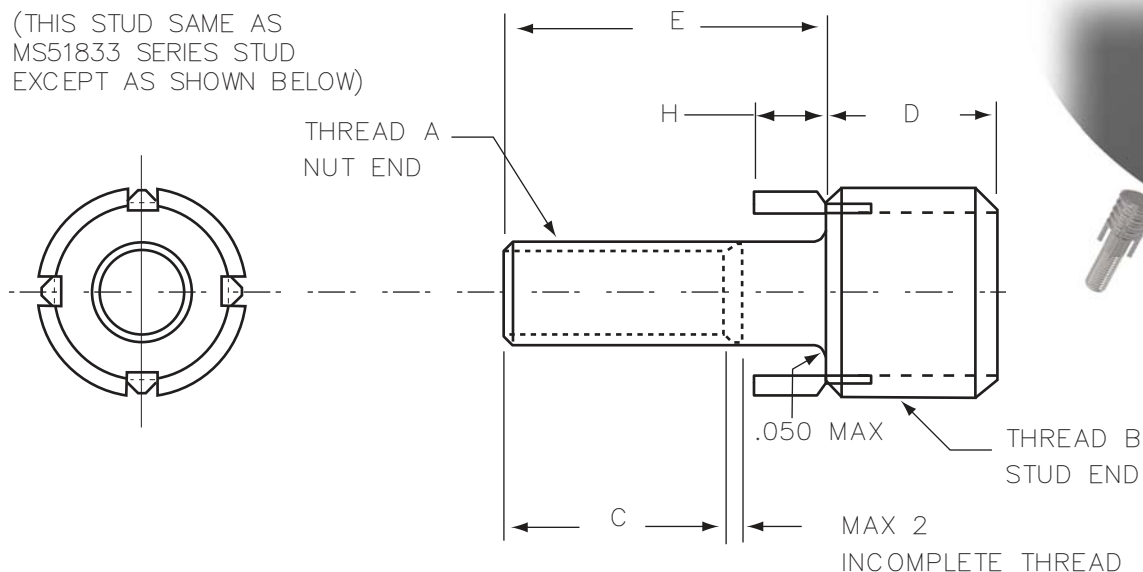




(THIS STUD SAME AS  
MS51833 SERIES STUD  
EXCEPT AS SHOWN BELOW)



PART NUMBER RA2004	A NUT END THREAD UNJF-3A	B STUD END THRD MOD MINOR Ø		C	D	E	H	NO. OF KEYS	STUD MATERIAL ①	LOCKING KEY MATERIAL ④
		THREAD UNC-2A	MINOR Ø REF							
RA2004-1	.250-28	.375-16	.320 .312	.470	.370	.688	.190	2	A	D
RA2004-2	-.250-28	.375-16	.320 .312	.470	.370	.625	.190	2	B	D
RA2004-3	.3125-24	.4375-14	.383 .375	.530	.430	.875	.190	4	C	D
RA2004-4	.3125-24	.4375-14	.383 .375	.690	.430	.875	.190	4	C	D
RA2004-5	.500-20	.625-11	.565 .551	.780	.620	1.062	.190	4	C	D
RA2004-6	.375-24	.5625-12	.503 .495	.640	.843	1.000	.190	4	C	D
RA2004-7	.190-32	.3125-18	.256 .249	.410	.310	.562	.160	2	B	D

RA2004-6 SAME AS MS51834 EXCEPT STUD END LENGTH

CAGE CODE <b>63EM5</b>	DWG NO. <b>RA2004</b> REV: NC SHEET 1 OF 2	Drawn by: <i>Chris Havel</i>	Date: 6/30/11
		Approved by: <i>[Signature]</i>	Date: 06/30/2011



# ROLAND AEROSPACE

MANUFACTURER OF SPECIALIZED JET ENGINE COMPONENTS  
13429 Western Ave. Gardena, California 90249

PART NUMBER RA2004	A NUT END THREAD UNJF-3A	B STUD END THRD MOD MINOR Ø		C	D	E	H	NO. OF KEYS	STUD MATERIAL ⚠	LOCKING KEY MATERIAL ⚠
		THREAD UNC-2A	MINOR Ø REF							
RA2004-8	.190-32	.3125-18	.256 .249	.440 .380	.327 .297	2.155 2.095	.160	2	B	F
RA2004-9	.190-32	.3125-18	.256 .249	.410	.319	.562	.160	2	B	F
RA2004-10	.250-28	.375-16	.320 .312	.470	.370	.625	.190	2	B	F
RA2004-11	.250-28	.375-16	.320 .312	.500 .440	.780 .720	.630 .570	.190	2	C	F
RA2004-12	.190-32	.3125-18	.256 .249	.875	.327 .297	1.077 1.047	.160	2	C	F

## NOTES

- 1) MATERIAL CODE:      A - ALLOY STEEL GRADE 4140 PER MIL-S-5626 OR  
GRADE 8740 PER AMS 6322
- B - 718 PER AMS-5662
- C - A-286 PER AMS-5731 OR AMS - 5737 (140 KSI MIN.)
- 2) HEAT TREAT               :      A - ALLOY STEEL (160 KSI MIN), (RC36-40) I.A.W. MIL-H-6875H
- B - 718 AGE HARDENED (180 KSI MIN.)
- C - A-286 - AMS-5731 ONLY (140 KSI MIN.)
- 3) SURFACE TREATMENT: ALLOY STEEL SHALL BE CADMIUM PLATED I.A.W. QQ-P-416,  
TYPE II, CLASS 3.
- ALLOYS 718 AND A-286 SHALL BE PASSIVATED I.A.W. QQ-P-35C  
OR AMS-QQ-P-35.
- 4) MATERIAL LOCKING KEYS:      D - 302 STAINLESS STEEL PER ASTM-A580 "CHEMISTRY ONLY"
- F - 420 STAINLESS STEEL PER QQ-S-763 "CHEMISTRY ONLY"  
HARDNESS TO BE RC50 MINIMUM
- 5) PERFORMANCE:      I.A.W. MILS-45915
- 6) INSTALLATION OF STUDS PER MS51835
- 7) DIMENSIONS AND TOLERANCES INTERERPRETED PER ANSI Y14.5M
- 8) FINISHED STUDS SHALL BE FREE FROM ALL HANGING BURRS OR SLIVERS THAT MIGHT BE  
DISLODGED DURING INSTALLATION.
- 9) THREADS: STUD END-I.A.W. FED-STD-H28 EXCEPT MODIFIED  
MINOR DIAMETERS SPECIFIED HEREIN.  
NUT END - I.A.W. MIL-S-8879

CAGE CODE  <b>63EM5</b>	DWG NO. <b>RA2004</b>  REV: NC SHEET 2 OF 2	Drawn by: <i>[Signature]</i>	Date: <i>6/30/11</i>
		Approved by: <i>[Signature]</i>	Date: 06/30/2011