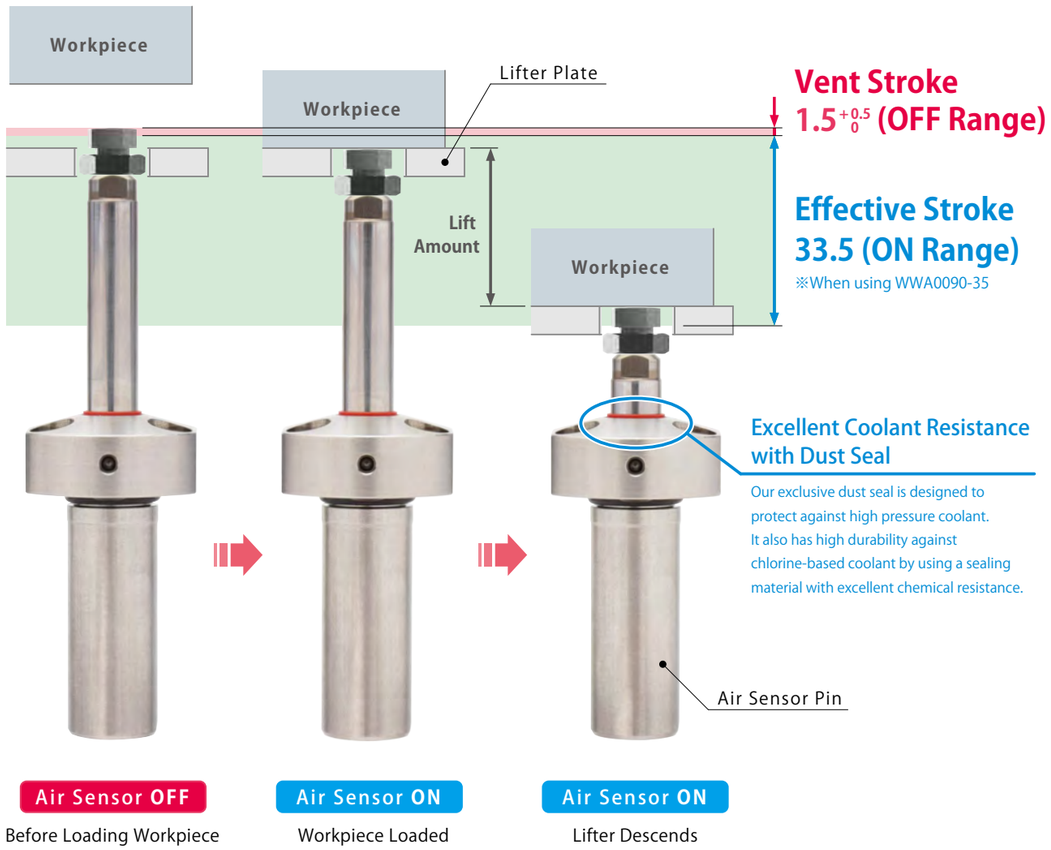
Pneumatic Sensor Pin

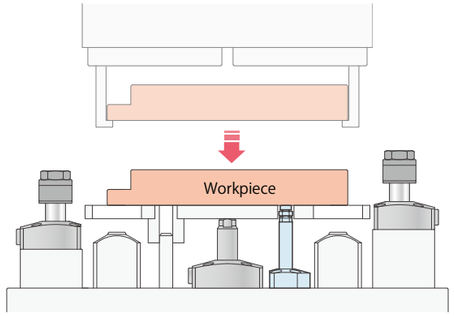
Model **WWA**

Detects the Workpiece with Long Stroke Range • Single Air Circuit

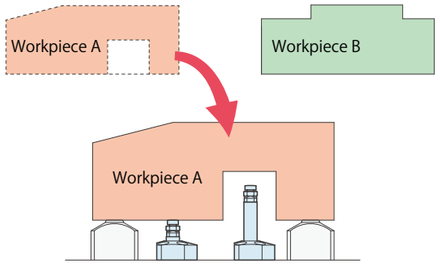
Pneumatic sensor pin automatically distinguishes different workpieces.



Application Examples



Detects Workpiece on Automatic Transfer Equipment



	Sensor 1	Sensor 2
Workpiece A	ON	OFF
Workpiece B	ON	ON

Automatically Distinguish Different Workpieces (Two Air Sensors)

Action Description

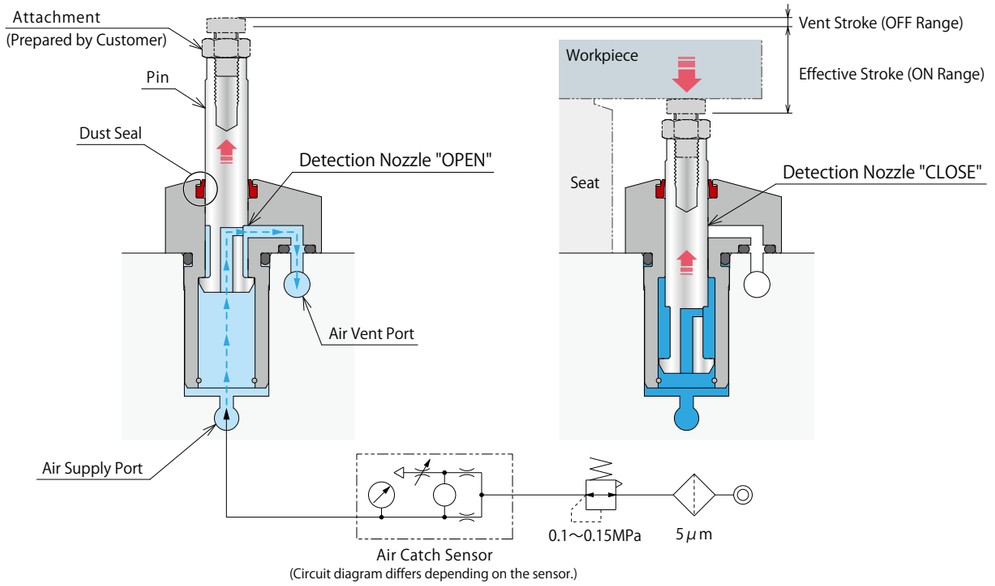
■ Sensor OFF

The pin ascends when air is supplied through an air catch sensor. When the pin ascends to the vent stroke, the air is discharged through air vent port and the sensor pressure decreases.

■ Sensor ON

When the pin descends to the effective stroke range, the detection nozzle is closed and the sensor pressure increases.

※ Please refer to the performance curve on P.319 for the pin thrust force.



- Air catch sensor is required in order to conduct the action confirmation.
  Air Operating Pressure：0.1~0.15MPa
  Recommended Air Catch Sensor

Maker	SMC	CKD
Name	Air Catch Sensor	Gap Switch
Model	ISA3-G , ISA2-H	GPS2-07-15

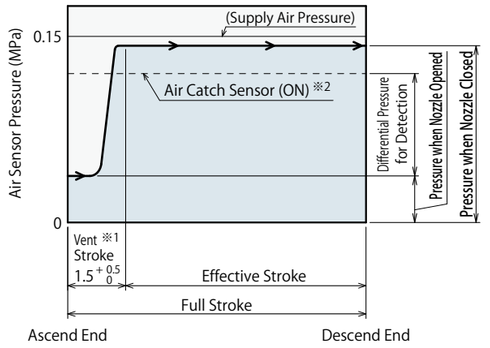
- Please refer to maker's catalog etc. for the detail of the air catch sensor.
- Continuously supply air pressure when exposed to environment with coolant and cutting chips.
- Air vent port must be open to the atmosphere, and prevent coolant and chips from entering the air vent port. The air catch sensor can malfunction if the air vent port is blocked.

※1. There is a certain tolerance where the detection nozzle is fully closed and pressurising is completed depending on the sensor structure.

※2. The position where the air catch sensor has ON signal output varies depending on the sensor setting.

- Air Sensing Chart (Number Directly Connected to Sensor Pin: 1)

Sensing chart shown is the relationship between the stroke and detection circuit air pressure.



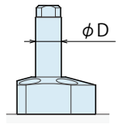
Model No. Indication

WWA0 09 0 - 35

1 2 3

1 Pin Outer Diameter

09 : φD = 9 mm
12 : φD = 12 mm

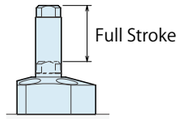


2 Design No.

0 : Revision Number

3 Stroke

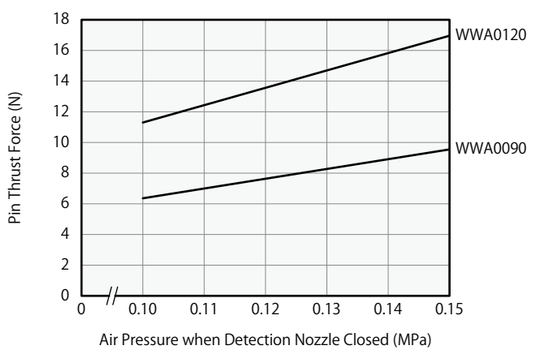
05 : Full Stroke 5 mm
35 : Full Stroke 35 mm



Specifications

Model No.		WWA0090-05	WWA0090-35	WWA0120-35
Full Stroke	mm	5	35	35
Vent Stroke	mm	$1.5^{+0.5}_{0}$	$1.5^{+0.5}_{0}$	$1.5^{+0.5}_{0}$
Effective Stroke	mm	(3.5)	(33.5)	(33.5)
Max. Operating Pressure	MPa	0.15		
Min. Operating Pressure	MPa	0.10		
Usable Fluid		Dry Air		
Operating Temperature	℃	0～70		
Mass	g	75	105	140

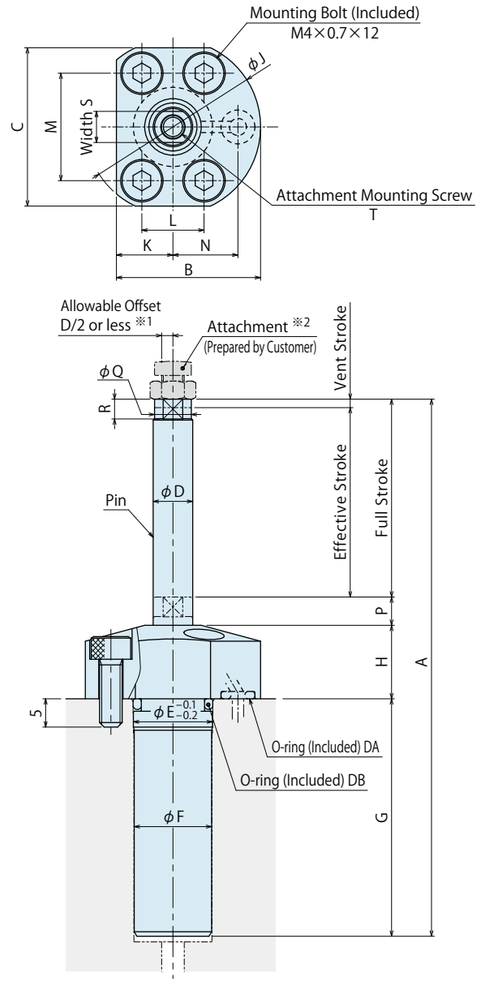
Pin Thrust Force Performance Curve



Note:
1. The performance curve shows the theoretical thrust within the effective stroke range (when the detection nozzle is closed.) The thrust in the vent stroke range is lower than the theoretical thrust.

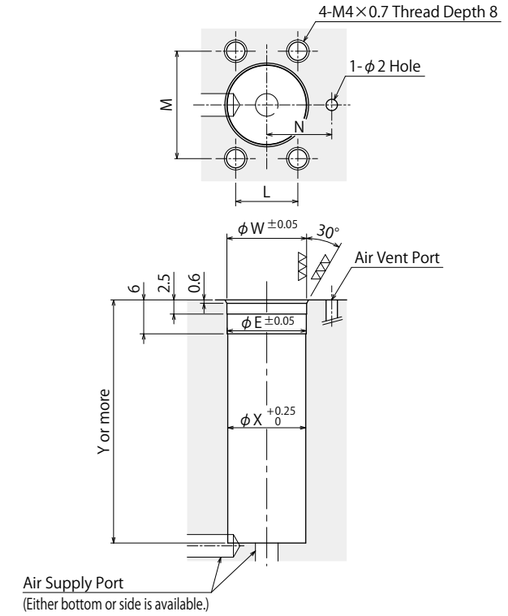
External Dimensions

※This drawing shows the ascended state of the pin.



Notes:
※1. When the contact point of workpiece and attachment is offset from the pin's center axis, the offset amount should be D/2 or less.
※2. Attachment is not included. Prepare it if necessary.

Mounting Hole Machining Dimensions



External Dimensions and Machining Dimensions of Mounting

(mm)

Model No.	WWA0090-05	WWA0090-35	WWA0120-35
Full Stroke	5	35	35
Vent Stroke	$1.5^{+0.5}_{0}$	$1.5^{+0.5}_{0}$	$1.5^{+0.5}_{0}$
Effective Stroke	(3.5)	(33.5)	(33.5)
A	35.5	95.5	97
B	27.5	27.5	29.5
C	29	29	31
D	9	9	12
E	16	16	19
F	15.7	15.7	18.7
G	12	42	42
H	13	13	14
J	33	33	36
K	11	11	11.5
L	13	13	14
M	20	20	22
N	12.5	12.5	14
P	5.5	5.5	6
Q	8.5	8.5	11.5
R	4	4	4.5
S	7	7	10
T	M5×0.8 Thread Depth 8	M5×0.8 Thread Depth 8	M6×1 Thread Depth 11
W	16.1	16.1	19.1
X	15.8	15.8	18.8
Y	13	43	43
O-ring DA	AS568-006 (90°)	AS568-006 (90°)	AS568-006 (90°)
O-ring DB	AS568-014 (90°)	AS568-014 (90°)	AS568-016 (90°)

Notes for Attachment Design

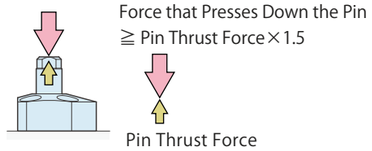
The attachment mass should be as shown in the table below.

Model No.	WWA0090-05	WWA0090-35	WWA0120-35
Attachment Mass	10g or less	10g or less	20g or less

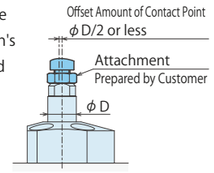
Cautions

Notes for Design

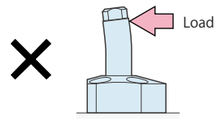
1) Check Specifications
- Please use each product according to its specifications.
- Force that a workpiece presses down the pin should be 1.5 times or more than the pin thrust force.



2) Attachment
- When the contact point of workpiece and attachment is offset from the pin's center axis, the offset amount should be D/2 or less.
- Attachment weight must be less than the values shown in the notes for attachment design on P.320.



3) Thrust Load
- Make sure not to apply transverse load towards the pin's stroke direction.



4) When using on a welding fixture, the pin surface should be protected.
- If spatter gets onto the pin it leads to sliding malfunction and no proper operation is ensured.

5) Chattering
- When chattering occurs near the end of stroke or when the pin stops while ascending please adjust the supply air pressure.

Installation Notes

1) Check the fluid to use.
- Please supply filtered clean dry air.
- Oil supply with a lubricator etc. is unnecessary.

2) Procedure before Piping
- The pipeline, piping connector and fixture circuits should be cleaned and flushed thoroughly.
  The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in the air circuit.

3) Applying Sealing Tape
- Wrap with tape 1 to 2 times following the screwing direction.
- Pieces of the sealing tape may lead to air leaks and malfunction.
- In order to prevent a foreign substance from going into the product during the piping work, it should be carefully cleaned before working.

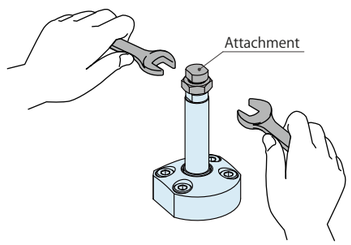
4) Mounting Pneumatic Sensor Pin
- When mounting the product use all hexagon socket bolts (with tensile strength of 12.9) and tighten them with the torque shown in the chart below.

Model No.	Thread Size	Tightening Torque (N·m)
WWA0090–□	M4×0.7	3.2
WWA0120–35	M4×0.7	3.2

- Apply an adequate amount of grease to the O-ring.
- If it is mounted under dry state, the O-ring may have twisting or be defective.

5) Mounting Attachment
- When mounting the attachment, stop the pin with a spanner at edge and tighten it with torque as shown in the table below.

Model No.	Head Thread Size	Tightening Torque (N·m)
WWA0090–□	M5×0.8	3.2
WWA0120–35	M6×1	5



※ Please refer to P.1239 for common cautions. ・Notes on Handling ・Maintenance/Inspection ・Warranty

MEMO

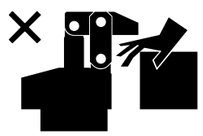
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
- The hydraulic machine and air compressor should be handled and maintained by qualified personnel.

2) Do not handle or remove the machine unless the safety protocols are ensured.
① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
③ After stopping the machine, do not remove until the temperature cools down.
④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch clamp (cylinder) while clamp (cylinder) is working. Otherwise, your hands may be injured due to clinching.

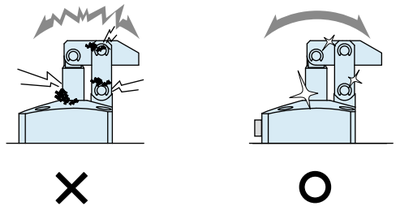


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

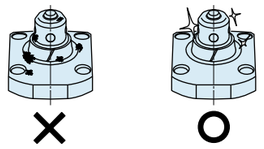
Maintenance and Inspection

1) Removal of the Machine and Shut-off of Pressure Source
- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the piston rod and plunger.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.



3) Please clean out the reference surface regularly (taper reference surface and seating surface) of locating machine. (VS/VT/VFL/VFM/VFJ/VFK/WVS/VWM/VWK/VX/VXF)
- Location products, except VX/VXF model, can remove contaminants with cleaning functions.
When installing pallets makes sure there is no thick sludge like substances on pallets.
- Continuous use with dirt on components will lead to locating functions not work properly, leaking and malfunction.



4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.

5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.

6) Make sure the hydraulic fluid has not deteriorated.

7) Make sure there is smooth action and no abnormal noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

8) The products should be stored in the cool and dark place without direct sunshine or moisture.

9) Please contact us for overhaul and repair.

Warranty

1) Warranty Period
- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope
- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
③ If it is used or handled in inappropriate way by the operator.
(Including damage caused by the misconduct of the third party.)
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Other caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.