CHERRY® AEROSPACE
SPS Fastener Division, a PCC Company

U.S. PATENT
7,059,816

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RETAINER ①

B

A

② FLOATING NUT ELEMENT

D

F

G DIA.

C

L

E

RETAINING CLIP

NUT RETAINER

NUT ELEMENT (REPLACEABLE)

-3

MANUFACTURER'S IDENTIFICATION ④

③ SIZE DESIGNATION (OPTIONAL)

SLEEVE

03

⑤ GRIP IDENTIFICATION

MANDREL (DISPOSABLE)

MINIMUM GRIP

STRUCTURE

INSTALLATION TOOLING ⑥

HOLE SIZE

Z DIA ⑦

PREPARE HOLE

INSERT ASSEMBLY, PULL MANDREL

INSTALLED NUT PLATE
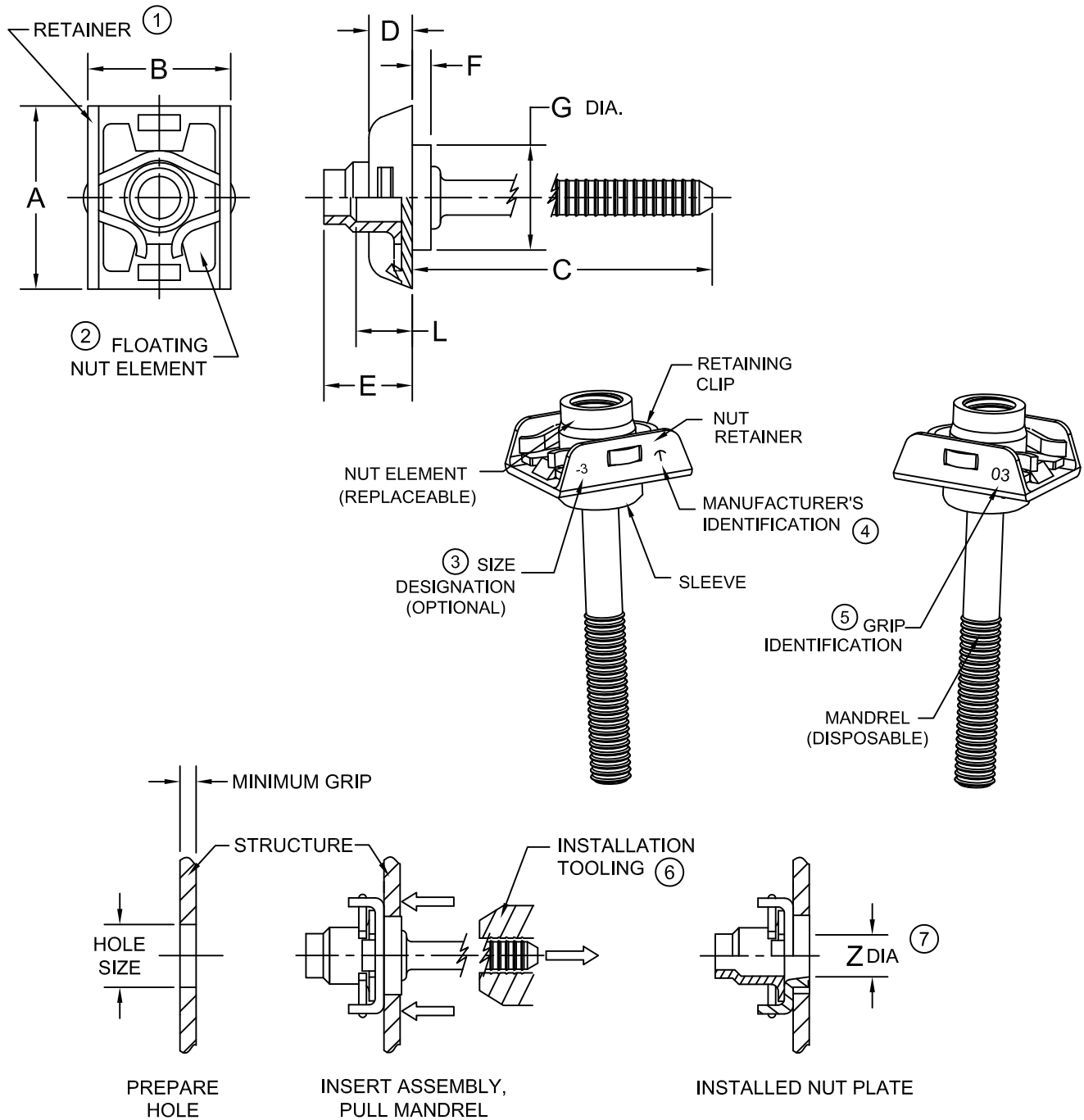
NUT PLATE INSTALLATION SEQUENCE

SEE SHEET 2 FOR DIMENSIONS

NOTICE : ALL DIMENSIONS ARE IN INCHES AND APPLY AFTER FINISH AND BEFORE LUBRICATION UNLESS OTHERWISE SPECIFIED.

WARNING : FASTENERS MAY NOT PERFORM PROPERLY IF ALTERED FROM THE MANUFACTURER'S AS-SHIPPED CONDITION OR INSTALLED IN CONDITIONS OTHER THAN SPECIFIED HEREIN.

PROCUREMENT SPECIFICATION : NASM25027 ⑪	CHERRY® RIVETLESS NUT PLATE 0.030 INCH BOLT CLEARANCE FOR CARBON COMPOSITE APPLICATIONS	SHEET 1 OF 5	PART NUMBER
		ISSUE 11-05-07	CNP53
NAS 523 CODE : - - -		REV. K 2-11-13	

Form No. 1141-05-10, Rev. G, 3 Apr 2007, DCR# 07-0425

ASSEMBLY DIMENSIONS

FASTENER DIAMETER DESIGNATION	THREAD SIZE (8)	C'BORE DASH NO.	L MIN	A MAX	B MAX	C REF	D REF	E MAX	Z (7) MIN	INSTALLATION HOLE SIZE	RETAINING CLIP
-3	.1900-32 UNJF-3B	-1	.076	.595	.490	1.450	.245	.258	.218	.275/.278	NAS1795-3
		-2	.135					.320			
		-3	.198					.383			
		-4	.260					.446			
		-5	.323					.508			

NUTPLATE GRIP SELECTION

GRIP DASH NO.	MINIMUM GRIP (in) (12)	F REF	G REF	MAXIMUM GRIP
-03	.125	.110	.275	BASED ON CUSTOMER APPLICATION. CONSULT CHERRY FOR OPTIONS

MECHANICAL PROPERTIES

FASTENER			AXIAL TENSILE STRENGTH OF ALLOY STEEL AND CRES AT ROOM TEMPERATURE (lbf, MINIMUM)	ASSEMBLY MECHANICAL PROPERTIES (9)	
DIAMETER DESIGNATION		THREAD SIZE (8)		TORQUE-OUT (in-lbf, MINIMUM)	PUSH-OUT (lbf, MINIMUM)
-3		.1900-32UNJF-3B	2460	60	100

Form No. 1141-05-10, Rev. G, 3 Apr 2007, DCR# 07-0425

⑩ MATERIAL AND FINISH

BASIC PART NO.	NUT			
	MAT'L CODE	MATERIAL	FINISH CODE	FINISH
CNP53	C	A286 CRES PER AMS5525, AMS5732, OR AMS5737	NO CODE	PASSIVATE PER AMS2700, COPPER OR NICKEL STRIKE OPTIONAL, AND DRY FILM LUBE PER AS5272
			P	SILVER PLATE PER AMS2410 .0002 MIN THICKNESS

SLEEVE		RETAINER		MANDREL		RETAINING CLIP	
MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH ⑬	MATERIAL	FINISH
NICKEL 200 PER ASTM-B-160 OR ASTM-B-162 ⑪	TUMBLE POLISH	A286 CRES PER AMS5525	PASSIVATE PER AMS 2700	CRES OR STEEL	PARTIALLY COPPER COATED OR PASSIVATE PER AMS 2700	XM-28 PER ASTM- A -313	PASSIVATE PER AMS 2700

SHEET 3 OF 5	PART NUMBER
ISSUE 11-05-07	CNP53
REV. K 2-11-13	

NOTES:

1. RETAINER BASE CONFIGURATION OPTIONAL WITHIN THE LIMITS OF DIMENSIONS "A" AND "B".

2. FLOAT OF NUT ELEMENT OF ASSEMBLY SHALL NOT BE LESS THAN .015 INCH RADIALLY FROM CENTERED POSITION. NUT ELEMENT SHALL BE CAPABLE OF ENGAGEMENT WITH BOLT IN THE MAXIMUM MISALIGNED POSITION.

3. FASTENER SIZE DESIGNATION STAMPED ON RETAINER AT MANUFACTURER'S OPTION.

4. MANUFACTURER'S IDENTIFICATION LETTER "ϒ" STAMPED ON RETAINER.

5. FASTENER GRIP IDENTIFICATION STAMPED ON RETAINER.

6. USE CHERRY® INSTALLATION TOOL AND PULLING HEAD AS SHOWN IN TABLE BELOW, OR CONSULT CHERRY AEROSPACE FOR OTHER INSTALLATION TOOLING OPTIONS:
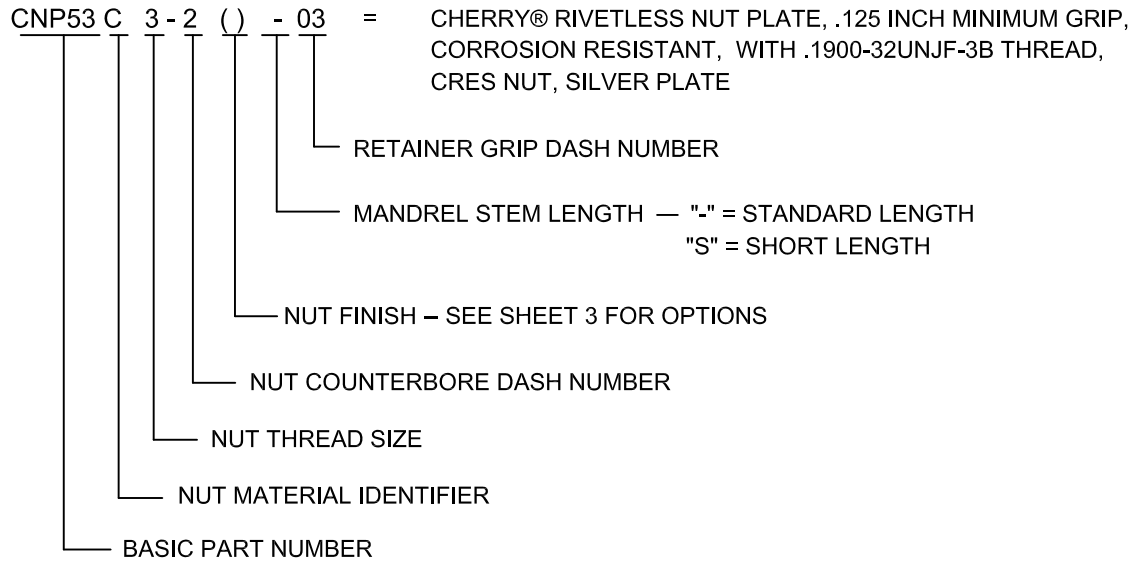
FASTENER DIAMETER DESIGNATION	INSTALLATION TOOL	PULLING HEAD
-3	G704B	H704-275NPC
	G800	

7. "Z" IS MINIMUM I.D. OF NUT RETAINER AFTER INSTALLATION.

8. THREADS IN ACCORDANCE WITH SAE AS8879 BEFORE THREAD LOCK AND LUBRICATION.

9. TORQUE-OUT AND PUSH-OUT VALUES APPLY TO ASSEMBLIES INSTALLED IN THE RECOMMENDED HOLE SIZE IN CARBON COMPOSITE MATERIAL.

10. MATERIAL DESIGNATION REFERS TO CHEMICAL COMPOSITION ONLY PER APPROPRIATE SPECIFICATION.

11. THE MAGNETIC PERMEABILITY OF THE SLEEVE SHALL BE LESS THAN 3.0 MU (AIR = 1.0) FOR FIELD STRENGTH OF H = 200 OERSTEDS.

12. IN MINIMUM GRIP INSTALLATIONS, ANY BURRS WHICH EXTEND BEYOND THE BACKSIDE OF THE STRUCTURE MAY BE REMOVED BY DEBURRING.

13. OPTIONAL: LUBE MAY BE APPLIED TO MANDREL FOR PERFORMANCE.

PART NUMBER EXAMPLE:

CNP53 C 3 - 2 ( ) - 03   =   CHERRY® RIVETLESS NUT PLATE, .125 INCH MINIMUM GRIP,
CORROSION RESISTANT, WITH .1900-32UNJF-3B THREAD,
CRES NUT, SILVER PLATE

RETAINER GRIP DASH NUMBER

MANDREL STEM LENGTH — "-" = STANDARD LENGTH
"S" = SHORT LENGTH

NUT FINISH – SEE SHEET 3 FOR OPTIONS

NUT COUNTERBORE DASH NUMBER

NUT THREAD SIZE

NUT MATERIAL IDENTIFIER

BASIC PART NUMBER

STANDARDS PAGE REVISION LOG

REV LTR	DATE	DCR NUMBER	REVISION DESCRIPTION	COMP. BY
K	2-11-13	13-0124	ADDED NEW NOTE TO MATERIAL AND FINISH: MANDREL: FINISH - OPTIONAL: LUBE MAY BE APPLIED TO MANDREL FOR PERFORMANCE.	RW