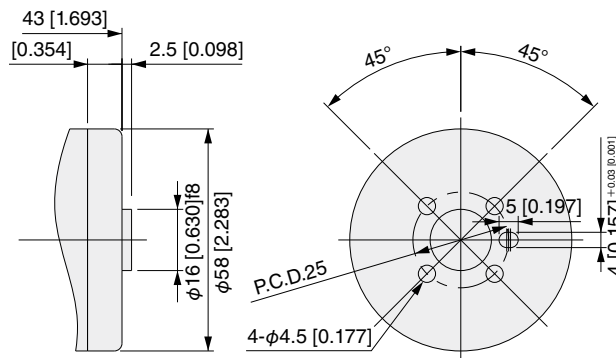
S2 (VYP03S2L) (for mounting ISO standard flange 2, pitch diameter 31.5 [1.240])



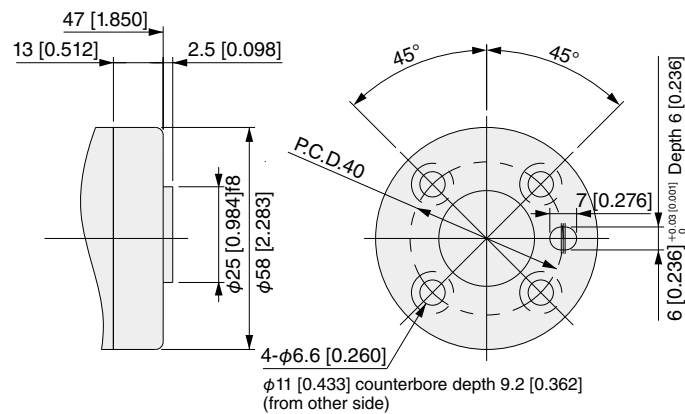
* Robot adapter and pad mounting plate can be specialized.
Contact a Koganei sales office.

●ISO robot adapter

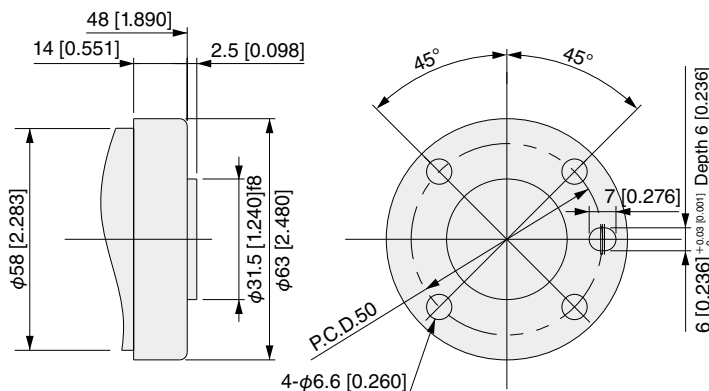
S1 (VYP03S1L) (for mounting ISO standard flange 1, pitch diameter 25 [0.984])



S3 (VYP03S3L) (for mounting ISO standard flange 3, pitch diameter 40 [1.575])

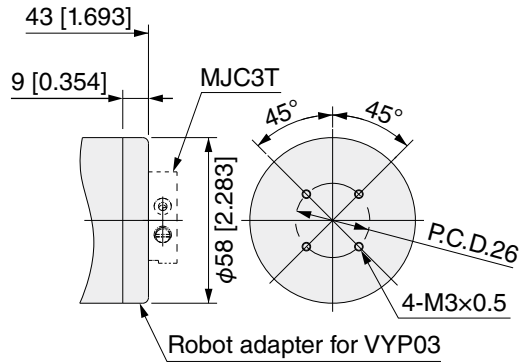


S4 (VYP03S4L) (for mounting ISO standard flange 4, pitch diameter 50 [1.969])

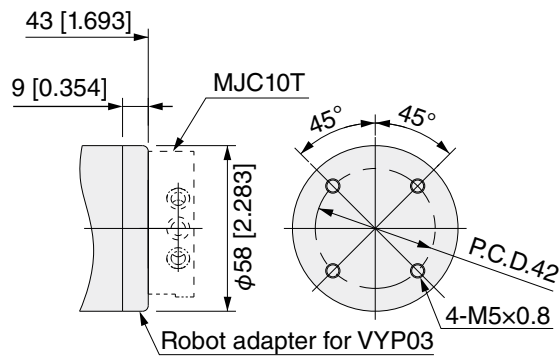


● Robot adapter

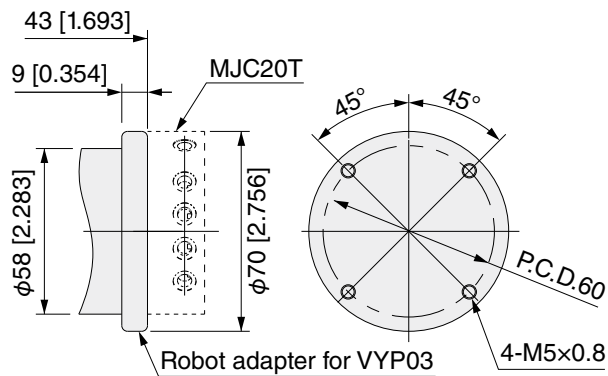
MJ3 (VYP03MJ3L) (for mounting auto hand changer MJC3)



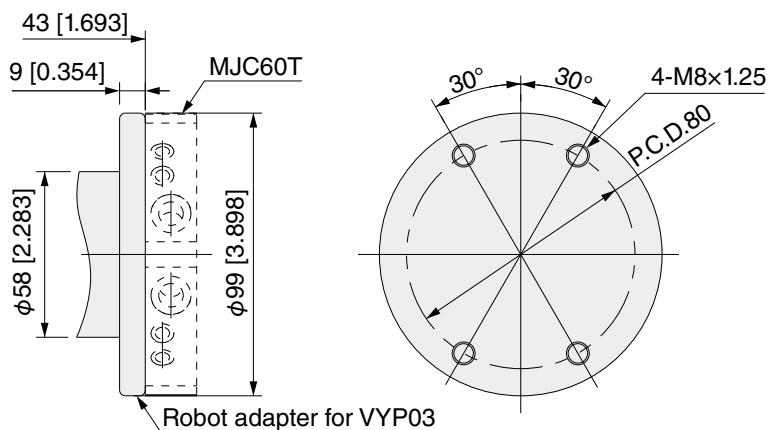
MJ10 (VYP03MJ10L) (for mounting auto hand changer MJC10)



MJ20 (VYP03MJ20L) (for mounting auto hand changer MJC20)

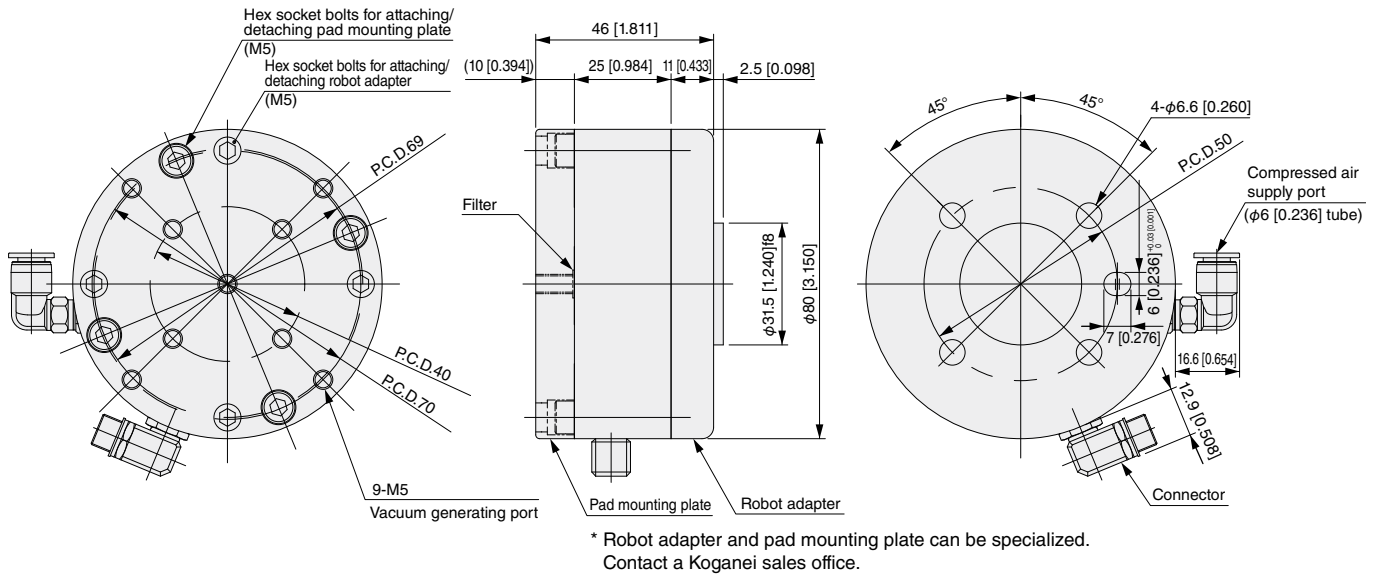


MJ60 (VYP03MJ60L) (for mounting auto hand changer MJC60)



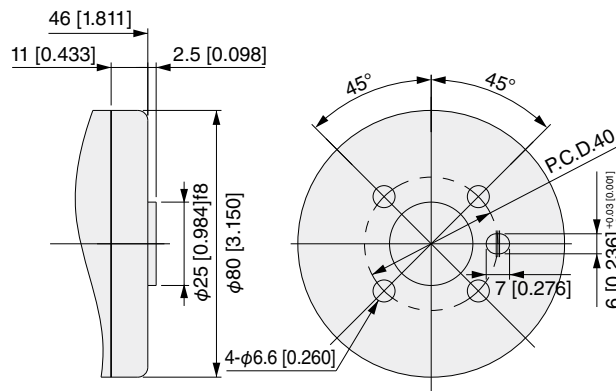
VYP05□□

S4 (VYP05S4L) (for mounting ISO standard flange 4, pitch diameter 50 [1.969])

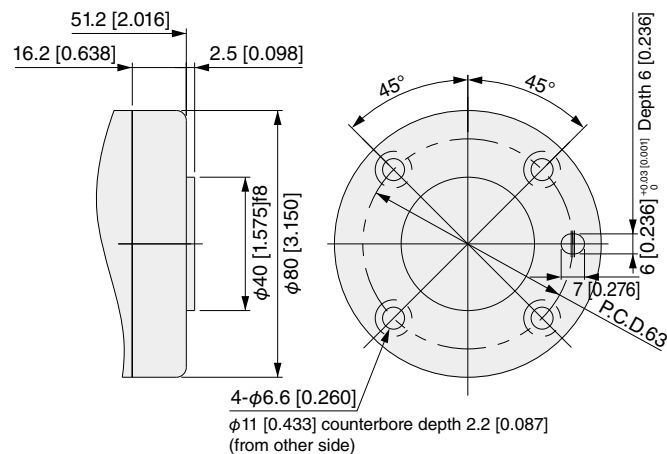


●ISO robot adapter

S3 (VYP05S3L) (for mounting ISO standard flange 3, pitch diameter 40 [1.575])

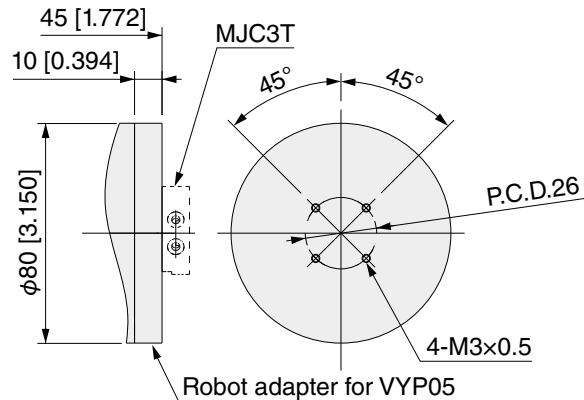


S5 (VYP05S5L) (for mounting ISO standard flange 5, pitch diameter 63 [2.480])

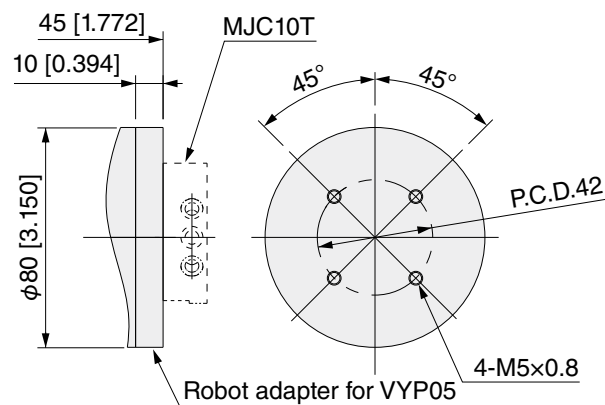


● Robot adapter

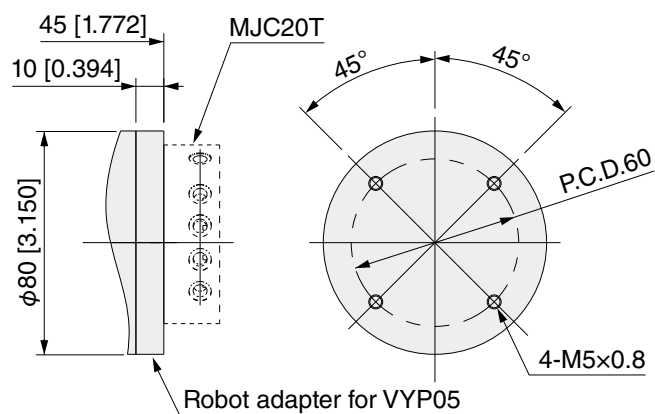
MJ3 (VYP05MJ3L) (for mounting auto hand changer MJC3)



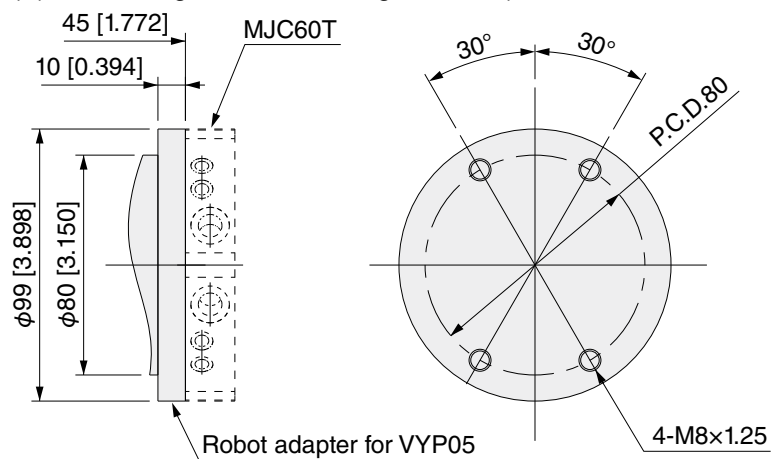
MJ10 (VYP05MJ10L) (for mounting auto hand changer MJC10)



MJ20 (VYP05MJ20L) (for mounting auto hand changer MJC20)

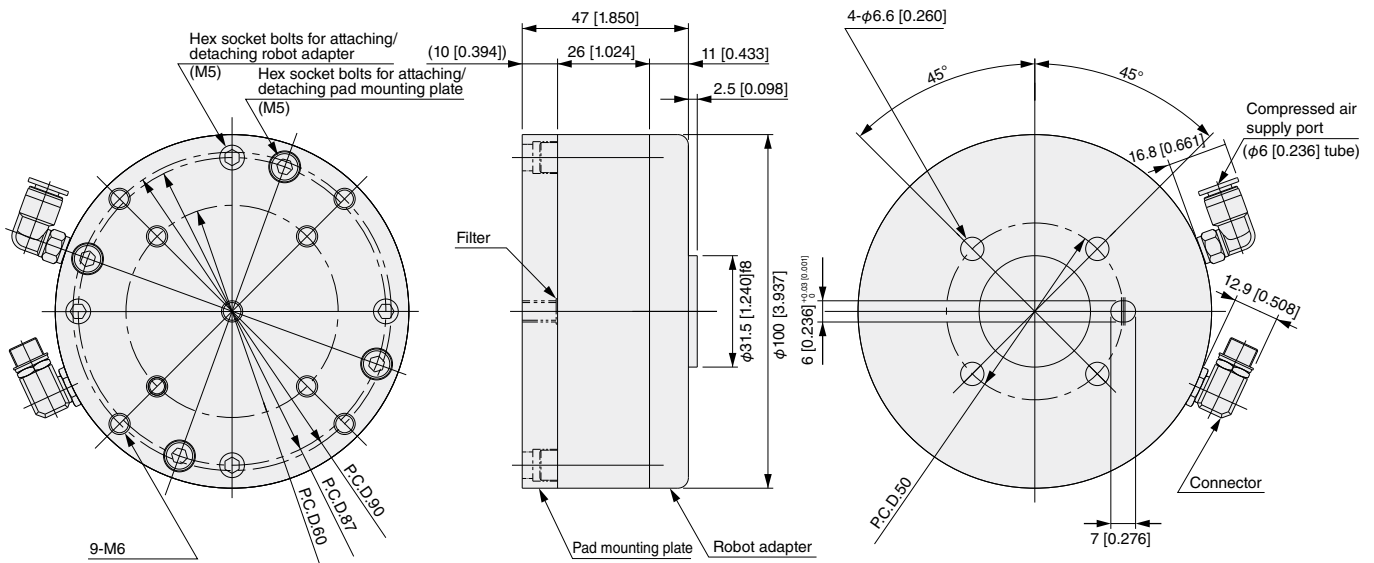


MJ60 (VYP05MJ60L) (for mounting auto hand changer MJC60)



VYP10□□

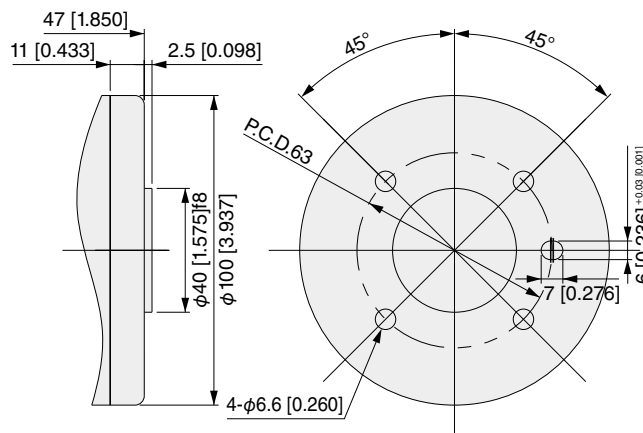
S4 (VYP10S4L) (for mounting ISO standard flange 4, pitch diameter 50 [1.969])



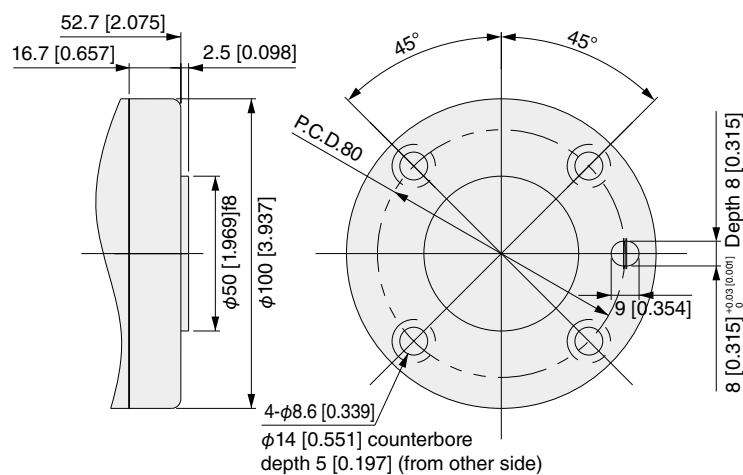
* Robot adapter and pad mounting plate can be specialized. Contact a Koganei sales office.

●ISO robot adapter

S5 (VYP10S5L) (for mounting ISO standard flange 5, pitch diameter 63 [2.480])

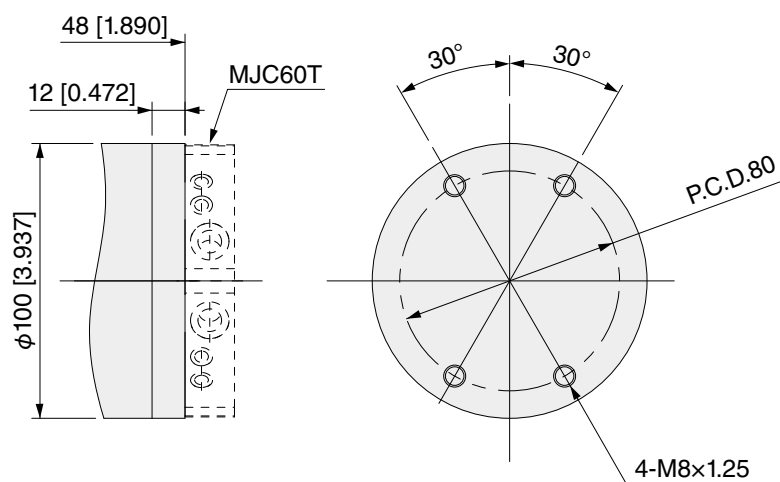


S6 (VYP10S6L) (for mounting ISO standard flange 6, pitch diameter 80 [3.150])

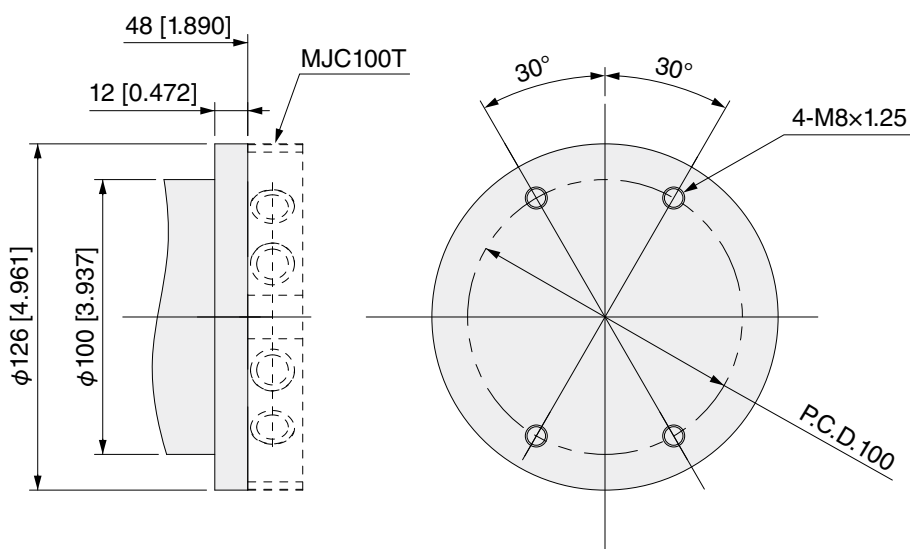


● Robot adapter

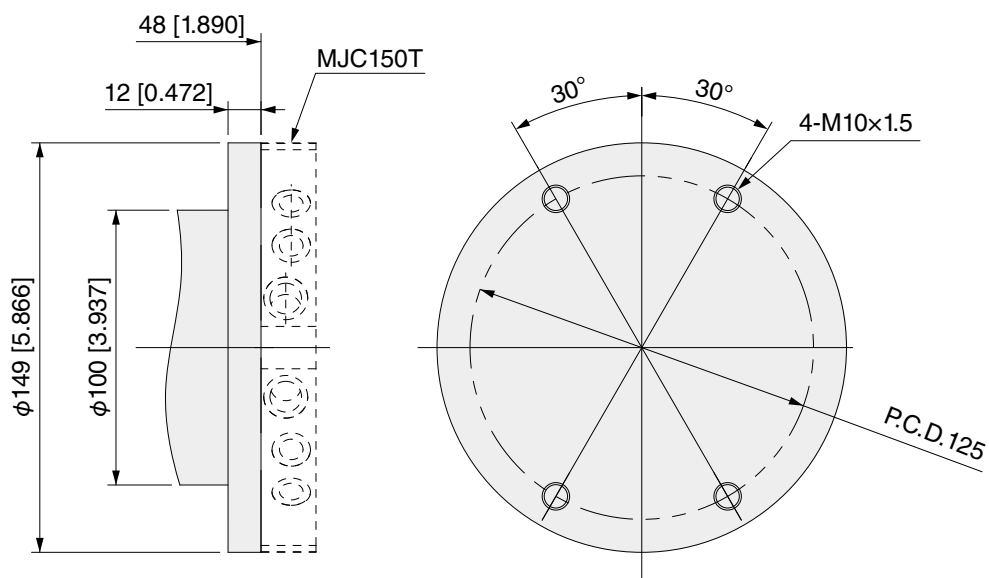
MJ60 (VYP10MJ60L) (for mounting auto hand changer MJC60)



MJ100 (VYP10MJ100L) (for mounting auto hand changer MJC100)

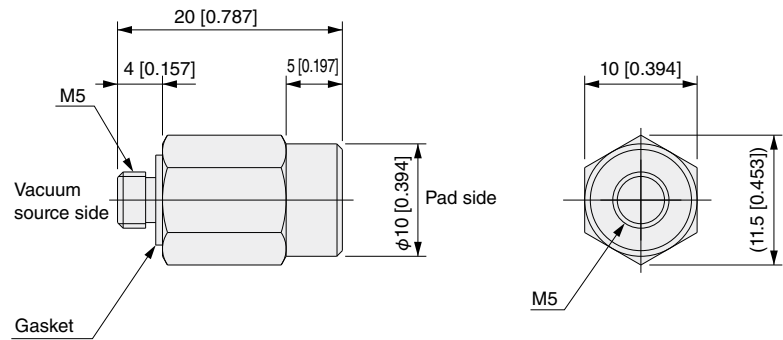


MJ150 (VYP10MJ150L) (for mounting auto hand changer MJC150)

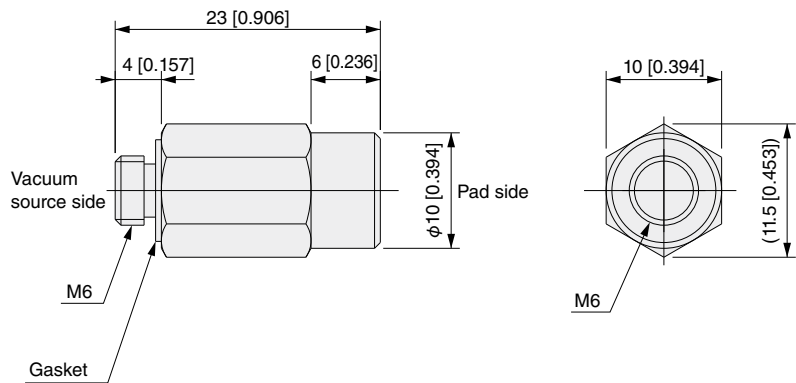


●Fall prevention check valve

VPC-M5

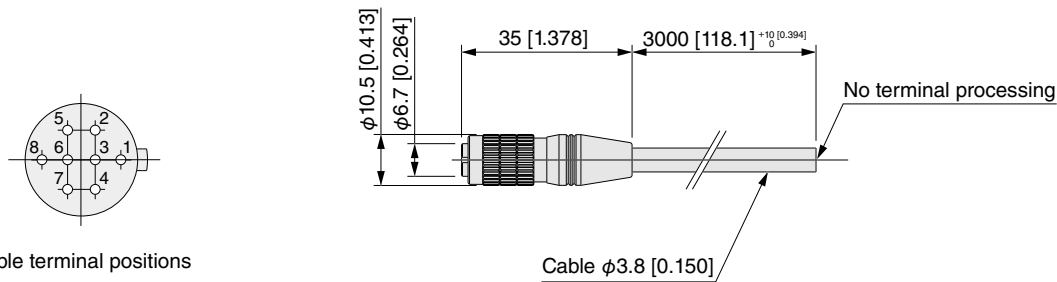


VPC-M6



●Replacement cable

VYPZ-K

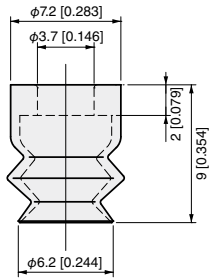


No.	Color	Item
1	-	-
2	Red	Valve COM (+)
3	Black	Vacuum valve (-)
4	White	Vacuum break side valve (-)
5	Green	Sensor head 0 V
6	Yellow	Analog voltage output
7	Brown	Sensor head +24 V
8	-	-

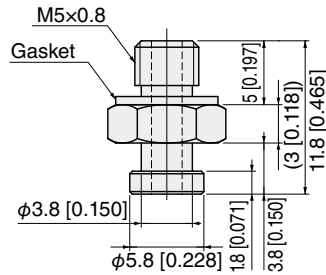
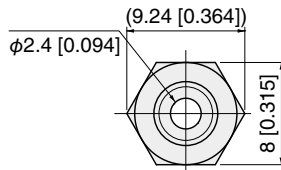
(KPZ)-TB□

● 6

Mounting screws for 6
(M-KPTB6)

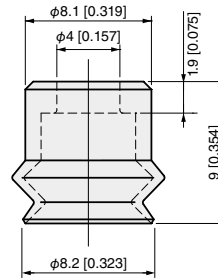


Model number for just pad
KPTB-6-□

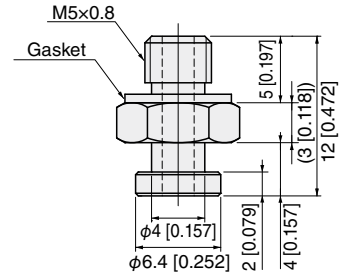
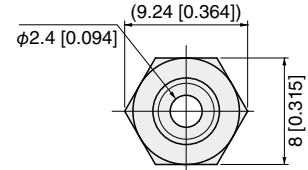


● 8

Mounting screws for 8
(M-KPTB8)

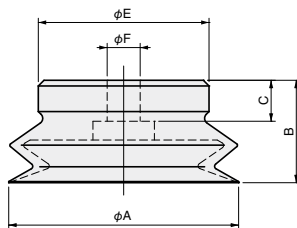


Model number for just pad
KPTB-8-□

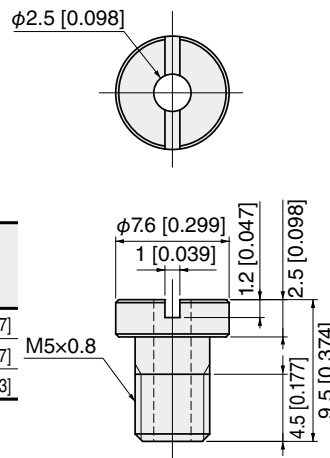


● 10·15·20

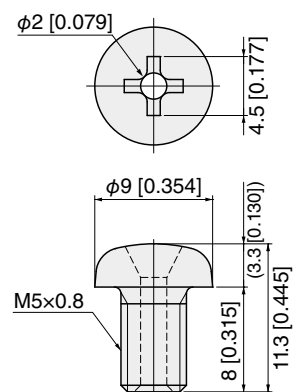
Mounting screws for 10 (M-KPTB10)
Mounting screws for 15 (M-KPTB15)



Item	A	B	C	E	F
Model number for just pad					
KPTB-10-□	9.8 [0.386]	9.2 [0.362]	3.5 [0.138]	11 [0.433]	4.5 [0.177]
KPTB-15-□	15.5 [0.610]	11 [0.433]	3.5 [0.138]	12 [0.472]	4.5 [0.177]
KPTB-20-□	20.2 [0.795]	13.1 [0.516]	4.6 [0.181]	15.1 [0.594]	4.4 [0.173]



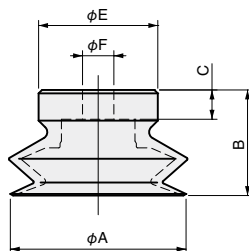
Mounting screws for 20 (M-KPTB20)



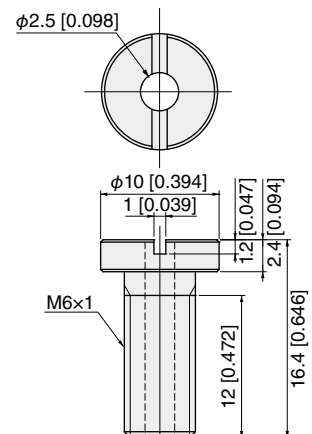
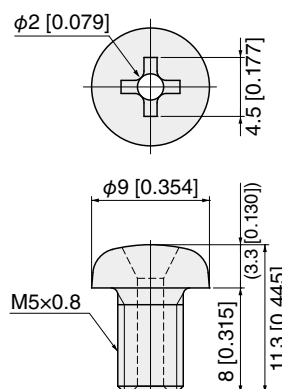
● 25·30·35

Mounting screws for 25 (M-KPTB25)

Mounting screws for 30 (M-KPTB30)
Mounting screws for 35 (M-KPTB35)

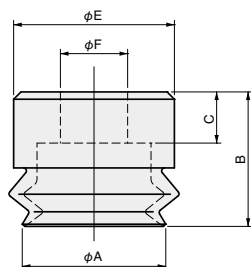


Item	A	B	C	E	F
Model number for just pad					
KPTB-25-□	25.8 [1.016]	15.5 [0.610]	4.5 [0.177]	17.5 [0.689]	4.6 [0.181]
KPTB-30-□	31 [1.220]	17.8 [0.701]	7.4 [0.291]	20 [0.787]	5.8 [0.228]
KPTB-35-□	36.1 [1.421]	18 [0.709]	7.7 [0.303]	25 [0.984]	5.8 [0.228]



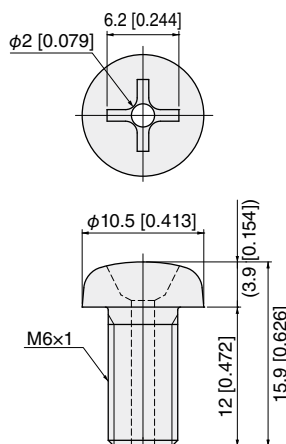
(KPZ-)TB□

● 40·50

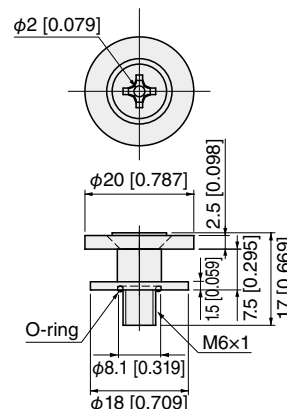


Model number for just pad	Item	A	B	C	E	F
KPTB-40-□		40.4 [1.591]	18 [0.709]	7 [0.276]	30 [1.181]	5.8 [0.228]
KPTB-50-□		50.6 [1.992]	19.5 [0.768]	7.2 [0.283]	40 [1.575]	8 [0.315]

Mounting screws for 40 (M-KPTB40)

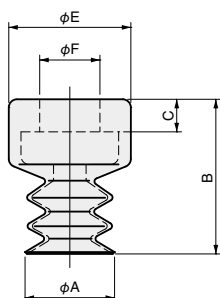


Mounting screws for 50 (M-KPTB50)



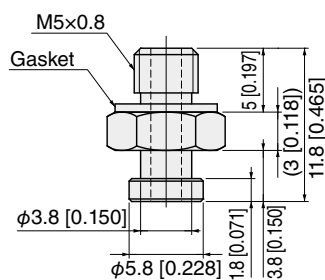
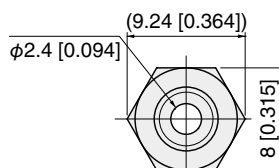
(KPZ-)TC□

● 5·7

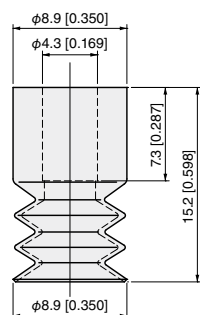


Model number for just pad	Item	A	B	C	E	F
KPTC-5-□		5.5 [0.217]	9.5 [0.374]	2 [0.079]	7.5 [0.295]	3.7 [0.146]
KPTC-7-□		7.2 [0.283]	9.9 [0.390]	2 [0.079]	7.5 [0.295]	3.8 [0.150]

Mounting screws for 5 (M-KPTC5) Mounting screws for 7 (M-KPTC7)

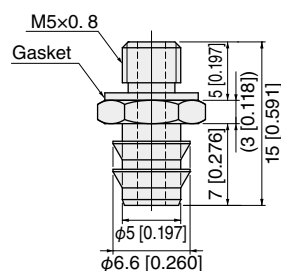
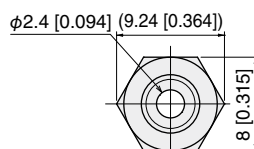


● 9



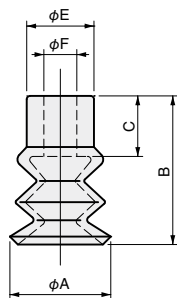
Model number for just pad
KPTC-9-□

Mounting screws for 9 (M-KPTC9)



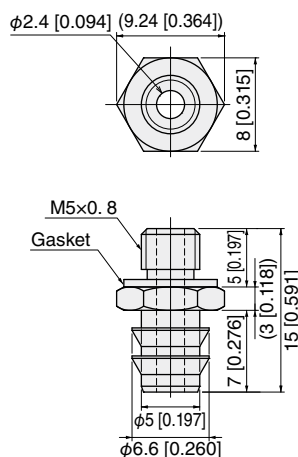
(KPZ-)TC□

● 15·19

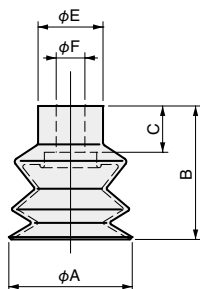


Model number for just pad	Item	A	B	C	E	F
KPTC-15-□		15 [0.591]	22.1 [0.870]	9 [0.354]	10 [0.394]	4.9 [0.193]
KPTC-19-□		19.2 [0.756]	23.2 [0.913]	8.1 [0.319]	11.4 [0.449]	4.6 [0.181]

Mounting screws for 15 (M-KPTC15)
Mounting screws for 19 (M-KPTC19)

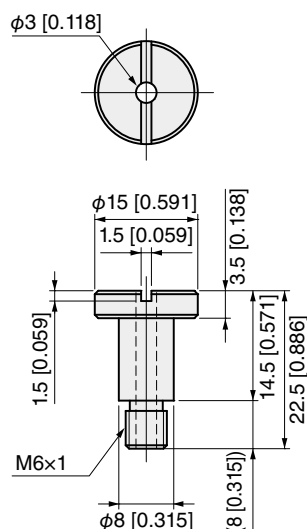


● 32·42



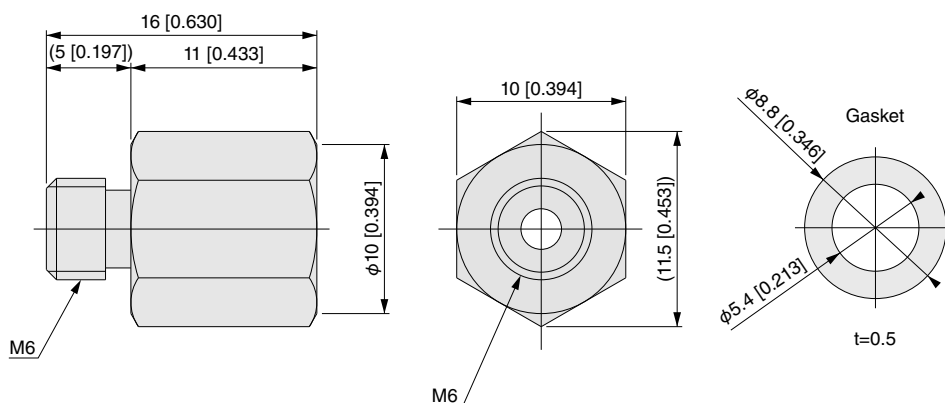
Model number for just pad	Item	A	B	C	E	F
KPTC-32-□		33.6 [1.323]	37.3 [1.469]	13 [0.512]	18 [0.709]	8 [0.315]
KPTC-42-□		42.4 [1.669]	46 [1.811]	13 [0.512]	20 [0.787]	8 [0.315]

Mounting screws for 32 (M-KPTC32)
Mounting screws for 42 (M-KPTC42)



● Spacer

The following plug and spacer are provided for preventing interference with **TB30·35·40·50**, and **TC32·42**.



[illegible]

This image shows a full page of a notebook or worksheet. It features approximately 28 horizontal dotted lines spaced evenly down the page, providing a guide for handwriting practice. The lines are light gray and extend across the entire width of the page. There is no text or other markings on the page.

Limited Warranty

KOGANEI CORP. warrants its products to be free from defects in material and workmanship subject to the following provisions.

Warranty Period The warranty period is 180 days from the date of delivery.

Koganei Responsibility If a defect in material or workmanship is found during the warranty period, KOGANEI CORP. will replace any part proved defective under normal use free of charge and will provide the service necessary to replace such a part.

Limitations ● This warranty is in lieu of all other warranties, expressed or implied, and is limited to the original cost of the product and shall not include any transportation fee, the cost of installation or any liability for direct, indirect or consequential damage or delay resulting from the defects.

● KOGANEI CORP. shall in no way be liable or responsible for injuries or damage to persons or property arising out of the use or operation of the manufacturer's product.

● This warranty shall be void if the engineered safety devices are removed, made inoperative or not periodically checked for proper functioning.

● Any operation beyond the rated capacity, any improper use or application, or any improper installation of the product, or any substitution upon it with parts not furnished or approved by KOGANEI CORP., shall void this warranty.

● This warranty covers only such items supplied by KOGANEI CORP. The products of other manufacturers are covered only by such warranties made by those original manufacturers, even though such items may have been included as the components.

The specifications are subject to change without notice.

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