

Hydraulic Work Support

Model LD

Model LC

Model TNC

Model TC

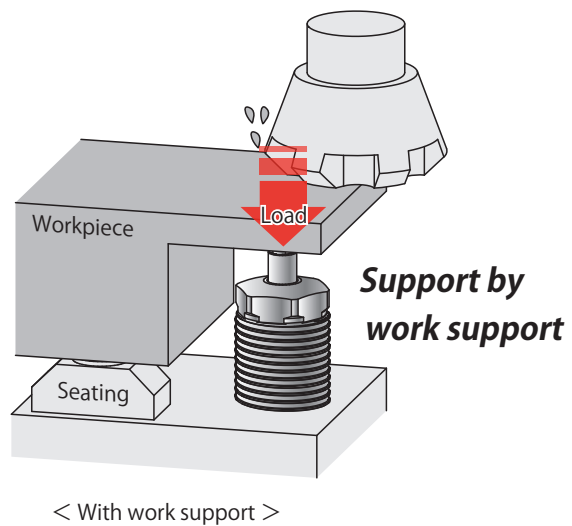
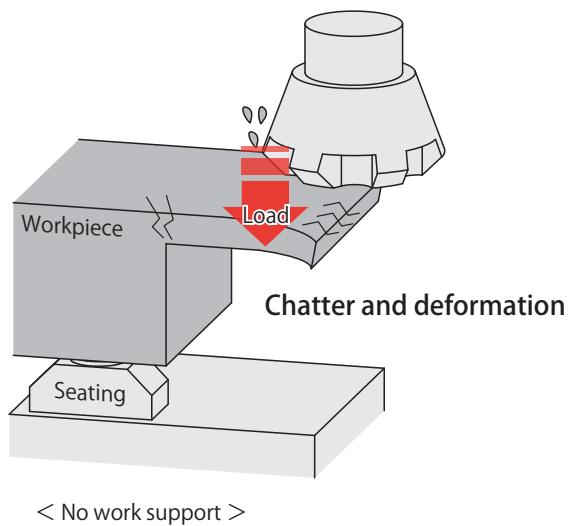


Strong support from opposite side when load is exerted

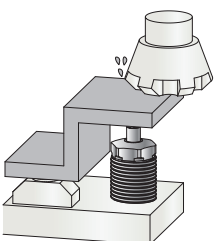
Pioneer and leading innovator of hydraulic work support collet technology.

PAT.

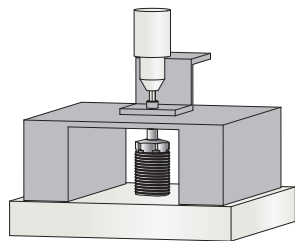
Work support eliminates chattering while machining and prevents deformation by the cutting load.



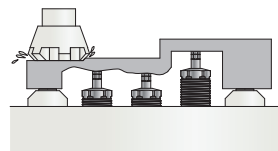
Application Examples



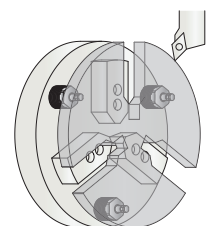
To avoid chattering during machining of thin-walled sections.





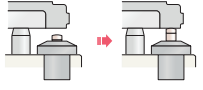
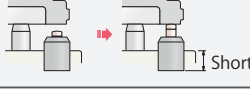

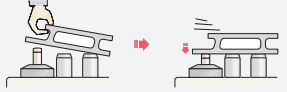
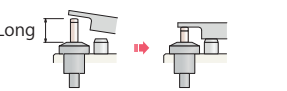

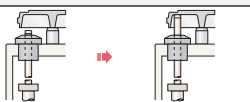





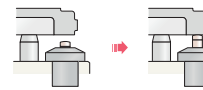
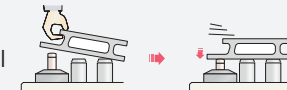
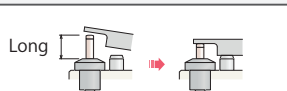


To back up the screw fastener machine and a nut-runner.



Work piece with different heights.



To avoid the radial chatter on lathe machining.

Low Pressure Model MAX 7MPa		 Model LD → P.547	 Model LC → P.571
Classification		Single Action External Thread	Single Action Top Flange
Operating Pressure Range		2.5~7MPa	2.5~7MPa
Standard Hydraulic Advance Model 		External Dimensions → P.557	External Dimensions → P.583
Options	Hydraulic Advance Short Model 	External Dimensions → P.557	—
	Hydraulic Advance Long Stroke Model 	External Dimensions → P.559	External Dimensions → P.585
	Spring Advance Model Spring Advance Short Model 	External Dimensions → P.561	External Dimensions → P.587
	Spring Advance Long Stroke Model 	External Dimensions → P.563	External Dimensions → P.589
	Air Sensing Option 	External Dimensions → P.565 <small>Connecting air sensor is available</small>	External Dimensions → P.593
	Rodless Hollow Model 	—	External Dimensions → P.591
Accessories	Manifold Block 	—	LZ-MP → P.1026
	Piping Block 	LZ-S/SQ DZ-C/R → P.1029	—
	Speed Control Valve Plug 	—	BZL, BZX, JZG → P.727
High Pressure Model TNC:MAX 35MPa / TC:MAX 25MPa		 Model TNC → P.599	 Model TC → P.613
Classification		Single Action External Thread	Single Action Top Flange
Operating Pressure Range		7~35MPa	7~25MPa
Standard Hydraulic Advance Model 		External Dimensions → P.607	External Dimensions → P.617
Options	Spring Advance Model 	External Dimensions → P.611	External Dimensions → P.619
	Hydraulic Advance Long Stroke Model 	External Dimensions → P.609	★
Accessories	Manifold Block 	—	LZ-MP → P.1026
	Piping Block 	TNZ-S/SQ → P.1034	—

※ Please contact us for detail dimension at ★ part.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others
- Hole Clamp
 - SFA
 - SFC
- Swing Clamp
 - LHA
 - LHC
 - LHS
 - LHW
 - LT/LG
 - TLA-2
 - TLB-2
 - TLA-1
- Link Clamp
 - LKA
 - LKC
 - LKW
 - LM/LJ
 - TMA-2
 - TMA-1
- Work Support
 - LD
 - LC
 - TNC
 - TC
- Air Sensing Lift Cylinder
 - LLW
- Compact Cylinder
 - LL
 - LLR
 - LLU
 - DP
 - DR
 - DS
 - DT
- Block Cylinder
 - DBA
 - DBC
- Control Valve
 - BZL
 - BZT
 - BZX/JZG
- Pallet Clamp
 - VS
 - VT
- Expansion Locating Pin
 - VL
 - VM
 - VJ
 - VK
- Pull Stud Clamp
 - FP
 - FQ
- Customized Spring Cylinder
 - DWA/DWB

PAT. Hydraulic Work Support

Model TNC

High Pressure (7~35MPa)

Single Action • Threaded Body Model

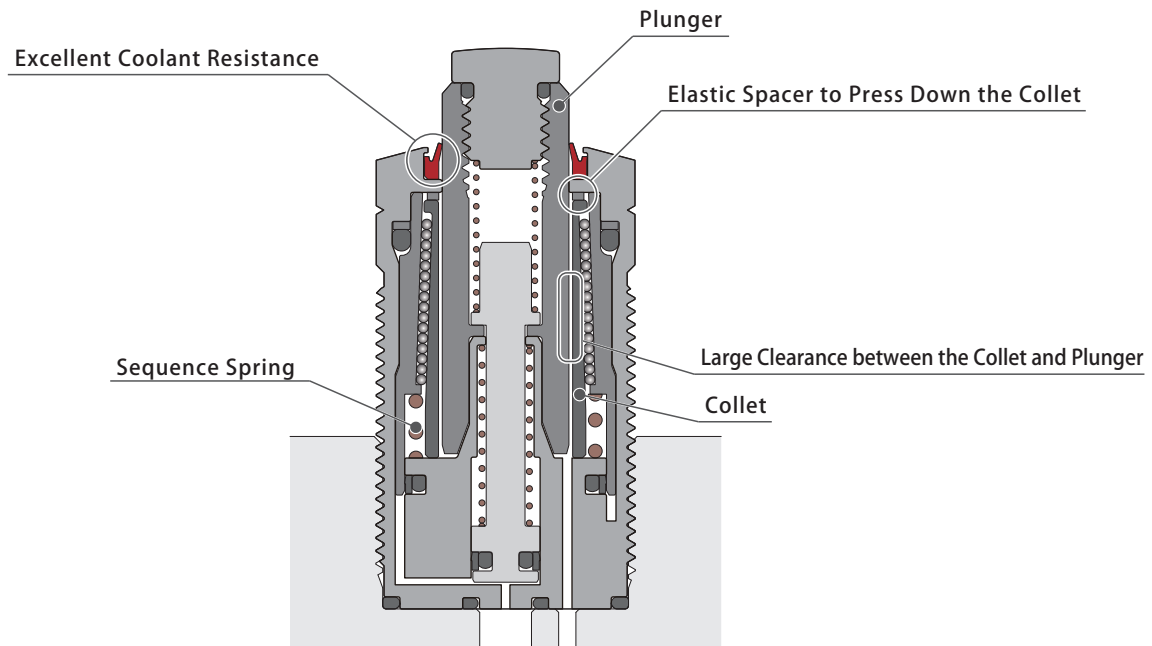
Powerful Support • Smooth Action



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• Hydraulic Advance Long Stroke Model (TNC-Q)	P.609
• Spring Advance Model (TNC-E)	P.611
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• Piping Block (Common Items of Other Models)	P.1034
Cautions	
• Notes for Hydraulic Work Support	P.623
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• Notes on Handling • Maintenance/Inspection • Warranty	

● Cross Section



- **It adopts the collet structure, the first in the world, ensuring powerful 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.

- **Concrete Workpiece Touch**

As the collet gripping the plunger is always pressed downwards, it helps prevent tilting when locked and the clearance with the work piece.

- **Certain Sequence Action**

As it is equipped with a powerful sequencing spring, the action sequences as such;

Plunger goes up → workpiece touches → collet locks. This is carried out via one hydraulic circuit system.

- **Excellent Coolant Resistance**

Our exclusive dust seal is designed to protect against high pressure coolant. It also has high durability against chlorine-based coolant by using a sealing material with excellent chemical resistance.

High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TC

Air Sensing Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion Locating Pin

VL
VM
VJ
VK

Pull Stud Clamp

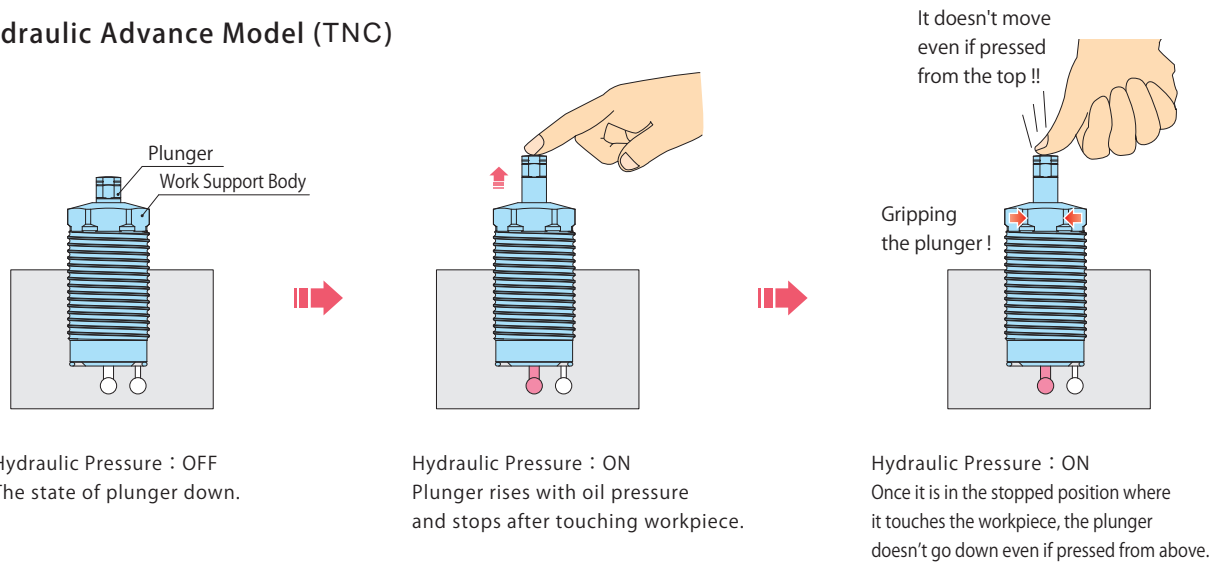
FP
FQ

Customized Spring Cylinder

DWA/DWB

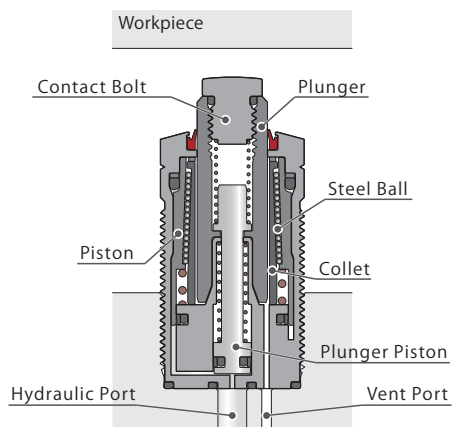
● Action Description

● Hydraulic Advance Model (TNC)



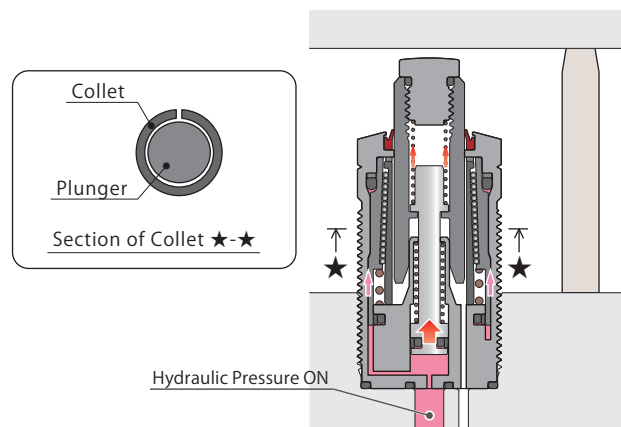
● Internal Action Description

● Hydraulic Advance model TNC



When releasing (Cross Section)

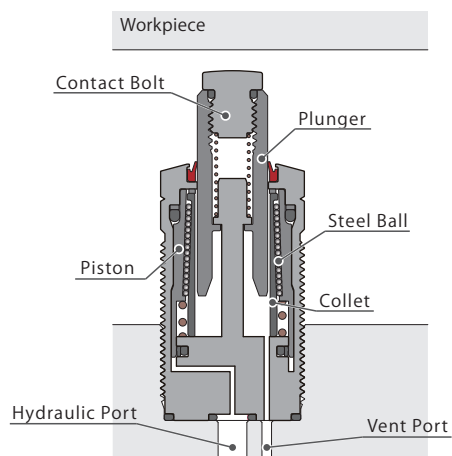
Plunger lowered by spring force.



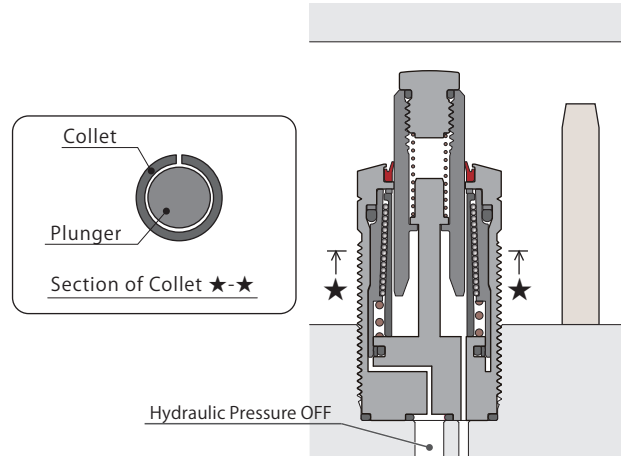
Plunger extends

Plunger piston rises first when hydraulic pressure is supplied. Plunger rises via spring force to the workpiece with this action.

● Spring Advance model TNC-E



When releasing (Cross Section)



Released State

High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

SFA

SFC

Swing Clamp

LHA

LHC

LHS

LHW

LT/LG

TLA-2

TLB-2

TLA-1

Link Clamp

LKA

LKC

LKW

LM/LJ

TMA-2

TMA-1

Work Support

LD

LC

TNC

TC

Air Sensing Lift Cylinder

LLW

Compact Cylinder

LL

LLR

LLU

DP

DR

DS

DT

Block Cylinder

DBA

DBC

Control Valve

BZL

BZT

BZX/JZG

Pallet Clamp

VS

VT

Expansion Locating Pin

VL

VM

VJ

VK

Pull Stud Clamp

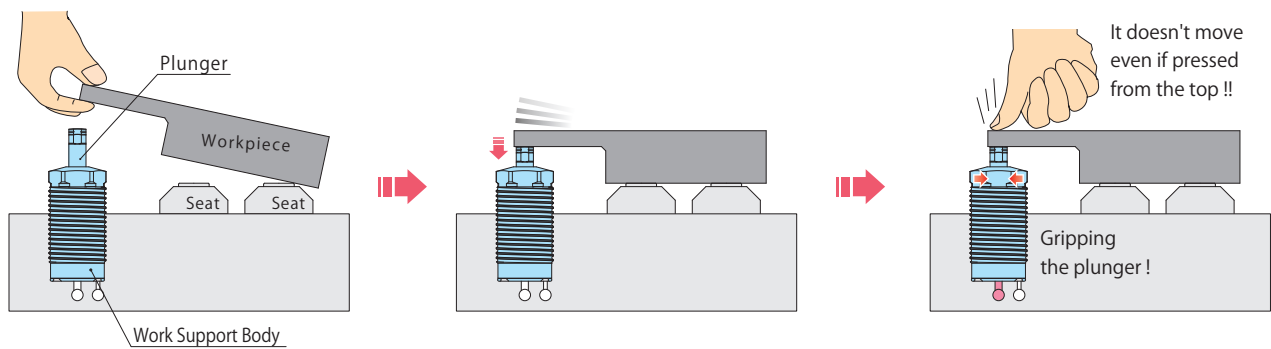
FP

FQ

Customized Spring Cylinder

DWA/DWB

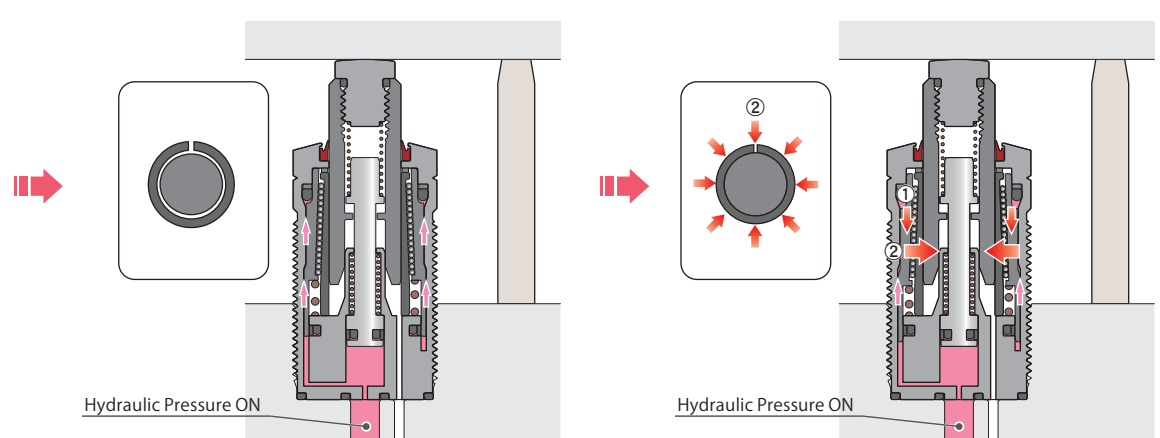
● Spring Advance Model (TNC-E)



Hydraulic Pressure : OFF
The state of plunger up.

Hydraulic Pressure : OFF
When workpiece rests on the work support, plunger goes down due to the weight of workpiece and is balanced.

Hydraulic Pressure : ON
Once it is in the stopped position where it touches the workpiece, the plunger doesn't go down even if pressed from above.

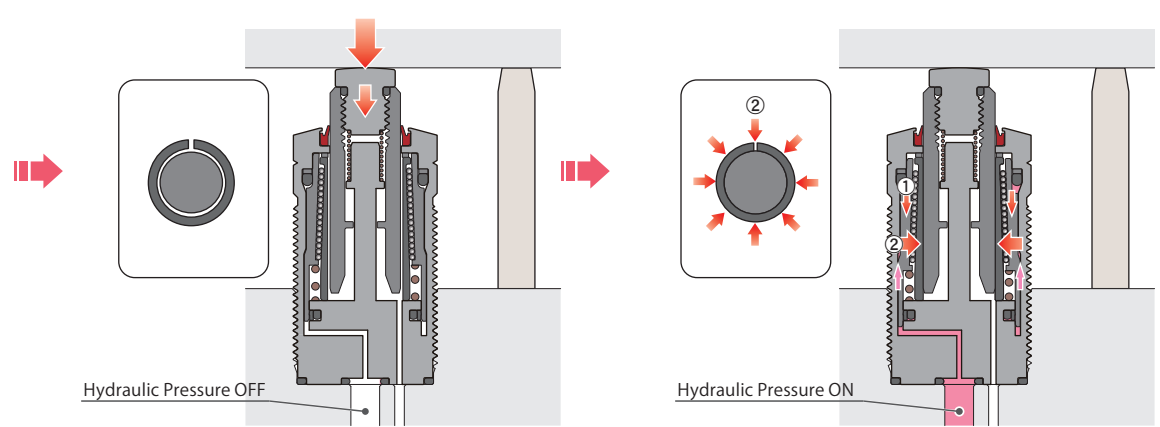


Contact bolt makes contact with workpiece

Plunger piston rises to the upper limit even after contact bolt makes contact with workpiece.

Locked State

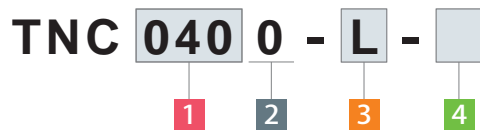
- ① The piston starts to press down via hydraulic pressure.
- ② The tapering action between the piston and collet affects the steel ball so that the collet can grip the plunger with even and strong power to generate the supporting force.



Workpiece set (Plunger goes down)

Locked State

Model No. Indication



1 Support Force

- 040** : Support Force 4.4kN at 35MPa
- 060** : Support Force 7.1kN at 35MPa
- 100** : Support Force 11.7kN at 35MPa
- 160** : Support Force 16.3kN at 35MPa

2 Design No.

- 0** : Revision Number

3 Plunger Spring Force

- L** : Low Spring Force
- H** : High Spring Force
- Blank** : **4** Q selected

4 Options

- Blank** : Hydraulic Advance Model (Standard)
 - Q** : Hydraulic Advance Long Stroke Model
 - E** : Spring Advance Model
- ※ Please contact us for Spring Advance Long Stroke model.

Specifications

4 Blank / E selected

Model No.	TNC0400-□	TNC0600-□	TNC1000-□	TNC1600-□	
	TNC0400-□-E	TNC0600-□-E	TNC1000-□-E	TNC1600-□-E	
Support Force at 35MPa	kN	4.4	7.1	11.7	16.3
Support Force (Calculation Formula) ^{※1}	kN	$0.147 \times P - 0.733$	$0.237 \times P - 1.183$	$0.390 \times P - 1.950$	$0.543 \times P - 2.717$
Plunger Stroke	mm	6.5	8	10	12
Cylinder Capacity	4 Blank Selected	0.3	0.6	1.1	1.8
	4 E Selected	0.1	0.1	0.3	0.4
Plunger Spring Force ^{※2}	L: Low Spring Force	4.0~5.8	4.7~7.8	5.8~9.7	8.3~14.6
	H: High Spring Force	5.6~8.0	6.2~11.0	7.8~13.5	10.1~22.0
Max. Operating Pressure	MPa	35			
Min. Operating Pressure	MPa	7			
Operating Temperature	°C	0~70			
Mass	kg	0.15	0.2	0.3	0.75

4 Q selected

Model No.	TNC0400-Q	TNC0600-Q	TNC1000-Q	TNC1600-Q	
Support Force at 35MPa	kN	4.4	7.1	11.7	16.3
Support Force (Calculation Formula) ^{※1}	kN	$0.147 \times P - 0.733$	$0.237 \times P - 1.183$	$0.390 \times P - 1.950$	$0.543 \times P - 2.717$
Plunger Stroke	mm	13	16	20	24
Cylinder Capacity	cm ³	0.6	1.0	1.9	3.1
Plunger Spring Force ^{※2}	N	6.1~11.4	6.2~12.9	7.8~20.4	10.1~24.8
Max. Operating Pressure	MPa	35			
Min. Operating Pressure	MPa	7			
Operating Temperature	°C	0~70			
Mass	kg	0.2	0.3	0.4	0.95

Notes ※ 1. P in the formula for support force indicates the hydraulic 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 work piece contacting force.

High-Power
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler
Hydraulic UnitManual Operation
Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TCAir Sensing
Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VTExpansion
Locating PinVL
VM
VJ
VK

Pull Stud Clamp

FP
FQCustomized
Spring Cylinder

DWA/DWB

● Performance Curve (TNC-□ : Hydraulic Advance Model / TNC-□-E : Spring Advance Model)

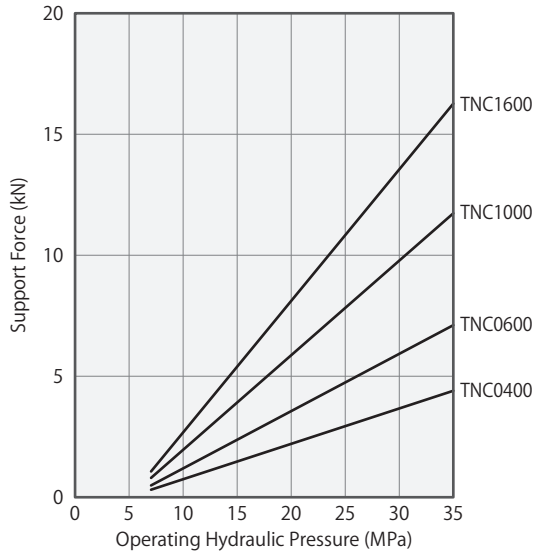
Applicable Model

TNC 040 0 - L H - Blank E

1 Body Size

4 Options : Blank, E selected

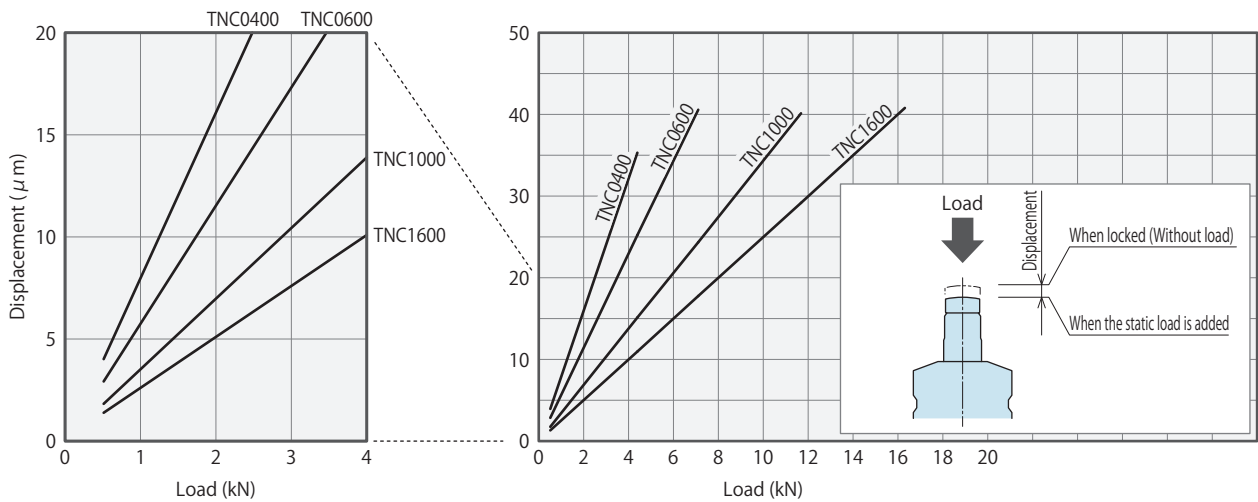
■ Support Force Graph ※ This graph shows the support force under static load condition.



Model No.	Support Force (kN)			
	TNC0400-□	TNC0600-□	TNC1000-□	TNC1600-□
Operating Hydraulic Pressure (MPa)	TNC0400-□-E	TNC0600-□-E	TNC1000-□-E	TNC1600-□-E
35	4.4	7.1	11.7	16.3
32.5	4.0	6.5	10.7	14.9
30	3.7	5.9	9.8	13.6
27.5	3.3	5.3	8.8	12.2
25	2.9	4.7	7.8	10.9
22.5	2.6	4.1	6.8	9.5
20	2.2	3.6	5.9	8.1
17.5	1.8	3.0	4.9	6.8
15	1.5	2.4	3.9	5.4
12.5	1.1	1.8	2.9	4.1
10	0.7	1.2	2.0	2.7
7.5	0.4	0.6	1.0	1.4
Support Force Formula ※3 kN	$0.147 \times P - 0.733$	$0.237 \times P - 1.183$	$0.390 \times P - 1.950$	$0.543 \times P - 2.717$

Note ※3. P : Operating hydraulic pressure (MPa)

■ Load / Displacement Graph ※ This graph shows the static load displacement at 35 MPa hydraulic pressure.



● Performance Curve (TNC-Q : Hydraulic Advance Long Stroke Model)

Applicable Model

TNC 040 0 - Q

4 Options : Q selected

1 Body Size

High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TC

Air Sensing Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion Locating Pin

VL
VM
VJ
VK

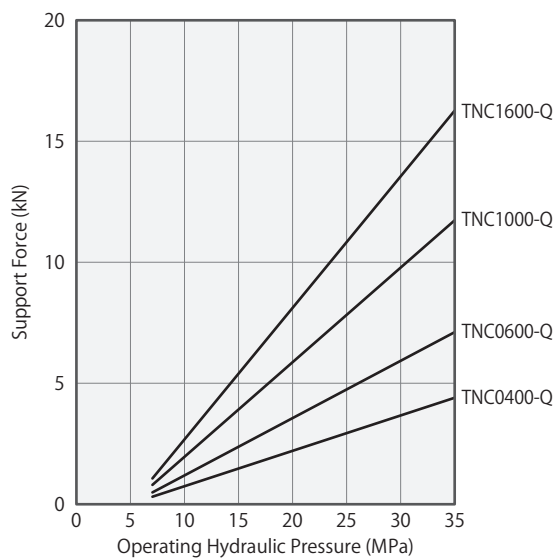
Pull Stud Clamp

FP
FQ

Customized Spring Cylinder

DWA/DWB

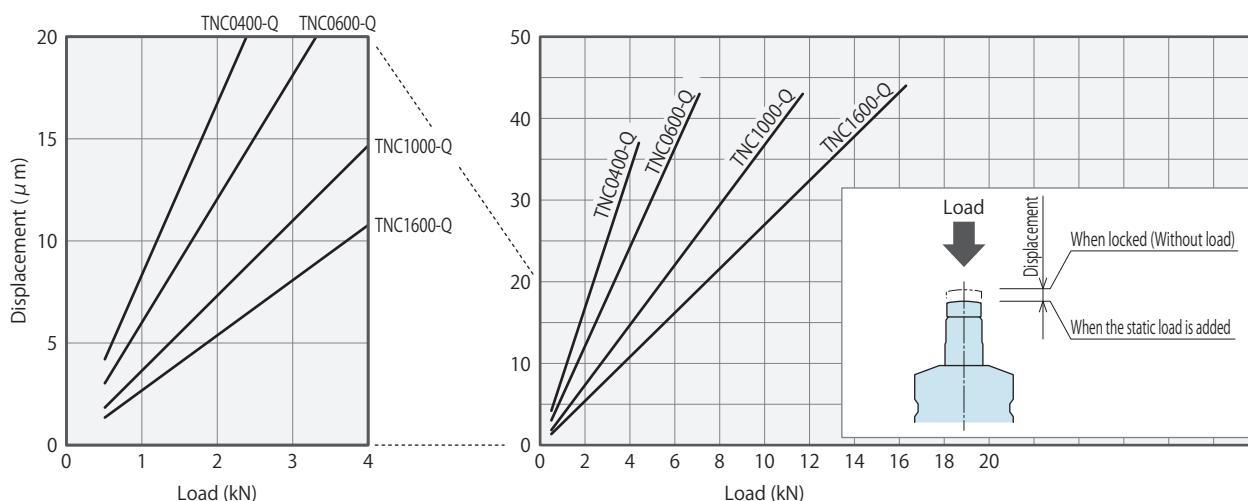
Support Force Graph ※ This graph shows the support force under static load condition.



Model No.	Support Force (kN)			
	TNC0400-Q	TNC0600-Q	TNC1000-Q	TNC1600-Q
Operating Hydraulic Pressure (MPa)				
35	4.4	7.1	11.7	16.3
32.5	4.0	6.5	10.7	14.9
30	3.7	5.9	9.8	13.6
27.5	3.3	5.3	8.8	12.2
25	2.9	4.7	7.8	10.9
22.5	2.6	4.1	6.8	9.5
20	2.2	3.6	5.9	8.1
17.5	1.8	3.0	4.9	6.8
15	1.5	2.4	3.9	5.4
12.5	1.1	1.8	2.9	4.1
10	0.7	1.2	2.0	2.7
7.5	0.4	0.6	1.0	1.4
Support Force Formula ※3 kN	$0.147 \times P - 0.733$	$0.237 \times P - 1.183$	$0.390 \times P - 1.950$	$0.543 \times P - 2.717$

Note ※3. P : Operating hydraulic pressure (MPa)

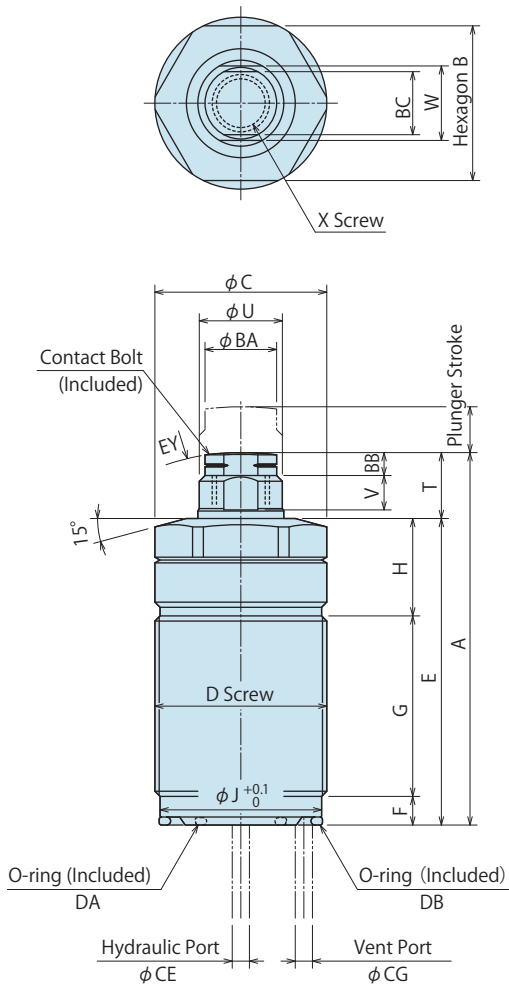
Load / Displacement Graph ※ This graph shows the static load displacement at 35 MPa hydraulic pressure.



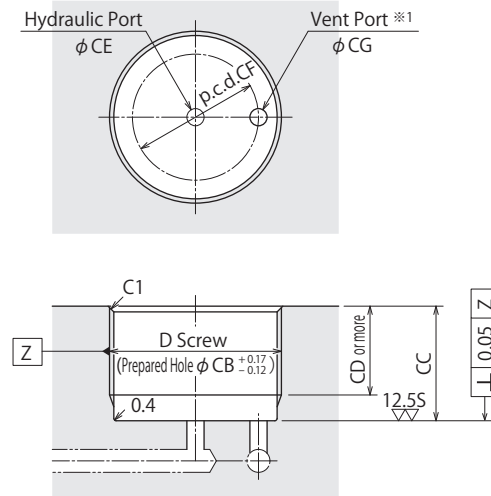
※ The Displacement of TNC-Q : long stroke model is bigger than TNC : standard model.

External Dimensions

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



Machining Dimensions of Mounting Area

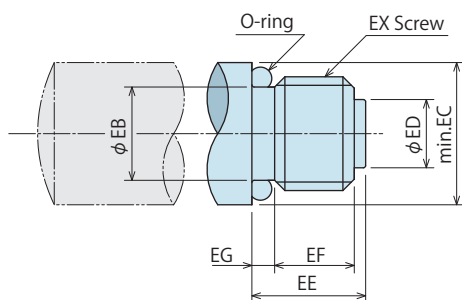


Note

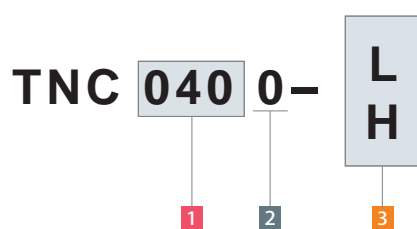
※ 1. The vent port needs to be processed in an open air environment without the presence of coolant, dust, etc. to avoid any internal contamination. (Refer to P.623: Appropriate Position of Vent Port for reference.)

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.



Model No. Indication



(Format Example : TNC0480-L)

- 1 Body Size
- 2 Design No.
- 3 Plunger Spring Force
- 4 Options

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	TNC0400-□	TNC0600-□	TNC1000-□	TNC1600-□
Plunger Stroke	6.5	8	10	12
A	60	65	76.5	88
B	24	27	32	41
C	26	30	36	45
D (Nominal×Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
E	48.5	53.5	64.5	71.5
F	5	5	5	6
G	27.5	31.5	51.2	55.2
H	16	17	8.3	10.3
J	24.2	28.2	34.2	43.2
T	11.5	11.5	12	16.5
U	12	15	18	22
V	6	6	6.5	9
W	10	13	14	19
X (Nominal×Pitch×Depth)	M8×1.25×12	M10×1.5×11	M10×1.5×11	M12×1.75×13
BA	11.5	12.5	12.5	16.5
BB	4	4	4	6
BC	10	11	11	14
CB	24.5	28.5	34.5	43.5
CC	13 ~ 32	13 ~ 36	15 ~ 55	18 ~ 60
CD	CC-4	CC-4	CC-4	CC-5
CE	max. 8	max. 10	max. 10	max. 12
CF	p.c.d. 19	p.c.d. 22	p.c.d. 26	p.c.d. 30
CG	max. 2.5	max. 3	max. 5	max. 6
DA	AS568-013(90°)	AS568-014(90°)	AS568-015(90°)	AS568-017(90°)
DB	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)
EY	SR30	SR50	SR50	SR80
Tightening Torque for Main Body*2	31.5 N·m	50 N·m	63 N·m	80 N·m

Note ※ 2. Use the recommended mounting torque in the chart above when mounting to the unit. 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.

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.

(mm)

Corresponding Product Model	TNC0400-□	TNC0600-□	TNC1000-□	TNC1600-□
EB	5.4	7.4	7.4	9.4
EC	10	12.5	12.5	16.5
ED	5	6	6	7.5
EE	10	10	10	12
EF	7.3	7.3	7.3	8.7
EG	1.7	1.7	1.7	2.3
EX (Nominal×Pitch)	M8×1.25	M10×1.5	M10×1.5	M12×1.75
O-ring	AS568-009(70°)	AS568-010(70°)	AS568-010(70°)	AS568-012(70°)

Notes

- Design and manufacture in consideration of the contact bolt's weight and the plunger's spring force.
- If contact bolts are designed and manufactured with different specs than the above chart, the plunger spring force will differ from the catalog and could result in damage to the plunger spring and cause it to malfunction.

High-Power
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler
Hydraulic Unit

Manual Operation
Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TC

Air Sensing
Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion
Locating Pin

VL
VM
VJ
VK

Pull Stud Clamp

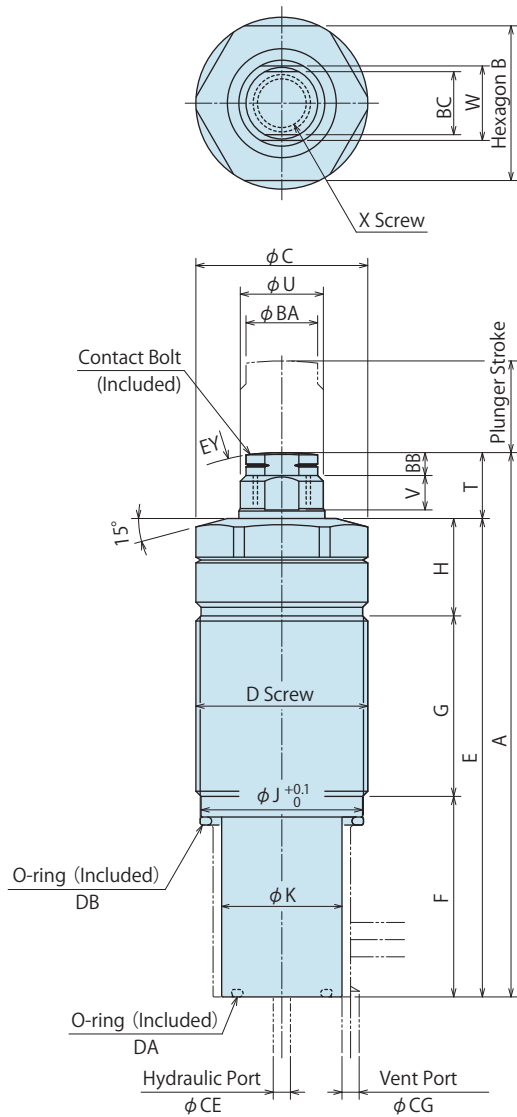
FP
FQ

Customized
Spring Cylinder

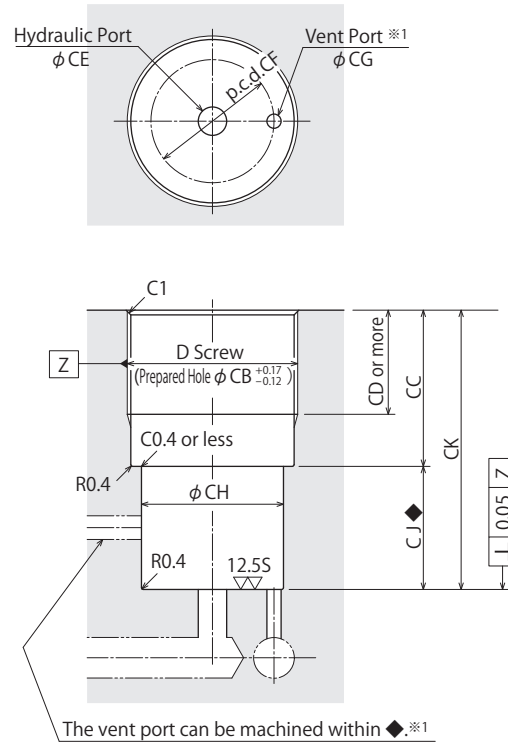
DWA/DWB

External Dimensions

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



Machining Dimensions of Mounting Area

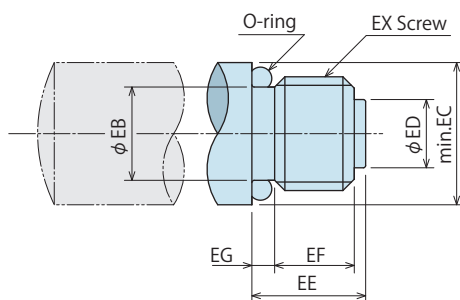


Note

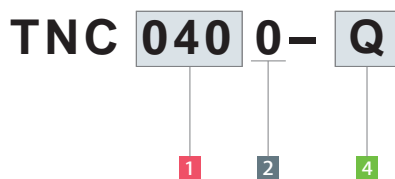
※ 1. The vent port needs to be processed in an open air environment without the presence of coolant, dust, etc. to avoid any internal contamination. (Refer to P.623: Appropriate Position of Vent Port for reference.)

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.



Model No. Indication



(Format Example : TNC0480-Q)

- 1 Body Size
- 2 Design No.
- 3 Plunger Spring Force (Blank)
- 4 Options (Q selected)

High-Power
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler
Hydraulic UnitManual Operation
Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TCAir Sensing
Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VTExpansion
Locating PinVL
VM
VJ
VK

Pull Stud Clamp

FP
FQCustomized
Spring Cylinder

DWA/DWB

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	TNC0400-Q	TNC0600-Q	TNC1000-Q	TNC1600-Q
Plunger Stroke	13	16	20	24
A	83.5	95	112	137
B	24	27	32	41
C	26	30	36	45
D (Nominal×Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
E	72	83.5	100	120.5
F	28.5	35	40.5	55
G	27.5	31.5	51.2	55.2
H	16	17	8.3	10.3
J	24.2	28.2	34.2	43.2
K	18.5	21	23	27
T	11.5	11.5	12	16.5
U	12	15	18	22
V	6	6	6.5	9
W	10	13	14	19
X (Nominal×Pitch×Depth)	M8×1.25×12	M10×1.5×11	M10×1.5×11	M12×1.75×13
BA	11.5	12.5	12.5	16.5
BB	4	4	4	6
BC	10	11	11	14
CB	24.5	28.5	34.5	43.5
CC	13 ~ 32	13 ~ 36	15 ~ 55	18 ~ 60
CD	CC-4	CC-4	CC-4	CC-5
CE	max. 8	max. 10	max. 10	max. 12
CF	p.c.d. 20	p.c.d. 24	p.c.d. 26	p.c.d. 30
CG	max. 2	max. 3	max. 3	max. 5
CH	20	24	30	39
CK	CC + 23.5	CC + 30	CC + 35.5	CC + 49
CJ	23.5	30	35.5	49
DA	AS568-014(90°)	AS568-015(90°)	AS568-016(90°)	AS568-018(90°)
DB	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)
EY	SR30	SR50	SR50	SR80
Tightening Torque for Main Body ^{※2}	31.5 N·m	50 N·m	63 N·m	80 N·m

Note ※ 2. Use the recommended mounting torque in the chart above when mounting to the unit. 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.

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.

(mm)

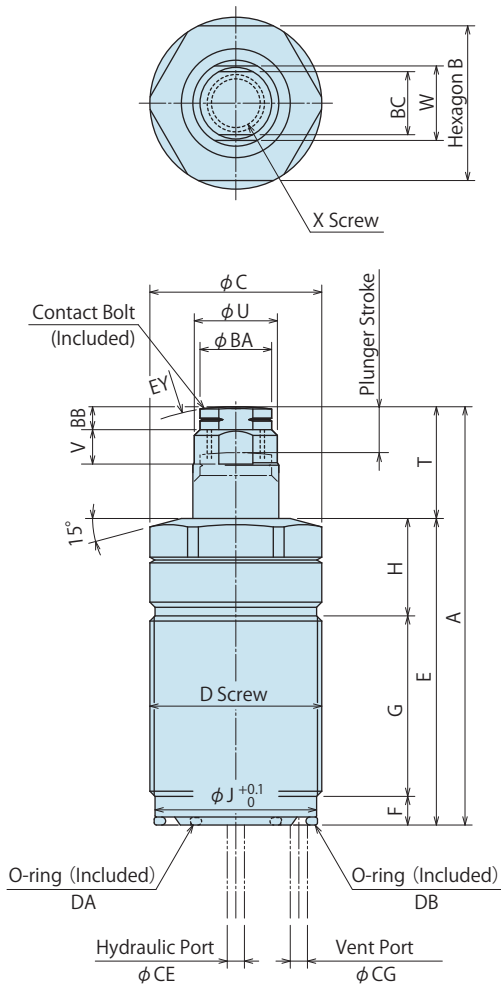
Corresponding Product Model	TNC0400-Q	TNC0600-Q	TNC1000-Q	TNC1600-Q
EB	5.4	7.4	7.4	9.4
EC	10	12.5	12.5	16.5
ED	5	6	6	7.5
EE	10	10	10	12
EF	7.3	7.3	7.3	8.7
EG	1.7	1.7	1.7	2.3
EX (Nominal×Pitch)	M8×1.25	M10×1.5	M10×1.5	M12×1.75
O-ring	AS568-009(70°)	AS568-010(70°)	AS568-010(70°)	AS568-012(70°)

Notes

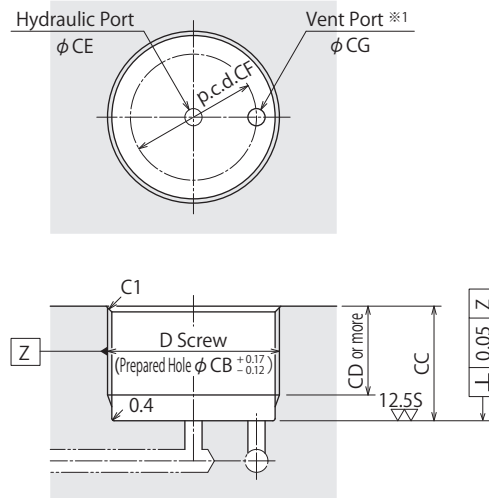
- Design and manufacture in consideration of the contact bolt's weight and the plunger's spring force.
- If contact bolts are designed and manufactured with different specs than the above chart, the plunger spring force will differ from the catalog and could result in damage to the plunger spring and cause it to malfunction.

External Dimensions

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



Machining Dimensions of Mounting Area

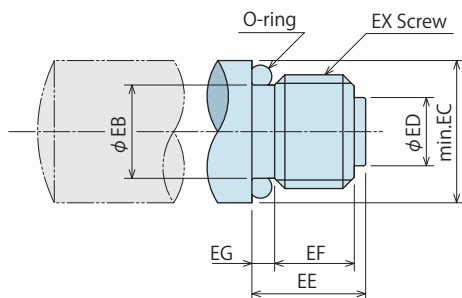


Note

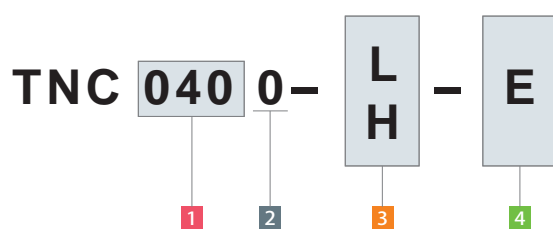
※ 1. The vent port needs to be processed in an open air environment without the presence of coolant, dust, etc. to avoid any internal contamination. (Refer to P.623: Appropriate Position of Vent Port for reference.)

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.



Model No. Indication



(Format Example : TNC0480-L-E)

- 1 Body Size
- 2 Design No.
- 3 Plunger Spring Force
- 4 Options (E selected)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	TNC0400-□-E	TNC0600-□-E	TNC1000-□-E	TNC1600-□-E
Plunger Stroke	6.5	8	10	12
A	66.5	73	86.5	100
B	24	27	32	41
C	26	30	36	45
D (Nominal×Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
E	48.5	53.5	64.5	71.5
F	5	5	5	6
G	27.5	31.5	51.2	55.2
H	16	17	8.3	10.3
J	24.2	28.2	34.2	43.2
T	18	19.5	22	28.5
U	12	15	18	22
V	6	6	6.5	9
W	10	13	14	19
X (Nominal×Pitch×Depth)	M8×1.25×12	M10×1.5×11	M10×1.5×11	M12×1.75×13
BA	11.5	12.5	12.5	16.5
BB	4	4	4	6
BC	10	11	11	14
CB	24.5	28.5	34.5	43.5
CC	13 ~ 32	13 ~ 36	15 ~ 55	18 ~ 60
CD	CC-4	CC-4	CC-4	CC-5
CE	max. 8	max. 10	max. 10	max. 12
CF	p.c.d. 19	p.c.d. 22	p.c.d. 26	p.c.d. 30
CG	max. 2.5	max. 3	max. 5	max. 6
DA	AS568-013(90°)	AS568-014(90°)	AS568-015(90°)	AS568-017(90°)
DB	AS568-020(90°)	AS568-022(90°)	AS568-026(90°)	AS568-030(90°)
EY	SR30	SR50	SR50	SR80
Tightening Torque for Main Body*2	31.5 N·m	50 N·m	63 N·m	80 N·m

Note ※ 2. Use the recommended mounting torque in the chart above when mounting to the unit. 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.

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.

(mm)

Corresponding Product Model	TNC0400-□-E	TNC0600-□-E	TNC1000-□-E	TNC1600-□-E
EB	5.4	7.4	7.4	9.4
EC	10	12.5	12.5	16.5
ED	5	6	6	7.5
EE	10	10	10	12
EF	7.3	7.3	7.3	8.7
EG	1.7	1.7	1.7	2.3
EX (Nominal×Pitch)	M8×1.25	M10×1.5	M10×1.5	M12×1.75
O-ring	AS568-009(70°)	AS568-010(70°)	AS568-010(70°)	AS568-012(70°)

Notes

- Design and manufacture in consideration of the contact bolt's weight and the plunger's spring force.
- If contact bolts are designed and manufactured with different specs than the above chart, the plunger spring force will differ from the catalog and could result in damage to the plunger spring and cause it to malfunction.

High-Power
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler
Hydraulic Unit

Manual Operation
Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1

Work Support

LD
LC
TNC
TC

Air Sensing
Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion
Locating Pin

VL
VM
VJ
VK

Pull Stud Clamp

FP
FQ

Customized
Spring Cylinder

DWA/DWB

PAT. Hydraulic Work Support

Model TC

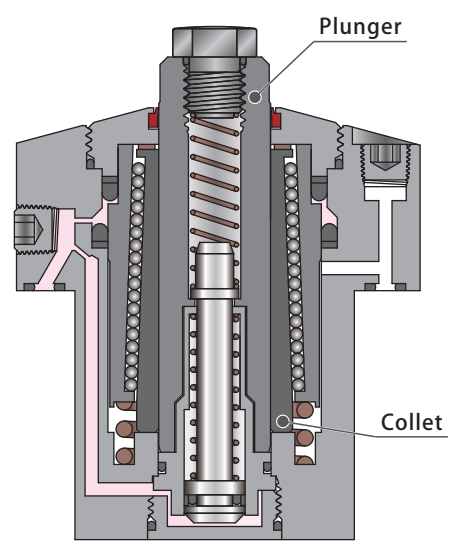
High Pressure (7~25MPa)
Single Action • Flange Model
Powerful Support • Smooth Action



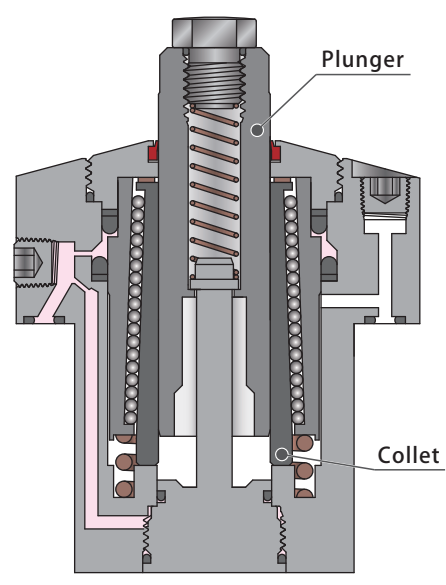
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• Installation Notes • Hydraulic Fluid List • Notes on Hydraulic Cylinder Speed Control Circuit	
• Notes on Handling • Maintenance/Inspection • Warranty	

Cross Section



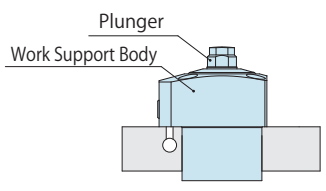
Hydraulic Advance Model (TC)
The drawing shows the released state.



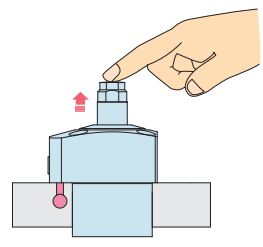
Spring Advance Model (TC-E)
The drawing shows the released state.

Action Description

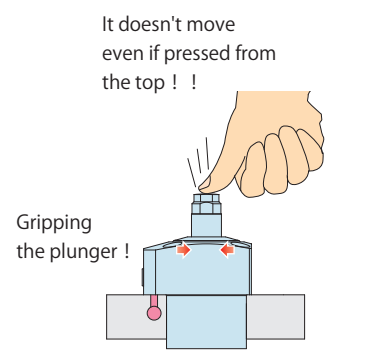
● Hydraulic Advance Model (TC)



Hydraulic Pressure : OFF
The state of plunger down.

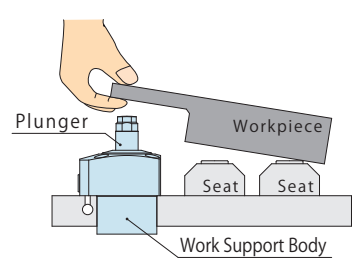


Hydraulic Pressure : ON
Plunger rises with oil pressure and stops after touching workpiece.

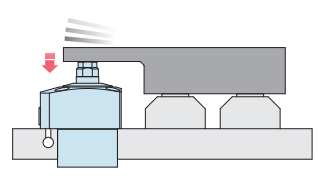


Hydraulic Pressure : ON
Once it is in the stopped position where it touches the workpiece, the plunger doesn't go down even if pressed from above.

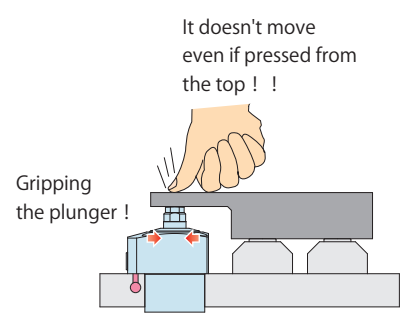
● Spring Advance Model (TC-E)



Hydraulic Pressure : OFF
The state of plunger up.



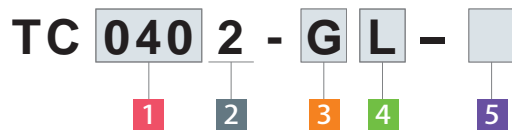
Hydraulic Pressure : OFF
When work piece rests on the work support, plunger goes down due to the weight of workpiece and is balanced.



Hydraulic Pressure : ON
Once it is in the stopped position where it touches the workpiece, the plunger doesn't go down even if pressed from above.

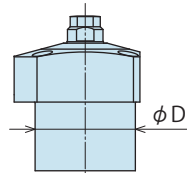
High-Power Series
Pneumatic Series
Hydraulic Series
Valve / Coupler Hydraulic Unit
Manual Operation Accessories
Cautions / Others
Hole Clamp
SFA
SFC
Swing Clamp
LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1
Link Clamp
LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1
Work Support
LD
LC
TNC
TC
Air Sensing Lift Cylinder
LLW
Compact Cylinder
LL
LLR
LLU
DP
DR
DS
DT
Block Cylinder
DBA
DBC
Control Valve
BZL
BZT
BZX/JZG
Pallet Clamp
VS
VT
Expansion Locating Pin
VL
VM
VJ
VK
Pull Stud Clamp
FP
FQ
Customized Spring Cylinder
DWA/DWB

Model No. Indication



1 Body Size

- 040** : φD=40mm
- 048** : φD=48mm
- 055** : φD=55mm
- 065** : φD=65mm
- 075** : φD=75mm



※ Outer diameter (φD) of the cylinder.

4 Plunger Spring Force

- L** : Low Spring Force
- H** : High Spring Force

5 Options

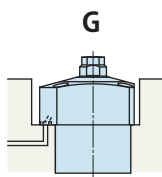
- Blank** : Hydraulic Advance Model (Standard)
- E** : Spring Advance Model

2 Design No.

- 2** : Revision Number

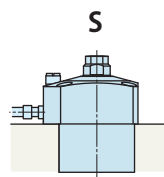
3 Piping Method

- G** : Gasket Option (With R Thread Plug)
- S** : Piping Option (Rc Thread Port)



Gasket Option

With R Thread Plug



Piping Option

Rc Thread Port
No Gasket Port

Specifications

Model No.	TC0402-□□-□	TC0482-□□-□	TC0552-□□-□	TC0652-□□-□	TC0752-□□-□	
Support Force at 25MPa kN	10.1	15.5	24.9	40.0	64.9	
Support Force (Calculation Formula) ^{※1} kN	0.47×P-1.63	0.72×P-2.52	1.16×P-4.07	1.86×P-6.51	3.02×P-10.58	
Plunger Stroke mm	10	12	14	16	20	
Cylinder Capacity cm ³	1.1	1.9	2.5	4.7	6.5	
Plunger Spring Force ^{※2} N	L: Low Spring Force	5.8~9.7	8.3~14.6	9.8~14.6	12.4~18.8	14.6~21.0
	H: High Spring Force	7.9~13.6	10.1~21.9	15.8~22.0	18.7~31.9	21.4~34.2
Max. Operating Pressure MPa	25					
Min. Operating Pressure MPa	7					
Withstanding Pressure MPa	37.5					
Operating Temperature °C	0~70					
Mass kg	0.7	1.1	1.6	2.7	4.3	

Notes

- ※1. P in the formula for support force indicates the hydraulic 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 work piece contacting force.

Performance Curve (TC-□□ : Hydraulic Advance Model / TC-□□-E : Spring Advance Model)

Applicable Model

TC **040** **2** -

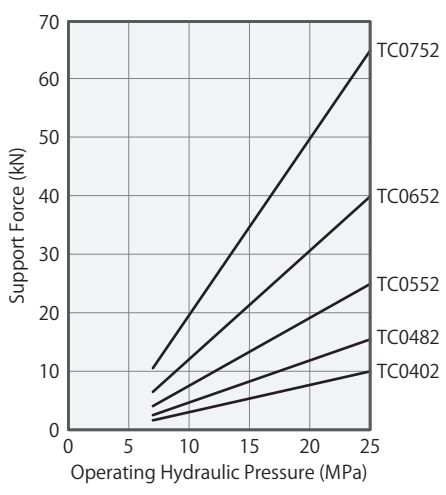
G	L
S	H

 -

Blank
E

1 Body Size **5** Options : Blank, E selected

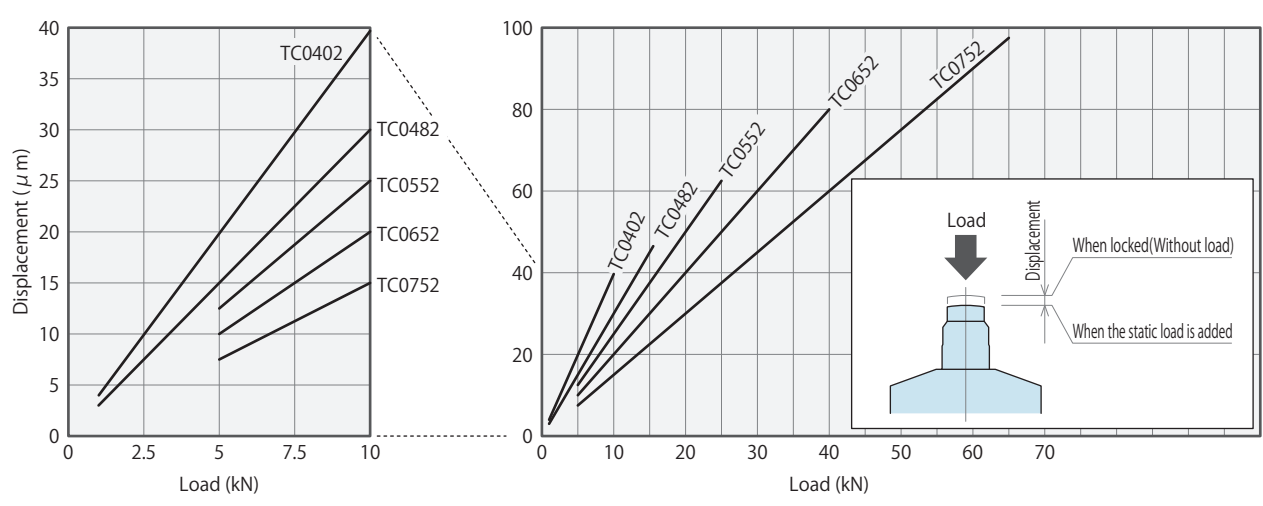
Support Force Graph ※ This graph shows the support force under static load condition.



Model No.	Support Force (kN)				
	TC0402-□□	TC0482-□□	TC0552-□□	TC0652-□□	TC0752-□□
Operating Hydraulic Pressure (MPa)	TC0402-□□-E	TC0482-□□-E	TC0552-□□-E	TC0652-□□-E	TC0752-□□-E
25	10.1	15.5	24.9	40.0	64.9
22.5	8.9	13.7	22.0	35.3	57.4
20	7.8	11.9	19.1	30.7	49.8
17.5	6.6	10.1	16.2	26.0	42.3
15	5.4	8.3	13.3	21.4	34.7
12.5	4.2	6.5	10.4	16.7	27.2
10	3.1	4.7	7.5	12.1	19.6
7.5	1.9	2.9	4.6	7.4	12.1
Support Force Formula ※ ³ kN	$0.47 \times P - 1.63$	$0.72 \times P - 2.52$	$1.16 \times P - 4.07$	$1.86 \times P - 6.51$	$3.02 \times P - 10.58$

Note ※3. P : Operating Hydraulic Pressure (MPa)

Load / Displacement Graph ※ This graph shows the static load displacement at 25 MPa hydraulic pressure.

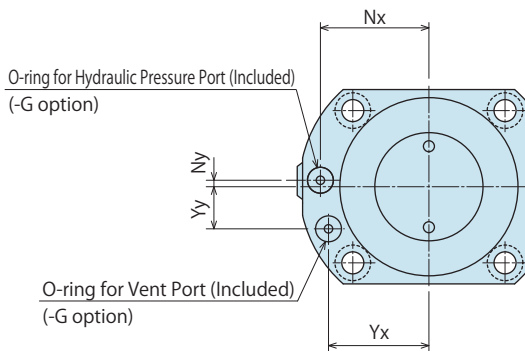
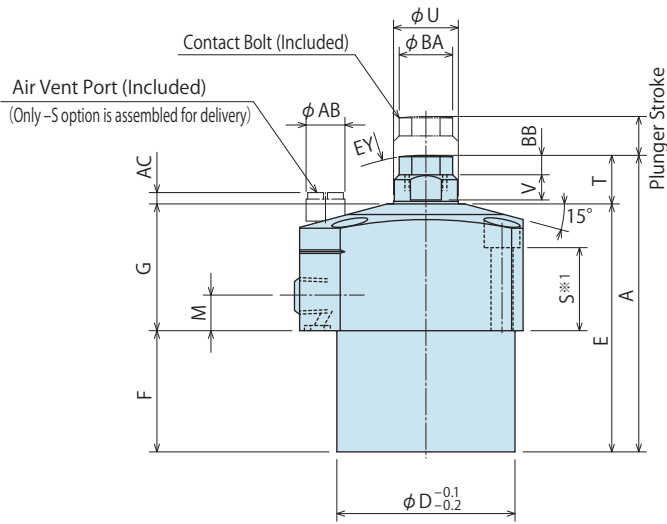
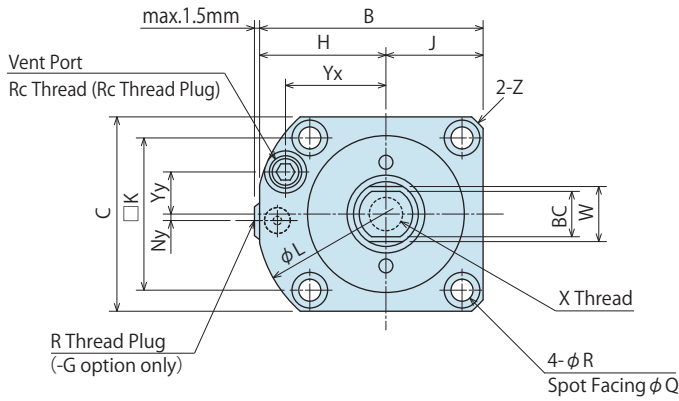


- High-Power Series
- Pneumatic Series
- Hydraulic Series**
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others
- Hole Clamp
 - SFA
 - SFC
- Swing Clamp
 - LHA
 - LHC
 - LHS
 - LHW
 - LT/LG
 - TLA-2
 - TLB-2
 - TLA-1
- Link Clamp
 - LKA
 - LKC
 - LKW
 - LM/LJ
 - TMA-2
 - TMA-1
- Work Support**
 - LD
 - LC
 - TNC
 - TC**
- Air Sensing Lift Cylinder
 - LLW
- Compact Cylinder
 - LL
 - LLR
 - LLU
 - DP
 - DR
 - DS
 - DT
- Block Cylinder
 - DBA
 - DBC
- Control Valve
 - BZL
 - BZT
 - BZX/JZG
- Pallet Clamp
 - VS
 - VT
- Expansion Locating Pin
 - VL
 - VM
 - VJ
 - VK
- Pull Stud Clamp
 - FP
 - FQ
- Customized Spring Cylinder
 - DWA/DWB

External Dimensions

G : Gasket Option (with R Thread Plug)

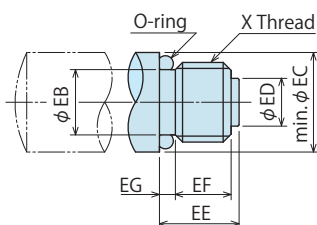
※This drawing shows the released state of TC-G□ (before the plunger is lifted).



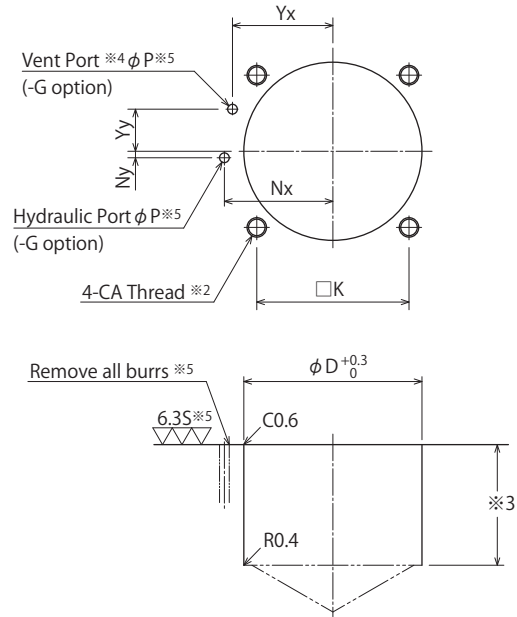
Notes

- ※1. Mounting bolts are not provided. Customer should prepare based on dimension "S".

Contact Bolt Design Dimensions



Machining Dimensions of Mounting Area



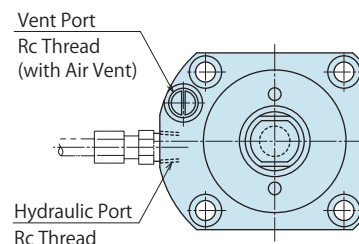
Notes

- ※2. The CA thread depth of the mounting bolt should be decided based on the mounting height with reference to S size.
- ※3. The φD depth of the body mounting hole should be decided from dimension F.
- ※4. 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.623 : Appropriate Position of Vent Port for reference.)
- ※5. This process indicates -G:gasket option.

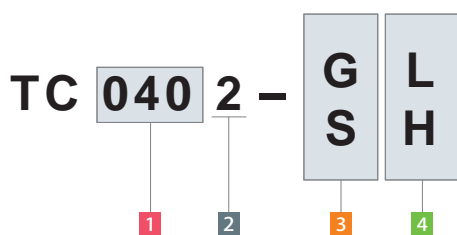
Piping Method

S : Piping Option (Rc-Thread)

※The graph shows TC-S□.



Model No. Indication



(Format Example : TC0402-GL、TC0752-SH)

- 1 Body Size
- 2 Design No.
- 3 Piping Method
- 4 Plunger Spring Force
- 5 Options : Blank

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	TC0402-□□	TC0482-□□	TC0552-□□	TC0652-□□	TC0752-□□
Plunger Stroke	10	12	14	16	20
A	75	85	101	126	149
B	54	61	69	81	92
C	45	51	60	70	80
D	40	48	55	65	75
E	64	70	85	107	128
F	28	34	49	69	82
G	36	36	36	38	46
H	31.5	35.5	39	46	52
J	22.5	25.5	30	35	40
K	34	40	47	55	63
L	68	73	80	94	106
M	11	12	12	12	14
Nx	26	30	33.5	39.5	45
Ny	5	0	0	0	0
P	3	3	3	5	5
Q	9.5	9.5	11	11	14
R	5.5	5.5	6.8	6.8	9
S	26	25	23	24	29
T	11	15	16	19	21
U	16	20	22	25	30
V	6	8	9	9	10.5
W	13	17	19	22	24
X (Nominal×Pitch×Depth)	M10×1.5×11	M12×1.75×13	M12×1.75×13	M16×2×20	M16×2×20
Yx	25	28	31	37	42.5
Yy	8	11	13	14	15
Z (Chamfer)	C1	C3	R40	R47	R53
AB	12	12	12	12	12
AC	5	4.5	4	3	1.5
BA	12.5	16.5	16.5	21.5	21.5
BB	4	6	6	9	9
BC	11	14	14	19	19
CA (Nominal×Pitch)	M5×0.8	M5×0.8	M6×1	M6×1	M8×1.25
EY	SR50	SR80	SR80	SR125	SR125
Hydraulic Port	-S option	Rc1/8	Rc1/8	Rc1/8	Rc1/4
R Thread Plug	-G option	R1/8	R1/8	R1/8	R1/4
O-ring (-G option)		1BP5	1BP5	1BP7	1BP7
Vent Port Rc Thread		Rc1/8	Rc1/8	Rc1/8	Rc1/8

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.

(mm)

Corresponding Item Model No.	TC0402-□□	TC0482-□□	TC0552-□□	TC0652-□□	TC0752-□□
EB	8.2	10	10	13.5	13.5
EC	12.5	16.5	16.5	21.5	21.5
ED	6	7.5	7.5	10.5	10.5
EE	10	12	12	16	16
EF	7	8	8	11	11
EG	2	3	3	4	4
EX (Nominal×Pitch)	M10×1.5	M12×1.75	M12×1.75	M16×2	M16×2
O-ring	S8 (Made by NOK)	S10 (Made by NOK)	S10 (Made by NOK)	AS568-014 (70°)	AS568-014 (70°)

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

Hole Clamp

- SFA
- SFC

Swing Clamp

- LHA
- LHC
- LHS
- LHW
- LT/LG
- TLA-2
- TLB-2
- TLA-1

Link Clamp

- LKA
- LKC
- LKW
- LM/LJ
- TMA-2
- TMA-1

Work Support

- LD
- LC
- TNC
- TC

Air Sensing Lift Cylinder

- LLW

Compact Cylinder

- LL
- LLR
- LLU
- DP
- DR
- DS
- DT

Block Cylinder

- DBA
- DBC

Control Valve

- BZL
- BZT
- BZX/JZG

Pallet Clamp

- VS
- VT

Expansion Locating Pin

- VL
- VM
- VJ
- VK

Pull Stud Clamp

- FP
- FQ

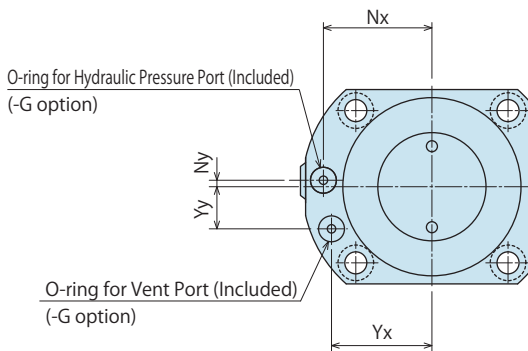
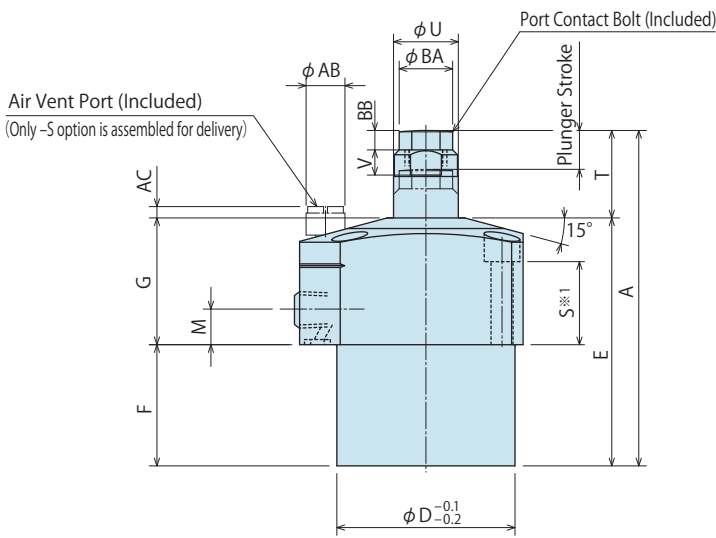
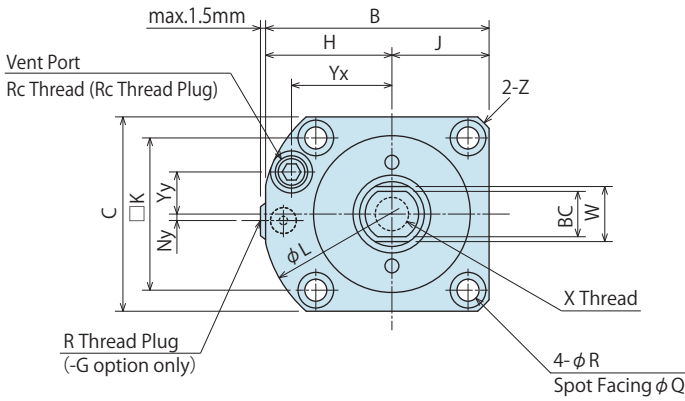
Customized Spring Cylinder

- DWA/DWB

External Dimensions

G : Gasket Option (with R Thread Plug)

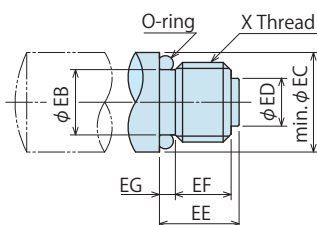
※This drawing shows the released state of TC-G□-E (plunger rises).



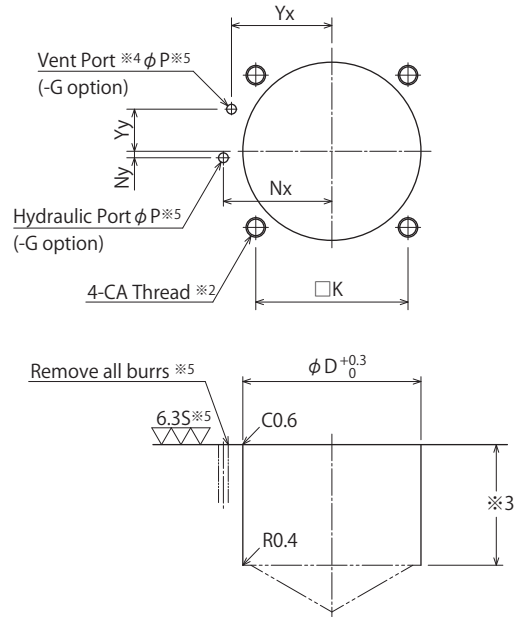
Notes

- ※1. Mounting bolts are not provided. Customer should prepare based on dimension "S".

Contact Bolt Design Dimensions



Machining Dimensions of Mounting Area



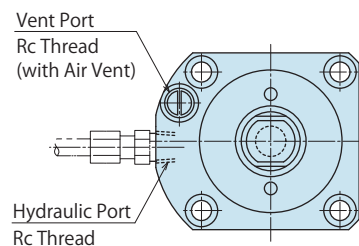
Notes

- ※2. The CA thread depth of the mounting bolt should be decided based on the mounting height with reference to S size.
- ※3. The φD depth of the body mounting hole should be decided from dimension F.
- ※4. 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.623 : Appropriate Position of Vent Port for reference.)
- ※5. This process indicates -G: gasket option.

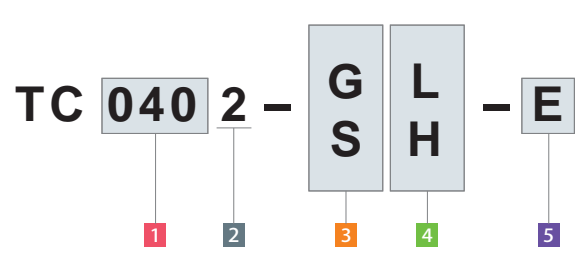
Piping Method

S : Piping Option (Rc-Thread)

※The graph shows TC-S□-E.



Model No. Indication



(Format Example : TC0402-GL-E, TC0752-SH-E)

- 1 Body Size
- 2 Design No.
- 3 Piping Method
- 4 Plunger Spring Force
- 5 Options (E selected)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	TC0402-□□-E	TC0482-□□-E	TC0552-□□-E	TC0652-□□-E	TC0752-□□-E
Plunger Stroke	10	12	14	16	20
A	85	97	115	142	169
B	54	61	69	81	92
C	45	51	60	70	80
D	40	48	55	65	75
E	64	70	85	107	128
F	28	34	49	69	82
G	36	36	36	38	46
H	31.5	35.5	39	46	52
J	22.5	25.5	30	35	40
K	34	40	47	55	63
L	68	73	80	94	106
M	11	12	12	12	14
Nx	26	30	33.5	39.5	45
Ny	5	0	0	0	0
P	3	3	3	5	5
Q	9.5	9.5	11	11	14
R	5.5	5.5	6.8	6.8	9
S	26	25	23	24	29
T	21	27	30	35	41
U	16	20	22	25	30
V	6	8	9	9	10.5
W	13	17	19	22	24
X (Nominal×Pitch×Depth)	M10×1.5×11	M12×1.75×13	M12×1.75×13	M16×2×20	M16×2×20
Yx	25	28	31	37	42.5
Yy	8	11	13	14	15
Z (Chamfer)	C1	C3	R40	R47	R53
AB	12	12	12	12	12
AC	5	4.5	4	3	1.5
BA	12.5	16.5	16.5	21.5	21.5
BB	4	6	6	9	9
BC	11	14	14	19	19
CA (Nominal × Pitch)	M5×0.8	M5×0.8	M6×1	M6×1	M8×1.25
EY	SR50	SR80	SR80	SR125	SR125
Hydraulic Port	-S option	Rc1/8	Rc1/8	Rc1/8	Rc1/4
R thread Plug	-G option	R1/8	R1/8	R1/8	R1/4
O-ring (-G option)		1BP5	1BP5	1BP7	1BP7
Vent Port Rc Thread		Rc1/8	Rc1/8	Rc1/8	Rc1/8

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. (mm)

Corresponding Item Model No.	TC0402-□□-E	TC0482-□□-E	TC0552-□□-E	TC0652-□□-E	TC0752-□□-E
EB	8.2	10	10	13.5	13.5
EC	12.5	16.5	16.5	21.5	21.5
ED	6	7.5	7.5	10.5	10.5
EE	10	12	12	16	16
EF	7	8	8	11	11
EG	2	3	3	4	4
EX (Nominal × Pitch)	M10×1.5	M12×1.75	M12×1.75	M16×2	M16×2
O-ring	S8 (Made by NOK)	S10 (Made by NOK)	S10 (Made by NOK)	AS568-014 (70°)	AS568-014 (70°)

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

- Hole Clamp
 - SFA
 - SFC

- Swing Clamp
 - LHA
 - LHC
 - LHS
 - LHW
 - LT/LG
 - TLA-2
 - TLB-2
 - TLA-1

- Link Clamp
 - LKA
 - LKC
 - LKW
 - LM/LJ
 - TMA-2
 - TMA-1

- Work Support
 - LD
 - LC
 - TNC
 - TC

- Air Sensing Lift Cylinder
 - LLW

- Compact Cylinder
 - LL
 - LLR
 - LLU
 - DP
 - DR
 - DS
 - DT

- Block Cylinder
 - DBA
 - DBC

- Control Valve
 - BZL
 - BZT
 - BZX/JZG

- Pallet Clamp
 - VS
 - VT

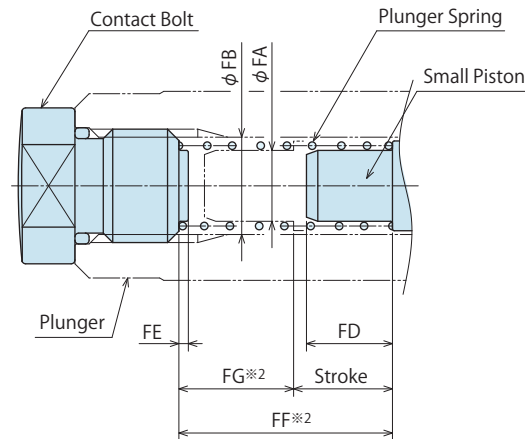
- Expansion Locating Pin
 - VL
 - VM
 - VJ
 - VK

- Pull Stud Clamp
 - FP
 - FQ

- Customized Spring Cylinder
 - DWA/DWB

● Plunger Spring Design Dimension

- ※ Please use as reference in case springs other than an attached plunger spring are designed and manufactured to the customer.
- ※ This drawing shows the released state.



(mm)

Corresponding Product Model	TC0402	TC0482	TC0552	TC0652	TC0752	
TC	FA	6	7.5	7.5	10.5	10.5
	FB	8.5	10.3	10.3	14	14
	FD	8.1	9.1	9.1	12.6	12.6
	FE	1	1	1	1	1
	FF*2	19.6	22.6	34.6	34.3	46.3
	FG*2	9.6	10.6	20.6	18.3	26.3
	Stroke	10	12	14	16	20
TC-E	FA	6	7.5	7.5	10.5	10.5
	FB	8.5	10.3	10.3	14	14
	FD	2.5	3	3	3.5	3.5
	FE	1	1	1	1	1
	FF*2	19.6	22.6	34.6	34.3	46.3
	FG*2	9.6	10.6	20.6	18.3	26.3
	Stroke	10	12	14	16	20

Notes

- ※ 2. Please perform a spring design so that spring set length is below FF dimension and spring contact length is below FG dimension.

 **MEMO**High-Power
Series

Pneumatic Series

Hydraulic SeriesValve / Coupler
Hydraulic UnitManual Operation
Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

LHA
LHC
LHS
LHW
LT/LG
TLA-2
TLB-2
TLA-1

Link Clamp

LKA
LKC
LKW
LM/LJ
TMA-2
TMA-1**Work Support**LD
LC
TNC
TCAir Sensing
Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VTExpansion
Locating PinVL
VM
VJ
VK

Pull Stud Clamp

FP
FQCustomized
Spring Cylinder

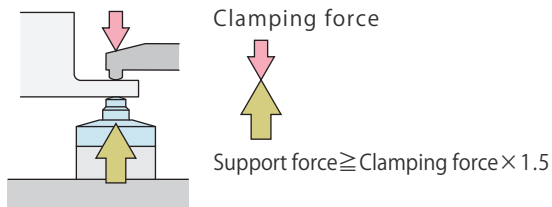
DWA/DWB

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) Notes for Circuit Design

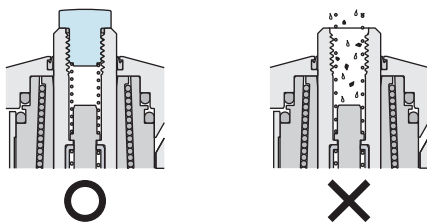
- Please read "Notes on Hydraulic Cylinder Speed Control Circuit" on P.1044 to assist with proper hydraulic circuit designing.

3) 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.

4) 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.

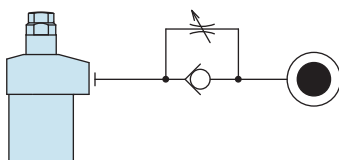


5) Protect the plunger surface at the time of use on welding fixture etc.

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

6) Adjust plunger operation time with flow rate.

- 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 & will lock it self with the clearance between plunger & the workpiece.
- Use a flow regulating valve with check valve that has 0.1 MPa or less of cracking pressure. If the cracking pressure is too high the plunger will not move at the time of release.

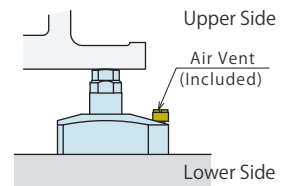


7) Appropriate Measures for the Vent Port

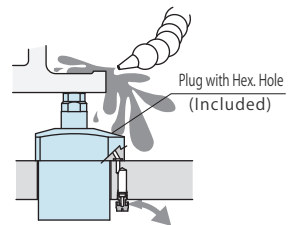
- The work support, although only slightly, breathes like a single-action cylinder. Take the environment where it is used into consideration to avoid taking in cutting fluid or other foreign materials.
- Use only in an environment where cutting fluids cannot invade when the attached air vent undergoes dry cutting process. Invasion of cutting fluids may result in action failure.
- If it is used without a vent port it may not function properly.

Application sample

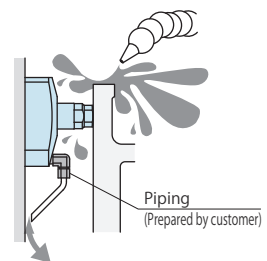
- Use the attached air vent. As shown in the right diagram, this mounting method can prevent coolant fluids from directly invading.



- Use a hexagonal hole plug. Put the vent hole through the fixture in the form of a manifold pipe and make sure venting is not affected by cutting fluids or coolant fluids.

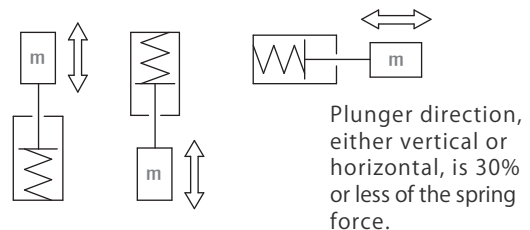


- Process the piping outside. If the manifold pipe is not possible as in the previous clause 2 due to coolant fluid, move the vent hole to a place where there is no coolant fluid.



8) Keep the right weight when designing and manufacturing attachments.

- Make sure the weight of attachments is 30% or less of the plunger spring force.



- Example) In the case of LC0402-L, the maximum mass of contact bolt = $4.7 \times 0.3 / 9.807 = 0.14\text{kg}$ when the plunger spring force is between 4.7-7.8N. It is recommended to use extreme low mass due to variation from tribological resistance of the plunger and spring properties.
- The dimensions of the installing thread area needs to be processed as per the design dimensions for contact bolts as shown on respective product pages.
- If the plunger spring is fixed, different dimensions at the thread area may lead to spring force fluctuation and damage, resulting in malfunctioning.

● Installation Notes

1) Check the Usable Fluid

- Please use the appropriate fluid by referring to the Hydraulic Fluid List. (Refer to P.1043 for Hydraulic Fluid List)

2) Mounting the Unit

- All the mounting bolt holes should be used for the plunger type with tightening torque shown in the table below.

	Model No.	Thread Size	Tightening Torque (N·m)
LC	LC0402	M5×0.8	6.3
	LC0482	M5×0.8	6.3
	LC0552	M6×1	10
	LC0652	M6×1	10
	LC0752	M8×1.25	25
TC	LC0902	M10×1.5	50
	TC0402	M5×0.8	6.3
	TC0482	M5×0.8	6.3
	TC0552	M6×1	10
	TC0652	M6×1	10
	TC0752	M8×1.25	25

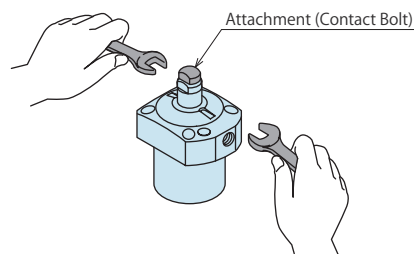
- While mounting, make sure there are no scratches or damage to the O-ring or to the seals. Tighten according to the torque's mentioned in the table.

	Model No.	Thread Size	Tightening Torque (N·m)
LD	LD0222	M22×1.5	16
	LD0262	M26×1.5	31.5
	LD0302	M30×1.5	50
	LD0362	M36×1.5	63
	LD0452	M45×1.5	80
TNC	TNC0400	M26×1.5	31.5
	TNC0600	M30×1.5	50
	TNC1000	M36×1.5	63
	TNC1600	M45×1.5	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.

3) 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)
LC	LC0402	M10×1.5	16
	LC0482	M10×1.5	16
	LC0552	M12×1.75	40
	LC0652	M12×1.75	40
	LC0752	M16×2	80
	LC0902	M16×2	80
TC	TC0402	M10×1.5	16
	TC0482	M12×1.75	40
	TC0552	M12×1.75	40
	TC0652	M16×2	80
LD	TC0752	M16×2	80
	LD0222	M4×0.7	1.6
	LD0262	M6×1	5
	LD0302	M8×1.25	10
TNC	LD0362	M10×1.5	16
	LD0452	M10×1.5	16
	TNC0400	M8×1.25	10
	TNC0600	M10×1.5	16
	TNC1000	M10×1.5	16
	TNC1600	M12×1.75	40

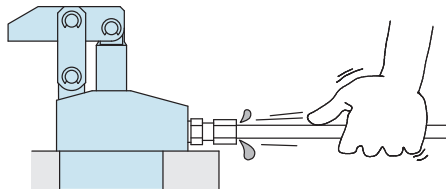
※ Please refer to P.1043 for common cautions. • Installation Notes • Hydraulic Fluid List • Notes on Hydraulic Cylinder Speed Control Circuit • Notes on Handling • Maintenance/Inspection • Warranty

- High-Power Series
- Pneumatic Series
- Hydraulic Series**
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others
- Hole Clamp
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 - TLB-2
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- Link Clamp
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 - DT
- Block Cylinder
 - DBA
 - DBC
- Control Valve
 - BZL
 - BZT
 - BZX/JZG
- Pallet Clamp
 - VS
 - VT
- Expansion Locating Pin
 - VL
 - VM
 - VJ
 - VK
- Pull Stud Clamp
 - FP
 - FQ
- Customized Spring Cylinder
 - DWA/DWB

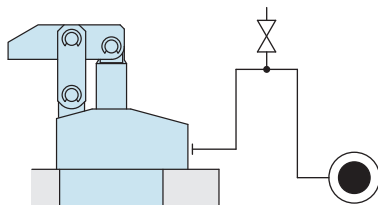
● Cautions

● Installation Notes (For Hydraulic Series)

- 1) Check the Usable Fluid
 - Please use the appropriate fluid by referring to the Hydraulic Fluid List.
- 2) Procedure before Piping
 - The pipeline, piping connector and fixture circuits should be cleaned by thorough flushing.
 - The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
 - There is no filter provided with Kosmek' s product except for a part of valves which prevents foreign materials and contaminants from getting into the circuit.
- 3) Applying Sealing Tape
 - Wrap with tape 1 to 2 times following the screw direction.
 - Pieces of the sealing tape can lead to oil leakage and malfunction.
 - In order to prevent a foreign substance from going into the product during the piping work, it should be carefully cleaned before working.
- 4) Air Bleeding of the Hydraulic Circuit
 - If the hydraulic circuit has excessive air, the action time may become very long. If air enters the circuit after connecting the hydraulic port or under the condition of no air in the oil tank, please perform the following steps.
 - ① Reduce hydraulic pressure to less than 2MPa.
 - ② Loosen the cap nut of pipe fitting closest to the clamp by one full turn.
 - ③ Wiggle the pipeline to loosen the outlet of pipe fitting.
Hydraulic fluid mixed with air comes out.



- ④ Tighten the cap nut after bleeding.
- ⑤ It is more effective to bleed air at the highest point inside the circuit or at the end of the circuit.
(Set an air bleeding valve at the highest point inside the circuit.)



5) Checking Looseness and Retightening

- At the beginning of the machine installation, the bolt and nut may be tightened lightly. Check the looseness and re-tighten as required.

● Hydraulic Fluid List

Maker	ISO Viscosity Grade ISO-VG-32	
	Anti-Wear Hydraulic Oil	Multi-Purpose Hydraulic Oil
Showa Shell Sekiyu	Tellus S2 M 32	Morlina S2 B 32
Idemitsu Kosan	Daphne Hydraulic Fluid 32	Daphne Super Multi Oil 32
JX Nippon Oil & Energy	Super Hyrando 32	Super Mulpus DX 32
Cosmo Oil	Cosmo Hydro AW32	Cosmo New Mighty Super 32
ExxonMobil	Mobil DTE 24	Mobil DTE 24 Light
Matsumura Oil	Hydol AW-32	
Castrol	Hyspin AWS 32	

Note As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

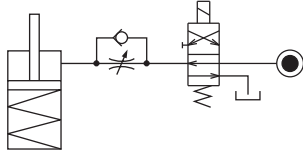
● Notes on Hydraulic Cylinder Speed Control Unit



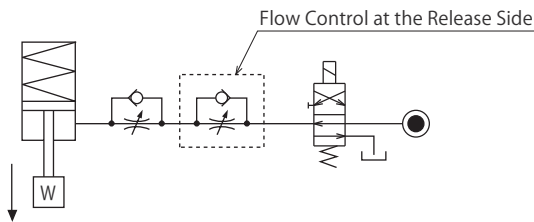
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

● Flow Control Circuit for Single Acting Cylinder

For spring return single acting cylinders, restricting flow during release can extremely slow down or disrupt release action. The preferred method is to control the flow during the lock action using a valve that has free-flow in the release direction. It is also preferred to provide a flow control valve at each actuator.



Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow. (Please add flow control to release flow if the lever weight is put on at the time of release action when using swing clamps.)



● Flow Control Circuit for Double Acting Cylinder

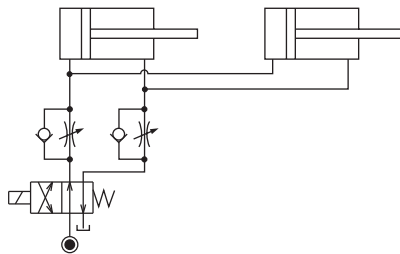
Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

However, in the case of controlling LKE, TMA, TLA, both lock side and release side should be meter-in circuit.

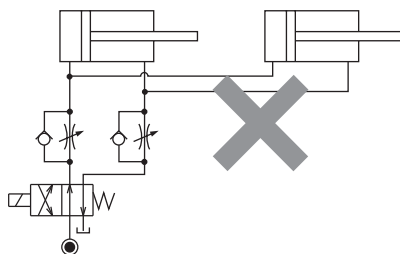
Refer to P.47 for speed adjustment of LKE.

For TMA and TLA, if meter-out circuit is used, abnormal high pressure is created, which causes oil leakage and damage.

【Meter-out Circuit】 (Except LKE/TMA/TLA)

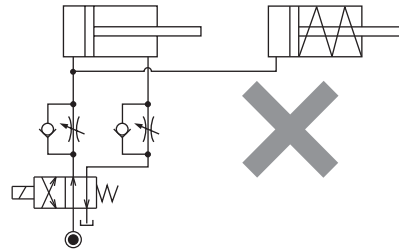


【Meter-in Circuit】 (LKE/TMA/TLA must be controlled with meter-in.)



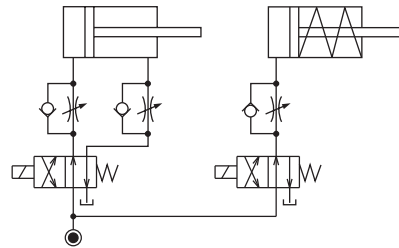
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

- ① Single acting components should not be used in the same flow control circuit as the double acting components. The release action of the single acting cylinders may become erratic or very slow.

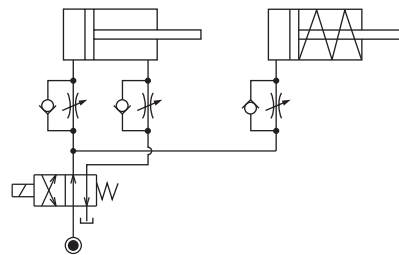


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

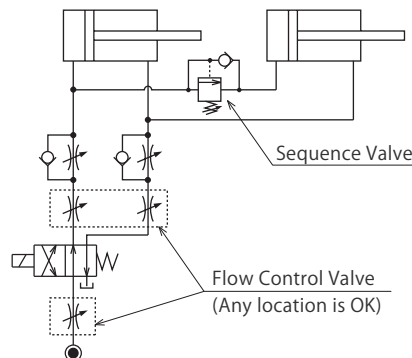
- Separate the control circuit.



- Reduce the influence of double acting cylinder control unit. However, due to the back pressure in tank line, single action cylinder is activated after double action cylinder works.



- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve or pressure switches for clamping detection. If the back pressure is more than the set pressure then the system will not work as it is designed to.



- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

Cautions

- Installation Notes (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
- History

Index

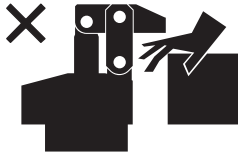
- Search by Alphabetical Order

Sales Offices

● Cautions

● Notes on Handling

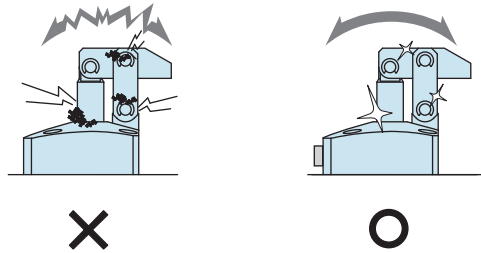
- 1) It should be handled by qualified personnel.
 - The hydraulic machine and air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when 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 clamps (cylinder) while clamps (cylinder) is working. Otherwise, your hands may be injured due to clinching.



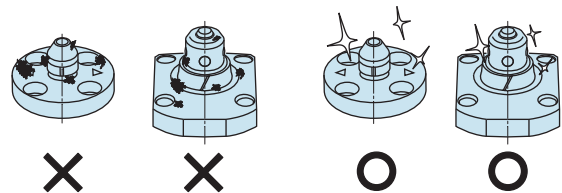
- 4) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
 - Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
 - Make sure there is no abnormality in the bolts and respective parts before restarting.
- 2) Regularly clean the area around the piston rod and plunger.
 - If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage and air leaks.



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



- 4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
- 5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.
- 6) Make sure the hydraulic fluid has not deteriorated.
- 7) Make sure there is smooth action and no abnormal noise.
 - Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 8) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 9) Please contact us for overhaul and repair.

● Warranty

1) Warranty Period

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

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.

Defects or failures caused by the following are not covered.

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

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

Manifold Block

Model WHZ-MD

Model LZY-MD

Model LZ-MS

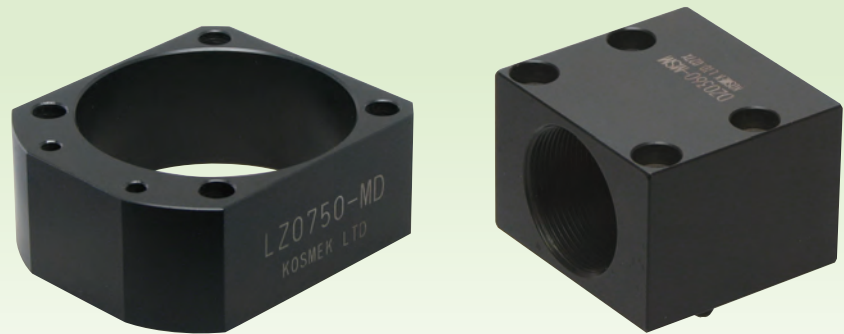
Model LZ-MP

Model TMZ-1MB

Model TMZ-2MB

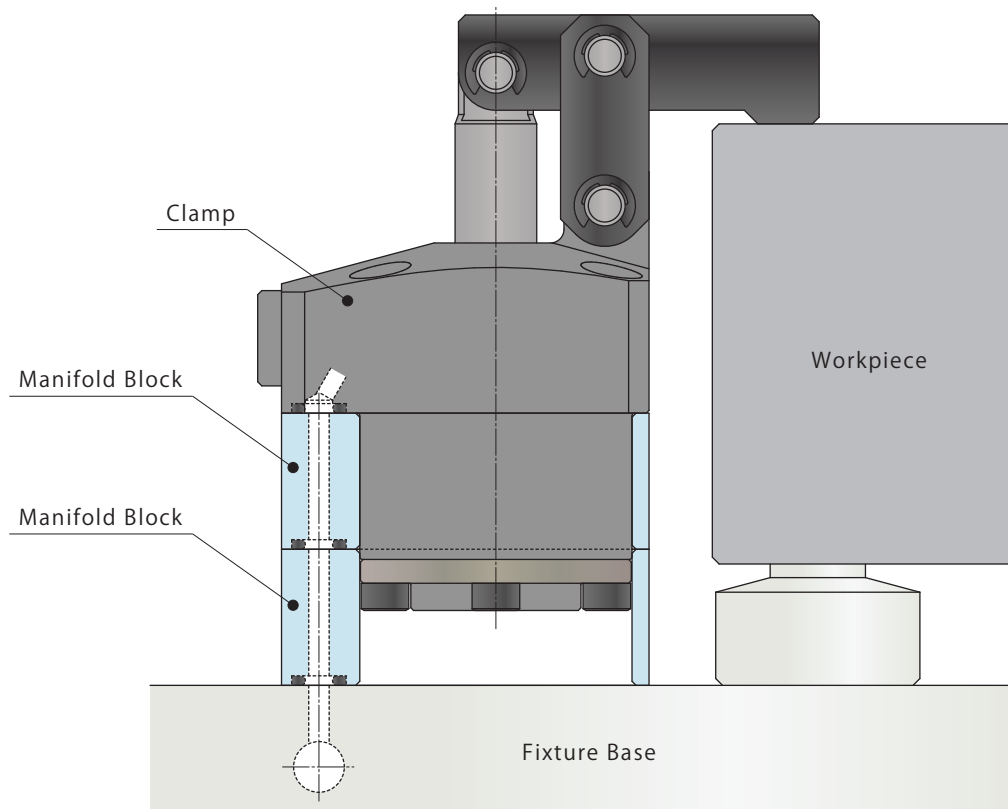
Model DZ-MG

Model DZ-MS



- **Manifold Block**

The mounting height of clamp is adjustable with the manifold block.



Applicable Model

Manifold Block Model No.	Corresponding Item Model No.
Model WHZ-MD	Model WCA Model WHA Model WCE Model WHE
Model LZY-MD	Model LKA Model LKE Model LHC Model LHS Model LKC Model LHA Model LHE Model LL
Model LZ-MS	Model LM Model LT Model LJ Model LG
Model LZ-MP	Model LC Model TC
Model TMZ-1MB	Model TMA-1
Model TMZ-2MB	Model TMA-2
Model DZ-MG□/MS□	Model DP

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories**
- Cautions / Others

Screw Locator
VXF

Manual Expansion Locating Pin
VX

Manifold Block

- WHZ-MD
- LZY-MD
- LZ-MS
- LZ-MP
- TMZ-1MB
- TMZ-2MB
- DZ-M

Manifold Block / Nut

- DZ-R
- DZ-C
- DZ-P
- DZ-B
- LZ-S
- LZ-SQ
- TNZ-S
- TNZ-SQ

Pressure Switch
JB

Pressure Gauge
JGA/JGB

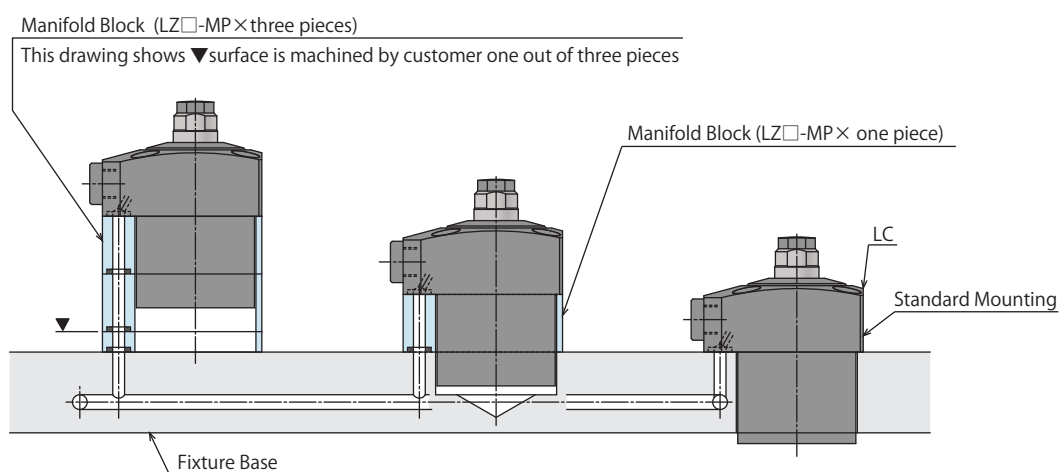
Manifold
JX

Coupler Switch
PS

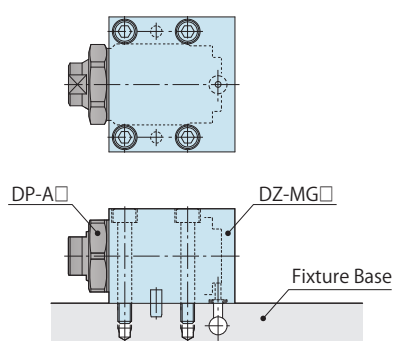
G-Thread Fitting

Application Examples

• Work Support (LC) Application Example



• Push Cylinder (DP) Application Example



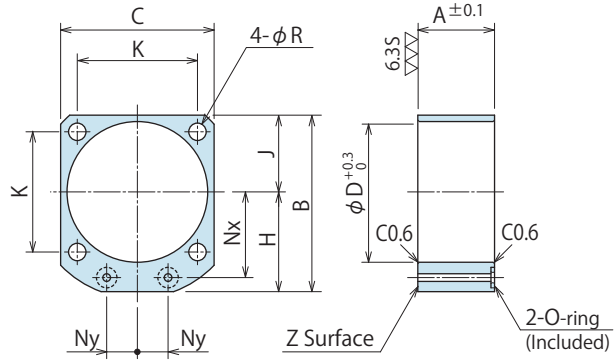
Manifold Block for WCA/WCE/WHA/WHE

Model No. Indication

WHZ 048 0 - MD

Size
(Refer to following table)

Design No.
(Revision Number)



(mm)

Model No.	WHZ0600-MD	WHZ0320-MD	WHZ0400-MD	WHZ0500-MD	WHZ0630-MD
Corresponding Item Model Number	WCE0601 WHE0600	WCA0321 WHA0320	WCE1001 WHE1000	WCA0401 WHA0400	WCE1601 WHE1600
A	23	25	27	31	35
B	54	60	67	77	88.5
C	45	50	58	68	81
D	40	46	54	64	77
H	31.5	35	38	43	48
J	22.5	25	29	34	40.5
K	34	39	45	53	65
Nx	26	28	31	36	41
Ny	9	10	13	15	20
R	5.5	5.5	5.5	6.5	6.5
O-ring	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.1	0.1	0.1	0.2	0.2

- Notes
1. Material: A2017BE-T4
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the A dimensions as a reference.
 3. If thickness other than A is required, perform additional machining on surface Z. Please refer to the drawing.

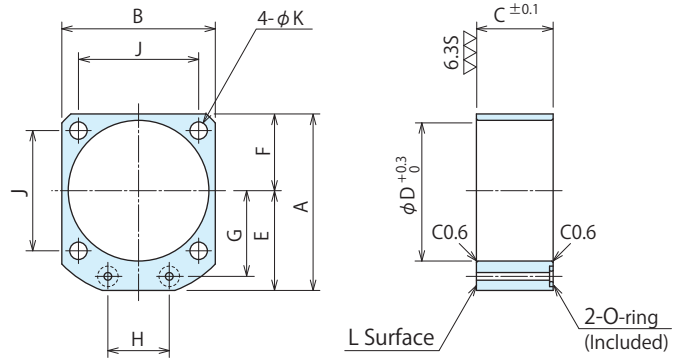
Manifold Block for LKA/LKC/LKE/LHA/LHC/LHE/LHS/LL

Model No. Indication

LZY 048 0 - MD

Size
(Refer to following table)

Design No.
(Revision Number)



(mm)

Model No.	LZY0360-MD	LZY0400-MD	LZY0480-MD	LZY0550-MD	LZY0650-MD	LZY0750-MD	LZY0900-MD	LZY1050-MD
Corresponding Item Model Number	LKA0360 / LKE0360 LHA0360 / LHC0360 LHE0360 / LHS0360 LLO360	LKA0400 / LKC0400 LKE0400 / LHA0400 LHC0400 / LHE0400 LHS0400 / LLO400	LKA0480 / LKC0480 LKE0480 / LHA0480 LHC0480 / LHE0480 LHS0480 / LLO480	LKA0550 / LKC0550 LKE0550 / LHA0550 LHC0550 / LHE0550 LHS0550 / LLO550	LKA0650 / LKC0650 LHA0650 / LHC0650 LHS0650 LLO650	LKA0750 LHA0750 LHS0750 LLO750	LKA0900 LHA0900 LHS0900 LLO900	LKA1050 LHA1050 LHS1050 LLO1050
A	49	54	61	69	81	92	107	122
B	40	45	51	60	70	80	95	110
C	20	20	27	30	32	37	45	50
D	36	40	48	55	65	75	90	105
E	29	31.5	35.5	39	46	52	59.5	67
F	20	22.5	25.5	30	35	40	47.5	55
G	23.5	26	30	33.5	39.5	45	52.5	60
H	16	18	22	24	30	32	37	45
J	31.4	34	40	47	55	63	75	88
K	4.5	5.5	5.5	6.8	6.8	9	11	14
O-ring	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

- Notes
1. Material: S45C
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
 3. If thickness other than C is required, perform additional machining on surface L. Please refer to the drawing.

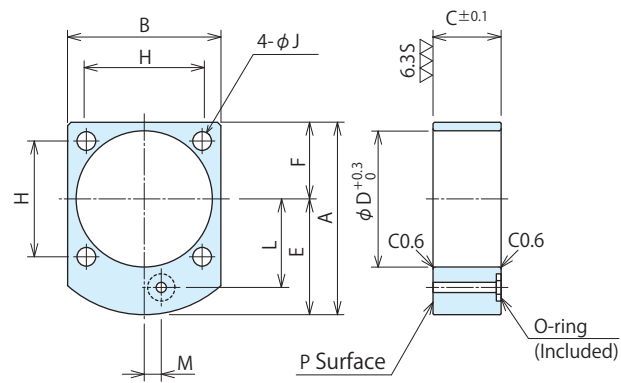
Manifold Block for LM/LJ/LT/LG

Model No. Indication

LZ 048 0 - MS

Size
(Refer to following table)

Design No.
(Revision Number)



(mm)

Model No.	LZ0360-MS	LZ0400-MS	LZ0480-MS	LZ0550-MS	LZ0650-MS	LZ0750-MS	LZ0900-MS	LZ1050-MS
Corresponding Item	LT0360	LT0400	LT0480	LT0550	LT0650	LT0750	LG0900	LG1050
Model Number	LM0360	LM0400	LM0480	LM0550	LM0650	LM0750	LJ0902	LJ1052
A	51.5	56.5	62	70	82	93	107	122
B	40	45	51	60	70	80	95	110
C	20	20	27	30	32	37	45	50
D	36	40	48	55	65	75	90	105
E	31.5	34	36.5	40	47	53	59.5	67
F	20	22.5	25.5	30	35	40	47.5	55
H	31.4	34	40	47	55	63	75	88
J	4.5	5.5	5.5	6.8	6.8	9	11	14
L	23.5	26	30	33.5	39.5	45	52.5	60
M	5	5	0	0	0	0	0	0
O-ring	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

- Notes
1. Material: S45C
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
 3. If thickness other than C is required, perform additional machining on surface L. Please refer to the drawing.

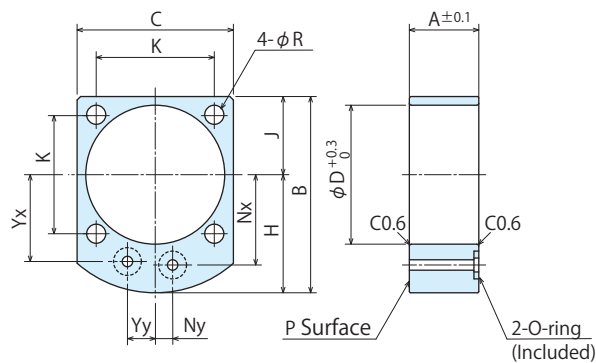
Manifold Block for LC/TC

Model No. Indication

LZ 048 0 - MP

Size
(Refer to following table)

Design No.
(Revision Number)



(mm)

Model No.	LZ0400-MP	LZ0480-MP	LZ0550-MP	LZ0650-MP	LZ0750-MP	LZ0900-MP
Corresponding Item	LC0402	LC0482	LC0552	LC0652	LC0752	LC0902
Model Number	TC0402	TC0482	TC0552	TC0652	TC0752	
A	20	27	30	32	37	45
B	56.5	62	70	82	93	107
C	45	51	60	70	80	95
D	40	48	55	65	75	90
H	34	36.5	40	47	53	59.5
J	22.5	25.5	30	35	40	47.5
K	34	40	47	55	63	75
Nx	26	30	33.5	39.5	45	52.5
Ny	5	0	0	0	0	0
R	5.5	5.5	6.8	6.8	9	11
Yx	25	28	31	37	42.5	50
Yy	8	11	13	14	15	15
O-ring	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7
Mass kg	0.2	0.3	0.4	0.5	0.8	1.2

- Notes
1. Material: S45C
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the A dimensions as a reference.
 3. If thickness other than A is required, perform additional machining on surface P. Please refer to the drawing.

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others
- Screw Locator
 - VXF
- Manual Expansion Locating Pin
 - VX
- Manifold Block
 - WHZ-MD
 - LZY-MD
 - LZ-MS
 - LZ-MP
 - TMZ-1MB
 - TMZ-2MB
 - DZ-M
- Manifold Block / Nut
 - DZ-R
 - DZ-C
 - DZ-P
 - DZ-B
 - LZ-S
 - LZ-SQ
 - TNZ-S
 - TNZ-SQ
- Pressure Switch
 - JB
- Pressure Gauge
 - JGA/JGB
- Manifold
 - JX
- Coupler Switch
 - PS
- G-Thread Fitting

Manifold Block / Nut

- Model DZ-R
- Model DZ-C
- Model DZ-P
- Model DZ-B
- Model LZ-S
- Model LZ-SQ
- Model TNZ-S
- Model TNZ-SQ

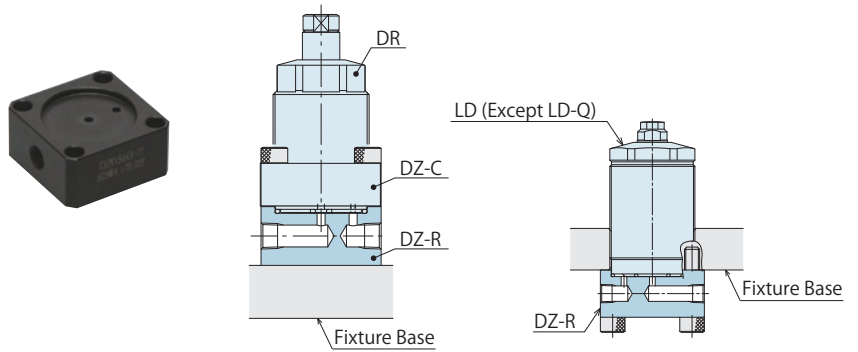


Applicable Model/Application Examples

DZ-R

Manifold Block for
DR/LD/WNC

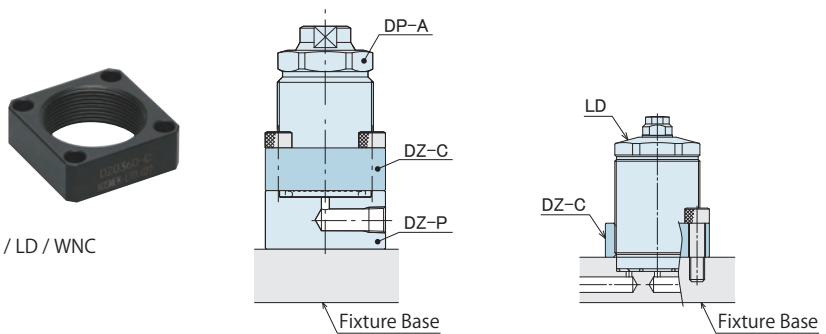
Corresponding Item Model No. : DR / LD / WNC



DZ-C

Flanged Nut for
DP/DR/DS/DT/LD/WNC

Corresponding Item Model No. : DP / DR / DS / DT / LD / WNC

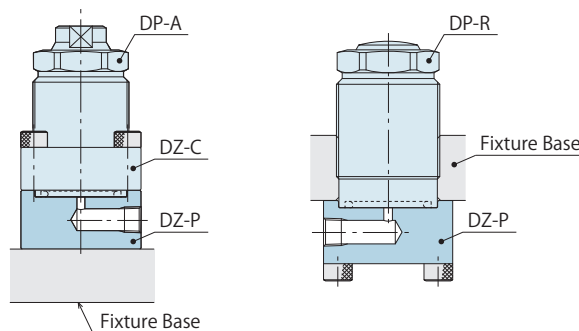


Applicable Model/Application Examples

DZ-P

Manifold Block for DP

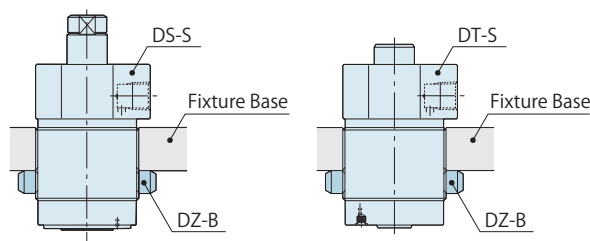
Corresponding Item Model No. : DP



DZ-B

Bulkhead Nut for DP/DR/DS/DT

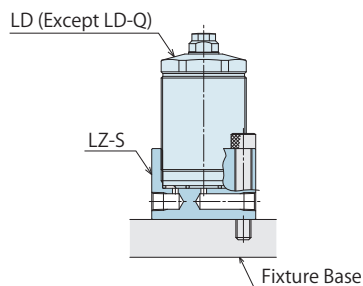
Corresponding Item Model No. : DP / DR / DS / DT



LZ-S

Manifold Block for LD/WNC

Corresponding Item Model No. : LD / WNC



TNZ-S

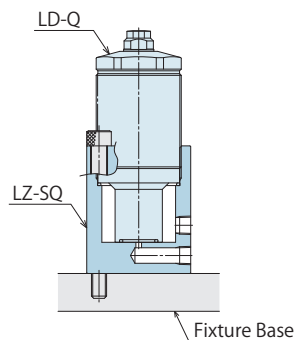
Manifold Block for TNC

Corresponding Item Model No. : TNC

LZ-SQ

Manifold Block for LD-Q

Corresponding Item Model No. : LD-Q



TNZ-SQ

Manifold Block for TNC-Q

Corresponding Item Model No. : TNC-Q

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

- Screw Locator
- VXF

- Manual Expansion Locating Pin
- VX

- Manifold Block
- WHZ-MD
- LZY-MD
- LZ-MS
- LZ-MP
- TMZ-1MB
- TMZ-2MB
- DZ-M

- Manifold Block / Nut
- DZ-R
- DZ-C
- DZ-P
- DZ-B
- LZ-S
- LZ-SQ
- TNZ-S
- TNZ-SQ

- Pressure Switch
- JB

- Pressure Gauge
- JGA/JGB

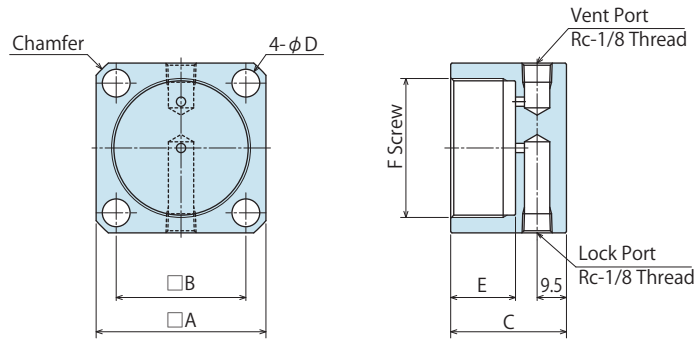
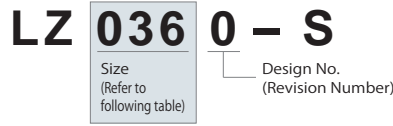
- Manifold
- JX

- Coupler Switch
- PS

- G-Thread Fitting

Manifold Block for LD/WNC

Model No. Indication

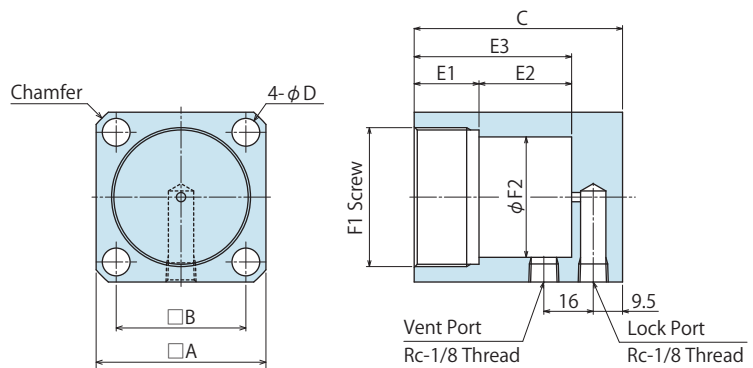
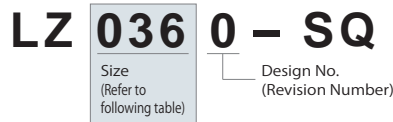


Model No.	LZ0220-S	LZ0260-S	LZ0300-S	LZ0360-S	LZ0450-S	LZ0600-S
Corresponding Item Model Number	LD0222 WNC0350	LD0262 (Except Q option) ^{※1} WNC0600	LD0302 (Except Q option) ^{※1} WNC1000	LD0362 (Except Q option) ^{※1} WNC1600	LD0452 (Except Q option) ^{※1} WNC3000	- WNC6000
A	28	35	38	45	55	75
B	21	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
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
- ※1. It is not applicable for LD-Q: work support hydraulic advance long stroke option. (Please select from LZ-SQ.)

Manifold Block for LD-Q

Model No. Indication



Model No.	LZ0260-SQ	LZ0300-SQ	LZ0360-SQ	LZ0450-SQ
Corresponding Item Model Number	LD0262-Q ^{※2}	LD0302-Q ^{※2}	LD0362-Q ^{※2}	LD0452-Q ^{※2}
A	35	38	45	55
B	26	29	35	42
C	49.5	53	60.5	67.5
D	5.5	5.5	6.8	9
E1	16	17	18	21
E2	17	19.5	26	30
E3	33	36.5	44	51
F1 (Nominal × Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
F2	20	24	30	39
Chamfer	C3	C3	C3	C4
Mass kg	0.31	0.38	0.58	0.89

- Notes
1. Material: S45C
 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the C dimensions as a reference.
- ※1. It is not applicable for LD-EQ work support hydraulic advance long stroke option. (Please select from LZ-S.)

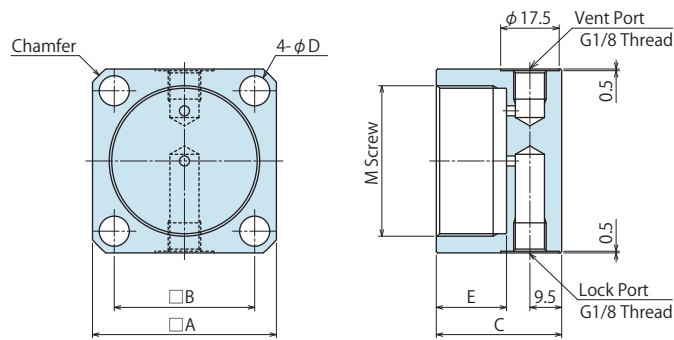
Manifold Block for TNC

Model No. Indication

TNZ 060 0 - S

Size
(Refer to
following table)

Design No.
(Revision Number)



(mm)

Model No.	TNZ0400-S	TNZ0600-S	TNZ1000-S	TNZ1600-S
Corresponding Item Model Number	TNC0400	TNC0600	TNC1000	TNC1600
A	35	38	45	55
B	26	29	35	42
C	32.5	33.5	34.5	37.5
D	5.5	5.5	6.8	9
E	16	17	18	21
M (Nominal × Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
Chamfer	C3	C3	C3	C4
Mass kg	0.20	0.23	0.34	0.52

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

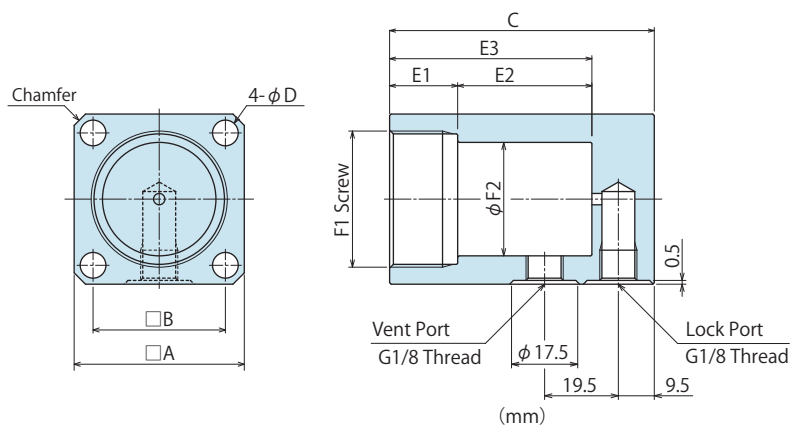
Manifold Block for TNC-Q

Model No. Indication

TNZ 060 0 - SQ

Size
(Refer to
following table)

Design No.
(Revision Number)



(mm)

Model No.	TNZ0400-SQ	TNZ0600-SQ	TNZ1000-SQ	TNZ1600-SQ
Corresponding Item Model Number	TNC0400-Q	TNC0600-Q	TNC1000-Q	TNC1600-Q
A	35	38	45	55
B	26	29	35	42
C	56	63.5	70	86.5
D	5.5	5.5	6.8	9
E1	16	17	18	21
E2	23.5	30	35.5	49
E3	39.5	47	53.5	70
F1 (Nominal × Pitch)	M26×1.5	M30×1.5	M36×1.5	M45×1.5
F2	20	24	30	39
Chamfer	C3	C3	C3	C4
Mass kg	0.36	0.46	0.68	1.16

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

- High-Power Series
- Pneumatic Series
- Hydraulic Series
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

- Screw Locator
 - VXF
- Manual Expansion Locating Pin
 - VX
- Manifold Block
 - WHZ-MD
 - LZY-MD
 - LZ-MS
 - LZ-MP
 - TMZ-1MB
 - TMZ-2MB
 - DZ-M

- Manifold Block / Nut
 - DZ-R
 - DZ-C
 - DZ-P
 - DZ-B
 - LZ-S
 - LZ-SQ
 - TNZ-S
 - TNZ-SQ

- Pressure Switch
 - JB
- Pressure Gauge
 - JGA/JGB
- Manifold
 - JX
- Coupler Switch
 - PS
- G-Thread Fitting

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Global Network



Asia Detailed Map



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