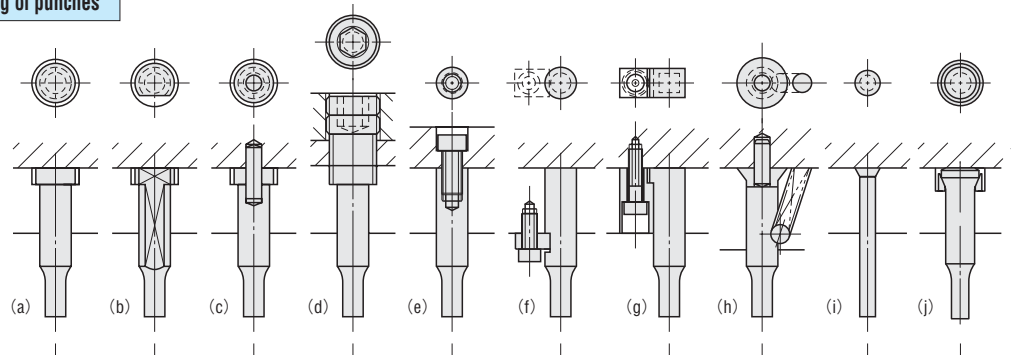


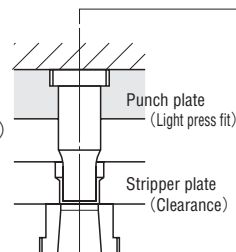
[PRODUCTS DATA] HOW TO MOUNT PUNCHES & DIES

Mounting of punches

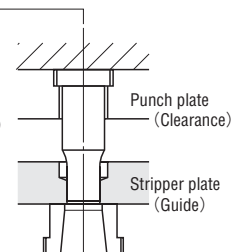


Holding of punches

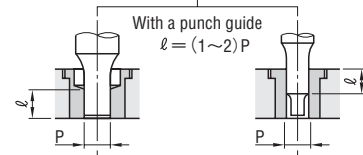
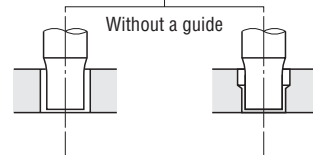
Relative to punch plate (Fig. 1)



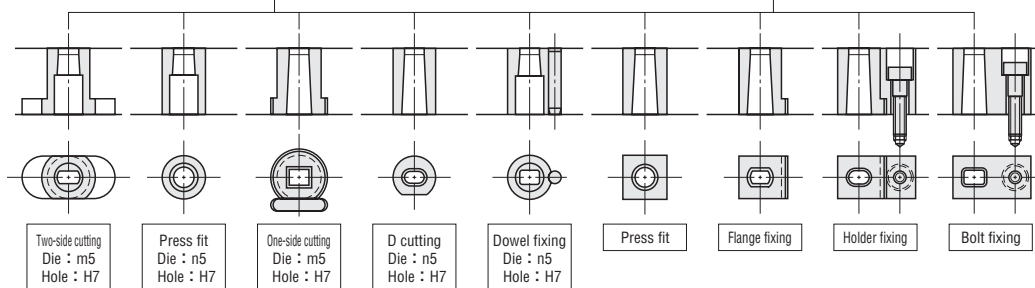
Relative to stripper plate (Fig. 2)



Guiding of punches



Mounting of dies



Mounting of punches

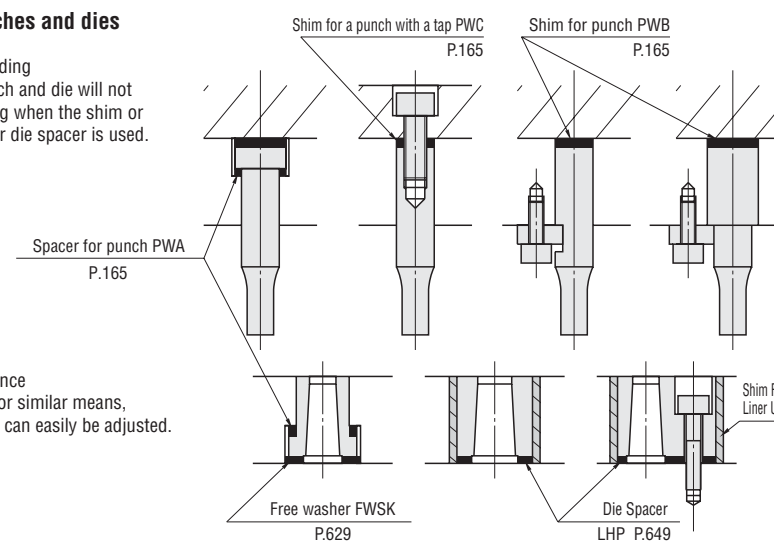
| Category | How to fix | Notes | Page | |
|----------|---|---|--|--------|
| a | Flange fixing | The position and perpendicularity of the punch are maintained at the shank, and the head prevents the punch from coming off. | A standard type for round punches. It is reliable for preventing the punch from coming off. | P. 49~ |
| b | Flange (positioning with a segment) | The position and perpendicularity of the punch are maintained at the shank, and the head prevents the punch from coming off. | The position is determined by the segmental shank inserted into the hole machined with W/EDM. | P. 79~ |
| c | Positioning with dowel pin | Positional accuracy is achieved with the dowel pin, and the head of the punch is fixed. | As the dowel hole is made in the NC process, positioning is easy. This is often used for the dies for automobiles. | P. 83~ |
| d | Fixing with adjust pin | The position and perpendicularity of the punch are maintained at the shank, and the head is fastened with a screw. | It allows the punch to be replaced easily. | P.643~ |
| e | Bolt fixing (tapping) | The position and perpendicularity of the punch is maintained with the punch plate, and the bolt prevents the punch from coming off. | It is reliable for maintaining accuracy and preventing the punch from coming off, but not suitable for thin punches and punching thick plates. | P.131~ |
| f | Key fixing | The groove of the punch is fixed with a key. | It allows the punch to be mounted and replaced easily. It is often used for precision dies based on stripper plates. | P.141~ |
| g | Holder fixing | The head of the punch is screwed with a holder. | It allows the punch to be replaced easily. It is used in case the clearance between the punch plate and stripper is small. | P.333~ |
| h | Ball lock | The punch is fixed with a steel ball in the dedicated retainer which locks the groove of the punch. | The punch can be set and removed quickly by raising the steel ball with a pin. This is often used for the dies for automobiles. | P.789~ |
| i | Tapering for preventing the punch from coming off | The tapering part prevents the punch from coming off. | The cost is reduced because the head is produced with a header. It is used for small diameter punches. | P.155~ |
| j | Taper+Ring | Support the tapered part with the dedicated ring. | A dedicated ring enables the tapered head punch which has a robust head to be installed easily. | P.115 |

Holding of punches

- **Punch plate standard (Fig. 1)** : The most typical method is used for the press fit of the punch in the punch plate, facilitating the production of dies. It is not suitable for the punch and die with a small clearance. When the accuracy of the concentricity of the punch or machined hole of the punch plate is low, the clearance between the punch and die is often uneven.
- **Relative to stripper plate (Fig. 2)** : This method is mainly used for thin, high precision dies. The end of the punch blade is guided by the stripper plate near the punch and die, minimizing the precision error. The punch is held in the punch plate with clearance fit

Adjustments of punches and dies

- **Adjustments in regrinding**
The height of the punch and die will not change with regrinding when the shim or spacer for punches, or die spacer is used.



- **Adjustments of clearance**
Using the shim, liner or similar means, the position of the die can easily be adjusted.