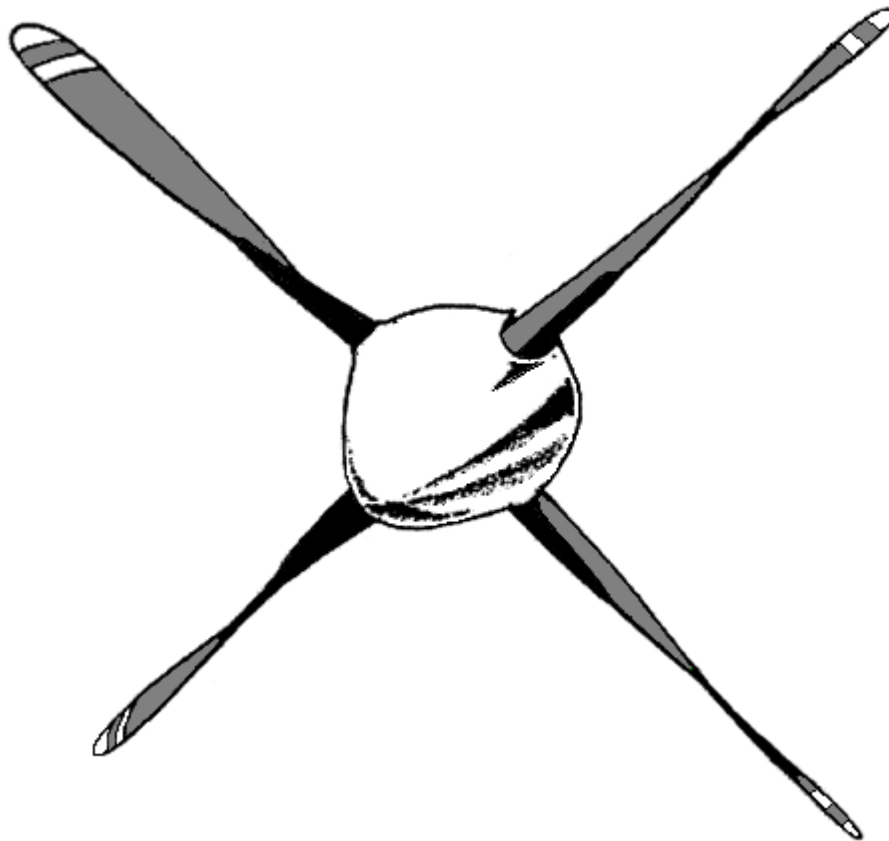


INSTALLATION AND RIGGING PROCEDURES

Raisbeck Engineering Document No. 85-105

**RAISBECK/HARTZELL QUIET TURBOFAN
PROPELLER SYSTEM OR SWEEPED TURBOFAN
PROPELLER SYSTEM FOR BEECHCRAFT KING AIR
MODEL 200/A200/B200/B200GT SERIES AIRCRAFT**



Advanced Technology Performance and Environmental
Improvement Systems for Your **KING AIR**

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

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RAISBECK/HARTZELL QUIET TURBOFAN PROPELLER SYSTEM OR SWEPT TURBOFAN PROPELLER SYSTEM FOR BEECHCRAFT KING AIR MODEL 200/A200/B200/B200GT SERIES AIRCRAFT

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- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

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| AC | Sec. 16.0 | Revised W&B to show values for 2X propeller systems, instead of a single system. | 4/28/17 | NL |
| AD | 6.1 9.0 10.0 Fig 1 Fig 3 Fig 4 Fig 5 Fig 6 Fig 8 | Revised Circuit Breaker Switch P/N in Section 6.1, Step 4. Added Section 9.2. Deleted Section 9.6. Revised Section 10.0 for clarity. Revised Circuit Breaker Switch P/N, Zone D2. Revised view titles for clarity. Revised view title for clarity. Added view of screw type target, spinner bulkhead mounted. Revised Flag Notes and Prop Tool notation. Revised Equipment List. See DCN AD for details. | 1/5/18 | KEA |
| AE | 1.0 3.1 5.3 | Revised note to also exclude aircraft with G1000. Updated table of applicable AFMSs. Inserted Section 5.3 for Aircraft Equipped with G1000. See DCN AE for details. | 6/12/18 | NL |
| AF | 15.0 | Added specific trim tab adjustment instructions if the aircraft is both Fusion and MDFDR equipped. See DCN AF for details. | 12/4/18 | NL |
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| AH | All 3.4 | Updated header with current REI logo. Added Section 3.4 to support Autothrottle. | | |

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

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- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
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BEECHCRAFT KING AIR 200/A200/B200/B200GT SERIES AIRCRAFT

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System



1.0 INTRODUCTION AND APPROVAL

Information in this document supersedes similar information in applicable Beechcraft, Goodrich, Hartzell, and Pratt & Whitney maintenance and service manuals where applicable. For all other procedures of rigging, installation and maintenance, consult applicable existing documentation.

This document is intended to provide detailed instructions for the installation of Raisbeck/Hartzell Quiet Turbofan Propeller System or Raisbeck/Hartzell Swept Turbofan Propeller System on Beechcraft King Air 200, A200, B200, and B200GT series aircraft. On airplanes BB-2, BB-6 thru BB-162, BP-1, BP-19 thru BP-22, BP-24 and after, BC-1 and after, and BD-1 and after, prior or concurrent incorporation of Beechcraft Service Instruction No. 0808-247 is required. Autofeather must be installed as a prerequisite.

Raisbeck/Hartzell Quiet Turbofan Propeller System and Raisbeck/Hartzell Swept Turbofan Propeller System have been approved by the Federal Aviation Administration (FAA) under Supplemental Type Certificate (STC) SA2698NM-S.

The installation of this system must conform to the FAA approved Raisbeck Engineering Installation and Rigging Procedures and Figures within this document. Conformity verification of the installed system is the responsibility of the installing facility.

NOTE: If aircraft is equipped with an electronic instrument display system other than Rockwell Collins Pro Line 21 or Pro Line Fusion, or Garmin International G1000, please refer to that system's manufacturer for installation procedures particular to the Raisbeck/Hartzell propeller installation.



- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

2.0 SYSTEM DESCRIPTION

Each engine is equipped with a Raisbeck/Hartzell Quiet or Swept Turbofan, four-blade, full-feathering, constant-speed, counterweighted, reversing, variable-pitch propeller mounted on the output shaft of the reduction gear box. The propeller pitch and speed are controlled by engine oil pressure, through single-action, engine-driven propeller governors. Centrifugal counterweights, assisted by a feathering spring, move the blades toward the low RPM (high pitch) position and into the feathered position. Governor boosted engine oil pressure moves the propeller to the high RPM (low pitch) hydraulic stop and reverse position. The propellers have no low RPM (high pitch) stops; this allows the blades to feather after engine shut down.

Salient features of the entire Raisbeck/Hartzell Quiet or Swept Turbofan Propeller System include:

1. Lightweight aluminum hubs with all propeller adjustments external to the hub.
2. Small diameter (94 inch) high-twist aluminum blades, incorporating new high-lift airfoils from root to tip. Additionally, these blades maintain their airfoil contours well into the spinner, reducing or eliminating blockage to the nacelle inlet.
3. New Hartzell De-ice System, complete with circuit breakers and switches, will be installed on all 200/A200 series aircraft. B200 series aircraft will receive new circuit breakers and switches as required.
4. New low-drag aluminum propeller spinners.
5. The optional Raisbeck/Hartzell Swept Turbofan Propeller is characterized by, and is different from the Raisbeck/Hartzell Quiet Turbofan Propeller in that it features, a swept blade design and a larger diameter, measuring at 96 inches.

The above combination, when installed on King Air 200/A200/B200/B200GT series aircraft, provides the owner/operator with a truly quiet, more efficient, reliable propeller system representing the state-of-the-art in propeller design.

The Raisbeck/Hartzell four-blade HC-D4N-3A/D9383K Quiet Turbofan Propellers have a full feathered angle of 86 degrees at the 30 inch station and mechanical reverse pitch stop of minus 10.5 degrees \pm .5 degree.

The Raisbeck/Hartzell four-blade HC-D4N-3A/D9515K Swept Turbofan Propellers have a full feathered angle of 84.2 degrees at the 30 inch station and mechanical reverse pitch stop of minus 10.3 degrees \pm .5 degree.

Low pitch propeller position is determined by a mechanically monitored hydraulic stop. The propeller servo piston is connected by four spring-loaded sliding rods to the slip ring mounted behind the propeller. Movement is transferred through the propeller-reversing lever to the Beta valve of the governor. The initial forward motion of the Beta valve blocks off the flow of oil to the propeller. Further motion forward dumps the oil from the propeller at a speed lower than that selected on the governor, the governor pump provides oil pressure to the servo piston and decreases the pitch of the propeller blades until the feedback of motion from the slip ring pulls the Beta valve into a position blocking the supply of oil to the propeller, this preventing further pitch changes.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

3.0 REQUIRED DOCUMENTATION

3.1 Raisbeck Engineering Supplied

1. REI Document No. 85-105, Installation and Rigging Procedures
2. Airplane Flight Manual Supplement (AFMS) as applicable, REI Document No.:

| PROPELLER / ENGINE (PT6A-) CONFIGURATION | AFMS |
|---|--------------------|
| TFPS Mark VI -41 | 85-107 |
| TFPS Mark VI -42 | 85-108 |
| TFPS and EPLE -41 | 85-109 |
| TFPS and EPLE -42 | 85-110 |
| TFPS -41 or -42 | 85-106 or 85-106UK |
| TFPS -52 or -61 | 09-52-106 |
| SWEPT -41 or -42 | 11-106 |
| SWEPT -52 or -61 | 11-52-106 |
| TFPS EPIC -41 | 85-115 |
| TFPS EPIC -42 | 85-116H |
| TFPS EPIC -52 | 09-B200GT-116 |
| TFPS EPIC -61 | 07BM-116 |
| SWEPT EPIC -41 | 11-115 |
| SWEPT EPIC -42 | 11-116H |
| SWEPT EPIC -52 | 11-B200GT-116 |
| SWEPT EPIC -61 | 11BM-116 |
| <ul style="list-style-type: none"> ▪ Quiet Turbofan Propellers (TFPS). ▪ Swept Turbofan Propellers (SWEPT). ▪ Mark VI Performance System (Mark VI). ▪ Enhanced Performance Leading Edges (EPL). ▪ Aircraft equipped with: TFPS or SWEPT, Ram Air Recovery System, EPLE, Dual Aft Body Strakes, and Fully Enclosed Main Landing Gear (when high flotation landing gear equipped) (EPIC) or Aircraft equipped with: TFPS or SWEPT, Mark VI, and Fully Enclosed Main Landing Gear (when high flotation landing gear equipped) (EPIC). | |

3.2 Customer/Installer Supplied

1. Beechcraft King Air 200 Series Maintenance Manual
2. Beechcraft King Air model appropriate Pilot's Operating Handbook

3.3 Kit Contents

As applicable depending on the propeller/engine configuration:

- | | |
|---------------|---------------------------------|
| 1. 85-1500-() | Quiet Turbofan Propeller System |
| 85-1500-()S | Swept Turbofan Propeller System |

3.4 Innovative Solutions & Support Supplied

If the aircraft is, or will be concurrently, equipped with Innovative Solutions & Support's Autothrottle System (ATS), STC SA00400BO, contact their product support team for configuration guidance.



- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

4.0 PRE-INSTALLATION RUN-UP AND RIGGING CHECKS

Run-up checks are required to ensure that all related systems are functioning properly before the Raisbeck Quiet Turbofan Propellers or the Swept Turbofan Propellers are installed.

CAUTION: OBSERVE STANDARD FIRE AND PROPELLER SAFETY. MAKE SURE RAMP IS CLEAR BEFORE STARTING ENGINES.

Refer to the appropriate sections of the Beechcraft King Air Pilot's Operating Handbook and start engines. Refer to Beechcraft King Air 200 Series Maintenance Manual, Subjects 61-00-00 and 76-00-00, as required and check the following:

NOTE: Ensure the following checks are within the Beechcraft King Air 200 Series Maintenance Manual limits prior to proceeding.

1. Takeoff Maximum RPM (2,000) – Reading
2. Flight Idle RPM (1,800) torque check – Reading
3. Overspeed Governor – Operation
4. Autofeather – Check
5. Reversing System
 - a) N₁ RPM increases – Operation
 - b) Maximum N₁ RPM – Reading

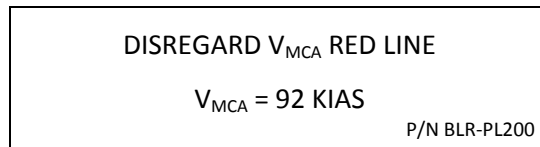
5.0 AIRSPEED INDICATOR REWORK

NOTE: Model 200 and A200 series aircraft indicate airspeed in **KIAS** but their limitation markings are located at the markings' respective **KCAS** values. Model B200 and B200GT series aircraft indicate airspeed in **KIAS** and their limitation markings are located at the markings' respective **KIAS** values. Model B200GT series aircraft are factory equipped with Rockwell Collins Pro Line 21 (see section 5.1) or Pro Line Fusion (see section 5.3).

5.1 Aircraft Equipped with Rockwell Collins Pro Line 21 – OEM

Reference TABLE 1

1. If installed, remove placard P/N BLR-PL200 from above pilot's and co-pilot's PFD:



2. Referencing TABLE 1, determine the part number of your Adaptive Flight Display (AFD) model AFD-3010 or AFD-3010E.

BEECHCRAFT KING AIR 200/A200/B200/B200GT SERIES AIRCRAFT

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System



TABLE 1

| AFD P/N INSTALLED | AIRCRAFT MODEL | COLLINS SB | BEECHCRAFT REPORT* |
|-------------------|----------------|------------|--------------------|
| 1084-051 | B200 | 521 | Rev 2/3 |
| 1084-053 | B200 | 521 | Rev 2/3 |
| 1084-351 | B200 | -- | Rev 2/3 |
| 1084-352 | B200 | -- | Rev 2/3 |
| 1084-353 | B200 | -- | Rev 2/3 |
| 1084-354 | B200 | -- | Rev 3 |
| 1084-358 | B200 | -- | Rev 3 |
| 1753-351 | B200 | -- | Rev 2/3 |
| 1753-352 | B200 | -- | Rev 2/3 |
| 1753-353 | B200 | -- | Rev 2/3 |
| 1753-354 | B200 | -- | Rev 3 |
| 1753-358 | B200 | -- | Rev 3 |
| 1084-353 | B200GT | 546 | Rev 3 |
| 1084-354 | B200GT | -- | Rev 3 |
| 1084-355 | B200GT | -- | Rev 3 |
| 1084-358 | B200GT | -- | Rev 3 |
| 1084-359 | B200GT | -- | Rev 3 |
| 1084-360 | B200GT | -- | Rev 3 |
| 1753-353 | B200GT | 546 | Rev 3 |
| 1753-354 | B200GT | -- | Rev 3 |
| 1753-355 | B200GT | -- | Rev 3 |
| 1753-358 | B200GT | -- | Rev 3 |
| 1753-359 | B200GT | -- | Rev 3 |
| 1753-360 | B200GT | -- | Rev 3 |

* Or latest approved revision.

3. If your AFD model requires a Rockwell Collins Service Bulletin (SB) per TABLE 1, remove and ship to a Rockwell Collins authorized repair station for rework. The unit will return with a new part number.
4. Your AFD must be pin strapped to display the correct limitations for your Raisbeck equipped aircraft. Determine pin strapping by the Raisbeck STCs that are incorporated into the aircraft. The proper pin strapping is referenced in Beechcraft Report 200E261947. Carefully follow these instructions to determine how to pin strap your Rockwell Collins AFD model.
5. Modify the existing wiring per Beechcraft Report 200E261947 and the manufacturer's approved maintenance manual.

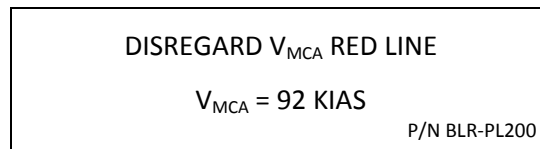
5.2 Aircraft Equipped with Rockwell Collins Pro Line 21 – Aftermarket

1. Configure your Pro Line 21 installation per BHE & Associates STC SA11133SC, with instructions for either the Raisbeck D9383K (Quiet Turbofan Propeller) configuration, or the Raisbeck D9515K (Swept Turbofan Propeller) configuration, whichever applies.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

5.3 Aircraft Equipped with Rockwell Collins Pro Line Fusion – OEM

1. If installed, remove BLR-PL200 Placard from above pilot's and co-pilot's PFD:



2. Configure your Beechcraft factory “off the line” Pro Line Fusion installation per Textron Aviation Fusion Maintenance Manual (document 434-590168-0009) with instructions for enabling either:

NOTE: Reference Section 3.1 AFMS listing to determine if your aircraft is EPIC or non-EPIC.

- a. Sub-type 14 “B200GT W/ RAISBECK PROP MOD” for non-EPIC equipped aircraft.
or
- b. Sub-type 41 “B200GT RAISBECK EPIC PLATINUM” for EPIC Platinum equipped aircraft.

5.4. Aircraft Equipped with Rockwell Collins Pro Line Fusion – Aftermarket

1. Configure your Pro Line Fusion installation per BHE & Associates STC SA11136SC or Rockwell Collins STC SA01769WI with instructions for either the Raisbeck D9383K (Quiet Turbofan Propeller) configuration, or the Raisbeck D9515K (Swept Turbofan Propeller) configuration, whichever applies.

5.5 Aircraft Equipped with Garmin International G1000

1. Configure your G1000 installation per Garmin International STC SA01535WI-D, with instructions for either the Raisbeck D9383K (Quiet Turbofan Propeller) configuration, or the Raisbeck D9515K (Swept Turbofan Propeller) configuration, whichever applies.

5.6 Model 200 and A200 Series Airspeed Indicator Rework

Reference FIGURE 1

1. Remove the airspeed indicators and route them to an instrument repair shop for the following rework:
 - a) For 200 and A200 series aircraft, remove the red radial (V_{MCA}) at 91 knots and replace with red radial (V_{MCA}) at 96 knots.
 - b) Install REI-1001-2 Placard on the reworked instrument's housing.
 - c) Reinstall the airspeed indicators and perform pitot static system leak check (Ref. Beechcraft King Air 200 Series Maintenance Manual, Subject 34-00-00).

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

5.7 Model B200 Series Airspeed Indicator Rework

1. For B200 series aircraft previously equipped with the hub and propeller combinations listed below, and for B200 series aircraft within serial number range *BB-1439, BB-1444 and after [except Special Editions], and BL-139 and after*, remove the red radial (V_{MCA}) at 86 knots and replace with a red radial (V_{MCA}) at 91 knots.
 - 2 ea. Hartzell HC-B3TN-3G (3N) hubs, 3-bladed propeller
 - 2 ea. Hartzell HC-E4N-3G hubs, D9390SK-1R 4-bladed propeller
 - 2 ea. McCauley 4HFR34C754 hubs, 4-bladed propeller
 - 2 ea. McCauley 4HFR34C771 hubs, 4-bladed propeller
 - 2 ea. McCauley 3GFR34C702 hubs, 3-bladed propeller
 - a) Install REI-1001-2 Placard on the reworked instrument's housing.
 - b) Reinstall the airspeed indicators and perform pitot static system leak check (Ref. Beechcraft King Air 200 Series Maintenance Manual, Subject 34-00-00).

6.0 COCKPIT AND CABIN COMPONENT CHANGES

6.1 Models 200 and B200 Series Cabin/Cockpit Rework

CAUTION: DISREGARD STEP 1 BELOW IF YOUR AIRPLANE IS ALREADY EQUIPPED WITH 25 AMP CIRCUIT BREAKERS FOR THE PROPELLER DE-ICE CIRCUIT.

Reference FIGURES 1, 2, and 8

1. Remove and discard left and right propeller de-ice 20 amp circuit breakers from the lower section of the fuel control panel. Install two (2) 25 amp AS25244-25 or MS25244-25 Circuit Breakers as shown in FIGURE 2, zone B4 (Ref. Item 1 on FIGURE 8, zone D8).
2. Remove the propeller de-ice ammeter and route to an instrument repair shop for the following work:

NOTE: As a customer option, the existing ammeter can be replaced with a Beechcraft 101-389017-13 Ammeter.

- a) Change the green arc from its current 14 to 18 amps to 18 to 24 amps. Install REI-1001-2 Placard on the reworked instrument's housing.
3. Reinstall the reworked propeller de-ice ammeter or install new Beechcraft ammeter.
 4. Remove and discard propeller de-ice control circuit breaker switch from pilot's subpanel. Replace with a 25 amp 7270-1-25 or 7270-5-25 Circuit Breaker Switch as shown in FIGURE 1, zone D2 (Ref. Item 3 on FIGURE 8, zone B8).
 5. On aircraft indicated for rework of S175 Switch per flag note 1 on FIGURE 1, zone C2, rework the switch by installing an 18 gauge jumper between the inner and outer posts as shown in FIGURE 8, zone C7, per flag note 1 (Ref. Item 4).

NOTE: Goodrich 3E1964-3 De-ice Timer and McCauley C45114 and C45116 De-ice Timers are compatible with this installation. Check the de-ice timer part number to verify that one of these timers is installed.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

6. On aircraft indicated for de-ice timer replacement per flag note 1 on FIGURE 2, gain access through the cabin floor panel that is just forward of the front spar. Remove and discard existing de-ice timer while retaining attachment hardware. Installation of the new timer will be easier if the timer bracket is removed. Locate 3E1964-3 De-ice Timer or equivalent on the bracket at the approximate center of the old timer's location. Drill no. 10 (\varnothing .1935 inch) holes in the bracket to match the de-ice timer's mounting holes. Install four (4) 10-32 Nut Plates on lower side of the bracket. Reinstall bracket and install replacement timer with retained hardware.
7. On aircraft indicated for de-ice timer replacement per flag note 1 on FIGURE 2, remove, cap, and stow wires from pins "C" and "E" in timer plug and reconnect to timer (Ref. Goodrich drawing 7E1561 and Item 7 on FIGURE 8, zone B5).
8. Because the lower section of the fuel control panel was reworked, accomplish a dual buss conformity inspection per Beechcraft King Air 200 Series Maintenance Manual, Subject 24-50-00.
9. Reinstall cockpit and cabin furnishings as required.

6.2 Model A200 Series Cabin/Cockpit Rework

- (*BP-1, BP-19 through BP-22, BP-24 and after, BC-1 and after, BD-1 and after*)

Reference TABLE 2 and FIGURES 2 and 8

1. Remove and discard left and right propeller de-ice 20 amp circuit breakers from the lower section of the fuel control panel. Install two (2) 25 amp 4200-002-25 or 4120-G214-J3M1-C4S0ZN-25A Circuit Breakers as shown in FIGURE 2, zone B4 (Ref. Item 1 on FIGURE 8, zone D8).
2. Remove and discard No. 1 and No. 2 inner propeller de-ice circuit breakers; CB 138 and CB 139 from the A147 propeller de-ice equipment shelf assembly.
3. Remove and discard No. 1 and No. 2 outer propeller de-ice circuit breakers; CB 140 and CB 141 from the A147 propeller de-ice equipment shelf assembly.
4. Install hole-plugs in place of CB 138, 139, 140, and 141 and remove the associated placards.
5. Remove wire H61C22 from K133 outer propeller de-ice manual over-ride relay. Cut, cap, and stow per AC 43.13.
6. Remove propeller de-ice ammeter and route to an instrument repair shop for the following work:

NOTE: As a customer option, the existing ammeter can be replaced with a Beechcraft 101-389017-13 Ammeter.

- a) Change the green arc from its current 14-18 amps to 18-24 amps. Install REI-1001-2 Placard on the reworked instrument's housing.
7. Reinstall the reworked propeller de-ice ammeter or install new Beechcraft ammeter.
8. On aircraft indicated for rework of S175 Switch per flag note 1 on FIGURE 1, zone C2, rework the switch by installing an 18 gauge jumper between the inner and outer posts on as shown in FIGURE 8, zone C7, per flag note 1 (Ref. Item 4).

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

TABLE 2

| RE-TERMINATED WIRES | | | | | |
|---------------------|----------------|--------|--------|--------------------------|--|
| WIRE NO. | FROM | PIN | TO | PIN | NOTE |
| H57A14 H62A14 | CB138 CB138 | - - | - - | Splice 1 Splice 1 | - |
| H55A14 H56A14 | CB139 CB139 | - - | - - | Splice 2 Splice 2 | - |
| H58A14 H63A14 | CB140 CB140 | - - | - - | Cap & Stow Cap & Stow | - |
| H53A14 H54A14 | CB141 CB141 | - - | - - | Cap & Stow Cap & Stow | - |
| H61C22 | K133 | - | - | Cap & Stow | Outer Prop De-Ice Manual Over-Ride Relay |
| H49A14 H51A14 | P267 P267 | C E | - - | Cap & Stow Cap & Stow | M125 Prop De-Ice Timer |
| H58D16 H58D16 | P19 P19 | A A | - - | Cap & Stow Cap & Stow | No. 1 Engine No. 2 Engine |
| ADDED WIRE | | | | | |
| Jumper | S24 | 1 | S24 | 3 | Manual Prop De-Ice Control Switch |

NOTE: Goodrich 3E1964-3 De-ice Timer and McCauley C45114 De-ice and C45116 De-ice Timers are compatible with this installation. Check the de-ice timer part number to verify that one of these timers is installed.

- On aircraft indicated for de-ice timer replacement per flag note 1 on FIGURE 2, gain access through the cabin floor panel that is just forward of the front spar. Remove and discard existing de-ice timer while retaining attachment hardware. Installation of the new timer will be easier if the timer bracket is removed. Locate 3E1964-3 De-ice Timer or equivalent on the bracket at the approximate center of the old timer’s location. Drill no. 10 (Ø.1935 inch) holes in the bracket to match the de-ice timer’s mounting holes. Install four (4) 10-32 Nut Plates on lower side of the bracket. Reinstall bracket and install replacement timer with retained hardware.
- On aircraft indicated for de-ice timer replacement per flag note 1 on FIGURE 2, remove, cap, and stow wires from pins “C” and “E” in timer plug and reconnect to timer (Ref. Goodrich drawing 7E1561 and Item 7 on FIGURE 8, zone B6).
- Because the lower section of the fuel control panel was reworked, accomplish a dual buss conformity inspection per Beechcraft King Air 200 Series Maintenance Manual, Subject 24-50-00.
- Reinstall cockpit and cabin furnishings as required.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

7.0 PROPELLER REMOVAL

1. Remove engine cowling (Ref. Beechcraft King Air 200 Series Maintenance Manual, Subject 71-10-00).
2. Remove and retain Beta arm and discard carbon block.
3. Remove propellers (Ref. Beechcraft King Air 200 Series Maintenance Manual, Subject 61-10-00).

Reference FIGURES 3 & 5

4. Remove and retain synchrophaser targets (screws or brackets), and counterweights as applicable.
5. If removing Hartzell composite blade HC-E4N-3A/NC9208K Propellers installed per STC SA02130SE, remove and discard the engine mounted propeller de-ice Metal Oxide Varistor (MOV) (Ref. FIGURE 5, zone C5).
 - a) Remove wires connecting MOV module to de-ice brush blocks.
 - b) Remove MOV assembly from mounting bracket and discard.
 - c) As an option, the MOV mounting bracket may be replaced with Beechcraft P/N 35-550115-37. Remove 130909B33 and 130909B14 Bolts, MS35333-40 and NAS1149F0332P Washers, and 130909N29 Nut. Install 35-550115-37 Bracket with removed hardware.

8.0 PROPELLER DE-ICE SYSTEM BRACKETRY AND BRUSH REWORK

8.1 Propeller De-ice System Bracketry Rework

- *(BB-2 Thru BB-1192, BL-1 Thru BL-117, BN-1 Thru BN-4, BT-1 Thru BT-30, BP-1, BP-19 Thru BP-22, BP-24 and after, BC-1 and after, BD-1 and after)*

Reference FIGURES 4 & 5

1. Remove existing brush block or modular brush assembly and its associated hardware (Ref. Beechcraft King Air 200 Series Maintenance Manual, Subject 30-60-00), whichever exists. Install new 3E2090-1 Modular Brush Block.

NOTE: Raisbeck 15BC-72-200-1 Bracket Assembly is a pre-trimmed replacement for the OEM 50-910584-33 Bracket Assembly.

2. Trim .125 inch from the front edge of the existing de-ice brush mounting bracket and elongate brush retention slots .125 inch aft as shown in FIGURE 4 or 5. Break all sharp edges and treat all bare metal surfaces with primer.
3. Remove, then reinstall magnetic pick-up with jam nut on the outside of bracket to increase the adjustment length of magnetic pick-up (Ref. FIGURE 5, zone B7).

- *(BB-1193 thru BB-1406, BL-118 thru BL-133, and BT-31 thru BT-33)*

Reference FIGURES 4 & 5

1. Remove and retain magnetic pick-up and jam nut from the bracket.
2. Remove and discard C40315 Synchrophaser Bracket and C40257 Brush Block and Bracket Assembly, while retaining attachment hardware.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

NOTE: Raisbeck 15BC-72-200-1 Bracket Assembly is a pre-trimmed replacement for the OEM 50-910584-33 Bracket Assembly.

3. Trim .125 inch from the front edge of the new de-ice brush mounting 50-910584-33 Bracket Assembly provided with your kit. Elongate brush retention slots .125 inch aft as shown in FIGURE 4 or 5. Break all sharp edges and treat all bare metal surfaces with primer.
 4. Install the trimmed de-ice brush mounting 50-910584-33 Bracket Assembly on the engine case using salvaged hardware.
 5. Install new synchrophaser magnetic pick-up 90-960028-1 Bracket Assembly with MS35335-32 Lock Washers between the brush block bracket assembly and magnetic pick-up bracket assembly using 130909B15 Bolts, NAS1149CN816R Washers, and MS21043-3 Nuts.
 6. Reinstall magnetic pick-up with jam nut on the outside of bracket to increase the adjustment length of magnetic pick-up (Ref. FIGURE 5, zone B8).
- *(BB-1407 thru BB-1438, BB-1440 thru BB-1443, BL-134 thru BL-138, and BT-34)*
Reference FIGURES 4 & 5

1. Remove and retain electrical magnetic pick-up and jam nuts from the synchrophaser brackets. One magnetic pick-up is for synchrophasing and the other is for propeller balancing.
2. Remove the existing brush block bracket and synchrophaser bracket and discard while retaining the attachment hardware.

NOTE: Raisbeck 15BC-72-200-1 Bracket Assembly is a pre-trimmed replacement for the OEM 50-910584-33 Bracket Assembly.

3. Trim .125 inch from the front of the new de-ice brush mounting 50-910584-33 Bracket Assembly provided with your kit and elongate brush retention slots .125 inch aft as shown in FIGURE 6, zone B3. Break all sharp edges and treat all bare metal surfaces with primer.
 4. Install trimmed de-ice brush mounting 50-910584-33 Bracket Assembly on the engine case using salvaged hardware.
 5. Install new 92-2502-1 Bracket Assembly provided with your kit using salvaged hardware.
 6. Reinstall prop-balancer pick-up and synchrophaser pick-up ensuring that both the left and right engines have identical installations (reference FIGURE 4 for location of each pick-up).
- *(BB-1439, BB-1444 thru BB-1508 [except Special Edition], BL-139, BL-140, and BW-1 and after)*

Reference FIGURES 4 & 5

1. Remove and retain magnetic pick-ups and jam nuts from the synchrophaser brackets. One magnetic pick-up is for the synchrophaser and the other is for the propeller balancing.
2. Remove and discard the existing brush block bracket and synchrophaser bracket, while retaining the attachment hardware.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

NOTE: Raisbeck 15BC-72-200-1 Bracket Assembly is a pre-trimmed replacement for the OEM 50-910584-33 Bracket Assembly.

3. Trim .125 inch from the front of the de-ice brush mounting 50-910584-33 Bracket Assembly provided with your kit and elongate brush retention slots .125 inch as shown in FIGURE 4 or 5. Break all sharp edges and treat all bare metal surfaces with primer.
4. Install trimmer de-ice brush mounting 50-910584-33 Bracket Assembly on the engine case using salvaged hardware.
5. Install new 92-2502-1 Bracket Assembly provided with your kit using salvaged hardware.
6. Reinstall prop-balancer pick-up and synchrophaser pick-up ensuring that both the left and right engines have identical installations (reference FIGURE 5; zone C5 for location of each pick-up).

NOTE: *BB-1509 and after, BL-141 and after, BN-5 and after, BT-35, BY-1 and after* do not require any bracketry rework.

8.2 Propeller De-ice Brush Block/Module Rework and Inspection

- (*Model 200 Series [except BL-30 through BL-36] and Model B200 Series [BB-734 and BB-793 only]*)

Reference FIGURE 8

1. On airplanes with three (3) brush modules, 3E2090-1 Modular Brush Block, remove and discard module "A" (bottom). Cut, cap, and stow wire per AC 43.13 (Ref. Item 9 on FIGURE 8, zone C3).

NOTE: Operators of airplanes with brush blocks should consider incorporating Beechcraft Service Instruction No. 1075.

2. On airplanes with 4E1311-2 Brush Block Assembly (Ref. Item 9 on FIGURE 8, zone C2) accomplish the steps as follows:
 - a) Disconnect ground Wire H52A16N from the top brush "C". Remove and discard the top brush and spring.
 - b) Disconnect Wire H51D16 from the bottom brush "A", cap and stow per AC 43.13, or remove from pin R of Plug 220 on the forward fire seal.
 - c) Connect ground Wire H52A16N to the bottom brush "A".

9.0 PROPELLER SYNCHROPHASER TARGET REWORK AND INSTALLATION

9.1 Screw Type Target – Slip Ring Mounted

Reference FIGURE 3

1. Install six (6) retained and two (2) new Goodrich 2E1377 Screws in the pre-threaded holes of the bulkhead with Loctite "C" and torque to 32-48 oz-in as follows:
 - a) Left Spinner Aft Bulkhead - Four (4) screws aligned with blade centerlines.
 - b) Right Spinner Aft Bulkhead - Four (4) screws 65 degrees counterclockwise from blade centerlines as viewed from rear.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

9.2 Screw Type Target – Spinner Bulkhead Mounted

Reference FIGURE 5

1. Install 3360-078 Target with AN960C6L Washer and MS21043-06 Nut.
 - a) Left Spinner Aft Bulkhead - One (1) target 5 degrees counterclockwise from blade centerline as viewed from rear, in pre-drilled hole to align with synchrophaser pick-up.
 - b) Right Spinner Aft Bulkhead - One (1) target 20 degrees clockwise from blade centerline as viewed from rear, in pre-drilled hole to align with synchrophaser pick-up.

9.3 Angle Type Target – Multiple-Targets

NOTE: Raisbeck 08BC-72-400-1 Target Bracket is a direct replacement for OEM 90-960028-3 Target Bracket. The 08BC-72-400-1 Target Bracket is supplied with an 80 degree bend. There is no need to adjust the angle.

Reference FIGURE 3

1. Rework the six (6) retained and (2) new 90-960028-3 Target Brackets (closed angle) from 90 degrees to approximately 80 degrees as shown on FIGURE 3, zone A5.
2. Install three (3) retained and one (1) new 90960028-3 Target Bracket on the aft side of each spinner aft bulkhead. Install each bracket with an AN3-5A Bolt, an MS35335-32 Lock Washer between the target bracket and aft side of spinner aft bulkhead, and NAS1149F0332P Washer and MS21043-3 Nut on the forward side of spinner aft bulkhead as shown on FIGURE 3, zones D5 thru D6. Position target brackets for left and right propellers as follows:
 - a) Left Spinner Aft Bulkhead - four (4) brackets 5 degrees counterclockwise from blade centerline as viewed from rear, in pre-drilled holes R7.261 inches from hub centerline.
 - b) Right Spinner Aft Bulkhead - four (4) brackets 20 degrees clockwise from blade centerline as viewed from rear, in pre-drilled holes R7.261 inches from hub centerline.
3. Torque nuts 20-25 lb-in above nut running torque.

9.4 Angle Type Target – Single-Target

NOTE: Raisbeck 08BC-72-400-1 Target Bracket is a direct replacement for OEM P/N 90-960028-3 Target Bracket. The 08BC-72-400-1 Target Bracket is supplied with an 80 degree bend. There is no need to adjust the angle.

NOTE: Customer should consider accomplishing Beechcraft Service Bulletin 2115 that installs an improved 90-960028-11 Target Bracket at this time.

Reference FIGURE 3

1. Rework the two (2) salvaged 90-960028-3 Target Brackets or new 90-960028-11 Target Brackets (closed angle) from 90 degrees to approximately 80 degrees as shown on FIGURE 3, zone A5.



- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

2. Install one (1) 90-960028-3 or -11 Target Bracket on the aft side of each spinner aft bulkhead. Install each bracket with an AN3-5A Bolt, an MS35335-32 Lock Washer between the target bracket and aft side of spinner aft bulkhead, and NAS1149F0332P Washer and MS21043-3 Nut on the forward side of spinner aft bulkhead as shown on FIGURE 3, zones D2 thru D3. Position target brackets for left and right propeller as follows:
 - a) Left Spinner Aft Bulkhead - One (1) bracket 5 degrees counterclockwise from blade centerline as viewed from rear, in pre-drilled holes R7.261 inches from hub centerline.
 - b) Right Spinner Aft Bulkhead - One (1) bracket 20 degrees clockwise from blade centerline as viewed from rear, in pre-drilled holes R7.261 inches from hub centerline.
3. Torque nuts 20-25 lb-in above nut running torque.
4. Reinstall retained counterweights on spinner aft bulkhead 180 degrees from target in pre-drilled hole as shown in FIGURE 3. Torque nut 20-25 lb-in above nut running torque.

9.5 Screw Type Target – Bracket Mounted

Reference FIGURE 4

1. Rework the 90-960028-21, -29, or -39 Target Brackets from 90 degrees to approximately 70 degrees as shown on FIGURE 4, zone D3.
2. The installation of these target brackets requires the match-drilling of the spinner aft bulkhead to accommodate the second mounting hole of the target bracket. The stock spinner aft bulkhead is delivered with only a single hole at the R7.261 inches location. (Ref. FIGURE 4, zones A5 for illustration).
3. Install reworked 90-960028-21, -29, or -39 Target Brackets, with magnetic 3360-078 Screw, NAS1149CN616R Washer, and MS21043-06 Nut attached, on the aft side of each spinner aft bulkhead. Install each target bracket with AN3-5A Bolts, NAS1149F0332P Washers, and MS21043-3 Nuts as shown on FIGURE 4, zone D5. Position target brackets for left and right propeller as follows:
 - a) Left Spinner Aft Bulkhead - One (1) bracket 5 degrees counterclockwise from blade centerline as viewed from rear, in holes R7.261 inches from hub centerline.
 - b) Right Spinner Aft Bulkhead - One (1) bracket 20 degrees clockwise from blade centerline as viewed from rear, in R7.261 inches from hub centerline.
4. Torque nuts 20-25 lb-in above nut running torque.
5. Reinstall the retained 90-960028-23 Counterweights 180 degrees from target in pre-drilled holes to the spinner aft bulkhead with AN3-5A Bolts, NAS1149F0332P Washers, and MS21043-3 Nuts. Torque nuts 20-25 lb-in above nut running torque.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

10.0 PROPELLER INSTALLATION

NOTE: The propellers must be installed on the left hand and right hand engines respectively as per Synchrophaser Target Installation in Section 9.0.

New mounting hardware and betta ring carbon blocks are provided with the 85-1500-() or 85-1500-()S kits.

Reference the applicable King Air Maintenance Manual and Hartzell Propeller Owner's Manual and Logbook No. 149 for propeller installation.

Reference FIGURE 6 for External Beta System Decompression Tool installation and propeller installation general arrangement.

11.0 SYNCHROPHASER PICK-UP RIGGING

Reference FIGURES 3, 4, and 5 for Target / Pick-Up Configuration

NOTE: Some angular adjustment of angle style or bracket mounted targets may be required to ensure consistent clearance between the face of the target and the pick-up.

1. Adjust the pick-up to provide clearance between the pick-up and targets in accordance with the applicable King Air Maintenance Manual.
2. Torque jam nut to a maximum of 25 lb-in and lockwire.
3. During Post Installation Run-Up Checks and Adjustments (Section 14.0) perform a functional check of the Propeller Synchrophaser System in accordance with the applicable King Air Maintenance Manual.

12.0 PROPELLER DE-ICE BRUSH BLOCK INSTALLATION

- *(BB-2 thru BB-1192, BB-1439, BB-1444, BB-1509 and after [except Special Edition], BL-1 thru BL-117, BL-141 and after, BN-1 and after, BT-1 thru BT-30, BT-39 and after, BP-1, BP-19 thru BP-22, BP-24 and after, BC-1 and after, and BD-1 and after)*
 1. On airplanes with brush blocks, install and rig per Beechcraft King Air 200 Series Maintenance Manual, Subject 30-60-00.
 2. On airplanes with modular brush assemblies, install modular brush assembly with 1E1157 Shims and adjust using Beechcraft King Air 200 Series Maintenance Manual, Subject 30-60-00.
- *(BB-1193 thru BB-1508, BL-118 thru BL-140, BN-1 thru BN-4, and BT-31 thru BT-38)*

NOTE: This step does not apply to aircraft equipped with Hartzell/Beechcraft HC-E4N-3G/D9390SK-1R Propellers.

1. Install new 3E2090-1 Brush Modular Assembly with 1E1157 Shims, MS51957-50 Screws, NAS1149CN816R Washers, and MS21045-08 Nuts. Adjust using Goodrich instructions.



- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

13.0 PRE-RUN INSPECTION AND CHECKS

1. Reference Beechcraft King Air 200 Series Maintenance Manual for Pre-Run Inspection and Checks.
2. Perform a detailed inspection of all work accomplished.
3. Install propeller spinner per Hartzell Propellers Owner's Manual and Logbook No. 149.
4. Functionally check the de-ice system per Beechcraft King Air 200 Series Maintenance Manual.
5. Reinstall cowling.

14.0 POST-INSTALLATION RUN-UP CHECKS AND ADJUSTMENTS

14.1 Power Symmetry and Low-Pitch Stop Check

CAUTION: OBSERVE STANDARD FIRE AND PROPELLER SAFETY PRECAUTIONS. MAKE SURE RAMP IS CLEAR BEFORE STARTING ENGINES.

Refer to the appropriate sections of the Beechcraft King Air Pilot's Operating Handbook and start engines. Accomplish the checks and adjustments as follows:

CAUTION: USE CHART A FOR MODEL 200, B200, AND B200GT SERIES TORQUE SETTING VALUES. USE CHART B FOR MODEL A200 SERIES TORQUE SETTING VALUES.

CAUTION: HOLD STUDS WHEN TURNING BETA NUTS.

NOTE: If this check is not being performed under zero wind conditions, take an average of the upwind and downwind readings to obtain valid results.

1. With the propeller levers fully forward, advance the cockpit power lever for the engine until the propeller reaches 1,800 RPM. The torque meter reading for the engine must not exceed and should be within 40 lb-ft of the value designated by the pressure altitude and temperature conversion graph Chart A, or must not exceed and should be within 1.8% of the value designated by the pressure altitude and temperature conversion graph Chart B, for the ambient conditions under which the engine is operating. Repeat this check on the other engine. The difference between torque meter readings on the engines should not exceed 20 lb-ft (Chart A), or 0.9% (Chart B). If the torque meter readings do not fall within the limitations described by the graph, or if the difference between the engines exceeds 20 lb-ft (Chart A), or 0.9% (Chart B), the following adjustments are required:
 - a) When the torque change required to bring an engine within the design limits does not exceed 20 lb-ft (Chart A), or 0.9% (Chart B), disconnect the fuel topping governor inner connecting rod and disconnect the control cable rear clevis from the Beta control cam. Adjust the clevis in or out until engine torque is within the prescribed limits and the torque of each engine is the same, then reconnect the inner connecting rod and the rear clevis.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

- b) When the torque change required to bring an engine within the prescribed limits exceeds 20 lb-ft (Chart A), or 0.9% (Chart B), adjustment of the stop (Beta) nut on each of the four low pitch stop rods for the propeller is required. All four nuts must be adjusted to an identical setting (Ref. FIGURE 4, zone A4). One flat of rotation on the Beta nuts (clockwise to increase or counterclockwise to decrease) changes engine torque approximately 15 lb-ft (Chart A), or 0.7% (Chart B). Adjust the Beta nuts as necessary to bring the engines within the prescribed limits.

14.2 Low-Idle Adjustment

CAUTION: OPERATION BETWEEN 400 AND 1,150 RPM MAY CAUSE DAMAGE TO PROPELLER.

CAUTION: HOLD STUDS WHEN TURNING BETA NUTS.

Set the condition lever at low idle and the power level at idle then set the propeller at 1,150 +50/-0 RPM. Perform adjustment per Beechcraft King Air 200 Series Maintenance Manual, Subject 76-00-00, until proper propeller speed is achieved.

14.3 High-Idle Adjustment

If required, rig per Beechcraft King Air 200 Series Maintenance Manual, Subject 76-00-00.

14.4 Fuel Cutoff Lever Adjustment

Rig per Beechcraft King Air 200 Series Maintenance Manual, Subject 76-00-00.

14.5 Propeller Autofeathering System

Check and adjust autofeather power switch as required per Beechcraft King Air 200 Series Maintenance Manual, Subject 61-21-00.

CAUTION: OPERATION BETWEEN 400 AND 1,150 RPM MAY CAUSE DAMAGE TO PROPELLER.

NOTE: If ground check of the autofeather system is unsatisfactory, the problem may be that the low pitch stops (propeller blade angles) are too coarse. In this case, reset the low pitch stops so that the minimum torque value allowed (per Section 15.1.1) at 1,800 RPM is utilized. This will require lowering low idle N_1 to reduce propeller idle RPM to 1,150, reducing torque at low idle.

NOTE: Concerning early Model 200 aircraft, serial numbers BB-2 thru BB-733, BB-735 thru BB-792, BB-794 thru BB-828, BB-830 thru BB-853, BB-871 thru BB-873, BB-892, BB-893, BB-912, BL-1 thru BL-36, BN-1, and BT1 thru BT-22: If ground check of the autofeather system is unsatisfactory, the problem may be due to the higher oil pressure associated with the four-bladed propeller tripping the pressure switch prematurely. Raisbeck Engineering Service Bulletin No. 06-02 provides for replacement of the stock pressure switch with an approved alternate pressure switch with a higher tripping pressure.

14.6 Propeller Overspeed Governor Check

Check the operation per Beechcraft King Air 200 Series Maintenance Manual, Subject 61-20-00.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System
or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

14.7 Propeller Reversing System

Obtain maximum N_1 RPM settings per Beechcraft King Air 200 Series Maintenance Manual, Subject 61-20-00.

14.8 Propeller Synchrophaser Check

Perform a functional check of the propeller Synchrophaser System in accordance with the applicable King Air Maintenance Manual.

14.9 Propeller Dynamic Balancing

Raisbeck Engineering strongly recommends dynamically balancing both propellers per Beechcraft King Air 200 Series Maintenance Manual, Subject 61-01-00.

14.10 Elevator Trim Tab Adjustment

CAUTION: THIS STEP TO BE ACCOMPLISHED ONLY WHEN INSTALLING RAISBECK/HARTZELL HC-D4N-3A/D9515K SWEPT TURBOFAN PROPELLERS.

NOTE: All work to be accomplished in accordance with the Beechcraft King Air 200 Series Maintenance Manual.

15.0 SWEPT TURBOFAN PROPELLER ELEVATOR TRIM TAB ADJUSTMENT

CAUTION: THIS STEP TO BE ACCOMPLISHED ONLY WHEN INSTALLING RAISBECK/HARTZELL HC-D4N-3A/D9515K SWEPT TURBOFAN PROPELLERS.

NOTE: All work to be accomplished in accordance with the Beechcraft King Air 200 Series Maintenance Manual.

1. Perform CHECKING ELEVATOR TAB FREE PLAY inspection per the Beechcraft Maintenance Manual, and correct any discrepancies.
2. Perform an ELEVATOR TRIM TAB RIGGING procedure per the Beechcraft Maintenance Manual, except adjust the elevator tab for a deflection of 15 degrees +1/-0 degree DOWN from neutral, in lieu of the value specified by the Maintenance Manual. All other settings are per the Maintenance Manual.

If the aircraft is equipped with Rockwell Collins' Pro Line Fusion and L-3's MADRAS Digital Flight Data Recorder (MDFDR) do the following:

- a) Contact Textron's Team Turboprop and request a "B300 ROSE FDR" configuration file specific to the aircraft's serial number.

Team Turboprop
teamturboprop@txtav.com
(306) 676-7261

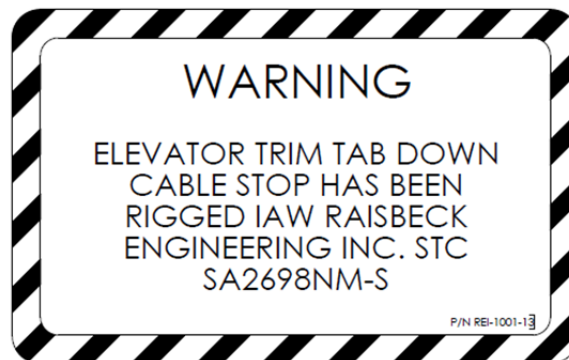
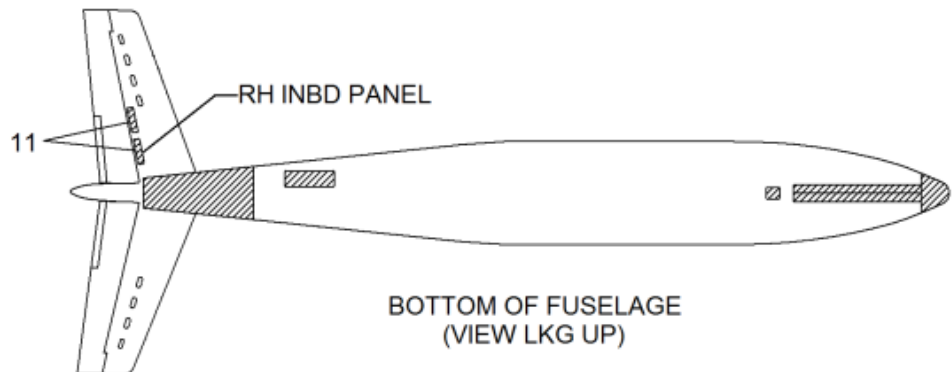
- b) Load the B300 ROSE configuration file per instructions provided by Team Turboprop.
- c) Rig the trim tab as indicated above as well as the tab's MDFDR transducer cable clamp position per the Beechcraft Maintenance Manual. Position the cable clamp such that throughout the tab's 15° range of motion the clamp does not contact nearby structure.

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

3. Perform an ELEVATOR TAB INDICATOR ADJUSTMENT procedure per the Beechcraft Maintenance Manual. Adjust indicator if required.
4. Perform an ELEVATOR TRIM INDICATOR SCALE MARKINGS procedure per the Beechcraft Maintenance Manual. Remark indicator if required.

15.1 Warning Placard Installation

- (for BB-1 thru BB-13, contact Raisbeck Engineering)
 1. Remove the right-hand inboard number 11 access panel from the lower side of the horizontal stabilizer (see picture of location below). This panel allows access to the Elevator Tab Cable Down Stop (and turnbuckle).
 2. Install REI-1001-13 Placard to the INSIDE surface of the number 11 access panel (see picture of placard below), taking care to prepare the surface per steps 2.a & 2.b below.
 - a. Before applying the placard, clean the INSIDE surface of the access panel with a 2 to 1 mixture of water and isopropyl alcohol. Do not use soaps or other cleaners with lotions or creams, as they will leave a residue.
 - b. Saturate a clean paper towel with a solvent-based cleaner and wipe the access panel surface. Be certain to follow all the manufacturer's safety guidelines when using any solvent. Dry the surface with a lint-free paper towel before the solvent evaporates.
 3. Reinstall the number 11 access panel.



- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

16.0 RETURN AIRPLANE TO SERVICE

1. Make appropriate log book entry in the Airplane Logbook.

Example:

Installed Raisbeck/Hartzell Quiet Turbofan Propeller System, Drawing List No. 85-1500, per STC SA2698NM-S. Weight and balance revised. Removed propeller P/N S/N ____ left, S/N ____ right. Installed propeller P/N HC-D4N-3A/D9383K or HC-D4N-3A/D9515K S/N ____ left, S/N ____ right. Removed propeller timer P/N ____, S/N ____ and installed 3E1964-3 S/N ____.

2. Complete three (3) copies of FAA Form 337. Give one (1) copy to the aircraft owner/operator, mail one (1) copy to the FAA Aircraft Registration Branch in Oklahoma City (may be submitted electronically), and retain one (1) copy for the installer's records.
3. Change the weight and balance data in Aircraft Flight Manual. Add Raisbeck/Hartzell Quiet Turbofan Propeller System, or add Raisbeck/Hartzell Swept Turbofan Propeller System, whichever applies. If upgrading from a current Raisbeck installation to the Raisbeck/Hartzell Swept Turbofan Propeller System reduce weight and moment data as shown below.

| PROPELLER SYSTEM | WEIGHT (lb) | ARM (in) | MOMENT (lb-in) |
|--|----------------------------------|-------------|-------------------|
| Raisbeck/Hartzell Quiet Turbofan Propellers (D9383K) | 318.6 | +71.4 | +22,748.04 |
| Raisbeck/Hartzell Swept Turbofan Propellers (D9515K) | 314.6 | +71.4 | +22,462.44 |
| Removed Propellers | Refer to Aircraft Equipment List | | |

4. Install red metal placard on the engine mount brace near the fuel control on the right side of the engine, in plain view of maintenance personnel. Contour tag to conform to brace profile, clamp in-place, and use ATACS 5103A/B epoxy to secure tag to brace.

THIS AIRCRAFT IS **RAISBECK** -
EQUIPPED. CONSULT APPLICABLE
RAISBECK ENGINEERING RIGGING
INSTRUCTIONS WITH A/C PAPERS,
OR CALL RAISBECK SERVICE AT

(206) 723-2000
OR
1-800-537-7277

P/N REI-1001-1

5. Include this manual, **85-105 Installation and Rigging Procedures**, with papers delivered with the airplane to the customer.
6. Insert the applicable Raisbeck Engineering AFMS (supplied with kit) into the Pilot's Operating Handbook. Reference Section 3.1.
7. Complete Installation Record Form 145-() included in data package and remit to:

Raisbeck Engineering Inc.
4411 South Ryan Way
Seattle, Washington 98178
Telephone (US & Canada): 800-537-7277
Telephone (International): 206.723.2000
Facsimile: 206-723-2884
Electronic Mail: customerservice@raisbeck.com

- Equipped with Raisbeck/Hartzell Quiet Turbofan Propeller System or
- Equipped with Raisbeck/Hartzell Swept Turbofan Propeller System

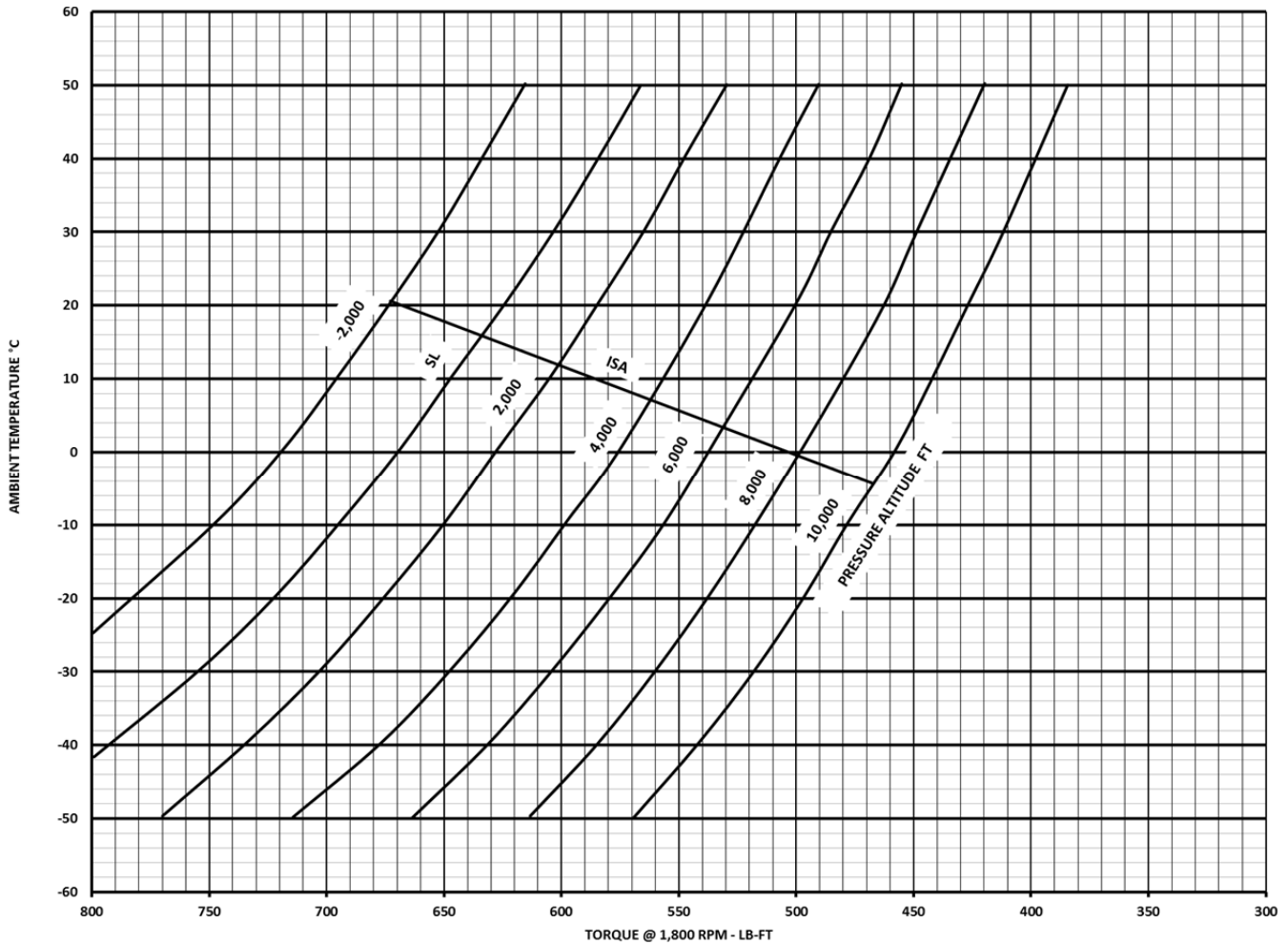
RAISBECK/HARTZELL QUIET/SWEPT FOUR-BLADED PROPELLER LOW PITCH CHART

CHART A

Model 200, B200, and B200GT Series

1. Set Low-Pitch stops to produce these torque values at 1,800 RPM.
2. Adjust N_1 to achieve an N_2 of 1,150 RPM ± 50 RPM.
3. Verify propeller RPM at Ground Idle is 1,150 RPM ± 50 RPM.

CAUTION: OPERATION BETWEEN 400 AND 1,150 RPM MAY CAUSE DAMAGE TO PROPELLER.



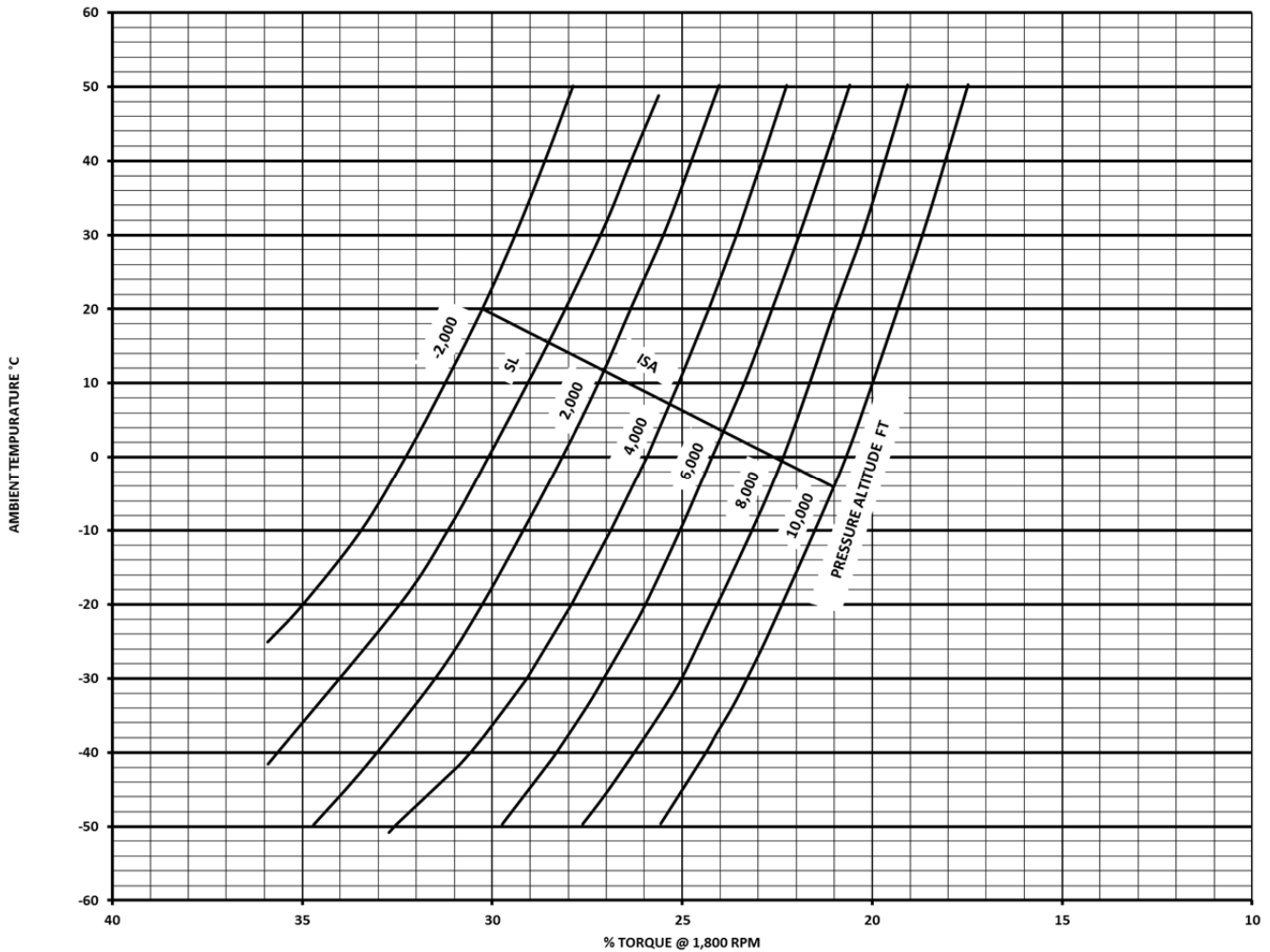
RAISBECK/HARTZELL QUIET/SWEPT FOUR-BLADED PROPELLER LOW PITCH CHART

CHART B

Model A200 BC-1 & after, BD-1 & after, BP-1, BP-19 thru BP-22, and BP-24 & after

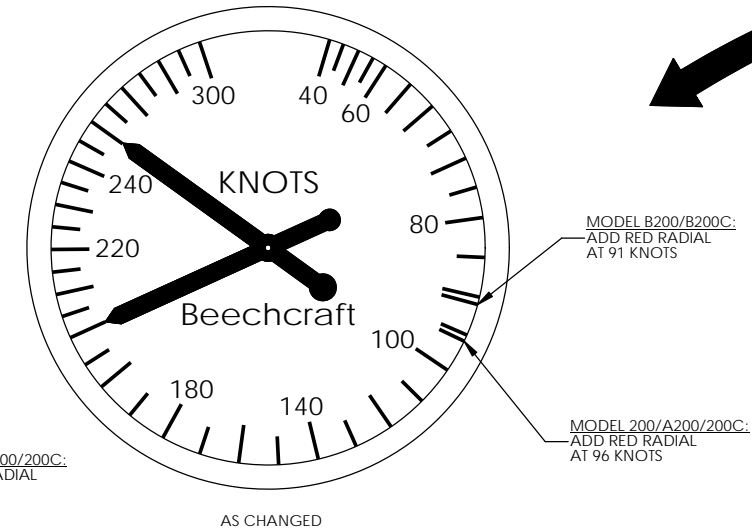
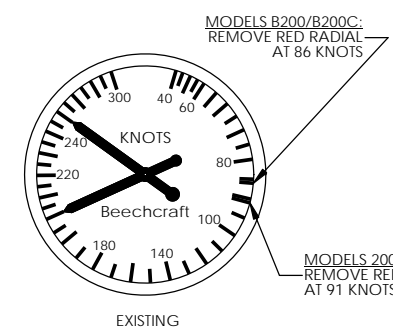
1. Set Low-Pitch stops to produce these torque values at 1,800 RPM.
2. Adjust N_1 to achieve an N_2 of 1,150 RPM ± 50 RPM.
3. Verify propeller RPM at Ground Idle is 1,150 RPM ± 50 RPM.

CAUTION: OPERATION BETWEEN 400 AND 1,150 RPM MAY CAUSE DAMAGE TO PROPELLER.

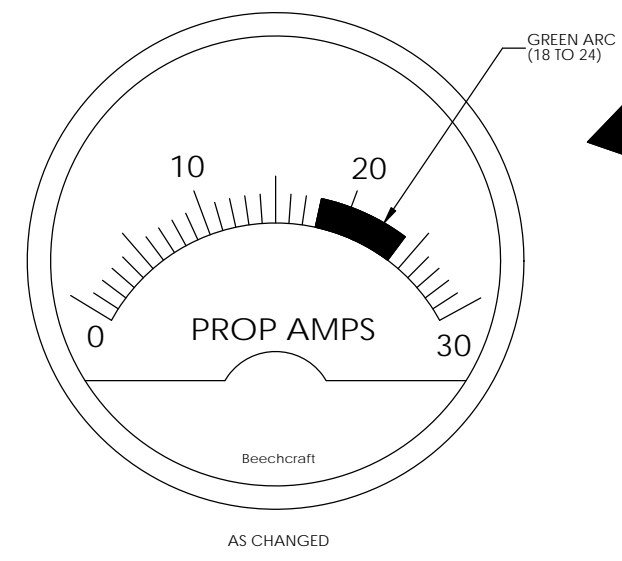
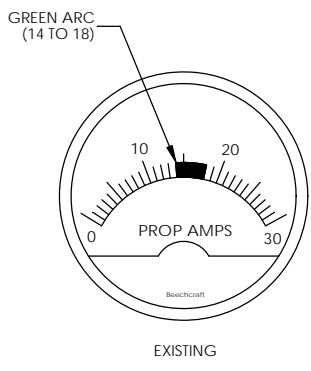


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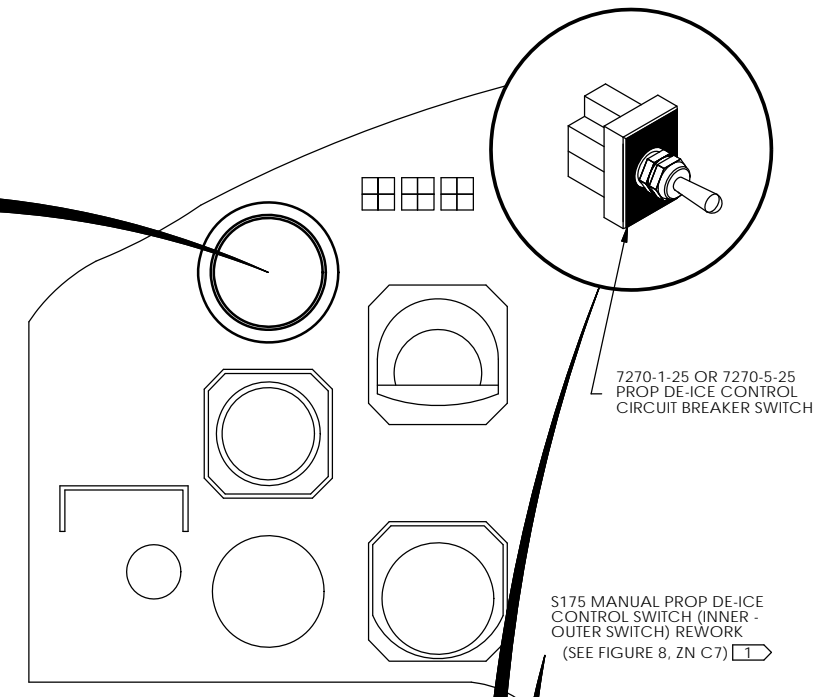
- 1 BB-2 THRU BB-828, BB-830 THRU BB-853, BB-871 THRU BB-873, BB-892, BB-893, BB-895, AND BB-912.
BC-1 AND AFTER: 3
BD-1 AND AFTER: 3
BL-1 THRU BL-29.
BN-1 ONLY.
BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER: 3
BT-1 THRU BT-22.
- 2 AIRCRAFT EQUIPPED WITH HARTZELL/BEECHCRAFT PROPELLERS HC-E4N-3G/D9390SK-1R:
FOR MODELS B200:
BB-1439, BB-1444 AND AFTER,
BL-139 AND AFTER; BW-1 AND AFTER
REMOVE RED RADIAL (V_{MCA}) AT 92 KNOTS AND REPLACE WITH RED RADIAL (V_{MCA}) AT 91 KNOTS.
- 3 CIRCUIT BREAKER AND DE-ICE CONTROL SWITCH LOCATED IN THE A110 OVERHEAD CONTROL PANEL.
- 4 AFTER INSTRUMENT REWORK, INSTALL PLACARD P/N REI-1001-2 ON HOUSING.



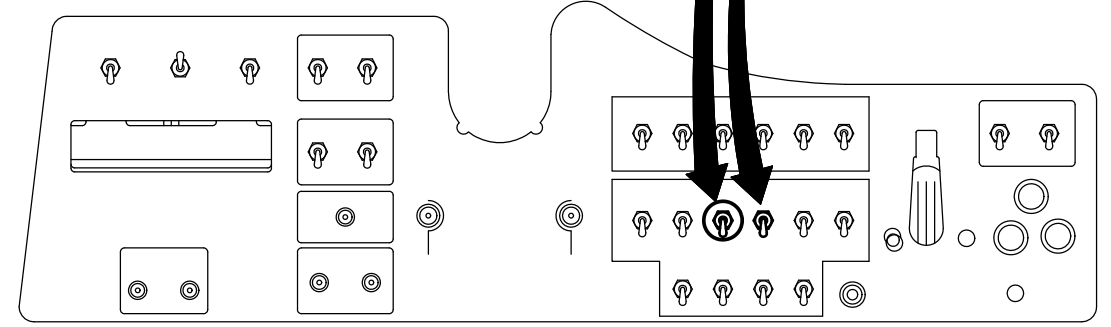
2 4 AIRSPEED INDICATOR CHANGE



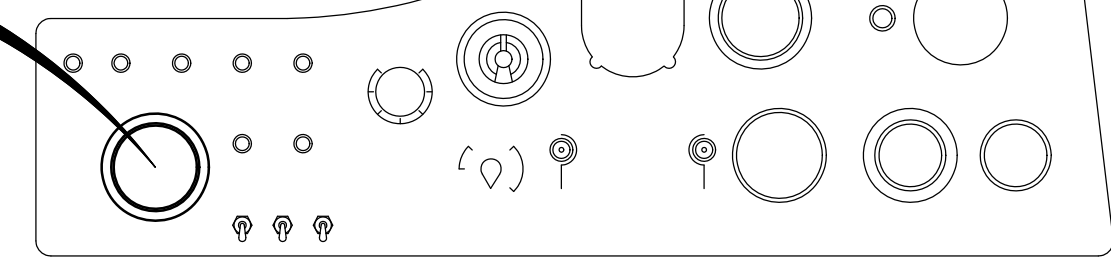
4 PROPELLER DE-ICE AMMETER REWORK (M123 PROP DEICE AMMETER)



PILOT'S PANEL REWORK



PILOT'S SUBPANEL REWORK



COPILOT'S SUBPANEL REWORK

| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS X ± .1 | ANGULAR ± 1° |
| XX ± .03 | |
| XXX ± .010 | |
| DO NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

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Seattle, WA 98178

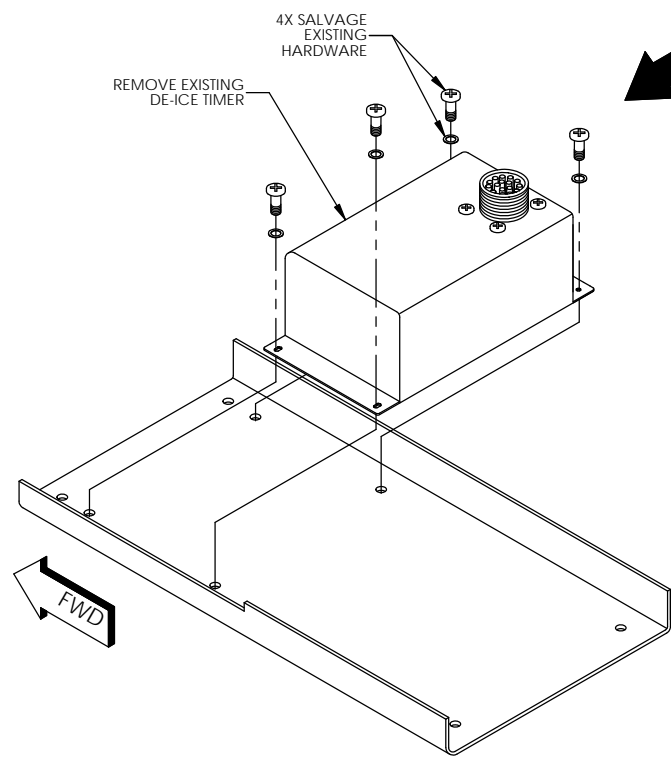
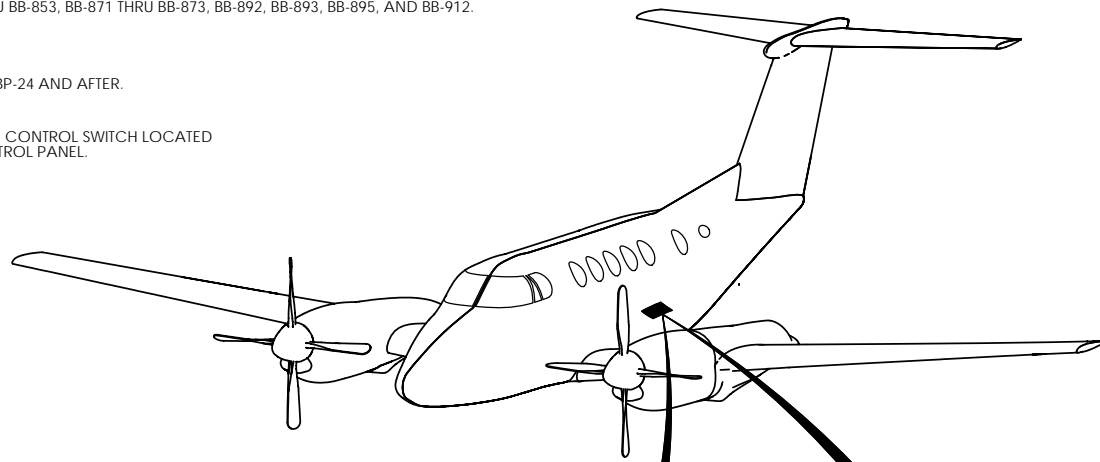


| | |
|---------------------------------|---|
| TITLE COCKPIT CHANGES | |
| SIZE D | CAGE CODE |
| SCALE NONE | DWG NO. FIGURE 1 Doc. 85-105 |
| CALC. WT | ACT. WT |
| SHEET 1 OF 8 | |

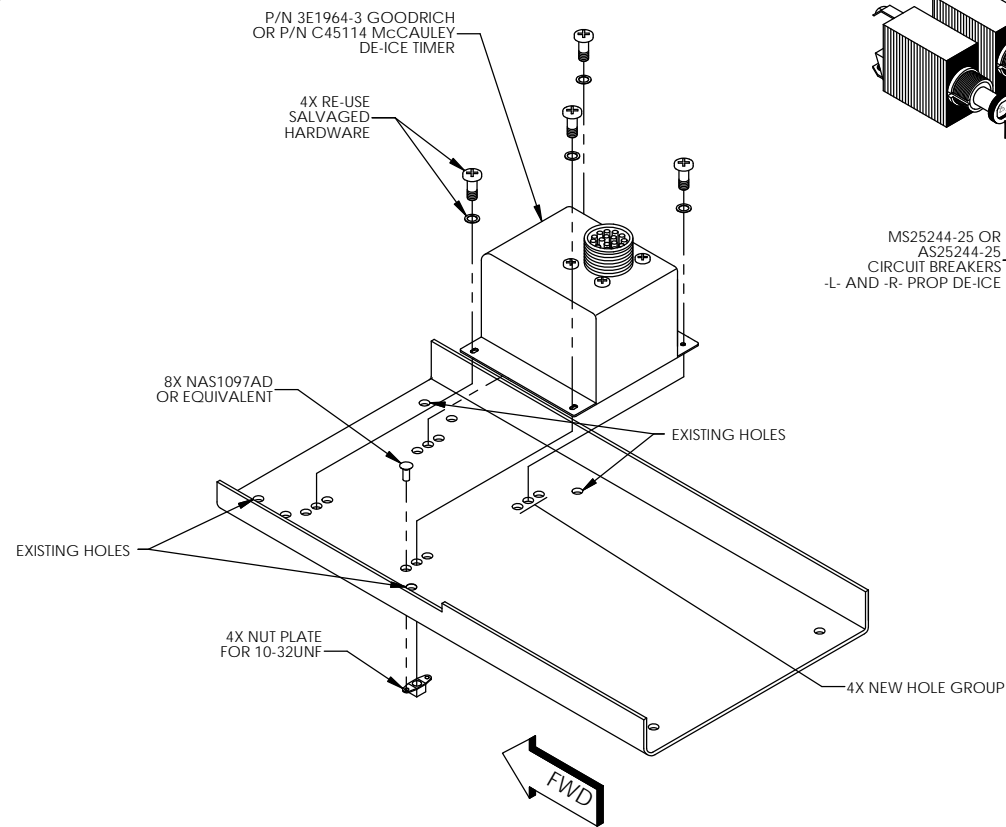
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- 1 BB-2 THRU BB-828, BB-830 THRU BB-853, BB-871 THRU BB-873, BB-892, BB-893, BB-895, AND BB-912.
BC-1 AND AFTER.
BD-1 AND AFTER.
BL-1 THRU BL-36.
BN-1 ONLY.
BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER.
BT-1 THRU BT-22.

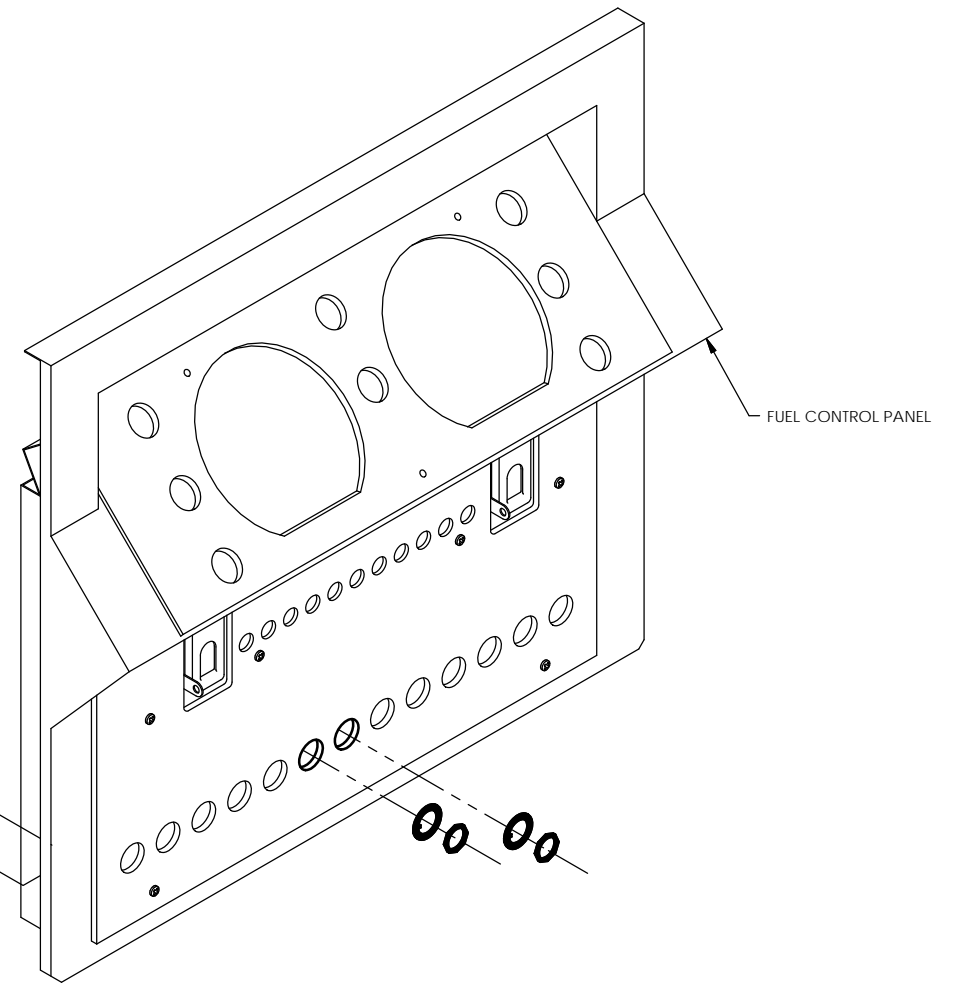
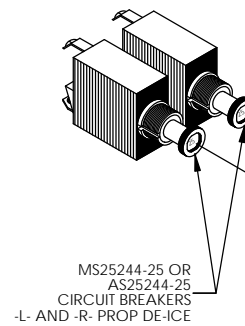
- 2 CIRCUIT BREAKER AND DE-ICE CONTROL SWITCH LOCATED IN THE A110 OVERHEAD CONTROL PANEL.



1 DE-ICE TIMER REMOVAL



1 NEW DE-ICE TIMER INSTALLATION



25 AMP CIRCUIT BREAKER INSTALLATION

- BB-2 THRU BB-1438, BB-1440 THRU BB-1443, BB-1514 AND AFTER (SPECIAL EDITION ONLY).
- BC-1 AND AFTER. 2
- BD-1 AND AFTER. 2
- BL-1 THRU BL-138.
- BN-1 THRU BN-4.
- BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER. 2
- BT-1 THRU BT-34.

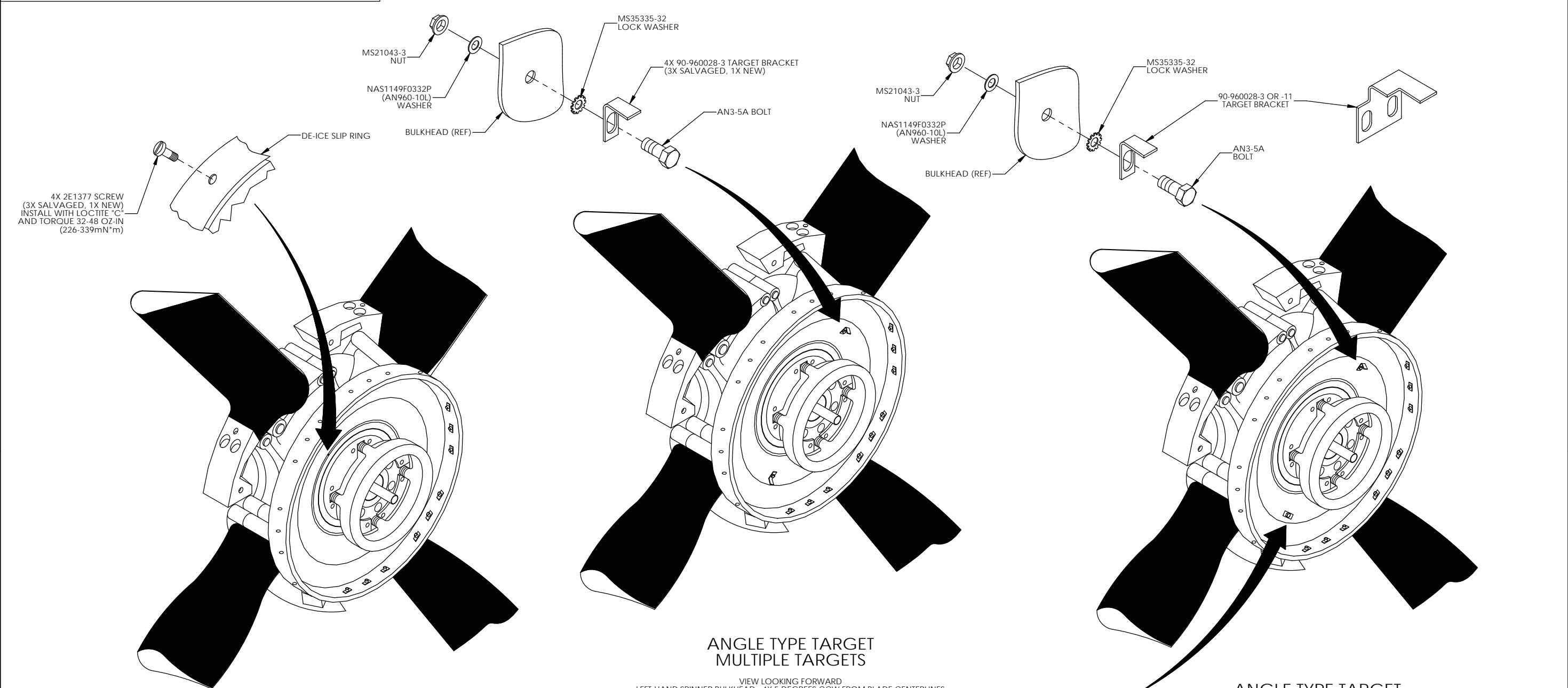
| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS X ± .1 | ANGULAR ± 1° |
| XX ± .03 | |
| XXX ± .010 | |
| DO NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

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Seattle, WA 98178



| | | | |
|---|-----------|----------------------------|-------------|
| TITLE COCKPIT AND CABIN CHANGES | | | |
| SIZE D | CAGE CODE | DWG NO. FIGURE 2 | Doc. 85-105 |
| SCALE NONE | | CALC WT | ACT WT |
| | | SHEET 2 OF 8 | |

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**SCREW TYPE TARGET
SLIP RING MOUNTED**

VIEW LOOKING FORWARD
LEFT-HAND SPINNER BULKHEAD - 4X ALIGNED WITH BLADE CENTERLINES
RIGHT-HAND SPINNER BULKHEAD - 4X 65 DEGREES CCW FROM BLADE CENTERLINES

**ANGLE TYPE TARGET
MULTIPLE TARGETS**

VIEW LOOKING FORWARD
LEFT-HAND SPINNER BULKHEAD - 4X 5 DEGREES CCW FROM BLADE CENTERLINES
RIGHT-HAND SPINNER BULKHEAD - 4X 20 DEGREES CW FROM BLADE CENTERLINES

**ANGLE TYPE TARGET
SINGLE TARGET**

VIEW LOOKING FORWARD
LEFT-HAND SPINNER BULKHEAD - 1X 5 DEGREES CCW FROM BLADE CENTERLINES
RIGHT-HAND SPINNER BULKHEAD - 1X 20 DEGREES CW FROM BLADE CENTERLINES



DETAIL BRACKET REWORK

P/Ns 90-960028-3 OR -11

| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS X ± .1 XX ± .03 XXX ± .010 | ANGULAR ± 1° |
| D.O. NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

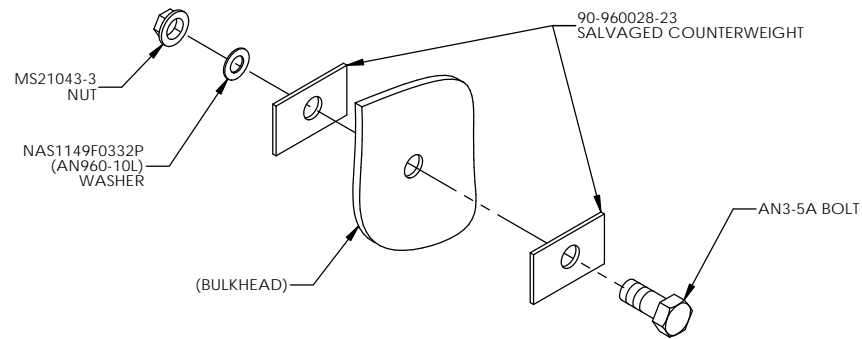
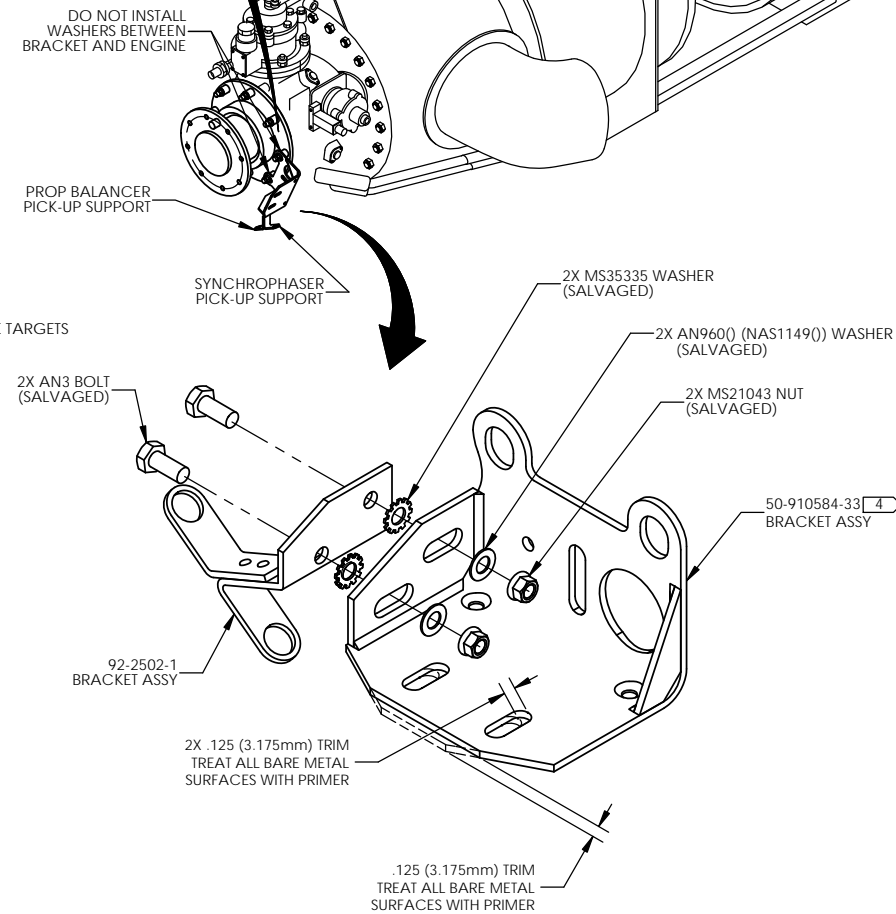
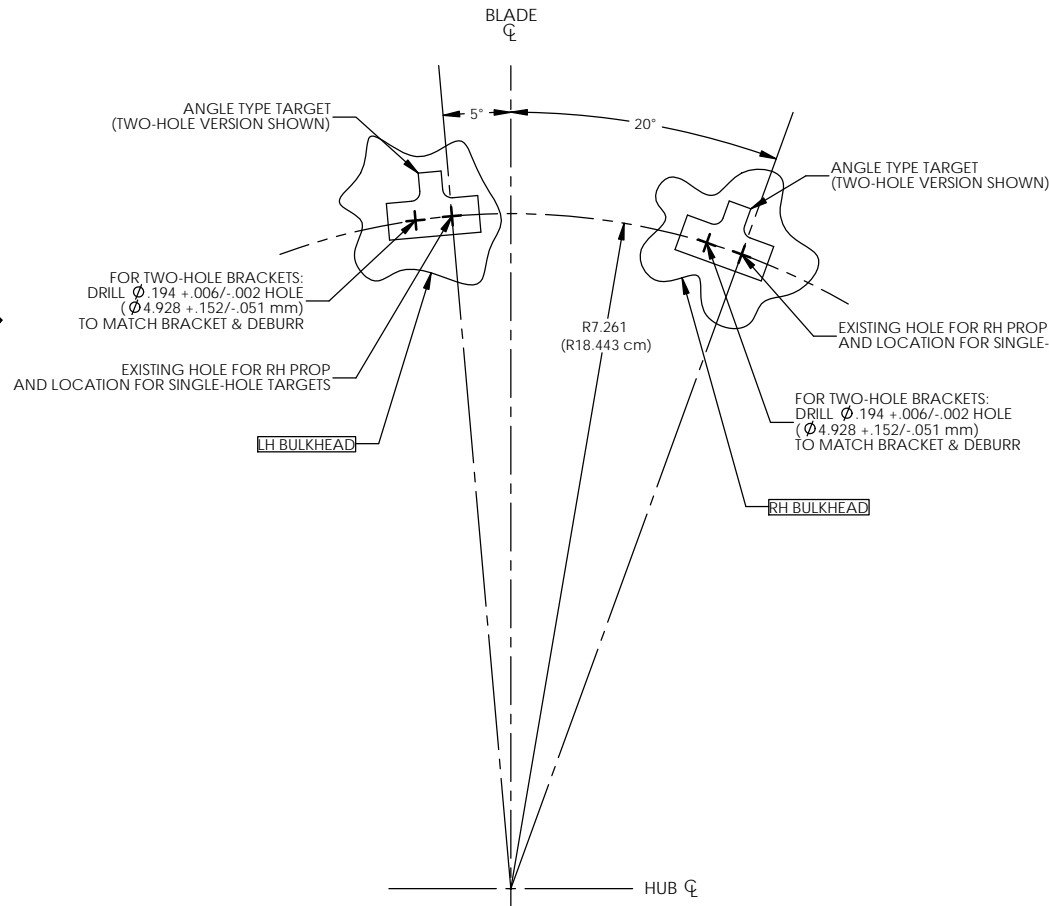
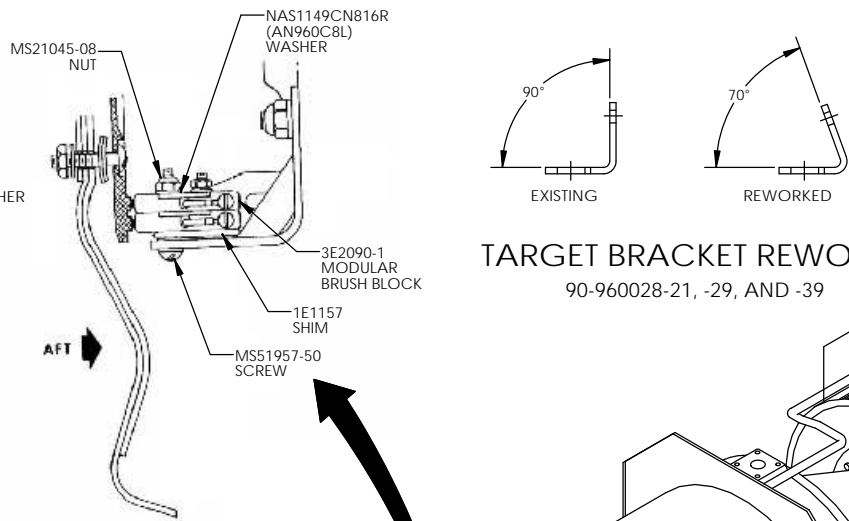
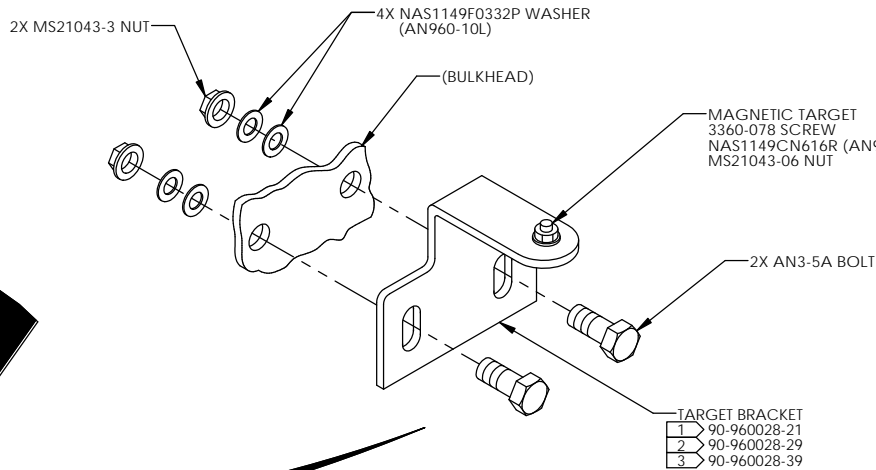
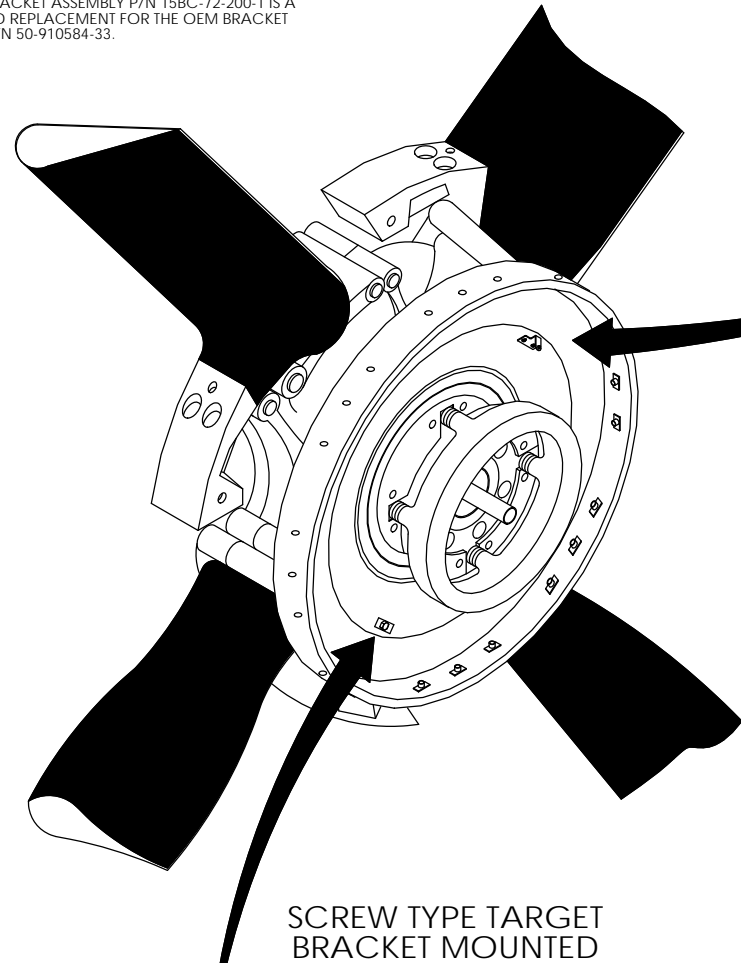
4411 S. Ryan Way
Seattle, WA 98178



| | | | |
|---|-----------|----------------------------|-------------|
| TITLE SYNCHROPHASER TARGET BRACKETRY REWORK | | | |
| SIZE D | CAGE CODE | DWG NO. FIGURE 3 | Doc. 85-105 |
| SCALE NONE | | CALC. WT | ACT. WT |
| | | SHEET 3 OF 8 | |

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- 1 BB-1407 THRU BB-1438, BB-1440 THRU BB-1443, AND BT-34.
- 2 BB-1407 THRU BB-1455, AND BT-35 THRU BT-38.
- 3 BB-1456 THRU BB-1508, BL-139, AND BL-140.
- 4 RAISBECK BRACKET ASSEMBLY P/N 15BC-72-200-1 IS A PRE-TRIMMED REPLACEMENT FOR THE OEM BRACKET ASSEMBLY P/N 50-910584-33.



TARGET POSITIONING ANGLE TYPE TARGET (TWO MOUNTING HOLE VERSION SHOWN)

VIEW LOOKING FORWARD LEFT & RIGHT PROPELLER BULKHEAD GEOMETRY SHOWN

| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS | ANGULAR |
| .XX ± .01 | ± 1° |
| .XXX ± .010 | |
| DID NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

4411 S. Ryan Way
Seattle, WA 98178

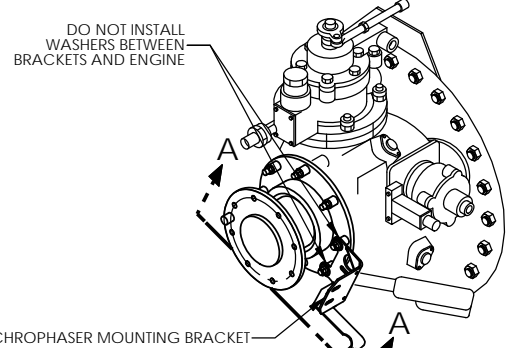


TITLE SYNCHROPHASER TARGET AND DE-ICE SYSTEM BRACKETRY REWORK

| | | |
|------------|-----------|------------------|
| SIZE D | CAGE CODE | DWG NO. FIGURE 4 |
| SCALE NONE | | Doc. 85-105 |
| | | SHEET 4 OF 8 |

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- 1 SALVAGED PART:
BB-2 THRU BB-1192.
BL-1 THRU BL-117.
BN-1 THRU BN-4.
BT-1 THRU BT-30.
- PART INCLUDED WITH KIT:
BB-1193 THRU BB-1406.
BL-118 THRU BL-138.
BT-31 THRU BT-33.
- 2 RAISBECK BRACKET ASSEMBLY P/N 15BC-72-200-1 IS A PRE-TRIMMED REPLACEMENT FOR THE OEM BRACKET ASSEMBLY P/N 50-910584-33.

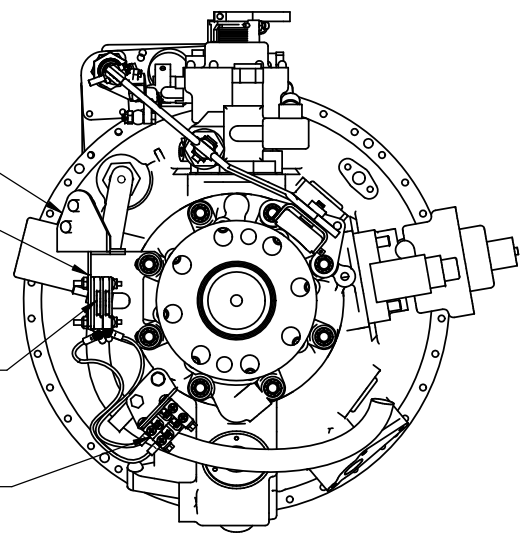


DO NOT INSTALL WASHERS BETWEEN BRACKETS AND ENGINE

SYNCHROPHASER MOUNTING BRACKET

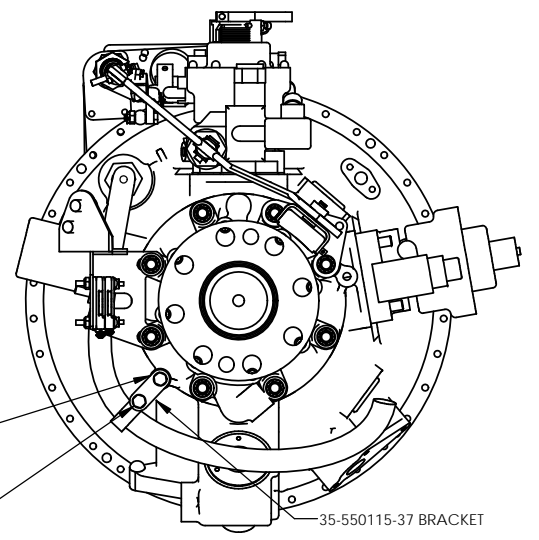
PROPELLER AND HUB ASSEMBLY OMITTED FOR CLARITY

- 101-960116-1 SYNCHROPHASER/BALANCE PICK-UP BRACKET
NO REWORK REQUIRED
- 101-960115-1 BRUSH BLOCK BRACKET
NO REWORK REQUIRED
- REMOVE AND DISCARD EXISTING MODULAR DE-ICE BRUSH BLOCK ASSEMBLY
- MOV ASSEMBLY

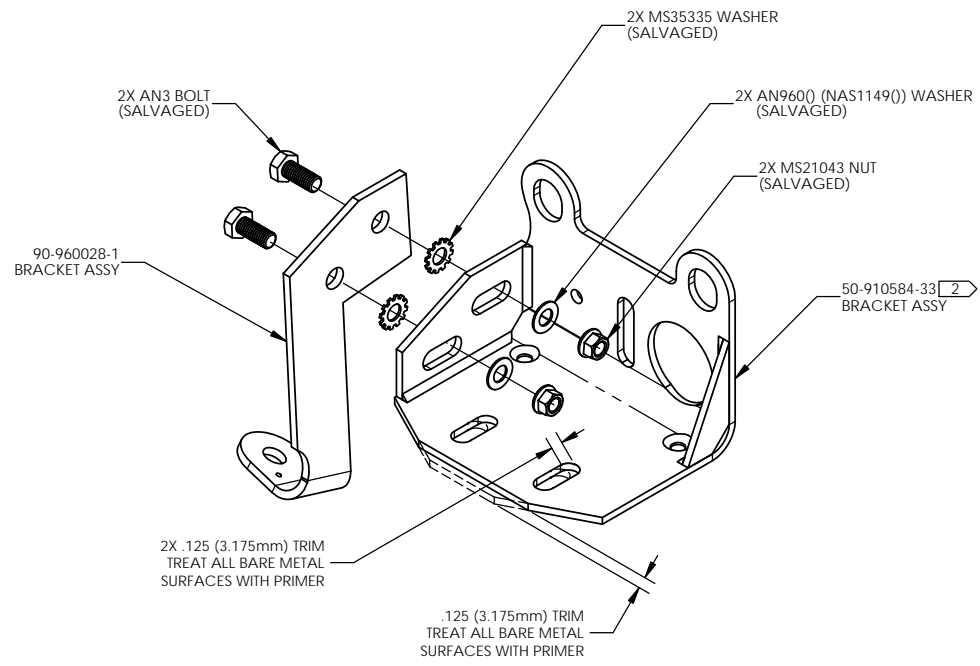


MOV MODULE REMOVAL
BY-117, BY-119 AND AFTER

- 130909B33 BOLT
MS35333-40 LOCK WASHER
- 130909B33 BOLT
NAS1149F0332P WASHER
130909N29 NUT
- 35-550115-37 BRACKET

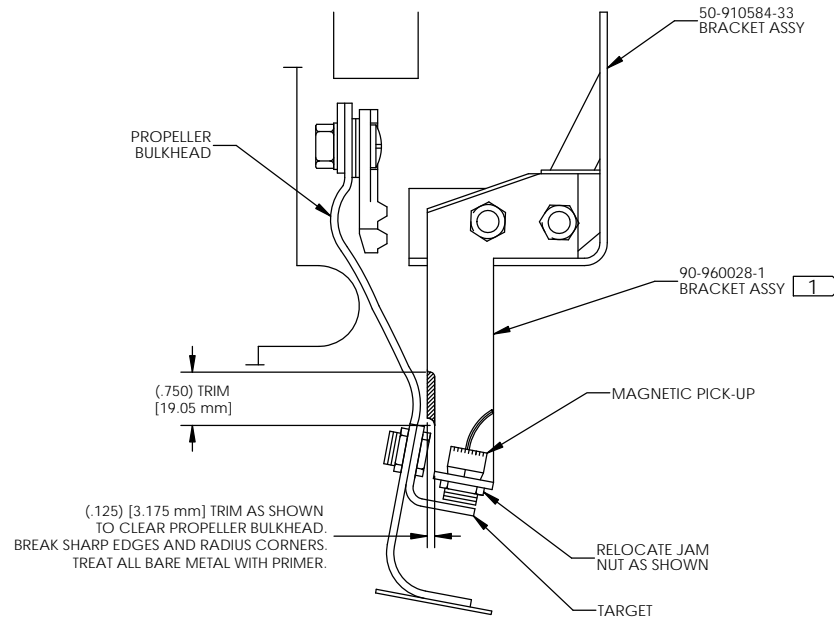


OPTIONAL MOV BRACKET REPLACEMENT
BY-117, BY-119 AND AFTER



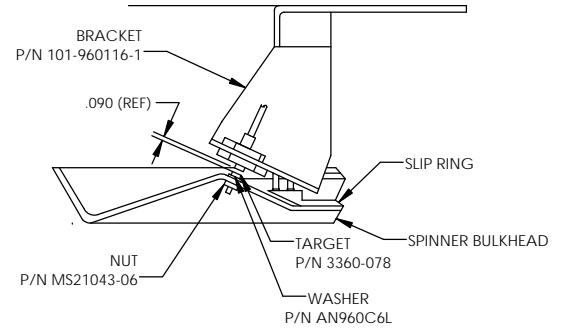
DE-ICE BRUSH BLOCK MOUNTING BRACKET
REWORK

BC-1 AND AFTER.
BD-1 AND AFTER.
BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER.



SYNCHROPHASER MAGNETIC
PICK-UP BRACKET REWORK
VIEW A-A

BB-791 THRU BB-1406.
BL-18 THRU BL-138.
BN-1 THRU BN-4.
BT-1 THRU BT-33.



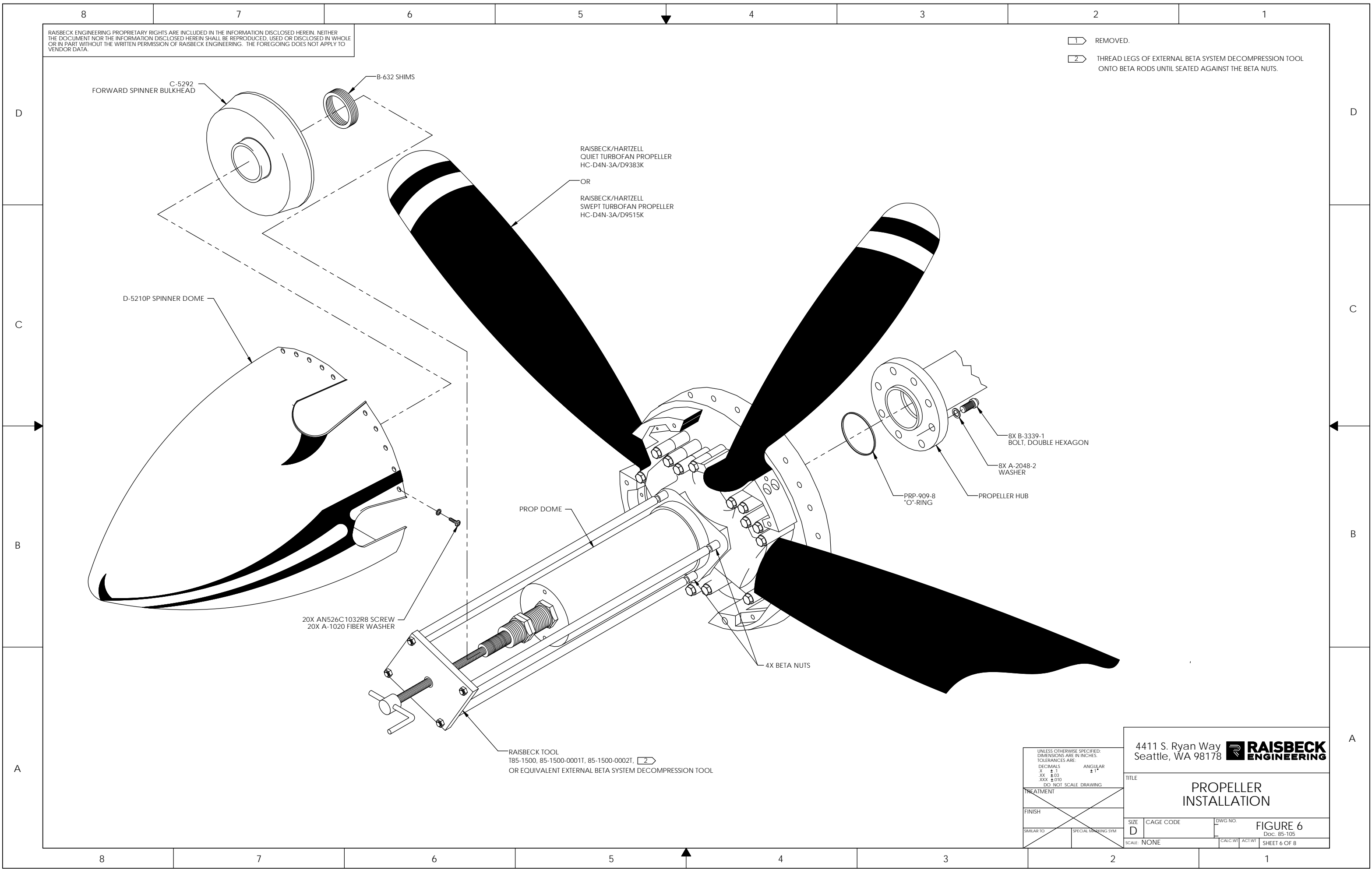
SCREW TYPE TARGET
SPINNER BULKHEAD MOUNTED

| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS X ± .1 | ANGULAR ± 1° |
| XX ± .03 | |
| XXX ± .010 | |
| DO NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

| | | | |
|--|-----------|---------------------------------|--------------|
| 4411 S. Ryan Way Seattle, WA 98178 | | RAISBECK ENGINEERING | |
| TITLE DE-ICE SYSTEM BRACKETRY REWORK | | | |
| SIZE D | CAGE CODE | DWG NO. FIGURE 5 | Doc. 85-105 |
| SCALE NONE | CALC WT | ACT WT | SHEET 5 OF 8 |

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- 1 REMOVED.
- 2 THREAD LEGS OF EXTERNAL BETA SYSTEM DECOMPRESSION TOOL ONTO BETA RODS UNTIL SEATED AGAINST THE BETA NUTS.



C-5292 FORWARD SPINNER BULKHEAD

B-632 SHIMS

RAISBECK/HARTZELL QUIET TURBOFAN PROPELLER HC-D4N-3A/D9383K

OR
RAISBECK/HARTZELL SWEPT TURBOFAN PROPELLER HC-D4N-3A/D9515K

D-5210P SPINNER DOME

PROP DOME

20X AN526C1032R8 SCREW
20X A-1020 FIBER WASHER

RAISBECK TOOL
T85-1500, 85-1500-0001T, 85-1500-0002T, 2
OR EQUIVALENT EXTERNAL BETA SYSTEM DECOMPRESSION TOOL

8X B-3339-1 BOLT, DOUBLE HEXAGON

8X A-2048-2 WASHER

PRP-909-8 O-RING

PROPELLER HUB

4X BETA NUTS

| | |
|---|---------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
| DECIMALS X ± .1 | ANGULAR ± 1° |
| XX ± .03 | |
| XXX ± .010 | |
| DO NOT SCALE DRAWING | |
| TREATMENT | |
| FINISH | |
| SIMILAR TO | SPECIAL MARKING SYM |

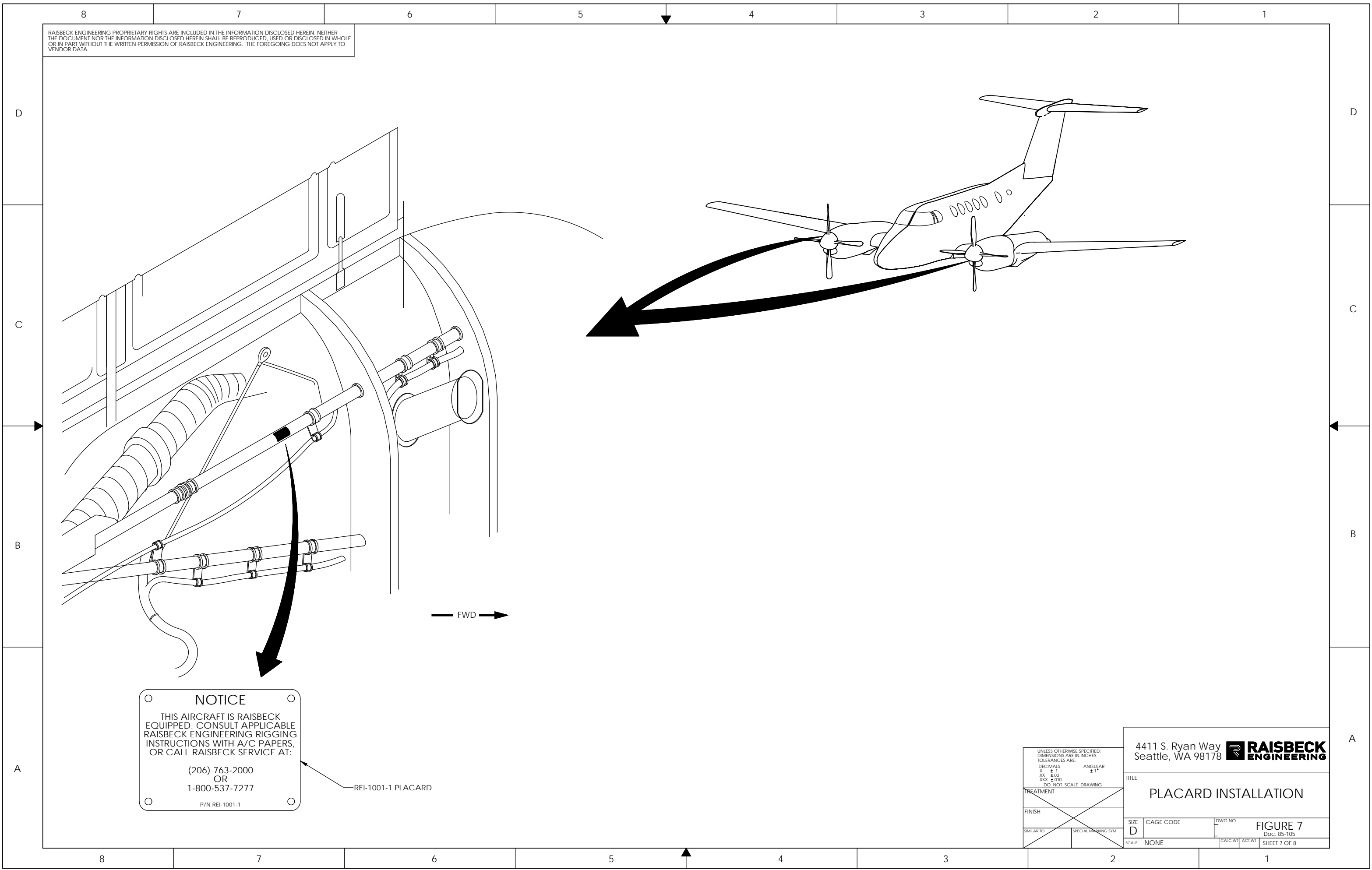
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Seattle, WA 98178



TITLE
PROPELLER INSTALLATION

| | | |
|------------------|-----------|-----------------------------|
| SIZE D | CAGE CODE | DWG NO. FIGURE 6 |
| SCALE NONE | CALC. WT | ACT. WT |
| | | Doc. 85-105 SHEET 6 OF 8 |

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NOTICE
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 (206) 763-2000
 OR
 1-800-537-7277
 P/N REI-1001-1

REI-1001-1 PLACARD

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES.
 TOLERANCES ARE:
 DECIMALS ANGULAR
 .X ± .1 ± 1°
 .XX ± .03
 .XXX ± .010
 (DO NOT SCALE DRAWING)

TREATMENT
 FINISH
 SIMILAR TO
 SPECIAL MARKING SYM

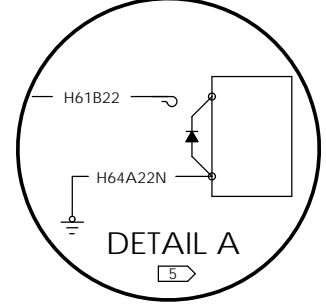
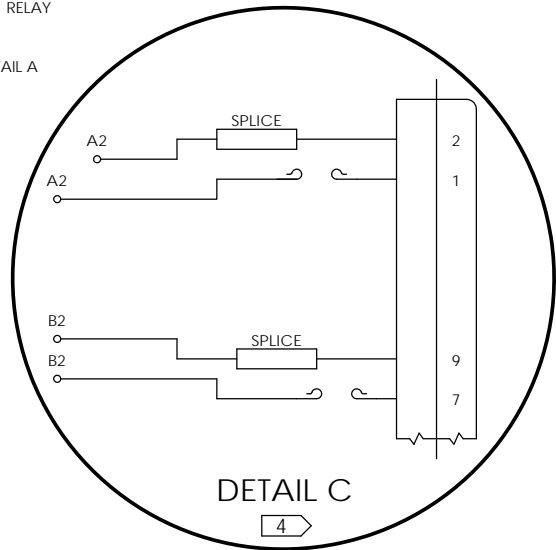
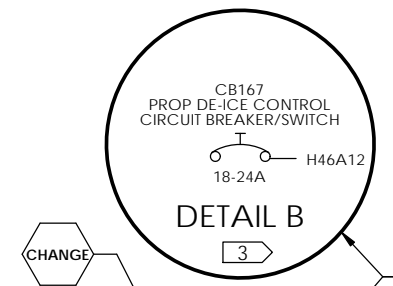
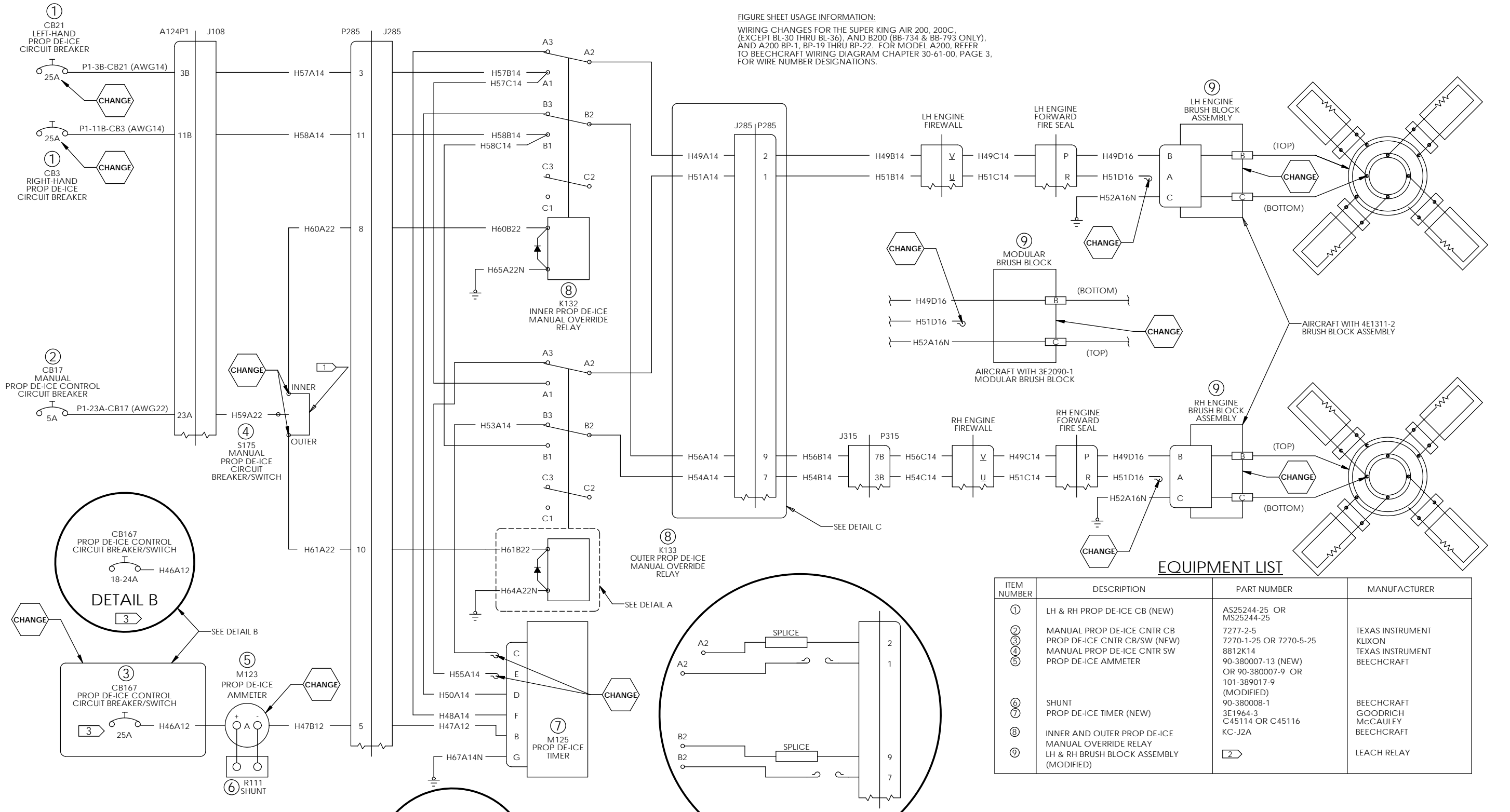
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 Seattle, WA 98178

TITLE
PLACARD INSTALLATION

SIZE D CAGE CODE DWG NO. **FIGURE 7**
 Doc. 85-105

SCALE: NONE SHEET 7 OF 8

FIGURE SHEET USAGE INFORMATION:
 WIRING CHANGES FOR THE SUPER KING AIR 200, 200C,
 (EXCEPT BL-30 THRU BL-36), AND B200 (BB-734 & BB-793 ONLY),
 AND A200 BP-1, BP-19 THRU BP-22. FOR MODEL A200, REFER
 TO BEECHCRAFT WIRING DIAGRAM CHAPTER 30-61-00, PAGE 3,
 FOR WIRE NUMBER DESIGNATIONS.



- FLAG NOTES:**
- 1 JUMPER INNER AND OUTER POSTS OF THE MANUAL PROP DE-ICE CONTROL SWITCH WITH 18 GAUGE WIRE AND TERMINALS.
 - 2 4E1311-2 BRUSH BLOCK ASSEMBLY OR 3E2090-1 MODULAR BRUSH BLOCK.
 - 3 CIRCUIT BREAKER CHANGE NOT APPLICABLE FOR AIRCRAFT BC-1 AND AFTER, BD-1 AND AFTER, BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER.
 - 4 REMOVE CIRCUIT BREAKER CB140, CB138, CB141, & CB139 FOR AIRCRAFT BC-1 AND AFTER, BD-1 AND AFTER, BP-1, BP-19 THRU BP-22, AND BP-24 AND AFTER.
 - 5 INNER PROP DE-ICE INACTIVE AFTER MODIFICATION.

EQUIPMENT LIST

| ITEM NUMBER | DESCRIPTION | PART NUMBER | MANUFACTURER |
|-------------|---|---|------------------|
| 1 | LH & RH PROP DE-ICE CB (NEW) | AS25244-25 OR MS25244-25 | |
| 2 | MANUAL PROP DE-ICE CNTR CB | 7277-2-5 | TEXAS INSTRUMENT |
| 3 | PROP DE-ICE CNTR CB/SW (NEW) | 7270-1-25 OR 7270-5-25 | KLIXON |
| 4 | MANUAL PROP DE-ICE CNTR SW | 8812K14 | TEXAS INSTRUMENT |
| 5 | PROP DE-ICE AMMETER | 90-380007-13 (NEW) OR 90-380007-9 OR 101-389017-9 (MODIFIED) | BECHCRAFT |
| 6 | SHUNT | 90-380008-1 | BECHCRAFT |
| 7 | PROP DE-ICE TIMER (NEW) | 3E1964-3 | GOODRICH |
| 8 | INNER AND OUTER PROP DE-ICE MANUAL OVERRIDE RELAY | C45114 OR C45116 | MCCAULEY |
| 9 | LH & RH BRUSH BLOCK ASSEMBLY (MODIFIED) | KC-J2A | BECHCRAFT |
| | | | LEACH RELAY |

UNLESS OTHERWISE SPECIFIED:
 DIMENSIONS ARE IN INCHES.
 TOLERANCES ARE:
 DECIMALS X ± .1 ANGULAR ± 1°
 .XX ± .03
 .XXX ± .010
 .DO NOT SCALE DRAWING

4411 S. Ryan Way
 Seattle, WA 98178

RAISBECK ENGINEERING

TITLE: **PROPELLER DE-ICING SYSTEM WIRING DIAGRAM**

SIZE: D CAGE CODE: DWG NO: **FIGURE 8**
 Doc. 85-105
 SCALE: NONE CALC. WT. ACT. WT. SHEET 8 OF 8