

# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

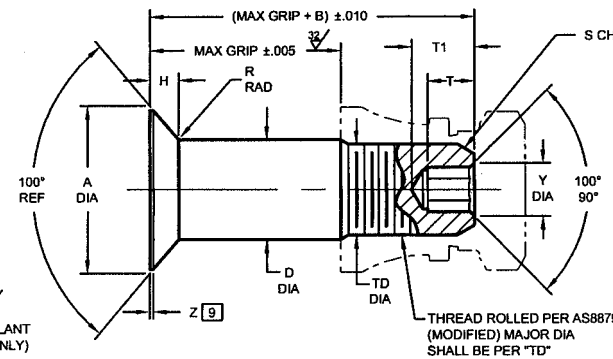
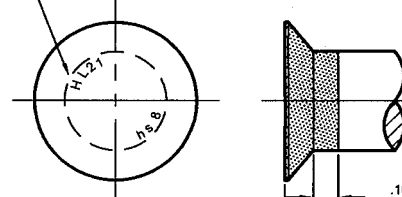
2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509 U.S.A.

HI-SHEAR CORPORATION, U.S.A. (Patent Holder) CAGE No. 73197  
 a LI SI AEROSPACE Company  
 AIR INDUSTRIES CO., INC., U.S.A. (Licensee - U.S.A & Canada) CAGE No. 06725  
 HUCK INTERNATIONAL, INC., U.S.A. (Licensee) CAGE No. 97928  
 SPS TECHNOLOGIES, U.S.A. (Licensee) CAGE No. 56878  
 ALCOA FASTENING SYSTEM (Licensee) CAGE No. 15653  
 WEST COAST AEROSPACE INC., U.S.A. (Licensee) CAGE No. 60516  
 (Pins & Steel Collars)

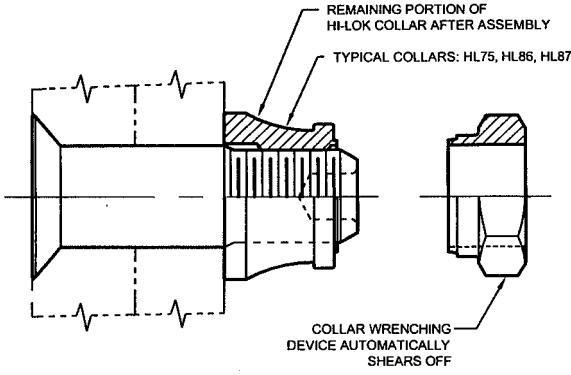
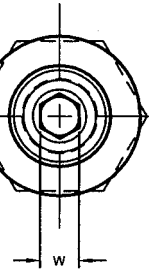
BLANC AERO INDUSTRIES UK LIMITED (Licensee) CAGE No. 0LB68  
 a LI SI AEROSPACE Company  
 HUCK S.A. France (Licensee - ECC Countries)  
 BLANC AERO S.A. France (Licensee - ECC Countries)  
 a LI SI AEROSPACE Company  
 MINEBEA CO., LTD. Japan (Licensee - Japan)

(21)

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



HI-LOK® PIN



HI-LOK® PIN AND COLLAR AFTER ASSEMBLY

FIRST DASH NO.	PIN NOM DIA	A DIA	B REF	D DIA	TD DIA	F REF	H	R RAD	Z MAX	S CHAMFER REF	THREAD	SOCKET				DOUBLE SHEAR POUNDS MINIMUM	TENSION POUNDS MINIMUM
												W HEX	T DEPTH	T1 DEPTH MAX	Y DIA		
5	5/32	.3304 .3256	.312	.1635 .1625	.1595 .1570	.004	.0700 .0680	.025 .015	.010	1/32" x 45°	8-32UNJC-3A Modified	.0801 .0791	.135 .115	.165	[7]	4,010	2,180
6	3/16	.3813 .3765	.325	.1895 .1885	.1840 .1810	.005	.0805 .0785	.030 .020	.015	1/32" x 45°	10-32UNJF-3A Modified	.0806 .0791	.135 .115	.175	.119 .104	5,380	3,180
8	1/4	.5066 .5018	.395	.2495 .2485	.2440 .2410	.006	.1080 .1060	.030 .020	.015	1/32" x 45°	1/4-28UNJF-3A Modified	.0967 .0947	.150 .130	.200	.142 .122	9,300	5,820
10	5/16	.6335 .6287	.500	.3120 .3110	.3060 .3020	.007	.1350 .1330	.040 .030	.015	3/64" x 45°	5/16-24UNJF-3A Modified	.1295 .1270	.170 .150	.240	.180 .160	14,600	9,200
12	3/8	.7604 .7556	.545	.3745 .3735	.3680 .3640	.008	.1620 .1600	.040 .030	.015	3/64" x 45°	3/8-24UNJF-3A Modified	.1617 .1582	.200 .180	.275	.217 .197	21,000	14,000
14	7/16	.8884 .8812	.635	.4370 .4360	.4310 .4260	.009	.1895 .1865	.050 .040	.022	3/64" x 45°	7/16-20UNJF-3A Modified	.1930 .1895	.230 .210	.315	.253 .233	28,600	18,900
16	1/2	1.0139 1.0068	.685	.4995 .4985	.4930 .4880	.010	.2160 .2130	.050 .040	.022	3/64" x 45°	1/2-20UNJF-3A Modified	.2242 .2207	.260 .240	.360	.289 .269	37,300	25,600
18	9/16	1.1408 1.1337	.770	.5615 .5605	.5550 .5500	.010	.2430 .2400	.050 .040	.025	1/16" x 45°	9/16-18UNJF-3A Modified	.2555 .2520	.290 .270	.400	.326 .306	47,200	32,400
20	5/8	1.2723 1.2651	.825	.6240 .6230	.6180 .6120	.010	.2720 .2690	.050 .040	.025	1/16" x 45°	5/8-18UNJF-3A Modified	.2555 .2520	.330 .305	.440	.326 .306	58,300	41,000
24	3/4	1.5308 1.5236	1.050	.7490 .7480	.7430 .7370	.012	.3280 .3250	.050 .040	.025	1/16" x 45°	3/4-16UNJF-3A Modified	.3185 .3150	.395 .365	.520	.398 .378	83,900	59,500
28	7/8	1.7845 1.7773	1.210	.8740 .8730	.8680 .8610	.014	.3820 .3790	.050 .040	.025	5/64" x 45°	7/8-14UNJF-3A Modified	.3820 .3780	.400 .370	.560	.471 .451	114,000	81,500
32	1	2.0405 2.0310	1.390	.9990 .9980	.9930 .9860	.014	.4370 .4330	.050 .040	.025	5/64" x 45°	1-12UNJF-3A Modified	.5100 .5040	.520 .490	.715	.618 .598	149,000	106,000

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

HL21

DRAWN		DATE	TITLE
Ric		3-11-63	HI-LOK® PIN
APPROVED		DATE	100° FLUSH MS24694 TENSION HEAD ALLOY STEEL 1/16" GRIP VARIATION
Cessna		3-13-63	
REVISION		DATE	DRAWING NUMBER
(21)		JO 5-1-2008	HL21

SHEET 1 OF 2

# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509 U.S.A.

HI-SHEAR CORPORATION, U.S.A. (Patent Holder) CAGE No. 73197 a LISI AEROSPACE Company AIR INDUSTRIES CO., INC., U.S.A. (Licensee - U.S.A & Canada) CAGE No. 06725 HUCK INTERNATIONAL, INC., U.S.A. (Licensee) CAGE No. 97928 SPS TECHNOLOGIES, U.S.A. (Licensee) CAGE No. 56878 ALCOA FASTENING SYSTEM (Licensee) CAGE No. 15653 WEST COAST AEROSPACE INC., U.S.A. (Licensee) CAGE No. 60516 (Pins & Steel Collars)	BLANC AERO INDUSTRIES UK LIMITED (Licensee) CAGE No. OL888 a LISI AEROSPACE Company HUCK S.A. France (Licensee - ECC Countries) BLANC AERO S.A. France (Licensee - ECC Countries) a LISI AEROSPACE Company MINEBEA CO., LTD. Japan (Licensee - Japan)
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- GENERAL NOTES:**
1. Head edge out of roundness shall not exceed "F".
  2. Concentricity: Conical surface of head to "D" diameter within .005 FIM.
  3. "H" is dimensioned from maximum "D" diameter.
  4. Dimensions to be met after finish.
  5. Surface texture per ANSI B46.1.
  6. Hole preparation per NAS618.
  7. Evidence of broken edge across paints.
  8. Non-lubed pins must be used with lubed collars or with wet sealant.
  9. Curved or flat edge manufacturer's option.
  10. Use HL65 for oversize replacement.

21 **MATERIAL:** Alloy steel per AMS6415, AMS6349, or AMS6049.

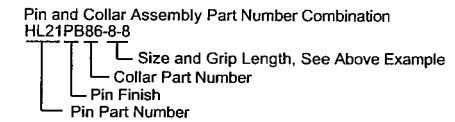
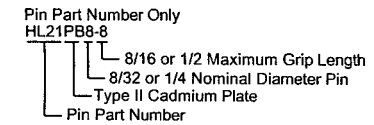
21 **HEAT TREAT:** 160,000 - 180,000 psi tensile per AMS-H-6875.

- 21 **FINISH:**
- HL21(-)(-) = Cadmium plate per AMS-QQ-P-416, Type I, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
  - HL21HC(-)(-) = Cadmium plate per AMS-QQ-P-416, Type I, Class 2, and Precoat No. PR1436G sealant (.002-.005 thick) plus cetyl alcohol lube per Hi-Shear Spec. 305.
  - HL21N(-)(-) = Diffused nickel-cadmium plate per AMS2416pe I, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
  - HL21PB(-)(-) = Cadmium plate per AMS-QQ-P-416, Type II, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
  - 8 HL21PN(-)(-) = Cadmium plate per AMS-QQ-P-416, Type II, Class 2.
  - HL21RB(-)(-) = Cadmium plate per AMS-QQ-P-416, Type II, Class 2, color violet purple, and cetyl alcohol lube per Hi-Shear Spec. 305.

**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.

21 **HOW TO ORDER  
EXAMPLES:**



HL21

JFO-STD/HLPIN

DRAWING NUMBER

**HL21**

Sheet 2 of 2