

engine is running, and accidentally reversing of the battery polarity will destroy the diodes. Grounding the field circuit will also result in the destruction of the diodes. Some voltage regulators provide protection against some of these circumstances. However, it is recommended that extreme caution be used.

Accidentally reversing the battery connections must be avoided. If a booster battery is to be used, the batteries must be connected positive (+) to positive (+) and negative (-) to negative (-).

Never disconnect the battery while the alternator is in operation. Disconnecting the battery will result in damage to the diodes, caused by the momentary high voltage and current induced by the instantaneous collapse of the magnetic field surrounding the field windings.

c. Drive Belt Tension. Alternator drive belt tension should be such that a firm push with the thumb at a point midway between the two pulleys will deflect the drive belt $1/2$ to $3/4$ inch.

NOTE: When more than one belt is used to drive a component, always replace all belts with a matched set even though only one belt may be unserviceable. After belt replacement, operate the engine for 15 seconds to seat the belt and readjust the belt tension. Recheck the belt tension after $1/2$ hour of engine operation and again after 8 hours of operation. Thereafter, check the belt tension after every 50 hours of operation and adjust if necessary. Whenever the alternator has been loosened for belt installation or tension adjustment, always be sure to retighten the pivot bolt as well as the bolt in the adjusting slot.

CAUTION: A belt that is too tight is destructive to the bearings of the driven component and a belt that is too loose will slip.

2-5. LUBRICATION OF THE DRAWWORKS AND DRIVE ASSEMBLY (Figure 2-2). The oil level in the bevel gear case should be checked periodically. It is recommended that the oil level be checked each week initially. If the oil level is consistently found to be satisfactory, the interval between oil level checks may be lengthened. However, the oil level should be checked at any time there is evidence that leakage might be occurring. The oil should be changed after each 6 months of operation.

a. Checking Oil Level. With the drilling machine level, remove the oil level check plug. The oil level should be even with the oil level check plug hole. If the oil level is low, remove the filler cap and add oil until

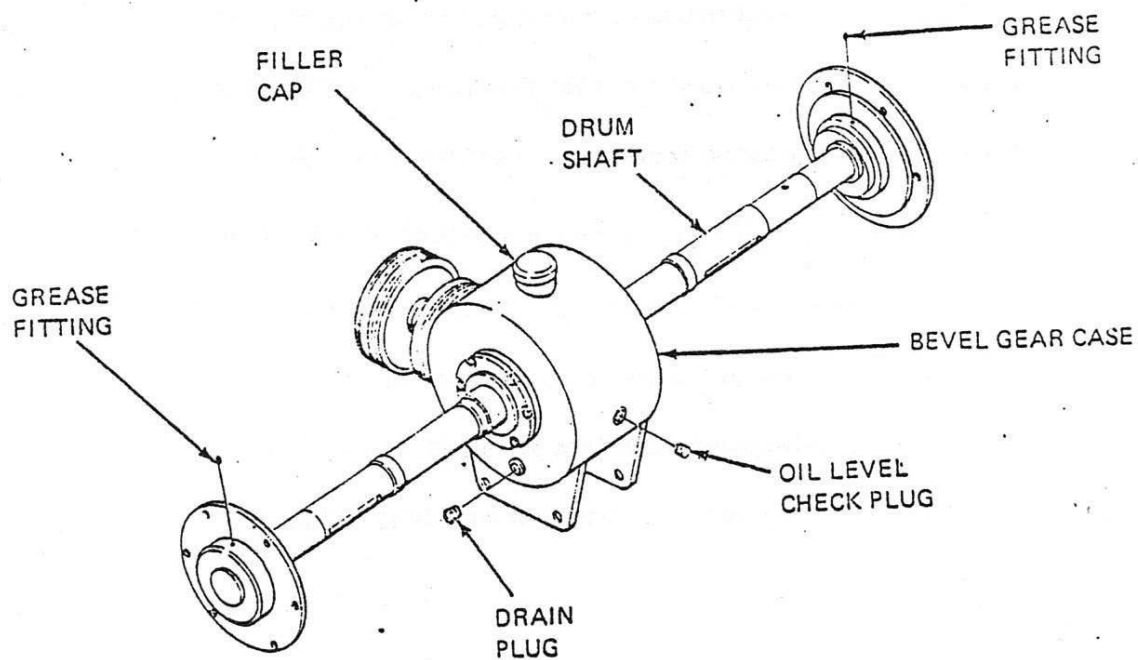


Figure 2-2. Drawworks and Drive Assembly Lubrication

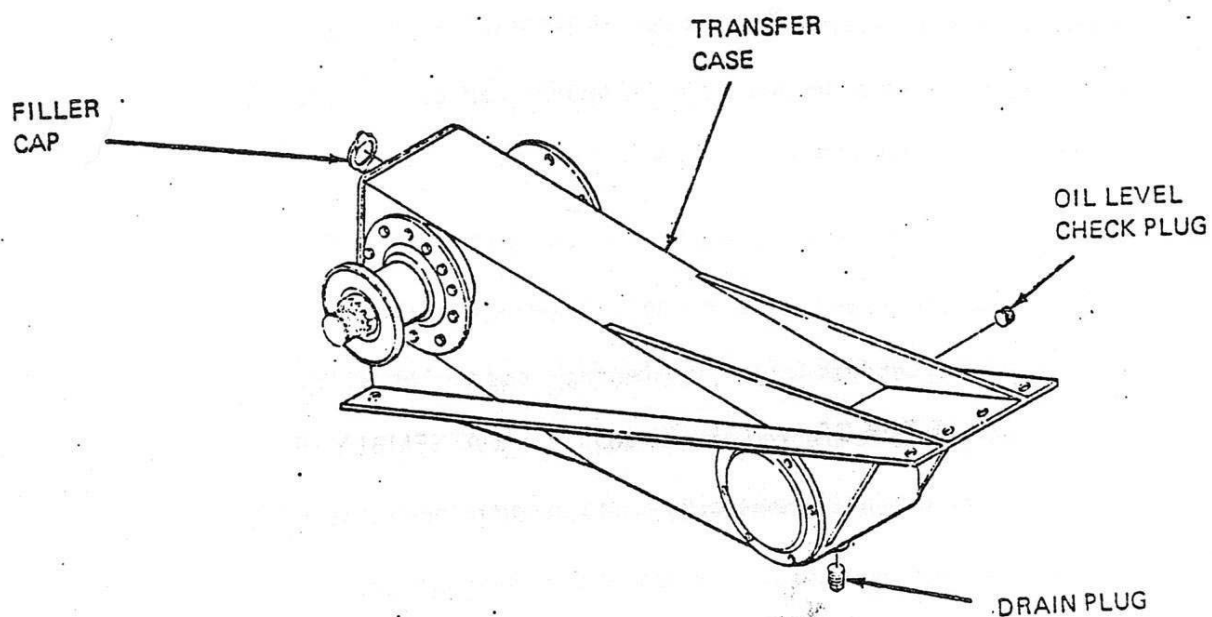


Figure 2-3. Transfer Case Lubrication.

oil starts to flow from the oil level check plug hole. Reinstall the oil level check plug and filler cap.

- b. Recommended Lubricant. Refer to the Lubrication Chart for the type of lubricant to be used.

NOTE

During cold weather operation, it is recommended that the drawworks drive assembly be operated at low speed for a short period of time before being brought up to operating speed.

- c. Changing the Oil. The oil should be changed after the machine has been operating to ensure maximum suspension and drainage of any minute foreign particles. Perform the following procedures to drain the oil.

- (1). Remove the drain plug and drain the oil. Clean and reinstall the drain plug.
- (2). Remove the oil level check plug and filler cap.
- (3). Service the bevel gear case with oil until oil starts to flow from the oil level check plug hold.
- (4). Reinstall the oil level check plug and filler cap.

- d. Bearing Lubrication. Grease fittings are provided for lubricating the bearings on both ends of the drum shaft. A reliable multipurpose grease NLGI Grade No. 2 is recommended.

CAUTION

Avoid excessive greasing. The bearings are enclosed and if filled completely with grease will tend to run hot.

2-6 LUBRICATION OF THE TRANSFER CASE (Figure 2-3). The oil level in the transfer case should be checked periodically. It is recommended that the oil level be checked each week initially. If the oil level is consistently found to be satisfactory, then the interval between oil level checks may be lengthened. The oil level should be checked at any time there is evidence that leakage might be occurring. The oil should be changed after each 4 months of operation.

- a. Checking Oil Level. With the machine level, remove the oil level check plug. The oil level should be even with the oil level check plug hole. If the oil level is low remove the filler cap and add oil until