

KOSMEK Products for Press Machines

Application examples with press machine related KOSMEK products are available on our website.



http://www.kosmek.co.jp/php_file/video_index.php?lang=2

QDCS Complete Catalog

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■ For Further Information on Unlisted Specifications and Sizes, Please call us.
 ■ Specifications in this Leaflet are Subject to Change without Notice.



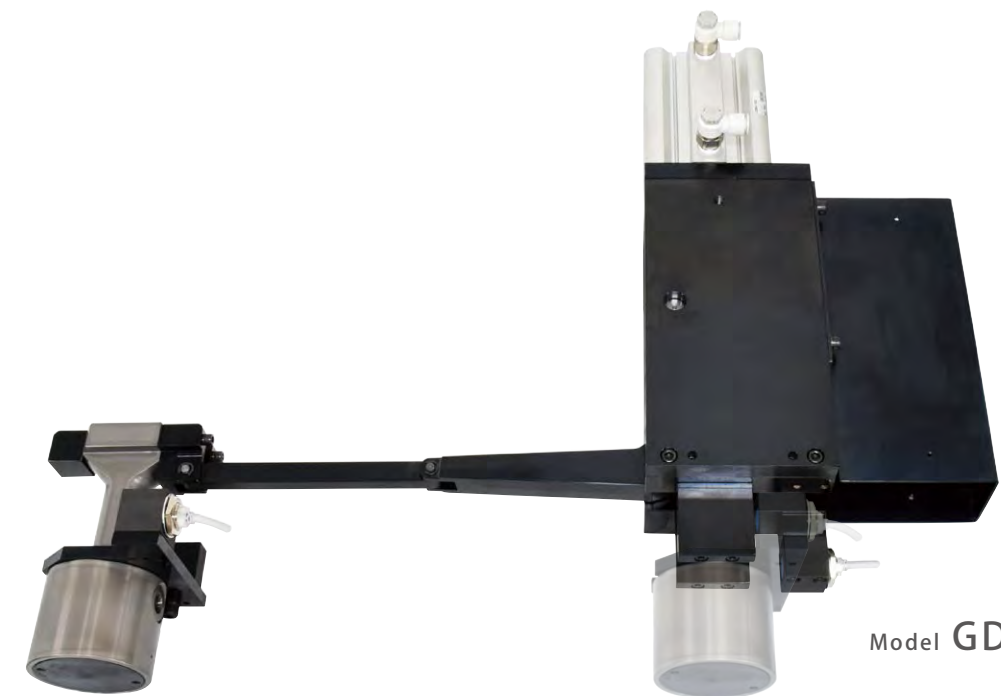
2021/04 First 0Ry

New

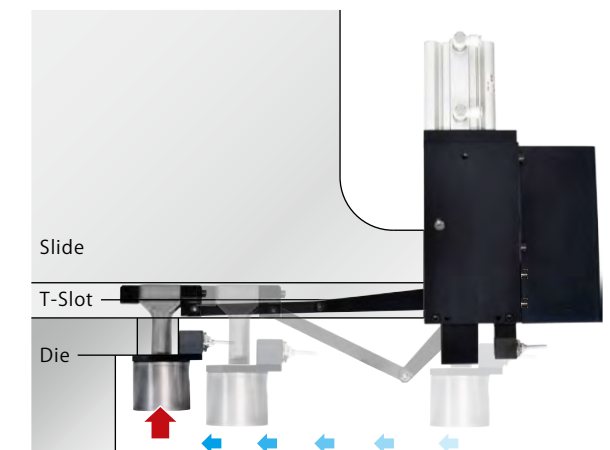
Hydraulic Piston Clamp for Press Machine

Link Slide Clamp for Upper Die

Compact Traveling Die Clamp



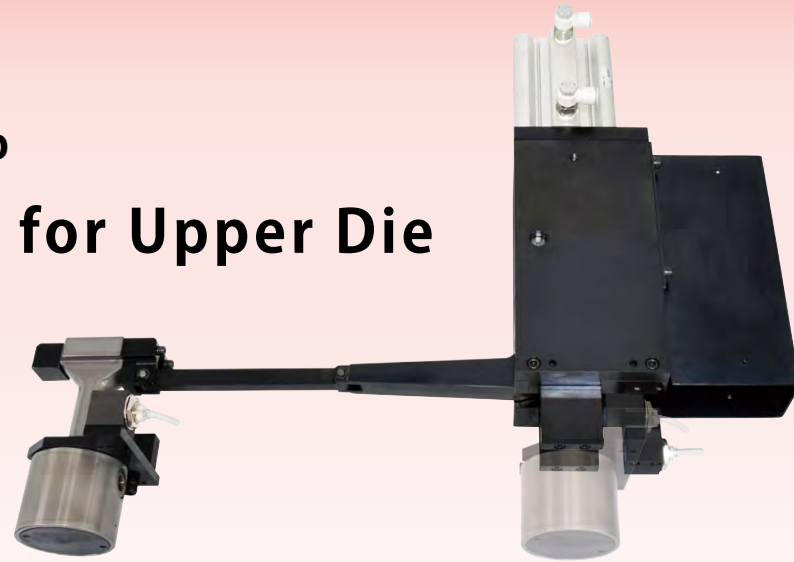
Model GDL



For Press Machine

Hydraulic Piston Clamp Link Slide Clamp for Upper Die

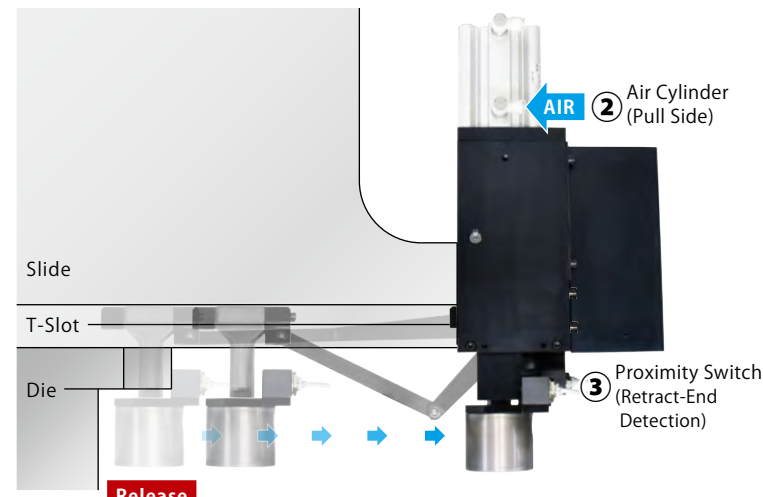
Model GDL



Compact Traveling Die Clamp

Able to install into a narrow space on a machine slide.

Action Description



RELEASE Hydraulic Pressure : OFF → Air (Pull Side) : ON
Air (Push Side) : OFF

Proximity Switch Clamp Retract-End Confirmation : ON
Clamp Forward-End Confirmation : OFF

- ① When hydraulic pressure is released : The clamp releases with built-in spring.
- ② When air pressure is supplied to the pull side port of the air cylinder : The clamp moves backward.
- ③ The proximity switch detects that the clamp moved backward.



LOCK Air (Pull Side) : OFF → Hydraulic Pressure : ON
Air (Push Side) : ON

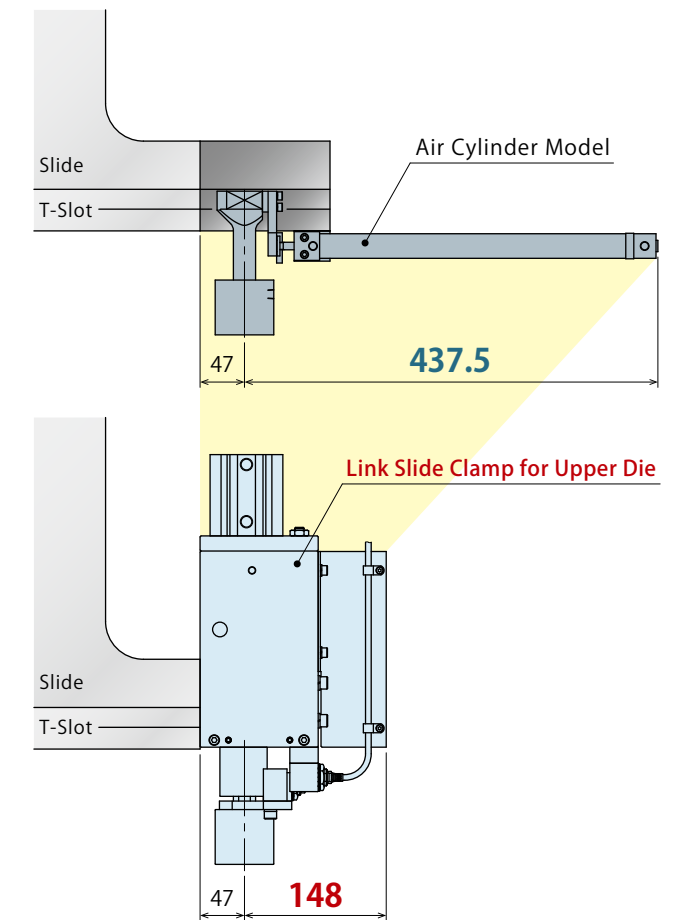
Proximity Switch Clamp Retract-End Confirmation : OFF
Clamp Forward-End Confirmation : ON

- ① When air pressure is supplied to the push side port of the air cylinder : The clamp moves forward until it touches the die.
- ② The proximity switch detects that the clamp moved forward.
- ③ When hydraulic pressure is supplied to the clamp : The clamp locks the die (U-Cut).

Features

Projection amount is less than half

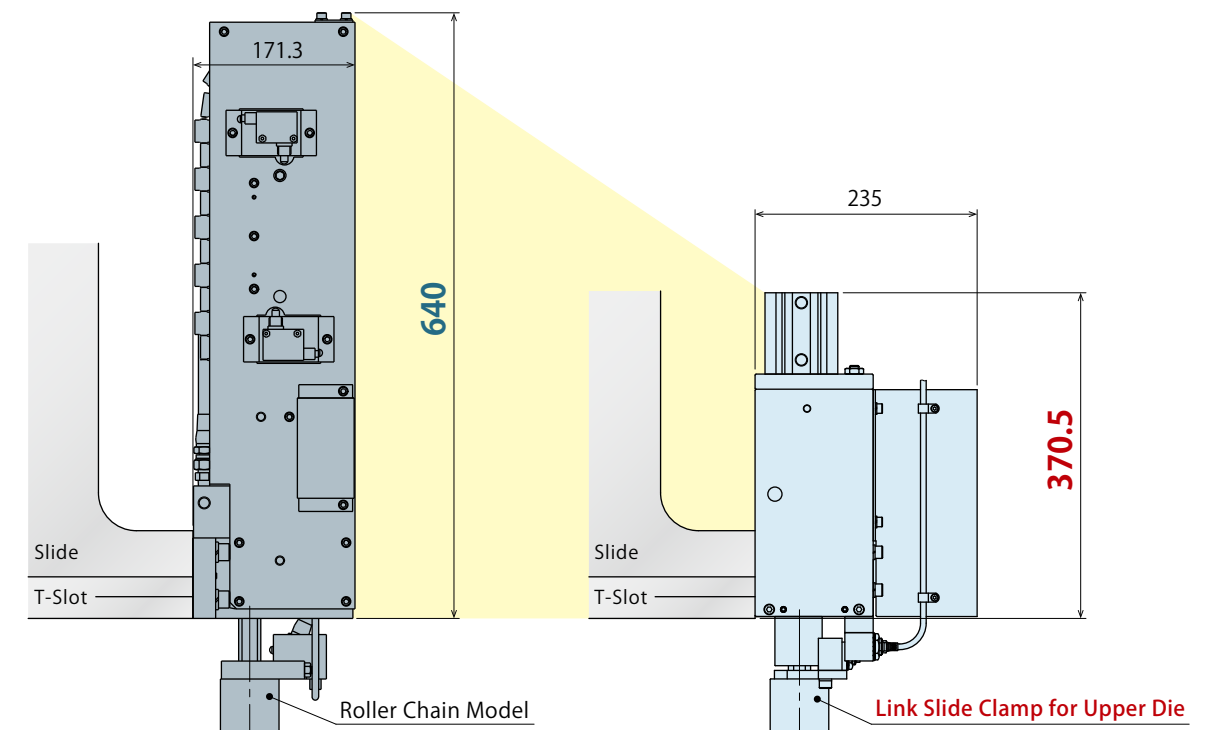
of automatic-slide air cylinder.



※ Comparison when the clamp size is 040 and the slide stroke is 300mm.

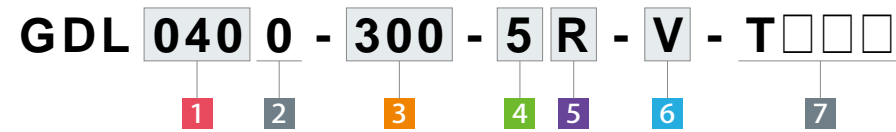
Overall height is about half

of the roller-chain traveling clamp.



※ Comparison when the clamp size is 040 and the slide stroke is 400mm.

Model No. Indication



1 Clamping Force

- 025 : 25 kN
- 040 : 40 kN
- 063 : 63 kN

2 Design No.

- 0 : Revision Number

3 Slide Stroke

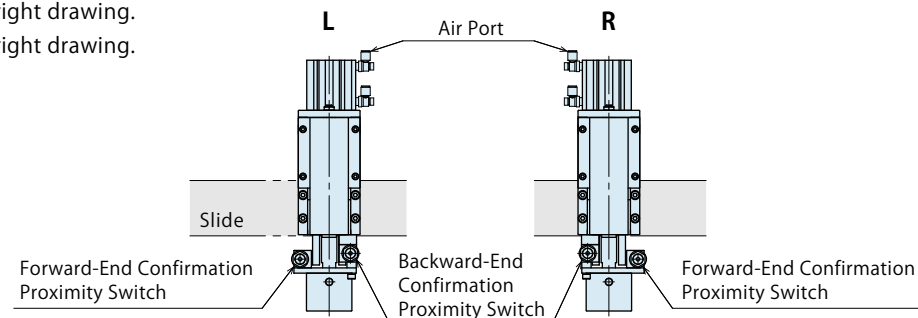
- 300 : Clamp Travel Distance = 300mm
- 400 : Clamp Travel Distance = 400mm
- ※ Extra distance should be considered when determining clamp travel distance.

4 Switch Load Voltage (Current)

- 1 : AC100V
- 2 : AC200V
- 5 : DC24V (5~40mA)

5 Proximity Switch Mounting Position and Air Port Position

- L : See the right drawing.
- R : See the right drawing.



Specifications

Model No.	GDL0250	GDL0400	GDL0630
Clamping Force (at 25MPa)	kN 25	40	63
Cylinder Capacity (at Full Stroke)	cm ³ 8	13	21
Working Pressure	MPa 25	25	25
Withstanding Pressure	MPa 37	37	37
Air Pressure for Air Cylinder ※3	MPa 0.4 ~ 0.5	0.4 ~ 0.5	0.4 ~ 0.5
Full Stroke	mm 8	8	8
Clamp Stroke	mm 5	5	5
Extra Stroke	mm 3	3	3
Operating Temperature ※4	℃ 0 ~ 70 (V: High temperature option is available for 0 ~ 120℃)	0 ~ 70 (V: High temperature option is available for 0 ~ 120℃)	0 ~ 70 (V: High temperature option is available for 0 ~ 120℃)
Use Frequency ※5	20 Cycles / Day or less		
Usable Fluid ※6 ※7 ※8	General Hydraulic Oil Equivalent to ISO-VG-32		
Weight (at Min.h)	kg When slide stroke is 300mm	17	17
	kg When slide stroke is 400mm	19	20

- Notes :
- ※3. Air pressure less than 0.4MPa will cause malfunction.
 - ※4. Option V : High Temperature (0~120℃) is for operating in temperatures of 70° or more.
 - ※5. Please contact us for more frequent use.
 - ※6. Please contact us for fluids other than those mentioned on the list.
 - ※7. If hydraulic viscosity is higher than specified, clamp operating time will be longer.
 - ※8. If using it at low temperature, clamp operating time will be longer because the viscosity of hydraulic oil becomes higher.

6 Options

- Blank : Standard
- H : Extra Height Rod
- N : NPT Port ※1
- P : Available for Existing Machine Retrofit
- S1 : Long Stroke (Full Stroke : 12.5mm)
- S2 : Long Stroke (Full Stroke : 20.0mm)
- V : High Temperature (0 ~ 120℃) ※2

- Notes :
1. Please contact us for specifications and external dimensions of these options.
 - ※1. Dimensions in the specification sheet and other documents are in inches.
 - ※2. Select a hydraulic unit with pressure relief valve when using under high temperature since there may be pressure fluctuation caused by temperature change.

7 Production Number

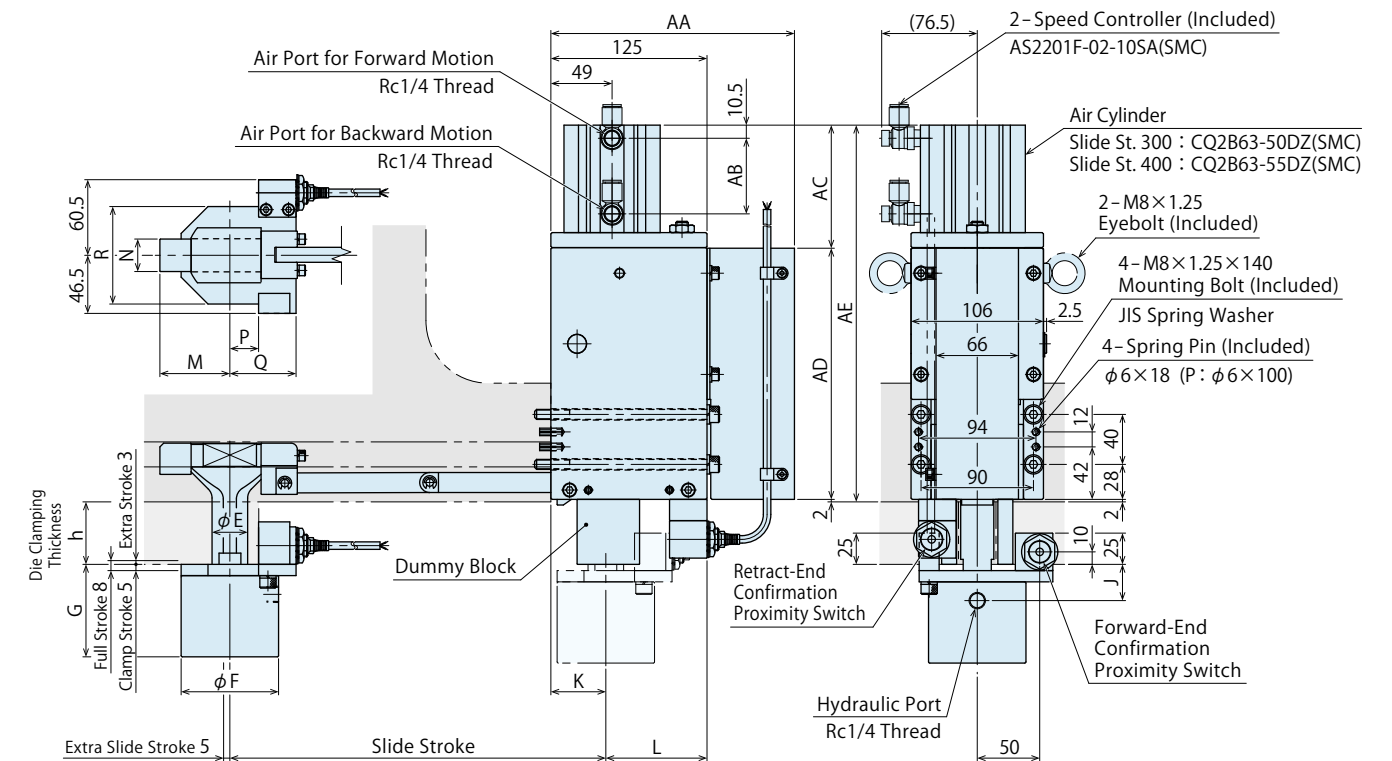
- ※ This number represents the main specification of the clamp's T-slot stem and the clamping height. After the specification is confirmed, we will create a number.

Switch Specifications

Model No.	FL7M-7T7HD-L5	FL7M-7J6HD-L5
Manufacturer	Azbil	Azbil
Voltage	AC 40 ~ 250 V	DC 10 ~ 30 V
Internal Voltage Drop	10 V or less	3 V or less
Load Current	5 ~ 100 mA	3 ~ 100 mA
Cable Length	5 m	5 m

External Dimensions

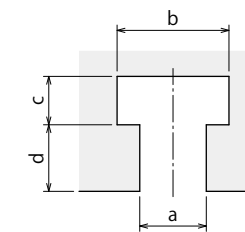
- ※ This drawing shows the standard model with Proximity Switch Mounting Position and Air Port Position : R. Please contact us for external dimensions of options.



External Dimension List

Model No.	GDL0250	GDL0400	GDL0630
E	18.5	23.5	28.5
F	53	62	78
G	61	67	74
J	26	29	29
K	54	47	44
L	71	78	81
a = 28	M	45.5	51
	N		26
a = 32	M	48.5	54
	N		29.5
P	13	20	23
Q	43	50	53
R	53	62	78
Slide Stroke 300 mm	AA		195
	AB		60.5
	AC		98.5
	AD		201
	AE		299.5
Slide Stroke 400 mm	AA		235
	AB		95.5
	AC		133.5
	AD		237
	AE		370.5
h	40 ~ 50	40 ~ 60	40 ~ 70

T-Slot Dimensions



Recommended T-Slot Dimensions

T-Slot	28	32
a	28 ±0.5	32 ±0.7
b	46 +4/0	53 +4/0
c	20 +2/0	22 +2/0
d	28 ±0.2	32 ±0.2

- Notes :
1. If you would like to change the ratio of clamp stroke and extra stroke, please contact us.
 2. When making an order, please indicate T-slot dimensions (a, b, c and d) and die clamping thickness (h dimension). However, min.a dimension is 28mm.
 3. Please precisely indicate the dimensions of a, b, c, d and h in 0.1mm increments.
 4. Please adjust the moving speed of the clamp with speed controller to fully stroke within 1 to 2 seconds.
 5. Do not set the forward-end confirmation proximity switch to the die surface near the U-cut.
 6. The clamp sliding surface must be smooth (without any bumps).
 7. When operating a press machine without activating clamps, make sure to clamp a dummy block at the backward end position. (Operating a press machine without clamping will cause damage to clamps.)

Cautions

Notes for Design

- 1) Check Specifications
 - Please use the product according to the specifications.
 - Operating hydraulic pressure is 25MPa. Do not exceed the specified operating pressure. Failure to do so may result in damage on the product, falling of a die and an injury. In order to reduce clamping force, use the product with lower operating pressure.
- 2) Check Die Clamping Thickness
 - Please check the die clamping thickness. Using dies other than specified causes locking malfunction of die clamps leading to falling of a die and an injury.
- 3) Die clamping surface must be parallel with die mounting surface.
 - If a clamping surface is not even or parallel, excessive force will be applied to the clamp, deforming the clamp body, lever and pins. This causes falling of clamp and die leading to an injury.
- 4) Make sure that dust, sand, cutting chips or blank pieces do not enter the clamp.
 - Clamp does not operate smoothly and may be damaged.

Installation Notes

- 1) Check the Usable Fluid
 - Please use the appropriate fluid by referring to the Hydraulic Fluid List.
 - If viscosity grade of hydraulic oil is higher than ISO-VG-32, operating time becomes longer.
 - If using it at low temperature, operating time will be longer because the viscosity of hydraulic oil becomes higher.
- 2) Procedure before Piping
 - Pipelines, piping connectors and others should be cleaned by thorough flushing. Dust and cutting chips in the circuit may lead to fluid leakage and malfunction. (There is no filter that prevents contamination.)
- 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.
 - ⑤ It is more effective to release air at the highest point inside the circuit or at the end of 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.
- 6) Installation of the Product
 - Use hexagonal socket bolts and tighten them with the following torque.

Model No.	Thread Size	Tightening Torque (N·m)
GDL0250	M8×1.25	25
GDL0400	M8×1.25	25
GDL0630	M8×1.25	25

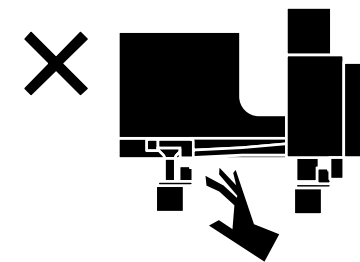
Hydraulic Fluid List

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 : Please contact manufacturers when customers require products in the list above.

Notes on Handling

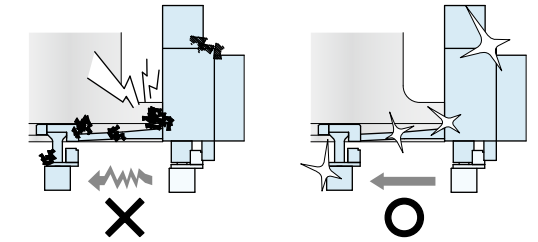
- 1) Shutting down of the machine should be done without load applied to the clamp.
 - Failure to do so results in a die fall and an injury.
 - For press machine use, make sure to stop the slide at bottom dead point.
- 2) It should be operated by qualified personnel.
 - Hydraulic products, machines and devices should be operated and maintained by qualified personnel.
- 3) 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 removing the product, 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 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.
- 4) Do not touch a clamp (cylinder) while it is working. Otherwise, your hands may be injured due to clincing.



- 5) Hold the clamp body when moving and removing the clamp.
 - Pulling on hydraulic hose or air tube leads to a clamp fall and an injury. Also, rivet part of the hose will be loosened leading to fluid leakage.
- 6) Do not disassemble or modify.
 - If the product is taken apart or modified, the warranty will be voided even within the warranty period.
- 7) Do not pour water or oil over the product.
 - Failure to do so causes malfunctions and deterioration of the product leading to an accident.

Maintenance and Inspection

- 1) Removal of the Product and Shut-off of Pressure Source
 - Before removing the product, make sure that safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the hydraulic and air circuits.
 - Make sure there is no abnormality in the bolts and respective parts before restarting.
- 2) Regularly clean the area around the product.
 - If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning and fluid leakage.



- 3) If disconnecting by couplers, air bleeding should be carried out on a regular basis to avoid air mixed in the circuit.
- 4) Regularly tighten pipe line, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.
- 5) Make sure the hydraulic fluid has not deteriorated.
- 6) 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.
- 7) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 8) Please contact us for overhaul and repair.

Warranty

- 1) Warranty Period
 - The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.
- 2) Warranty Scope
 - If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense. Defects or failures caused by the following are not covered.
 - ① If the stipulated maintenance and inspection are not carried out.
 - ② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
 - ③ If it is used or operated in an 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.