# Locating Pins (Shoulder)

## Set Screw Mounting Shank

**Locating Pins – Shoulder, Set Screw Mounting Shank**

RoHS10

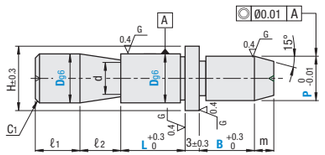
- ℓ3 is the recommended dimension of the position of set screw tip.
- Select set screw position X or Y for Notched Diamond Type and Set Screw Flat Diamond Type.
- A slight machined step will remain on the Diamond Shape.
- L>A+G+1


When D<3: a=0.5, d=D-0.1
When D≥3: a=1.0, d=D-0.2

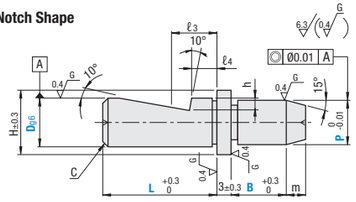
Relief dimension is reference value.

| Material No. | Material | Surface Treatment | Hardness | Type: Circumference Groove | Type: Notch | Type: Set Screw Flat | Shape Code |
|---|---|---|---|---|---|---|---|
| (1) | 01 Tool Steel Equivalent | — | Treated Hardness: 60~63 HRC min. | JPGJ | JPCJ | JPDJ | S (Round) D (Diamond) |

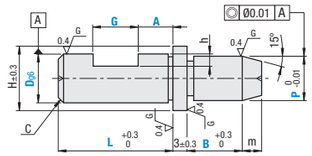
**Circumference Groove Shape**

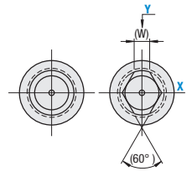


**Notch Shape**



**Set Screw Flat Shape**






## Circumference Groove Shape

| Part Number: Type | Part Number: Shape Code | Part Number: D | D Tolerance g6 | P 0.01 mm Increment | L 1 mm Increment | B 0.1 mm Increment | d | $\ell_1$ | $\ell_2$ | $C_1$ | m | H | (W): When D<P | (W): When D≥P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JPGJ | S Round D Diamond | 6 | -0.004 -0.012 | 2.00–6.00 | 3–12 | 2.0–20.0 | 4.5 | 5 | 5 | 1 | 3 | 8 | 3 | 1.5 |
| | | 6S | | | 2–12 | | | 2 | | 0.5 | | | | |
| | | 8 | -0.005 -0.014 | 3.00–8.00 | 4–16 | | 6.5 | 6 | 6 | 1.5 | 4 | 11 | 3.5 | 1.8 |
| | | 8S | | | 3–16 | | | 3 | | 0.5 | | | | |
| | | 10 | | 3.00–12.00 | 5–20 | 3.0–20.0 | 8 | 8 | 8 | 2 | | 13 | 4 | 2.2 |
| | | 10S | | | 4–20 | | | 3 | | 0.5 | | | | |
| | | 12 | -0.006 -0.017 | 5.00–12.00 | 6–24 | 3.0–25.0 | 10 | 8 | | 2 | | 15 | 5 | 2.5 |
| | | 12S | | | 5–24 | 3.0–20.0 | | 4 | | 0.5 | | | | |
| | | 16 | | 10.00–16.00 | 8–32 | 5.0–25.0 | 14 | 8 | | 3 | 5 | 19 | 7 | 4 |
| | | 16S | | | 7–32 | 5.0–20.0 | | 4 | | 0.5 | | | | |
| | | 20 | -0.007 -0.020 | 13.00–20.00 | 10–40 | 5.0–25.0 | 18 | 8 | | 3 | | 23 | 9 | 5 |

Pins of D dimension with S are for Limited Space with shorter mounting shaft (L and [ℓ1]). Actual D dimension is the number without "s"

## Notch Shape / Set Screw Flat Shape

| Part Number: Type | Part Number: Shape Code | Part Number: D | D Dim. Tolerance g6 | P 0.01 mm Increment | L 1 mm Increment | B 0.1 mm Increment | G 1 mm Increment | A 0.1 mm Increment | Flat Position | $\ell_3$ | $\ell_4$ | h | c | m | H | Applicable Set Screws | (W): When D<P | (W): When D≥P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Notched JPCJ / Set Screw Flat JPDJ | S Round D Diamond | 6 | -0.004 -0.012 | 5.00–7.00 | 12–20 | 5.0–20.0 | 3–9 | 2.0–8.0 | X Y Diamond | 5.5 | 2.5 | 1.0 | 1 | 3 | 8 | M4 | 3 | 1.5 |
| | | 8 | -0.005 -0.014 | 5.00–9.00 | 14–22 | 5.0–30.0 (15.0) | | 2.0–12.0 | | 7.5 | 3.5 | 1.2 | 1.5 | 4 | 11 | M5 | 3.5 | 1.8 |
| | | 10 | | 5.00–12.00 | 15–25 | 5.0–20.0 (25.0) | | 2.0–16.0 | | 7.5 | 3.5 | 1.2 | 2 | 4 | 13 | M6 | 4 | 2.2 |
| | | 12 | -0.006 -0.017 | 5.00–12.00 | 15–25 | 5.0–20.0 (25.0) | | 2.0–20.0 | | 7.5 | 3.5 | 1.2 | 2 | 4 | 15 | M6 | 5 | 2.5 |
| | | 16 | | 10.00–16.00 | 24–35 | 5.0–20.0 (30.0) | | 2.0–28.0 | | 10.5 | 5.5 | 2.0 | 3 | 5 | 19 | M8 | 7 | 4 |
| | | 20 | -0.007 -0.020 | 13.00–20.00 | 27–40 | | | 2.0–36.0 | | 13.5 | 8.5 | 2.0 | 3 | 5 | 23 | M8 | 9 | 5 |

Applicable set screws in the table are the recommended sizes for Notch Shape.

**Part Number Example**

| Part Number | - | P | - | L | - | B | - | G | - | A | - | Flat Position |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JPGJS10 | - | P9.05 | - | L6 | - | B3.5 | | | | | | |
| JPDJD8 | - | P5.05 | - | L20 | - | B10.1 | - | G5 | - | A8.2 | - | X |





# Locating Pins

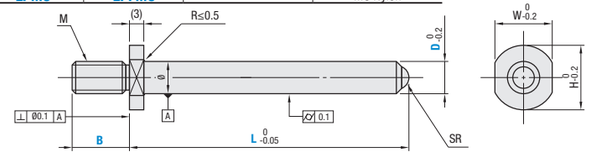
## Selectable Pilot & Mounting Shape / Configurable Shoulder Thickness / Tip Shape Selectable

**Feature:** Useable for lifting work objects that require isolation from metal contacts.

**Locating Pins – Selectable Pilot & Mounting Shape / Configurable Shoulder Thickness**

RoHS10

| Type: L Selectable | Type: L Configurable | Type: L, B Configurable | Material: Main Body | Material: Tip |
|---|---|---|---|---|
| — | LPCE | LPFCE | 304 Stainless Steel | Ceramic (Alumina 99) |
| LPEPK | LPPK | LPFPK | | PEEK |
| — | LPMC | LPFMC | | MC Nylon |




### L Selectable Type

| Part Number: Type | Part Number: D | L | B | M (Coarse) | H | W | SR |
|---|---|---|---|---|---|---|---|
| LPEPK | 3 | 25 | 4.5 | 3 | 6 | 5 | 1.2 |
| | 4 | 50 | 6 | 4 | 8 | 7 | |
| | 5 | 75 | 7.5 | 5 | 9 | 7 | 2 |
| | 6 | 100 | 9 | 6 | 10 | 8 | |
| | | 120 | | | | | |

### L Configurable Type

| Part Number: Type | Part Number: D | L 1 mm Increment | B | M (Coarse) | H | W | SR |
|---|---|---|---|---|---|---|---|
| LPCE LPPK LPMC | 3 | 15–120 | 4.5 | 3 | 6 | 5 | 1.2 |
| | 4 | | 6 | 4 | 8 | 7 | |
| | 5 | | 7.5 | 5 | 9 | 7 | 2 |
| | 6 | | 9 | 6 | 10 | 8 | |
| | 8 | 20–120 | 12 | 8 | 12 | 10 | 3.2 |
| | 10 | | 15 | 10 | 15 | 13 | |

### L, B Configurable Type

L+B≤135

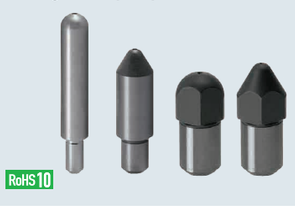
| Part Number: Type | Part Number: D | L 1 mm Increment | B 0.5 mm Increment | M (Coarse) | H | W | SR |
|---|---|---|---|---|---|---|---|
| LPFCE LPFPK LPFMC | 3 | 15–120 | 5.0–9.0 | 3 | 6 | 5 | 1.2 |
| | 4 | | 6.5–12.0 | 4 | 8 | 7 | |
| | 5 | | 8.0–15.0 | 5 | 9 | 7 | 2 |
| | 6 | | 9.5–18.0 | 6 | 10 | 8 | |
| | 8 | 20–120 | 12.5–24.0 | 8 | 12 | 10 | 3.2 |
| | 10 | | 15.5–30.0 | 10 | 15 | 13 | |

**Part Number Example**

| Part Number | - | L | - | B |
|---|---|---|---|---|
| LPEPK3 | - | 120 | | |
| LPCE4 | - | 72 | | |
| LPFCE5 | - | 75 | - | B9.0 |

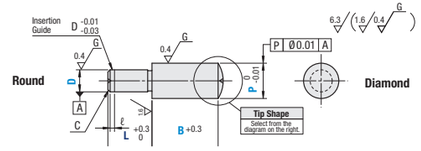
L Selectable
L Configurable
L, B Configurable

**Locating Pins – Tip Shape Selectable**



RoHS10

| Material No. | Round: d Tolerance m6 | Round: d Tolerance p6 | Diamond: d Tolerance m6 | Material | Surface Treatment | Hardness |
|---|---|---|---|---|---|---|
| (1) | LPEJ | LPPEJ | LPDEJ | 01 Tool Steel Equiv. | — | Treated Hardness: 55~60 HRC min. |
| (2) | LPEG | LPPEG | LPDEG | 01 Tool Steel Equiv. | Hard Chrome Plating | Hardness: 50~55 HRC min. Plating Hardness 750 HV min. |
| (3) | LPE | LPPE | LPDE | 1045 Carbon Steel Equiv. | — | Treated Hardness: 45~50 HRC min. |
| (4) | LPEB | LPPEB | LPDEB | 1045 Carbon Steel Equiv. | Black Oxide | Treated Hardness: 45~50 HRC min. |
| (5) | LPER | LPPER | LPDER | 1045 Carbon Steel Equiv. | Hard Chrome Plating | Treated Hardness: 45~50 HRC min. Plating Hardness 750 HV min. |
| (6) | LPES | LPPES | LPDES | 304 Stainless Steel Equiv. | — | — |
| (7) | LPED | LPPED | LPDED | 304 Stainless Steel Equiv. | Hard Chrome Plating | Plating Hardness 750 HV min. |
| (8) | LPEC | LPPEC | LPDEC | 440C Stainless Steel Equiv. | — | Treated Hardness: 50~55 HRC min. |



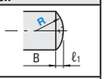

440C Stainless Steel has an identification groove on D part.
Polished, centering hole is sometimes not available for 304 Stainless Steel.

| Part Number: Type | Tip Shape | Part Number: D | D Tolerance m6 | D Tolerance p6 | P 0.01 mm Increment | B 0.1 mm Increment | R 1 mm Increment: A Shape / C Shape Only | G 1 mm Increment: B Shape Only | L 1 mm Increment | C | ℓ | (W) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Round m6 LPEJ LPEG LPE LPEB LPER LPES LPED LPEC / Round p6 LPPEJ LPPEG LPPE LPPEB LPPER LPPES LPPED LPPEC / Diamond m6 LPDEJ LPDEG LPDE LPDEB LPDER LPDES LPDED LPDEC | A | 2 | +0.008 +0.002 | +0.012 +0.006 | 2.50–4.00 | 2.0–25.0 (10.0) | A Shape R≥P/2 / C Shape R≤P/2 | B Shape G≤P | 2–6 | 0.5 | 0 | 1.2 |
| | | 3 | | | 3.50–6.00 | 2.0–25.0 (10.0) | | | 3–6 | | | 1.5 |
| | | 4 | +0.012 +0.004 | +0.020 +0.012 | 4.50–9.00 | 2.0–25.0 (10.0) | | | 4–8 | 1 | | 1.8 |
| | | 5 | | | 5.50–10.00 | 2.0–30.0 (10.0) | | | 5–10 | | 1 | 2.2 |
| | | 6 | | | 6.50–12.00 | 2.0–40.0 (12.0) | | | 6–12 | | | 3 |
| | B | 8 | +0.015 +0.006 | +0.024 +0.015 | 9.00–15.00 | 2.0–40.0 (15.0) | | | 8–16 | 1.5 | | 3.5 |
| | | 10 | | | 11.00–20.00 | 3.0–50.0 (20.0) | | | 10–20 | 2 | | 4 |
| | C | 12 | +0.018 +0.007 | +0.029 +0.018 | 13.00–20.00 | 3.0–50.0 (20.0) | | | 12–24 | | | 5 |
| | | 16 | | | 17.00–25.00 | 5.0–50.0 (20.0) | | | 16–32 | | | 7 |
| | | 20 | +0.021 +0.008 | +0.035 +0.022 | 21.00–30.00 | 5.0–50.0 (20.0) | | | 20–40 | 3 | 2 | 9 |

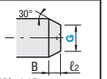
B dimension in ( ) and L dimension in ( ) are for the Diamond Type.

**Pilot-Tip Shape Selection**

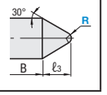
**A Shape**
- $\ell_1 = R - \sqrt{R^2 - \frac{P^2}{4}}$
- R≥P/2




**B Shape**
- $\ell_2 = \left(\frac{P-G}{2\tan 30°}\right)$ Reference: 2tan30°=1.15
- G≤P
- When G=P, add about C0.2 chamfering.




**C Shape**
- $\ell_3 = \frac{P}{2}/\tan 30° + R - (R/\sin 30°)$
- R≤P/2
- Reference: tan30°=0.577, sin30°=0.5



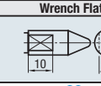
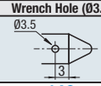
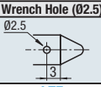

**Part Number Example**

| Part Number | - | P | - | B | - | R | - | G | - | L |
|---|---|---|---|---|---|---|---|---|---|---|
| LPPEJB10 | - | P15.00 | - | B27.0 | | | - | G12 | - | L10 |

**Part Number Alterations**

| Part Number | - | P | - | B | - | R | - | G | - | L | - | (SC, LAC, LTE) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LPEA5 | - | P10.00 | - | B12.0 | - | R6 | | | - | L5 | - | LTE |

Alteration is not available for P Selectable Type.

| Alterations | Wrench Flats | Wrench Hole (Ø3.5) | Wrench Hole (Ø2.5) |
|---|---|---|---|
| |  |  |  |
| Code | SC | LAC | LTE |
| Spec. | SC=1 mm Increment<br>When B≤11, adds wrench flats on the tip<br>P-3≤SC≤P-1, SC≥D | Adds a Ø3.5 hole.<br>Applicable when B≥10 and P≥8. | Adds a Ø2.5 hole.<br>Applicable when B≥8 and 7≤P≤15. |