


Precision Pivot Pins

Cotter Pins with Flange

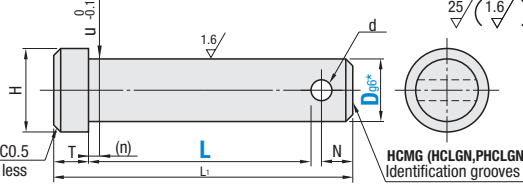


Precision Pivot Pins – Cotter Pins with Flange

RoHS10

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	Plating Hardness 750 HV min.	Hard Chrome Plating	SWRM or Low carbon steel	
SHCMG	SHCLGN	304 Stainless Steel Equivalent	—	—	Material 304 Stainless Steel
—	SHCLGHN	440C Stainless Steel Equivalent	45~50 HRC min.	Hard Chrome Plating	
—	GSCHLGN				

D Tolerance (g6)	
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



*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		3.9		1		6.5	NPN1-10	NSPN1-10
				L+5.6	4.9	1.2		8		NPN1.2-10	NSPN1.2-10	
				L+5.8	5.8	1.6		9		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	2	2	2	12	NPN2-12	NSPN2-12
				L+8.25		9.8		2.5		14	NPN2.5-15	NSPN2.5-15
				L+10.6	11.8	3.2		17		NPN3.2-20	NSPN3.2-20	
				L+10.6	11.8	3.2		17		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		3.9		1		6.5	NPN1-10	NSPN1-10
				L+5.6	4.9	1.2		8		NPN1.2-10	NSPN1.2-10	
				L+5.8	5.8	1.6		9		NPN1.6-10	NSPN1.6-10	
				L+7	7.8	2		12		NPN2-12	NSPN2-12	
				L+8.25	9.8	2.5		14		NPN2.5-15	NSPN2.5-15	
				L+10.6	11.8	3.2		17		NPN3.2-20	NSPN3.2-20	
				L+12	7	4		3		18	NPN4-20	NSPN4-20
				L+12	7	4		3		19		
				L+12	7	4		3		20		
L+12	7	4	3	21								
L+12	7	4	3	22	NPN4-25	NSPN4-25						
L+12	7	4	3	23								
L+14.5	8	26	4	4	NPN5-35	NSPN5-35						
L+14.5	8	26	4	4								
L+15.5	9	30	5	4								

① SHCCGH and GSHCCGH may be discolored by hardening.

② Applicable to L Dimension Configurable Type.

Part Number Example

Part Number: HCMG8 - L 30

Part Number: HCLGN15 - L 120.3

Part Number Alterations


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

Part Number: HCLGN15 - L 120.3 - NC3

Alterations	Cotter Pin Hole Position	Shoulder Thickness	Shoulder Diameter Cut																	
	Code	NC	TC	HC																
Spec.	Ordering Code: NC3	Ordering Code: TC3	Ordering Code: HC																	
	<table border="1"> <thead> <tr> <th>D</th> <th>NC (0.1 mm Increment)</th> </tr> </thead> <tbody> <tr><td>3</td><td>1.5</td></tr> <tr><td>4</td><td>1.5 2</td></tr> <tr><td>5</td><td>1.5 2 2.5</td></tr> <tr><td>6, 8</td><td>2 2.5 3</td></tr> <tr><td>10</td><td>2.5 3 4</td></tr> <tr><td>12</td><td>3 4 5</td></tr> <tr><td>13-18</td><td>3 4 5 6</td></tr> <tr><td>20-25</td><td>4 5 6 7</td></tr> </tbody> </table> <p>① L₁=L+NC+d/2+T.</p>	D	NC (0.1 mm Increment)	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	<p>① TC = 0.5 mm Increment</p> <p>② T < TC ≤ 5</p> <p>③ L₁ = L + N + d/2 + TC.</p>
D	NC (0.1 mm Increment)																			
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																			

Precision Pivot Pins

Retaining Ring with Flange

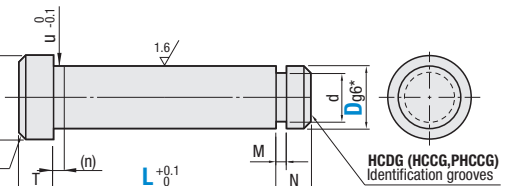


Precision Pivot Pins – Retaining Ring with Flange

RoHS10

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	Material Spring Steel
HCDGH	HCCGH				
—	PHCCG			Electroless Nickel Plating	
—	PHCCGH				
—	GHCCG	Plating Hardness 750 HV min.	Hard Chrome Plating	Retaining Ring 1 Pc.	Material Spring Steel
SHCDG	SHCCG	304 Stainless Steel Equivalent	—	—	Material 304 Stainless Steel
—	SHCCGH	440C Stainless Steel Equivalent	45~50 HRC min.	Hard Chrome Plating	
—	GSHCCGH				

D Tolerance (g6)	
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



*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	3.9	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
Stainless Steel SHCDG	8	10	15 16 18 20 22 24 25 30 35 40 45 50	0.9	3	7.8	1.5	7	2	12	C Type	No.7	NETW7	NETWS7
												No.10	STWN10	STWS10
												No.12	STWN12	STWS12
												No.12	STWN12	STWS12

④ 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	3.9	1.5 or Less	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
												No.10	STWN10	STWS10
												No.12	STWN12	STWS12
												No.13	STWN13	STWS13
												No.14	STWN14	STWS14
HCCG HCCGH PHCCG GHCCG SHCCG SHCCGH GSHCCGH	10	12	15.0-100.0	1.15	3	14.8	1.5 or Less	3	2	14	C Type	No.15	STWN15	STWS15
												No.16	STWN16	STWS16
												No.17	STWN17	STWS17
												No.18	STWN18	STWS18
												No.20	STWN20	STWS20
												No.22	STWN22	STWS22
												No.25	STWN25	STWS25

④ For details, please refer to P.4021. ① SHCCGH and GSHCCGH may be discolored by hardening.

② Applicable to L Dimension Configurable Type.

Part Number Example

Part Number: HCDG8 - L 30

Part Number: HCCG15 - L 120.3

Part Number Alterations

Part Number: HCCG15 - L 120.3 - (NC / TC / HC)

Part Number: HCCG15 - L 120.3 - NC3.5 - TC3.5

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