



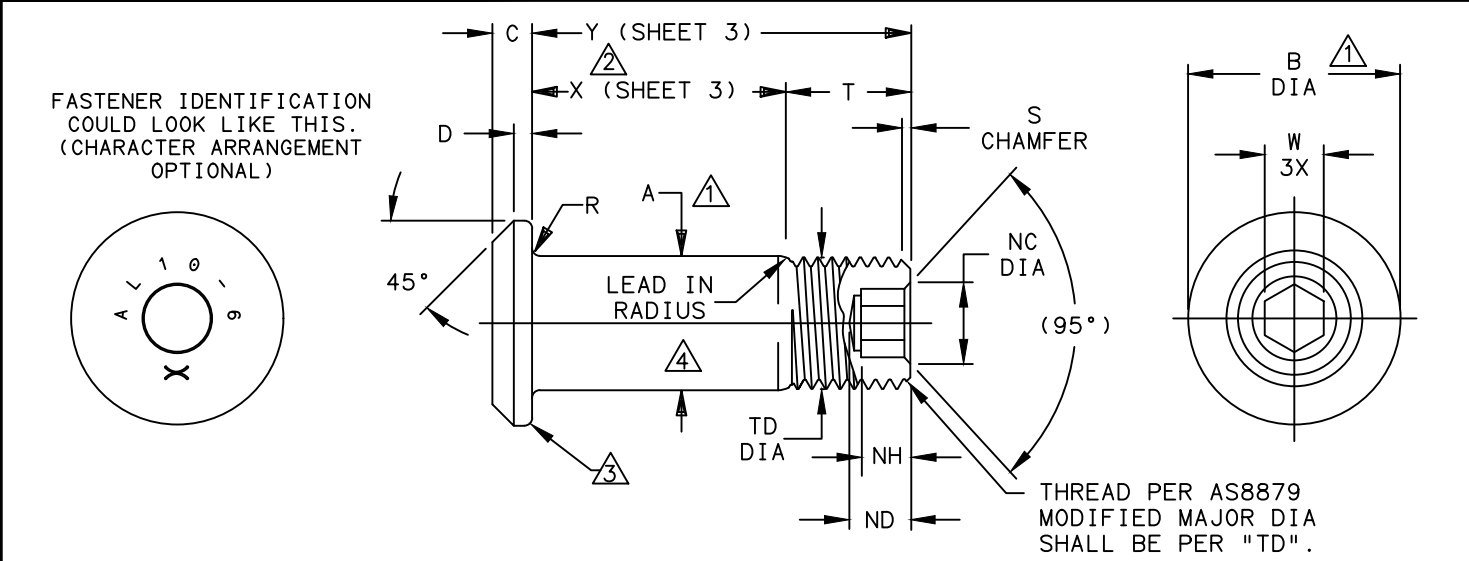
Howmet Fastening Systems  
 Carson Operations  
 900 E. Watson Center Road  
 Carson, California 90745 U.S.A.

**HOWMET  
 AEROSPACE**

Phone (310) 830-8200  
 HFS\_Carson\_Engineering@howmet.com

**AERO-LITE®  
 ENGINEERING  
 STANDARD**

THIS DRAWING, THE STRUCTURAL DESIGN DISCLOSED THEREIN AND THE TECHNICAL DATA AND ENGINEERING SERVICE REPRESENTED THEREBY ARE THE EXCLUSIVE PROPERTY OF HUCK INTERNATIONAL INCORPORATED.



AL PIN FAMILY NUMBER	NOM SIZE	THREAD (MODIFIED)	A SHANK DIA BARE $\pm .0005$ $- .0000$	A SHANK DIA COATED $\pm .0005$	B HEAD DIA	C HEAD HEIGHT	D REF	NC CHAMFER DIA	ND DRILL DEPTH MAX	NH HEX DEPTH	R RAD $\pm .005$	S CHAMFER	T REF	TD DIA	W HEX 3X	DOUBLE SHEAR LBS MIN	TENSION LBS MIN
AL108()-5-()WD	.1640	.1640-32 UNJC-3A	.1630	.1630	.262 .242	.047 .037	.020	.104 .094	.135	.100 .080	.020	1/32"	.280	.1595 .1570	.0806 .0791	4010	1940
AL10()-5-()WD	.1640	.1640-32 UNJC-3A	.1630	.1630	.262 .242	.047 .037	.020	.090 .075	.170	.135 .115	.020	1/32"	.280	.1595 .1570	.0645 .0635	4010	1940
AL10()-6-()WD	.1900	.1900-32 UNJF-3A	.1890	.1890	.315 .295	.055 .045	.025	.119 .104	.135	.100 .080	.020	1/32"	.290	.1840 .1810	.0806 .0791	5380	2500
AL10()-8-()WD	.2500	.2500-28 UNJF-3A	.2490	.2490	.412 .387	.069 .059	.025	.142 .122	.160	.110 .090	.020	1/32"	.320	.2440 .2410	.0967 .0947	9300	4300
AL10()-10-()WD	.3125	.3125-24 UNJF-3A	.3115	.3115	.505 .475	.078 .068	.035	.180 .160	.200	.130 .110	.025	3/64"	.380	.3060 .3020	.1295 .1270	14600	6300
AL10()-12-()WD	.3750	.3750-24 UNJF-3A	.3740	.3740	.600 .565	.088 .078	.040	.217 .197	.235	.160 .140	.025	3/64"	.420	.3680 .3640	.1617 .1582	21000	8700
AL10()-14-()WD	.4375	.4375-20 UNJF-3A	.4365	.4365	.676 .641	.105 .093	.045	.253 .233	.275	.190 .170	.025	3/64"	.485	.4310 .4260	.1930 .1895	28600	12100
AL10()-16-()WD	.5000	.5000-20 UNJF-3A	.4990	.4990	.770 .735	.115 .103	.050	.289 .269	.315	.220 .200	.025	3/64"	.525	.4930 .4880	.2242 .2207	37300	15300

- ① CONCENTRICITY: "B" HEAD DIAMETER TO "A" SHANK DIAMETER TO BE WITHIN .010 TIR.
- ② GRIP LENGTH IS MEASURED FROM THE UNDERSIDE OF THE HEAD TO THE MAXIMUM GRIP PLANE. TRANSITION AREA AND THREAD FORM WILL ALLOW MATING COLLAR TO ACHIEVE MINIMUM GRIP CONDITION WITHOUT INTERFERENCE. (SEE DESIGN GRIP RANGE AND DIMENSION "X" SHEET 3).
- ③ PERMISSIBLE NATURAL FLOW OF MATERIAL. MUST BE FREE FROM SHARP CORNERS.
- ④ MAXIMUM "A" DIAMETER MAY BE INCREASED BY .0002 TO ALLOW FOR DRY FILM LUBE (SUFFIX "RS" FINISH ONLY).

MATERIAL: 6AL-4V TITANIUM ALLOY PER AMS4967 OR AMS4928.  
 MINIMUM SHEAR STRENGTH: 95 KSI.  
 SURFACE TEXTURE: Ra MAX PER ANSI-B46.1 BEFORE COATING. BEARING SURFACE OF HEAD, HEAD TO SHANK FILLET RADIUS, SHANK AND LEAD-IN RADIUS, -32, OTHER SURFACES -125.

DIMENSIONS IN INCHES AFTER FINISH

PROCUREMENT SPECIFICATION: C380

©1995, 2020 HUCK INTERNATIONAL, INC., ALL RIGHTS RESERVED.

AERO-LITE IS A TRADEMARK OF HOWMET AEROSPACE INC. AND ITS SUBSIDIARIES.

DRAWN BY	DH	FSCM (Cage Code) 17446 - Carson
CHECKED BY	MM	

REMOVE HI-KOTE I AND KAL-GARD 2242 FROM PAGE 2. (REF. ECR 2906)

ISSUED	09/19/96	PIN, AERO-LITE® LIGHTWEIGHT PROTRUDING SHEAR (LAP FREE) HEAD, 6AL-4V TITANIUM. (95 KSI SHEAR)	AL 10/108()-()-()WD AL107
REVISED	09/12/2022		
PAGE	1 OF 3		



Howmet Fastening Systems  
 Carson Operations  
 900 E. Watson Center Road  
 Carson, California 90745 U.S.A.

Phone (310) 830-8200  
 HFS\_Carson\_Engineering@howmet.com

**AERO-LITE®**  
**ENGINEERING**  
**STANDARD**

THIS DRAWING, THE STRUCTURAL DESIGN DISCLOSED THEREIN AND THE TECHNICAL DATA AND ENGINEERING SERVICE REPRESENTED THEREBY ARE THE EXCLUSIVE PROPERTY OF HUCK INTERNATIONAL INCORPORATED.

- FINISH: SUFFIX "AG" = ALUMINUM COATING PER NAS4006 WITH ORANGE COLOR ON THREAD END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "AP" = ALUMINUM COATING PER NAS4006 PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "BJ" = ION VAPOR DEPOSITED ALUMINUM COATING PER MIL-C-83488, TYPE II, CLASS 3 PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "BL" = ION VAPOR DEPOSITED ALUMINUM COATING PER MIL-C-83488 TYPE II, CLASS 3 WITH BLACK COLOR ON THREAD END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "RP" = PHOSPHATE FLUORIDE TREAT PER AMS2486 WITH ORANGE COLOR ON THREAD END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "RS" = PHOSPHATE FLUORIDE TREAT PER AMS2486 AND DRY FILM LUBE PER AS5272 WITH ORANGE COLOR ON THREAD END.
- SUFFIX "SU" = ALUMINUM COATING PER NAS4006 WITH LIGHT BLUE COLOR ON THREAD END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- SUFFIX "WF" = SULFURIC ACID ANODIZE (BLUE) PER ISO 8080 WITH BLACK COLOR ON THREAD END PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.
- NO LETTER = UNCOATED PIN PLUS CETYL ALCOHOL LUBE PER MIL-L-87132.

HEAD MARKING: HEADS SHALL BE MARKED WITH THE MANUFACTURER'S SYMBOL, THE BASIC NUMBER (AL10 OR AL108 ) AND DASH NUMBER DESIGNATING DIAMETER, DEPRESSED .006 MAX DEPTH ARRANGEMENT OPTIONAL. CODE LETTER "WD" PARTS SHALL BE MARKED WITH A DEPRESSED CIRCLE WITH .006 MAX DEPTH ON HEAD & CONCENTRIC TO SHANK DIA WITHIN .010 FIM.

CODING: THE FIRST SET OF LETTERS DESIGNATE THE FAMILY OF LIGHTWEIGHT AERO-LITE® PINS FOR AEROSPACE APPLICATIONS (AL).

THE NEXT SET OR NUMBERS DESIGNATE HEAD SIZE, STYLE, MATERIAL AND LOAD APPLICATION. THE NUMBER (108) DESIGNATES OVERSIZE HEX SOCKET SOCKET (ONLY VALID FOR 5/32 DIAMETER).

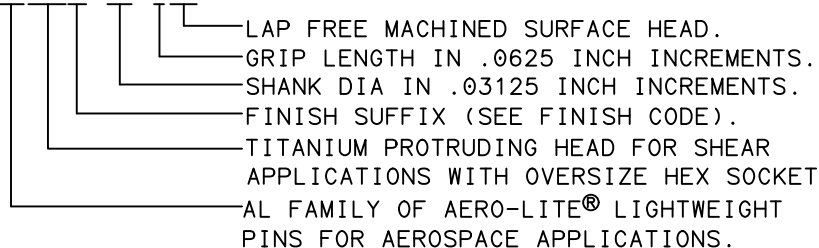
THE NEXT SET OF LETTERS DESIGNATE FINISH (SEE FINISH CODE FOR SUFFIX INFORMATION).

THE FOLLOWING NUMBERS DESIGNATE THE NOMINAL PIN SHANK DIAMETER IN .03125 INCH INCREMENTS.

THE FINAL NUMBERS DESIGNATE THE GRIP LENGTH NUMBER OR THE NOMINAL PIN SHANK LENGTH IN .0625 INCH INCREMENTS.

THE FINAL LETTERS DESIGNATE LAP FREE MACHINED SURFACE HEAD.

EXAMPLE: AL108()-10-6WD



DIMENSIONS IN INCHES  
 AFTER FINISH

B  
10

REMOVE HI-KOTE I AND KAL-GARD 2242 FROM PAGE 2. (REF. ECR 2906)

ISSUED	09/19/96	PIN, AERO-LITE® LIGHTWEIGHT PROTRUDING SHEAR (LAP FREE) HEAD, 6AL-4V TITANIUM.(95 KSI SHEAR)	AL 10/108()-()-()WD
REVISED	09/12/2022		
PAGE	2 OF 3		AL107



**HOWMET  
AEROSPACE**

Howmet Fastening Systems  
Carson Operations  
900 E. Watson Center Road  
Carson, California 90745 U.S.A.

Phone (310) 830-8200  
HFS\_Carson\_Engineering@howmet.com

**AERO-LITE®  
ENGINEERING  
STANDARD**

THIS DRAWING, THE STRUCTURAL DESIGN DISCLOSED THEREIN AND THE TECHNICAL DATA AND ENGINEERING SERVICE REPRESENTED THEREBY ARE THE EXCLUSIVE PROPERTY OF HUCK INTERNATIONAL INCORPORATED.

GRIP NUMBER TABULATION										
GRIP DASH NO.	DESIGN GRIP RANGE		X  ±.005	05	06	08	10	12	14	16
	MIN.	MAX.		Y	Y	Y	Y	Y	Y	Y
				±.010	±.010	±.010	±.010	±.010	±.010	±.010
2	.063	.125	.125	.405	.415	—	—	—	—	—
3	.126	.188	.188	.468	.478	.508	.568	—	—	—
4	.189	.250	.250	.530	.540	.570	.630	.670	.735	—
5	.251	.312	.312	.592	.602	.632	.692	.732	.797	.837
6	.313	.375	.375	.655	.665	.695	.755	.795	.860	.900
7	.376	.438	.438	.718	.728	.758	.818	.858	.923	.963
8	.439	.500	.500	.780	.790	.820	.880	.920	.985	1.025
9	.501	.562	.562	.842	.852	.882	.942	.982	1.047	1.087
10	.563	.625	.625	.905	.915	.945	1.005	1.045	1.110	1.150
11	.626	.688	.688	.968	.978	1.008	1.068	1.108	1.173	1.213
12	.689	.750	.750	1.030	1.040	1.070	1.130	1.170	1.235	1.275
13	.751	.812	.812	1.092	1.102	1.132	1.192	1.232	1.297	1.337
14	.813	.875	.875	1.155	1.165	1.195	1.255	1.295	1.360	1.400
15	.876	.938	.938	1.218	1.228	1.258	1.318	1.358	1.423	1.463
16	.939	1.000	1.000	1.280	1.290	1.320	1.380	1.420	1.485	1.525
17	1.001	1.062	1.062	1.342	1.352	1.382	1.442	1.482	1.547	1.587
18	1.063	1.125	1.125	1.405	1.415	1.445	1.505	1.545	1.610	1.650
19	1.126	1.188	1.188	1.468	1.478	1.508	1.568	1.608	1.673	1.713
20	1.189	1.250	1.250	1.530	1.540	1.570	1.630	1.670	1.735	1.775
21	1.251	1.312	1.312	1.592	1.602	1.632	1.692	1.732	1.797	1.837
22	1.313	1.375	1.375	1.655	1.665	1.695	1.755	1.795	1.860	1.900
23	1.376	1.438	1.438	1.718	1.728	1.758	1.818	1.858	1.923	1.963
24	1.439	1.500	1.500	1.780	1.790	1.820	1.880	1.920	1.985	2.025
25	1.501	1.562	1.562	1.842	1.852	1.882	1.942	1.982	2.047	2.087
26	1.563	1.625	1.625	1.905	1.915	1.945	2.005	2.045	2.110	2.150
27	1.626	1.688	1.688	1.968	1.978	2.008	2.068	2.108	2.173	2.213
28	1.689	1.750	1.750	2.030	2.040	2.070	2.130	2.170	2.235	2.275
29	1.751	1.812	1.812	2.092	2.102	2.132	2.192	2.232	2.297	2.337
30	1.813	1.875	1.875	2.155	2.165	2.195	2.255	2.295	2.360	2.400
31	1.876	1.938	1.938	2.218	2.228	2.258	2.318	2.358	2.423	2.463
32	1.939	2.000	2.000	2.280	2.290	2.320	2.380	2.420	2.485	2.525

DIMENSIONS IN INCHES  
AFTER FINISH

ISSUED	09/19/96	PIN, AERO-LITE® LIGHTWEIGHT PROTRUDING SHEAR (LAP FREE) HEAD, 6AL-4V TITANIUM.(95 KSI SHEAR)	AL10/108()-()-()WD	
	REVISID			09/12/2022
	PAGE			3 OF 3
			AL107	

B  
10

REMOVE HI-KOTE I AND KAL-GARD 2242 FROM PAGE 2. (REF. ECR 2906)