Auto Backup Pin

Model WDC

Prevents Chattering and Distortion Counter to the Load

Pin Touches Workpiece Softly and Stops to Provide Support

Before

With No Backup

Chattering

Chattering on base plate, molding and workpiece due to the work load.

After

With Backup

Prevents Chattering

Prevention of chattering from the load enables high-quality implementation and processing.
(The pin touches workpiece softly and holds it instantly.)
Productivity Improvement • Cost Reduction : From Manual to Automatic

**After**
Automatic Following of the Height

The pin (plunger) descends and reaches the reference surface by the workpiece weight (slight force). Since the pin descends according to workpiece, it can absorb the height tolerance of workpiece and instantly complete the height adjustment. Time reduction in setup improves machine availability.

**Before**
No Time Saving (Manual Type)

Minute adjustment in unreachable or non-visible places is difficult and takes time.

Pin descends according to workpiece.

Withstand the load which is less than support force

Zero Clearance

Able to Install Attachment

Quality Improvement • Yield Rate Reduction : Suitable for the Work Required of Accuacy

**After**
Zero Clearance

It enables high-accuracy implementation and yield rate reduction, since there is no clearance regardless of the variation in height caused by workpiece distortion, the gap between seat surface and tip of the pin, or solid difference.

**Before**
Chattering

General fixed backup pin tends to have chattering due to the variation in height caused by workpiece distortion, the gap between seat surface and tip of the pin, or individual differences in pin height. Chattering causes low accuracy and assembling failure. Moreover, every time component changes, the backup pin has to be changed.
**Action Description**

※ The internal structure is a simplified figure. Actual components are different.

![Diagram of Auto Backup Pin](image)

**Before setting (When releasing)**

**Release Air Pressure** ON

Supply release air pressure to unlock the plunger. The plunger lifts up to the stroke-end by plunger spring.

**When setting workpiece**

**Release Air Pressure** ON

Set a workpiece. The plunger goes down due to the weight of the workpiece. ※ The plunger does not go down when plunger spring force is stronger than the workpiece weight.

**When supporting**

**Release Air Pressure** OFF

When release air pressure is OFF, the collet locks the plunger securely with the spring for locking. It withstands the load which is lower than support force.

**Application Examples**

- **Press-Fit Machine**
- **Thin-walled Section**
- **HDD Installation・Press Fit**
- **Base Plate, LCD Panel etc.**
Model No. Indication

**WDC00 3 0 - E**

E : Spring Advance Model

Design No. (Revision Number)

Support Force : 3N

External Dimensions

※The drawing shows the released condition of WDC0030-E.

![External Dimensions Diagram](image)

**Accessories : Manifold Block for Mounting**

Please contact us for further information.

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>WDC0030-E</th>
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<tbody>
<tr>
<td>Support Force <strong>(1)</strong></td>
<td>N</td>
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<tr>
<td>Plunger Stroke</td>
<td>mm</td>
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<tr>
<td>Cylinder Capacity</td>
<td>mm³</td>
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<tr>
<td>Plunger Spring Force <strong>(2)</strong></td>
<td>N</td>
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<tr>
<td>Max. Operating Pressure</td>
<td>MPa</td>
</tr>
<tr>
<td>Min. Operating Pressure</td>
<td>MPa</td>
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<td>Withholding Pressure</td>
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<tr>
<td>Operating Temperature</td>
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<tr>
<td>Usable Fluid</td>
<td>Dry Air</td>
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<tr>
<td>Recommended Tightening Torque for Main Body</td>
<td>N·m</td>
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<tr>
<td>Mass</td>
<td>g</td>
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</table>

Machining Dimension for Recommended Mounting Hole

Accessories : Manifold Block for Mounting

Cautions

※1. This product performs lock action with spring and release action with air pressure; therefore, support force is constant.
※2. Prepare the stopper for the thin and light workpiece if necessary.

When using multiple backup pins, workpiece may be pushed up by plunger spring force.

1. When mounting an attachment on the tip of plunger, the load ratio to the plunger spring force has to be 30% or less.
(Plunger direction either vertical or horizontal: the load ratio has to be 30% or less.)
Ex.) Plunger spring force=0.1~0.3N

Attachment maximum mass=0.1×0.3/0.009807=3g

However, the calculated value may differ due to the plunger sliding friction and spring specific etc., so the load ratio should be low as much as possible.
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) Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/VRA/VRC/VX/VXF/WVS/VWM/VWK).
   • Locating products (except VRA/VRC/VX/VXF and SWR without air blow port) 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) Regularly tighten pipings, mounting bolts, nuts, snap rings and cylinders to ensure proper use.
5) Make sure the hydraulic fluid has not deteriorated.
6) 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.
7) The products should be stored in the cool and dark place without direct sunshine or moisture.
8) 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 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.
Sales Offices

Sales Offices across the World

<table>
<thead>
<tr>
<th>Country</th>
<th>TEL.</th>
<th>FAX.</th>
<th>Address</th>
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<tbody>
<tr>
<td>Japan</td>
<td>TEL. +81-78-991-5162</td>
<td>FAX. +81-78-991-8787</td>
<td>Kosmek Ltd. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241</td>
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<tr>
<td>Overseas Sales</td>
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<tr>
<td>USA</td>
<td>TEL. +1-630-620-7650</td>
<td>FAX. +1-630-620-9015</td>
<td>650 Springer Drive, Lombard, IL 60148 USA</td>
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<td>KOSMEK (USA) LTD.</td>
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<td>Mexico</td>
<td>TEL. +52-442-161-2347</td>
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<td>Blvd Jurica la Campana 1040, B Colonia Punta Juriquilla Queretaro, QRO 76230 Mexico</td>
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<tr>
<td>KOSMEK USA Mexico Office</td>
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<td>EUROPE</td>
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<td>KOSMEK EUROPE GmbH</td>
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<td>KOSMEK (CHINA) LTD.</td>
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<td>F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore 560052 India</td>
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<td>KOSMEK LTD. - INDIA</td>
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<tr>
<td>Thailand Representative Office</td>
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<tr>
<td>Full Life Trading Co., Ltd.</td>
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<td>FAX. +63-2-310-7286</td>
<td>Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427</td>
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<tr>
<td>Indonesia</td>
<td>TEL. +62-21-5818632</td>
<td>FAX. +62-21-5814857</td>
<td>Ruko Green Garden Blok Z-ⅱ No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia</td>
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<td>P.T. PANDU HYDRO PNEUMATICS</td>
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Sales Offices in Japan

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<td>TEL.078-991-5115</td>
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<tr>
<td>Osaka Sales Office</td>
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<td>Tokyo Sales Office</td>
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<td>Nagoya Sales Office</td>
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<tr>
<td>Fukuoka Sales Office</td>
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- Mexico

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