

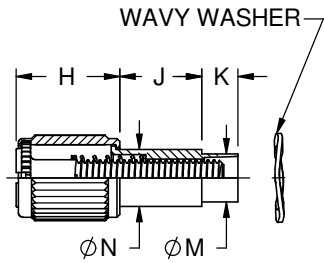
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Alcoa Fastening Systems & Rings

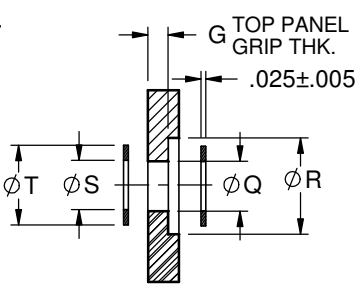


CURRENT DESIGN ACTIVITY
 CAGE CODE 0HDW7
 AFSR TUCSON OPERATIONS
 3724 EAST COLUMBIA STREET
 TUCSON, ARIZONA 85714
 PHONE (520) 519-7400
 FAX (520) 519-7454

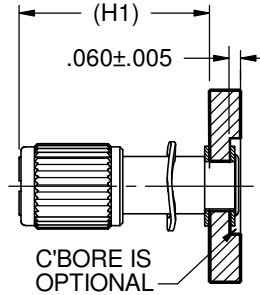
TURN-LOC® ENGINEERING STANDARD



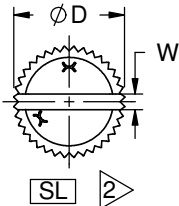
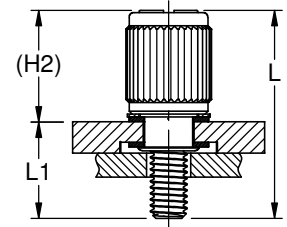
SCREW ASSEMBLY BEFORE MOUNTING



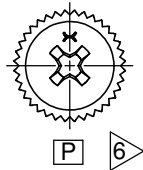
PANEL PREPARATION



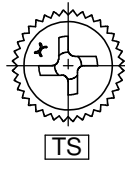
SCREW ASSEMBLY AFTER MOUNTING



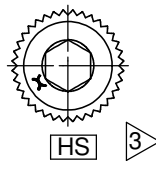
SL 2



P 6



TS



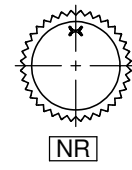
HS 3



TW



PZ 6



NR

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, M3	.325	.444	.374	.746	.676	.493	.423	.265	.177	.206	.250	.390	.185	.309	.040	4	2	2	3/32
6, 6F, M3.5	.356	.449	.379	.764	.694	.509	.439	.280	.202	.241	.272	.406	.209	.333	.044	4	3	4	7/64
8, 8F, M4	.420	.559	.489	.986	.916	.618	.548	.385	.215	.258	.281	.468	.223	.385	.049	6	4	6	9/64
10, 10C, 10F, M5	.451	.599	.529	1.061	.991	.656	.586	.427	.250	.297	.316	.500	.257	.415	.055	8	5	8	5/32
12, 12C, 12F, M6	.531	.604	.534	1.066	.996	.651	.581	.428	.313	.371	.386	.578	.323	.495	.062	10	6	10	3/16

PART NUMBER CALLOUT

FRBWW () 7500 () - () - ()

MODEL

SERIES

LENGTH CODE	4, 4F, M3		6, 6F, M3.5		8, 8F, M4		10, 10C, 10F, M5		12, 12C, 12F, M6	
	L +.025 -.015	L1	L +.025 -.015	L1	L +.025 -.015	L1	L +.025 -.015	L1	L +.025 -.015	L1
1	.639	.216	.650	.211	.685	.137	.832	.246	.745	.164
2	.764	.341	.775	.336	.810	.262	.957	.371	.870	.289
3	.889	.466	.900	.461	.935	.387	1.082	.496	.995	.414
4	1.014	.591	1.025	.586	1.060	.512	1.207	.621	1.120	.539
5	1.139	.716	1.150	.711	1.185	.637	1.332	.746	1.245	.664

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

MATERIAL CODE	WAVY WASHER MATERIAL
2	SPRING STEEL
3	17-7 PH
4	SPRING STEEL

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

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

AA	PER DCN 12955, CHANGED FROM Alcoa Fastening Systems AND AFS TO Alcoa Fastening Systems & Rings AND AFSR, UPDATED FINISH SPECS		TOLERANCE UNLESS OTHERWISE NOTED: .X = ±.05 .XX = ±.02 .XXX = ±.015 ANGLES ±0.5°	DRAWN BY	J. SCHLBOHM
	ISSUED	12/17/2003		CHECKED BY	SIGNATURE ON FILE
	REVISID	3/27/2015		FRBWW()7500 S-0673	
PAGE	1 OF 2				
TURN-LOC®, HIGH PROFILE, OPTIONAL RECESS, ALUM KNOB.031 RADIAL FLOAT					
DIMENSIONS IN INCHES					

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AVAILABILITY TABLE																				
GRIP CODE	4, 6, M3, M3.5					8, M4					10, 10C, M5					12, 12C, M6				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A																				
B						O										O				
C	O					O					O					O				
D	O					O	O				O					O	O			
E	O	O				O	O				O	O				O	O			
F	O	O	O			O	O	O			O	O				O	O	O		

- ASSEMBLIES NOT AVAILABLE
- FULLY RETRACTABLE ASSEMBLIES
- ASSEMBLIES NOT FULLY RETRACTABLE (STUD WILL PROTRUDE BELOW MINIMUM TOP PANEL THICKNESS)

MATERIAL

STUD: HS, NR, P, PZ, & SLOT RECESSES
ALL SIZES - 302 CRES PER ASTM-A-493 OR AMS 5636

STUD: TS AND TW RECESSES
ALL SIZES - A-286 CRES PER AMS 5737, HEAT TREAT TO 160 KSI MIN. ULTIMATE TENSILE STRENGTH

KNOB & SLEEVE : 6061 ALUMINUM ALLOY PER AMS-QQ-A-225/8, OR AMS 4117, OR EQUIVALENT

SPRING: 302 CRES PER ASTM-A-313 OR AMS 5688

WAVY WASHER:
CODE:
2 & 4: SPRING STEEL PER AMS-QQ-S-700 OR EQUIVALENT
3: CRES PER AMS 5528, AMS 5529 OR EQUIVALENT

FLAT WASHER: 301 CRES PER AMS 5901 OR AMS 5519 OR EQUIVALENT



FINISH
STUD, SPRING & FLAT WASHERS: PASSIVATE PER AMS2700
KNOB & SLEEVE: ANODIZE PER MIL-A-8625, TYPE II, CLASS I
WAVY WASHER:
CODE:
2: CAD PLATE PER AMS QQ-P-416, TYPE I, CLASS 2
3: PASSIVATE PER AMS2700
4: CAD PLATE PER AMS QQ-P-416, TYPE II, CLASS 2

NOTES:

- 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-DTL-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 BLACK FINISH IS AN AVAILABLE OPTION. CONSULT AFS ENGINEERING DEPARTMENT
- 6 CROSS 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.

INSTALLATION TOOLS: () INDICATES THREAD SIZE CODE
ARBOR PRESS TOOL HW7600-(), NOSE PIECE HN7513-(), REMOVAL ADAPTER TOOL FNR7505-(),
PULLER HP7523-(), HANDLE ASSEMBLY TA7533;
COMPLETE HAND TOOL ASSEMBLY: H8603-() - INCLUDES NOSE PIECE, PULLER & HANDLE

AA	PER DCN 12955, CHANGED FROM Alcoa Fastening Systems AND AFS TO Alcoa Fastening Systems & Rings AND AFSR, UPDATED FINISH SPECS		TOLERANCE UNLESS OTHERWISE NOTED: .X = ±.05 .XX = ±.02 .XXX = ±.015 ANGLES ±0.5°	DRAWN BY	J. SCHLBOHM
	ISSUED	12/17/2003		CHECKED BY	SIGNATURE ON FILE
	REVISID	3/27/2015		FRBWW()7500	
PAGE	2 OF 2	S-0673			
TURN-LOC®, HIGH PROFILE, OPTIONAL RECESS, ALUM KNOB.031 RADIAL FLOAT			DIMENSIONS IN INCHES		

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AA

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