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Cessna 208b grand caravan maintenance manual

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The document outlines the installation requirements for the TKS Ice Protection System on model 208B airplanes, specifically those with serial numbers listed. The kit includes various parts and materials, which must be installed according to the manufacturer's instructions. The kit covers essential components such as screws, rivets, grommets, nuts, washers, seals, clamps, hoses, tubing, and brackets. Installation is required for one airplane at a time, with specific instructions provided for each part. Additionally, the document includes guidance on materials to use for cleaning and maintenance, such as epoxy adhesive, detergent, Alodine, sealants, and a clenching tool. The manufacturer's approval has been obtained for technical data affecting airplane design, ensuring compliance with FAA regulations. To fabricate the Clenching Tool (3/8 Inch) for TKS tubing, it is crucial to follow specific guidelines. Firstly, attach maintenance warning tags to the battery and external power receptacle with the warning "DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS" written on them. Additionally, heed general cautions, warnings, and instructions when installing or working near the ice protection system. When handling the porous panels, be cautious not to cause damage. Avoid using solvents or paints as they can harm the plastic membrane. Only use materials listed below for work on or near the panels. When clenching the olive to the fluid tubing, do not use the coupling nut. Instead, employ only specified clenching tools. Also, avoid excessive torque during repair or replacement procedures, as this may cause leaks. If leaks occur, install new seals as necessary. To complete the service kit, ensure a minimum edge distance of at least two times the diameter of the rivet when installing all rivets. Initially, perform a weight and balance check on the airplane before installation. Next, seal the surface between grommets and structure using U544055S Sealant. Then, attach six 0823337-2 Grommets to the structure using 12 MS20470AD3-3A Rivets (refer to Figure 5, View A-A). For the bottom of the airplane, install doublers for the support of the TKS tank as follows: Remove the XPDR1 transponder antenna from the right side of the airplane. Match drill five nutplate holes and ten Number 40 (0.098-inch diameter) holes in the TKS Left External Doubler. Put the TKS Cutouts Doubler in position on the structure, making marks for the three holes to attach it to the structure. Install the TKS Right Aft Doubler using two S2906-4-2 Rivets, five MS20470AD4-4A Rivets, and one CM3827AD4-4A Rivet. Finally, modify the Floorboard Assembly by removing the Access Cover from the 2611127-22 Floorboard Assembly. \*\*Assembly Instructions\*\* 1. Align and drill holes for TKS strap assemblies, then seal the tank vent weldment and grommet. 2. Install the TKS tank, securing it to the airplane belly with 16 screws and washers. 3. Connect the tank wire harness and install the bulkhead connector and backnut. 4. Attach the antenna doubler to the forward fairing. 5. Install the equipment pallet components, including the drain tube assembly and wire harness. \*\*Sealing and Safety Precautions\*\* 1. Seal gaps around fairings and fairing assemblies with sealant. 2. Ensure no leaks when installing the tank or valve assembly. 3. Use safety wire and a specific tightening method to secure the nut. \*\*Installation of Electrical Components\*\* 1. Install the XPDR1 transponder antenna on the forward low profile TKS fairing, ensuring proper bonding and resistance values. 2. Connect the windshield washer tube at specified points without cutting the tubing. \*\*Additional Installation\*\* 1. Remove and discard old components and install new ones, such as the BLE Lens Assembly. Note: This paraphrased version maintains the original text's technical language and complexity, making it suitable for professionals familiar with the specific aircraft model and systems involved. Remove all existing attachment hardware from left and right wings, except for the lens assemblies which will be kept intact as per the Model 208 Maintenance Manual, Chapter 33, Landing and Taxi Recognition Light - Maintenance Manual. Install the provided 2620028-1 Left BLE Lens Assembly and the 2620028-2 Right BLE Lens Assembly as specified. When sealing gurney flaps to wing flaps, seal one wing at a time to avoid adhesive curing quickly. Use U000701S Sealant to secure the 2625027-1 Gurney Flaps to the left wing flap and the right wing flap, following page 30 of the service kit instructions. Attach the TKS wire assembly to the S2034-1 Mount with one S2209 Tie as shown in Figure 14, View A-A. Install the MS24524-23 BACKUP Switch (S1024) and C15Green Tip on the 9910616-5 LED LAA Switch Plate Assembly, along with the MS24524-27 MAX FLOW Switch (S1023) and C15Green Tip as specified for page 31. Install the 2605070-10 Icing Conditions Placard on the instrument panel according to page 32, following the maintenance manual's guidance. Ensure correct installation of tubing connections throughout the system, including engine compartment checks, and confirm electrical connections are secure. Perform a test of the wiring for the circuit breaker panel as outlined: 1. Disengage one circuit breaker (page 33). 2. Remove power from the system. 3. Remove the G1000 SD loader card from the PFD1 display. 4. Install three G1000 SD database cards into their correct displays. 5. Apply power and bring displays up in NORMAL mode. Check software configuration by setting initial conditions according to Table 2, as shown on page 35. Perform fluid indication systems check: 1. Put a five-gallon bucket below the TKS fluid tank and equipment pack drain line. 2. Make sure the fluid quantity readout on the MFD is green and reads "A-ICE GAL 0.0" (page 36). 3. Check accuracy of fluid quantity indication to ensure it shows within 1.50 gallons of 11.7. Perform pump operation systems check: CAUTION: If you see leakage during this check, turn off the anti-ice system, repair connections, and remove all leakage. 1. Disengage the BACKUP ANTI-ICE circuit breaker. 2. Ensure the pump shuts off. 3. Put the FLUID CONTROL BACKUP switch to the OFF position. 4. Engage the BACKUP ANTI-ICE system (page 37). Put the FLUID CONTROL PRIMARY switch to the NORMAL position and start the timer. Ensure two metering pumps are on for 20 seconds +3 seconds or -3 seconds, then off for 100 seconds +10 seconds or -10 seconds. Disconnect the horizontal, low-pressure switch connector on the right side of the airplane and ensure the red A-ICE PRESS LOW annunciator turns off. Then, connect it to the left side. Check if there are correct flow characteristics for the Wipe leading edge with paper towel to even porous panel in Table 4. Add fluid to the test cart as necessary until the flow characteristics match Figure 13. Install new sealing rings and connect the two left inboard wing panel supply lines to ports 1 and 5 on the wing proportioning unit. Disconnect the center TKS panel supply line from port 2 and connect the purge tank line to the left mid wing TKS panel as close to the panel as possible. Continue fluid purge until the panel is correctly purged according to Figure 13 and Table 4, with or without lightly running a dry cloth over the leading edge. Stop the fluid supply, wait for pressure release, then slowly disconnect the test cart fluid supply tube from the inboard panel. Install new sealing rings and connect the two right inboard wing panel supply lines to ports 1 and 5 on the wing proportioning unit. Apply pressure of 20 psi to start the fluid flow through the panel, increasing it to 70 psi until all holes are filled at the same rate along the full length. Stop the fluid supply, release pressure, disconnect purge tank lines, install a new sealing ring, and connect the left horizontal stabilizer TKS supply line to the tailcone proportioning unit. Disconnect the right horizontal stabilizer TKS panel supply line from the tailcone proportioning unit. \*\*Fluid Collection and Wing Maintenance\*\* 1. Ensure that fluid is collected from each wing, with a total quantity of 52 ounces +20 or -10 ounces (1550 ml +600 ml or -300 ml). 2. The amount of fluid collected from one side of the airplane should be within 20 ounces (600 ml) of the amount collected from the other side. \*\*Sealant Application and Panel Installation\*\* 1. Apply sealant to all access plates and panels on the bottoms of the wings, horizontal stabilizer, and vertical stabilizer using U544055S Sealant and petrolatum parting agent. 2. Refer to the 208 Maintenance Manual for more information on access plate identification and operation, as well as fuel, weather, and high-temperature sealing practices. 3. Install all removed wing inspection panels and access plates. \*\*Installation Guides\*\* The following pages contain installation guides with diagrams: \* Pages 49-51: Figure 1. TKS Installation (Sheets 1-3) \* Pages 52-53: Figure 2. Wing Proportioning Unit Location (Sheets 1-2) \* Pages 55-57: Figure 3. Fuselage Tubing Installation (Sheets 1-3) \* Pages 58-59: Figure 3. Fuselage Tubing Installation (Sheet 4) \* Page 60: Figure 3. Fuselage Tubing Installation (Sheet 5) \* Pages 61-62: Figure 4. Fuselage Tubing Routing (Sheets 1-2) \* Pages 63-64: Figure 4. Fuselage Tubing Routing (Sheet 3) \* Pages 65-67: Figure 5. Fuselage Modification - TKS Fairing Tank (Sheets 1-3) \* Page 68: Figure 5. Fuselage Modification - TKS Fairing Tank (Sheet 4) \* Page 69: Figure 5. Fuselage Modification - TKS Fairing Tank (Sheet 5) Please note that I've kept the same structure and organization as the original text, while rephrasing the content to make it easier to understand. SERVICE KIT SK208-179B - MODIFICATION GUIDELINE The service kit, SK208-179B, provides a comprehensive guide for modifying the fuselage, tailcone, and other components of an aircraft. The kit consists of multiple sheets, each covering a specific aspect of the modification process. \*\*Fuselage Modification\*\* Sheet 6: Fuselage Modification - TKS Fairing Tank \* Figure 5: Fuselage Modification - TKS Fairing Tank \*\*Tailcone Modification\*\* Sheet 1: Tailcone Modification Sheet 2: Tailcone Modification \* Figure 6: Tailcone Modification \*\*Tubing Coupling Procedures\*\* Sheet 1: Correct Tubing Coupling Procedures Sheet 2: Correct Tubing Coupling Procedures Sheet 3: Correct Tubing Coupling Procedures \* Figure 7: Correct Tubing Coupling Procedures \*\*Low-Profile Tank Installation\*\* Sheet 1: Low-Profile Tank Installation Sheet 2: Low-Profile Tank Installation Sheet 3: Low-Profile Tank Installation Sheet 4: Low-Profile Tank Installation \* Figure 8: Low-Profile Tank Installation \*\*Tank Fairing Installation\*\* Sheet 1: Tank Fairing Installation \* Figure 9: Tank Fairing Installation \*\*Placards Installation\*\* Sheet 1: Placards Installation Sheet 2: Placards Installation Sheet 3: Placards Installation Sheet 4: Placards Installation \* Figure 10: Placards Installation \*\*Low Profile Tank Strap Installation\*\* Sheet 1: Low Profile Tank Strap Installation Sheet 2: Low Profile Tank Strap Installation Sheet 3: Low Profile Tank Strap Installation \* Figure 11: Low Profile Tank Strap Installation \*\*Wiring Modification\*\* Sheet 1: Wiring Modification Sheet 2: Wiring Modification Sheet 3: Wiring Modification \* Figure 12: Wiring Modification \*\*Fluid Flow During Purge Operation\*\* Sheet 1: Fluid Flow During Purge Operation Sheet 2: Fluid Flow During Purge Operation Sheet 3: Fluid Flow During Purge Operation \* Figure 13: Fluid Flow During Purge Operation \*\*Electrical Equipment Installation\*\* Sheet 1: Electrical Equipment Installation Sheet 2: Electrical Equipment Installation Sheet 3: Electrical Equipment Installation \* Figure 14: Electrical Equipment Installation SERVICE KIT DOCUMENTATION FOR AVIATION EQUIPMENT INSTALLATIONS. THE MANUAL COVERS VARIOUS COMPONENTS SUCH AS ELECTRICAL EQUIPMENT, FUEL SUMP, TKS FAIRING NUTPLATE, XPDR ANTENNA, VENT TUBE, AND FILLER TUBE. IT ALSO INCLUDES INSTALLATION INSTRUCTIONS FOR THE LOW-PROFILE TANK AND GURNEY FLAP.