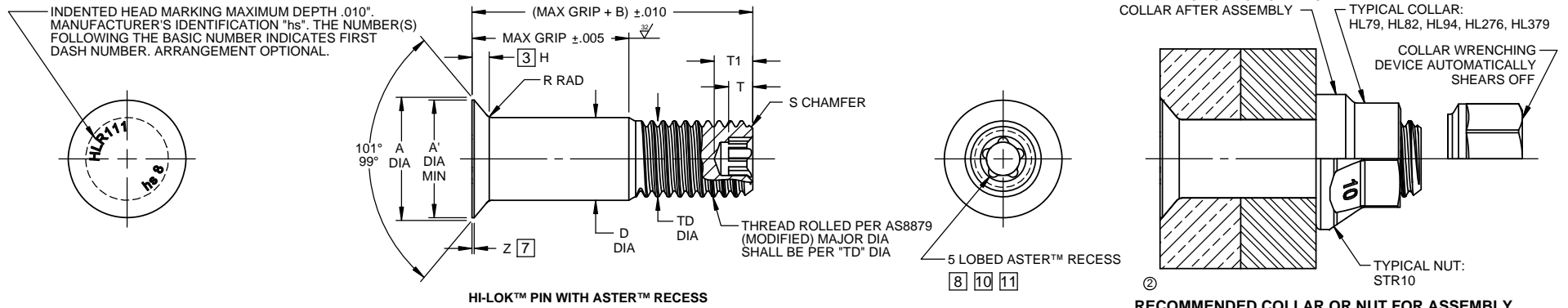


② For the current list of licensed manufacturers, please visit the LISI AEROSPACE website at:
[HTTP://WWW.LISI-AEROSPACE.COM/LICENSES](http://WWW.LISI-AEROSPACE.COM/LICENSES)



RECOMMENDED COLLAR OR NUT FOR ASSEMBLY

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

1																			7																		
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	NOTE: USE HLR11()6-()																																				
6	13/64	.3016 .2966	.270	.325	.2026 .2021	.2026 .2016	.1840 .1810	.005	.0415 .0394	.030 .020	.015	1/32 X 37°	.1900-32 UNJF-3A	A5L-06	.116	.069	6,130	2,000																			
7	15/64	.3403 .3355	.309	.355	.2338 .2333	.2338 .2328	.2100 .2070	.005	.0512 .0492	.030 .020	.015	1/32 X 37°	.2160-28 UNJF-3A	A5L-07	.117	.069	8,100	3,100																			
8	17/64	.3948 .3898	.363	.395	.2651 .2646	.2651 .2641	.2440 .2410	.006	.0544 .0523	.030 .020	.015	1/32 X 37°	.2500-28 UNJF-3A	A5L-08	.118	.069	10,490	3,700																			
10	21/64	.4739 .4689	.442	.500	.3276 .3271	.3276 .3266	.3060 .3020	.007	.0614 .0593	.040 .030	.015	3/64 X 37°	.3125-24 UNJF-3A	A5L-10	.127	.070	16,000	5,000																			
12	25/64	.5604 .5554	.529	.545	.3901 .3896	.3901 .3891	.3680 .3640	.008	.0714 .0693	.040 .030	.015	3/64 X 37°	.3750-24 UNJF-3A	A5L-12	.147	.087	22,700	7,200																			
14	29/64	.6680 .6620	.620	.635	.4526 .4521	.4526 .4516	.4310 .4260	.009	.0904 .0879	.050 .040	.022	3/64 X 37°	.4375-20 UNJF-3A	A5L-14	.196	.116	30,600	10,000																			
16	33/64	.7540 .7480	.706	.685	.5151 .5146	.5151 .5141	.4930 .4880	.010	.1002 .0977	.050 .040	.022	3/64 X 37°	.5000-20 UNJF-3A	A5L-16	.236	.139	39,600	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
APPROVED C.REITZ	DATE 2016-07-07
REVISION 2	DATE M.BEARD 2017-12-05
TITLE HI-LOK™ PIN, ASTER™ RECESS 100° FLUSH SHEAR HEAD TITANIUM 1/16 GRIP VARIATION, 1/64 OVERSIZE	
DRAWING NUMBER HLR111	

- 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 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. Oversize replacement replacement for HLR11. Use HLR411 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: HLR111NKJ()-() = 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.

HLR111NKK()-() = 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.

HLR111NKL()-() = 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 of the pin which HLR111 oversize pin replaces.
 Second dash number indicates maximum grip in 1/16ths.
 See Finish note for explanation of code letters.

HOW TO ORDER Pin Part Number

② **EXAMPLES:** HLR111 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

HLR111

DRAWING NUMBER

HLR111

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