GENERAL ELECTRIC

CID: 338629

G-J

SERVICE BULLETIN

ENGINE - Fan Rotor Assembly - Introduction of Spinner Cones, Stage 1 Blade Spacer, and Blade Retainer

1. PLANNING INFORMATION

A. Effectivity

Stage 1 Fan Rotor Blade Spacer (P/N 9050M88G01 and P/N 9050M90G01),

Spinner Cone (P/N 9010M26G02 and P/N 9074M95G01),

Insert (P/N 9049M93P01, P/N 9049M93P03, and P/N 9049M93P04),

installed on CF6-6D Engines and stocked as Spares.

NOTE: The modification defined by this Service Bulletin will be introduced in production on CF6-6D Engines S/N 451-388 and up.

B. Reason

Experience indicates that the Hook on the aft side of the Stage 1 Fan Rotor Blade dovetail may not provide sufficient blade retention under adverse operating conditions. If the hook should shear, axial movement of the blade might result.

Axial movement can be minimized by employing a retainer which will transmit the forward load of the blade to the aft side of the Fan Rotor Disc.

A new Fiberglas-filled Nylon Spacer is provided to help prevent wear between the Retainer and the bottom of the Fan Rotor Disc Slot. It also improves sealing which reduces air leakage thru the disc.

The new Spinner Cone keys with the forward ends of the Retainers to help assure correct positioning of the Retainers during assembly. It also helps maintain correct positioning of the Retainers during operation.

C. Description

This Service Bulletin provides instructions for replacing the present thirty-eight (38) Spacers (P/N 9050M88G01 or P/N 9050M90G01) and thirty-eight Inserts (P/N 9049M93P01,

1. C. (Cont'd)

P/N 9049M93P03, or P/N 9049M93P04) with thirty-eight (38) new Spacers (P/N 9136M72G01) and thirty-eight (38) Retainers (P/N 9136M54P02). The present Spinner Cone (P/N 9010M26G02 or P/N 9074M95G01) is reworked to P/N 9136M33G02, or replaced by P/N 9136M70G01 or P/N 9136M70G02.

D. Compliance

This is a Campaign Change.

It is recommended that this Service Bulletin be accomplished at the first opportunity but not later than the next exposure.

E. Approval

Approved by FAA DER CHI-118, September 20/73.

F. Manpower

An estimated 3.0 man-hours are required per engine to accomplish this Service Bulletin. If Trim Balance is required, an additional 4.5 man-hours per engine are required to accomplish this Service Bulletin.

A Labor Credit Allowance will be granted for each engine actually accomplished per the effectivity of this Service Bulletin. To obtain this Labor Credit Allowance, submit a Warranty Claim to:

General Electric Company
Commercial Engine Division
CF6 Warranty Administration
Mail Zone N62
Evendale, Ohio 45215, U.S.A.

Telephone: Cincinnati, Ohio 513-243-3218 or
Dial Comm 8-332-3218

G. Material

The material required to accomplish this Service Bulletin, referenced in paragraph 3.A. Material Requirements, is initially available on an allocated basis from the Engine Manufacturer. Send a Charge Purchase Order to:

1. G. (Cont'd)

General Electric Company
Commercial Engine Division
Commercial Engine Spare Parts
Mail Zone B69
Evendale, Ohio 45215, U.S.A.

Telephone: Cincinnati, Ohio 513-243-4367 or
Dial Comm 8-332-4367

A Parts Credit Allowance will be granted in accordance with the Campaign Change Warranty. To obtain this Parts Credit Allowance, submit a Warranty Claim to the office referenced in paragraph 1.F. Manpower, above.

H. Tooling

Locally-manufacture Protective Shield per Figure 3.

I. Weight and Balance

Accomplishment of this Service Bulletin results in a weight increase of 10.4 lbs. at Engine Station 155.

J. References

CF6-6 Maintenance Manual, GEK 9265.

K. Previous Modifications

CF6-6D Service Bulletin (CF6-6) 72-108, "Stage 1 Insert".

CF6-6D Service Bulletin (CF6-6) 72-267, "Replacement Spinner Cover, P/N 9074M94P01".

CF6-6D Service Bulletin (CF6-6) 72-288, "Replacement Spinner Cone Assembly, P/N 9074M95G01".

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2. ACCOMPLISHMENT INSTRUCTIONS

With the Spinner Cone and Stage 1 Fan Rotor Blades accessible, refer to Figure 1 and accomplish the following:

A. Removal of Present Spacers and Inserts

For removal instructions refer to paragraph 3. Removal of Chapter 72-21-00, FAN ROTOR ASSEMBLY -- REMOVAL/INSTALLATION, in the referenced Maintenance Manual.

NOTE: Prior to any removal operation at a Fan Rotor Blade location, rotate the blade involved to the bottom vertical centerline (6 o'clock engine position). Gravity will then hold the blade in the proper position. Do not remove the blades.

(1) Remove the Spinner Cone (P/N 9010M26G02 or P/N 9074M95G01). Retain attaching hardware for reinstallation. Dispose of the Spinner Cone per paragraph 3.D. Parts Disposition.

(2) Remove the Spacer (P/N 9050M88G01 or P/N 9050M90G01) and the polyurethane Insert (P/N 9049M93P01, P/N 9049M93P03, or P/N 9049M93P04. These parts will not be re-used.

B. Installation of New Blade Spacers and Retainers

(1) Assemble the metal Retainer (P/N 9136M54P02) to the new Fiberglas-filled Nylon Spacer (P/N 9136M72G01) with the forward end of the Retainer (the end with the hole) at the forward end of the Spacer (the end with the two tabs or "ears"). Pop the two pieces together so that the Retainer rests inside the Spacer.

(2) Rotate the Retainer relative to the Spacer until the Retainer is within the cross-section envelope of the Spacer. This will be 90° to its final position after installation or 90° to its position as shown in Figure 2.

(3) Liberally coat the external bearing surfaces of the Spacer with molydisulphide lubricant (Spray-Kote or equivalent) to aid its installation.

P. E. (Cont'd)

(4) With the Stage 1 Fan Rotor Blade installed and at the 6 o'clock engine position of the Stage 1 Fan Rotor Disc, insert the aft end of the Spacer and Retainer Assembly (tabs or "ears" forward and pointing down) into the forward end of the Stage 1 Rotor Disc dovetail slot between the inboard end of the Fan Rotor Blade dovetail and the inboard surface or "bottom" of the Rotor Disc dovetail slot.

(5) Using a plastic or raw-hide hammer, carefully drive the Spacer and Retainer assembly approximately halfway into the dovetail slot.

(6) Assemble the locally-manufactured Protective Shield to the assembly so that the slot slips over the shank of the Retainer between the aft side of the Forward Head of the Retainer and the forward end of the Spacer. The purpose of this shield is to protect the forward face of the Stage 1 Disc and forward edge of the dovetail slot. Refer to Figure 3.

(7) Hold the Protective Shield in position and, using a plastic or raw-hide hammer, carefully drive the Spacer and Retainer assembly in (aft) until the Protective Shield bottoms against the forward face of the Stage 1 Fan Rotor Disc and the Fan Rotor Blade Dovetail. Remove the Protective Shield.

CAUTION: USE CARE IN DRIVING THE ASSEMBLY TO AVOID DAMAGE TO THE FORWARD EDGE OF THE ROTOR DISC SLOT.

(8) Carefully tap the Spacer and Retainer assembly until the aft face of the Forward Head of the Retainer bottoms against the forward face of the Fan Rotor Blade Dovetail.

(9) Rotate the Retainer so that the hole in the forward end is radially outboard as shown in Figure 2. This is 90° from its position during insertion into the dovetail slot. The forward end or head will then cover the forward end of the Fan Rotor Blade dovetail while the aft end engages behind the Fan Rotor Disc to help prevent the Blade from moving forward.

2. B. (9) (Cont'd)

NOTE: The forward end of the Retainer should be pointing outboard within 8° of a radial line to prevent interference with the reworked Spinner Cone.

(10) Check the forward edges of the dovetail slots in the Fan Rotor Disc for nicks. In the event that the edge should be nicked, remove the Retainer and Spacer using the referenced Retainer Extractor. Blend out the nick with emery cloth rubbing in a circumferential direction. Reinstall the Retainer and Spacer per paragraphs 2.B.(4) thru 2.B.(9), above.

C. Installation of the New or Reworked Spinner Cone

Install Spinner Cone (P/N 9136M33G02 or P/N 9136M70G01 or P/N 9136M70G02) per paragraph 4. Installation of Chapter 72-21-00, FAN ROTOR ASSEMBLY -- REMOVAL/INSTALLATION, in the referenced Maintenance Manual. Use the attaching hardware previously removed.

NOTE: Engine vibration should be checked after assembly. If necessary, Trim Balance the Fan Rotor Assembly per paragraph 4.I. of Chapter 72-00-00, ADJUSTMENT/TEST, in the referenced Maintenance Manual.

ENGINE - Fan Rotor Assembly - Introduction of Spinner Cones, Stage 1 Blade Spacer, and Blade Retainer

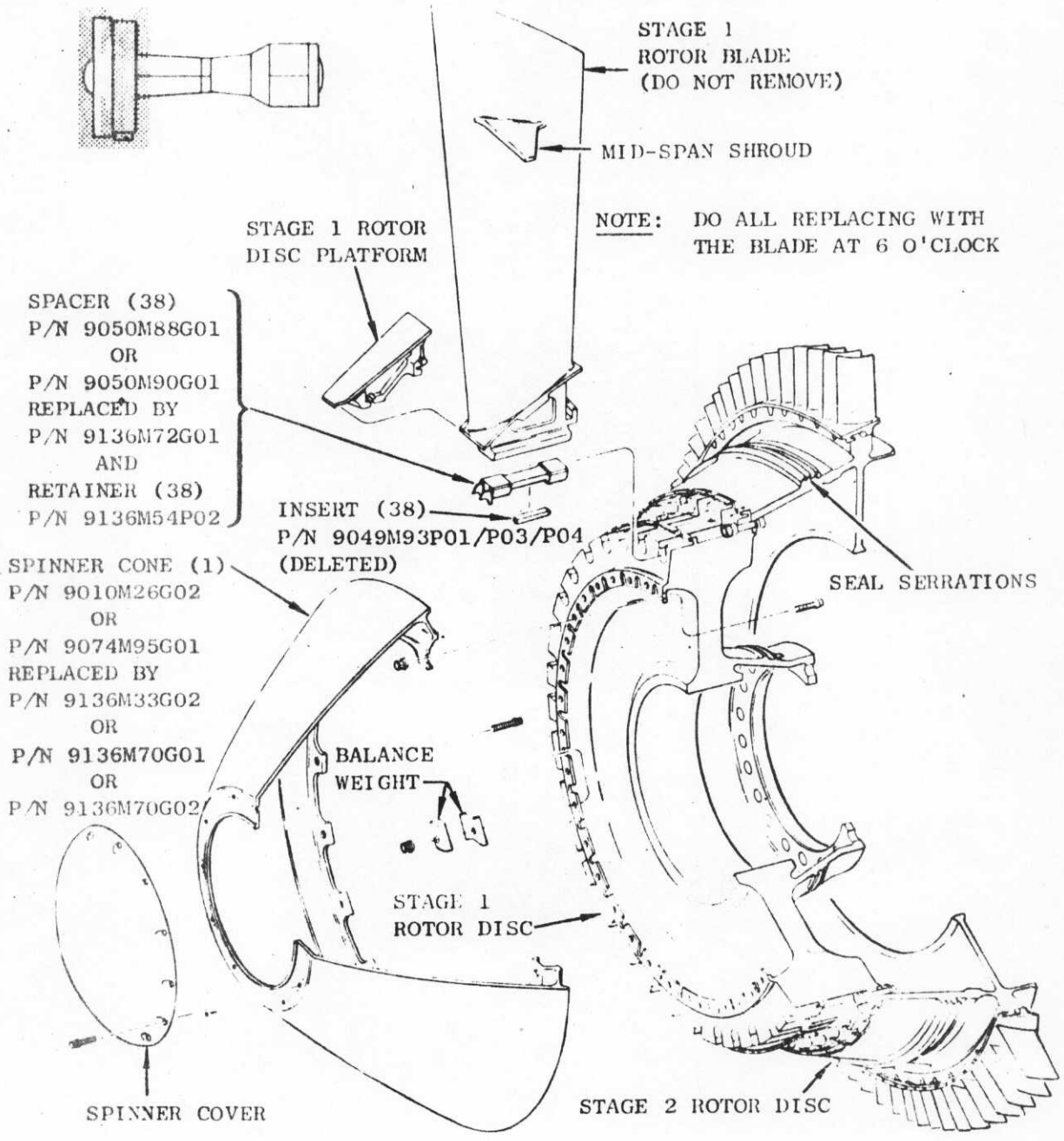
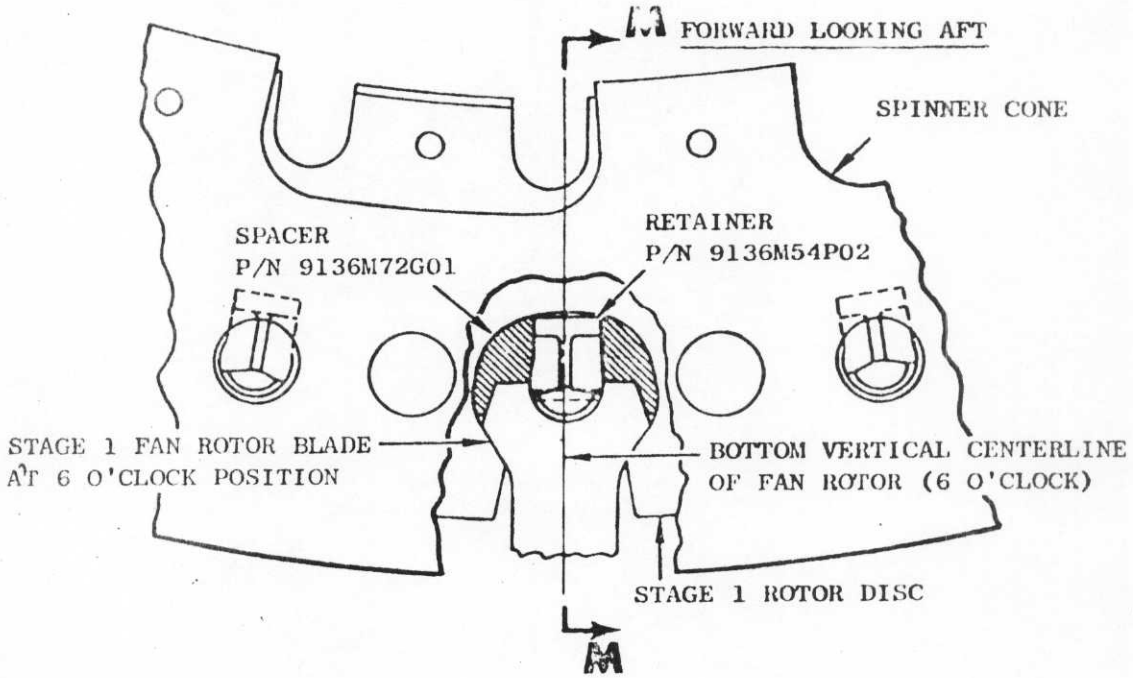


Figure 1
Fan Rotor Assembly

ENGINE - Fan Rotor Assembly - Introduction of Spinner Cones, Stage 1 Blade Spacer, and Blade Retainer



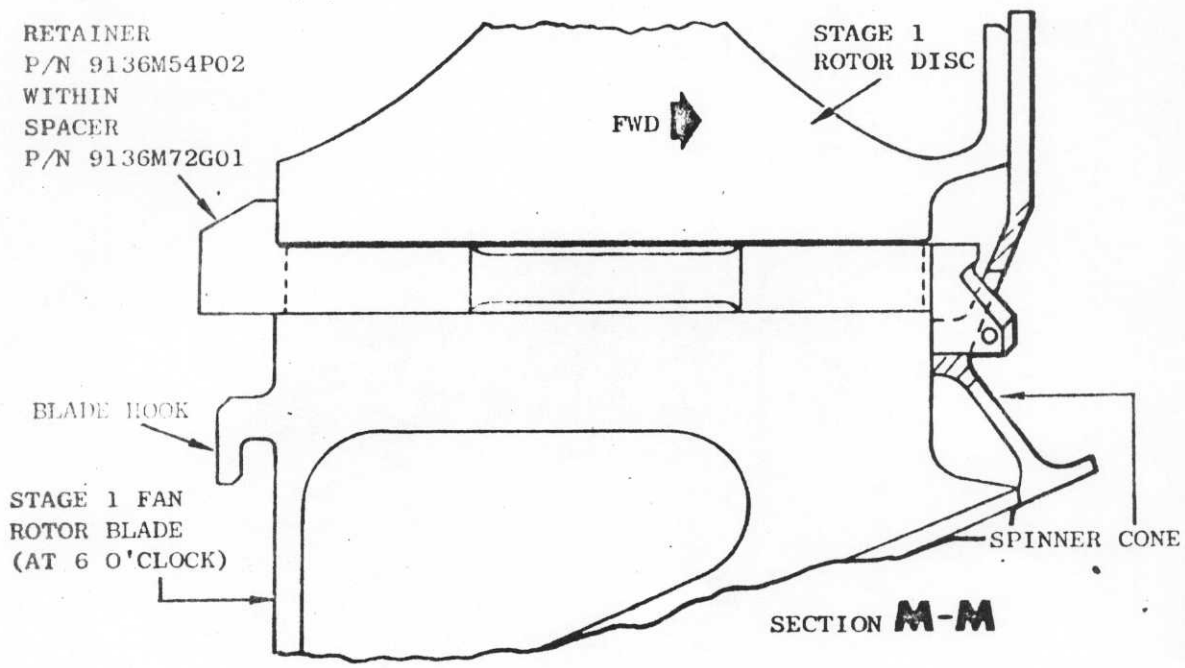
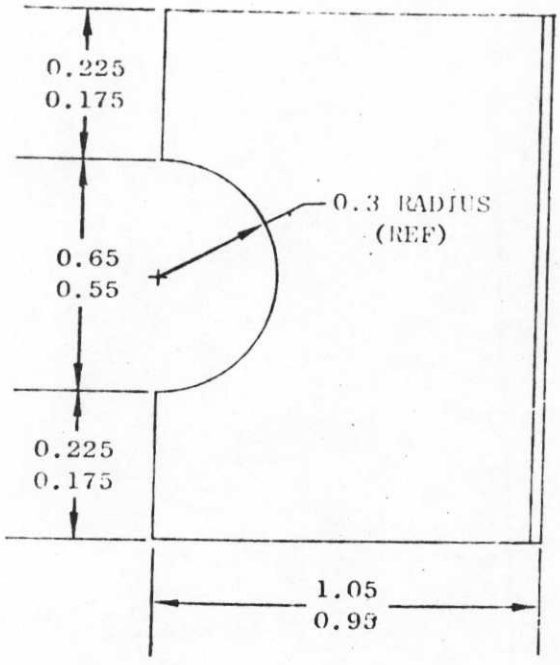


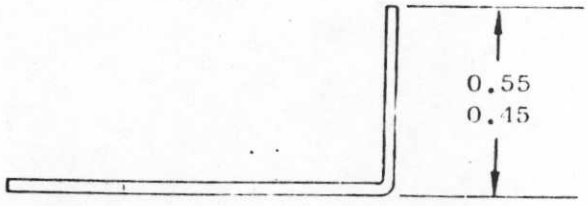
Figure 2
Spacer and Retainer Installation

(37)

ENGINE - Fan Rotor Assembly - Introduction of Spinner Cones, Stage 1 Blade Spacer, and Blade Retainer



LOCALLY - MANUFACTURE



MATERIAL: STEEL SHEET
NOMINAL THICKNESS 0.03" (0.8 MM)

Figure 3
Protective Shield for Spacer and Retainer Installation

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3. MATERIAL INFORMATION

A. Material Requirements

The following material is required per engine to accomplish This Service Bulletin:

Part Number	Qty.	Unit Price	Key Word	Pkg. Qty.	Lead Time (Days)
9136M33G02	(1)	NONPROV	Spinner Cone	(1)	-
or					
9136M70G01	(1)	NONPROV	Spinner Cone	(1)	-
or					
9136M70G02	(1)	$ 2600.00	Spinner Cone	(1)	90
9136M54P02	(38)	78.00	Blade Retainer	(1)	60
9136M72G01	(38)	10.00	Blade Spacer	(1)	60

NOTE: Price information is furnished solely for Spare Parts Provisioning and Planning purposes.

B. Configuration Chart

New Part No.	Qty/ Eng.	Key Word	Old Part No.	Qty/ Eng	Operation	Chng. Code
9690M04	X	Engine Assembly	9690M04	X	--------	-
9136M33G02	(1)	Cone, Spinner	9010M26G02	(1)	Reworked	3
or			or			
9136M70G02	(1)	Cone, Spinner	9074M95G01	(1)	Reworked	3
or			or			
9136M70G01	(1)	Cone, Spinner	9074M95G01	(1)	Replaced	3
or			or			
9136M70G02	(1)	Cone, Spinner	9136M70G01	(1)	Replaced	3
9136M54P02	(38)	Retainer, Blade	----------	-	Added	0
9136M72G01	(38)	Spacer, Blade	9050M88G01	(38)	Replaced	3
			or			
			9050M90G01	(38)	Replaced	3
----------	-	Insert	9049M93P04	(38)	Deleted	-

NOTE: Any new Spinner Cone may be used to replace any old Spinner Cone.

3. (Cont'd)

C. Interchangeability

Old and new parts are not physically interchangeable except in complete sets.

Functional interchangeability is affected in that the new configuration has an additional blade retention feature.

D. Parts Disposition

(1) Terminate (scrap) the deleted Inserts (P/N 9049M93P01, P/N 9049M93P03, and P/N 9049M93P04) in the presence of a GE Representative.

(2) Terminate (scrap) the replaced Spacers (P/N 9050M88G01 or P/N 9050M90G01) in the presence of a GE Representative.

(3) Return reworkable Spinner Cones (P/N 9010M26G02 or P/N 9074M95G01) to:

General Electric Company
336 Woodward Road, Southeast
Albuquerque, New Mexico 87102, U.S.A.

Attn: Fred Lopez