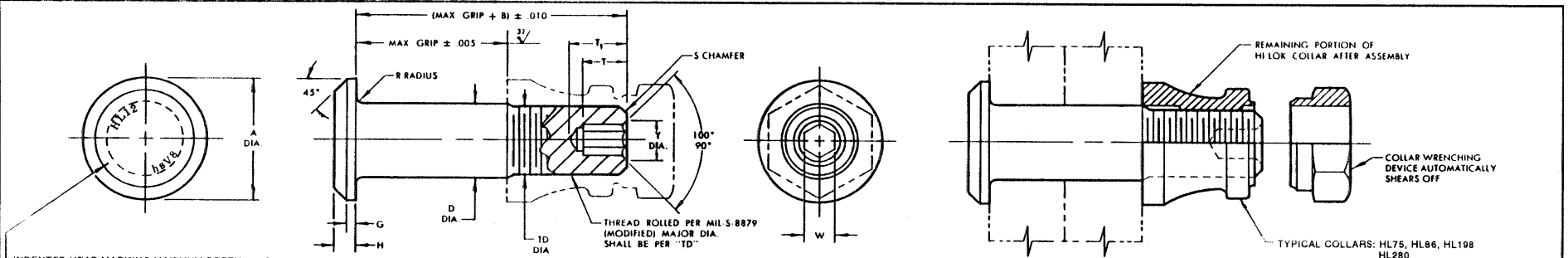


# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

2600 Skypark Drive, Torrance, California U.S.A. 90509

HI-SHEAR CORPORATION, U.S.A. (Patent Holder) CAGE No. 73197	HI-SHEAR FASTENERS EUROPE, LTD., U.K. (Licensee) CAGE No. 0LB88
Division of Hi-Shear Industries Inc., U.S.A.	Division of Hi-Shear Industries Inc., U.S.A.
AIR INDUSTRIES CO., INC., U.S.A. (Licensee - U.S. & Canada) CAGE No. 06725	HUCK INTERNATIONAL GMBH & CO., Germany (Licensee - EEC Countries)
CAGE No. 07928	SPS TECHNOLOGIES, U.S.A. (Licensee) CAGE No. 56878
HUCK INTERNATIONAL, INC., Deutsch Operation, U.S.A. (Licensee)	FAIRCHILD Aerospace Fastener Division, U.S.A. (Licensee) CAGE No. 02215
SAINT CHAMOND GRANAT, S.A. France (Licensee - EEC Countries)	WEST COAST AEROSPACE INC., U.S.A. (Licensee) CAGE No. 00516
SIMMONDS S.A., France (Licensee - EEC Countries-Collars)	
TOKYO SCREW COMPANY, Japan (Licensee - Japan)	



INDENTED HEAD MARKING MAXIMUM DEPTH .010".  
"hs" INDICATES HI-SHEAR TRADEMARK.  
THE NUMBER(S) FOLLOWING THE TRADEMARK  
INDICATE FIRST DASH NUMBER.  
ARRANGEMENT OPTIONAL.

FIRST DASH NO.	NOM. DIA.	A DIA.	B REF.	D DIA [6]		TD DIA.	G REF.	H	R RAD.	S CHAMFER REF.	THREAD	SOCKET				DOUBLE SHEAR POUNDS MINIMUM	TENSION POUNDS MINIMUM
				WITHOUT COATING OR SOLID FILM LUBE	AFTER COATING OR SOLID FILM LUBE							W HEX.	T DEPTH	T <sub>1</sub> DEPTH MAX.	Y DIA.		
5	5/32	.322 .306	.312	.1635 .1630	.1635 .1625	.1595 .1570	.030	.065 .055	.025 .015	1/32" x 37°	8-32UNJF-3A Modified	.0645 .0835	.135 .115	.160 .160	.090 .075	4,010	2,180
6	3/16	.377 .357	.325	.1895 .1890	.1895 .1885	.1840 .1810	.035	.074 .064	.025 .015	1/32" x 37°	10-32UNJF-3A Modified	.0806 .0791	.135 .115	.175 .175	.119 .104	5,380	3,180
8	1/4	.440 .415	.395	.2495 .2485	.2495 .2485	.2440 .2410	.045	.090 .080	.025 .015	1/32" x 37°	1/4-28UNJF-3A Modified	.0967 .0947	.150 .130	.200 .200	.142 .122	9,300	5,820
10	5/16	.505 .475	.500	.3120 .3115	.3120 .3110	.3060 .3020	.055	.112 .102	.030 .020	3/64" x 37°	5/16-24UNJF-3A Modified	.1295 .1270	.170 .150	.240 .240	.180 .160	14,600	9,200
12	3/8	.600 .565	.545	.3745 .3740	.3745 .3735	.3680 .3640	.075	.140 .130	.030 .020	3/64" x 37°	3/8-24UNJF-3A Modified	.1617 .1582	.200 .180	.275 .275	.217 .197	21,000	14,000
14	7/16	.676 .641	.635	.4370 .4365	.4370 .4360	.4310 .4260	.095	.160 .150	.030 .020	3/64" x 37°	7/16-20UNJF-3A Modified	.1930 .1895	.230 .210	.315 .315	.253 .233	28,600	18,900
16	1/2	.770 .735	.685	.4995 .4990	.4995 .4985	.4930 .4880	.095	.188 .178	.030 .020	3/64" x 37°	1/2-20UNJF-3A Modified	.2242 .2207	.260 .240	.360 .360	.289 .269	37,300	25,600
18	9/16	.877 .842	.770	.5615 .5610	.5615 .5605	.5550 .5500	.125	.210 .200	.040 .025	1/16" x 37°	9/16-18UNJF-3A Modified	.2555 .2520	.290 .270	.400 .400	.326 .306	47,200	32,400
20	5/8	.953 .919	.825	.6240 .6235	.6240 .6230	.6180 .6120	.140	.238 .228	.040 .025	1/16" x 37°	5/8-18UNJF-3A Modified	.2555 .2520	.330 .305	.440 .440	.326 .306	58,300	41,000
24	3/4	1.150 1.110	1.050	.7490 .7485	.7490 .7480	.7430 .7370	.200	.335 .320	.045 .030	1/16" x 37°	3/4-16UNJF-3A Modified	.3185 .3150	.330 .300	.465 .465	.398 .378	83,900	59,500
28	7/8	1.330 1.290	1.210	.8740 .8735	.8740 .8730	.8680 .8610	.250	.385 .370	.050 .035	5/64" x 37°	7/8-14UNJF-3A Modified	.3820 .3780	.400 .370	.560 .560	.471 .451	114,000	81,500
32	1	1.510 1.470	1.390	.9990 .9985	.9990 .9980	.9930 .9860	.300	.435 .420	.060 .045	5/64" x 37°	1-12UNJF-3A Modified	.5100 .5040	.520 .490	.715 .715	.618 .598	149,000	106,000

SEE COLLAR STANDARDS FOR COLLAR STRENGTHS. LOWER STRENGTH (PIN OR COLLAR) DETERMINES SYSTEM STRENGTH.

HL12

2-2255JFO

"Hi-Lok" and "HL" are internationally registered trademarks of Hi-Shear Corporation.

DRAWN Martin	DATE 7-19-63	TITLE <b>HI-LOK® PIN</b> PROTRUDING TENSION HEAD TITANIUM 1/16" GRIP VARIATION
APPROVED Cessna	DATE 7-23-63	
REVISION 37	DATE J.F. Obispo 01-22-96	DRAWING NUMBER <b>HL12</b> SHEET 1 OF 2

# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

2600 Skypark Drive, Torrance, California U.S.A. 90509

**GENERAL NOTES:**

1. Concurrency: "A" to "D" diameter within .010 FIM.
2. Dimensions to be met after finish.
3. Surface texture per ANSI B46.1.
4. Hole preparation per NAS618.
5. Use HL112 for oversize replacement.
- 6 Maximum "D" diameter may be increased by .0002 to allow for solid film or aluminum coating application.
- 7 Dimensions to be met before finish for "VY" code only.
- 8 Broach petals removed.
- 9 Non-lubed pins must be used with lubed collars or with wet sealant.

**MATERIAL:**

6Al-4V titanium alloy per AMS4928 or AMS4967.

**HEAT TREAT:**

160,000 psi tensile minimum (95,000 psi shear minimum).

**FINISH:**

- HL12V-(-)(-) = Cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VAP-(-)(-) = Hi-Kote 1 aluminum coating per Hi-Shear Spec. 294 and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VAT-(-)(-) = Hi-Kote 1 aluminum coating per Hi-Shear Spec. 294.
- HL12VAZ-(-)(-) = Hi-Kote 1 aluminum coating per Hi-Shear Spec. 294 with color code black on thread end, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VBJ-(-)(-) = I.V.D. aluminum coating per MIL-C-83488, Type II, Class 3, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VBV-(-)(-) = I.V.D. aluminum coating per MIL-C-83488, Type II, Class 3, with color code blue on thread end.
- HL12VDK-(-)(-) = Solid film lube per Kalgard FA.
- HL12VDF-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type I, color blue, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VLJ-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type II, and solid film lube per MIL-L-46010.
- HL12VLV-(-)(-) = Phosphate fluoride treat and Esna-Lube No. 382 (Everlube Corp).
- HL12VMA-(-)(-) = Solid film lube per Kalgard FA.
- HL12VR-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type II, and solid film lube per "Electrofilm" 4396.
- HL12VRA-(-)(-) = Phosphate fluoride treat with color code red on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VSS-(-)(-) = Grip blast top of head with color light blue on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VSY-(-)(-) = Phosphate fluoride treat, solid film lube per MIL-L46010, Type I, and color code red on thread end.
- HL12VT-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type I, color pink, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VTA-(-)(-) = Anodize Ti-Shield III and Hi-Kote 2 solid film lube per Hi-Shear Spec. 292, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VTB-(-)(-) = Hi-Kote 2 solid film lube per Hi-Shear Spec. 292 and cetyl alcohol lube per Hi-Shear Spec.305.
- HL12VTF-(-)(-) = Hi-Kote 2 solid film lube per Hi-Shear Spec. 292.
- HL12VTT-(-)(-) = Translube.
- HL12VUE-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type II, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL12VUU-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type II, and solid film lube per "Lubeco" 2123, Type II.
- HL12VV-(-)(-) = Solid film lube per "Lubeco" 2123, Type II.
- HL12VY-(-)(-) = Surface coating per Hi-Shear Spec. 306, Type I, color blue, and solid film lubricant per M88. (British Aircraft Corporation Spec. MP-1071).
- HL12VYS-(-)(-) = Hi-Kote 2 solid film lube per Hi-Shear Spec. 292 on threads only.

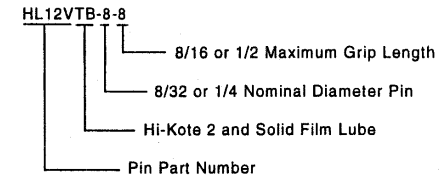
**SPECIFICATION:**

Hi-Lok Product Specification 342.

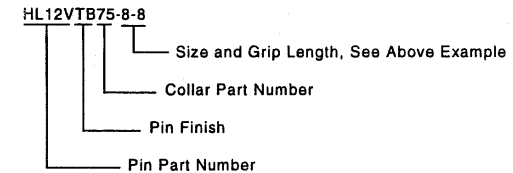
**CODE:** First dash number indicates nominal diameter in 1/32nds.  
Second dash number indicates maximum grip in 1/16ths.  
See Finish note for explanation of code letters.

**HOW TO ORDER EXAMPLES:**

Pin Part Number Only



Pin and Collar Assembly Part Number Combination



DRAWING NUMBER

# HL12

SHEET 2 OF 2