

Bushings for Inspection Jigs

Stepped & Threaded for Straight Pin

Applicable Pins: (Straight) P.1822, 1826

Bushings for Inspection Jigs – Stepped & Threaded for Straight Pin

	M Material	H Hardness	Surface Treatment	1Straight				2Shouldered			
				Round		Dowel Pin		Round		Dowel Pin	
				Type	Material Code	Type	Material Code	Type	Material Code	Type	Material Code
Standard Type (D _{0.02})	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	—	(P ^{+0.03} / _{-0.01}) KJB	M	(P ^{+0.03} / _{-0.01}) KJBK	M	(P ^{+0.03} / _{-0.01}) KJB	MT	(P ^{+0.03} / _{-0.01}) KJBK	MT
	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	Electroless Nickel Plating	(P ^{+0.03} / _{-0.01}) KJBH	MM	(P ^{+0.03} / _{-0.01}) KJBKH	—	(P ^{+0.03} / _{-0.01}) KJBH	—	(P ^{+0.03} / _{-0.01}) KJBKH	—
	304 Stainless Steel	—	—	(P ^{+0.03} / _{-0.01}) KJBH	MS	(P ^{+0.03} / _{-0.01}) KJBKH	MS	(P ^{+0.03} / _{-0.01}) KJBH	MTS	(P ^{+0.03} / _{-0.01}) KJBKH	—
	440C or 420 Stainless Steel	45–50 HRC min.	—	(P ^{+0.03} / _{-0.01}) KJBH	MC	(P ^{+0.03} / _{-0.01}) KJBKH	—	(P ^{+0.03} / _{-0.01}) KJBH	MTC	(P ^{+0.03} / _{-0.01}) KJBKH	—
Press Fit Type (D _{0.01})	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	—	(P ^{+0.03} / _{-0.01}) KJB	M	(P ^{+0.03} / _{-0.01}) KJBK	—	(P ^{+0.03} / _{-0.01}) KJB	MT	(P ^{+0.03} / _{-0.01}) KJBK	—
	304 Stainless Steel	—	—	(P ^{+0.03} / _{-0.01}) KJBH	—	(P ^{+0.03} / _{-0.01}) KJBKH	—	(P ^{+0.03} / _{-0.01}) KJBH	MTS	(P ^{+0.03} / _{-0.01}) KJBKH	—

P	H7
3.00–6.00	+0.012 0
6.01–10.00	+0.015 0
10.01–18.00	+0.018 0
18.01–23.00	+0.021 0

(1) Straight (Round) **(2) With Shoulder (Round)**

(1) Straight (Dowel Pin) **(2) With Shoulder (Dowel Pin)**

① 1. Press Fit Type has a 1–3 mm guide part. (D - 0.03/ - 0.05)
 ② 2. When wall is 2mm or less ((D-P)/2 ≤ 2), R is 0.5.
 ③ 3. When L ≤ 4, there is no R.
 ④ 4. When P=M, I.D. of P dimension will have thread runout.

Type	Material Code		D	P 0.01mm Increment	M (P ≥ M)				L 1mm Increment	B 1mm Increment	(2) Shouldered Type only		R	
	(1) Straight	(2) Shouldered			3	4	5	6			8	T		H
(Round)	M	MT	8	3.00–6.00	3	4			0				1.0	
(Dowel Pin)	MM	MTS	10	4.00–8.00	4	5	6	8	When L=0, specify P as 0. 3–25	5–25 (M ≤ B ≤ Mx3) For M3	2			
(Standard)	KJB	KJBK	12	4.00–10.00	4	5	6	8	When P ≤ 3.59 L ≤ Px2.5	(M ≤ B ≤ Mx2)	3		D+4	
(Press Fit)	KJBH	KJBKH	16	8.00–14.00					When P ≥ 3.60 L ≤ Px3		5			2.0
	KJBP	MTC	20	10.00–18.00										
	KJBPH	—	25	15.00–23.00										

⑤ 5. For Straight Dowel Pin Type, there must be a 1mm or greater wall thickness between I.D. and dowel hole ((D-P)/2 ≥ 3). ⑥ 6. For 304 Stainless Steel, there must be a 2mm or greater wall thickness ((D-P)/2 ≥ 2).

D	1Straight – Available Types							
	Round				Dowel Pin			
	KJBM	KJBM	KJBM	KJBM	KJBHM	KJBHM	KJBHM	KJBHM
8	•	•	•	•	•	•	•	•
10	•	•	•	•	•	•	•	•
12	•	•	•	•	•	•	•	•
16	•	•	•	•	•	•	•	•
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

D	2Shouldered – Available Types							
	Round				Dowel Pin			
	KJBMT	KJBMTS	KJBMTS	KJBMTS	KJBHMT	KJBHMT	KJBHMT	KJBHMT
8	•	•	•	•	•	•	•	•
10	•	•	•	•	•	•	•	•
12	•	•	•	•	•	•	•	•
16	•	•	•	•	•	•	•	•
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

Part Number Alterations
 Part Number: P - M - L - B - T - (FC / NC...etc.)
 Example: KJBW12 - P8.00 - M5 - L10 - B10 - FC

Part Number Example
 Part Number: P - M - L - B - T
 Example: KJB MT 12 - P8.00 - M5 - L10 - B10 - T2

Alterations	Code	Spec.
Groove (To Accumulate Adhesives)	FC	Adds groove for accumulating adhesives. ① D ≥ P+3: Applicable only when a wall of 1.5 mm or thicker is remaining. ② Applicable when L+B ≥ 10 for Straight Type, L+B ≥ 15 for Shoulder Type.
Groove (Retaining)	NC	Adds groove for retaining. ① D ≥ P+3: Applicable only when a wall of 1.5 mm or thicker is remaining. ② Applicable when L+B ≥ 10 for Straight Type, L+B ≥ 15 for Shoulder Type.
Radius R C Chamfered	RN	Adds C Chamfering (0.5 or less) to R.

Alterations	Code	Spec.
Radius R Square Corner	CRN	Replaces R with square corner. ① Edge may be burred. ② Combination with TKC is not available.
Additional Surface Treatment (Black Oxide)	STC	Adds Black Oxide Surface Treatment. ① Only applicable to material SKS93 (except electroless nickel plating).
Shoulder Thickness Tolerance	TKC	Changes shoulder thickness tolerance to ±0.01. ① Applicable to With Shoulder Type only. ② Combination with alteration CRN is not available.
Flats Alteration	HT	Adds a flat on bushing. ① Applicable to Round Type only. ② No flat on shoulder part.

Bushings for Inspection Jigs

Stepped & Threaded for Taper Pin

Applicable Pins: (Taper) P.1824, 1825

Bushings for Inspection Jigs – Stepped & Threaded for Taper Pin

	Material	Hardness	Surface Treatment	1Straight				2Shouldered				S	H7
				Round		Dowel Pin		Round		Dowel Pin			
				Type	Material Code	Type	Material Code	Type	Material Code	Type	Material Code		
Standard Type (D _{0.02})	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	—	(S ^{+0.03} / _{-0.01}) KJB	W	(S ^{+0.03} / _{-0.01}) KJB	W	(S ^{+0.03} / _{-0.01}) KJB	TW	(S ^{+0.03} / _{-0.01}) KJBK	TW	3–6	+0.012 0
	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	Electroless Nickel Plating	(S ^{+0.03} / _{-0.01}) KJBH	WM	(S ^{+0.03} / _{-0.01}) KJBK	—	(S ^{+0.03} / _{-0.01}) KJBH	—	(S ^{+0.03} / _{-0.01}) KJBKH	—	7–10	+0.015 0
Press Fit Type (D _{0.01})	SKS93 Tool Steel (JIS) Equivalent	50–60 HRC min.	—	(S _{0.01}) KJBPH	W	—	—	(S _{0.01}) KJBPH	TW	—	—	11–18	+0.018 0
	304 Stainless Steel	—	—	(S _{0.01}) KJBPH	—	—	—	(S _{0.01}) KJBPH	—	—	—	19	+0.021 0

P	H7
3.00–6.00	+0.012 0
6.01–10.00	+0.015 0
10.01–18.00	+0.018 0
18.01–23.00	+0.021 0

① Some combinations are unavailable. Refer to the price list to select the available combination.

(1) Straight (Round) **(2) With Shoulder (Round)**

(1) Straight (Dowel Pin) **(2) With Shoulder (Dowel Pin)**

① 1. Press Fit Type has a 1 – 3mm guide part. (D - 0.03/-0.05)
 ② 2. When wall is 2mm or less ((D-P)/2 ≤ 2), R is 0.5.
 ③ 3. When S=M, I.D. of S dimension will have thread runout.

Select Type, Material Code and D Dimension

Type	Material Code		D	P 0.01mm Increment	S (S=P-1) 1mm Increment	M	L 1mm Increment	L 1mm Increment	B 1mm Increment	(2) Shouldered Type only		R	
	(1) Straight	(2) Shouldered								T	H		
(Round)	M	MT	8	4.00–6.00	3–5	3	4	3–25 (L+L1 ≤ Px2.5)	3–25 (L+L1 ≤ Sx2.5)	5–25 (M ≤ B ≤ Mx3) For M3 (D8) (M ≤ B ≤ Mx2)	2		1.0
(Dowel Pin)	MM	MTS	10	5.00–8.00	4–7								
(Standard)	KJB	KJBK	12	5.00–10.00	4–9	4	5	3–25 (L ≤ Px3)	3 ≤ L1 < 25-L (L+L1 ≤ Sx3)		3	D+4	
(Press Fit)	KJBH	KJBKH	16	8.00–14.00	4–13	8	10				5		2.0
	KJBPH	—	20	10.00–18.00	6–17								
			25	15.00–23.00	8–19								

④ 4 For Straight Dowel Pin Type, there must be a 1mm or greater wall thickness between I.D. and dowel hole ((D-P)/2 ≥ 3).

D	(1) Straight – Available Types				(2) Shouldered – Available Types			
	Round		Dowel Pin		Round		Dowel Pin	
	S ^{+0.03} / _{-0.01}	KJBW	S _{0.01}	KJBKW	S ^{+0.03} / _{-0.01}	KJBTW	S _{0.01}	KJBKTW
8	•	•	•	•	•	•	•	•
10	•	•	•	•	•	•	•	•
12	•	•	•	•	•	•	•	•
16	•	•	•	•	•	•	•	•
20	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•

Part Number Alterations
 Part Number: P - S - M - L - L1 - B - T - (FC / PKC / NC...etc.)
 Example: KJBW12 - P8.00 - S6 - M5 - L10 - L1 - B10 - FC

Part Number Example
 Part Number: P - S - M - L - L1 - B - T
 Example: KJB TW 10 - P8.00 - S5 - M4 - L8 - L1 - B10 - T2

Alterations	Code	Spec.
Groove (To Accumulate Adhesives)	FC	Adds groove for accumulating adhesives. ① D ≥ P+3: Applicable only when a wall of 1.5 mm or thicker is remaining. ② Applicable when L+L1+B ≥ 10 for Straight Type, L+L1+B ≥ 15 for Shoulder Type.
Groove (Retaining)	NC	Adds groove for retaining. ① D ≥ P+3: Applicable only when a wall of 1.5 mm or thicker is remaining. ② Applicable when L+L1+B ≥ 10 for Straight Type, L+L1+B ≥ 15 for Shoulder 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. ① Edge may be burred. ② Combination with TKC is not available.

Alterations	Code	Spec.
Additional Surface Treatment (Black Oxide)	STC	Adds Black Oxide Surface Treatment. ① Only applicable 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. ① Applicable to With Shoulder Type only. ② Combination with alteration CRN is not available.
Flats Alteration	HT	Adds a flat on bushing. ① Applicable to Round Type only. ② No flat on shoulder part.