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# Plate Sequence Control Products

## Parting Line Locks
## Roller Pulling Assemblies
## Friction Pullers


# Plate Sequence Control Products

*Overview*

## Parting Line Locks

Parting Line Locks provide plate sequence control to mechanically draw floating plates and inserts. Floating plates are secured in place during mold opening and closing to prevent damage to the mold. Parting Line Locks are externally mounted which leaves more real estate available within the mold. Various sizes and styles available to accommodate most mold base sizes and molding applications.

- Used with stripper plate and 3 plate molds
- Provides plate sequence control
- Secures floating plates when mold opens and closes
- Prevents mold from crashing
- Externally mounted

## Roller Pulling Assemblies

Roller Pulling Assemblies provide plate sequence control. They are ideal for stripper plate and 3 plate molding applications. Enables well-balanced mold opening and closing through its locking mechanism composed of a belleville spring, internal rollers and lock rollers. Both standard and long type styles are available. Roller Lock Sets are available with a trivalent chromate coating for high heat applications.

- Used with stripper plate and 3 plate molds.
- Provides plate sequence control
- Rollers prevent uneven wear
- Externally mounted
- Standard and long type styles available
- Available with a trivalent chromate coating for high heat applications

## Friction Pullers

Friction Pullers are designed to provide plate sequence control. The Friction Puller controls plate movement and utilizes friction at a particular setting to release the plate once travel limits are reached. This product can be used to systematically draw floating plates and inserts.

- Resin Type: Heat-Stabilized, Lubricated Nylon 6
- Bolt Material: SCM435
- Ring Material: S45C
- Maximum Operating Temperature: 250°F (120°C)

# Parting Line Lock

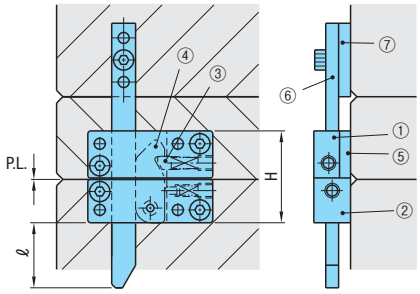
*Installation Guide*

Features

1. Compact and easy to mount.
2. Enables accurate mold opening movement with no reaction.
3. Can be used for low-pressure molding as it imposes little load when locking.
4. Functions regardless of the order of the mold closing process.
5. Slide lock retreats if the runner stripper side closes before the parting line.

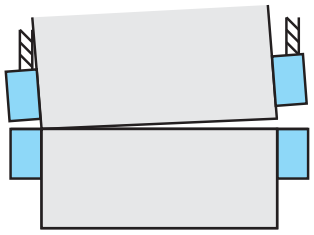
Notes

1. Always use 2 or more sets on a mold.
2. Use this parting lock set within the following load limits:
   - PL0068/PL0046 - 1 ton or less per mold (when 2 sets are used)
   - PL0088 - 1.8 tons or less per mold (when 2 sets are used)
   - PL0104 - 4 tons or less per mold (when 2 sets are used)
3. Maintain proper alignment of the right and left release points to avoid uneven contact and resultant breakage.

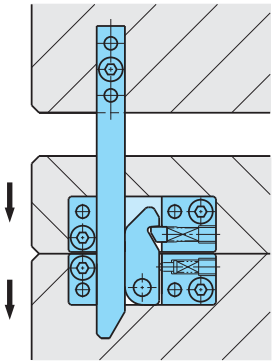



(Fig. 1) Mold closed

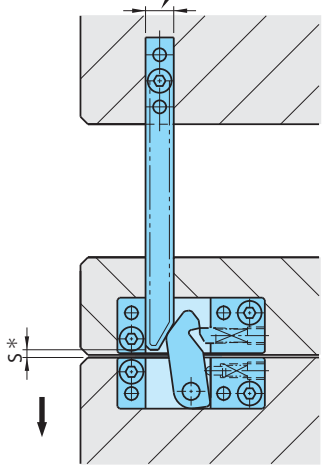
| Assembly Part number | H |
|---|---|
| PL0068 | 50 |
| PL0088 | 68 |
| PL0104 | 86 |



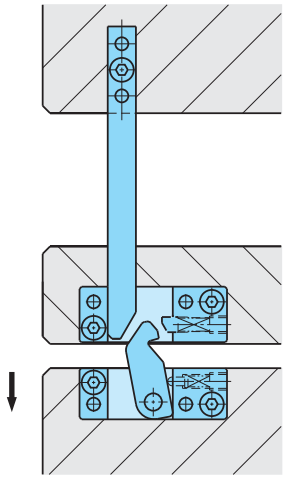
The release bar's sliding face has been reinforced up to 45 Rc or higher through induction hardening. The side faces have been kept under 30 Rc for drilling of mounting holes.



(Fig. 2) Mold opened




(Fig. 3) Release point of the cam lock



(Fig.4) Parting Line is released

The release point is where the release bar's end comes above the S (mm) cam holder's top surface.

Use the S (mm) values shown in the table as reference only. Make sure to check the actual release timing on the site.

| Assembly Part number | S (mm) |
|---|---|
| PL0068 | Approx. 2 |
| PL0088 | Approx. 11 |
| PL0104 | Approx. 15 |

# Parting Line Locks

*Installation Guide*

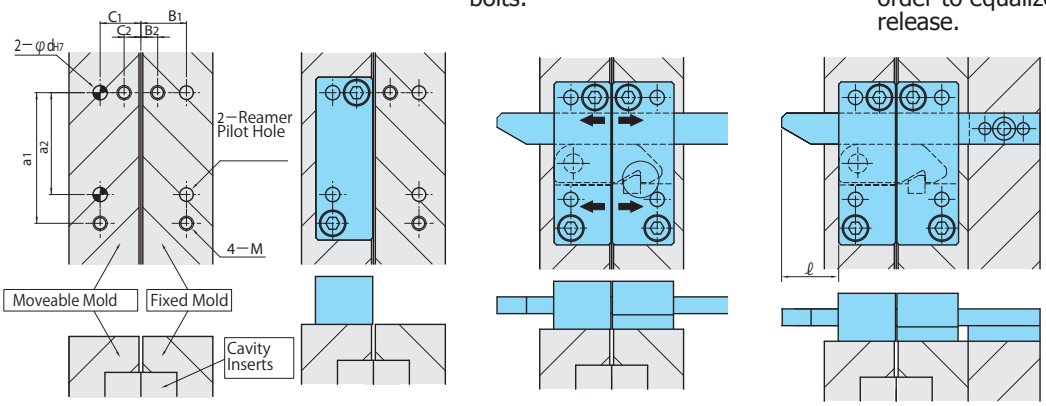
Method of installing the parting lock

① Form bolt holes and reamer holes in the mold parallel to the parting line face to a pitch accuracy within ±0.01. If the pitch accuracy is within ±0.02, form the holes to the reamer pilot hole dimension. (Machine the holes while taking into consideration the clearance between the insert and the mold.)

② Install the cam holder on the movable mold.

③ In order to eliminate looseness between the cam lock and the slide lock, insert the release bar, temporarily fix the slide holder while pulling it parallel to the cam holder, ream the holes and press-fit the dowel pins. In this condition, confirm that the release bar operates smoothly, and then tighten the slide holder with the bolts.

④ Install the mold in the molding machine, cut the release bar to the necessary length, form the bolt holes and reamer pilot holes, temporarily fix the release bar, check the sliding operation of the parting lock, and then ream the holes and press-fit the dowel pins. Make the overhang length ℓ of each release bar the same in order to equalize the timing of the release.




| Part number | a1 | a2 | C1 | C2 | B1 | B2 | M | dH7 | Reamer pilot hole M0.3 |
|---|---|---|---|---|---|---|---|---|---|
| PL0068 | 54.5 | 42.5 | 17 | 7 | 19 | 7 | M 6 | 6 | φ5.7 |
| PL0088 | 70 | 55 | 21 | 9 | 29 | 9 | M 8 | 8 | φ7.7 |
| PL0104 | 82 | 66 | 27 | 11 | 37 | 11 | M10 | 10 | φ9.7 |

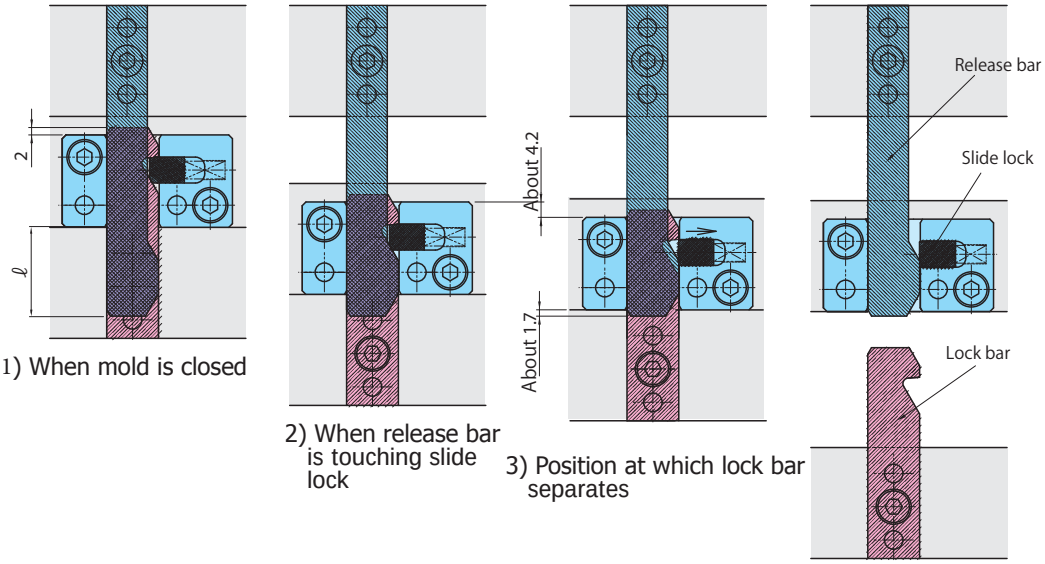
Precautions
If you form the dowel pin hole of the parting lock set by NC machining, the following trouble will occur.

1) The positions of the cam lock and slide lock will become misaligned, making it difficult to insert the slide bar. This in turn may result in damage to the cam lock or another part.

2) A clearance will occur between the cam lock and the slide lock, resulting in defective molding.

For the above reasons, carry out position adjustment by matching with the actual part.

Example of PL0046 operation




1) When mold is closed

2) When release bar is touching slide lock

3) Position at which lock bar separates

4) PL in open condition

How to Mount

1) Form bolt holes and reamer holes using NC machining, and install the cam holder parallel to the PL face.
2) Cut the cam lock to the necessary length, form the bolt holes and reamer pilot holes, tighten the cam lock with the bolts while pulling it, carry out position adjustment by matching with the actual part, form the dowel holes, and fix the cam lock.
3) Cut the release bar to the necessary length, and install it perpendicular to the mold. Make the overhang length ℓ of each release bar the same in order to equalize the release points.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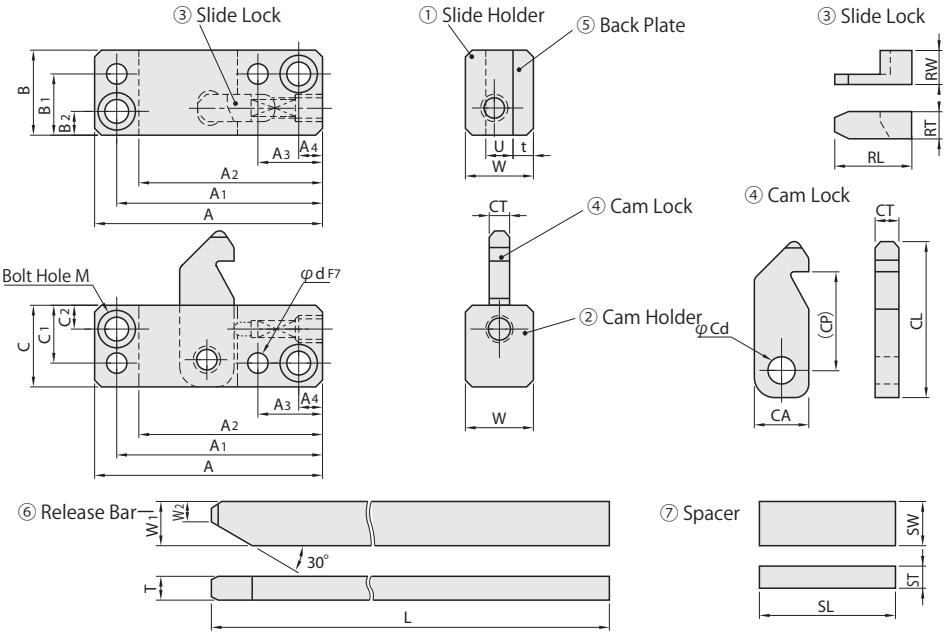
# Parting Line Locks

*For Light, Medium & Heavy Load*




| Item | ① Slide Holder | ② Cam Holder | ③ Slide Lock | ④ Cam Lock | ⑤ Back Plate | ⑥ Release Bar | ⑦ Spacer |
|---|---|---|---|---|---|---|---|
| Material type | Tool Steel H13 | Tool Steel H13 | SKD11 | SKD11 | SK | S45C | S45C |
| Hardness | 50-55 Rc | 50-55 Rc | 58 Rc | 58 Rc | 50 Rc | 45 Rc | N/A |

| Assembly Part Number | ① Slide holder ② Cam holder | | | | | | | | | | | | | | | ③ Slide lock | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | A1 | A2 | A3 | A4 | B | B1 | B2 | C | C1 | C2 | W | U | Bolt hole M | d | RL | RT | RW |
| PL0068 | 68 | 61.5 | 55 | 19 | 7 | 26 | 19 | 7 | 24 | 17 | 7 | 20 | 8 | For M6 | φ 6 | 18 | 7 | 11 |
| PL0088 | 88 | 79 | 70 | 24 | 9 | 38 | 29 | 9 | 30 | 21 | 9 | 30 | 12 | For M8 | φ 8 | 20 | 9 | 16 |
| PL0104 | 104 | 93 | 82 | 27 | 11 | 48 | 37 | 11 | 38 | 27 | 11 | 45 | 20 | For M10 | φ10 | 24 | 12 | 26 |

| Assembly Part Number | ④ Cam lock | | | | | ⑤ | ⑥ Release bar | | | | ⑦ Spacer | | | Accessories | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CL | CP | CA | CT | Cd | t | W1 | W2 | T | L | SW | ST | SL | Bolt 4 pcs. | Dowel pin 4 pcs. | Spring 2 pcs. |
| PL0068 | 45 | 28 | 16 | 7.5 | 8 | 6 | 13 | 5.9 | 7 | 250 | 13 | 6.5 | 40 | PLF0003 | PLD0001 | PS0001 |
| PL0088 | 64 | 41 | 20 | 10 | 10 | 7 | 16 | 8 | 10 | 300 | 16 | 8 | 50 | PLF0008 | PLD0002 | PS0002 |
| PL0104 | 84 | 53.5 | 25 | 18 | 13 | 8 | 20 | 9.5 | 15.5 | 350 | 20 | 10.2 | 55 | PLF0011 | PLD0003 | PS0002 |

Components (Unit)

Use when a cam holder unit is necessary, such as during two-color molding or insert molding, or when a lock set with a long release bar is necessary.

| Assembly Part Number | Slide holder unit ①③⑤+Accessories | Cam holder unit ② ④+Accessories | (L: 300mm) Release bar long type |
|---|---|---|---|
| PL0068 | PLH0001 | PLC0011 | PLR0011 |
| PL0088 | PLH0002 | PLC0012 | N/A |

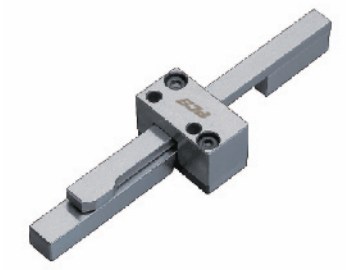
When PL0068 with a long release bar is necessary, use PLH0001, PLC0011 and PLR0011.

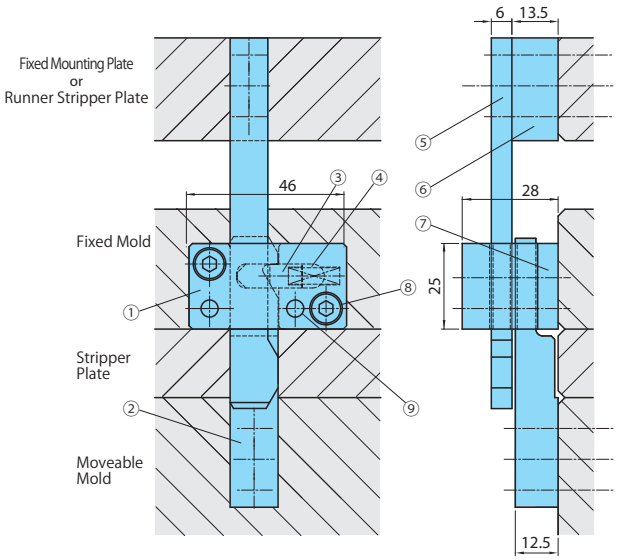
Components (Single Items) Consumable components-cam locks, slide locks and release bars can be purchased independently.

| Assembly Part Number | Slide Lock Only | Cam Lock Only | Release Bar Only |
|---|---|---|---|
| For PL0068 | PLS0001 | PLK0001 | PLR0001 |
| For PL0088 | PLS0002 | PLK0002 | PLR0002 |
| For PL0104 | PLS0003 | PLK0003 | PLR0003 |

# Parting Line Locks

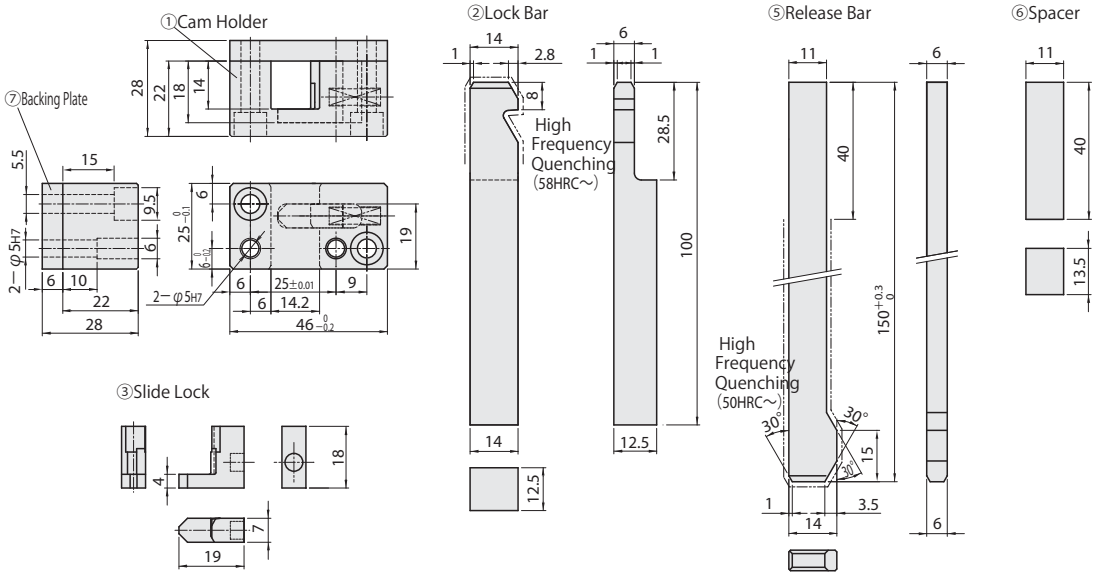
*Compact Type*






| Items | Material Type | Hardness |
|---|---|---|
| ① Cam holder | SKD61 | 50-55 Rc |
| ② Lock bar | SKS3 | 58 Rc (High frequency quenching) |
| ③ Slide lock | SKD11 | 58-60 Rc |
| ④ Spring | SUS631 | |
| ⑤ Release bar | SKS3 | 50 Rc (High frequency quenching) |
| ⑥ Spacer | S45C | |
| ⑦ Backing plate | SKS3 | 50 Rc |

P: ⑧ PLF0012 (2 pcs.) ⑨ PLD0006 (2 pcs.)




Parting Lock Set

| Components | Part Number |
|---|---|
| ①-⑦ Sets | PL0046 |

Cam holder unit

| Components | Part Number |
|---|---|
| ①③④⑦+Accessories | PLC0013 |

Release bar long type

| Components | Part Number |
|---|---|
| ⑤ (Length: 250 mm) ⑥ | PLR0021 |

If a lock set with long release bar is necessary, use PLC0013H, PLR0021 and PLL0001.

Components (Single Items)

| Components | Part Number |
|---|---|
| ② Lock bar | PLL0001 |
| ③ Slide lock | PLS0004 |
| ⑤ Release bar | PLR0004 |

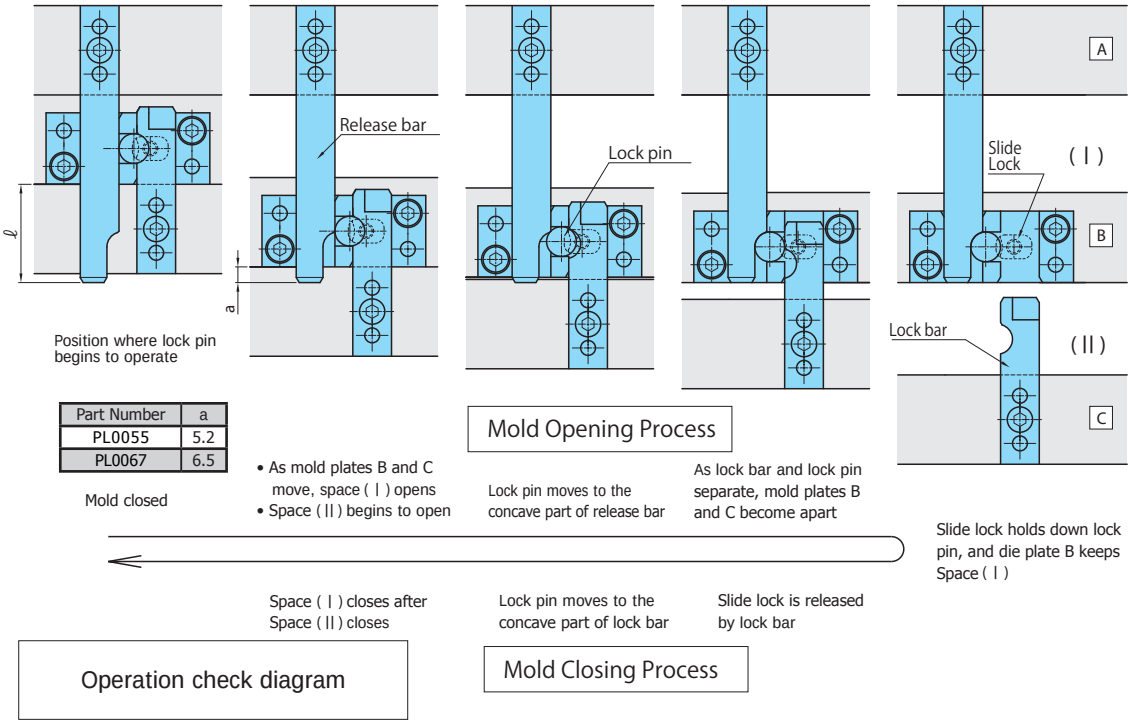
Consumable components-lock bars, slide locks and release bars can be purchased independently.

# Parting Line Locks

*Installation Guide*

Characteristics

- Mold closing control (closing PL surface after closing the stripper plate, etc.), which was not possible with the conventional parting lock sets (PL0068 and PL0046), is now possible.
- The lock bar is long, so it can also be used for thrusting out the stripper plate.
- Enables accurate mold opening and closing movement with no reaction.



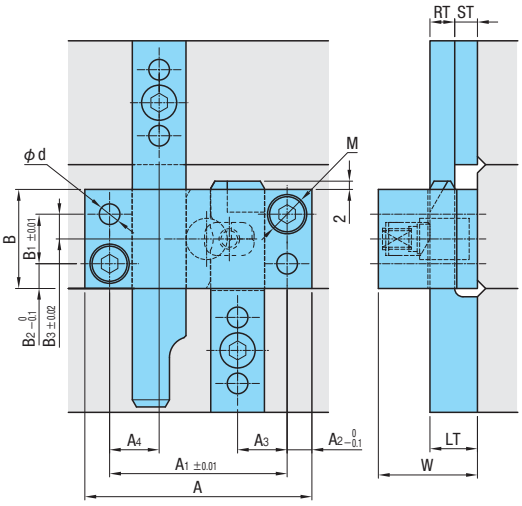

Mounting

(1)Mount 2 or more parting lock sets at symmetrical positions on the mold. PL0055 : 10KN or less for 1 mold/when mounting 2 sets, PL0067 : 20KN or less for 1 mold/when mounting 2 sets

(2)Form bolt holes and reamer holes using NC machining, and install the cam holder parallel to the PL face.

(3)Cut the lock bar to the necessary length, form the bolt holes and reamer pilot holes, tighten the cam lock with the bolts while pulling it, carry out position adjustment by matching with the actual part, form the dowel holes, and fix the cam lock.

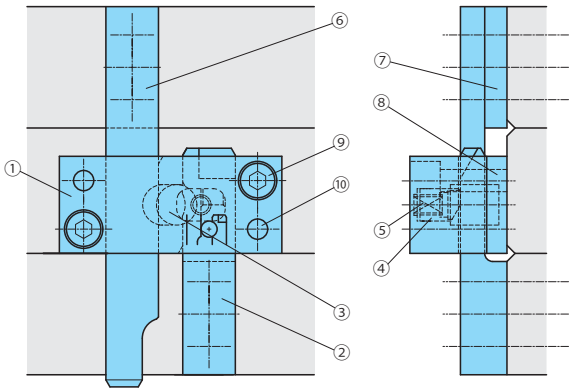
(4)Cut the release bar to the necessary length, and install it perpendicularly to the mold. Make the overhang length ℓ of each release bar the same in order to equalize the release points. (Maintain proper alignment of the release points to avoid uneven contact and resultant breakage.)

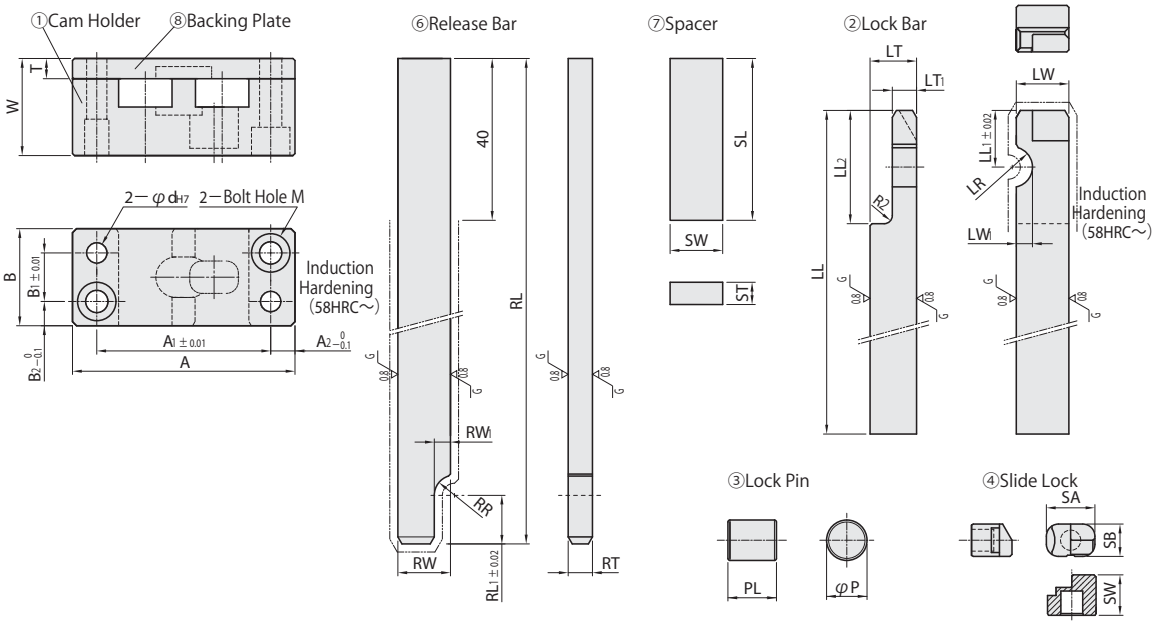



| Part Number | A | A1 | A2 | A3 | A4 | B | B1 | B2 | B3 | W | LT | RT | ST | d | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PL0055 | 55 | 43 | 6 | 12 | 12 | 24 | 12 | 6 | 6 | 24 | 11.5 | 6 | 5.5 | 5 | 5 |
| PL0067 | 67 | 53 | 7 | 15 | 14 | 32 | 16 | 8 | 8 | 32.5 | 16.5 | 10 | 6.5 | 6 | 6 |

# Parting Line Locks

*Mold Opening/Closing Type*




| Part Number | ① Cam holder ⑧ Backing plate | | | | | | | | | | ② Lock bar | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | A1 | A2 | B | B1 | B2 | d | M | W | T | LW | LW1 | LR | LL | LL1 | LL2 | LT | LT1 |
| PL0055 | 55 | 43 | 6 | 24 | 12 | 6 | 5 | 5 | 24 | 5 | 13 | 4 | 5 | 100 | 14 | 28 | 11.5 | 6 |
| PL0067 | 67 | 53 | 7 | 32 | 16 | 8 | 6 | 6 | 32.5 | 6 | 18 | 5 | 6 | 150 | 18 | 36 | 16.5 | 10 |

| Part Number | ③ Lock pin | | ④ Slide lock | | | ⑤ Spring | ⑥ Release bar | | | | | | ⑦ Spacer | | | Accessories | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | PL | SA | SB | SW | | RW | RW1 | RR | RL | RL1 | RT | SW | SL | ST | ⑨ Bolt | ⑩ Dowel pin |
| PL0055 | 10 | 12 | 12 | 8 | 10 | PS0003 | 13 | 4 | 5 | 150 | 12 | 6 | 13 | 40 | 5.5 | PLF0001 | PLD0003 |
| PL0067 | 12 | 17 | 16 | 10 | 13 | PS0004 | 16 | 5 | 6 | 200 | 16 | 10 | 16 | 50 | 6.6 | PLF0005 | PLD0004 |

Set

| Components | Part number |
|---|---|
| ①-⑩ Set | PL0055 |
| | PL0067 |

Components (Single Items)

| Components | Use with | Part Number |
|---|---|---|
| ② Lock bar | PL0055 | PLL0002 |
| | PL0067 | PLL0003 |
| ④ Slide lock | PL0055 | PLS0005 |
| | PL0067 | PLS0006 |
| ⑥ Release bar | PL0055 | PLR0005 |
| | PL0067 | PLR0006 |

| Name | Material Type | Hardness |
|---|---|---|
| ① Cam holder | Alloy tool steel | 50-55 Rc |
| ② Lock bar | | 58 Rc |
| ③ Lock pin | | 58-60 Rc |
| ④ Slide Lock | | 58-60 Rc |
| ⑤ Spring | SUS631 | |
| ⑥ Release bar | Alloy tool steel | 58 Rc |
| ⑦ Spacer | S45C | |
| ⑧ Backing plate | Alloy tool steel | 50 Rc |
| ⑨ SHCS | SCM435 | 38-43 Rc |
| ⑩ Dowel pin | SUJ2 | 45-50 Rc |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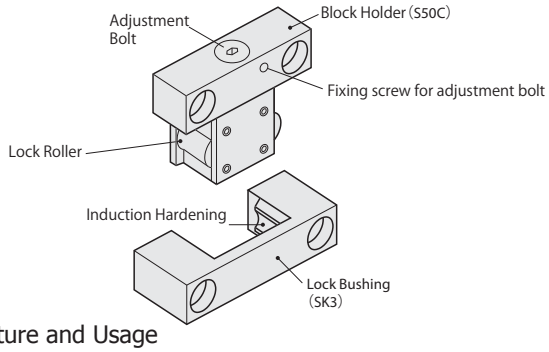
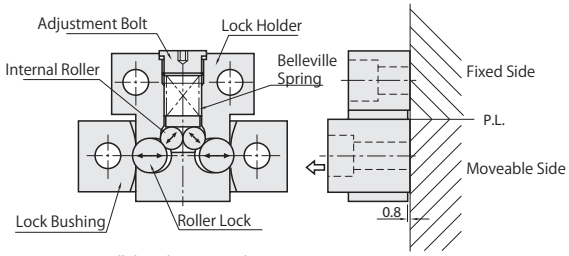
# Roller Pulling Assemblies

*Standard Type/Long Type*

## Features




## Structure and Usage




- Mount it in parallel to the parting line.
- The roller lock set can be removed by pulling it in the direction of arrow in the figure.

## Roller Pulling Assembly Features

- Enables well-balanced mold opening/closing through its mechanism composed of a belleville spring, internal rollers and lock rollers.
- Its rollers prevent uneven wear.
- The lock bushing's vertically symmetrical design allows a worn piece to be reused by reinstalling it in reverse.
- The lock holder's back recess enables it to be used even on a stepped mold plates.
- For heat resistant type, the adjusting bolt differs from standard type for identification.

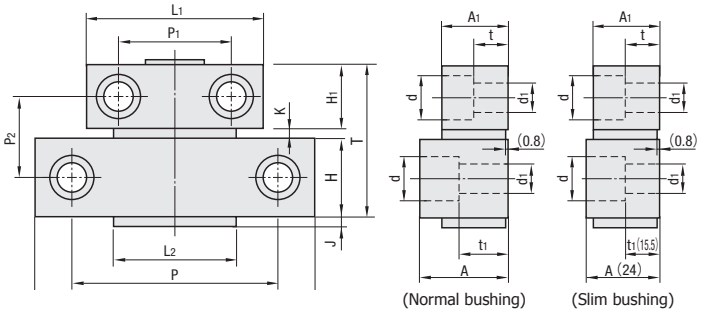
(Standard type: black oxide coated, Heat resitant type: Trivalent Chromate coated)

## Load Adjustment and Load Characteristics

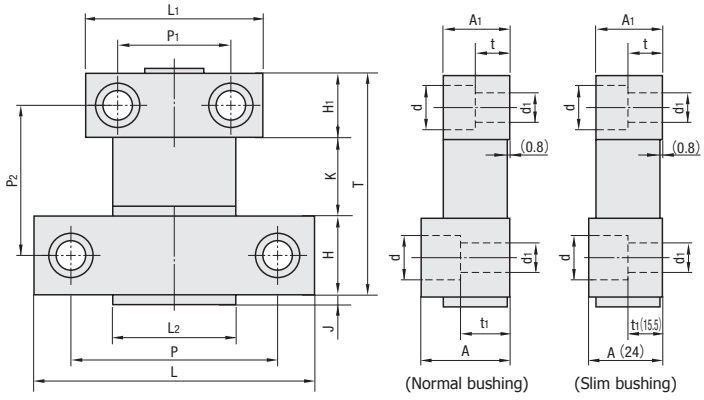
- Opening/closing load can be adjusted using an Allen wrench. The load is maximum when the adjustment bolt is fully tightened, 50% when it is loosened a half rotation, 0 when it is loosened 1 rotation or more. *For PLS0010, the load decreases about 25% when the adjustment bolt is loosened a half rotation, 70% when it is loosened one rotation.
- The load for mold closing is about 50% of mold opening.
- A fixing screw is provided on the load adjustment bolt. Loosen it to perform load adjustment, and make sure to tighten it after adjustment is completed.

Note: Make sure to assemble the right and left units symmetrically for well balanced operation.

## Standard Type/Standard Type - High Heat Resistance


## Long Type/Long Type - High Heat Resistance

# Roller Pulling Assemblies

*Standard Type*

Standard Type (Normal Bushing) - Withstands temperatures up to 175°F, 80°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLS0010 | 981N {100kgf} | 48 | 36 | 25 | 42 | 22 | 18 | 2 | 2 | 36 | 24 | 22 | 24 | 16 | 9.5 | 18 | 11 | 6.5 | PLF0002 PLF0004 |
| PLS0020 | 1961N {200kgf} | 54 | 42 | | | | | | | 40 | 28 | | | | 9 | 16 | | | PLF0002 PLF0003 |
| PLS0030 | 2942N {300kgf} | 65 | 46 | 35 | 48.5 | 25 | 20 | 3.5 | 3.5 | 50 | 31 | 26 | 27 | 19 | 9.5 | 17 | | 6.5 | PLF0004 PLF0005 |
| PLS0060 | 5884N {600kgf} | 73 | 50 | | | | | | | 52 | 33 | | | | | | 14 | 9 | PLF0007 PLF0008 |
| PLS0080 | 7845N {800kgf} | | | | 56.5 | | | | 11.5 | | | 34 | | | | | | | |

Standard Type (Slim Bushings) - Withstands temperatures up to 175°F, 80°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLSS0030 | 2942N {300kgf} | 65 | 46 | 35 | 48.5 | 25 | 20 | 3.5 | 3.5 | 50 | 31 | 26 | 24 | 19 | 9.5 | 15.5 | 11 | 7 | PLF0003 PLF0004 |
| PLSS0060 | 5884N {600kgf} | 73 | 50 | | | | | | | 52 | 33 | | | | | | 14 | 9 | PLF0006 PLF0007 |
| PLSS0080 | 7845N {800kgf} | | | | 56.5 | | | | 11.5 | | | 34 | | | | | | | |

Standard Type (Normal Bushing -High Heat Resistance) - Withstands temperatures up to 300°F, 150°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLS0020H | 1961N {200kgf} | 54 | 42 | 25 | 42 | 22 | 18 | 2 | 2 | 40 | 28 | 22 | 24 | 16 | 9 | 16 | 11 | 6.5 | PLF0002 PLF0003 |
| PLS0030H | 2942N {300kgf} | 65 | 46 | 35 | 48.5 | 25 | 20 | 3.5 | 3.5 | 50 | 31 | 26 | 27 | 19 | 9.5 | 17 | | 6.5 | PLF0004 PLF0005 |
| PLS0060H | 5884N {600kgf} | 73 | 50 | | | | | | | 52 | 33 | | | | | | 14 | 9 | PLF0007 PLF0008 |
| PLS0080H | 7845N {800kgf} | | | | 56.5 | | | | 11.5 | | | 34 | | | | | | | |
| PLS0100H | 9807N {1000kgf} | 103 | 65 | 48 | 58 | 30 | 24 | 4 | 4 | 76 | 42 | 31 | 34 | 25 | 13 | 19 | 17 | 11 | PLF0009 PLF0010 |

Standard Type (Slim Bushings - High Heat Resistance) - Withstands temperatures up to 300°F, 150°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLSS0030H | 2942N {300kgf} | 65 | 46 | 35 | 48.5 | 25 | 20 | 3.5 | 3.5 | 50 | 31 | 26 | 24 | 19 | 9.5 | 15.5 | 11 | 7 | PLF0003 PLF0004 |
| PLSS0060H | 5884N {600kgf} | 73 | 50 | | | | | | | 52 | 33 | | | | | | 14 | 9 | PLF0006 PLF0007 |
| PLSS0080H | 7845N {800kgf} | | | | 56.5 | | | | 11.5 | | | 34 | | | | | | | |

# Roller Pulling Assemblies

*Long Type*

Long Type (Normal Bushing) - Withstands temperatures up to 150°F, 80°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLS0060L | 5884N {600kgf} | 73 | 50 | 35 | 79.5 | 25 | 20 | 3.5 | 34.5 | 52 | 33 | 57 | 27 | 19 | 9.5 | 17 | 14 | 9 | PLF0007 PLF0008 |
| PLS0080L | 7845N {800kgf} | | | | 87.5 | | | | 42.5 | | | 65 | | | | | | | |
| PLS0100L | 9807N {1000kgf} | 103 | 65 | 48 | 89 | 30 | 24 | 4 | 35 | 76 | 42 | 62 | 34 | 25 | 13 | 19 | 17 | 11 | PLF0009 PLF0010 |

Long Type (Slim Bushing) - Withstands temperatures up to 150°F, 80°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLSS0080L | 7845N {800kgf} | 73 | 50 | 35 | 87.5 | 25 | 20 | 3.5 | 42.5 | 52 | 33 | 65 | 24 | 19 | 9.5 | 15.5 | 14 | 9 | PLF0006 PLF0007 |

Long Type (Normal Bushing - High Heat Resistance) - Withstands temperatures up to 300°F, 150°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLS0060LH | 5884N {600kgf} | 73 | 50 | 35 | 79.5 | 25 | 20 | 3.5 | 34.5 | 52 | 33 | 57 | 27 | 19 | 9.5 | 17 | 14 | 9 | PLF0007 PLF0008 |
| PLS0080LH | 7845N {800kgf} | | | | 87.5 | | | | 42.5 | | | 65 | | | | | | | |
| PLS0100LH | 9807N {1000kgf} | 103 | 65 | 48 | 89 | 30 | 24 | 4 | 35 | 76 | 42 | 62 | 34 | 25 | 13 | 19 | 17 | 11 | PLF0009 PLF0010 |

Long Type (Slim Bushing - High Heat Resistance) - Withstands temperatures up to 300°F, 150°C

| Part Number | Max. usable load | L | L1 | L2 | T | H | H1 | J | K | P | P1 | P2 | A | A1 | t | t1 | d | d1 | P 2 pcs. each |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PLSS0080LH | 7845N {800kgf} | 73 | 50 | 35 | 87.5 | 25 | 20 | 3.5 | 42.5 | 52 | 33 | 65 | 24 | 19 | 9.5 | 15.5 | 14 | 9 | PLF0006 PLF0007 |

# Roller Pulling Assemblies

*Normal & Slim Bushings*

Normal Bushing Component

| Part Number | Application |
|---|---|
| PLB1000 | For PLS0010(H) |
| PLB2000 | For PLS0020(H) |
| PLB3000 | For PLS0030(H)<br>For PLSS0030(H) |
| PLB6080 | For PLS0060(H) - PLS0080L(H) - PLS0060L(H)- PLS0080(H)<br>For PLSS0060(H) - PLSS0080L(H) - PLSS0080(H) |
| PLB1100 | For PLS0100(H) PLS0100L(H) |

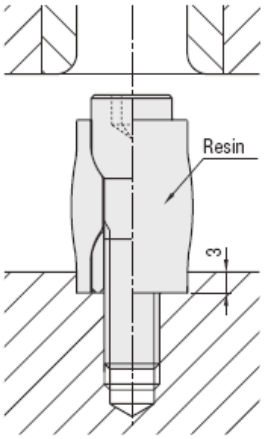
Slim Bushing Component

| Part Number | Application |
|---|---|
| PLBS3000 | For PLSS0030(H)<br>For PLS0030(H) |
| PLBS6080 | For PLS0060(H) - PLS0080L(H)<br>PLS0080(H)<br><br>For PLSS0060(H) - PLSS0080L(H)<br>PLSS0080(H) |

For use in 2-color molding, insert molding, etc. that require additional lock bushings.

# Friction Pullers

**Available sizes include: 10mm, 13mm, 16mm, and 20mm.**

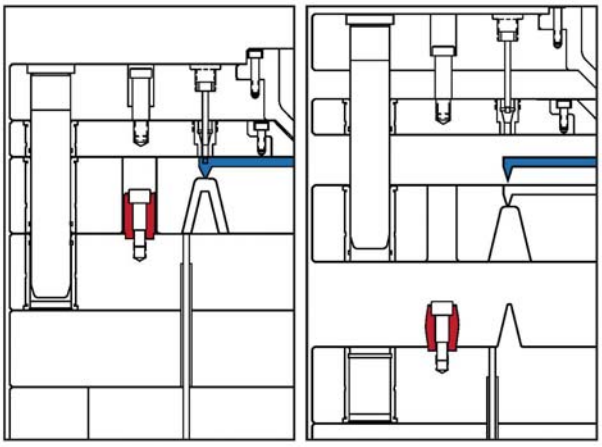


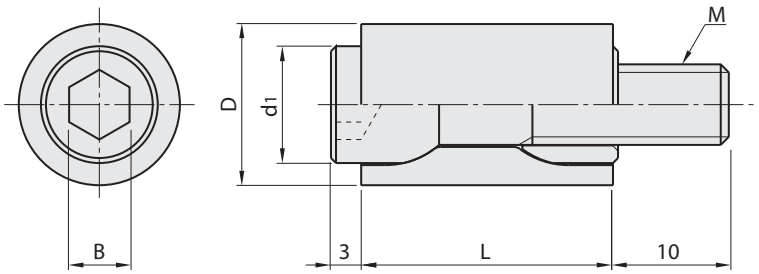

**Features:**

- Resin Type: Heat-Stabilized, Lubricated Nylon 6
- Bolt Material: SCM435
- Ring Material: S45C
- Maximum Operating Temperature: 250°F (120°C)

**Benefits:**

- Provides smooth plate sequence control
- Systematically draws floating plates & inserts apart




| Part Number | D (mm) | L (mm) | B (mm) | M | d1 (mm) | Maximum Force (each) |
|---|---|---|---|---|---|---|
| FP-10P | 10 | 17 | 4 | M5-.8 | 7.6 | 32.5 kg (70 lbs.) |
| FP-13P | 13 | 20 | 5 | M6-1 | 9.6 | 62.5 kg (135 lbs.) |
| FP-16P | 16 | 25 | 6 | M8-1.25 | 11.6 | 150.0 kg (330 lbs.) |
| FP-20P | 20 | 30 | 6 | M10-1.5 | 14.6 | 212.5 kg (470 lbs.) |

*Note: All dimensions in mm*

# Notes

# Notes


PSC0815

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