

Detects the Workpiece with Long Stroke Range • Single Air Circuit

Pneumatic sensor pin automatically distinguishes different workpieces.





Cautions / Others

Pneumatic Hole Clamp SWA

Pneumatic Swing Clamp WHA

Double Piston Pneumatic Swing Clamp

WHD Pneumatic Link Clamp

WCA

Air Flow Control Valve



Sensor OFF

Detects Workpiece on Automatic Transfer Equipment

Action Description

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

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Sensor 1

ON

ON

Automatically Distinguish Different Workpieces (Two Air Sensors)

Workpiece A

Workpiece B

Sensor 2

OFF

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.361 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 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) The sensing chart shows the relationship between the stroke and the detection circuit air pressure.







1 Pin Outer Diameter

- **09** : $\phi D = 9 \text{ mm}$
- **12** : $\phi D = 12 \text{ mm}$

2 Design No.

0 : Revision Number

3 Stroke

05 :Full Stroke 5 mm

35 : Full Stroke 35 mm



φD

Specifications

Model No.		WWA0090-05	WWA0090-35	WWA0120-35
Full Stroke	mm	5	35	35
Vent Stroke	mm	1.5 +0.5	1.5 +0.5	1.5 +0.5
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	
Weight	g	75	105	140

• Pin Thrust Force Performance Curve





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.

Features	Action Description	Model No. Indication	Specifications	Performance Curve	External Dimensions	Cautions	

External Dimensions

 $\% {\rm This}\ {\rm drawing}\ {\rm shows}\ {\rm the}\ {\rm ascended}\ {\rm state}\ {\rm of}\ {\rm the}\ {\rm pin}.$



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

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Model No.	WWA0090-05	WWA0090-35	WWA0120-35
Full Stroke	5	35	35
Vent Stroke	1.5 +0.5	1.5 +0.5	1.5 +0.5
Effective Stroke	(3.5)	(33.5)	(33.5)
А	35.5	95.5	97
В	27.5	27.5	29.5
С	29	29	31
D	9	9	12
E	16	16	19
F	15.7	15.7	18.7
G	12	42	42
Н	13	13	14
J	33	33	36
К	11	11	11.5
L	13	13	14
Μ	20	20	22
Ν	12.5	12.5	14
Р	5.5	5.5	6
Q	8.5	8.5	11.5
R	4	4	4.5
S	7	7	10
Т	M5×0.8 Thread Depth 8	M5×0.8 Thread Depth 8	M6×1 Thread Depth 11
W	16.1	16.1	19.1
Х	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 weight should be as shown in the table below.

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

High-Power

Hydraulic Series

Valve / Coupler

Hydraulic Unit

Accessories Cautions / Others

Pneumatic

Hole Clamp

Pneumatic

Swing Clamp

Double Piston Pneumatic Swing Clamp

Pneumatic Link Clamp

Air Flow Control Valve BZW

Pneumatic

(----)

Expansion Locating Pin

VWM

VWK

WWA

neumatic

SWA

WHA

WHD

WCA

Manual Operation

Series

Cautions

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



Force that presses down the pin \geq Pin Thrust Force \times 1.5

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.

than the values shown in the notes for attachment design on P.362.

Attachment weight must be less

Attachment
 Prepared by Customer
 ϕ D

Offset Amount of Contact Point

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



- Protect the exposed area of the piston rod when using on a welding fixture.
- If spatter attaches to the sliding surface it could lead to malfunction and fluid leakage.
- 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 leakage and malfunction.
- In order to prevent contamination during the piping work, it should be carefully cleaned before working.
- 4) Mounting Pneumatic Sensor Pin
- When mounting the product use all hexagonal socket bolts (with tensile strength of 12.9) and tighten them with the torque shown in the table below.

Model No.	Mounting Bolt 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) Installation of the 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



Features	Action Description	Model No. Indication	Specifications	Performance Curve	External Dimensions	Cautions	SMEK ony in Innovation
MEMO							High-Power Series
							Pneumatic Series
							Hydraulic Series
							Valve / Coupler Hydraulic Unit
							Manual Operation Accessories
							Cautions / Others

Pneumatic Hole Clamp SWA

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Double Piston Pneumatic Swing Clamp WHD

Pneumatic Link Clamp WCA

Air Flow Control Valve BZW

Pneumatic Expansion Locating Pin VWM VWK

Pneumatic Sensor Pin WWA

Cautions

- Notes on Handling
- 1) It should be operated by qualified personnel.
- The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
- ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
- ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
- ③ After stopping the product, do not remove until the temperature drops.
- ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
- Do not touch a clamp (cylinder) while it 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 safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
- 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 and fluid leakage.



- Please clean out the reference surfaces on a regular basis (taper reference surface and seating surface) of the locating products. (VS/VT/VFL/VFM/VFJ/VFK/WVS/VWM/VWK/VX/VXE/VXF)
- The locating products, except VX/VXE/VXF model, can remove contaminants with cleaning functions. However, hardened cutting chips, adhesive coolant and others may not be removed. Make sure there are no contaminants before installing a workpiece/pallet.
- Continuous use with contaminant on components will lead to locating accuracy failure, malfunction and fluid leakage.



- If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.
- 5) Regularly tighten nut, bolt, pin, cylinder, pipe line and others to ensure proper use.
- 6) Make sure the hydraulic fluid has not deteriorated.
- 7) Make sure there is a smooth action without an irregular noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 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



High-Power Series

Pneumatic Series

Pheum

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Cautions

(For Hydraulic Series) Hydraulic Fluid List

> Notes on Hydraulic Cylinder Speed Control Circuit

Notes on Handling Maintenance/ Inspection

Warranty

Company Profile
Company Profile
Our Products

Our Products History

Index Search by Alphabetical Order

Sales Offices

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 operated in an 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.



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