

MODEL R182 AND TR182 SERVICE MANUAL

SECTION 2

GROUND HANDLING, SERVICING, CLEANING, LUBRICATION AND INSPECTION

WARNING

When performing any inspection or maintenance that requires turning on the master switch, installing a battery, or pulling the propeller through by hand, treat the propeller as if the ignition switch were ON. Do not stand, nor allow anyone else to stand, within the arc of the propeller, since a loose or broken wire, or a component malfunction, could cause the propeller to rotate.

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- 2-1. GROUND HANDLING.
- 2-2. TOWING. Moving the aircraft by hand is accomplished by using the wing struts and landing gear struts as push points. A tow bar attached to the nose gear should be used for steering and maneuvering the aircraft on the ground.

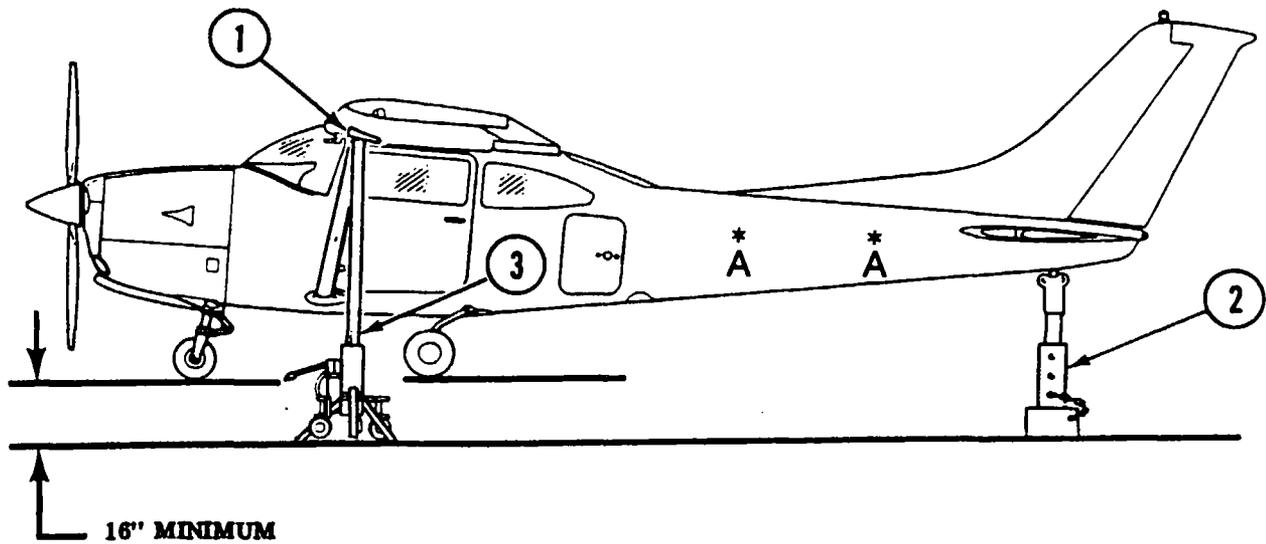
NOTE

Tow bar Part No. 0501019-1, is available from the Cessna Supply Division.

CAUTION

When towing the aircraft, never turn the nose wheel more than 29 degrees either side of center or the nose gear will be damaged. Do not push on control surfaces or outboard empennage surfaces. When pushing on the tailcone, always apply pressure at a bulkhead to avoid buckling the skin.

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NOTE

Corresponding points on both upper door sills may be used to level the aircraft laterally.

Reference points for longitudinal leveling of aircraft are two screws on left side of tailcone. These are indicated in illustration by A.

(Also refer to paragraph 2-5)

Figure 2-1. Jacking and Leveling (Sheet 1 of 2)

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JACKING INFORMATION

ITEM	TYPE AND NUMBER	REMARKS
①	Block (Jack points are available)	1x4x4 padded with 1 4" rubber
②	Cessna No. 2-168	Tail tie-down stand
③	No. 2-170 Basic jack (includes No. 2-71 Side tube: Liftstroke 22-1 1/2") No. 2-70 Slide tube: Liftstroke 22-1.2" No. 2-591 Extension cap No. 2-109 Leg extension	Min. closed height: 34" Max. extension height: 56-1 1/2" Min. closed height: 57-1.2" Max. extension height: 80" Adds 4" Adds 12"

1. Wing jacks are placed under front spar of wing just outboard of wing strut, must extend far enough to raise wheels a minimum of 16 inches off the ground, and must be of adequate strength.
2. Attach Cessna tail tie-down stand (SE2-168) to the tie-down ring. Be sure tail stand weighs enough to keep tail down and under all conditions and that it is strong enough to support any weight that might be placed on it (place shot bags or sand bags on tail stand). In addition, the base of adjustable tail stand is to be filled with concrete for additional weight as a safety factor.
3. Operate jacks evenly until desired height is reached (16-inch minimum).
4. Items (1), (2), and (3) are available from the Cessna Supply Division.

Figure 2-1. Jacking and Leveling (Sheet 2 of 2)

- 2-3. **HOISTING.** The aircraft may be lifted with a hoist of two-ton capacity by using hoisting rings, which are optional equipment, or by means of suitable slings. The front sling should be hooked to each upper engine mount at the firewall, and the aft sling should be positioned around the fuselage at the first bulkhead forward of the leading edge of the stabilizer. If the optional hoisting rings are used, a minimum cable length of 60 inches for each cable is required to prevent bending of the eyebolt-type hoisting rings. If desired, a spreader jig may be fabricated to apply vertical force to the eyebolts.
- 2-4. **JACKING.** See figure 2-1 for jacking procedures.
- 2-5. **LEVELING.** Corresponding points on both upper door sills may be used to level the aircraft laterally. Leveling point nutplates are provided on the left side of the tailcone at Sta. 139.65 and 171.65. Use these points for leveling the aircraft by removing NAS221-7 screws and installing suitable studs to support a level.
- 2-6. **WEIGHING .** Refer to Pilot's Operating Handbook.

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- 2-7. **PARKING.** Parking precautions depend principally on local conditions. As a general precaution, set parking brake or chock the wheels and install the controls lock. In severe weather and high wind conditions, tie down the aircraft as outlined in paragraph 2-8 if a hangar is not available.
- 2-8. **TIE-DOWN.** When mooring the aircraft in the open, head into the wind if possible. Secure control surfaces with the internal control lock and set brakes.

CAUTION

Do not set parking brakes when they are overheated or during cold weather when accumulated moisture may freeze them.

If brake ice freeze-up occurs, operate the brakes several times using maximum pressure.

- a. Tie ropes, cables, or chains to the wing tie-down fittings located at the upper end of each wing strut. Secure the opposite ends of ropes, cables, or chains to ground anchors.
 - b. Secure a tie-down rope (no chains or cables) to the nose gear strut, and secure opposite end of rope to ground anchor.
 - c. Secure the middle of a rope to the tail tie-down ring. Pull each end of rope away at a 45 degree angle and secure to ground anchors at each side of tail.
 - d. Secure control lock on pilot control column. If control lock is not available, tie pilot control wheel back with front seat belt.
 - e. These aircraft are equipped with a spring-loaded steering bungee which affords protection against normal wind gusts. However, if extremely high wind gusts are anticipated, additional external locks may be installed.
- 2-9. **FLYABLE STORAGE.** Flyable storage is defined as a maximum of 30 days nonoperational storage and/or the first 25 hours of intermittent engine operation.

NOTE

The aircraft is delivered from Cessna with MIL-L-6082 Aviation Grade Mineral Oil. This oil is to be used to replenish the oil supply during the first 25 hours of operation, at the first 25-hour oil change and until a total of 50 hours have accumulated or oil consumption has stabilized. Then use Ashless Dispersant Oil conforming to MIL-L-22851 in accordance with the oil chart in figure 2-5.

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During the 30-day nonoperational storage or the first 25 hours of intermittent engine operation, every seventh day the propeller shall be rotated by hand without running the engine. After rotating the engine five revolutions, stop the propeller 45° to 90° from the position it was in. If the aircraft is stored outside, tie-down in accordance with paragraph 2-8. In addition, the pitot tube, static air vents, air vents, openings in the engine cowling, and other similar openings shall have protective covers installed to prevent entry of foreign material. If at the end of thirty (30) days aircraft will not be removed from storage, the engine shall be started and run. The preferred method would be to fly the aircraft for thirty (30) minutes, and up to but not exceeding normal oil and cylinder temperatures.

CAUTION

Excessive ground operation shall be avoided.

- 2-10. **RETURNING AIRCRAFT TO SERVICE.** After flyable storage, returning the aircraft to service is accomplished by performing a thorough preflight inspection. At the end of the first 25 hours of engine operation, drain engine oil, change external oil filter element, and service engine with correct grade and quantity of engine oil. See figure 2-4 and paragraph 2-23 for correct grade of engine oil.
- 2-11. **TEMPORARY STORAGE.** Temporary storage is defined as aircraft in a nonoperational status for a maximum of 90 days. The aircraft is constructed of corrosion resistant alclad aluminum, which will last indefinitely under normal conditions if kept clean, however, these alloys are subject to oxidation. The first indication of corrosion on unpainted surfaces is in the form of white deposits or spots. On painted surfaces, the paint is discolored or blistered. Storage in a dry hangar is essential to good preservation and should be procured, if possible. Varying conditions will alter the measures of preservation, but under normal conditions in a dry hangar, and for storage periods not to exceed 90 days, the following methods of treatment are suggested.
- a. Fill fuel tanks or bays with correct grade of gasoline.

WARNING

DURING ALL FUELING PROCEDURES, FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE. TWO GROUND WIRES FROM DIFFERENT POINTS ON THE AIRPLANE TO SEPARATE APPROVED GROUND STAKES SHALL BE USED TO PREVENT ACCIDENTAL DISCONNECTION OF ONE GROUND WIRE. ENSURE THAT FUELING NOZZLE IS GROUNDED TO THE AIRPLANE.

NOTE

Tie down rings should be used as grounding points for all ground wires during refueling procedures.

- b. Clean and wax aircraft thoroughly.
- c. Clean any oil or grease from tires and coat tires with a tire preservative. Cover tires to protect against grease and oil.
- d. Either block up fuselage to relieve pressure on tires or rotate wheels every 30 days to prevent flat spotting the tires.
- e. Lubricate all airframe items and seal or cover all openings which could allow moisture and/or dust to enter.

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NOTE

The aircraft battery serial number is recorded in the aircraft equipment list. To assure accurate warranty records, the battery should be reinstalled in the same aircraft from which it was removed. If the battery is returned to service in a different aircraft, appropriate record changes must be made and notification sent to the Cessna Claims Department.

- f. Remove battery and store in a cool, dry place; service battery periodically and charge as required.

NOTE

An engine treated in accordance with the following may be considered being protected against normal atmospheric corrosion for a period not to exceed 90 days.

- g. Disconnect spark plug leads and remove upper and lower spark plugs from each cylinder.

NOTE

The preservative oil must conform to specification MIL-C-6529, Type 1. Oil must be heated to 200°/220°F spray nozzle temperature.

- h. Using a portable pressure sprayer, spray preservative oil through the upper spark plug hole of each cylinder with the piston in a down position. Rotate crankshaft as each pair of cylinders is sprayed.
- i. After completing step "h," rotate crankshaft so that no piston is at a top position. If the aircraft is to be stored outside, stop two-bladed propeller so that blades are as near horizontal as possible to provide maximum clearance with passing aircraft.
- j. Again, spray each cylinder without moving the crankshaft, to thoroughly cover all interior surfaces of the cylinder above the piston.
- k. Install spark plugs and connect spark plug leads.
- l. Apply preservative oil to the engine interior by spraying approximately two ounces of the preservative oil through the oil filler tube.
- m. Seal all engine openings exposed to the atmosphere, using suitable plugs or non-hygroscopic tape. Attach a red streamer at each point that a plug or tape is installed.
- n. If the aircraft is to be stored outside, perform the procedures outlined in paragraph 2-8. In addition, the pitot tube, static source vents, air vents, openings in the engine cowlings, and other similar openings should have protective covers installed to prevent entry of foreign material.
- o. Attach a warning placard to the propeller to the effect that the propeller shall not be moved while the engine is in storage.

2-12. INSPECTION DURING STORAGE.

- a. Inspect airframe for corrosion at least once a month. Remove dust collections as frequently as possible. Clean and wax aircraft as required.
- b. Inspect the interior of at least one cylinder through the spark plug hole for corrosion at least once each month.

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NOTE

Do not move crankshaft when inspecting interior of cylinder for corrosion.

- c. If at the end of the 90 day period, the aircraft is to be continued in non-operational storage, repeat the procedural steps "g" thru "o" of paragraph 2-11.
- 2-13. RETURNING AIRCRAFT TO SERVICE. After temporary storage, use the following procedures to return the aircraft to service.
- a. Remove aircraft from blocks. Check tires for proper inflation.
 - b. Check and install battery.
 - c. Check that oil sump has proper grade and quantity of engine oil.
 - d. Service induction air filter and remove warning placard from propeller.
 - e. Remove materials used to cover openings.
 - f. Remove, clean and gap spark plugs.
 - g. While spark plugs are removed, rotate propeller several revolutions to clear excess rust preventive oil from cylinders.
 - h. Install spark plugs and torque to value specified in Section 11 or 11A. Connect spark plug leads.
 - i. Check fuel strainer. Remove and clean filter screen, if necessary. Check fuel cells and fuel lines for moisture and sediment. Drain enough fuel to eliminate moisture and sediment.
 - j. Perform a thorough preflight inspection, then start and warmup engine.
- 2-14. INDEFINITE STORAGE. Indefinite storage is defined as aircraft in a nonoperational status for an indefinite period of time. Engines treated in accordance with the following may be considered protected against normal atmosphere corrosion, provided the procedures outlined in paragraph 2-15 are performed at the intervals specified.
- a. Operate engine until oil temperature reaches normal operating range. Drain engine oil sump in accordance with procedures outlined in paragraph 2-23. Close drain valve.
 - b. Fill oil sump to normal operating capacity with corrosion preventive mixture which has been thoroughly mixed.

NOTE

Corrosion-preventive mixture consists of one part compound (by volume) MIL-C-6529, Type 1, mixed with three parts (by volume) MIL-C-6082 aviation grade straight mineral oil.

- c. Immediately after filling the oil sump with a corrosion preventive mixture, fly the aircraft for a period of time not to exceed a maximum of 30 minutes.
- d. After flight, with engine operating at 1200 to 1500 RPM, and induction air filter removed, spray corrosion preventive mixture into induction airbox, at the rate of one-half gallon per minute. Spray until heavy black smoke comes from exhaust stack. Then increase the spray until engine is stopped.

CAUTION

Spraying the mixture too fast can cause a hydrostatic lock.

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- e. Do not rotate propeller after completing step "d."
- f. Remove all spark plugs and spray corrosion preventive mixture, which has been preheated (221°F to 250°F) into all spark plug holes to thoroughly cover interior surfaces of cylinders.
- g. Install spark plugs or solid plugs into the lower spark plug holes and install dehydrator plugs in the upper spark plug holes. Be sure that dehydrator plugs are blue in color when installed.

NOTE

To thoroughly cover all surfaces of the cylinder interior, move the nozzle of the spray gun from the top to the bottom of the cylinder. If by accident the propeller is rotated following this spraying, respray the cylinders to insure an unbroken coverage on all surfaces.

- h. Cover spark plug lead terminals with shipping plugs (AN4060-1), or other suitable covers.
- i. With throttle in full open position, place a bag of desiccant in the induction air intake and seal opening with moisture resistant paper and tape.
- j. Place a bag of desiccant in the exhaust tailpipe and seal openings with moisture resistant tape.
- k. Seal cold air inlet to the heater muff with moisture resistant tape.
- l. Seal engine breather hose and clamping in place.
- m. Seal all other engine openings exposed to atmosphere, using suitable plugs or non-hygroscopic tape.

NOTE

Attach a red streamer to each location where plugs or tapes are installed. Either attach red streamers outside the sealed area with tape or to the inside of the sealed area with safety wire to prevent wicking of moisture into the sealed area.

- n. Drain corrosion preventive mixture from engine sump in accordance with the procedures outlined in paragraph 2-23. The corrosion preventive mixture is harmful to paint and should be wiped from painted surfaces immediately.
- o. Attach a warning placard on the throttle control knob to the effect that the engine contains no lubricating oil. Placard the propeller to the effect that it should not be moved while the engine is in storage.
- p. Prepare airframe for storage as outlined in paragraph 2-11 thru step "f".

NOTE

As an alternate method of indefinite storage, the aircraft may be serviced in accordance with paragraph 2-11, providing the aircraft is run up at maximum intervals of 90 days and then reserviced per paragraph 2-11.

2-15. INSPECTION DURING STORAGE. Aircraft in indefinite storage shall be inspected as follows:

- a. Inspect cylinder protex plugs each seven days.

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- b. Change protex plugs if their color indicates an unsafe condition.
- c. If the protex plugs have changed color in one half of the cylinders, all desiccant material in the engine should be replaced with new material.
- d. Respray the cylinder interiors with corrosion preventive mixture every six months and replace all desiccant and Protex plugs.

NOTE

Before spraying, inspect the interior of one cylinder for corrosion through the spark plug hole and remove at least one rocker box cover and inspect the valve mechanism.

- 2-16. **RETURNING AIRCRAFT TO SERVICE.** After indefinite storage, use the following procedure to return the aircraft to service.
- a. Remove aircraft from blocks. Check tires for correct inflation.
 - b. Check and install battery.
 - c. Remove all materials used to seal and cover openings.
 - d. Remove warning placards posted at throttle and propeller.
 - e. Change engine oil filter and close oil quick-drain valve by pulling down on stem or twisting a screwdriver inserted between clip and body as shown in figure 2-4. Remove hose from stem. Service engine with oil in accordance with figure 2-4 of this manual.
 - f. Service and install the induction air filter.

NOTE

The corrosion preventive mixture will mix with the engine lubricating oil, so flushing the oil system is not necessary. Draining the oil sump will remove enough of the corrosion preventive mixture.

- g. Remove protex plugs and spark plugs or plugs installed in spark plug holes. Rotate propeller several revolutions by hand to clear corrosion preventive mixture from cylinders.
- h. Clean, gap and install spark plugs. Torque spark plugs to value specified in Section 11 or 11A. Connect leads.
- i. Check fuel strainer. Remove and clean filter screen. Check fuel cells and fuel lines for moisture and sediment, and drain enough fuel to eliminate.
- j. Perform a thorough preflight inspection, then start and warm-up engine.
- k. Thoroughly clean aircraft and flight test aircraft.

- 2-17. **SERVICING.**

- 2-18. **GENERAL DESCRIPTION.** Servicing requirements are shown in figure 2-4. The following paragraphs supplement this figure by adding details not included in the figure.

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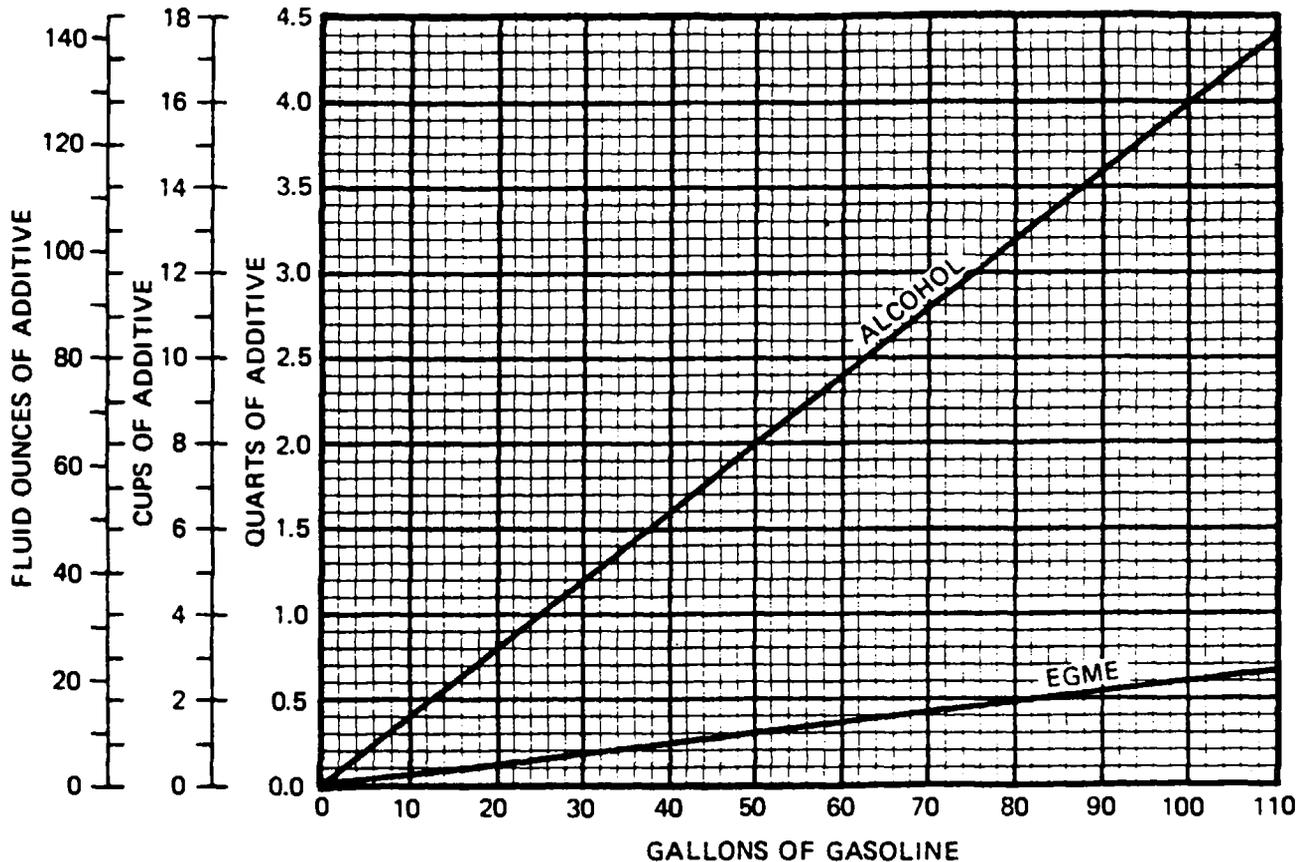


Figure 2-2. Fuel Additives Mixing Ratio Chart

- 2-19. **FUEL.** Fuel tanks should be filled immediately after flight to lessen moisture condensation. Tank capacities are listed in Section 1. The recommended fuel grade to be used is given in figure 2-4.

WARNING

DURING ALL FUELING PROCEDURES, FIRE FIGHTING EQUIPMENT MUST BE AVAILABLE. TWO GROUND WIRES FROM DIFFERENT POINTS ON THE AIRPLANE TO SEPARATE APPROVED GROUND STAKES SHALL BE USED TO PREVENT ACCIDENTAL DISCONNECTION OF ONE GROUND WIRE. ENSURE THAT FUELING NOZZLE IS GROUNDED TO THE AIRPLANE.

NOTE

Tie down rings should be used as grounding points for all ground wires during refueling procedures.

- 2-20. **USE OF FUEL ADDITIVES FOR COLD WEATHER OPERATION.** Strict adherence to recommended preflight draining instructions will eliminate any free water accumulations from the tank sumps. While small amounts of water may still remain in solution in the gasoline, it will normally be consumed and go unnoticed in the operation of the engine.

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One exception to this can be encountered when operating under the combined effect of: (1) use of certain fuels, with (2) high humidity conditions on the ground (3) followed by flight at high altitude and low temperature. Under these unusual conditions small amounts of water in solution can precipitate from the fuel stream and freeze in sufficient quantities to induce partial icing of the engine fuel system.

While these conditions are quite rare and will not normally pose a problem to owners and operators, they do exist in certain areas of the world and consequently must be dealt with, when encountered.

Therefore, to alleviate the possibility of fuel icing occurring under these unusual conditions it is permissible to add isopropyl alcohol or ethylene glycol monomethyl ether (EGME) compound to the fuel supply. See Figure 2-2 for fuel additive mixing ratio.

The introduction of alcohol or EGME compound into the fuel provides two distinct effects: (1) it absorbs the dissolved water from the gasoline and (2) alcohol has a freezing temperature depressant effect.

Alcohol, if used, is to be blended with the fuel in a concentration of 1% by volume. Concentrations greater than 1% are not recommended since they can be detrimental to fuel tank materials.

The manner in which the alcohol is added to the fuel is significant because alcohol is most effective when it is completely dissolved in the fuel. To insure proper mixing the following is recommended:

1. For best results the alcohol should be added during the fueling operation by pouring the alcohol directly on the fuel stream issuing from the fueling nozzle.
2. An alternate method that may be used is to premix the complete alcohol dosage with some fuel in a separate clean container (approximately 2-3 gallon capacity) and then transfer this mixture to the tank prior to the fuel operation.

Any high quality isopropyl alcohol may be used, such as:

Anti-icing fluid (MIL-F-5566) or
Isopropyl alcohol (Federal Specification TT-I-735a).

Ethylene glycol monomethyl ether (EGME) compound in compliance with MIL-I-27686 or Phillips PFA-55MB, if used, must be carefully mixed with the fuel in concentrations not to exceed 0.15% by volume.

CAUTION

Mixing of the EGME compound with the fuel is extremely important because concentration in excess of that recommended (0.15 percent by volume maximum) will result in detrimental affects to the fuel tanks, such as deterioration of protective primer and sealants and damage to O-rings and seals in the fuel system and engine components. Use only blending equipment that is recommended by the manufacturer to obtain proper proportioning.

Do not allow the concentrated EGME compound to come in contact with the airplane finish or fuel cell as damage can result.

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Prolonged storage of the airplane will result in a water build-up in the fuel which "leeches out" the additive. An indication of this is when an excessive amount of water accumulates in the fuel tank sumps. The concentration can be checked using a differential refractometer. It is imperative that the technical manual for the differential refractometer be followed explicitly when checking the additive concentration.

- 2-21. **FUEL DRAINS.** Fuel drains are located in the fuel selector valve, fuel tanks, fuel line, fuel strainer and carburetor. The fuel tanks and fuel strainer have drain valves. To activate the tank drain valve for fuel sampling, place cup up to valve and depress valve with rod protruding from cup. See Section 12 for illustration of fuel tank drain valve. The strainer drain valve is an integral part of the fuel strainer assembly. The strainer drain is equipped with a control which is located adjacent to the oil dipstick. Access to the control is through the oil dipstick access door. Open drains and remove drain plugs at intervals specified in figure 2-4. Also, during daily inspection of the fuel strainer and tanks, if water is found in the system, all fuel drain plugs should be removed and all water drained from the system.
- 2-22. **CARBURETOR DRAIN PLUG INSPECTION.** In order to prevent the possibility of thread sealant contamination in the carburetor float chamber, cleaning and inspection of the carburetor should be accomplished at each 100-hour inspection and any time water in the fuel is suspected.
- a. With the fuel selector valve OFF, remove carburetor drain plug and clean off any sealant present on the end of the plug or in the threads on the plug.
 - b. Inspect drain plug hole in the carburetor and remove any sealant remaining in the hole.
 - c. Turn fuel selector valve to ON to flush float chamber and drain plug chamber while probing drain plug hole to ascertain that all residue of sealant material is dislodged and washed out of the chamber. Flushing operation should last 15 to 30 seconds.
 - d. A second flushing should then be accomplished and the drained fuel retained for inspection to insure that no sealant particles are present.
 - e. Install drain plug as follows:
 1. Install drain plug in carburetor 1-1/2 to 2 turns.
 2. Apply sealant to drain plug threads (use NS-40 (RAS-4) or equivalent).
 3. Tighten and safety drain plug.
 - f. Turn fuel selector valve ON and inspect for evidence of fuel leakage.
- 2-23. **ENGINE OIL.** Check engine lubricating oil with the dipstick five to ten minutes after the engine has been stopped. The airplane should be in as near a level position as possible when checking the engine oil, so that a true reading is obtained. Engine oil should be drained while the engine is still hot, and the nose of the airplane should be raised slightly for more positive draining of any sludge which may have collected in the engine oil sump. Oil change may be extended to 100 hours, providing the oil filter is changed each 50 hours. Change engine oil and filter at least every six months, even though less than the specified hours have accumulated. Reduce these intervals for prolonged operations in dusty areas, in cold cli-

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mates where sludging conditions exist, or where short flights and long idle periods are encountered, which cause sludging conditions. Always change oil and oil filter whenever oil on the dipstick appears dirty. Aviation grade oil conforming to AVCO Lycoming Service Instruction No. 1014, and any revisions or supplements thereto, shall be used in the "Blue Streak" (Lycoming) engine.

WARNING

The U.S. Environmental Protection Agency advises that mechanics and other workers who handle engine oil are advised to minimize skin contact with used oil and promptly remove used oil from the skin. In a laboratory study, mice developed skin cancer after skin was exposed to used engine oil twice a week without being washed off, for most of their life span. Substances found to cause cancer in laboratory animals may also cause cancer in humans.

NOTE

New or newly-overhauled engines should be operated on aviation grade straight mineral oil until the first oil change. If an ashless dispersant oil is used in a new or newly-overhauled engine, high oil consumption may be experienced. The anti-friction additives in detergent and dispersant oils will retard "break-in" of the pistons, rings and cylinder walls. This condition can be avoided by the use of straight mineral oil. If oil must be added during the first 25 hours, use only aviation grade straight mineral oil (non-detergent) conforming to Specification No. MIL-L-6082. After the first 25 hours of operation, drain engine oil sump and change the oil filter. Refill sump with straight mineral oil (non-detergent) and use until a total of 50 hours have accumulated or oil consumption has stabilized, then change to ashless dispersant oil in accordance with the oil charts in figure 2-4.

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When changing engine oil, install a new oil filter. An oil quick-drain valve is installed. This valve provides a quicker and cleaner method of draining the engine oil. This valve is installed in the oil drain port of the oil sump and allows oil to be drained by attaching a hose over the stem and pushing up, causing the oil to drain through the hose into a container. To drain the engine oil, proceed as follows:

- a. Operate engine until oil temperature is at normal operating temperature.
- b. Attach a hose to the stem of the quick-drain valve located in the engine oil sump. Push up on stem until clip locks on body, holding valve in the open position. (See figure 2-3.) Allow oil to drain through hose into container.
- c. Close oil quick-drain valve by pulling down on stem or twisting a screwdriver inserted between valve body and clip as shown in figure 2-3. Remove hose from stem.
- d. Change engine oil filter and service engine with oil in accordance with figure 2-4 of this manual.

NOTE

Refer to figure 2-4 for intervals for changing oil and filters.

Valve shown open. To close, twist screwdriver until valve unlocks and snaps down to closed position.

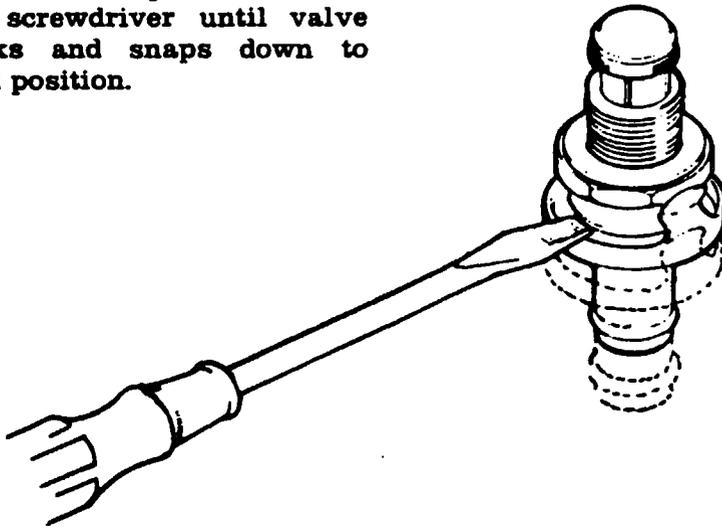


Figure 2-3. Quick-Drain Valve

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- 2-24. **ENGINE OIL COOLER.** Oil coolers can be a cause of internal engine damage if not properly serviced. Trapped air in the lines and cooler, as a result of draining oil from the oil cooler, can cause oil aeration, which gives insufficient valve train lubrication resulting in premature engine wear. Therefore, anytime oil is drained, for changing or flushing, the following procedures should be used to eliminate trapped air.
- Prior to starting, remove lower spark plugs. If available, the use of an Auxiliary Power Cart is recommended.
 - With mixture in idle cut off, and magneto switch on "START", rotate engine with the starter. Rotate engine to stabilize oil pressure, but **DO NOT CRANK LONGER THAN THIRTY (30) SECONDS EACH TIME. ALLOW AT LEAST ONE (1) FULL MINUTE BETWEEN CYCLES FOR STARTER MOTOR COOLING.** After oil pressure gage stabilizes, crank an additional ten (10) seconds, **IF WITHIN THE THIRTY SECONDS LIMIT.**
 - Repeat this procedure at least four (4) times, but **DO NOT EXCEED THIRTY (30) SECONDS "ON" nor ONE (1) MINUTE "OFF" Limitation.**
 - Reinstall the lower spark plugs.
 - Start engine and run at 900 - 1,000 RPM for approximately five (5) minutes. Shut engine down, and check oil level. Add oil as necessary to fill crankcase to full mark on dipstick. Ensure that oil filter is safety wired.
- 2-25. **ENGINE INDUCTION AIR FILTER.** The induction air filter keeps dust and dirt from entering the induction system. The value of maintaining the air filter in a good clean condition can never be overstressed. More engine wear is caused through the use of a dirty or damaged air filter than is generally believed. The frequency with which the filter should be removed, inspected, and cleaned will be determined primarily by aircraft operating conditions. A good general rule, however, is to remove, inspect and clean the filter at least every 100 hours of engine operating time and more frequently if warranted by operating conditions. Under extremely dusty conditions, daily servicing of the filter is recommended. To service the induction air filter, proceed as follows:
- Remove filter from aircraft.

NOTE

Use care to prevent damage to filter element when cleaning filter with compressed air.

- Clean filter by blowing with compressed air (not over 100 psi) from direction opposite of normal air flow. Arrows on filter case indicate direction of normal air flow.

CAUTION

Do not use solvent or cleaning fluids to wash filter. Use only a water and household detergent solution when washing the filter.

- After cleaning as outlined in step "b", the filter may be washed, if necessary, in a solution of warm water and a mild household detergent. A cold water solution may be used.

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NOTE

The filter assembly may be cleaned with compressed air a maximum of 30 times or it may be washed a maximum of 20 times. A new filter should be installed after 500 hours of engine operating time or one year, whichever should occur first. However, a new filter should be installed at anytime the existing filter is damaged. A damaged filter may have sharp or broken edges in the filtering panels which would allow unfiltered air to enter the induction system. Any filter that appears doubtful, shall have a new filter installed in its place.

- d. After washing, rinse filter with clear water until rinse water draining from filter is clear. Allow water to drain from filter and dry with compressed air (not over 100 psi).

NOTE

The filtering panels of the filter may become distorted when wet, but they will return to their original shape when dry.

- e. Ensure that the air box is clean and the filter and filter gasket are undamaged and serviceable.
- f. Install filter at entrance to air box with gasket on aft face of filter frame pointed in the correct direction.

- 2-26. **VACUUM SYSTEM CENTRAL AIR FILTER.** The vacuum system central air filter keeps dust and dirt from entering the vacuum operated instruments. Inspect the filter every 100 hours for damage and cleanliness. Change central air filter element whenever damaged, every 500 hours of operating time, or annually, whichever comes occurs first; and whenever it becomes sufficiently clogged to cause suction gage readings to drop below 4.6 inches of mercury. Also, do not operate the vacuum system with the filter removed, or a vacuum line disconnected as particles of dust or other foreign matter may enter the system and damage the vacuum-operated instruments.

CAUTION

Smoking will cause premature filter clogging.

- 2-27. **BATTERY.** Battery servicing involves adding distilled water to maintain the electrolyte even with the horizontal baffle plate at the bottom of the filler holes, checking the battery cable connections, and neutralizing and cleaning spilled electrolyte or corrosion. Use bicarbonate of soda (baking soda) and water to neutralize electrolyte or corrosion. Follow with a thorough flushing with water. Brighten cables and terminals with a wire brush, then coat with petroleum jelly before connecting. The battery box also should be checked and cleaned if any corrosion is noted (when applicable). Distilled water, not acid or "rejuvenators", should be used to maintain electrolyte level. Check the battery every 100 hours (or at least every 90 days), more often in hot weather. See Section 16 for detailed battery removal, installation and testing.
- 2-28. **TIRES.** Maintain tire pressure at the pressure specified in figure 1-1. When checking tire pressure, examine tires for wear, cuts, bruises, and slippage. Remove oil, grease, and mud from tires with soap and water.

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NOTE

Recommended tire pressures should be maintained. Especially in cold weather, remember that any drop in temperature of the air inside a tire causes a corresponding drop in air pressure.

- 2-29. **NOSE GEAR SHOCK STRUT.** The nose gear shock strut requires periodic checking to ensure that the strut is filled with hydraulic fluid and is inflated to the correct air pressure. To service the nose gear shock strut, proceed as follows:
- a. Remove valve core and fully compress strut. (Fork and outer barrel in contact.)
 - b. Remove upper filler plug.
 - c. Extend strut one inch, fill to overflow with MIL-H-5606 Hydraulic fluid and replace filler plug.
 - d. Compress strut. If strut compresses fully, repeat operation "c" and "d" until strut will no longer compress fully.
 - e. Remove filler plug, compress strut fully and allow fluid to overflow.
 - f. Replace filler plug and valve core.
 - g. With no load on strut inflate to 55 PSI.

NOTE

The nose landing gear shock strut will normally require only a minimum amount of service. Maintain the strut extension air pressure shown in figure 1-1. Lubricate landing gear as shown in figure 2-5. Check landing gear daily for general cleanliness, security of mounting, and for hydraulic fluid leakage. Keep machined surface of strut barrel wiped free of dirt and dust, using a clean, lint-free cloth moistened with hydraulic fluid or kerosene. All surfaces should be wiped free of excess hydraulic fluid or kerosene. Leave a light film of fluid on the machine surface of the strut barrel.

- 2-30. **SHIMMY DAMPENER.** The shimmy dampener contains a compensating mechanism within the hollow piston rod for thermal expansion and contraction of the hydraulic fluid. The shimmy dampener must be filled completely with fluid, free of entrapped air, to serve its purpose. In addition, the piston rod must also be partially full of fluid before the temperature compensating mechanism will function properly. It should be noted that the fluid is under pressure exerted against the floating piston by a spring, and that loosening or removing the filler plug will cause loss of fluid and necessitate removal and refilling of the shimmy dampener and piston rod.

NOTE

The shimmy dampener should be checked at each 50-hour inspection to see if it should be serviced.

Use the following procedure to fill the shimmy dampener.

- a. Using the tow bar, turn the nose wheel strut to the extreme left position (thru serial R18200710), to the extreme right position (beginning with serial R18200711), against the stop. This will place the shimmy dampener piston to the rear of the cylinder and eliminate the possibility of trapping air in the cylinder.

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- b. Remove the filler plug and fill with hydraulic fluid.
- c. Replace filler plug and turn nose wheel strut through its entire travel several times.
- d. Return strut to the extreme left position (thru serial R18200710), to the extreme right position (beginning with R18200711) against the stop.
- e. Remove filler plug and add whatever fluid is needed to fill the cylinder.
- f. Replace and safety the filler plug.

NOTE

Keep shimmy dampener, especially the exposed portions of the dampener piston shaft, clean to prevent collection of dust and grit which could cut the seals in the dampener barrel. Keep machined surfaces wiped free of dirt and dust, using a clean lint-free cloth saturated with hydraulic fluid (MIL-H-5606) or kerosene. All surfaces should be wiped free of excessive hydraulic fluid.

- 2-31. **HYDRAULIC FLUID SAMPLING AND CONTAMINATION CHECK.** At the first 50 and first 100-hour inspection and thereafter at each 500-hour inspection or one year, whichever should occur first, a sample of fluid should be taken and examined for sediment and discoloration. This may be done as follows:
- a. Place aircraft master switch in OFF position and place aircraft on jacks as shown in figure 2-1. Bleed pressure from system by moving landing gear selector valve to gear UP position.

CAUTION

Do not turn master switch ON while hydraulic system is open to atmosphere. The pump will automatically start, causing hydraulic fluid to spray from any open line.

- b. Remove cap plug from tee fitting on left side of power pack and place a non-metal container below opening.
 - c. Place landing gear selector valve in down position and operate emergency hand pump to pump fluid into container.
 - d. If the drain fluid is clear and is not appreciably darker in color than new fluid, continue to use the present fluid.
 - e. If the fluid color is doubtful, place fluid sample in a non-metallic container and insert a strip of polished copper in the fluid.
 - f. Keep copper in the fluid for six hours at a temperature of 70°F or more. A slight darkening of the copper is permissible, but there should be no pitting or etching visible up to 20X magnification. If pitting or etching is evident, drain fluid from power pack reservoir. Fill power pack with MIL-H-5606 hydraulic fluid and bleed air from system.
- 2-32. **LANDING GEAR HYDRAULIC RETRACTION SYSTEM.** Draining, filling and bleeding of the landing gear hydraulic retraction system can be accomplished by the following method.
- a. Place aircraft master switch in OFF position and place aircraft on jacks as shown in figure 2-1. Bleed pressure from system by moving landing gear selector valve to gear UP position.

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CAUTION

Do not turn master switch ON while hydraulic system is open to atmosphere. The pump will automatically start, causing hydraulic fluid to spray from any open line.

- b. Drain system by removing cap plug from tee fitting on left side of power pack and attaching a drain hose to opening. Place end of hose in a container of at least one gallon capacity and using emergency hand pump, pump fluid into container. When power pack reservoir is empty, replace cap plug on tee fitting.
 - c. Fill power pack reservoir full with MIL-H-5606 hydraulic fluid by inserting funnel or filler hose in dipstick opening on top of power pack body.
 - d. Bleed system by cycling landing gear through several cycles. Refill power pack reservoir with MIL-H-5606 hydraulic fluid and remove aircraft from jacks.
- 2-33. **HYDRAULIC BRAKE SYSTEM.** Check brake master cylinders and refill with hydraulic fluid (MIL-H-5606) as specified in the inspection charts. Bleed the brake system of entrapped air whenever there is a spongy response to the brake pedals. Refer to Section 5 for filling and bleeding of the brake system.
- 2-34. **CLEANING.**
- 2-35. **GENERAL DESCRIPTION.** Keeping the aircraft clean is important. Besides maintaining the trim appearance of the aircraft, cleaning lessens the possibility of corrosion and makes inspection and maintenance easier.

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2-36. CLEANING WINDSHIELD AND WINDOWS.

2-37. MATERIALS REQUIRED.

NAME	MANUFACTURER	USE
Mild soap or detergent (hand dishwashing type without abrasives).	Commercially available.	Cleaning windshields and windows.
Aliphatic Naphtha Type II conforming to Federal Specification TT-N-95.	Commercially available.	Removing deposits which cannot be removed with mild soap solution on acrylic windshields and windows.
*Polishing wax.		Waxing acrylic windshields and windows
Turtle Wax (paste).	Turtle Wax, Inc. Chicago, IL. 60638	
Great Reflections Paste Wax	E.I. duPont de Nemours and Co. (Inc.) Wilmington, DE 19898	
Slip-Stream Wax (paste)	Classic Chemical Grand Prairie, TX 75050	
Acrylic polish conforming to Federal Specification P-P-560 such as:		Cleaning and polishing acrylic windshields and windows.
Permatex plastic cleaner No. 403D	Permatex Company, Inc. Kansas City, KS 66115	
Cotton flannel or cotton terry cloth material.	Commercially available.	

* These are the only polishing waxes tested and approved for use by Cessna Aircraft Company.

CAUTION

Windshields and windows are easily damaged by improper handling and cleaning techniques.

- a. Place airplane inside hangar or in shaded area and allow to cool from heat of sun's direct rays.
- b. Using clean (preferably running) water, flood surface. Use bare hands with no jewelry to feel and dislodge any dirt or abrasive materials.
- c. Using a mild soap or detergent (such as dishwashing liquid) in water, wash surface. Again use only bare hands to provide rubbing force. (A clean cloth may be used to transfer soap solution to surface, but extreme care must be exercised to prevent scratching surface.)

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- d. On acrylic windshields and windows only, if soils which cannot be removed by a mild detergent remain, Type II aliphatic naphtha applied with a soft clean cloth may be used as a cleaning solvent. Be sure to frequently refold cloth to avoid redepositing soil and/or scratching windshield with any abrasive particles.
- e. Rinse surface thoroughly with clean fresh water and dry with a clean cloth.

CAUTION

DO NOT use any of the following on or for cleaning windshields and windows: methanol, denatured alcohol, gasoline, benzene, xylene, MEK, acetone, carbon tetrachloride, lacquer thinners, commercial or household window cleaning sprays.

2-38. WAXING.

- a. Hand polishing wax should be applied to acrylic surfaces. (The wax has an index of refraction nearly the same as transparent acrylic and tend to mask any shallow scratches on windshield surface).
- b. Acrylic surfaces may be polished using a polish meeting Federal Specification P-P-560 applied per manufacturer's instructions.

CAUTION

DO NOT use rain repellent on acrylic surfaces.

NOTE

When applying and removing wax and polish, use a clean soft cloth.

2-39. PREVENTIVE MAINTENANCE.

NOTE

Utilization of the following techniques will help minimize windshield and window crazing.

- a. Keep all surfaces of windshields and windows clean.
- b. If desired, wax acrylic surfaces.
- c. Carefully cover all surfaces during any painting, powerplant cleaning or other procedure that calls for use of any type of solvents or chemicals. The following coatings are approved for use in protecting surfaces from solvent attack.
 - 1. White Spary Lab, MIL-C-6799, Type I, Class II.
 - 2. WPL-3 Masking Paper - St. Regis, Newton, MA.
 - 3. 5 X N - Poly-Spotstick - St. Regis, Newton, MA.
 - 4. Protex 40 - Mask Off Company, Monrovia, CA, and Southwest Paper Co., Wichita, KS.
 - 5. Protex 10VS - Mask Off Company, Monrovia, CA, and Southwest Paper Co., Wichita, KS.
 - 6. Scotch 344 Black Tape - 3M Company.
- d. Do not park or store airplane where it might be subjected to direct contact with or vapors from: methanol, denatured alcohol, gasoline, benzene, xylene, MEK, acetone, carbon tetrachloride, lacquer thinners, commercial or household window cleaning sprays, paint strippers, or other types of solvents.

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- e. Do not use solar screens or shields installed on inside of airplane or leave sun visors up against windshield. The reflected heat from these items causes elevated temperatures which accelerate crazing and may cause formation of bubbles in the inner ply of multiple-ply windshields.
- f. Do not use a power drill motor or other powered device to clean, polish, or wax surfaces.

2-40. INTERIOR TRIM. The instrument panel, interior plastic trim, and control knobs need only be wiped with a damp cloth. Oil and grease on the control wheels and control knobs can be removed with a cloth moistened with Stoddard solvent. Volatile solvents, mentioned in the caution note of paragraph 2-36, must never be used since they soften and craze the plastic trim.

2-41. PAINTED SURFACES. The painted exterior surfaces of your new Cessna have a durable, long-lasting finish. Approximately 10 days are required for the paint to cure completely; in most cases, the curing period will have been completed prior to delivery of the airplane. In the event that polishing or buffing is required within the curing period, it is recommended that the work be done by someone experienced in handling uncured paint. Any Cessna Dealer can accomplish this work.

Generally, the painted surfaces can be kept bright by washing with water and mild soap, followed by a rinse with water and drying with cloths or a chamois. Harsh or abrasive soaps or detergents which cause corrosion or scratches should never be used. Remove stubborn oil and grease with a cloth moistened with Stoddard solvent.

To seal any minor surface chips or scratches and protect against corrosion, the airplane should be waxed regularly with a good automotive wax applied in accordance with the manufacturer's instructions. If the airplane is operated in a seacoast or other salt water environment, it must be washed and waxed more frequently to assure adequate protection. Special care should be taken to seal around rivet heads and skin laps, which are the areas most susceptible to corrosion. A heavier coating of wax on the leading edges of the wings and tail, and on the cowl nose cap and propeller spinner will help reduce the abrasion encountered in these areas. Reapplication of wax will generally be necessary after cleaning with soap solutions or after chemical de-icing operations.

2-42. ALUMINUM SURFACES. The aluminum surfaces require a minimum of care, but should never be neglected. The aircraft may be washed with clean water to remove dirt and may be washed with nonalkaline grease solvents to remove oil and/or grease. Household type detergent soap powders are effective cleaners, but should be used cautiously since some of them are strongly alkaline. Many good aluminum cleaners, polishes and waxes are available from commercial suppliers of aircraft products.

2-43. ENGINE AND ENGINE COMPARTMENT. An engine and accessories wash-down should be accomplished during each 100-hour inspection to remove oil, grease, salt corrosion or other residue that might conceal component defect during inspection. Also, periodic cleaning can be very effective in preventive maintenance.

Precautions should be taken when working with cleaning agents such as wearing of rubber gloves, an apron or coveralls and a face shield or goggles. Use the least toxic of available cleaning agents that will satisfactorily accomplish the work. These cleaning agents include: (1) Stoddard solvent (Specification P-D-680, Type II), (2) A water base alkaline detergent cleaner (MIL-C-25769J) mixed 1 part cleaner, 2 to 3 parts water and 8 to 12 parts Stoddard solvent or (3) A solvent base emulsion cleaner (MIL-C-4361B) mixed 1 part cleaner and 3 parts Stoddard solvent.

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CAUTION

Do not use gasoline or other highly flammable substances for wash-down.

Perform all cleaning operations in well ventilated work areas, and ensure that adequate fire-fighting and safety equipment is available. Do not smoke or expose a flame within 100 feet of the cleaning area. Compressed air, used for cleaning agent application or drying, should be regulated to the lowest practical pressure. Use of a stiff bristle brush rather than a steel brush is recommended if cleaning agents do not remove excess grease and grime during spraying.

A recommended procedure for cleaning an engine and accessories is as follows.

CAUTION

Do not attempt to wash an engine which is still hot or running. Allow the engine to cool before cleaning.

- a. Remove engine cowling in accordance with paragraph 11-3.
- b. Carefully cover the coupling area between the vacuum pump and the engine drive shaft so that no cleaning solvent can reach the coupling or seal.
- c. Cover the open end of the vacuum discharge tube.
- d. Cover the vacuum relief valve filter, if installed in the engine compartment.
- e. Use fresh water for wash-down when the engine is contaminated with salt or corrosive chemicals. A cleaning agent such as described previously may then be used to remove oil and grime.

CAUTION

Care should be exercised to not direct cleaning agents or water streams at openings on the starter, magnetos, alternator, vacuum pump, or turbocharger relief valve.

- f. Thoroughly rinse with clean, warm water to remove all traces of cleaning agents.

CAUTION

Cleaning agents should never be left on engine components for an extended period of time. Failure to remove them may cause damage to components such as neoprene seals and silicone fire sleeves, and could cause additional corrosion.

- g. Completely dry the engine and accessories using clean, dry compressed air.
- h. Remove the cover over the coupling area.
- i. Remove the cover from the vacuum discharge tube.
- j. Remove the cover from the vacuum relief valve filter, if installed.
- k. If desired, the engine cowling may be washed with the same cleaning agents, then rinsed thoroughly and wiped dry.
- l. Reinstall engine cowling.

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WARNING

For maximum safety, check that the magneto switches are OFF, the throttle is closed, the mixture control is in the idle cut-off position, and the airplane is secured before rotating the propeller by hand. Do not stand within the arc of the propeller blades while turning the propeller.

- m. Before starting the engine, rotate the propeller by hand no less than four complete revolutions.

- 2-44. **UPHOLSTERY AND INTERIOR** cleaning prolongs the life of upholstery fabrics and interior trim. To clean the interior, proceed as follows:
 - a. Empty all ash trays and refuse containers.
 - b. Brush or vacuum clean the upholstery and carpet to remove dust and dirt.
 - c. Wipe leather and plastic trim with a damp cloth.
 - d. Soiled upholstery fabrics and carpet may be cleaned with a foam-type detergent used according to manufacturer's instructions.
 - e. Oil spots and stains may be cleaned with household spot removers, used sparingly. Before using any solvent, read the instructions on the container and test it on an obscure place in the fabric to be cleaned. Never saturate the fabric with volatile solvent; it may damage the padding and backing material.
 - f. Scrape sticky material from fabric with a dull knife, then spot clean the area.
- 2-45. **PROPELLER.** The propeller should be wiped occasionally with an oily cloth to remove grass and bug stains. In salt water areas this will assist in corrosion proofing the propeller.
- 2-46. **WHEELS.** The wheels should be washed periodically and examined for corrosion, chipped paint, and cracks or dents in the wheel halves or in the flanges or hubs. If defects are found, remove and repair in accordance with Section 5. Discard cracked wheel halves, flanges or hubs and install new parts.
- 2-47. **LUBRICATION.**
- 2-48. **GENERAL DESCRIPTION.** Lubrication requirements are shown in figure 2-5. Before adding lubricant to a fitting, wipe fitting free of dirt. Lubricate until grease appears around part being lubricated, and wipe excess grease from parts. The following paragraphs supplement figure 2-5 by adding details not shown in the figure.
- 2-49. **TACHOMETER DRIVE SHAFT.** Refer to Section 15.
- 2-50. **WHEEL BEARINGS.** Clean and repack the wheel bearings at the first 100-hour inspection and at each 500-hour inspection thereafter. If more than the usual number of takeoffs and landings are made, extensive taxiing is required, or the aircraft is operated in dusty areas or under seacoast conditions, cleaning and lubrication of the wheel bearings shall be accomplished at each 100-hour inspection.
- 2-51. **NOSE GEAR TORQUE LINKS.** Lubricate nose gear torque links every 50 hours. When operating from a dirt strip or in extremely dusty areas, more frequent lubrication of the torque links is required.

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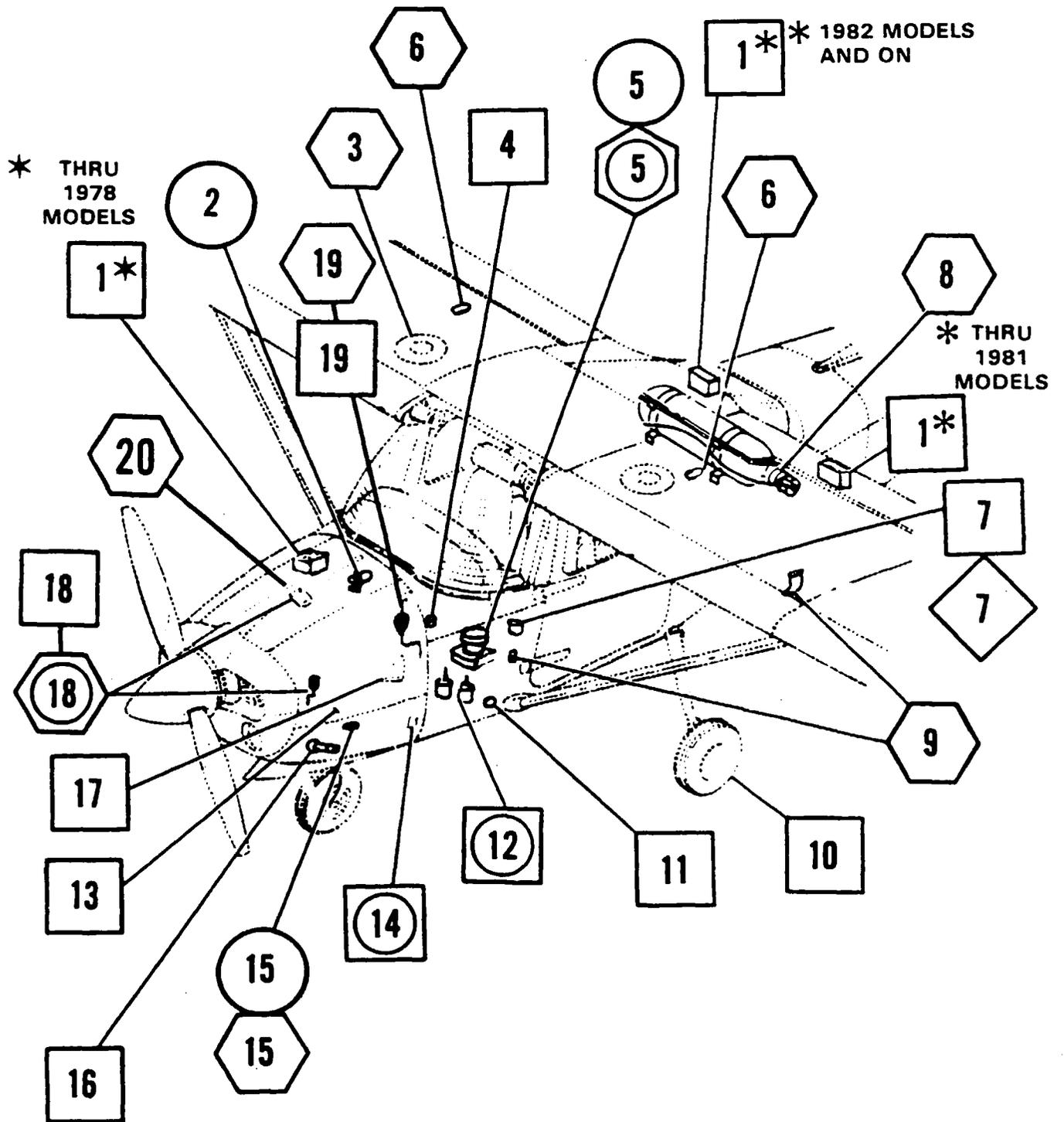
- 2-52. **WING FLAP ACTUATOR.** Clean and lubricate wing flap actuator jack screw each 100 hours as follows:
- a. Expose jack screw by operating flaps to full down position.
 - b. Clean jack screw threads with solvent rag and dry with compressed air.

NOTE

It is not necessary to remove actuator from aircraft to clean or lubricate threads.

- c. With oil can, apply light coat of No. 10 weight non-detergent oil to threads of jack screw.
- 2-53. **ROD END BEARINGS.** Periodic inspection and lubrication is required to prevent corrosion of the bearing in the rod end. At each 100-hour inspection, disconnect the control rods at the aileron, flap and nose gear steering bungee, and inspect each rod end for corrosion. If no corrosion is found, wipe the surface of the rod end balls with general purpose oil and rotate ball freely to distribute the oil over its entire surface and connect the control rods to their respective units. If corrosion is detected during the inspection, install new rod ends.
- 2-54. **NOSE GEAR STEERING COLLAR.** Lubricate nose gear steering collar spindle links at each 100-hour inspection.
- 2-55. **NOSE GEAR PIVOTS.** Lubricate all nose gear pivot points at each 100-hour inspection, including the drag link pivot points. More frequent lubrication may be required when operating in dusty areas.
- 2-56. **MAIN GEAR PIVOT POINTS.** Lubricate main landing gear pivot assembly at each 500-hour inspection. If more than the usual number of takeoffs and landings are made, lubrication of the pivot assembly should be accomplished at each 100-hour inspection.

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NOTE

Refer to Sheet 2 for specified Hydraulic Fluid, Oxygen, Fuel and Oil.

Figure 2-4. Servicing (Sheet 1 of 5)

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HYDRAULIC FLUID:
SPEC. NO. MIL-H-5606

OXYGEN:
SPEC. NO. MIL-O-27210

SPECIFIED AVIATION GRADE FUELS:

WARNING

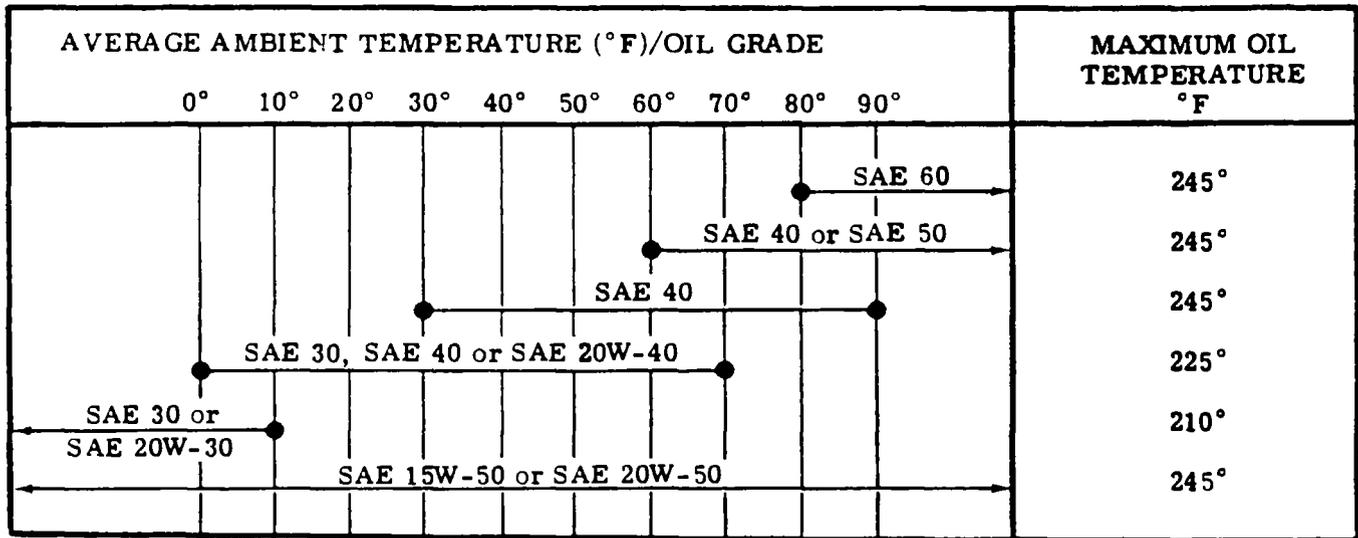
ONLY AVIATION GRADE FUELS ARE APPROVED FOR USE.

ENGINE MODEL	APPROVED FUEL GRADES	NOTE
LYCOMING O-540-J or O-540-L	100LL (blue)	1
	100 (green) (formerly 100/130)	1

NOTE

1. Compliance with Avco Lycoming Service Instruction No. 1070, and all revisions thereto, must be accomplished.

SPECIFIED AVIATION GRADE OIL:



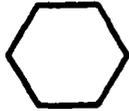
NOTE

The overlap of oil grades is based on a mid-range of ambient ground temperatures vs. maximum oil inlet temperature. Aviation Grade ashless dispersant oil conforming to Avco Lycoming Service Instruction No. 1014 and all revisions and supplements thereto, **MUST BE USED** except as noted in paragraph 2-23.

CAPACITY (TOTAL)	CAPACITY (TOTAL WITH FILTER)	NORMAL OPERATION	MINIMUM FOR FLIGHT
8	9	6	5

Figure 2-4. Servicing (Sheet 2 of 5)

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DAILY

3

FUEL CELLS:

Service after each flight. Keep full to retard condensation. Refer to paragraph 2-21.

6

FUEL CELL SUMP DRAINS:

Drain off any water and sediment before first flight of the day.

19

FUEL STRAINER:

Drain off any water and sediment before first flight of the day.

20

OIL DIPSTICK:

Check on preflight. Add oil as necessary. Refer to paragraph 2-23 for details. Check that filler cap is tight and oil filler is secure.

9

PITOT AND STATIC PORTS:

Check for obstructions before first flight of the day.

8

OXYGEN CYLINDER:

Check for anticipated requirements before each flight. Refer to Section 14.

15

NOSE GEAR SHOCK STRUT:

Check on preflight. Check inner barrel showing below outer barrel to be approximately two inches. Deviation from these dimensions is cause to check and service strut per paragraph 2-29.



25 HOURS

18

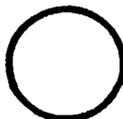
ENGINE OIL SYSTEM: FIRST 25 HOURS

Refill with straight mineral oil, non-detergent, and use until a total of 50 hours have accumulated or oil consumption has stabilized, then change to ashless dispersant oil. Refer to paragraph 2-23.

5

HYDRAULIC POWER PACK:

Check fluid level, and after a gear extension which uses the hydraulic hand pump.



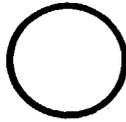
50 HOURS

2

ENGINE OIL FILTER:

Change filter every 50 hours.

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50 HOURS (Cont.)

15 NOSE GEAR SHOCK STRUT:
Keep strut filled and inflated to correct pressure. Refer to paragraph 2-29.

5 HYDRAULIC FLUID RESERVOIR:
At first 50 and first 100 hours, thereafter at each 500 hours or one year, whichever comes first, a sample of hydraulic fluid should be examined for sediment and discoloration as outlined in paragraph 2-31.



100 HOURS

10 TIRES:
Maintain correct tire inflation as listed in figure 1-1. Refer to paragraph 2-28.

16 SHIMMY DAMPENER:
Check fluid level and refill as required in accordance with paragraph 2-30.

13 CARBURETOR DRAIN PLUG:
Check for thread sealant residue in float chamber. Refer to paragraph 2-22.

17 INDUCTION AIR FILTER:
Clean filter per paragraph 2-25. Replace as required.

19 FUEL STRAINER:
Disassemble and clean strainer bowl and screen.

18 ENGINE OIL:
Change oil at least every 100 hours or every six months.

4 VACUUM RELIEF VALVE FILTER:
Replace each 100 hours.

1 BATTERY:
Check electrolyte level and clean battery compartment each 100 hours or each 90 days.

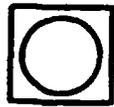
12 BRAKE MASTER CYLINDERS:
Check fluid level and fill as required with hydraulic fluid.

7 VACUUM SYSTEM CENTRAL AIR FILTER:
Inspect for damage. Refer to paragraph 2-26.

11 SELECTOR VALVE DRAIN:
Remove plug and drain off any water or sediment. Refer to paragraph 2-21.

Figure 2-4. Servicing (Sheet 4 of 5)

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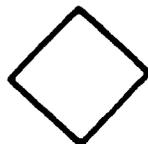


200 HOURS

14

GROUND SERVICE RECEPTACLE:

Connect to 24-volt DC, negative-ground power unit. Refer to Section 16.



500 HOURS

7

VACUUM SYSTEM CENTRAL AIR FILTER:

Replace every 500 hours or annually. Refer to paragraph 2-26.

MODEL R182 AND TR182 SERVICE MANUAL

FREQUENCY (HOURS)



WHERE NO INTERVAL IS SPECIFIED, LUBRICATE AS REQUIRED AND WHEN ASSEMBLED OR INSTALLED.

NOTE

The military specifications listed are not mandatory, but are intended as guides in choosing satisfactory materials. Products of most reputable manufacturers meet or exceed these specifications.

LUBRICANTS

PG	SS-G-659	POWDERED GRAPHITE
GR	MIL-G-81322A	GENERAL PURPOSE GREASE
GH	MIL-G-23827A	AIRCRAFT AND INSTRUMENT GREASE
GL	MIL-G-21164C	HIGH AND LOW TEMPERATURE GREASE
OG	MIL-L-7870A	GENERAL PURPOSE OIL
PL	VV-P-236	PETROLATUM
GP		NO. 10-WEIGHT, NON-DETERGENT OIL
OL	VV-L-800A	LIGHT OIL

Figure 2-5. Lubrication (Sheet 1 of 6)

MODEL R182 AND TR182 SERVICE MANUAL

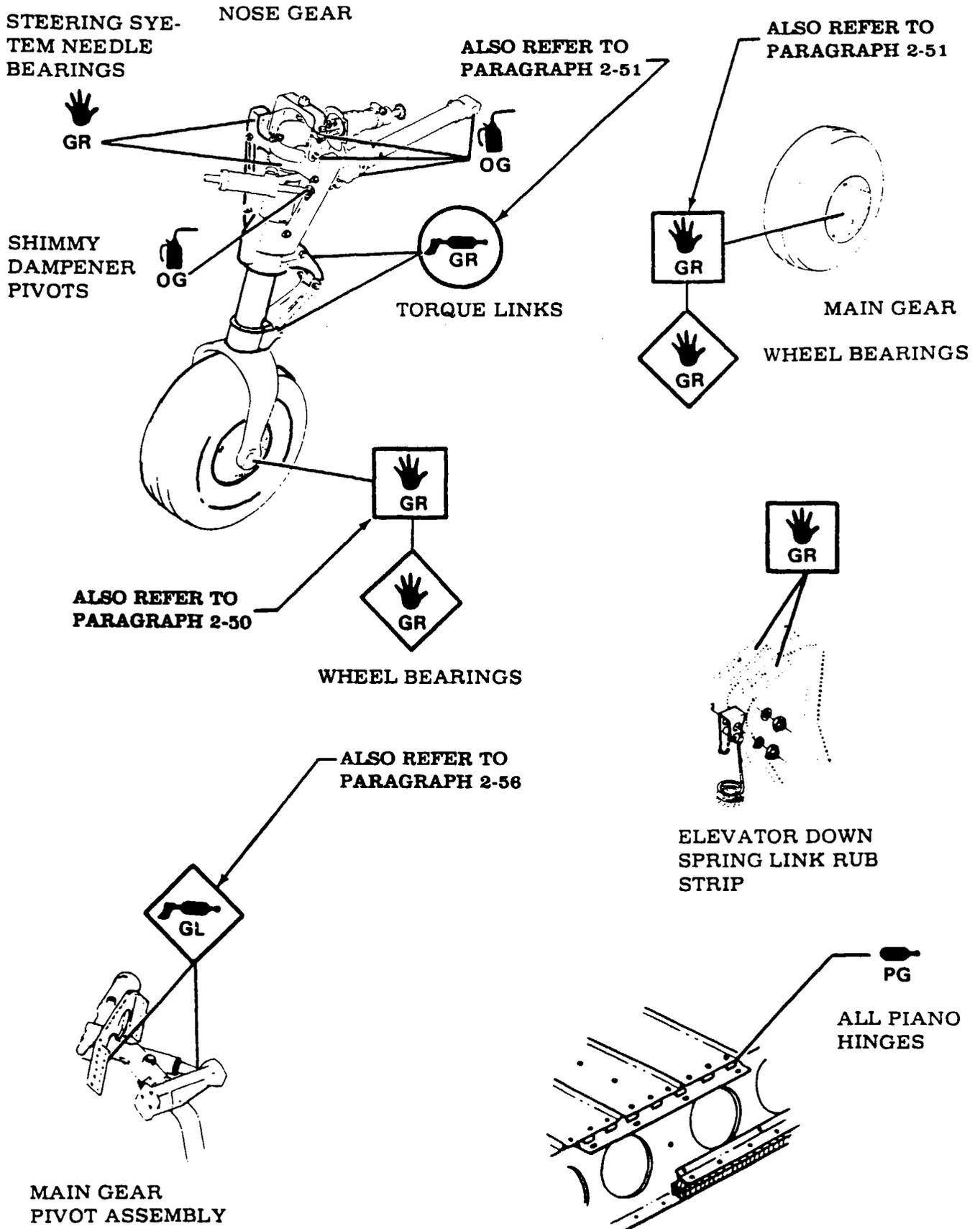


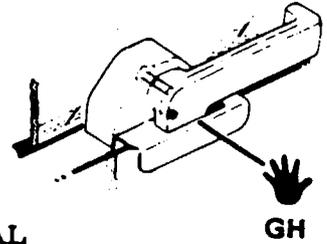
Figure 2-5. Lubrication (Sheet 2 of 6)

MODEL R182 AND TR182 SERVICE MANUAL



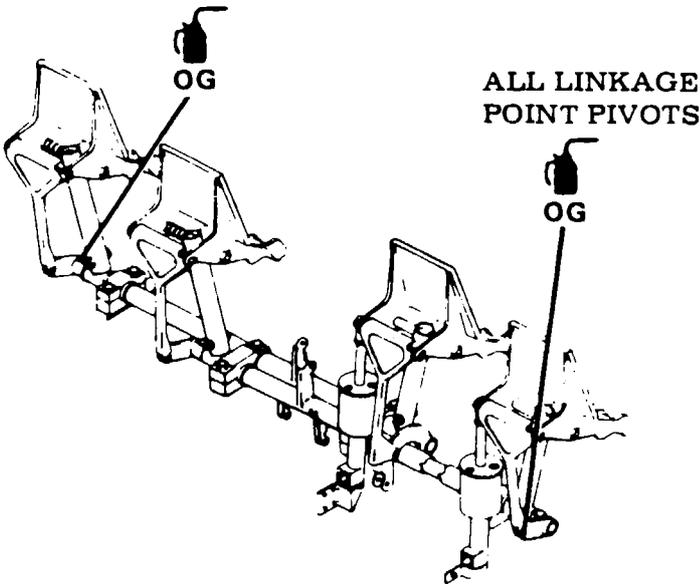
ALSO REFER TO INSPECTION CHART IN THIS SECTION AND TO SECTION 9 OF THIS MANUAL.

ELEVATOR TRIM TAB ACTUATOR

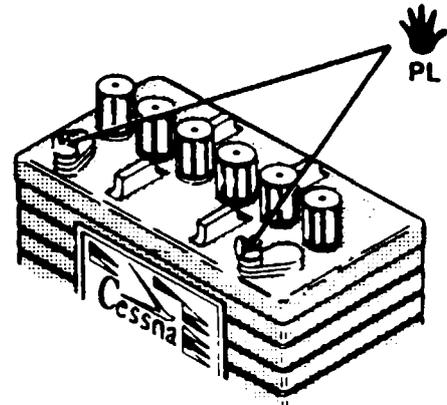


TYPICAL CABIN DOOR WINDOW INSERT GROOVES

OILITE BEARINGS (RUDDER BAR ENDS)

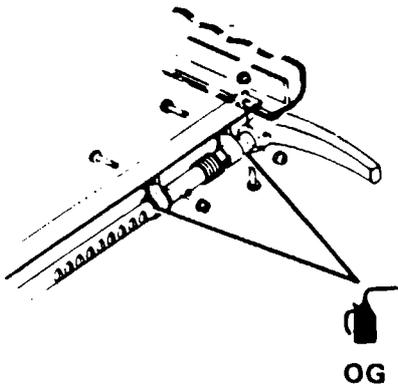


RUDDER BARS AND PEDALS

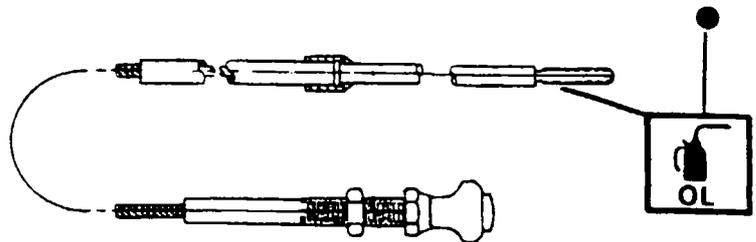


BATTERY TERMINALS

● DO NOT OIL IF OPERATING IN EXTREMELY DUSTY CONDITIONS



PARKING BRAKE HANDLE SHAFT

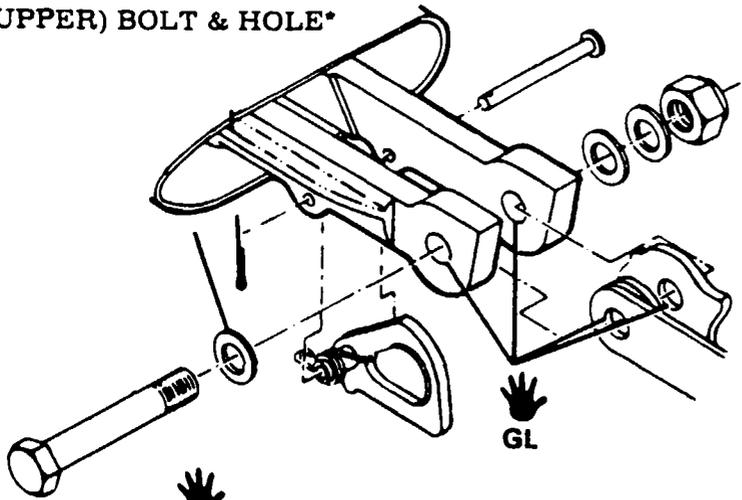


ENGINE CONTROLS

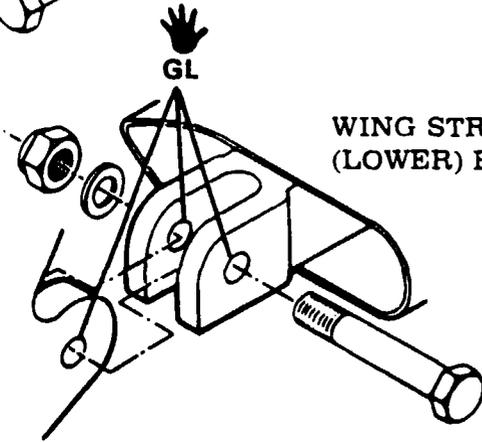
Figure 2-5. Lubrication (Sheet 3 of 6)

MODEL R182 AND TR182 SERVICE MANUAL

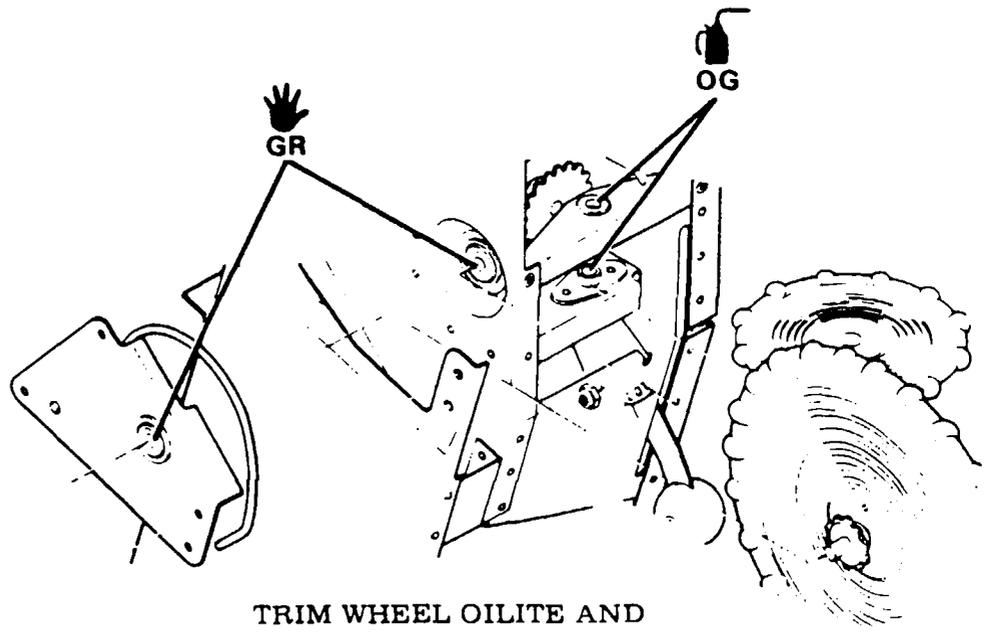
WING STRUT-ATTACH
(UPPER) BOLT & HOLE*



WING STRUT-ATTACH
(LOWER) BOLT & HOLE*



*UPON INSTALLATION



TRIM WHEEL OILITE AND
NEEDLE BEARINGS

Figure 2-5. Lubrication (Sheet 4 of 6)

MODEL R182 AND TR182 SERVICE MANUAL

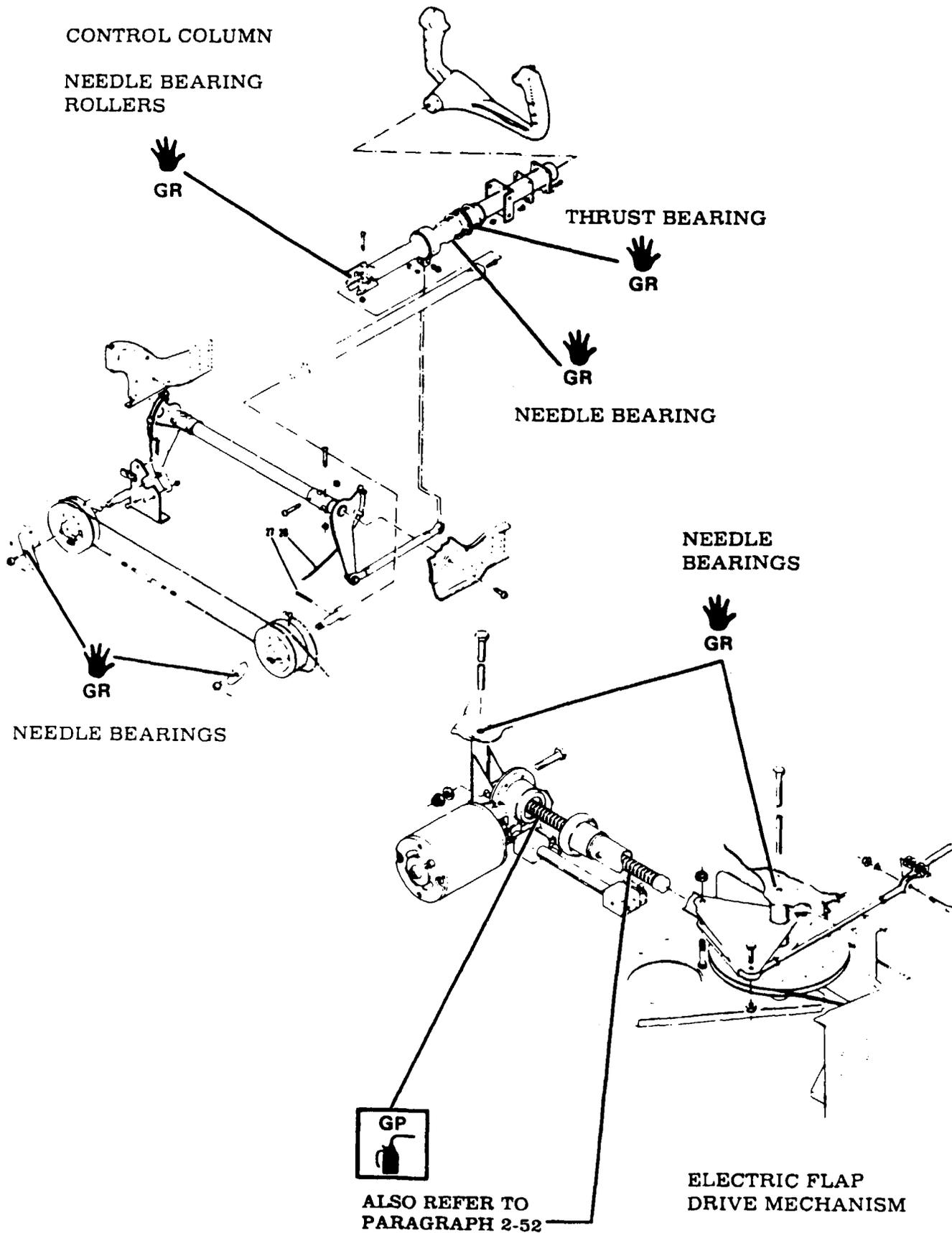
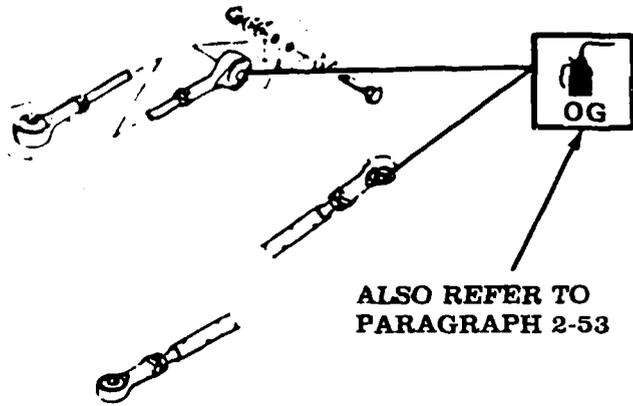
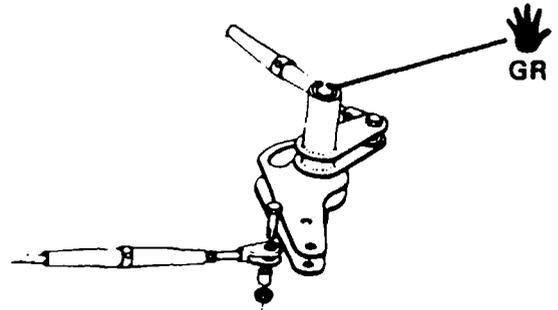


Figure 2-5. Lubrication (Sheet 5 of 6)

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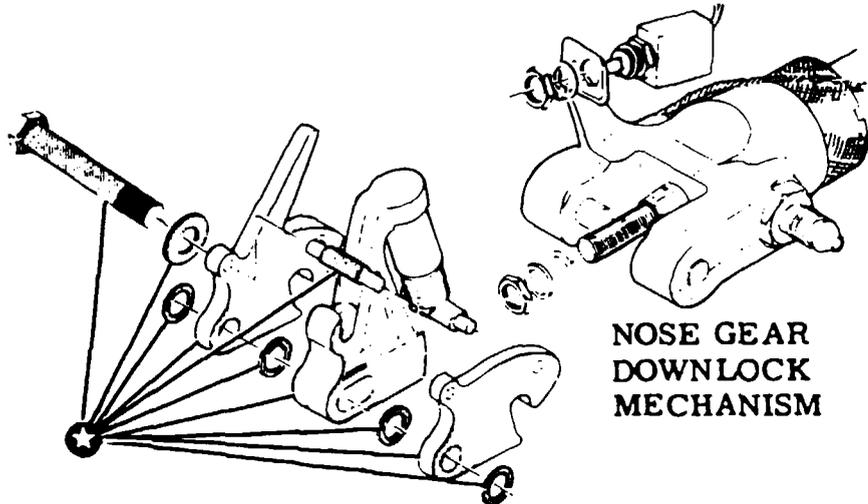


ROD END BEARINGS



AILERON BELLCRANK NEEDLE BEARINGS

- ★ SPRAY BOTH SIDES OF SHADED AREAS WITH ELECTROFILM LUBRI-BOND "A" WHICH IS AVAILABLE IN AEROSOL SPRAY CANS, OR AN EQUIVALENT LUBRICANT. TORQUE ATTACHING BOLT TO 10-20 LB-IN.



NOSE GEAR DOWNLOCK MECHANISM

NOTES

Sealed bearings require no lubrication.

Do not lubricate roller chains or cables except under seacoast conditions. Wipe with a clean, dry cloth.

Lubricate unsealed pulley bearings, rod ends, Oilite bearings, pivot and hinge points, and any other friction point obviously needing lubrication, with general purpose oil every 1000 hours or oftener if required.

Paraffin wax rubbed on seat rails will ease sliding the seats for and aft.

Lubricate door latching mechanism with MIL-G-81322A general purpose grease, applied sparingly to friction points, every 1000 hours or oftener, if binding occurs. No lubrication is recommended on the rotary clutch.

Figure 2-5. Lubrication (Sheet 6 of 6)

MODEL R182 & TR182 SERIES SERVICE MANUAL

2-57. GENERAL INSPECTION (MODEL R182 AND TR182 AIRPLANES).

NOTE

Cessna Aircraft Company recommends PROGRESSIVE CARE for airplanes flown 200 hours or more per year, and 100-HOUR INSPECTION for airplanes flown less than 200 hours per year.

A. Inspection Requirements.

(1) Two basic types of inspections are available as defined below:

- (a) As required by Federal Aviation Regulation Part 91.409(a), all civil airplanes of U.S. registry must undergo an annual inspection each 12 calendar months. In addition airplanes operated commercially (for hire) must also have an annual 100 hour inspection each 100 hours of operation as required by Federal Aviation Regulation Part 91.409(b).
- (b) In lieu of the above requirements, an airplane may be inspected in accordance with a progressive inspection program in accordance with Federal Aviation Regulation Part 91.409(d), which allows the work load to be divided into smaller operations that can be accomplished in a shorter time period. The CESSNA PROGRESSIVE CARE PROGRAM has been developed to satisfy the requirements of Part 91 409 (d).

B. Inspection Program Selection.

(1) As a guide for selecting the inspection program that best suits the operation of the airplane, the following is provided:

- (a) If the airplane is flown less than 200 hours annually, the following conditions apply:
 1. If flown for hire.
 - a. An airplane operating in this category must be inspected each 100 hours of operation (100-HOUR) and each 12 calendar months of operation (ANNUAL).
 2. If not flown for hire.
 - a. An airplane operating in this category must be inspected each 12 calendar months of operation (ANNUAL). It is recommended that between annual inspections, all items be inspected at the intervals specified in the Inspection Time Limits Charts and Component Time Limits Charts.
- (b) If the airplane is flown more than 200 hours annually, the following condition applies:
 1. Whether flown for hire or not, it is recommended that airplanes operating in this category be placed on the CESSNA PROGRESSIVE CARE PROGRAM. However, if not placed on the CESSNA PROGRESSIVE CARE PROGRAM, the inspection requirements for airplanes in this category are the same as those defined under Paragraph B. (1)(a)1.a. or 2.a. CESSNA PROGRESSIVE CARE PROGRAM may be utilized as a total concept program which ensures that the inspection intervals in the inspection charts are not exceeded. Manuals and forms which are required for conducting the CESSNA PROGRESSIVE CARE PROGRAM inspections are available from the Cessna Supply Division.

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C. Inspection Charts.

NOTE

Cessna has prepared these Inspection Charts to assist the owner or operator in meeting the foregoing responsibilities and to meet the intent of Federal Aviation Regulation Part 91.409(d). The Inspection Charts are not intended to be all-inclusive, for no such charts can replace the good judgment of a certified airframe and powerplant mechanic in performance of his duties. As the one primarily responsible for this airworthiness of the airplane, the owner or operator should select only qualified personnel to maintain the airplane.

- (1) The following Inspection Charts (Inspection Time Limits, Component Time Limits, Progressive Care Inspection, and Expanded Inspection) show the recommended intervals at which items are to be inspected based on normal usage under average environmental conditions. Airplanes operated in extremely humid tropics, or in exceptionally cold, damp climates, etc., may need more frequent inspections for wear, corrosion, and lubrication. Under these adverse conditions, perform periodic inspections in compliance with this chart at more frequent intervals until the operator can set his own inspection periods based on field experience. The operator's inspection intervals shall not deviate from the inspection time limits shown in this manual except as provided below:
 - (a) Each inspection interval can be exceeded by 10 hours or can be performed early at any time prior to the regular interval as provided below:
 1. In the event of late compliance of any operation scheduled, the next operation in sequence retains a due point from the time the late operation was originally scheduled.
 2. In the event of early compliance of any operation scheduled, that occurs 10 hours or less ahead of schedule, the next phase due point may remain where originally set.
 3. In the event of early compliance of any operation scheduled, that occurs more than 10 hours ahead of schedule, the next phase due point must be rescheduled to establish a new due point from the time of early accomplishment.
- (2) As shown in the charts, there are items to be checked at 50 hours, 100 hours, 200 hours, or at Special or Yearly inspection. Special or Yearly inspection items require servicing or inspection at intervals other than 50, 100, or 200 hours. If two inspection time requirements are listed for one inspection item, one hourly and the yearly, both apply and whichever requirement occurs first determines the time limit.
 - (a) When conducting a 50-hour inspection, check all items listed under EACH 50 HOURS. A 100-hour inspection includes all items listed under EACH 50 HOURS and EACH 100 HOURS. The 200-hour inspection includes all items listed under EACH 50 HOURS, EACH 100 HOURS, and EACH 200 HOURS. All of the items listed would be inspected, serviced, or otherwise performed as necessary to ensure compliance with the inspection requirements.
 - (b) A COMPLETE AIRPLANE INSPECTION includes all 50-, 100-, and 200-hour items plus those Special and Yearly Inspection Items which are due at the specified time.
 - (c) Component Time Limits Charts should be checked at each inspection interval to ensure proper overhaul and replacement requirements are accomplished at the specified times.

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D. Inspection Guidelines.

- (1) The Inspection Charts are to be used as a recommended inspection outline. Detailed information of systems and components in the airplane will be found in various chapters of this Maintenance Manual and the pertinent vendor publications. It is recommended that reference be made to the applicable portion of this manual for service instructions, installation instructions, and to the vendor's data or publications specifications for torque values, clearances, settings, tolerances, and other requirements.
- (2) For the purpose of this inspection, the term on condition is defined as follows: The necessary inspections and/or checks to determine that a malfunction or failure will not occur prior to the next scheduled inspection.
- (3) **MOVABLE PARTS:** Inspect for lubrication, servicing, security of attachment, binding, excessive wear, safetying, proper operation, proper adjustment, correct travel, cracked fittings, security of hinges, defective bearings, cleanliness, corrosion, deformation, sealing, and tension.
- (4) **FLUID LINES AND HOSES:** Inspect for leaks, cracks, bulging, collapsed, twisted, dents, kinks, chafing, proper radius, security, discoloration, bleaching, deterioration, and proper routing; rubber hoses for stiffness and metal lines for corrosion.
- (5) **METAL PARTS:** Inspect for security of attachment, cracks, metal distortion, broken spotwelds, condition of paint (especially chips at seams and around fasteners for onset of corrosion) and any other apparent damage.
- (6) **WIRING:** Inspect for security, chafing, burning, arcing, defective insulation, loose or broken terminals, heat deterioration, and corroded terminals.
- (7) **STRUCTURAL FASTENERS:** Inspect for correct torque in accordance with applicable torque values. Refer to Bolt Torque Data during installation or when visual inspection indicates the need for a torque check.

NOTE

Torque values listed are not to be used for checking tightness of installed parts during service.

- (8) **FILTERS, SCREENS, AND FLUIDS:** Inspect for cleanliness and the need for replacement at specified intervals.
- (9) System check (operation or function) requiring electrical power must be performed using 28.5 ± 0.25 volts bus voltage. This will ensure all components are operating at their designed requirements.
 - (a) Airplane file.
 1. Miscellaneous data, information, and licenses are a part of the airplane file. Check that the following documents are up-to-date and in accordance with current Federal Aviation Regulations. Most of the items listed are required by the Federal Aviation Regulations. Since the regulations of other nations may require other documents and data, owners of exported airplanes should check with their own aviation officials to determine their individual requirements.
 - a. To be displayed in the airplane at all times:
 - 1) Standard Airworthiness Certificate (FAA Form 8100-2).
 - 2) Aircraft Registration Certificate (FAA Form 8050-3).
 - 3) Aircraft Radio Station License (Federal Communication Commission Form 556 if transmitter is installed).
 - 4) Radio Telephone Station License (Federal Communication Commission Form 409 if Flitephone Radio Telephone is installed).
 - b. To be carried in the airplane at all times:
 - 1) Weight and Balance Data Sheets and associated papers (all copies of the Repair and Alteration Form, FAA Form 337, are applicable).
 - 2) Equipment List.
 - 3) Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual.
 - c. To be made available upon request:
 - 1) Airframe, Engine, Propeller, and Avionics Maintenance Records.

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2-58. PREINSPECTION CHECKS. (MODEL R182 AND TR182 AIRPLANES.)

A. Preinspection Operational Checks.

- (1) Before beginning the step-by-step inspection, start and run up the engine and upon completion, shut down the engine in accordance with instructions in the Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual. During the run-up, observe the following, making note of any discrepancies or abnormalities:
 - (a) Engine temperatures and pressures.
 - (b) Static RPM. (Also refer to Section 11 of this manual.)
 - (c) Magneto drop. (Also refer to Section 11 of this manual.)
 - (d) Engine response to changes in power.
 - (e) Any unusual engine noises.
 - (f) Fuel selector and/or shutoff valve; operate engine on each tank (or cell) position and OFF position long enough to ensure shutoff and/or selector valve functions properly.
 - (g) Idling speed and mixture; proper idle cut-off.
 - (h) Alternator and ammeter.
 - (i) Suction gage.
 - (j) Fuel flow indicator.
- (2) After the inspection has been completed, an engine run-up should again be performed to determine that any discrepancies or abnormalities have been corrected.
- (3) Some of the items in the Inspection Time Limits paragraph are optional, therefore not applicable to all airplanes.

Mechanic's Preinspection Discrepancies or Abnormalities to be Checked:

Mechanic's Post-inspection Corrective Action Taken:

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2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)

EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	SPECIAL INSPECTIONS	
HOURS	HOURS	HOURS	HOURS	YEARS

A	Placards (Refer to Pilot's Operating Handbook).					
A	1 Placards and Decals - Inspect presence, legibility and security. Consult Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for required placards.			•		
B	Fuselage (Section 3).					
B	1 Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.		•			
B	2 Internal Fuselage Structure - Inspect bulkheads, doorposts, stringers, doublers and skins for corrosion, cracks, buckles and loose rivets, bolts and nuts.			•		
B	3 Control Wheel Lock - Check general condition and operation.			•		
B	4 Fuselage Mounted Equipment - Check for general condition and security of attachment.			•		
B	5 Antennas and Cables - Inspect for security of attachment, connection and condition.			•		
B	6 Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with FAR Part 91.207. Refer to Section 16 - Emergency Locator Transmitter - Checkout Interval.		•			
B	7 Instrument Panel Shock Mounts, Ground Straps and Covers - Inspect for deterioration, cracks and security of attachment.			•		
B	8 Pilot's and Copilot's Inertia Reels - Inspect for security of installation, proper operation and evidence of damage.		•			
B	9 Seats, Seat Belts, and Shoulder Harnesses - Check general condition and security. Check operation of seat stops and adjustment mechanism. Inspect belts for condition and security of fasteners.		•			
B	10 Windows, Windshield, Doors and Seals - Inspect general condition. Check latches, hinges and seals for condition, operation and security of attachment.		•			
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.				EACH 400	EACH 1
B	12 Flight Controls - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation (as applicable.)		•			
B	13 Aileron, Elevator and Rudder Stops - Check for damage and security. Compliance with Cessna Service Letter SE80-65 is required.		•			
B	14 Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation and servicing date.		•			

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2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)		EACH	EACH	EACH	SPECIAL	
		50	100	200	INSPECTIONS	
		HOURS	HOURS	HOURS	HOURS	YEARS
B	15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.	•				
B	16 Control Column - Inspect pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security.			•		
B	17 Fuel Line and Selector Valve Drain(s) - Remove plug and drain.		•			
C	Wings and Empennage (Section 4).					
C	1 Wing Surfaces and Tips - Inspect for skin damage, loose rivets and condition of paint.		•			
C	2 Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets and condition of paint.		•			
C	3 Wing Spar and Wing Strut Fittings - Check for evidence of wear. Check attach bolts for indications of looseness and retorque as required.			•		
C	4 Wing Structure - Inspect spars, ribs, skins and stringers for cracks, wrinkles, loose rivets, corrosion or other damage.			•		
C	5 Metal Lines, Hoses, Clamps and Fittings - Check for leaks, condition and security. Check for proper routing and support.			•		
C	6 Wing Access Plates - Check for damage and security of installation.			•		
C	7 Vertical and Horizontal Stabilizers, Tips and Tailcone - Inspect externally for skin damage and condition of paint.		•			
C	8 Vertical and Horizontal Stabilizers and Tailcone structure - Inspect bulkheads, spars, ribs and skins for cracks, wrinkles, loose rivets, corrosion or other damage. Inspect vertical and horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings and tips.		•			
D	Landing Gear and Brakes (Section 5).					
D	1 Brakes, Master Cylinders and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake.		•			
D	2 Main Gear Tubular Struts - Inspect for cracks, dents, corrosion, condition of paint or other damage. Check axles for condition and security.		•			
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.				EACH 400	EACH 1
D	4 Wheels, Brake Discs and Linings - Inspect for wear, cracks, warps, dents or other damage. Check wheel through-bolts and nuts for looseness.		•			
D	5 Tires - Check tread wear and general condition. Check for proper inflation.		•			

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		SPECIAL INSPECTIONS				
		EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	HOURS	YEARS
2-59.	INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)					
D	6 Main Landing Gear Strut-to-Pivot Attachment - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.		•			
D	7 Nose Gear Steering Mechanism - Check for wear, security and proper rigging.			•		
D	8 Nose Gear - Inspect torque links, steering rods and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting and cleanliness. Check shimmy damper and/or bungees for operation, leakage and attach points for wear and security.		•			
D	9 Nose Gear Fork - Inspect for cracks, general condition and security of attachment.			•		
D	10 Wheel Bearings - Clean, inspect and lube.				A	
D	11 Nose Gear Attachment Structure - Inspect for cracks, corrosion or other damage and security of attachment.		•			
D	12 Landing Gear - Perform five fault-free cycles.		•			
D	13 Main Landing Gear - Check downlock engagement.		•			
D	14 Landing Gear System - Check adjustment of main and nose gear up and down switches and operation of gear position indicator.		•			
D	15 Throttle-Operated Gear Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5-44).			•		
D	16 Nose Gear Doors and Linkage - Check for .25 inch minimum clearance throughout up and down cycles, and proper fit when closed. Check linkage for wear, damaged bearings, distortion and superficial damage.		•			
D	17 Hydraulic System - Check all components for leaks and external damage to components or mounting structure.		•			
D	18 Emergency Hand Pump - Check operation, check lines and components for damage and leaks.			•		
D	19 Powerpack - Clean self-relieving check valve filter.		•			
D	20 Powerpack - Hydraulic fluid contamination check.				B	
D	21 Powerpack - Check condition and wear of brushes in servo motor.				C	
D	22 Powerpack - Perform hydraulic pressure checks of primary relief valve, thermal relief valve and pressure switch.		•			
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.					D
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.					D
E	Aileron Control System (Section 6).					
E	1 Ailerons and Hinges - Check condition, security and operation.		•			
E	2 Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys and Pulley Brackets - Check condition, operation and security of attachment.		•			

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2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)		EACH	EACH	EACH	SPECIAL	
		50	100	200	INSPECTIONS	YEARS
		HOURS	HOURS	HOURS	HOURS	YEARS
E	3 Ailerons and Cables - Check operation and security of stops. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment or if stops are damaged. Check fairleads and rub strips for condition.			•		
E	4 Autopilot Rigging - Check per Avionics Installation Manual.				E	EACH 1
E	5 Aileron Controls - Check freedom of movement and proper operation through full travel with and without flaps extended.		•			
F	Wing Flap Control System (Section 7).					
F	1 Flaps - Check tracks, rollers and control rods for security of attachment. Check operation.		•			
F	2 Flap Actuator Threads - Clean and lubricate. Refer to paragraph 2-52 for detailed instructions.		•			
F	3 Flap Structure, Linkage, Bellcranks, Pulleys and Pulley Brackets - Check for condition, operation and security.			•		
F	4 Wing Flap Control - Check operation through full travel and observe Flap Position indicator for proper indication.			•		
F	5 Throttle-Operated Flap Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5).			•		
F	6 Flaps and Cables - Check cables for proper tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment.			•		
F	7 Flap Motor, Actuator and Limit Switches (electric flaps) - Check wiring and terminals for condition and security. Check actuator for condition and security.			•		
G	Elevator Control System (Section 8).					
G	1 Elevator Control - Check freedom of movement and proper operation through full travel with and without flaps extended.		•			
G	2 Elevator, Hinges and Cable Attachment - Check condition, security and operation.		•			
G	3 Elevator Control System - Inspect pulleys, cables, sprockets, bearings, chains and turnbuckles for condition, security and operation.			•		
G	4 Elevator/Rudder Downspring - Check structure, bolts, linkage, bellcrank and push-pull tube for condition, operation and security. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travels if cables require tension adjustment or if stops are damaged.		•			
H	Elevator Trim Tab Control System (Section 9).					
H	1 Elevator Trim Tab and Hinges - Check condition, security and operation.		•			
H	2 Elevator Trim System - Check cables, push-pull rods, bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc. for proper routing, condition and security.		•			

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		EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	SPECIAL INSPECTIONS	
					HOURS	YEARS
2-59.	INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)					
H	3 Trim Controls and Indicators - Check freedom of movement and proper operation through full travel. Check pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security. Check electric trim controls for operation as applicable.			•		
H	4 Elevator Trim Tab Stop Blocks - Inspect for damage and security.			•		
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.				F	
H	6 Elevator Trim Tab Actuator - Free-Play limits inspection. Refer to Section 9 for cleaning, inspection and repair procedures.			•		
I	Rudder Control System. (Section 10).					
I	1 Rudder - Inspect the rudder skins for cracks and loose rivets, rudder hinges for condition, cracks and security; hinge bolts, hinge bearings, hinge attach fittings and bonding jumper for evidence of damage and wear, failed fasteners and security. Inspect the rudder hinge bolts for proper safeying of nuts with cotter pins. Inspect balance weight for looseness and the supporting structure for damage.		•			
I	2 Rudder Pedals and Linkage - Check for general condition, proper rigging, and operation. Check for security of attachment.			•		
I	3 Rudder, Tips, Hinges and Cable Attachment - Check condition, security and operation.		•			
I	4 Rudder - Check internal surfaces for corrosion, condition of fasteners and balance weight attachment.			•		
J	Normally Aspirated and Turbocharged Engines (Sections 11 and 11A).					
J	1 Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation.	•				
J	2 Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.	•				
J	3 Cowl Flap Controls - Check freedom of movement through full travel.	•				
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.	•				G
J	5 Ignition Switch and Electrical Harness - Inspect for damage, condition and security.		•			
J	6 Firewall Structure - Inspect for wrinkles, damage, cracks, sheared rivets, etc. Check cowl shock mounts for condition and security.			•		
J	7 Engine Shock Mounts, Engine Mount Structure and Ground Straps - Check condition, security and alignment.			•		
J	8 Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage.	•				

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2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)		EACH	EACH	EACH	SPECIAL	
		50	100	200	HOURS	YEARS
		HOURS	HOURS	HOURS	HOURS	YEARS
J	9 Induction Airbox, Valves, Doors and Controls - Remove air filter and inspect hinges, doors, seals and attaching parts for wear and security. Check operation.		•			
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.		•		H	
J	11 Alternate Induction Air System - Check for obstructions, operation and security.	•				
J	12 Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment.	•				
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.					I
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		•			J
J	15 Oil Cooler - Check for obstructions, leaks and security of attachment.	•				
J	16 Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.	•				
J	17 Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.	•				
J	18 Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security. Remove and clean filter (as applicable).		•			
J	19 Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment and general condition.		•			
J	20 Magnetos - Check external condition, security and electrical leads for condition. Check timing to engine and internal timing if engine timing requires adjustment. Compliance with Bendix Service Bulletin 599D is required.		•			
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.				K	
J	22 Ignition Harness and Insulators - Check for proper routing, deterioration and condition of terminals.		•			
J	23 Spark Plugs - Remove, clean analyze, test, gap and rotate top plugs-to-bottom and bottom plugs-to-top.		•			
J	24 Cylinder Compression - Perform differential compression test.			•		
J	25 Carburetor - Drain and flush carburetor bowl, clean inlet strainer and drain plug. Check general condition and security.		•			
J	26 Engine Primer - Check for leakage, operation and security.		•			
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.	•				L
J	28 Cold and Hot Air Hoses - Check condition, routing and security.		•			

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2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)		SPECIAL INSPECTIONS			
		EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	HOURS YEARS
J	29 Engine Cylinders, Rocker Box Covers and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment and general condition.		•		
J	30 Engine Baffles and Seals - Check condition and security of attachment.	•			
J	31 Crankcase, Oil Sump and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorque as necessary. Check crankcase breather lines for obstructions, security and general condition.		•		
J	32 Turbocharger (if applicable) - a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment. b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.	• •			
J	33 Turbocharger (if applicable) - a. Remove heat shields and inspect for burned areas, bulges or cracks. Remove tailpipe and ducting - inspect turbine for coking, carbonization, oil deposits and turbine impellers for damage.			•	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	•			M
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	•			M
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.		•		M
K	Fuel System (Section 12).				
K	1 Integral Fuel Tanks - Check for evidence of leakage and condition of fuel caps, adapters and placards.		•		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.				N
K	3 Fuel Bladders - Check for leaks and security, condition of fuel caps, adapters and placards.		•		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.				N
K	5 Fuel System - Inspect plumbing and components for mounting and security.		•		
K	6 Fuel Tank or Bladder Drains - Drain water and sediment.	•			
K	7 Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.		•		
K	8 Fuel Selector Valve - Check controls for detent in each position, security of attachment and for proper placarding.		•		
K	9 Fuel Strainer, Drain Valve and Controls - Check freedom of movement, security and proper operation. Disassemble, flush and clean screen and bowl.		•		

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2-59. INSPECTION TIME LIMITS (Model R182 & TR182 Airplanes)

		EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	SPECIAL INSPECTIONS	
					HOURS	YEARS
K	10 Fuel Quantity Indicators – Check for damage and security of installation.					EACH 1
K	11 Fuel quantity indicating system operational test is required every 12 months. Refer to Section 15 for detailed accomplishment instructions.					EACH 1
L	Propeller and Propeller Governor (Section 13).					
L	1 Propeller Governor and Control – Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.	•				
L	2 Proper Mounting – Check for security of installation.	•				
L	3 Propeller Blades – Inspect for cracks, dents, nicks, scratches, erosion, corrosion, or other damage.	•				
L	4 Spinner – Check general condition and attachment.	•				
L	5 Spinner and Spinner Bulkhead – Remove spinner, wash and inspect for cracks and fractures.		•			
L	6 Propeller Mounting Bolts – Inspect mounting bolts and safety-wire for signs of looseness. Retorque mounting bolts as required.			•		
L	7 Propeller Hub – Check general condition			•		
L	8 Propeller Governor and Control – Check for security and operation of controls.			•		
L	9 Propeller Assembly – Overhaul (See McCauley Service Manual; refer to list of publications).				O	
M	Utility Systems (Section 14).					
M	1 Ventilation System – Inspect clamps, hoses and valves for condition and security.				400	EACH 1
M	2 Heater Components, Inlets and Outlets – Inspect all lines, connections, ducts, clamps, seals and gaskets for condition, restriction and security.		•			
M	3 Cabin Heat and Ventilation Controls – Check freedom of movement through full travel. Check friction locks for proper operation.			•		
M	4 Pitot Tube and Stall warning Vane – Check for condition and obstructions.	•				
M	5 Pitot Tube Heater Element – Perform operational check.	•				
M	6 Propeller Anti-ice Slip Rings, Brushes and Boots – Inspect for condition and security. Perform operational check.	•				
M	7 Heated Windshield Panel – Check operation, security of installation, electrical wiring and condition of storage bag.			•		
M	8 Oxygen System – Inspect masks, hoses, lines and fittings for condition, routing and support. Test operation and check for leaks.			•		
M	9 Oxygen Cylinder – Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.					EACH 5
N	Instruments and Instrument Systems (Section 15).					
N	1 Vacuum System – Inspect for condition and security.		•			

MODEL R182 & TR182 SERIES SERVICE MANUAL

2-59. INSPECTION TIME LIMITS.

(Model R182 & TR182 Airplanes)

		EACH 50 HOURS	EACH 100 HOURS	EACH 200 HOURS	SPECIAL INSPECTIONS HOURS	YEARS
N	2 Vacuum System Hoses – Inspect for hardness, deterioration, looseness or collapsed hoses.		•			
N	3 Vacuum Pump – Check for condition and security. Check Vacuum system breather line for obstructions, condition and security.		•			
N	4 Vacuum System Air Filter – Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.		•		P	
N	5 Vacuum System Relief Valve – Inspect for condition and security.		•		Q	
N	6 Instruments – Check general condition and markings for legibility.		•			
N	7 Instrument Lines, Fittings, Ducting and Instrument Panel Wiring – Check for proper routing, support and security of attachment.			•		
N	8 Static System – Inspect for security of installation, cleanliness and evidence of damage.			•		
N	9 Navigation Indicators, Controls and components – Inspect for condition and security.			•		
N	10 Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass – Calibrate.					EACH 2
N	11 Altimeter and Static System – Inspect in accordance with FAR Part 91.411.					EACH 2
N	12 Instrument Panel Mounted Avionics Units (Including Audio Panel, VHF Nav/Com(s), ADF, Transponder, DME and Compass System) – Inspect for deterioration, cracks and security of instrument panel mounts. Inspect for security of electrical connections, condition and security of wire routing.			•		
N	13 Avionics Operating Controls – Inspect for security and proper operation of controls and switches and ensure that all digital segments will illuminate properly.			•		
N	14 Remote Mounted Avionics – Inspect for security of units and electrical connectors, condition and security of wire routing. Also check for evidence of damage and cleanliness.			•		
N	15 Microphones, Headsets and Jacks – Inspect for cleanliness, security and evidence of damage.			•		
N	16 Magnetic Compass – Inspect for security of installation, cleanliness and evidence of damage.			•		
O	Electrical Systems (Section 16).					
O	1 General Airplane and System Wiring – Inspect for proper routing, chafing broken or loose terminals, general condition, broken or inadequate clamps or sharp bends in wiring.			•		
O	2 Instrument, Cabin, Navigation, Beacon, Strobe, and Landing Lights – Check operation, condition of lens and security of attachment.		•			
O	3 Circuit Breaker and Fuses – Check operation and condition. Check for required number of spare fuses.		•			
O	4 Battery – Check general condition and security. Check level of electrolyte.		•		R	
O	5 Battery Box and Cables – Clean and remove any corrosion. Check cables for routing, support and security of connections.		•			

MODEL R182 & TR182 SERIES SERVICE MANUAL

2-59. INSPECTION TIME LIMITS. (MODEL R182 & TR182 AIRPLANES.)		EACH	EACH	EACH	SPECIAL	
		50	100	200	INSPECTIONS	
		HOURS	HOURS	HOURS	HOURS	YEARS
O	6 Switch and Circuit Breaker Panel, Terminal Blocks and Junction Boxes - Inspect wiring and terminals for condition and security.			•		
O	7 Alternator Control Unit - Inspect wiring, mounting, condition and wire routing.			•		
O	8 Switches - Check operation, terminals, wiring and mounting for conditions, security and interference.			•		
O	9 Instrument Panel and Control Pedestal - Inspect wiring, mounting and terminals for condition and security. Check resistance between stationary panel and instrument panel for proper ground.			•		
O	10 External Power Receptacle and Power Cables - Inspect for condition and security.			•		
P	Post Inspection.					
P	1 Replace all fairings, doors and access hole covers. Ground check engine, alternator charging rate, oil pressure, tachometer, oil temperature and pressure gages and general operation of components.					
Q	Perform the Following Operational Checks:					
Q	1 Brakes - Test toe brakes and parking brake for proper operation.		•			
R	Service Bulletins/Airworthiness Directives.					
R	1 Check that all applicable Cessna Service Bulletins and Supplier Service Bulletins are complied with.					
R	2 Check that all applicable Airworthiness Directives and Federal Aviation Regulations are complied with.					
R	3 Ensure all Maintenance Record Entries required by Federal Aviation Regulations are completed before returning the airplane to service.					

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Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn to .25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods on-condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing should be inspected and checked. If magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever comes first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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2-60. COMPONENT TIME LIMITS

1. General

- A. Most components listed throughout Section 2 should be inspected as detailed elsewhere in this section and repaired, overhauled or replaced as required. Some components, however, have a time or life limit, and must be overhauled or replaced on or before the specified time limit.

NOTE: Overhaul - Item may be overhauled as defined in FAR 43.2 or it can be replaced.

NOTE: Replacement - Item must be replaced with a new item or a serviceable item that is within its service life and time limits or has been rebuilt as defined in FAR 43.2.

- B. This section provides a list of items that must be overhauled or replaced at specific time limits. Table 1 lists those items that Cessna has mandated must be overhauled or replaced at specific time limits. Table 2 lists component time limits that have been established by a supplier to Cessna for the supplier's product.
- C. In addition to these time limits, the components listed herein are also inspected at regular time intervals set forth in the Inspection Charts, and may require overhaul/replacement before the time limit is reached based on service usage and inspection results.

2. Cessna-Established Replacement Time Limits.

- A. The following component time limits have been established by Cessna Aircraft Company.

Table 1: Cessna-Established Replacement Time Limits

COMPONENT	REPLACEMENT TIME	OVERHAUL
Restraint Assembly Pilot, Copilot, and Passenger Seats	10 years	NO
Trim Tab Actuator	1,000 hours or 3 years, whichever occurs first	YES
Vacuum System Filter	500 hours	NO
Vacuum System Hoses	10 years	NO
Pitot and Static System Hoses	10 years	NO
Vacuum Relief/Regulator Valve Filter (If Installed)	500 hours	NO
Engine Compartment Flexible Fluid-Carrying Teflon Hoses (Cessna-Installed) Except Drain Hoses (Drain hoses are replaced on condition)	10 years or engine overhaul, whichever occurs first (Note 1)	NO
Engine Mixture, Throttle, and Propeller Controls	At engine TBO	NO
Engine Compartment Flexible Fluid-Carrying Rubber Hoses (Cessna-Installed) Except Drain Hoses (Drain hoses are replaced on condition)	5 years or engine overhaul, whichever occurs first (Note 1)	NO

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COMPONENT	REPLACEMENT TIME	OVERHAUL
Engine Air Filter	500 hours or 36 months, whichever occurs first (Note 9)	NO
Check Valve (Turbocharger Oil Line Check Valve)	Every 1,000 hours of operation (Note 10)	NO
Oxygen Bottle - Lightweight Steel (ICC-3HT, DOT-3HT)	Every 24 years or 4380 cycles, whichever occurs first	NO
Oxygen Bottle - Composite (DOT-E8162)	Every 15 years	NO
Engine Driven Dry Vacuum Pump Drive Coupling (Not lubricated with engine oil)	6 years or at vacuum pump replacement, whichever occurs first	NO
Engine Driven Dry Vacuum Pump (Not lubricated with engine oil)	500 hours (Note 11)	NO
Standby Dry Vacuum Pump	500 hours or 10 years, whichever occurs first (Note 11)	NO

3. Supplier-Established Replacement Time Limits

- A. The following component time limits have been established by specific suppliers and are reproduced as follows:

Table 2: Supplier-Established Replacement Time Limits

COMPONENT	REPLACEMENT TIME	OVERHAUL
ELT Battery	(Note 3)	NO
Vacuum Manifold	(Note 4)	NO
Magnetos	(Note 5)	YES
Engine	(Note 6)	YES
Engine Flexible Hoses (Lycoming-Installed)	(Note 2)	NO
Auxiliary Electric Fuel Pump	(Note 7)	YES
Propeller	(Note 8)	YES

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NOTES:

Note 1: This life limit is not intended to allow flexible fluid-carrying Teflon or rubber hoses in a deteriorated or damaged condition to remain in service. Replace engine compartment flexible Teflon (AE3663819BXXXX series hose) fluid-carrying hoses (Cessna-installed only) every ten years or at engine overhaul, whichever occurs first. Replace engine compartment flexible rubber fluid-carrying hoses (Cessna-installed only) every five years or at engine overhaul, whichever occurs first (this does not include drain hoses). Hoses which are beyond these limits and are otherwise in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose from Cessna.

Note 2: For Textron Lycoming engines, refer to latest Textron Lycoming Engine Service Bulletins.

Note 3: Refer to FAR 91.207 for battery replacement time limits.

Note 4: Refer to Airborne Air & Fuel Product Reference Memo No. 39, or latest revision, for replacement time limits.

Note 5: For airplanes equipped with Slick magnetos, refer to Slick Service Bulletin SB2-80C, or latest revision, for time limits.

For airplanes equipped with TCM/Bendix magnetos, refer to Teledyne Continental Motors Service Bulletin No. 643, or latest revision, for time limits.

Note 6: For Textron Lycoming engines, refer to Textron/Lycoming Service Instruction S.I. 1009AJ, or latest revision, for time limits.

Note 7: Refer to Cessna Service Bulletin SEB94-7 Revision 1/Dukes Inc. Service Bulletin NO. 0003, or latest revision.

Note 8: Refer to the applicable McCauley Service Bulletins and Overhaul Manual for replacement and overhaul information.

Note 9: The air filter may be cleaned. Refer to Section 2 of this service manual and for airplanes equipped with an air filter manufactured by Donaldson, refer to Donaldson Aircraft Filters Service Instructions P46-9075 for detailed servicing instructions.
The address for Donaldson Aircraft Filters is:

Customer Service
115 E. Steels Corners RD
Stow OH. 44224

Do not over-service the air filter. Over-servicing increases the risk of damage to the air filter from excessive handling. A damaged/worn air filter may expose the engine to unfiltered air and result in damage/excessive wear to the engine.

Note 10: Replace the turbocharger oil line check valve every 1,000 hours of operation (Refer to Cessna Service Bulletin SEB91-7 Revision 1, or latest revision).

Note 11: Replace engine driven dry vacuum pump not equipped with a wear indicator every 500 hours of operation, or replace according to the vacuum pump manufacturer's recommended inspection and replacement interval, whichever occurs first.

Replace standby vacuum pump not equipped with a wear indicator every 500 hours of operation or 10 years, whichever occurs first, or replace according to the vacuum pump manufacturer's recommended inspection and replacement interval, whichever occurs first.

For a vacuum pump equipped with a wear indicator, replace pump according to the vacuum pump manufacturer's recommended inspection and replacement intervals.

MODEL R182 & TR182 SERIES SERVICE MANUAL

2-61. SCHEDULED MAINTENANCE CHECKS. (MODEL R182 & TR182 AIRPLANES)

2-62. PROGRESSIVE CARE PROGRAM. (MODEL R182 & TR182 AIRPLANES)

A. Progressive Inspection Program.

- (1) Purpose and Use.
 - (a) As detailed in Federal Aviation Regulation Part 91.409, paragraph (d), airplanes that desire to use a Progressive Inspection Program must be inspected in accordance with an authorized progressive inspection program. This chapter presents the current progressive inspection program for the Cessna Model R182 and TR182, recommended by the Cessna Aircraft Company.

B. Introduction.

- (1) Following is the recommended Progressive Care Program for Model R182 and TR182 airplanes.
- (2) This program is divided into four separate operations which are to be accomplished initially after 50 hours of operation and each 50 hours of operation thereafter. Additional special requirements indicated as Special Inspection, which are required at other intervals are specified separately.
- (3) Recommended progressive care inspection may be accomplished by one of the following.

NOTE

Some 100 HOUR items are covered in Operation 1 and 3, also some 200 HOUR items are covered in Operation 1, 2, 3 and 4. These items are placed here for convenience and expediency of the total inspection. After the first completion of all four Operations, these items will be at the proper intervals.

- (a) NEW DELIVERED AIRCRAFT - A new delivered aircraft must have less than 50 hours total time in service and enough calendar time remaining since the issuance date of the original Airworthiness Certificate to allow the owner/operator to complete a cycle of all four Operations before the first annual inspection becomes due. Operation 1 will be due at 50 hours time in service. Operation 2 will be due at 100 hours. Operation 3 will be due at 150 hours and Operation 4 will be due at 200 hours. There are additional inspection requirements for new aircraft at the FIRST 50 HOUR inspection point. In addition to performing Operation 1, the FIRST 50 HOUR ITEMS listed in the inspection Time Limits Charts in 2-59 must also be performed. After these FIRST 50 HOUR items have been accomplished, they have permanent inspection time limits which are covered in the Operations Schedules.
 - (b) ALL OTHER AIRCRAFT - To qualify other aircraft which have more than 50 hours time in service for the Progressive Inspection Program, conduct a COMPLETE AIRPLANE INSPECTION. Operation 1 will become due 50 hours from the time the COMPLETE AIRPLANE INSPECTION was accomplished.
- (4) Performance of the inspections as listed herein at the specified points will assure compliance with the Inspection Time Limits detailed in 2-59. Special inspections shall be complied with at prescribed intervals and/or intervals coinciding with operations 1 through 4 as outlined in 2-62.
 - (5) An operator may elect to perform the recommended inspections on a schedule other than that specified. Any inspection schedule requiring the various inspection items detailed in this chapter to be performed at a frequency equal to that specified herein or more frequently is acceptable. Any inspection item performed at a time period in excess of that specified herein must be approved by the appropriate regulating agency.
 - (6) As defined in Federal Aviation Regulations Part 91.409,(d) the frequency and detail of the Progressive Inspection Program shall provide for the complete inspection of the airplane within each 12-calendar months. If the airplane is approaching the end of a 12-calendar month period, but the complete cycle of 4 operations has not been accomplished, it will be necessary to complete the remaining operations, regardless of airplane hours before the end of the 12-calendar month period. If the Progressive Inspection Program is to be discontinued, an annual inspection becomes due at the time when any item reaches a maximum of 12 calendar months from the last time it was inspected under the Progressive Inspection Program. Refer to Federal Aviation Regulation Part 91.409(d) for detailed information.

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C. Inspection Time Limitations.

- (1) Each inspection interval may be exceeded by 10 hours or can be performed early at any time prior to the regular interval as provided below:
 - (a) In the event of late compliance of any operation scheduled, the next operation in sequence retains a due point from the time the late operation was originally scheduled.
 - (b) In the event of early compliance of any operation scheduled, that occurs 10 hours or less ahead of schedule, the next phase due point may remain where originally set.
 - (c) In the event of early compliance of any operation scheduled, that occurs more than 10 hours ahead of schedule, the next phase due point must be rescheduled to establish a new due point from the time of early accomplishment.

D. Procedures.

- (1) The following instructions are provided to aid in implementation of the Model R182 & TR182 Series Progressive Care Program Schedule.
 - (a) Use the Progressive Care Program Inspection Chart, provided herein, for each airplane. The chart is to be placed in the airplane flight log book for use as a quick reference for pilots and maintenance personnel in determining when inspections are due and that they are performed within prescribed flight time intervals.
 - (b) Use the Progressive Care Program Component Overhaul and Replacement Log, provided herein, for each airplane. This log is to be kept with the airplane maintenance records and serves as a periodic reminder to maintenance personnel when various components are due for overhaul or replacement.
 - (c) To start the Progressive Care Program, begin conducting the inspections defined herein and refer to Federal Aviation Regulations Part 91.409(d) for procedures to notify the Federal Aviation Administration of the intent to begin a progressive inspection program.
 - (d) Accomplish each inspection and maintenance item per the checklists on the operation sheets of the Progressive Care and Maintenance Schedule. Spaces have been provided for the mechanic's and inspector's signatures as required, as well as any remarks. These are to become part of the maintenance records for each airplane. Each inspection is to be logged in the airplane and/or engine log books. Refer to Federal Aviation Regulation Part 43 for the recommended entry statement.

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PROGRESSIVE CARE PROGRAM (MODEL R182 & TR 182 AIRPLANES) COMPONENT OVERHAUL AND REPLACEMENT RECORD

COMPONENT	DATE	REASON FOR REPLACEMENT	REPLACEMENT PART NUMBER SERIAL NUMBER	NEXT OVERHAUL AIRPLANE HOURS DATE
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			
	X			

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PROGRESSIVE CARE PROGRAM INSPECTION CHART

AIRPLANE MODEL: R182/TR182

REGISTRATION NUMBER:

INSPECTION POINTS	TIME		TIME	
	INSPECTION DUE	INSPECTION ACCOMPLISHED	INSPECTION DUE	INSPECTION ACCOMPLISHED
OPERATION 1				
OPERATION 2				
OPERATION 3				
OPERATION 4				

EXAMPLE:

The airplane in this example was placed on the Progressive Care Program after flying a total of 110 hours. At that point, a complete initial inspection of the airplane was performed. The following steps indicate what will have taken place up through an hourmeter reading of 261 hours.

1. After the initial inspection at 110 hours, the first Inspection Due Column was filled out to show the total flying time at which each of the four (4) operation inspections would be due.
2. As each inspection was performed, the total flying time was recorded in the Inspection Accomplished column. The next Inspection Due space for that particular operation is also filled in at this time. These times will always be 200 hours from the last due point providing the operation was actually accomplished within the ten (10) hours limit.
3. The sample airplane now has a total flying time of 261 hours and the inspection chart shows that a Phase 4 will be due at 310 hours.

INSPECTION POINTS	TIME		TIME	
	INSPECTION DUE	INSPECTION ACCOMPLISHED	INSPECTION DUE	INSPECTION ACCOMPLISHED
OPERATION 1	160	162	360	
OPERATION 2	210	209	409	
OPERATION 3	260	261	460	
OPERATION 4	310			

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- C 1 Wing Surfaces and Tips - Inspect for skin damage, loose rivets and condition of paint.
-
- C 2 Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets and condition of paint.
-
- C 7 Vertical and Horizontal Stabilizers, Tips and Tailcone - Inspect externally for skin damage and condition of paint.
-
- C 8 Vertical and Horizontal Stabilizers and Tailcone structure - Inspect bulkheads, spars, ribs and skins for cracks, wrinkles, loose rivets, corrosion or other damage. Inspect vertical and horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings and tips.
-
- E 1 Ailerons and Hinges - Check condition, security and operation.
-
- E 2 Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys and Pulley Brackets - Check condition, operation and security of attachment.
-
- E 5 Aileron Controls - Check freedom of movement and proper operation through full travel with and without flaps extended
-
- F 1 Flaps - Check tracks, rollers and control rods for security of attachment. Check operation.
-
- F 2 Flap Actuator Threads - Clean and lubricate. Refer to paragraph 2-52 for detailed instructions.
-
- G 1 Elevator Control - Check freedom of movement and proper operation through full travel with and without flaps extended.
-
- G 2 Elevator, Hinges and Cable Attachment - Check condition, security and operation.
-
- G 4 Elevator/Rudder Downspring - Check structure, bolts, linkage, bellcrank and push-pull tube for condition, operation and security. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travels if cables require tension adjustment or if stops are damaged.
-
- H 1 Elevator Trim Tab and Hinges - Check condition, security and operation.
-
- H 2 Elevator Trim System - Check cables, push-pull rods, bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc. for proper routing, condition and security.
-
- I 1 Rudder - Inspect the rudder skins for cracks and loose rivets, rudder hinges for condition, cracks and security; hinge bolts, hinge bearings, hinge attach fittings and bonding jumper for evidence of damage and wear, failed fasteners and security. Inspect the rudder hinge bolts for proper safetying of nuts with cotter pins. Inspect balance weight for looseness and the supporting structure for damage.
-
- I 3 Rudder, Tips, Hinges and Cable Attachment - Check condition, security and operation.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| I | 4 | Rudder - Check internal surfaces for corrosion, condition of fasteners and balance weight attachment. |
| J | 1 | Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation. |
| J | 2 | Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories. |
| J | 3 | Cowl Flap Controls - Check freedom of movement through full travel. |
| J | 4 | Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation. |
| J | 5 | Ignition Switch and Electrical Harness - Inspect for damage, condition and security. |
| J | 6 | Firewall Structure - Inspect for wrinkles, damage, cracks, sheared rivets, etc. Check cowl shock mounts for condition and security. |
| J | 7 | Engine Shock Mounts, Engine Mount Structure and Ground Straps - Check condition, security and alignment. |
| J | 8 | Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage. |
| J | 9 | Induction Airbox, Valves, Doors and Controls - Remove air filter and inspect hinges, doors, seals and attaching parts for wear and security. Check operation. |
| J | 10 | Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25. |
| J | 11 | Alternate Induction Air System - Check for obstructions, operation and security. |
| J | 12 | Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. |
| J | 14 | Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator. |
| J | 15 | Oil Cooler - Check for obstructions, leaks and security of attachment. |
| J | 16 | Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 17 | Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 18 | Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security. Remove and clean filter (as applicable). |
| J | 19 | Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment and general condition. |

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 20 Magnetos - Check external condition, security and electrical leads for condition. Check timing to engine and internal timing if engine timing requires adjustment. Compliance with Bendix Service Bulletin 599D is required.
-
- J 22 Ignition Harness and Insulators - Check for proper routing, deterioration and condition of terminals.
-
- J 23 Spark Plugs - Remove, clean analyze, test, gap and rotate top plugs-to-bottom and bottom plugs-to-top.
-
- J 24 Cylinder Compression - Perform differential compression test.
-
- J 25 Carburetor - Drain and flush carburetor bowl, clean inlet strainer and drain plug. Check general condition and security.
-
- J 26 Engine Primer - Check for leakage, operation and security.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 28 Cold and Hot Air Hoses - Check condition, routing and security.
-
- J 29 Engine Cylinders, Rocker Box Covers and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment and general condition.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 31 Crankcase, Oil Sump and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorquing as necessary. Check crankcase breather lines for obstructions, security and general condition.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 33 Turbocharger (if applicable) -
a. Remove heat shields and inspect for burned areas, bulges or cracks. Remove tailpipe and ducting - inspect turbine for coking, carbonization, oil deposits and turbine impellers for damage.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- K 1 Integral Fuel Tanks - Check for evidence of leakage and condition of fuel caps, adapters and placards.
-
- K 3 Fuel Bladders - Check for leaks and security, condition of fuel caps, adapters and placards.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- K 5 Fuel System - Inspect plumbing and components for mounting and security.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 7 Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.
-
- K 9 Fuel Strainer, Drain Valve and Controls - Check freedom of movement, security and proper operation. Disassemble, flush and clean screen and bowl.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.
-
- L 2 Propeller Mounting - Check for security of installation.
-
- L 3 Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage.
-
- L 4 Spinner - Check general condition and attachment.
-
- L 5 Spinner and Spinner Bulkhead - Remove spinner, wash and inspect for cracks and fractures.
-
- L 6 Propeller Mounting Bolts - Inspect mounting bolts and safety-wire for signs of looseness. Retorque mounting bolts as required.
-
- L 7 Propeller Hub - Check general condition.
-
- L 8 Propeller Governor and Control - Check for security and operation of controls.
-
- M 2 Heater Components, Inlets and Outlets - Inspect all lines, connections, ducts, clamps, seals and gaskets for condition, restriction and security.
-
- M 4 Pitot Tube and Stall Warning Vane - Check for condition and obstructions.
-
- M 5 Pitot Tube Heater Element - Perform operational check.
-
- M 6 Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check.
-
- N 3 Vacuum Pump - Check for condition and security. Check vacuum system breather line for obstructions, condition and security.
-
- O 4 Battery - Check general condition and security. Check level of electrolyte.
-
- O 5 Battery Box and Cables - Clean and remove any corrosion. Check cables for routing, support and security of connections.
-
- O 7 Alternator Control Unit - Inspect wiring, mounting, condition and wire routing.
-
- O 10 External Power Receptacle and Power Cables - Inspect for condition and security.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing lilter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 1

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- B 1 Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.
-
- B 6 Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with FAR Part 91.207. Refer to Section 16 Emergency Locator Transmitter - Checkout Interval.
-
- B 8 Pilot's and Copilot's Inertia Reels - Inspect for security of installation, proper operation and evidence of damage.
-
- B 9 Seats, Seat Belts, and Shoulder Harnesses - Check general condition and security. Check operation of seat stops and adjustment mechanism. Inspect belts for condition and security of fasteners.
-
- B 10 Windows, Windshield, Doors and Seals - Inspect general condition. Check latches, hinges and seals for condition, operation and security of attachment.
-
- B 12 Flight Controls - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation (as applicable.)
-
- B 13 Aileron, Elevator and Rudder Stops - Check for damage and security. Compliance with Cessna Service Letter SE80-65 is required.
-
- B 14 Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation and servicing date.
-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- B 17 Fuel Line and Selector Valve Drain(s) - Remove plug and drain.
-
- D 1 Brakes, Master Cylinders and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake.
-
- D 2 Main Gear Tubular Struts - Inspect for cracks, dents, corrosion, condition of paint or other damage. Check axles for condition and security.
-
- D 4 Wheels, Brake Discs and Linings - Inspect for wear, cracks, warps, dents or other damage. Check wheel through-bolts and nuts for looseness.
-
- D 5 Tires - Check tread wear and general condition. Check for proper inflation.
-
- D 6 Main Landing Gear Strut-to-Pivot Attachment - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.
-
- D 7 Nose Gear Steering Mechanism - Check for wear, security and proper rigging.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- D 8 Nose Gear - Inspect torque links, steering rods and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting, and cleanliness. Check shimmy damper and/or bungees for operation, leakage and attach points for wear and security.
-
- D 9 Nose Gear Fork - Inspect for cracks, general condition and security of attachment.
-
- D 11 Nose Gear Attachment Structure - Inspect for cracks, corrosion or other damage and security of attachment.
-
- D 12 Landing Gear - Perform five fault-free cycles.
-
- D 13 Main Landing Gear - Check downlock engagement.
-
- D 14 Landing Gear System - Check adjustment of main and nose gear up and down switches and operation of gear position indicator.
-
- D 15 Throttle-Operated Gear Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5).
-
- D 16 Nose Gear Doors and Linkage - Check for .25 inch minimum clearance throughout up and down cycles, and proper fit when closed. Check linkage for wear, damaged bearings, distortion and superficial damage.
-
- D 17 Hydraulic System - Check all components for leaks and external damage to components or mounting structure.
-
- D 19 Powerpack - Clean self-relieving check valve filter.
-
- D 22 Powerpack - Perform hydraulic pressure checks of primary relief valve, thermal relief valve and pressure switch.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation.
-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.
-
- J 8 Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage.
-
- J 11 Alternate Induction Air System - Check for obstructions, operation and security.
-
- J 12 Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment.
-
- J 15 Oil Cooler - Check for obstructions, leaks and security of attachment.
-
- J 16 Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 17 Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- J 36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 8 Fuel Selector Valve - Check controls for detent in each position, security of attachment and for proper placarding.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.
-
- L 2 Propeller Mounting - Check for security of installation.
-
- L 3 Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage.
-
- L 4 Spinner - Check general condition and attachment.
-
- M 4 Pitot Tube and Stall Warning Vane - Check for condition and obstructions.
-
- M 5 Pitot Tube Heater Element - Perform operational check.
-
- M 6 Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check.
-
- N 1 Vacuum System - Inspect for condition and security.
-
- N 2 Vacuum System Hoses - Inspect for hardness, deterioration, looseness or collapsed hoses.
-
- N 4 Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required.
NOTE: Smoking will cause premature filter clogging.
-
- N 5 Vacuum System relief Valve - Inspect for condition and security.

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OPERATION NO. 2

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- N 6 Instruments - Check general condition and markings for legibility.
-
- O 2 Instrument, Cabin, Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens and security of attachment.
-
- O 3 Circuit Breakers and Fuses - Check operation and condition. Check for required number of spare fuses.
-
- Q Perform the Following Operational Check:
-
- Q 1 Brakes - Test toe brakes and parking brake for proper operation.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 2

SPECIAL INSPECTION AND YEARLY ITEMS INSPECTION
COMPLETED BY
 HOURS YEARS

Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
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-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- C 1 Wing Surfaces and Tips - Inspect for skin damage, loose rivets and condition of paint.
-
- C 2 Wing Struts and Strut Fairings - Check for dents, cracks, loose screws and rivets and condition of paint.
-
- C 3 Wing Spar and Wing Strut Fittings - Check for evidence of wear. Check attach bolts for indications of looseness and retorque as required.
-
- C 4 Wing Structure - Inspect spars, ribs, skins and stringers for cracks, wrinkles, loose rivets, corrosion or other damage.
-
- C 5 Metal Lines, Hoses, Clamps and Fittings - Check for leaks, condition and security. Check for proper routing and support.
-
- C 6 Wing Access Plates - Check for damage and security of installation.
-
- C 7 Vertical and Horizontal Stabilizers, Tips and Tailcone - Inspect externally for skin damage and condition of paint.
-
- C 8 Vertical and Horizontal Stabilizers and Tailcone structure - Inspect bulkheads, spars, ribs and skins for cracks, wrinkles, loose rivets, corrosion or other damage. Inspect vertical and horizontal stabilizer attach bolts for looseness. Retorque as necessary. Check security of inspection covers, fairings and tips.
-
- E 1 Ailerons and Hinges - Check condition, security and operation.
-
- E 2 Aileron Structure, Control Rods, Hinges, Balance Weights, Bellcranks, Linkage, Bolts, Pulleys and Pulley Brackets - Check condition, operation and security of attachment.
-
- E 3 Ailerons and Cables - Check operation and security of stops. Check cables for tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment or if stops are damaged. Check fairleads and rub strips for condition.
-
- E 5 Aileron Controls - Check freedom of movement and proper operation through full travel with and without flaps extended.
-
- F 1 Flaps - Check tracks, rollers and control rods for security of attachment. Check operation.
-
- F 2 Flap Actuator Threads - Clean and lubricate. Refer to paragraph 2-52 for detailed instructions.
-
- F 3 Flap Structure, Linkage, Bellcranks, Pulleys and Pulley Brackets - Check for condition, operation and security.
-
- F 4 Wing Flap Control - Check operation through full travel and observe Flap Position indicator for proper indication.
-
- F 5 Throttle-Operated Flap Warning System - Check condition of wiring and security of components. Perform rigging check (refer to Section 5).
-
- F 6 Flaps and Cables - Check cables for proper tension, routing, fraying, corrosion and turnbuckle safety. Check travel if cable tension requires adjustment.

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-
- F 7 Flap Motor, Actuator and Limit Switches (electric flaps) -
Check wiring and terminals for condition and security.
Check actuator for condition and security.
-
- G 1 Elevator Control - Check freedom of movement and proper
operation through full travel with and without flaps
extended.
-
- G 2 Elevator, Hinges and Cable Attachment - Check condition,
security and operation.
-
- G 4 Elevator/Rudder Downspring - Check structure, bolts,
linkage, bellcrank and push-pull tube for condition,
operation and security. Check cables for tension, routing,
fraying, corrosion and turnbuckle safety. Check travels if
cables require tension adjustment or if stops are damaged.
-
- H 1 Elevator Trim Tab and Hinges - Check condition, security
and operation.
-
- H 2 Elevator Trim System - Check cables, push-pull rods,
bellcranks, pulleys, turnbuckles, fairleads, rub strips, etc.
for proper routing, condition and security.
-
- H 4 Elevator Trim Tab Stop Blocks - Inspect for damage and
security.
-
- H 6 Elevator Trim Tab Actuator - Free-Play limits inspection.
Refer to Section 9 for cleaning, inspection and repair
procedures.
-
- I 1 Rudder - Inspect the rudder skins for cracks and loose
rivets, rudder hinges for condition, cracks and security;
hinge bolts, hinge bearings, hinge attach fittings and
bonding jumper for evidence of damage and wear, failed
fasteners and security. Inspect the rudder hinge bolts for
proper safetying of nuts with cotter pins. Inspect balance
weight for looseness and the supporting structure for
damage.
-
- I 3 Rudder, Tips, Hinges and Cable Attachment - Check
condition, security and operation.
-
- I 4 Rudder - Check internal surfaces for corrosion, condition of
fasteners and balance weight attachment.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and
other damage, security of cowl fasteners and cowl mounted
landing lights for attachment. Check cowl flaps for
condition, security and operation.
-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash
engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through
full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general
condition, freedom of movement through full range. Check
for proper travel, security of attachment and for evidence of
wear. Check friction locks for proper operation.
-
- J 5 Ignition Switch and Electrical Harness - Inspect for damage,
condition and security.
-
- J 8 Induction System - Check security of clamps, tubes and
ducting. Inspect for evidence of leakage.
-
- J 9 Induction Airbox, Valves, Doors and Controls - Remove air
filter and inspect hinges, doors, seals and attaching parts
for wear and security. Check operation.

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OPERATION NO. 3

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| J | 10 | Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25. |
| J | 11 | Alternate Induction Air System - Check for obstructions, operation and security. |
| J | 12 | Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment. |
| J | 14 | Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator. |
| J | 15 | Oil Cooler - Check for obstructions, leaks and security of attachment. |
| J | 16 | Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 17 | Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures. |
| J | 18 | Auxiliary (Electric) Fuel Pump - Check pump and fittings for condition, operation, security. Remove and clean filter (as applicable). |
| J | 19 | Engine-Driven Fuel Pump - Check for evidence of leakage, security of attachment and general condition. |
| J | 20 | Magnetos - Check external condition, security and electrical leads for condition. Check timing to engine and internal timing if engine timing requires adjustment. Compliance with Bendix Service Bulletin 599D is required. |
| J | 22 | Ignition Harness and Insulators - Check for proper routing, deterioration and condition of terminals. |
| J | 23 | Spark Plugs - Remove, clean analyze, test, gap and rotate top plugs-to-bottom and bottom plugs-to-top. |
| J | 25 | Carburetor - Drain and flush carburetor bowl, clean inlet strainer and drain plug. Check general condition and security. |
| J | 26 | Engine Primer - Check for leakage, operation and security. |
| J | 27 | Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration. |
| J | 28 | Cold and Hot Air Hoses - Check condition, routing and security. |
| J | 29 | Engine Cylinders, Rocker Box Covers and Pushrod Housings - Check for fin damage, cracks, oil leakage, security of attachment and general condition. |
| J | 30 | Engine Baffles and Seals - Check condition and security of attachment. |
| J | 31 | Crankcase, Oil Sump and Accessory Section - Inspect for cracks and evidence of oil leakage. Check bolts and nuts for looseness and retorque as necessary. Check crankcase breather lines for obstructions, security and general condition. |

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Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 32 Turbocharger (if applicable) -
- a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
 - b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- K 1 Integral Fuel Tanks - Check for evidence of leakage and condition of fuel caps, adapters and placards.
-
- K 3 Fuel Bladders - Check for leaks and security, condition of fuel caps, adapters and placards.
-
- K 5 Fuel System - Inspect plumbing and components for mounting and security.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 7 Fuel Tank Vent Lines and Vent Valves - Check vents for obstruction and proper positioning. Check valves for operation.
-
- K 9 Fuel Strainer, Drain Valve and Controls - Check freedom of movement, security and proper operation. Disassemble, flush and clean screen and bowl.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.
-
- L 2 Propeller Mounting - Check for security of installation.
-
- L 3 Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage.
-
- L 4 Spinner - Check general condition and attachment.
-
- L 5 Spinner and Spinner Bulkhead - Remove spinner, wash and inspect for cracks and fractures.
-
- M 2 Heater Components, Inlets and Outlets - Inspect all lines, connections, ducts, clamps, seals and gaskets for condition, restriction and security.
-
- M 4 Pitot Tube and Stall Warning Vane - Check for condition and obstructions.
-
- M 5 Pitot Tube Heater Element - Perform operational check.
-
- M 6 Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check.
-
- N 3 Vacuum Pump - Check for condition and security. Check vacuum system breather line for obstructions, condition and security.
-
- O 4 Battery - Check general condition and security. Check level of electrolyte.
-
- O 5 Battery Box and Cables - Clean and remove any corrosion. Check cables for routing, support and security of connections.

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OPERATION NO. 3

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

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OPERATION NO. 3

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

M	1	Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9	Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4	Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5	Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10	Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11	Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4	Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- A 1 Placards and Decals - Inspect presence, legibility and security. Consult Pilot's Operating Handbook and FAA-Approved Airplane Flight Manual for required placards.
-
- B 1 Fuselage Surface - Inspect for skin damage, loose rivets, condition of paint and check pitot-static ports and drain holes for obstruction. Inspect covers and fairings for security.
-
- B 2 Internal Fuselage Structure - Inspect bulkheads, doorposts, stringers, doublers and skins for corrosion, cracks, buckles and loose rivets, bolts and nuts.
-
- B 3 Control Wheel Lock - Check general condition and operation.
-
- B 4 Fuselage Mounted Equipment - Check for general condition and security of attachment.
-
- B 5 Antennas and Cables - Inspect for security of attachment, connection and condition.
-
- B 6 Emergency Locator Transmitter - Inspect for security of attachment and check operation by verifying transmitter output. Check cumulative time and useful life of batteries in accordance with FAR Part 91.207. Refer to Section 16 - Emergency Locator Transmitter - Checkout Interval.
-
- B 7 Instrument Panel Shock Mounts, Ground Straps and Covers - Inspect for deterioration, cracks and security of attachment.
-
- B 8 Pilot's and Copilot's Inertia Reels - Inspect for security of installation, proper operation and evidence of damage.
-
- B 9 Seats, Seat Belts, and Shoulder Harnesses - Check general condition and security. Check operation of seat stops and adjustment mechanism. Inspect belts for condition and security of fasteners.
-
- B 10 Windows, Windshield, Doors and Seals - Inspect general condition. Check latches, hinges and seals for condition, operation and security of attachment.
-
- B 12 Flight Controls - Check freedom of movement and proper operation through full travel with and without flaps extended. Check electric trim controls for operation (as applicable.)
-
- B 13 Aileron, Elevator and Rudder Stops - Check for damage and security. Compliance with Cessna Service Letter SE80-65 is required.
-
- B 14 Portable Hand Fire Extinguisher - Inspect for proper operating pressure, condition, security of installation and servicing date.
-
- B 15 Seat Tracks and Stops - Inspect seat tracks for condition and security of installation. Check seat track stops for damage and correct location. Ensure inspection of seat rails for cracks EACH 50 HOURS. Refer to Section 3.
-
- B 16 Control Column - Inspect pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security.
-
- B 17 Fuel Line and Selector Valve Drain(s) - Remove plug and drain.

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OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- D 1 Brakes, Master Cylinders and Parking Brake - Check master cylinders and parking brake mechanism for condition and security. Check fluid level and test operation of toe and parking brake.
-
- D 2 Main Gear Tubular Struts - Inspect for cracks, dents, corrosion, condition of paint or other damage. Check axles for condition and security.
-
- D 4 Wheels, Brake Discs and Linings - Inspect for wear, cracks, warps, dents or other damage. Check wheel through-bolts and nuts for looseness.
-
- D 5 Tires - Check tread wear and general condition. Check for proper inflation.
-
- D 6 Main Landing Gear Strut-to-Pivot Attachment - Check for damage, cracks, loose rivets, bolts and nuts and security of attachment.
-
- D 8 Nose Gear - Inspect torque links, steering rods and boots for condition and security of attachment. Check strut for evidence of leakage and proper extension. Check strut barrel for corrosion, pitting, and cleanliness. Check shimmy damper and/or bungees for operation, leakage and attach points for wear and security.
-
- D 11 Nose Gear Attachment Structure - Inspect for cracks, corrosion or other damage and security of attachment.
-
- D 12 Landing Gear - Perform five fault-free cycles.
-
- D 13 Main Landing Gear - Check downlock engagement.
-
- D 14 Landing Gear System - Check adjustment of main and nose gear up and down switches and operation of gear position indicator.
-
- D 16 Nose Gear Doors and Linkage - Check for .25 inch minimum clearance throughout up and down cycles, and proper fit when closed. Check linkage for wear, damaged bearings, distortion and superficial damage.
-
- D 17 Hydraulic System - Check all components for leaks and external damage to components or mounting structure.
-
- D 18 Emergency Hand Pump - Check operation, check lines and components for damage and leaks.
-
- D 19 Powerpack - Clean self-relieving check valve filter.
-
- D 22 Powerpack - Perform hydraulic pressure checks of primary relief valve, thermal relief valve and pressure switch.
-
- G 3 Elevator Control System - Inspect pulleys, cables, sprockets, bearings, chains and turnbuckles for condition, security and operation.
-
- H 3 Trim Controls and Indicators - Check freedom of movement and proper operation through full travel. Check pulleys, cables, sprockets, bearings, chains, bungees and turnbuckles for condition and security. Check electric trim controls for operation as applicable.
-
- I 2 Rudder Pedals and Linkage - Check for general condition, proper rigging, and operation. Check for security of attachment.
-
- J 1 Cowling and Cowl Flaps - Inspect for cracks, dents and other damage, security of cowl fasteners and cowl mounted landing lights for attachment. Check cowl flaps for condition, security and operation.

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OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- J 2 Engine - Inspect for evidence of oil and fuel leaks. Wash engine and check for security of accessories.
-
- J 3 Cowl Flap Controls - Check freedom of movement through full travel.
-
- J 4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.
-
- J 8 Induction System - Check security of clamps, tubes and ducting. Inspect for evidence of leakage.
-
- J 11 Alternate Induction Air System - Check for obstructions, operation and security.
-
- J 12 Alternator and Electrical Connections - Check condition and security. Check alternator belts for condition and proper adjustment.
-
- J 15 Oil Cooler - Check for obstructions, leaks and security of attachment.
-
- J 16 Exhaust System - Inspect for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 17 Exhaust System (turbocharged engine) - Inspect couplings, seals, clamps and expansion joints for cracks and security. Air leak check exhaust system. Refer to Sections 11 and 11A, Paragraphs 11-98 and 11-75A, for inspection procedures.
-
- J 27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.
-
- J 30 Engine Baffles and Seals - Check condition and security of attachment.
-
- J 32 Turbocharger (if applicable) -
a. Inspect turbocharger mounting brackets, ducting, linkage and attaching parts for general condition, leakage or damage and security of attachment.
b. Check waste gate, actuator, controller, oil and vent lines, overboost relief valve and compressor housing for leakage, apparent damage, security of attachment and evidence of wear. Check waste gate return spring for condition and security.
-
- J 34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.
-
- J 35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.
-
- J 36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.
-
- K 6 Fuel Tank or Bladder Drains - Drain water and sediment.
-
- K 8 Fuel Selector Valve - Check controls for detent in each position, security of attachment and for proper placarding.
-
- L 1 Propeller Governor and Control - Inspect for oil and grease leaks. If leakage is evident, refer to McCauley Service Manual.

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CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

- | | | |
|---|----|--|
| L | 2 | Propeller Mounting - Check for security of installation. |
| L | 3 | Propeller Blades - Inspect for cracks, dents, nicks, scratches, erosion, corrosion or other damage. |
| L | 4 | Spinner - Check general condition and attachment. |
| M | 3 | Cabin Heat and Ventilation Controls - Check freedom of movement through full travel. Check friction locks for proper operation. |
| M | 4 | Pitot Tube and Stall Warning Vane - Check for condition and obstructions. |
| M | 5 | Pitot Tube Heater Element - Perform operational check. |
| M | 6 | Propeller Anti-ice Slip Rings, Brushes and Boots - Inspect for condition and security. Perform operational check. |
| M | 7 | Heated Windshield Panel - Check operation, security of installation, electrical wiring and condition of storage bag. |
| M | 8 | Oxygen System - Inspect masks, hoses, lines and fittings for condition, routing and support. Test operation and check for leaks. |
| N | 1 | Vacuum System - Inspect for condition and security. |
| N | 2 | Vacuum System Hoses - Inspect for hardness, deterioration, looseness or collapsed hoses. |
| N | 4 | Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required.
NOTE: Smoking will cause premature filter clogging. |
| N | 5 | Vacuum System relief Valve - Inspect for condition and security. |
| N | 6 | Instruments - Check general condition and markings for legibility. |
| N | 7 | Instrument Lines, Fittings, Ducting and Instrument Panel Wiring - Check for proper routing, support and security of attachment. |
| N | 8 | Static System - Inspect for security of installation, cleanliness and evidence of damage. |
| N | 9 | Navigation Indicators, Controls and Components - Inspect for condition and security. |
| N | 12 | Instrument Panel Mounted Avionics Units (Including Audio Panel, VHF Nav/Com(s), ADF, Transponder, DME and Compass System) - Inspect for deterioration, cracks and security of instrument panel mounts. Inspect for security of electrical connections, condition and security of wire routing. |
| N | 13 | Avionics Operating Controls - Inspect for security and proper operation of controls and switches and ensure that all digital segments will illuminate properly. |
| N | 14 | Remote Mounted Avionics - Inspect for security of units and electrical connectors, condition and security of wire routing. Also check for evidence of damage and cleanliness. |
| N | 15 | Microphones, Headsets and Jacks - Inspect for cleanliness, security and evidence of damage. |

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

Registration No. _____ Aircraft Model and SN _____ Aircraft Time _____
INSPECTION COMPLETED BY _____

-
- O 1 General Airplane and System Wiring - Inspect for proper routing, chafing, broken or loose terminals, general condition, broken or inadequate clamps and sharp bends in wiring.
-
- O 2 Instrument, Cabin, Navigation, Beacon, Strobe, and Landing Lights - Check operation, condition of lens and security of attachment.
-
- O 3 Circuit Breakers and Fuses - Check operation and condition. Check for required number of spare fuses.
-
- O 6 Switch and Circuit Breaker Panel, Terminal Blocks and Junction Boxes - Inspect wiring and terminals for condition and security.
-
- O 8 Switches - Check operation, terminals, wiring and mounting for conditions, security and interference.
-
- O 9 Instrument Panel and Control Pedestal - Inspect wiring, mounting and terminals for condition and security. Check resistance between stationary panel and instrument panel for proper ground.

Q Perform the Following Operational Checks:

-
- Q 1 Brakes - Test toe brakes and parking brake for proper operation.

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

SPECIAL INSPECTION AND YEARLY ITEMS

HOURS YEARS

INSPECTION
COMPLETED BY

Please review each of these items for required compliance

		HOURS	YEARS	INSPECTION COMPLETED BY
B	11 Upholstery, Headliner, Trim and Carpeting - Check condition and clean as required.	EACH 400	EACH 1	
D	3 Brake Lines, Wheel Cylinders, Hoses, Clamps and Fittings - Check for leaks, condition and security of hoses for bulges and deterioration. Check brake lines and hoses for proper routing and support.	EACH 400	EACH 1	
D	10 Wheel Bearings - Clean, inspect and lube.	A		
D	20 Powerpack - Hydraulic fluid contamination check.	B		
D	21 Powerpack - Check condition and wear of brushes in servo motor.	C		
D	23 Landing Gear System - Overhaul main gear downlock actuators, main and nose gear actuators, landing gear selector valve, emergency hand pump and pressure switch. Replace all rubber goods.		D	
D	24 Brake System - Overhaul brake discs, parking brake system, wheel cylinders and master cylinders. Replace brake pads and all rubber goods.		D	
E	4 Autopilot Rigging - Check per Avionics Installation Manual.	E	EACH 1	
H	5 Elevator Trim Tab Actuator - Clean, lubricate and check free-play.	F		
J	4 Engine, Propeller Controls and Linkage - Check general condition, freedom of movement through full range. Check for proper travel, security of attachment and for evidence of wear. Check friction locks for proper operation.		G	
J	10 Induction Air Filter - Remove and clean. Inspect for damage and service per paragraph 2-25.	H		
J	13 Alternator - Check brushes, leads, commutator or slip ring for wear.		I	
J	14 Starter, Starter Solenoid and Electrical Connections - Check for condition of starter brushes, brush leads and commutator.		J	
J	21 Magnetos - Timing Procedures and intervals, lubrication and overhaul procedures.	K		
J	27 Hoses, Metal Lines and Fittings - Inspect for signs of oil and fuel leaks. Check for abrasions, chafing, security, proper routing and support and for evidence of deterioration.		L	
J	34 Engine Oil With Oil Filter - Replace filter. Add recommended grade aviation oil to replace oil lost in existing filter.	M		
J	35 Engine Oil Without Oil Filter - Drain oil sump and oil cooler, clean and inspect screens and refill with recommended grade aviation oil.	M		
J	36 Engine Oil With Oil Filter - Drain oil sump and refill with recommended grade aviation oil.	M		
K	2 Integral Fuel Tanks - Drain fuel and check tank interior and outlet screens.	N		
K	4 Fuel Bladders - Drain fuel and check for wrinkles that would retain contaminants or liquid, security of attachment and condition of outlet screens.	N		
K	10 Fuel Quantity Indicators - Check for damage, security of installation and perform accuracy test.		EACH 1	
L	9 Propeller Assembly - Overhaul (See McCauley Service Manual; refer to list of publication).	O		

MODEL R182 & TR182 SERIES SERVICE MANUAL

CESSNA PROGRESSIVE CARE MODEL R182 & TR182

OPERATION NO. 4

SPECIAL INSPECTION AND YEARLY ITEMS		HOURS	YEARS	INSPECTION COMPLETED BY
Please review each of these items for required compliance				
M	1 Ventilation System - Inspect clamps, hoses and valves for condition and security.	400	EACH 1	
M	9 Oxygen Cylinder - Inspect for condition, check hydrostatic test date and perform hydrostatic test, if due.		EACH 5	
N	4 Vacuum System Air Filter - Inspect for damage, deterioration and contamination. Clean or replace, if required. NOTE: Smoking will cause premature filter clogging.	P		
N	5 Vacuum System relief Valve - Inspect for condition and security.	Q		
N	10 Airspeed Indicator, Vertical Speed Indicator and Magnetic Compass - Calibrate.		EACH 2	
N	11 Altimeter and Static System - Inspect in accordance with FAR Part 91.411.		EACH 2	
O	4 Battery - Check general condition and security. Check level of electrolyte.	R		

Special Inspections Legends:

- A. First 100 hours and each 500 hours thereafter. More often if operated under prevailing wet or dusty conditions.
- B. At first 50 hours, first 100 hours, and each 500 hours thereafter, or one year, whichever comes first.
- C. Each 500 hours, and whenever improper operation is suspected. Replace brushes when worn down to 0.25 inch or less.
- D. Serial R18200001 thru R18200583 and FR18200001 thru FR18200025: Each 5 years. Serial R18200584 and On and FR18200026 thru FR18200070: Overhaul components and replace rubber goods On-Condition basis.
- E. Each 600 hours or 1 year, whichever comes first.
- F. Lubrication of the actuator is required each 1000 hours or 3 years, whichever comes first. See figure 2-5 for grease specification.
- G. Lubricate each 100 hours (except in extreme dusty conditions). These controls are not repairable and should be replaced every 1500 hours or sooner if required.
- H. Clean filter per paragraph 2-25. Replace paper filters at least each 500 hours.
- I. Inspect each 500 hours.
- J. For Prestolite starters only, inspect the commutator and brushes every 1500 hours.
- K. At the first 25 hours, first 50 hours, first 100 hours and thereafter at each 100 hours, the contact breaker point compartment and magneto-to-engine timing is correct within plus zero degrees to minus two degrees, internal timing need not be checked. If timing is out of tolerance, remove magneto and set internal timing, then install and time to the engine. Refer to Section 11 or 11A and the magneto manufacturers service instructions for magneto timing procedures.
- L. Replace engine compartment rubber hoses (Cessna installed only) every five years or at engine overhaul, whichever occurs first. This does not include drain hoses. Hoses which are beyond these limits and are in a serviceable condition, must be placed on order immediately and then be replaced within 120 days after receiving the new hose(s) from Cessna. Replace drain hoses on condition. Engine flexible hoses (Lycoming installed) (Refer to Lycoming Maintenance Manual and Lycoming Engine Service Bulletins).
- M. First 25 hours: Refill with straight grade mineral oil and use until a total of 50 hours have accumulated, or oil consumption has stabilized. Change oil, replace filter, and refill sump with recommended grade of ashless dispersant oil. Change oil and replace filter at least every six months, regardless of accumulated hours.
- N. Each 1000 hours.
- O. See McCauley Service Manual; refer to list of publication.
- P. Replace every 500 hours.
- Q. Replace filter each 100 hours.
- R. Check electrolyte level and clean battery box each 100 hours or 90 days.