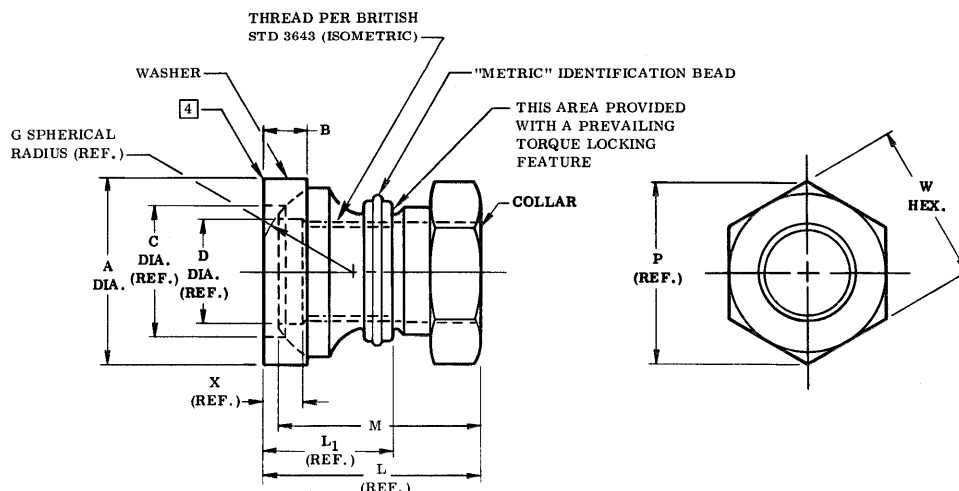


STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509

HI-SHEAR CORPORATION, U.S.A. (Patent Holder) U.S. Federal Code I.D. No. 73187
Division of HI-Shear Industries Inc., U.S.A. (Licensee)
AIRCRAFT FASTENERS (Forged Parts) LTD., U.K. (Licensee)
Division of HI-Shear Industries Inc., U.S.A. (Licensee)
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. 95878
LITTON FASTENING SYSTEMS, U.S.A. (Licensee) U.S. Federal Code I.D. No. 97828
Division of LITTON Systems Inc., U.S.A. (Licensee)

ST. CHAMOND-GRANAT, S.A. France (Licensee—EEC Countries)
KAMAY-WERKE, Germany (Licensee—EEC Countries)
Rudolph Kallmann GmbH & Co. (Licensee—EEC Countries—Collars)
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



DASH NO. (METRIC)	PIN NOM. DIA.	THREAD	A DIA.	B DIA.	C DIA. (REF.)	D DIA. (REF.)	G SPHER. RAD. (REF.)	L (REF.)	L1 (REF.)	M	P (REF.)	W (HEX.)	X (REF.)	TORQUE OFF NEWTON-METER	ULT TNSN STR NEWTONS MINIMUM
-04	4	M4 x 0.7-4H5H	9.27 9.01	1.99 1.72	6.0	4.2	5.1	11.50	7.2	10.90 10.40	8.87	8.00 7.78	2.8	2.8-4.0	13300
-05	5	M5 x 0.8-4H5H	10.90 10.64	2.29 2.03	6.5	5.2	5.1	11.65	7.4	10.90 10.40	11.10	10.00 9.78	2.9	3.9-5.7	17800
-06	6	M6 x 1.0-4H5H	12.80 12.54	2.67 2.41	8.1	6.2	6.7	14.25	9.2	13.45 12.95	12.12	11.00 10.73	3.3	9.0-12.5	30200
-08	8	M8 x 1.0-4H5H	16.70 16.44	3.00 2.74	10.6	8.2	8.7	16.75	11.0	15.75 15.25	14.40	13.00 12.73	3.3	20.3-26.0	53400
-10	10	M10 x 1.0-4H5H	20.60 20.34	3.94 3.68	13.0	10.2	11.4	19.50	12.9	18.30 17.80	15.56	14.00 13.73	3.3	40.6-47.5	86700
-12	12	M12 x 1.25-4H5H	24.40 24.14	4.58 4.32	15.7	12.2	13.1	22.85	15.3	21.10 20.60	18.90	17.00 16.73	3.9	67.7-76.3	117900

- NOTES: 1. Go thread gage penetration shall be 3/4 of one revolution minimum after thread lock.
2. Dimensions apply after finish.
3. For use on sloped surface up to 7° maximum on Hi-Lok standard pins.
4. Break sharp edge.
5. Use HLM89 for oversize replacement.

MATERIAL: Collar — 17-4PH stainless steel per AMS5643.
Washer — "W" = 17-4PH stainless steel per AMS5643, or PH15-7Mo per AMS5520,

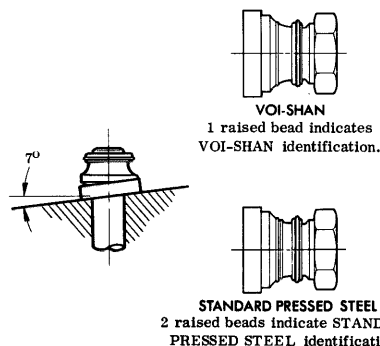
HEAT TREAT: Collar — "WA" = 4140 or 8740 alloy steel per MIL-S-5626 or MIL-S-6049.
Washer — "W" = Age to H1025 condition per MIL-H-6875.
"WA" = Age to H-1025 condition for 17-4PH, age to TH1050 condition for 17-7PH and 15-7Mo per MIL-H-6875.

FINISH: Collar — HLM89-()A = Silver plate per AMS2410 and cetyl alcohol lube per Hi-Shear Spec. 305.
HLM89DU-()A = Solid film lube per MIL-L-8937.
HLM89PB-()A = Cadmium plate per QQ-P-416, Type II, Class 2, and cetyl alcohol lube per Hi-Shear Spec. 305.
Washer — HLM89-()DW = Solid film lube per MIL-L-8937.
HLM89-()GW = Silver plate per AMS2410 and cetyl alcohol lube per Hi-Shear Spec. 305.
HLM89-()PBW = Cadmium plate per QQ-P-416, Type II, Class 2.
HLM89-()PBWA = Cadmium plate per QQ-P-416, Type II, Class 2.
HLM89-()W = Cadmium plate per QQ-P-416, Type I, Class 2.
HLM89-()WU = Passivate per Hi-Shear Spec. 258.

SPECIFICATION: Hi-Lok Product Specification M345.

CODE: Dash number indicates nominal thread size in 1 mm.
Code letter "A" following dash number indicates Hi-Lok collar only.
Code letters "W" or "WA" following dash number indicate swivel washer only.
See "Finish" note for explanation of code letters.

EXAMPLES: HLM89DU-08AWU = M8 x 1.0 Hi-Lok solid film lubed collar with HLM89-08WU swivel washer.
HLM89DU-08A = M8 x 1.0 Hi-Lok collar with solid film lube.
HLM89-08WU = 8 mm size swivel washer with passivate.



U.S. patents 3,390,906; and foreign patents. "Hi-Lok" and "HL" are Registered Trademarks of Hi-Shear Corporation.

DATE	BY	TITLE	DRAWING NUMBER
DRAWN 9-9-83	D. P. S.	hi-Lok® COLLAR (METRIC SERIES)	HLM89
APPROVED 9-9-83	<i>[Signature]</i>	SELF-ALIGNING COLLAR ASSEMBLY (17-4PH STAINLESS STEEL COLLAR — STAINLESS STEEL OR ALLOY STEEL WASHER) 1 mm GRIP VARIATION — TENSION APPLICATION	
REVISION			