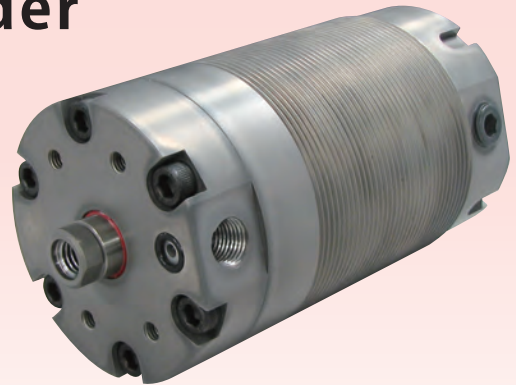


Customized Spring Cylinder

Model DWA

Model DWB



Spring lock conserves energy

Cylinders can be customized according to the customer's requirements.

- **Custom Made**

Design and calculation of cylinder is very tedious and involves a lot of effort.

KOSMEK can do this work for the customer.

KOSMEK develops and manufactures spring cylinders according to the customers preference for mounting method, space and capacity.

Please contact us directly or by sending an inquiry via our website.

- **When using the cylinder, power source can be switched off.**

This cylinder is locked by spring force and released by hydraulic force.

When using cylinder, power source can be switched off.

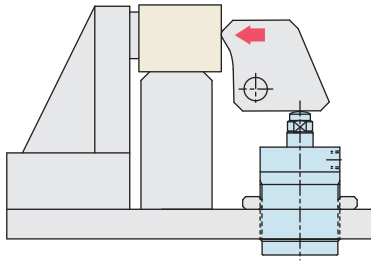
- **Cylinder output is stable.**

"Spring force=Cylinder output" Unstable and abnormal conditions caused by thermal changes in the fluid are eliminated.

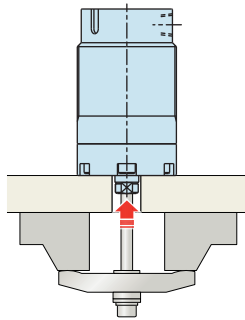
Same force is maintained when using the cylinder.

Model No.	Model DWA	Model DWB
Classification	Single Action Push Cylinder	Single Action Pull Cylinder
Action	Spring Lock / Hydraulic Release	
Standard Model	→ P.825	→ P.826
Customized Model	Please contact us directly or send an inquiry via our website.	

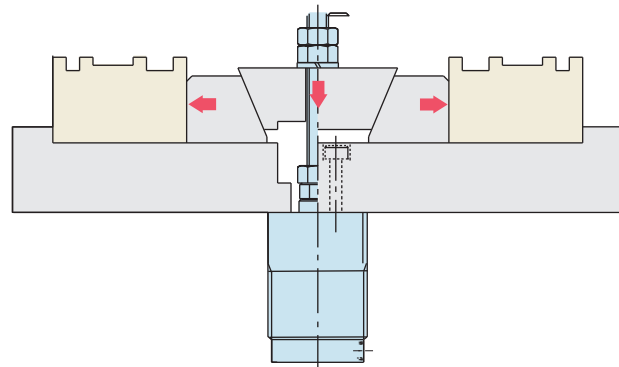
Application Examples



Push Cylinder (Spring Lock)



Pull Cylinder (Spring Lock)



High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

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

Link Clamp

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

Work Support

LD
LC
TNC
TC

Air Sensing Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion Locating Pin

VL
VM
VJ
VK

Pull Stud Clamp

FP
FQ

Customized Spring Cylinder

DWA/DWB

● Model No. Indication

Single Action Push Cylinder



1 Clamping Force

025 : 2.5 kN

100 : 10 kN

400 : 40 kN

※ Spring force varies depending on the stroke.

2 Design No.

0 : Revision Number

3 Piping Method

G : Gasket Option (With R Thread Plug)

S : Piping Option (Rc Thread Port)

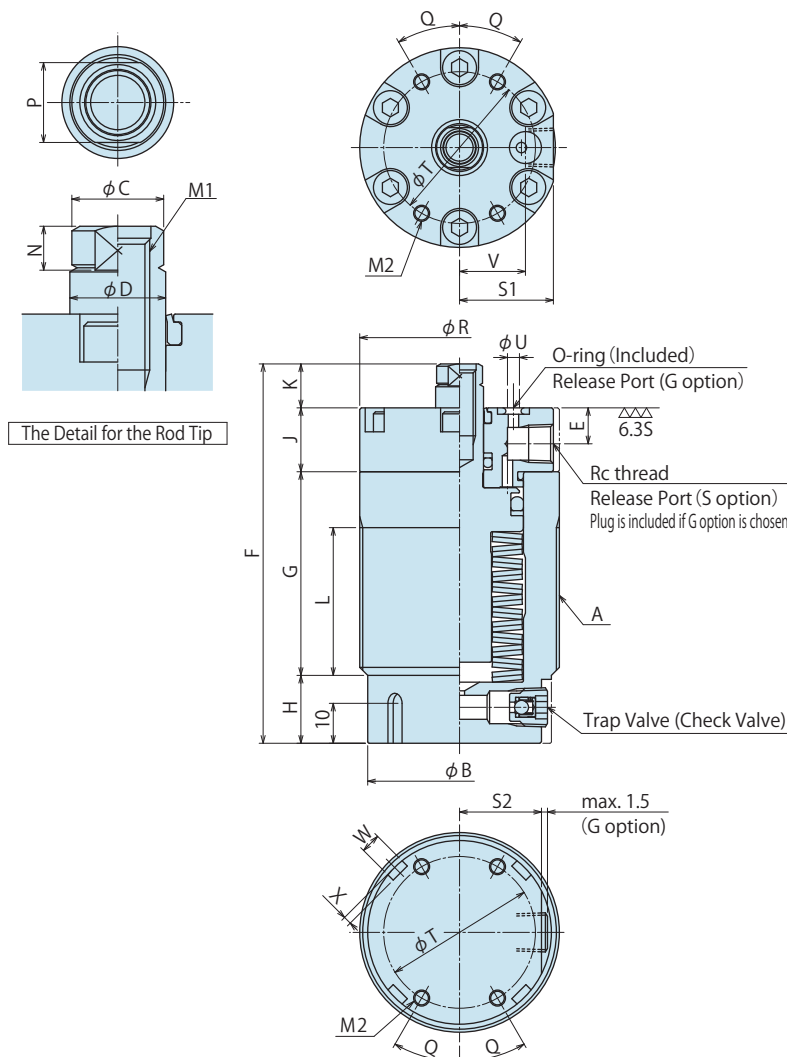
● Specifications

Model No.	DWA0250-□	DWA1000-□	DWA4000-□	
Stroke	mm	5		
Cylinder Area	cm ²	6.911	19.227	44.461
Cylinder Capacity	cm ³	3.5	9.6	22.2
Operating Pressure (Release Pressure)	MPa	14		
Withstanding Pressure	MPa	21		
Operating Temperature	°C	0 ~ 70		
Spring Force kN	Stroke 0mm (When releasing)	3.8	15	44
	Stroke 3mm (Recommended Clamp Stroke)	2.6	11	39
	Stroke 5mm (At Full Stroke)	1.7	8.4	35

Note 1. Spring force may exhibits hysteresis.
Please contact us for further detail and specification with individual outline drawing.

● External Dimensions

※This drawing shows the status at full stroke.



(mm)

Model No.	DWA0250-□	DWA1000-□	DWA4000-□
A (Nominal x Pitch)	M50×1.5	M75×2	M110×2
B	46	72.5	105
C	11.5	15.5	29.5
D	12	16	30
E	9	11	11
F	95	143	218
G	51	88	154
H	17	22	25
J	16	21	21
K	11	12	18
L	37	68	124
M1 (Nominal x Pitch x Depth)	M8×1.25×18	M10×1.5×20	M20×2.5×31
M2 (Nominal x Pitch x Depth)	M4×0.7×8	M6×1×11	M10×1.5×15
N	5.5	6.5	11.5
P	10	14	27
Q	30°	30°	45°
R	50	75	110
S1	23.5	35.5	53
S2	20.5	34	51
T	38	50	65
U	3	5	5
V	16.5	25.5	34.5
W	5	7	8
X	2	3	3.5
Rc	Rc1/8	Rc1/4	Rc1/4
O-ring (Included)	1BP5	1BP7	1BP7

Model No. Indication

Single Action Pull Cylinder

DWB **025** **0** - **S**

1
2
3

1 Clamping Force

025 : 2.5 kN

100 : 10 kN

400 : 40 kN

※ Spring force varies depending on the stroke.

2 Design No.

0 : Revision Number

3 Piping Method

G : Gasket Option (With R Thread Plug)

S : Piping Option (Rc Thread Port)

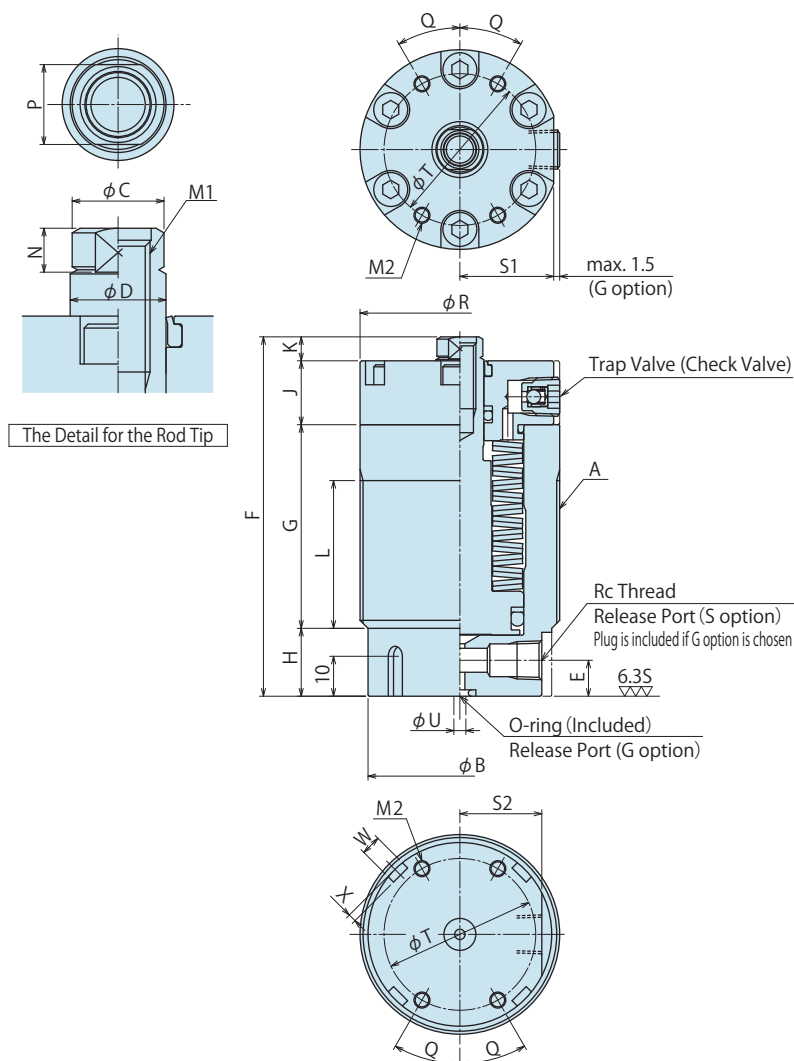
Specifications

Model No.	DWB0250-□	DWB1000-□	DWB4000-□
Stroke	mm		
Stroke	5		
Cylinder Area	cm ²	8.042	21.237
Cylinder Capacity	cm ³	4.0	10.6
Operating Pressure (Release Pressure)	MPa		
Operating Pressure (Release Pressure)	14		
Withstanding Pressure	MPa		
Withstanding Pressure	21		
Operating Temperature	°C		
Operating Temperature	0 ~ 70		
Spring Force: kN	Stroke 0mm (When releasing)	3.8	15
	Stroke 3mm (Recommended Clamp Stroke)	2.6	11
	Stroke 5mm (At Full Stroke)	1.7	8.4

Note 1. Spring force may exhibits hysteresis.
Please contact us for further detail and specification with individual outline drawing.

External Dimensions

※ This drawing shows the status at full stroke.



	(mm)		
Model No.	DWB0250-□	DWB1000-□	DWB4000-□
A (Nominal × Pitch)	M50×1.5	M75×2	M110×2
B	46	72.5	105
C	11.5	15.5	29.5
D	12	16	30
E	9	11	15
F	90	138	213
G	51	88	154
H	17	22	25
J	16	21	21
K	6	7	13
L	37	68	124
M1 (Nominal×Pitch×Depth)	M8×1.25×18	M10×1.5×20	M20×2.5×31
M2 (Nominal×Pitch×Depth)	M4×0.7×8	M6×1×11	M10×1.5×15
N	5.5	6.5	11.5
P	10	14	27
Q	30°	30°	45°
R	50	75	110
S1	23.5	35.5	53
S2	20.5	34	51
T	38	50	65
U	3	5	5
W	5	7	8
X	2	3	3.5
Rc	Rc1/8	Rc1/4	Rc1/4
O-ring (Included)	1BP5	1BP7	1BP7

High-Power Series

Pneumatic Series

Hydraulic Series

Valve / Coupler Hydraulic Unit

Manual Operation Accessories

Cautions / Others

Hole Clamp

SFA
SFC

Swing Clamp

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

Link Clamp

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

Work Support

LD
LC
TNC
TC

Air Sensing Lift Cylinder

LLW

Compact Cylinder

LL
LLR
LLU
DP
DR
DS
DT

Block Cylinder

DBA
DBC

Control Valve

BZL
BZT
BZX/JZG

Pallet Clamp

VS
VT

Expansion Locating Pin

VL
VM
VJ
VK

Pull Stud Clamp

FP
FQ

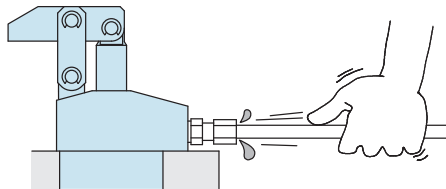
Customized Spring Cylinder

DWA/DWB

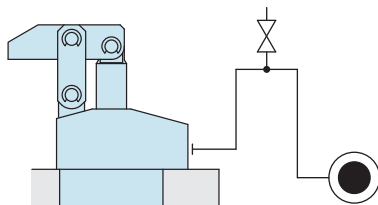
● Cautions

● Installation Notes (For Hydraulic Series)

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



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



5) Checking Looseness and Retightening

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

● Hydraulic Fluid List

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

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

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

Cautions

- Installation Notes (For Hydraulic Series)
- Hydraulic Fluid List
- Notes on Hydraulic Cylinder Speed Control Circuit
- Notes on Handling
- Maintenance/Inspection
- Warranty

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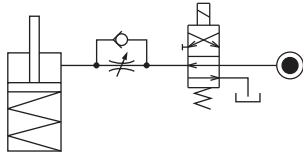
● Notes on Hydraulic Cylinder Speed Control Unit



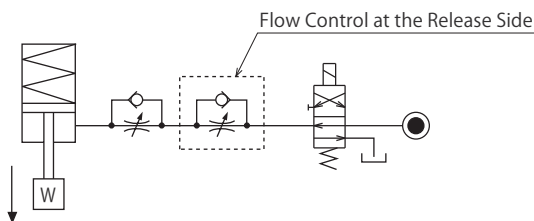
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

● 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

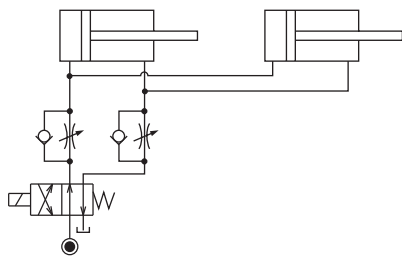
Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

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

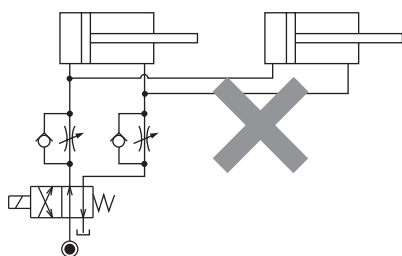
Refer to P.47 for speed adjustment of LKE.

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

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

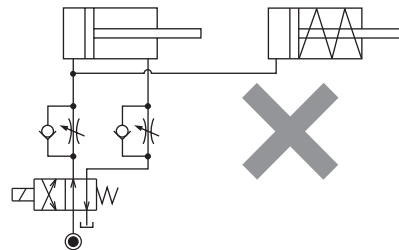


【Meter-in Circuit】 (LKE/TMA/TLA must be controlled with meter-in.)



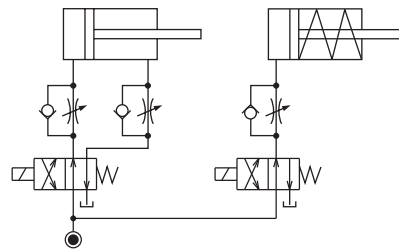
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

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

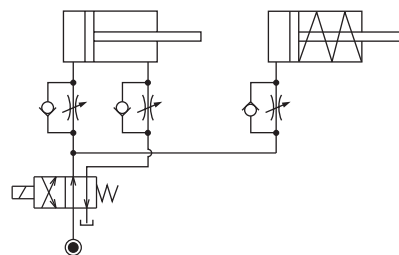


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

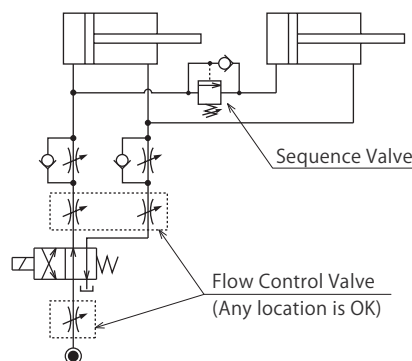
- Separate the control circuit.



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



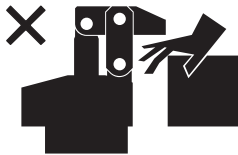
- ② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve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



● Cautions

● Notes on Handling

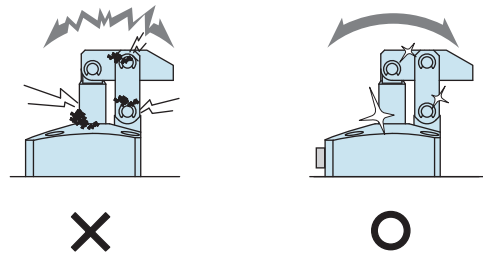
- 1) It should be handled by qualified personnel.
 - The hydraulic machine and air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when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



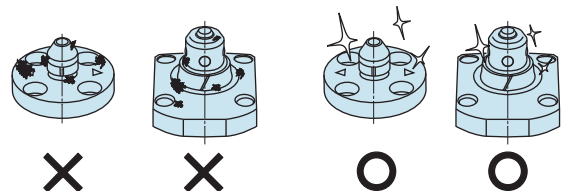
- 4) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance and Inspection

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



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



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

Cautions

[Installation Notes
\(For Hydraulic Series\)](#)
[Hydraulic Fluid List](#)
[Notes on Hydraulic Cylinder
Speed Control Circuit](#)
[Notes on Handling](#)
[Maintenance/
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Sales Offices

● Warranty

1) Warranty Period

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

2) Warranty Scope

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

Defects or failures caused by the following are not covered.

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

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

Sales Offices

Sales Offices across the World

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

Sales Offices in Japan

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

Global Network



Asia Detailed Map



● FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
 ● SPECIFICATIONS IN THIS CATALOG ARE SUBJECT TO CHANGE WITHOUT NOTICE.

