

New

For Diecast Systems

Ejector Coupler

Automatic Ejector Rod Coupler

Simple Setup / Setup Time Reduction / Improve Productivity



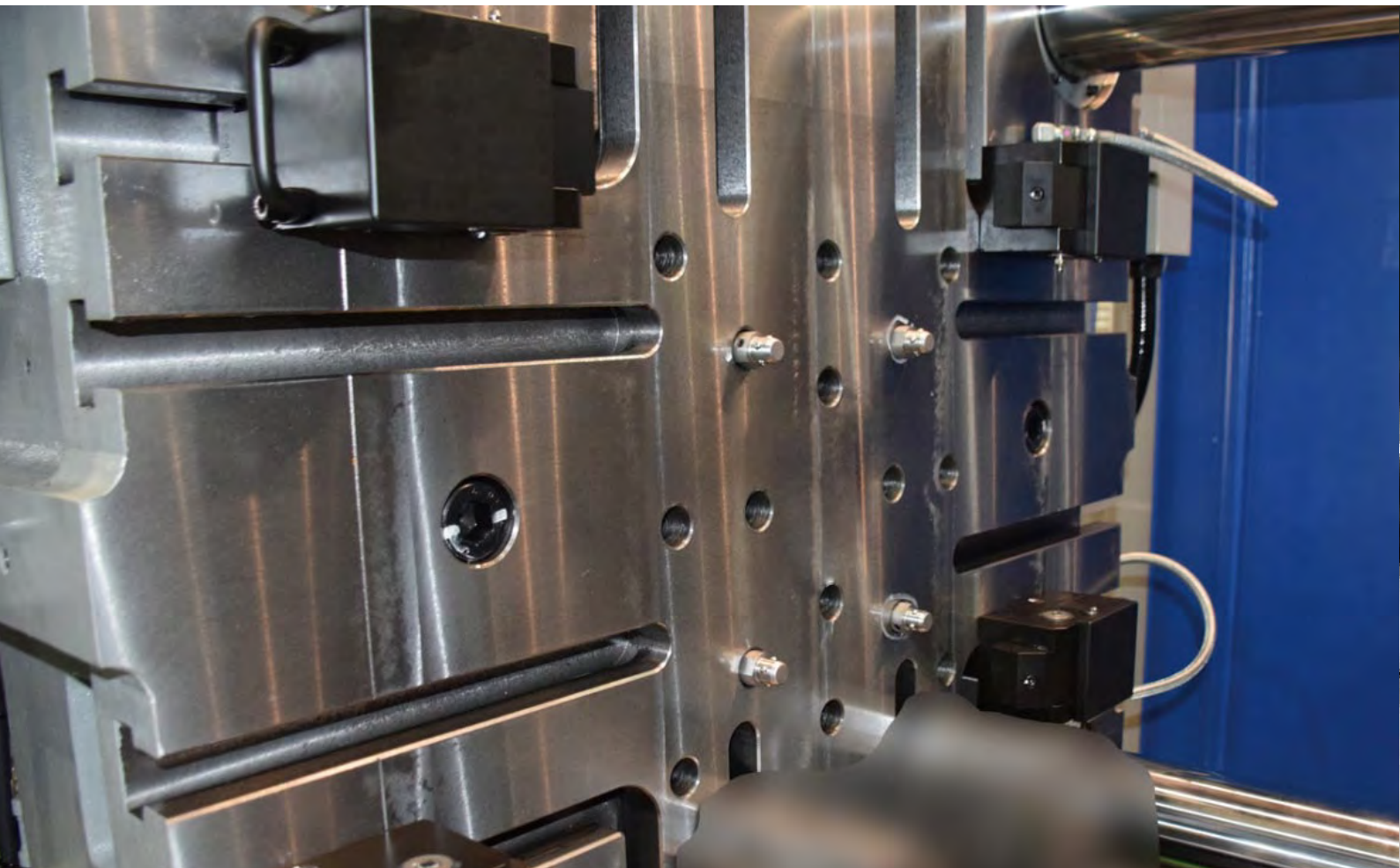
Model PMF Pneumatic Auto Coupling

Manual Model Newly Added



Model PMG Manual Coupling

One Touch to Connect EJ Rods



Ejector Coupler Model PMF

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Minimizes Mold Change Time



Manual Ejector Coupler Model PMG

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For Diecast Systems

Ejector Coupler

Model PMF

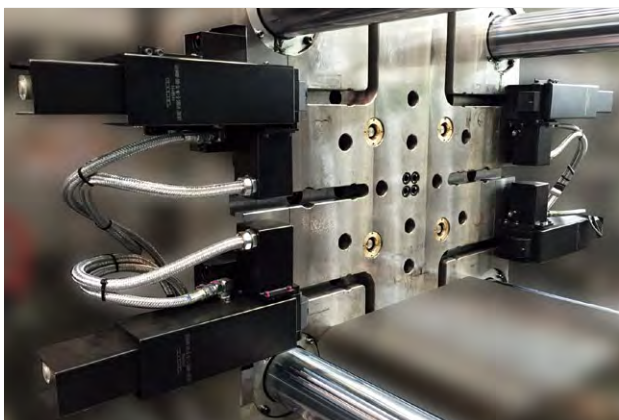


Quick Change Automatic Ejector Coupler

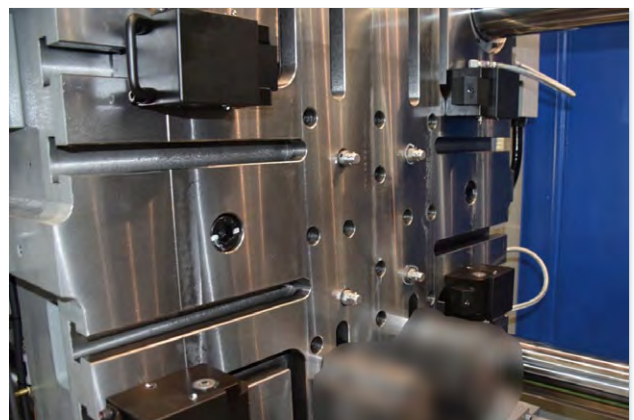
Drastically reduce setup time. Ball Lock Joint Provides Powerful Connection

No Connecting Work Required!

One touch to connect ejector rods with button operation from outside the machine.



Installation Example of 125 ton Diecast Machine



Installation Example of 350 ton Diecast Machine

Mold Change Time Reduction

※ Actual mold change time of a 350 ton diecast machine.

Unloading a Mold

Machine Side : Untighten 4 Nuts
Mold Side : Untighten 4 Rods

362 sec

Button Operation

1 sec

Loading a Mold

Machine Side : Tighten 4 Nuts
Mold Side : Tighten 4 Rods

387 sec

Button Operation

1 sec

Ejector Coupler

Manual
Ejector Coupler

Simplified Ejector Rod Connection

Manual Operation

MOLD Tighten 2 Ejector Rods (Operation Side)

Move to Non-Operation Side

MOLD Tighten 2 Ejector Rods (Non-Operation Side)

Move to Operation Side

Pump Start → Mold Close → Ejector Plate Move Forward

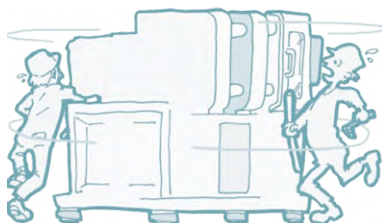
MACHINE Tighten 2 Nuts (Operation Side)

Move to Non-Operation Side

MACHINE Tighten 2 Nuts (Non-Operation Side)

Move to Operation Side

Pump Start → Ejector Plate Move Backward → Mold Open



Ejector Coupler

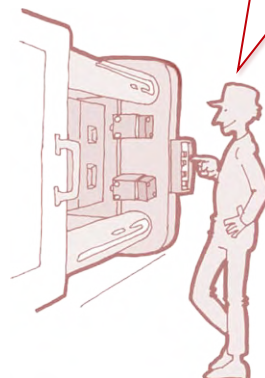
Mold Close → Ejector Plate Move Forward

Ejector Coupler
LOCK (Button Operation)

Ejector Plate Move Backward → Mold Open

No need to move around the machine
or operate inside the machine.

No Tools Required



PMF Ejector Coupler

Improve Work Efficiency

The work without tools enhances productivity by saving time for searching tools.

Reduce Operation Time

No need to move to the non-operation side.

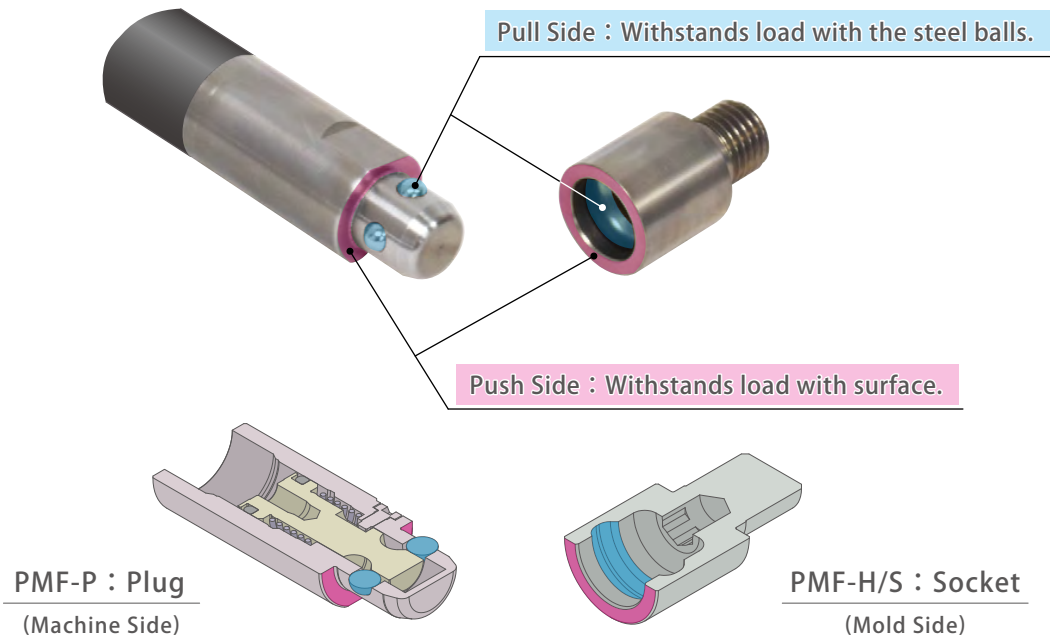
Secure Operation

Prevent accidents caused by tightening work inside the machine.

Standardize Operation

It allows everyone to tighten them with the same force.

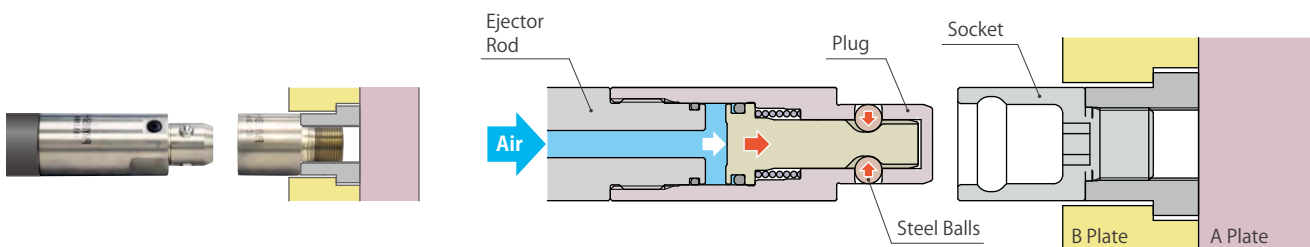
Powerfully Connected by Air - Mechanical Locking



Released State

Release Air Pressure **ON**

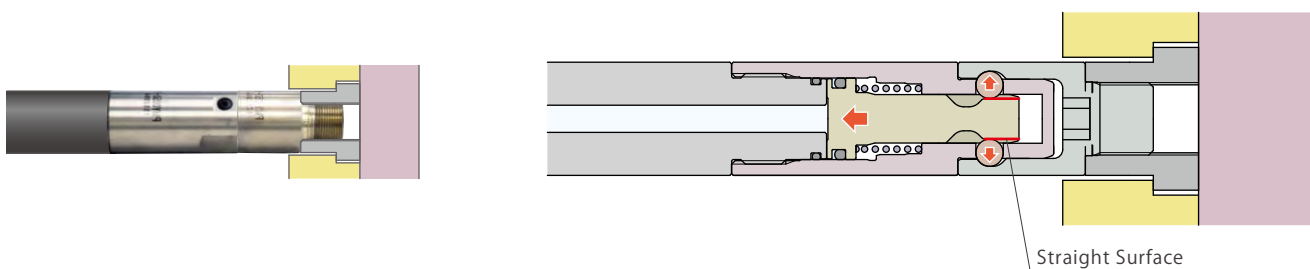
By supplying air pressure, steel balls are free to move so the plug can be pulled out.



Locked State

Release Air Pressure **OFF**

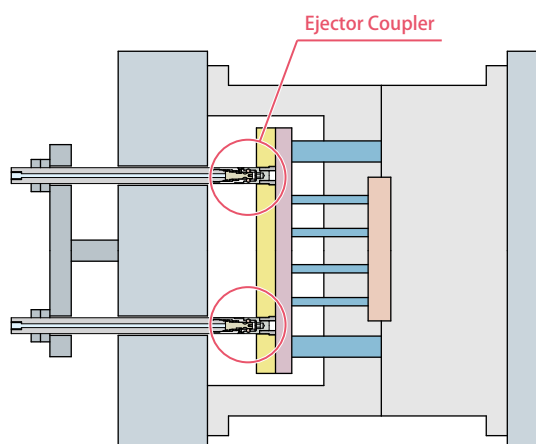
By releasing air pressure, steel balls are pushed out with spring force, and the plug/socket is connected.



Using straight surface to fix the steel balls allows for powerful connection.

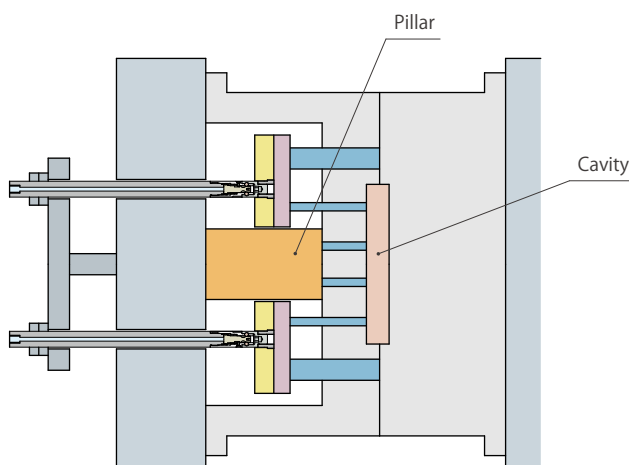
Reduce Setup Time Safely

Setup time can be reduced safely since the connection of ejector rod is completed only by ON/OFF of air pressure.



Able to Install a Pillar

Since the rod part is connected, the pillar can be placed on the back side of the cavity which receives casting pressure. This makes product quality stable.

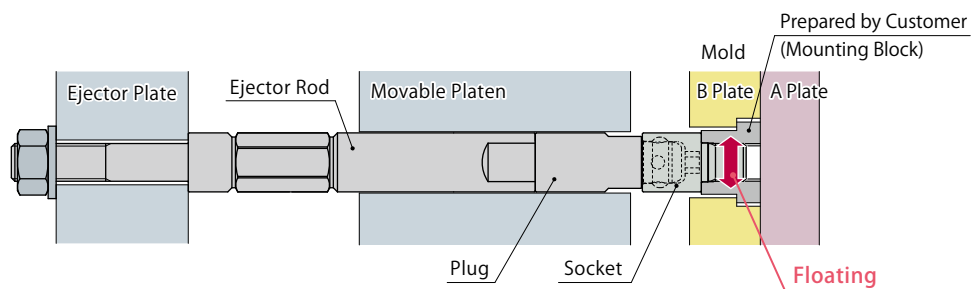
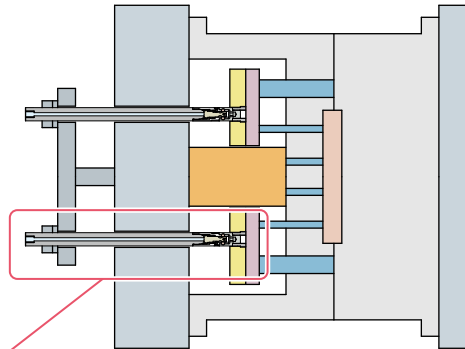


How to Absorb the Center Offset of Ejector Rod

The Ejector Coupler has no floating function, so it is required to provide the floating function in order to absorb the center offset of the ejector rods.

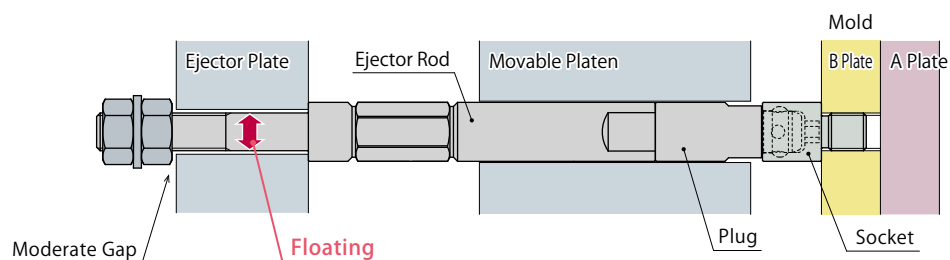
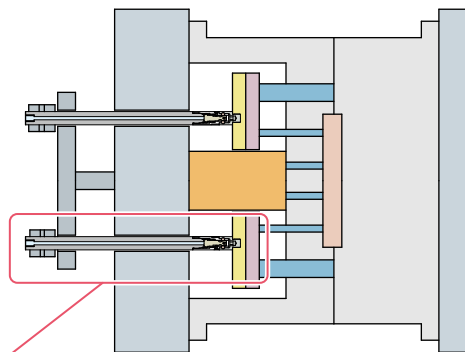
Floating on the Mold Side

The method to provide floating margin on the mold side that absorbs the center offset. When installing the Ejector Couplers on existing molds, the molds need to be modified.



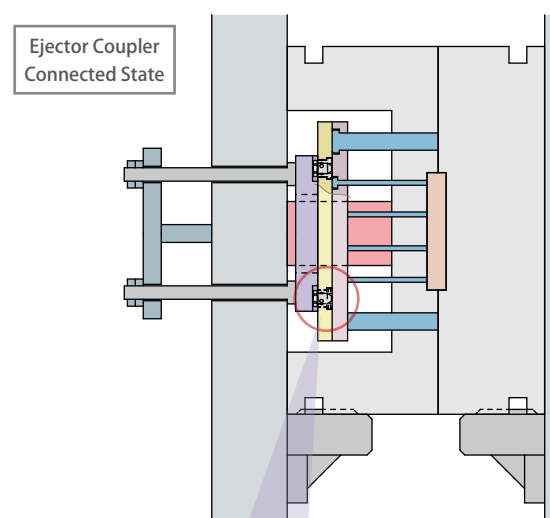
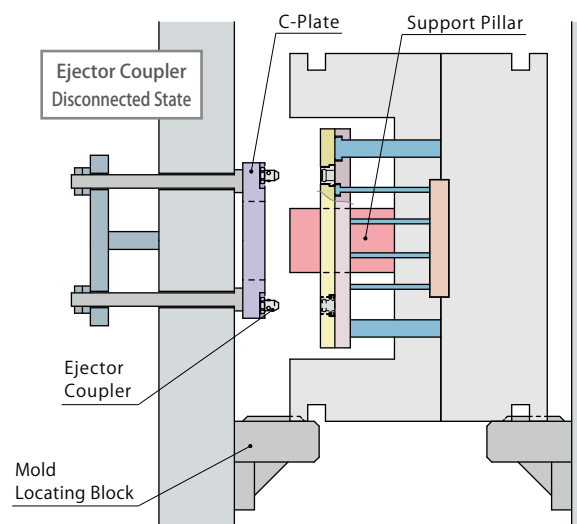
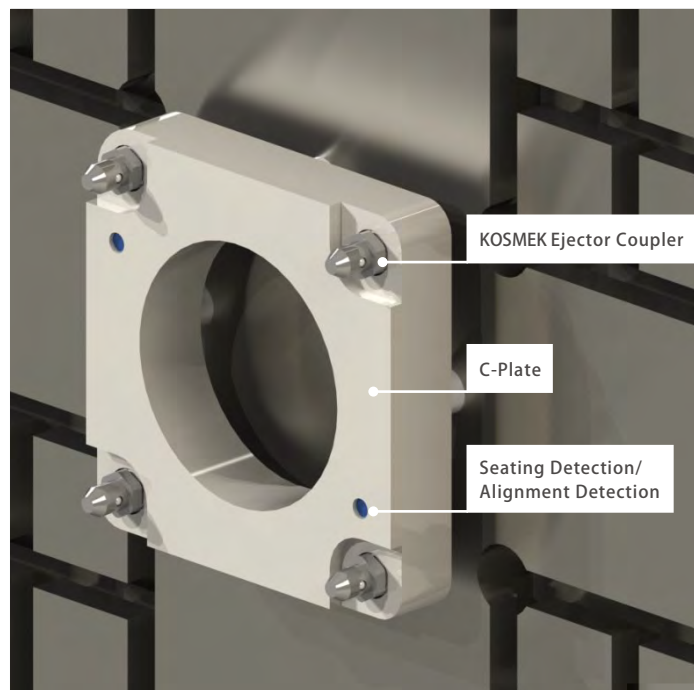
Floating on the Ejector Plate Side

The method to provide floating margin on the ejector plate side that absorbs the center offset. When installing the Ejector Couplers on existing molds, the socket will be installed in place of existing rod, so the molds can be used without modification.



Flexible Design of C-Plate

※ Special Application Example

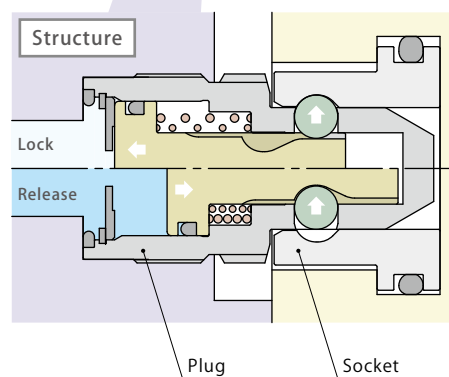


Required to install a pillar to stabilize accuracy and quality of products, but C-plate occupies space behind the cavity so that a support pillar cannot be installed.



Even in such the case...

**With KOSMEK Ejector Coupler,
it is able to design a C-plate freely.**



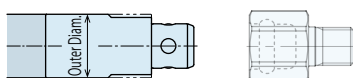
Model No. Indication

Plug (Machine Side)

PMF **025** **0** - **P** **A** - **F** - **S**

1
2
3
4
5
6

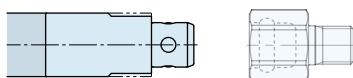
1 Body Size

025 : Outer Diameter ϕ 25 mm**029** : Outer Diameter ϕ 29 mm**037** : Outer Diameter ϕ 37 mm**P** : Plug

2 Design No.

0 : Revision Number

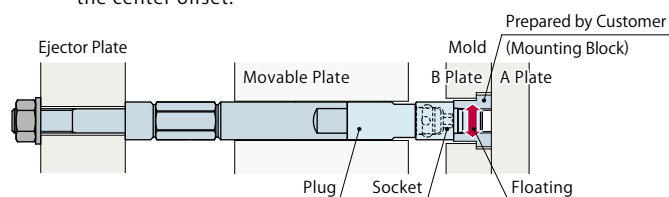
3 Classification

P : Plug**P** : Plug

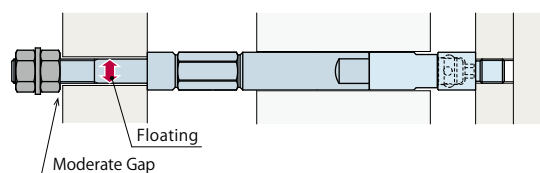
5 Floating Method

Blank : Floating on the Mold Side (Standard)**F** : Floating on the Ejector Plate Side**Blank** : Floating on the Mold Side

Provides floating margin on the mold side to absorb the center offset.

**F** : Floating on the Ejector Plate Side

Provides floating margin on the ejector plate side to absorb the center offset.

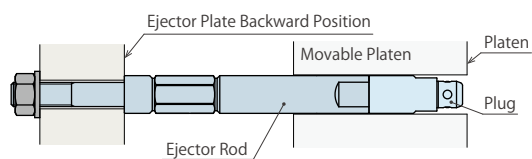


4 Ejector Coupler Installation Position

A : Position A**B** : Position B**A** : Ejector device with servo control, etc.

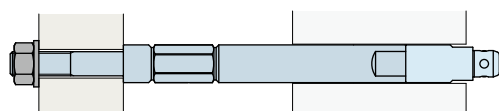
Able to stop in the neutral position.

(The plug top is inside the platen when a mold is loaded.)

**B** : Ejector device with hydraulic control.

Unable to stop in the neutral position.

(The plug top is out of the platen when a mold is loaded.)



6 Production Number

This number represents the dimensions of Ejector Rod, such as shape and length. A number will be given after confirming specifications.

Socket (Mold Side)

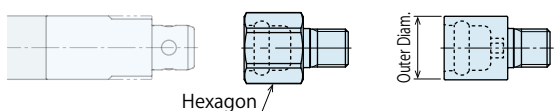
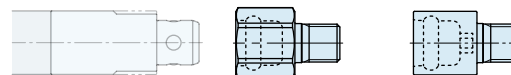
PMF 025 0 - H - K

1

2

3

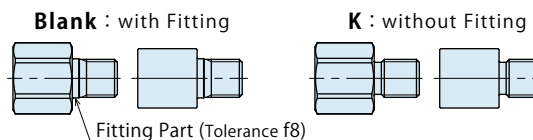
4

1 Body Size**025** : Hexagon 27 mm / Outer Diameter ϕ 25 mm**029** : Hexagon 30 mm / Outer Diameter ϕ 29 mm**037** : Hexagon 41 mm / Outer Diameter ϕ 37 mm**H** : Socket
(Hex. Model)**S** : Socket
(Space-Saving Model)**2 Design No.****0** : Revision Number**3 Classification****H** : Socket (Hex. Model)**S** : Socket (Space-Saving Model)**H** : Socket
(Hex. Model)**S** : Socket
(Space-Saving Model)**4 Thread Part Shape****Blank** : with Fitting

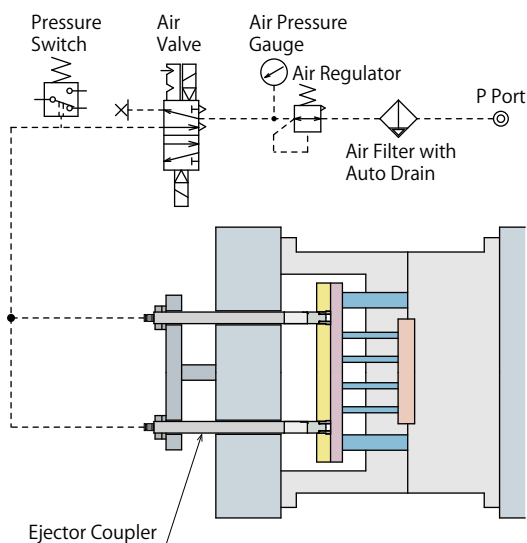
(When selecting Floating on the Mold Side)

K : without Fitting

(When selecting Floating on the Ejector Plate Side)

**Specifications**

Model No.		PMF0250	PMF0290	PMF0370
Max. Allowable Pulling Capacity	kN	10	14	20
Max. Allowable Compressive Capacity	kN	25	40	63
Cylinder Capacity (Release)	cm ³	0.90	1.56	2.95
Air Pressure	MPa	0.3 ~ 1.0		
Withstanding Pressure	MPa	1.5		
Operating Temperature	°C	0 ~ 120		
Usable Fluid		Dry Air		

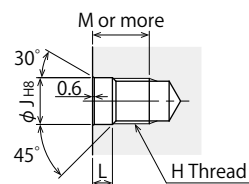
Air Circuit Reference

※ Air valve should be selected according to usage.

Machining Dimensions of Socket Mounting Part

Corresponding Model No.

Socket (Mold Side) **PMF** **0** - **H** **S** - **4** with Fitting



External Dimension and Machining Dimension Lists

Plug

(mm)

Model No.	PMF0250-PA	PMF0250-PB	PMF0290-PA	PMF0290-PB	PMF0370-PA	PMF0370-PB
A	25		29		37	
B	45	44.5	51.5	51	53	52.5
C	17	17.5	18.5	19	24.5	25
D	17.5		19.5		25.5	
E	22		26		33	

Socket

(mm)

Model No.	PMF0250-H	PMF0250-S	PMF0290-H	PMF0290-S	PMF0370-H	PMF0370-S
F	25		30		36.5	
G	19		22		29	
H	M16×2		M18×2.5		M24×3	
J f8	16.5 _{-0.016 -0.043}		18.5 _{-0.020 -0.053}		24.5 _{-0.020 -0.053}	
J H8	16.5 _{+0.027 0}		18.5 _{+0.033 0}		24.5 _{+0.033 0}	
K	27 (Outer Diam. ϕ 30)	8	30 (Outer Diam. ϕ 33)	10	41 (Outer Diam. ϕ 45)	12
L	7		8		9	
M	20		23		30	
Allowable Center Offset before Connection	0.5 ~ 1		0.5 ~ 1		0.5 ~ 1	
Tightening Torque (N · m) ※4	80		130		240	

Note :

※4. Insufficient tightening torque causes looseness and breakage.

Specification List

After confirming specifications, we will determine the shape of Ejector Rod and submit the dimensional drawing.

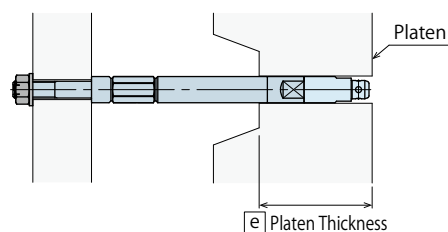
Diecast Machine Maker	
Diecast Machine Model No.	
Extrusion Capability	kN
Ejector Stroke	mm
[a] Distance from Ejector Plate to Platen ※5	mm
[b] Plate Thickness	mm
[c] Platen Hole Diam. ※5	mm
[d] Plate Hole Diam.	mm

[e] Platen Thickness ※6	mm
[f] Retraction (Only when selecting A : Position A)	mm
[g] Mounting Block Thickness ※5	mm
[h] Distance from Platen to B-Plate ※5	mm
[j] B-Plate Thickness ※5	mm
Ejector Coupler Body Size	
Ejector Coupler Qty.	

Notes :

※5. Specify them precisely including tolerance.

※6. [e] Platen Thickness shall indicate the part where the ejector rod is actually mounted.



External Dimensions : Floating on the Ejector Plate Side

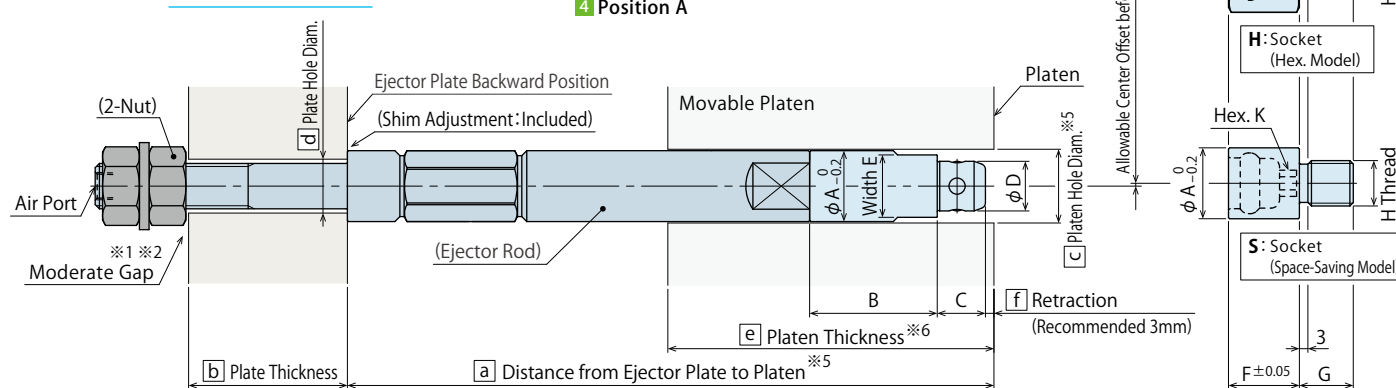
Socket (Mold Side) PMF 0 - **H** - **S** - **K**

A : Position A

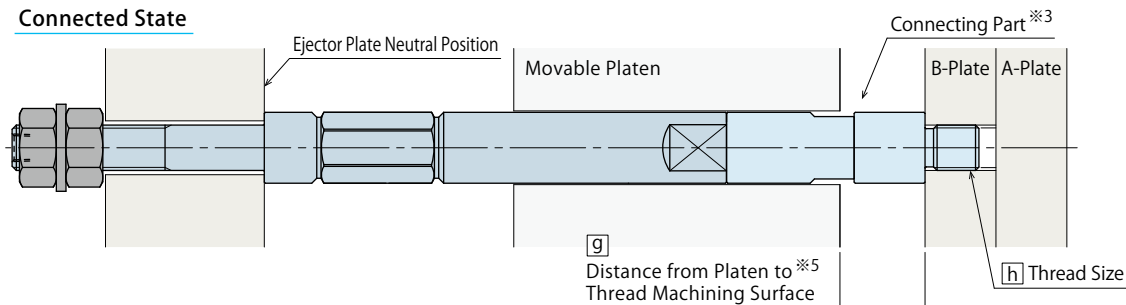
Corresponding Model No.

Plug (Machine Side) PMF 0 - P **A** - **F** - **S** □ □ □ □

Disconnected State



Connected State



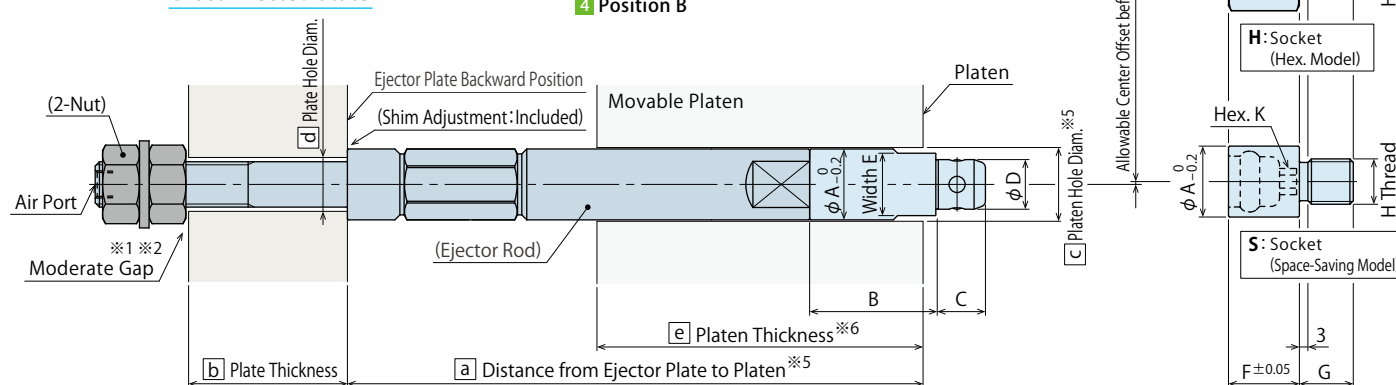
Socket (Mold Side) PMF 0 - **H** - **S** - **K**

B : Position B

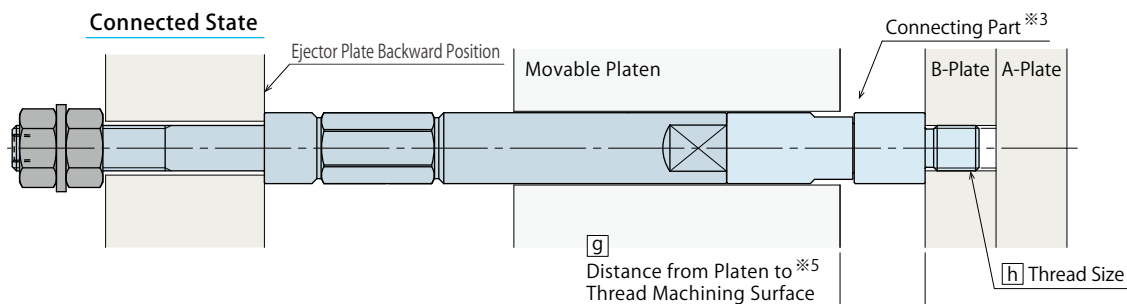
Corresponding Model No.

Plug (Machine Side) PMF 0 - P **B** - **F** - **S** □ □ □ □

Disconnected State



Connected State



Notes :

※1. There should be a moderate gap that the plug can be inserted into the socket within the allowable center offset.

※2. The gap should be adjusted so that all the ejector couplers in use receive the load equally.

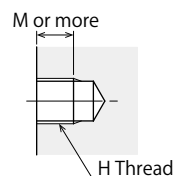
※3. There is a gap between the plug and the socket.

Make sure to install return pins since the ejector pin cannot be fully moved backward due to the gap.

Machining Dimensions of Socket Mounting Part

Corresponding Model No.

Socket (Mold Side) **PMF** **0** - H S - K
4 without Fitting



External Dimension and Machining Dimension Lists

Plug

(mm)

Model No.	PMF0250-PA-F	PMF0250-PB-F	PMF0290-PA-F	PMF0290-PB-F	PMF0370-PA-F	PMF0370-PB-F
A	25		29		37	
B	45	44.5	51.5	51	53	52.5
C	17	17.5	18.5	19	24.5	25
D	17.5		19.5		25.5	
E	22		26		33	

Socket

(mm)

Model No.	PMF0250-H-K	PMF0250-S-K	PMF0290-H-K	PMF0290-S-K	PMF0370-H-K	PMF0370-S-K
F	25		30		36.5	
G	19		22		29	
H	M16×2		M18×2.5		M24×3	
K	27 (Outer Diam. φ 30)	8	30 (Outer Diam. φ 33)	10	41 (Outer Diam. φ 45)	12
M	20		23		30	
Allowable Center Offset before Connection	0.5 ~ 1		0.5 ~ 1		0.5 ~ 1	
Tightening Torque (N · m) ※4	80		130		240	

Note :

※4. Insufficient tightening torque causes looseness and breakage.

Specification List

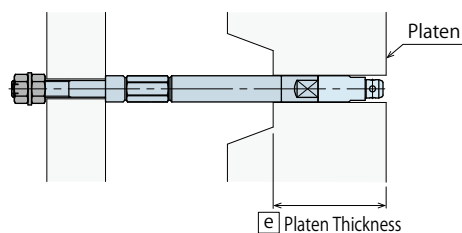
After confirming specifications, we will determine the shape of Ejector Rod and submit the dimensional drawing.

Diecast Machine Maker	
Diecast Machine Model No.	
Extrusion Capability	kN
Ejector Stroke	mm
a Distance from Ejector Plate to Platen※5	mm
b Plate Thickness	mm
c Platen Hole Diam.※5	mm
d Plate Hole Diam.	mm

e Platen Thickness ※6	mm	
f Retraction (Only when selecting A : Position A)	mm	
g Distance from Platen to Thread Machining Surface ※5	mm	
h Thread Size	mm	
Ejector Coupler Body Size		
Ejector Coupler Qty.		

Notes :

※5. Specify them precisely including tolerance.

※6. e Platen Thickness shall indicate the part where the ejector rod is actually mounted.

For Diecast Systems

Manual Ejector Coupler

Model PMG



Quick Change Manual Ejector Coupler

One-Touch Ball Lock Joint Reduces Setup Time in Half

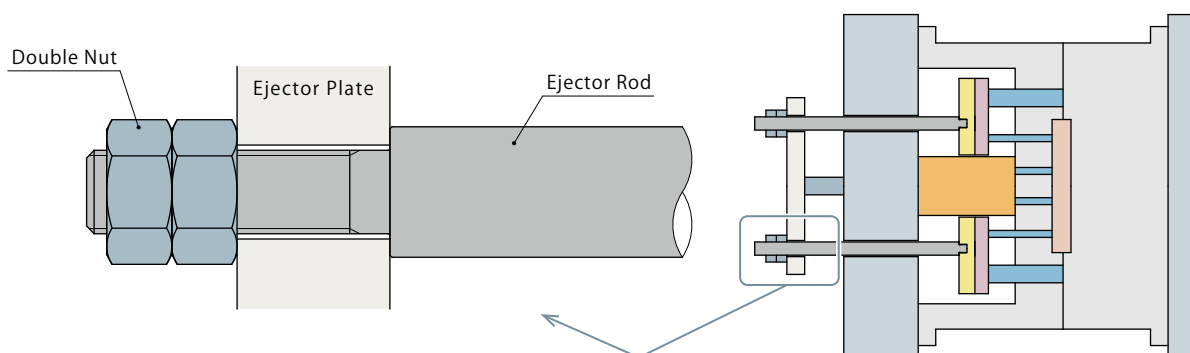
One Touch to Connect Ejector Rod and Ejector Plate!



Reduces Setup Time in Half!

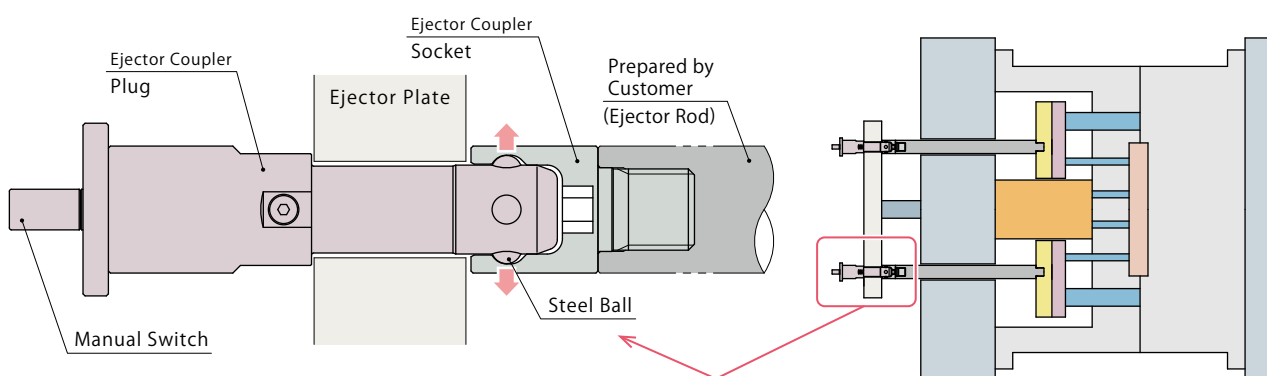
Current Method

In general, an ejector rod and an ejector plate are connected by double nut, but this takes a lot of time to tighten and untighten.



Manual Ejector Coupler

Manual Ejector Coupler enables one-touch connection of the ejector rod and ejector plate.



Locked State : Mechanical Lock

By releasing the manual switch, the steel balls come out with internal spring and lock the plug and socket.



Released State : Manual Switch

By pushing the manual switch, the steel balls become free to move so it is able to pull out the plug.



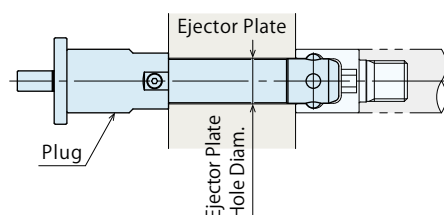
Model No. Indication



1 Ejector Plate Hole Diameter

018 : Ejector Plate Hole Diameter $\phi 18 \sim 19$ mm

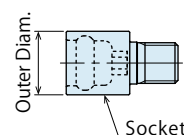
020 : Ejector Plate Hole Diameter $\phi 20 \sim 21$ mm



1 Body Size

025 : Outer Diameter $\phi 25$ mm (Applicable Plug PMG0180)

029 : Outer Diameter $\phi 29$ mm (Applicable Plug PMG0200)



2 Design No.

0 : Revision Number

2 Design No.

0 : Revision Number

3 Ejector Plate Thickness

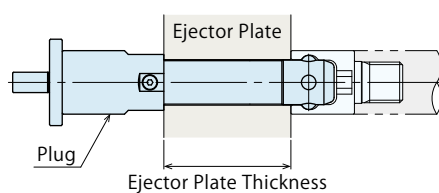
250 : Ejector Plate Thickness 25 mm

}

700 : Ejector Plate Thickness 70 mm

※ Specify **3** Ejector Plate Thickness in 1mm increments with the first decimal place rounded up.
(Ex.) When the actual thickness is 50.3mm, select '**510** : 51mm.'

※ The maximum ejector plate thickness is **700** : 70mm.



3 Classification

S : Socket (Space-Saving Model)

Specifications

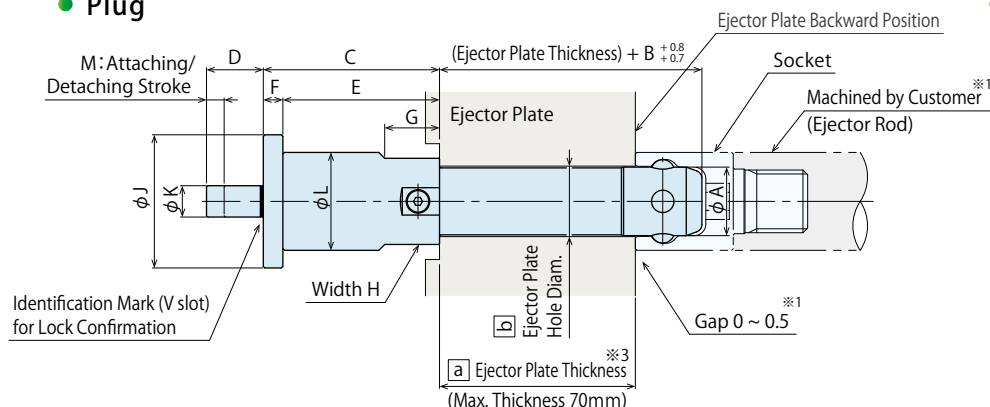
Model No.			Plug	Socket
			PMG0180	PMG0200
Max. Allowable Pulling Capacity	kN		10	14
Max. Allowable Compressive Capacity	kN		25	40
Spring Force	N		11 ~ 16	11 ~ 19
Operating Temperature	°C		0 ~ 120	
Ejector Plate Hole Diameter	mm		$\phi 18 \sim 19$	$\phi 20 \sim 21$
Max. Ejector Plate Thickness	mm		70	

Note :

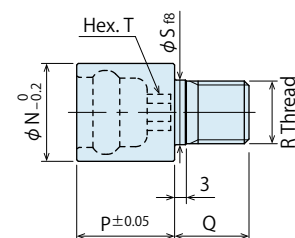
1. Make sure that the ejector plate hole is cleaned before use.
Contaminants entering from steel ball holes lead to malfunction.

External Dimensions

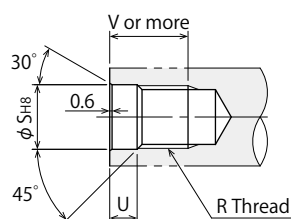
Plug



Socket



Machining Dimensions of Socket Mounting Part



External Dimension and Machining Dimension Lists

Plug

Model No.	PMG0180	PMG0200
A	17.5	19.5
B	17	18.5
C	45	50.5
D	14.5	17.5
E	40	44.5
F	5	6
G	14	18
H	22	26
J	34	39
K	8	8
L	25	29
M	4.5	5.5

Socket

Model No.	PMF0250-S	PMF0290-S
N	25	29
P	25	30
Q	19	22
R	M16×2	M18×2.5
S f8	16.5 $\begin{smallmatrix} -0.016 \\ -0.043 \end{smallmatrix}$	18.5 $\begin{smallmatrix} -0.020 \\ -0.053 \end{smallmatrix}$
S H8	16.5 $\begin{smallmatrix} +0.027 \\ 0 \end{smallmatrix}$	18.5 $\begin{smallmatrix} +0.033 \\ 0 \end{smallmatrix}$
T	8	10
U	7	8
V	20	23
Tightening Torque (N · m) ※2	80	130

Notes :

※1. Design the ejector rod with a gap (0 ~ 0.5mm) between the ejector plate and socket at the ejector plate backward position in order to prevent the load applied on the connecting part of the manual ejector coupler.

Make sure to install return pins since the ejector pin cannot be fully moved backward due to the gap.

※2. Insufficient tightening torque causes looseness and breakage.

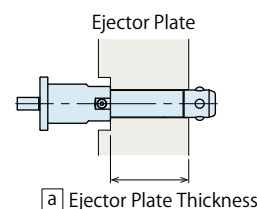
1. Contact us for unlisted sizes.

Specification List

a Ejector Plate Thickness ※3 mm	
b Ejector Plate Hole Diameter mm	

Note :

※3. a Ejector Plate Thickness shall indicate the part where the ejector rod is actually mounted.
(Be careful with the spot facing hole.)



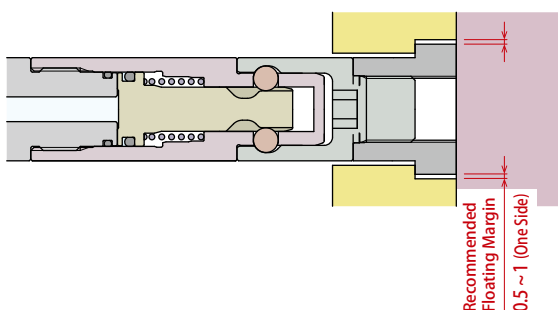
Cautions

Notes for Design

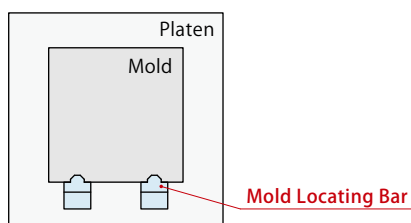
- 1) Check Specifications
 - The diecast machine/coupler device should be handled and maintained by qualified personnel.
- 2) Do not connect couplers when contaminants are adhered.
 - If there are contaminants adhered on edge of each coupler, make sure to remove them with air blow. Otherwise it cannot be connected properly.
- 3) Secure the floating margin so that the mold side absorbs center offset.

(Applying only to : PMF Coupler with Floating on the Mold Side)

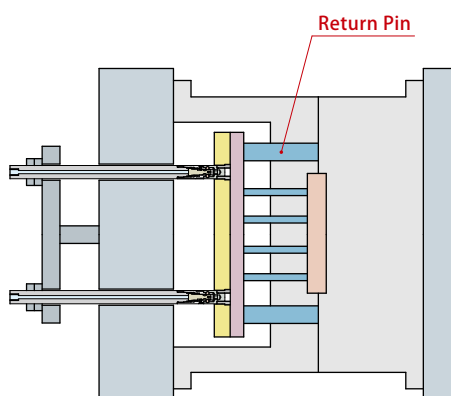
 - Ejector coupler itself has no floating function. Mold positioning accuracy must be within the floating margin. Recommended Floating Margin : 0.5~1mm (One Side)



- 4) Install mold locating bars.



- 5) Install return pins.

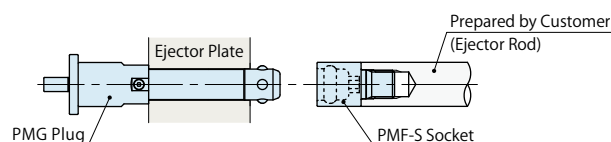
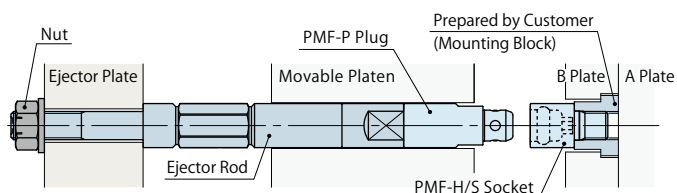


- 6) Operation sequence of PMF Ejector Coupler differs depending on the ejector coupler installation position : Position A or B. Please contact us for further information.

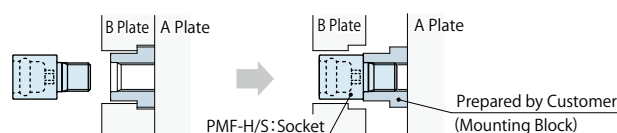
Installation Notes

- 1) Please supply clean dry air. (Only for PMF Coupler)
 - Install an air filter/air dryer in order to prevent rust and dirt. Otherwise it may lead to malfunction.
- 2) Procedure before Piping (Only for PMF Coupler)
 - The pipeline and piping connector should be cleaned by thorough flushing. The dust and cutting chips in the circuit may lead to air leakage and malfunction. (The filter which removes contaminant in the air circuit is not provided.)
- 3) Applying Sealing Tape
 - Wrap with tape 1 to 2 times following the screwing direction. When piping, be careful that contaminants such as sealing tape do not enter in products. Pieces of the sealing tape can lead to air leakage and malfunction.
- 4) Installation of the Product
 - For installation of PMF-H/S : Socket, tighten it with the torque shown in the following list. Insufficient tightening torque causes looseness and breakage. Tightening torque of the ejector rod of PMF Coupler differs depending on the thread size. Contact us for further information.

Model No.	Thread Size	Tightening Torque (N · m)
PMF0250-H/S	M16×2	80
PMF0290-H/S	M18×2.5	130
PMF0370-H/S	M24×3	240



- When the socket cannot be installed with the specified torque due to interference of a mold with a mounting block installed, mount the socket to the mounting block first and install them to the mold. (Applying only to : PMF Coupler with Floating on the Mold Side)

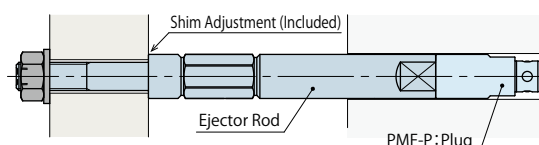


The case when the socket cannot be installed with the specified torque due to interference of a mold with a mounting block installed.

Mount the socket to the mounting block first and install them to the mold.

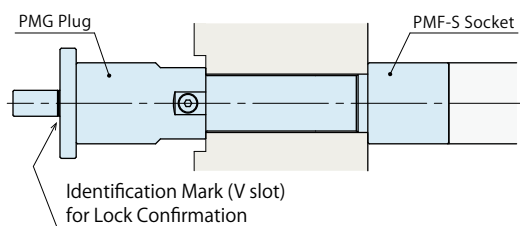
- 5) Shim Adjustment (Only for PMF Coupler)

- Use the included shims and level four ejector rods in length direction.



● Notes on Handling

- 1) It should be handled by qualified personnel.
- 2) Do not handle or remove the product unless the safety is 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 product is removed, make sure that the above-mentioned safety measures are in place.
 - ③ After stopping the machine, do not remove the product until the temperature cools down.
 - ④ Make sure there is no abnormality in the respective parts before restarting the machine or equipment.
- 3) Do not disassemble or modify.
 - If the product is taken apart or modified, the warranty will be voided even within the warranty period.
- 4) Do not touch the product while it is working.
 - Otherwise, your hands may be injured due to clinching.
- 5) After connected, make sure you can see the identification mark for lock confirmation and the coupler cannot be detached.



● Maintenance/Inspection

- 1) Removal of the Product and Shut-off of Air Source
 - Before the product is removed, make sure that the preventive devices and the safety measures are in place.

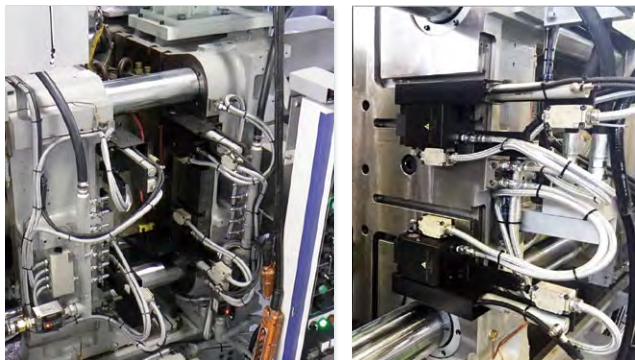
Shut off the pressure source and power source and make sure no pressure exists in the air circuit. Also, make sure there is no abnormality in the bolts and respective parts before restarting.
- 2) Periodically ensure that piping, plug body and socket are securely tightened.
- 3) Periodically ensure that supply air pressure is a specified value.
- 4) Make sure to supply filtered clean dry air.
- 5) Make sure there is smooth action and no abnormal noise.
 - Especially when it is restarted after being left unused for a long period, make sure it can be operated properly.
- 6) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 7) Please contact us for overhaul and repair.

● Warranty

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

Kosmek Products for Diecast Systems



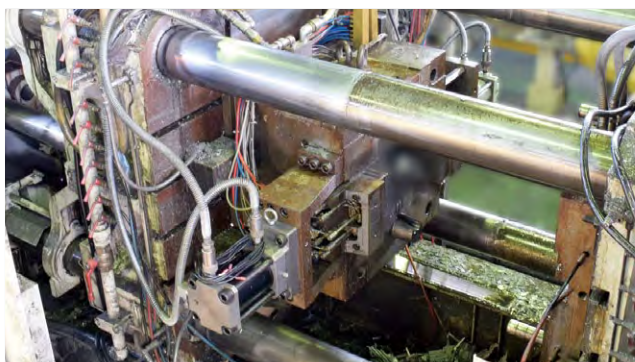
KOSMEK Diecast Clamping Systems

For Diecast Systems

Secure and Safe Mold Clamping with Auto Clamps

Allows for secure and safe mold clamping
with a button operation outside the machine.

Model GK□



High-Power / High-Speed Core Pull Cylinder

For Diecast Systems

Productivity Improvement

Pulls out the core with 1.8 times thrust force
in half the time compared to a cylinder with the same size.

Model PC□

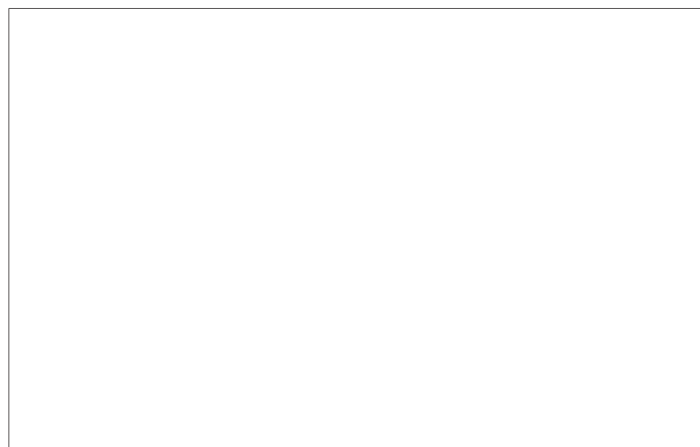


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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.

