



Service

3.1 INTRODUCTION

Periodic inspection and service will assure long life and efficient performance of the Layton Remote Trax TC30-1. This section contains preventive maintenance, troubleshooting and corrective maintenance procedures.

3.2 PREVENTIVE MAINTENANCE

In order to avoid breakdowns and reduce wear, equipment must be serviced regularly. Whenever the equipment is running continuously or operated in extreme conditions, the prescribed service intervals should be adjusted to provide more frequent inspection and lubrication.

3.2.1 Lubricant Specifications

1. Gear Oil

Use EP85/90 in the Torque Hubs.

2. Hydraulic Fluid

Use oil that conforms with ISO68 in the Hydraulic Oil Reservoir and in the Transmission.

NOTE: Hydraulic Fluid that conforms with ISO32 is recommended for cold weather

3. Motor Oil

Use 15W40 motor oil in the Crankcase.

4. Grease

Use multipurpose grease for lubricating ball and roller bearings and pivot points.

NOTE: Failure to use the recommended lubricants during the warranty period may void warranties, express or implied, on related components. Submit fluid samples with components returned for warranty consideration.

3.2.2 Service Instructions

See Figure 3-1.

1. Radiator

▲ WARNING

THIS UNIT HAS A PRESSURIZED COOLING SYSTEM. REMOVE RADIATOR CAP SLOWLY IN ORDER TO PREVENT SUDDEN RELEASE OF PRESSURIZED COOLANT WHICH MAY CAUSE SEVERE BURNS.

Check coolant level daily. Flush and drain cooling system annually, and refill with a 50/50 ethylene-glycol/water mixture that includes a rust inhibitor.

NOTE: Accumulations of oil, coolant, and dust will cause engine to run hotter resulting in decreased efficiency. Keep the radiator free of debris.

For arctic (extreme cold weather) operation, you should consider installing a higher temperature thermostat and adjusting the coolant mixing ratio according to coolant manufacturer's specifications.

2. Fan Belt

Check tension every 200 operating hours by pulling at the midpoint between pulleys. Adjust tension if deflection exceeds 3/4".

3. Engine

Check oil level daily. Replace crankcase oil and oil filter after the first 50 operating hours. Afterwards, change crankcase oil every 100 hours, and change the oil filter every 200 hours.



4. Fuel Filter

- a. A good grade of diesel fuel should be used.
- b. If the tractor is being fueled from a storage tank, the tank system must have a fuel filter.
- c. If the tractor is going to operate in extreme cold weather, a fuel additive to prevent gelling must be used.
- d. Check daily for sediment and excess water. Excess water accumulation indicates a high concentration of water in the fuel. Drain water and/or sediment, and a minimum of fuel from the filter bowl. Also drain water from the fuel tank when evident in the fuel filter.

NOTE: Maintain fuel level at or above 1/2 full to minimize the risk of drawing water and sediment from the bottom of the tank through the injectors as well as reducing the potential for water condensation in the fuel tank.

- e. Replace fuel filter every 200 operating hours.

5. Transmission

Check fluid level daily. Use a hydraulic servicing unit with an in-line filter or pre-filter fluid before refilling.

6. Hydraulic Filters

⚠ CAUTION

DISCONNECTED HYDRAULIC LINES MUST BE COVERED TO PREVENT CONTAMINATION. CAP OR PLUG OPEN PORTS, LINES, AND FITTINGS DURING INSTALLATION, SERVICE AND REPAIR.

CLOSE HYDRAULIC SHUTOFF VALVE WHEN SERVICING HYDRAULIC FILTERS TO PREVENT DRAINING THE HYDRAULIC RESERVOIR.

Change filters after the first 25 operating hours, and then every 50 hours afterward.

NOTE: Fill new filter elements with filtered oil and wipe a light film of oil on the rubber gasket before installation.

7. Battery

⚠ WARNING

KEEP BATTERY AWAY FROM SPARKS OR OPEN FLAMES WHILE CHARGING OR SERVICING ELECTROLYTE AS VAPORS MAY EXPLODE.

DO NOT ALLOW ELECTROLYTE LEVEL TO DROP BELOW THE BOTTOM OF PLATES BECAUSE PLATE WARPAGE MAY RESULT.

Check terminals for corrosion and electrolyte level every 100 hours. Ensure vent holes in plugs are open, and fill battery cells to the bottom of the vent holes.

NOTE: Maintain specific gravity recommended by the battery manufacturer.

Clean battery as follows to ensure proper conductivity:

- a. Disconnect battery cables, ground cable first.
- b. Verify that plugs are closed tightly, to prevent cleaning solution from entering cells.
- c. Wash terminals with a solution of baking soda and water.
- d. Rinse battery and surrounding area with fresh water to remove excess cleaning solution.

⚠ CAUTION

REVERSING POLARITY ON THE BATTERY WILL DAMAGE THE ALTERNATOR.

- e. Reconnect battery cables, ground cable last.
- f. Coat battery terminals with petrolcum jelly to minimize corrosion.

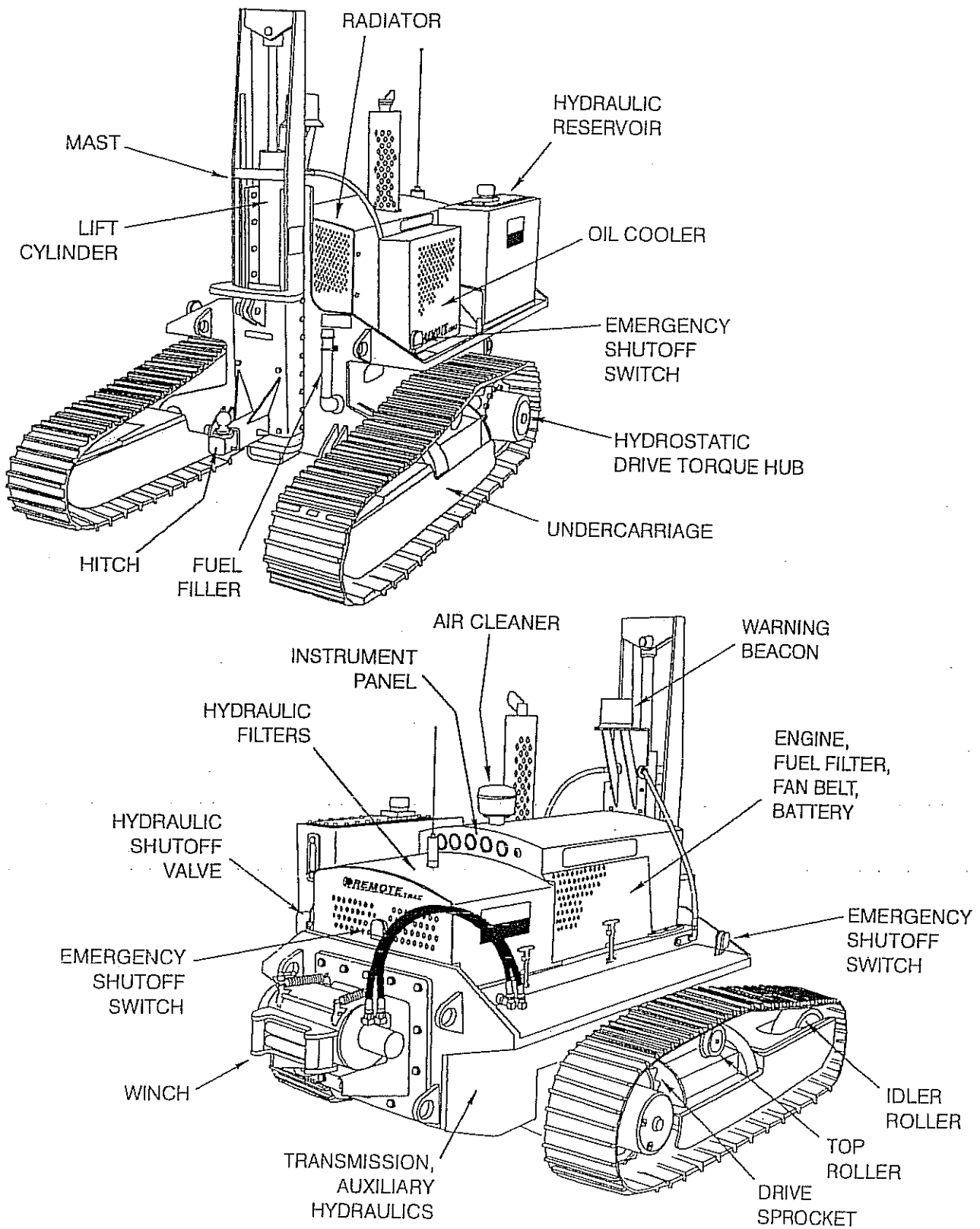


Figure 3-1 Layton Remote Trax TC30-1

8. Air Cleaner

Clean filter bowl daily or whenever engine smokes excessively. Check for leaks or dents daily.

NOTE: The engine manufacturer's warranty is void if the engine is damaged due to a defective air cleaner.

Replace the paper filter element every six months or 200 hours, whichever occurs first. Also replace the element if you notice that the engine is losing power or smoking excessively, or if you discover pin holes or tears in the element.

When replacing a filter element, thoroughly clean the inside of the air cleaner with a damp paper towel or rag. Ensure the gasket is seated properly.

9. Winch

Check the winch for leaks. Drain and refill annually or every 2,000 operating hours, whichever occurs first.

10. Hydraulic Reservoir

▲ CAUTION

DO NOT OVERFILL.

WATER, MOST LIKELY TO ACCUMULATE IN A HIGH HUMIDITY ENVIRONMENT, MAY DAMAGE THE TRANSMISSION OR OTHER HYDRAULIC COMPONENTS IF NOT REMOVED.

Check fluid level daily. Ensure crawler is on a level surface when adding fluid. Completely drain and refill with 19 gallons of hydraulic oil every 1,000 operating hours, or anytime contamination is suspected.

11. Torque Hubs

Inspect for leaks daily. Drain and refill after the first 50 operating hours and every 100 operating hours afterward.

NOTE: Place unit on a level surface and refill to the overflow plug level. **DO NOT OVERFILL.**

12. Track

a. Cleaning - Track assemblies should be cleaned with a pressure washer or steam cleaner on a daily basis. If the tracks are not cleaned on a daily basis, undue wear will occur, causing the track chain to come off the track assembly.

b. Adjustment - Check track tension and inspect for wear daily to assure maximum track life. If tracks are over tightened, undue wear will occur. Under tightening will allow tracks to come off. Maintain track tension by limiting sag measured halfway between the top roller and the drive sprocket to 0.781". See Figure 3-2. Track tension is adjusted by applying grease through a zerk fitting on the track tensioner.

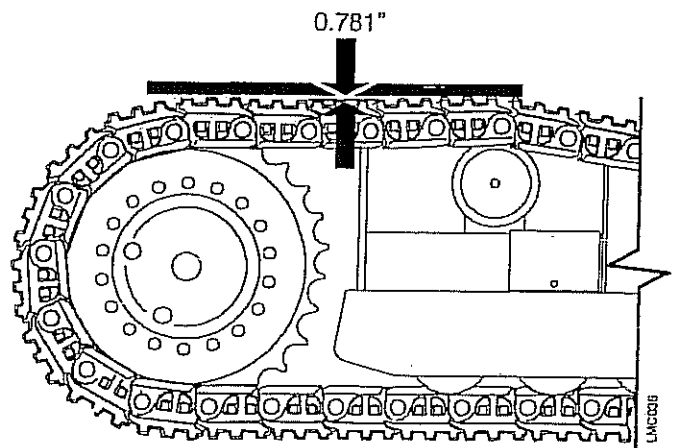


Figure 3-2 Track Adjustment

c. Track Grouser - Check pads weekly to ensure fasteners are tight.

NOTE: Track grouser fasteners dry torque to 80 lb-ft with a 17 mm socket.

13. Hydraulic Cylinders

⚠ CAUTION

A LEAKING SEAL WILL NOT CAUSE VISIBLE DAMAGE, BUT MAY RESULT IN FAILURE TO HOLD A LOAD.

Check for leakage around the rod, and for nicked or dented rod/cylinder. Replace entire seal kit whenever servicing the cylinder.

14. Mast

Inspect for visible damage. Lubricate mast at all four zerks, daily or every 12 operating hours, and verify smooth operation through the entire range of travel. Verify that the hitch and pin are properly installed and cotter key is intact.

15. Hydraulic Lines and Fittings

⚠ CAUTION

DO NOT ATTEMPT TO TIGHTEN A FITTING WHILE THE TRACTOR IS RUNNING AND PRESSURE IS APPLIED.

DO NOT OVERTIGHTEN FITTINGS TO STOP A LEAK.

Inspect for leaks and security. Most leaks can be stopped by replacing an O-ring.

16. Fasteners

Inspect for loose or missing fasteners daily. Unless otherwise specified, check attaching hardware torque every 6 months.

3.3 TROUBLESHOOTING

The most common operating situations, probable causes and recommended corrective actions are described in the following paragraphs.

3.3.1 Power Train Overheating

1. Overloading the tractor at half speed or excessive maneuvering at full speed. Reduce load, increase speed and/or minimize maneuvering.

2. Prolonged operation with heavy load. Allow 2-3 minutes cool down time before resuming operation.

3. Plugged/contaminated oil cooler fins. Service radiator/oil cooler as recommended in paragraph 3.2.2.

⚠ CAUTION

CLEAN ONLY AFTER ALLOWING TRACTOR TO COOL DOWN.

4. Low engine/hydraulic oil levels. Service engine/hydraulic reservoir as recommended in paragraph 3.2.2.

⚠ CAUTION

WHEN EXCEEDING HIGH PRESSURE RELIEF, TEMPERATURE INCREASES APPROXIMATELY 2-4°F PER MINUTE.

5. Exceeding transmission high pressure relief. Allow temperature to stabilize, and then minimize maneuvering. If overtemp resulted after attempting to maneuver over unstable terrain, try winching out.

Section 3



3.3.2 Sluggish Starting

1. Low battery output voltage. Service battery as described in paragraph 3.2.2.
2. Engine malfunction overloading starter, or defective starter. Service engine/starter.
3. Corrosion on battery terminals causing high resistance resulting in low output voltage. Service battery as described in paragraph 3.2.2.
4. Loose, frayed or corroded battery cables resulting in low battery output voltage. Service battery as described in paragraph 3.2.2.
5. Extreme cold temperatures resulting in low battery output voltage.

3.3.3 Hydraulic System Overheating

▲ CAUTION

CONTINUED OPERATION WHEN HYDRAULIC FLUID TEMPERATURE EXCEEDS 190°F (90°C) WILL RESULT IN SEVERE TRANSMISSION DAMAGE. DISCONTINUE OPERATION AND DETERMINE THE CAUSE OF OVERHEATING.

1. Check cooler fan. If fan is not operating with the ignition switch on, check 20 amp inline fuse under hood.
2. Plugged hydraulic filter. Service hydraulic filter as described in paragraph 3.2.2.

▲ CAUTION

DO NOT USE A PRESSURE WASHER ON THE OIL COOLER.

3. Plugged/contaminated oil cooler fins. Oil cooler fins should be kept clean from debris. If they become plugged or contaminated they should be cleaned. Use a water soluble de-greaser and water to clean, finish by using low pressure air.
4. Exceeding transmission high pressure relief. Allow temperature to stabilize, and then minimize maneuvering. If overtemp resulted after attempting to maneuver over unstable terrain, try winching out.
5. Overloading the tractor at half speed or excessive maneuvering at full speed. Reduce load, increase speed and/or minimize maneuvering.