High-Power Pneumatic Work Support

Model WNC

Strong Support Force with Wedge Function

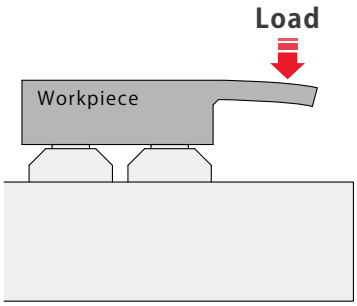
PAT.

Work support prevents chattering during machining workpiece and prevents deformation caused by pressing load.

※ Work support exerts higher clamping force than that of auto backup pin (model WDC).
Prevents chattering caused by machining load and dislocation or deformation caused by load during assembly or press fit.
Also it maintains workpiece during transfer.

Before

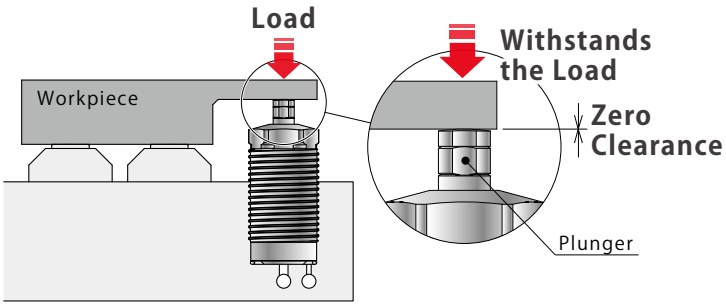
No Work Support



Chattering • Deformation

After

With Work Support

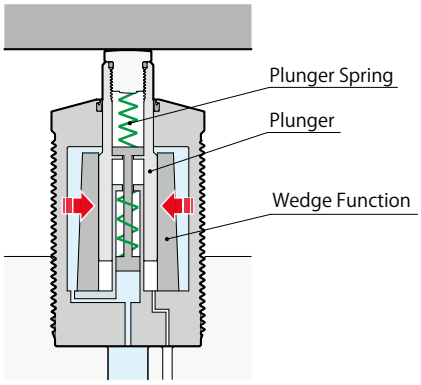


Prevents Chattering • Deformation

The plunger contacts with slight spring force.
Wedge function locks the plunger firmly and holds it.

Strong Support and Smooth Action

KOSMEK was the first to develop the collet design in 1996.
Compared with the traditional sleeve design, it ensures powerful gripping force via a wedge effect.
In addition, a larger gap between collet and plunger is designed to prevent sticking and allow smoother action.
(The load applied to the workpiece is only plunger spring force.)



< Image of Internal Action >

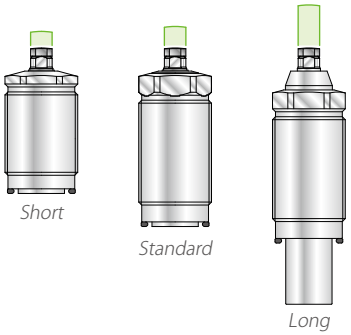
The World's Smallest Work Support

Line-up of 6 Body Sizes (External Thread Part):
M22,M26,M30,M36,M45,M60
The world's smallest M22 Work Support enables smaller footprints.

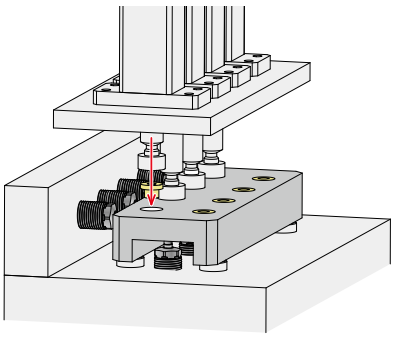
World's Smallest M22 Work Support newly added to the line-up.

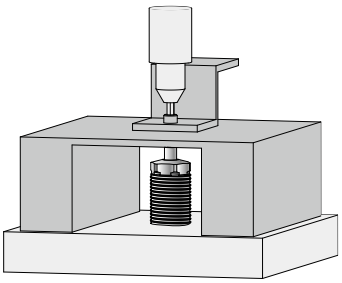
A Wider Variety of Options

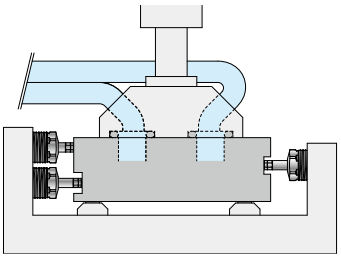
NEW M22 short model and M22~M60 long stroke model improves fixture footprint flexibility, accessibility and designing options.

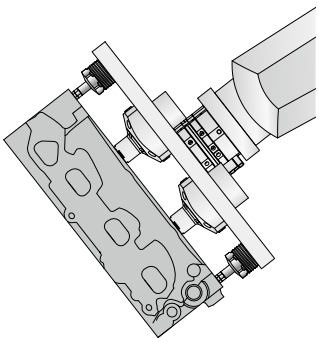


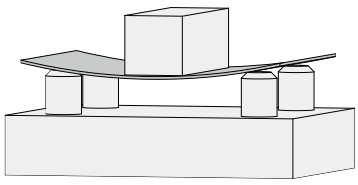
Application Examples

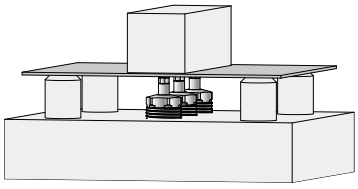

Support of the Press Fit Machine


Backup of the Screw Fastening Machine/Nut Runner


Dislocation Prevention of Leak Test Device


Keeping Position of Workpiece during Transfer


No Work Support

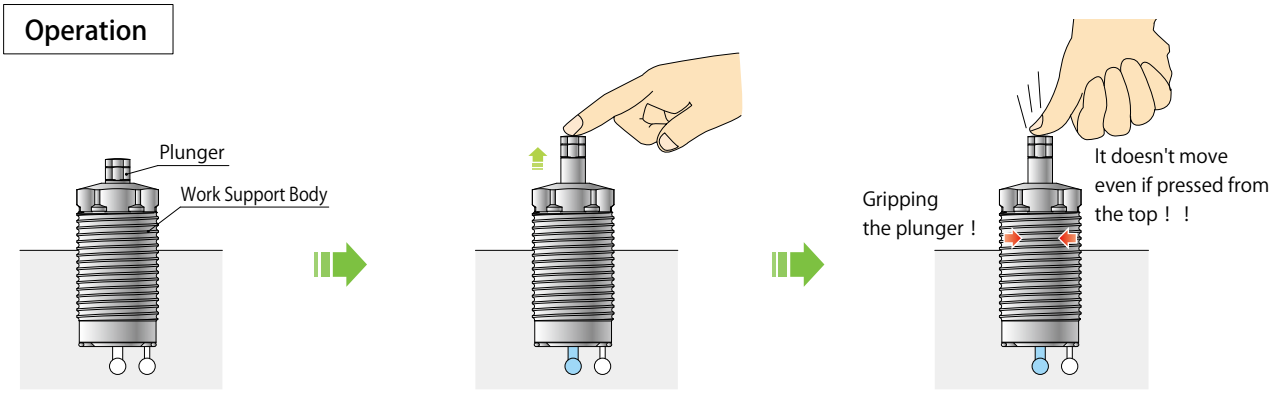

With Work Support

Prevention of Deformation Caused by Heavy Load

Action Description

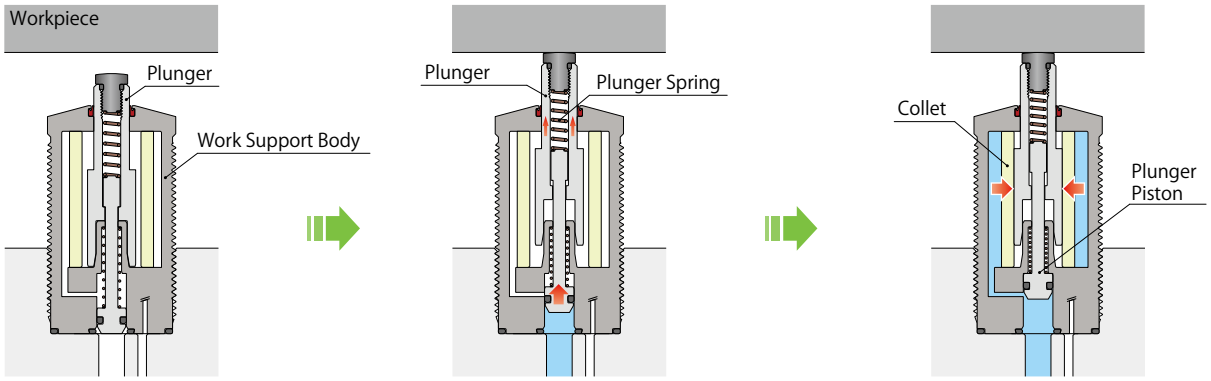
Air Advance Model : WNC

Operation



Cross Section

※ Simplified drawing. The actual components are different.



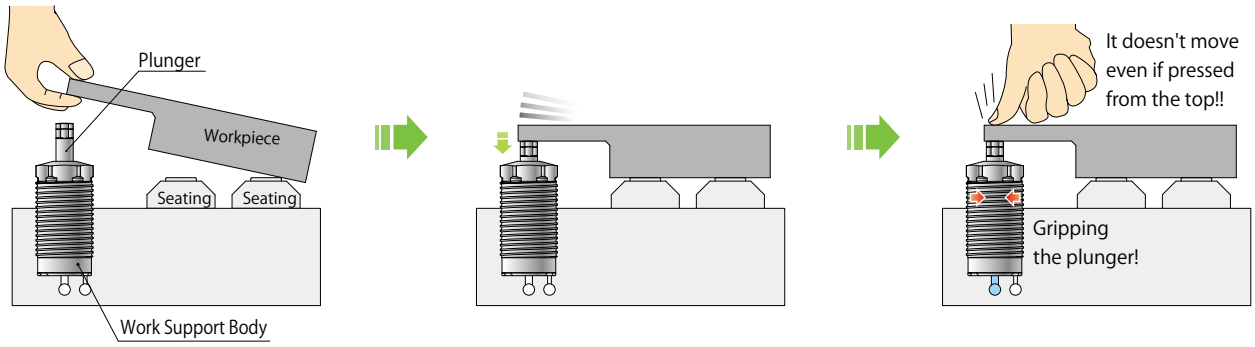
Air Pressure：OFF
The state of plunger down.

Air Pressure：ON（In the middle of pressure rising）
When pneumatic pressure is supplied to the plunger, the plunger lifts up and stops at the point where it comes into contact with the workpiece.
※ The load applied to the workpiece is only plunger spring force.
The work may be lifted up, if the spring force is higher than the work weight.

Air Pressure：ON（Pressure rising completion）
When the plunger-piston is fully stroked, the air is passed into the collets periphery and collet locks the plunger tightly.
After gripping, the plunger doesn't fall down even if force is applied from the top.

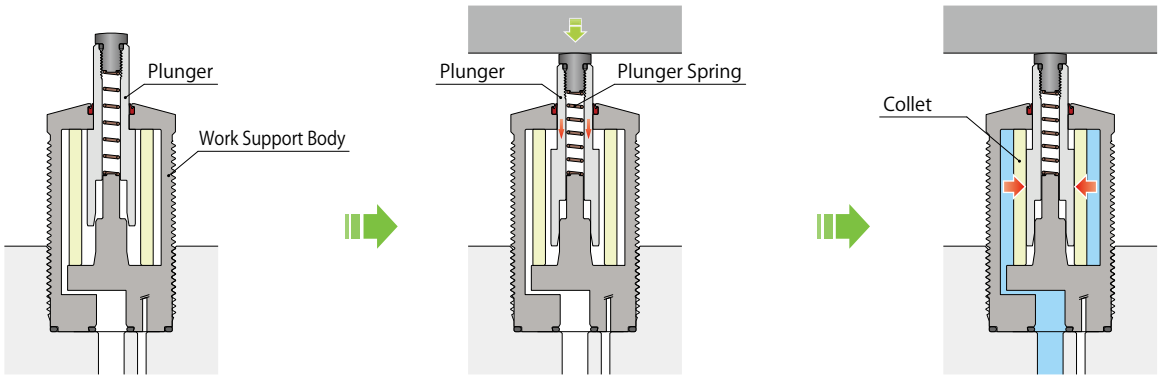
• Spring Advance Model : WNC-E

Operation



Cross Section

※ Simplified drawing. The actual components are different.



Air Pressure：OFF
The state of plunger down.

Air Pressure：OFF
When workpiece rests on the work support, plunger goes down due to the weight of workpiece and is balanced.
※ The load applied to the workpiece is only plunger spring force.
The work may be lifted up, if the spring force is higher than the work weight.

Air Pressure：ON（Pressure rising completion）
If the air pressure increases, the collet will grip the plunger securely by the internal construction.
After gripping, the plunger doesn't fall down even if force is applied from the top.

Model No. Indication

WNC 060 0 - L - E
1 2 3 4

1 Support Force

035：Support Force 0.34 kN (Supply Air Pressure 0.5MPa) (WNC0350-□-S：Support Force 0.08kN)
060：Support Force 0.6 kN (Supply Air Pressure 0.5MPa)
100：Support Force 1.0 kN (Supply Air Pressure 0.5MPa)
160：Support Force 1.5 kN (Supply Air Pressure 0.5MPa)
300：Support Force 3.0 kN (Supply Air Pressure 0.5MPa)
600：Support Force 5.7 kN (Supply Air Pressure 0.5MPa)

2 Design No.

0 ：Revision Number

3 Plunger Spring Force

L ：Low Spring Force
H ：High Spring Force
Blank：When selecting 4 Option **Q**.

4 Options

Blank ：Air Advance Model (Standard)
E ：Spring Advance Model
S ：Air Advance Short Model
Q ：Air Advance Long Stroke Model

	● = Available Option					
	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	M60×2
4 Option Symbol	WNC 0350	WNC 0600	WNC 1000	WNC 1600	WNC 3000	WNC 6000
Blank	●	●	●	●	●	●
E	●	●	●	●	●	●
S	●					
Q	●	●	●	●	●	●

Specifications

4 Blank / E selected

Model No.		WNC0350-□ WNC0350-□-E	WNC0600-□ WNC0600-□-E	WNC1000-□ WNC1000-□-E	WNC1600-□ WNC1600-□-E	WNC3000-□ WNC3000-□-E	WNC6000-□ WNC6000-□-E
Support Force (at 0.5MPa) kN		0.34	0.6	1.0	1.5	3.0	5.7
Support Force (Calculation Formula)※1 kN		1.26×P-0.29	2.00×P-0.40	3.33×P-0.67	5.00×P-1.00	9.09×P-1.55	16.29×P-2.44
Plunger Stroke mm		6.5	6.5	6.5	8.0	8.0	10
Cylinder Capacity cm³	4 Blank	0.9	1.5	2.2	3.5	6.6	12.2
	4 E	0.6	1.0	1.7	2.9	5.7	11.1
Plunger Spring Force ※2 N	L: Low Spring Force	1.3～2.5	1.8～2.9	2.1～2.9	2.3～2.9	3.6～4.3	6.4～7.5
	H: High Spring Force	1.5～3.5	2.1～4.3	3.0～4.4	3.2～4.4	4.9～6.1	8.7～10.4
Max. Operating Pressure MPa		0.7					
Min. Operating Pressure MPa		0.25					
Withstanding Pressure MPa		1.0					
Operating Temperature ℃		0～70					
Mass kg		0.10	0.15	0.25	0.40	0.70	1.30

4 S selected

Model No.		WNC0350-□-S
Support Force (at 0.5MPa) kN		0.08
Support Force (Calculation Formula)※1 kN		0.57×P-0.21
Plunger Stroke mm		5
Cylinder Capacity cm³		0.5
Plunger Spring Force ※2 N	L: Low Spring Force	1.0～2.4
	H: High Spring Force	1.2～3.5
Max. Operating Pressure MPa		0.7
Min. Operating Pressure MPa		0.4
Withstanding Pressure MPa		1.0
Operating Temperature ℃		0～70
Mass kg		0.07

4 Q selected

Model No.	WNC0350-Q	WNC0600-Q	WNC1000-Q	WNC1600-Q	WNC3000-Q	WNC6000-Q
Support Force (at 0.5MPa) kN	0.34	0.6	1.0	1.5	3.0	5.7
Support Force (Calculation Formula)※1 kN	1.26×P-0.29	2.00×P-0.40	3.33×P-0.67	5.00×P-1.00	9.09×P-1.55	16.29×P-2.44
Plunger Stroke mm	13	13	13	16	16	20
Cylinder Capacity cm³	1.1	1.8	2.5	3.9	7.2	13.0
Plunger Spring Force ※2 N	1.5～3.8	2.1～4.9	3.1～5.1	3.1～5.5	4.8～6.6	8.7～12.5
Max. Operating Pressure MPa	0.7					
Min. Operating Pressure MPa	0.25					
Withstanding Pressure MPa	1.0					
Operating Temperature ℃	0～70					
Mass kg	0.12	0.17	0.30	0.45	0.75	1.45

Notes: ※1. P : Supply Air Pressure (MPa)
※2. The plunger spring force figure indicates the spring design force.
It may vary due to moving resistance of the plunger and spring. Please use it as reference for the workpiece contacting force.

Performance Curve (WNC-□ : Air Advance Model / WNC-□-E : Spring Advance Model)

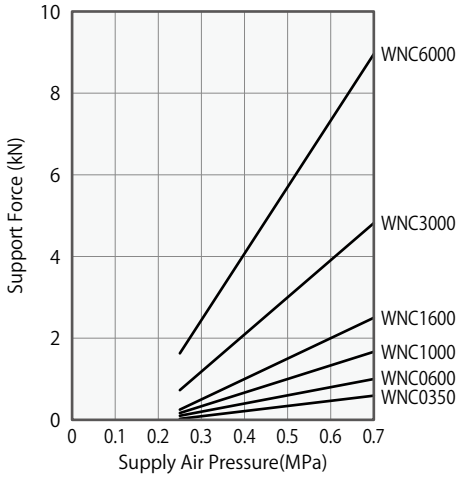
Applicable Model

WNC 060 0 - L/H - Blank/E

1 Support Force

4 Options : Blank, E selected

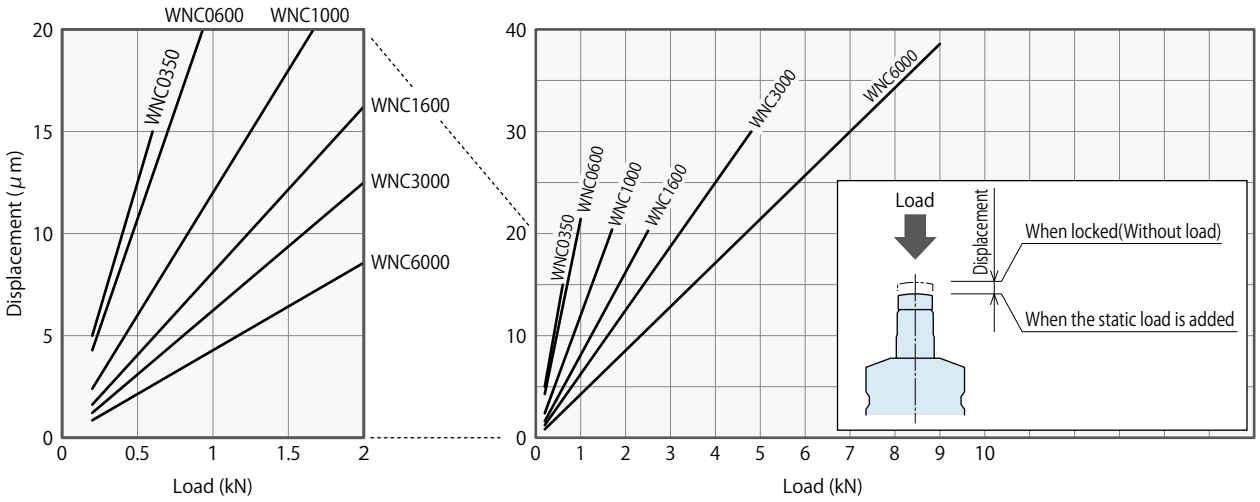
Support Force Graph ※ This graph shows the support force under static load condition.



Model No.	WNC0350-□	WNC0600-□	WNC1000-□	WNC1600-□	WNC3000-□	WNC6000-□
Supply Air Pressure(MPa)	WNC0350-□-E	WNC0600-□-E	WNC1000-□-E	WNC1600-□-E	WNC3000-□-E	WNC6000-□-E
	Support Force (kN)					
0.7	0.59	1.0	1.7	2.5	4.8	9.0
0.6	0.47	0.8	1.3	2.0	3.9	7.3
0.5	0.34	0.6	1.0	1.5	3.0	5.7
0.4	0.21	0.4	0.7	1.0	2.1	4.1
0.3	0.09	0.2	0.3	0.5	1.2	2.4
0.25	0.03	0.1	0.2	0.3	0.7	1.6
Support Force Formula ※1 kN	1.26×P-0.29	2.00×P-0.40	3.33×P-0.67	5.00×P-1.00	9.09×P-1.55	16.29×P-2.44

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

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



Performance Curve（WNC-□-S：Air Advance Short Model）

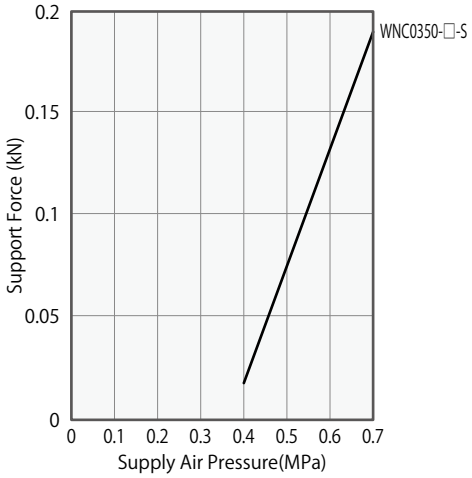
Applicable Model

WNC 060 0 - L/H - S

1 Support Force

4 Options：S selected

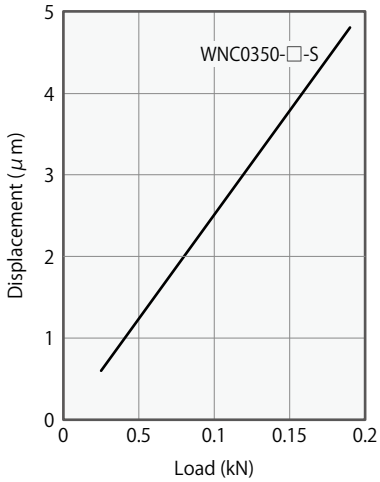
Support Force Graph ※This graph shows the support force under static load condition.

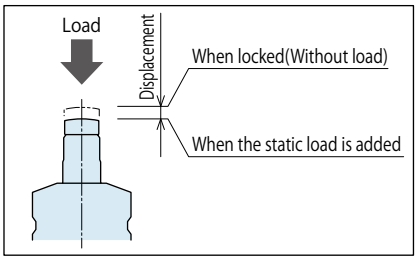


Model No.	Support Force (kN)
	WNC0350-□-S
Supply Air Pressure(MPa)	
0.7	0.19
0.6	0.13
0.5	0.08
0.4	0.02
Support Force Formula ※1 kN	0.57×P-0.21

Note ※1. P：Supply air pressure (MPa)

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





Performance Curve（WNC-Q：Air Advance Long Stroke Model）

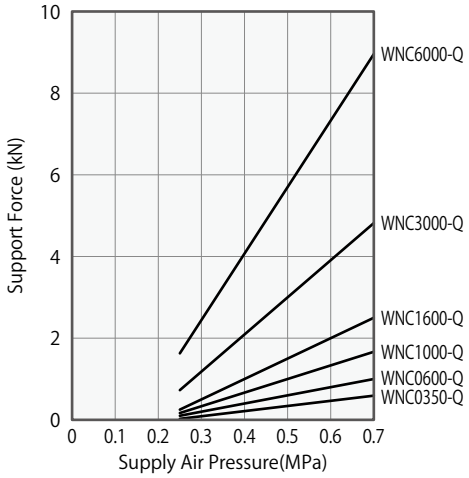
Applicable Model

WNC 060 0 - Q

4 Options：Q selected

1 Support Force

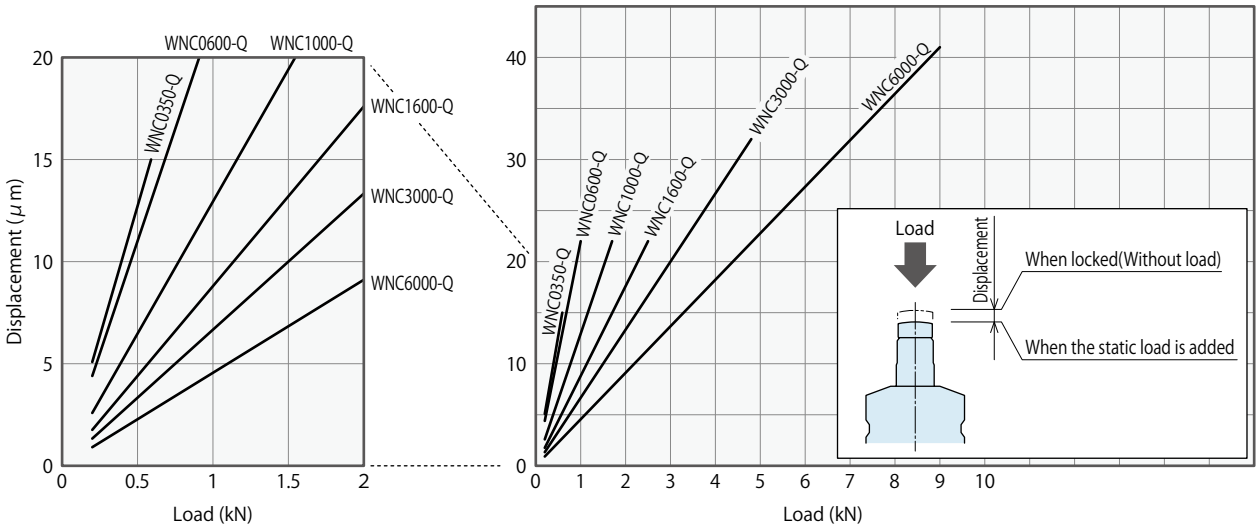
Support Force Graph ※This graph shows the support force under static load condition.



Model No. / Supply Air Pressure(MPa)	Support Force (kN) WNC0350-Q	WNC0600-Q	WNC1000-Q	WNC1600-Q	WNC3000-Q	WNC6000-Q
0.7	0.59	1.0	1.7	2.5	4.8	9.0
0.6	0.47	0.8	1.3	2.0	3.9	7.3
0.5	0.34	0.6	1.0	1.5	3.0	5.7
0.4	0.21	0.4	0.7	1.0	2.1	4.1
0.3	0.09	0.2	0.3	0.5	1.2	2.4
0.25	0.03	0.1	0.2	0.3	0.7	1.6
Support Force Formula ※1 kN	1.26×P-0.29	2.00×P-0.40	3.33×P-0.67	5.00×P-1.00	9.09×P-1.55	16.29×P-2.44

Note ※1. P：Supply air pressure (MPa)

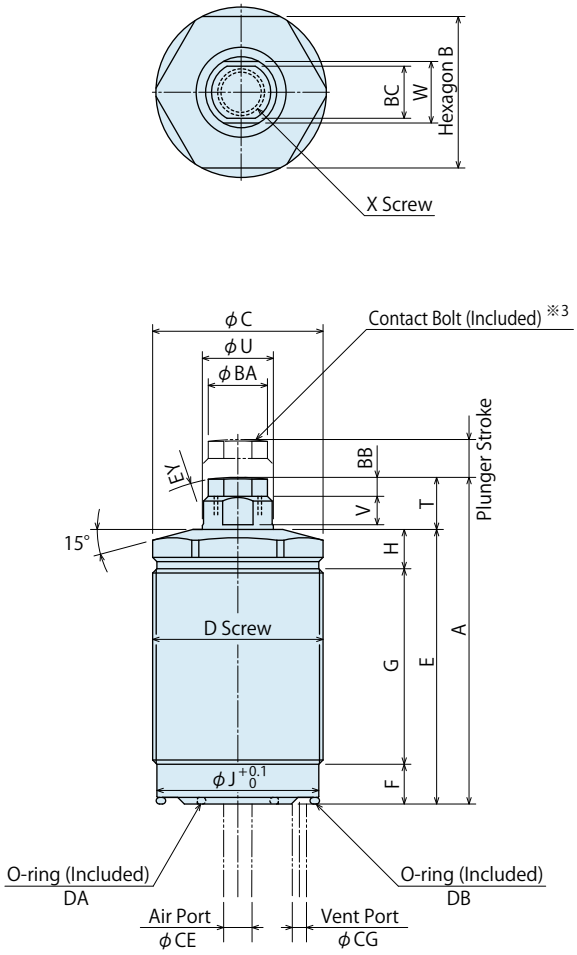
Load / Displacement Graph ※This graph shows the static load-displacement at the time of supplied air pressure 0.7MPa.



※ The displacement of WNC-Q：long stoke model is bigger than WNC-□ / WNC-□-E：standard model.

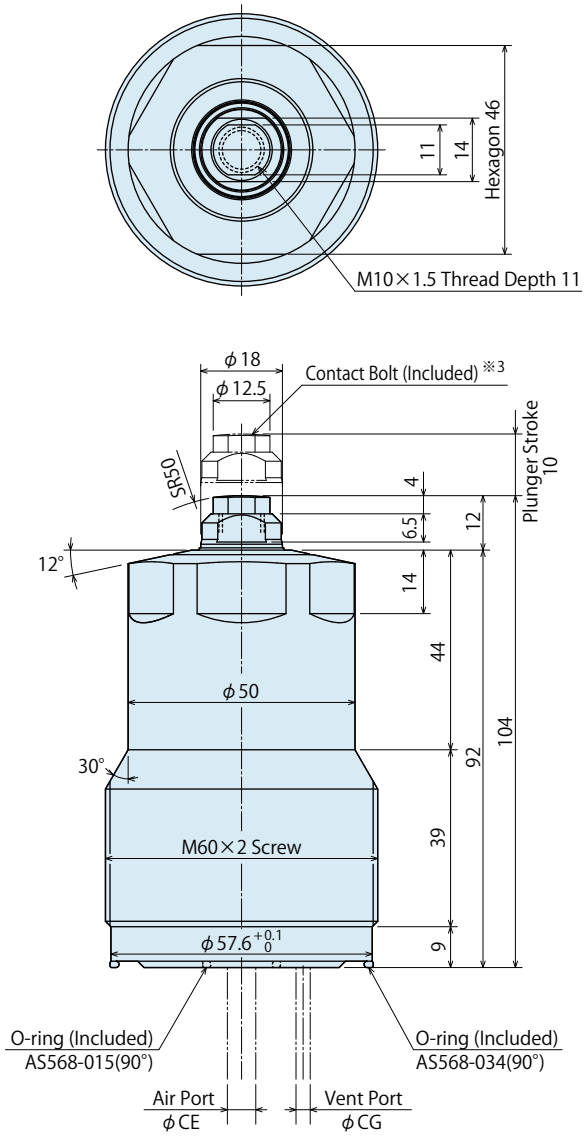
External Dimensions

※ This drawing shows the released state of WNC0350-□, WNC0600-□, WNC1000-□, WNC1600-□, WNC3000-□(before the plunger is lifted).

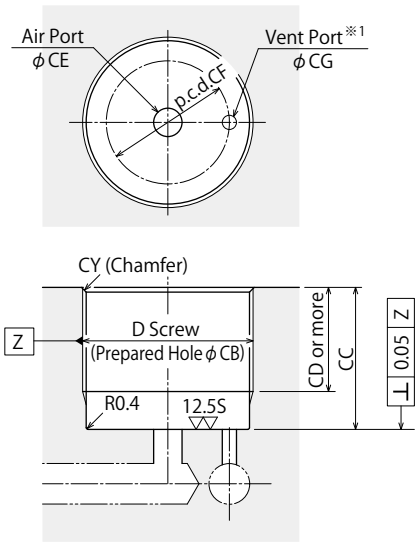


External Dimensions (WNC6000-□)

※This drawing shows the released state of WNC6000-□ (before the plunger is lifted).



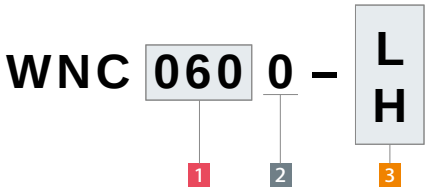
Machining Dimensions of Mounting Area



Note:

※1. The vent port needs to be processed in an open air environment without the presence of coolant,dust, etc. to avoid any internal contamination.
(Refer to P.21: Appropriate Position of Vent Port for reference.)

Model No. Indication



(Format Example：WNC1000-L、WNC3000-H)

1 Support Force
2 Design No.
3 Plunger Spring Force
4 Options (Blank)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	WNC0350-□	WNC0600-□	WNC1000-□	WNC1600-□	WNC3000-□	WNC6000-□
Plunger Stroke	6.5	6.5	6.5	8	8	10
A	54	62	69	73	87	-
B	20	24	27	32	41	-
C	22	26	30	36	45	-
D (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	-
E	47	52.5	59.5	63.5	75.5	-
F	6.5	7.4	9.4	9.4	9	-
G	31.7	36.3	39.8	43.8	52.7	-
H	8.8	8.8	10.3	10.3	13.8	-
J	20.2	24.2	28.2	34.2	43.2	-
T	7	9.5	9.5	9.5	11.5	-
U	7	9	9	10	12	-
V	3.5	5	5	5	6	-
W	5.5	8	8	8	10	-
X (Nominal×Pitch×Depth)	M4×0.7×7	M6×1×9	M6×1×9	M6×1×9	M8×1.25×12	-
BA	6.5	9	9	9	11.5	-
BB	2.5	3	3	3	4	-
BC	5.5	8	8	8	10	-
CB	$20.5^{+0.17}_{-0.12}$	$24.5^{+0.17}_{-0.12}$	$28.5^{+0.17}_{-0.12}$	$34.5^{+0.17}_{-0.12}$	$43.5^{+0.17}_{-0.12}$	$58^{+0.21}_{-0.17}$
CC	14～37	16～43	17～48	18～52	21～61	25～77
CD	CC-5	CC-6	CC-8	CC-8	CC-7.5	CC-7.5
CE	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CF	P.C.D. 15	P.C.D. 18	P.C.D. 22	P.C.D. 26	P.C.D. 30	P.C.D. 48
CG	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CY (Chamfer)	C1	C1	C1	C1	C1	C1.5
DA	AS568-011(90°)	AS568-012(90°)	AS568-012(90°)	AS568-012(90°)	AS568-014(90°)	-
DB	AS568-017(90°)	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)	-
EY	SR20	SR30	SR30	SR30	SR30	-
Tightening Torque for Main Body ※2 N·m	10	16	25	40	63	80

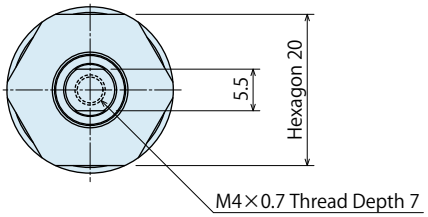
Notes:

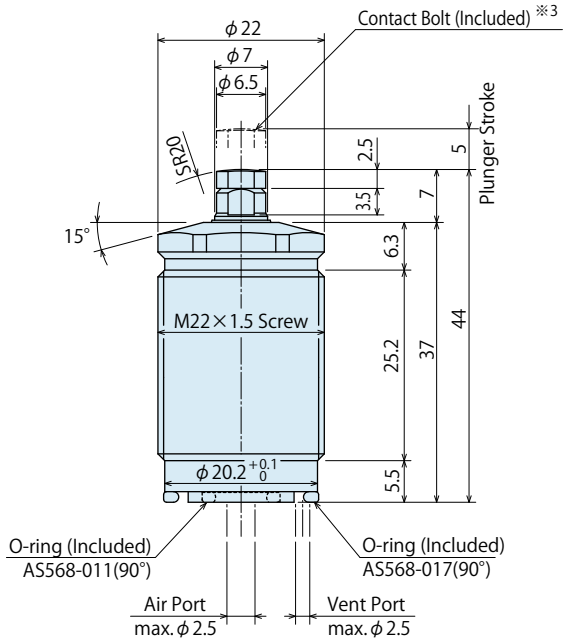
※2. Torque at the time of work support mounting shall be the value of upper table.
If the recommended torque is exceeded, abnormal action may be incurred due to deformation of the body.
However, if the torque is much lower than the recommended one, the O-ring may be damaged due to loosening, resulting in fluid leakage.

※3. When contact bolts (attachment) are designed and manufactured by the customer, refer to the "contact bolt design dimension" on P.19.

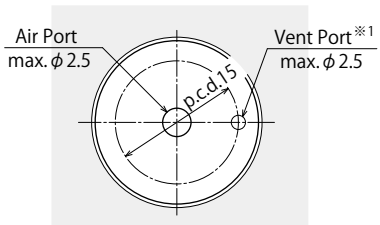
External Dimensions

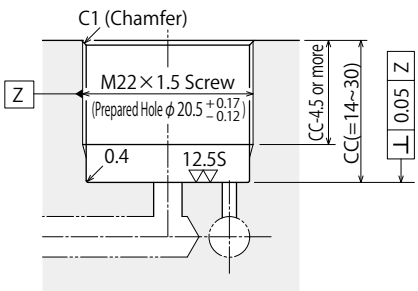
※ This drawing shows the released state of WNC0350-□-S
(before the plunger is lifted).





Machining Dimensions of Mounting Area

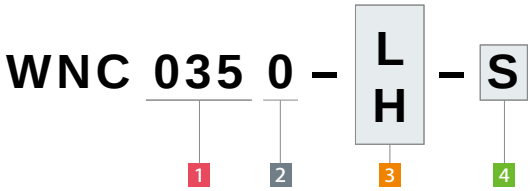




Note:

※1. The vent port needs to be processed in an open air environment without the presence of coolant,dust, etc. to avoid any internal contamination.
(Refer to P.21: Appropriate Position of Vent Port for reference.)

Model No. Indication



(Format Example：WNC0350-L-S)

1 Support Force
2 Design No.
3 Plunger Spring Force
4 Options (S selected)

Tightening Torque for Main Body

Model No.	WNC0350-□-S
Tightening Torque for Main Body ※2 N·m	10

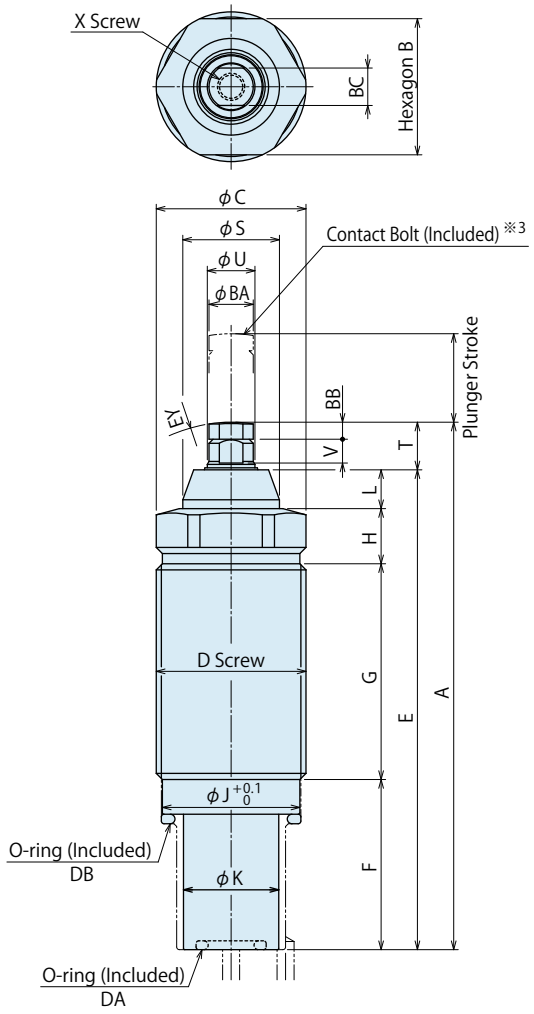
Notes:

※2. Torque at the time of work support mounting shall be the value of upper table.
If the recommended torque is exceeded, abnormal action may be incurred due to deformation of the body.
However, if the torque is much lower than the recommended one, the O-ring may be damaged due to loosening, resulting in fluid leakage.

※3. When contact bolts (attachment) are designed and manufactured by the customer, refer to the "contact bolt design dimension" on P.19.

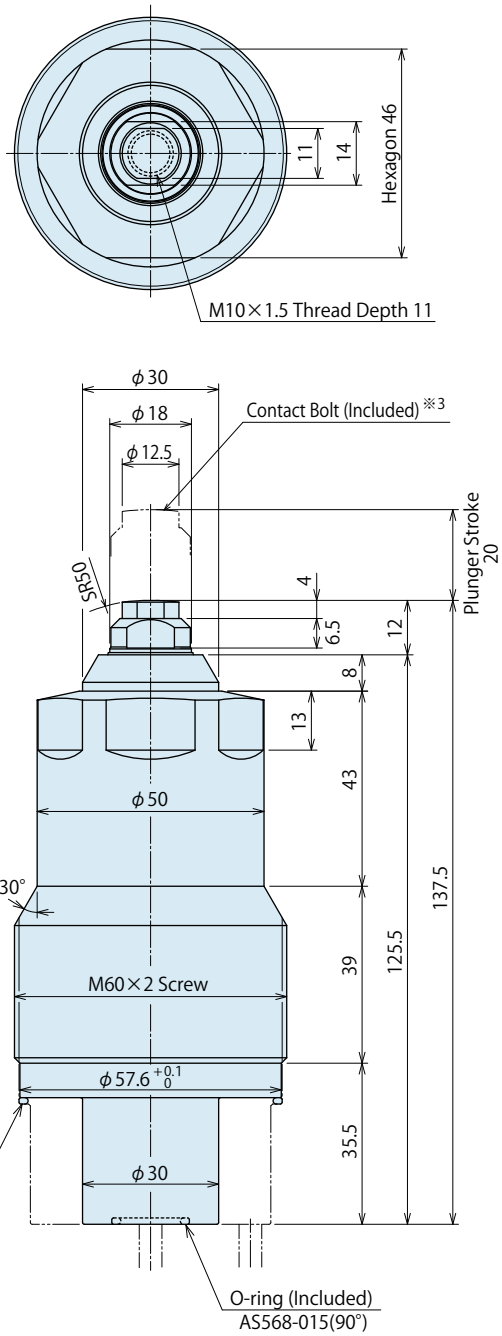
External Dimensions

※ This drawing shows the released state of WNC0350-Q, WNC0600-Q, WNC1000-Q, WNC1600-Q, WNC3000-Q (before the plunger is lifted).

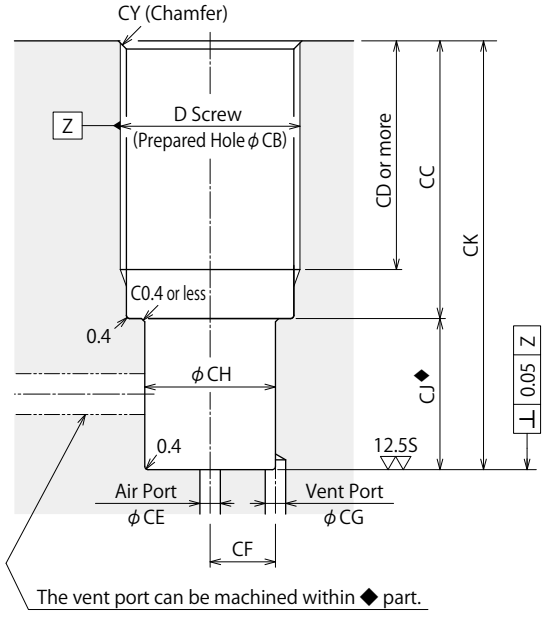


External Dimensions (WNC6000-Q)

※This drawing shows the released state of WNC6000-Q (before the plunger is lifted).



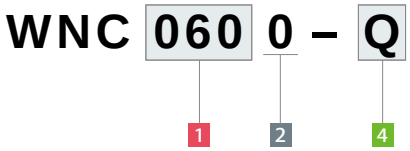
Machining Dimensions of Mounting Area



Note:

※1. The vent port needs to be processed in an open air environment without the presence of coolant,dust, etc. to avoid any internal contamination.
(Refer to P.21: Appropriate Position of Vent Port for reference.)

Model No. Indication



(Format Example：WNC1000-Q)

1 Support Force

2 Design No.

4 Options (Q selected)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	WNC0350-Q	WNC0600-Q	WNC1000-Q	WNC1600-Q	WNC3000-Q	WNC6000-Q
Plunger Stroke	13	13	13	16	16	20
A	77.5	84	91	99	113.5	-
B	20	24	27	32	41	-
C	22	26	30	36	45	-
D (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	-
E	70.5	74.5	81.5	89.5	102	-
F	25	25.9	27.9	30.9	30.5	-
G	31.7	36.3	39.8	43.8	52.7	-
H	8.1	8.1	9.6	9.4	12.9	-
J	20.2	24.2	28.2	34.2	43.2	-
K	14	16	20	20	22	-
L	5.7	4.2	4.2	5.4	5.9	-
S	14.2	16.5	16.5	19	22	-
T	7	9.5	9.5	9.5	11.5	-
U	7	9	9	10	12	-
V	3.5	5	5	5	6	-
X (Nominal×Pitch×Depth)	M4×0.7×7	M6×1×9	M6×1×9	M6×1×9	M8×1.25×12	-
BA	6.5	9	9	9	11.5	-
BB	2.5	3	3	3	4	-
BC	5.5	8	8	8	10	-
CB	$20.5^{+0.17}_{-0.12}$	$24.5^{+0.17}_{-0.12}$	$28.5^{+0.17}_{-0.12}$	$34.5^{+0.17}_{-0.12}$	$43.5^{+0.17}_{-0.12}$	$58^{+0.21}_{-0.17}$
CC	14～37	16～43	17～48	18～52	21～61	25～77
CD	CC-5	CC-6	CC-8	CC-8	CC-7.5	CC-7.5
CE	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CF	8	10	12	13	15	22
CG	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CH	16	20	24	30	39	53
CJ	18.5	18.5	18.5	21.5	21.5	26.5
CK	CC+18.5	CC+18.5	CC+18.5	CC+21.5	CC+21.5	CC+26.5
CY (Chamfer)	C1	C1	C1	C1	C1	C1.5
DA	AS568-011(90°)	AS568-012(90°)	AS568-012(90°)	AS568-012(90°)	AS568-014(90°)	-
DB	AS568-017(90°)	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)	-
EY	SR20	SR30	SR30	SR30	SR30	-
Tightening Torque for Main Body ※2 N·m	10	16	25	40	63	80

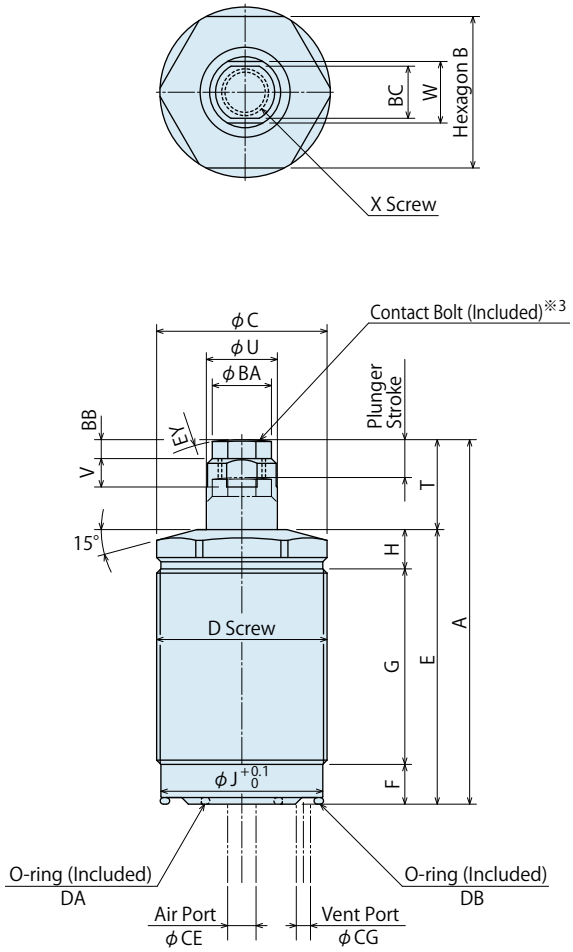
Notes:

※2. Torque at the time of work support mounting shall be the value of upper table.
If the recommended torque is exceeded, abnormal action may be incurred due to deformation of the body.
However, if the torque is much lower than the recommended one, the O-ring may be damaged due to loosening, resulting in fluid leakage.

※3. When contact bolts (attachment) are designed and manufactured by the customer, refer to the "contact bolt design dimension" on P.19.

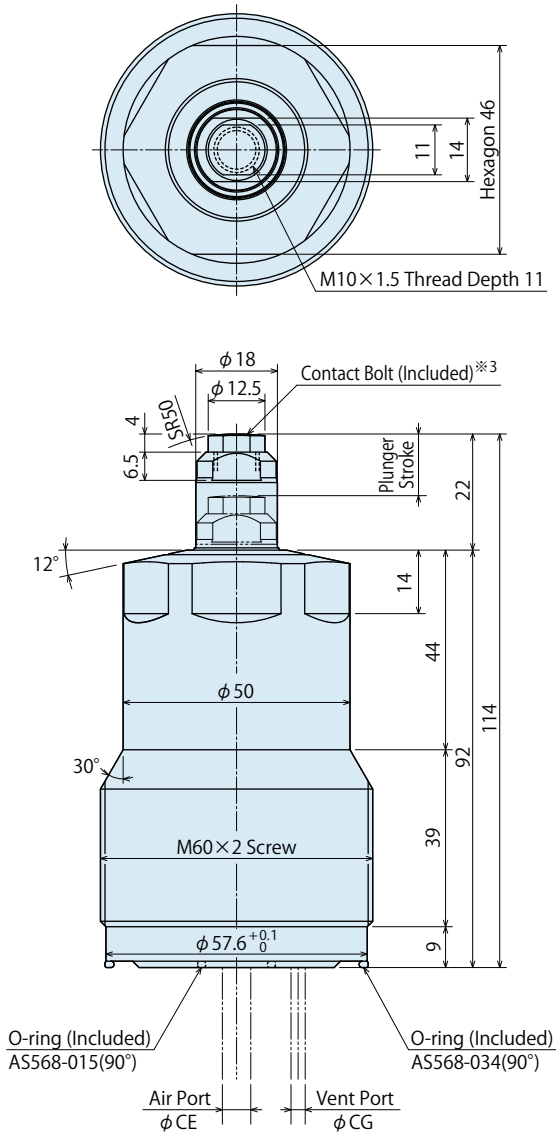
External Dimensions

※ This drawing shows the released state of WNC0350-□-E, WNC0600-□-E, WNC1000-□-E, WNC1600-□-E, WNC3000-□-E (before the plunger is lifted).

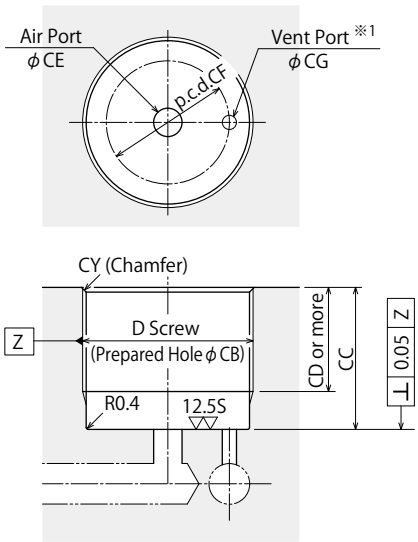


External Dimensions (WNC6000-□-E)

※ This drawing shows the released state of WNC6000-□-E (before the plunger is lifted).



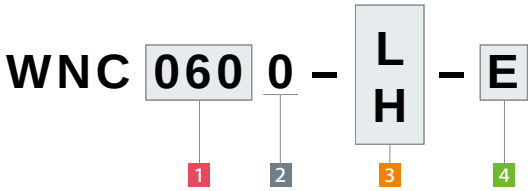
Machining Dimensions of Mounting Area



Note:

※1. The vent port needs to be processed in an open air environment without the presence of coolant,dust, etc. to avoid any internal contamination.
(Refer to P.21: Appropriate Position of Vent Port for reference.)

Model No. Indication



(Format Example：WNC1000-L-E, WNC3000-H-E)

1 Support Force
2 Design No.
3 Plunger Spring Force
4 Options (E selected)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	WNC0350-□-E	WNC0600-□-E	WNC1000-□-E	WNC1600-□-E	WNC3000-□-E	WNC6000-□-E
Plunger Stroke	6.5	6.5	6.5	8	8	10
A	60.5	68.5	75.5	81	95	-
B	20	24	27	32	41	-
C	22	26	30	36	45	-
D (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	-
E	47	52.5	59.5	63.5	75.5	-
F	6.5	7.4	9.4	9.4	9	-
G	31.7	36.3	39.8	43.8	52.7	-
H	8.8	8.8	10.3	10.3	13.8	-
J	20.2	24.2	28.2	34.2	43.2	-
T	13.5	16	16	17.5	19.5	-
U	7	9	9	10	12	-
V	3.5	5	5	5	6	-
W	5.5	8	8	8	10	-
X (Nominal×Pitch×Depth)	M4×0.7×7	M6×1×9	M6×1×9	M6×1×9	M8×1.25×12	-
BA	6.5	9	9	9	11.5	-
BB	2.5	3	3	3	4	-
BC	5.5	8	8	8	10	-
CB	$20.5^{+0.17}_{-0.12}$	$24.5^{+0.17}_{-0.12}$	$28.5^{+0.17}_{-0.12}$	$34.5^{+0.17}_{-0.12}$	$43.5^{+0.17}_{-0.12}$	$58^{+0.21}_{-0.17}$
CC	14～37	16～43	17～48	18～52	21～61	25～77
CD	CC-5	CC-6	CC-8	CC-8	CC-7.5	CC-7.5
CE	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CF	P.C.D. 15	P.C.D. 18	P.C.D. 22	P.C.D. 26	P.C.D. 30	P.C.D. 48
CG	max. 2.5	max. 3	max. 3	max. 3	max. 5	max. 5
CY (Chamfer)	C1	C1	C1	C1	C1	C1.5
DA	AS568-011(90°)	AS568-012(90°)	AS568-012(90°)	AS568-012(90°)	AS568-014(90°)	-
DB	AS568-017(90°)	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)	-
EY	SR20	SR30	SR30	SR30	SR30	SR50
Tightening Torque for Main Body ※2 N·m	10	16	25	40	63	80

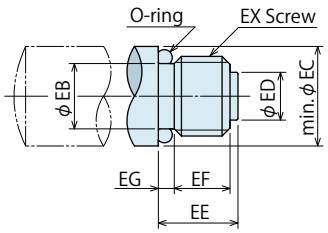
Notes:

※2. Torque at the time of work support mounting shall be the value of upper table.
If the recommended torque is exceeded, abnormal action may be incurred due to deformation of the body.
However, if the torque is much lower than the recommended one, the O-ring may be damaged due to loosening, resulting in oil leakage.

※3. When contact bolts (attachment) are designed and manufactured by the customer, refer to the "contact bolt design dimension" on P.19.

Contact Bolt Design Dimensions

※ Please use as reference in case contact bolts (attachment) other than the attached contact bolt are designed and manufactured to the customer. Please be sure to refer to "Notes on Contact Bolt (Attachment) Design".

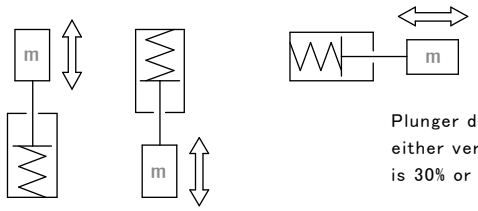


(mm)

Corresponding Product Model	WNC0350	WNC0600	WNC1000	WNC1600	WNC3000	WNC6000
EB	3	4.5	4.5	4.5	6	8.2
EC	6	8.5	8.5	8.5	10	12.5
ED	2	3.5	3.5	3.5	5	6
EE	6	8	8	8	10	10
EF	4.5	6	6	6	7	7
EG	1	1.5	1.5	1.5	2	2
EX	M4×0.7	M6×1	M6×1	M6×1	M8×1.25	M10×1.5
O-ring	SS3 (NOK)	S5 (NOK)	S5 (NOK)	S5 (NOK)	S6 (NOK)	S8 (NOK)
Contact Bolt Tightening Torque	1.6 N·m	5 N·m	5 N·m	5 N·m	10 N·m	16 N·m

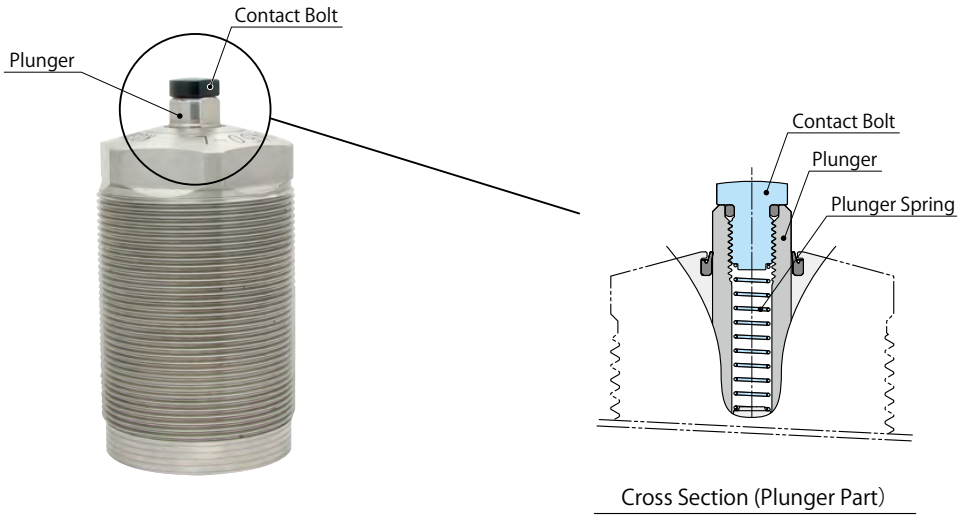
Notes on Contact Bolt (Attachment) Design

●Please use the mass of a contact bolt (attachment) of 30% or less against plunger spring force.



Plunger direction,
either vertical or horizontal,
is 30% or less of the spring force.

- ex) In the case of WNC1000-L is 2.1~ 2.9N,
  it becomes maximum mass of a contact bolt =2.1x0.3 / 9.807 = 0.06 kg
  It is recommended to use extreme low mass due to variation from tribological resistance of the plunger and spring properties.
- Please manufacture the dimension of a mounting screw portion according to a contact bolt design dimension.
- If the plunger spring is fixed, different dimensions at the thread area may lead to spring force fluctuation and damage, resulting in malfunctioning.

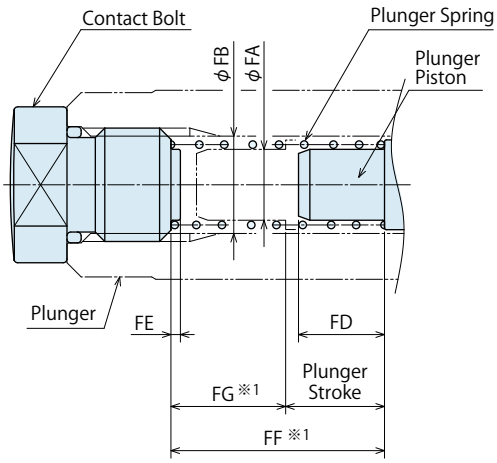


Cross Section (Plunger Part)

Plunger Spring Chamber Dimension

※ Please use as reference in case springs other than an attached plunger spring are designed and manufactured to the customer. When contact bolts (attachment) are designed and manufactured by the customer, refer to the contact bolt design dimension.

※ This drawing shows at the released state.



(mm)

Corresponding Product Model	WNC0350-□ WNC0350-□-E	WNC0600-□ WNC0600-□-E	WNC1000-□ WNC1000-□-E	WNC1600-□ WNC1600-□-E	WNC3000-□ WNC3000-□-E	WNC6000-□ WNC6000-□-E
FA	-	3.5	3.5	3.5	5	6
FB	3.4	5.1	5.1	5.1	6.8	8.5
FD	-	0.5	0.5	0.5	3.9	1
FE	0.5	0.5	0.5	0.5	1	1
FF※1	13	11.1	13	17	24.6	31.6
FG※1	6.5	4.6	6.5	9	16.6	21.6
Plunger Stroke	6.5	6.5	6.5	8.0	8.0	10

(mm)

Corresponding Product Model	WNC0350-□-S
FA	-
FB	3.4
FD	-
FE	0.5
FF※1	9.5
FG※1	4.5
Plunger Stroke	5

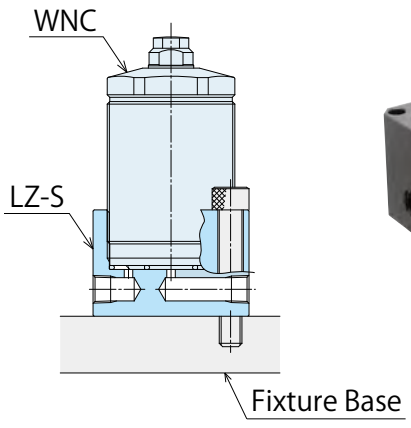
(mm)

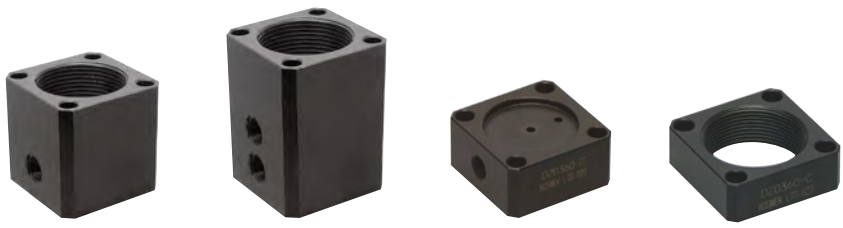
Corresponding Product Model	WNC0350-Q	WNC0600-Q	WNC1000-Q	WNC1600-Q	WNC3000-Q	WNC6000-Q
FA	-	3.5	3.5	3.5	5	6
FB	3.4	5.1	5.1	5.1	6.8	8.5
FD	-	0.5	0.5	0.5	3.9	1
FE	0.5	0.5	0.5	0.5	1	1
FF※1	24	24	31	31.6	38	45
FG※1	11	11	18	15.6	22	25
Plunger Stroke	13	13	13	16	16	20

Note: ※1. Please perform a spring design so that spring set length is below FF dimension and spring contact length is below FG dimension.

Accessories

● There are accessories that will make the process for mounting hole easier.
Refer to P.337 for further information.





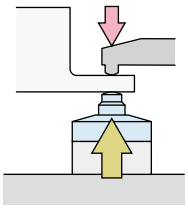
LZ-S WNZ-SQ DZ-R DZ-C

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.

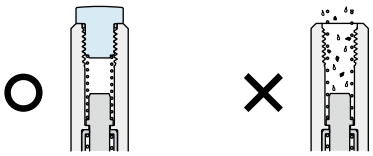


2) Install temporary stopper for workpiece if necessary.

- When multiple work supports are used for a light workpiece, the plunger spring force may be higher than the weight of the workpiece causing it to lift the workpiece.

3) Contact Bolt or Attachment Required for the Plunger

- Always use contact bolt or attachment with the plunger. Plunger doesn't rise since plunger spring is free to move.
- you must set an O-ring at the attachment. With contact bolt or attachment removed, cutting fluid or other foreign material will get in easily, causing malfunction.

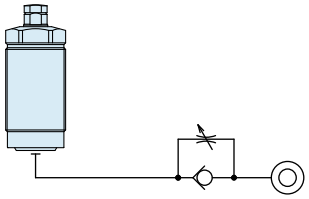


4) Protect the plunger surface at the time of use on welding fixture etc.

- If sputtered substances adheres to a plunger, poor sliding will occur and a normal support function will not be sustained.

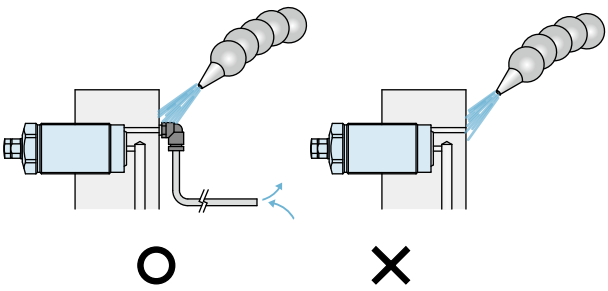
5) Adjust plunger operating time by the amount of supply air.

- A rough guideline for the full stroke is between 0.5 and 1 second.
- As with single-action cylinders, use a flow regulating valve with a check valve (meter-in) in consideration of the decreasing speed at release.
- If the action speed is too fast, it may bounce back due to shock impact and will lock itself with the clearance between plunger and the workpiece.



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.

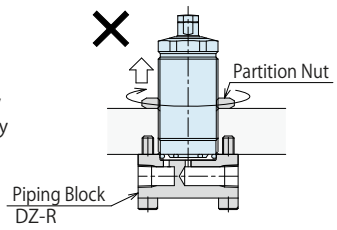


7) Work Support Mounting Method

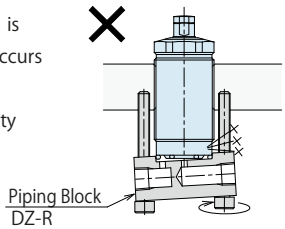
- The base is horizontal to bearing surface and load cannot be received on the base at the time of work support attachment. By the following mounting method, load cannot be received on the base and there is a possibility of equipment's damaging and the increased amount of displacement by load.

NG Examples

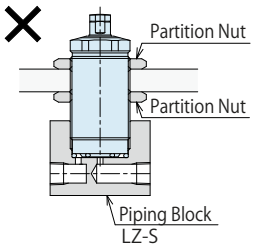
① Work support is lifted up by tightening the partition nut, and it cannot receive load by on bearing surface.



② Bearing surface contact part is not horizontal, a clearance occurs and it cannot receive load. Moreover, there is a possibility of damaging equipment by tightening bolts.



③ Since the piping block which receives load has floated, load cannot be received.



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.

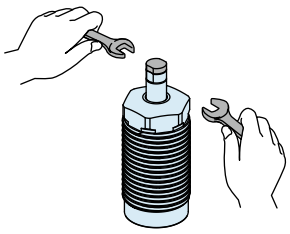
4) Mounting the Unit.
- While mounting, make sure there are no scratches or damage to the O-ring or to the seals. Tighten according to the torque shown in the chart below.

Model No.	Thread Size	Tightening Torque (N·m)
WNC0350	M22×1.5	10
WNC0600	M26×1.5	16
WNC1000	M30×1.5	25
WNC1600	M36×1.5	40
WNC3000	M45×1.5	63
WNC6000	M60×2	80

- 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.
- If it is tightened with higher torque, it may lead to malfunction.

5) Replacement of attachment.
- Do not lose the plunger spring when the attachment (contact bolt) is removed.
- When the attachment is removed, stop the plunger with a spanner at its front end and tighten it with torque as shown in the table below.

Model No.	Front Thread Size	Tightening Torque (N·m)
WNC0350	M4×0.7	1.6
WNC0600	M6×1	5
WNC1000	M6×1	5
WNC1600	M6×1	5
WNC3000	M8×1.25	10
WNC6000	M10×1.5	16



※ 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.

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

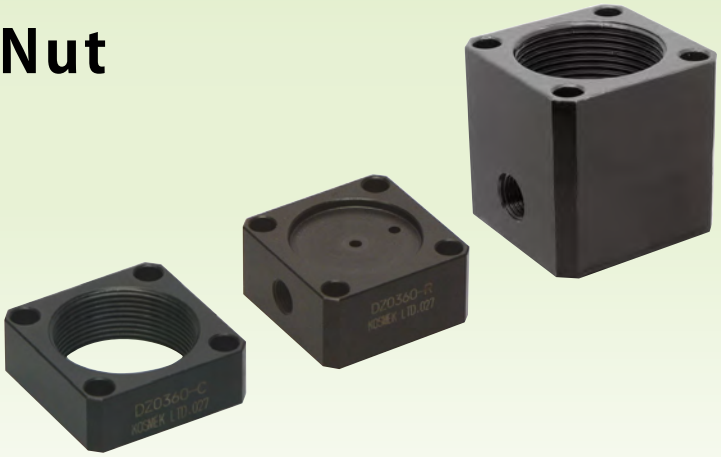
- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

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.

Manifold Block / Nut

Model DZ-R
Model DZ-C
Model LZ-S
Model WNZ-SQ

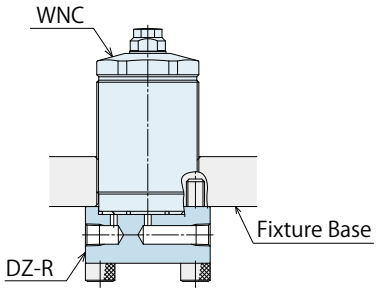


Applicable Model/Application Examples

DZ–R

Manifold Block for WNC

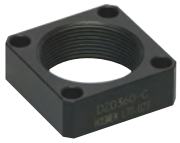
Corresponding Item Model No. : WNC

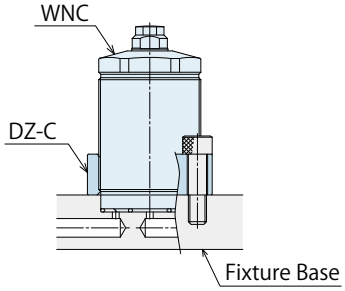


DZ–C

Flanged Nut for WNC

Corresponding Item Model No. : WNC



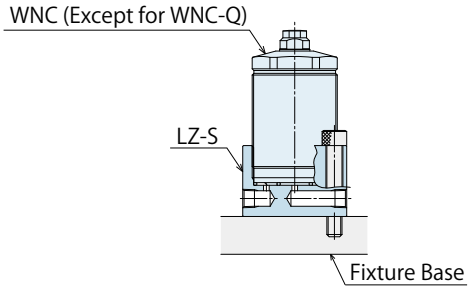


Applicable Model/Application Examples

LZ-S

Manifold Block for WNC

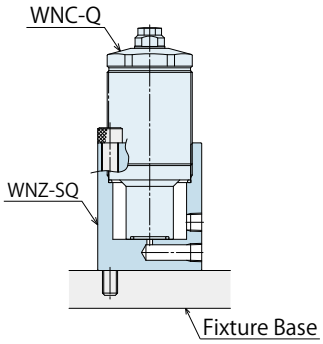
Corresponding Item Model No. : WNC



WNZ-SQ

Manifold Block for WNC-Q

Corresponding Item Model No. : WNC-Q

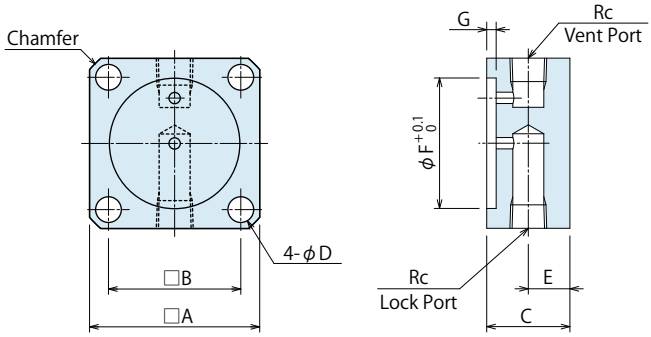


Manifold Block for WNC

Model No. Indication

DZ 036 0 – R

- 036: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	DZ0220-R	DZ0260-R	DZ0300-R	DZ0360-R	DZ0450-R	DZ0600-R
Corresponding Model No.	WNC0350-□ WNC0350-□-E WNC0350-□-S	WNC0600-□ WNC0600-□-E	WNC1000-□ WNC1000-□-E	WNC1600-□ WNC1600-□-E	WNC3000-□ WNC3000-□-E	WNC6000-□ WNC6000-□-E
A	28	35	38	45	55	75
B	21	26	29	35	42	59
C	19	19	22	22	25	25
D	4.5	5.5	5.5	6.8	9	11
E	9.5	9.5	11	11	12.5	12.5
F	20.5	24.5	28.5	34.5	43.5	58
G	2.5	2.5	2.5	2.5	3.5	3.5
Rc	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4
Chamfer	C2	C3	C3	C3	C4	C4
Mass kg	0.1	0.2	0.2	0.3	0.6	0.9

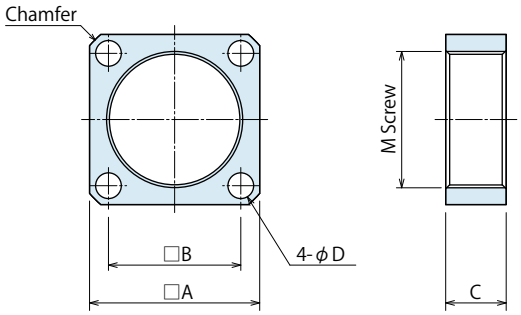
Notes: 1. Material：S45C Surface Finishing：Alkaline Blackening
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
3. It is not applicable for WNC-Q：Long Stroke Model. (Please select from WNZ-SQ.)

Flange Nut for WNC

Model No. Indication

DZ 036 0 – C

- 036: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	DZ0220-C	DZ0260-C	DZ0300-C	DZ0360-C	DZ0450-C	DZ0600-C
Corresponding Model No.	WNC0350-□ WNC0350-□-E WNC0350-□-S WNC0350-Q	WNC0600-□ WNC0600-□-E WNC0600-Q	WNC1000-□ WNC1000-□-E WNC1000-Q	WNC1600-□ WNC1600-□-E WNC1600-Q	WNC3000-□ WNC3000-□-E WNC3000-Q	WNC6000-□ WNC6000-□-E WNC6000-Q
A	28	35	38	45	55	75
B	21	26	29	35	42	59
C	14	14	15	16	18	22
D	4.5	5.5	5.5	6.8	9	11
M (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	M60×2
Chamfer	C2	C3	C3	C3	C4	C4
Mass kg	0.04	0.07	0.08	0.1	0.2	0.45

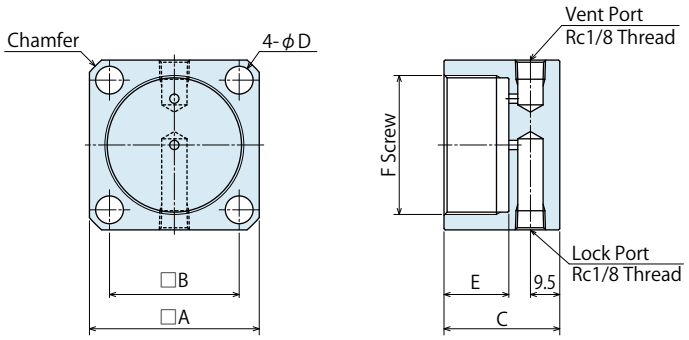
Notes: 1. Material：S45C Surface Finishing：Alkaline Blackening
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.

Manifold Block for WNC

Model No. Indication

LZ 036 0 – S

- 036: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	LZ0220-S	LZ0260-S	LZ0300-S	LZ0360-S	LZ0450-S	LZ0600-S
Corresponding Model No.	WNC0350-□ WNC0350-□-E WNC0350-□-S	WNC0600-□ WNC0600-□-E	WNC1000-□ WNC1000-□-E	WNC1600-□ WNC1600-□-E	WNC3000-□ WNC3000-□-E	WNC6000-□ WNC6000-□-E
A	28	35	38	45	55	75
B	21	26	29	35	42	59
C	30.5	32.5	33.5	34.5	37.5	41.5
D	4.5	5.5	5.5	6.8	9	11
E	14	16	17	18	21	25
F (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	M60×2
Chamfer	C2	C3	C3	C3	C4	C4
Mass kg	0.12	0.20	0.24	0.34	0.52	1.12

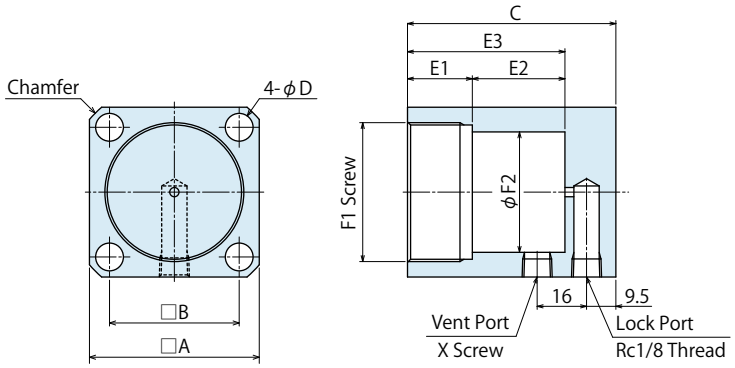
Notes: 1. Material：S45C Surface Finishing：Alkaline Blackening
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
3. It is not applicable for WNC-Q：Long Stroke Model. (Please select from WNZ-SQ.)

Manifold Block for WNC-Q

Model No. Indication

WNZ 035 0 – SQ

- 035: Size (Refer to following table)
- 0: Design No. (Revision Number)



(mm)

Model No.	WNZ0350-SQ	WNZ0600-SQ	WNZ1000-SQ	WNZ1600-SQ	WNZ3000-SQ	WNZ6000-SQ
Corresponding Model No.	WNC0350-Q	WNC0600-Q	WNC1000-Q	WNC1600-Q	WNC3000-Q	WNC6000-Q
A	28	35	38	45	55	75
B	21	26	29	35	42	59
C	49	51	52	56	59	68
D	4.5	5.5	5.5	6.8	9	11
E1	14	16	17	18	21	25
E2	18.5	18.5	18.5	21.5	21.5	26.5
E3	32.5	34.5	35.5	39.5	42.5	51.5
F1 (Nominal × Pitch)	M22×1.5	M26×1.5	M30×1.5	M36×1.5	M45×1.5	M60×2
F2	16	20	24	30	39	53
X Screw	M5×0.8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8
Chamfer	C2	C3	C3	C3	C4	C4
Mass kg	0.20	0.32	0.37	0.55	0.79	1.75

Notes: 1. Material：S45C Surface Finishing：Alkaline Blackening
2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.

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Sales Offices across the World

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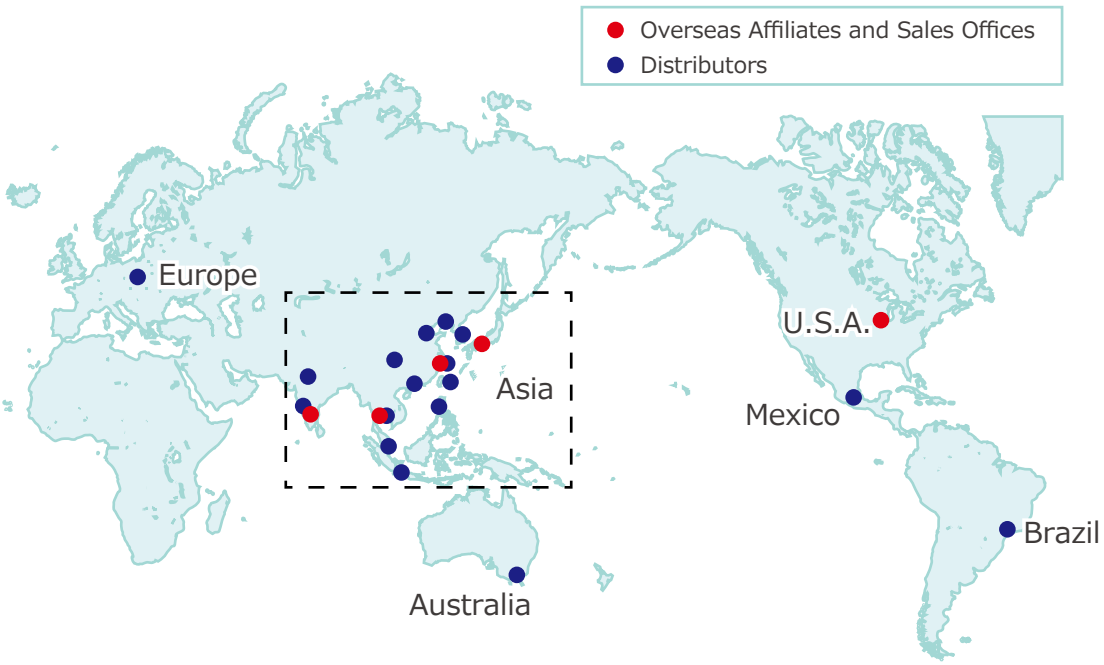

Asia Detailed Map

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