

NATIONAL AEROSPACE STANDARD

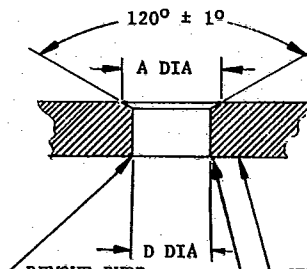
AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W., WASHINGTON, D. C. 20036

REMOVE BURR (ALL SURF.)
DO NOT USE TOOL THAT
WILL CHAMFER HOLE



UNDER STRUCTURE
ROCKWELL HARDNESS
B90 AND UNDER

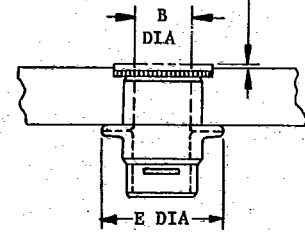
TYPE 1
HOLE PREPARATION



REMOVE BURR
(ALL SURF.)

TYPE 2
HOLE PREPARATION

C FLUSHNESS REQUIREMENT



UNDER STRUCTURE
ROCKWELL HARDNESS
B91 THRU B98

AFTER INSTL

SPOTFACE WHEN REQUIRED
SEE NOTE 6

TABLE 1

REQUIREMENT IDENTIFIER CALLOUT	A DIA COUNTERSINK		B DIA AFTER INSTL		C FLUSHNESS		D HOLE DIA		E DIA MAX
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
NAS1733 -04	.165	.175	.118	.123	-.005	+.003	.155	.157	.240
NAS1733 -06	.201	.211	.140	.145	-.005	+.003	.189	.192	.265
NAS1733 -08	.232	.242	.167	.171	-.005	+.003	.221	.224	.312
NAS1733 -3	.252	.262	.192	.195	-.005	+.004	.242	.245	.372
NAS1733 -4	.340	.350	.252	.255	-.005	+.005	.328	.332	.476
NAS1733 -5	.413	.423	.315	.318	-.005	+.005	.397	.401	.564
NAS1733 -6	.497	.507	.377	.380	-.005	+.005	.472	.477	.662
NAS1733 -7	.562	.572	.439	.442	-.005	+.005	.540	.545	.703
NAS1733 -8	.642	.652	.502	.505	-.005	+.005	.615	.620	.798
NAS1733 -9	.713	.723	.564	.567	-.005	+.005	.689	.694	.882
NAS1733 -10	.788	.798	.627	.630	-.005	+.005	.770	.775	.967
NAS1733 -12	.948	.958	.752	.755	-.005	+.005	.919	.924	1.135

INACTIVE FOR DESIGN
AFTER 31 DECEMBER 1979
NO SUPERSEDING STANDARD

TABLE 2
NUT INSTALLATION

LIST OF CURRENT SHEETS	
SHEET NO.	REVISION
1	1
2	1

REQUIREMENT IDENTIFIER CALLOUT	NUT INSTALLATION TOOLS (HI-SHEAR)				INSTALLATION PRESSURE LBS + 50 LBS	HI-SHEAR GUNS BG SERIES NO. PRESS. SET LB
	PRODUCTION DRAWING CALLOUT REF	ANVIL	CHUCK	MANDREL NUT GRIP 0 TO 1 IN. 1 TO 2 IN.		
NAS1733 -04	NAS1731 -04-* NAS1732 -04-*	DA11-440	C1-5	DM1-440	900	BG 1750 500 - 450
NAS1733 -06	NAS1731 -06-* NAS1732 -06-*	DA11-632	C1-632	DM1-632	1,550	BG 1750 800 - 750
NAS1733 -08	NAS1731 -08-* NAS1732 -08-*	DA11-832	C1-832	DM1-832	2,000	BG 1750 1000 - 950
NAS1733 -3	NAS1731 -3-* NAS1732 -3-*	DA22-3	DC2-3	DM5-1032	2,400	BG 2500 575 - 525
NAS1733 -4	NAS1731 -4-* NAS1732 -4-*	DA22-4	DC2-4	DM5-428	3,850	BG 2500 950 - 900
NAS1733 -5	NAS1731 -5-* NAS1732 -5-*	DA22-5	DC2-5	DM5-524	5,200	BG 2500 1200 - 1150
NAS1733 -6	NAS1731 -6-* NAS1732 -6-*	DA22-6	DC2-6	DM5-624	8,550	BG 2500 1900 - 1850
NAS1733 -7	NAS1731 -7-* NAS1732 -7-*	DA31-720	DC3-720	DM5-720	10,850	BG 4280 1400 - 1300
NAS1733 -8	NAS1731 -8-* NAS1732 -8-*	DA31-820	DC3-820	DM5-820	14,550	BG 4280 1800 - 1650
NAS1733 -9	NAS1731 -9-* NAS1732 -9-*	DA31-918	DC3-918	DM5-918	18,550	BG 4280 2250 - 2100
NAS1733 -10	NAS1731 -10-* NAS1732 -10-*	DA31-1018	DC3-1018	DM5-1018	22,550	BG 4280 2650 - 2550
NAS1733 -12	NAS1731 -12-* NAS1732 -12-*	DA31-1216	DC3-1216	DM5-1216	30,550	BG 4280 3250 - 3200

* SECOND DASH NUMBER INDICATES GRIP RANGE

CUSTODIAN: NATIONAL AEROSPACE STANDARDS COMMITTEE

PROCUREMENT SPECIFICATION	TITLE	CLASSIFICATION
		DESIGN STANDARD
NONE	NUT, BLIND, SERRATED HEAD, SELF- LOCKING, INSTALLATION DATA FOR	NAS1733 SHEET 1 OF 2

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NATIONAL AEROSPACE STANDARD

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC., 1725 DE SALES STREET, N. W., WASHINGTON, D. C. 20036

HOLE PREPARATION

TYPE 1 - DRILL D- DIAMETER HOLE. SEE TABLE 1.

TYPE 2 - DRILL D DIAMETER HOLE PLUS 120° COUNTERSINK TO THE A DIAMETER. SEE TABLE 1.

NUT INSTALLATION

THE VARIOUS TOOLS AND GUN PRESSURE SETTINGS SHOWN IN TABLE 2 ARE REQUIRED FOR THE INSTALLATION OF THE SERRATED HEAD BLIND NUT.

NOTES:

1. TO INSURE ENOUGH WORKING CLEARANCE TO FORM THE NUT BELLOWS, AND ENOUGH CLEARANCE TO REMOVE THE MANDREL FROM THE NUT, THE FOLLOWING ANVIL TO MANDREL SETTINGS ARE RECOMMENDED.
 - 1.1 FOR NUT GRIP RANGE -1, -2 AND -3
WITH THE MANDREL IN THE RETRACTED POSITION, THE SHANK OF THE MANDREL EXTENDS BEYOND THE ANVIL FACE .000 TO .040
 - 1.2 FOR NUT GRIP RANGE -4 THRU -16
WITH THE MANDREL IN THE RETRACTED POSITION, THE SHANK OF THE MANDREL EXTENDS BEYOND THE ANVIL FACE .060 TO .125
 - 1.3 FOR NUT GRIP RANGE -17 THRU -24
WITH THE MANDREL IN THE EXTENDED POSITION, SCREW THE NUT ALL THE WAY ON THE MANDREL. A MINIMUM OF .187 TO A MAXIMUM OF .500 EXISTS BETWEEN THE ANVIL FACE AND HEAD OF NUT.
 - 1.4 FOR NUT GRIP RANGE -25 AND ON
WITH THE MANDREL IN THE EXTENDED POSITION, SCREW THE NUT ALL THE WAY ON THE MANDREL. A MINIMUM OF .187 MUST EXIST BETWEEN THE ANVIL FACE AND HEAD OF NUT.
2. AFTER THE PROPER MANDREL TO ANVIL FACE SETTING IS MADE, SCREW THE NUT ALL THE WAY ON THE MANDREL. INSERT THE NUT INTO THE HOLE. WITH THE GUN SET AT THE RECOMMENDED PRESSURE FOR THE NUT BEING INSTALLED, TABLE 2, PROCEED WITH THE PULLING OPERATION.
3. IN FUEL AREAS IT IS RECOMMENDED THAT THE NUTS BE CLEANED AND THAT THE OUTER SURFACE OF THE NUT BE COATED WITH A GENERAL SEALANT PRIOR TO INSTALLATION. SEALANT TO BE MIL-S-8802 OR EQUIVALENT.
4. NUT SHALL BE INSTALLED FLUSH WITHIN THE TOLERANCE SPECIFIED IN COLUMN C TABLE 1.
5. THE INSIDE DIMENSION B OF THE UNTHREADED PORTION OF THE NUT SHALL BE WITHIN THE LIMITS SPECIFIED IN TABLE 1 AFTER INSTALLATION.
6. SPOTFACE UNDER SURFACE OF STRUCTURE IS REQUIRED FOR NUT BELLOWS IF THE ANGLE NORMAL TO THE CENTERLINE OF THE HOLE AND THE UNDER SURFACE EXCEEDS 30°. THE SPOTFACE DIAMETER SHALL BE A MINIMUM OF .050 LARGER THAN THE E DIAMETER FOR THE NUT BELLOWS.
7. THE CENTERLINE OF THE INSTALLED NUT SHALL BE NORMAL TO THE STRUCTURE SURFACE IN WHICH THE NUT HEAD IS SEATED. A TOLERANCE OF 1° MAX IS PERMITTED.

NUT REMOVAL

REMOVAL OF A DAMAGED OR IMPROPERLY INSTALLED NUT MAY BE ACCOMPLISHED BY DRILLING OUT THE NUT HEAD WITH THE SAME SIZE DRILL AS REQUIRED FOR THE NUT HOLE PREPARATION. TO REPLACE THE DAMAGED NUT, FOLLOW THE SAME PROCEDURE OUTLINED FOR THE ORIGINAL INSTALLATION.

RECOMMENDED PRODUCTION DRAWING CALLOUT FOR NUT INSTALLATION

EXAMPLE OF REQUIREMENT IDENTIFIER CALLOUT:

INSTALL PER NAS1733 - 4 - 1

1 - 1 INDICATES TYPE 1 HOLE PREPARATION FOR UNDER STRUCTURE, ROCKWELL HARDNESS B90 AND UNDER

2 - 2 INDICATES TYPE 2 HOLE PREPARATION FOR UNDER STRUCTURE, ROCKWELL HARDNESS B91 THRU B98

INDICATES HOLE SIZE AND INSTALLATION DATA FOR INSTALLING NAS1731 OR NAS1732 NUT HAVING .2500-28 THREAD

BASIC DESIGN STANDARD NUMBER

1 INACTIVE FOR DESIGN
AFTER 31 DECEMBER, 1979
NO SUPERSEDING STANDARD

NAS1733
SHEET 2

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