

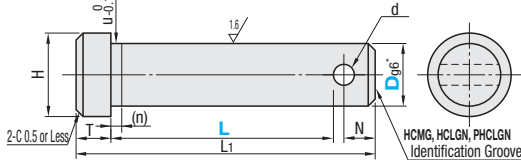
Pivot Pins

Cotter Pins with Shoulder



Type	Material	Hardness	Surface Treatment	Accessory
L Dimension Selectable	L Dimension Configurable			
HCMG	HCLGN	S45C (HCMG) S45C Equivalent (HCLGN)	-	
HCMGH	HCLGHN	S45C (HCMGH) S45C Equivalent (HCLGHN)	40~45HRC	Black Oxide
-	PHCLGN	S45C Equivalent (PHCLGN)	-	Electroless Nickel
-	PHCLGHN	S45C Equivalent (PHCLGHN)	40~45HRC	Plating
-	GHCLGN	S45C Equivalent (GHCLGN)	Plating Hardness 750HV~	Hard Chrome Plating: Plating Thickness 3µm or more
SHCMG	SHCLGN	SUS304 Equivalent	-	
-	SHCLGHN	SUS304 Equivalent	45~50HRC	
-	GSCLGHN	SUS440C Equivalent	45~50HRC Plating Hardness 750HV~	Hard Chrome Plating: Plating Thickness 3µm or more

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



*Dg6 Tolerance is available for L dimensions only. Others are general tolerance.

- There are identification grooves on the side of HCMG, HCLGN and PHCLGN to be distinguished from Hardened Type.
- Relief dimension under the shoulder is for reference.
- For L Dimension, Standard Machining Tolerances (Class: Medium) is used.
- This type may have centering holes depending on dimensions.

L Dimension Selectable

Part Number	Type	D	L Selection	L1	N	u	(n)	d	T	H	Included Cotter Pin	Unit Price
HCMG	3	10 12 14 15 16 18 20	L+ 4.4	2.5	2.9	0.8	5.5	NPNO.8- 8	NSPN0.8- 8		HCMG HCMGH SHCMG	
HCMGH	4	10 12 14 15 16 18 20	L+ 4.5	3.9	1.2	6.5	NPNO.8- 8	NSPN1-10				
(Hardened)	5	10 12 14 15 16 18 20 22 24 25 30	L+ 5.6	4.9	1.2	8	NPNO.8- 8	NSPN1.2-10				
SHCMG	6	15 16 18 20 22 24 25 30	L+ 5.8	3.5	5.8	1.5	9	NPNO.8- 8	NSPN1.6-10			
(Stainless Steel)	8	18 20 22 24 25 30 35 40 45 50	L+ 7	4	7.8	2	12	NPNO.8- 8	NSPN2-12			
	10	18 20 22 24 25 30 35 40 45 50	L+ 8.25	5	9.8	2.5	14	NPNO.8- 8	NSPN2.5-15			
	12	22 24 25 30 35 40 45 50	L+10.6	6	11.8	3.2	17	NPNO.8- 8	NSPN3.2-20			

L Dimension Configurable Type (0.1mm Increment)

Part Number	Type	D	L=0.1mm Increment	L1	N	u	(n)	d	T	H	Included Cotter Pin	Unit Price
HCLGN	3	5.0~50.0	L+ 4.4	2.5	2.9	0.8	5.5	NPNO.8- 8	NSPN0.8- 8			
HCLGHN	4	5.0~50.0	L+ 4.5	3.9	1.2	6.5	NPNO.8- 8	NSPN1-10				
PHCLGN	5	10.0~60.0	L+ 5.6	3.5	5.8	1.5	9	NPNO.8- 8	NSPN1.6-10			
PHCLGHN	6	10.0~100.0	L+ 5.8	3.5	5.8	1.5	9	NPNO.8- 8	NSPN1.6-10			
GHCLGN	8	10.0~100.0	L+ 7	4	7.8	2	12	NPNO.8- 8	NSPN2-12			
SHCLGN	10	15.0~100.0	L+ 8.25	5	9.8	2.5	14	NPNO.8- 8	NSPN2.5-15			
SHCLGHN	12	15.0~200.0	L+10.6	6	11.8	3.2	17	NPNO.8- 8	NSPN3.2-20			
GSCLGN	13	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	14	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	15	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	16	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	17	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	18	20.0~200.0	L+12	7	13.8	4	19	NPNO.8- 8	NSPN4-20			
SHCLGHN	20	20.0~200.0	L+14.5	8	19.8	5	26	NPNO.8- 8	NSPN5-35			
SHCLGHN	22	20.0~200.0	L+14.5	8	19.8	5	26	NPNO.8- 8	NSPN5-35			
SHCLGHN	25	20.0~200.0	L+15.5	9	24.8	6	30	NPNO.8- 8	NSPN5-35			

SHCLGHN and GSCLGHN may be discolored by hardening.

Ordering Example	Part Number	-	L
	HCMG8	-	30
	HCLGN15	-	120.3

Alterations	Part Number	-	L	(NC, TC, HC)	Applicable to L Dimension Configurable Type.
	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 L1=L+NC+d/2+T	Ordering Code TC3 TC=0.5mm Increment T<TC≤5 L1=L+N+d/2+TC	Ordering Code HC D=3~10 HC=H/2-1 D=12~25 HC=H/2-2 The positional relationship between the shoulder diameter cut and the cotter pin is established as shown on the drawing below.

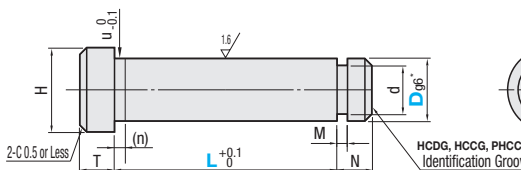
Pivot Pins

Retaining Ring with Shoulder



Type	Material	Hardness	Surface Treatment	Accessory
L Dimension Selectable	L Dimension Configurable			
HCDG	HCCG	S45C Equivalent (HCDG) S45C (HCCG)	-	
HCDGH	HCCGH	S45C Equivalent (HCDGH) S45C (HCCGH)	40~45HRC	Black Oxide
-	PHCCG	S45C Equivalent (PHCCG)	-	Electroless Nickel
-	PHCCGH	S45C Equivalent (PHCCGH)	40~45HRC	Plating
-	GHCCG	S45C Equivalent (GHCCG)	Plating Hardness 750HV~	Hard Chrome Plating: Plating Thickness 3µm or more
SHCDG	SHCCG	SUS304	-	
-	SHCCGH	SUS304	45~50HRC	
-	GSCHCCGH	SUS440C Equivalent	45~50HRC Plating Hardness 750HV~	Hard Chrome Plating: Plating Thickness 3µm or more

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



*Dg6 Tolerance is available for L dimensions only. Others are general tolerance.

- There are identification grooves on the side of HCDG, HCCG and PHCCG to be distinguished from Hardened Type.
- Relief dimension under the shoulder is for reference.
- For L Dimension, Standard Machining Tolerances (Class: Medium) is used.
- 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	Included Retaining Ring Shape/JIS Nominal	Unit Price
HCDG	3	10 12 14 15 16 18 20 22 24 25 30	0.5	+0.05	2	2.9	2	+0.06	5.5	5.5	No. 2	
HCDGH	4	10 12 14 15 16 18 20 22 24 25 30	0.7	+0.1	2	3.9	3	0	6.5	6.5	No. 3	
(Hardened)	5	15 16 18 20 22 24 25 30 35 40 45 50	0.9	0	2	4.9	4	+0.075	8	8	No. 4	
SHCDG	6	18 20 22 24 25 30 35 40 45 50	1.15	+0.14	3	5.8	5	0	9	9	No. 5	
(Stainless Steel)	8	22 24 25 30 35 40 45 50			3	7.8	7	+0.09	12	12	No. 7	
	10				3	9.6	9	+0.09	14	14	No. 9	
	12				3	11.8	11.5	+0.11	17	17	No. 12	

* For details, see P2303.

L Dimension Configurable Type (0.1mm Increment)

Part Number	Type	D	L=0.1mm Increment	M Tolerance	N	u	(n)	d Tolerance	T	H	Included Retaining Ring Shape/JIS Nominal	Unit Price
HCCG	2	5.0~ 30.0	0.5	+0.05	1	1.9	1.5	+0.06	4.5	4.5	No. 1.5	
HCCGH	3	5.0~ 50.0	0.7	0	2	2.9	2	0	5.5	5.5	No. 2	
PHCCG	4	10.0~ 60.0	0.9	+0.1	2	3.9	3	+0.075	6.5	6.5	No. 3	
PHCCGH	5	10.0~ 100.0	1.15	0	2	4.9	4	0	8	8	No. 4	
GHCCG	6	10.0~ 100.0	1.15	0	2	5.8	5	0	9	9	No. 5	
SHCCG	8	15.0~ 100.0	1.35	+0.14	3	7.8	7	+0.09	12	12	No. 7	
SHCCGH	10	15.0~ 200.0	1.35	0	3	9.6	9	+0.09	14	14	No. 9	
GSCHCCGH	12	20.0~ 200.0	1.35	0	3	11.8	11.5	+0.11	17	17	No. 12	
	13	20.0~ 200.0	1.35	0	3	12.8	12.4	0	18	18	No. 13	
	14	20.0~ 200.0	1.35	0	3	13.8	13.4	-0.11	19	19	No. 14	
	15	20.0~ 200.0	1.35	0	3	14.8	14.3	0	20	20	No. 15	
	16	20.0~ 200.0	1.35	0	3	15.8	15.2	0	21	21	No. 16	
	17	20.0~ 200.0	1.35	0	3	16.8	16.2	0	22	22	No. 17	
	18	20.0~ 200.0	1.35	0	3	17.8	17	0	23	23	No. 18	
	20	20.0~ 200.0	1.35	0	4	19.8	19	0	26	26	No. 20	
	22	20.0~ 200.0	1.35	0	4	21.8	21	-0.21	27	27	No. 22	
	25	20.0~ 200.0	1.35	0	4	24.8	23.9	-0.21	31	31	No. 25	

* For details, see P2303. SHCCGH and GSCHCCGH may be discolored by hardening.

Ordering Example	Part Number	-	L
	HCDG8	-	30
	HCCG15	-	120.3

Alterations	Part Number	-	L	(NC, TC, HC)	Applicable to L Dimension Configurable Type.
	HCCG15	-	120.3	- NC3.5 - TC3.5 - HC3.5	

Alterations	Retaining Ring Groove Position	Shoulder Thickness	Shoulder Diameter Cut
	NC	TC	HC
Code	NC	TC	HC
Spec.	Ordering Code NC3.5 D NC (0.1mm 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 Overall Length is L+NC+T.	Ordering Code TC3 TC=0.5mm Increment T<TC≤5 Overall Length is L+N+TC.	Ordering Code HC D=2~10 HC=H/2-1 D=12~25 HC=H/2-2