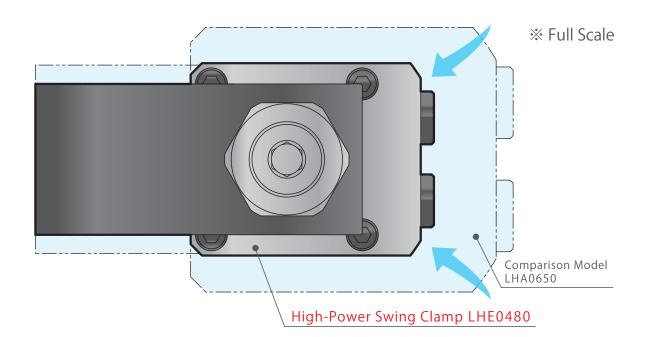
High-Power Swing Clamp Hydraulic Double Action

Model LHE

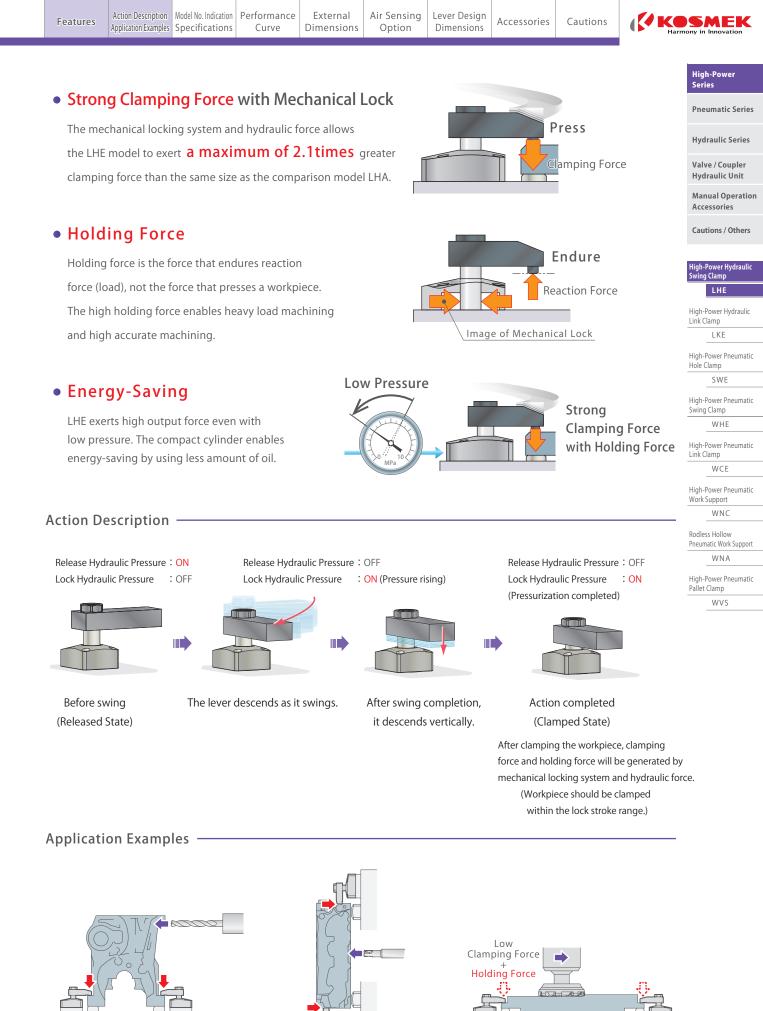


Mechanical Locking System with Hydraulic Force PAT.

Equivalent clamping force, 2 sizes smaller!!



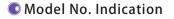
	Hydraulic Swing Clam Model LHA0650	p (Comparison Model)	High-Power Swing Clamp
Clamping Force * Hydraulic Pressure at 4MPa	4.5 kN (Lever Length : 56.5mm)	Clamping Force + Holding Force	$\underset{_{(Lever Length : 42mm)}}{4.2} \left(\text{ Holding Force } 9.1_{kN} \right)$
Weight Weight of the clamp without clamp la	ever 2.8 kg	43% Lighter	1.6 kg
Projected Area	${{5670}\atop_{(81\times70mm)}}mm^2$	45% Smaller	$\underset{_{(61\times51mm)}}{3111}mm^{2}$
Cylinder Capacity	Lock Side Release Side 40.9 cr	40% Less Volume	Lock Side Release Side 22.7 cm ³
Cylinder Outer Diamete	er 65.0 mm	26% Smaller	48.0 mm

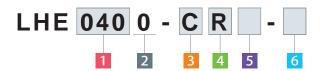


< For Backside Machining >

< For High Accurate Machining of Thin Workpiece > Holding force enables machining workpiece without deformation.

12





1 Body Size

030: *φ* D=30mm **036**: *φ* D=36mm **048**: φ D=48mm **055**: φ D=55mm

040: *φ* D=40mm

D=40mm



С

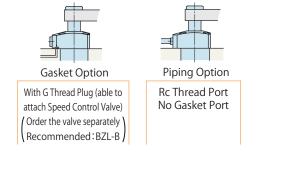
% Outer diameter (ϕ D) of the cylinder.

2 Design No.

0 : Revision Number

3 Piping Method

- C : Gasket Option (With G Thread Plug)
- **S** : Piping Option (With Rc Thread Port)
- Speed control valve (BZL) is sold separately. Please refer to P.947.



S

L

4 Swing Direction When Clamping

- R : Clockwise
- L : Counter-Clockwise



Swing Direction When Clamping

5 Action Confirmation Method

Blank : None (Standard)

- M : Air Sensing Manifold Option
- **N** : Air Sensing Piping Option

Only when selecting 1 Body Size 040/048/055.

6 Options

Blank : None (Standard: Taper Lock Lever Option)

- A : Quick Change Lever Option A
- F : Quick Change Lever Option F
- P : Balance Lever Option
- Y□ : Swing Angle Selectable Option (Y30: 30° / Y45: 45° / Y60: 60°)

Blank A F P Y

* Please contact us for a combination of the action confirmation and the option.

Features Action Description Application Examples Model No. Indication Specifications Performance Curve External Dimensions Air Sensing Option Lever Design Dimensions Accessories Cautions	K
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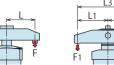
Specification	s
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• • • • • •															High-Power Series
Model No.			LHE	0300-🗆		LHE	0360-🗆		LHE	0400-🗆		LHE	0480-🗆		Series
Cylinder Force (a	,	kN		2.3			3.5			5.1			6.7		Pneumatic Series
Cylinder Inner Di		mm		20			26			31			37		
Rod Diameter *1		mm		12			15		18		22			Hydraulic Series	
Clamping Force	6 Option Blank/A/F/Y	' □	F=P		F=	Р		F= —	Р		F= —	Р		,	
(Calculation	option Etallity, 1, 1, 1		2	2.34+0.0118×L		1.	.59+0.00)76×L	1.	07+0.00	44×L	0.	.82+0.00	30×L	Valve / Coupler
Formula) ^{%2} kN	6 Option P		F1= (L	F1= (L2/L3)×0.46×P		F1= (L	.2/L3)×0	.69×P	F1= (L	2/L3)×1.	03×P	F1= (L	2/L3)×1.	33×P	Hydraulic Unit
FUITIUIA) Kin			F2= (L	1/L3)×0.4	46×P	F2= (L	.1/L3)×0.	.69×P	F2= (L	1/L3)×1.	03×P	F2= (L	.1/L3)×1.	33×P	Manual Operation
Holding Force	6 Option Blank/A/F/Y	· 🗆	Ek-	0.76>	×Р	Fk= -	1.03>		Fk= -	1.60×		Fk= -	1.98×	P	Accessories
(Calculation			1 K-	0.76>	4×L	FK-	1-0.004	12×L	1 K-	1-0.003	6×L	1 N-	1-0.003	2×L	Cautions / Others
Formula) ^{*2} kN 6 Option P			Fk1= (L2/L3)×().76×P	Fk1= ((L2/L3)×	1.03×P	Fk1= (L2/L3)×	1.60×P	Fk1= ((L2/L3)×	1.98×P	cautons, others
Formula) ² KN 6 Option P			Fk2= (L1/L3)×().76×P	Fk2= ((L1/L3)×	1.03×P	Fk2= (L1/L3)×	1.60×P	Fk2= ((L1/L3)×′	1.98×P	
	Full Stroke	mm		12			13			15			17		High-Power Hydraulic Swing Clamp
	Swing Stroke (90°) mn			7.5			8			9			11		LHE
0 Ontion	Vertical Stroke	mm	4.5			5		6		6					
	(Break Idle Stroke	mm		2			2			2.5		2.5		High-Power Hydraulic Link Clamp	
	down) Lock Stroke ^{*3}	mm		2.5			3			3.5			3.5		LINK Claimp
	Swing Angle Accuracy							90° :	±3°						
	Swing Completion Position Repea	atability	±0.75°					±0.5°					High-Power Pneumatic Hole Clamp		
	Option		Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	Y30	Y45	Y60	SWE
	Full Stroke	mm	7.8	8.9	9.9	9	10	11	10.7	11.7	12.8	11.7	13	14.3	
	Swing Stroke	mm	3.3	4.4	5.4	4	5	6	4.7	5.7	6.8	5.7	7	8.3	High-Power Pneumatic Swing Clamp
6 Option Y	Vertical Stroke	mm		4.5			5			6			б		WHE
	(Break Idle Stroke	mm		2			2			2.5			2.5		
	down) Lock Stroke ^{*3}	mm		2.5			3			3.5			3.5		High-Power Pneumatic Link Clamp
	Swing Angle Accuracy		30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	45° ±3°	60° ±3°	30° ±3°	$45^{\circ}\pm3^{\circ}$	60° ±3°	WCE
	Swing Completion Position Repea	atability		±0.75°						±0.5°					
Max. Operating	Max. Operating Pressure MP							6	.0						High-Power Pneumatic Work Support
Min. Operating 5 Blank Selected				1.5									WNC		
Pressure ^{**4} MPa 5 M/N Selected				- 2.0								Di illere Helleri			
Withstanding Pr	Vithstanding Pressure MPa			9.0								Rodless Hollow Pneumatic Work Support			
Operating Temp	Operating Temperature °C			0~70								WNA			
Usable Fluid					General Hydraulic Oil Equivalent to ISO-VG-32								Lich Dourse Doorsetio		
Maria I.															High-Power Pneumatic Pallet Clamp
Model No.			LHE	0550-											

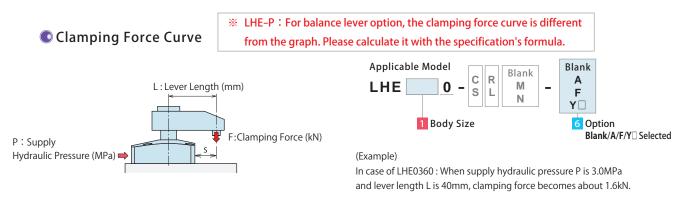
Model No.			LHE	0550-🗆]	
Cylinder Force (a	it 5MPa)	kN		10.3		
Cylinder Inner Di	iameter ^{%1}	mm		44		
Rod Diameter *1	l	mm	mm 25			
Clamping Force	6 Option Blank/A/F/Y	F = -	P 53+0.00	17×1		
(Calculation			F1= (L2/L3)×2.06			
Formula) ^{%2} kN	6 Option P			i/L3)×2.0		
Holding Force	6 Option Blank/A/F/Y	′□	Ek-	3.18× 1-0.002	Р	
(Calculation Formula) ^{%2} kN			Fk1= (I	L2/L3)×3	8.18×P	
Formula) ^{®2} Kin	6 Option P		Fk2= (L1/L3)×3	8.18×P	
	Full Stroke	mm		18.5		
	Swing Stroke (90°)	mm		12.5		
	Vertical Stroke	mm		6		
6 Option	(Break Idle Stroke	mm		2		
Blank/A/F/P	down) Lock Stroke ^{*3}	mm		4		
	Swing Angle Accuracy		90° ±3°			
	Swing Completion Position Repea	atability	ability ±0.5°			
	Option		Y30	Y45	Y60	
	Full Stroke	mm	12.5	14	15.5	
	Swing Stroke	mm	6.5	8	9.5	
6 Option Y	Vertical Stroke	mm		6		
	(Break Idle Stroke	mm		2		
	down) Lock Stroke ^{*3}	mm		4		
	Swing Angle Accuracy		$30^{\circ} \pm 3^{\circ}$	$45^{\circ}\pm3^{\circ}$	60° ±3°	
	Swing Completion Position Repea	atability		±0.5°		
Max. Operating	Pressure	MPa		6.0		
Min. Operating	5 Blank Selected			1.5		
Pressure **4 MPa	5 M/N Selected			2.0		
Withstanding Pr	essure	MPa	MPa 9.0			
Operating Temp	erature	°C 0~70				
Usable Fluid			General Hydra	ulic Oil Equivale	ent to ISO-VG-32	

Notes:

- %1. Clamping force cannot be calculated from the cylinder inner diameter and rod diameter. Please refer to the clamping force curve.
- X2. F, F1, F2 : Clamping Force (kN), Fk, Fk1, Fk2 : Holding Force (kN), P : Supply Hydraulic Pressure (MPa), L, L1, L2 : Distance between the piston center and the clamping point (mm), L3 :L1+L2(mm). It might be within the non-usable range depending on the value of P and L, please check the clamping force curve on P.15 and holding force curve on P.17.
- ※3. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (Please refer to "The specification value is not fulfilled when clamping out of the lock stroke range." on P.51.)
- %4. Minimum pressure to operate the clamp without load.
- 1. Please refer to External Dimensions for the cylinder capacity and the product weight.



WVS



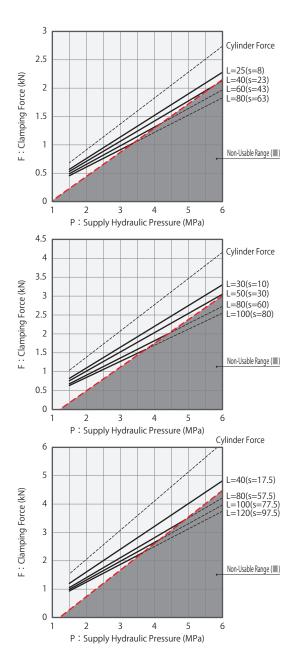
Notes :

- %1. F: Clamping Force (kN), P: Supply Hydraulic Pressure (MPa), L: Lever Length (mm).
 - 1. Tables and graphs show the relationship between the clamping force (kN) and supply hydraulic pressure (MPa).
 - 2. Cylinder force (when L=0) cannot be calculated with the formula of clamping force.
 - 3. Lever with a large inertia sometimes does not work depending on supply hydraulic pressure, lever mounting position, etc.
 - 4. Values in below charts indicate clamping force when clamping within the lock stroke range (not the value for the idle stroke range). (Please refer to "The specification value is not fulfilled when clamping out of the lock stroke range." on P.51)
 - 5. The clamping force varies depending on the lever length. Set the suitable supply hydraulic pressure based on the lever length.
 - 6. Clamping force in the non-usable range may cause damage and fluid leakage.

LHE03	300	Clampi	ng Force (Calculatio	n Formula	^{** 1} (kN)	F =	P / (2.34 -	- 0.01	18×L)	
Hydraulic	Cylind	er Force			Cla	mping	Force (kN) No	on-Usable I	Range()	Max. Lever Length	
Pressure	· (ŀ	(N)		Lever Length L (mm)								
(MPa)			L=25	L=30	L=35	L=40	L=50	L=60	L=70	L=80	(mm)	
6	2.7		2.3	2.2	2.2						38	
5.5	2.5		2.1	2.0	2.0	2.0					42	
5	2.3		1.9	1.9	1.8	1.8					47	
4.5	2	2.1	1.7	1.7	1.6	1.6	1.5				54	
4	1	1.8	1.5	1.5	1.5	1.4	1.4	1.3			63	
3.5	1	1.6	1.3	1.3	1.3	1.2	1.2	1.1	1.1		75	
3	1	1.4	1.1	1.1	1.1	1.1	1.0	1.0	0.9	0.9	90	
2.5	1	1.1	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	90	
2	(0.9		0.7	0.7	0.7	0.7	0.7	0.6	0.6	90	
1.5	().7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	90	
Max. Operatin	ng Pressu	re (MPa)	6.0	6.0	6.0	5.7	4.8	4.1	3.7	3.3		

LHE03	360	Clampii	ng Force (Calculatio	n Formula	^{** 1} (kN)	F =	P / (1.59 -	+ 0.00	76×L)		
Hydraulic	Cylinder F	orce		Clamping Force (kN) Non-Usable Range() Max. Lever Ler									
Pressure	(kN)				Lev	/er Leng	gth L (m	ım)			(L)		
(MPa)			L=30	L=40	L=50	L=60	L=70	L=80	L=90	L=100	(mm)		
6	4.2		3.3	3.2	3.0						53		
5.5	3.8		3.0	2.9	2.8						59		
5	3.5		2.8	2.6	2.5	2.4					67		
4.5	3.1		2.5	2.4	2.3	2.2	2.1				77		
4	2.8		2.2	2.1	2.0	2.0	1.9	1.8	1.8		91		
3.5	2.4		1.9	1.8	1.8	1.7	1.6	1.6	1.5	1.5	110		
3	2.1		1.7	1.6	1.5	1.5	1.4	1.4	1.3	1.3	120		
2.5	1.7		1.4	1.3	1.3	1.2	1.2	1.1	1.1	1.1	120		
2	1.4		1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	120		
1.5	1.0		0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	120		
Max. Operatir	ng Pressure (I	MPa)	6.0	6.0	6.0	5.4	4.8	4.4	4.0	3.7			

LHE0400Clamping Force Calculation Formula **1 (kN)F = P / (1.07 + 1									- 0.00	44×L)
Hydraulic	Cylinder Force	Clamping Force (kN) Non-Usable Range								
Pressure	(kN)			Lev	/er Leng	gth L (m	ım)			(L)
(MPa)		L=40	L=50	L=60	L=70	L=80	L=90	L=100	L=120	(mm)
6	6.2	4.8	4.7	4.5						61
5.5	5.6	4.4	4.3	4.1						69
5	5.1	4.0	3.9	3.7	3.6					78
4.5	4.6	3.6	3.5	3.4	3.3	3.2				89
4	4.1	3.2	3.1	3.0	2.9	2.8	2.7	2.6		105
3.5	3.6	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.2	128
3	3.1	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	145
2.5	2.6	2.0	1.9	1.9	1.8	1.8	1.7	1.7	1.6	145
2	2.1	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	145
1.5	1.5	1.2	1.2	1.1	1.1	1.1	1.0	1.0	0.9	145
Max. Operatir	ng Pressure (MPa)	6.0	6.0	6.0	5.4	4.9	4.4	4.1	3.7	





Cautions

Accessories

H	ig	h-	P	DV	/e	r	
-							

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

High-Power Hydrauli Swing Clamp LHE

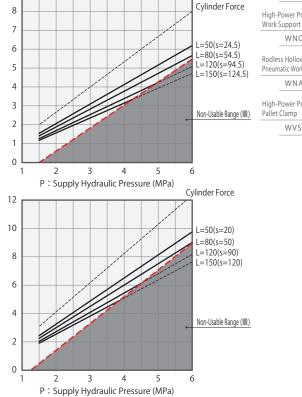
High-Power Hydraulic Link Clamp LKE

High-Power Pneumatic Hole Clamp SWE

High-Power Pneumatic Swing Clamp

WHE

High-Power Pneumatic Link Clamp WCE High-Power Pneumatic Work Support WNC Rodless Hollow Pneumatic Work Support WNA High-Power Pneumatic Pallet Clamp



LHE04	480	Clampi	ng Force (Calculatio	n Formula	^{** 1} (kN)	F =	P / (0.82 +	- 0.00	30×L)		
Hydraulic	Cylinde	r Force			Cla	mping	Force (kN) No	on-Usable F	Range()	Max. Lever Length		
Pressure	(kN)			Lever Length L (mm)									
(MPa)			L=50	L=60	L=70	L=80	L=90	L=100	L=120	L=150	(mm)		
6	8.0		6.2	6.0	5.8	5.7	5.5				92		
5.5	7.3		5.7	5.5	5.3	5.2	5.0	4.9			103		
5	6.7		5.2	5.0	4.9	4.7	4.6	4.5			118		
4.5	6.	0	4.6	4.5	4.4	4.2	4.1	4.0	3.8		137		
4	5.	3	4.1	4.0	3.9	3.8	3.7	3.6	3.4	3.1	160		
3.5	4.	7	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.8	160		
3	4.	0	3.1	3.0	2.9	2.8	2.8	2.7	2.5	2.4	160		
2.5	3.	3	2.6	2.5	2.4	2.4	2.3	2.2	2.1	2.0	160		
2	2.7		2.1	2.0	1.9	1.9	1.8	1.8	1.7	1.6	160		
1.5	2.0		1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.2	160		
Max. Operatir	ng Pressure	e (MPa)	6.0	6.0	6.0	6.0	6.0	5.6	4.9	4.2			

Action Description Model No. Indication Performance

Curve

Application Examples Specifications

Features

Air Sensing

Option

External

Dimensions

Lever Design

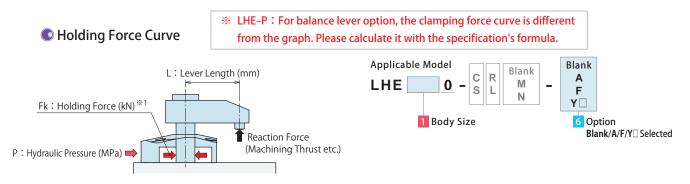
Dimensions

9

F: Clamping Force (kN)

F: Clamping Force (kN)

LHEOS	550	Clampi	ng Force (Calculatio	n Formula	^{※1} (kN)	F =	P / (0.53 +	- 0.00	17×L)
Hydraulic	Cylinde	er Force	Force Clamping Force (kN) Non-Usable Range() Max. Level								
Pressure	(kN)				Lev	/er Lend	gth L (m	nm)			(L)
(MPa)			L=50	L=60	L=70	L=80	L=90	L=100	L=120	L=150	(mm)
6	12	.4	9.8	9.5	9.2	9.0					82
5.5	11.3		8.9	8.7	8.5	8.3	8.1				92
5	10.3		8.1	7.9	7.7	7.5	7.3	7.1			104
4.5	9	.3	7.3	7.1	6.9	6.8	6.6	6.4	6.1		120
4	8	3.2	6.5	6.3	6.2	6.0	5.9	5.7	5.4		142
3.5	7	.2	5.7	5.5	5.4	5.3	5.1	5.0	4.8	4.5	170
3	6	.2	4.9	4.7	4.6	4.5	4.4	4.3	4.1	3.8	170
2.5	5	.1	4.1	4.0	3.9	3.8	3.7	3.6	3.4	3.2	170
2	4.1		3.3	3.2	3.1	3.0	2.9	2.9	2.7	2.5	170
1.5	3.1		2.4	2.4	2.3	2.3	2.2	2.1	2.0	1.9	170
Max. Operatir	ng Pressur	e (MPa)	6.0	6.0	6.0	6.0	5.6	5.2	4.5	3.9	



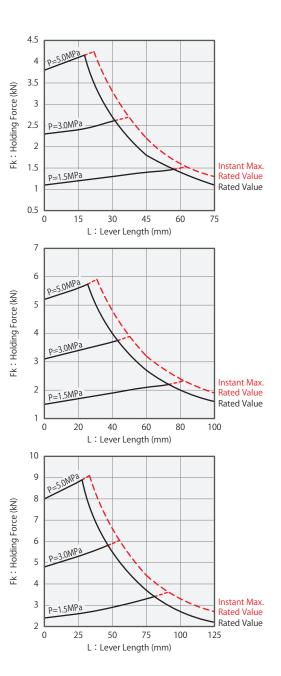
Notes:

- ※1. Holding force is the force that counters the reaction force in the clamping state, and differs from clamping force. Please keep in mind that it can produce displacement depending on lever rigidity even if the reaction force is lower than holding force. (If slight displacement is also not allowed, please keep the reaction force beyond clamping force from being applied.)
- *2. Fk : Holding Force (kN), P : Supply Hydraulic Pressure (MPa), L : Lever Length (mm) The non-usable range is when the calculated holding force exceeds the max. rated value. The max. holding force becomes the rated value.
 - Tables and graphs show the relationship between the holding force (kN) and lever length (mm).
 - 2. Values in below charts indicate holding force when clamping within the lock stroke range (not the value for the idle stroke range).
 - (Please refer to "The specification value is not fulfilled when clamping out of the lock stroke range." on P.51.)
- 3. The holding force varies depending on the lever length. Set the suitable supply hydraulic pressure based on the lever length.
- 4. The reaction force beyond holding force shown in the graph may cause deformation, seizure and fluid leakage etc.
- Repetitive use at the range of instant maximum rated value will shorten the product life. It should be designed with allowance fully taken into consideration.

LHE0300	Holding Force Calcul ($Fk \leq Rated V$	(kN)	Fk =	1	0.76 - 0.00				
	Hydraulic Pressure (MPa)	L=25	L=30		ver Leng	Force(ki gth L(m L=50	m)	n-Usable F	Range(■)
	6	3.3	2.7	2.3					
	5.5	3.3	2.7	2.3	2.0				
	5	3.3	2.7	2.3	2.0				
	4.5	3.3	2.7	2.3	2.0	1.6			
	4	3.3	2.7	2.3	2.0	1.6	1.4		
	3.5	3.0	2.7	2.3	2.0	1.6	1.4	1.2	
	3 2.5 2		2.6	2.3	2.0	1.6	1.4	1.2	1.0
			2.2	2.3	2.0	1.6	1.4	1.2	1.0
			1.8	2.3	2.0	1.6	1.4	1.2	1.0
	1.5	1.3	1.3	1.3	1.4	1.5	1.4	1.2	1.0

LHE0360	Holding Force Calculated ($Fk \leq Rated V$	Fk =	1	1.03 - 0.00		L			
	Hydraulic Pressure (MPa)								
	6		4.0	3.2					
	5.5	5.3	4.0	3.2					
	5		4.0	3.2	2.7				
	4.5	5.3	4.0	3.2	2.7	2.3			
	4	4.7	4.0	3.2	2.7	2.3	2.0	1.8	
	3.5	4.1	4.0	3.2	2.7	2.3	2.0	1.8	1.6
	3		3.7	3.2	2.7	2.3	2.0	1.8	1.6
	2.5	2.9	3.1	3.2	2.7	2.3	2.0	1.8	1.6
	2	2.4	2.5	2.6	2.7	2.3	2.0	1.8	1.6
	1.5	1.8	1.9	2.0	2.1	2.2	2.0	1.8	1.6

Holding Force Calcul ($Fk \leq Rated V$	(kN)	Fk =	1	1.60 - 0.0	× P 036×	L		
Hydraulic Pressure Holding Force(kN) Non-Usable Range(Lever Length L(mm)							Range(III)	
(MPa)	L=40	L=50	L=60	L=70	L=80	L=90	L=100	L=120
6	6.9	5.5	4.6					
5.5	6.9	5.5	4.6					
5	6.9	5.5	4.6	3.9				
4.5	6.9	5.5	4.6	3.9	3.4			
4	6.9	5.5	4.6	3.9	3.4	3.1	2.7	
3.5	6.5	5.5	4.6	3.9	3.4	3.1	2.7	2.3
3	5.6	5.5	4.6	3.9	3.4	3.1	2.7	2.3
2.5	4.7	4.9	4.6	3.9	3.4	3.1	2.7	2.3
2	3.7	3.9	4.1	3.9	3.4	3.1	2.7	2.3
1.5	2.8	2.9	3.1	3.2	3.4	3.1	2.7	2.3



LHE0400

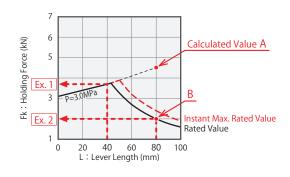
INGGMEN
Harmony in Innovation

Cautions

(Ex.1) In case of LHE0360 :

When supply hydraulic pressure P is 3.0MPa and lever length L is 40mm, holding force becomes about 3.7kN. (Ex.2) In case of LHE0360 :

When supply hydraulic pressure P is 3.0MPa and lever length L is 80mm, the calculated value is at the point A but it is in the non-usable range. In this case, the value of intersection B becomes the holding force that counters the reaction force, and it is about 2.0kN.



High-Power
Series

Pneumatic Series

Hydraulic Series

Valve / Coupler

Hydraulic Unit Manual Operation

Accessories

Cautions / Others

High-Power Hydrau Swing Clamp LHE

High-Power Hydraulic Link Clamp LKF

High-Power Pneumatic Hole Clamp SWF

High-Power Pneumatic Swing Clamp WHE

High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

Rated Value

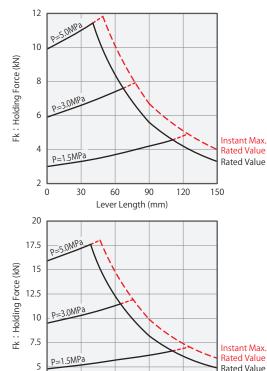
150

WVS

LHE0480	Holding Force Calcul ($Fk \leq Rated V$		nula ^{% 2}	(kN)	Fk =	1	1.98 - 0.00		L
	Hydraulic Pressure (MPa)	L=50	L=60		olding I ver Leng L=80	gth L(m			Range(■)
	6	10.0	8.4	7.2	6.3	5.6	2 100	2 120	2 150
	5.5	10.0	8.4	7.2	6.3	5.6	5.0		
	5	10.0	8.4	7.2	6.3	5.6	5.0		
	4.5	10.0	8.4	7.2	6.3	5.6	5.0	4.2	
	4	9.4	8.4	7.2	6.3	5.6	5.0	4.2	3.3
	3.5	8.3	8.4	7.2	6.3	5.6	5.0	4.2	3.3
	3	7.1	7.4	7.2	6.3	5.6	5.0	4.2	3.3
	2.5	5.9	6.1	6.4	6.3	5.6	5.0	4.2	3.3
	2	4.7	4.9	5.1	5.3	5.6	5.0	4.2	3.3
	1.5	3.5	3.7	3.8	4.0	4.2	4.4	4.2	3.3
	1.5	3.5	3.7	3.8	4.0	4.2	4.4	4.2	3.3

Holding Force Calcul ($Fk \leq Rated V$		nula ^{% 2}	(kN)	$Fk = \frac{3.18 \times P}{1 - 0.0026 \times L}$				
Hydraulic Pressure (MPa)		Holding Force(kN) Non-Usable Range(Lever Length L(mm) =50 L=60 L=70 L=80 L=90 L=100 L=120 L=150						
	L=50	L=60	L=70	L=80	L=90	L=100	L=120	L=150
6	14.7	12.3	10.5	9.2				
5.5	14.7	12.3	10.5	9.2	8.2			
5	14.7	12.3	10.5	9.2	8.2	7.4		
4.5	14.7	12.3	10.5	9.2	8.2	7.4	6.1	
4	14.6	12.3	10.5	9.2	8.2	7.4	6.1	
3.5	12.8	12.3	10.5	9.2	8.2	7.4	6.1	4.9
3	11.0	11.3	10.5	9.2	8.2	7.4	6.1	4.9
2.5	9.1	9.4	9.7	9.2	8.2	7.4	6.1	4.9
2	7.3	7.5	7.8	8.0	8.2	7.4	6.1	4.9
1.5	5.5	5.7	5.8	6.0	6.2	6.4	6.1	4.9

LHE0550



2.5 0

30

60

Lever Length (mm)

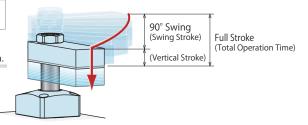
90

120

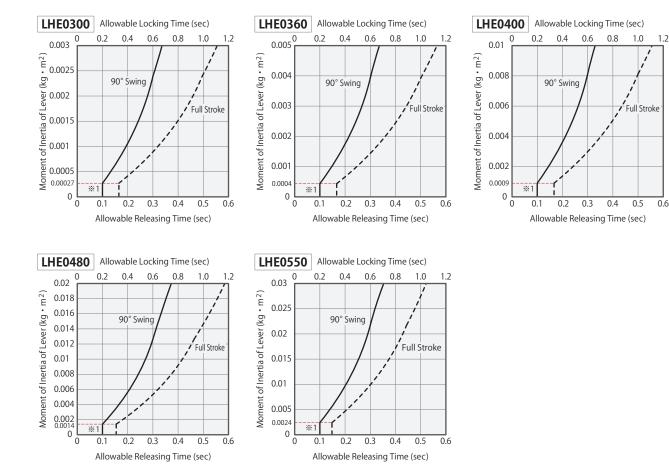
Allowable Swing Time Graph

Adjustment of Swing Time

The graph shows allowable swing time against the moment of inertia of a lever. An operation time should be longer than the operation time shown in the graph.

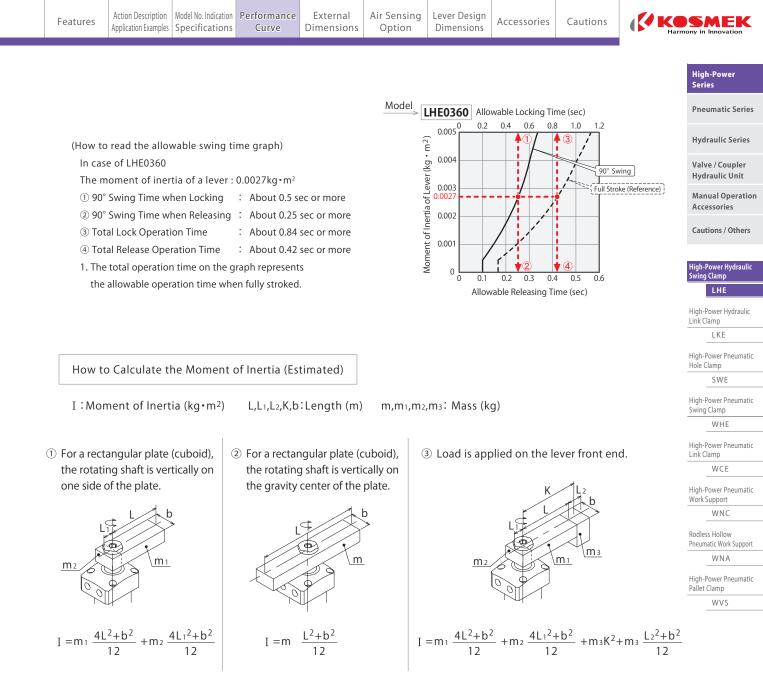


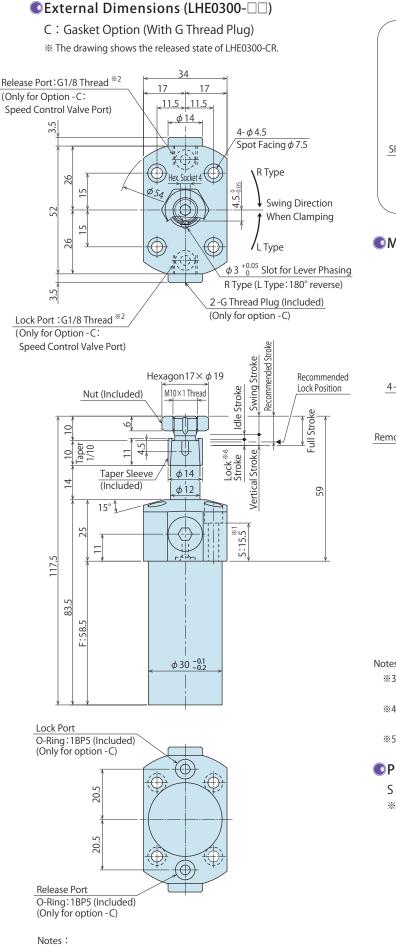
Excessive action speed can reduce stopping accuracy and damage internal components.

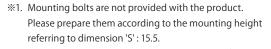


Notes:

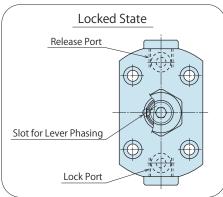
- *1. For any moment of inertia of a lever, the minimum 90° swing time should be 0.2 sec for locking and 0.1 sec for releasing or more.
- 1. The graph shows the allowable action time with respect to the moment of inertia of lever when the piston rod operates at constant speed.
- 2. Lever with a large inertia sometimes does not work depending on supply hydraulic pressure, oil flow rate and lever mounting position.
- 3. For speed adjustment of clamp lever, please use meter-out flow control valve.
- In case of meter-in control, the clamp lever may be accelerated by its own weight during swinging motion (clamp mounted horizontally) or the piston rod may be moving too fast. Please refer to P.1356 for speed control of the hydraulic cylinder.
- 4. Excessive swing speed can reduce stopping accuracy and damage the internal parts.
- 5. Please contact us if operational conditions differ from those shown on the graphs.



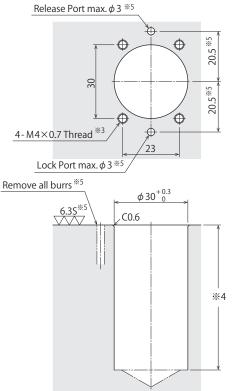




%2. Speed control valve is sold separately. Please refer to P.947.



Machining Dimensions of Mounting Area

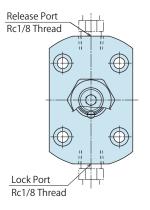


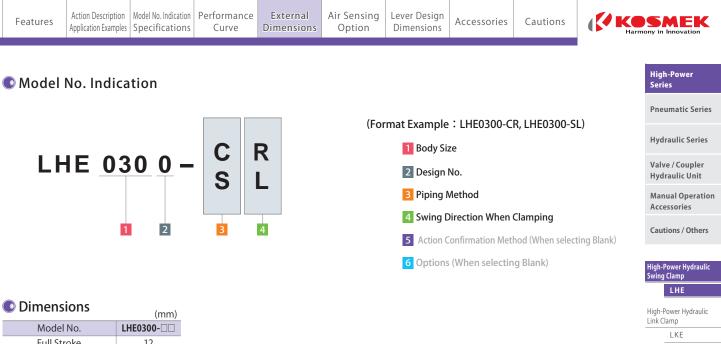
Notes:

- 3. M4 \times 0.7 tapping depth of the mounting bolt should be decided according to the mounting height referring to dimension 'S': 15.5.
- %4. The depth of the body mounting hole $\phi 30^{+0.3}_{-0.3}$ should be decided according to the mounting height referring to dimension 'F': 58.5.
- *5. The machining dimension is for -C: Gasket Option.

Piping Method

- S: Piping Option (Rc Thread)
- % The drawing shows the released state of LHE0300-SR.





High-Power Pneumatic Hole Clamp SWF

High-Power Pneumatic Swing Clamp WHE

High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

WVS

	iensic	JIIS	(mm)		
1	Nodel N	0.	LHE0300-		
F	ull Stro	ke	12		
Swin	ng Strok	7.5			
Ve	rtical St	4.5			
(Break	Idle Str	oke	2		
down)	Lock St	troke ^{%6}	2.5		
Recom	mende	d Stroke	10.5		
Cylinde	r	Lock	3.5		
Capacit	y cm³	Release	4.9		
Weight	*7	kg	0.6		

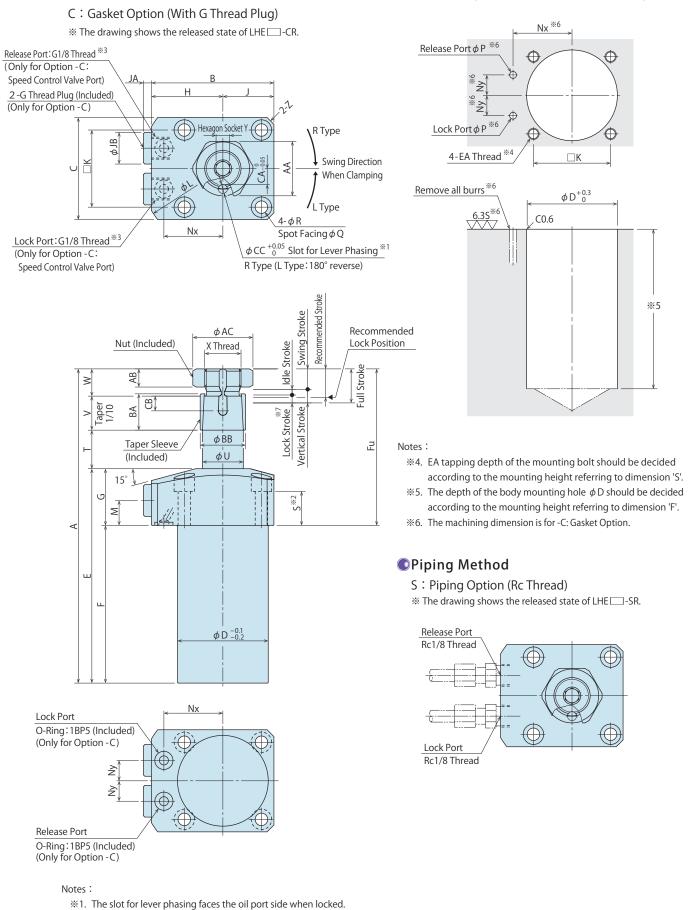
Notes:

*6. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range.

(The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)

%7. It shows the weight of single swing clamp including taper sleeve and nut.

©External Dimensions (LHE0360/0400/0480/0550-□□) ©Machining Dimensions of Mounting Area



- ※2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S'.
- *3. Speed control valve is sold separately. Please refer to P.947.

	Features	Action Description Application Examples			External A imensions	ir Sensing Option	Lever Design Dimensions	Accessories	Cautions	K	SMEK
										1	
	Model	No. Indicat	tion								High-Power Series
						(For	mat Example	e:LHE0360-C	R, LHE0550-S	L)	Pneumatic Series
				C R			1 Body Si	ize			Hydraulic Series
	LF	IE 04	00-	S L			2 Design	No.			Valve / Coupler Hydraulic Unit
				-			3 Piping				Manual Operation Accessories
		1	2	3 4				Direction When			Cautions / Others
								Confirmation Met s (When selectir		ting Blank)	the Dense Hadrock
	Evtornal	Dimension	s and Machiı	ning Dimong	ions for Mc	unting			.9 2		High-Power Hydraulic Swing Clamp LHE
		del No.				(1	nm)				High-Power Hydraulic
	Ful	l Stroke	13	15	17	18.5					Link Clamp
	Swing	Stroke (90°)	8	9	11	12.5					LKE
		cal Stroke	5	6	6	6					High-Power Pneumatic
/	Breakdown)	Idle Stroke	2	2.5	2.5	2					Hole Clamp SWE
(Diedkuown)	Lock Stroke ^{**7}	3	3.5	3.5	4					
	Recomm	ended Stroke	11	12.5	14.5	15.5					High-Power Pneumatic Swing Clamp
		А	124.5	138.5	154	170.5					WHE
		В	49	54	61	69					
		С	40	45	51	60					High-Power Pneumatic Link Clamp
		D	36	40	48	55					WCE
		E	85.5	94.5	103	114					
		F	60.5	69.5	75	84					High-Power Pneumatic Work Support
		Fu	64	69	79	86.5					WNC
		G	25	25	28	30					Rodless Hollow
		Н	29	31.5	35.5	39					Pneumatic Work Support
		J	20	22.5	25.5	30					WNA
_		К	31.4	34	40	47					High-Power Pneumatic
		L	66	73	83	88					Pallet Clamp
		М	11	11	13	12					WVS
		Nx	23.5	26	30	33.5					
_		Ny	8	9	11	12	_				
		Р	max.3	max.3	max.3	max.3					
		Q	7.5	9	9	11					
		R	4.5	5.5	5.5	6.8					
		S T	16	15	17.5	17	_				
		T	15	17	19	20.5					
		U V	15	18	22	25					
		W	13	15	18	21					
	X (Nom	inal×Pitch)	M14×1.5	M16×1.5	M20×1.5	M22×1.	5				
		Y	5	6	8	8	5				
	7 (C	hamfer)	C2	C3	C3	C3					
		AA	22	24	30	32					
		AB	7	8	9	10					
		AC	24.5	26.5	33	35.5					
		BA	14	16	19	22					
		BB	17	20	25	28					
		CA	6	7	9	10					
		СВ	6.5	6.5	7.5	9.5					
		CC	4	4	5	6					
	EA (Non	ninal×Pitch)	M4×0.7	M5×0.8	M5×0.8	M6×1					
	2.1 (11011	JA	3.5	3.5	3.5	3.5					
		JB	14	14	14	14					
_	ultra al a si C a s	- Last	6.5	11.1	16.2	272					

Weight ^{%8} Notes:

Cylinder Capacity

%7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)

16.2

22.7

1.6

27.2

36.3

2.3

11.1

14.9

1.1

*8. It shows the weight of single swing clamp including taper sleeve and nut.

6.5

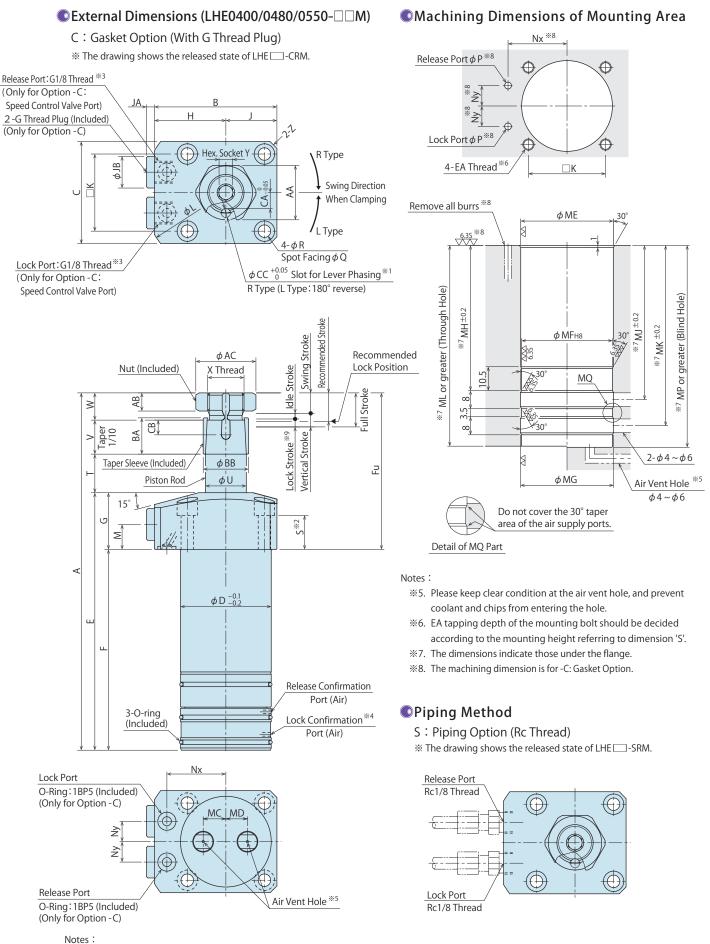
8.8

0.8

Lock

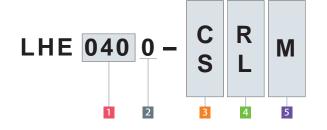
kg

cm³ Release



- %1. The slot for lever phasing faces the oil port side when locked.
- ※2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S'.
- %3. Speed control valve is sold separately. Please refer to P.947.
- %4. Lock confirmation is not the stroke check of piston rod, but rather the action check of internal mechanical lock. 1. Please contact us for a combination with other options.
- 2. Please refer to P.45 for Air Sensing Chart.

Model No. Indication



Model N	0	LHE0400-	LHE0480-00M	LHE0550-
Full Stro		15	17	18.5
Swing Strok		9	17	12.5
Vertical St		6	6	6
Idlo	Stroke	2.5	2.5	2
	k Stroke ^{%9}	3.5	3.5	4
Recommende	a stroke	12.5	14.5	15.5
A		157.5	173	189.5
B		54	61	69
<u> </u>		45	51	60
D		40	48	55
E		113.5	122	133
F		88.5	94	103
Fu		69	79	86.5
G		25	28	30
Н		31.5	35.5	39
J		22.5	25.5	30
K		34	40	47
L		73	83	88
M		11	13	12
Nx		26	30	33.5
Ny		9	11	12
Р		max.3	max.3	max.3
Q		9	9	11
R		5.5	5.5	6.8
S		15	17.5	17
Т		17	19	20.5
U		18	22	25
V		15	18	21
W		12	14	15
X (Nominal>	(Pitch)	M16×1.5	M20×1.5	M22×1.5
Y	,	6	8	8
Z (Chami	fer)	C3	C3	C3
AA		24	30	32
AB		8	9	10
AC		26.5	33	35.5
BA		16	19	22
BB		20	25	22
CA		7	9	10
CB		6.5	7.5	9.5
CC		4	5	9.5
	V Ditch)		M5×0.8	
EA (Nominal MC	~r((())	M5×0.8 10	12	M6×1 14.5
MD		9.5	9.5	9.5
ME		40.8 40 ^{+0.039}	49 48 ^{+0.039}	56 55 ^{+0.046}
MF				
MG		40.6	48.6	55.6
MH		64	69.5	78.5
MJ		68	73.5	82.5
MK		79.5	85	94
ML		88.5	94	103
MP		89	94.5	103.5
JA		3.5	3.5	3.5
JB		14 36×1.5	14	14
3-O-rin	g	(Internal Diameter ×Wire Diameter)	AS568-031(70)	AS568-033(70
Cylinder Capacity	Lock	11.1	16.2	27.2
cm ³	Release	14.9	22.7	36.3
Weight ^{%10}				

External Dimensions and Machining Dimensions for Mounting

(Format Example : LHE0400-CRM, LHE0550-SLM)

1 Body Size 2 Design No. 3 Piping Method 4 Swing Direction When Clamping 5 Action Confirmation Method (When selecting M)

6 Options (When selecting Blank)

Pneumatic Series

Hydraulic Series

Valve / Coupler

Hydraulic Unit

Manual Operation Accessories

Cautions / Others

High-Power Hydraulic

SWII	iy ciallip
	LHE
	-Power Hydraulic Clamp
	LKE
	-Power Pneumatic Clamp
	SWE
	-Power Pneumatic g Clamp
	WHE

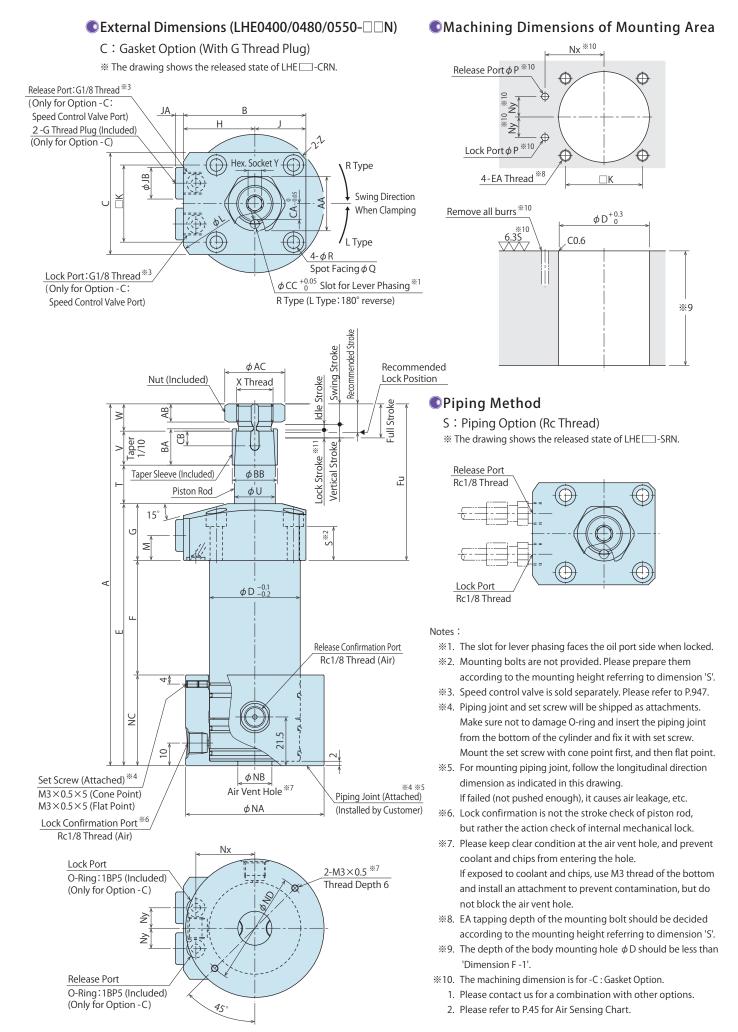
High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp WVS

Notes: %9. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.) %10. It shows the weight of single swing clamp including taper sleeve and nut.



Harmony in Innovation

Series

High-Power

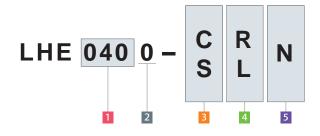
Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit Manual Operation Accessories

Cautions / Others

Model No. Indication



C External Dimensions and Machining Dimensions for Mounting

Model No	Э.	LHE0400-00N	LHE0480-00N	LHE0550-DDN
Full Strok	æ	15	17	18.5
Swing Stroke		9	11	12.5
Vertical Str	· · ·	6	6	6
	Stroke	2.5	2.5	2
	Stroke *11	3.5	3.5	4
Recommended		12.5	14.5	15.5
A		159.5	175	191.5
В		54	61	69
C		45	51	60
D		40	48	55
E		115.5	124	135
F		50.5	55	64
F		69	79	86.5
G		25	28	30
H		31.5	35.5	39
		22.5	25.5	30
K		34	40	47
L		73	83	88
M		11	13	12
Nx		26	30	33.5
Ny		9	11	12
Р		max.3	max.3	max.3
Q		9	9	11
R		5.5	5.5	6.8
S		15	17.5	17
Т		17	19	20.5
U		18	22	25
V		15	18	21
W		12	14	15
X (Nominal×	Pitch)	M16×1.5	M20×1.5	M22×1.5
Y		6	8	8
Z (Chamfe	er)	C3	C3	C3
AA		24	30	32
AB		8	9	10
AC		26.5	33	35.5
BA		16	19	22
BB		20	25	28
CA		7	9	10
CB		6.5	7.5	9.5
CC		4	5	6
EA (Nominal×Pitch)		M5×0.8	M5×0.8	M6×1
NA		61	69	76
NB		15	18	22
NC		40	41	41
ND		50	60	66
JA		3.5	3.5	3.5
		14	14	14
				14
JB	Lock			
	Lock Release	11.1	16.2 22.7	27.2 36.3

1 Body Size
2 Design No.
3 Piping Method
4 Swing Direction When Clamping
5 Action Confirmation Method (When selecting N)
Continue (When only this p Dianty)

6 Options (When selecting Blank)

High-Power Hydraulic Link Clamp _____KE

High-Power Pneumatic Hole Clamp SWE

High-Power Pneumatic Swing Clamp WHE

High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

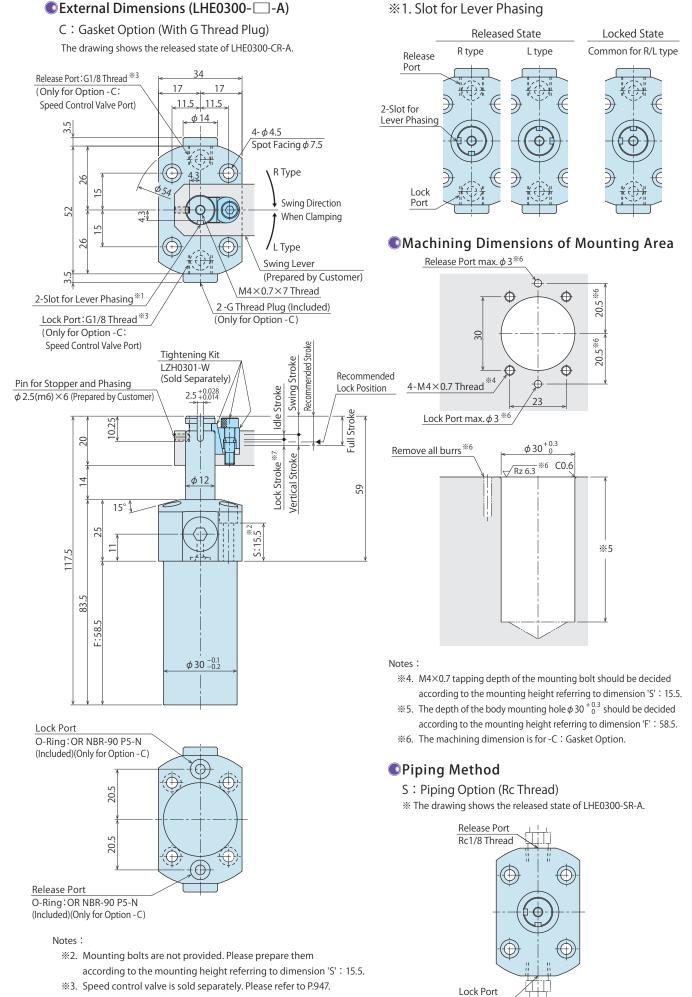
Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

WVS

Notes: **11. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)

% 12. It shows the weight of single swing clamp including taper sleeve and nut.



Rc1/8 Thread

^{1.} Please contact us for a combination with other options.

	Features	Action Description Application Examples	Model No. Indication Specifications	Performance Curve	e Exte Dimer		ir Sensing Option	Lever Design Dimensions	Accessories	Cautions		SMEK
										High-Power Series		
							(For	mat Evampla	: LHE0300-C		CI A)	Pneumatic Series
				C	R		(FOI	Body Size		к-А, LПЕ0300	-3L-A)	Hydraulic Series
	LF	IE 03	<u>0</u> –	c		– A		2 Design No	р.			Valve / Coupler Hydraulic Unit

2

3

4

6

2

3 Piping Method 4 Swing Direction When Clamping

5 Action Confirmation Method (When selecting Blank)

eries

Manual Operation

Accessories Cautions / Others

High-Power Hydraul Swing Clamp LHE

High-Power Hydraulic Link Clamp

LKE

High-Power Pneumatic Hole Clamp SWE High-Power Pneumatic Swing Clamp WHE High-Power Pneumatic Link Clamp WCE

6 Options (When selecting A)

Dimensions

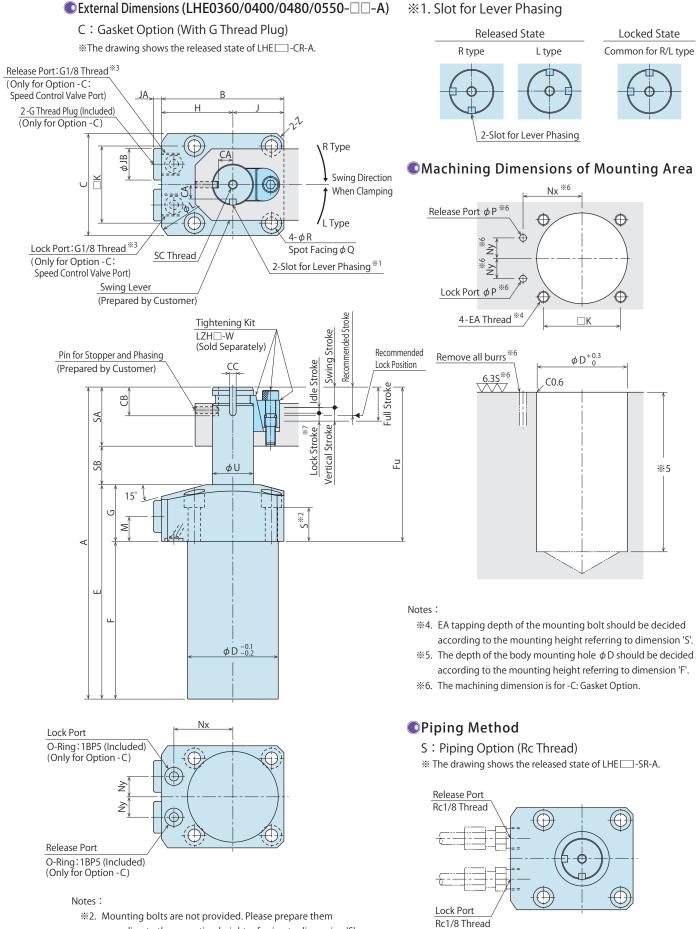
Ulmensio	(mm)		
Mode	LHE0300-00-A		
Full S	12		
Swing Str	7.5		
Vertical	4.5		
(Breakdown)	dle S	Stroke	2
L	.ock	Stroke ^{%7}	2.5
Recommen	ded	l Stroke	10.5
Cylinder Capacit	y	Lock	3.5
C	4.9		
Weight ^{%8}	0.6		

Notes:

*7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.) %8. It shows the weight of single swing clamp.

High-Power Pneumatic Work Support WNC Rodless Hollow Pneumatic Work Support

WNA

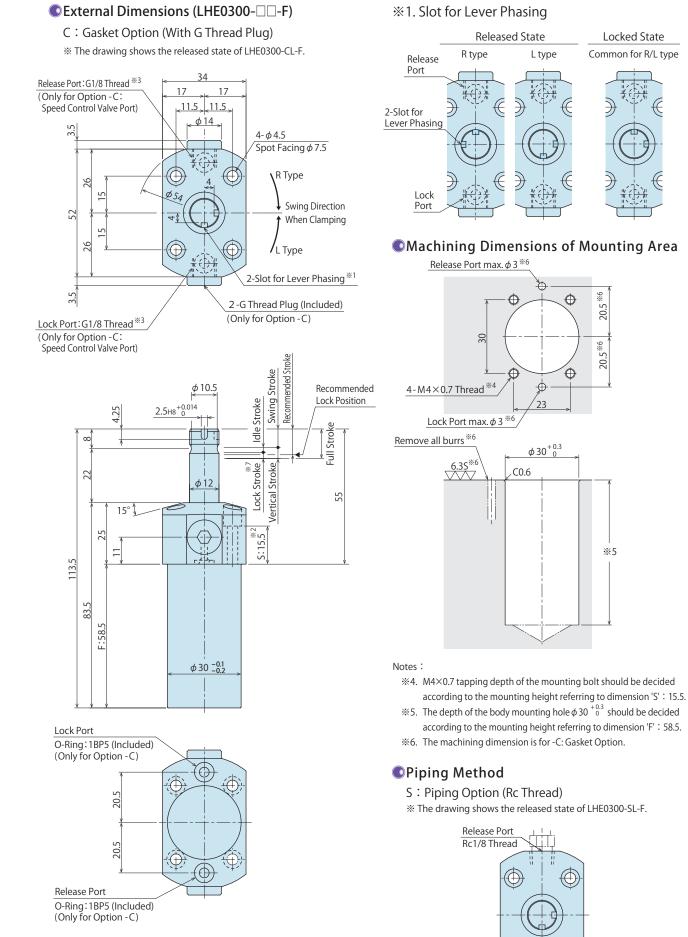


- according to the mounting height referring to dimension 'S'.
- %3. Speed control valve is sold separately. Please refer to P.947.
- 1. Please contact us for a combination with other options.

Features Action Description Application Examples Mod					Lever Design Dimensions	Accessories	Cautions	K Harm	SMEK
🜑 Model No. Indicatio	on								High-Power Series
									Pneumatic Series
				(Form	nat Example	: LHE0360-C	R-A, LHE0550	-SL-A)	
	_	C R			1 Body Size	2			Hydraulic Series
LHE 040	0 – 0		– A		_				Valve / Coupler
		S L			2 Design No				Hydraulic Unit
					3 Piping Me	ethod			Manual Operation Accessories
1	2	3 4	6		4 Swing Dir	rection When Cl	lamping		
	Z				5 Action Co	onfirmation Me	thod (When sel	ecting Blank)	Cautions / Others
					6 Options (When selecting	A)		High-Power Hydraulic
<u></u> .				-					Swing Clamp
© External Dimensions a	nd Machini	ng Dimensi	ons for Mou	unting _{(m}	m)				LHE
Model No.		LHE0400-DD-A	LHE0480-DD-A		-A				High-Power Hydraulic Link Clamp
Full Stroke	13	15	17	18.5					LKE
Swing Stroke (90°)	8	9	11	12.5					High-Power Pneumatic
Vertical Stroke	5	6	6	6					Hole Clamp
(Breakdown)	2	2.5 3.5	2.5 3.5	2					SWE
Recommended Stroke	11	12.5	14.5	15.5					High-Power Pneumatic
A	124.5	138.5	154	170.5					Swing Clamp
В	49	54	61	69					WHE
C	40	45	51	60					High-Power Pneumatic
D	36	40	48	55					Link Clamp WCE
E	85.5	94.5	103	114	_				
F	60.5	69.5	75	84					High-Power Pneumatic Work Support
Fu	64	69	79	86.5					WNC
G	25	25	28	30					Rodless Hollow
Н	29	31.5	35.5	39					Pneumatic Work Support
J K	20 31.4	22.5 34	25.5 40	30 47					WNA
L	66	73	83	88					High-Power Pneumatic
M	11	11	13	12					Pallet Clamp WVS
Nx	23.5	26	30	33.5					S
Ny	8	9	11	12					
P	max.3	max.3	max.3	max.3					
Q	7.5	9	9	11					
R	4.5	5.5	5.5	6.8					
S	16	15	17.5	17					
U	15	18	22	25					
Z (Chamfer)	C2	C3	C3	C3	_				
CA CB	4.8	5.8	7.8	8.8 17.5					
CC	3 ^{+0.028} +0.014	4 +0.038 +0.020	4 +0.038 +0.020	4 +0.03	8				
EA (Nominal×Pitch)	M4×0.7	M5×0.8	M5×0.8	M6×1	0				
SA	24	27	32	36					
SB	15	17	19	20.5					
SC (Nominal×Pitch×Depth)	M4×0.7×7	M5×0.8×8	M5×0.8×8	M6×1×11					
JA	3.5	3.5	3.5	3.5					
JB	14	14	14	14					
Cylinder Capacity Lock	6.5	11.1	16.2	27.2	_				
cm ³ Release	8.8	14.9	22.7	36.3					
Weight ^{**8} kg	0.8	1.1	1.6	2.3					

Notes:

*7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)



Notes:

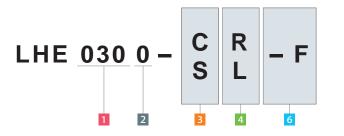
- %2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S' : 15.5.
- %3. Speed control valve is sold separately. Please refer to P.947.
- 1. Please contact us for a combination with other options.

Lock Port

Rc1/8 Thread

Features		Model No. Indication Specifications	Performance Curve	External Dimensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	
Madal	No Indica	tion							High-Power Series

Model No. Indication



(Format Example : LHE0300-CR-F, LHE0300-SL-F)

Body Size

2 Design No.

3 Piping Method

4 Swing Direction When Clamping

5 Action Confirmation Method (When selecting Blank)

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation

Accessories

Cautions / Others

6 Options (When selecting F)

High-Power Hydrau Swing Clamp

High-Power Hydraulic

Link Clamp LKE High-Power Pneumatic Hole Clamp SWF High-Power Pneumatic Swing Clamp WHE High-Power Pneumatic Link Clamp WCE

Dimensions

Ulmensi	(mm)		
Мо	LHE0300-00-F		
Ful	12		
Swing	7.5		
Vertie	4.5		
(Breakdown)	Idle S	Stroke	2
(Dreakdown)	Lock	Stroke ^{%7}	2.5
Recomm	endec	l Stroke	10.5
Cylinder Capa	city	Lock	3.5
	4.9		
Weight ^{%8}	0.6		

Notes:

%7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.) %8. It shows the weight of single swing clamp.

WNC Rodless Hollow Pneumatic Work Support

High-Power Pneumatic Work Support

WNA High-Power Pneumatic Pallet Clamp

WVS

External Dimensions (LHE0360/0400/0480/0550-□□-F) ※1. Slot for Lever Phasing C: Gasket Option (With G Thread Plug) **Released State** Locked State *The drawing shows the released state of LHE -CL-F. Common for R/L type R type L type Release Port: G1/8 Thread ^{**3} (Only for Option -C: Speed Control Valve Port) JA 2 -G Thread Plug (Included) 1 (Only for Option -C) 2-Slot for Lever Phasing $(\bigcirc$ R Type 2 Machining Dimensions of Mounting Area Swing Direction ř C Nx **6 When Clamping Release Port ϕP^{*6} (\uparrow) (\oplus L Type 4-*φ* R æ Spot Facing ϕQ ź Lock Port: G1/8 Thread **3 2-Slot for Lever Phasing *1 (Only for Option -C: ž Speed Control Valve Port) ¢ Lock Port ϕP^{*6} Æ 4-EA Screw ^{%4} Recommended Stroke ΠK Swing Stroke φFA Recommended Remove all burrs^{*6} φD^{+0.3} Lock Position Idle Stroke ССна 6.35 C0.6 Full Stroke e(Uf B *7 Lock Stroke Vertical Stroke Ч Fu φU ж5 15° Ċ ۲%2 Σ ц Notes: ш %4. EA tapping depth of the mounting bolt should be decided according to the mounting height referring to dimension 'S'. $\phi D_{-0.2}^{-0.1}$ %5. The depth of the body mounting hole ϕ D should be decided according to the mounting height referring to dimension 'F'. %6. The machining dimension is for -C: Gasket Option. Nx Piping Method Lock Port O-Ring: 1BP5 (Included) S: Piping Option (Rc Thread) (Only for Option - C) ťŒ % The drawing shows the released state of LHE -SL-F. (\oplus) Ž Release Port ź Rc1/8 Thread (\bigoplus) \oplus (\bigcirc) Release Port O-Ring: 1BP5 (Included) (Only for Option - C) Æ (\oplus) Notes: Lock Port

Rc1/8 Thread

- ※2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S'.
- *3. Speed control valve is sold separately. Please refer to P.947.
- 1. Please contact us for a combination with other options.

		del No. Indication Pe pecifications			9	ver Design imensions	Accessories	Cautions	K	SMEK nony in Innovation
🔍 Model No.	Indicatio	on								High-Power Series
										Pneumatic Series
					(Forma	t Example	: LHE0360-C	R-F, LHE0550	-SL-F)	Hydraulic Series
LUE	040		C R	E		1 Body Size				
LUC	040		S L	– F	E	2 Design No	Э.			Valve / Coupler Hydraulic Unit
					E	B Piping Me	ethod			Manual Operation Accessories
	1	2	3 4	6	4	4 Swing Dir	ection When C	lamping		
		2	3 4	0	4	5 Action Co	onfirmation Me	thod (When sel	ecting Blank)	Cautions / Others
					(6 Options (\	When selecting	I F)		High-Power Hydraulic
External Dim	nonsions a	and Machin	ina Dimensi	ons for Moi	unting					Swing Clamp
Model N					- (1111)					High-Power Hydraulic
Full Strol		13	15	17	18.5					Link Clamp
Swing Stroke		8	9	11	12.5					LKE
Vertical Str		5	6	6	6					High-Power Pneumatic
Idle	Stroke	2	2.5	2.5	2					Hole Clamp
(Breakdown)	k Stroke ^{%7}	3	3.5	3.5	4	_				SWE
Recommended		11	12.5	14.5	15.5					High-Power Pneumatic
A		122.5	136.5	152	168.5					Swing Clamp WHE
В		49	54	61	69					
С		40	45	51	60					High-Power Pneumatic Link Clamp
D		36	40	48	55					WCE
E		85.5	94.5	103	114	_				Llink Druce Draumatic
F		60.5	69.5	75	84					High-Power Pneumatic Work Support
Fu		62	67	77	84.5	-				WNC
G		25	25	28	30					Rodless Hollow
Н		29	31.5	35.5	39	_				Pneumatic Work Support
J		20	22.5	25.5	30	-				WNA
K		31.4 66	34 73	40 83	47 88					High-Power Pneumatic
M		11	11	13	12					Pallet Clamp
Nx		23.5	26	30	33.5					WVS
Ny		8	9	11	12	-				
P		max.3	max.3	max.3	max.3					
Q		7.5	9	9	11	_				
R		4.5	5.5	5.5	6.8					
S		16	15	17.5	17	_				
U		15	18	22	25					
Z (Chamf	er)	C2	C3	C3	C3	_				
CA		5	5.8	7.8	9					
CB		5	6.5	6.5	7	-				
CC	(D:t-l-)	3 ^{+0.014}	4 +0.018	4 +0.018	4 ^{+0.018}					
EA (Nominal>	×Pitch)	M4×0.7	M5×0.8	M5×0.8	M6×1					
FA FB		13.5	16 12.5	19.5 15	22 17	_				
FB FC		26	29.5	34	37.5					
JA		3.5	3.5	3.5	3.5					
JA		14	14	14	14					
Cylinder Capacity	Lock	6.5	11.1	16.2	27.2	_				
	Release	8.8	14.9	22.7	36.3					
Woight ^{%8}	ka	0.8	11	16	23	_				

Weight ^{%8} Notes:

%7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)

2.3

1.6

%8. It shows the weight of single swing clamp.

kg

0.8

1.1

20.5 ^{%6}

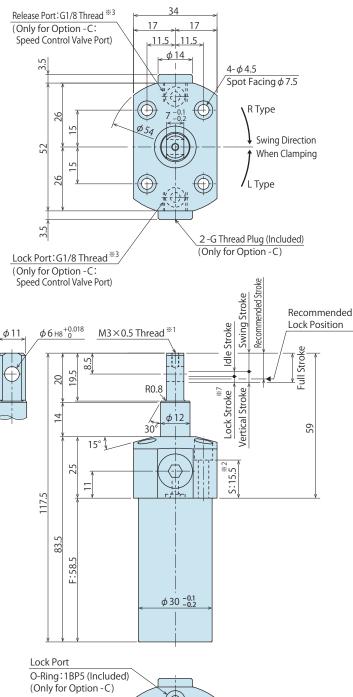
20.5^{%6}

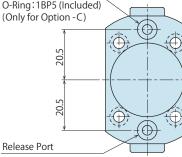
‰5

External Dimensions (LHE0300-DD-P)

C: Gasket Option (With G Thread Plug)

% The drawing shows the released state of LHE0300-C \Box -P.





O-Ring: 1BP5 (Included) (Only for Option - C)

Notes :

- 1. For maintaining the position of the lever, use M3 \times 0.5 thread on the top of the rod.
- ※2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S': 15.5.
- ※3. Speed control valve is sold separately. Please refer to P.947.1. Please contact us for a combination with other options.

(Included) -C)

Notes :

%4. M4×0.7 tapping depth of the mounting bolt should be decided according to the mounting height referring to dimension 'S': 15.5.

Machining Dimensions of Mounting Area

ै⇔

⊕

23

 $\phi 30^{+0.3}_{0}$

C0.6

 \oplus

Φ

Release Port max. ϕ 3 % 6

30

 $4 - M4 \times 0.7$ Thread *4

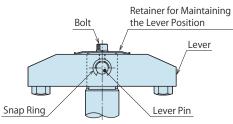
Remove all burrs ^{**6}

Lock Port max. ϕ 3 ^{*6}

6.35

- *5. The depth of the body mounting hole ϕ 30 $^{+0.3}_{-0.3}$ should be decided according to the mounting height referring to dimension 'F' : 58.5.
- %6. The machining dimension is for -C: Gasket Option.

Balance Lever Reference Drawing

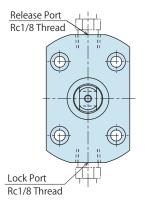


Note :

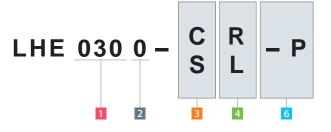
 Lever, bolt, lever pin, snap ring and retainer for maintaining the lever position are not provided. Please design and prepare by Customer.

Piping Method

- S:Piping Option (Rc Thread)
- % The drawing shows the released state of LHE0300-S \square -P.



	Features		Model No. Indication Specifications	Performance Curve	External Dimensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions		
© Model No. Indication										High-Power Series	
											Pneumatic Series



- 1 Body Size
- 2 Design No.
- 3 Piping Method
- 4 Swing Direction When Clamping
- 5 Action Confirmation Method (When selecting Blank)

atic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation

Accessories

Cautions / Others

6 Options (When selecting P)

Hiah-P	ower H	lydraulic
	Clamp	iyaraane
Swilly	ciamp	
	LHE	

High-Power Hydraulic Link Clamp

LKE High-Power Pneumatic Hole Clamp SWF High-Power Pneumatic Swing Clamp WHE High-Power Pneumatic Link Clamp WCE

Dimensions

	(mm)	
Model N	LHE0300-00-P	
Full Strok	12	
Swing Stroke	7.5	
Vertical Str	4.5	
(Breakdown)	Stroke	2
Lock	Stroke ^{%7}	2.5
Recommended	d Stroke	10.5
Cylinder Capacity	Lock	3.5
cm ³	4.9	
Weight ^{%8}	0.6	

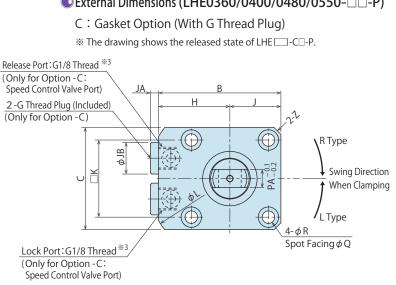
Notes:

*7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.) %8. It shows the weight of single swing clamp.

High-Power Pneumatic Work Support WNC Rodless Hollow Pneumatic Work Support

WNA

External Dimensions (LHE0360/0400/0480/0550-□□-P)



PH Thread *1

2 Ы Ч

15°

Σ

R0.8

ß

ц

ш

Ċ

ф РС на

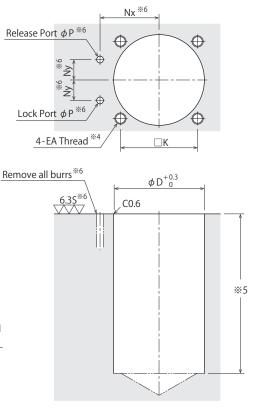
30

φPB

φU

φD^{-0.1} -0.2

Machining Dimensions of Mounting Area



Notes :

Recommended

Lock Position

Full Strok

Ŀ

Recommended Stroke **Swing Stroke**

Idle Stroke

*7 Lock Stroke **/ertical Stroke**

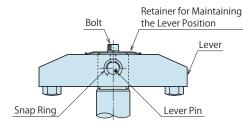
S^{*2 -}

%4. EA tapping depth of the mounting bolt should be decided according to the mounting height referring to dimension 'S'.

%5. The depth of the body mounting hole ϕ D should be decided according to the mounting height referring to dimension 'F'.

%6. The machining dimension is for -C: Gasket Option.

Balance Lever Reference Drawing

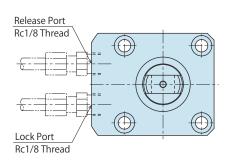


Note :

1. Lever, bolt, lever pin, snap ring and retainer for maintaining the lever position are not provided. Please design and prepare by Customer.

Piping Method

- S: Piping Option (Rc Thread)
- % The drawing shows the released state of LHE \square -S \square -P.



Nx Lock Port O-Ring: 1BP5 (Included) (Only for Option - C) œ Ž ź Ð **Release** Port

O-Ring: 1BP5 (Included) (Only for Option - C)

Notes:

- %1. For maintaining the position of the lever, use the thread (PH Thread) on the top of the rod.
- %2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S'.
- %3. Speed control valve is sold separately. Please refer to P.947.
- 1. Please contact us for a combination with other options.

Features	Action Description Mo Application Examples Sp				r Sensing Option	Lever Design Dimensions	Accessories	Cautions	K	SMEK ony in Innovation
Model	No. Indicati	on								High-Power Series
										Pneumatic Series
					(For	mat Example	e:LHE0360-C	R-P, LHE0550	-SL-P)	
			C R			1 Body Size	2			Hydraulic Series
LF	IE 040) 0 –		– P		2 Design N	0.			Valve / Coupler Hydraulic Unit
			S L							
						3 Piping Mo				Manual Operation Accessories
		2	3 4	6		4 Swing Di	rection When C	lamping		Cautions / Others
		2				5 Action Co	onfirmation Me	thod (When sel	ecting Blank)	Cautions / Others
						6 Options (When selecting	P)		High-Power Hydraulic Swing Clamp
C Externa	Dimensions a	and Machini	ng Dimensi	ons for Mou	unting _{(r}	mm)				LHE
Мс	odel No.	LHE0360-D-P	LHE0400P	LHE0480P	LHE0550-					High-Power Hydraulic
	ll Stroke	13	15	17	18.5	_				Link Clamp LKE
Swing	Stroke (90°)	8	9	11	12.5					
Verti	cal Stroke	5	6	6	6					High-Power Pneumatic Hole Clamp
(Breakdown)	Idle Stroke	2	2.5	2.5	2					SWE
	Lock Stroke ^{**7}	3	3.5	3.5	4					
Recomm	ended Stroke	11	12.5	14.5	15.5					High-Power Pneumatic Swing Clamp
	А	124.5	138.5	154	170.5					WHE
	В	49	54	61	69					
	C	40	45	51	60					High-Power Pneumatic Link Clamp
	D	36	40	48	55					WCE
-	E	85.5	94.5	103	114					
	F	60.5	69.5	75	84					High-Power Pneumatic Work Support
	Fu	64	69	79	86.5					WNC
	G	25	25	28	30					Rodless Hollow
	Н	29	31.5	35.5	39					Pneumatic Work Support
	J	20	22.5	25.5	30					WNA
	K	31.4	34	40	47					High-Power Pneumatic
	L	66	73	83	88					Pallet Clamp
	M	11	11	13	12					WVS
	Nx	23.5	26	30	33.5					
	Ny P	8	9	11 may 2	12					
		max.3	max.3	max.3 9	max.3					
	Q R	7.5	5.5	5.5	6.8					
	S	4.5	15	17.5	17					
	U	15	13	22	25					
7 (0	Chamfer)	C2	C3	C3	C3					
	ninal×Pitch)	M4×0.7	M5×0.8	M5×0.8	M6×1					
Entimot	PA	8	8	10	13					
	PB	14	17	20	23					
	PC	8 +0.022	10 +0.022	10 +0.022	12 +0	0.027				
	PD	10.5	10 0	10 0	15.5	0				
		10.5	26.5	20.5	24.5					

Notes:

Weight ^{%8}

Cylinder Capacity

*7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)

30.5

32

19

M4×0.7

3.5

14

16.2

22.7

1.6

34.5

36

20.5

M5×0.8

3.5

14

27.2

36.3

2.3

%8. It shows the weight of single swing clamp.

kg

Lock

cm³ Release

23.5

24

15

M3×0.5

3.5

14

6.5

8.8

0.8

26.5

27

17

M3×0.5

3.5

14

11.1

14.9

1.1

PE

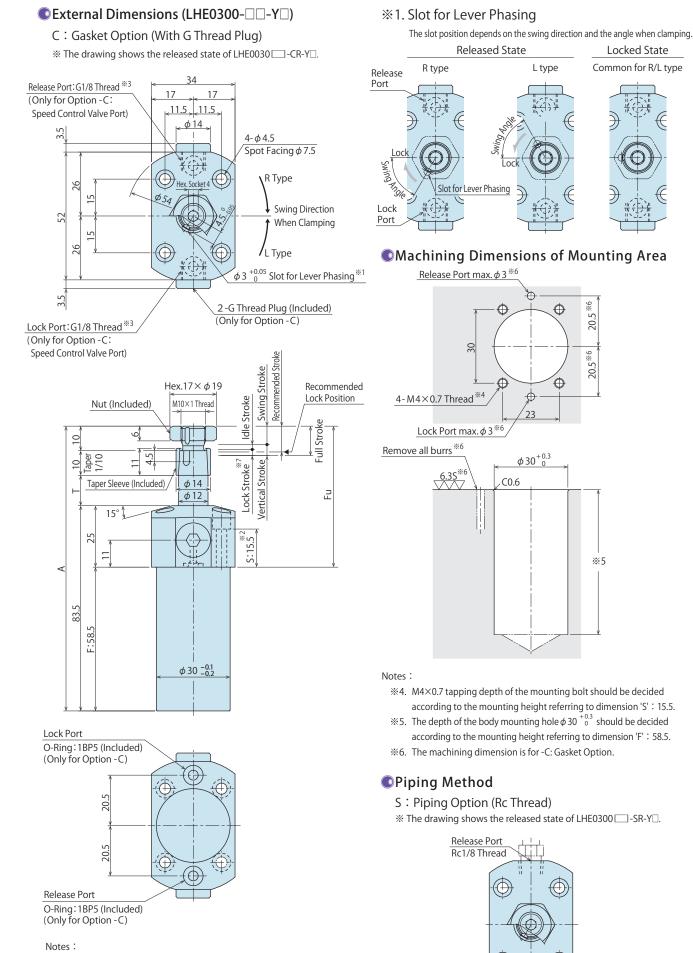
PF

PG

PH (Nominal×Pitch)

JA

JB



Lock Port Rc1/8 Thread

- %2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S' : 15.5.
- %3. Speed control valve is sold separately. Please refer to P.947.

Features	Action Description Application Examples	Model No. Indicat Specificatio		formance Curve		ternal ensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	K	SMEK	
💽 Model	Model No. Indication High-Power Series Pneumatic Serie												
		0.0		С	R			Format Examp 1 Body S		CR-Y45, LHE0	300-SL-Y60)	Hydraulic Series Valve / Coupler	
LHE <u>030</u> 0 -				S	L			2 Desigr 3 Piping		Hydraulic Unit Manual Operation			
	1	2		3	4	(5		Direction When		electing Blank)	Accessories Cautions / Others	
								6 Optior	ns (When select	ing Y)		High-Power Hydraulic Swing Clamp	
Dimen	sions			(mm)								LHE High-Power Hydraulic Link Clamp	
M	odel No.	LHE	0300-🗆	-Y □								LKE	
Optio	n Model No.	Y30	Y45	Y60									
	ng Angle	30°	45°	60°								High-Power Pneumatic Hole Clamp	
	ll Stroke	7.8	8.9	9.9								SWE	
	ng Stroke	3.3	4.4	5.4								High-Power Pneumatic	
Vert	ical Stroke		4.5									Swing Clamp	
(Breakdown)	Idle Stroke	7	2									WHE	
Becomm	nended Stroke	6.3	2.5 7.4	8.4								High-Power Pneumatic	
necomin	A	113.3	114.4	115.4								Link Clamp	
	Fu	54.8	55.9	56.9								WCE	
	T	9.8	10.9	11.9								High-Power Pneumatic Work Support	
Cylinder Capa	acity Lock	2.7	2.9	3.1								WNC	
, ,		2.5	2.0	4.2									

Notes:

Weight ^{%8}

cm³ Release

3.5

kg

3.9

0.6

4.2

The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.)
 It shows the weight of single swing clamp including taper sleeve and nut.

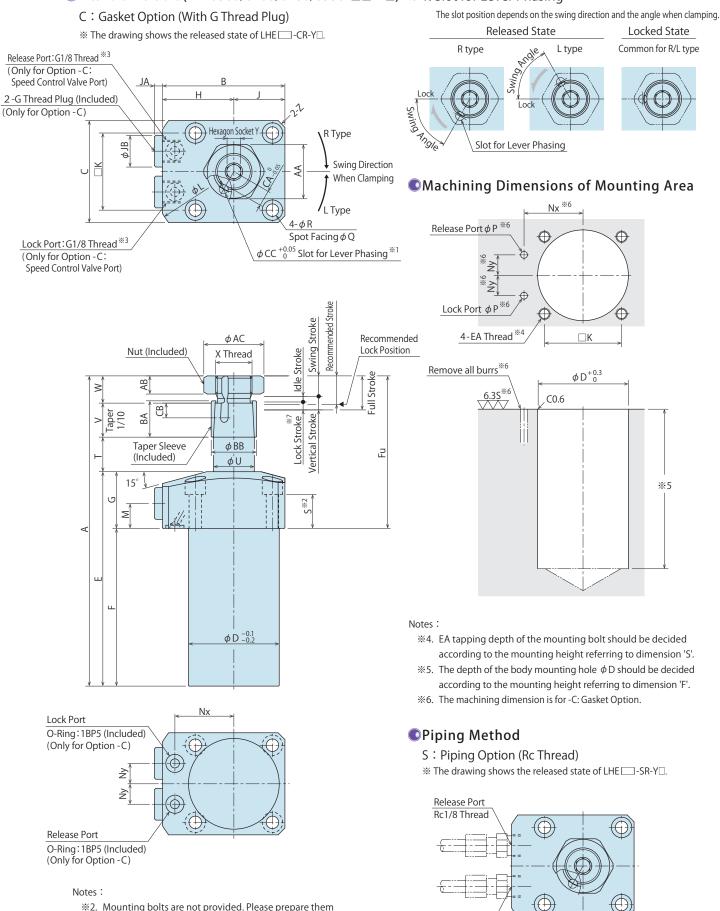
Rodless Hollow Pneumatic Work Support

WNA

High-Power Pneumatic Pallet Clamp

WVS

© External Dimensions (LHE0360/0400/0480/0550-□□-Y□) ※1. Slot for Lever Phasing



Lock Port

Rc1/8 Thread

- ※2. Mounting bolts are not provided. Please prepare them according to the mounting height referring to dimension 'S'.
- *3. Speed control valve is sold separately. Please refer to P.947.

Features	Action Description Application Examples	Model No. Indication Specifications			ternal ensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	K	SMEK
Model	No. Indica	tion									High-Power Series
						(Format Examp	le:LHE0360-	CR-Y45, LHE0	550-SL-Y60)	Pneumatic Series
LE	IE 04	00-	С	R	_ `		1 Body S				Hydraulic Series
			C				2 Design	n No.			N 1 (0 1

6

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

High-Power Hydraul Swing Clamp

LHE

5 Action Confirmation Method (When selecting Blank) Cautions / Others

6 Options (When selecting Y)

4 Swing Direction When Clamping

3 Piping Method

© External Dimensions and Machining Dimensions for Mounting

2

1

5

3

4

Model	Nie		0360-			0400-			0400			0550-	(mi
									0480-				
Option Mo		Y30	Y45	Y60	Y30	Y45	Y 60	Y30	Y45	Y 60	Y30	Y45	Y6
Swing A	-	30°	45°	60°	30°	45°	60°	30°	45°	60°	30°	45°	60°
Full Stro		9	10	11	10.7	11.7	12.8	11.7	13	14.3	12.5	14	15.
Swing St		4	5	6	4.7	5.7	6.8	5.7	7	8.3	6.5	8	9.5
Vertical S			5			6			6		6		
Breakdown) 🔚	e Stroke		2			2.5		2.5			2		
	ck Stroke ^{**7}	-	3	0	0.0	3.5	10.2	0.0	3.5	11.0	0.5	4	12
Recommende	ed Stroke	7	8	9	8.2	9.2	10.3	9.2	10.5	11.8	9.5	11	12.
A		120.5	121.5	122.5	134.2	135.2	136.3	148.7	150	151.3	164.5	166	167
B			49			54			61			69	
С			40			45			51			60	
D			36			40			48			55	
E			85.5			94.5			103			114	
F			60.5	-		69.5			75			84	
Fu		60	61	62	64.7	65.7	66.8	73.7	75	76.3	80.5	82	83.
G			25			25			28			30	
Н			29			31.5			35.5			39	
J			20		22.5			25.5			30		
K		31.4			34			40			47		
L		66			73			83			88		
Μ		11			11		13			12			
Nx		23.5				26		30			33.5		
Ny		8				9		11			12		
Р		max. 3				max. 3			max. 3			max. 3	
Q		7.5				9		9				11	
R		4.5				5.5		5.5				6.8	
S			16	1		15	1		17.5			17	
Т		11	12	13	12.7	13.7	14.8	13.7	15	16.3	14.5	16	17.
U			15			18			22			25	
V			13			15			18			21	
W		11			12			14			15		
X (Nominal	×Pitch)	M14×1.5			M16×1.5			M20×1.5			M22×1.5		
Y			5		6			8			8		
Z (Cham	nfer)		C2		C3			C3				C3	
AA			22		24			30				32	
AB			7		8			9				10	
AC			24.5		26.5				33			35.5	
BA			14			16			19			22	
BB			17			20			25			28	
CA			6			7			9			10	
CB			6.5			6.5			7.5			9.5	
CC			4			4			5			6	
EA (Nominal	I×Pitch)		M4×0.7			M5×0.8			M5×0.8	3		M6×1	
JA			3.5			3.5			3.5			3.5	
JB			14			14			14			14	
Cylinder Capacity	Lock	5.0	5.4	5.8	8.9	9.4	10.0	12.5	13.4	14.3	21.1	22.6	24.
cm ³	Release	6.6	7.2	7.7	11.6	12.4	13.2	17.0	18.4	19.8	27.2	29.5	31.
Weight ^{%8}	kg		0.8			1.1			1.6			2.3	

High-Power Hydraulic Link Clamp LKE High-Power Pneumatic Hole Clamp SWF High-Power Pneumatic Swing Clamp WHE High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

WVS

Notes:

%7. The specification value of cylinder force, clamping force, holding force and swing completion position repeatability is fulfilled only when clamping within the lock stroke range. (The specification value is not fulfilled when clamping within the range of swing stroke and idle stroke.) %8. It shows the weight of single swing clamp including taper sleeve and nut.

Action Description (Air Sensing Chart Explanation)

Action confirmation can be conducted by detecting differential pressure with the air catch sensor. Release confirmation is the action confirmation of piston rod. Lock confirmation is not the stroke confirmation of piston rod, but the action confirmation of internal mechanical lock.



About Air Catch Sensor

Air catch sensor is required in order to conduct the action confirmation.

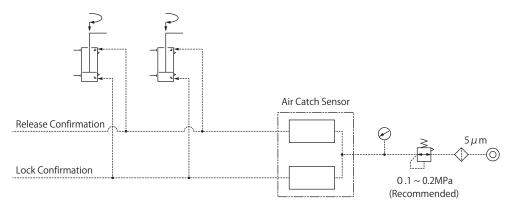
Sensing can be done by the air catch sensor with small air flow (recommended models are in the chart below).

Recommended Operating Air Pressure: 0.1 ~ 0.2MPa

Recommended Air Catch Sensor

Maker	SMC	CKD
Name	Air Catch Sensor	Gap Switch
Model No.	ISA3-G	GPS3-E

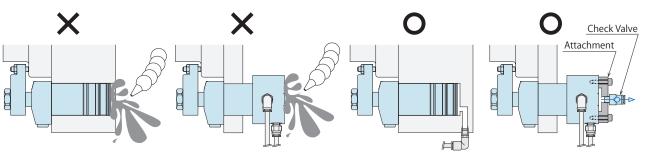
- Please refer to manufacturer's catalog or other documents for the details about the air catch sensor.
- The air pressure to the air catch sensor should be 0.1 ~ 0.2MPa.
- Please keep supplying air pressure when in use.
- Refer to the drawing below for the air circuit structure.



Notes for Design • Use • Installation

Please keep clear condition at the air vent hole, and prevent coolant and chips from entering the hole.
 The air catch sensor can malfunction if the air vent hole is blocked.

Prevention of Contaminants to the Air Vent Hole
 Coolant and chips can be prevented by setting a check valve with low cracking pressure.
 (Recommended check valve : SMC-made series AKH, cracking pressure: 0.005MPa)



• Keep supplying air pressure to the air port when in use.

Apply adequate amounts of grease on O-ring of the clamp before installation.
 The O-ring can be twisted or damaged when in a dry state.
 If too much grease is applied, the air catch sensor can malfunction due to overflow grease blocking the detection port.

Features	Action Description Application Examples	Model No. Indication Specifications	Performance Curve	External Dimensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	Har



Pneumatic Series

WHE

WCE

WNC

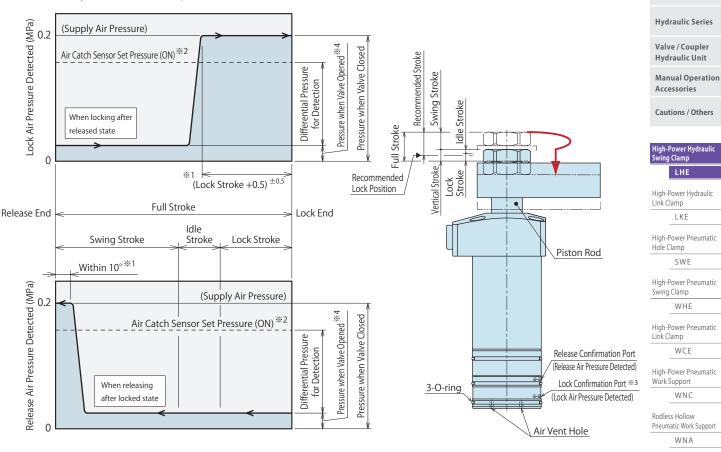
High-Power Pneumatic Pallet Clamp

WVS

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Air Sensing Chart

Number Directly Connected to Clamp: 1



Notes:

- 1. The sensing chart shows the relationship between the stroke and detection circuit air pressure.
- 2. The specifications may vary depending on the air circuit. The length of hose should be as short as possible. (Suggest shorter than 5m)
- *1. There is a certain tolerance with regard to the position where the pressure for closing the valve is reached depending on the clamp structure. (Refer to the sensing chart.)
- *2. The location of a signal from air sensor output varies depending on the sensor setting.
- **3. Lock confirmation is an action confirmation of the mechanical lock. The air catch sensor pressure increase may be behind piston rod action.
- %4. The sensor pressure for opening the valve depends on the sensor. With air sensor with large air flow, the sensor pressure for opening the valve is higher and the differential pressure for detection is lower.

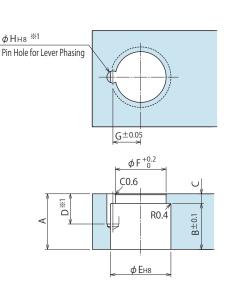
				(mm)
Mode	el No.	LHE0400-DDM/N	LHE0480-DDM/N	LHE0550-DDM/N
Full S	troke	15	17	18.5
Swing Str	oke (90°)	9	11	12.5
Vertical	Stroke	6	6	6
(Breakdown)	Idle Stroke	2.5	2.5	2
(DIEakuOWII)	Lock Stroke	3.5	3.5	4
Recommen	ded Stroke	12.5	14.5	15.5

Taper Lock Lever Design Dimensions

* Reference for designing a taper lock swing lever.



6 Option When selecting Blank/Y



					(mm)
Corresponding	LHE0300-00	LHE0360-00	LHE0400-00	LHE0480-00	LHE0550-00
Model No. **3	LHE0300-00-Y0	LHE0360-00-Y0	LHE0400-00-Y0	LHE0480-00-Y0	LHE0550-00-Y0
А	14	17	19	23	26
В	11	14	16	19	22
C	3	3	3	4	4
D	8.5	10.5	10.5	12.5	14.5
E	14 ^{+0.027}	17 ^{+0.027}	20 ^{+0.033}	25 ^{+0.033}	28 ^{+0.033}
F	11	15	17	21	23.5
G	6	8.1	9.1	11.6	13.1
Н	3 +0.014	4 +0.018	4 +0.018	5 +0.018 0	6 +0.018 0
Phasing Pin ^{%2} (Reference)	¢3(h8)×8	φ4(h8)×10	φ4(h8)×10	φ5(h8)×12	φ6(h8)×14

Notes:

Swing lever should be designed with its length according to performance curve.
 If the swing lever is not in accordance with the dimension shown above,

performance may be degraded and damage can occur.

1. The pin hole (ϕ H) for determining the lever phase should be added, if necessary.

%2. Phasing pin is not included. Prepare it separately.

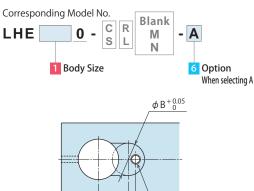
%3. Refer to Design Dimensions of Quick Change Lever Option A for -A (Quick Change Lever Option A).

Refer to Design Dimensions of Quick Change Lever Option F for -F (Quick Change Lever Option F).

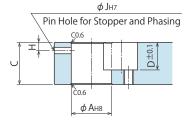
For -P (Balance Lever Option), it should be designed by customer.

Quick Change Lever Option A Design Dimensions

* Reference for designing Quick Change Swing Lever Option A.



	24		
E >	F±0.05	G K Thread	



					(mm)
Corresponding Model No.	LHE0300-00-A	LHE0360-00-A	LHE0400-00-A	LHE0480-00-A	LHE0550-00-A
А	12 +0.027	15 ^{+0.027}	18 ^{+0.027}	22 +0.033	25 ^{+0.033}
В	10.5	12	15	18	20
С	14	17	19	23	26
D	9.5	11	13	15.5	17
E	10.5	13	16	20	23
F	10.75	12.5	15	16.5	18.5
G	1.25	2	2.5	4	4.5
Н	2.5	3	4	4	4
J	2.5 +0.010	3 +0.010	4 +0.012	4 +0.012	4 +0.012
К	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1
Pin for Stopper and Phasing	φ2.5 (m6) ×6	φ3 (m6) ×8	φ4 (m6) ×10	φ4 (m6) ×12	φ4 (m6) ×14

Notes:

1. Swing lever should be designed with its length according to performance curve.

2. If the swing lever is not in accordance with the dimension shown above, performance may be degraded and damage can occur.

The pin hole for stopper and phasing (\$\u03c4 J) should be appropriately machined according to the slot for lever phasing on the clamp body.
 Pin for stopper and phasing (prepared by customer) is used as phasing when mounting the lever and as stopper when removing the lever. If you are not using a pin for stopper and phasing, a stopper is required to remove the lever.

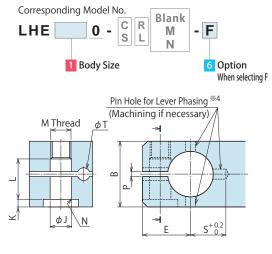
4. Tightening Kit (LZH - W) for Quick Change Lever Option A is sold separately.

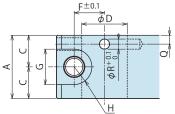
Features	Action Description Application Examples	Model No. Indication Specifications	Performance Curve	External Dimensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	
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© Quick Change Lever Option F Design Dimensions

% Reference for designing Quick Change Swing Lever Option F.





					(mm)
Corresponding Model No.	LHE0300-00-F	LHE0360-00-F	LHE0400-00-F	LHE0480-00-F	LHE0550-00-F
А	16	22	25	30	34
В	19	22	26	32	36
С	8	11	12.5	15	17
D	12 _0.016	15 _ ⁰ _ 0.016	18 _ 0 _ 0.016	22 _{-0.020}	25 ₋ ⁰ _{0.020}
Е	13	15	19	23	26.5
F	7.75	9.75	12	14.75	17
G	10	11	14	17.5	20
Н	R5	R5.5	R7	R8.75	R10
J	5.5	6.5	8.5	10.5	12.5
К	1.5	2	3	4	4
L	11.5	13.5	16	18	22
М	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5
Ν	C0.4	C0.4	C0.6	C0.6	C1
Р	2	2	2	2	2
Q	2.25	2.5	3.5	3.5	4
R	2.5	3	4	4	4
S	10.5	13.5	14	18	19.5
Т	2.9	3.4	4.5	4.5	4.5
Phasing Pin ^{%5} (Reference)	φ2.5×6	\$	φ4×8	¢4×10	φ4×10

Notes:

 Swing lever should be designed with its length according to performance curve.
 If the swing lever is not in accordance with the dimension shown above, performance may be degraded and damage can occur.

3. Tightening Bolt (LZH—-B) for Quick Change Lever Option F is sold separately.

*4. The pin hole (ϕ R) for determining the lever phase should be added, if necessary. *5. Phasing pin is not included. Prepare it separately.

High-Power	
Sorios	

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

High-Power Hydraul Swing Clamp LHE

High-Power Hydraulic Link Clamp

> LKE High-Power Pneumatic

Hole Clamp SWF

High-Power Pneumatic

Swing Clamp WHE

High-Power Pneumatic Link Clamp

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

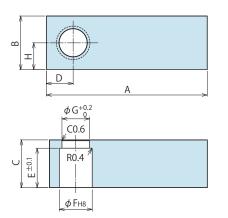
WVS

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Accessories : Material Swing Lever for Taper Lock Option







					(mm)
Model No.	LZH0300-T	LZH0360-T	LZH0400-T	LZH0480-T	LZH0550-T
Corresponding	LHE0300-00	LHE0360-00	LHE0400-00	LHE0480-00	LHE0550-00
Model No. ^{%6}	LHE0300-00-Y0	LHE0360-00-Y0	LHE0400-00-Y0	LHE0480-00-Y0	LHE0550-00-Y0
А	90	120	145	160	170
В	21	26	32	40	45
С	14	17	19	23	26
D	10.5	13	16	20	23
E	11	14	16	19	22
F	14 +0.027	17 ^{+0.027}	20 +0.033	25 ^{+0.033}	28 +0.033
G	11	15	17	21	23.5
Н	10.5	13	16	20	22.5
Natas :					

Notes:

1. Material : S50CH Surface Finishing : Alkaline Blackening

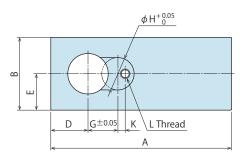
2. If necessary, the front end should be additionally machined and finished.

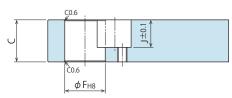
3. When determining the phase, refer to taper lock lever design dimensions for each model for the additional machining.

**6. Refer to Accessory of Quick Change Lever Option A for -A (Quick Change Lever Option A). Refer to Accessory of Quick Change Lever Option F for -F (Quick Change Lever Option F). For -P (Balance Lever Option), it should be designed by customer.

CAccessories: Material Swing Lever for Quick Change Lever Option A







					(mm)
Model No.	LZH0300-A	LZH0360-A	LZH0400-A	LZH0480-A	LZH0550-A
Corresponding Model No.	LHE0300-00-A	LHE0360-00-A	LHE0400-00-A	LHE0480-00-A	LHE0550-00-A
А	90	120	145	160	170
В	21	26	32	40	45
С	14	17	19	23	26
D	10.5	13	16	20	23
E	10.5	13	16	20	22.5
F	$12 + 0.027 \\ 0$	15 + 0.027 0	18 + 0.027 0	$22 + 0.033 \\ 0$	25 + 0.033 0
G	10.75	12.5	15	16.5	18.5
Н	10.5	12	15	18	20
J	9.5	11	13	15.5	17
К	1.25	2	2.5	4	4.5
L	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1

Notes :

1. Material : S50CH Surface Finishing : Alkaline Blackening

2. If necessary, the front end should be additionally machined and finished.

3. The pin hole for stopper and lever phasing should be additionally machined by referring to Quick Change Lever Option A Design Dimensions.

4. Tightening Kit (LZH - W) for Quick Change Lever Option A is sold separately.

CAccessories: Tightening Kit for Quick Change Lever Option A

Swing Lever

Model No. Indication **LZH** 040 Size (Refer to the table) 1 - W Design No. (Revision Number) Wedge 1 Fightening Bolt Wedge 2

Tightening Kit for mounting Quick Change Lever Option A. Sold separately from clamp body.

【Contents of Tightening Kit】

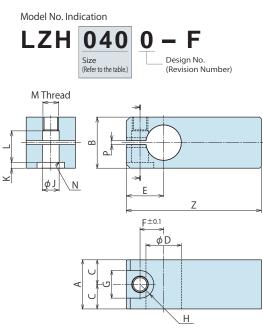
Wedge 1 · Wedge 2 · Tightening Bolt

Model No.	LZH0301-W	LZH0361-W	LZH0401-W	LZH0481-W	LZH0551-W
Corresponding Model No.	LHE0300 -□□-A	LHE0360 -□□-A	LHE0400 -□□□-A	LHE0480 -□□□-A	LHE0550 -□□□-A
Nominal×Pitch of Tightening Bolt	M4×0.7	M4×0.7	M5×0.8	M5×0.8	M6×1
Hex. Socket mm	2.5	2.5	3	3	4
Tightening Torque N•m	2.5	2.5	5.0	5.0	8.0



High-Power

Accessories : Material Swing Lever for Quick Change Lever Option F



r Quick Cł	Series					
					(mm)	
Model No.	LZH0300-F	LZH0360-F	LZH0400-F	LZH0480-F	LZH0550-F	Pneumatic Series
Corresponding Model No.	LHE0300-00-F	LHE0360-00-F	LHE0400-00-F	LHE0480-00-F	LHE0550-00-F	Hydraulic Series
А	16	22	25	30	34	Valve / Coupler
В	19	22	26	32	36	Hydraulic Unit
С	8	11	12.5	15	17	Manual Operation
D	12 ₋ ⁰ _{0.016}	15 _ ⁰ _ 0.016	18 ₋ 0.016	22 ₋ ⁰ _{0.020}	$25_{-0.020}$	Accessories
E	13	15	19	23	26.5	
F	7.75	9.75	12	14.75	17	Cautions / Others
G	10	11	14	17.5	20	
Н	R5	R5.5	R7	R8.75	R10	High-Power Hydraulic
J	5.5	6.5	8.5	10.5	12.5	Swing Clamp
К	1.5	2	3	4	4	LHE
L	11.5	13.5	16	18	22	High-Power Hydraulic
М	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5	Link Clamp
Ν	C0.4	C0.4	C0.6	C0.6	C1	LKE
Р	2	2	2	2	2	High-Power Pneumatic
Z	100	120	145	160	170	Hole Clamp
Notes :			-			SWE

1. Material : S50CH Surface Finishing : Alkaline Blackening

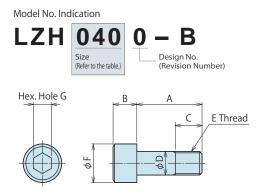
2. If necessary, the front end should be additionally machined and finished.

3. When determining the phase, refer to Quick Change Lever Option F

Design Dimensions for the additional machining.

4. Tightening Bolt (LZH -B) for Quick Change Lever Option F is sold separately.

Accessories : Tightening Bolts for Quick Change Lever Option F



					(mm)
Model No.	LZH0300-B	LZH0360-B	LZH0400-B	LZH0480-B	LZH0550-B
Corresponding Model No.	LHE0300-00-F	LHE0360-00-F	LHE0400-00-F	LHE0480-00-F	LHE0550-00-F
А	17.5	20	23	28	32
В	5	6	8	10	12
С	6.5	7	10	11	13
D	5	6	8	10	12
E	M5×0.8	M6×1	M8×1	M10×1.25	M12×1.5
F	8.5	10	13	16	18
G	4	5	6	8	10

High-Power Pneumatic Link Clamp WCE High-Power Pneumatic Work Support WNC

SWF High-Power Pneumatic

WHE

Swing Clamp

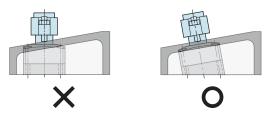
Rodless Hollow Pneumatic Work Support WNA

High-Power Pneumatic Pallet Clamp

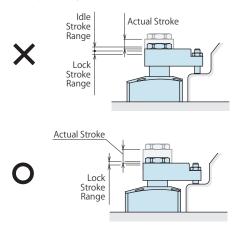
WVS

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 Unit" for proper hydraulic circuit design. Improper circuit design may lead to malfunctions and damages. (Refer to P.1356)
- Ensure there is no possibility of supplying hydraulic pressure to the lock port and the release port simultaneously.
- 3) Swing lever should be designed to make the moment of inertia 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 operating time after the moment of inertia is calculated.
 Please make sure that the clamps work within allowable operating time referring to the allowable operating time graph.
- 4) Protect the exposed area of the piston rod when using on a welding fixture.
- If spatter attaches to the sliding surface it could lead to malfunction and fluid leakage.
- 5) When clamping on a sloped surface of the workpiece
- Make sure the clamping surface and the mounting surface of the clamp are parallel.



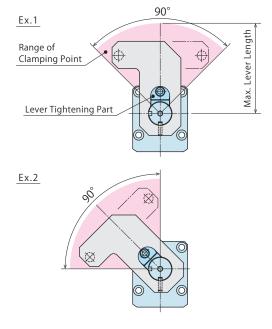
- 6) The specification value is not fulfilled when clamping out of the lock stroke range.
- The mechanical lock function will not work when clamping within the range of swing stroke and idle stroke, and the specification value of cylinder force, clamping force, holding force and swing completion position repeatability will not be fulfilled.



7) Notes for LHE-M/N (Air Sensing Option)

Make sure to check the Notes for Design • Installation • Use on P.45.

- 8) When using an offset lever for (WHE-A) Quick Change Lever Option A.
- Clamping point should be within the range of 90° towards the lever tightening part.



Installation Notes

- 1) Check the fluid to use.
- Please use the appropriate fluid by referring to the Hydraulic Fluid List (P.1355).
- 2) Installation of the Product
- When mounting the clamp, use hexagonal socket bolts as multiple bolt holes for mounting (with tensile strength of 12.9) and tighten them with the torque shown in the table below.
 Tightening with greater torque than recommended can depress the seating surface or break the bolt.

Model No.	Thread Size	Tightening Torque (N · m)
LHE0300	M4×0.7	4.0
LHE0360	M4×0.7	4.0
LHE0400	M5×0.8	8.0
LHE0480	M5×0.8	8.0
LHE0550	M6×1	14

Features	Action Description Application Examples	Model No. Indication Specifications	Performance Curve	External Dimensions	Air Sensing Option	Lever Design Dimensions	Accessories	Cautions	



High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

High-Power Hydrauli Swing Clamp LHE

High-Power Hydraulio Link Clamp

High-Power Pneumatic Hole Clamp SWF

High-Power Pneumatic Swing Clamp WHE

High-Power Pneumatic Link Clamp WCE

High-Power Pneumatic Work Support WNC

Rodless Hollow Pneumatic Work Support

WNA

High-Power Pneumatic Pallet Clamp

WVS

- 3) Installation / Removal of the Swing Lever
- Oil or debris on the tightened part of the lever, taper sleeve or piston rod may cause the rod to loosen.
 Please clean them thoroughly before installation.
- Tighten it with the torque shown in the table below.

LHE Standard: Taper Lock Lever Option

Model No.	Thread Size	Tightening Torque (N·m)
LHE0300-00	M10×1	13
LHE0360-00	M14×1.5	25
LHE0400-00	M16×1.5	40
LHE0480-00	M20×1.5	65
LHE0550-00	M22×1.5	100

LHE-F: Quick Change Lever Option F

Model No.	Tightening Bolt Size	Tightening Torque (N · m)
LHE0300-00-F	M5×0.8	7.5
LHE0360-00-F	M6×1	14
LHE0400-00-F	M8×1	33
LHE0480-00-F	M10×1.25	65
LHE0550-00-F	M12×1.5	114

LHE-A: Quick Change Lever Option A

Model No.	Tightening Bolt Size	Tightening Torque (N · m)
LHE0300-00-A	M4×0.7	2.5
LHE0360-00-A	M4×0.7	2.5
LHE0400-00-A	M5×0.8	5.0
LHE0480-00-A	M5×0.8	5.0
LHE0550-00-A	M6×1	8.0

 In case of LHE Standard (Taper Lock Lever)
 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.

Installation Procedure

- With a clamp positioned to a jig, determine the lever position, and tighten the nut for fixing the lever (temporal tightening).
- ② Remove the clamp from the jig, fix the lever with a machine vise etc., and tighten the nut.
- If tightening the nut with the clamp positioned to the jig, use a wrench to the hexagon part of piston rod, or fix the lever with a spanner.
 It is best to bring the lever to the middle of the swing stroke before tightening the nut.

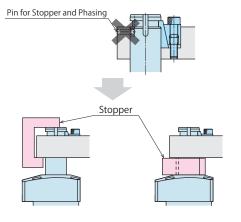
Removal Procedure

- While the clamp is on the jig or vise, use a hex wrench to bring the lever to the middle of the swing stroke and then loosen the nut.
- ② Loosen the nut after securing the lever two or three turns then remove the lever with a puller without any rotational torque applied on the piston rod.



In case of LHE-A (Quick Change Lever Option A) A pin for stopper and phasing (prepared by customer) is used for phasing when mounting the lever and as a stopper when removing the lever. If you are not using the pin for stopper and phasing, a stopper is required to remove the lever.

Stopper example for lever removal when not using the pin for stopper and phasing.

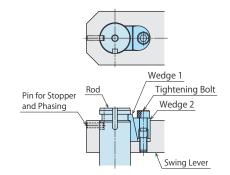


Installation Procedure

Install in order of swing lever, wedge 1, wedge 2 to the rod.
 Pull the lever towards the wedge side and tighten the tightening bolt with the specified torque.

Removal Procedure

① By loosening the tightening bolt, the wedges are released and the lever can be removed.

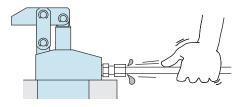


- 4) Swing Speed Adjustment
- Adjust the speed following "Allowable Swing Time Graph".
 If the clamp operates too fast the parts will be worn out leading to premature damage and ultimately complete equipment failure.
- Please make sure to release air from the circuit before adjusting speed. It will be 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.

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

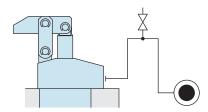
Cautions

- 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.
- Please implement piping construction in a clear environment to prevent anything getting in products.
- 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 Shake the pipeline to loosen the outlet of pipe fitting.Hydraulic fluid mixed with air comes out.



- ④ Tighten the cap nut after bleeding.
- ③ It is more effective to release 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

ISO Viscosity Grade ISO-VG									
Maker	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 : Please contact manufacturers when customers require products in the list above.

High-Power Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Cautions Notes on Handling

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Sales Offices

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





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Installation Notes (For Hydraulic Series)

Hydraulic Fluid List

Notes on Hydraulic Cylinder Speed Control Circuit

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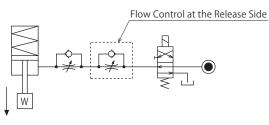
Notes on Hydraulic Cylinder Speed Control Unit

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.

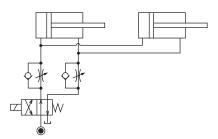
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow. (Please add flow control to release flow if the lever weight is put on at the time of release action when using swing clamps.)



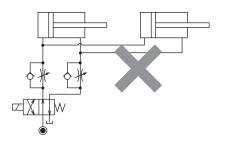
Flow Control Circuit for Double Acting Cylinder Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system. However, in the case of controlling LKE, TMA, TLA, both lock side and release side should be meter-in circuit. Refer to P.75 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.)

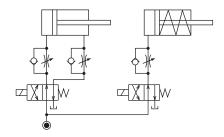


erratic or very slow.

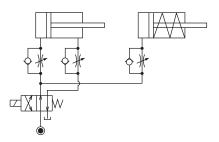
In the case of meter-out circuit, the hydraulic circuit should

be designed with the following points.

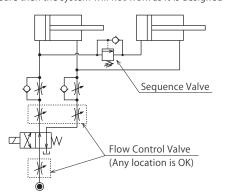
Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together. \bigcirc Separate the control circuit.



○ 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

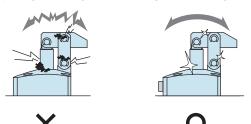
- Notes on Handling
- 1) It should be operated by qualified personnel.
- The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
- ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
- ② Before the product is removed, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
- ③ After stopping the product, do not remove until the temperature drops.
- ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
- Do not touch a clamp (cylinder) while it is working.
 Otherwise, your hands may be injured due to clinching.



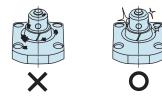
- 4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
- Before the machine is removed, make sure that safety devices and preventive devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the air and hydraulic circuits.
- 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 and fluid leakage.



- Please clean out the reference surfaces on a regular basis (taper reference surface and seating surface) of the locating products. (VS/VT/VFL/VFM/VFJ/VFK/WVS/VWM/VWK/VX/VXE/VXF)
- The locating products, except VX/VXE/VXF model, can remove contaminants with cleaning functions. However, hardened cutting chips, adhesive coolant and others may not be removed. Make sure there are no contaminants before installing a workpiece/pallet.
- Continuous use with contaminant on components will lead to locating accuracy failure, malfunction and fluid leakage.



- If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.
- 5) Regularly tighten nut, bolt, pin, cylinder, pipe line and others to ensure proper use.
- 6) Make sure the hydraulic fluid has not deteriorated.
- 7) Make sure there is a smooth action without an irregular noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 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



High-Power Series

Pneumatic Series

Pheuma

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Cautions

(For Hydraulic Series) Hydraulic Fluid List

> Notes on Hydraulic Cylinder Speed Control Circuit

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Sales Offices

- Warranty1) 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 operated in an inappropriate way by the operator.
 (Including damage caused by the misconduct of the third party.)
- 3 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 Model BZS

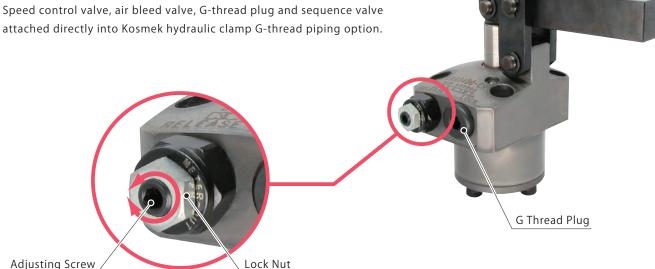


Directly-Attached Speed Control Valve, Air Bleed Valve, G-Thread Plug and Sequence Valve

• Directly Attached to Clamps

Control Valves :

attached directly into Kosmek hydraulic clamp G-thread piping option.



Adjusting Screw

Speed Control Valve



Speed Control Valve

Model BZL Model BZT



Air Bleed Valve

Model **BZX**





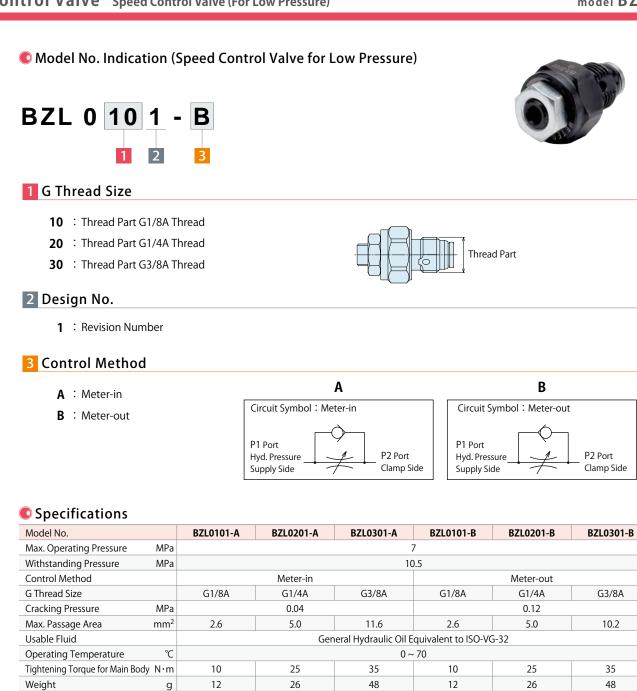
G Thread Plug

Direct-Mount Sequence Valve

Model JZG

Model BZS

	Operating	Action Description	High-Power Series
	Pressure Range	Action Description	Pneumatic Series
Speed Control Valve		Adjust the flow rate with a wrench.	Hydraulic Series
(For Low Pressure)		Able to adjust the clamping speed individually.	Valve / Coupler Hydraulic Unit
		Clamp	Manual Operation
Model BZL	7MPa or less		Accessories
→ P.949		Flow Control	Cautions / Others
			Hole Clamp
	San		SFA SFC
			Swing Clamp
Speed Control Valve (For High Pressure)		Air bleeding in the circuit is possible	LHA
(· - · · · · j . · · · · · · ,		by loosening the speed control valve.	LHS LHW
			LG/LT TLA-2
Model BZT	35MPa or less		TLB-2 TLA-1
→ P.953			Link Clamp
			LKA LKC
			LKW LJ/LM
			TMA-2 TMA-1
Air Bleed Valve		Air bleeding in the circuit is possible by wrench.	Work Support
		- T	LD
			TNC TC
Model BZX			Air Sensing
$\rightarrow P.955$	25MPa or less		Lift Cylinder
•			Linear Cylinder / Compact Cylinder
			LL
			LLU DP
G Thread Plug		Air bleeding in the circuit is possible	DR
		by loosening the G thread plug.	DT
		Π	Block Cylinder DBA/DBC
			Centering Vise
Model JZG → P.957	35MPa or less		FVA FVD
			FVC
			Control Valve BZL
			BZT BZX/JZG
Direct-Mount		Sequence Valve directly attaches to KOSMEK	BZS Pallet Clamp
Sequence Valve		hydraulic clamp's G-thread piping option.	VS/VT
_		Controls the operating sequence of each actuator.	Expansion Locating Pin
	- Her	Hydraulic Clamp	VFL/VFM VFJ/VFK
Model BZS	7MPa or less	nyuraune Clamp	Pull Stud Clamp
→ P.959		Direct-Mount Sequence Valve	FP FQ
-			Customized
			Spring Cylinder DWA/DWB



Notes : 1. 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.

2. Do not attach a used BZL to other clamps.

Flow control will not be made because the bottom depth difference of G thread makes metal seal insufficient.

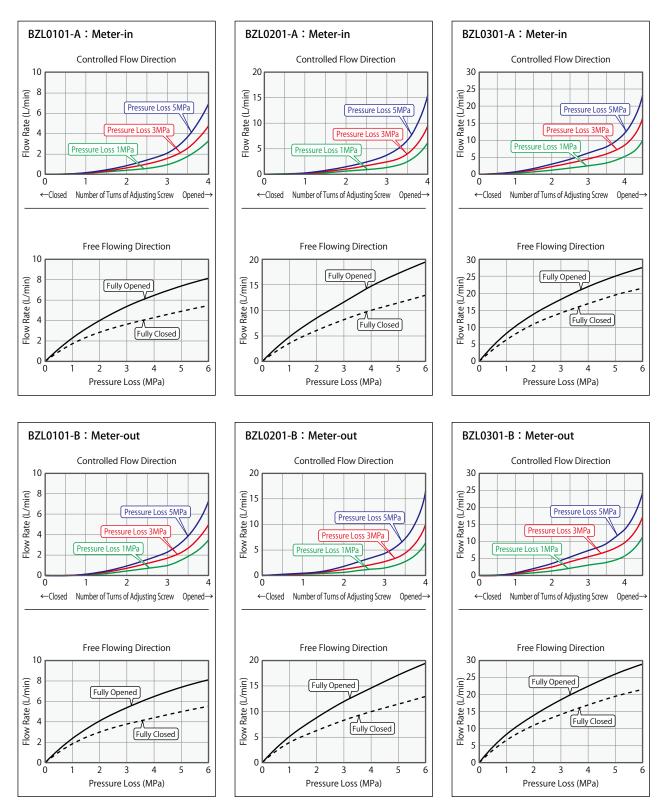
Applicable Products

Model No.	DBA (Double Action)	DBC (Double Action)	FVA (Double Action)	FVC (Double Action)	FVD (Double Action)	LC (Single Action)	LCW (Single Action)
Model No.	Block Cylinder	Block Cylinder	Centering Vise	Centering Vise	Centering Vise	Work Support	Work Support
	(DBA0250-C 🗆)	(DBC0250-C 🗆)	(FVA0401)	(FVC0630)	(FVD1600)	LC0263-C 🗆 -	LCW0363-C
	(DBA0320-C 🗆)	(DBC0320-C 🗆)	(FVA0631)		(FVD2500)	LC0303-C 🗆 -	LCW0403-C
			(FVA1001)			LC0363-C 🗆 -	LCW0483-C
BZL0101-A						LC0403-C 🗆 -	LCW0553-C
						LC0483-C 🗆 -	LCW0653-C
						LC0553-C 🗆 🗆 -	
						LC0653-C 🗆 🗆 -	
	DBA0250-C	DBC0250-C	FVA0401	FVC0630	FVD1600		
BZL0101-B	DBA0320-C	DBC0320-C	FVA0631		FVD2500		
			FVA1001				
BZL0201-A	(DBA0400-C 🗆)	(DBC0400-C 🗆)		(FVC1000)	(FVD4000)	LC0753-C 🗆 🗆	
BZLUZUI-A	(DBA0500-C 🗆)	(DBC0500-C 🗆)		(FVC1600)		LC0903-C 🗆 🗆 -	
BZL0201-B	DBA0400-C	DBC0400-C		FVC1000	FVD4000		
BZLUZUI-B	DBA0500-C	DBC0500-C		FVC1600			

BZL0101-A BZL0101-A (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0360-C) (HA0480-C) (HA0550-C) (HA050-C			Products	Flow Rate		Dimensions	Ha	mony in Innovation
Model No.LHA (Double Action) Swing ClampLHC (C Swing Swing Swing Swing Swing Swing Swing Swing Swing (HA0360-CII)LHC (G Swing (HA0480-CII)BZL0101-AHA0360-CII1 (HA0480-CII)HA0360-CII1 (HA0480-CII)HC032 (HA0480-CII)BZL0201-A(HA0650-CII1) (HA0550-CII)HA0650-CII1 (HA0550-CII)HC032 (HA0550-CII1)BZL0201-A(HA0650-CII1) (HA050-CII1)HA0650-CII1 (HA050-CII1)HC032 (HA050-CII1)BZL0301-A(HA0900-CII1) (HA1050-CII1)IIModel No.LGV (Single Action) Swing ClampLKA03 (LKA04 <br< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>High-Power Series</th></br<>								High-Power Series
Swing ClampSwingBZL0101-A(HA0360-C]) (HA0400-C]) (HA0480-C]) (HA0550-C]) 		ion) LHE (Double Acti	on) LHS (Double Action)	LHV (Double Action)			LG (Single Action)	Pneumatic Serie
BZL0101-A (LHA0400-CC)-D) (LHC040) BZL0101-B LHA0360-CC)-D) (LHC040) BZL0201-A (LHA0550-CC)-D) (LHC040) LHA0550-CC)-D) (LHC040) (LHC040) BZL0201-A (LHA0550-CC)-D) (LHC040) BZL0301-A (LHA0550-CC)-D) (LHC040) LHA0550-CC)-D) (LHC040) (LHC040) BZL0301-A (LHA0900-CC)-D) (LHC040) LHA0550-CC)-D) (LHC040) (LHC040) BZL0301-A (LHA0900-CC)-D) (LHC040) LHA050-CC)-D) (LHC040) (LHC040) BZL0301-A (LHA0900-CC)-D) (LHC040) LGV0400-CC)-D) (LHC040) (LHC040) BZL0301-A (LGV0400-CC)-D) (LHC040) LGV0480-CC)-D) (LHC040) (LHC040) BZL0101-A LGV0480-CC)-D) (LHC040) BZL0101-A LGV0480-CC)-D) (LHC040) BZL0301-A LGV0650-CC)-D) (LHC040) BZL0301-A LGV040-CC)-D) (LHC040) BZL0301-A LJV0400-CC)-D) (LFW00) BZL01011-A LJV0400-CC)-D)	ng Clamp Swing Clar			Swing Clamp	5 .	Swing Clamp	Swing Clamp	
BZL0101-A(LHA0480-C (LHA0550-C (LHA0550-C LHO400-C LHA0400-C LHA0400-C LHA0400-C LHA0400-C LHA0400-C LHA0550-C LHA0550-C LHA0550-C LHA0550-C BZL0201-ALHA0360-C LHA0550-C LIA050 LGV0480-C LIA0550			(LHS0360-C	(LHV0400-C E-)			LG0301-C	Hydraulic Series
Image: set of the			(LHS0400-C) (LHS0480-C)	(LHV0480-C E-) (LHV0550-C E-)			LG0361-C	Valve / Coupler
Image: set of the			(LHS0550-C□□-□)			LT0481-C	LG0401 C	Hydraulic Unit
BZL0101-B LHA0400-CIIIII LHCA44 LHA0480-CIIIIII LHCA44 LHA0550-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			(/				LG0551-C	Manual Operati
BZL0101-B LHA0480-C LHA0550-C LHA0650-C BZL0201-A LHA0550-C LHA0650-C LHA0650-C BZL0301-A LHA0500-C LHA0500-C LHA0500-C BZL0301-A LHA0900-C LHA0500-C LHA0500-C BZL0301-A LHA0900-C LHA050-C LHA050-C BZL0301-A LHA0900-C LHA050-C LHA050-C Model No. LGV (Single Action) LKA04 LGV0400-C LKA04 LKA04 LGV0400-C LKA04 LKA04 BZL0101-A LGV0400-C LKA04 LGV0400-C LKA04 LKA04 LGV0400-C LKA04 LKA04 LGV0400-C LKA04 LKA04 BZL0101-A LGV0650-C LKA04 LGV0750-C LKA04 LKA04 LGV0750-C LKA04 LKA04 BZL0301-A LGV0650-C LKA06 BZL0301-A LJV0Single Action) LKA04 LJV0550-C LINA LINA BZL0101-A LJV0400-C LINA BZL01010-A LJV0650-C LINA	860-C	LHE0300-C	LHS0360-C	LHV0400-C E-	LHW0401-C	/		Accessories
Image: section of the section of th	400-C LHD0480-C			LHV0480-C E-	LHW0481-C			Cautions / Other
Image: section of the section of th	480-C□□-□ LHD0550-C□			LHV0550-C□E-□	LHW0551-C			
BZL0201-A BZL0301-A (HA0750-C) HA0650-C) HA0750-C) HA0750-C) HA0750-C) HA0750-C) BZL0301-A HA0900-C) HA0900-C) HA090-C) HA090-C -	550-C□□-□	LHE0480-C						Hole Clamp
BZL0201-A BZL0301-A (HA0750-C) HA0650-C) HA0750-C) HA0750-C) HA0750-C) HA0750-C) BZL0301-A HA0900-C) HA0900-C) HA090-C) HA090-C -		LHE0550-C	(LHS0650-C		(LHW0651-C	LT0651-C 🗆 - 🗆	LG0651-C 🗆 - 🗌	SFA
BZL0201-B LHA0650-CII-IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			(LHS0750-C	(LHV0750-C E-)			LG0051-C	SFC
IHA0750-CIIII BZL0301-A (IHA0900-CIIII) IHA0900-CIIIII IHA0900-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	550-C 🗆 –	/ /	LHS0650-C					Swing Clamp
BZL0301-A (HA1050-C□) BZL0301-B HA0900-C□) HA1050-C□) HA1050-C□) Model No. LGV (Single Action) LKA (D Swing Clamp LKA03 LGV0400-C□ LKA04 LGV0550-C□ LKA04 LGV0550-C□ LKA04 LGV0750-C□ LKA04 LGV0750-C□ LKA04 LGV0750-C□ LKA04 LGV0750-C□ LKA04 LGV0750-C□ LKA04 LGV0750-C□ LKA09 BZL0301-B LJV(Single Action) Model No. LJV(Single Action) LJV0400-C□ LFW0 LJV0400-C□ LFW0 BZL0101-B LJV0400-C□ BZL0101-B LJV0650-C□ BZL0201-A LJV0650-C□			LHS0750-C 🗆 -	LHV0750-C E-	LHW0751-COO-0			LHA
(IHA1050-CIII-I) BZL0301-B IHA0900-CIII-I) IHA1050-CIII-I) ILANO Model No. LGV (Single Action) LKA (D BZL0101-A IGV0400-CIIII ILANO BZL0101-A IGV0400-CIIIII ILANO BZL0101-A IGV0400-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		1 - 7	(LHS0900-C 🗆 🗆 - 🗆)				LG0901-C 🛛 - 🗌	LHS
BZL0301-B LHA1050-CII-I Model No. LGV (Single Action) Swing Clamp LKA (D Link BZL0101-A LGV0400-CIII (LKA03 LGV0480-CIIII LKA03 LKA04 LKA04 BZL0101-A LGV0550-CIIII LKA03 LKA04 BZL0101-B LGV0650-CIIIII LKA03 LKA04 BZL0201-B LGV0650-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			(LHS1050-C 🗆 - 🗆)			<u> </u>	LG1051-C 🛛 - 🗌	LHW LG/LT
Image:			LHS0900-C C					TLA-2
Model No. Swing Clamp Link BZL0101-A LGV0400-C[] (LKA03 LGV0480-C]] (LKA04 LKA04 LKA04 BZL0101-B LGV0550-C]] LKA03 LKA04 LKA05 BZL0201-A LGV0650-C]] (LKA06 LGV0750-C]] (LKA07 LKA06 LGV0750-C]] BZL0201-B LGV0650-C]] (LKA07 LKA06 LGV0750-C]] (LKA07 LKA06 LKA07 LKA09 LKA09 LKA09 LKA09 LKA10 BZL0301-B LJV(Single Action) LKA09 LKA10 LKA09 LKA09 LKA09 LKA10 BZL0301-B LJV(Single Action) LFW (L LN0550-C]] LFW (C LFW (L LN0550-C]] BZL0101-A LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0101-B LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0201-A LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0201-B LJV0650-C]] LFW (C LFW (L LFW (L)W0750-C]]			LHS1050-C					TLB-2
Model No. Swing Clamp Link BZL0101-A LGV0400-C[] (LKA03 LGV0480-C]] (LKA04 LKA04 LKA04 BZL0101-B LGV0550-C]] LKA03 LKA04 LKA05 BZL0201-A LGV0650-C]] (LKA06 LGV0750-C]] (LKA07 LKA06 LGV0750-C]] BZL0201-B LGV0650-C]] (LKA07 LKA06 LGV0750-C]] (LKA07 LKA06 LKA07 LKA09 LKA09 LKA09 LKA09 LKA10 BZL0301-B LJV(Single Action) LKA09 LKA10 LKA09 LKA09 LKA09 LKA10 BZL0301-B LJV(Single Action) LFW (L LN0550-C]] LFW (C LFW (L LN0550-C]] BZL0101-A LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0101-B LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0201-A LJV0650-C]] LFW (C LFW (L LV0750-C]] BZL0201-B LJV0650-C]] LFW (C LFW (L LFW (L)W0750-C]]	Double Action) LKC (Double Ac	on) LKE (Double Acti	on) LKK (Double Action)	LKV (Double Action)	LKW (Double Action)	LM (Single Action)	LJ (Single Action)	TLA-1
BZL0101-A LGV0400-CCCCCCCCA (LKA03 LGV0480-CCCCCCCCA BZL0101-B LGV0550-CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	k Clamp Link Clam			Link Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp
BZL0101-A BZL0101-B BZL0201-A BZL0201-A BZL0201-A BZL0201-A BZL0301-A BZ BZ BZ BZ BZ BZ BZ BZ BZ BZ BZ BZ BZ	360-C 🗆 - 🗋 (LKC0400-C	-		(LKV0400-C□E-□)	(LKW0401-C	LM0300-C	LJ0302-C	LKA LKC
BZL0101-BLKA03 LKA04 LKA03BZL0201-ALGV0650-CCC LGV0750-CCCLKA04 LKA05BZL0201-BLGV0650-CCC LGK07LKA06 LKA07BZL0301-ALKA06 LKA09 LKA00LKA09 LKA09BZL0301-BLJV(Single Action) Link ClampLKA09 LKA09BZL0101-BLJV0400-CCC LJV0550-CCCLFW00 LINKBZL0101-BLJV0650-CCC LJV0550-CCCLFW00 LFW00 LINKBZL0101-BLJV0650-CCCC LJV0550-CCCLFW00 LFW00 LINKBZL0201-ALJV0650-CCCC LFW00 LJV0550-CCCLFW00 <td>400-C</td> <td>-</td> <td>,</td> <td>(LKV0480-C□E-□)</td> <td>(LKW0481-C</td> <td>LM0360-C</td> <td>LJ0362-C</td> <td>LKW</td>	400-C	-	,	(LKV0480-C□E-□)	(LKW0481-C	LM0360-C	LJ0362-C	LKW
BZL0101-B IKA03 BZL0201-A IGV0650-CCC IKA04 IGV0750-CCC IKA05 BZL0201-B IGV0650-CCC IKA07 BZL0301-B IKA09 IKA09 BZL0301-B IKA09 IKA09 BZL0301-B IKA09 IKA09 BZL0301-B ILV(Single Action) IKA09 BZL0301-B ILV0400-CCCC ILNA09 BZL0101-A IJV0400-CCCC ILNA09 BZL0101-A IJV0400-CCCC ILNA09 BZL0101-B IJV0400-CCCCC ILNA09 BZL0101-B IJV0400-CCCC ILNA09 BZL0101-B IJV0400-CCCC ILNA09 BZL0201-A IJV0650-CCCC ILFWC BZL0201-A IJV0650-CCCC ILFWC BZL0201-A ILV00650-CCCC ILFWC BZL0201-B ILV0050-CCCC ILFWC BZL0201-B ILV0650-CCCC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC ILFWC	480-C 🗆 - 🛛 (LKC0550-C) LKE0400-C	□ (LKK0480-C-□)	(LKV0550-C□E-□)	(LKW0551-C	LM0400-C	LJ0402-C	LJ/LM TMA-2
BZL0101-B LKA04 LKA05 BZL0201-A LGV0650-CIII LGV0750-CIII LKA06 LGV0750-CIIII BZL0201-B LKA06 LGV0750-CIIII LKA06 LKA07 BZL0301-A LKA06 LGV0750-CIIII LKA06 LKA07 BZL0301-B LLV(Single Action) LINK Clamp LKA09 LKA09 BZL0301-B LJV(Single Action) LINK Clamp LFW (I LINK LINK Clamp BZL0101-A LJV0400-CIIIII LINK Clamp LFW (I LINK LING BZL0101-B LJV0650-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	550-C 🗆 🗆 - 🗆)	LKE0480-C	□ (LKK0550-C-□)			LM0480-C	LJ0482-C	TMA-2
BZL0101-B LKA04 LKA05 BZL0201-A LGV0650-CIII LGV0750-CIII LKA06 LGV0750-CIIII BZL0201-B LKA06 LGV0750-CIIII LKA06 LKA07 BZL0301-A LKA06 LGV0750-CIIII LKA06 LKA07 BZL0301-B LLV(Single Action) LINK Clamp LKA09 LKA09 BZL0301-B LJV(Single Action) LINK Clamp LFW (I LINK LINK Clamp BZL0101-A LJV0400-CIIIII LINK Clamp LFW (I LINK LING BZL0101-B LJV0650-CIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		LKE0550-C				LM0550-C	LJ0552-C	Work Support
BZL0101-B LKA04 LGV0650-C (LKA07 BZL0201-A LGV0650-C (LKA07 BZL0201-B LGV0750-C (LKA07 BZL0301-A LKA04 (LKA07 BZL0301-A LSV0650-C (LKA07 BZL0301-A LSV0650-C (LKA09 BZL0301-B LSV0650-C (LKA09 BZL0101-B LJV0(Single Action) LFW (D LINK Clamp BZL0101-A LJV0400-C (LFWC LJV0400-C LINK (LFWC BZL0101-B LJV0650-C (LFWC BZL0101-B LJV0650-C (LFWC BZL0201-A LJV0650-C (LFWC LJV0750-C LFWC LFWC BZL0201-B LJV0650-C LFWC BZL0201-B LFWC LFWC	360-C - LKC0400-C		LKK0360-C-	LKV0400-C E-				LD
Image: style	400-C		LKK0400-C-	LKV0480-C E-				LC
BZL0201-A LGV0650-CC (LKA06 LGV0750-CC BZL0201-B LKA07 BZL0301-A (LKA09 BZL0301-A (LKA09 BZL0301-B (LKA09 BZL0301-B (LKA09 BZL0301-B (LKA09 BZL0301-B (LKA09 BZL0301-B (LK09 BZL0301-B (LV (Single Action) Link Clamp (LFW0 Link BZL0101-A LJV0400-CC (LFW0 L)V0550-CC BZL0101-B LJV0650-CC (LFW0 L)V0750-CC BZL0201-A LJV0650-CC (LFW0 L)V0750-CC BZL0201-B EFW0 LFW0 (LFW0 LFW0	480-CUU-U LKC0550-Cl 550-CUU-U	··· /	LKK0480-C-					TC
BZL0201-A LGV0750-CC (LKA07 BZL0301-B LKA07 BZL0301-A LKA07 BZL0301-B LKA07 BZL0301-B LKA07 BZL0301-B LKA07 BZL0301-B LKA09 LKA07 LKA09 BZL0301-B LKA09 BZL0301-B LVSingle Action) BZL0101-B LJVV (Single Action) LFW (DUP) BZL0101-A LJV0400-CCC LIFWC BZL0101-B LJV0650-CCC LFWC BZL0201-A LJV0650-CCC LFWC BZL0201-A LJV0650-CCC LFWC BZL0201-B LIV0650-CCC LFWC BZL0201-B LIV0650-CCC LFWC LJV0750-CC LFWC LFWC LJV0750-CC LFWC LFWC LJV0750-CC LFWC LFWC LJV0750-C LFWC LFWC		-0		(LKV0650-C□E-□)	(LKW0651-C	LM0650-C	LJ0652-C	Air Sensing
BZL0201-B LKA07 BZL0301-A (LKA09 (LKA10) BZL0301-B LKA07 (LKA09 (LKA10) Model No. LJV (Single Action) Link Clamp LFW (D Link Link BZL0101-A LJV0400-CCC LFW (D LJV0480-CCC) BZL0101-A LJV0480-CCC LFW (D LJV0550-CCC) BZL0101-B LJV0650-CCC LFW (D LJV0750-CC) BZL0201-A LJV0650-CCC (LFW (D LFW (D LJV0750-CC)) BZL0201-B LFW (D LFW (D LFW (D)) LFW (D LFW (D))				(LKV0750-C□E-□)	(LKW0751-C	LM0750-C	LJ0752-C	Lift Cylinder
BZL0301-A LKA07 BZL0301-A LKA09 BZL0301-B LKA09 Model No. LJV (Single Action) LKW0 LINK Clamp LINK BZL0101-A LJV0400-CC LINK BZL0101-A LJV0400-CC LINK BZL0101-A LJV0400-CC LINK BZL0101-B LJV0550-CC LINK BZL0101-B LJV0650-CC LINK BZL0201-A LJV0650-CC LINK BZL0201-B LIV0650-CC LIFW0 BZL0201-B LIFW0 LIFW0	650-C	0	LKK0650-C-	LKV0650-C□E-□	LKW0651-C			LLW
BZL0301-A (LKA10 BZL0301-B LKA09 Model No. LJV (Single Action) Link Clamp LFW (D Link BZL0101-A LJV0400-CC (LFWC LJV0480-CC BZL0101-A LJV0480-CC (LFWC LJV0550-CC BZL0101-B LJV0650-CC (LFWC LJV0750-CC BZL0201-A LJV0650-CC (LFWC LJV0750-CC BZL0201-B LJV0650-CC (LFWC LFWC	750-C 🗆 - 🗆			LKV0750-C□E-□	LKW0751-C			Linear Cylinder / Compact Cylinde
BZL0301-B LJV (Single Action) LKA09 LKA10 Model No. LJV (Single Action) Link Clamp LFW (0 Link Link LINV0480-CCCC LINV0550-CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	900-C 🗆 - 🗋)						LJ0902-C	LL
BZL0301-B LKA10 Model No. LJV (Single Action) Link Clamp LFW (0 Link Link LINK BZL0101-A LJV0400-CC (LFWC LJV0480-CC) BZL0101-B LIV0550-CC LFWC LJV0550-CC BZL0101-B LJV0650-CC (LFWC LJV0750-CC) BZL0201-A LJV0650-CC (LFWC LJV0750-CC) BZL0201-B LFWC LJV0750-CC LFWC LFWC	050-C						LJ1052-C	LLR
Model No. LJV (Single Action) Link Clamp LFW (Clamp) BZL0101-A LJV0400-CCC (LFWC LJV0480-CCC) (LFWC LJV0550-CC) BZL0101-B LJV0650-CCC LFWC LJV0750-CC) (LFWC LFWC LFWC BZL0201-A LJV0650-CCC (LFWC LFWC BZL0201-B LJV0650-CCC (LFWC LFWC	900-C							DP
Model No. Link Clamp Link BZL0101-A LJV0400-C□ (LFWC BZL0101-B LJV0550-C□ LFWC BZL0201-A LJV0650-C□ LFWC BZL0201-A LJV0650-C□ LFWC BZL0201-B LJV0650-C□ LFWC								DR
Model No. Link Clamp Link BZL0101-A LJV0400-CCC (LFWC BZL0101-B LJV0550-CCC LFWC BZL0201-A LJV0650-CCC LFWC BZL0201-A LJV0650-CCC LFWC BZL0201-A LJV0650-CCC LFWC BZL0201-B LJV0650-CCC LFWC	(Double Action) LFA (Double Ac	on) LSA (Double Act	on) LSE (Double Action)	LL (Double Action)	LLR (Double Action)	LLV (Double Action)	LLW (Double Action)	DS DT
BZL0101-A LJV0480-CC (LFWC LJV0550-CC LFWC BZL0101-B LJV0650-CC LFWC BZL0201-A LJV0650-CC (LFWC BZL0201-B LJV0650-CC (LFWC BZL0201-B LJV0650-CC LFWC	k Clamp Link Clam					Lift Cylinder	Lift Cylinder	Block Cylinder
BZL0101-A LJV0550-C LFWC BZL0101-B LJV0650-C LFWC BZL0201-A LJV0650-C (LFWC LJV0750-C (LFWC LFWC BZL0201-B LIV0650-C (LFWC	/0480-C□J)(LFA0480-C□) (LSA0360-C-	□) LSE0360-C-□	(LL0360-C			(LLW0361-C	DBA/DBC
BZL0101-B LJV0550-C LFWC BZL0201-A LJV0650-C (LFWC LJV0750-C (LFWC BZL0201-B LFWC	/0550-C□J) (LFA0550-C□])		(LL0400-C			(LLW0401C	Centering Vise
BZL0101-B LFWC BZL0201-A LJV0650-CCCC (LFWC LJV0750-CCCC LFWC BZL0201-B LFWC				(LL0480-C			(LLW0481-C)	FVA
BZL0101-B LFWC BZL0201-A LJV0650-CC:::::::::::::::::::::::::::::::::::				(LL0550-C				FVD
BZL0101-B LJV0650-C□□ (LFWC BZL0201-A LJV0750-C□□ (LFWC BZL0201-B LFWC LFWC	0480-C J LFA0480-C			LL0360-C			LLW0361-C	FVC
BZL0201-A LJV0750-C III (LFWC BZL0201-B LFWC LFWC				LL0400-C			LLW0401-C	Control Valve
BZL0201-A LJV0750-C (LFWC) BZL0201-B LFWC LFWC LFWC				LL0480-C				BZL BZT
BZL0201-B	/0650-C□J)(LFA0650-C□) /	/ /	(LL0650-C			/	BZX/JZG
BZL0201-B LFWC	/0750-C□J) (LFA0750-C□	1)		(LL0750-C□□-□)	(LLR0750-C)			BZS
LFWC	0650-C J LFA0650-C			LL0650-C	LLR0650-C			Pallet Clamp
BZL0301-A	0750-C J LFA0750-C			LL0750-C			/	VS/VT
	//			(LL0900-C				Expansion Locating Pin
				(LL1050-C			/	VFL/VFM
BZL0301-B				LL0900-C				VFJ/VFK
								Pull Stud Clamp

Customized Spring Cylinder ______DWA/DWB

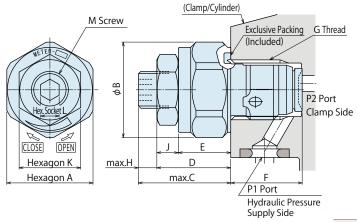
● Flow Rate Graph < Hydraulic Fluids ISO-VG32 (25~35°C) >



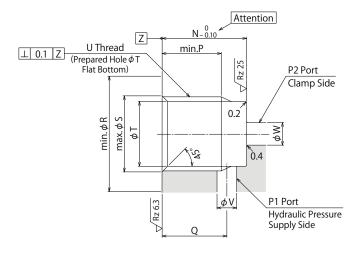
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Control Valve Digest	Model No. Indication	Specifications	Applicable Products	Flow Rate Graph	External Dimensions	

C External Dimensions



Machining Dimensions of Mounting Area



			(mm)
Model No.	BZL0101-	BZL0201-	BZL0301-
A	14	18	22
В	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
Н	3	3	3
J	3.5	3.5	5
К	10	10	13
L	3	3	4
M (Nominal × Pitch)	M6×0.75	M6×0.75	M8×0.75
Ν	11.5	15	17.5
Р	8.5	11*1	13
Q	9	11.5	13
R (Flat Surface Area)	16	20.5	24.5
S	10	13.5	17
Т	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

Notes :

- 1. Since the $\sqrt{Rz 6.3}$ area is sealing part, be careful not to damage it.
- 2. Since the $\sqrt{Rz 12.5}$ 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 side 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 Unit" for proper hydraulic circuit design. Improper circuit design may lead to malfunctions and damages. (Refer to P.1356)
- 2. It is dangerous to release the air under high pressure. It must be done under lower pressure.
 - (For reference : the minimum operating range of the product within the circuit.)

LC TNC TC

Air Sensing Lift Cylinder LLW

High-Power

Pneumatic Series

Hydraulic Series

Valve / Coupler

Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp SFA

SFC

LHA

LHC

LHS

LHW LG/LT TLA-2

TLB-2 TLA-1

LKA

LKC

LKW

LJ/LM TMA-2

TMA-1 Work Support

LD

Link Clamp

Swing Clamp

Series

Linear Cylinder / Compact Cylinder LL

> LLR LLU DP DR

DS

DT

Centering Vise FVA

FVD FVC

ontrol Valve

BZT

BZX/JZG BZS

Pallet Clamp

VS/VT

Expansion Locating Pin VFL/VFM VFJ/VFK

Pull Stud Clamp FP

FQ

Customized Spring Cylinder DWA/DWB

952

Model No. Indication (Air Bleed Valve)





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.

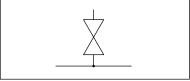
0 : Revision Number

Specifications

Model No.		BZX010	BZX020	BZX030				
Max. Operating Pressure	MPa		35					
Withstanding Pressure	MPa		42					
G Thread Size		G1/8A	G1/4A	G3/8A				
Usable Fluid		General Hydr	aulic Oil Equivalent	to ISO-VG-32				
Operating Temperature	°C		0~70					
Tightening Torque for Main Body	N۰m	10	25	35				
Weight	g	12	23	36				

Circuit Symbol

Thread Part



Notes: 1. Do not over-loosen the plug during air venting.

(Do not loosen further than 2 turns from the fully closed position.)

2. Air bleeding under high pressure is dangerous. It must be done under lower pressure. (For reference : the minimum operation pressure range of the product within the circuit)

3. Refer to the machining dimensions of BZL mounting area when installing BZX into a hydraulic circuit.

Applicable Products

Model No.	DBA (Double Action)	DBC (Double Action)	FVA (Double Action)	FVC (Double Action)	FVD (Double Action)	LC (Single Action)	LCW (Single Action)	TC (Single Action)
Model No.	Block Cylinder	Block Cylinder	Centering Vise	Centering Vise	Centering Vise	Work Support	Work Support	Work Support
	DBA0250-C	DBC0250-C	FVA0401	FVC0630	FVD1600	LC0263-C 🛛-🗆	LCW0363-C	TC0403-C□-□-□
	DBA0320-C	DBC0320-C	FVA0631		FVD2500	LC0303-C 🗆 -	LCW0403-C	TC0483-C
			FVA1001			LC0363-C 🗆 -	LCW0483-C	TC0553-C□-□-□
BZX010						LC0403-C	LCW0553-C	TC0653-C□-□-□
						LC0483-C	LCW0653-C	TC0753-C□-□-□
						LC0553-C 🗆 -		
						LC0653-C 🗆 -		
PZY020	DBA0400-C	DBC0400-C		FVC1000	FVD4000	LC0753-C 🗆 -		
BZX020	DBA0500-C	DBC0500-C		FVC1600		LC0903-C		

Control	Valve
Digest	P.947

Model No. Indication

Specifications

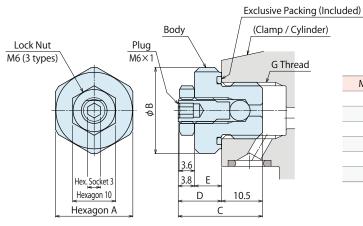
Applicable Products

External Dimensions



Applica										
Model No.	LHA (Double Action) Swing Clamp		LHD (Double Action) Swing Clamp	LHE (Double Action) High-Power Swing Clamp	LHS (Double Action) Swing Clamp	LHV (Double Action) Swing Clamp	LHW (Double Action) Swing Clamp	LT (Single Action) Swing Clamp	LG (Single Action) Swing Clamp	Pneumatic Se
	3 .		LHD0400-C	LHE0300-C	LHS0360-C	LHV0400-C E-	LHW0401-C	LT0301-C	LG0301-C	Hydraulic Se
			LHD0480-C	LHE0360-C	LHS0400-C	LHV0480-C E-	LHW0481-C	LT0361-C	LG0361-C□-□	Hyuraune se
BZX010			LHD0550-C	LHE0400-C	LHS0480-C	LHV0550-C E-	LHW0551-C	LT0401-C	LG0401-C□-□	Valve / Coupl
		LHC0550-C		LHE0480-C	LHS0550-COO-			LT0481-CD-D	LG0481-C□-□	Hydraulic Un
				LHE0550-C				LT0551-CD-D	LG0551-CD-D	Manual Oper
	LHA0650-C	LHC0650-C			LHS0650-C00-0	LHV0650-C□E-□	LHW0651-C	LT0651-C	LG0651-C	Accessories
BZX020	LHA0750-C 🗆 -				LHS0750-C00-0	LHV0750-C□E-□	LHW0751-C00-0	LT0751-C□-□	LG0751-C□-□	Cautions / Oth
	LHA0900-C				LHS0900-C				LG0901-C	Cautions / ou
BZX030	LHA1050-C				LHS1050-C				LG1051-C -	
				~						Hole Clamp
Model No.	LGV (Single Action)									SFA
noc.	Swing Clamp									SFC
	LGV0400-C									Swing Clamp
	LGV0480-C									LHA
BZX010	LGV0550-C									LHC
										LHS
										LG/LT
	LGV0650-C									TLA-2
BZX020	LGV0750-C									TLB-2
	LGV0750-C									TLA-1
BZX020	LGV0750-C									
		-								TLA-1 Link Clamp LKA
BZX030	LKA (Double Action)	LKC (Double Action)	LKE (Double Action)	LKK (Double Action)		LKW (Double Action)	LM (Single Action)	LJ (Single Action)	LJV (Single Action)	TLA-1 Link Clamp LKA LKC
BZX030	LKA (Double Action) Link Clamp	Link Clamp	High-Power Link Clamp	Universal Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp	TLA-1 Link Clamp LKA LKC LKW
BZX030	LKA (Double Action)	LKC (Double Action)	High-Power Link Clamp				-	-	-	Link Clamp LKA LKC LKW LJ/LM
BZX030	LKA (Double Action) Link Clamp	Link Clamp	High-Power Link Clamp	Universal Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp	Link Clamp LKA LKC LKW
	LKA (Double Action) Link Clamp LKA0360-C	LKC (Double Action) Link Clamp LKC0400-C []-	High-Power Link Clamp	Universal Clamp LKK0360-C-	Link Clamp	Link Clamp	Link Clamp LM0300-C	Link Clamp LJ0302-C	Link Clamp	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1
BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C	High-Power Link Clamp LKE0300-C LKE0360-C	Universal Clamp LKK0360-C- LKK0400-C-	Link Clamp LKV0400-C E- LKV0480-C E-	Link Clamp LKW0401-C LKW0481-C	Link Clamp LM0300-C LM0360-C	Link Clamp LJ0302-C LJ0362-C	Link Clamp LJV0400-C LJV0480-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support
BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C	High-PowerLink Clamp LKE0300-C LKE0360-C LKE0400-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C-	Link Clamp LKV0400-C E- LKV0480-C E-	Link Clamp LKW0401-C LKW0481-C	Link Clamp LM0300-C LM0360-C LM0400-C	Link Clamp LJ0302-C LJ0362-C LJ0402-C	Link Clamp LJV0400-C LJV0480-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD
BZX030 Model No. BZX010	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C-	Link Clamp LKV0400-C E- LKV0480-C E-	Link Clamp LKW0401-C LKW0481-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C	Link Clamp LJ0302-C LJ0362-C LJ0402-C LJ0482-C	Link Clamp LJV0400-C LJV0480-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support
BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C-	Link Clamp LKV0400-C E- LKV0480-C E- LKV0550-C E-	Link Clamp LKW0401-C LKW0481-C LKW0551-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C	Link Clamp L0302-C L0362-C L0402-C L0402-C L0482-C L0552-C	Link Clamp LJV0400-CCC LJV0480-CCC LJV0550-CCC	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC
BZX030 Model No. BZX010 BZX020	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA0650-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C-	Link Clamp LKV0400-C	Link Clamp LKW0401-C LKW0481-C LKW0551-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0650-C	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0652-C U0752-C	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC
BZX030 Model No. BZX010	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA0750-C LKA0900-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C-	Link Clamp LKV0400-C	Link Clamp LKW0401-C LKW0481-C LKW0551-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0650-C	Link Clamp L0302-C L0362-C L0402-C L0402-C L0552-C L0652-C L0752-C L0752-C L0902-C	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder
BZX030 Model No. BZX010 BZX020	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA050-C LKA050-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C	Universal Clamp LKK0360-C LKK0400-C LKK0480-C LKK0550-C LKK0650-C	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0650-C E LKV0750-C E	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0651-C LKW0751-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0652-C U0752-C	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C LJV0750-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing
BZX030 Model No. BZX010 BZX020 BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA0050-C LKA0050-C LKA0050-C LKA050-C LKA050-C LKA050-C LKA050-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LKC0650-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C-	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0650-C E LKV0750-C E LKV0750-C E	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LKW0751-C LKW0751-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0652-C U0752-C U0902-C LU9002-C LUW (Double Action)	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C LJV0650-C LJV0750-C LJV0750-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylinder
BZX030 Model No. BZX010 BZX020	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA050-C LKA050-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E	Link Clamp LKW0401-CO-O LKW0481-CO-O LKW0551-CO-O LKW0551-CO-O LKW0751-CO-O LKW0751-CO-O LLR (Double Action) Linear Cylinder	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C	Link Clamp L0302-C L0362-C L0402-C L0482-C L0552-C L0652-C L0752-C L0902-C L1052-C L1052-C L1052-C L1052-C	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C LJV0650-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0650-C LJV07	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylinder
BZX030 Model No. BZX010 BZX020 BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0650-C LKA0050-C LKA0050-C LKA0050-C LKA050-C LKA050-C LKA050-C LKA050-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LKC0650-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C-	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E LKV0750-C E	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LKW0751-C LKW0751-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C	Link Clamp L0302-C L0362-C L0402-C L0482-C L0552-C L0652-C L0752-C L0902-C L1052-C L1052-C L1052-C L1052-C	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0650-C LJV0650-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0650-C LJV07	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylinde Compact Cylind
BZX030 Model No. BZX010 BZX020 BZX030 Model No.	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0480-C LKA0550-C LKA0550-C LKA0650-C LKA0650-C LKA0650-C LKA0650-C LKA0550-C LINK LINK LINK	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C LKC0650-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C LKV0480-C LKV0550-C LKV0550-C LKV0750-C LL (Double Action) Linear Cylinder LL0360-C	Link Clamp LKW0401-CO-O LKW0481-CO-O LKW0551-CO-O LKW0551-CO-O LKW0751-CO-O LKW0751-CO-O LLR (Double Action) Linear Cylinder	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LM0750-C LLV(Double Action) LIT Cylinder LLV0360-C E-	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LLW (Double Action) Lft Cylinder LLW0361-C L-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0650-C LJV0650-C LJV0650-C LJV0650-C LJV0650-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylind Compact Cylind
BZX030 Model No. BZX010 BZX020 BZX030	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0400-C LKA0550-C LKA0550-C LKA0650-C LKA0650-C LKA0650-C LKA0650-C LKA0650-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LFW (Double Action) Link Clamp LFW0480-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LFA (Double Action) Link Clamp LFA0480-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LLC00ble Action) Linear Cylinder LL0360-C LL0400-C	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LKW0751-C LLR (Double Action) Linear Cylinder LLR0360-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LLV(Double Action) Lift Cylinder LLV0360-C LE	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LUW (Double Action) Lft Cylinder LLW0361-C LW0401-C U-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LINC TTA (Double Action) Linear Cylinder TTA0360-C TTA0400-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylind Compact Cyli
BZX030 Model No. BZX010 BZX020 BZX030 Model No.	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0400-C LKA0550-C LKA0550-C LKA0650-C LKA0650-C LKA0650-C LKA0650-C LKA0650-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LFW (Double Action) Link Clamp LFW0480-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LFA (Double Action) Link Clamp LFA0480-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C	Link Clamp LKW0401-CD-D LKW0481-CD-D LKW0551-CD-D LKW0551-CD-D LKW0751-CD-D LLR (Double Action) Linear Cylinder LLR0360-CD-D LLR0400-CD-D	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LLV(Double Action) Lift Cylinder LLV0360-C LE	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LUW (Double Action) Lft Cylinder LLW0361-C LW0401-C U-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LINC TTA (Double Action) Linear Cylinder TTA0360-C TTA0400-C	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylind Compact Cylin LLR LLR LLU
BZX030 Model No. BZX010 BZX020 BZX030 Model No. BZX010	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0450-C LKA0550-C LFW (Double Action) Link Clamp LFW0550-C J	LKC (Double Action) Link Clamp LKC0400-C LKC0550-C LKC0550-C LKC0650-C LKC0650-C LFA (Double Action) Link Clamp LFA0480-C LFA0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LKV0750-C E LL0400-C E LL0480-C E LL0480-C E LL0480-C E LL0550-C E	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LLR (Double Action) Linear Cylinder LLR0360-C LLR0400-C LLR0480-C LLR0480-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LLV(Double Action) Lift Cylinder LLV0360-C LE	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LUW (Double Action) Lft Cylinder LLW0361-C LW0401-C U-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV07	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylinde Compact Cylin LLR LLR LLR LLU DP
BZX030 Model No. BZX010 BZX020 BZX030 Model No.	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA050-C LKA0550-C LKA0550-C LKA0900-C LKA0900-C LKA01050-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LKA0550-C LFW (Double Action) Link Clamp LFW0550-C J LFW0650-C	LKC (Double Action) Link Clamp LKC0400-C LKC0480-C LKC0550-C LKC0650-C LKC0650-C LFA (Double Action) Link Clamp LFA0480-C LFA0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LKV0750-C E LL0260-C E LL0400-C E LL0480-C E LL0480-C E LL0550-C E LL0550-C E LL0650-C E	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LLR (Double Action) Linear Cylinder LLR0360-C LLR0400-C LLR0480-C LLR0480-C LLR0550-C LLR0550-C LLR0650-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LLV(Double Action) Lift Cylinder LLV0360-C LE	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LUW (Double Action) Lft Cylinder LLW0361-C LW0401-C U-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0400-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0750-C LJV0400-C LJV0400-C LJV0400-C LJV0750-C LJV07	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Support LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylinde Compact Cyli LL LLR LLR LLR LLU DP DR
BZX030 Model No. BZX010 BZX020 BZX030 Model No. BZX010	LKA (Double Action) Link Clamp LKA0360-C LKA0400-C LKA0450-C LKA0550-C LFW (Double Action) Link Clamp LFW0550-C J	LKC (Double Action) Link Clamp LKC0400-C LKC0550-C LKC0550-C LKC0650-C LKC0650-C LFA (Double Action) Link Clamp LFA0480-C LFA0550-C	High-Power Link Clamp LKE0300-C LKE0360-C LKE0400-C LKE0480-C LKE0550-C LKE0550-C LKE0550-C LKE0550-C LSA (Double Action) Side Clamp	Universal Clamp LKK0360-C- LKK0400-C- LKK0480-C- LKK0550-C- LKK0650-C- LKK0650-C- LKK0650-C- High-Power Side Clamp	Link Clamp LKV0400-C E LKV0480-C E LKV0550-C E LKV0550-C E LKV0750-C E LKV0750-C E LL0260-C E LL0480-C E LL0480-C E LL0550-C E L	Link Clamp LKW0401-C LKW0481-C LKW0551-C LKW0551-C LKW0751-C LLR (Double Action) Linear Cylinder LLR0360-C LLR0400-C LLR0480-C LLR0480-C	Link Clamp LM0300-C LM0360-C LM0400-C LM0480-C LM0550-C LM0550-C LM0750-C LM0750-C LM0750-C LLV(Double Action) Lift Cylinder LLV0360-C LE	Link Clamp U0302-C U0362-C U0402-C U0482-C U0552-C U0552-C U0752-C U0752-C LU0902-C LU0902-C LUW (Double Action) Lft Cylinder LLW0361-C LW0401-C U-	Link Clamp LJV0400-C LJV0480-C LJV0550-C LJV0550-C LJV07	TLA-1 Link Clamp LKA LKC LKW LJ/LM TMA-2 TMA-1 Work Suppor LD LC TNC TC Air Sensing Lift Cylinder LLW Linear Cylind Compact Cyli LLR LLR LLU DP DR DS

External Dimensions



			(mm)
Model No.	BZX010	BZX020	BZX030
А	14	18	22
В	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

Pull Stud Clamp FP FQ

Centering Vise FVA

FVD FVC

Control Valve

BZL

BZS

VS/VT Expansion Locating Pin

VFL/VFM

VFJ/VFK

Pallet Clamp

BZT BZX/JZG

Customized Spring Cylinder

DWA/DWB

Model No. Indication (G Thread Plug with Air Bleeding Function) PAT.





Thread Part

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 Pre	ssure N	ИРа		35		
Withstanding Press	sure N	ИРа		42		
G Thread Size			G1/8A	G1/4A	G3/8A	
Usable Fluid			General Hydr	aulic Oil Equivalent	to ISO-VG-32	
Operating Tempera	ature	°C		0~70		
Tightening Torque	Female Thread Side Material : Steel		10	25	35	
for Main Body N·m Female Thread Side Material : Aluminum (For LT/LM ^{*1})			8	20	28	
Weight		g	7	15	23	

Notes : 1. Air bleeding under high pressure is dangerous. It must be done under lower pressure.

(For reference : the minimum operation pressure range of the product within the circuit)

2. Refer to the machining dimensions of BZL mounting area when installing JZG into a hydraulic circuit.

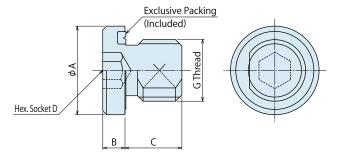
%1. Body material of LT/LM is aluminum alloy, so install it with the tightening torque for aluminum.

Applicable Products

Model No.	LHA (Double Action)		LHD (Double Action)		LHS (Double Action)		LHW (Double Action)	LT (Single Action)	LG (Single Action)
	Swing Clamp	Swing Clamp	Swing Clamp	High-Power Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp
	LHA0360-C	LHC0360-C 🗆 -	LHD0400-C	LHE0300-C	LHS0360-C 🗆 -	LHV0400-C□E-□	LHW0401-C	LT0301-C□-□	LG0301-C□-□
	LHA0400-C	LHC0400-C 🗆 🗆 -	LHD0480-C	LHE0360-C 🗆	LHS0400-C	LHV0480-C E-	LHW0481-C	LT0361-C	LG0361-C□-□
JZG010	LHA0480-C	LHC0480-C 🗆 🗆 -	LHD0550-C	LHE0400-C 🗆	LHS0480-C	LHV0550-C□E-□	LHW0551-C	LT0401-C	LG0401-C
	LHA0550-C	LHC0550-C 🗆 🗆 -		LHE0480-C 🗆	LHS0550-C			LT0481-C	LG0481-C
				LHE0550-C				LT0551-C	LG0551-C
JZG020	LHA0650-C	LHC0650-C 🗆 -			LHS0650-C 🗆 🗆 -	LHV0650-C□E-□	LHW0651-C	LT0651-C□-□	LG0651-C□-□
JZG020	LHA0750-C				LHS0750-C 🗆 🗆 -	LHV0750-C□E-□	LHW0751-C 00-0	LT0751-C	LG0751-C
JZG030	LHA0900-C				LHS0900-C 00-0				LG0901-C
JZG030	LHA1050-C				LHS1050-C 0				LG1051-C
							1		
Model No.	LGV (Single Action)	$DBA \ (Double \ Action)$	DBC (Double Action)	FVA (Double Action)	FVC (Double Action)	FVD (Double Action)	LC (Single Action)	LCW (Single Action)	TC (Single Action)
Model No.	Swing Clamp	Block Cylinder	Block Cylinder	Centering Vise	Centering Vise	Centering Vise	Work Support	Work Support	Work Support
								mont support	work Support
	LGV0400-C 🗆	DBA0250-C	DBC0250-C	FVA0401	FVC0630	FVD1600	LC0263-C 🛛 -	LCW0363-C	TC0403-C
	LGV0400-C []	DBA0250-C DBA0320-C	DBC0250-C	FVA0401 FVA0631	FVC0630	FVD1600 FVD2500	LC0263-C LC0303-C		
		DBA0320-C			FVC0630			LCW0363-C	TC0403-C□-□-□
JZG010	LGV0480-C 🗆	DBA0320-C		FVA0631	FVC0630		LC0303-C 🗆 -	LCW0363-C	TC0403-C TC0483-C
JZG010	LGV0480-C 🗆	DBA0320-C		FVA0631	FVC0630		LC0303-C LC0363-C	LCW0363-C LCW0403-C LCW0483-C	TC0403-C TC0483-C TC0553-C
JZG010	LGV0480-C 🗆	DBA0320-C		FVA0631	FVC0630		LC0303-C LC0363-C LC0403-C	LCW0363-C LCW0403-C LCW0483-C LCW0553-C	TC0403-C TC0483-C TC0553-C TC0653-C
JZG010	LGV0480-C 🗆	DBA0320-C		FVA0631	FVC0630		LC0303-C LC0363-C LC0403-C LC0483-C	LCW0363-C LCW0403-C LCW0483-C LCW0553-C	TC0403-C TC0483-C TC0553-C TC0653-C
JZG010 JZG020	LGV0480-C 🗆	DBA0320-C		FVA0631	FVC0630 FVC1000		LC0303-C LC0363-C LC0403-C LC0483-C LC0553-C	LCW0363-C LCW0403-C LCW0483-C LCW0553-C	TC0403-C TC0483-C TC0553-C TC0653-C

Control Digest I		Model No. Indi	ication	Specification	s App	licable Produc	ts Externa	Il Dimensions		DSMEK mony in Innovation
C Applica	able Prod	ucts								High-Power Series
Model No.	LKA (Double Action Link Clamp	n) LKC (Double Action) Link Clamp	LKE (Double Action) High-Power Link Clamp	LKK (Double Action) Universal Clamp	LKV (Double Action Link Clamp) LKW (Double Action) Link Clamp	LM (Single Action) Link Clamp	LJ (Single Action) Link Clamp	LJV (Single Action) Link Clamp	Pneumatic Series
	LKA0360-C		LKE0300-C LKE0360-C	LKK0360-C-□ LKK0400-C-□	LKV0400-C E-		LM0300-C LM0360-C	LJ0302-C LJ0362-C	LJV0400-C	Hydraulic Series
JZG010	LKA0480-C		LKE0400-C 🗆 LKE0480-C 🗆	LKK0480-C-□ LKK0550-C-□	LKV0550-C□E-	LKW0551-C	LM0400-C	LJ0402-C LJ0482-C	LJV0550-C	Valve / Coupler Hydraulic Unit
JZG020	LKA0650-C	LKC0650-C	LKE0550-C	LKK0650-C-	LKV0650-C□E-[] LKW0651-C□□-□	LM0550-C	LJ0552-C	LJV0650-C	Manual Operation Accessories
	LKA0750-C				LKV0750-C□E-] LKW0751-CDD-D	LM0750-C	LJ0752-C	LJV0750-C	Cautions / Others
JZG030	LKA1050-C							LJ1052-C		Hole Clamp
Model No.	TLA-1 (Single Action Swing Clamp	1) TLA-2 (Double Action) Swing Clamp	TLB-2 (Double Action) Swing Clamp	TLV-2 (Double Action) Swing Clamp	TMA-1 (Double Action Link Clamp) TMA-2 (Double Action) Link Clamp	TMV-2 (Double Action) Link Clamp			SFA SFC
	TLA0402-1C TLA0602-1C	TLA0401-2C	TLB0401-2C	TLV0800-2C	TMA0250-1C		TMV0400-2C			Swing Clamp LHA LHC
JZG010	TLA0802-1C TLA1002-1C	TLA1001-2C	TLB0801-2C	TLV1600-2C	TMA0600-1C		TMV1000-2C			LHS LHW
	TLA1602-1C TLA2002-1C	TLA2001-2C	TLB1601-2C	TLV2000-2C	TMA1600-1C		TMV1600-2C			LG/LT TLA-2 TLB-2
JZG020	TLA2502-1C TLA4002-1C		TLB2501-2C		TMA2500-1C			_		TLA-1 Link Clamp
Model No.	LFA (Double Action)) LFW (Double Action)	LSA (Double Action)	LSE (Double Action)	LL (Double Action	LLR (Double Action)	LLV (Double Action)	LLW (Double Action)) TTA (Double Action)	LKA LKC
MOUELING.	Link Clamp	Link Clamp	Side Clamp LSA0360-C-	High-Power Side Clamp	Linear Cylinde		Lift Cylinder	Lift Cylinder	Linear Cylinder TTA0360-C	LKW LJ/LM
JZG010	LFA0550-C 🗆	LFW0550-C 🛛 J			LL0400-C	LLR0480-C	LLV0480-C E-	LLW0401-C00-0 LLW0481-C00-0		TMA-2 TMA-1 Work Support LD
	LFA0650-C	LFW0650-C J			LL0650-C	LLR0650-C			TTA0650-C	LC TNC
JZG020	LFA0750-C 🗆	LFW0750-C J			LL0750-C	LLR0750-C				 Air Sensing
JZG030					LL0900-C	LLR0900-C				Lift Cylinder
	2		k	r	<u></u>		<i>v</i>	~		Linear Cylinder / Compact Cylinder LL
										LLR

External Dimensions



			(mm)
Model No.	JZG010	JZG020	JZG030
А	14	18	22
В	3.5	4.5	4.5
С	8	9	10
D	5	6	8
G	G1/8A	G1/4A	G3/8A

VFJ/VFK Pull Stud Clamp FP

LLU DP DR DS DT Block Cylinder

Centering Vise FVA FVD FVC

Control Valve

BZT BZX/JZG

BZS

Pallet Clamp VS/VT

Expansion Locating Pin VFL/VFM

FQ

Customized Spring Cylinder DWA/DWB

PAT.P.

Direct-Mount Sequence Valve

Model BZS



Attaches directly into Kosmek hydraulic clamps G-thread piping option. Easily and securely controls the operating sequence of actuators.

C Model No. Indication



1 G Thread	Size
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- **10** : G1/8A Thread
- **20** : G1/4A Thread
- **30** : G3/8A Thread

2 Design No.

0 : Revision Number

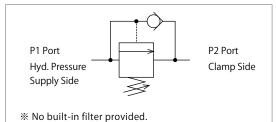
Specifications

Model No.		BZS0100	BZS0200	BZS0300		
Sequence Operating Pressure Ad	justable Range MPa		1.0 ~ 6.0			
Operating Pressure Rai	nge MPa		2.0 ~ 7.0			
Withstanding Pressure	MPa		10.5			
G Thread Size		G1/8A	G1/4A	G3/8A		
Cracking Pressure	MPa		0.03			
Adjusting Screw Turn Ratio: Re	eference MPa/Rev	1.5	1.3	1.1		
Min. Passage Area	$P1 \rightarrow P2$	2.0	2.0 5.7 8.5			
mm ²	$P2 \rightarrow P1$	2.0	2.0 5.0 8.2			
Usable Fluid		General Hydraulic Oil Equivalent to ISO-VG-32				
Operating Temperatur	e ℃		0 ~ 70			
Tightening Torque	N∙m	10	25	35		
Weight	g	35	82	155		

Notes: 1. Please mount to an actuator using Hex. E shown in External Dimensions on P.961A with the tightening torque shown in the list above. Insufficient or excessive tightening torque leads to malfunction.

- 2. Do not attach a used BZS to other clamps.
- Sequence movement may not be done because the bottom depth difference of G thread makes metal sealing insufficient.
- 3. The difference between the set pressure and the supplying pressure should be 1MPa or more.
- 4. For using multiple sequence valves to operate cylinders in sequence, the difference of each set pressure should be 1MPa or more.
- 5. Depending on circuit system (actuator capacity, hydraulic pipe diameter, passage length, etc.), sometimes it is necessary to reduce hydraulic flow rate to achieve proper sequence movement. Make sure you are able to control flow rate. (Since BZS is directly mounted on and used exclusively for one actuator, it is easily affected by hydraulic flow rate.)
- 6. Filter is not built in this product. Please note that contaminants such as cutting chips and sealing tapes entering into the product cause malfunction. Also when internal parts are damaged, it will not operate properly even after removing contaminants.

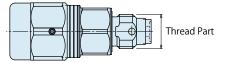
Circuit Symbol



• What is a Sequence Valve?

The sequence valve controls the clamping and positioning sequence of multiple actuators.

When the incoming side pressure (P1 port) reaches the sequence setting pressure value, the pressure will be supplied to the outgoing side (P2 port). Refer to P.961B for the action description.



Control	Va	ve
Digest	P.9	47

Model No. Indication

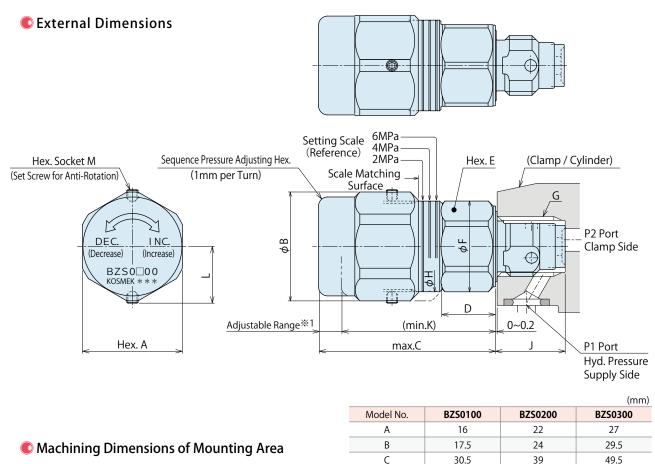
Specifications

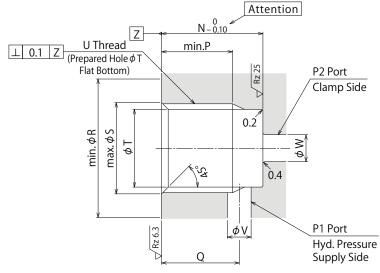
Applicable ProductsExternal Dimensions

Accessories



Digest P.	J-17								Ha	rmony in Innovation
										High-Power
Applic	able Produ	ucts								Series
Model No.	DBA (Double Action) Block Cylinder		FVA (Double Action) Centering Vise	FVC (Double Action) Centering Vise		LHA (Double Action) Swing Clamp	LHC (Double Action) Swing Clamp	LHD (Double Action) Swing Clamp	LHE (Double Action) High-Power Swing Clamp	Pneumatic Se
	DBA0250-C	DBC0250-C	FVA0401	FVC0630	FVD1600	LHA0360-C		LHD0400-C	LHE0300-C	
	DBA0320-C	DBC0320-C	FVA0631		FVD2500		LHC0400-C	LHD0480-C	LHE0360-C	Hydraulic Ser
BZS0100			FVA1001				LHC0480-C		LHE0400-C	Valve / Couple
						LHA0550-C			LHE0480-C	Hydraulic Uni
									LHE0550-C	Manual Opera
	DBA0400-C	DBC0400-C		FVC1000	FVD4000	LHA0650-C	LHC0650-C			Accessories
BZS0200	DBA0500-C	DBC0500-C		FVC1600 ^{*1}		LHA0750-C				Cautions / Oth
						LHA0900-C			\sim	Cautions / Oth
BZS0300						LHA1050-C				
				10			<u>1</u>			Hole Clamp
	LHS (Double Action)	LHV (Double Action)	LHW (Double Action)	LT (Single Action)	LG (Single Action)	LGV (Single Action)	LKA (Double Action)	LKC (Double Action)	LKE (Double Action)	SFA SFC
Model No.	Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp	Swing Clamp	Link Clamp	Link Clamp	High-Power Link Clamp	
	LHS0360-C	LHV0400-C E-	LHW0401-C	LT0301-C	LG0301-C□-□	LGV0400-C	LKA0360-C	LKC0400-C 🛛 -	LKE0300-C	Swing Clamp LHA
	LHS0400-C	LHV0480-C□E-□	LHW0481-C	LT0361-C□-□	LG0361-C□-□	LGV0480-C	LKA0400-C	LKC0480-C	LKE0360-C	LHC
BZS0100	LHS0480-C	LHV0550-C E-	LHW0551-C00-0	LT0401-C□-□	LG0401-C	LGV0550-C	LKA0480-C	LKC0550-C 🛛 -	LKE0400-C	LHS
	LHS0550-CO-			LT0481-C	LG0481-C□-□		LKA0550-C 🗆 -		LKE0480-C 🗌	LHW
				LT0551-C	LG0551-C				LKE0550-C	LG/LT TLA-2
BZS0200	LHS0650-CO-		LHW0651-C	LT0651-C		LGV0650-C	LKA0650-C 🗆 -	LKC0650-C 🛛 -		TLB-2
5250200	LHS0750-C	LHV0750-C E-	LHW0751-C	LT0751-CD-D		LGV0750-C	LKA0750-C			TLA-1
BZS0300	LHS0900-C				LG0901-C		LKA0900-C			Link Clamp
5250500	LHS1050-C				LG1051-C		LKA1050-C			LKA
										LKC
Model No.		LKV (Double Action)			LJ (Single Action)	LJV (Single Action)				LKW LJ/LM
	Universal Clamp		Link Clamp	Link Clamp	Link Clamp	Link Clamp				TMA-2
	LKK0360-C-	LKV0400-C E-	LKW0401-C	LM0300-C	LJ0302-C	LJV0400-C				TMA-1
	LKK0400-C-	LKV0480-C E-	LKW0481-C	LM0360-C	LJ0362-C	LJV0480-C				Work Support
BZS0100	LKK0480-C-	LKV0550-C E-	LKW0551-C	LM0400-C	LJ0402-C	LJV0550-C				LD
	LKK0550-C-			LM0480-C	LJ0482-C					LC
				LM0550-C	LJ0552-C					TNC TC
BZS0200	LKK0650-C-	LKV0650-C E-	LKW0651-C	LM0650-C	LJ0652-C	LJV0650-C				
		LKV0750-C E-	LKW0751-C00-0	LM0750-C	LJ0752-C	LJV0750-C				Air Sensing Lift Cylinder
BZS0300					LJ0902-C					LLW
					LJ1052-C		-			Linear Cylinder
			ICA (Dauble Artice)	LCE (Dauble Astian)	LL (Dauble Asting)	LLR (Double Action)	LIV (Dauble Astism)	LIM (Dauble Astian)		Compact Cylin
Model No.	LFW (Double Action) Link Clamp	LFA (Double Action) Link Clamp	LSA (Double Action) Side Clamp	LSE (Double Action) High-Power Side Clamp	LL (Double Action) Linear Cylinder			LLW (Double Action) Lift Cylinder		LL
		-	LSA0360-C-	LSE0360-C-						LLR
	LFW0480-C J LFW0550-C J	LFA0480-C	LSAU300-C-	LSE0300-C-	LL0360-C	LLR0400-C		LLW0361-C		DP
BZS0100					LL0400-C		LLV0400-C_E-			DR
DZ30100					LL0480-C	LLR0480-C		LLVV0401-C UU-U		DS
										DT
	LFW0650-C J	LFA0650-C			LL0650-C	LLR0650-C				Block Cylinder
BZS0200	LFW0050-C	LFA0050-C				LLR0750-C				DBA/DE
					LL0750-C	LLR0750-C	F			Centering Vise
BZS0300						LLR1050-C				FVA
										FVD
ote : ※1.	lt is not possibl	le to install two	o BZS valves to	FVC1000.						FVC
										Control Valve
In case o	of Work Supp	oort】								BZL
or usina Di	rect-Mount Seq	uence Valve for	Work Support	(Model:IC%), r	mount Speed C	ontrol Valve (M	odel:BZI	A) on Work Supr	port and	BZX/JZ
-	ct-Mount Seque						,	, on noneapp		BZS
	to P.962A for M				J					Pallet Clamp
	ntact us when c									VS/VT
										Expansion
		Work Supe	port (Model:LC	*)						Locating Pin
										VFL/VF
ı		Speed	d Control Valve	(Model:BZL	-A)					VFJ/VFI
		~	-+ M C							Pull Stud Clam
		Dire	ct-Mount Seque	ence Valve						FP
		Mar	nifold Block (Mo	del:17R79)					FQ
	DECLINC	¥ /'''			<u>,</u>					Customized
1										Spring Cylinday
\										Spring Cylinder





Model No.	BZS0100	BZS0200	BZS0300
A	16	22	27
В	17.5	24	29.5
C	30.5	39	49.5
D	7.5	12	15
E	14	18	22
F	15.5	20	24
G	G1/8	G1/4	G3/8
Н	13.8	20	24
J %2	(11.6)	(15.1)	(17.6)
К	(26.5)	(34)	(44)
L	9.5	12.5	15
М	1.3	1.3	1.5
N	11.5	15	17.5
Р	8.5	11*3	13
Q	9	11.5	13
R (Flat Surface Area)	16	20.5	24.5
S	10	13.5	17
Т	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

Notes:

- 1. Since the $\sqrt{Rz 6.3}$ area is sealing part, be careful not to damage it.
- 2. Since the $\sqrt{Rz 12.5}$ area is the metal sealing part at the edge of BZS, 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.
- *1. Use the sequence pressure adjusting hex. within the adjustable range of *2 (the dimensions K~C in the above). Please note that if it is loosened further than max. C, pressure adjusting hex. part and internal spring will come off.
- $\%2.\,$ Dimension when mounted. (+0.5mm before mounted.)
- **3. If mounting plugs or fittings with G thread specification available in the market, the dimension '**3' should be 12.5.

Cautions

Specifications

External Dimensions

Accessories



High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

Swing Clamp

SFA SFC

LHA

LHC

LHS LHW

LG/LT TLA-2

TLB-2 TLA-1 Link Clamp

> LKA LKC LKW

LJ/LM TMA-2 TMA-1

Work Support LD LC

TNC

ТC

Air Sensing

Lift Cylinder LLW Linear Cylinder /

Compact Cylinder LL LLR LLU

DP

DR DS DT

4. The difference between the set pressure and the supplying pressure should be 1MPa or more.

1. Please design hydraulic circuit properly. Improper circuit design may lead to malfunctions and damages.

5. For using multiple sequence valves to operate cylinders in sequence, the difference of each set pressure should be 1MPa or more.

2. Filter is not built in this product. Be aware that contaminants such as cutting chips and sealing tapes entering into the product cause

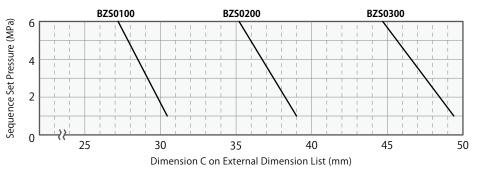
6. For using multiple sequence valves to operate cylinders simultaneously, adjust them gradually by checking their actions.

malfunction. Also when internal parts are damaged, it will not operate properly even after removing contaminants. 3. Depending on circuit system (actuator capacity, hydraulic pipe diameter, passage length, etc.), sometimes it is necessary

to reduce hydraulic flow rate to achieve proper sequence movement. Make sure you are able to control flow rate.

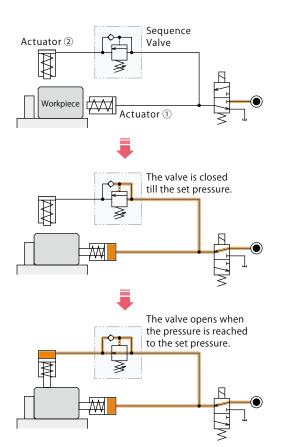
(Since BZS is directly mounted on and used exclusively for one actuator, it is easily affected by hydraulic flow rate.)

- 7. Please keep in mind that the minimum passage area of each actuator will be decreased by mounting this product and thus operating time may become longer.
- 8. Please mount to an actuator using Hex. E shown in External Dimensions on P.961 with the tightening torque shown in the specification list on P.959. Insufficient or excessive tightening torque leads to malfunction.
- 9. Air bleeding is required as air mixed in the circuit causes malfunction.
- 10. At shipment, sequence pressure is not adjusted. Please adjust it by referring to the graph below. Install a pressure gauge on the circuit to check pressure as necessary. After adjustment, tighten one or more set screw for anti-rotation. (Tightening torque:0.2N·m)





Action Description



Operating Procedure		Note	Centering Vise
	Hydraulic pressure is ON.		FVA FVD
	Actuator ① is activated.		FVC
	Pressure increases to the sequence	The difference between the operating	Control Valve BZL
g	•	pressure and the sequence operation	BZT
Locking	operation set pressure.	set pressure should be 1MPa or more.	BZX/JZG
Lo	The sequence valve circuit opens.		
	Actuator (2) is activated.		Pallet Clamp
	Actuator @ is activated.		VS/VT
	Locking action is completed.		Expansion
	Machining, etc.		Locating Pin
			VFL/VFM
g	Hydraulic pressure is OFF.		VFJ/VFK
Releasing	The actuators $\textcircled{1}$ and $\textcircled{2}$ are	The check valve in the sequence valve opens	Pull Stud Clamp
ele	released almost simultaneously.	when the incoming side pressure decreases.	FP
Å.	Releasing action is completed.		FQ

Customized Spring Cylinder DWA/DWB

VFM /FK

961B

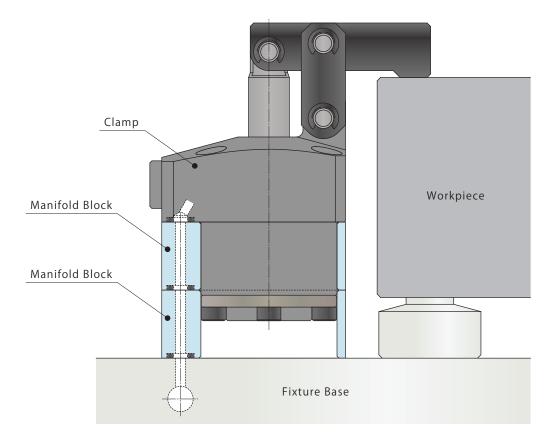
Manifold Block

Model WHZ-MD Model LZY-MD Model LZ-MS Model LZ-MP Model TMZ-1MB Model DZ-MG Model DZ-MS



Manifold Block

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

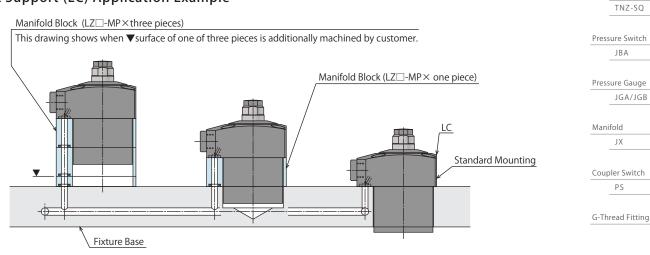




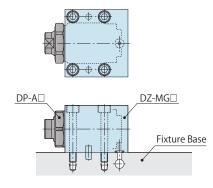
licable Model ————		High-Powe Series
Manifold Block Model No.	Corresponding Item Model No.	Pneumatic
		Hydraulic S
Model WHZ-MD	Model WCA Model WHA	Valve / Cou
	Model WCE Model WHE	Hydraulic U Manual Op
	Model LKA Model LKE Model LHC Model LHS	Accessorie
Model LZY-MD		Cautions /
	Model LKC Model LHA Model LHE Model LL	
		Screw Locator
Model LZ-MS	Model LJ Model LG	VXF/
	Model LM Model LT	Manual Expa
		Locating Pin
		VX
Model LZ-MP	Model LC Model TC	Manifold Bl
		WHZ
		LZY-I
Model TMZ-1MB	Model TMA-1	LZ-M
		LZ-M
		TMZ-
	TMA 2	TMZ-
Model TMZ-2MB	Model TMA-2	
		Manifold Blo Nut
		DZ-R
Model DZ-MG /MS	Model DP	DZ-C
		DZ-P
		DZ-B
		LZ-S

Application Examples -

• Work Support (LC) Application Example



• Push Cylinder (DP) Application Example

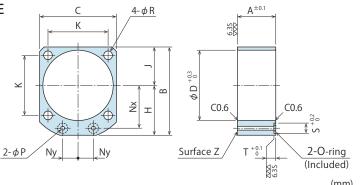


LZ-SQ

WNZ-SQ TNZ-S

Manifold Block for WCA/WCE/WHA/WHE



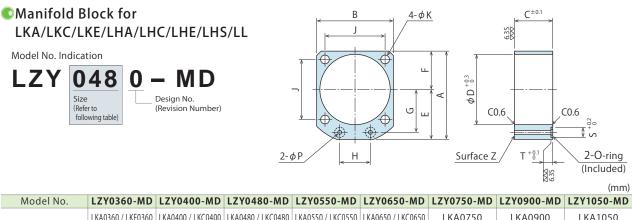


					(mm)
Model No.	WHZ0600-MD	WHZ0320-MD	WHZ0400-MD	WHZ0500-MD	WHZ0630-MD
Corresponding Model No.	WCE0602 WHE0600	WCA0321 WCE1002 WHA0320 WHE1000	WCA0401 WCE1602 WHA0400 WHE1600	WCA0501 WCE2502 WHA0500 WHE2500	WCA0631 WCE4002 WHA0630 WHE4000
А	23	25	27	31	35
В	54	60	67	77	88.5
С	45	50	58	68	81
D	40	46	54	64	77
Н	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
Р	3	5	5	5	5
R	5.5	5.5	5.5	6.5	6.5
S	8	10	10	10	10
Т	1.4	1.4	1.4	1.4	1.4
O-ring	1BP5	1BP7	1BP7	1BP7	1BP7
Weight kg	0.1	0.1	0.1	0.2	0.2

Notes : 1. Material: A2017BE-T4 Surface Finishing: Zircon Finishing (Zirconium Chemical Conversion Treatment)

2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the dimension A as a reference.

3. For other block thickness (dim. A), machine the surface Z or design a block referring to the drawing and apply surface treatment if necessary.



modermor								
Corresponding Model No.	LKA0360 / LKE0360 LHA0360 / LHC0360 LHE0360 / LHS0360 LLO360	LKE0400 / LHA0400	LKA0480 / LKC0480 LKE0480 / LHA0480 LHC0480 / LHE0480 LHS0480 / LL0480	LKE0550 / LHA0550	LKA0650 / LKC0650 LHA0650 / LHC0650 LHS0650 LL0650	LKA0750 LHA0750 LHS0750 LL0750	LKA0900 LHA0900 LHS0900 LL0900	LKA1050 LHA1050 LHS1050 LL1050
A	49	54	61	69	81	92	107	122
В	40	45	51	60	70	80	95	110
С	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
Н	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
Р	3	3	3	3	5	5	5	5
S	8	8	8	8	10	10	10	10
Т	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
O-ring	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Weight kg	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

Notes : 1. Material: S45C Surface Finishing: Alkaline Blackening

Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the dimension C as a reference.
 For other block thickness (dim. C), machine the surface Z or design a block referring to the drawing and apply surface treatment if necessary.



High-Power

Pneumatic Series

Hydraulic Series

Valve / Coupler

Hydraulic Unit

Accessories

Screw Locator

Manual Operation

VXF/VXF Manual Expansion Locating Pin VX

> WHZ-MD LZY-MD

LZ-MP TMZ-1MB TMZ-2MB DZ-M Manifold Block / Nut

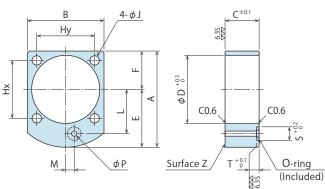
> DZ-R DZ-C

Series

Manifold Block for LJ/LM/LG/LT

Model No. Indication





Cautions / Others

									(mm)
Model No.	LZ0300-MS	LZ0360-MS	LZ0400-MS	LZ0480-MS	LZ0550-MS	LZ0650-MS	LZ0750-MS	LZ0900-MS	LZ1050-MS
Corresponding Model No.	LG0301 / LT0301 LJ0302 / LM0300		LG040 / LT040 LJ0402 / LM0400		LG055 / LT055 LJ0552 / LM0550		LG075 / LT075 LJ0752 / LM0750	LG090 LJ0902	LG105 LJ1052
А	48	51.5	56.5	62	70	82	93	107	122
В	34	40	45	51	60	70	80	95	110
С	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
М	3	5	5	0	0	0	0	0	0
Р	3	3	3	3	3	5	5	5	5
S	8	8	8	8	8	10	10	10	10
Т	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
O-ring	1BP5	1BP5	1BP5	1BP5	1BP5	1BP7	1BP7	1BP7	1BP7
Weight kg	0.1	0.2	0.2	0.3	0.4	0.5	0.8	1.2	1.7

1. Material:S45C Surface Finishing: Alkaline Blackening Notes :

> 2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the dimension C as a reference. 3. For other block thickness (dim. C), machine the surface Z or design a block referring to the drawing and apply surface treatment if nec

LZ0260-MP LZ0300-MP LZ0360-MP LZ0400-MP LZ0480-MP LZ0550-

LC0402 / TC0402

20

56.5

45

40

34

22.5

34

34

26

5

5.5

25

8

3

8

1.4

1BP5

0.2

LC0482 / TC0482

27

62

51

48

36.5

25.5

40

40

30

0

5.5

28

11

3

8

1.4

1BP5

0.3

LC0362

20

51.5

40

36

31.5

20

31.4

31.4

23.5

5

4.5

23.5

8

3

8

1.4

1BP5

0.2

Manifold Block for LC/TC

Model No.

Corresponding Model No.

A

B

С

D

Н

J

Кx

Ку

Nx

Ny

R

Υx

Yy

Ρ

S

O-ring Weight

kg



LC0262

18

43

29

26

26.5

16.5

25

21

18.5

3

3.4

18.5

7

3

8

1.4

1BP5

0.1

LC0302

18

48

34

30

28.5

19.5

30

23

20.5

3

4.5

20.5

7

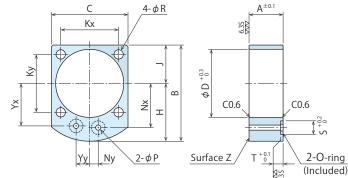
3

8

1.4

1BP5

0.1



47

47

33.5

0

6.8

31

13

3

8

1.4

1BP5

0.4

55

55

39.5

0

6.8

37

14

5

10

1.4

1BP7

0.5

	DZ-P
essary.	DZ-B
,	LZ-S
	LZ-SQ
	WNZ-SQ
	TNZ-S
	TNZ-SQ
	Pressure Switch
	JBA
	Pressure Gauge
	JGA/JGB

		(6.35	Included)	Manifold
LZ0550-MP	LZ0650-MP	LZ0750-MP	(mm) LZ0900-MP	JX
LC0552 / TC0552	LC0652 / TC0652	LC0752 / TC0752	LC0902	
30	32	37	45	Coupler Switch
70	82	93	107	PS
60	70	80	95	
55	65	75	90	G-Thread Fitting
40	47	53	59.5	
30	35	40	47.5	

75

75

52.5

0

11

50

15

5

10

1.4

1BP7

1.2

63

63

45

0

9

42.5

15

5

10

1.4

1BP7

0.8

Notes : 1. Material:S45C Surface Finishing: Alkaline Blackening

2. Mounting bolts are not provided. Prepare mounting bolts according to the mounting height using the dimension A as a reference.

3. For other block thickness (dim. A), machine the surface Z or design a block referring to the drawing and apply surface treatment if necessary.



Sales Offices across the World

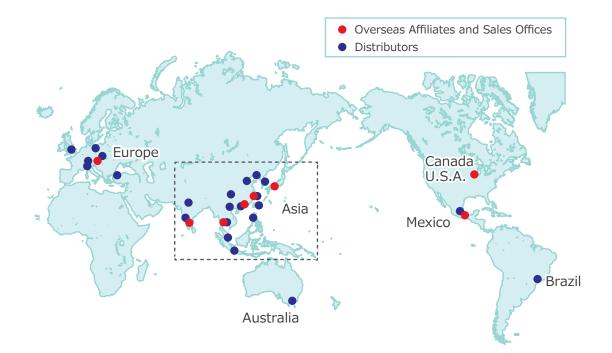
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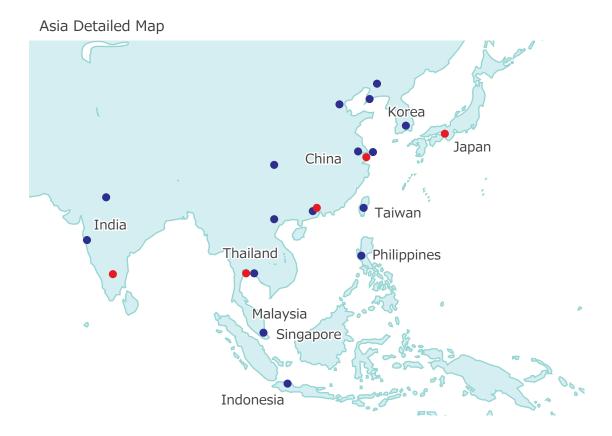
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