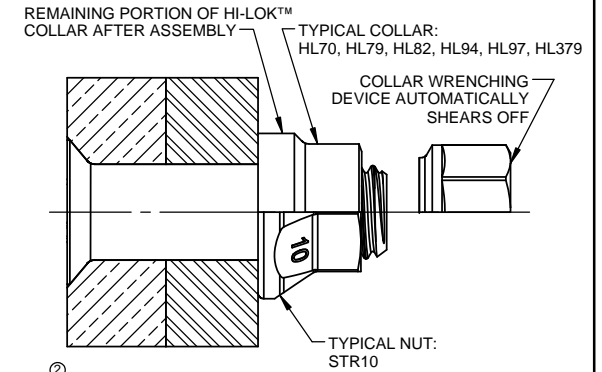
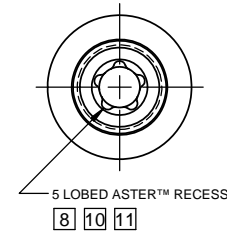
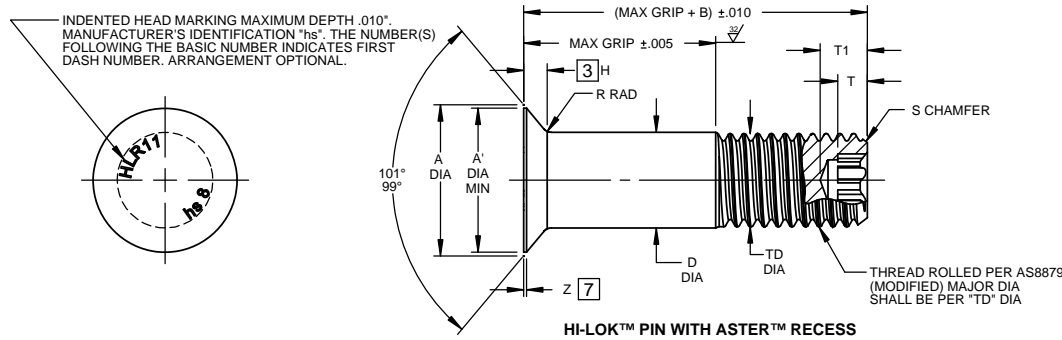


② For the current list of licensed manufacturers, please visit the  
 LISI AEROSPACE website at:  
[HTTP://WWW.LISI-AEROSPACE.COM/LICENSES](http://www.lisi-aerospace.com/licenses)



② RECOMMENDED COLLAR OR NUT FOR ASSEMBLY

FIRST DASH NO.	PIN NOM DIA	A DIA	A' DIA MIN	B REF	D DIA		TD DIA	F	H	R RAD	Z MAX	S CHAMFER REF	THREAD MODIFIED	ASTER™ RECESS			DOUBLE SHEAR POUNDS MINIMUM	TENSION POUNDS MINIMUM
					WITHOUT ALUMINUM COATING	WITH ALUMINUM COATING								RECESS SIZE CODE	T1 DEPTH MAX	T DEPTH MIN		
5	5/32	.2612 .2564	.242	.312	.1635 .1630	.1635 .1625	.1595 .1570	.004	.0410 .0390	.025 .015	.010	1/32 X 37°	.1640-32 UNJC-3A	A5L-05	.118	.072	4,010	1,650
6	3/16	.3016 .2966	.270	.325	.1895 .1890	.1895 .1885	.1840 .1810	.005	.0470 .0450	.030 .020	.015	1/32 X 37°	.1900-32 UNJF-3A	A5L-06	.116	.069	5,380	2,000
7	7/32	.3403 .3355	.309	.355	.2182 .2177	.2182 .2172	.2100 .2070	.005	.0512 .0492	.030 .020	.015	1/32 X 37°	.2160-28 UNJF-3A	A5L-07	.117	.069	7,194	3,100
8	1/4	.3948 .3898	.363	.395	.2495 .2490	.2495 .2485	.2440 .2410	.006	.0610 .0590	.030 .020	.015	1/32 X 37°	.2500-28 UNJF-3A	A5L-08	.118	.069	9,300	3,700
10	5/16	.4739 .4689	.442	.500	.3120 .3115	.3120 .3110	.3060 .3020	.007	.0680 .0660	.040 .030	.015	3/64 X 37°	.3125-24 UNJF-3A	A5L-10	.127	.070	14,600	5,000
12	3/8	.5604 .5554	.529	.545	.3745 .3740	.3745 .3735	.3680 .3640	.008	.0780 .0760	.040 .030	.015	3/64 X 37°	.3750-24 UNJF-3A	A5L-12	.147	.087	21,000	7,200
14	7/16	.6680 .6620	.620	.635	.4370 .4365	.4370 .4360	.4310 .4260	.009	.0969 .0944	.050 .040	.022	3/64 X 37°	.4375-20 UNJF-3A	A5L-14	.196	.116	28,600	10,000
16	1/2	.7540 .7480	.706	.685	.4995 .4990	.4995 .4985	.4930 .4880	.010	.1068 .1043	.050 .040	.022	3/64 X 37°	.5000-20 UNJF-3A	A5L-16	.236	.139	37,300	13,500

②

"HI-LOK", "HLR", AND "HI-KOTE", ARE TRADEMARKS OF HI-SHEAR CORPORATION. ASTER™ IS A TRADEMARK OF LISI AEROSPACE.		
DRAWN BY F.CARINGELLA	DATE 2016-07-07	TITLE HI-LOK™ PIN, ASTER™ RECESS 100° FLUSH SHEAR HEAD TITANIUM 1/16 GRIP VARIATION
APPROVED C.REITZ	DATE 2016-07-07	
REVISION ②	DATE M.BEARD 2017-12-05	DRAWING NUMBER <b>HLR11</b> 1 OF 2

**GENERAL NOTES:**

- ① Head edge out of roundness shall not exceed "F".
2. Concentricity: Conical surface of head to "D" diameter within .003 FIM.
- ③ "H" is dimensioned from maximum "D" diameter.
4. Dimensions are in inches and to be met after finish.
- ⑤ Surface texture per ASME B46.1.
6. Hole preparation per NAS618.
- ⑦ Curved or flat edge manufacturer's option.
- ⑧ US patent 6632057; other US & foreign patents granted and pending property of LISI AEROSPACE.
9. Use HLR111 for oversize replacement.
- ⑩ Broach petals removed.
- ② ⑪ Identification colorant is not allowed in the ASTER™ Recess.

**MATERIAL:**

6Al-4V titanium alloy per AMS4928 or AMS4967.

**HEAT TREAT:**

160,000 psi tensile minimum (95,000 psi shear minimum). ②

**FINISH:**

HLR11NKJ( )-( ) = HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 with color silver on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.

HLR11NKK( )-( ) = Sulfuric acid anodizing per ISO8080 and HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 on threads only with color silver on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.

HLR11NKL( )-( ) = HI-KOTE™ 1 NC aluminum pigmented coating per Hi-Shear Spec. 294 on threads only with color silver on thread end and cetyl alcohol lube per Hi-Shear Spec. 305.

**SPECIFICATION:**

HI-LOK™ Product Specification 409.  
 ASTER™ Recess per A5L-QA02.

**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.

**HOW TO ORDER**

② **EXAMPLES:**

Pin Part Number

HLR11 NKJ 8-8

8/16 or 1/2 Maximum Grip Length  
 8/32 or 1/4 Nominal Diameter Pin  
 Finish Code  
 Pin Basic Part Number

HLR11

DRAWING NUMBER

**HLR11**

2 OF 2