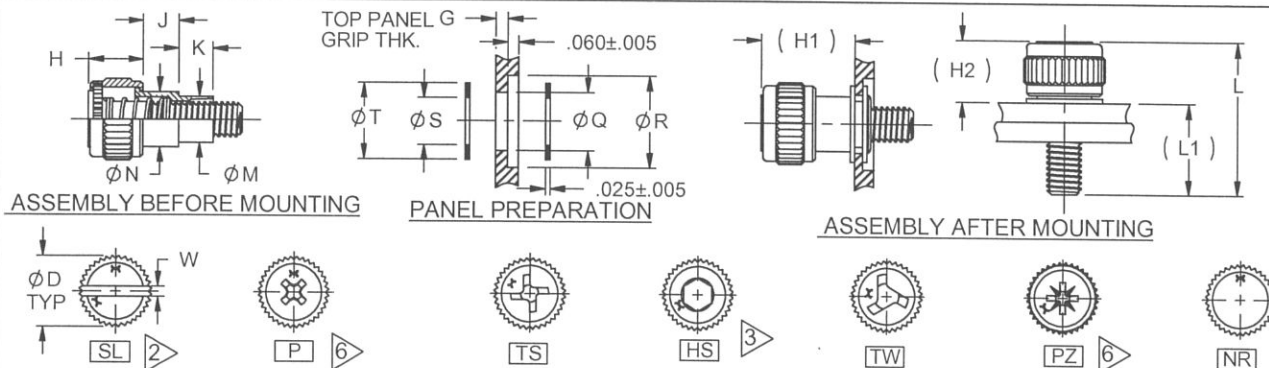


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**TURN-LOC®**  
**ENGINEERING  
STANDARD**



THREAD SIZE CODE	Ø D	H		(H1)		(H2)		J	Ø M ±.005	Ø N ±.005	Ø Q +.004 -.001	Ø R	Ø S +.004 -.001	Ø T ±.010	W	RECESS SIZE			
		HS	P, PZ, SL, TS, TW, NR	HS	P, PZ, SL, TS, TW, NR	HS	P, PZ, SL, TS, TW, NR									P, PZ	TW	TS	HS
4, 4F, M2.5, M3	.325	.339	.269	.549	.479	.389	.319	.176	.177	.206	.250	.390	.185	.309	.040	4	2	2	3/32
6, 6F, M3.5	.356								.202	.241	.272	.406	.209	.333	.044	4	3	4	7/64
8, 8F, M4	.420	.354	.284	.576	.506	.401	.331	.188	.215	.258	.281	.468	.223	.385	.049	6	4	6	9/64
10, 10C, 10F, M5	.451								.250	.297	.316	.500	.257	.415	.055	8	5	8	5/32
12, 12C, 12F, M6	.531	.374	.304	.619	.549	.429	.354	.211	.313	.371	.386	.578	.323	.495	.062	10	6	10	3/16

F ( ) 7500 ( ) - ( ) - ( ) - ( )

LENGTH CODE	4, 4F, M2.5, M3		6, 6F, M3.5		8, 8F, M4		10, 10C, 10F, M5		12, 12C, 12F, M6	
	L		L		L		L		L	
	+ .025 - .015	L1	+ .025 - .015	L1	+ .025 - .015	L1	+ .025 - .015	L1	+ .025 - .015	L1
1	.576	.257	.587	.268	.622	.291	.644	.310	.682	.328
1.5	.607	.288	.619	.300	.655	.324	.676	.342	.714	.360
2	.639	.320	.650	.331	.685	.354	.707	.373	.745	.391
2.5	.702	.383	.713	.394	.748	.417	.770	.436	.808	.454
3	.764	.445	.775	.456	.810	.479	.832	.498	.870	.516
3.5	.827	.508	.838	.519	.873	.542	.895	.561	.933	.579
4	.889	.570	.900	.581	.935	.604	.957	.623	.995	.641
4.5	.952	.633	.963	.644	.998	.667	1.020	.686	1.058	.704
5	1.014	.695	1.025	.706	1.060	.729	1.082	.748	1.120	.766

THREAD SIZE CODE	THREAD SIZE		LEAD	THREAD SIZE CODE	THREAD SIZE		LEAD
4	.112-40 UNC-3A	SINGLE	SINGLE	8F	.164-32 UNC-3A	QUAD	QUAD
6	.138-32 UNC-3A			10F	.190-32 UNF-3A		
8	.164-32 UNC-3A			12F	.250-28 UNF-3A		
10	.190-32 UNF-3A			M2.5	M2.5 x 0.45-4h6h		
12	.250-28 UNC-3A			M3	M3 x 0.5-4h6h		
10C	.190-24 UNC-3A	SINGLE (COARSE)	SINGLE	M3.5	M3.5 x 0.6-4h6h	METRIC	METRIC
12C	.250-20 UNC-3A			M4	M4 x 0.7-4h6h		
4F	.112-40 UNC-3A	DOUBLE	DOUBLE	M5	M5 x 0.8-4h6h		
6F	.138-32 UNC-3A			M6	M6 x 1.0-4h6h		

GRIP CODE	G (TOP PANEL GRIP THICKNESS)	K ±.005
A	.020-.031	.125
B	.032-.093	.187
C	.094-.155	.250
D	.156-.217	.312
E	.218-.279	.375
F	.280-.341	.437

CODE	FINISH
NONE	CLEAR
B	BLACK

RECESS CODE	DRIVING RECESS AND SPECIFICATION	RECESS CODE	DRIVING RECESS AND SPECIFICATION
	SLOT RECESS PER ANSI B18.6.3	PZ	RECESS PER TYPE 1A ANSI B18.6.3
HS	HEX SOCKET RECESS PER ANSI B18.3	TS	RECESS PER MS 33781
NR	NO RECESS	TW	RECESS PER NAS 4000
P	CROSS RECESS PER MS 9006		

F( )7500  
S-0209

ISSUED	4/27/2004
REVISED	3/31/2015
PAGE	1 OF 2

TURN-LOC® LOW PROFILE,  
OPTIONAL RECESS, ALUM KNOB, .031 RADIAL FLOAT

DIMENSIONS IN INCHES

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# Alcoa Fastening Systems & Rings



CURRENT DESIGN ACTIVITY  
CAGE CODE 0HDW7  
AFSR TUCSON OPERATIONS  
3724 EAST COLUMBIA STREET  
TUCSON, ARIZONA 85714  
PHONE (520) 519-7400  
FAX (520) 519-7454

**TURN-LOC®**  
**ENGINEERING  
STANDARD**

INSTALLATION - AVAILABILITY TABLE

GRIP CODE	4, 4F, M2.5, M3, 6, 6F, M3.5									8, 8F, M4									10, 10C, 10F, M5, 12, 12C, 12F, M6								
	1	1.5	2	2.5	3	3.5	4	4.5	5	1	1.5	2	2.5	3	3.5	4	4.5	5	1	1.5	2	2.5	3	3.5	4	4.5	5
A																											
B																											
C	O									O																	
D	O	O	O							O	O	O							O	O							
E	O	O	O	O						O	O	O							O	O	O						
F	O	O	O	O	O					O	O	O	O						O	O	O	O					

- ☐ ASSEMBLIES NOT AVAILABLE  
☐ ARBOR PRESS FORMING TOOL  
☐ INSTALLATION TOOL H8603-( ) OR ARBOR PRESS FORMING TOOL

## MATERIAL

STUD: HS, NR, P, PZ, & SLOT RECESSES  
ALL SIZES - CRES PER ASTM-A-493 OR AMS 5636 (302)  
 STUD: TS AND TW RECESSES  
ALL SIZES - CRES PER AMS 5737 (A-286), HEAT TREAT  
TO 160 KSI MIN. ULTIMATE TENSILE STRENGTH  
 KNOB: ALUMINUM ALLOY PER QQ-A-225/8, OR AMS 4117 (6061), OR EQUIVALENT  
 SLEEVE: ALUMINUM ALLOY PER QQ-A-225/8, OR AMS 4117 (6061), OR EQUIVALENT  
 SPRING: CRES PER ASTM-A313 OR AMS 5688 (302)  
 WASHERS: CRES PER AMS 5901, AMS 5517 OR AMS 5519 (301)

## FINISH

NONE: STUD, SPRING & WASHERS: PASSIVATE PER AMS2700  
 KNOB & SLEEVE: ANODIZE PER MIL-A-8625, TYPE II, CLASS I  
 B: STUD & WASHERS:  
 BLACK OXIDE PER MIL-DTL-13924, CLASS 4 (300 SERIES)  
 BLACK OXIDE PER MIL-DTL-13924, CLASS 3 (A-286)  
 KNOB: BLACK ANODIZE PER MIL-A-8625, TYPE II, CLASS 2

NOTES UNLESS SPECIFIED OTHERWISE:

- 1 LETTERS AT THE END OF PART NUMBER DESIGNATE SPECIAL ASSEMBLIES:  
DL - ASSEMBLIES WITH DRI LUBE THREADS PER AS5272  
PL - ASSEMBLIES WITH PATCH LOCK PER MIL-F-18240
- 2 NO CODE REQUIRED FOR SLOTTED HEADS.
- 3 WHEN USING THE HEX SOCKET CONFIGURATION, ADD .070 TO "L" LENGTH.
- 4 FOR LONGER LENGTHS, ADD .125 INCREMENTS PER LENGTH CODE
- 5 THREAD SIZE CODE
- 6 RECESS IS ONE SIZE SMALLER THAN NOMINAL SIZE REQUIRED FOR 100° FLAT HEAD.
- 7 -3A THREADS PER ASME B1.1. "M" THREADS PER ANSI/ASME B1.13M
- 8 COMPONENTS ARE FINISHED PRIOR TO THE ASSEMBLY PROCESS. DISCOLORATION OF THE BLACK ANODIZE MAY OCCUR ON THE CRIMPED PORTION OF THE KNOB DURING ASSEMBLY. A HIGH-ADHESION BLACK PAINT IS PERMITTED FOR TOUCH-UP AFTER ASSEMBLY.

INSTALLATION TOOLS: ( ) = THREAD SIZE CODE

ARBOR PRESS TOOL HW7600-( ), REMOVAL ADAPTER TOOL FN7505-( ), NOSE PIECE  
HN7513-( ), PULLER HP7523-( ), HANDLE ASSEMBLY TA7533;

COMPLETE HAND TOOL ASSY: H8603-( ) (INCLUDES NOSE PIECE, PULLER & HANDLE)

AE

PER DCN 12953, CHANGED FROM Alcoa Fastening Systems AND AFS  
TO Alcoa Fastening Systems & Rings AND AFSR

ISSUED 4/27/2004  
 REVISED 3/31/2015  
 PAGE 2 OF 2

TURN-LOC®, LOW PROFILE,  
OPTIONAL RECESS, ALUM KNOB, .031 RADIAL FLOAT

TOLERANCE UNLESS  
OTHERWISE NOTED:  
X = ±.05  
XX = ±.02  
XXX = ±.015  
ANGLES ±0.5°

DRAWN BY J. SCHLOBOHM  
 CHECKED BY SIGNATURE ON FILE

**F( )7500**  
**S-0209**

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