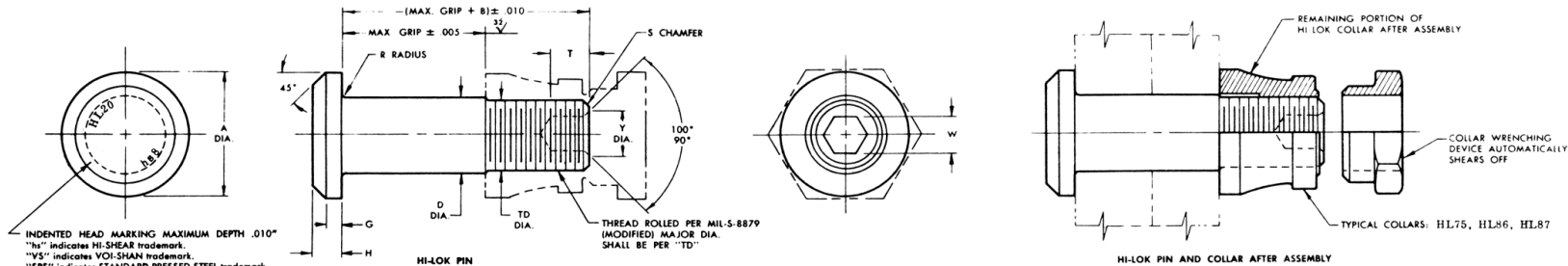


STANDARDS COMMITTEE FOR HI-LOK[®] PRODUCTS

2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509

HI-SHEAR CORPORATION, U.S.A. (Patent Holder) — U.S. Federal code I.D. No. 73197
 Division of Hi-Shear Industries Inc., U.S.A.
 AIRCRAFT FASTENERS (Forged Parts) LTD., U.K. (Licensee)
 Division of Hi-Shear Industries Inc., U.S.A.
 VOI-SHAN, Division of VSI Corp., U.S.A. (Licensee) — U.S. Federal Code I.D. No. 92215
 SPS TECHNOLOGIES, U.S.A. (Licensee) — U.S. Federal Code I.D. No. 56878
 LITTON FASTENING SYSTEMS, U.S.A. (Licensee) — U.S. Federal Code I.D. No. 97928
 Division of Litton Systems Inc., U.S.A.

ST. CHAMOND-GRAMAT, S.A. France (Licensee — EEC Countries)
 KAMAX-WERKE, Germany (Licensee — EEC Countries)
 Rudolph Kallermann GmbH & Co.
 SIMMONDS, S.A. France (Licensee — EEC Countries — Collars)
 TOKYO SCREW COMPANY, Japan (Licensee — Japan)
 WEST COAST AEROSPACE INC., U.S.A. (Licensee — Oversize Pins & Steel Collars)
 U.S. Federal Code I.D. No. 60516



INDENTED HEAD MARKING MAXIMUM DEPTH .010"
 "ht" indicates HI-SHEAR trademark.
 "VS" indicates VOI-SHAN trademark.
 "SPS" indicates STANDARD PRESSED STEEL trademark.
 The number or numbers following the trademark indicate first dash number. Arrangement optional.

FIRST DASH NO.	NOM. DIA.	A DIA.	B REF.	D DIA.	TD DIA.	G REF.	H	R RAD.	S CHAMFER REF.	THREAD	SOCKET			DOUBLE SHEAR POUNDS MINIMUM	TENSION POUNDS MINIMUM
											W HEX.	T DEPTH	Y DIA.		
-5	5/32	.322 .306	.312	.1635 .1625	.1595 .1570	.030	.060 .055	.025 .015	1/32" x 45°	8-32UNJC-3A Modified	.0801 .0791	.135 .115	6	4,010	2,180
-6	3/16	.377 .357	.325	.1895 .1885	.1840 .1810	.035	.074 .064	.025 .015	1/32" x 45°	10-32UNJF-3A Modified	.0806 .0791	.135 .115	.119 .104	5,380	3,180
-8	1/4	.440 .415	.395	.2495 .2485	.2440 .2410	.045	.090 .077	.025 .015	1/32" x 45°	1/4-28UNJF-3A Modified	.0967 .0947	.150 .130	.142 .122	9,300	5,820
-10	5/16	.502 .472	.500	.3120 .3110	.3060 .3020	.055	.112 .098	.030 .020	3/64" x 45°	5/16-24UNJF-3A Modified	.1295 .1270	.170 .150	.180 .160	14,600	9,200
-12	3/8	.565 .530	.545	.3745 .3735	.3680 .3640	.065	.140 .130	.030 .020	3/64" x 45°	3/8-24UNJF-3A Modified	.1617 .1582	.200 .180	.217 .197	21,000	14,000
-14	7/16	.627 .592	.635	.4370 .4360	.4310 .4260	.075	.160 .150	.030 .020	3/64" x 45°	7/16-20UNJF-3A Modified	.1930 .1895	.230 .210	.253 .233	28,600	18,900
-16	1/2	.752 .717	.685	.4995 .4985	.4930 .4880	.085	.188 .178	.030 .020	3/64" x 45°	1/2-20UNJF-3A Modified	.2242 .2207	.260 .240	.289 .269	37,300	25,600
-18	9/16	.877 .842	.770	.5615 .5605	.5550 .5500	.125	.210 .200	.040 .025	1/16" x 45°	9/16-18UNJF-3A Modified	.2555 .2520	.290 .270	.326 .306	47,200	32,400
-20	5/8	.953 .918	.825	.6240 .6230	.6180 .6120	.140	.238 .228	.040 .025	1/16" x 45°	5/8-18UNJF-3A Modified	.2555 .2520	.330 .305	.326 .306	58,300	41,000
-24	3/4	1.150 1.110	1.050	.7490 .7480	.7430 .7370	.200	.335 .320	.045 .030	1/16" x 45°	3/4-16UNJF-3A Modified	.3185 .3150	.395 .365	.398 .378	83,900	59,500

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

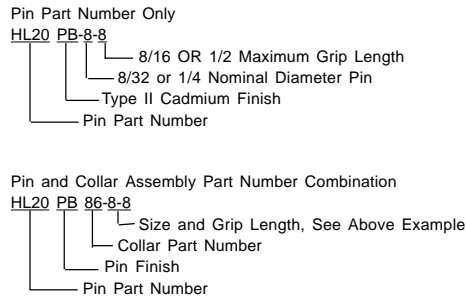
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- GENERAL NOTES:
- Concentricity: "A" to "D" diameter within .010 FIR.
 - Dimensions to be met after finish.
 - Non-lubed pins must be used with wet sealant or with lubed collars.
 - Surface texture per ANSI B46.1.
 - Hole preparation per NAS618.
 - Evidence of broken edge across points.
 - Use HL64 for oversize replacement.

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.

- MATERIAL: Alloy steel per Spec. MIL-S-5000, MIL-S-5626 or MIL-S-6049.
 HEAT TREAT: 160,000-180,000 psi tensile per Spec. MIL-H-6875.
 FINISH: HL20(-)(-) = Cadmium plate Spec. QQ-P-416, Type I, class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
 HL20KD(-)(-) = Aluminum coating per Boeing BMS 10-85, Type I, Class B, with color code black on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.
 HL20N(-)(-) = Diffused nickel-cadmium plate per AMS2416 and cetyl alcohol lube per Hi-Shear Spec. 305.
 HL20PB(-)(-) = Cadmium plate per Spec. QQ-P-416, Type II, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
 HL20PN(-)(-) = Cadmium plate per QQ-P-416, Type II, Class 2 (see Note 3).
 HL20RB(-)(-) = Cadmium plate per QQ-P-416, Type II, Class 2, color violet to purple, and cetyl alcohol lube per Hi-Shear Spec. 305.

HOW TO ORDER EXAMPLES:



U.S. patents 2,882,773; 2,927,491; 2,940,495; 3,027,789; 3,138,987; design patent 191,883 other U.S. and Foreign patents granted and pending properties of "Hi-Lok" and "HL" are Registered Trademarks of Hi-Shear Corporation.		
DRAWN J.C.S.	DATE 3-11-63	<p>PROTRUDING TENSION HEAD ALLOY STEEL 1/16" GRIP VARIATION</p>
APPROVED Cessna	DATE 3-13-63	
REVISION 18	DATE D. P. S. 9-24-79	
		DRAWING NUMBER HL20

HL20

SPECIFICATION: Hi-Lok Product Specification 342.