

2015-2016 KOSMEK Quick Die Change Systems

Complete Catalog INDEX

Automatic Clamp

GA Piston Clamp
Slides in the T-slot and clamps the U-cut of the die.



Model GA

P.017

GD Piston Clamp
GA Clamp with an air cylinder that slides in the T-slot automatically.



Model GD

P.023

GN Piston Clamp
The clamp rod swings to avoid interfering with the die when loading / unloading the die.



Model GN

P.063

GBB Lever Clamp New
Lever Clamp that slides in the T-slot. No U-cut is required on the die.

Model GBB

P.027



GBC Lever Clamp
GBB clamp with longer stroke for the variation in mold clamping thicknesses.

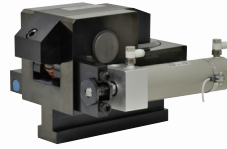
Model GBC

P.039

GBE Lever Clamp New
GBB Clamp with an air cylinder that slides in the T-slot automatically.

Model GBE

P.033



GBF Lever Clamp
GBE clamp with longer stroke for the variation in mold clamping thicknesses.

Model GBF

P.045

GBP Lever Clamp New
Fixed-Type Lever Clamp. No T-slot is required.

Model GBP

P.051



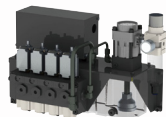
GBQ Lever Clamp
GBP clamp with longer stroke for the variation in mold clamping thicknesses.

Model GBQ

P.057

Hydraulic Unit Operation Panel/ Control Unit

Hydraulic Unit New
Powered by compressed air.



Model CP/CR/CP□/CQ□ P.071

Pump • Valve Unit
Separated into two pieces for flexibility in mounting.



Model CB/CD/CC•BC/BH•MV P.083

Operation Panel / Control Unit
Operates and controls the clamp system. Various models to match system specifications.



Model YP/YA

P.095

Die Lifter Pre-Roller

RA Die Lifter
Rail of rollers set in the bolster slot. Uses hydraulic power to lift the die.



Model RA / RAF

P.099

RB Die Lifter
Rail of rollers set in the bolster slot. Springs lift the die.



Model RB

P.117

Pre-Roller
Allows the die to be brought in/out of the press for smooth die changes.



Model MR□

P.123

Options

Press Load Monitor
Able to confirm the press load and prevent breakdown caused by overload.



Model YK

P.171

Accessories New
Pressure Switch Model JBA
Pressure Gauge Model JG□
Manifold Model JX
Coupler Switch Model PS

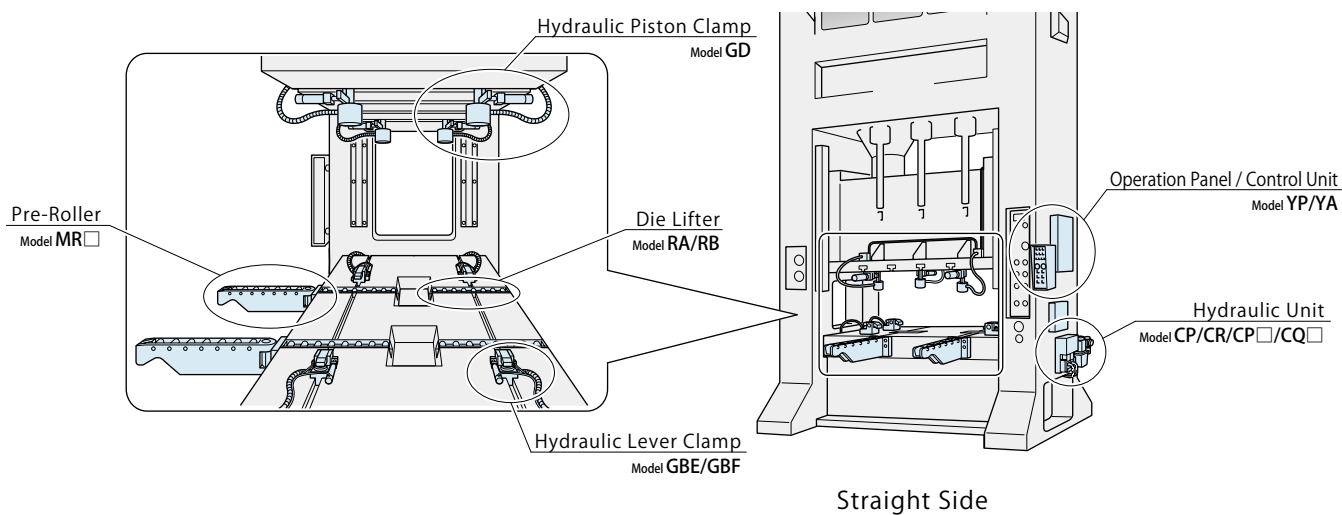
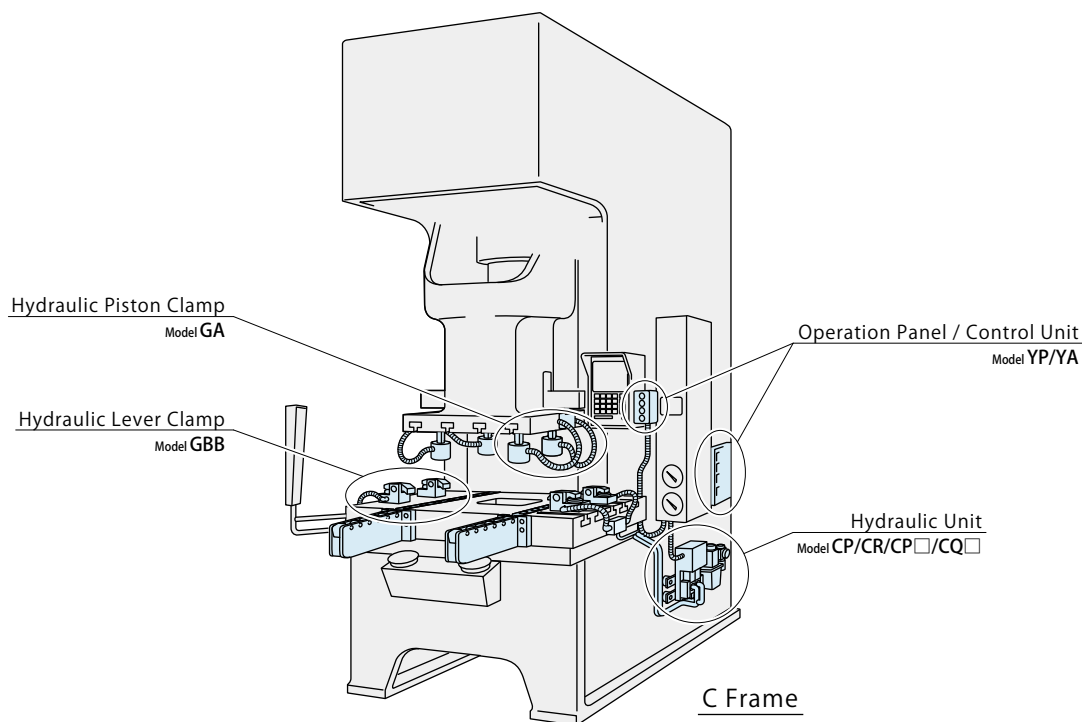


P.173

Kosmek works to meet the needs of every customer, developing and producing innovative products.

<http://www.kosmek.co.jp>

We have various types of hydraulic and pneumatic products. Please let us know your requirements, and we will make it happen.



Caution
Other



P.177

Other Products

We offer a wide range of products for press machines not listed in this catalog.



P.181

Company Profile

KOSMEK
Harmony in Innovation

P.191

Quick Die Change Systems

Kosmek QDCS can effectively reduce die change time for stamping presses.

Automatic clamping replaces labor-intensive bolt tightening.

Loading / Unloading dies is safe and easy with die lifters and pre-rollers.

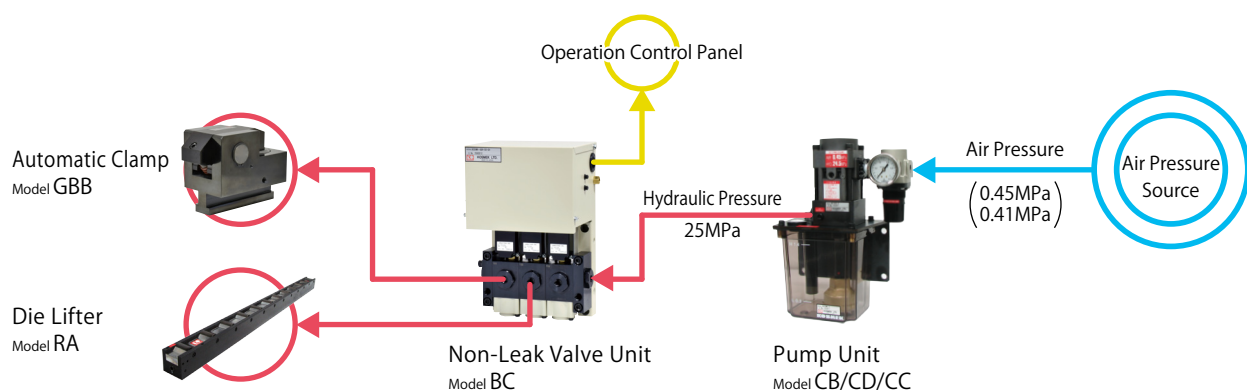
The operation panel has user-friendly push-button controls.

Operator error is prevented by the interlock circuit, and makes your workplace safer.



● Supplying Hydraulic Pressure

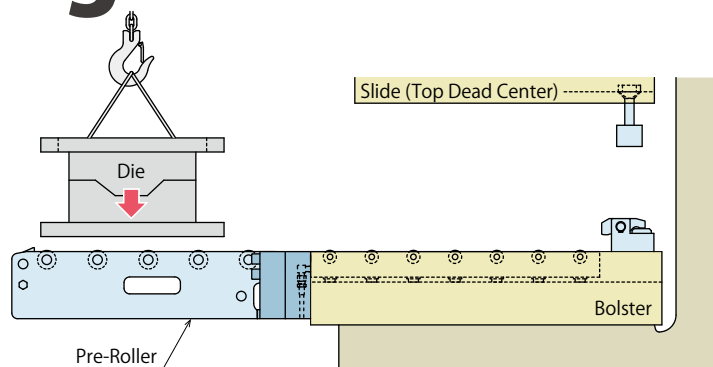
The Kosmek pump unit easily generates hydraulic pressure using factory compressed air.



Die Change Process

Load the die.

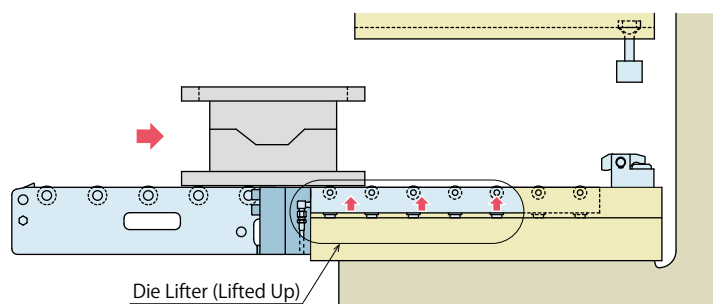
Load the die using a crane or forklift.
The pre-rollers enable easy loading.



Transfer the die to the bolster.

Transfer the die to the bolster.
With the pre-rollers and die lifters,
minimal force is required to move the die.
Die lifters are set in the T-/U- slots.

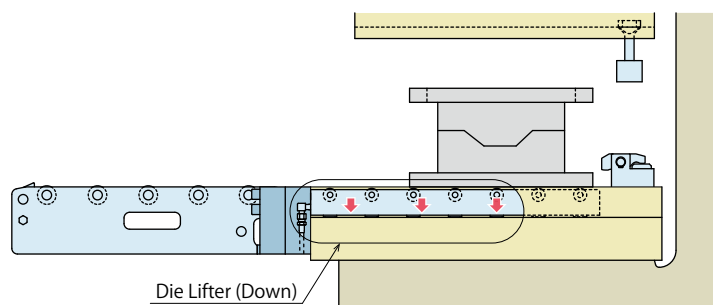
Die Lifter : Hydraulic Pressure **ON**



Set the die on the bolster.

With push-button operation, the die lifter
releases and the die makes contact with
the bolster.

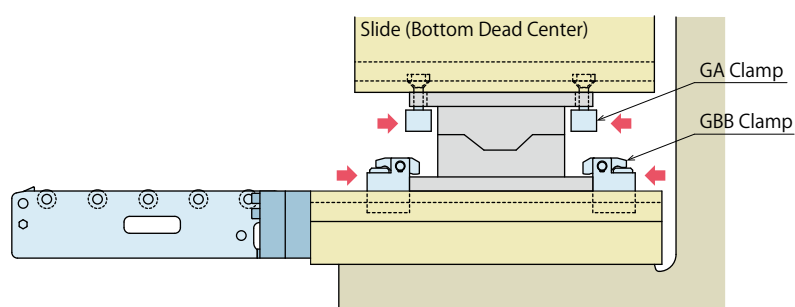
Die Lifter : Hydraulic Pressure **OFF**



Set the automatic clamps.

Set the slide to the bottom dead center.
Slide automatic clamps on the T-slot and
bring them near the die.

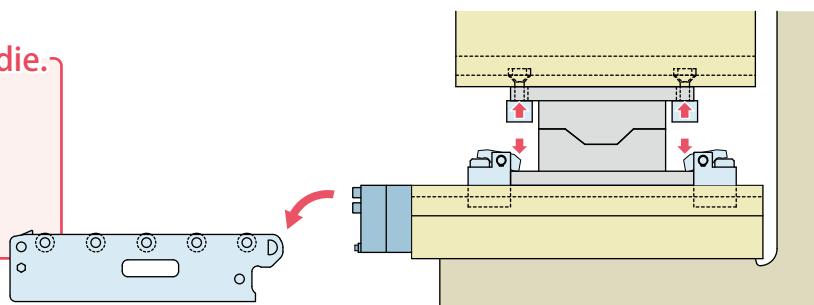
Automatic Clamp : Hydraulic Pressure **OFF**



Lock the die.

With a button operation, automatic clamps
lock the die. After safety confirmation,
the pre-roller can be removed.

Automatic Clamp : Hydraulic Pressure **ON**



Die Change Completed

Unload the die.

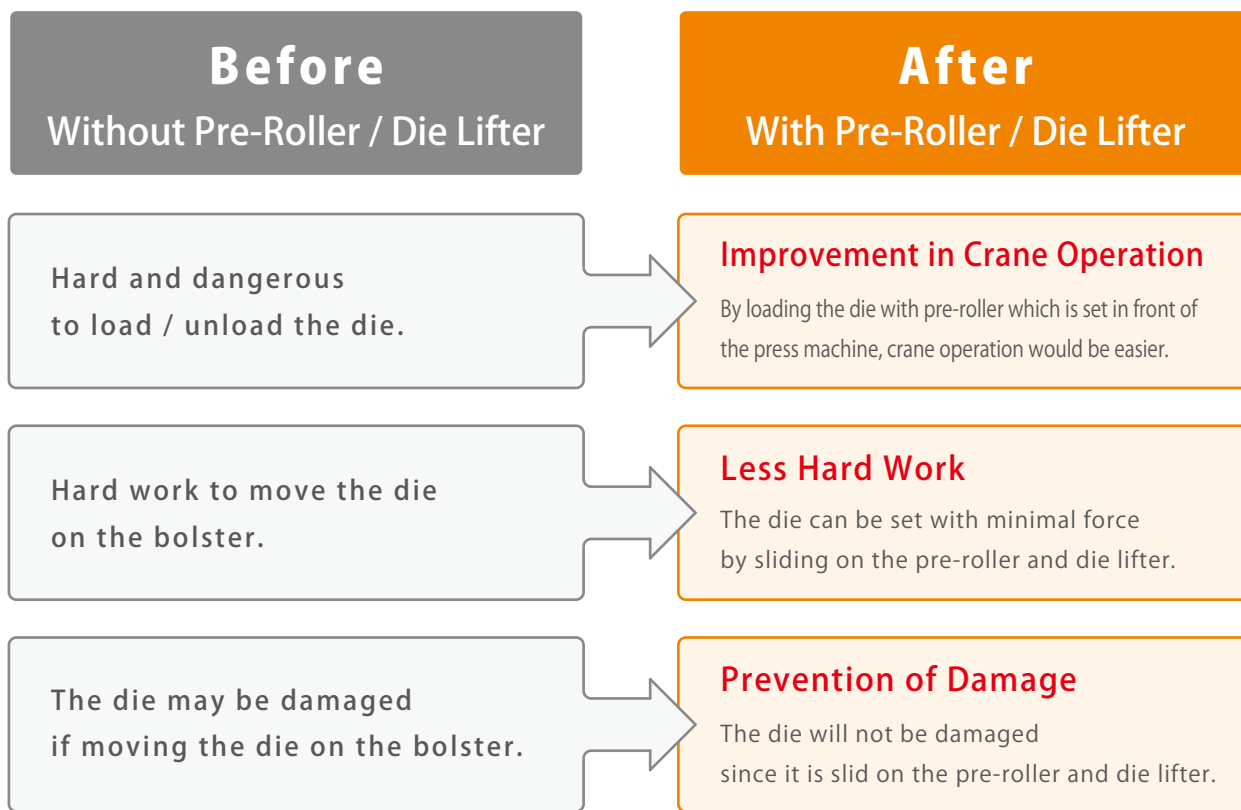
With a button operation, automatic clamps release the die and it is easily unloaded.

Effects of Introducing QDCS

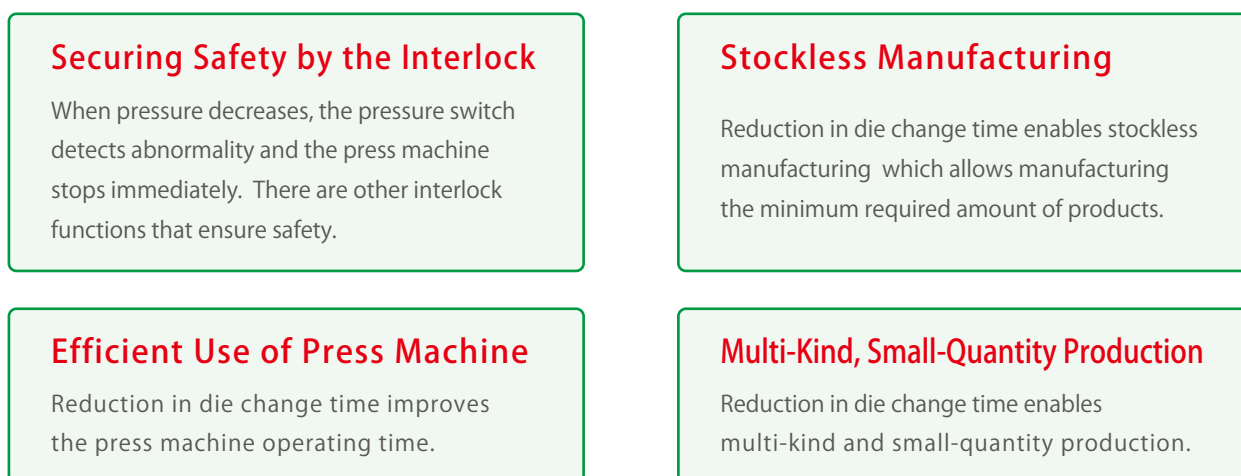
Introducing Automatic Clamping



Introducing Pre-Roller / Die Lifter



Quick Die Change Systems Improve Safety • Productivity • Quality



Total Business Power Improvement

Revolutionary Long Stroke Design Means

Die Variation Possible!!

Presenting the World's First Long **Stroke Lever Clamp!**



In the Past...

Die
40 mm
Bolster
50 mm
45 mm

Dies are not standardized...

Die standardization held back plans for converting to auto-clamping...

To introduce auto clamping when plates were not standardized...

Milling of a Clamping Pocket

Addition of Spacer Plates in Clamping Area

dies had to be modified to accommodate the auto clamps.

The Future is Now!

Die

T-Slot

With T-slot clamps,
Die width variance is possible.

50 mm

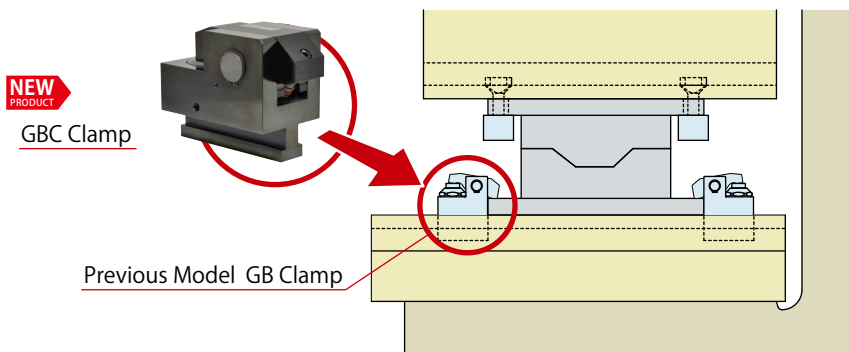
45 mm

40 mm

With the GBC clamp long stroke,
Die clamping plate thickness variance is also possible!

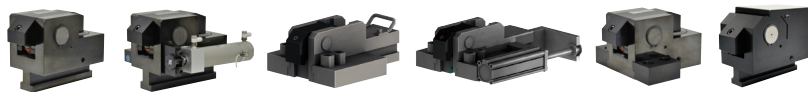
- Point 1 For Customer Dies with Non-Standardized Dimensions
- Point 1 No Accidents Caused by Incorrect Spacer Thickness

An existing system can be converted to a long stroke system by replacing only the clamps.



Announcing, for Kosmek's basic hydraulic clamp line,

A Full Model Change!!



Disassembly and assembly possible **with only standard tools!**

Redesigned from the ground up with ease of maintenance in mind.

NEW
MODEL



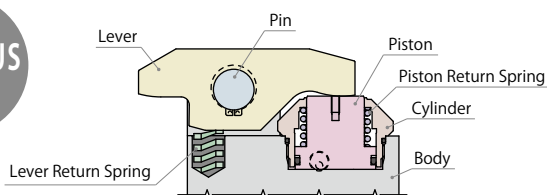
Point 1

Since no special tools are required,
no clamp-specific knowledge is required.

Point 1

Since anyone can assemble and disassemble the clamp,
only a seal kit is needed to perform on-site maintenance.

PREVIOUS
MODEL



Disassembly and assembly
of the lever and cylinder
required special tools and jigs...

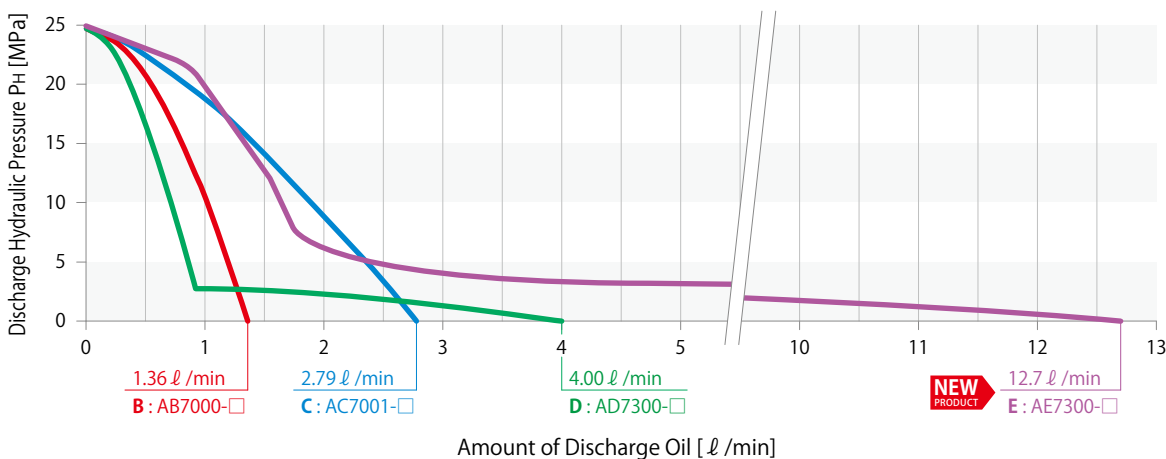
Clamp Operation Time Reduction

Point 1

Newly Developed Large Flow Air-Hydraulic Combination Pump

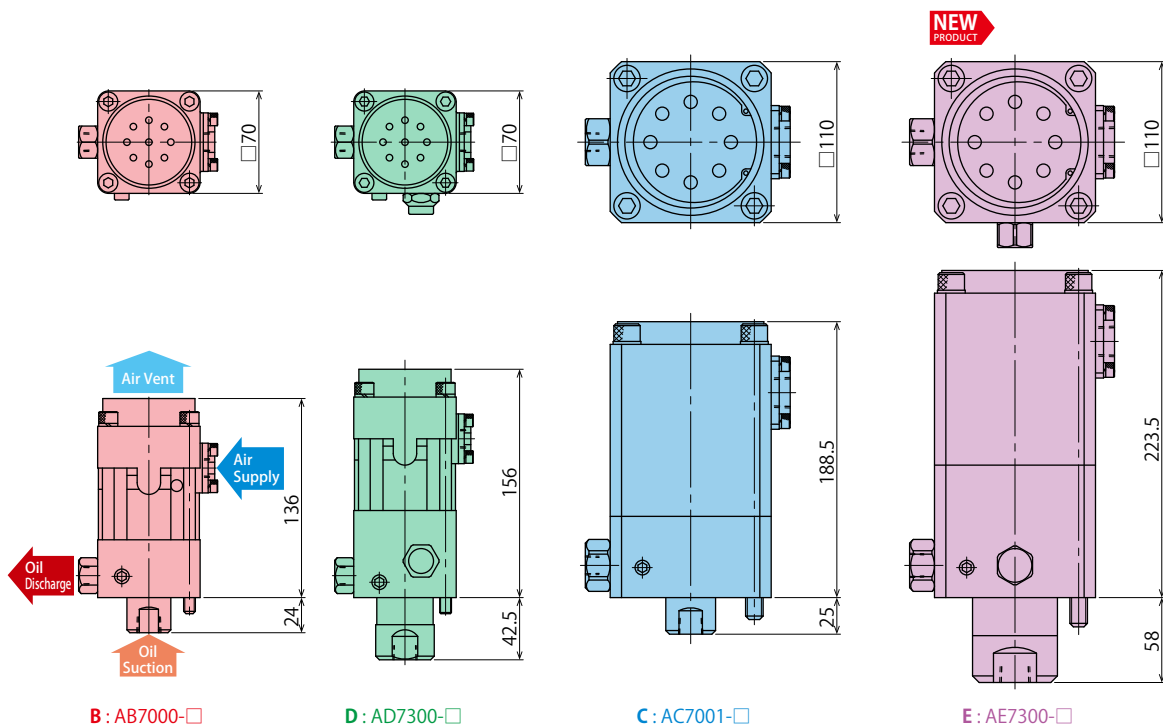
Reduces 50% of O.T. ^{※1} (In comparison with other Kosmek products.)
 ※1. O.T. = Operation Time
 Reduced time varies depending on piping, etc.

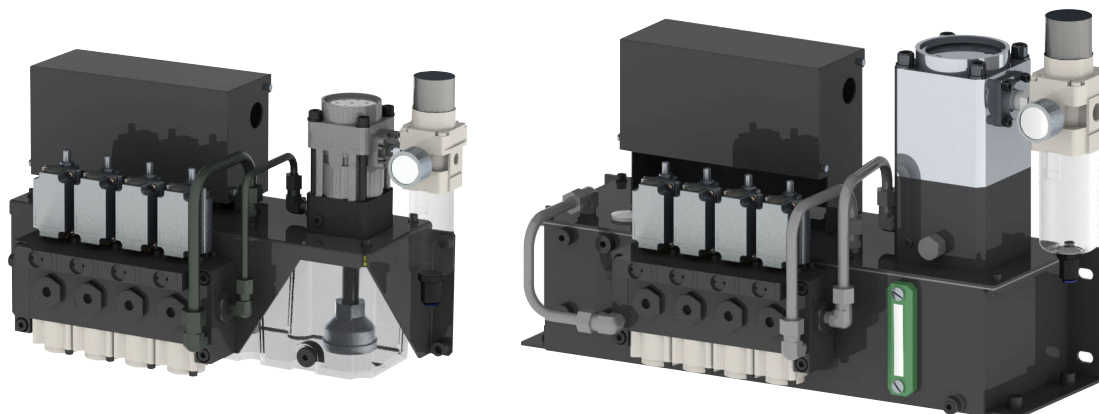
Pump Performance Curve



Point 1

High Performance and **Compact !**

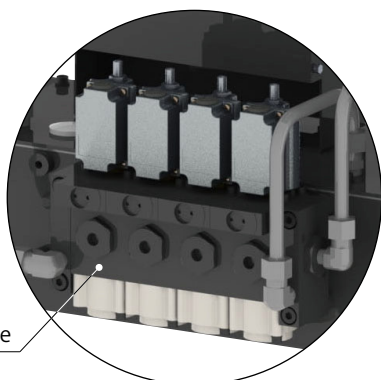




Point 1

Larger Flow Rate

Higher Clamp Speed



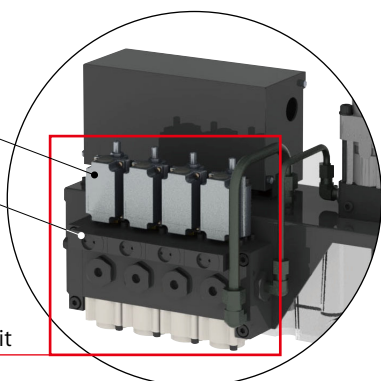
Non-Leak Valve

The Kosmek non-leak valve has been thoroughly revised. With a wider oil path, it has larger flow rate. Faster action speed reduces mold change time.

Point 1

By changing the layout

Maintainance has been improved



Pressure Switch

Pressure Relief Valve

Placed in front of the Unit

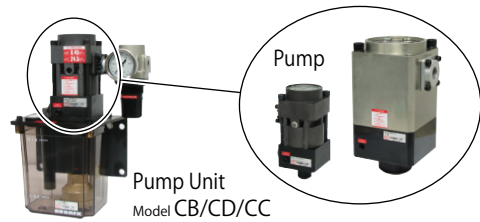
Placing the non-leak valve, pressure switch and pressure relief valve in front of the unit allows for easy mounting and dismounting.

Safety of Systems

The safety of die clamping systems will be ensured by KOSMEK safety functions.

● Prevention of Hydraulic Pressure Reduction

When hydraulic pressure decreases, a balanced-type hydraulic and pneumatic pump immediately supplies additional hydraulic pressure.



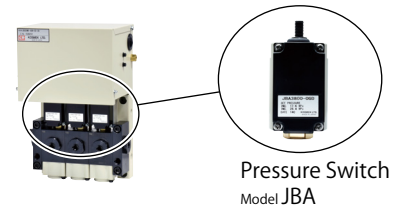
● Maintains Hydraulic Pressure

Even when air pressure is at zero, hydraulic pressure will be maintained by the non-leak valve.



● Abnormal Detection by Pressure Switch

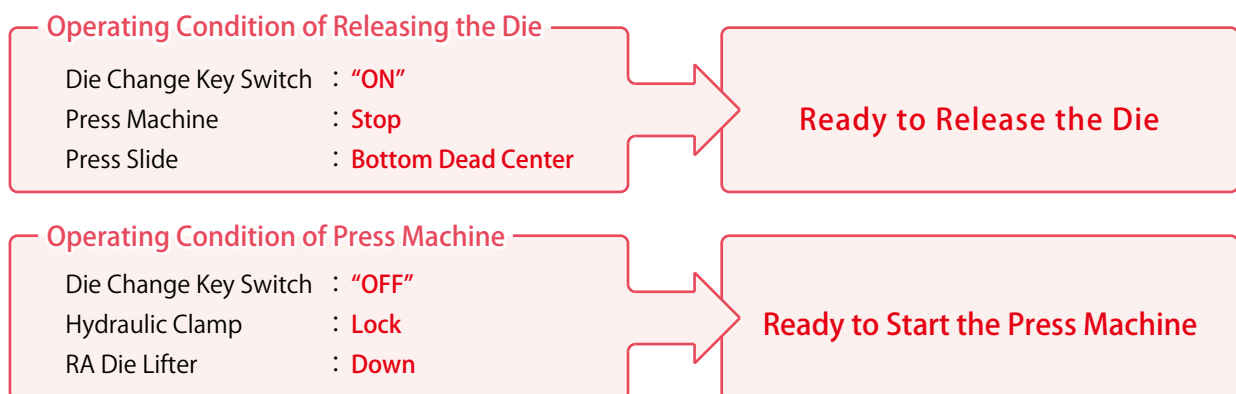
In case of accident such as breakage of hydraulic hose, the pressure switch detects the reduction of hydraulic pressure and immediately stops the press machine.



● Safety Measure by Various Interlock Functions

Operation Panel / Control Unit has various interlock functions.

● Control Example



- During press operation, die change systems cannot be operated unless the key has been pulled put.
- Unlike manually tightened clamp, when automatic clamps are unlocked, the press does not start working.

Selecting Method

Select the Type of Clamps

Slides in the T-slot

Clamps the U-cut of the Die

Manual Slide

GA Piston Clamp



Model GA P.017

Automatic Slide

GD Piston Clamp



Model GD P.023

Without using T-slot

Fixed by Bolts

GBP Lever Clamp Model GBP P.051



GBQ Lever Clamp
Long Stroke Model
Model GBQ P.057

Clamp without using the U-cut of the Die

Manual Slide

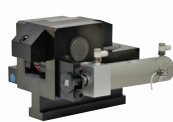
GBB Lever Clamp Model GBB P.027



GBC Lever Clamp
Long Stroke Model
Model GBC P.039

Automatic Slide

GBE Lever Clamp Model GBE P.033



GBF Lever Clamp
Long Stroke Model
Model GBF P.045

The rod swings to avoid interfering with the die.

GN Piston Clamp



Model GN P.063

Select the Number of Clamps

Select the number of clamps considering the points below:

- Weight of the Die
- Size of the Die
- Shape of the Die
- The Number of Slots of the Bolster and Slide

Select the Size of Clamps

The total clamping force should be more than 10% of the press capacity of upper and lower die.

$$\text{Clamping Force per Clamp} \times \text{The Number of Clamps} > \text{Press Capacity} \times 0.1$$

Select the Hydraulic Unit

United Model

Electric Control Model

Standard Flow Rate

CP Unit (2 ℓ Tank)

CPB Unit (5 ℓ Tank)

CR Unit (2 ℓ Tank)

CPD Unit (5 ℓ Tank)

CPC Unit (5 ℓ Tank)

CQC Unit (10 ℓ Tank)

CPE Unit (5 ℓ Tank)

CQE Unit (10 ℓ Tank)

Large Flow Rate

Model CP/CR/CP□/CQ□
P.071

Separated Model

Select the Pump Unit

Standard Flow Rate

CB Pump Unit

Model CB P.083

Large Flow Rate

CD/CC Pump Unit

Model CD/CC P.083

Select the Non-Leak Valve Unit

Electric Control Model

BC Valve Unit

Model BC P.087

Manual Control Model

BH Valve Unit

Model BH P.091

Select the Number of Circuits and Circuit Symbols of the Hydraulic Unit

Select the number of circuits and circuit symbols considering specifications of die change system. The typical examples are shown below. There are various kinds of circuit symbols, and combination is freely selected. Contact us for more information.

System Structure Example	Number of Circuits	Circuit Symbols
Control either upper clamps or lower clamps	1	G ^{※1} C ^{※2} (Normal Open:1 Circuit)
Control RA die lifter only	1	H ^{※1} D ^{※2} (Normal Close:1 Circuit)
Control upper clamps and lower clamps individually	2	2G ^{※1} CC ^{※2} (Normal Open:2 Circuits)
Control either upper clamps or lower clamps (normal open), and control RA die lifter separately (normal close)	2	GH ^{※1} CD ^{※2} (Normal Open:1 Circuit) (Normal Close:1 Circuit)
Control upper clamps and lower clamps individually (normal open), and control RA die lifter separately (normal close)	3	2GH ^{※1} CCD ^{※2} (Normal Open:2 Circuits) (Normal Close:1 Circuit)

※1. When using CPB/CPD/CPC/CPE/CQC/CQE
 ※2. When using CP/CR/BC/BH

Selecting Method

Select the Die Lifter

Select either Hydraulic Die Lifter or Spring Die Lifter depending on the situation of the press capacity, die weight and locating accuracy of the die.

For Middle or Large Size Press

Hydraulic Die Lifter

RA Die Lifter



Model RA

P.099

For Small or Middle Size Press

Spring Die Lifter

RB Die Lifter



Model RB

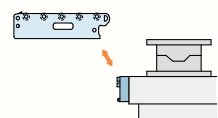
P.117

Select the Pre-Roller

Select the pre-roller from the five types of frame.

Removable

MRC Pre-Roller

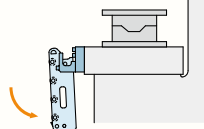


Model MRC

P.125

Removable-Vertical Folding

MRD Pre-Roller

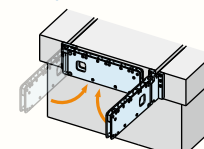


Model MRD

P.135

Horizontal Folding

MRE/MRF Pre-Roller



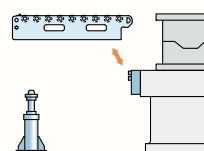
Model MRE/MRF

P.145

For Heavy Dies

Removable with Stand

MRG Pre-Roller

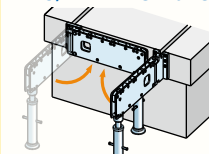


Model MRG

P.153

Horizontal Folding with Stand

MRJ/MRK Pre-Roller



Model MRJ/MRK

P.161

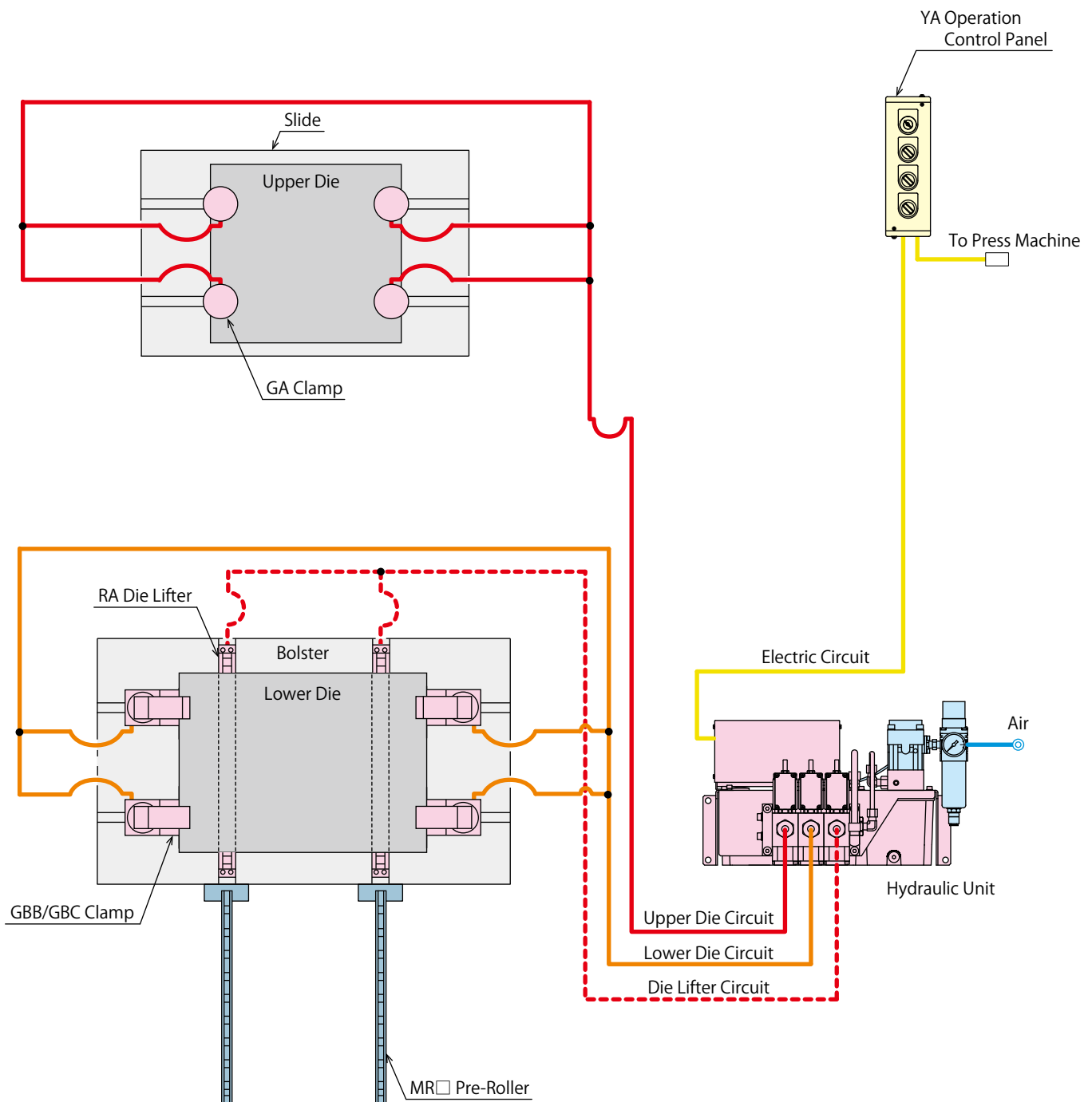
System Structure Example

System Structure Example ①

The basic structure with GA / GBB / GBC clamps that slide manually in the T-slot. This system is able to control the upper die circuit, lower die circuit, and RA die lifter circuit individually by using 3-circuit type hydraulic unit.

- Upper Clamp : GA Clamp
- Lower Clamp : GBB / GBC Clamp
- Loading / Unloading the Die : MR□ Pre-Roller + RA Die Lifter
- Hydraulic Source : CP□ Unit / CQ□ Unit

- Upper Die Circuit
- Lower Die Circuit
- - - Die Lifter Circuit
- Air Circuit
- Electric Circuit

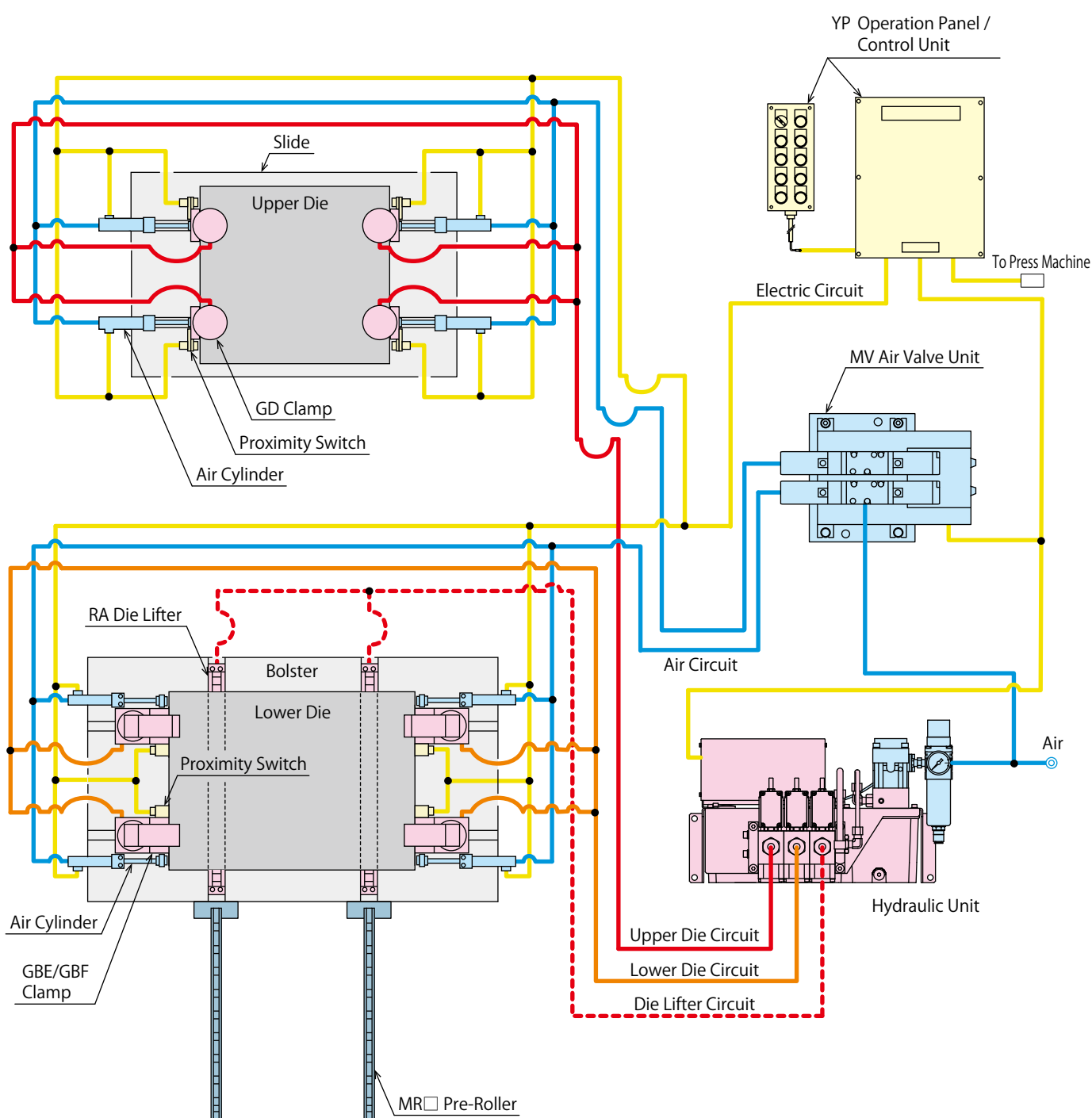


System Structure Example ②

Auto-slide GD / GBE / GBF clamps enable to slide clamps and lock the die with button operation. The forward-end switch (proximity switch) detects that the die is locked securely, and the backward-end switch detects that the clamps are retracted. In case malfunction occurs in the air cylinder, even the proximity switch detects the die is in place, the press machine does not start working by interlock function unless the clamps conduct lock action. Most suitable when it is difficult to slide clamp manually, or for reduction of manual systems.

- Upper Clamp : GD Clamp
- Lower Clamp : GBE / GBF Clamp
- Loading / Unloading the Die : MR□ Pre-Roller + RA Die Lifter
- Hydraulic Source : CP□ Unit / CQ□ Unit

- Upper Die Circuit
- Lower Die Circuit
- - - Die Lifter Circuit
- Air Circuit
- Electric Circuit





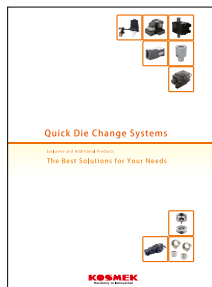
Quick Die Change Systems

FOR PRESS MACHINES

QDCS Exclusive and Additional Products

We offer a wide range of products for QDCS not listed in this catalog.

Please visit our website (<http://www.kosmek.co.jp>) or view our brochure.



QDCS Additional and Exclusive Products

Brochure No.SBR-QDC001-□-JP

Hydraulic Clamp
T-Slot Automatic Slide
 Model GY1090

Hydraulic Clamp that Slides Automatically on the T-slot
 Protrusion from the Press Slide is **Less than Half of the Standard Model**

Hydraulic Clamp
Swing Lever
 Model GY1310

Swing the Lever 90° by Hand
No Interference with the Die when Loading/Unloading

Hydraulic Hollow Cylinder
Bolt Fastening
 Model DY1700

Fasten the Die Mounting Bolts with Hydraulic Force
Suitable for Unreachable or Non-visible Places

Hydraulic Clamp
Swing Rod
 Model GY1400

The Rod Automatically Swings 90° and Clamps the Die
 The Die Clamps are Automated with the Proximity Switch

Hydraulic Clamp
For Knockout Rod
 Model PPK

Fasten the Knockout Rod with Hydraulic Force
Manual Fastening is not Required, Saving Time and Ensuring Safety

Multi-Load Model
Overload Protector
 Model PV/PW

For Use on Unbalanced Loads of 2-point and 4-point Presses
Instant Response Prevents Damage to Presses or Dies

Robotic Hand Changer

Model SWR

For **Changing Workpiece Transfer Arms** in the Automatic Press Line
High Accuracy: Within $3\ \mu\text{m}$, High Rigidity: "0" Backlash, Long Life: **A Million Cycles**



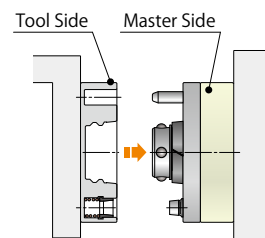
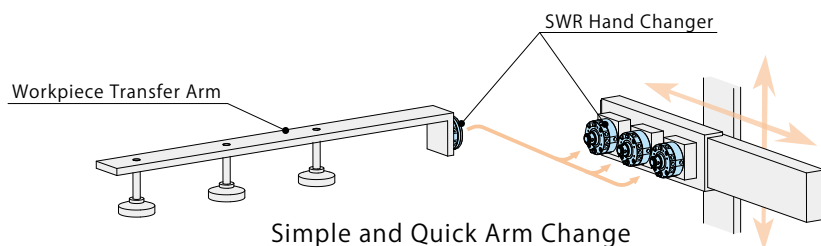
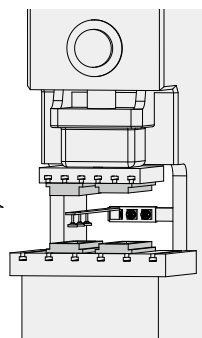
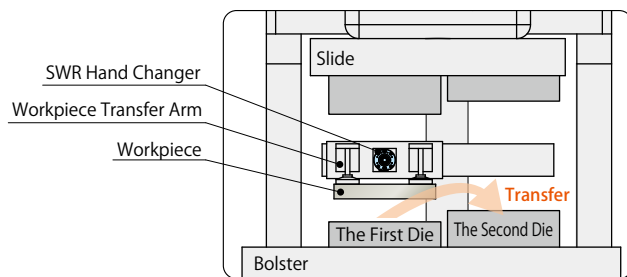
Clamp
Hydraulic Unit
Operation Control Panel

Die Lifter
Pre-Roller

Accessories

Cautions
Company Profile

Time Reduction in Changing Transfer Arm



Cautions

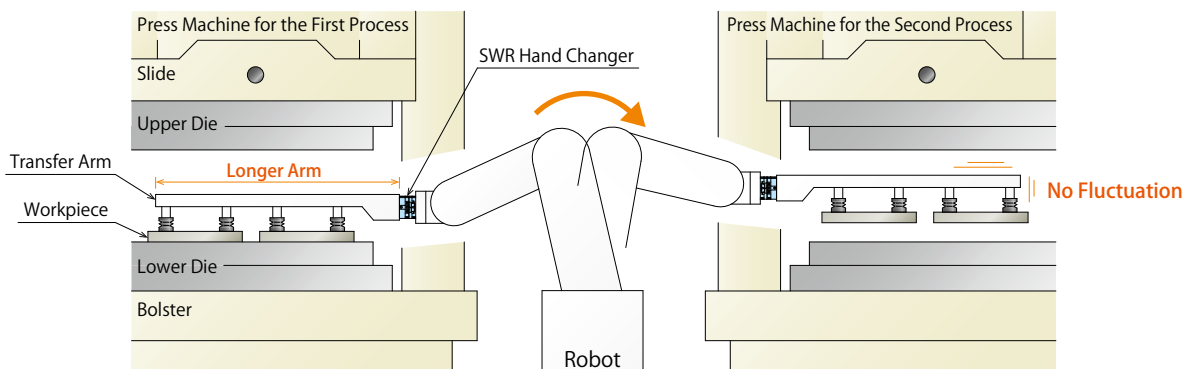
- Installation Notes (For Hydraulic Series)
- Hydraulic Fluid List
- Notes on Hydraulic Cylinder Speed Control Unit
- Notes on Handling
- Maintenance / Inspection
- Warranty

Company Profile

Our Products

- Company Profile
- History
- Sales Office

Fluctuation is minimum even with longer arms.



- **Productive**

- **Improves Work Efficiency**

- No backlash on connected part is due to **the dual surface mechanism** with movable taper sleeve.

- **Safe**

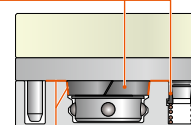
- **Prevents Arms from Falling Off**

- Mechanical lock system maintains connected condition with built-in spring.

- **Space Saving**

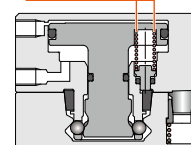
- **Compact and Light Weight**

Movable Taper Sleeve



Dual Surface

Built-in Spring





KOSMEK LTD. Head Office

Company Name	KOSMEK LTD.
Established	May 1986
Capital	¥99,000,000
Sales	60 billion yen (period ended March 2015)
Chairman	Keitaro Yonezawa
President	Tsutomu Shirakawa
Employee Count	230
Group Company	KOSMEK LTD. KOSMEK ENGINEERING LTD. KOSMEK (USA) LTD. KOSMEK EUROPE GmbH KOSMEK (CHINA) LTD. KOSMEK LTD. - INDIA
Business Fields	Design, production and sales of precision products, and hydraulic and pneumatic equipment
Customers	Manufacturers of automobiles, industrial machinery, semiconductors and electric appliances
Banks	Resona bank, Tokyo-Mitsubishi bank, Ikeda bank

Major Machine Tool Devices (As of March 2015)

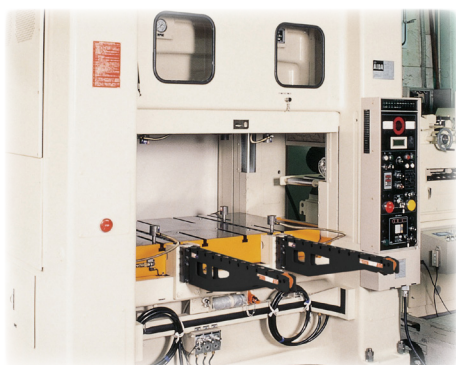
- Lathe machine devices etc. : Composite CNC lathe etc. (57units)
- Machining center devices etc. : Horizontal Machining center etc. (18 units)
- Grinding machine : Internal and external cylindrical NC grinding machine etc. (6 units)
- Other machine tools : Honing machine etc. (24 units)
- Measuring instruments : Precision 3D CMM etc. (9 units)
- Heat treatment etc. : Nitriding furnace etc. (5 units)

Major Industrial Property Rights

(Including patent right and patent pending as of March 2015)

- Domestic : 110
- International : 250 (USA, EU, Taiwan, South Korea, China, India, Brazil, Mexico, Thailand, Indonesia)

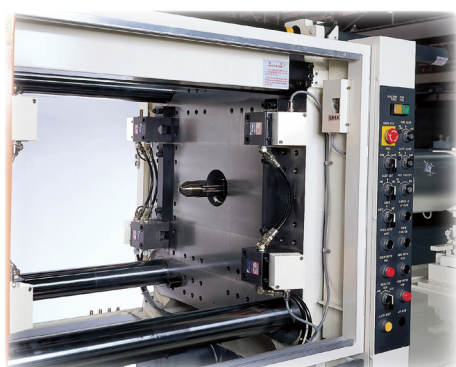
Our Products



Die Change System for Press Machine

QUICK DIE CHANGE SYSTEMS

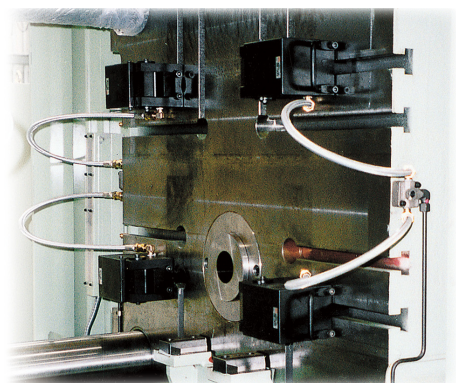
Kosmek Quick Die Change Systems are a cost effective way to improve the working environment, allow diversified and small-lot production, and reduce press down time. Available for a wide range of machines; from large size transfer-presses to smaller high speed presses.



Mold Change System for Injection Molding Machine

QUICK MOLD CHANGE SYSTEMS

Automatic clamping systems have reduced mold change times and increased production efficiency for plastics manufacturers in a multitude of industries. We offer a variety of different clamping options, including hydraulically powered clamps, pneumatic clamps with a force multiplying mechanism, and magnetic clamping systems.



Die Cast Clamping System

DIECAST CLAMPING SYSTEMS

Kosmek Diecast Clamping Systems (KDCS) enable stable die clamping for die casting and magnesium molding machines that are subjected to severe conditions caused by exposure to mold release agents and high temperature.



Work Clamping System for Machine Tool

KOSMEK WORK CLAMPING SYSTEMS

Our clamping system enables boltless automation making loading and unloading workpieces easier. The non-leak valve enables the use of hydraulic source and fixtures in a disconnected condition after locking (clamping action).

Clamp
Hydraulic Unit
Operation Control Panel

Die Lifter
Pre-Roller

Accessories

Cautions
Company Profile

Cautions

Installation Notes
(For Hydraulic Series)

Hydraulic Fluid List

Notes on Hydraulic Cylinder
Speed Control Unit

Notes on Handling

Maintenance / Inspection

Warranty

Company Profile

Our Products

Company Profile

History

Sales Office

Sales Offices

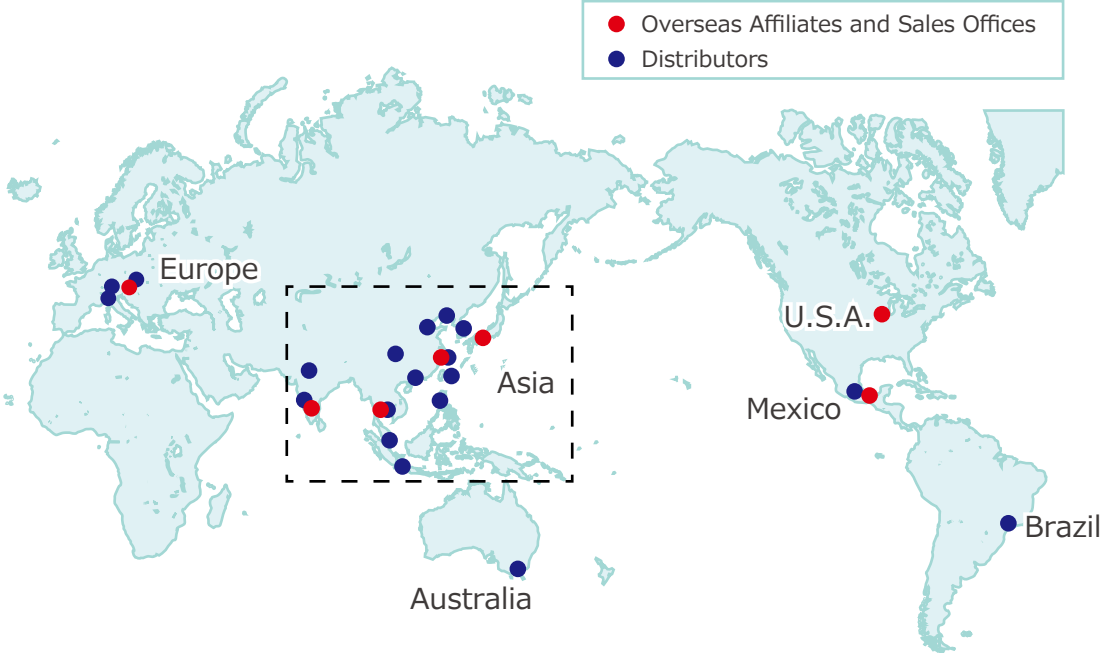
Sales Offices across the World

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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	
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KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	21/F, Orient International Technology Building, No.58, Xiangchen Rd, Pudong Shanghai 200122., P.R.China 中国上海市浦东新区向城路58号东方国际科技大厦21F室 200122	
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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	
Indonesia (Indonesia Exclusive Distributor)	TEL. +62-21-5818632	FAX. +62-21-5814857
P.T PANDU HYDRO PNEUMATICS	Ruko Green Garden Blok Z- II No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia	

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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



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