



TECHNICAL BULLETIN

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* Supersedes TB900-025R1, dated 5 May 2003. Revised to correct quantity of replacement parts/supplies, generator TSO approval level and temperature conversion errors, and to extend effectivity, incorporate release of Goodrich Generator Modification Service Bulletin, and add special tools.

GENERATOR COOLING MODIFICATION

1. PLANNING INFORMATION

A. Aircraft Affected:

MD900 helicopters serial numbers 900-00008 thru 900-00117 equipped with PW 207E engines. The generator modification described in paragraph 2.C.(2). may only be applied to serial numbers 900-00012, 900-00091, 900-00092, 900-00105, 900-0107, 900-00108.

B. Assembly/Components Affected By This Bulletin:

Swashplate Forward Fairing (P/N 900F2611300-103, 900F2611350-101, -103, 900F6611350-103), Starter Generator (P/N 23081-056).

C. Reason:

To increase the outside air temperature operating envelope to 125° F (51.7° C) at sea level.

D. Description:

Procedures in this Bulletin provide owners and operators with information pertaining to installing generator cooling scoops on the forward swashplate fairing and cooling ducts between the scoops and the starter generators. (Ref. MDHI Modification Drawing 900P5620210-101.)

E. FAA Approval:

The technical design aspects of this Bulletin are FAA Approved.

F. Manpower:

14 man-hours.

G. Time of Compliance

Customer option, at owner/operator discretion. Generators modified per paragraph 2.C.(2) shall be modified to 23081-070 configuration per Goodrich Corp. Power System Service Bulletin 23081-056-24-01 at next major starter/generator maintenance, no later than next overhaul.

H. Interchangeability:

None

I. Material/Part Availability:

Contact MDHI Parts Sales Dept.

REPLACEMENT PARTS/SUPPLIES			
Nomenclature	Part No.	Qty.	Source
Screen, ECS Air Inlet	900F2611304-103	2	MDHI
Scoop, Vent Air Inlet	900P2250101-101	2	MDHI

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REPLACEMENT PARTS/SUPPLIES (Cont.)			
Nomenclature	Part No.	Qty.	Source
Duct, Generator Cooling	900P3620212-101	2	MDHI
Clamp	MS21919WDG48	4	MDHI/Commercial
Washer	NAS1149C0332B	12	MDHI/Commercial
Washer	NAS1149D0332K	12	MDHI/Commercial
Screw	MS51958-68	12	MDHI/Commercial
Clamp	NAS1922-0275-1	2	MDHI/Commercial
Clamp	MS21919WDG24	2	MDHI/Commercial
Clamp	MS21919WDG30	2	MDHI/Commercial
Screw	NAS1801-3-13	4	MDHI/Commercial
Nut	AN315-3R	4	MDHI/Commercial
Nut	MS21042L3	4	MDHI/Commercial
Cloth, Glass, Finished, 120 Style, for Epoxy Laminates (MIL-C-9084, Type 3, Class 2)	MRM011849	288 Sq In.	MDHI or Commercial
Adhesive, Epoxy (MDM16-1068, Class 9B)	EA9394	AR	MDHI or Dexter Adhesive & Coating Systems 2850 Willow Pass Rd P.O. Box 312 Bay Point, CA 94565-0031 (925) 458-8000 (800) 424-9300
Epoxy, Clear	Epibond 1217	AR	Vantico, Inc. 4917 Dawn Avenue East Lansing MI 48823 (800) 367-8793
Primer, Epoxy (MIL-P-85582, T1, Class C2 or MIL-P-23377, T1)		AR	Deft Inc. 17451 Von Karman Avenue Irvine, CA 92614-6295 (800) 544-3338 (949) 474-0400



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REPLACEMENT PARTS/SUPPLIES (Cont.)			
Nomenclature	Part No.	Qty.	Source
Fabric, Plain Weave, Dry Std Mod, Carbon (MDM16-1 163, Type 2, Class 1, Grade B)	MRM012116	2016 Sq In.	MDHI or AMOCO Polymer 4500 McGinnis Ferry Rd Alpharetta, GA 30202 (770) 772-8200 Cytec Fiberite Inc. 4300 Jackson St Greenville, TX 75401 (903) 457-8532 Fiberite 501 W. 3rd Street Winona, MN 55987 (507)454-361 1
Resin, Epoxy (MDM16-1 115, Type 3)	MRM013546 (40 oz or less) Redux 501 (Araldite 501)	1	MDHI or Vantico Inc. 5124 San Fernando Rd Los Angeles, CA 90038 (800) 367-8793
Adhesive/Sealant, RTV, Silicone (MDM16-1 118, Type 1, Class 3)	MRM010312 (3 oz tube) Silastic 730	1	MDHI or Dow Corning Midland, MI (517) 496-5900
Sandpaper, 180 grit		AR	MDHI/Commercial
Acetone (O-A-51)		AR	MDHI/Commercial
Sealing Compound (fuel resistant) (MDM16-1097, T2, Class B)		AR	Advanced Chemistry & Technology, Inc 7341 Anaconda Avenue Garden Grove, CA 92841 (714) 373-2837
*Inlet, Air	23081-1092	2	MDHI
**Starter/Generator	23081-070	2	MDHI

* Air Inlets are required only when starter/generators are modified by this Bulletin.

** Existing P/N 23081-056 starter/generators may be modified to P/N 23081-070 by performing Goodrich Corp. Power Systems Service Bulletin 23081-056-24-01 which adds the air inlets.

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J. Warranty Policy:

N/A

K. Tooling:

Use of the following tools is optional. Contact MDHI Field Service Department for availability.

TOOLS AND EQUIPMENT	
Nomenclature	Source
Scoop Cutout Location Tool (P/N 900F2611301-107-TDF1-1)	MDHI
Scoop Cutout Location Tool (P/N 900F2611301-107-TDF2-1)	MDHI

L. Weight and Balance:

N/A

M. Electrical Load Data:

N/A

N. Other Publications Affected:

Rotorcraft Maintenance Manual (CSP-900RMM-2)
Illustrated Parts List (CSP-900IPC-4)
Rotorcraft Flight Manual (900 Config w/ PW207E) (CSP-900RFM207E-1)
Rotorcraft Flight Manual (902 Config w/ PW207E) (CSP-902RFM207E-1)

O. Points of Contact

For further assistance, contact your local MDHI Field Service Representative or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 346-6387. DATAFAX: (480) 346-6813

2. ACCOMPLISHMENT INSTRUCTIONS

A. Modify Swashplate Forward Fairing Assembly 900F2611300-103)

(Ref. Figure 1)

- (1). Remove swashplate forward fairing (Ref. CSP-900RMM-2, Section 53-30-00, Swashplate Forward Fairing Assembly Removal).



Use care when removing inner skin and honeycomb from fairing to prevent damage to outer skin.

- (2). Remove inner skin and honeycomb from fairing, as shown in Section B-B.
- (3). Pot area with epoxy adhesive per manufacturer's instructions.
- (4). Sand reworked area with 180 grit sandpaper.



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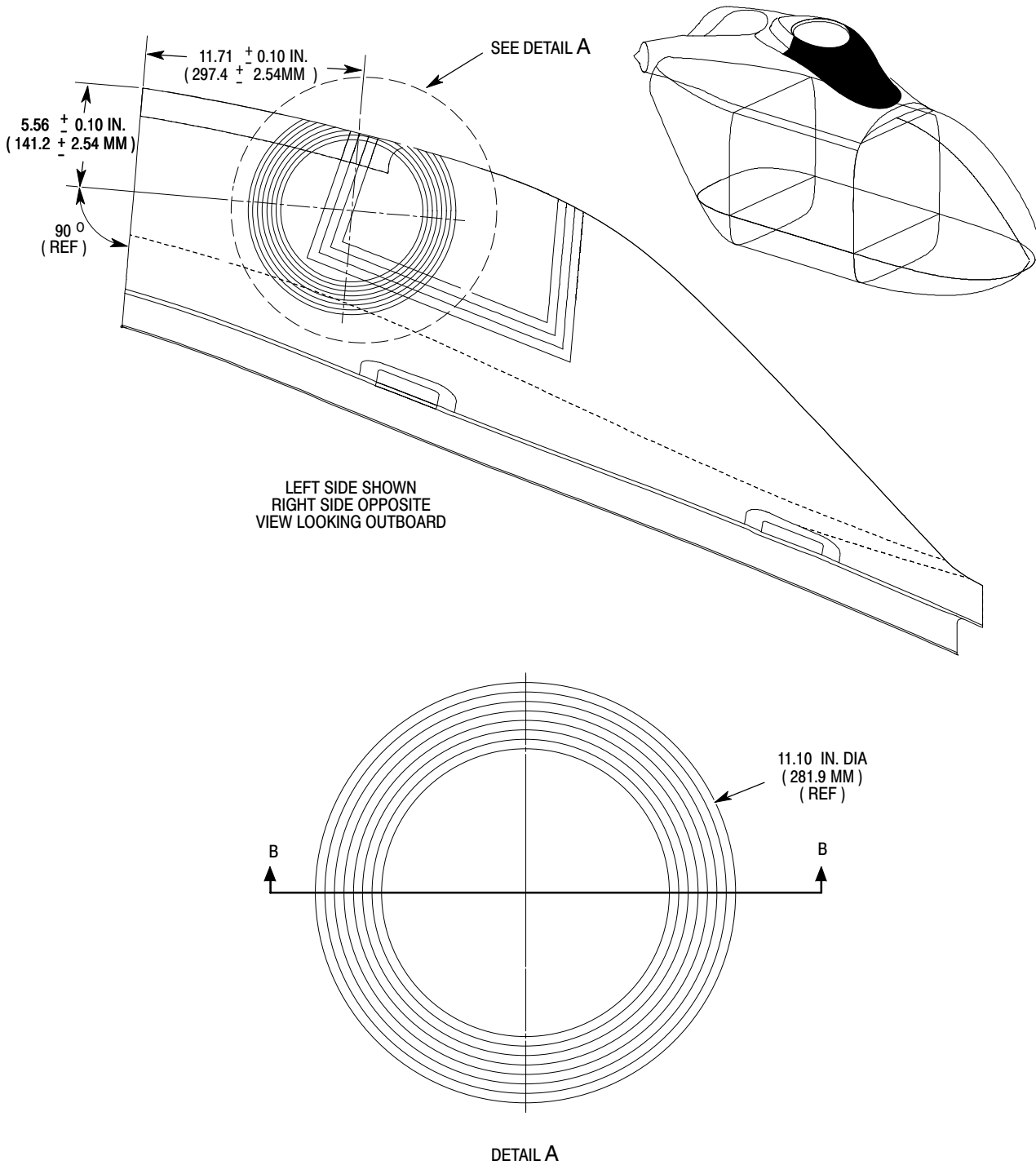
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- (5). Solvent wipe reworked area with acetone until no residue is present on clean cloth.
- (6). Cut seven pieces of carbon fabric (ply numbers -281 through -293) and one piece of glass cloth (ply number -295) to dimensions shown in Figure 1, Section B-B.
- (7). Prepare epoxy resin per manufacturer's instructions.
- (8). Wet layup each ply in order and orientation shown.
- (9). Vacuum bag and apply **20-29 in. HG (63-91 kPa)**.
- (10). Cure for 12 hours at room temperature (**80°F ± 10°F (26.6°C ± 6°C)**).

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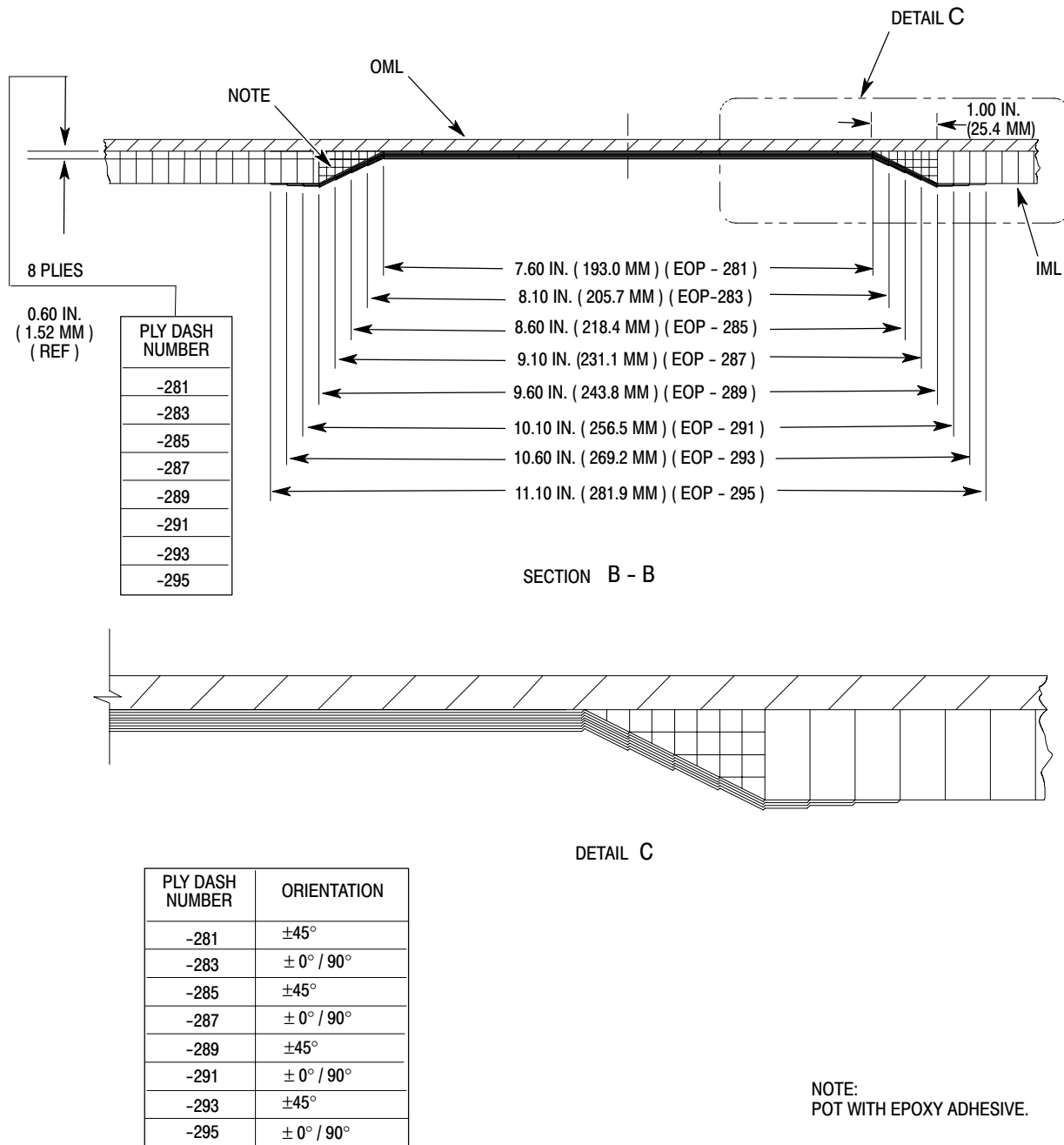


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**Figure 1. Swashplate Forward Fairing (P/N 900F2611300-103) Modification
(Sheet 1 of 2)**

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Figure 1. Swashplate Forward Fairing (P/N 900F2611300-103) Modification (Sheet 2 of 2)

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B. Modify Swashplate Forward Fairing Assembly 900F2611350-101, -103, 900F6611350-103)

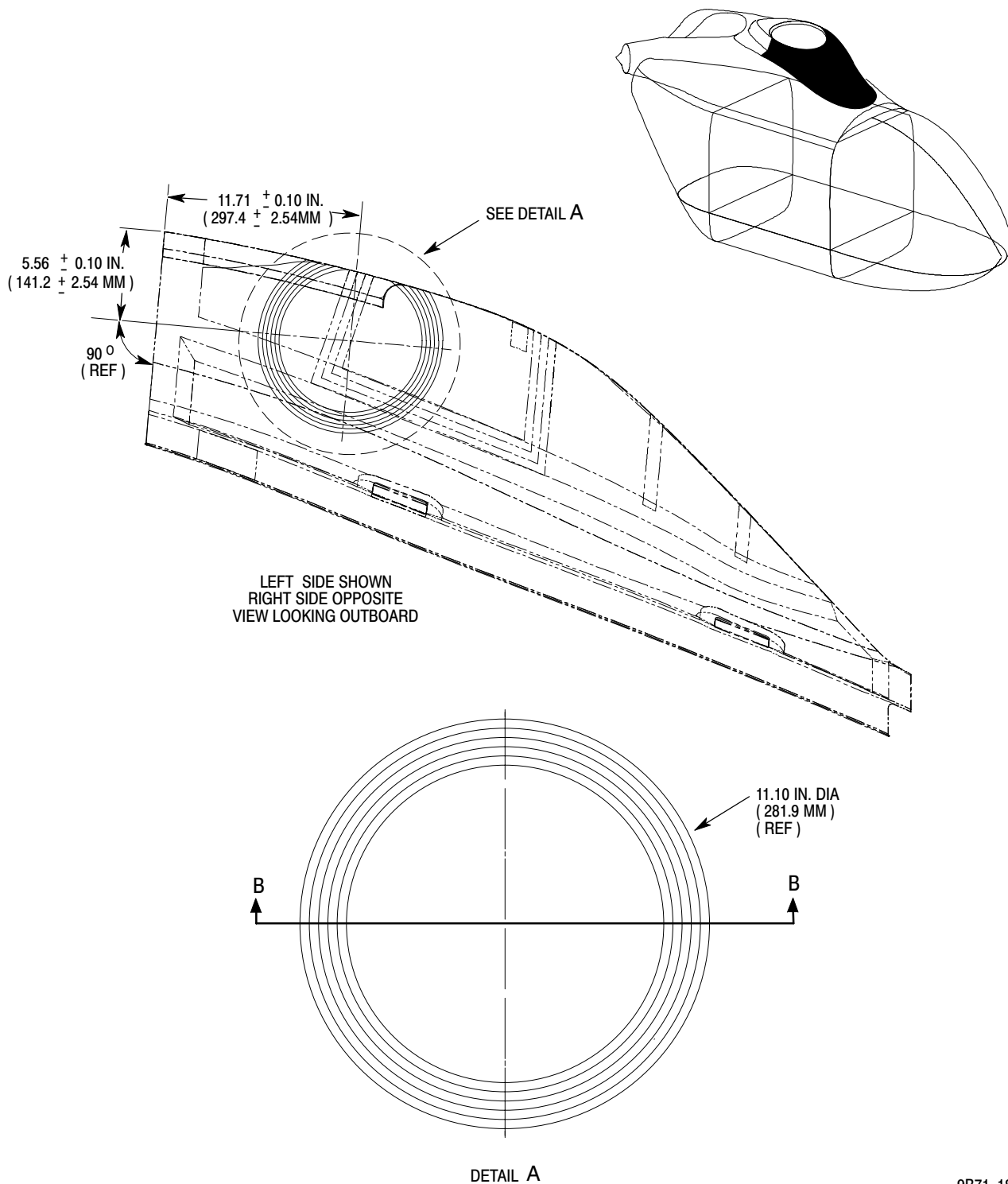
(Ref. Figure 2)

- (1). Remove swashplate forward fairing (Ref. CSP-900RMM-2, Section 53-30-00, Swashplate Forward Fairing Assembly Removal).
- (2). Sand rework area with 180 grit sandpaper.
- (3). Solvent wipe rework area with acetone until no residue is present on clean cloth.
- (4). Cut five pieces of carbon fabric (ply numbers -261 through -269) and one piece of glass cloth (ply number -271) to dimensions shown in Figure 2, Section B-B.
- (5). Prepare epoxy resin per manufacturer's instructions.
- (6). Wet layup each ply in order and orientation shown.
- (7). Vacuum bag and apply **20-29 in. HG (63-91 kPa)**.
- (8). Cure for 12 hours at room temperature (**80°F ± 10°F (26.6°C ± 6°C)**).

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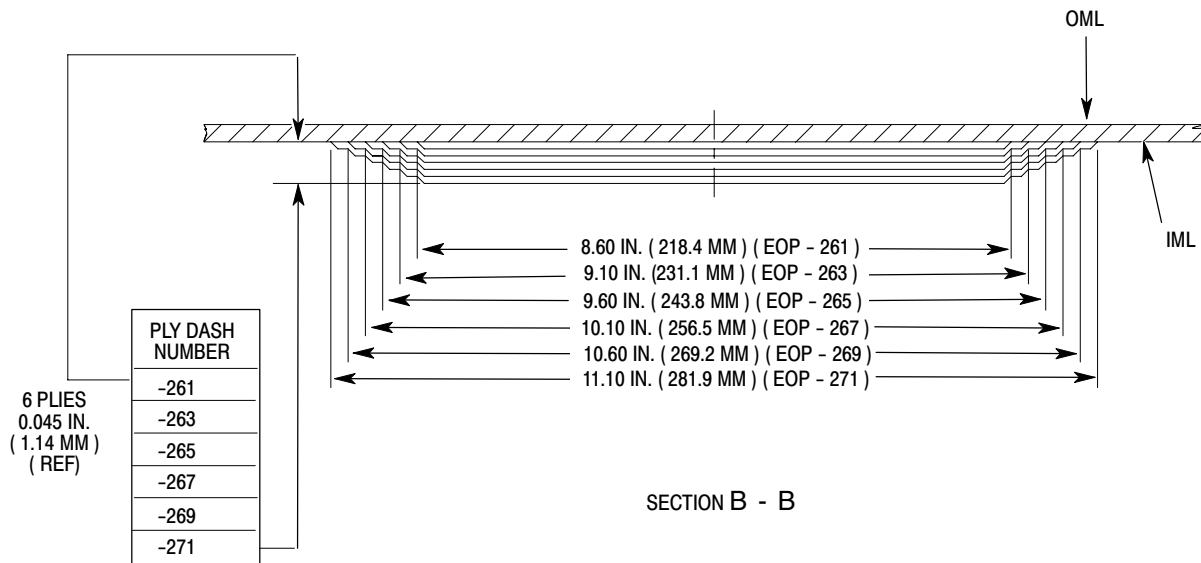
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Figure 2. Swashplate Forward Fairing (P/N 900F2611350-101, -103, 900F6611350-103) Modification (Sheet 1 of 2)

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PLY DASH NUMBER	ORIENTATION
-261	±45°
-263	± 0° / 90°
-265	±45°
-267	± 0° / 90°
-269	±45°
-271	± 0° / 90°

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Figure 2. Swashplate Forward Fairing (P/N 900F2611350-101, -103, 900F6611350-103) Modification (Sheet 2 of 2)

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C. Replace or Modify Starter/Generators

NOTE: The existing starter/generators must either be replaced or modified, as described below.

- (1). Replace starter/generators.
 - (a). Remove P/N 23081-056 starter/generators (Ref. CSP-900RMM-2, Section 71-00-00, Starter/Generator Removal).
 - (b). Install P/N 23081-070 starter/generators (Ref. CSP-900RMM-2, Section 71-00-00, Starter/Generator Installation).
- (2). Modification to existing starter/generators, if P/N 23081-070 starter/generators are not available. The modification described below, that is done in advance of the manufacturer's TSO-C56 FAA updated approval, is limited to Model 900 serial numbers 00012, 00091, 00092, 0105, 0107, and 0108 ONLY.
 - (a). Remove engine cowling assemblies L260 and R260 (Ref. CSP-900RMM-2, Section 53-30-00, Engine Cowl Assembly Removal).
 - (b). Remove and retain screws holding existing P/N 23081-1571 air inlet to each starter/generator and remove air inlet.
 - (c). Install new P/N 23081-1092 air inlet on each starter/generator using retained screws.
 - (d). Identify modified starter/generators.
 - 1). Permanent mark starter/generator housing with the following: "MODIFIED IAW MDHI TB900-025".
 - 2). Seal marking with clear epoxy per manufacturer's instructions.
 - 3). At next major starter/generator maintenance, no later than next overhaul, modify starter/generator to TSO-C56 FAA approved 23081-070 configuration in accordance with Goodrich Corp. Power Systems Service Bulletin 23081-056-24-01.
 - (e). Install engine cowling assemblies L260 and R260 (Ref. CSP-900RMM-2, Section 53-30-00, Engine Cowl Assembly Installation).

D. Cut Holes in Modified Swashplate Forward Fairing Assemblies

(Ref. Figure 3)

NOTE: Cutouts for cooling ducts may be located as shown in Figure 3, View E or by using scoop cutout location tools (P/N 900F2611301-107-TDF1-1 and 900F2611301-107-TDF2-1).

- (1). After layup has cured, locate and trim cooling duct cutouts on fairing.
- (2). Match drill cooling duct attachment holes in fairing.
- (3). Edge seal with adhesive/sealant.
- (4). Apply epoxy primer to reworked area.
- (5). Permanent mark modified swashplate forward fairing assemblies adjacent to part number with the following: "MODIFIED IAW MDHI TB900-025".



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- (6). Seal marking with clear epoxy per manufacturer's instructions.

E. Install Cooling Ducts

NOTE: The following steps apply to both left and right cooling ducts.

- (1). Place cooling duct in position as shown. Route duct to clear rotating swashplate travel and mark low point of duct.
- (2). Remove duct.
- (3). Insert block of wood inside of duct at marked low point.
- (4). Punch a **0.38 in. (9.6 mm)** hole in duct to prevent water build up.
- (5). Remove block of wood.
- (6). Place cooling duct in position as shown.
- (7). Install one NAS1922-0275-1 clamp on aft end of cooling duct.
- (8). Install aft end of cooling duct on starter/generator air inlet and secure with clamp.
- (9). Install swashplate forward fairing, except do not install forward access doors, L155 and R155, and transmission access doors, L210 and R210 (Ref. CSP-900RMM-2, Section 53-30-00, Swashplate Forward Fairing Assembly Installation).
- (10). Position scoop on fairing as shown and match drill six holes in scoop.
- (11). Paint scoop and visible portion of duct flange to match aircraft color.
- (12). Insert six MS51958-68 screws with six NAS1149C0332B washers into holes in fairing from outside of fairing.
- (13). Position scoop, screen and cooling duct flange on fairing from inside and tighten screws. Ensure that scoop fits flush with inside of fairing.
- (14). Secure cooling duct to struts with MS21919WDG48, MS21919WDG30 and MS21919WDG24 clamps, NAS1801-3-13 screws, NAS1149D0332K washers, AN315-3R nuts and MS21042L3 nuts, as shown.
- (15). Fillet seal fairing, scoop and duct, as required, with sealing compound per manufacturer's instructions.

3. IDENTIFICATION

Identify modified starter/generators as directed in the Accomplishment Instructions in this Bulletin.

4. DISPOSITION OF PARTS REMOVED

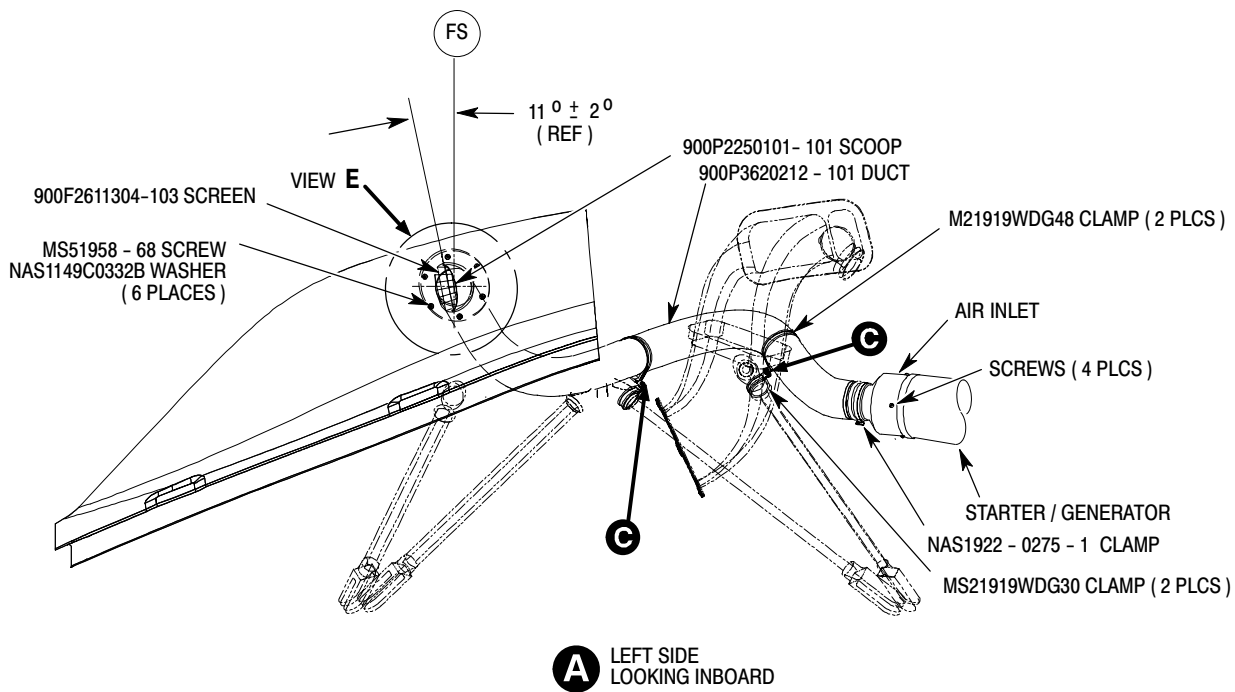
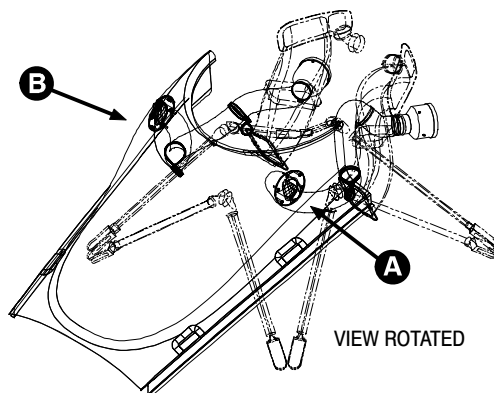
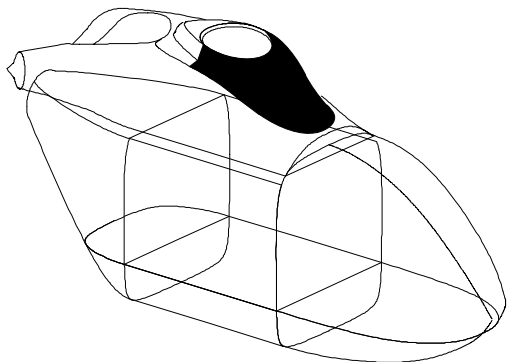
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5. COMPLIANCE RECORD

Record compliance to this Technical Bulletin in the Compliance Record section of the helicopter Log Book.

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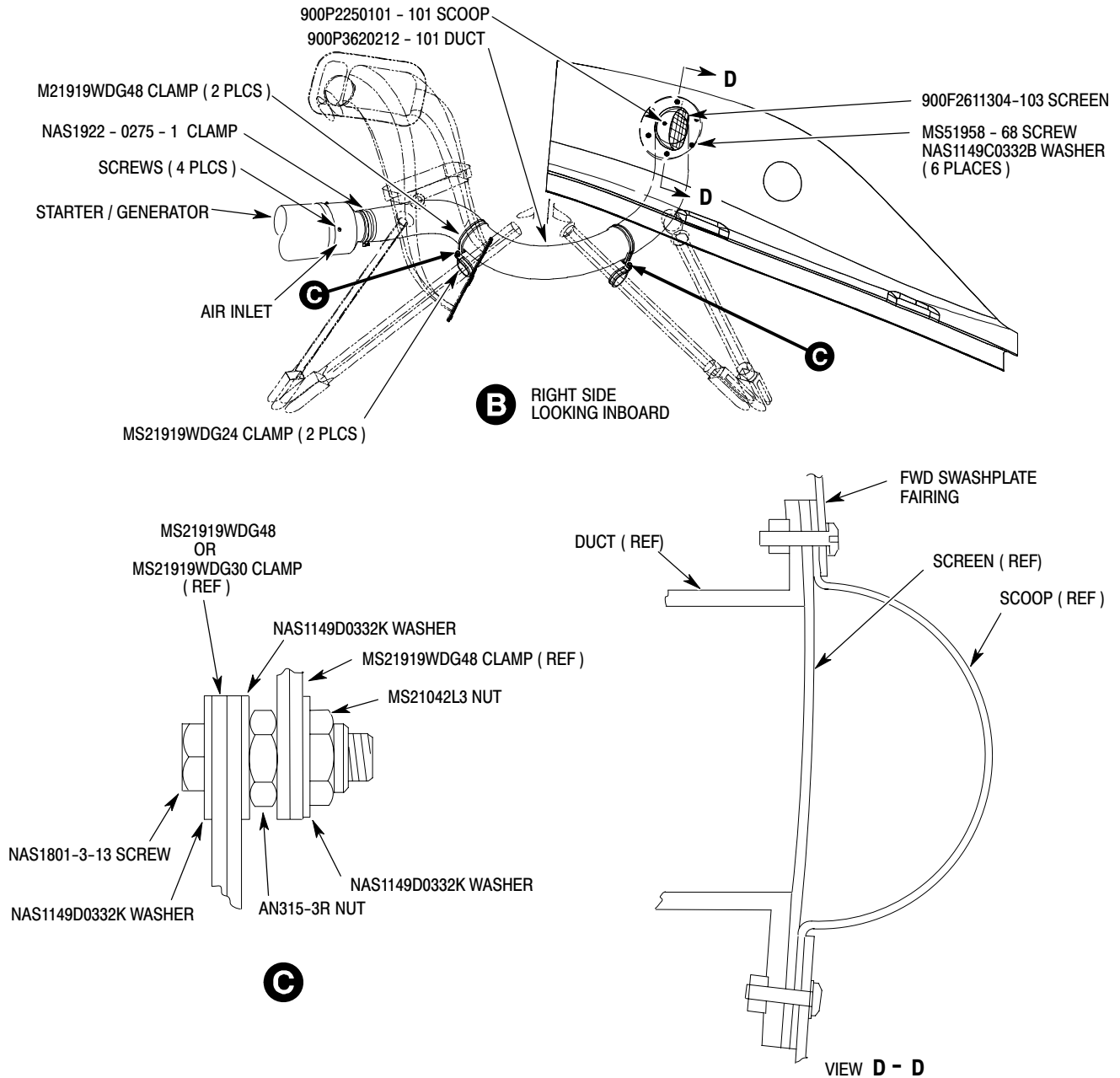
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Figure 3. Installation of Cooling Ducts (Sheet 1 of 3)

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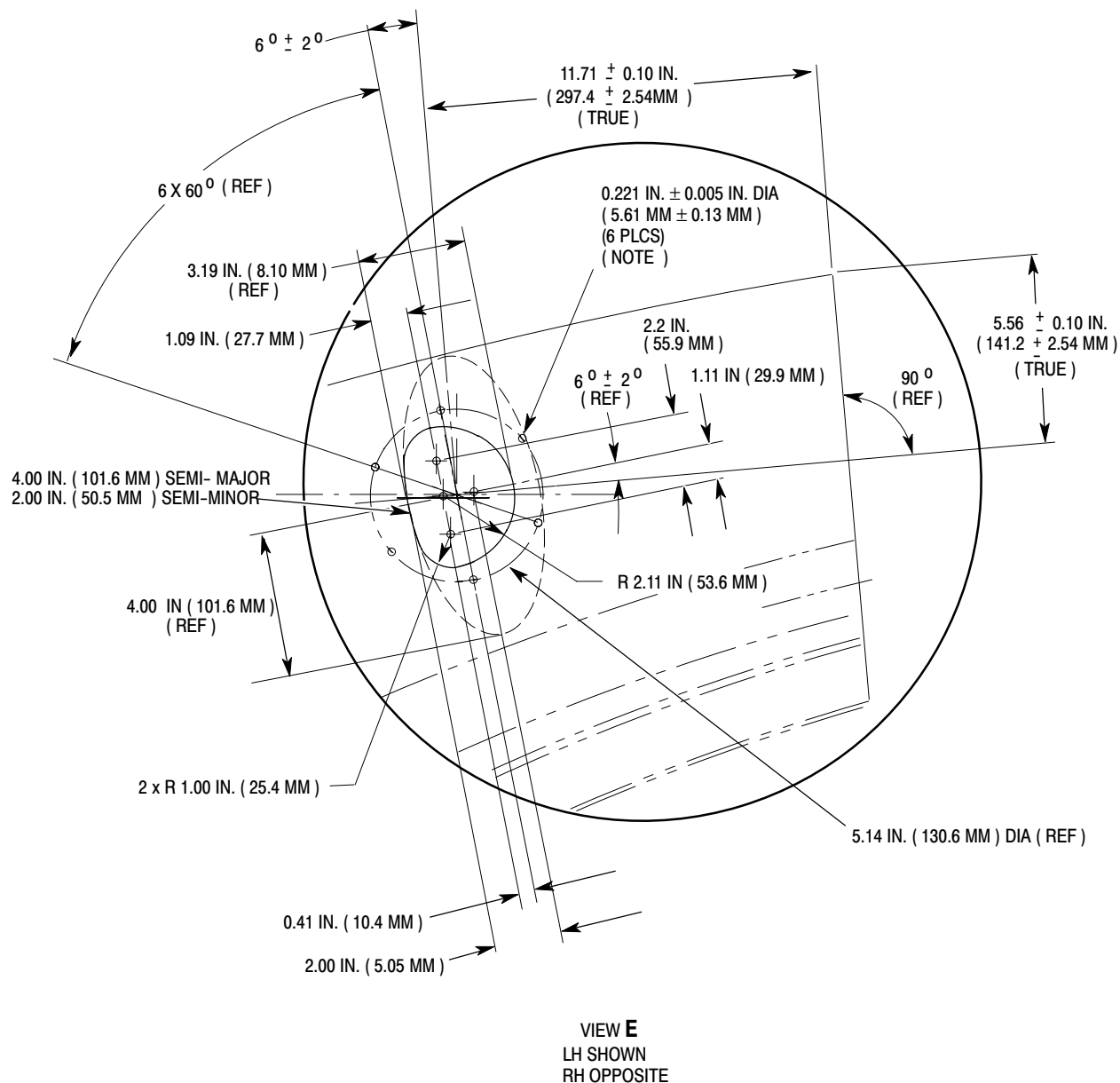


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Figure 3. Installation of Cooling Ducts (Sheet 2 of 3)

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NOTE: MATCH DRILL TO GENERATOR
COOLING DUCT (P/N 900P3620212-101)

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Figure 3 Installation of Cooling Ducts (Sheet 3 of 3)