

Precision Pivot Pins

Cotter Pins with Flange

Precision Pivot Pins – Cotter Pins with Flange

Type		Material	Hardness	Surface Treatment	Accessory
L Dimension Selectable	L Dimension Configurable				
HCMG	HCLGN	1045 Carbon Steel or Equivalent	40~45 HRC min.	Black Oxide	Cotter Pin 1 pc.
HCMGH	HCLGHN				
	PHCLGN			Electroless Nickel Plating	
	PHCLGHN				
	GHCLGN	304 Stainless Steel Equivalent	Plating Hardness 750 HV min.	Hard Chrome Plating	SWRM or Low carbon steel
SHCMG	SHCLGN	304 Stainless Steel Equivalent	45~50 HRC min.		Material 304 Stainless Steel
	SHCLGHN				
	GSCHLGN				

D Tolerance (g6)

D	Tolerance
3	-0.002 -0.008
4-6	-0.004 -0.012
8, 10	-0.005 -0.014
12-18	-0.006 -0.017
20-25	-0.007 -0.020

HCMG (HCLGN, PHCLGN) Identification grooves

- *The tolerance Dg6 is only available for the diameter over the length L. The front diameter has a negative tolerance.
- ① HCMG has identification grooves on the side in order to distinguish it from Hardened Type. (HCLGN and PHCLGN may also have identification grooves.)
- ② Relief dimension under the shoulder is for reference.
- ③ This type may have centering holes depending on dimensions.
- ④ For L Dimension, Standard Machining Tolerances (Class: Medium) are used.

L Dimension Selectable

Part Number	Type	D	L Selection	L ₁	N	u	(n)	d	T	H	Attached Cotter Pin	
											HCMG	SHCMG
Hardened HCMG HCMGH	3	4	10 12 14 15 16 18 20	L+4.4	2.5	2.9	1.5	0.8	1.5	5.5	NPN0.8-8	NSPN0.8-8
				L+4.5							NPN1-10	NSPN1-10
				L+5.6	NPN1.2-10	NSPN1.2-10						
				L+5.8	NPN1.6-10	NSPN1.6-10						
Stainless Steel SHCMG	8	10	18 20 22 24 25 30 35 40 45 50	L+7	4	7.8	1.5	2	2	12	NPN2-12	NSPN2-12
				L+8.25							NPN2.5-15	NSPN2.5-15
				L+10.6	NPN3.2-20	NSPN3.2-20						
				L+10.6	NPN3.2-20	NSPN3.2-20						

L Dimension Configurable Type

Part Number	Type	D	L 0.1mm Increment	L ₁	N	u	(n)	d	T	H	Attached Cotter Pin	
											HCLGN	PHCLGN
HCLGN HCLGHN PHCLGN GHCLGN SHCLGN SHCLGHN GSCHLGN	3	4	5.0-50.0	L+4.4	2.5	2.9	1.5 or Less	0.8	1.5	5.5	NPN0.8-8	NSPN0.8-8
				L+4.5							NPN1-10	NSPN1-10
				L+5.6	NPN1.2-10	NSPN1.2-10						
				L+5.8	NPN1.6-10	NSPN1.6-10						
				L+7	NPN2-12	NSPN2-12						
				L+8.25	NPN2.5-15	NSPN2.5-15						
			20.0-200.0	L+10.6	NPN3.2-20	NSPN3.2-20						
				L+12	18	NPN4-20	NSPN4-20					
					19							
					20							
					21							
				20.0-200.0	L+14.5	22	NPN4-25	NSPN4-25				
						23						
						26						
						27						
				25	L+15.5	28	NPN5-35	NSPN5-35				
30												

① SHCCGH and GSHCCGH may be discolored by hardening.

② Applicable to L Dimension Configurable Type.

Part Number Example

Part Number: HCMG8 - L 30
HCLGN15 - L 120.3

Part Number Alterations

Part Number: HCLGN15 - L 120.3 - (NC / TC / HC)
HCLGN15 - 120.3 - NC3

Alterations	Cotter Pin Hole Position	Shoulder Thickness	Shoulder Diameter Cut
	NC	TC	HC
Code	NC	TC	HC
Spec.	Ordering Code: NC3 D NC (Selection Range) 3 1.5 4 1.5 2 5 1.5 2 2.5 6, 8 2 2.5 3 10 2.5 3 4 12 3 4 5 13-18 3 4 5 6 20-25 4 5 6 7 ① L ₁ =L+NC+d/2+T.	Ordering Code: TC3 ① TC = 0.5 mm Increment ② T < TC ≤ 5 ③ L ₁ = L + N + d/2 + TC.	Ordering Code: HC - D = 3-10 HC = H/2-1 - D = 12-25 HC = H/2-2 ① Shoulder diameter cut and cotter pin hole position will be as follows

Precision Pivot Pins

Retaining Ring with Flange

Precision Pivot Pins – Retaining Ring with Flange

Type		Material	Hardness	Surface Treatment	Accessory
L Dimension Selectable	L Dimension Configurable				
HCDG	HCCG	1045 Carbon Steel or Equivalent	40~45 HRC min.	Black Oxide	Retaining Ring 1 Pc.
HCDGH	HCCGH				
	PHCCG			Electroless Nickel Plating	
	PHCCGH				
	GHCCG	304 Stainless Steel Equivalent	Plating Hardness 750 HV min.	Hard Chrome Plating	Material 304 Stainless Steel
SHCDG	SHCCG	304 Stainless Steel Equivalent	45~50 HRC min.		Material 304 Stainless Steel
	SHCCGH				
	GSHCCGH				

D Tolerance (g6)

D	Tolerance
2, 3	-0.002 -0.008
4-6	-0.004 -0.012
8, 10	-0.005 -0.014
12-18	-0.006 -0.017
20-25	-0.007 -0.020

HCDG (HCCG, PHCCG) Identification grooves

- *The tolerance Dg6 is only available for the diameter over the length L. The front diameter has a negative tolerance.
- ① HCDG has identification grooves on the side in order to distinguish it from Hardened Type. (HCCG and PHCCG may also have identification grooves.)
- ② Relief dimension under the shoulder is for reference.
- ③ This type may have centering holes depending on dimensions.

L Dimension Selectable

Part Number	Type	D	L Selection	M Tolerance	N	u	(n)	d Tolerance	T	H	Attached Retaining Ring			
											Shape	JIS Nominal*	Spring Steel	304 SS
Hardened HCDG HCDGH	3	4	10 12 14 15 16 18 20 22 24 25 30	0.5	2	2.9	1.5	2	1.5	5.5	E Type	No.2	NETW2	NETWS2
												No.3	NETW3	NETWS3
												No.4	NETW4	NETWS4
												No.5	NETW5	NETWS5
												No.7	NETW7	NETWS7
												No.10	STWN10	STWS10
Stainless Steel SHCDG	8	10	18 20 22 24 25 30 35 40 45 50	0.9	3	7.8	1.5	7	2	14	C Type	No.10	STWN10	STWS10
												No.12	STWN12	STWS12

① For details, please refer to P.4021.

L Dimension Configurable

Part Number	Type	D	L 0.1 mm Increment	M Tolerance	N	u	(n)	d Tolerance	T	H	Attached Retaining Rings			
											Shape	JIS Nominal*	Spring Steel	304 SS
HCCG HCCGH PHCCG GHCCG SHCCG SHCCGH GSHCCGH	2	3	5.0-30.0	0.5	2	2.9	1.5	2	1.5	5.5	E Type	No.1.5	NETW1.5	NETWS1.5
												No.2	NETW2	NETWS2
												No.3	NETW3	NETWS3
												No.4	NETW4	NETWS4
												No.5	NETW5	NETWS5
												No.7	NETW7	NETWS7
			20.0-200.0	L+10.6	NPN3.2-20	NSPN3.2-20								
				L+12	18	NPN4-20	NSPN4-20							
					19									
					20									
					21									
				20.0-200.0	L+14.5	22	NPN4-25	NSPN4-25						
						23								
						26								
						27								
				25	L+15.5	28	NPN5-35	NSPN5-35						
30														

① For details, please refer to P.4021. ② SHCCGH and GSHCCGH may be discolored by hardening.

③ Applicable to L Dimension Configurable Type.

Part Number Example

Part Number: HCDG8 - L 30
HCCG15 - L 120.3

Part Number Alterations

Part Number: HCCG15 - L 120.3 - (NC / TC / HC)
HCCG15 - 120.3 - NC3.5 - TC3.5

Alterations	Retaining Ring Groove Position	Shoulder Thickness	Shoulder Dia. Cut
	NC	TC	HC
Code	NC	TC	HC
Spec.	Ordering Code: NC3.5 D NC (0.1 mm Increment) 2-4 1.5-3 5 1.7-3 6 1.9-4 8 2.4-5 10-18 2.7-5 20-25 2.9-5 ① Overall Length is L+NC+T.	Ordering Code: TC3 ① TC = 0.5 mm Increment ② T < TC ≤ 5 ③ Overall Length is L+N+TC.	Ordering Code: HC - D = 2-10 HC = H/2-1 - D = 12-25 HC = H/2-2