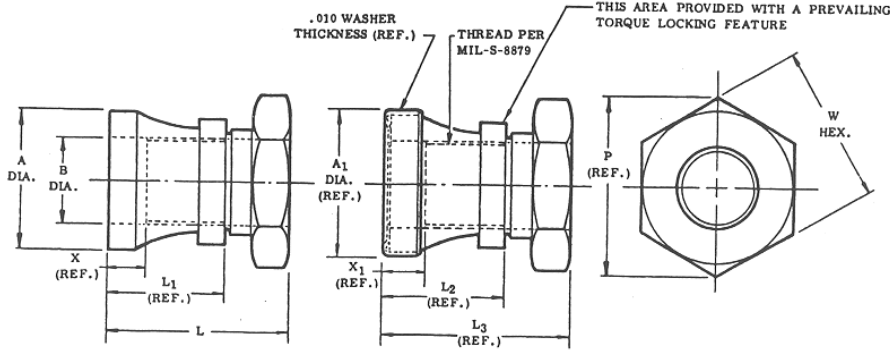


# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

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.  
 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 FASTENINGS 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)  
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 U.S. Federal Code I.D. No. 60516



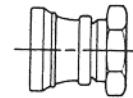
DASH NO.	PIN NOM. DIA.	THREAD	A DIA.	A <sub>1</sub> DIA. (REF.)	B DIA.	L	L <sub>1</sub> (REF.)	L <sub>2</sub> (REF.)	L <sub>3</sub> (REF.)	P (REF.)	W HEX.	X (REF.)	X <sub>1</sub> (REF.)	UTS LBS. MIN.	TORQUE OFF IN. LBS.
-5	5/32"	8-32UNJC-3B	.287 .283	.320	.173 .166	.447 .427	.265	.280	.460	.344	.314 .302	.107	.120	2,300	30-40
-6	3/16"	10-32UNJF-3B	.307 .303	.340	.200 .192	.457 .437	.275	.290	.470	.344	.314 .302	.107	.120	2,750	40-50
-8	1/4"	1/4-28UNJF-3B	.412 .408	.442	.261 .252	.552 .532	.340	.355	.565	.380	.346 .332	.112	.125	5,000	115-130
-10	5/16"	5/16-24UNJF-3B	.518 .512	.552	.325 .314	.672 .652	.430	.445	.685	.484	.440 .425	.122	.135	8,300	200-250
-12	3/8"	3/8-24UNJF-3B	.628 .622	.665	.388 .376	.744 .724	.475	.490	.755	.557	.503 .488	.122	.135	12,700	360-420
-14	7/16"	7/16-20UNJF-3B	.733 .727	.765	.463 .442	.862 .842	.560	.575	.875	.840	.753 .736	.137	.150	19,000	525-675
-16	1/2"	1/2-20UNJF-3B	.848 .842	.880	.528 .501	.942 .922	.610	.625	.955	.970	.878 .861	.137	.150	25,500	725-1000
-18	9/16"	9/16-18UNJF-3B	.915 .905	.940	.598 .570	1.029 1.009	.670	.685	1.042	.970	.878 .861	.145	.158	29,000	1000-1150
-20	5/8"	5/8-18UNJF-3B	.995 .985	1.040	.661 .634	1.123 1.103	.735	.750	1.136	1.120	1.003 .986	.145	.158	32,000	1350-1550
-24	3/4"	3/4-16UNJF-3B	1.120 1.110	1.140	.786 .762	1.371 1.351	.940	.955	1.384	1.240	1.128 1.110	.156	.169	42,000	1900-2200
-28	7/8"	7/8-14UNJF-3B	1.345 1.335	1.365	.911 .887	1.575 1.545	1.060	1.075	1.584	1.520	1.380 1.356	.169	.182	62,000	3200-3600
-32	1"	1-12UNJF-3B	1.490 1.480	1.510	1.036 1.015	1.840 1.810	1.225	1.240	1.849	1.650	1.504 1.480	.186	.199	84,000	4500-5000

- NOTES: 1. Go thread gage penetration shall be 3/4 of one revolution minimum.  
 2. Dimensions apply after finish.  
 3. Use HL87 for oversize replacement.  
 4. Use HL73 or HL273 for higher tension application.

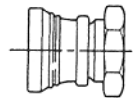
MATERIAL: Collar - 303 Se stainless steel per ASTM A-582 (AMS5640). Steel Washer - 300 series stainless steel.  
 Aluminum Washer- 2024-T6 aluminum alloy per QQ-A-250/4 or QQ-A-250/5.

- FINISH:  
 HL86(-) = Collar only with cadmium plate per QQ-P-416, Type I, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.  
 HL86W(-) = Collar with cadmium plate per QQ-P-416, Typel, Class 2, and no lube.  
 HL86CNNW(-) = Diffused nickel-cadmium plating per Spec. AMS2416, and cetyl alcohol lube per Hi-Shear Spec. 305, and steel washer finish is passivate.  
 HL86D(-) = Collar only with cadmium plate per QQ-P-416, Type II, Class 2, and solid film lubricant per MIL-L89377.  
 HL86DU(-) = Collar only with solid film lube per MIL-L-8937.  
 HLDUW(-) = Collar with solid film lube per MIL-L-8937 and steel washer with cadmium plate per QQ-P-416, Type II, Class 2, and no lube.  
 HL86G(-) = Collar only with silver plate per AMS2410 and cetyl alcohol lube per Hi-Shear Spec. 305.  
 HL86GGW(-) = Collar and steel washer both with silver plate per AMS2410 and cetyl alcohol lube per Hi-Shear Spec. 305.  
 HL86GNW(-) = Silver plate per Spec. AMS2410 and cetyl alcohol lube per Hi-Shear Spec. 305, and steel washer finish is passivate.  
 HL86K(-) = Collar only with solid film lube per "Lubeco" 905 (recommended for use on HL32 and H33 only).  
 HL86KP(-) = Collar only with cadmium plate per QQ-P-416, Type II Class 2, color violet to purple, and cetyl alcohol lube per Hi-Shear Spec. 305.  
 HL86KPW(-) = Collar with cadmium plate per QQ-P-416, Type II, Class2, color violet to purple, and cetyl alcohol lube per Hi-Shear Spec. 305. Steel washer with cadmium plate per QQ-P-416, Type II, Class 2, and no lube.  
 HL86PB(-) = Collar only with cadmium plate per QQ-P-416, Type II, Class 2, color violet to purple, and no lube.  
 HL86PBW(-) = Collar with cadmium plate per QQ-P-416, Type II, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305. Steel washer with cadmium plate per QQ-P-416, Typell, Class 2, and no lube.  
 HL86TB(-) = Collar only with Hi-Kote 2 solid film lube per Hi-Shear Spec. 292, and cetyl alcohol lube per Hi-Shear Spec. 305.  
 HL86TF(-) = Collar only with Hi-Kote 2 solid film lube per Hi\_Shear Spec. 292.  
 HL86TW(-) = Collar with cadmium plate per QQ-P-416, Type I, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.  
 Aluminum washer anodize per MIL-A-8625, dye color blue.

SPECIFICATION: Hi-Lok Product Specification 345.  
 CODE: Dash number indicates nominal thread size in 1/32nds.  
 EXAMPLE: HL86W-8 = 1/4-28 Hi-Lok collar and steel washer.  
 HL86TW-8 = 1/4-28 Hi-Lok collar and aluminum washer.



VOI-SHAN  
1 raised bead indicates VOI-SHAN identification.



STANDARD PRESSED STEEL  
2 raised beads indicate STANDARD PRESSED STEEL identification.

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, property of Hi-Shear Corporation "Hi-Lok" and "HL" are Registered Trademarks of Hi-Shear Corporation.

DATE	BY	TITLE	DRAWING NUMBER
DRAWN 7-29-60	VAN	 <b>hi-lok COLLAR</b> TYPE 303 Se STAINLESS STEEL 1/16" GRIP VARIATION TENSION APPLICATION	<b>HL86</b>
APPROVED 8-6-65	J.M.		
REVISION 10-31-79	D.P.S.		