

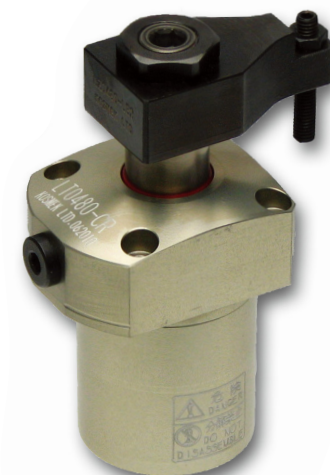
Hydraulic Single Action Swing Clamp

PAT.

Model LT/LG

Low Pressure (2.5~7MPa)

High Power • High Speed

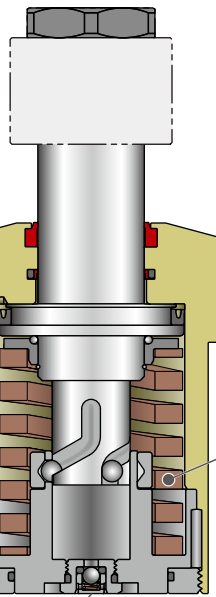


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Action Description

BZL Speed Control Valve
(Sold Separately)



Trap Valve (Check Valve)

When releasing

Cutoff hydraulic supply,
release action is done by spring.

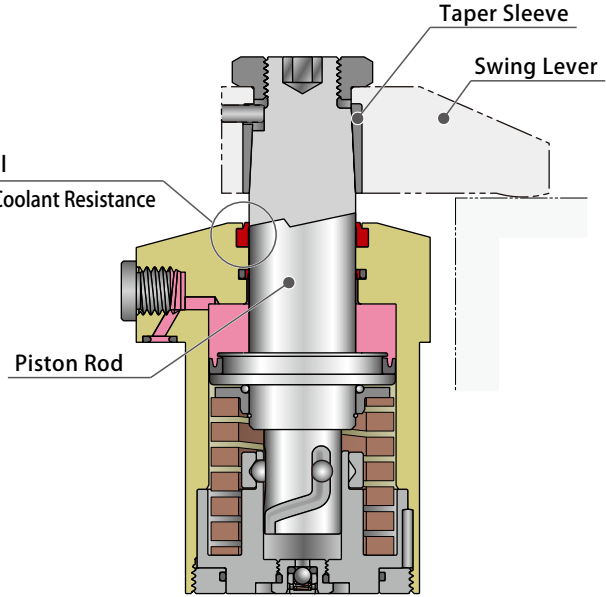
Dust Seal
Excellent Coolant Resistance

Piston Rod

Spring

Taper Sleeve

Swing Lever



When locking

When supplying oil to oil port,
do the locking action.

● Trap Valve, High Durability and Long Life

Shutting OFF trap valve, will ensure the complete spring chamber is sealed without contact of external atmosphere. Since the coolant is prevented from entering inside the cylinder, corrosion is eliminated. Also, cumbersome vent port isn't required.

● Lighter • Aluminum Alloy Body (Except LG)

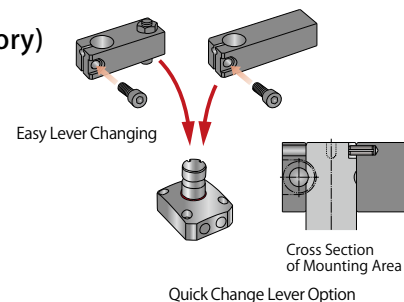
The body of LT0301 ~ LT0751 is made of aluminum alloy that makes the weight of it lighter, which is the most appropriate for high-speed transportation and calculation with no time. Load is reduced by straining the inertial force of the fixture & machine.

● 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.

● Easy Fabrication of Swing Lever (Taper sleeve is standard accessory)

As taper sleeve is standard accessory, tapering process while manufacturing clamp lever is eliminated. Supplied lever sleeve incorporates taper simplifying clamping lever design. Quick change lever type that is available as option is easy to attach and detach the lever with one wrench. (Refer to the drawing on the right.)



● Able to Attach Speed Control Valve Directly

When fitting the gasket (-C option), it is able to attach the speed control valve with air venting function. (Speed control valve is sold separately.)

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

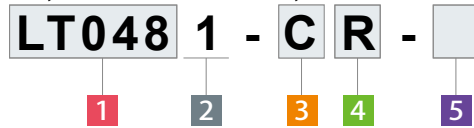
Expansion Locating Pin
VL
VM
VJ
VK

Pull Stud Clamp
FP
FQ

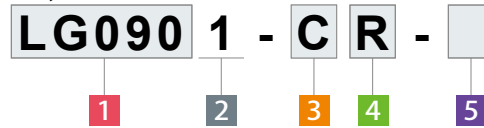
Customized Spring Cylinder
DWA/DWB

Model No. Indication

Body Material: Aluminum Alloy



Body Material: Steel

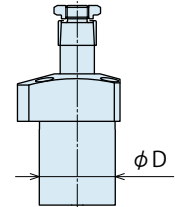


1 Body Material • Body Size

- LT030** : $\phi D=30\text{mm}$ Body Material: Aluminum Alloy
- LT036** : $\phi D=36\text{mm}$ Body Material: Aluminum Alloy
- LT040** : $\phi D=40\text{mm}$ Body Material: Aluminum Alloy
- LT048** : $\phi D=48\text{mm}$ Body Material: Aluminum Alloy
- LT055** : $\phi D=55\text{mm}$ Body Material: Aluminum Alloy
- LT065** : $\phi D=65\text{mm}$ Body Material: Aluminum Alloy
- LT075** : $\phi D=75\text{mm}$ Body Material: Aluminum Alloy

※ LT Body Size: 030~075
 LG Body Size: 030~105

- LG030** : $\phi D=30\text{mm}$ Body Material: Steel
- LG036** : $\phi D=36\text{mm}$ Body Material: Steel
- LG040** : $\phi D=40\text{mm}$ Body Material: Steel
- LG048** : $\phi D=48\text{mm}$ Body Material: Steel
- LG055** : $\phi D=55\text{mm}$ Body Material: Steel
- LG065** : $\phi D=65\text{mm}$ Body Material: Steel
- LG075** : $\phi D=75\text{mm}$ Body Material: Steel
- LG090** : $\phi D=90\text{mm}$ Body Material: Steel
- LG105** : $\phi D=105\text{mm}$ Body Material: Steel



2 Design No.

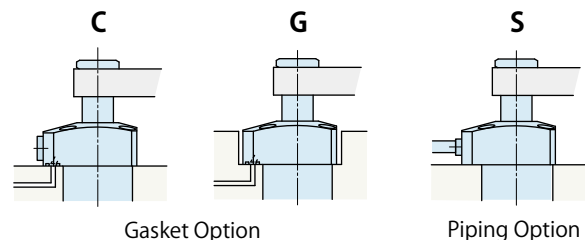
1 : Revision Number

3 Piping Method

- C** : Gasket Option (With G Thread Plug)
- G** : Gasket Option ※1
- S** : Piping Option (Rc Thread Port)

※ Speed control valve (BZL) is sold separately. Refer to P.727.

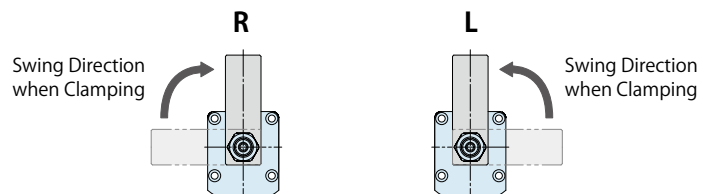
- ※1. Piping Method G Option
 - LT : It has no Rc thread and no need to mount a plug.
 - LG : It has Rc thread and is delivered to the customer with R thread plug mounted.



Gasket Option With G Thread Plug Possible to attach Speed Control Valve	※1 LT : No Thread LG : With R Thread Plug	Piping Option Rc Thread Port No Gasket Port
--	---	---

4 Swing Direction when Clamping

- R** : Clockwise
- L** : Counter-Clockwise



5 Option

- Blank** : None (Standard: Taper Lock Lever Option)
- F** : Quick Change Lever Option
- P** : Balance Lever Option
- Y** : Swing Angle Selectable Option
 (Y30 : 30° / Y45 : 45° / Y60 : 60°)

※ Please contact us when action check method have a combination with option.

Specifications

Model No.		LT0301 LG0301	LT0361 LG0361	LT0401 LG0401	LT0481 LG0481	LT0551 LG0551												
Cylinder Area for Locking		cm ²		2.67	4.0	5.5	7.5	10.3										
Clamping Force (Calculation Formula) ^{※2} kN	5 Blank/F/Y□ selected	$F = \frac{P - 1.01}{3.75 + 0.018 \times L}$		$F = \frac{P - 1.29}{2.85 + 0.0124 \times L}$		$F = \frac{P - 1.22}{2.04 + 0.0084 \times L}$		$F = \frac{P - 1.09}{1.45 + 0.0044 \times L}$		$F = \frac{P - 1.22}{1.07 + 0.0033 \times L}$								
	5 P selected	$F_1 = (L_2/L_3) \times (0.27 \times P - 0.27)$ $F_2 = (L_1/L_3) \times (0.27 \times P - 0.27)$		$F_1 = (L_2/L_3) \times (0.40 \times P - 0.52)$ $F_2 = (L_1/L_3) \times (0.40 \times P - 0.52)$		$F_1 = (L_2/L_3) \times (0.55 \times P - 0.69)$ $F_2 = (L_1/L_3) \times (0.55 \times P - 0.69)$		$F_1 = (L_2/L_3) \times (0.75 \times P - 0.83)$ $F_2 = (L_1/L_3) \times (0.75 \times P - 0.83)$		$F_1 = (L_2/L_3) \times (1.03 \times P - 1.29)$ $F_2 = (L_1/L_3) \times (1.03 \times P - 1.29)$								
5 Blank/F/P selected	Full Stroke	mm		10.5	12.5	13	14	16.5										
	Swing Stroke (90°)	mm		4.5	4.5	5	6	6.5										
	Vertical Stroke	mm		6	8	8	8	10										
	Swing Angle Accuracy			90° ±3°														
	Swing Completion Position Repeatability			± 1°		±0.5°												
Return Spring Force kN	max.			0.29	0.58	0.76	0.89	1.41										
	min.			0.21	0.33	0.45	0.59	0.83										
5 Y□ selected	Option Form	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60		
	Full Stroke	mm		8.1	8.7	9.3	10.2	10.8	11.3	10.3	11	11.7	10.9	11.7	12.4	13	13.9	14.8
	Swing Stroke	mm		2.1	2.7	3.3	2.2	2.8	3.3	2.3	3	3.7	2.9	3.7	4.4	3	3.9	4.8
	Vertical Stroke	mm		6	6	6	8	8	8	8	8	8	8	8	10	10	10	
	Swing Angle Accuracy			30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°
	Swing Completion Position Repeatability			± 1°		±0.5°												
Return Spring Force kN	max.			0.29	0.29	0.29	0.58	0.58	0.58	0.76	0.76	0.76	0.89	0.89	0.89	1.41	1.41	1.41
	min.			0.23	0.23	0.22	0.38	0.36	0.35	0.51	0.49	0.48	0.66	0.64	0.63	0.96	0.92	0.89
Max. Operating Pressure	MPa		7															
Min. Operating Pressure ^{※3}	MPa		2.5															
Withstanding Pressure	MPa		10.5															
Operating Temperature	°C		0 ~ 70															
Pressurizing Agent			General Hydraulic Oil Equivalent to ISO-VG-32															

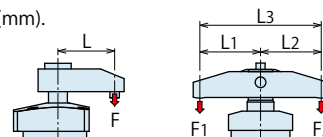
Model No.		LT0651 LG0651	LT0751 LG0751	LG0901	LG1051										
Cylinder Area for Locking		cm ²		14.2	21.3	30.7	42.7								
Clamping Force (Calculation Formula) ^{※2} kN	5 Blank/F/Y□ selected	$F = \frac{P - 1.22}{0.77 + 0.0020 \times L}$		$F = \frac{P - 0.97}{0.51 + 0.0012 \times L}$		$F = \frac{P - 0.87}{0.36 + 0.0008 \times L}$		$F = \frac{P - 1.00}{0.26 + 0.0004 \times L}$							
	5 P selected	$F_1 = (L_2/L_3) \times (1.42 \times P - 1.62)$ $F_2 = (L_1/L_3) \times (1.42 \times P - 1.62)$		$F_1 = (L_2/L_3) \times (2.13 \times P - 2.10)$ $F_2 = (L_1/L_3) \times (2.13 \times P - 2.10)$		$F_1 = (L_2/L_3) \times (3.07 \times P - 2.73)$ $F_2 = (L_1/L_3) \times (3.07 \times P - 2.73)$		$F_1 = (L_2/L_3) \times (4.27 \times P - 4.39)$ $F_2 = (L_1/L_3) \times (4.27 \times P - 4.39)$							
5 Blank/F/P selected	Full Stroke	mm		18	21.5	23	28.5								
	Swing Stroke (90°)	mm		8	9.5	11	12.5								
	Vertical Stroke	mm		10	12	12	16								
	Swing Angle Accuracy			90° ±3°											
	Swing Completion Position Repeatability			±0.5°											
Return Spring Force kN	max.			1.75	2.26	2.93	4.76								
	min.			1.08	1.43	1.80	2.81								
5 Y□ selected	Option Form	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60					
	Full Stroke	mm		13.8	14.8	15.9	16.5	17.7	19	17.3	18.7	20.1	22	23.6	25.2
	Swing Stroke	mm		3.8	4.8	5.9	4.5	5.7	7	5.3	6.7	8.1	6	7.6	9.2
	Vertical Stroke	mm		10	10	10	12	12	12	12	12	16	16	16	
	Swing Angle Accuracy			30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°
	Swing Completion Position Repeatability			±0.5°											
Return Spring Force kN	max.			1.75	1.75	1.75	2.26	2.26	2.26	2.93	2.93	2.93	4.76	4.76	4.76
	min.			1.23	1.20	1.16	1.62	1.58	1.53	2.08	2.01	1.94	3.25	3.15	3.04
Max. Operating Pressure	MPa		7												
Min. Operating Pressure ^{※3}	MPa		2.5												
Withstanding Pressure	MPa		10.5												
Operating Temperature	°C		0 ~ 70												
Pressurizing Agent			General Hydraulic Oil Equivalent to ISO-VG-32												

Notes: ※2. F, F₁, F₂ : Clamping Force (kN) P : Supply Hydraulic Pressure (MPa)

L, L₁, L₂ : Distance between the piston center and the clamping point (mm) L₃ : (mm).

※3. Minimum pressure to operate the clamp with no load.

- Please see the external dimension if you need the information of mass and cylinder volume.



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

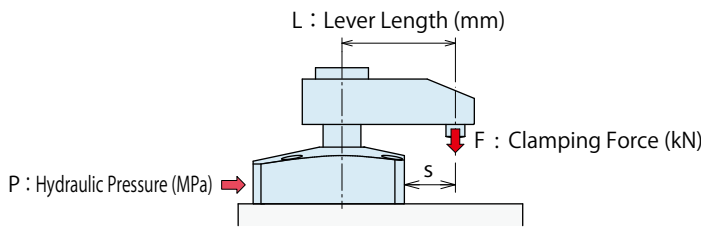
Expansion Locating Pin
VL
VM
VJ
VK

Pull Stud Clamp
FP
FQ

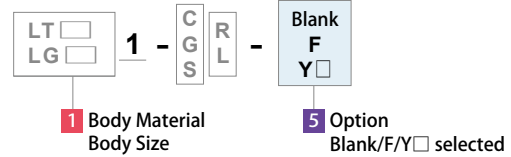
Customized Spring Cylinder
DWA/DWB

Clamping Force Curve

※ LT/LG□1-□□-P : For balance lever option, the clamping force curve is different from the graph. Please calculate it with the specification's formula.



Applicable Model



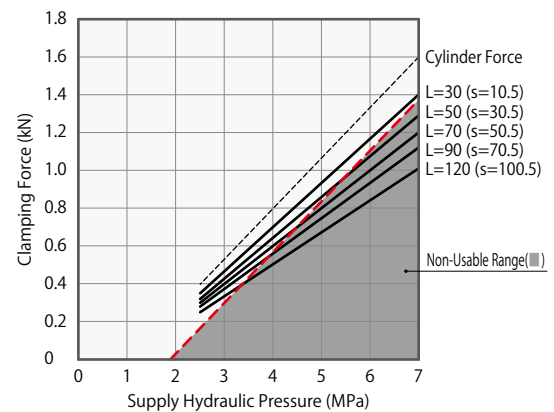
(Example) When using LT0481/LG0481

Supply Hydraulic Pressure 5.0 MPa, Lever Length L=50 mm, Clamping force is about 2.3 kN.

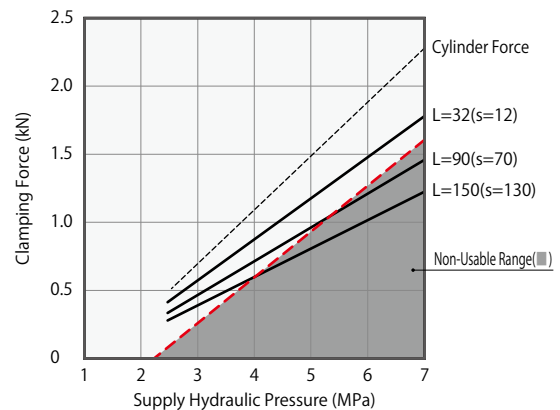
Notes:

- Tables and graphs shown are the relationships between the clamping force (kN) and supply hydraulic pressure (MPa).
 - Cylinder output (when L=0) cannot be calculated from the calculation formula of clamping force.
 - There may be no lever swing action with large inertia depending on supply hydraulic pressure or lever mounting position.
 - The clamping force is shown with lever in the locked position.
 - The clamping force varies as per the lever length. Use the hydraulic supply pressure suitable to the lever length.
 - Operation in the non-usable range can damage the clamp and lead to fluid leakage.
 - The tables and graphs are only for reference. The exact results should be calculated based on the formula in the specification column.
- ※ 1. F : Clamping Force (kN) , P : Supply Hydraulic Pressure (MPa) , L : Lever Length (mm).

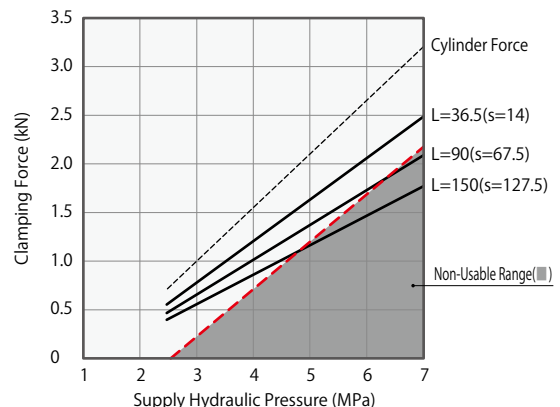
LT0301 / LG0301		Calculation Formula ^{※1} (kN) $F = (P-1.01) / (3.75+0.018 \times L)$								
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Max. Lever Length (L) (mm)
		L=30	L=40	L=50	L=60	L=70	L=80	L=100	L=120	
7	1.6	1.4								35
6.5	1.5	1.3								38
6	1.3	1.2	1.1							43
5.5	1.2	1.1	1.0							49
5	1.1	0.9	0.9	0.9						57
4.5	0.9	0.8	0.8	0.8	0.7					68
4	0.8	0.7	0.7	0.6	0.6	0.6	0.6			83
3.5	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.4		109
3	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3	120
2.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	120
Max. Operating Pressure (MPa)		7.0	6.3	5.4	4.8	4.4	4.1	3.6	3.4	



LT0361 / LG0361		Calculation Formula ^{※1} (kN) $F = (P-1.29) / (2.85+0.0124 \times L)$								
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Max. Lever Length (L) (mm)
		L=30	L=40	L=50	L=60	L=80	L=100	L=120	L=150	
7	2.3	1.8	1.7	1.7						56
6.5	2.1	1.6	1.6	1.5	1.5					63
6	1.9	1.5	1.4	1.4	1.3					72
5.5	1.7	1.3	1.3	1.2	1.2	1.1				84
5	1.5	1.2	1.1	1.1	1.0	1.0	0.9			100
4.5	1.3	1.0	1.0	0.9	0.9	0.8	0.8	0.7		124
4	1.1	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6	150
3.5	0.9	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	150
3	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	150
2.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	150
Max. Operating Pressure (MPa)		7.0	7.0	7.0	6.7	5.7	5.0	4.6	4.1	



LT0401 / LG0401		Calculation Formula ^{※1} (kN) $F = (P-1.22) / (2.04+0.0084 \times L)$								
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Max. Lever Length (L) (mm)
		L=40	L=50	L=60	L=70	L=80	L=100	L=120	L=150	
7	3.2	2.4	2.4	2.3	2.2					71
6.5	2.9	2.2	2.2	2.1	2.0	2.0				81
6	2.6	2.0	1.9	1.9	1.8	1.8				92
5.5	2.3	1.8	1.7	1.7	1.6	1.6	1.5			108
5	2.1	1.6	1.5	1.5	1.4	1.4	1.3	1.2		130
4.5	1.8	1.4	1.3	1.3	1.3	1.2	1.1	1.1	1.0	150
4	1.5	1.2	1.1	1.1	1.1	1.0	1.0	0.9	0.8	150
3.5	1.2	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	150
3	1.0	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.5	150
2.5	0.7	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	150
Max. Operating Pressure (MPa)		7.0	7.0	7.0	7.0	6.6	5.7	5.2	4.7	



- 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

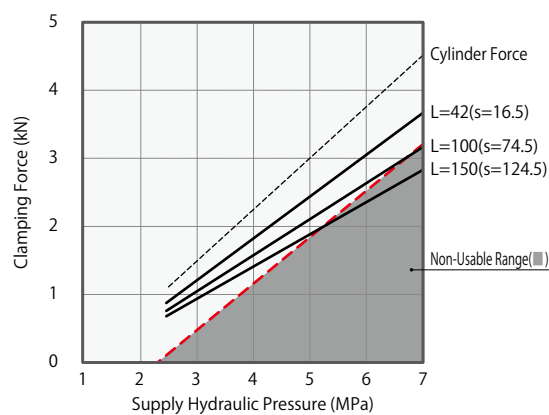
- FP
- FQ

Customized Spring Cylinder

- DWA/DWB

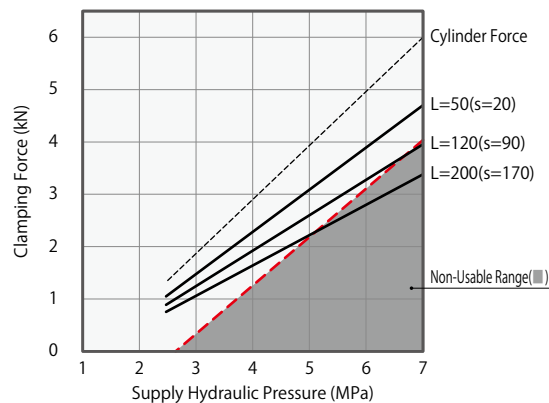
LT0481/LG0481 Calculation Formula^{**1} (kN) $F = (P-1.09) / (1.45+0.0044 \times L)$

Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN)								Non-Usable Range (mm)	Max. Lever Length (L) (mm)
		L=50	L=60	L=70	L=80	L=100	L=120	L=140	L=150		
7	4.4	3.5	3.5	3.4	3.3						89
6.5	4.0	3.2	3.2	3.1	3.0	2.9					100
6	3.7	2.9	2.9	2.8	2.7	2.6					114
5.5	3.3	2.6	2.6	2.5	2.5	2.3	2.2				132
5	2.9	2.3	2.3	2.2	2.2	2.1	2.0	1.9	1.9		150
4.5	2.5	2.0	2.0	1.9	1.9	1.8	1.7	1.7	1.6		150
4	2.2	1.7	1.7	1.7	1.6	1.5	1.5	1.4	1.4		150
3.5	1.8	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.1		150
3	1.4	1.1	1.1	1.1	1.1	1.0	1.0	0.9	0.9		150
2.5	1.0	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7		150
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	6.5	5.8	5.3	5.1		



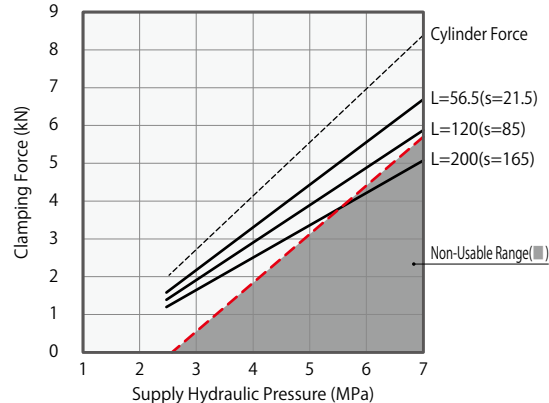
LT0551/LG0551 Calculation Formula^{**1} (kN) $F = (P-1.22) / (1.07+0.0033 \times L)$

Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN)								Non-Usable Range (mm)	Max. Lever Length (L) (mm)
		L=50	L=60	L=80	L=100	L=120	L=140	L=160	L=200		
7	5.9	4.7	4.6	4.3	4.1						102
6.5	5.4	4.3	4.2	4.0	3.8						115
6	4.9	3.9	3.8	3.6	3.4	3.3					132
5.5	4.4	3.5	3.4	3.2	3.1	2.9	2.8				156
5	3.9	3.1	3.0	2.8	2.7	2.6	2.5	2.4			188
4.5	3.3	2.7	2.6	2.5	2.3	2.2	2.1	2.1	1.9		200
4	2.8	2.3	2.2	2.1	2.0	1.9	1.8	1.7	1.6		200
3.5	2.3	1.9	1.8	1.7	1.6	1.6	1.5	1.4	1.3		200
3	1.8	1.4	1.4	1.3	1.3	1.2	1.2	1.1	1.0		200
2.5	1.3	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7		200
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	6.4	5.8	5.4	4.9		



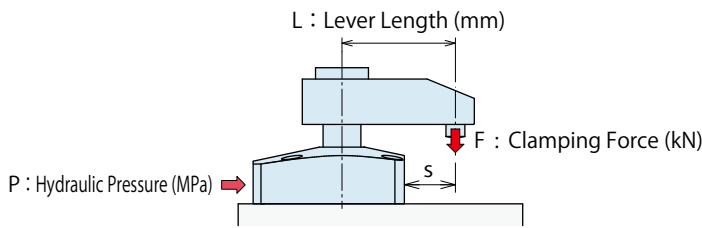
LT0651/LG0651 Calculation Formula^{**1} (kN) $F = (P-1.22) / (0.77+0.0020 \times L)$

Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN)								Non-Usable Range (mm)	Max. Lever Length (L) (mm)
		L=50	L=60	L=80	L=100	L=120	L=140	L=160	L=200		
7	8.3	6.6	6.5	6.2	6.0	5.7					126
6.5	7.6	6.1	5.9	5.7	5.4	5.2	5.0				142
6	6.9	5.5	5.4	5.1	4.9	4.7	4.6	4.4			163
5.5	6.2	4.9	4.8	4.6	4.4	4.2	4.1	3.9			191
5	5.5	4.3	4.3	4.1	3.9	3.7	3.6	3.5	3.2		200
4.5	4.8	3.8	3.7	3.5	3.4	3.3	3.1	3.0	2.8		200
4	4.1	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.4		200
3.5	3.4	2.6	2.6	2.5	2.4	2.3	2.2	2.1	2.0		200
3	2.6	2.1	2.0	1.9	1.8	1.8	1.7	1.6	1.5		200
2.5	1.9	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.1		200
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	7.0	6.6	6.1	5.4		

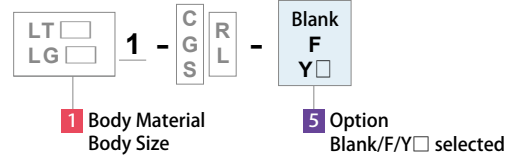


Clamping Force Curve

※ LT/LG□1-□□-P : For balance lever option, the clamping force curve is different from the graph. Please calculate it with the specification's formula.



Applicable Model



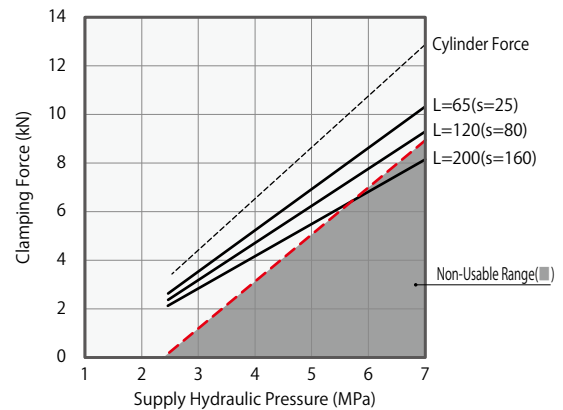
(Example) When using LT0751/LG0751

Supply Hydraulic Pressure 5.0 MPa, Lever Length L=50 mm, Clamping force is about 7.1 kN.

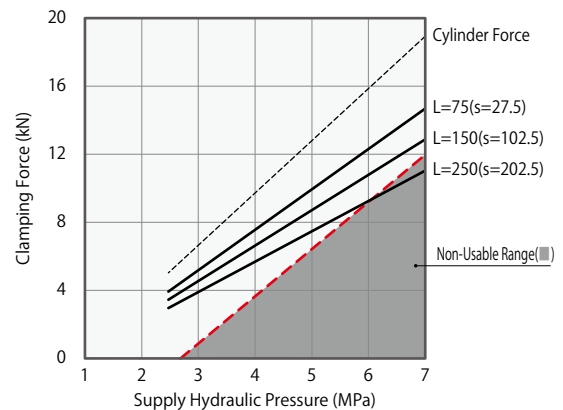
Notes:

- Tables and graphs shown are the relationships between the clamping force (kN) and supply hydraulic pressure (MPa).
 - Cylinder output (when L=0) cannot be calculated from the calculation formula of clamping force.
 - There may be no lever swing action with large inertia depending on supply hydraulic pressure or lever mounting position.
 - The clamping force is shown with lever in the locked position.
 - The clamping force varies as per the lever length. Use the hydraulic supply pressure suitable to the lever length.
 - Operation in the non-usable range can damage the clamp and lead to fluid leakage.
 - The tables and graphs are only for reference. The exact results should be calculated based on the formula in the specification column.
- ※1. F : Clamping Force (kN) , P : Supply Hydraulic Pressure (MPa) , L : Lever Length (mm).

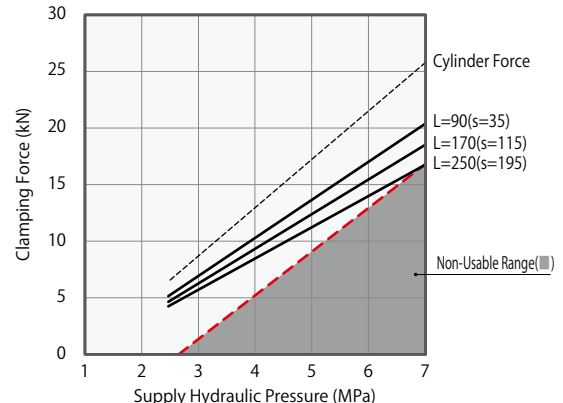
LT0751 / LG0751		Calculation Formula ※1 (kN) $F = (P-0.97) / (0.51+0.0012 \times L)$											
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Non-Usable Range (■)	Max. Lever Length (L) (mm)		
		L=50	L=60	L=80	L=100	L=120	L=140	L=160	L=200				
7	12.8	10.6	10.4	10.0	9.6	9.2	8.8	8.5	8.2	7.8	7.4	7.2	134
6.5	11.7	9.7	9.5	9.1	8.8	8.5	8.2	7.9	7.6	7.3	7.0	6.7	150
6	10.7	8.8	8.6	8.3	8.0	7.7	7.4	7.2	6.9	6.7	6.5	6.0	171
5.5	9.6	8.0	7.8	7.5	7.2	6.9	6.7	6.5	6.0	5.7	5.4	5.0	199
5	8.6	7.1	6.9	6.7	6.4	6.2	5.9	5.7	5.4	5.0	4.7	4.0	200
4.5	7.5	6.2	6.1	5.8	5.6	5.4	5.2	5.0	4.7	4.0	3.7	3.0	200
4	6.4	5.3	5.2	5.0	4.8	4.6	4.5	4.3	4.0	3.0	2.7	2.0	200
3.5	5.4	4.4	4.4	4.2	4.0	3.9	3.7	3.6	3.4	2.7	2.4	2.0	200
3	4.3	3.6	3.5	3.4	3.2	3.1	3.0	2.9	2.7	2.0	1.8	1.5	200
2.5	3.2	2.7	2.6	2.5	2.4	2.3	2.3	2.2	2.0	1.5	1.4	1.0	200
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	7.0	6.8	6.3	5.5				



LG0901		Calculation Formula ※1 (kN) $F = (P-0.87) / (0.36+0.0008 \times L)$											
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Non-Usable Range (■)	Max. Lever Length (L) (mm)		
		L=60	L=75	L=100	L=120	L=140	L=170	L=200	L=250				
7	18.8	15.0	14.6	13.9	13.4	13.0	12.4	11.8	11.4	10.8	10.3	9.9	180
6.5	17.2	13.8	13.4	12.8	12.4	11.9	11.4	10.8	10.3	9.9	9.4	9.0	203
6	15.7	12.6	12.2	11.7	11.3	10.9	10.3	9.9	9.4	9.0	8.6	8.2	234
5.5	14.2	11.4	11.0	10.5	10.2	9.8	9.3	8.9	8.3	8.0	7.6	7.2	250
5	12.6	10.1	9.8	9.4	9.1	8.8	8.3	7.9	7.4	7.0	6.6	6.2	250
4.5	11.1	8.9	8.6	8.3	8.0	7.7	7.3	7.0	6.5	6.2	5.8	5.4	250
4	9.6	7.7	7.5	7.1	6.9	6.6	6.3	6.0	5.6	5.2	4.9	4.5	250
3.5	8.0	6.5	6.3	6.0	5.8	5.6	5.3	5.1	4.7	4.4	4.1	3.8	250
3	6.5	5.2	5.1	4.8	4.7	4.5	4.3	4.1	3.8	3.5	3.2	2.9	250
2.5	4.9	4.0	3.9	3.7	3.6	3.5	3.3	3.1	2.9	2.6	2.4	2.1	250
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.6	5.8				



LG1051		Calculation Formula ※1 (kN) $F = (P-1.00) / (0.26+0.0004 \times L)$											
Hydraulic Pressure (MPa)	Cylinder Force (kN)	Clamping Force (kN) Lever Length L (mm)								Non-Usable Range (■)	Max. Lever Length (L) (mm)		
		L=80	L=100	L=120	L=140	L=170	L=200	L=250	L=300				
7	25.5	20.6	20.0	19.5	19.0	18.3	17.7	17.1	16.2	15.3	14.4	13.2	236
6.5	23.4	18.8	18.3	17.9	17.4	16.8	16.2	15.3	14.4	13.9	13.2	12.0	267
6	21.2	17.1	16.7	16.2	15.8	15.2	14.7	13.9	13.2	12.5	11.8	10.5	300
5.5	19.1	15.4	15.0	14.6	14.2	13.7	13.2	12.5	11.8	11.1	10.5	9.0	300
5	17.0	13.7	13.3	13.0	12.7	12.2	11.8	11.1	10.5	9.7	9.2	7.5	300
4.5	14.8	12.0	11.7	11.4	11.1	10.7	10.3	9.7	9.2	8.3	7.9	6.0	300
4	12.7	10.3	10.0	9.7	9.5	9.2	8.8	8.3	7.9	7.0	6.6	4.5	300
3.5	10.6	8.6	8.3	8.1	7.9	7.6	7.4	6.9	6.6	5.5	5.3	3.5	300
3	8.4	6.9	6.7	6.5	6.3	6.1	5.9	5.6	5.3	4.0	3.8	2.5	300
2.5	6.3	5.1	5.0	4.9	4.8	4.6	4.4	4.2	4.0	2.5	2.4	1.5	300
Max. Operating Pressure (MPa)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	6.8	6.1				



 **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

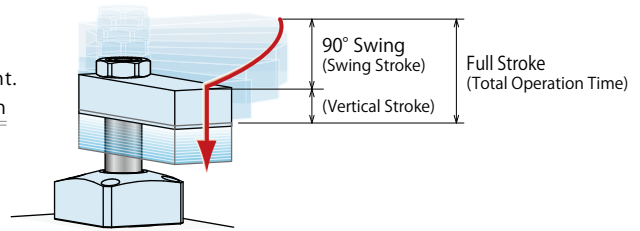
DWA/DWB

● Allowable Swing Time Graph

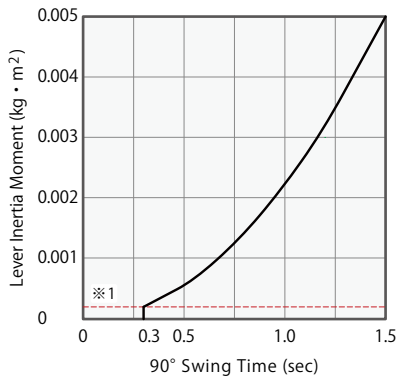
Adjustment of Swing Time

The graph shows allowable swing time against lever inertia moment. Please make sure that an operation time is more than the operation time shown in the graph.

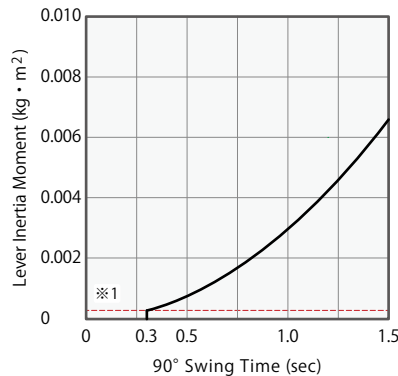
Excessive action speed can reduce stopping accuracy and damage internal parts.



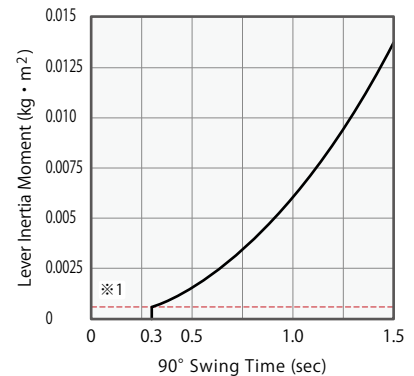
LT0301/LG0301



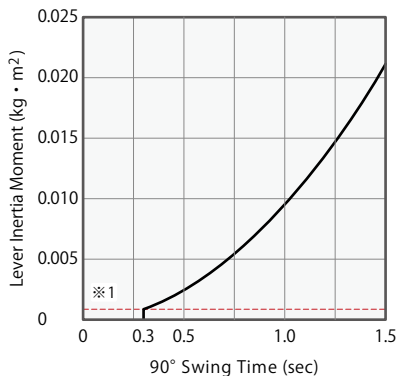
LT0361/LG0361



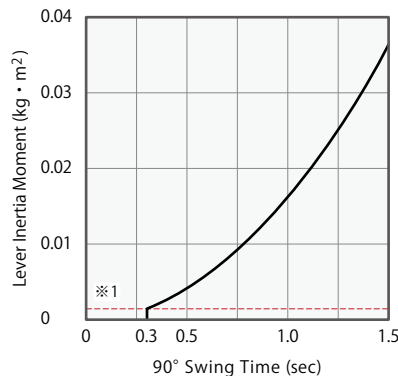
LT0401/LG0401



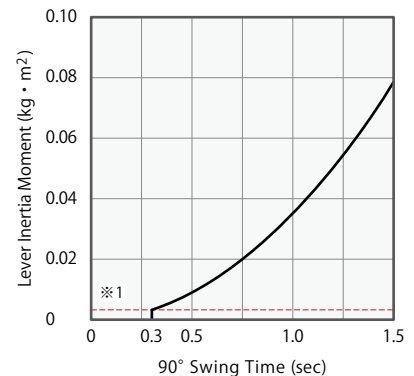
LT0481/LG0481



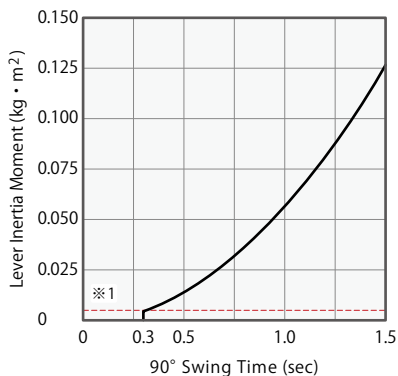
LT0551/LG0551



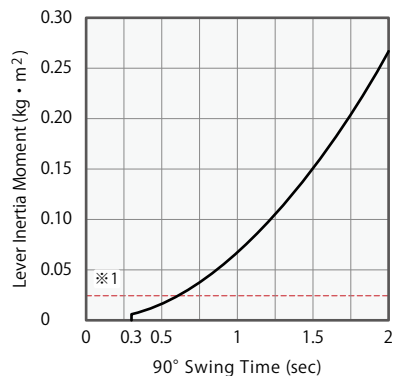
LT0651/LG0651



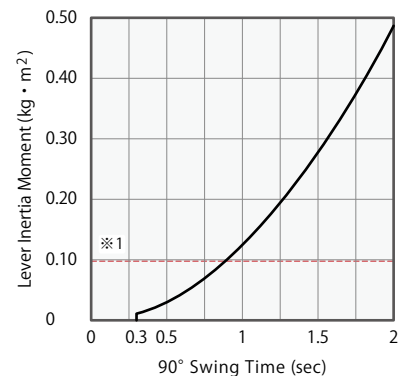
LT0751/LG0751



LG0901



LG1051



Notes:

- ※1. It shows the inertia moment with material lever (LZ□-LE2).
- ※2. For any lever inertia moment, minimum 90° swing time should be 0.3 sec or more.
 1. The graph shows the action time tolerance in regard to the lever inertia moment when the clamp piston is operating at constant speed.
 2. There may be no lever swing action with large inertia depending on supply hydraulic pressure, oil flow and lever mounting position.
 3. Please adjust the 90° swing time against lever inertia moment to be longer than the indicated time shown in the graphs above.
 4. When clamps are mounted horizontally, the lever may be accelerated by its own weight and the swing time may be faster than the allowable time shown above. This leads to clamp damage. In this case, use meter-out flow control valve for speed adjustment. (Please see P.1044 for Notes on Hydraulic Cylinder Speed Control Unit)
 5. Excessive swing speed can reduce stopping accuracy and damage the internal parts.
 6. Please contact us if operational conditions differ from those shown on the graphs.

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 → **LT0481/LG0481**

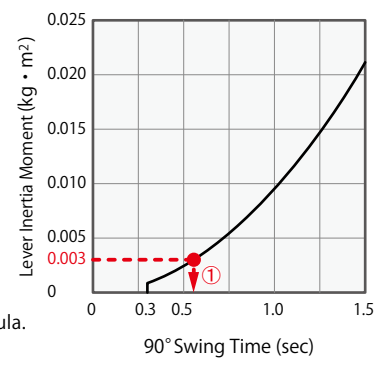
(How to read the action time tolerance graph)

When using LT0481/LG0481 is used

Lever Inertia Moment : 0.003kg·m²

- ① 90° Swing Time : About 0.56 sec or more
- ② Total Operation Time : About 1.30 sec or more

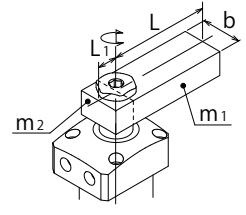
1. The total operation time represents the allowable operation time when fully stroked.
2. The total operation time should be calculated as per the calculation formula.



How to calculate inertia moment (Estimated)

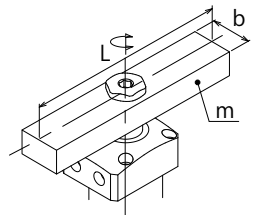
I : Inertia Moment (kg·m²) L, L₁, L₂, K, b : Length (m) m, m₁, m₂, m₃ : Mass (kg)

① For a rectangular plate (cuboid), the rotating shaft is vertically on one side of the plate.



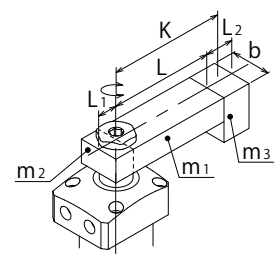
$$I = m_1 \frac{4L^2 + b^2}{12} + m_2 \frac{4L_1^2 + b^2}{12}$$

② For a rectangular plate (cuboid), the rotating shaft is vertically on the gravity center of the plate.



$$I = m \frac{L^2 + b^2}{12}$$

③ Load is applied on the lever front end.



$$I = m_1 \frac{4L^2 + b^2}{12} + m_2 \frac{4L_1^2 + b^2}{12} + m_3 K^2 + m_3 \frac{L_2^2 + b^2}{12}$$

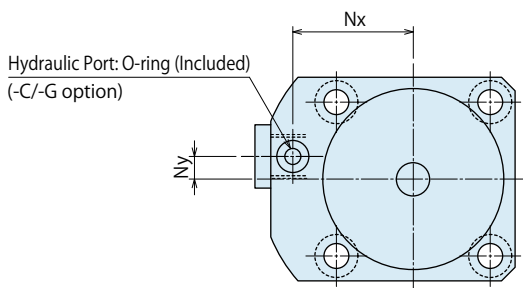
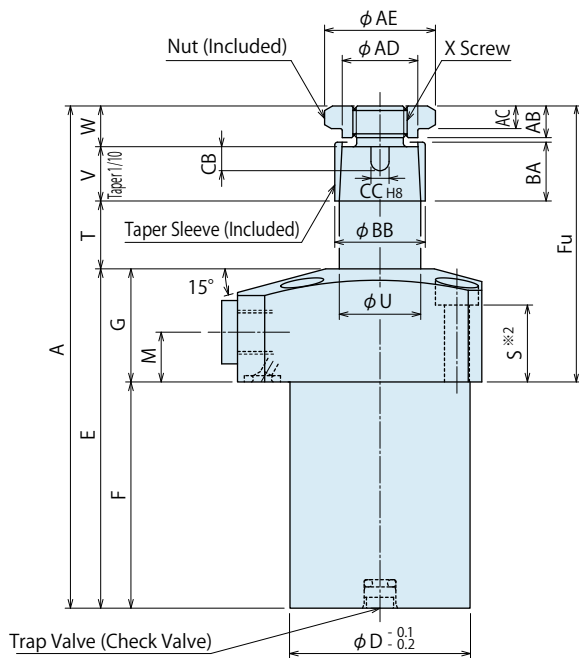
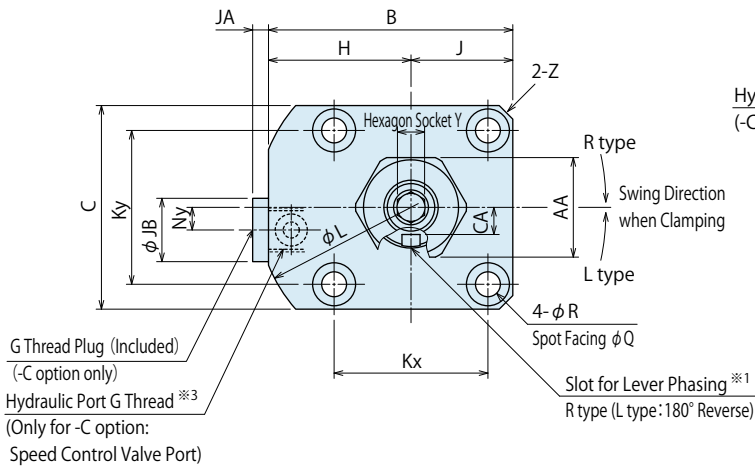
Calculation Formula of Total Operation Time

$$\text{Total Operation Time (sec)} = 90^\circ \text{ Swing Time (sec)} \times \frac{\text{Full Stroke (mm)}}{\text{Swing Stroke (mm)}}$$

External Dimensions

C : Gasket Option (With G Thread Plug)

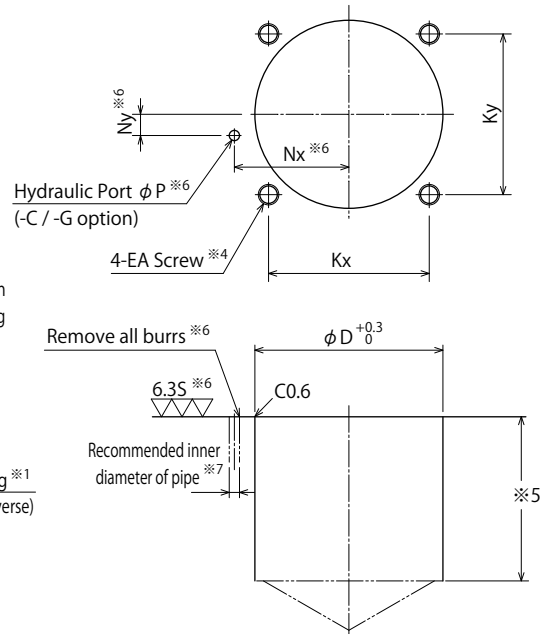
※ The drawing shows the released state of LT-CR and LG-CR.



Notes:

- ※1. The slot for determining the lever phase faces the port side if locked.
- ※2. Mounting bolts are not provided. Customer should prepare based on dimension "S".
- ※3. Speed control valve is sold separately. Please prepare using reference to P.727.
- 1. Please contact us when you require options in combination.

Machining Dimensions of Mounting Area



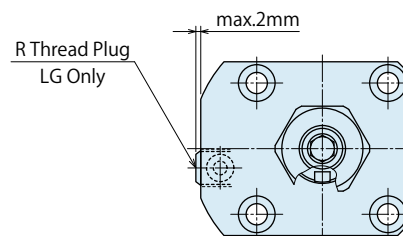
Notes:

- ※4. EA tapping depth should be calculated so that mounting bolts engage fixture by at least 1.5 x bolt diameter.
- ※5. The φ D depth of the body mounting hole should be decided from dimension F.
- ※6. This process indicates -C/-G : Gasket option.

Piping Method

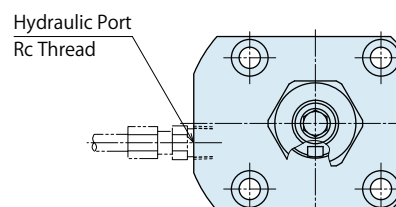
G : Gasket Option (with R Thread Plug)

※ The drawing shows the released state of LT-GR and LG-GR. There is no R thread plug (Rc thread) on LT030 ~ LT075.

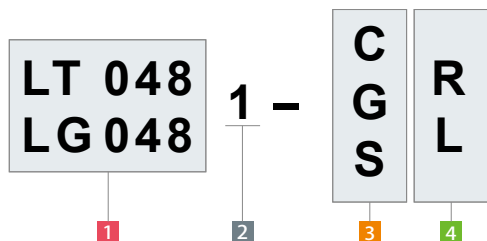


S : Piping Option (Rc Thread)

※ The drawing shows the released state of LT-SR and LG-SR.



Model No. Indication



(Format Example : LT0551-CR, LG0901-SL)

- 1 Body Material • Body Size
- 2 Design No.
- 3 Piping Method
- 4 Swing Direction when Clamping

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	LT0301-□□ LG0301-□□	LT0361-□□ LG0361-□□	LT0401-□□ LG0401-□□	LT0481-□□ LG0481-□□	LT0551-□□ LG0551-□□	LT0651-□□ LG0651-□□	LT0751-□□ LG0751-□□	LG0901-□□	LG1051-□□
Full Stroke	10.5	12.5	13	14	16.5	18	21.5	23	28.5
Swing Stroke (90°)	4.5	4.5	5	6	6.5	8	9.5	11	12.5
Vertical Stroke	6	8	8	8	10	10	12	12	16
A	95.5	103.5	111	121	137.5	145	171.5	185	223.5
B	45.5	49	54	61	69	81	92	107	122
C	34	40	45	51	60	70	80	95	110
D	30	36	40	48	55	65	75	90	105
E	68	73	75	80	87	93	108	114	138
F	43	48	50	52	59	63	71	74	88
Fu	52.5	55.5	61	69	78.5	82	100.5	111	135.5
G	25	25	25	28	28	30	37	40	50
H	26	29	31.5	35.5	39	46	52	59.5	67
J	19.5	20	22.5	25.5	30	35	40	47.5	55
Kx	30	31.4	34	40	47	55	63	75	88
Ky	23	31.4	34	40	47	55	63	75	88
L	57	63	68	73	80	94	106	126	147
M	11	11	11	13	12	13	16	16	21
Nx	20.5	23.5	26	30	33.5	39.5	45	52.5	60
Ny	3	5	5	0	0	0	0	0	0
P	3	3	3	3	3	5	5	5	5
Q	7.5	7.5	9.5	9.5	11	11	14	17.5	20
R	4.5	4.5	5.5	5.5	6.8	6.8	9	11	14
S	15.5	18	17	18.5	17	18	22	22	29
T	12.5	14.5	15	16	18.5	20	23.5	25	30.5
U	12	15	18	22	25	30	35.5	45	55
V	9	9	12	14	20	20	26	32	38
W	6	7	9	11	12	12	14	14	17
X (Nominal × Pitch)	M8×1	M10×1	M12×1.5	M16×1.5	M18×1.5	M22×1.5	M28×1.5	M36×1.5	M45×1.5
Y	3	4	5	6	8	10	10	14	14
Z (Chamfer)	C3	C2	C3	C3	(φ80)	(φ94)	(φ106)	(φ126)	(φ147)
AA	14	19	22	24	30	36	41	50	60
AB	4.8	5.8	7	9	10	10	12	12	15
AC	3	4	5	6	7	7	8	8	10
AD	10.9	13.8	16.6	20.5	22.9	27.9	32.8	41.7	51.1
AE	15.5	21.2	24.5	26.5	33	40	45	55	66
BA	9.5	9.5	13	15	21	21	27	33	39
BB	13.5	17	20	25	28	34	40	49	60
CA	4	5	6	8	9	11	14	18	22.5
CB	4	4	5.3	5.3	5.3	7.5	7.5	9.5	9.5
CC	3 ^{+0.014} ₀	3 ^{+0.014} ₀	4 ^{+0.018} ₀	4 ^{+0.018} ₀	4 ^{+0.018} ₀	6 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀	8 ^{+0.022} ₀
EA (Nominal × Pitch)	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1	M6×1	M8×1.25	M10×1.5	M12×1.75
JA	3.5	3.5	3.5	3.5	3.5	4.5	4.5	4.5	4.5
JB	14	14	14	14	14	19	19	22	22
G-Thread Plug -C option	G1/8	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8
R-Thread Plug (LG Only) -G option	R1/8	R1/8	R1/8	R1/8	R1/8	R1/4	R1/4	R3/8	R3/8
O-ring (-C/-G option)	1BP5	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Recommended Inner Diameter of Pipe ※7	φ6	φ6	φ6	φ6	φ6	φ8	φ8	φ12	φ12
Hydraulic Port -S option	R1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4	Rc3/8	Rc3/8
Cylinder Capacity cm ³	2.8	4.9	7.1	10.6	17	25.5	45.7	70.5	121.7
Mass ※8 kg	LT	0.25	0.4	0.6	0.8	1.2	1.8	-	-
	LG	0.45	0.6	0.9	1.2	1.7	2.6	3.9	8.9

Notes: ※7. The recommended inner pipe diameters in the chart are reference values.

Make appropriate changes according to the number of clamps used and the distance from the piping.

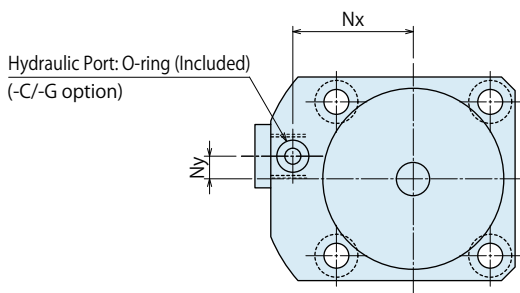
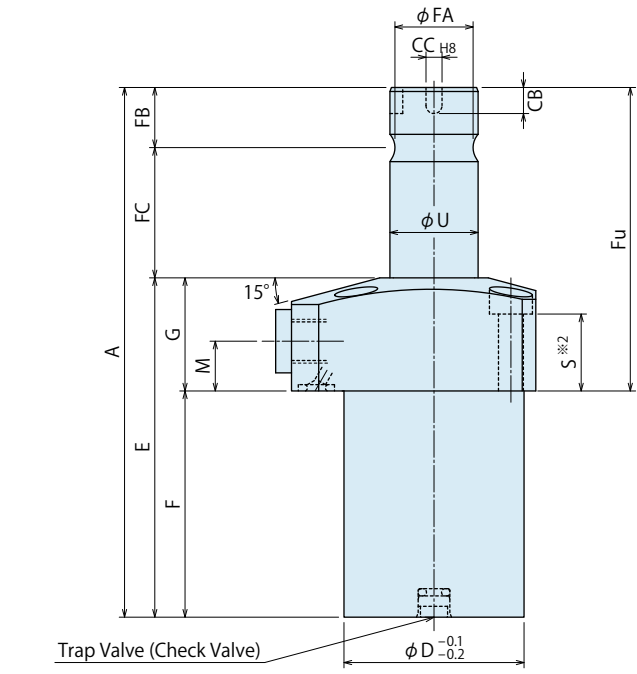
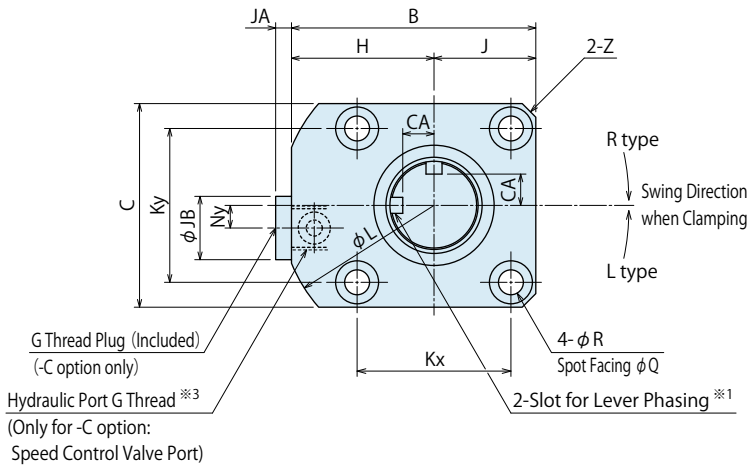
※8. Mass of single swing clamp including taper sleeve and nut.

- 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

C : Gasket Option (With G Thread Plug)

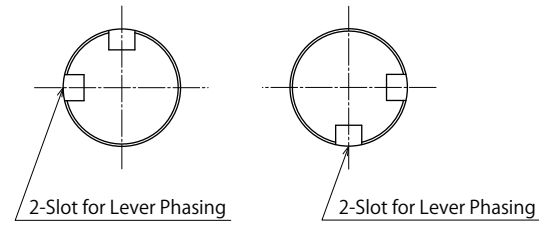
※ The drawing shows the released state of LT-CR-F and LG-CR-F.



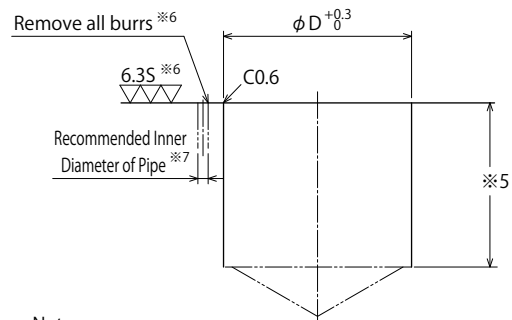
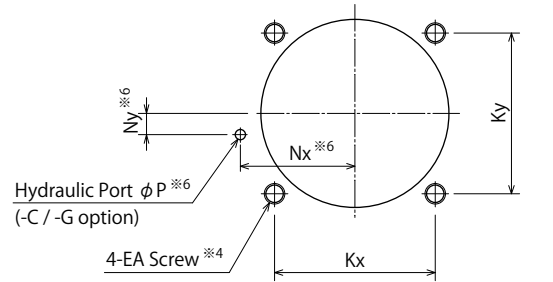
※ 1. Slot for Lever Phasing (Released State).

The slot position varies as per the lock swinging direction.

Swing Direction when Clamping : R Swing Direction when Clamping : L



Machining Dimensions of Mounting Area



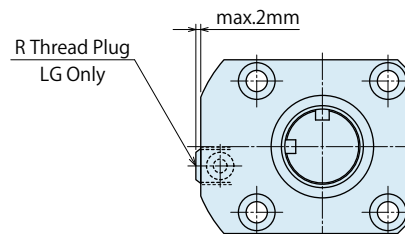
Notes:

- ※4. EA tapping depth should be calculated so that mounting bolts engage fixture by at least 1.5 x bolt diameter.
- ※5. The φD depth of the body mounting hole should be decided from dimension F.
- ※6. This process indicates -C/-G : Gasket option.

Piping Method

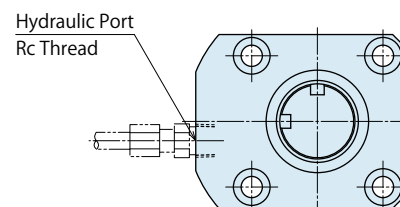
G : Gasket Option (with R Thread Plug)

※ The drawing shows the released state of LT-GR-F and LG-GR-F. There is no R thread plug (Rc thread) on LT030 ~ LT075.



S : Piping Option (Rc Thread)

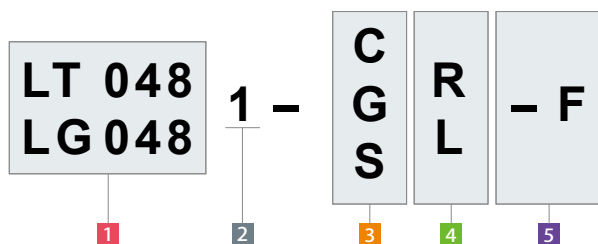
※ The drawing shows the released state of LT-SR-F and LG-SR-F.



Notes:

- ※2. Mounting bolts are not provided. Customer should prepare based on dimension "S".
- ※3. Speed control valve is sold separately. Please prepare using reference to P.727.
- 1. Please contact us when you require options in combination.

Model No. Indication



(Format Example : LT0551-CR-F, LG0901-SL-F)

- 1 Body Material • Body Size
- 2 Design No.
- 3 Piping Method
- 4 Swing Direction when Clamping
- 5 Option (When F is chosen)

External Dimensions and Machining Dimensions for Mounting

(mm)

Model No.	LT0301-□□-F LG0301-□□-F	LT0361-□□-F LG0361-□□-F	LT0401-□□-F LG0401-□□-F	LT0481-□□-F LG0481-□□-F	LT0551-□□-F LG0551-□□-F	LT0651-□□-F LG0651-□□-F	LT0751-□□-F LG0751-□□-F	LG0901-□□-F	LG1051-□□-F
Full Stroke	10.5	12.5	13	14	16.5	18	21.5	23	28.5
Swing Stroke (90°)	4.5	4.5	5	6	6.5	8	9.5	11	12.5
Vertical Stroke	6	8	8	8	10	10	12	12	16
A	96.5	109.5	115	126	139.5	153	177.5	194	228.5
B	45.5	49	54	61	69	81	92	107	122
C	34	40	45	51	60	70	80	95	110
D	30	36	40	48	55	65	75	90	105
E	68	73	75	80	87	93	108	114	138
F	43	48	50	52	59	63	71	74	88
Fu	53.5	61.5	65	74	80.5	90	106.5	120	140.5
G	25	25	25	28	28	30	37	40	50
H	26	29	31.5	35.5	39	46	52	59.5	67
J	19.5	20	22.5	25.5	30	35	40	47.5	55
Kx	30	31.4	34	40	47	55	63	75	88
Ky	23	31.4	34	40	47	55	63	75	88
L	57	63	68	73	80	94	106	126	147
M	11	11	11	13	12	13	16	16	21
Nx	20.5	23.5	26	30	33.5	39.5	45	52.5	60
Ny	3	5	5	0	0	0	0	0	0
P	3	3	3	3	3	5	5	5	5
Q	7.5	7.5	9.5	9.5	11	11	14	17.5	20
R	4.5	4.5	5.5	5.5	6.8	6.8	9	11	14
S	15.5	18	17	18.5	17	18	22	22	29
U	12	15	18	22	25	30	35.5	45	55
Z (Chamfer)	C3	C2	C3	C3	(φ80)	(φ94)	(φ106)	(φ126)	(φ147)
CA	4	5	5.8	7.8	9	10	13.25	17.5	22.5
CB	4.25	5	6.5	6.5	7	9.5	9.5	13	13.5
CC	2.5 ^{+0.014} ₀	3 ^{+0.014} ₀	4 ^{+0.018} ₀	4 ^{+0.018} ₀	4 ^{+0.018} ₀	6 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀	8 ^{+0.022} ₀
EA (Nominal × Pitch)	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1	M6×1	M8×1.25	M10×1.5	M12×1.75
FA	10.5	13.5	16	19.5	22	26	31	39.5	48
FB	8	11	12.5	15	17	20	23	27.5	30
FC	20.5	25.5	27.5	31	35.5	40	46.5	52.5	60.5
JA	3.5	3.5	3.5	3.5	3.5	4.5	4.5	4.5	4.5
JB	14	14	14	14	14	19	19	22	22
G-Thread Plug -C option	G1/8	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8
R-Thread Plug (LG Only) -G option	R1/8	R1/8	R1/8	R1/8	R1/8	R1/4	R1/4	R3/8	R3/8
O-ring (-C/-G option)	1BP5	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Recommended Inner Diameter of Pipe ^{※7}	φ6	φ6	φ6	φ6	φ6	φ8	φ8	φ12	φ12
Hydraulic Port -S option	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4	Rc3/8	Rc3/8
Cylinder Capacity cm ³	2.8	4.9	7.1	10.6	17	25.5	45.7	70.5	121.7
Mass ^{※8} kg									
	LT	0.25	0.4	0.6	0.8	1.2	1.8	-	-
	LG	0.45	0.6	0.9	1.2	1.7	2.6	3.9	5.4

Note: ※7. The recommended inner pipe diameters in the chart are reference values.

Make appropriate changes according to the number of clamps used and the distance from the piping.

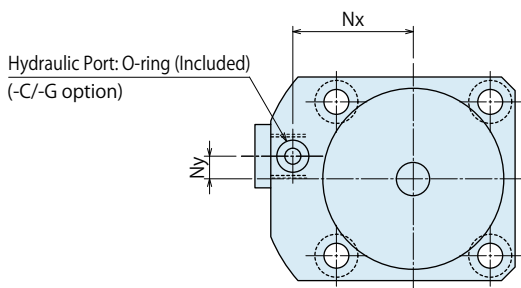
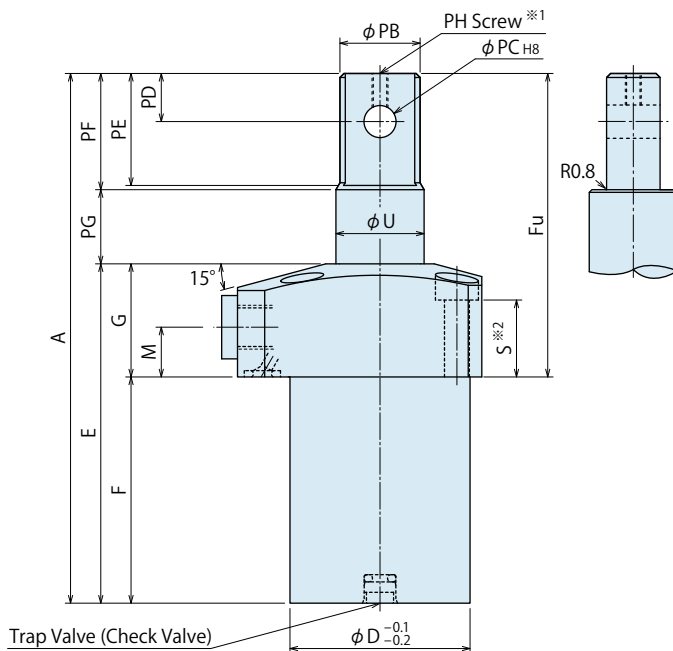
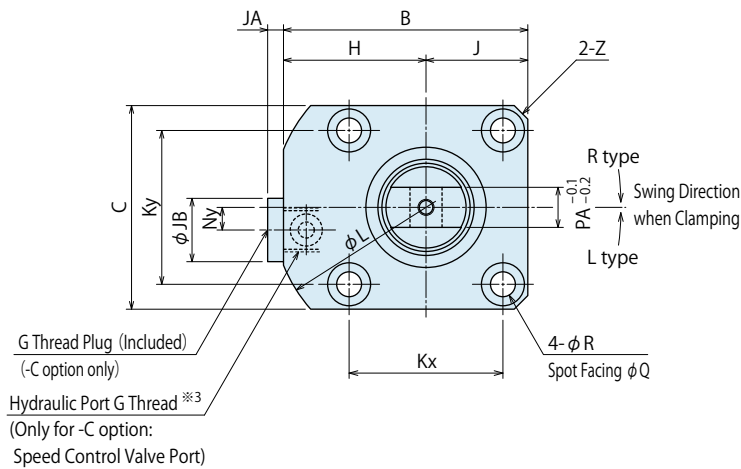
- High-Power Series
- Pneumatic Series
- Hydraulic Series**
- Valve / Coupler Hydraulic Unit
- Manual Operation Accessories
- Cautions / Others

- 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

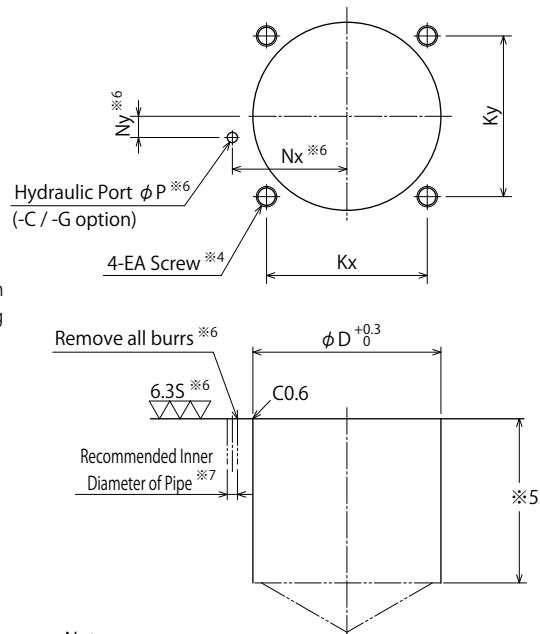
External Dimensions

C : Gasket Option (With G Thread Plug)

※ The drawing shows the released state of LT-□-P and LG-□-P.



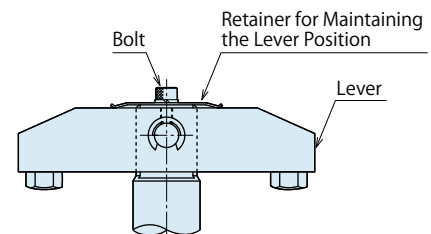
Machining Dimensions of Mounting Area



Notes:

- ※4. EA tapping depth should be calculated so that mounting bolts engage fixture by at least 1.5 x bolt diameter.
- ※5. The φD depth of the body mounting hole should be decided from dimension F.
- ※6. This process indicates -C/-G : Gasket option.

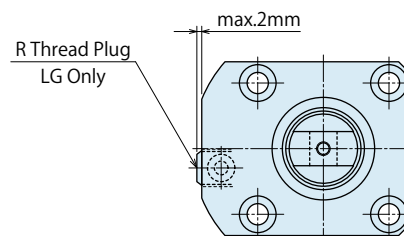
Balance Lever Reference Drawing



Piping Method

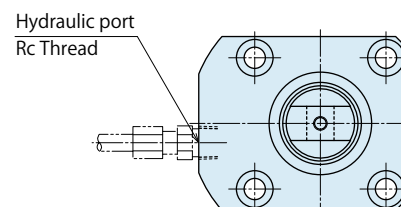
G : Gasket Option (with R Thread Plug)

※ The drawing shows the released state of LT-G□-P and LG-G□-P. There is no R thread plug (Rc thread) on LT030 ~ LT075.



S : Piping Option (Rc Thread Port)

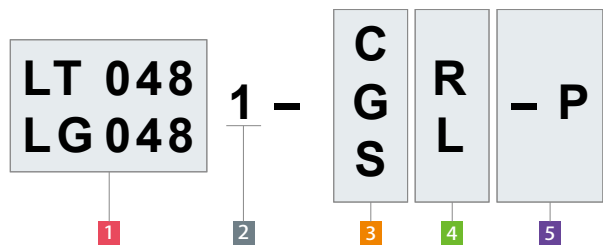
※ The drawing shows the released state of LT-S□-P and LG-S□-P.



Notes:

- ※1. Use the tapped hole (PH thread) on top of rod to attach retainer for lever.
 - ※2. Mounting bolts are not provided. Customer should prepare based on dimension "S".
 - ※3. Speed control valve is sold separately. Please prepare using reference to P.727.
1. Please contact us when you require options in combination.

Model No. Indication



(Format Example : LT0551-CR-P, LG0901-SL-P)

- 1 Body Material • Body Size
- 2 Design No.
- 3 Piping Method
- 4 Swing Direction when Clamping
- 5 Option (When P is chosen)

External Dimensions and Machining Dimensions for Mounting

(mm)

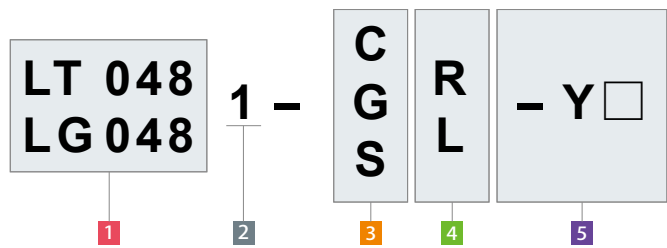
Model No.	LT0301-□□-P LG0301-□□-P	LT0361-□□-P LG0361-□□-P	LT0401-□□-P LG0401-□□-P	LT0481-□□-P LG0481-□□-P	LT0551-□□-P LG0551-□□-P	LT0651-□□-P LG0651-□□-P	LT0751-□□-P LG0751-□□-P	LG0901-□□-P	LG1051-□□-P
Full Stroke	10.5	12.5	13	14	16.5	18	21.5	23	28.5
Swing Stroke (90°)	4.5	4.5	5	6	6.5	8	9.5	11	12.5
Vertical Stroke	6	8	8	8	10	10	12	12	16
A	95.5	103.5	111	121	137.5	145	171.5	185	223.5
B	45.5	49	54	61	69	81	92	107	122
C	34	40	45	51	60	70	80	95	110
D	30	36	40	48	55	65	75	90	105
E	68	73	75	80	87	93	108	114	138
F	43	48	50	52	59	63	71	74	88
Fu	52.5	55.5	61	69	78.5	82	100.5	111	135.5
G	25	25	25	28	28	30	37	40	50
H	26	29	31.5	35.5	39	46	52	59.5	67
J	19.5	20	22.5	25.5	30	35	40	47.5	55
Kx	30	31.4	34	40	47	55	63	75	88
Ky	23	31.4	34	40	47	55	63	75	88
L	57	63	68	73	80	94	106	126	147
M	11	11	11	13	12	13	16	16	21
Nx	20.5	23.5	26	30	33.5	39.5	45	52.5	60
Ny	3	5	5	0	0	0	0	0	0
P	3	3	3	3	3	5	5	5	5
Q	7.5	7.5	9.5	9.5	11	11	14	17.5	20
R	4.5	4.5	5.5	5.5	6.8	6.8	9	11	14
S	15.5	18	17	18.5	17	18	22	22	29
U	12	15	18	22	25	30	35.5	45	55
Z (Chamfer)	C3	C2	C3	C3	(φ80)	(φ94)	(φ106)	(φ126)	(φ147)
EA (Nominal × Pitch)	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1	M6×1	M8×1.25	M10×1.5	M12×1.75
PA	6	7	8	10	12	14	16	22	26
PB	11	13.5	16	20	23	28	33.5	43	53
PC	5 ^{+0.018} ₀	6 ^{+0.018} ₀	6 ^{+0.018} ₀	8 ^{+0.022} ₀	10 ^{+0.022} ₀	13 ^{+0.027} ₀	13 ^{+0.027} ₀	16 ^{+0.027} ₀	20 ^{+0.033} ₀
PD	6.5	7	8	10	12	15	16.5	20	24
PE	14	15.5	20	23.5	29	30.5	38.5	44.5	53.5
PF	15	16	21	25	30.5	32	40	46	55
PG	12.5	14.5	15	16	20	20	23.5	25	30.5
PH (Nominal × Pitch)	M3×0.5	M3×0.5	M3×0.5	M4×0.7	M5×0.8	M6×1	M6×1	M8×1.25	M8×1.25
JA	3.5	3.5	3.5	3.5	3.5	4.5	4.5	4.5	4.5
JB	14	14	14	14	14	19	19	22	22
G-Thread Plug -C option	G1/8	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8
R-Thread Plug (LG Only) -G option	R1/8	R1/8	R1/8	R1/8	R1/8	R1/4	R1/4	R3/8	R3/8
O-ring (-C/-G option)	1BP5	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Recommended Inner Diameter of Pipe ※7	φ6	φ6	φ6	φ6	φ6	φ8	φ8	φ12	φ12
Hydraulic Port -S option	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/8	Rc1/4	Rc1/4	Rc3/8	Rc3/8
Cylinder Capacity cm ³	2.8	4.9	7.1	10.6	17	25.5	45.7	70.5	121.7
Mass ※8 kg	LT 0.25 LG 0.45	0.4 0.6	0.6 0.9	0.8 1.2	1.2 1.7	1.8 2.6	2.8 3.9	- 5.4	- 8.9

Note: ※7. The recommended inner pipe diameters in the chart are reference values.

Make appropriate changes according to the number of clamps used and the distance from the piping.

- 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



(Format Example : LT0551-CR-Y30、LG0901-SL-Y45)

- 1 Body Material • Body Size
- 2 Design No.
- 3 Piping Method
- 4 Swing Direction when Clamping
- 5 Option (When Y□ is chosen)

External Dimensions and Machining Dimensions for Mounting

(mm)

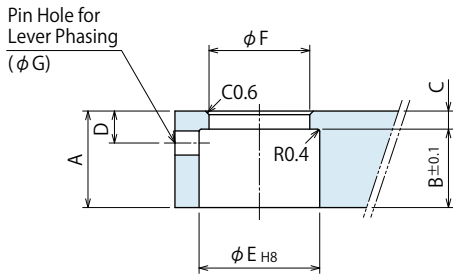
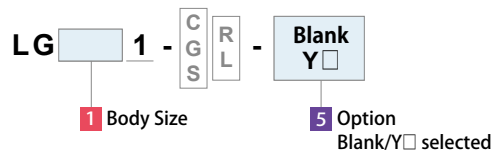
Model No.	LT0301-□□-Y□			LT0361-□□-Y□			LT0401-□□-Y□			LT0481-□□-Y□			LT0551-□□-Y□			LT0651-□□-Y□			LT0751-□□-Y□			LG0901-□□-Y□			LG1051-□□-Y□					
	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60			
Option Model No.	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60
Swing Angle	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°
Full Stroke	8.1	8.7	9.3	10.2	10.8	11.3	10.3	11	11.7	10.9	11.7	12.4	13	13.9	14.8	13.8	14.8	15.9	16.5	17.7	19	17.3	18.7	20.1	22	23.6	25.2			
Swing Stroke	2.1	2.7	3.3	2.2	2.8	3.3	2.3	3	3.7	2.9	3.7	4.4	3	3.9	4.8	3.8	4.8	5.9	4.5	5.7	7	5.3	6.7	8.1	6	7.6	9.2			
Vertical Stroke	6			8			8			8			10			10			12			12			16					
A	93.1	93.7	94.3	101.2	101.8	102.3	108.3	109	109.7	117.9	118.7	119.4	134	134.9	135.8	140.8	141.8	142.9	166.5	167.7	169	179.3	180.7	182.1	217	218.6	220.2			
B	45.5			49			54			61			69			81			92			107			122					
C	34			40			45			51			60			70			80			95			110					
D	30			36			40			48			55			65			75			90			105					
E	68			73			75			80			87			93			108			114			138					
F	43			48			50			52			59			63			71			74			88					
Fu	50.1	50.7	51.3	53.2	53.8	54.3	58.3	59	59.7	65.9	66.7	67.4	75	75.9	76.8	77.8	78.8	79.9	95.5	96.7	98	105.3	106.7	108.1	129	130.6	132.2			
G	25			25			25			28			28			30			37			40			50					
H	26			29			31.5			35.5			39			46			52			59.5			67					
J	19.5			20			22.5			25.5			30			35			40			47.5			55					
Kx	30			31.4			34			40			47			55			63			75			88					
Ky	23			31.4			34			40			47			55			63			75			88					
L	57			63			68			73			80			94			106			126			147					
M	11			11			11			13			12			13			16			16			21					
Nx	20.5			23.5			26			30			33.5			39.5			45			52.5			60					
Ny	3			5			5			0			0			0			0			0			0					
P	3			3			3			3			3			5			5			5			5					
Q	7.5			7.5			9.5			9.5			11			11			14			17.5			20					
R	4.5			4.5			5.5			5.5			6.8			6.8			9			11			14					
S	15.5			18			17			18.5			17			18			22			22			29					
T	10.1	10.7	11.3	12.2	12.8	13.3	12.3	13	13.7	12.9	13.7	14.4	15	15.9	16.8	15.8	16.8	17.9	18.5	19.7	21	19.3	20.7	22.1	24	25.6	27.2			
U	12			15			18			22			25			30			35.5			45			55					
V	9			9			12			14			20			20			26			32			38					
W	6			7			9			11			12			12			14			14			17					
X (Nominal × Pitch)	M8×1			M10×1			M12×1.5			M16×1.5			M18×1.5			M22×1.5			M28×1.5			M36×1.5			M45×1.5					
Y	3			4			5			6			8			10			10			14			14					
Z (Chamfer)	C3			C2			C3			C3			(φ80)			(φ94)			(φ106)			(φ126)			(φ147)					
AA	14			19			22			24			30			36			41			50			60					
AB	4.8			5.8			7			9			10			10			12			12			15					
AC	3			4			5			6			7			7			8			8			10					
AD	10.9			13.8			16.6			20.5			22.9			27.9			32.8			41.7			51.1					
AE	15.5			21.2			24.5			26.5			33			40			45			55			66					
BA	9.5			9.5			13			15			21			21			27			33			39					
BB	13.5			17			20			25			28			34			40			49			60					
CA	4			5			6			8			9			11			14			18			22.5					
CB	4			4			5.3			5.3			5.3			7.5			7.5			9.5			9.5					
CC	3 ^{+0.014} ₀			3 ^{+0.014} ₀			4 ^{+0.018} ₀			4 ^{+0.018} ₀			4 ^{+0.018} ₀			6 ^{+0.018} ₀			6 ^{+0.018} ₀			8 ^{+0.022} ₀			8 ^{+0.022} ₀					
EA (Nominal × Pitch)	M4×0.7			M4×0.7			M5×0.8			M5×0.8			M6×1			M6×1			M8×1.25			M10×1.5			M12×1.75					
JA	3.5			3.5			3.5			3.5			3.5			4.5			4.5			4.5			4.5					
JB	14			14			14			14			14			19			19			22			22					
G-Thread Plug -C option	G1/8			G1/8			G1/8			G1/8			G1/8			G1/4			G1/4			G3/8			G3/8					
R-Thread Plug (LG Only) -G option	R1/8			R1/8			R1/8			R1/8			R1/8			R1/4			R1/4			R3/8			R3/8					
O-ring (-C/-G option)	1BP5			1BP5			1BP5			1BP5			1BP5			1BP7			1BP7			1BP7			1BP7					
Recommended Inner Diameter of Pipe ^{※7}	φ6			φ6			φ6			φ6			φ6			φ8			φ8			φ12			φ12					
Hydraulic Port -S option	Rc1/8			Rc1/8			Rc1/8			Rc1/8			Rc1/8			Rc1/4			Rc1/4			Rc3/8			Rc3/8					
Cylinder Capacity cm ³	2.2	2.3	2.5	4.0	4.3	4.5	5.7	6.1	6.4	8.2	8.8	9.4	13.4	14.3	15.2	19.6	21.0	22.5	35.1	37.7	40.4	53	57.3	61.6	94	100.8	107.7			
Mass ^{※8} kg	LT			0.25			0.4			0.6			0.8			1.2			1.8			2.8			-			-		
	LG			0.45			0.6			0.9			1.2			1.7			2.6			3.9			5.4			8.9		

Notes: ※7. The recommended inner pipe diameters in the chart are reference values. Make appropriate changes according to the number of clamps used and the distance from the piping.
 ※8. Mass of single swing clamp including taper sleeve and nut.

Taper Lock Lever Design Dimensions

※ Reference for designing taper lock swing lever.

Corresponding Model No.



(mm)

Corresponding Model No. ※1	LT0301	LT0361	LT0401	LT0481	LT0551	LT0651	LT0751	LG0901	LG1051
A	12	12	16	19	25	25	32	38	45
B	9.5	9.5	13	15	21	21	27	33	39
C	2.5	2.5	3	4	4	4	5	5	6
D	4.3	4.3	5.3	6.3	6.3	7.5	8.5	9.5	10.5
E	13.5 ^{+0.027} ₀	17 ^{+0.027} ₀	20 ^{+0.033} ₀	25 ^{+0.033} ₀	28 ^{+0.033} ₀	34 ^{+0.039} ₀	40 ^{+0.039} ₀	49 ^{+0.039} ₀	60 ^{+0.046} ₀
F	11 ^{+0.15} ₀	13.9 ^{+0.15} ₀	16.7 ^{+0.15} ₀	20.6 ^{+0.15} ₀	23 ^{+0.15} ₀	28 ^{+0.15} ₀	32.9 ^{+0.20} ₀	41.8 ^{+0.20} ₀	51.2 ^{+0.20} ₀
G	3	3	4	4	4	6	6	8	8

Notes:

1. Swing lever should be designed with its length according to performance graph shown on P.371,P.372.
 2. If the swing lever is not in accordance with the dimension shown above, performance may be degraded and damage can occur.
- ※1. Please refer to the swing lever design dimension for quick change lever type that is described below when -F type (quick change lever type) is used (P.385). Please make self preparation, when P type is chosen (balance lever type) (P.379).

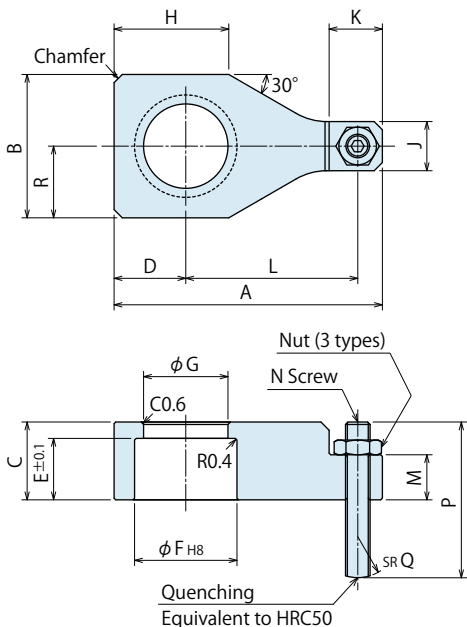
Accessories : Swing Lever for Taper Lock Option

Model No. Indication

LZ 040 0 - LE1

Size (Refer to the graph on the right)

Design No. (Revision Number)



Model No.	LZ0300 -LE1	LZ0360 -LE1	LZ0400 -LE1	LZ0481 ^{※2} -LE1	LZ0550 -LE1	LZ0650 -LE1	LZ0750 -LE1	LZ0900 -LE1	LZ1050 -LE1
Corresponding Model No. ^{※1}	LT0301 LG0301	LT0361 LG0361	LT0401 LG0401	LT0481 LG0481	LT0551 LG0551	LT0651 LG0651	LT0751 LG0751	LG0901	LG1051
A	44	50	56.5	65.5	77	91.5	105	127	152
B	19	26	28	35	38	50	58	75	90
C	12	12	16	19	25	25	32	38	45
D	9.5	13	14	17.5	19	25	29	38	45
E	9.5	9.5	13	15	21	21	27	33	39
F	13.5 ^{+0.027} ₀	17 ^{+0.027} ₀	20 ^{+0.033} ₀	25 ^{+0.033} ₀	28 ^{+0.033} ₀	34 ^{+0.039} ₀	40 ^{+0.039} ₀	49 ^{+0.039} ₀	60 ^{+0.046} ₀
G	11 ^{+0.15} ₀	13.9 ^{+0.15} ₀	16.7 ^{+0.15} ₀	20.6 ^{+0.15} ₀	23 ^{+0.15} ₀	28 ^{+0.15} ₀	32.9 ^{+0.20} ₀	41.8 ^{+0.20} ₀	51.2 ^{+0.20} ₀
H	17.5	22.5	24	28	34	40	47	53	65
J	8	10	12	12	17	19	22	27	32
K	10	11	13	13	17	22	25	31	38
L	30	32	36.5	42	50	56.5	65	75	90
M	7	7.5	10	11	15	13	16	22	27
N	M4×0.7	M5×0.8	M6×1	M6×1	M8×1.25	M10×1.5	M12×1.75	M16×2	M20×2.5
P	18	28	33	38	42	47	52	56	65
Q	8	8	10	10	15	20	30	45	60
R	9.5	13	14	17.5	19	25	29	37.5	45
Chamfer	C1	C1	C1	C1	C1	C3	C4	C10	C16

Notes:

- Material : S45C
 - When you perform a phase determination, please additionally process after referring to a swing lever design size.
- ※1. Please refer to the swing lever design dimension for quick change lever type that is described below when -F type (quick change lever type) is used (P.385). Please make self preparation, when P type is chosen (balance lever type)(P.379).
- ※2. The design No. is 1 for LZ048 only.

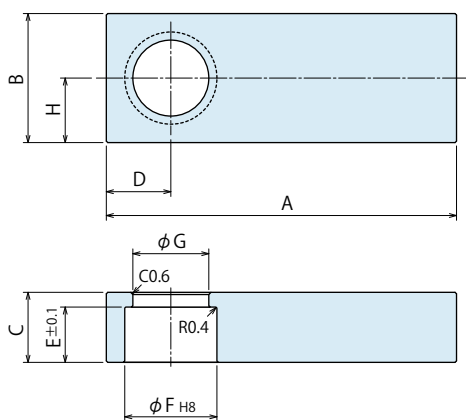
Accessories : Material Swing Lever for Taper Lock Option

Model No. Indication

LZ 040 0 - LE2

Size (Refer to the graph on the right)

Design No. (Revision Number)



Model No.	LZ0300 -LE2	LZ0360 -LE2	LZ0400 -LE2	LZ0481 ^{※2} -LE2	LZ0550 -LE2	LZ0650 -LE2	LZ0750 -LE2	LZ0900 -LE2	LZ1050 -LE2
Corresponding Model No. ^{※1}	LT0301 LG0301	LT0361 LG0361	LT0401 LG0401	LT0481 LG0481	LT0551 LG0551	LT0651 LG0651	LT0751 LG0751	LG0901	LG1051
A	79.5	85	90	95	100	120	125	180	250
B	19	26	28	35	38	50	58	75	90
C	12	12	16	19	25	25	32	38	45
D	9.5	13	14	17.5	19	25	29	38	45
E	9.5	9.5	13	15	21	21	27	33	39
F	13.5 ^{+0.027} ₀	17 ^{+0.027} ₀	20 ^{+0.033} ₀	25 ^{+0.033} ₀	28 ^{+0.033} ₀	34 ^{+0.039} ₀	40 ^{+0.039} ₀	49 ^{+0.039} ₀	60 ^{+0.046} ₀
G	11 ^{+0.15} ₀	13.9 ^{+0.15} ₀	16.7 ^{+0.15} ₀	20.6 ^{+0.15} ₀	23 ^{+0.15} ₀	28 ^{+0.15} ₀	32.9 ^{+0.20} ₀	41.8 ^{+0.20} ₀	51.2 ^{+0.20} ₀
H	9.5	13	14	17.5	19	25	29	37.5	45

Notes:

- Material : S45C
 - If necessary, the front end should be additionally processed.
 - When determining the phase, refer to the swing lever design dimensions for each model to do the additional machining.
- ※1. Please refer to the swing lever design dimension for quick change lever type that is described below when -F type (quick change lever type) is used (P.385). Please make self preparation, when P type is chosen (balance lever type) (P.379).
- ※2. The design No. is 1 for LZ048 only.

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

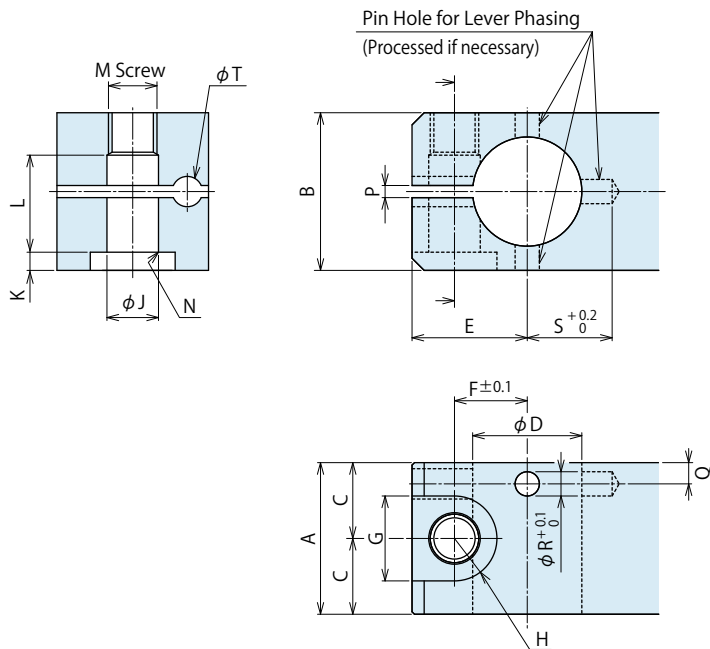
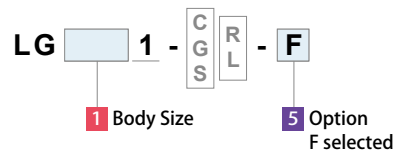
Customized Spring Cylinder

DWA/DWB

Quick Change Lever Design Dimensions

※ Reference for designing quick change swing lever.

Corresponding Model No.



(mm)

Corresponding Model No. ※1	LT0301-F LG0301-F	LT036□-F LG036□-F	LT040□-F LG040□-F	LT048□-F LG048□-F	LT055□-F LG055□-F	LT065□-F LG065□-F	LT075□-F LG075□-F	LG090□-F	LG105□-F
A	16	22	25	30	34	40	46	55	60
B	19	22	26	32	36	45	53	70	82
C	8	11	12.5	15	17	20	23	27.5	30
D	12 ⁰ _{-0.016}	15 ⁰ _{-0.016}	18 ⁰ _{-0.016}	22 ⁰ _{-0.020}	25 ⁰ _{-0.020}	30 ⁰ _{-0.020}	35.5 ⁰ _{-0.025}	45 ⁰ _{-0.025}	55 ⁰ _{-0.030}
E	13	15	19	23	26.5	31.5	36.5	46	55
F	7.75	9.75	12	14.75	17	20	23.5	29.75	36
G	10	11	14	17.5	20	23	26	32	39
H	R5	R5.5	R7	R8.75	R10	R11.5	R13	R16	R19.5
J	5.5	6.5	8.5	10.5	12.5	14.5	16.5	21	25
K	1.5	2	3	4	4	5	7	9	11
L	11.5	13.5	16	18	22	26.5	31	42	46
M	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5	M14×1.5	M16×1.5	M20×2	M24×2
N	C0.4	C0.4	C0.6	C0.6	C1	C1	C1	C1	C1
P	2	2	2	2	2	2	2	2	2
Q	2.25	2.5	3.5	3.5	4	5.5	5.5	7.5	8
R	2.5	3	4	4	4	6	6	8	8
S	10.5	13.5	14	18	19.5	24.5	27.75	38	45
T	2.9	3.4	4.5	4.5	4.5	6.5	6.5	9	9
Phasing Pin (Reference)	φ2.5×6	φ3×8	φ4×8	φ4×10	φ4×10	φ6×14	φ6×14	φ8×20	φ8×22

Notes:

1. Swing lever should be designed with its length according to performance graph shown on P.371,P.372.
2. If the swing lever is not in accordance with the dimension shown above, performance may be degraded and damage can occur.

※1. Please refer to the swing lever design dimension for taper lock lever option when standard model or -Y option (Swing Angle Selectable option) is used (P.383).

Please make self preparation, when P option is chosen (balance lever option)(P.379).

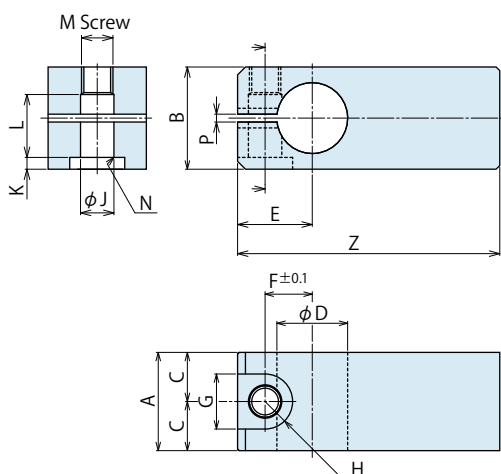
Accessories : Material Swing Lever for Quick Change Option

Model No. Indication

LZH 040 0 - F

Size (Refer to the graph on the right)

Design No. (Revision Number)



Model No.	LZH0300 -F	LZH0360 -F	LZH0400 -F	LZH0480 -F	LZH0550 -F	LZH0650 -F	LZH0750 -F	LZH0900 -F	LZH1050 -F
Corresponding Model No.※1	LT0301-F LG0301-F	LT036□-F LG036□-F	LT040□-F LG040□-F	LT048□-F LG048□-F	LT055□-F LG055□-F	LT065□-F LG065□-F	LT075□-F LG075□-F	LG090□-F	LG105□-F
A	16	22	25	30	34	40	46	55	60
B	19	22	26	32	36	45	53	70	82
C	8	11	12.5	15	17	20	23	27.5	30
D	12 ⁰ _{-0.016}	15 ⁰ _{-0.016}	18 ⁰ _{-0.016}	22 ⁰ _{-0.020}	25 ⁰ _{-0.020}	30 ⁰ _{-0.020}	35.5 ⁰ _{-0.025}	45 ⁰ _{-0.025}	55 ⁰ _{-0.030}
E	13	15	19	23	26.5	31.5	36.5	46	55
F	7.75	9.75	12	14.75	17	20	23.5	29.75	36
G	10	11	14	17.5	20	23	26	32	39
H	R5	R5.5	R7	R8.75	R10	R11.5	R13	R16	R19.5
J	5.5	6.5	8.5	10.5	12.5	14.5	16.5	21	25
K	1.5	2	3	4	4	5	7	9	11
L	11.5	13.5	16	18	22	26.5	31	42	46
M	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5	M14×1.5	M16×1.5	M20×2	M24×2
N	C0.4	C0.4	C0.6	C0.6	C1	C1	C1	C1	C1
P	2	2	2	2	2	2	2	2	2
Z	100	120	145	160	170	175	185	220	270

Notes:

1. Material : S50CH
2. If necessary, the front end should be additionally machined.
3. For the phase determination, the design dimensions of swinging lever should be additionally machined with reference of the quick change option.

※1. Please refer to the swing lever design dimension for taper lock lever option when standard model or -Y option (Swing Angle Selectable option) is used (P.383).

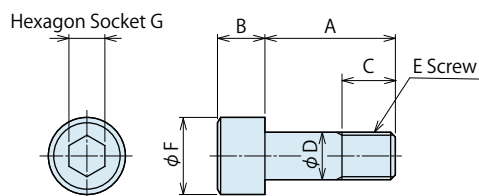
Accessories : Tightening Bolts for Quick Change Lever

Model No. Indication

LZH 040 0 - B

Size (Refer to the graph on the right)

Design No. (Revision Number)



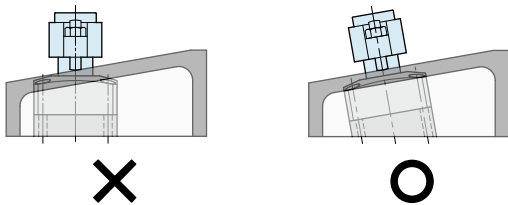
Model No.	LZH0300 -B	LZH0360 -B	LZH0400 -B	LZH0480 -B	LZH0550 -B	LZH0650 -B	LZH0750 -B	LZH0900 -B	LZH1050 -B
Corresponding Model No.※1	LT0301-F LG0301-F	LT036□-F LG036□-F	LT040□-F LG040□-F	LT048□-F LG048□-F	LT055□-F LG055□-F	LT065□-F LG065□-F	LT075□-F LG075□-F	LG090□-F	LG105□-F
A	17.5	20	23	28	32	40	46	61	71
B	5	6	8	10	12	14	16	20	24
C	6.5	7	10	11	13	16	18	23	27
D	5	6	8	10	12	14	16	20	24
E	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5	M14×1.5	M16×1.5	M20×2	M24×2
F	8.5	10	13	16	18	21	24	30	36
G	4	5	6	8	10	12	14	17	19

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

Cautions

● Notes for Design

- 1) Check Specifications
 - Please use each product according to the specifications.
- 2) Notes for Circuit Design
 - Please read "Notes on Hydraulic Cylinder Speed Control Circuit" on P. 1044 to assist with proper hydraulic circuit designing.
 - Ensure there is no possibility of supplying hydraulic pressure to the lock and release ports simultaneously.
- 3) Swing lever should be designed so that the inertia moment is small.
 - Large moment of inertia will degrade the lever's stopping accuracy and cause undue wear to the clamp. Additionally, the clamp may not function, depending on supplied hydraulic pressure and lever mounting position.
 - Please set the allowable operating time after the inertia moment is calculated. Please make sure that let the clamps work within allowable operating time referring to the allowable operating time graph.
- 4) When using on a welding fixture, the exposed area of piston rod should be protected.
 - If spatter gets onto the sliding surface it could lead to malfunction and fluid leakage.
- 5) When clamping on a sloped surface of the workpiece
 - Make sure the clamp surface and mounting surface of the clamp are parallel.



6) Notes for LHA-M/N, LHW

- When using air sensing swing clamp (LHA-M/N, LHW), make sure to check the Notes for Design • Installation • Use (Pages shown below).
 - Swing clamp with air sensing option LHA-M/N: Refer to P.315.
 - Swing clamp with air sensing valve LHW: Refer to P.353.

● Installation Notes

- 1) Check the Usable Fluid
 - Please use the appropriate fluid by referring to the Hydraulic Fluid List (P.1043).
- 2) Mounting the clamp
 - When mounting the clamp, use hexagon socket bolts as multiple bolt holes for mounting (with tensile strength of 12.9) and tighten them with the torque shown in the chart below. Tightening with greater torque than recommended can depress the seating surface or break the bolt.

	Model No.	Thread Size	Tightening Torque (N·m)	
LHA LHC LHS LHW	LHA0360 / LHS0360	M4×0.7	4.0	
	LHA0400 / LHC0400 LHS0400 / LHW040□	M5×0.8	8.0	
	LHA0480 / LHC0480 LHS0480 / LHW048□	M5×0.8	8.0	
	LHA0550 / LHC0550 LHS0550 / LHW055□	M6×1	14	
	LHA0650 / LHC0650 LHS0650 / LHW065□	M6×1	14	
	LHA0750 / LHS0750 LHW0751	M8×1.25	33	
	LHA0900 / LHS0900	M10×1.5	65	
	LHA1050 / LHS1050	M12×1.75	114	
	LT/LG	LT0301 / LG0301	M4×0.7	3.2
		LT036□ / LG036□	M4×0.7	3.2
LT040□ / LG040□		M5×0.8	6.3	
LT048□ / LG048□		M5×0.8	6.3	
LT055□ / LG055□		M6×1	10	
LT065□ / LG065□		M6×1	10	
LT075□ / LG075□		M8×1.25	25	
LG090□		M10×1.5	58.8	
LG105□		M12×1.75	98	
TLA-2 TLB-2 TLA-1		TL□040□-□	M5×0.8	6.9
	TL□060□-□	M6×1	11.8	
	TL□080□-□	M6×1	11.8	
	TL□100□-□	M8×1.25	25	
	TL□160□-□	M8×1.25	25	
	TL□200□-□	M10×1.5	58.8	
	TL□250□-□	M10×1.5	58.8	
	TL□400□-□	M12×1.75	98	

3) Mounting and removing the swing lever.

- Oil or debris on the mating surfaces of the lever, taper sleeve or piston rod can cause the rod to loosen. Clean carefully before assembly.
- Lever arm mounting bolt torques are shown below.

LHA/LHS/LT/LG Standard : Taper Lock Lever

	Model No.	Thread Size	Tightening Torque (N·m)
LHA LHC LHS LHW	LHA0360 / LHS0360	M14×1.5	21 ~ 25
	LHA0400 / LHC0400 LHS0400 / LHW040□	M16×1.5	33 ~ 40
	LHA0480 / LHC0480 LHS0480 / LHW048□	M20×1.5	54 ~ 65
	LHA0550 / LHC0550 LHS0550 / LHW055□	M22×1.5	84 ~ 100
	LHA0650 / LHC0650 LHS0650 / LHW065□	M27×1.5	120 ~ 145
	LHA0750 / LHS0750 LHW0751	M30×1.5	175 ~ 210
	LHA0900 / LHS0900	M39×1.5	280 ~ 335
	LHA1050 / LHS1050	M48×1.5	333 ~ 400
	LT/LG	LT0301 / LG0301	M8×1
LT036□ / LG036□		M10×1	15 ~ 18
LT040□ / LG040□		M12×1.5	24 ~ 29
LT048□ / LG048□		M16×1.5	37 ~ 45
LT055□ / LG055□		M18×1.5	59 ~ 71
LT065□ / LG065□		M22×1.5	93 ~ 112
LT075□ / LG075□		M28×1.5	147 ~ 177
LG090□		M36×1.5	235 ~ 282
LG105□		M45×1.5	300 ~ 360

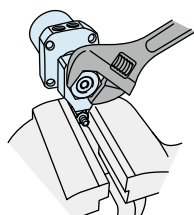
LHA/LHS-F/LT-F/LG-F Quick Change Lever, TLA-2/TLB-2/TLA-1 Standard

	Model No.	Thread Size	Tightening Torque (N·m)	
LHA-F LHS-F LT-F LG-F	LT0301-F / LG0301-F	M5×0.8	7.5	
	LHA0360-F / LHS0360-F LT036□-F / LG036□-F	M6×1	14	
	LHA0400-F / LHS0400-F LT040□-F / LG040□-F	M8×1	33	
	LHA0480-F / LHS0480-F LT048□-F / LG048□-F	M10×1.25	65	
	LHA0550-F / LHS0550-F LT055□-F / LG055□-F	M12×1.5	100 ~ 114	
	LHA0650-F / LHS0650-F LT065□-F / LG065□-F	M14×1.5	160 ~ 180	
	LHA0750-F / LHS0750-F LT075□-F / LG075□-F	M16×1.5	250 ~ 280	
	LHA0900-F / LHS0900-F LG090□-F	M20×2	500 ~ 540	
	LHA1050-F / LHS1050-F LG105□-F	M24×2	760 ~ 810	
	TLA-2 TLB-2 TLA-1	TL□040□-□	M6×1	13
		TL□060□-□	M8×1	32
		TL□080□-□	M8×1	32
		TL□100□-□	M10×1.25	63
TL□160□-□		M12×1.5	100	
TL□200□-□		M14×1.5	160	
TL□250□-□	M16×1.5	250		
TL□400□-□	M20×2	500		

- If the piston rod is subjected to excessive torque or shock, the rod or the internal mechanism may be damaged. Observe the following points to prevent such shock.

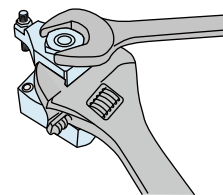
During mounting

- ① When the clamp is positioned with fixture, determine the lever position, and temporarily tighten the nut for fixing the lever.



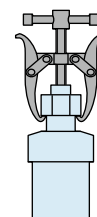
- ② Remove the clamp from a fixture, fix the lever by machine vise etc., and tighten the nut.

- ③ If clamp can't be removed from fixture for final tightening, secure the lever while tightening the nut. It is best to bring the lever to the middle of the swing stroke before tightening the nut.



During removal

- ① While the clamp is in the fixture or vise, use a hex wrench to bring the arm to the middle of the swing stroke and then loosen the nut.
- ② Loosen the taper sleeve nut two or three turns then remove the lever with puller. Do not put any rotating torque on the piston rod.



4) Swinging Speed Adjustment

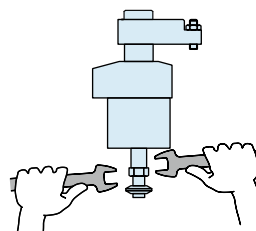
- Adjust the speed following "Allowable Swing Time Graph". If the clamp operates too fast the parts will wear out leading to premature damage and ultimately complete equipment failure.
- Please make sure to release air from the circuit before adjusting speed. It will be difficult to adjust the speed accurately with air mixed in the circuit.
- Turn the speed control valve gradually from the low-speed side (small flow) to the high-speed side (large flow) to adjust the speed.

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.

6) Notes on dual rod option (-D) for dog application.

- When attaching dog, set up the piston so that it will not turn around. Please secure the dog or cam and prevent any rotation or torque on the piston rod. Torque values for the mounting screw are shown in the table below.



Model No.	Thread Size	Tightening Torque (N·m)
LHA0360-□□D	M4×0.7	3.2
LHA0400-□□D	M6×1	10
LHA0480-□□D	M8×1.25	25
LHA0550-□□D	M8×1.25	25
LHA0650-□□D	M8×1.25	25
LHA0750-□□D	M10×1.5	50
LHA0900-□□D	M10×1.5	50
LHA1050-□□D	M10×1.5	50

※ 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

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

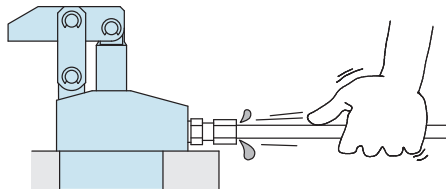
Customized Spring Cylinder

DWA/DWB

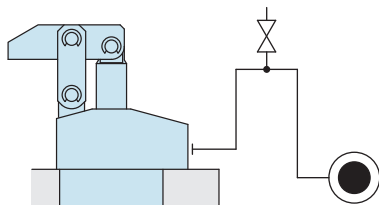
● Cautions

● 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.

- 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

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- Search by Alphabetical Order

Sales Offices

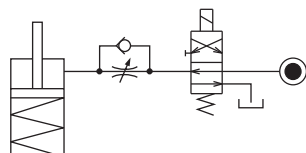
● Notes on Hydraulic Cylinder Speed Control Unit



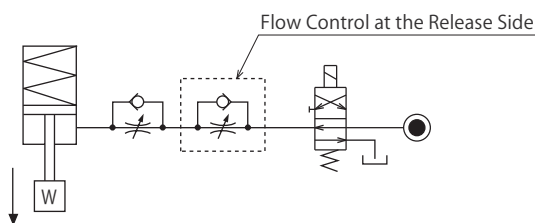
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

● 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

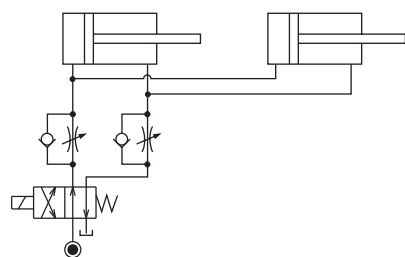
Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

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

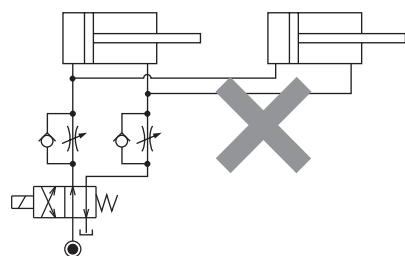
Refer to P.47 for speed adjustment of LKE.

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)

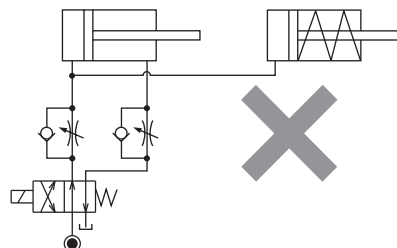


【Meter-in Circuit】 (LKE/TMA/TLA must be controlled with meter-in.)



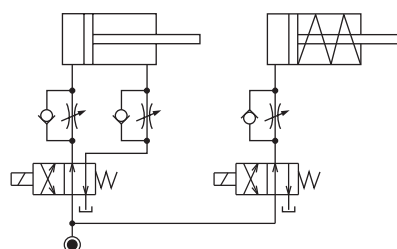
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

- 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.

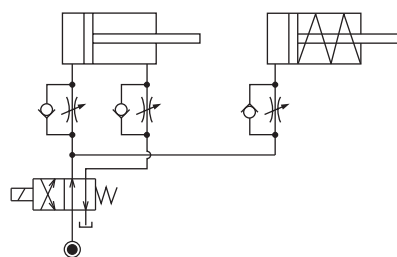


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

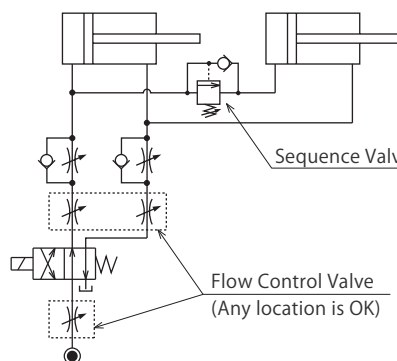
- Separate the control circuit.



- 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.



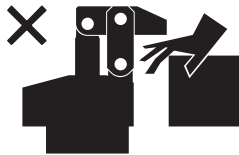
- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve 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.



● Cautions

● Notes on Handling

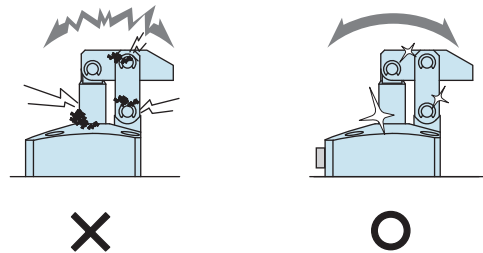
- 1) It should be handled by qualified personnel.
 - The hydraulic machine and air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when 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.



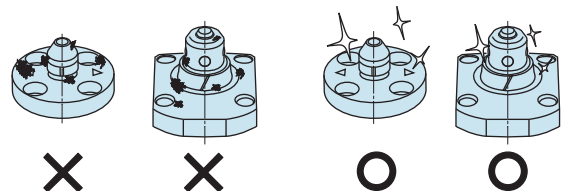
- 4) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● 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.

Control Valve

Model BZL

Model BZT

Model BZX

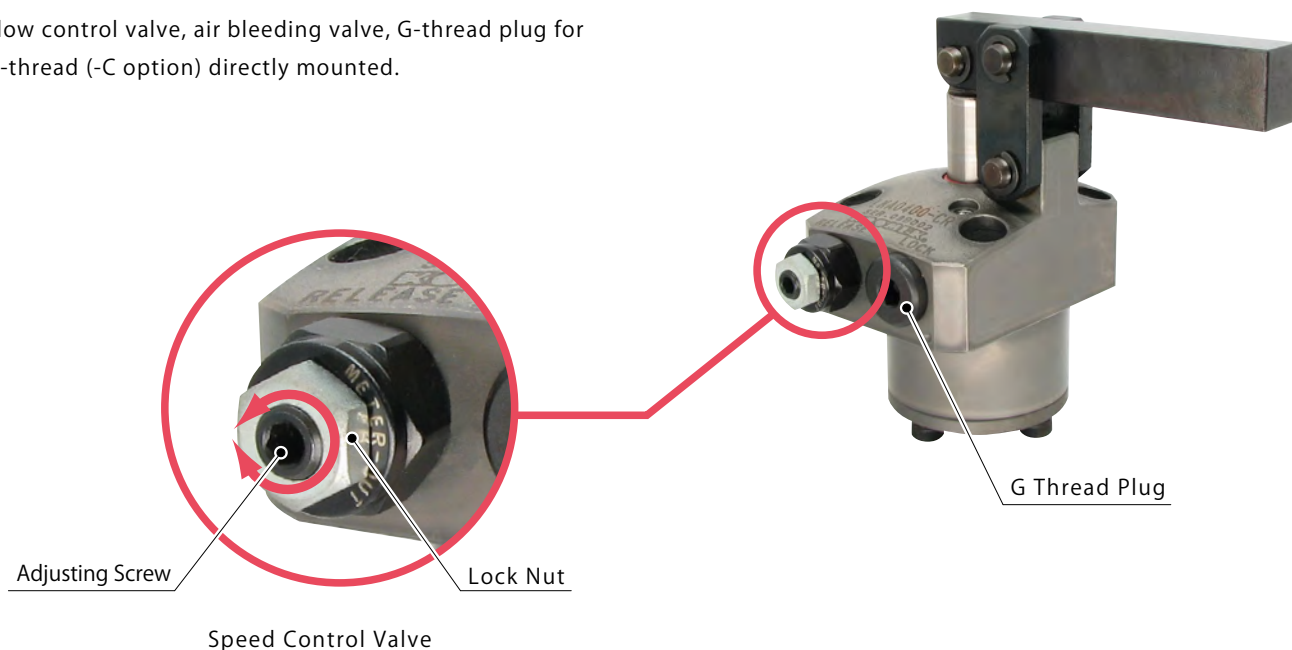
Model JZG



Directly mounted to clamps, flow control valve • Air bleeding • plug

- Directly mounted to clamps

Flow control valve, air bleeding valve, G-thread plug for G-thread (-C option) directly mounted.



Speed Control Valve



Speed Control Valve

Model BZL

Model BZT




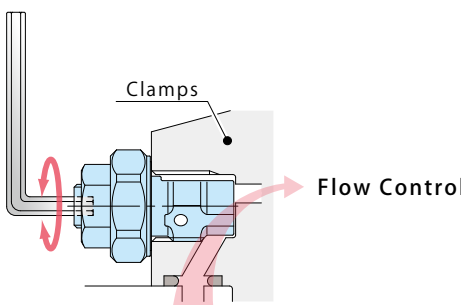
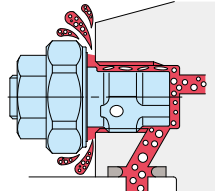

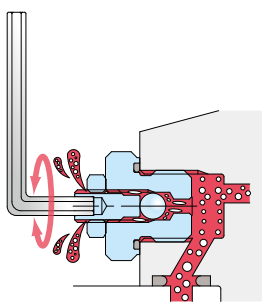

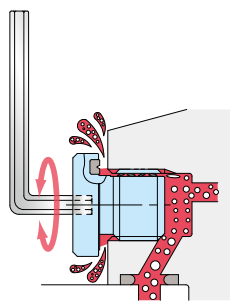
Air Bleed Valve

Model BZX



G Thread Plug

Model JZG

	Operating Pressure Range	Action Description
<p>Speed Control Valve (For Low Pressure)</p> <p>Model BZL → P.729</p> 	7MPa or less	<p>Adjust the flow by wrench. It can adjust the clamping action speed individually.</p> 
<p>Speed Control Valve (For High Pressure)</p> <p>Model BZT → P.733</p>	35MPa or less	<p>Air bleeding in the circuit is possible by loosening flow control valve.</p> 
<p>Air Bleed Valve</p> <p>Model BZX → P.735</p> 	25MPa or less	<p>Air bleeding in the circuit is possible by wrench.</p> 
<p>G Thread Plug</p> <p>Model JZG → P.737</p> 	35MPa or less	<p>Air bleeding in the circuit is possible by loosening G thread plug.</p> 

- 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 (Speed Control Valve for Low Pressure)

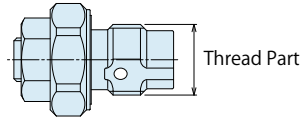
BZL 0 10 0 - B

1 2 3



1 G Thread Size

- 10** : Thread Part G1/8A Thread
- 20** : Thread Part G1/4A Thread
- 30** : Thread Part G3/8A Thread

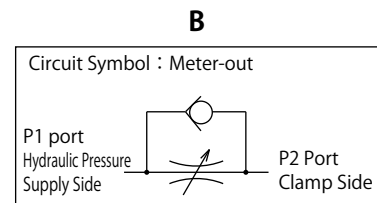
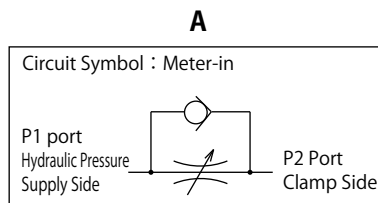


2 Design No.

- 0** : Revision Number

3 Control Method

- A** : Meter-in
- B** : Meter-out



Specifications

Model No.	BZL0100-A	BZL0200-A	BZL0300-A	BZL0100-B	BZL0200-B	BZL0300-B
Max. Operating Pressure MPa	7					
Withstanding Pressure MPa	10.5					
Control Method	Meter-in			Meter-out		
G Thread Size	G1/8A	G1/4A	G3/8A	G1/8A	G1/4A	G3/8A
Cracking Pressure MPa	0.04			0.12		
Max. Passage Area mm ²	2.6	5.0	11.6	2.6	5.0	10.2
Usable Fluid	General Hydraulic Oil Equivalent to ISO-VG-32					
Operating Temperature °C	0 ~ 70					
Tightening Torque for Main Body N·m	10	25	35	10	25	35

- Notes
1. Minimum passage area when fully opened is the same as the maximum passage area in the table above.
 2. It must be mounted with recommended torque. Because of the structure of the metal seal, if mounting torque is insufficient, the flow control valve may not be able to adjust the flow rate.
 3. Don't use used BZL to other clamps.
Flow control will not be made because the bottom depth difference of G thread makes metal seal insufficient.

Applicable Products

Model No.	DBA (Single Action) Block Cylinder	DBC (Single Action) Block Cylinder	LC (Single Action) Work Support	LHA (Double Action) Swing Clamp	LHC (Double Action) Swing Clamp	LHE (Double Action) High-Power Swing Clamp	LHS (Double Action) Swing Clamp	LHW (Double Action) Swing Clamp
BZL0100-A	(DBA0250-C□) (DBA0320-C□)	(DBC0250-C□) (DBC0320-C□)	LC0402-C□□□ LC0482-C□□□ LC0552-C□□□ LC0652-C□□□	(LHA0360-C□□□) (LHA0400-C□□□) (LHA0480-C□□□) (LHA0550-C□□□)	(LHC0360-C□□□) (LHC0400-C□□□) (LHC0480-C□□□) (LHC0550-C□□□)	/	(LHS0360-C□□□) (LHS0400-C□□□) (LHS0480-C□□□) (LHS0550-C□□□)	(LHW040□-C□□□) (LHW048□-C□□□) (LHW055□-C□□□)
BZL0100-B	DBA0250-C□ DBA0320-C□	DBC0250-C□ DBC0320-C□	/	LHA0360-C□□□ LHA0400-C□□□ LHA0480-C□□□ LHA0550-C□□□	LHC0360-C□□□ LHC0400-C□□□ LHC0480-C□□□ LHC0550-C□□□	LHE0300-C□ LHE0360-C□ LHE0400-C□ LHE0480-C□ LHE0550-C□	LHS0360-C□□□ LHS0400-C□□□ LHS0480-C□□□ LHS0550-C□□□	LHW040□-C□□□ LHW048□-C□□□ LHW055□-C□□□
BZL0200-A	(DBA0400-C□) (DBA0500-C□)	(DBC0400-C□) (DBC0500-C□)	LC0752-C□□□ LC0902-C□□□	(LHA0650-C□□□) (LHA0750-C□□□)	(LHC0650-C□□□)	/	(LHS0650-C□□□) (LHS0750-C□□□)	(LHW065□-C□□□) (LHW0751-C□□□)
BZL0200-B	DBA0400-C□ DBA0500-C□	DBC0400-C□ DBC0500-C□	/	LHA0650-C□□□ LHA0750-C□□□	LHC0650-C□□□	/	LHS0650-C□□□ LHS0750-C□□□	LHW065□-C□□□ LHW0751-C□□□
BZL0300-A	/	/	/	(LHA0900-C□□□) (LHA1050-C□□□)	/	/	(LHS0900-C□□□) (LHS1050-C□□□)	/
BZL0300-B	/	/	/	LHA0900-C□□□ LHA1050-C□□□	/	/	LHS0900-C□□□ LHS1050-C□□□	/

Model No.	LT (Single Action) Swing Clamp	LG (Single Action) Swing Clamp	LKA (Double Action) Link Clamp	LKC (Double Action) Link Clamp	LKE (Double Action) High-Power Link Clamp	LKW (Double Action) Link Clamp	LM (Single Action) Link Clamp	LJ (Single Action) Link Clamp
BZL0100-A	LT0301-C□□□ LT036□-C□□□ LT040□-C□□□ LT048□-C□□□ LT055□-C□□□	LG0301-C□□□ LG036□-C□□□ LG040□-C□□□ LG048□-C□□□ LG055□-C□□□	(LKA0360-C□□□) (LKA0400-C□□□) (LKA0480-C□□□) (LKA0550-C□□□)	(LKC0400-C□□□) (LKC0480-C□□□) (LKC0550-C□□□)	LKE0300-C□ LKE0360-C□ LKE0400-C□ LKE0480-C□ LKE0550-C□	(LKW040□-C□□□) (LKW048□-C□□□) (LKW055□-C□□□)	LM0300-C□ LM0360-C□ LM0400-C□ LM0480-C□ LM0550-C□	LJ0302-C□ LJ0362-C□ LJ0402-C□ LJ0482-C□ LJ0552-C□
BZL0100-B	/	/	LKA0360-C□□□ LKA0400-C□□□ LKA0480-C□□□ LKA0550-C□□□	LKC0400-C□□□ LKC0480-C□□□ LKC0550-C□□□	/	LKW040□-C□□□ LKW048□-C□□□ LKW055□-C□□□	/	/
BZL0200-A	LT065□-C□□□ LT075□-C□□□	LG065□-C□□□ LG075□-C□□□	(LKA0650-C□□□) (LKA0750-C□□□)	(LKC0650-C□□□)	/	(LKW065□-C□□□) (LKW0751-C□□□)	LM0650-C□ LM0750-C□	LJ0652-C□ LJ0752-C□
BZL0200-B	/	/	LKA0650-C□□□ LKA0750-C□□□	LKC0650-C□□□	/	LKW065□-C□□□ LKW0751-C□□□	/	/
BZL0300-A	/	LG090□-C□□□ LG105□-C□□□	(LKA0900-C□□□) (LKA1050-C□□□)	/	/	/	/	LJ0902-C□ LJ1052-C□
BZL0300-B	/	/	LKA0900-C□□□ LKA1050-C□□□	/	/	/	/	/

Model No.	LL (Double Action) Linear Cylinder	LLR (Double Action) Linear Cylinder	LLW (Double Action) Lift Cylinder
BZL0100-A	(LL0360-C□□□) (LL0400-C□□□) (LL0480-C□□□) (LL0550-C□□□)	(LLR0360-C□□□) (LLR0400-C□□□) (LLR0480-C□□□) (LLR0550-C□□□)	(LLW036□-C□□□) (LLW040□-C□□□) (LLW048□-C□□□)
BZL0100-B	LL0360-C□□□ LL0400-C□□□ LL0480-C□□□ LL0550-C□□□	LLR0360-C□□□ LLR0400-C□□□ LLR0480-C□□□ LLR0550-C□□□	LLW036□-C□□□ LLW040□-C□□□ LLW048□-C□□□
BZL0200-A	(LL0650-C□□□) (LL0750-C□□□)	(LLR0650-C□□□) (LLR0750-C□□□)	/
BZL0200-B	LL0650-C□□□ LL0750-C□□□	LLR0650-C□□□ LLR0750-C□□□	/
BZL0300-A	(LL0900-C□□□) (LL1050-C□□□)	(LLR0900-C□□□) (LLR1050-C□□□)	/
BZL0300-B	LL0900-C□□□ LL1050-C□□□	LLR0900-C□□□ LLR1050-C□□□	/

Note: 1. Flow control circuit for double acting cylinder both should have meter-out circuits for the lock side and release side except model LKE/TLA/TMA.
Meter-in controls can be adversely affected by any air in the system.

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

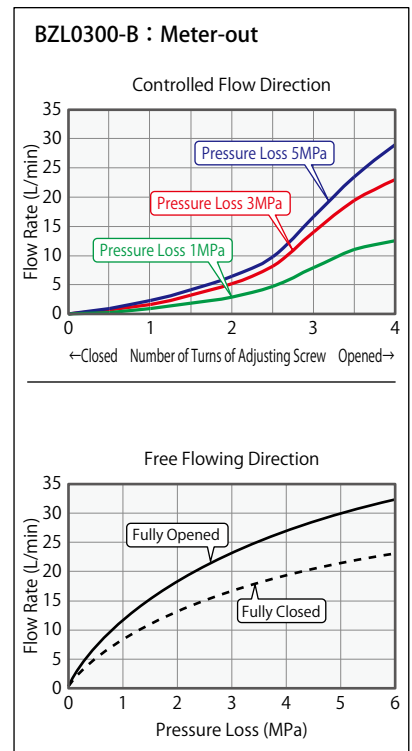
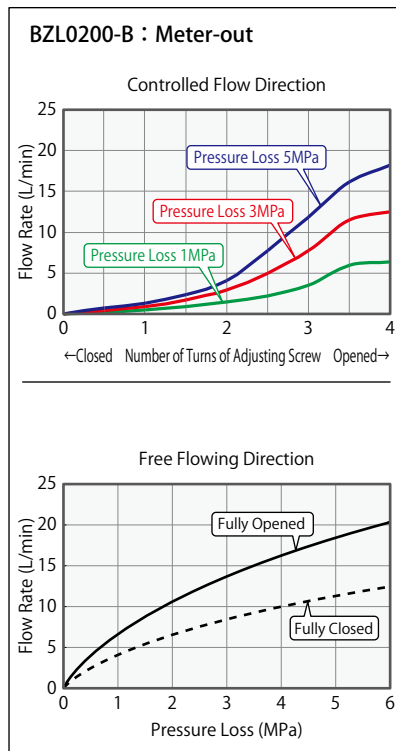
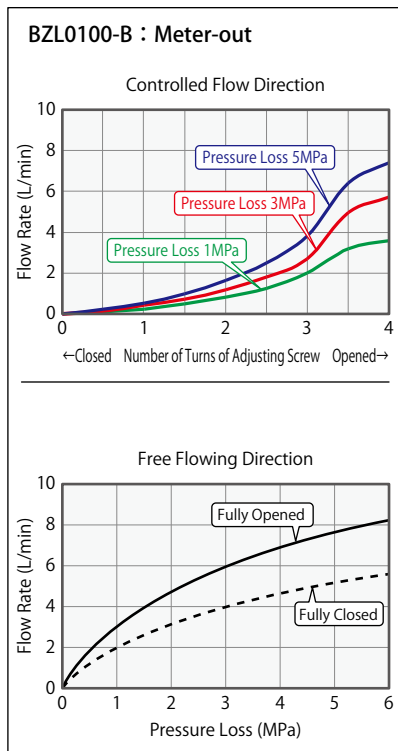
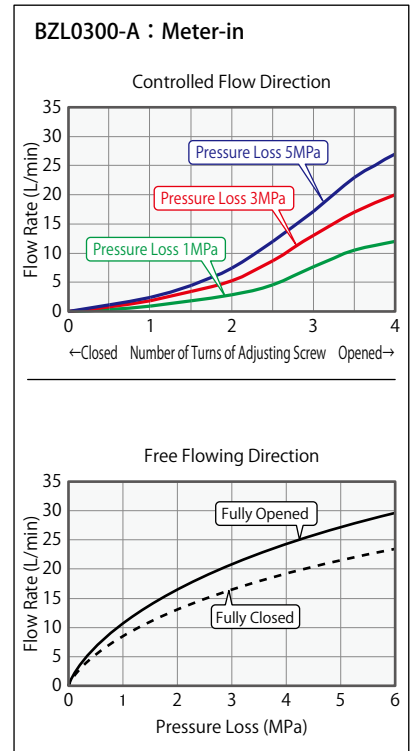
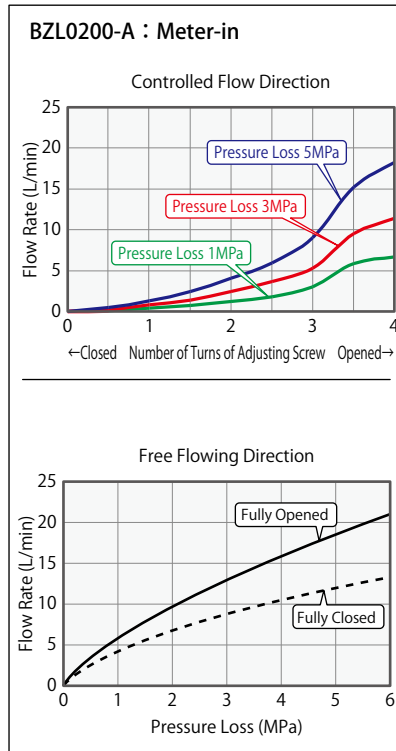
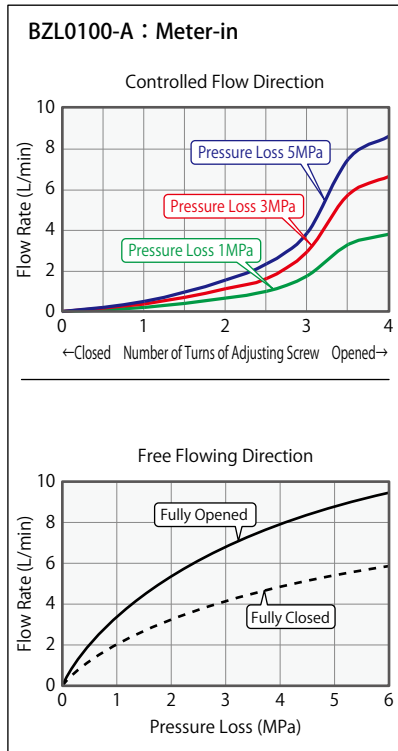
Pull Stud Clamp

FP
FQ

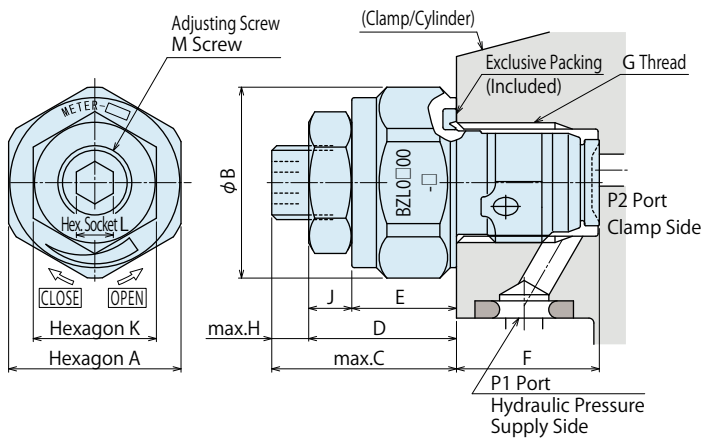
Customized Spring Cylinder

DWA/DWB

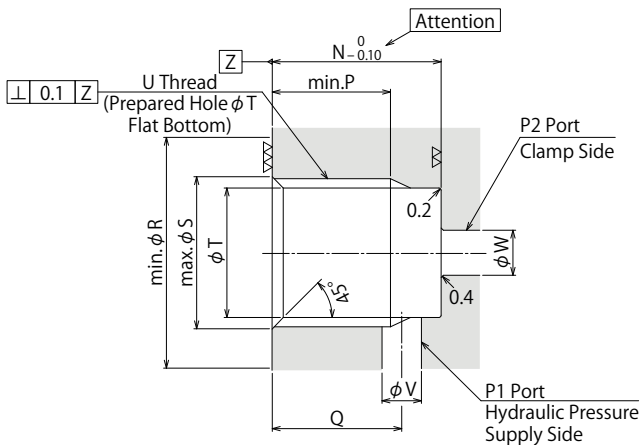
● Flow Rate Graph < Hydraulic Fluids ISO-VG32 (25~35°C) >



External Dimensions



Machining Dimensions of Mounting Area



Notes

1. Since the $\nabla\nabla$ area is sealing part, be careful not to damage it.
2. Since the $\nabla\nabla$ area is the metal sealing part of BZL, be careful not to damage it. (Especially when deburring)
3. No cutting chips or burr should be at the tolerance part of machining hole.
4. As shown in the drawing, P1 port is used as the hydraulic supply and P2 port as the clamp side.
5. If mounting plugs or fittings with G thread specification available in the market, the dimension '※1' should be 12.5.

Notes

1. Please read "Notes on Hydraulic Cylinder Speed Control Circuit" to assist with proper hydraulic circuit design.
If there is something wrong with the circuit design, it leads to the applications malfunction and damage. (Refer to P.1044)
2. It is dangerous to air bleed during operation under high pressure. It must be done under lower pressure.
(For reference: the minimum operating range of the product within the circuit.)

Model No.	BZL0100-□	BZL0200-□	BZL0300-□
A	14	18	22
B	15.5	20	24
C	15	16	19
D	12	13	16
E	8.5	9.5	11
F	(11.6)	(15.1)	(17.6)
G	G1/8	G1/4	G3/8
H	3	3	3
J	3.5	3.5	5
K	10	10	13
L	3	3	4
M	M6×0.75	M6×0.75	M8×0.75
N	11.5	15	17.5
P	8.5	11※1	13
Q	9	11.5	13
R (Flat Surface Area)	16	20.5	24.5
S	10	13.5	17
T	8.7	11.5	15
U	G1/8	G1/4	G3/8
V	2 ~ 3	3 ~ 4	4 ~ 5
W	2.5 ~ 5	3.5 ~ 7	4.5 ~ 9

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

(mm)

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 (Air Bleed Valve)

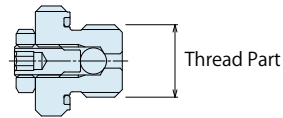
BZX0 **1** **0**

1 **2**



1 G Thread Size

- 1** : Thread Part G1/8A Thread
- 2** : Thread Part G1/4A Thread
- 3** : Thread Part G3/8A Thread



2 Design No.

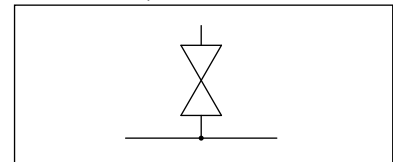
- 0** : Revision Number

Specifications

Model No.	BZX010	BZX020	BZX030
Max. Operating Pressure MPa	25		
Withstanding Pressure MPa	37.5		
G Thread Size	G1/8A	G1/4A	G3/8A
Usable Fluid	General Hydraulic Oil Equivalent to ISO-VG-32		
Operating Temperature °C	0 ~ 70		
Tightening Torque for Main Body N·m	10	25	35

- Notes
1. Do not over loosen the plug during air venting.
(Do not loosen for more than 2 turns from the fully closed position.)
 2. It is dangerous to have air venting operation under high pressure. It must be done under lower pressure.
(For reference: the minimum operation pressure range of the product within the circuit)
 3. Refer to the processing dimensions for BZL mounting area.

Circuit Symbol



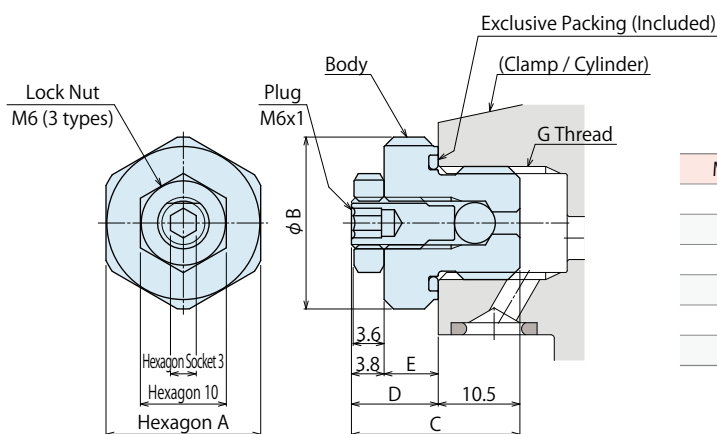
Applicable Products

Model No.	DBA (Single Action) Block Cylinder	DBC (Single Action) Block Cylinder	LC (Single Action) Work Support	LHA (Double Action) Swing Clamp	LHC (Double Action) Swing Clamp	LHE (Double Action) High-Power Swing Clamp	LHW (Double Action) Swing Clamp	LHS (Double Action) Swing Clamp
BZX010	DBA0250-C□□	DBC0250-C□□	LC0402-C□□□	LHA0360-C□□□	LHC0360-C□□□	LHE0300-C□□	LHW040□-C□□□	LHS0360-C□□□
	DBA0320-C□□	DBC0320-C□□	LC0482-C□□□	LHA0400-C□□□	LHC0400-C□□□	LHE0360-C□□	LHW048□-C□□□	LHS0400-C□□□
			LC0552-C□□□	LHA0480-C□□□	LHC0480-C□□□	LHE0400-C□□	LHW055□-C□□□	LHS0480-C□□□
			LC0652-C□□□	LHA0550-C□□□	LHC0550-C□□□	LHE0480-C□□	LHE0550-C□□	LHS0550-C□□□
BZX020	DBA0400-C□□	DBC0400-C□□	LC0752-C□□□	LHA0650-C□□□	LHC0650-C□□□		LHW065□-C□□□	LHS0650-C□□□
	DBA0500-C□□	DBC0500-C□□	LC0902-C□□□	LHA0750-C□□□			LHW0751-C□□□	LHS0750-C□□□
BZX030				LHA0900-C□□□				LHS0900-C□□□
				LHA1050-C□□□				LHS1050-C□□□

Model No.	LT (Single Action) Swing Clamp	LG (Single Action) Swing Clamp	LKA (Double Action) Link Clamp	LKC (Double Action) Link Clamp	LKE (Double Action) High-Power Link Clamp	LKW (Double Action) Link Clamp	LM (Single Action) Link Clamp	LJ (Single Action) Link Clamp
BZX010	LT0301-C□□□	LG0301-C□□□	LKA0360-C□□□	LKC0400-C□□□	LKE0300-C□□	LKW040□-C□□□	LM0300-C□□	LJ0302-C□□
	LT036□-C□□□	LG036□-C□□□	LKA0400-C□□□	LKC0480-C□□□	LKE0360-C□□	LKW048□-C□□□	LM0360-C□□	LJ0362-C□□
	LT040□-C□□□	LG040□-C□□□	LKA0480-C□□□	LKC0550-C□□□	LKE0400-C□□	LKW055□-C□□□	LM0400-C□□	LJ0402-C□□
	LT048□-C□□□	LG048□-C□□□	LKA0550-C□□□		LKE0480-C□□		LM0480-C□□	LJ0482-C□□
	LT055□-C□□□	LG055□-C□□□			LKE0550-C□□		LM0550-C□□	LJ0552-C□□
BZX020	LT065□-C□□□	LG065□-C□□□	LKA0650-C□□□	LKC0650-C□□□		LKW065□-C□□□	LM0650-C□□	LJ0652-C□□
	LT075□-C□□□	LG075□-C□□□	LKA0750-C□□□			LKW0751-C□□□	LM0750-C□□	LJ0752-C□□
BZX030		LG090□-C□□□	LKA0900-C□□□					LJ0902-C□□
		LG105□-C□□□	LKA1050-C□□□					LJ1052-C□□

Model No.	LL (Double Action) Linear Cylinder	LLR (Double Action) Linear Cylinder	LLW (Double Action) Lift Cylinder
BZX010	LL0360-C□□□	LLR0360-C□□□	LLW036□-C□□□
	LL0400-C□□□	LLR0400-C□□□	LLW040□-C□□□
	LL0480-C□□□	LLR0480-C□□□	LLW048□-C□□□
	LL0550-C□□□	LLR0550-C□□□	
BZX020	LL0650-C□□□	LLR0650-C□□□	
	LL0750-C□□□	LLR0750-C□□□	
BZX030	LL0900-C□□□	LLR0900-C□□□	
	LL1050-C□□□	LLR1050-C□□□	

External Dimensions



Model No.	BZX010	BZX020	BZX030
A	14	18	22
B	15.5	20	24
C	19.8	20.6	20.6
D	9.3	10.1	10.1
E	5.5	6.3	6.3
G	G1/8	G1/4	G3/8

(mm)

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 (G Thread Plug with Air Bleeding Function)

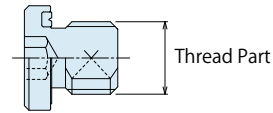
JZG0 **1** **0**

1 2



1 G Thread Size

- 1 : Thread Part G1/8A Thread
- 2 : Thread Part G1/4A Thread
- 3 : Thread Part G3/8A Thread



2 Design No.

- 0 : Revision Number

● Specifications

Model No.	JZG010	JZG020	JZG030
Max. Operating Pressure MPa	35		
Withstanding Pressure MPa	42		
G Thread Size	G1/8A	G1/4A	G3/8A
Usable Fluid	General Hydraulic Oil Equivalent to ISO-VG-32		
Operating Temperature °C	0 ~ 70		
Tightening Torque for Main Body N·m	10	25	35

- Notes
1. It is dangerous to have air venting operation under high pressure. It must be done under lower pressure.
(For reference: the minimum operation pressure range of the product within the circuit)
 2. Refer to the processing dimensions for BZL mounting area.

External Dimensions

Model No.	DBA (Single Action) Block Cylinder	DBC (Single Action) Block Cylinder	LC (Single Action) Work Support	LHA (Double Action) Swing Clamp	LHC (Double Action) Swing Clamp	LHE (Double Action) High-Power Swing Clamp	LHW (Double Action) Swing Clamp	LHS (Double Action) Swing Clamp
JZG010	DBA0250-C□□	DBC0250-C□□	LC0402-C□□□	LHA0360-C□□□	LHC0360-C□□□	LHE0300-C□□	LHW040□-C□□□	LHS0360-C□□□
	DBA0320-C□□	DBC0320-C□□	LC0482-C□□□	LHA0400-C□□□	LHC0400-C□□□	LHE0360-C□□	LHW048□-C□□□	LHS0400-C□□□
			LC0552-C□□□	LHA0480-C□□□	LHC0480-C□□□	LHE0400-C□□	LHW055□-C□□□	LHS0480-C□□□
			LC0652-C□□□	LHA0550-C□□□	LHC0550-C□□□	LHE0480-C□□		LHS0550-C□□□
JZG020	DBA0400-C□□	DBC0400-C□□	LC0752-C□□□	LHA0650-C□□□	LHC0650-C□□□		LHW065□-C□□□	LHS0650-C□□□
	DBA0500-C□□	DBC0500-C□□	LC0902-C□□□	LHA0750-C□□□			LHW0751-C□□□	LHS0750-C□□□
JZG030				LHA0900-C□□□				LHS0900-C□□□
				LHA1050-C□□□				LHS1050-C□□□
Model No.	LT (Single Action) Swing Clamp	LG (Single Action) Swing Clamp	LKA (Double Action) Link Clamp	LKC (Double Action) Link Clamp	LKE (Double Action) High-Power Link Clamp	LKW (Double Action) Link Clamp	LM (Single Action) Link Clamp	LJ (Single Action) Link Clamp
JZG010	LT0301-C□□□	LG0301-C□□□	LKA0360-C□□□	LKC0400-C□□□	LKE0300-C□□	LKW040□-C□□□	LM0300-C□□	LJ0302-C□□
	LT036□-C□□□	LG036□-C□□□	LKA0400-C□□□	LKC0480-C□□□	LKE0360-C□□	LKW048□-C□□□	LM0360-C□□	LJ0362-C□□
	LT040□-C□□□	LG040□-C□□□	LKA0480-C□□□	LKC0550-C□□□	LKE0400-C□□	LKW055□-C□□□	LM0400-C□□	LJ0402-C□□
	LT048□-C□□□	LG048□-C□□□	LKA0550-C□□□		LKE0480-C□□		LM0480-C□□	LJ0482-C□□
	LT055□-C□□□	LG055□-C□□□			LKE0550-C□□		LM0550-C□□	LJ0552-C□□
JZG020	LT065□-C□□□	LG065□-C□□□	LKA0650-C□□□	LKC0650-C□□□		LKW065□-C□□□	LM0650-C□□	LJ0652-C□□
	LT075□-C□□□	LG075□-C□□□	LKA0750-C□□□			LKW0751-C□□□	LM0750-C□□	LJ0752-C□□
JZG030		LG090□-C□□□	LKA0900-C□□□					LJ0902-C□□
		LG105□-C□□□	LKA1050-C□□□					LJ1052-C□□
Model No.	LL (Double Action) Linear Cylinder	LLR (Double Action) Linear Cylinder	LLW (Double Action) Lift Cylinder	TLA-2 (Double Action) Swing Clamp	TLB-2 (Double Action) Swing Clamp	TLA-1 (Single Action) Swing Clamp	TMA-2 (Double Action) Link Clamp	TMA-1 (Single Action) Link Clamp
JZG010	LL0360-C□□□	LLR0360-C□□□	LLW036□-C□□□	TLA0401-2C□□	TLB0401-2C□□	TLA0402-1C□	TMA0250-2C□	TMA0250-1C□
	LL0400-C□□□	LLR0400-C□□□	LLW040□-C□□□	TLA0601-2C□□	TLB0601-2C□□	TLA0602-1C□	TMA0400-2C□	TMA0400-1C□
	LL0480-C□□□	LLR0480-C□□□	LLW048□-C□□□	TLA0801-2C□□	TLB0801-2C□□	TLA0802-1C□	TMA0600-2C□	TMA0600-1C□
	LL0550-C□□□	LLR0550-C□□□		TLA1001-2C□□	TLB1001-2C□□	TLA1002-1C□	TMA1000-2C□	TMA1000-1C□
				TLA1601-2C□□	TLB1601-2C□□	TLA1602-1C□		
JZG020	LL0650-C□□□	LLR0650-C□□□		TLA2001-2C□□	TLB2001-2C□□	TLA2002-1C□	TMA1600-2C□	TMA1600-1C□
	LL0750-C□□□	LLR0750-C□□□		TLA2501-2C□□	TLB2501-2C□□	TLA2502-1C□	TMA2500-2C□	TMA2500-1C□
JZG030				TLA4001-2C□□	TLB4001-2C□□	TLA4002-1C□	TMA3200-2C□	TMA3200-1C□
	LL0900-C□□□	LLR0900-C□□□						
	LL1050-C□□□	LLR1050-C□□□						

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

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

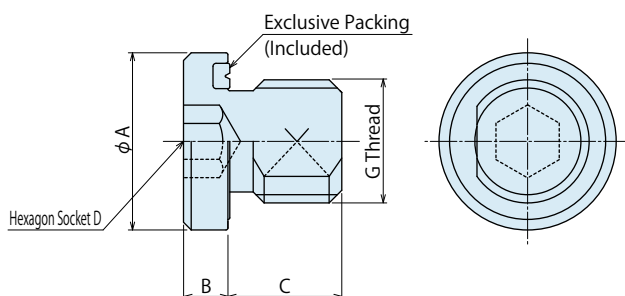
Pull Stud Clamp

FP

FQ

Customized
Spring Cylinder

DWA/DWB



Model No.	JZG010	JZG020	JZG030
A	14	18	22
B	3.5	4.5	4.5
C	8	9	10
D	5	6	8
G	G1/8A	G1/4A	G3/8A

(mm)

Manifold Block

Model WHZ-MD

Model LZY-MD

Model LZ-MS

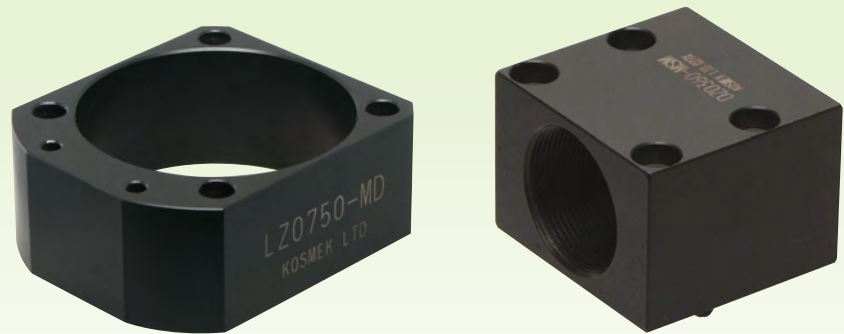
Model LZ-MP

Model TMZ-1MB

Model TMZ-2MB

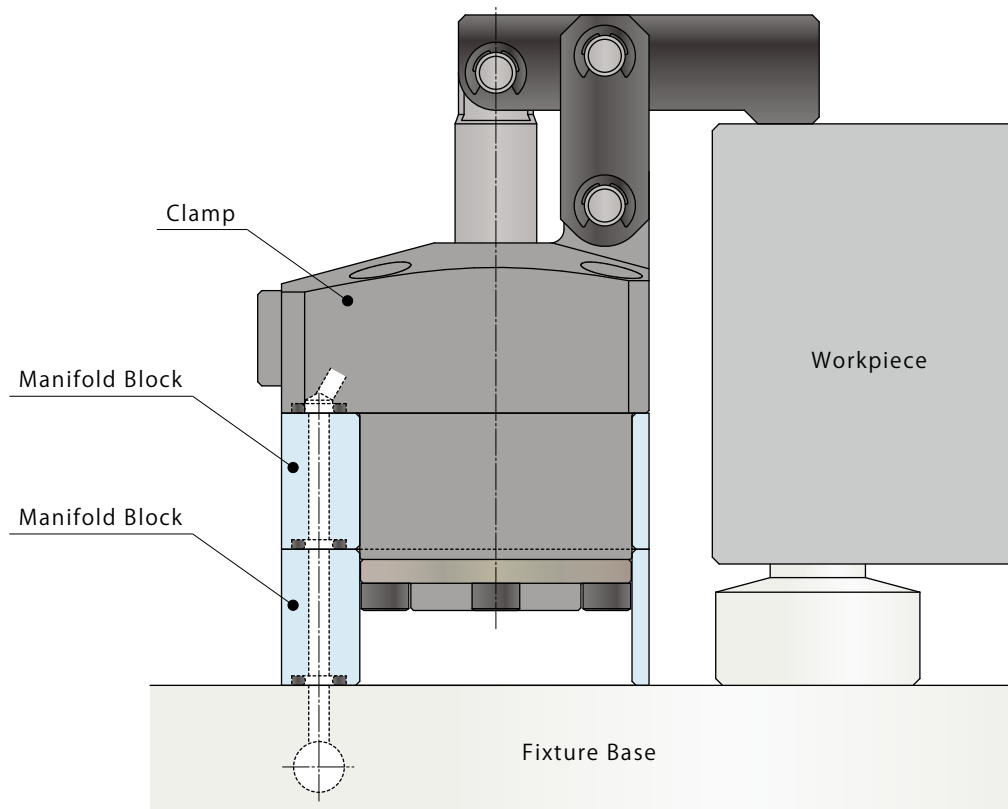
Model DZ-MG

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

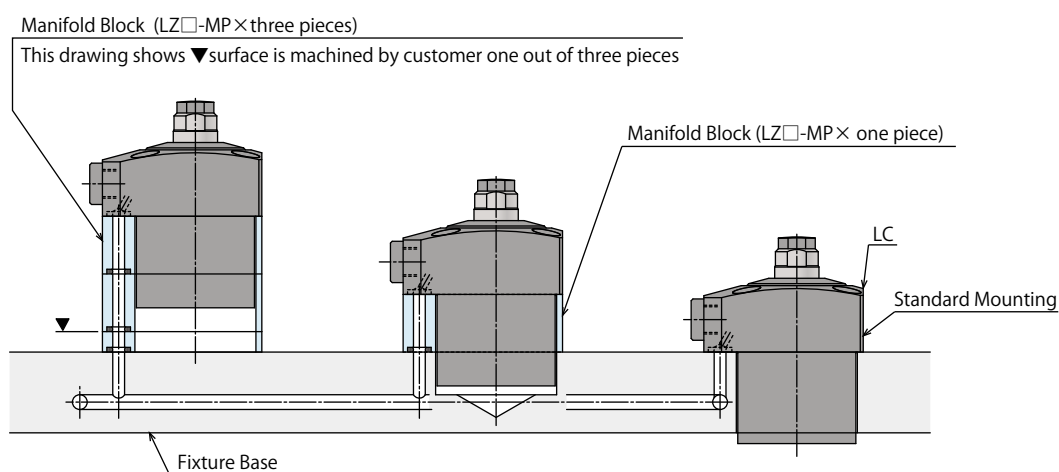
- Manifold
- JX

- Coupler Switch
- PS

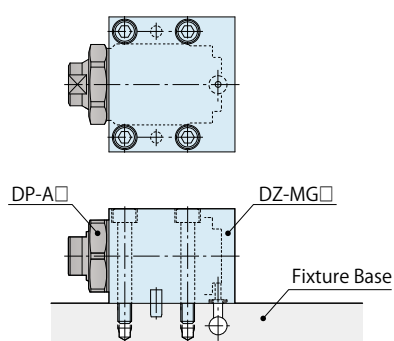
- G-Thread Fitting

Application Examples

• Work Support (LC) Application Example



• Push Cylinder (DP) Application Example



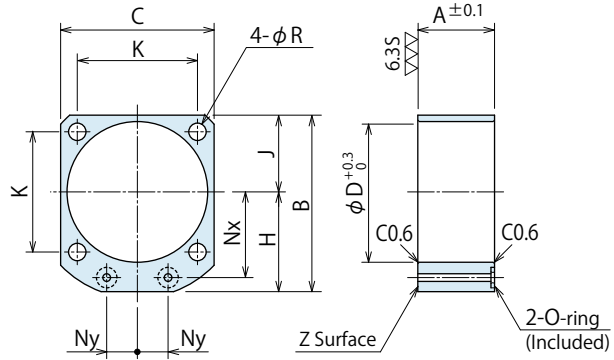
Manifold Block for WCA/WCE/WHA/WHE

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 WCE1001 WHA0320 WHE1000	WCA0401 WCE1601 WHA0400 WHE1600	WCA0501 WCE2501 WHA0500 WHE2500	WCA0631 WCE4001 WHA0630 WHE4000
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.

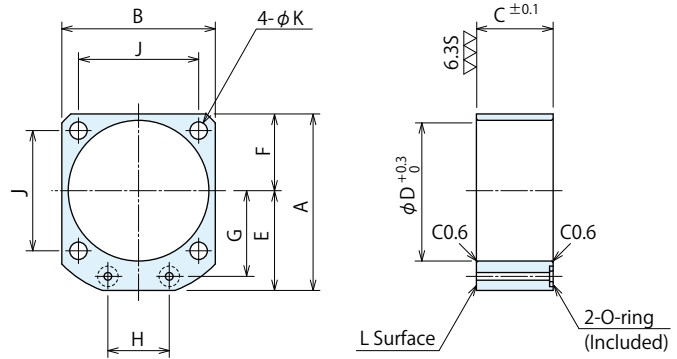
Manifold Block for LKA/LKC/LKE/LHA/LHC/LHE/LHS/LL

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.

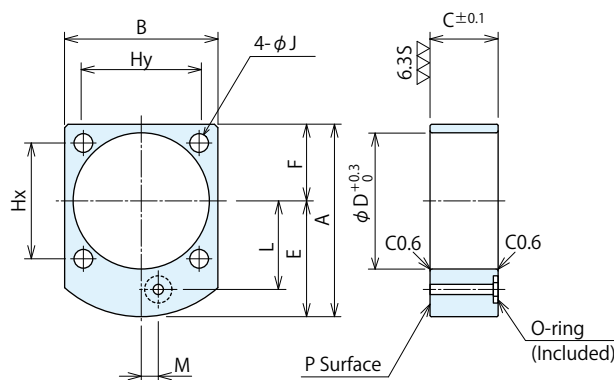
● **Manifold Block for LM/LJ/LT/LG**

Model No. Indication

LZ 048 0 - MS

Size
(Refer to
following table)

Design No.
(Revision Number)



(mm)

Model No.	LZ0300-MS	LZ0360-MS	LZ0400-MS	LZ0480-MS	LZ0550-MS	LZ0650-MS	LZ0750-MS	LZ0900-MS	LZ1050-MS
Corresponding Item	LT0301 / LG0301	LT036□ / LG036□	LT040□ / LG040□	LT048□ / LG048□	LT055□ / LG055□	LT065□ / LG065□	LT075□ / LG075□	LG090□	LG105□
Model Number	LM0300 / LJ0302	LM0360 / LJ0362	LM0400 / LJ0402	LM0480 / LJ0482	LM0550 / LJ0552	LM0650 / LJ0652	LM0750 / LJ0752	LJ0902	LJ1052
A	48	51.5	56.5	62	70	82	93	107	122
B	34	40	45	51	60	70	80	95	110
C	18	20	20	27	30	32	37	45	50
D	30	36	40	48	55	65	75	90	105
E	28.5	31.5	34	36.5	40	47	53	59.5	67
F	19.5	20	22.5	25.5	30	35	40	47.5	55
Hx	30	31.4	34	40	47	55	63	75	88
Hy	23	31.4	34	40	47	55	63	75	88
J	4.5	4.5	5.5	5.5	6.8	6.8	9	11	14
L	20.5	23.5	26	30	33.5	39.5	45	52.5	60
M	3	5	5	0	0	0	0	0	0
O-ring	1BP5	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Mass kg	0.1	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.

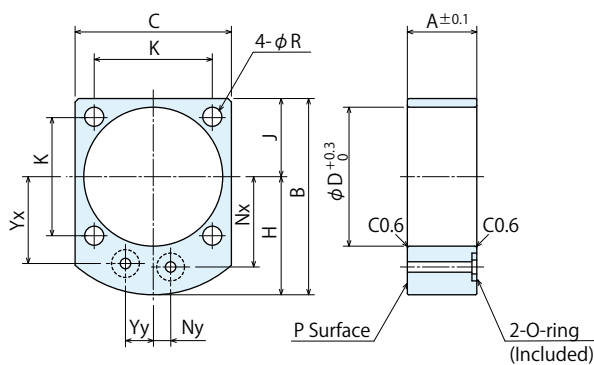
● **Manifold Block for LC/TC**

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

Sales Offices

Sales Offices across the World

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KOSMEK (USA) LTD.	1441 Branding Avenue, Suite 110, Downers Grove, IL 60515 USA	
China	TEL.+86-21-54253000	FAX.+86-21-54253709
KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	21/F, Orient International Technology Building, No.58, Xiangchen Rd, Pudong Shanghai 200122., P.R.China 中国上海市浦东新区向城路58号东方国际科技大厦21F室 200122	
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KOSMEK LTD - INDIA	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India	
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Thailand Representative Office	67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand	
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Full Life Trading Co., Ltd. 盈生貿易有限公司	16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)	
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G.E.T. Inc, Phil.	Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427	
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KOS-MECH GmbH	Schleppplatz 2 9020 Klagenfurt Austria	
Indonesia (Indonesia Exclusive Distributor)	TEL. +62-21-5818632	FAX. +62-21-5814857
P.T PANDU HYDRO PNEUMATICS	Ruko Green Garden Blok Z- II No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia	

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Asia Detailed Map



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