# Locating Pins - High Hardness Stainless Steel, Tapered / R / Taper R
## Full Threaded

For products uncovered by e-Catalog Standard, see P.131.

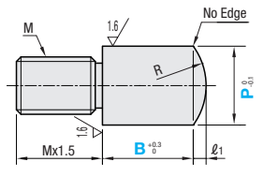
**Features:** New Full Threaded Type has been added to the High Hardness Stainless Steel Locating Pin product line-up. For orders of up to 1,000 pcs., 7th Day Shipping is available. (For details, see P.1617.)


| Material | Hardness | Type |
|---|---|---|
| High Hardness Stainless Steel | 35HRC~ | AJPNG |

When the dia. exceeds Ø10, the center hardness may become 30HRC~.

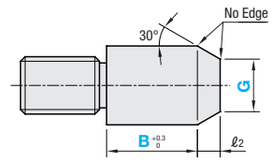
6.3 ( 0.8 )

• Tip Shape A (R) $\ell_1 = R - \sqrt{R^2 - \frac{P^2}{4}}$




• Tip Shape B (Tapered) $\ell_2 = \frac{P-G}{2\tan 30°}$

When G=P, add about C0.2 chamfering.



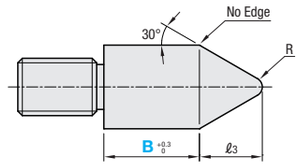


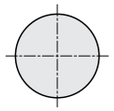
| M | (a) | (d) |
|---|---|---|
| 3 | 1.3 | 2.2 |
| 4 | 1.8 | 2.9 |
| 5 | 2 | 3.7 |
| 6 | 2.5 | 4.4 |
| 8 | 3.1 | 6 |
| 10 | 3.7 | 7.7 |
| 12 | 4.4 | 9.4 |

Above dimensions are for reference, not guaranteed.

• Tip Shape C (Taper R) $\ell_3 = \frac{P}{2} \div \tan 30° + R - (R \div \sin 30°)$

Reference: $\tan 30° \approx 0.577$ $\sin 30° = 0.5$



For Tip Shapes B and C, unless described otherwise on the drawing, the spec. design is the same as for Tip Shape A.

| Part Number Type | Tip Shape | M (Coarse) | * Tightening Torque N·cm | P 0.01mm Increment | B 0.1mm Increment | R 1mm Increment A Shape, C Shape only | G 1mm Increment B Shape only | Unit Price |
|---|---|---|---|---|---|---|---|---|
| AJPNG | A B C | 3 | 147 | 3.50~6.00 | 1.0~10.0 | Shape A R≥P/2 Shape C R≤P/2 | Shape B G≤P | |
| | | 4 | 333 | 4.50~7.00 | | | | |
| | | 5 | 676 | 5.50~8.00 | | | | |
| | | 6 | 1156 | 6.50~12.00 | 1.0~12.0 | | | |
| | | 8 | 2803 | 8.50~15.00 | 1.0~15.0 | | | |
| | | 10 | 5557 | 10.50~16.00 | 3.0~20.0 | | | |
| | | 12 | 9702 | 12.50~17.50 | | | | |

* Tightening torque (reference) is of Tightening Torque Strength Class (10.9) indicated on Technical Data P.2365. Not applicable when using locking materials or lock washers.

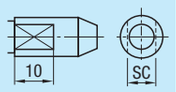
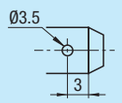
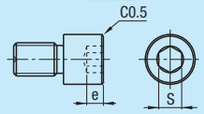
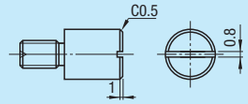
Ordering Example

| | Part Number Type | Tip Shape | M | | P | | B | | R | | G |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R, Taper R | AJPNG | A | 5 | - | P6.50 | - | B8.0 | - | R4 | | |
| Tapered | AJPNG | B | 8 | - | P9.80 | - | B4.0 | | | - | G3 |

Alterations

| Part Number | - | P | - | B | - | R | - | G | - | (SC, LAC, RAC, GC) |
|---|---|---|---|---|---|---|---|---|---|---|
| AJPNGA3 | - | P6.00 | - | B4 | - | R4 | | | - | SC5 |

Any alteration cannot be combined with another alteration.

| Alterations | Wrench Flats | Wrench Hole | Hex Socket Machining | Flathead Slot |
|---|---|---|---|---|
| Code | SC | LAC | RAC | GC |
| Spec. | Ordering Code SC5   SC = 1mm Increment When B≤11, adds wrench flats on the tip. P-3≤SC≤P-1, SC≥M | Machines wrench holes. Ordering Code LAC   Applicable when D≥6. | Machines hex sockets. Ordering Code RAC   Applicable for Tip Shape B only (Tip: C0.5) | Machines a flathead slot. Ordering Code GC   Width 0.8mm Depth 1mm Applicable for Tip Shape B only (Tip: C0.5) |

| Applicable Dimension P | Applicable Dimension B | Wrench Hole Dimensions Q |
|---|---|---|
| ~9.99 | 5.0~ 9.9 | 2 |
| | 10.0~20.0 | 2.5 |
| 10.00~ | 5.0~ 7.9 | 2 |
| | 8.0~11.9 | 2.5 |
| | 12.0~20.0 | 3.5 |

| M | Applicable Dimension B | Hex Hole Dimensions S | Hex Hole Dimensions e |
|---|---|---|---|
| 3 | 6.5~ | 2 | 2 |
| 4 | | 2.5 | |
| 5 | | 3 | |
| 6 | | | |
| 8 | 7.0~ | 4 | 2.5 |
| 10 | 8.0~ | 5 | 3 |
| 12 | 9.0~ | 6 | 4 |



# Locating Pins - High Hardness Stainless Steel Small Head, Tapered
## Press Fit / Tapped

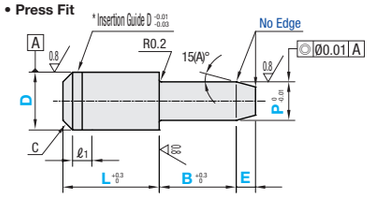
For products uncovered by e-Catalog Standard, see P.131.

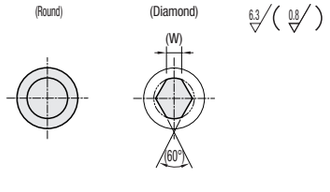
**Features:** For High Hardness Stainless Steel, Small Head Tapered Type, the configurable range of dimensions has been further widened. For order of up to 1,000 pcs., the 7th Day Shipping is available. (For details, see P.1617.)


| Material | Hardness | Pin Shape | Press Fit m6 | Press Fit p6 | Press Fit g6 | Press Fit h7 | Tapped g6 | Tapped h7 |
|---|---|---|---|---|---|---|---|---|
| High Hardness Stainless Steel | 35HRC~ | Round | AFPSA | AFPSPA | AFPSGA | AFPSHA | AFPSTA | AFPSTHA |
| | | Diamond | AFPSD | AFPSPD | AFPSGD | AFPSHD | AFPSTD | AFPSTHD |

When the dia. exceeds Ø10, the center hardness may become 30HRC~.

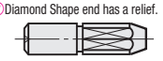
• Press Fit



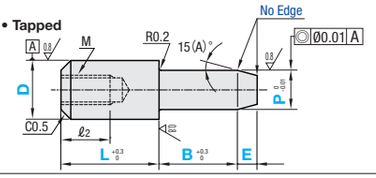




6.3 ( 0.8 )

Diamond Shape end has a relief.



• Tapped




When B+E>20mm, the P dim. tolerance is 0-0.02.
P-2EtanA≥0.73 (Tip dia. Ø0.73 or more)
Reference: tan15°≈0.267 tan30°≈0.577
tan45°=1 tan60°≈1.732
* For D Tolerance g6, h7, no Insertion Guide is provided. ($\ell_1$)

**Tolerance**

| D or P | m6 | p6 | g6 | h7 |
|---|---|---|---|---|
| 1.00 ~ 3.00 | +0.008 +0.002 | +0.012 +0.006 | -0.002 -0.008 | 0 -0.010 |
| 3.01 ~ 6.00 | +0.012 +0.004 | +0.020 +0.012 | -0.004 -0.012 | 0 -0.012 |
| 6.01 ~ 10.00 | +0.015 +0.006 | +0.024 +0.015 | -0.005 -0.014 | 0 -0.015 |
| 10.01 ~ 16.00 | +0.018 +0.007 | +0.029 +0.018 | -0.006 -0.017 | 0 -0.018 |

**Press Fit**

| Part Number Type | D | P 0.01mm Increment | L 1mm Increment | B 0.1mm Increment | E Not Configurable | E 0.1mm Increment | C | $\ell_1$ | (W) | Unit Price Round Shape | Unit Price Diamond Shape |
|---|---|---|---|---|---|---|---|---|---|---|---|
| <Round> AFPSA (m6) AFPSPA (p6) AFPSGA (g6) AFPSHA (h7) <Diamond> AFPSD (m6) AFPSPD (p6) AFPSGD (g6) AFPSHD (h7) | 3 | 1.00(2.00)~3.00 | 3(4)~10 | 2.0~10.0 | 0.5 | 0.5~10 | 0.5 | 1 | 1.0 | | |
| | 4 | 2.00~4.00 | | | 1 | | 1 | | 1.0 | | |
| | 5 | 2.00~5.00 | | | 2 | | | | 1.2 | | |
| | 6 | 2.00~6.00 | | 2.0~15.0 | | | | | 1.5 | | |
| | 8 | 2.00(3.00)~8.00 | | | 3 | | 1.5 | | 1.8 | | |
| | 10 | 6.00~10.00 | 4(5)~16 | 2.0~30.0 | | | 2 | | 2.2 | | |
| | 12 | 6.00~12.00 | | | | | | | 2.5 | | |
| | 16 | 6.00~16.00 | | | 4 | | 3 | 2 | 4 | | |

P, L dimensions in ( ) are applicable to Diamond Shape. When L=3, C=0.5 and $\ell_1$=1.

**Tapped**

| Part Number Type | D | P 0.01mm Increment | L 1mm Increment | B 0.1mm Increment | E Not Configurable | E 0.1mm Increment | M (Coarse) | * Tightening Torque N·cm | $\ell_2$ | (W) | Unit Price Round Shape | Unit Price Diamond Shape |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <Round> AFPSTA (g6) AFPSTHA (h7) <Diamond> AFPSTD (g6) AFPSTHD (h7) | 6 | 4.00~6.00 | 8(9)~12 | 2.0~12.0 | 2 | 0.5~10.0 | M3 | 147 | 5 | 1.5 | | |
| | 8 | 6.00~8.00 | 11(12)~16 | 2.0~15.0 | | | M4 | 333 | 6 | 1.8 | | |
| | 10 | 7.00~10.00 | 11(12)~20 | 3.0~20.0 | 3 | | M5 | 676 | 8 | 2.2 | | |
| | 12 | 7.00~12.00 | | | | | | | | 2.5 | | |
| | 16 | 8.00~16.00 | | 5.0~20.0 | 4 | | M6 | 1156 | 9 | 4 | | |

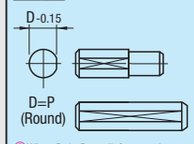
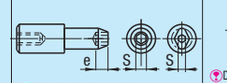
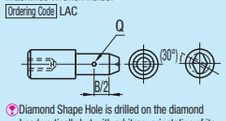
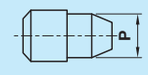
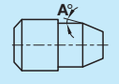
Note the strength of under-head part. P.1618 L dimension in ( ) is applicable to Diamond Shape. Please confirm pilot hole depth on P.1618. Holes may go through.
* Tightening torque (reference) is of Tightening Torque Strength Class (10.9) indicated on Technical Data P.2365. Not applicable when using locking materials or lock washers.

Ordering Example

| | Part Number Type | D | | P | | L | | B | | E |
|---|---|---|---|---|---|---|---|---|---|---|
| E dim. (Not Configurable) | AFPSA | 8 | - | P6.01 | - | L8 | - | B5.3 | | |
| E dim. (Configurable) | AFPSA | 8 | - | P6.01 | - | L8 | - | B5.3 | - | E2.5 |

Alterations

| Part Number | - | P | - | L | - | B | - | E | - | (AC, RAC, LAC ··· etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| AFPSA6 | - | P4.20 | - | L6 | - | B5.3 | | | - | A30 |

| Alterations | Air Vent | Hex Socket Machining | Wrench Hole | P Dimension Tolerance | Taper Angle |
|---|---|---|---|---|---|
| Code | AC | RAC | LAC | PM/PP/PG/PH | A |
| Spec. | Adds an air vent. Ordering Code AC   When D-3≤P, a relief groove is provided on B dim. part. | Machines hex sockets. Ordering Code RAC   S+3 ≤P - 2 x E x tanA° Round Shape is applicable to D≥8, and Diamond Shape is applicable to D≥10. Combination with LAC is not available. | Machines wrench holes. Ordering Code LAC   Diamond Shape Hole is drilled on the diamond head vertically but with arbitrary orientation of its diamond surfaces against those of the diamond head. Applicable when D≥8. Applicable to Tapped Type only. Combination with RAC is not available. | Changes the P dim. tolerance. Ordering Code PM   Not applicable when B+E>20. 3 Days Volume discount rate is applicable. | Changes the taper angle. Ordering Code A60   3 Days Volume discount rate is applicable. |

| Applicable Dimension P | Applicable Dimension B | Wrench Hole Dimensions Q |
|---|---|---|
| ~9.99 | 5.0~ 9.9 | 2 |
| | 10.0~20.0 | 2.5 |
| 10.00~ | 5.0~ 7.9 | 2 |
| | 8.0~11.9 | 2.5 |
| | 12.0~20.0 | 3.5 |

| D | Applicable Dimension B | Hex Hole Dimensions S | Hex Hole Dimensions e |
|---|---|---|---|
| 8 | 4.0~ | 3 | 2 |
| 10 | 4.0~ | | |
| 12 | 5.0~ | | |
| 16 | 7.0~ | 4 | 2.5 |

| Ordering Code | Tolerance |
|---|---|
| PM | m6 |
| PP | p6 |
| PG | g6 |
| PH | h7 |

| Ordering Code | Angle |
|---|---|
| A30 | 30° |
| A45 | 45° |
| A60 | 60° |