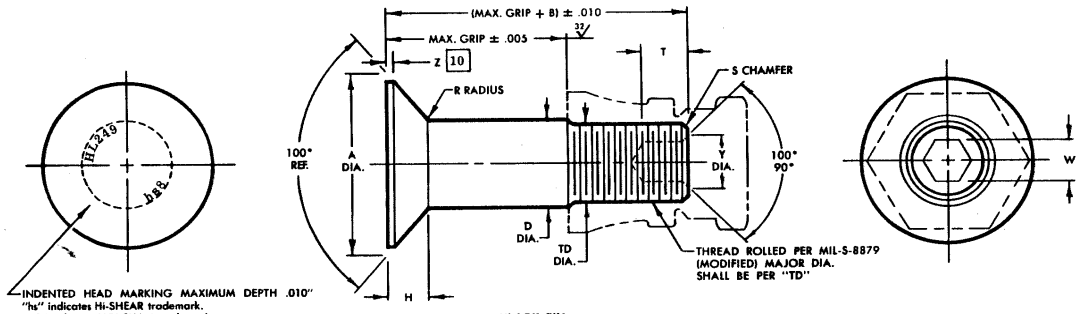
# STANDARDS COMMITTEE FOR HI-LOK® PRODUCTS

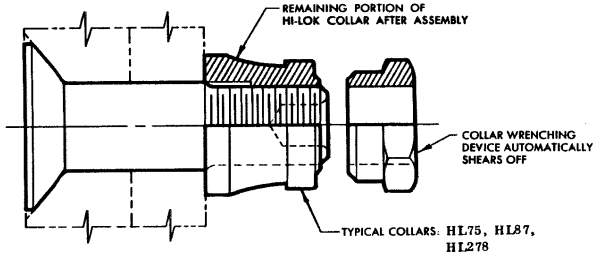
2600 SKYPARK DRIVE, TORRANCE, CALIFORNIA 90509

① HI-SHEAR CORPORATION, U.S.A. ___ (Patent Holder) ___ U.S. Federal Code No. 73197
Division of Hi-Shear Industries Inc., U.S.A.
AIR INDUSTRIES CO., INC. (Licensee - U.S. & Canada) ___ U.S. Federal Code No. 06725
DEUTSCH FASTENER CO., INC. ___ (Licensee) ___ U.S. Federal Code No. 97924
SPS TECHNOLOGIES, U.S.A. ___ (Licensee) ___ U.S. Federal Code No. 58878
VOI-SHAN, Division of VSI Corp., U.S.A. (Licensee) ___ U.S. Federal Code No. 92215
WEST COAST AEROSPACE INC., U.S.A. ___ (Licensee- Pins & Steel Collars) ___ U.S. Federal Code No. 60516

HI-SHEAR FASTENERS EUROPE, LTD., U.K. (Licensee)
Division of Hi-Shear Industries Inc., U.S.A.
KAMAX-WERKE, Germany ___ (Licensee - EEC Countries)
Rudolph Kellerman GmbH & Co.
ST. CHAMOND GRANAT, S.A. France ___ (Licensee - EEC Countries)
SIMMONDS, S.A. France ___ (Licensee - EEC Countries- Collars)
TOKYO SCREW COMPANY, Japan ___ (Licensee - Japan)




HI-LOK PIN




HI-LOK PIN AND COLLAR AFTER ASSEMBLY

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

| FIRST DASH NO. | NOM. DIA. | A DIA. | B REF. | D DIA. [9] WITHOUT COATING OR SOLID FILM LUBE | D DIA. [9] WITH COATING OR SOLID FILM LUBE | TD DIA. | F | H | R RAD. | Z MAX. | S CHAMFER REF. | THREAD | SOCKET W HEX. | SOCKET T DEPTH | SOCKET Y DIA. | ** DOUBLE SHEAR POUNDS MINIMUM | TENSION POUNDS MINIMUM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -5 | 3/16 | | | NOTE: Use HL49-6 | | | | | | | | | | | | | |
| -6 | 13/64 | .3813<br>.3765 | .325 | .2026<br>.2021 | .2026<br>.2016 | .1840<br>.1810 | .005 | .0750<br>.0730 | .030<br>.020 | .015 | 1/32" x 45° | 10-32UNJF-3A Modified | .0806<br>.0791 | .135<br>.115 | .119<br>.104 | 6,130 | 3,180 |
| -8 | 17/64 | .5066<br>.5018 | .395 | .2651<br>.2646 | .2651<br>.2641 | .2440<br>.2410 | .006 | .1013<br>.0993 | .030<br>.020 | .015 | 1/32" x 45° | 1/4-28UNJF-3A Modified | .0967<br>.0947 | .150<br>.130 | .142<br>.122 | 10,490 | 5,820 |
| -10 | 21/64 | .6335<br>.6287 | .500 | .3276<br>.3271 | .3276<br>.3266 | .3060<br>.3020 | .007 | .1283<br>.1263 | .040<br>.030 | .015 | 3/64" x 45° | 5/16-24UNJF-3A Modified | .1295<br>.1270 | .170<br>.150 | .180<br>.160 | 16,000 | 9,200 |
| -12 | 25/64 | .7604<br>.7556 | .545 | .3901<br>.3896 | .3901<br>.3891 | .3680<br>.3640 | .008 | .1553<br>.1533 | .040<br>.030 | .015 | 3/64" x 45° | 3/8-24UNJF-3A Modified | .1617<br>.1582 | .200<br>.180 | .217<br>.197 | 22,700 | 14,000 |
| -14 | 29/64 | .8884<br>.8812 | .635 | .4526<br>.4521 | .4526<br>.4516 | .4310<br>.4260 | .009 | .1828<br>.1798 | .050<br>.040 | .022 | 3/64" x 45° | 7/16-20UNJF-3A Modified | .1930<br>.1895 | .230<br>.210 | .253<br>.233 | 30,600 | 18,900 |
| -16 | 33/64 | 1.0139<br>1.0068 | .685 | .5151<br>.5146 | .5151<br>.5141 | .4930<br>.4880 | .010 | .2093<br>.2063 | .050<br>.040 | .022 | 3/64" x 45° | 1/2-20UNJF-3A Modified | .2242<br>.2207 | .260<br>.240 | .289<br>.269 | 39,600 | 25,600 |
| -18 | 37/64 | 1.1408<br>1.1337 | .770 | .5771<br>.5766 | .5771<br>.5761 | .5550<br>.5500 | .010 | .2430<br>.2400 | .050<br>.040 | .025 | 1/16" x 45° | 9/16-18UNJF-3A Modified | .2555<br>.2520 | .290<br>.270 | .326<br>.306 | 49,700 | 32,400 |
| -20 | 41/64 | 1.2723<br>1.2651 | .825 | .6396<br>.6391 | .6396<br>.6386 | .6180<br>.6120 | .010 | .2720<br>.2690 | .050<br>.040 | .025 | 1/16" x 45° | 5/8-18UNJF-3A Modified | .2555<br>.2520 | .330<br>.305 | .326<br>.306 | 61,000 | 41,000 |
| -24 | 49/64 | 1.5308<br>1.5236 | 1.050 | .7646<br>.7641 | .7646<br>.7636 | .7430<br>.7370 | .012 | .3280<br>.3250 | .050<br>.040 | .025 | 1/16" x 45° | 3/4-16UNJF-3A Modified | .3185<br>.3150 | .395<br>.365 | .398<br>.378 | 87,200 | 59,500 |

**GENERAL NOTES:**
1. Head out of roundness shall not exceed "F".
2. Concentricity: Conical surface of head to "D" diameter within .005 FIR.
3. "H" dimensioned from maximum "D" diameter.
4. Dimensions to be met after finish.
5. Non-lubed pins must be used with lubed collars.
6. Surface texture per ANSI B46.1.
7. Hole preparation per NAS618.
8. Use HL749 for oversize replacement.
9. Maximum "D" diameter may be increased by .0002 to allow for solid film or coating application.
10. Curved or flat edge manufacturer's option.

**MATERIAL:** A-286 high temperature alloy per Spec. AMS5737 or AMS5731.

**HEAT TREAT:** 160,000 psi tensile minimum (95,000 psi shear minimum) at 70°F.

**① FINISH:**
- HL249-( )-( ) = Passivate per Hi-Shear Spec. 258, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL249AZ-( )-( ) = 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.
- HL249DL-( )-( ) = Solid film lube per MIL-L-46010, Type I, and cetyl alcohol lube per Hi-Shear Spec. 305.
- HL249DU-( )-( ) = Solid film lube per MIL-L-46010, Type I.
- [5] HL249PY-( )-( ) = Passivate per Hi-Shear Spec. 258.
- HL249V-( )-( ) = Solid film lube per "Lubeco" 2123, Type II.

**SPECIFICATION:** Hi-Lok Product Specification 342.

**CODE:** First dash number indicates nominal diameter in 1/32nds of the pin which HL249 oversize pin replaces. 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
HL249-8-8
- 8/16 or 1/2 Maximum Grip Length
- Replaces 8/32 or 1/4 Nominal Diameter Pin
- Pin Part Number

Pin and Collar Assembly Part Number Combination
HL24987-8-8
- Size and grip length, see above example
- Collar Part Number
- Pin Part Number

** The Double Shear values shown are based on cross sectional area for nominal diameter pin.

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

| DRAWN | DATE | hi-Lok® PIN |
|---|---|---|
| Brlej | 5-28-63 | 100° FLUSH MS24694 TENSION HEAD |
| APPROVED | DATE | A-286 HIGH TEMPERATURE ALLOY |
| Cessna | 5-28-63 | 1/16" GRIP VARIATION — 1/64" OVERSIZE |
| REVISION | DATE | DRAWING NUMBER |
| (9) | D.P.S. 8-6-92 | HL249 |

HL249

2-1501