

Bushings for Inspection Components

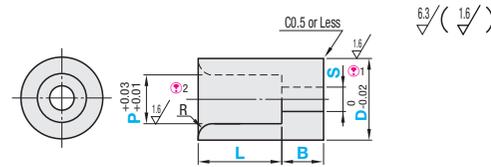
Stepped Straight (Standard)

For compatible Pins, see P.1821~P.1824.

Stepped Straight



| Material | Hardness | Surface Treatment | Type | |
|------------------|----------|----------------------------|--|--------|
| | | | S _{0.03} ^{+0.03} / _{0.01} | SH7 |
| SKS93 Equivalent | 50~60HRC | - | KJBD | KJBHD |
| SKS93 Equivalent | 50~60HRC | Electroless Nickel Plating | KJBDM | KJBDM |
| SUS304 | - | - | KJBDS | KJBHDS |



1. When wall is 2mm or less ((D-P)/2≤2), R is 0.5.

| S | H7 |
|-------------|-------------|
| 3.00-6.00 | +0.012 0 |
| 6.01-10.00 | +0.015 0 |
| 10.01-18.00 | +0.018 0 |
| 18.01-21.00 | +0.021 0 |

S Tolerance

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | R | Unit Price | | |
|--|----|-----------------------|-----------------------|------------------------|--|-----|------------|-------|-------|
| | | | | | | | KJBD | KJBDM | KJBDS |
| (SKS93 Equivalent Hardened) KJBD | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 1.0 | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | 2.0 | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | 2.0 | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | 2.0 | | | |
| (SKS93 Equivalent Hardened, Electroless Nickel Plating) KJBDM | 20 | 10.00~18.00 | 6.00~17.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2.0 | | | |
| | 25 | 15.00~23.00 | 8.00~21.00 | | | 2.0 | | | |

2. For SUS304, there must be a 2mm or greater wall thickness ((D-P)/2≥2).

S Tolerance H7

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | R | Unit Price | | |
|--|----|-----------------------|-----------------------|------------------------|--|-----|------------|-------|--------|
| | | | | | | | KJBHD | KJBDM | KJBHDS |
| (SKS93 Equivalent Hardened) KJBHD | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 1.0 | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | 2.0 | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | 2.0 | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | 2.0 | | | |
| (SKS93 Equivalent Hardened, Electroless Nickel Plating) KJBDM | 20 | 10.00~18.00 | 6.00~17.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2.0 | | | |
| | 25 | 15.00~23.00 | 8.00~21.00 | | | 2.0 | | | |

Ordering Example

| | | | | |
|-------------|----|-------|-------|-----|
| Part Number | P | S | L | B |
| Type | D | | | |
| KJBD | 10 | P5.02 | S4.12 | L15 |
| | | | | B5 |

Alterations

| | | | | | |
|-------------|-------|-------|-----|----|---------------|
| Part Number | P | S | L | B | FC, PKC--etc. |
| KJBD12 | P8.00 | S4.00 | L10 | B5 | FC |

| Alterations | Code | Spec. |
|---------------------------------|------|---|
| Groove (for Adhesive Reservoir) | FC | Adds an adhesive reservoir groove. D≥P+3: Applicable only when a wall of 1.5mm or thicker is remaining. Applicable when L+B≥10 for Straight Type, L+B≥15 for Shouldered Type. |
| Groove (for Retaining) | NC | Adds groove for retaining. D≥P+3: Applicable only when a wall of 1.5mm or thicker is remaining. Applicable when L+B≥10 for Straight Type, L+B≥15 for Shouldered Type. |
| Radius R C Chamfered | RN | Adds C Chamfering (0.5 or less) to R. |
| Radius R Square Corner | CRN | Replaces R with square corner. Edge may be burred. Combination with TKC and LKC is not available. |

| Alterations | Code | Spec. |
|--|------|--|
| Additional Surface Treatment (Black Oxide) | STC | Adds black oxide surface treatment. Applicable only to material SKS93 (except electroless nickel plating). |
| P Dimension Tolerance | PKC | Changes P dimension tolerance to H7. |
| Shoulder Thickness Tolerance | TKC | Changes shoulder thickness tolerance to ±0.01. Applicable to Shouldered T Dimension Fixed Type only. Combination with alteration CRN and LKC is not available. |
| L+B Dimension Tolerance | LKC | Changes L+B dimension tolerance to 0/-0.05. Combination with TKC and CRN is not available. Tolerance is not for L dimension only. |
| Flats Machining | HT | Adds a flat on bushing. |

Bushings for Inspection Components

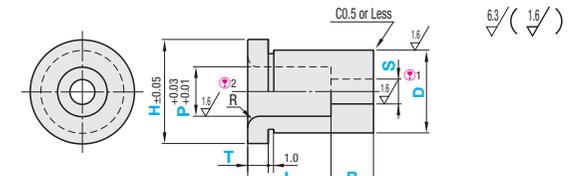
Stepped Straight Type with Shoulder (Standard/Press Fit Type)

For compatible Pins, see P.1821~P.1824.

Stepped Straight Type with Shoulder



| Material | Hardness | T Selection | | | | T, H Configurable | | | |
|------------------|----------|--|-----------------------------------|------------------------------------|-----------------------------------|--|-----------------------------------|------------------------------------|-----------------------------------|
| | | S _{0.03} ^{+0.03} / _{0.01} | | SH7 | | S _{0.03} ^{+0.03} / _{0.01} | | SH7 | |
| | | Standard Type (D _{0.02}) | Press Fit Type (D _{p6}) | Standard Type (D _{0.02}) | Press Fit Type (D _{p6}) | Standard Type (D _{0.02}) | Press Fit Type (D _{p6}) | Standard Type (D _{0.02}) | Press Fit Type (D _{p6}) |
| SKS93 Equivalent | 50~60HRC | KJBTD | KJBPTD | KJBHDT | KJBPHDT | KJFBD | KJFPBD | KJBFHD | KJBPFD |
| SUS304 | - | KJBTDTS | KJBPTDTS | - | - | - | - | - | - |



1 Press Fit Type has a 1 ~ 3mm guide part (D_{0.03}^{+0.03}/_{0.05}).

2 When wall is 2mm or less ((D-P)/2≤2), R is 0.5.

| S | H7 |
|-------------|-------------|
| 3.00-6.00 | +0.012 0 |
| 6.01-10.00 | +0.015 0 |
| 10.01-18.00 | +0.018 0 |
| 18.01-21.00 | +0.021 0 |

T Selection S Dimension Tolerance

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | T±0.05 Selection | H | R | Unit Price | | | |
|---|----|-----------------------|-----------------------|------------------------|--|---------------------|-----|-----|------------|--------|--------|---------|
| | | | | | | | | | KJBDT | KJBPTD | KJBHDT | KJBPHDT |
| (The Standard Type SKS 93 Equivalent Hardened) KJBDT | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 2 3 5 | D+4 | 1.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |
| (Press Fit, SKS93 Equivalent Hardened) KJBPTD | 25 | 15.00~23.00 | 8.00~21.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2 3 5 | D+4 | 2.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |

T Selection S Dimension Tolerance H7

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | T±0.05 Selection | H | R | Unit Price | | | |
|---|----|-----------------------|-----------------------|------------------------|--|---------------------|-----|-----|------------|---------|--------|---------|
| | | | | | | | | | KJBHDT | KJBPHDT | KJBHDT | KJBPHDT |
| (Standard, SKS93 Equivalent Hardened) KJBHDT | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 2 3 5 | D+4 | 1.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |
| (Press Fit, SKS93 Equivalent Hardened) KJBPHDT | 25 | 15.00~23.00 | 8.00~21.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2 3 5 | D+4 | 2.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |

T, H Configurable S Dimension Tolerance

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | T±0.01 0.1mm Increment | H | R | Unit Price | | | |
|--|----|-----------------------|-----------------------|------------------------|--|---------------------------|-----|-----|------------|--------|--------|--------|
| | | | | | | | | | KJBFDT | KJFPDT | KJBFDT | KJFPDT |
| (Standard, SKS93 Equivalent Hardened) KJBFDT | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 2.0~5.5 | D+4 | 1.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |
| (Press Fit, SKS93 Equivalent Hardened) KJFPDT | 25 | 15.00~23.00 | 8.00~21.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2.0~5.5 | D+4 | 2.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |

T, H Configurable S Dimension Tolerance H7

| Part Number Type | D | P 0.01mm Increment | S 0.01mm Increment | L 1mm Increment | B 1mm Increment | T±0.01 0.1mm Increment | H | R | Unit Price | | | |
|--|----|-----------------------|-----------------------|------------------------|--|---------------------------|-----|-----|------------|--------|--------|--------|
| | | | | | | | | | KJBFHD | KJFPHD | KJBFHD | KJFPHD |
| (Standard, SKS93 Equivalent Hardened) KJBFHD | 8 | 4.00~ 6.00 | 3.00~ 5.00 | 3~25 | 5~25 | 2.0~5.5 | D+4 | 1.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |
| (Press Fit, SKS93 Equivalent Hardened) KJFPHD | 25 | 15.00~23.00 | 8.00~21.00 | L≤Px3 No R for 3, 4 | When S≤3.59 B≤Sx2.5 When S≥3.60 B≤Sx3 | 2.0~5.5 | D+4 | 2.0 | | | | |
| | 10 | 4.00~ 8.00 | 3.00~ 7.00 | | | | | 2.0 | | | | |
| | 12 | 5.00~10.00 | 3.00~ 9.00 | | | | | 2.0 | | | | |
| | 16 | 8.00~14.00 | 4.00~13.00 | | | | | 2.0 | | | | |
| | 20 | 10.00~18.00 | 6.00~17.00 | | | | | 2.0 | | | | |

3. For SUS304, there must be a 2mm or greater wall thickness ((D-P)/2≥2).

Ordering Example

| | | | | | | |
|-------------|----|-------|-------|-----|----|------|
| Part Number | P | S | L | B | T | H |
| Type | D | | | | | |
| KJBTD | 12 | P8.02 | S4.12 | L10 | B5 | T3 |
| KJFBD | 12 | P8.02 | S4.12 | L10 | B5 | T3.5 |

Alterations

| | | | | | |
|-------------|-------|-------|-----|----|----|
| Part Number | P | S | L | B | T |
| KJBDT12 | P8.00 | S4.00 | L10 | B5 | T3 |

| Alterations | Code | Spec. |
|---------------------------------|------|---|
| Groove (for Adhesive Reservoir) | FC | Adds an adhesive reservoir groove. D≥P+3: Applicable only when a wall of 1.5mm or thicker is remaining. Applicable when L+B≥10 for Straight Type, L+B≥15 for Shouldered Type. |
| Groove (for Retaining) | NC | Adds groove for retaining. D≥P+3: Applicable only when a wall of 1.5mm or thicker is remaining. Applicable when L+B≥10 for Straight Type, L+B≥15 for Shouldered Type. |
| Radius R C Chamfered | RN | Adds C Chamfering (0.5 or less) to R. |
| Radius R Square Corner | CRN | Replaces R with square corner. Edge may be burred. Combination with TKC and LKC is not available. |

| Alterations | Code | Spec. |
|--|------|--|
| Additional Surface Treatment (Black Oxide) | STC | Adds black oxide surface treatment. Applicable only to material SKS93 (except electroless nickel plating). |
| P Dimension Tolerance | PKC | Changes P dimension tolerance to H7. |
| Shoulder Thickness Tolerance | TKC | Changes shoulder thickness tolerance to ±0.01. Applicable to Shouldered T Dimension Fixed Type only. Combination with alteration CRN and LKC is not available. |
| L+B Dimension Tolerance | LKC | Changes L+B dimension tolerance to 0/-0.05. Combination with TKC and CRN is not available. Tolerance is not for L dimension only. |
| Flats Machining | HT | Adds a flat on bushing. No flat on shoulder part. |