

# Pneumatic Work Support

## Rodless Hollow

Model WNA



## Prevents Deformation Caused by Load

**Work Support holds the rod and prevents dislocation, overload to the cylinder and deformation caused by load.**

※ There is slight displacement caused by load (reaction force). Please refer to the load/displacement graph.

Before

Requires powerful cylinder to withstand the load.

Excessive thrust is applied to the workpiece.

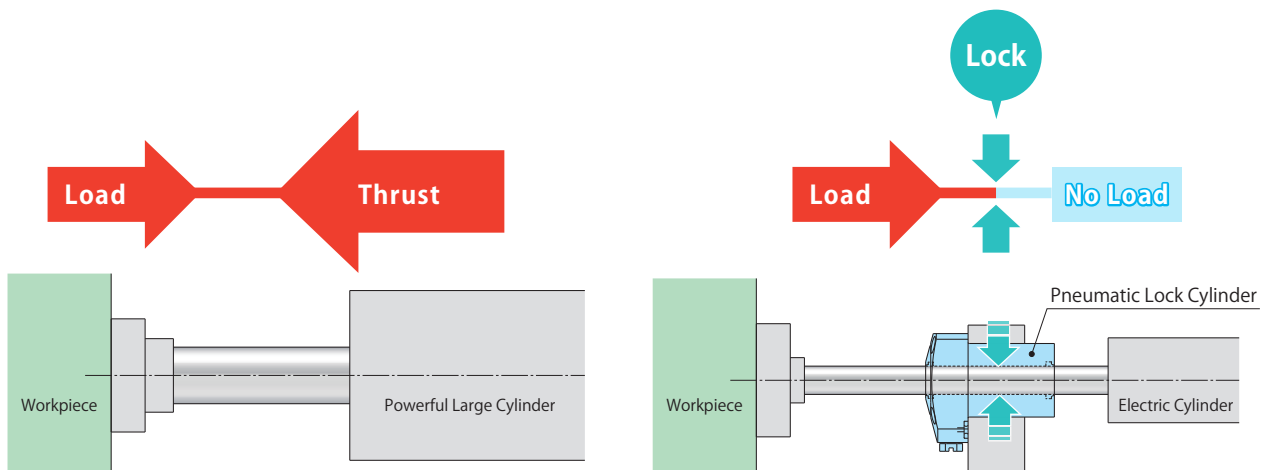
Overload can be applied to the cylinder.

After

Work support grips and holds the rod so that the cylinder does not receive the load. Compact and low power cylinder can be selected.

Able to use the cylinder with minimal thrust.

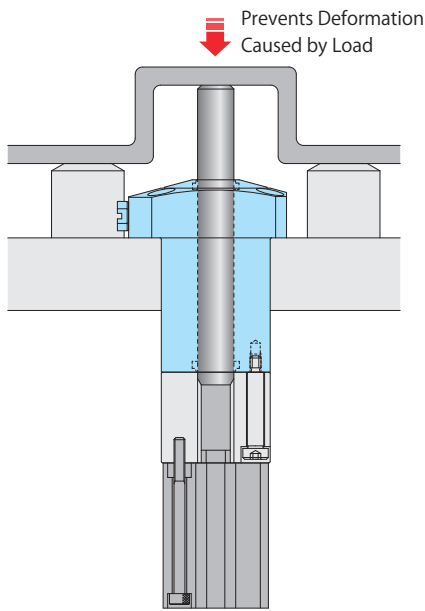
Does not transmit the load to the cylinder and prevents the overload.



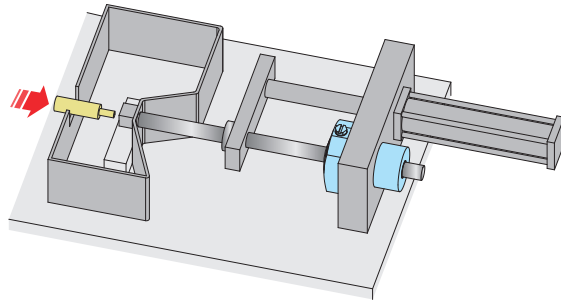
- Locating + Clamp
- Locating
- Clamp
- Support**
- Valve · Coupler
- Cautions · Others

- Auto Backup Pin
- WDC
- High-Power Pneumatic Work Support
- WNC
- Rodless Hollow Work Support**
- WNA**
- Manifold Block/Nut
- DZ-R
- DZ-C
- LZ-S
- WNZ-SQ

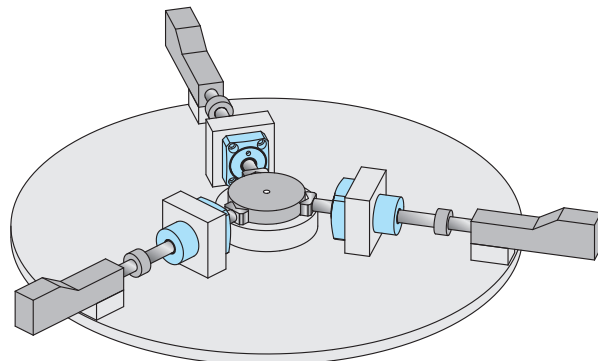
● Application Examples



Use as Long Stroke Work Support by Using with a Cylinder

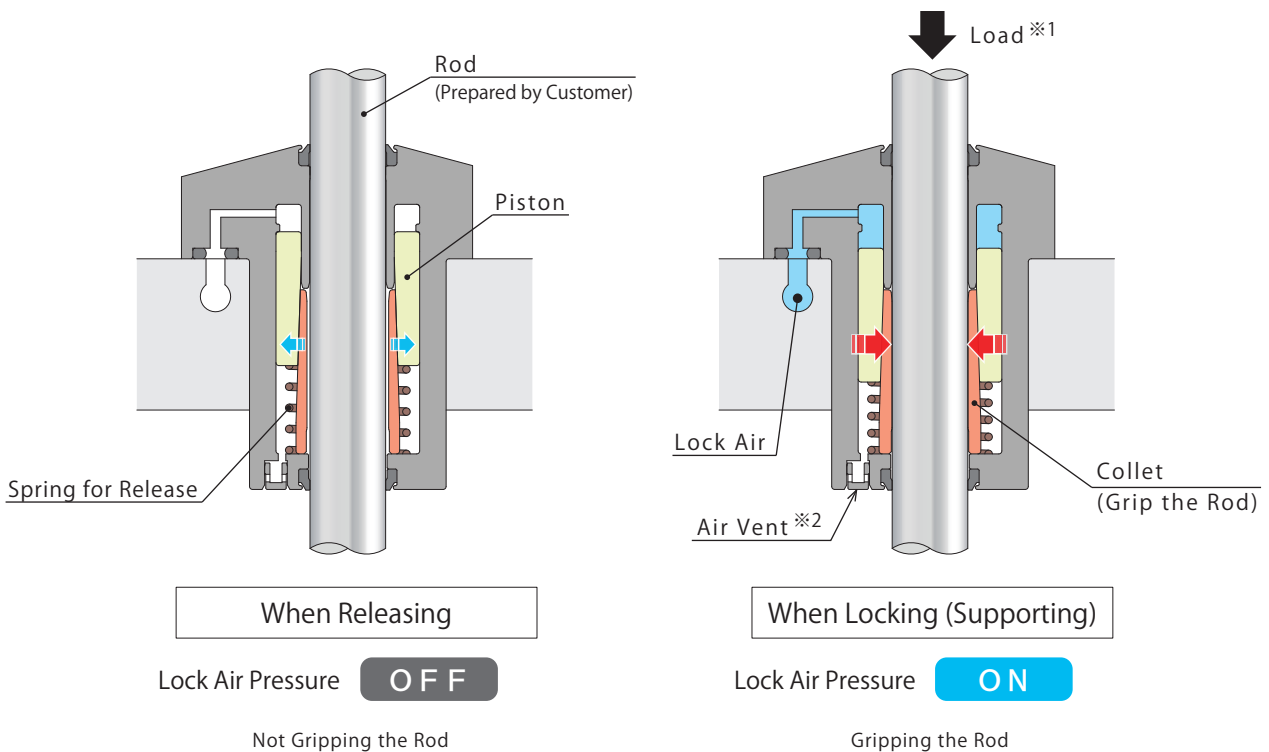


Support for Press Fitting of Parts and Screw Fastener



Locates with Electric Cylinder · Withstands the Load with Lock Cylinder

● Action Description ※ This is a simplified drawing. Actual components are different.



Notes: ※1. The load acts towards the arrow direction (↓) as shown in the drawing. (If used in a reversed position the internal parts are likely to be damaged.)  
 ※2. Please refer to the cautions on P.29 for the air vent.

## ● Model No. Indication

WNA **070** **0** - G - D

1      2

### 1 Support Force

- 025** : Support Force 0.25 kN (Supply Air Pressure 0.5MPa)
- 040** : Support Force 0.4 kN (Supply Air Pressure 0.5MPa)
- 070** : Support Force 0.7 kN (Supply Air Pressure 0.5MPa)
- 100** : Support Force 1.0 kN (Supply Air Pressure 0.5MPa)
- 200** : Support Force 2.0 kN (Supply Air Pressure 0.5MPa)
- 400** : Support Force 4.0 kN (Supply Air Pressure 0.5MPa)

### 2 Design No.

- 0** : Revision Number

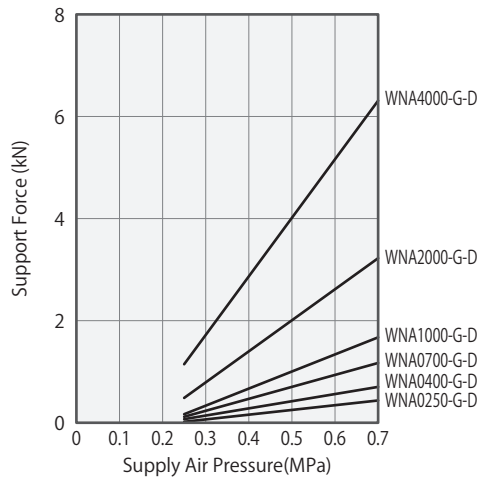
## ● Specifications

| Model No.  | WNA0250-G-D            | WNA0400-G-D            | WNA0700-G-D            | WNA1000-G-D            | WNA2000-G-D            | WNA4000-G-D             |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Support Force (at 0.5MPa) kN                         | 0.25                   | 0.4                    | 0.7                    | 1.0                    | 2.0                    | 4.0                     |
| Support Force (Calculation Formula) <sup>※1</sup> kN | $0.93 \times P - 0.21$ | $1.40 \times P - 0.28$ | $2.33 \times P - 0.47$ | $3.33 \times P - 0.67$ | $6.06 \times P - 1.03$ | $11.43 \times P - 1.71$ |
| Cylinder Capacity cm <sup>3</sup>                    | 0.6                    | 1.0                    | 1.7                    | 2.9                    | 5.7                    | 11.1                    |
| Max. Operating Pressure MPa                          | 0.7                    |                        |                        |                        |                        |                         |
| Min. Operating Pressure MPa                          | 0.25                   |                        |                        |                        |                        |                         |
| Withstanding Pressure MPa                            | 1.0                    |                        |                        |                        |                        |                         |
| Operating Temperature °C                             | 0~70                   |                        |                        |                        |                        |                         |
| Mass kg  | 0.10                   | 0.15                   | 0.25                   | 0.35                   | 0.90                   | 2.00                    |

Note: ※1. P : Supply Air Pressure (MPa)

**Performance Curve**

**Support Force Graph** ※ This graph shows the support force under static load condition.



| Model No.                              | Support Force (kN)     |                        |                        |                        |                        |                         |
|--|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
|  | WNA0250-G-D            | WNA400-G-D             | WNA700-G-D             | WNA1000-G-D            | WNA2000-G-D            | WNA4000-G-D             |
| Supply Air Pressure(MPa)               |                        |                        |                        |                        |                        |                         |
| 0.7                                    | 0.44                   | 0.7                    | 1.2                    | 1.7                    | 3.2                    | 6.3                     |
| 0.6                                    | 0.35                   | 0.6                    | 0.9                    | 1.3                    | 2.6                    | 5.1                     |
| 0.5                                    | 0.25                   | 0.4                    | 0.7                    | 1.0                    | 2.0                    | 4.0                     |
| 0.4                                    | 0.16                   | 0.3                    | 0.5                    | 0.7                    | 1.4                    | 2.9                     |
| 0.3                                    | 0.07                   | 0.1                    | 0.2                    | 0.3                    | 0.8                    | 1.7                     |
| 0.25                                   | 0.02                   | 0.1                    | 0.1                    | 0.2                    | 0.5                    | 1.1                     |
| Support Force Formula <sup>#1</sup> kN | $0.93 \times P - 0.21$ | $1.40 \times P - 0.28$ | $2.33 \times P - 0.47$ | $3.33 \times P - 0.67$ | $6.06 \times P - 1.03$ | $11.43 \times P - 1.71$ |

Note: ※ 1. P : Supply air pressure (MPa)

Locating + Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Auto Backup Pin

WDC

High-Power Pneumatic Work Support

WNC

Rodless Hollow Work Support

WNA

Manifold Block/Nut

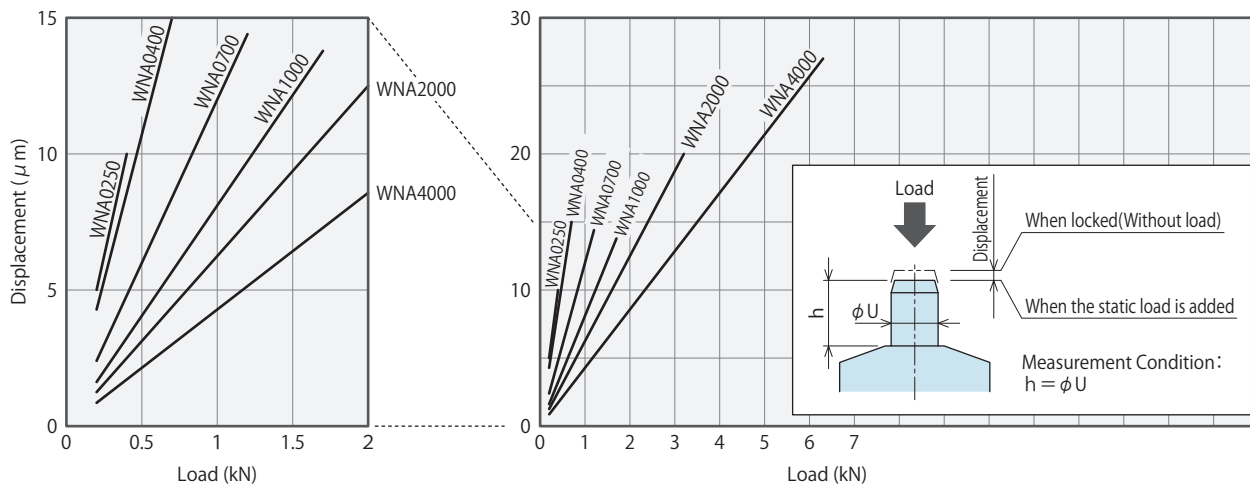
DZ-R

DZ-C

LZ-S

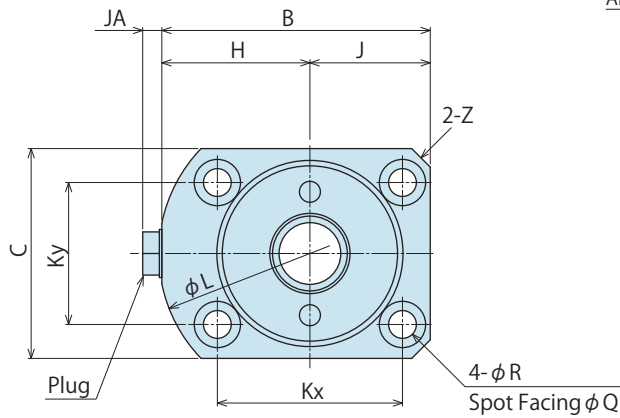
WNZ-SQ

**Load / Displacement Graph** ※ This graph shows the static load-displacement at the time of supplied air pressure 0.7MPa.

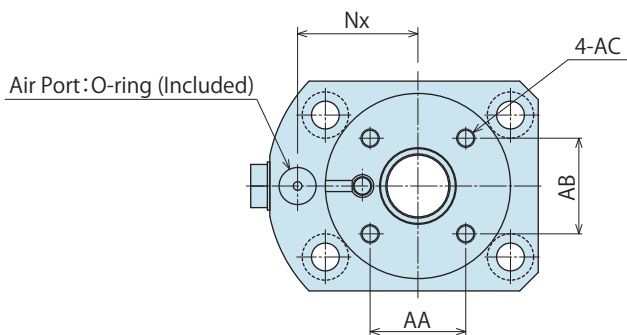
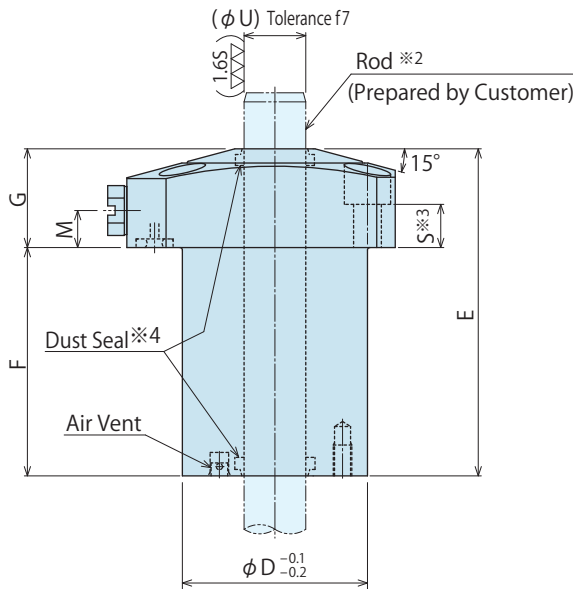


External Dimensions

※ This drawing shows WNA-G-D.



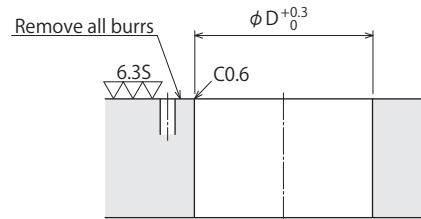
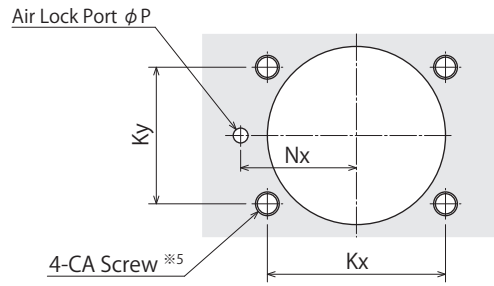
Load※1



Notes:

- ※ 1. The load acts towards the arrow direction (↓) as shown in the drawing. If used in a reversed position the internal parts are likely to be damaged.
- ※ 2. The surface hardness of the rod (prepared by the customer) should be above HRC60. (The hard chrome plated metal is acceptable.)
- ※ 3. Mounting bolts are not provided. Customer should prepare based on dimension "S".
- ※ 4. Deburr the rod end, and pay attention not to damage the dust seal when the rod is inserted into the body (upper and lower parts).

Machining Dimensions of Mounting Area



Note:

- ※ 5. CA tapping depth of the mounting bolt should be decided according to the mounting height referring to dimensions 'S'.

## Model No. Indication

(Format Example : WNA0250-G-D, WNA2000-G-D)

WNA **025** **0** - G - D

1      2

1 Body Size

2 Design No.

Locating + Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Auto Backup Pin

WDC

High-Power Pneumatic Work Support

WNC

Rodless Hollow Work Support

WNA

Manifold Block/Nut

DZ-R

DZ-C

LZ-S

WNZ-SQ

## External Dimensions and Machining Dimensions for Mounting

(mm)

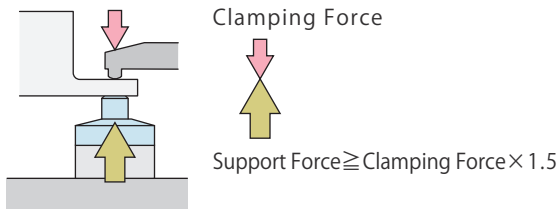
| Model No. | WNA0250-G-D                           | WNA0400-G-D                            | WNA0700-G-D                            | WNA1000-G-D                            | WNA2000-G-D                            | WNA4000-G-D                            |
|-----------|---------------------------------------|--|--|--|--|--|
| B         | 35.5                                  | 38.5                                   | 43.5                                   | 47                                     | 61                                     | 81                                     |
| C         | 25                                    | 29                                     | 34                                     | 40                                     | 51                                     | 70                                     |
| D         | 22                                    | 26                                     | 30                                     | 36                                     | 48                                     | 65                                     |
| E         | 41                                    | 45.5                                   | 53                                     | 60                                     | 70                                     | 86                                     |
| F         | 26                                    | 30.5                                   | 37                                     | 43                                     | 45                                     | 59                                     |
| G         | 15                                    | 15                                     | 16                                     | 17                                     | 25                                     | 27                                     |
| H         | 20                                    | 22                                     | 24                                     | 27                                     | 35.5                                   | 46                                     |
| J         | 15.5                                  | 16.5                                   | 19.5                                   | 20                                     | 25.5                                   | 35                                     |
| Kx        | 23                                    | 25                                     | 30                                     | 31.4                                   | 40                                     | 55                                     |
| Ky        | 17                                    | 21                                     | 23                                     | 31.4                                   | 40                                     | 55                                     |
| L         | 41                                    | 45                                     | 49                                     | 55                                     | 73                                     | 94                                     |
| M         | 6                                     | 6                                      | 6                                      | 6                                      | 11                                     | 11                                     |
| Nx        | 15.5                                  | 17.5                                   | 19.5                                   | 22.5                                   | 30                                     | 39.5                                   |
| P         | max. 2.5                              | max. 2.5                               | max. 2.5                               | max. 2.5                               | max. 3                                 | max. 5                                 |
| Q         | 6                                     | 6                                      | 7.5                                    | 7.5                                    | 9.5                                    | 11                                     |
| R         | 3.4                                   | 3.4                                    | 4.5                                    | 4.5                                    | 5.5                                    | 6.8                                    |
| S         | 8                                     | 8                                      | 7                                      | 8                                      | 13                                     | 12                                     |
| U         | 8 <sup>-0.013</sup> <sub>-0.028</sub> | 10 <sup>-0.013</sup> <sub>-0.028</sub> | 10 <sup>-0.013</sup> <sub>-0.028</sub> | 12 <sup>-0.016</sup> <sub>-0.034</sub> | 14 <sup>-0.016</sup> <sub>-0.034</sub> | 20 <sup>-0.020</sup> <sub>-0.041</sub> |
| Z         | C2                                    | C2                                     | C3                                     | C2                                     | C3                                     | R47                                    |
| AA        | -                                     | -                                      | 15.5                                   | 20                                     | 25.5                                   | 34                                     |
| AB        | -                                     | -                                      | 15.5                                   | 20                                     | 25.5                                   | 34                                     |
| AC        | -                                     | -                                      | M3×0.5 Thread Depth 5                  | M3×0.5 Thread Depth 5                  | M5×0.8 Thread Depth 8                  | M5×0.8 Thread Depth 8                  |
| CA        | M3×0.5                                | M3×0.5                                 | M4×0.7                                 | M4×0.7                                 | M5×0.8                                 | M6×1                                   |
| JA        | 3.1                                   | 3.1                                    | 3.1                                    | 3.1                                    | max. 1.5                               | max. 1.5                               |
| Plug      | M5×0.8<br>(CKD:FPL-M5)                | M5×0.8<br>(CKD:FPL-M5)                 | M5×0.8<br>(CKD:FPL-M5)                 | M5×0.8<br>(CKD:FPL-M5)                 | R1/8                                   | R1/8                                   |
| O-ring    | AS568-006(90°)                        | AS568-006(90°)                         | AS568-006(90°)                         | AS568-006(90°)                         | 1BP5                                   | 1BP7                                   |

**Cautions**

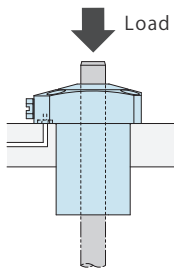
**Notes for Design**

1) Check Specifications

- Please use each product according to the specifications.
- When using a work support opposite to the clamp, set the support force at more than 1.5 times the clamping force.



- The load acts towards the arrow direction (↓) as shown in the drawing. If used in a reversed position the internal parts are likely to be damaged.



2) Operation without the Rod

- Do not supply air without setting the rod.

3) The Surface Hardness of the Rod

- The surface hardness of the rod should be above HRC60. (The hard chrome plated metal is acceptable.)

4) Outer Diameter of the Rod

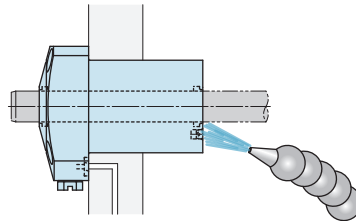
- The tolerance of the rod must be f7 grade (shown in the external dimensions). Otherwise proper operation may not be ensured.

5) When using on a welding fixture, the rod surface should be protected.

- If spatter gets onto the rod it leads to sliding malfunction and no proper supporting is ensured.

6) Appropriate Measures for the Vent Port

- The work support, although only slightly, breathes like a single-action cylinder. Take the environment where it is used into consideration to avoid taking in cutting fluid or other foreign materials.
- If it is used without a vent port it may not function properly.



## ● 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.  
Wrapping in the wrong direction will cause leaks and malfunction.
- Pieces of the sealing tape can lead to air leaks and malfunction.
- When piping, be careful that contaminant such as sealing tape does not enter in products.

### 4) Mounting the Work Support

- When mounting the work support, use hexagon socket bolts as multiple bolt holes for mounting (with tensile strength of 12.9) and tighten them with the torque shown in the chart below.

| Model No.   | Mounting Bolt Size | Tightening Torque (N·m) |
|-------------|--------------------|-------------------------|
| WNA0250-G-D | M3×0.5             | 1.3                     |
| WNA0400-G-D | M3×0.5             | 1.3                     |
| WNA0700-G-D | M4×0.7             | 3.2                     |
| WNA1000-G-D | M4×0.7             | 3.2                     |
| WNA2000-G-D | M5×0.8             | 6.3                     |
| WNA4000-G-D | M6×1               | 10                      |

※ Please refer to P.37 for common cautions.

• Notes on Handling

• Maintenance/Inspection

• Warranty



## ● 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 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 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) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
- 4) Regularly tighten nuts, bolts, pins, cylinders and pipe line 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.

Locating  
 +  
 Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Cautions

Installation Notes

Maintenance/  
Inspection

Warranty

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 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.

# Sales Offices

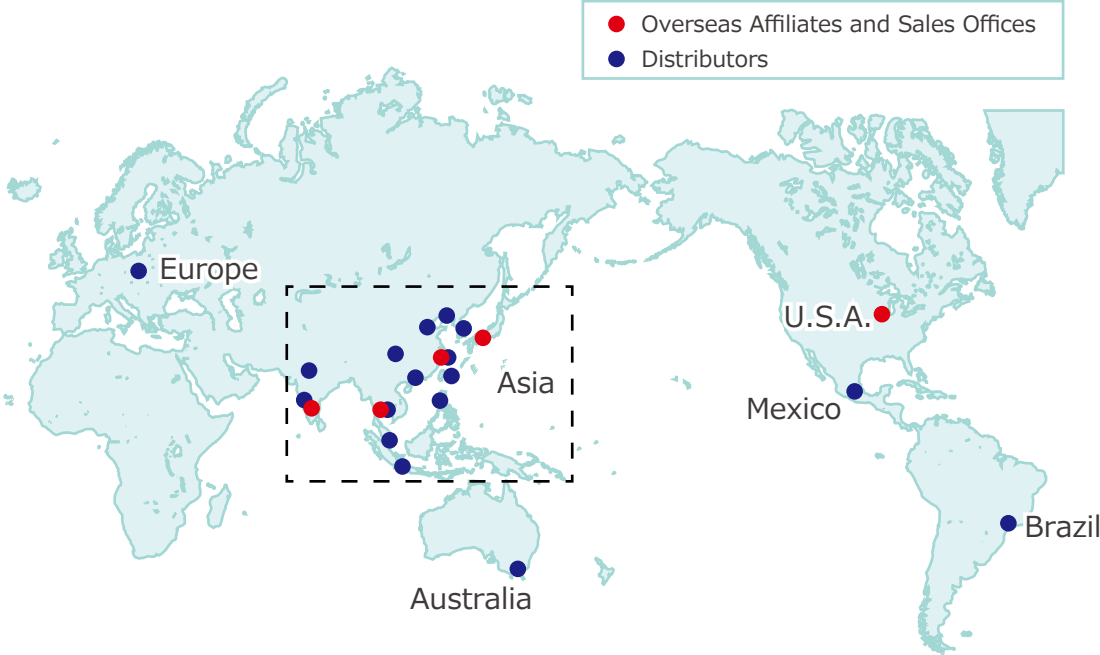
## Sales Offices across the World

|  |   |                               |
|--|---|-------------------------------|
| Japan  | <b>TEL. +81-78-991-5162</b>   | <b>FAX. +81-78-991-8787</b>   |
| Overseas Sales                                     | KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241<br>〒651-2241 兵庫県神戸市西区室谷2丁目1番5号                                 |                               |
| USA  | <b>TEL. +1-630-241-3465</b>   | <b>FAX. +1-630-241-3834</b>   |
| KOSMEK (USA) LTD.                                  | 1441 Branding Avenue, Suite 110, Downers Grove, IL 60515 USA  |                               |
| China  | <b>TEL.+86-21-54253000</b>  | <b>FAX.+86-21-54253709</b>    |
| KOSMEK (CHINA) LTD.<br>考世美(上海)貿易有限公司               | 21/F, Orient International Technology Building, No.58, Xiangchen Rd, Pudong Shanghai 200122., P.R.China<br>中国上海市浦东新区向城路58号东方国际科技大厦21F室 200122 |                               |
| India  | <b>TEL.+91-9880561695</b>   |                               |
| KOSMEK LTD - INDIA                                 | F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India  |                               |
| Thailand   | <b>TEL. +66-2-715-3450</b>  | <b>FAX. +66-2-715-3453</b>    |
| Thailand Representative Office                     | 67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand  |                               |
| Taiwan<br>(Taiwan Exclusive Distributor)           | <b>TEL. +886-2-82261860</b>   | <b>FAX. +886-2-82261890</b>   |
| Full Life Trading Co., Ltd.<br>盈生貿易有限公司            | 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511<br>台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)                                      |                               |
| Philippines<br>(Philippines Exclusive Distributor) | <b>TEL.+63-2-310-7286</b>   | <b>FAX. +63-2-310-7286</b>    |
| G.E.T. Inc, Phil.                                  | Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427                          |                               |
| Europe<br>(Europe Exclusive Distributor)           | <b>TEL. +43-463-287587-10</b>   | <b>FAX. +43-463-287587-20</b> |
| KOS-MECH GmbH                                      | Schleppplatz 2 9020 Klagenfurt Austria  |                               |
| Indonesia<br>(Indonesia Exclusive Distributor)     | <b>TEL. +62-21-5818632</b>  | <b>FAX. +62-21-5814857</b>    |
| P.T PANDU HYDRO PNEUMATICS                         | Ruko Green Garden Blok Z- II No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia                                       |                               |

## Sales Offices in Japan

|                      |                                   |                         |
|----------------------|-----------------------------------|-------------------------|
| Head Office          | <b>TEL.078-991-5115</b>           | <b>FAX.078-991-8787</b> |
| Osaka Sales Office   | 〒651-2241 兵庫県神戸市西区室谷2丁目1番5号       |                         |
| Overseas Sales       |                                   |                         |
| Tokyo Sales Office   | <b>TEL.048-652-8839</b>           | <b>FAX.048-652-8828</b> |
|                      | 〒331-0815 埼玉県さいたま市北区大成町4丁目81番地    |                         |
| Nagoya Sales Office  | <b>TEL.0566-74-8778</b>           | <b>FAX.0566-74-8808</b> |
|                      | 〒446-0076 愛知県安城市美園町2丁目10番地1       |                         |
| Fukuoka Sales Office | <b>TEL.092-433-0424</b>           | <b>FAX.092-433-0426</b> |
|                      | 〒812-0006 福岡県福岡市博多区上牟田1丁目8-10-101 |                         |

# Global Network



Asia Detailed Map

