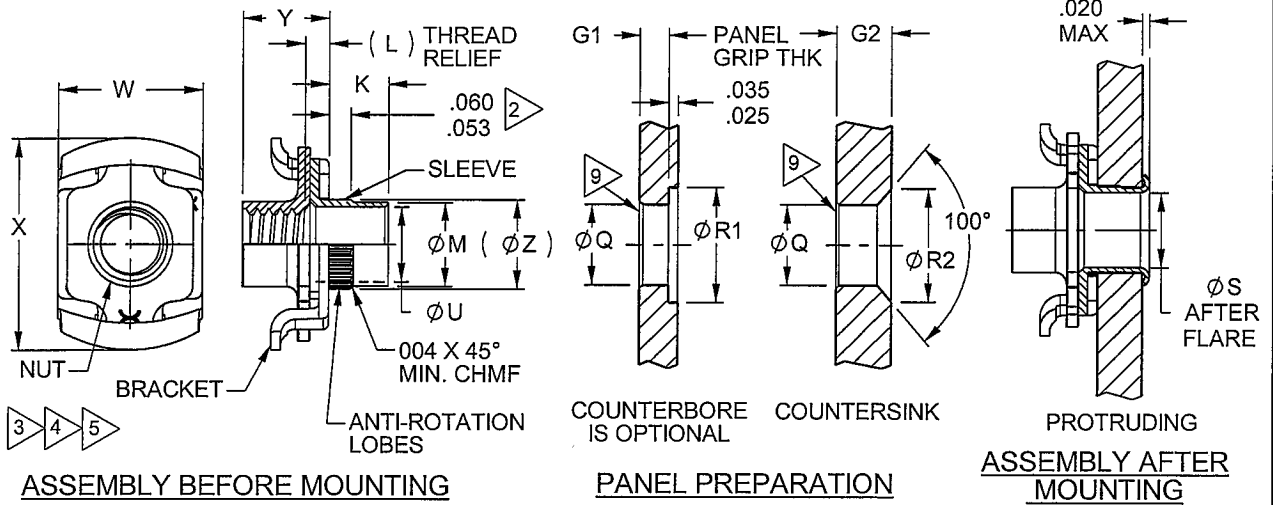


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REV **FF**
S-1415
 DRAWING NO.

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



PART NUMBER CALLOUT

FHF 6010 ()-()-()-()

MODEL

SERIES

3

CODE	NUT TYPE
L	LOCKING
NL	NONLOCKING

NUT HEIGHT CODE	(L)			Y ±.015		
	4, 6	8, 10	12	4, 6	8, 10	12
1	.062	.068	.089	.189	.230	.303
2	.109	.113	.174	.254	.295	.366
3	.172	.176	.237	.317	.357	.428
4	.234	.239	.300	.380	.420	.490

THREAD SIZE CODE	THREAD SIZE PER SAE-AS-8879
4	.112-40 UNJC-3B
6	.138-32 UNJC-3B
8	.164-32 UNJC-3B
10	.190-32 UNJF-3B
12	.250-28 UNJF-3B
10C	.190-24 UNJC-3B
12C	.250-20 UNJC-3B

THREAD SIZE CODE	Ø M		Ø U		Ø Q	Ø R1	Ø R2	Ø S	W	X	(Ø Z)
	MAX	MIN	MAX	MIN	+0.030 -0.000	+0.020 -0.000	±.005	+0.003 -0.000			
4	.153	.149	.126	.123	.1565	.270	.250	.1195	.295	.420	.168
6	.179	.175	.152	.149	.1825	.296	.276	.1455	.295	.420	.193
8	.205	.201	.178	.175	.2085	.322	.302	.1715	.390	.572	.219
10	.231	.227	.204	.201	.2345	.348	.328	.1975	.390	.572	.245
12	.291	.287	.264	.261	.2945	.408	.388	.2575	.450	.650	.305

GRIP CODE	G1	G2	K ±.010
AA	N/A	.055 - .073	.073
A	.031 - .062	.074 - .106	.099
B	.063 - .094	.107 - .133	.130
C	.095 - .125	.134 - .165	.161
D	.126 - .156	.166 - .196	.192
E	.157 - .187	.197 - .227	.223
F	.188 - .218	.228 - .258	.254
G	.219 - .250	.259 - .289	.285
H	.251 - .281	.290 - .320	.316
J	.282 - .312	.321 - .351	.347
K	.313 - .343	.352 - .382	.378
L	.344 - .375	.383 - .413	.409
M	.375 - .405	.414 - .444	.440
N	.406 - .436	.445 - .475	.471
P	.437 - .467	.476 - .506	.502
R	.468 - .498	.507 - .537	.533
S	.499 - .529	.538 - .568	.564
T	.530 - .560	.569 - .599	.595
U	.561 - .591	.600 - .630	.626
V	.592 - .622	.631 - .661	.657
W	.623 - .653	.662 - .692	.688
X	.654 - .684	.693 - .723	.719
Y	.685 - .715	.724 - .754	.750

FF	DCN 6678	06-25-08
REV	DESCRIPTION/EC NO.	DATE
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES		
TOLERANCE UNLESS OTHERWISE NOTED: X = ±.05 ANGLES ±0.5° XX = ±.02 XXX = ±.015		

Alcoa Fastening Systems
 AEROSPACE FASTENER DIVISION
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 TUCSON, ARIZONA 85714
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 FAX 520 519-7427
 www.huckaerospace.com

TITLE NUT PLATE, RIVETLESS, (450° F), REDUCED DIAMETER SLEEVE			
DATE 03/27/2006	PART NO. FHF6010		
DRAWN JLS	DRAWING NO. S-1415		
CHECK <i>[Signature]</i>	CAGE CODE 0HDW7	REV FF	
APPROVE	SCALE: 2:1		SHEET 1 OF 4

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REV **FF**

DRAWING NO. **S-1415**

DRAWING NO.

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MATERIAL:
 SLEEVE: CRES PER AMS 5639 (304) OR AMS 5514 (305)

NUT: 1050 CARBON STEEL PER AMS 5085, H.T. TO
 160 KSI MIN ULTIMATE TENSILE STRENGTH

BRACKET: 1050 CARBON STEEL PER AMS 5085, H.T. TO HRC 42-47

FINISH CODE:
 ALL COMPONENTS: CAD PLATE PER AMS QQ-P-416, TYPE II, CLASS 2 (YELLOW)
 NUT: DRI-FILM LUBRICANT PER MIL-PRF-46010

NOTES:

- 1 "AA" GRIP RECOMMENDED PANEL PREPARATION:
 SIZES 12, 12C MIN. PANEL THICKNESSES .060
 SIZE 4: "R2" DIMENSION .209
 SIZE 6: "R2" DIMENSION .235
 SIZE 8: "R2" DIMENSION .258
 SIZES 10,10C: "R2" DIMENSION .300
- 2 LOBE HEIGHTS FOR "AA" & "A" GRIPS: .023/.030 – "R2" DIMENSION .275
- 3 A MINIMUM OF TWO THREADS ARE DEFORMED TO PRODUCE SELF-LOCKING ACTION PER NASM25027 WHEN LOCKING FEATURE IS REQUIRED.
- 4 NUT ELEMENT HAS .060 TOTAL RADIAL FLOAT WITHIN THE BRACKET.
- 5 FOR NUT ELEMENT REPLACEMENT P/N SEE DWG. S-0877.
- 6 NUT ELEMENT REMOVAL TOOL AVAILABLE, P/N RB 6527.
- 7 NUT ELEMENT COLOR CODE: (PCD 160147)
 NONE (NATURAL DARK GRAY)– LOCKING STANDARD THREADS
 GREEN - NONLOCKING STANDARD THREADS
 YELLOW – COARSE THREADS
- 8 FOR HIGH VOLUME INSTALLATION RATES, ALTERNATE POWER TOOLING IS AVAILABLE. PLEASE CONTACT AFS INSTALLATION SYSTEMS FOR MORE INFORMATION
- 9 .010 X 45° CHAMFER REQUIRED FOR INSTALLATIONS IN 7075 AND 7050 ALLUMINUM ALLOYS.
- 10 COMPLETE HAND TOOL ASSEMBLY INCLUDES NOSE PIECE, PULLER AND HANDLE

HAND INSTALLATION TOOL SELECTION TABLE				
COMPLETE HAND TOOL ASSEMBLY		PULLER	NOSE PIECE	
C'BORE	C'SINK		C'BORE	C'SINK
DCBT8601(-)	DCST8601(-)	DTP86231(-)	DCBN86131(-)	DCSN86131(-)
() = THREAD SIZE CODE				

INSTALLATION TOOLS:
 ARBOR PRESS TOOL HW (*) 7659(-)
 ANVIL HW (*) 7658(-)
 FORMER HW (*) 7657(-)

HAND INSTALLATION TOOLS:
 NOSE PIECE
 PULLER
 HANDLE ASSEMBLY TA7533

* "B" DESIGNATES C'BORE
 "S" DESIGNATES C'SINK

FF	DCN 6678	06-25-08
REV	DESCRIPTION/EC NO.	DATE

UNLESS OTHERWISE SPECIFIED
 ALL DIMENSIONS IN INCHES
 TOLERANCE UNLESS OTHERWISE NOTED:
 X = ±.05 ANGLES ±0.5°
 XX = ±.02
 XXX = ±.015


Alcoa Fastening Systems
ALCOA

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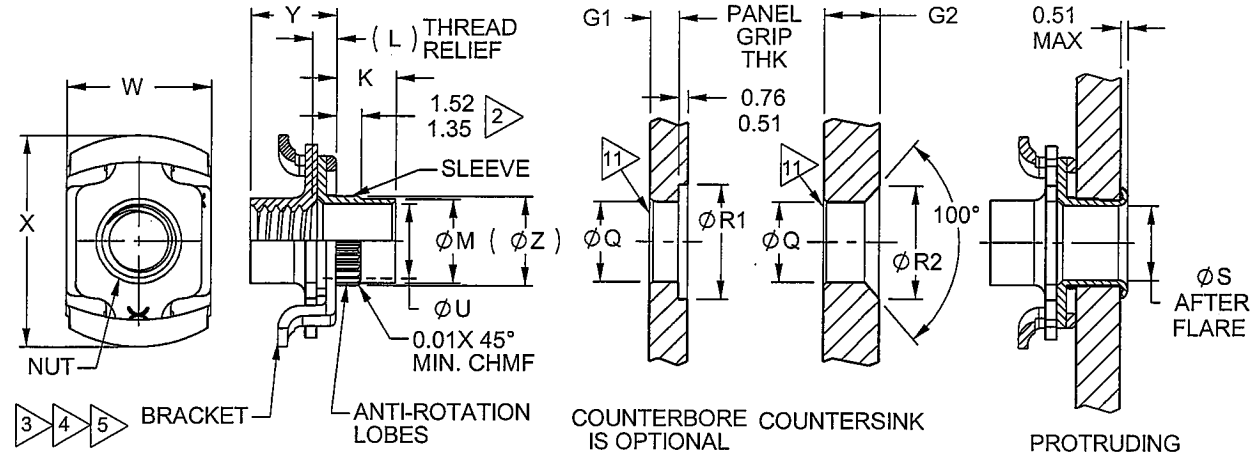
TITLE NUT PLATE, RIVETLESS, (450° F), REDUCED DIAMETER SLEEVE			
DATE 03/27/2006	PART NO. FHF6010		
DRAWN JLS	DRAWING NO. S-1415		
CHECK <i>[Signature]</i>	CAGE CODE 0HDW7	REV FF	
APPROVE	SCALE: 2:1		SHEET 2 OF 4

REV FF

DRAWING NO. S-1415

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ASSEMBLY BEFORE MOUNTING

COUNTERBORE COUNTERSINK IS OPTIONAL

PANEL PREPARATION

ASSEMBLY AFTER MOUNTING

PART NUMBER CALLOUT

FHF 6010 ()-()-()-()

MODEL SERIES

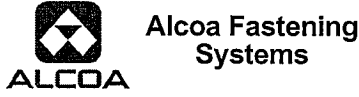
THREAD SIZE CODE	Ø M		Ø U		Ø Q	Ø R1	Ø R2	Ø S	W	X	(Ø Z)
	MAX	MIN	MAX	MIN	+0.080 -0.000	+0.51 -0.00	±0.13	+0.51 -0.00			
3	4.04	3.94	3.35	3.28	4.128	7.01	6.50	3.19	7.49	10.67	4.42
3.5	4.55	4.45	3.86	3.79	4.636	7.52	7.01	3.70	7.49	10.67	4.90
4	5.03	4.93	4.34	4.27	5.118	8.00	7.50	4.17	9.91	14.53	5.39
5	6.04	5.94	5.33	5.27	6.134	9.02	8.51	5.19	9.91	14.53	6.40
6	7.04	6.94	6.35	6.27	7.125	10.00	9.50	6.18	11.43	16.51	7.39

NUT HEIGHT CODE	(L)			Y ±0.38		
	3 & 3.5	4 & 5	6	3 & 3.5	4 & 5	6
1	1.57	1.73	2.26	4.80	5.84	7.69
2	2.77	2.87	4.42	6.45	7.49	9.29
3	4.37	4.47	6.02	8.05	9.07	10.87
4	5.94	6.07	7.62	9.65	10.67	12.44

GRIP CODE	GRIP RANGE	GRIP RANGE	K
AA	N/A	1.40 - 1.85	1.85
A	0.79 - 1.57	1.85 - 2.69	2.51
B	1.58 - 2.39	2.70 - 3.38	3.30
C	2.40 - 3.18	3.39 - 4.19	4.09
D	3.19 - 3.96	4.20 - 4.98	4.88
E	3.97 - 4.75	4.99 - 5.77	5.66
F	4.76 - 5.54	5.78 - 6.55	6.45
G	5.55 - 6.35	6.56 - 7.34	7.24
H	6.36 - 7.14	7.35 - 8.13	8.03
J	7.15 - 7.92	8.14 - 8.92	8.81
K	7.93 - 8.71	8.93 - 9.70	9.60
L	8.72 - 9.50	9.71 - 10.49	10.39
M	9.51 - 10.29	10.50 - 11.28	11.18
N	10.30 - 11.07	11.29 - 12.07	11.96
P	11.08 - 11.86	12.08 - 12.85	12.75
R	11.87 - 12.65	12.86 - 13.64	13.54
S	12.66 - 13.44	13.65 - 14.43	14.33
T	13.45 - 14.22	14.44 - 15.21	15.11
U	14.23 - 15.01	15.22 - 16.00	15.90
V	15.02 - 15.80	16.01 - 16.79	16.69
W	15.81 - 16.59	16.80 - 17.58	17.48
X	16.60 - 17.37	17.59 - 18.36	18.26
Y	17.38 - 18.16	18.37 - 19.15	19.05

THREAD SIZE CODE	THREAD SIZE PER ASME B1.21M
M3	MJ3 x 0.5-4h6h
M3.5	MJ3.5 x 0.6-4h6h
M4	MJ4 x 0.7-4h6h
M5	MJ5 x 0.8-4h6h
M6	MJ6 x 1.0-4h6h

CODE	NUT TYPE
L	LOCKING
NL	NONLOCKING



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TITLE
**METRIC NUT PLATE,
RIVETLESS, (450° F),
REDUCED DIAMETER SLEEVE**

DATE 03/27/2006	PART NO. FHF6010
DRAWN JLS	DRAWING NO. S-1415
CHECK <i>[Signature]</i>	CAGE CODE 0HDW7
APPROVE	REV FF
SCALE: 2:1	
SHEET 3 OF 4	

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REV **FF**

DRAWING NO. **S-1415**

DRAWING NO.

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MATERIAL:
SLEEVE: CRES PER AMS 5639 (304) OR AMS 5514 (305)

NUT: 1050 CARBON STEEL PER AMS 5085, H.T. TO 1,100 MPa

BRACKET: 1050 CARBON STEEL PER AMS 5085, H.T. TO HRC 42-47

FINISH CODE:
ALL COMPONENTS: CAD PLATE PER AMS QQ-P-416, TYPE I I, CLASS 2 (YELLOW)
NUT: DRI-FILM LUBRICANT PER MIL-PRF-46010

NOTES:

- 1 "AA" GRIP RECOMMENDED PANEL PREPARATION:
SIZE M6: MIN. PANEL THICKNESSES 1.52
SIZE M3: "R2" DIMENSION 5.46
SIZE M3.5: "R2" DIMENSION 5.97
SIZE M4: "R2" DIMENSION 6.38
SIZES M5: "R2" DIMENSION 7.80
- 2 LOBE HEIGHTS FOR "AA" & "A" GRIPS: 0.58/0.76
- 3 A MINIMUM OF TWO THREADS ARE DEFORMED TO PRODUCE SELF-LOCKING ACTION PER NASM25027 WHEN LOCKING FEATURE IS REQUIRED.
- 4 NUT ELEMENT HAS 1.52 TOTAL RADIAL FLOAT WITHIN THE BRACKET.
- 5 FOR NUT ELEMENT REPLACEMENT P/N SEE DWG. S-0877.
- 6 NUT ELEMENT REMOVAL TOOL AVAILABLE, P/N RB 6527.
- 7 NUT ELEMENT COLOR CODE: (PCD 160147)
BLUE - METRIC THREADS
- 8 FOR HIGH VOLUME INSTALLATION RATES, ALTERNATE POWER TOOLING IS AVAILABLE. PLEASE CONTACT AFS INSTALLATION SYSTEMS FOR MORE INFORMATION
- 9 ALL DIMENSIONS ARE IN MILLIMETERS SHEETS 3 & 4.
- 10 TOLERANCES ARE ±0.38mm UNLESS SPECIFIED OTHERWISE.
- 11 0.25mm X 45° CHAMFER REQUIRED FOR INSTALLATIONS IN 7075 AND 7050 ALUMINUM ALLOYS.
- 12 COMPLETE HAND TOOL ASSEMBLY INCLUDES NOSE PIECE, PULLER AND HANDLE

HAND INSTALLATION TOOL SELECTION TABLE

COMPLETE HAND TOOL ASSEMBLY	PULLER	NOSE PIECE	
		C'BORE	C'SINK
DCBT8601(-)	DCST8601(-)	DTP86231(-)	DCBN86131(-)
() = THREAD SIZE CODE			

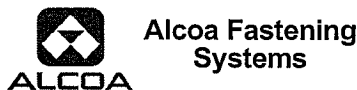
INSTALLATION TOOLS:
ARBOR PRESS TOOL HW (*) 7659(-)
ANVIL HW (*) 7658(-)
FORMER HW (*) 7657(-)

* B" DESIGNATES C'BORE
"S" DESIGNATES C'SINK

HAND INSTALLATION TOOLS:
NOSE PIECE
PULLER
HANDLE ASSEMBLY TA7533

FF	DCN 6678	06-25-08
REV	DESCRIPTION/EC NO.	DATE

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS IN MILLIMETERS
TOLERANCE UNLESS OTHERWISE NOTED:
X = ±1.25 ANGLES ±0°30'
XX = ±0.5
XXX = ±0.4



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TITLE METRIC NUT PLATE, RIVETLESS, (450° F), REDUCED DIAMETER SLEEVE	
DATE 03/27/2006	PART NO. FHF6010
DRAWN JLS	DRAWING NO. S-1415
CHECK <i>[Signature]</i>	CAGE CODE 0HDW7
APPROVE	REV FF
SCALE: 2:1 SHEET 4 OF 4	