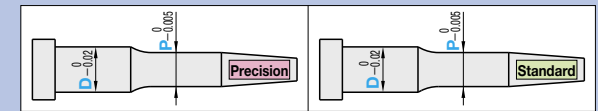


High Speed Steel
SKH51 equivalent

PRECISION STEPPED ONE-STEP CENTER PINS

—SHAFT DIAMETER (P) DESIGNATION (0.01mm INCREMENTS) TIP (A · V) TOLERANCE ±0.005 / ±0.01 TYPE—



Ⓜ Non JIS material definition is listed on P.1351 - 1352



SKH51 equivalent Range of guaranteed shaft diameter precision (D) (Details P.1305)
58~60HRC Range of guaranteed base material hardness (Details P.1307)

Type	Tolerance P	Head Thickness (T)	Applicable ejector sleeve hole tolerance
CPHB-5	-0.005	4mm (T4)	+0.005 0
CPVB-5			
CPHBJ-5		4 · 6 · 8mm (JIS)	
CPVBJ-5			

Details P.1309

Step A

$R \leq 0.5$ ($D \leq 2 \rightarrow R \leq 0.3$)
 $\ell \geq 0.5 + \alpha$

Type	Tolerance P	Tolerance V
CPHB-5A	-0.005	±0.01
CPHBJ-5A		
CPVB-5A		±0.005
CPVBJ-5A		

Default $\alpha = 0$
When CX, RX or SR code is used
Alteration reference

Step B

$R \leq 0.5$ ($D \leq 2 \rightarrow R \leq 0.3$)
 $R \leq 0.2$
 $\ell \geq 0.7 + \alpha$

Type	Tolerance P	Tolerance A · V
CPHB-5B	-0.005	±0.01
CPHBJ-5B		
CPVB-5B		±0.005
CPVBJ-5B		

Default $\alpha = 0$
When CX, RX or SR code is used
Alteration reference

Step C

$R \leq 0.5$ ($D \leq 2 \rightarrow R \leq 0.3$)
 $Ks = 45^\circ$
 $R \leq 0.2$
 $\ell \geq \frac{P-A}{2} + 0.5 + \alpha$
When AC code is used
 $\ell \geq \frac{P-A}{2 \tan AC} + 0.5 + \alpha$

Type	Tolerance P	Tolerance A · V	Tolerance Ks
CPHB-5C	-0.005	±0.01	±1°
CPHBJ-5C			
CPVB-5C			±0.005
CPVBJ-5C			

Default $\alpha = 0$
When CX, RX or SR code is used
Alteration reference

Step D

$R \leq 0.5$ ($D \leq 2 \rightarrow R \leq 0.3$)
 $Ks = 45^\circ$
 $C \pm 0.05$
 $R \leq 0.2$
 $\ell \geq C + 0.5 + \alpha$

Type	Tolerance P	Tolerance A · V	Tolerance Ks
CPHB-5D	-0.005	±0.01	±1°
CPHBJ-5D			
CPVB-5D			±0.005
CPVBJ-5D			

Default $\alpha = 0$
When CX, RX or SR code is used
Alteration reference

Step E

$R \leq 0.5$ ($D \leq 2 \rightarrow R \leq 0.3$)
 $R \pm 0.1$
 $\ell \geq R + 0.5 + \alpha$

Type	Tolerance P	Tolerance A	Tolerance V
CPHB-5E	-0.005	±0.02	±0.01
CPHBJ-5E			
CPVB-5E			±0.005
CPVBJ-5E			

Default $\alpha = 0$
When CX, RX or SR code is used
Alteration reference

4mm head		JIS head		Part Number		0.01mm increments					0.1mm increments		ℓ max.	
H	T	H	T	Type	Step	D	L	P	F	A	Vmin.	C · R		N
3	4	3	4	CPHB-5 CPVBJ-5	A	1	70.00~150.00	0.80~0.89	F ≥ 55.00	No need to designate A when [Step] A is selected.	1.00	0.50	[Step] D only 0.1 ≤ C ≤ 1.5 and C < P-A/2 [Step] E only R ≥ 0.3 and R ≤ P-A/2	N ≥ 25.0 and 30 ≤ [F-N] ≤ 200
						1.5	70.00~200.00	0.90~0.99						
						2	70.00~250.00	1.00~1.49						
						2.5		1.50~1.99						
						3		1.50~2.49						
						3	70.00~300.00	2.00~2.99						
						3.5		2.50~3.49						
						4		3.00~3.99						
						4.5		3.50~4.49						
						5		4.00~4.99						
						5.5		5.00~5.49						
						6		5.00~5.99						
6.5		5.00~6.49												
7		6.00~6.99												
8		6.00~7.99												
9		8.00~8.99												
10		8.00~9.99												
12		10.00~11.99												

Ⓜ Step E is D ≥ 1.5 (P ≥ 1.10) ~ Ⓜ Refer to the drawing for ℓ min. (normally, α = 0)

Alterations Part Number — L — P — F — A — V — C(R) — (KC · WKC...etc.)
CPHB-5E 6 - 350.00 - P5.55 - F330.00 - A5.00 - V4.50 - R0.5 - KC3.0

Alterations	Code	Spec.	1Code
	WKC	Single flat cutting (precision) D/2 ≤ WKC < H/2	
	VWC	Two flats cutting (precision) D/2 ≤ VWC < H/2	
	KC	Single flat cutting D/2 ≤ KC < H/2	
	WKC	Two flats cutting D/2 ≤ WKC < H/2	
	KAC KBC	Varied width parallel flats cutting D/2 ≤ KAC < H/2 KBC = 0.1mm increments only KAC < KBC < H/2	
	RKC	Two flats (right angled) cutting D/2 ≤ RKC < H/2	
	DKC	Three flats cutting D/2 ≤ DKC < H/2	
	KGC	Two flats (angled) cutting D/2 ≤ KGC < H/2 AG = 1° increments 0 < AG < 360	
	KTC	Three flats cutting at 120° D/2 ≤ KTC < H/2	
	HC	HC = 0.1mm increments D ≤ HC < H, D ≥ 1.5 Ⓜ In relation to the diameter tolerance, alteration may create a straight piece with little diameter difference between the head and shaft.	

Alteration details P.351

Alterations	Code	Spec.	1Code
	HCC	HCC = 0.1mm increments D + 1 ≤ HCC < H - 0.3	
	TC	TC = 0.1mm increments T/2 ≤ TC < T, D ≥ 1.5 T - TC ≤ Lmax - L (Dimensions L, F and N remain unchanged.)	
	NC	Dowel hole boring Ⓜ Available when H ≥ 4 Ⓜ Combination with other than NHC · NHN · CX · RX · SR · AC · RR not available.	
	NCW	Dowel hole boring + Spring pin driving Ⓜ Available when H ≥ 4 Ⓜ Combination with other than NHC · NHN · CX · RX · SR · AC · RR not available.	
	NHC	Numbering on the head How to order P.352 Ⓜ Available when H ≥ 2	
	NHN	Automatic sequential numbering on the head How to order P.352 Ⓜ Available when H ≥ 2	
	CX	CX = 0.1mm increments 0.3 ≤ CX ≤ 0.5, CX < V/2 Ⓜ Available when P ≥ 2 V is a dimension prior to CX machining. Ⓜ α = CX	
	RX	RX = 0.1mm increments P ≥ 4.5 0.3 ≤ RX ≤ 0.5, RX < V/2 P > 4.5 0.3 ≤ RX ≤ 1.0 Ⓜ Available when P ≥ 2 V is a dimension prior to RX machining. Ⓜ α = RX	
	SR	Finishes the tip in spherical shape (SR). Ⓜ Available when P ≥ 2 L is +0.05 Ⓜ α = V/2 V is a dimension prior to SR machining.	
	AC	Changes the standard angle (Ks = 45°). AC = 1° increments Ⓜ 30 ≤ AC ≤ 60 Ⓜ Available for [Step] C · D Ⓜ Combination with RR not available. When [Step] D, C ≤ 1.0 A + 2(C × tan AC) < P.	
	RR	Changes R (normally 0.2 or less) to R0.3~0.5. (for Strength improvement) [Designation method] RR Ⓜ Available for [Step] B · C · D Ⓜ P - A ≥ 1.0 When [Step] D, C ≥ 0.5	

P Price **Quotation**

Order Part Number — L — P — F — A — V — C(R)
CPHB-5E 6 - 350.00 - P5.55 - F330.00 - A5.00 - V4.50 - R0.5

Days to Ship **Quotation**

Stepped Center Pins
High Speed Steel SKH51 equivalent