



**HOWMET
AEROSPACE**

C6L[®] The Original Vibration-Resistant HuckBolt[®]

Locking Groove Design
Simple Installation
Consistent Clamp Force

3/16" - 3/8"





The Huck® C6L®

The Classic 6-Groove Locking Fastener Built with Staying Power

A result of Huck innovation a half-century ago, the versatile Huck C6L® remains the number one fastening system for applications that require a strong, vibration-resistant seal today.

C6L's exclusive locking groove design ensures a permanent fit that resists loosening. That means it's ideal for applications from general manufacturing to such high-vibration applications as HVAC, trailer and container assembly, rotary and rotating equipment, shopping carts, railroad and transit cars, geodesic structures, and many others.

In addition to offering superior fastening performance, the C6L system reduces labor and installation costs, along with rework and warranty expenses. For example, using the C6L eliminates the need to hire certified welders or specially trained employees, because workers can be instructed to install these foolproof fasteners in a matter of minutes. The C6L is simply stronger, easier to install, and more durable than welding, adhesives, or conventional threaded fastening systems.

Available Sizes:

3/16", 1/4", 5/16", 3/8"

Materials:

Steel, Aluminum, Stainless Steel

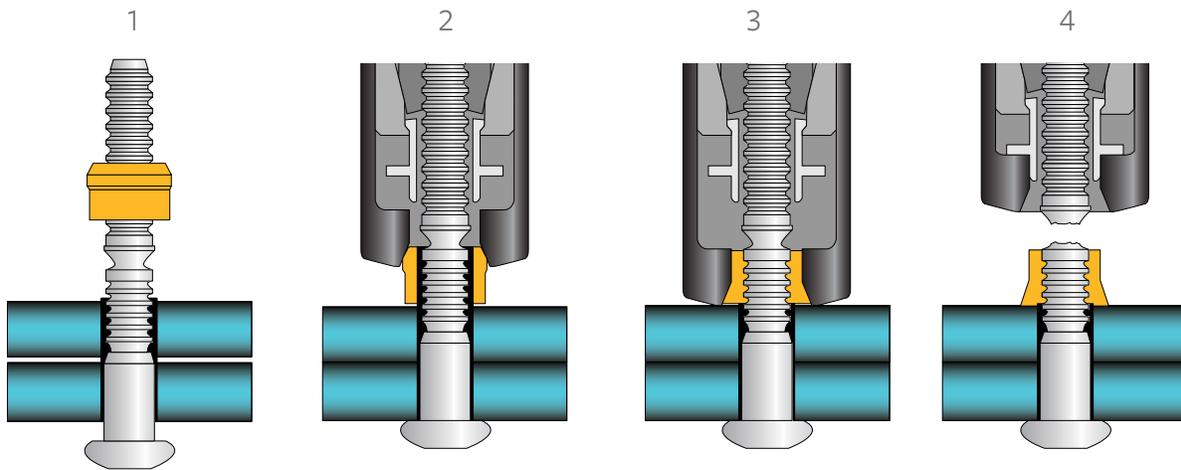
Headstyles:

Round, Truss, Flush, 98T



Installation Sequence

The C6L's unique design virtually eliminates installation errors caused by operator or tool variables. The C6L ensures that once the collar swage is complete, the pintail breaks off and the fastener is tightly installed. No rework required. And you can count on consistent, high-uniform clamp force with every C6L installation, time after time.



1
The pin is inserted into the prepared hole and the smooth bore collar is placed on the pin.

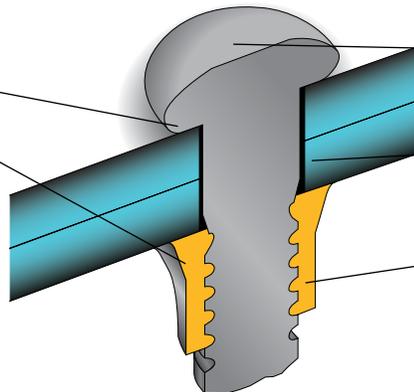
2
The installation tool is applied to the pintail. When the tool is activated, the jaws in the nose assembly pull on the pintail and the nose anvil pushes on the collar to remove any gap.

3
The nose anvil starts to swage the collar into the lockgrooves on the pin. Continued swaging causes the collar to lengthen and develop clamp.

4
When swaging of the collar into the lockgrooves is complete, the tool ejects the fastener and releases the puller to complete the sequence.

Secure, Fast Installation

- Wide bearing collar and head spread load to ensure structural integrity

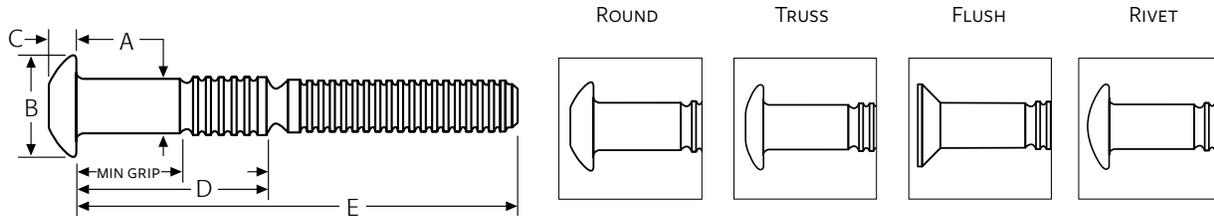


- Corrosion resistant coatings can be painted
- Excellent gap pull-out and high retained clamp
- High fatigue annular lock groove form extends the life of your structure

For Oversized Holes: To optimize clamp, hardened washers such as ASTM F436, DIN 6916 or EN 14399-6 are recommended for use with oversized holes and slots, along with good bolting practice.

Data and Dimensions

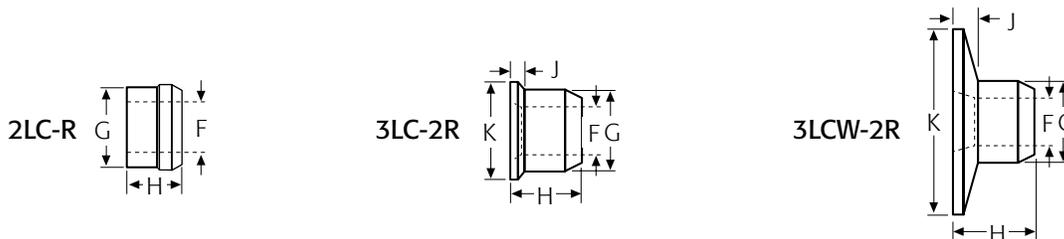
Head Style Options



Fastener Dimensions

DIA.	A	ROUND HEAD		TRUSS HEAD		FLUSH HEAD		RIVET HEAD	
		B	C	B	C	B	C	B	C
6 (3/16")	.190-.195	.360-.390	.113-.125	.406-.469	.078-.088	.325-.358	.075-.087	.446-.492	.090-.106
8 (1/4")	.254-.259	.475-.525	.136-.152	.531-.594	.103-.115	.435-.475	.100-.115		
10 (5/16")	.317-.322	.594-.656	.181-.201	.703-.797	.127-.141				
12 (3/8")	.380-.385	.713-.787	.223-.248	.828-.922	.186-.202				

Collar Style Options



Collar Dimensions

COLLAR TYPE	PART NUMBER	COLLAR DIAMETER	F DIAMETER	G DIAMETER	H LENGTH	J (1,2) DIMENSION	K DIAMETER
STANDARD	2LC-R, 2LC-F	6 (3/16")	.187-.196	.304-.311	.220-.260		
	2LC-2CU	8 (1/4")	.256-.265	.402-.409	.290-.320		
	LC-I	8 (1/4")	.256-.265	.402-.409	.315-.335		
		12 (3/8")	.370-.385	.590-.610	.450-.465		
	2LC-R	10 (5/16")	.304-.312	.485-.494	.350-.380		
	2LC-R, 2LC-2CU	12 (3/8")	.375-.385	.590-.600	.430-.460		
FLANGE	3LC-2R, 3LC-F ¹ 3LC-I, 3LC-2CU ¹	6	.187-.196	.304-.311	.250-.280	.031-.062	.359-.391
		8	.256-.267	.402-.409	.349-.379	.047-.078	.484-.516
		10	.304-.312	.498-.507	.394-.426	.062-.094	.609-.641
		12	.378-.390	.599-.610	.502-.532	.062-.125	.719-.781
WIDE FLANGE	3LCW-2R8 ¹	8	.256-.267	.400-.409	.410-.480	.105-.156	.853-1.022
	3LCW-2R10 ¹	10	.304-.312	.498-.507	.474-.506	.144-.176	.984-1.016
	3LCW-2R12	12	.378-.390	.598-.606	.600-.615	.175-.195	1.169-1.231

¹ When using 3LC Collars, add "J" dimension to thickness of material being fastened to determine grip number.



Installed Fastener Values - lbf(KN)

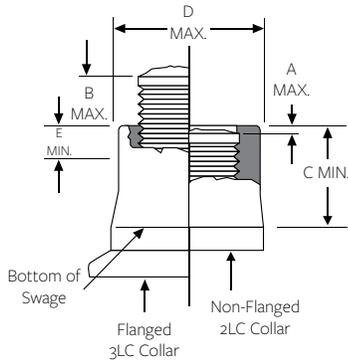
DIA.	CARBON STEEL (R) PINS			2024 ALUMINUM (C) PINS			6061 ALUMINUM (F) PINS			STAINLESS STEEL (U) PINS		
	GRADE 2 COLLAR VALUES 2LC-R OR 3LC-2R (GRADE 5 VALUES)			2LC-F OR 3LC-F COLLARS			LC-I OR 3LC-I COLLARS			2LC-2CU OR 3LC-2CU COLLARS		
	SHEAR	CLAMP	TENSILE	SHEAR	CLAMP	TENSILE	SHEAR	CLAMP	TENSILE	SHEAR	CLAMP	TENSILE
6	1725 (2430)	1025 (1200)	1400 (2200)	1050	550	1000	775	350	530	2000	1025	1455
8	3050 (4300)	1805 (2300)	2550 (3800)	1875	950	1800	1375	620	975	3550	1805	2750
10	4725 (6700)	2810 (4200)	3910 (6300)	2925	1500	2850	2125	965	1550	5525	2810	4250
12	6825 (9600)	4020 (5980)	5625 (9300)	4200	2200	4200	3050	1380	2400	7950	4020	6100

Grip Tables**

GRIP	GRIP RANGE	3/16" (6)		1/4" (8)		GRIP	GRIP RANGE	5/16" (10)		3/8" (12)	
		D	E	D	E			D	E	D	E
2	.063 - .188	.394	1.404	.485	1.520						
3	.125 - .250	.457	1.466	.548	1.583						
4	.188 - .313	.519	1.529	.610	1.645	4	.125 - .375	.749	1.906	.809	2.125
5	.250 - .375	.582	1.591	.673	1.708						
6	.313 - .438	.644	1.654	.735	1.770	6	.250 - .500	.874	2.032	.934	2.250
7	.375 - .500	.707	1.716	.798	1.833						
8	.438 - .563	.769	1.779	.860	1.895	8	.375 - .625	1.000	2.156	1.059	2.375
9	.500 - .625	.832	1.841	.923	1.958						
10	.563 - .688	.894	1.904	.985	2.020	10	.500 - .750	1.124	2.281	1.184	2.500
11	.625 - .750	.957	1.966	1.048	2.083						
12	.688 - .813	1.019	2.029	1.110	2.145	12	.625 - .875	1.249	2.406	1.309	2.625
13	.750 - .875	1.082	2.091	1.173	2.208						
14	.813 - .938	1.144	2.154	1.235	2.270	14	.750 - 1.000	1.374	2.531	1.434	2.750
15	.875 - 1.000	1.207	2.216	1.298	2.333						
16	.938 - 1.063	1.269	2.279	1.360	2.395	16	.875 - 1.125	1.500	2.656	1.559	2.875
17	1.000 - 1.125	1.332	2.341	1.423	2.458						
18	1.063 - 1.188	1.394	2.404	1.458	2.520	18	1.000 - 1.250	1.624	2.781	1.684	3.000
19	1.125 - 1.250	1.457	2.466	1.548	2.583						
20	1.188 - 1.313	1.519	2.529	1.610	2.645	20	1.125 - 1.375	1.749	2.906	1.809	3.125
21	1.250 - 1.375	1.582	2.591	1.673	2.708						
22	1.313 - 1.438	1.644	2.654	1.735	2.770	22	1.250 - 1.500	1.874	3.032	1.934	3.250
23	1.375 - 1.500	1.707	2.716	1.798	2.833						
24	1.438 - 1.563			1.866	2.895	24	1.375 - 1.625	2.000	3.156	2.059	3.375
25	1.500 - 1.625			1.923	2.958						
26	1.563 - 1.688			1.985	3.020	26	1.500 - 1.750	2.124	3.281	2.184	3.500
27	1.625 - 1.750			2.048	3.083						
28	1.688 - 1.813			2.110	3.145	28	1.625 - 1.875	2.249	3.406	2.309	3.625
29	1.750 - 1.875			2.173	3.208						
30	1.813 - 1.938			2.235	3.270	30	1.750 - 2.000	2.374	3.531	2.434	3.750
31	1.875 - 2.000			2.298	3.333						
32	1.937 - 2.063			2.368	3.395	32	1.875 - 2.125	2.500	3.656	2.559	3.875
37				2.637	3.708						

**All grips calculated using a 2LC collar

C6L Inspection Data and Installation Tooling



Inspection Data							
NOMINAL SIZE	A MAX	B MAX	C MIN	D MAX	E MIN	MAX. HOLE SIZE	
						2LC COLLAR	3LC COLLAR
STRAIGHT BORE ANVIL TOOLING							
6 (3/16")	.078	.125	.172	.276	–	.219	.234
8 (1/4")	.078	.156	.250	.364	–	.281	.312
10 (5/16")	.140	.219	.281	.454	–	.359	.390
12 (3/8")	.125	.281	.344	.552	–	.421	.468
TAPERED BORE ANVIL TOOLING (99-3003 AND 99-3006)							
6 (3/16")	.040	.125	.180	.276	.115	.218	.234
8 (1/4")	.030	.156	.230	.364	.085	.281	.312

Should “A” or “B” dimensions exceed the given values, the fastener is out-of-grip. A “C” dimension less than the given value indicates an incomplete swage. A “D” dimension greater than the given values indicates an incorrect or worn anvil on the installation tool. “E” is the minimum length from the top of the collar to measure “D” diameter for tapered bore anvils.

Installation Tools							
NOSE ASSEMBLY	SIZE	BATTERY TOOLS	PNEUDRAULIC TOOLS			HYDRAULIC TOOLS	
		TOOL MODEL					
		BV4500-118	244X	256	2025 ^{1,2}	2480	2581
	3/16"	99-3003	99-2555	99-2558	99-3003 ^{1,2}	99-2555 99-3003 ¹	99-2558
	1/4"	99-3005	99-3417	99-2564	99-3006 ^{1,2}	99-3006 ¹ 99-3417	99-2564
	5/16"			99-99-245			99-99-245
	3/8"			99-100-245			99-100-245



Tooling Weight and Dimensions					
MODEL	TYPE	WEIGHT	LENGTH	HEIGHT	WIDTH
BV4500-118	BATTERY	5 LBS	9.06"	9.42"	3.15"
244X	PNEUDRAULIC	5.75 LBS	6.9"	13.1"	4.7"
256	PNEUDRAULIC	11.1 LBS	7.8"	14.9"	6.1"
2025 ^{1,2}	PNEUDRAULIC	5.75 LBS	8.4"	12.5"	4.4"
2480	HYDRAULIC	2.2 LBS	8.6"	6.5"	1.9"
2581	HYDRAULIC	5.5 LBS	8.4"	7.1"	2.1"

¹ Note: When using tapered bore anvils, use visual inspection data for tapered bore anvil tooling. ² Model 2025 is not recommended for high volume installation of stainless steel fasteners.

Ordering Information

Follow the form below to construct a part number for ordering C6L pins and their respective collars. Refer to the Grip Data chart for grip numbers.

Pins (Grade 2 Steel, Aluminum, Stainless Steel)

C6L — (MATERIAL) (DIAMETER) — (GRIP NUMBER) (FINISH)

Example: C6LT-R8-4G is a C6L HuckBolt Pin, Truss Head, Carbon Steel, 1/4" Diameter, Grip 4, Zinc Finish

HEAD STYLE	PREFIX	MATERIAL	CODE	DIAMETER	CODE	GRIP	FINISH	SUFFIX
ROUND	C6LB	GRADE 2 CARBON STEEL	R	3/16"	6	REFER TO GRIP TABLE ON PAGE 5	ZINC	G
TRUSS	C6LT	2024 ALUMINUM ALLOY	C	1/4"	8			
FLUSH	C6L90	6061 ALUMINUM ALLOY	F	5/16"	10			
RIVET	C98LT	STAINLESS STEEL	U	3/8"	12			

Collars (Grade 2 Steel, Aluminum, Stainless Steel)

(TYPE) – (MATERIAL) (DIAMETER) (FINISH) (OPTIONS)

Example: 2LC-R8GL is a Standard C6L HuckBolt Collar, Carbon Steel, 1/4" Diameter, Zinc Finish with Tab-Lok

HEAD STYLE	PREFIX	MATERIAL	CODE	DIAMETER	CODE	FINISH	SUFFIX	OPTIONS	CODE
STANDARD	2LC	CARBON STEEL	2R/R	3/16"	6	ZINC	G	TAB LOK	L
FLANGE	3LC	6061 ALUM ALLOY HEAT TREATED	I	1/4"	8				
WIDE FLANGE	3LCW	6061 ALUM ALLOY	F	5/16"	10				
		STAINLESS STEEL	2CU	3/8"	12				

*Optional tablock on collars

Pins (Grade 5)

C120L (HEAD STYLE) — (MATERIAL) (DIAMETER) — (GRIP NUMBER) (FINISH)

Example: C120LT-R8-4G is a C120L HuckBolt Pin, Truss Head, Carbon Steel, 1/4" Diameter, Grip 4, Zinc Finish

HEAD STYLE	PREFIX	MATERIAL	CODE	DIAMETER	CODE	GRIP	FINISH	SUFFIX
ROUND	C120LB	GRADE 5 CARBON STEEL	R	3/16"	6	REFER TO GRIP TABLE ON PAGE 5	ZINC	G
TRUSS	C120LT			1/4"	8			
FLUSH	C120L90			5/16"	10			
				3/8"	12			

Collars (Grade 5)

(TYPE) – (MATERIAL) (DIAMETER) (FINISH) (OPTIONS)

Example: 2LC120-R8GL is a Standard C120L HuckBolt Collar, Carbon Steel, 1/4" Diameter, Zinc Finish with Tab-Lok

GRADE 5	PREFIX	MATERIAL	CODE	DIAMETER	CODE	FINISH	SUFFIX	OPTIONS	CODE
STANDARD	2LC120	CARBON STEEL	2R/R	3/16"	6	ZINC	G	TAB LOK	L
FLANGE	3LC120			1/4"	8				
				5/16"	10				
				3/8"	12				

Tab-Lok™

The Tab-Lok feature makes sure the collar stays on the pin, before installation, in overhead and down slanted pin placements. To order Tab-Lok collars refer to adjacent charts.





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Howmet Fastening Systems

Industrial Division Brands



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North America

Waco Operations

PO Box 8117
8001 Imperial Drive
Waco, TX 76714-8117
Tel: +1 800-388-4825
Fax: +1 800-798-4825
hfs.sales.waco@howmet.com

Kingston Operations

1 Corporate Drive
Kingston, NY 12401
Tel: +1 800-278-4825
Fax: +1 845-334-7333
hfs.sales.kingston@howmet.com

Tracy Operations

1925 North MacArthur Drive
Tracy, CA 95376
Tel: +1 800-826-2884
Fax: +1 800-573-2645
hfs.sales.idg@howmet.com

Global

Telford Operations

Unit C, Stafford Park 7
Telford, Shropshire
England TF3 3BQ
Tel: +44 (0) 1952-290011
Fax: +44 (0) 1952-290459
thisales@howmet.com

Suzhou Operations

58 Yinsheng Road,
SIP Suzhou, Jiangsu
215126 China
Tel: +86-512-62863800-8888

Melbourne Operations

1508 Centre Road
Clayton, Victoria
Australia 3168
Tel: +613-8545-3333
Fax: +613-8545-3390
hfs.sales@howmet.com

Tokyo Operations (Japan & Korea)

1013 Hibiya U-1 Bldg.
Uchisaiwai-cho 1-1-7
Chiyoda-ku, Tokyo
100-0011 Japan
Tel: +81-3-3539-6594
Fax: +81-3-3539-6585

hfsindustrial.com

[YouTube.com/HFSIndustrial](https://www.youtube.com/HFSIndustrial)

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