

OPERATOR'S MANUAL

This manual has been prepared for and is considered part of -

5540F/YB5515

Crane Model Number

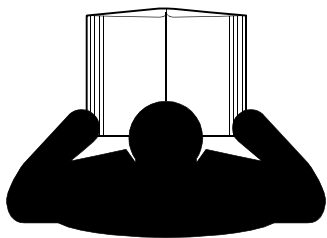
This Manual is divided into the following sections:

SECTION 1	INTRODUCTION
SECTION 2	SAFETY INFORMATION
SECTION 3	OPERATING CONTROLS AND PROCEDURES
SECTION 4	CAPACITY CHARTS
SECTION 5	ATTACHMENTS
SECTION 6	MAINTENANCE
SECTION 7	ADJUSTMENTS
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NOTICE

The crane serial number is the only method your distributor or the factory has of providing you with correct parts and service information.

The crane serial number is identified on the builder's decal attached to the operator's cab. **Always furnish crane serial number** when ordering parts or communicating service problems with your distributor or the factory.



WARNING

To prevent death or serious injury:

- Avoid unsafe operation and maintenance.
- This crane must be operated and maintained by trained and experienced personnel. Manitowoc is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Rating Plate supplied with crane.
- Store Operator's Manual in holder provided on crane.
- Attach laminated Capacity Charts supplied with crane to chain in operator's cab.
- If Operator's Manual or Capacity Charts are missing from cab, contact your distributor for new ones.

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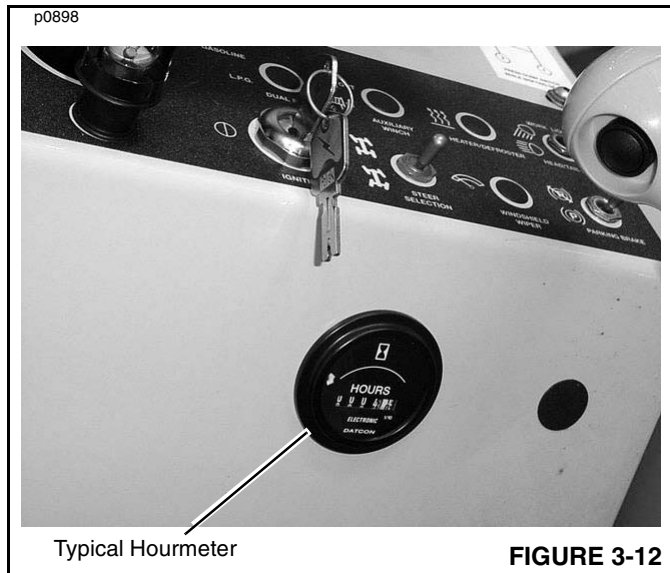


FIGURE 3-12

Low Battery Warning Light

See Figure 3-13 for the following procedure.

When this light is illuminated it is an indication that the electrical system is not being supplied with enough voltage by the alternator. Either the alternator is malfunctioning or the fan belt is broken, slipping, etc.

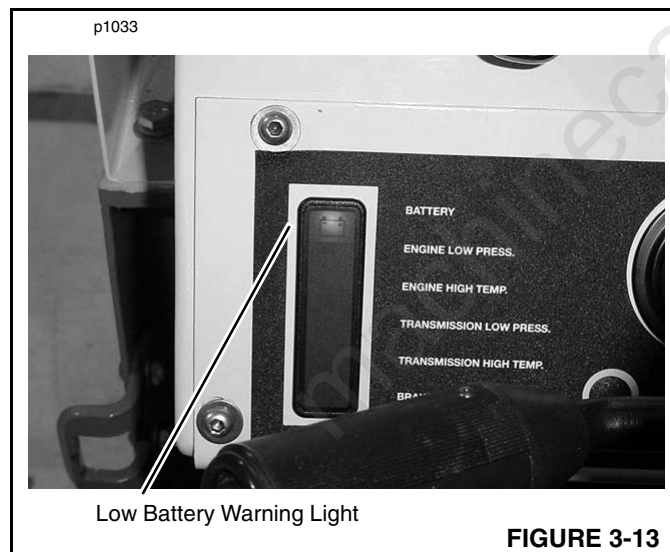


FIGURE 3-13

Engine Low Pressure Warning Light

See Figure 3-14 for the following procedure.

When this light is illuminated it is an indication that the engine oil pressure is lower than what is recommended for proper operation of the engine. The engine could be damaged if it is run with low oil pressure. If this light

illuminates during operation, have the engine serviced immediately.

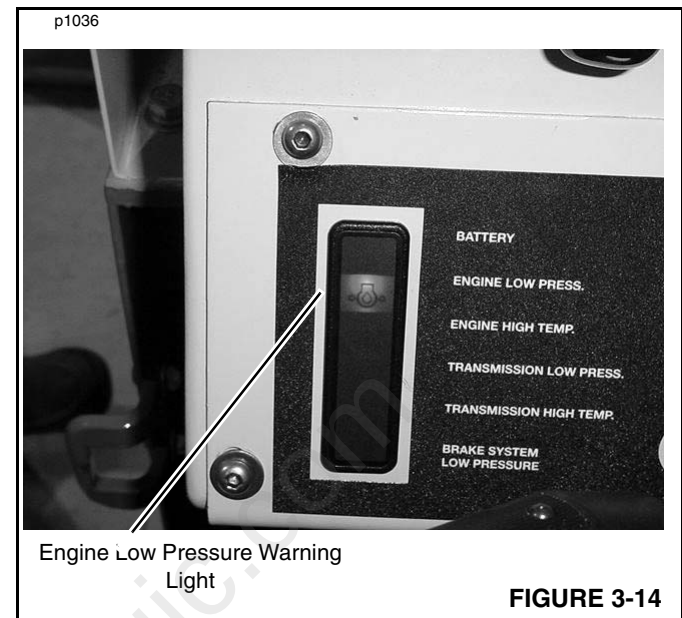


FIGURE 3-14

Engine High Temperature Warning Light

See Figure 3-15 for the following procedure.

When this light is illuminated it is an indication that the engine cooling system is not properly cooling the engine and that the engine temperature is above normal operating temperature. High temperature could damage the engine, therefore, if this light illuminates during operation, immediately shut down the engine and have the engine cooling system serviced.

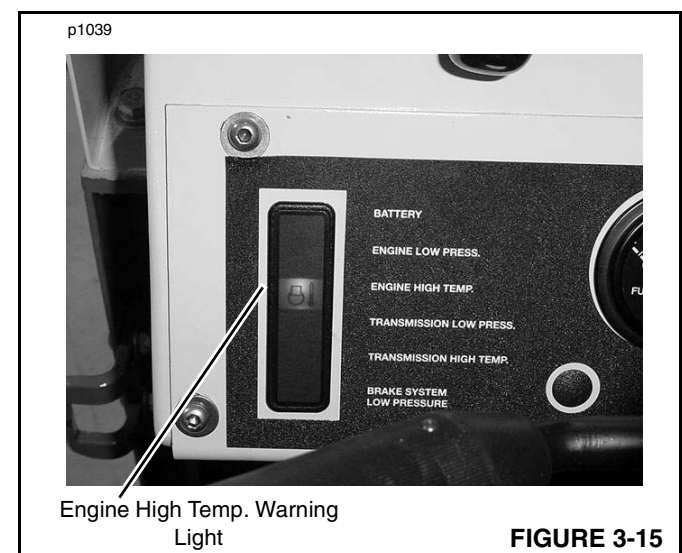


FIGURE 3-15

Attaching the Load

The hoist rope must not be wrapped around the load as the wire rope will be damaged.

The load must be attached to the hook by means of slings or other devices of sufficient capacity.

Holding The Load

The operator must not leave the controls while a load is suspended. An exception to this is under those circumstances where a load is to be held suspended for a period of time exceeding normal lifting operations, the operator may leave the controls provided that, prior to that time, the appointed individual and operator establish the requirements for restraining the boom hoist, telescope, load, swing and outrigger functions, and provide notices, barricades or whatever other precautions may be necessary.

No person should be permitted to stand or pass under a suspended load.

Moving The Load

1. The person directing the lift must see that:
 - a. The crane is level and where necessary, blocked.
 - b. The load is well secured and balanced in the sling or lifting device before it is lifted more than a few inches.
 - c. The lift and swing path is clear of obstructions.
2. Before starting to lift the load, the following conditions should be noted:
 - a. That the boom when extended, is laterally straight.
 - b. That the hoist rope is not kinked or damaged.
 - c. That multiple-part lines are not twisted around each other.
 - d. That the hook is brought over the load in such a manner as to minimize swinging.
 - e. If there is a slack condition in the wire rope, it must be determined that the rope is seated on the hoist drum and in the sheaves as the slack is removed.
 - f. The effect of ambient wind on the load and crane stability.
3. During lifting operations care must be taken that:
 - a. There is no sudden acceleration or deceleration of the moving load.

- b. Load, boom and other parts of the crane do not contact any obstruction.

4. The load must not be lowered below a point where less than three full wraps of rope remain on the hoist drum.
5. When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. That person must analyze the operation and instruct all personnel involved in the proper positioning, rigging the load and the movements to be made. Decisions such as the necessity to reduce crane ratings, load positions, boom location, ground support and speed of movement must be in accordance with this determination.
6. When rotating the boom with a load, sudden starts and stops must be avoided. Rotational speed must be such that the load does not swing out beyond the radius at which it can be controlled. A tag or restraint line must be used when rotation of the load is hazardous.

Traveling with a Load (Pick And Carry)

NOTE: Pick and carry is not allowed when the boom extension is attached and used to lift the load.

When traveling with a load, a designated person must be responsible for the operation. Decisions, such as the necessity to reduce crane ratings, load position, boom location, ground support, travel route and speed of movement must be in accordance with that person's determination. Specified tire pressure must be maintained. The boom should be carried in line with the direction of travel. Sudden starts and stops should be avoided. Tag and restraint lines should be used to control swinging of the load.

Turning Clearances

The front end of the boom extends beyond the end of the frame. The operator must be aware of the maximum sweep of the boom when turning and allow for adequate clearance between boom and other objects.

Machine Shutdown

1. Park the crane on level ground.
2. Place the travel select lever in Neutral (N) and engage the parking brake.
3. Lower any load to the ground and full retract and lower the boom.
4. Turn the ignition switch to the OFF position and remove the key.

SECTION 5
ATTACHMENTS

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2. Tighten all battery hardware to keep the battery securely in place.
3. Disconnect the battery cables.
4. Sprinkle the batteries with baking soda to neutralize the acid. Rinse with water. Be careful not to get water inside the battery.
5. Coat the battery posts with petroleum jelly and reinstall the battery cables.
6. Install the battery box cover.

Clean the Radiator

NOTE: To inhibit personal injury, always wear safety glasses when using compressed air.

Clean the radiator fins by using compressed air or a water hose to remove all foreign materials. If these materials are not removed, the engine may over heat due to blocked air through the radiator fins and core.

Lubricate the Wire Rope

Apply lubricant to the hoist wire rope to inhibit rust, corrosion and wear.

1. Unwind the wire rope from the hoist drum.
2. Thoroughly clean the wire rope prior to application of any lubricant. Use a wire brush and compressed air to remove all foreign matter and old lubricant.

NOTE: To inhibit personal injury from compressed air, always wear safety glasses when using compressed air for cleaning.

3. After cleaning the wire rope, apply a good grade of wire rope lubricant, to the entire length of the wire rope. Or, apply a light weight oil that has been preheated to a temperature between 60° and 100°F (18° to 36° C). Use a brush or cloth to apply the oil.

NOTE: Be sure the lubricant enters the strands of the wire rope for proper lubrication. Do not use grease to lubricate the wire rope.

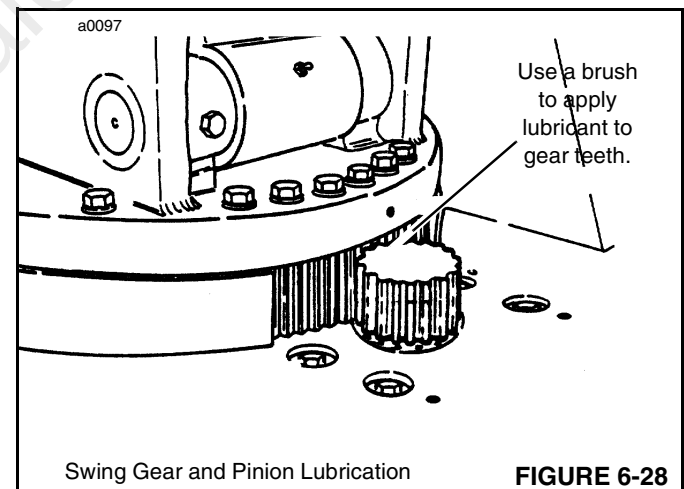
Lubricate the Swing Gear and Pinion

1. Engage the parking brake and shut off the engine.
2. Remove the guard covering the swing pinion.



Rotating gears can cause injury. Keep hands clear of rotating pinion and gear while the mast is rotating.

3. Using a brush, apply open gear lube to the pinion and swing gear teeth (Figure 6-28).

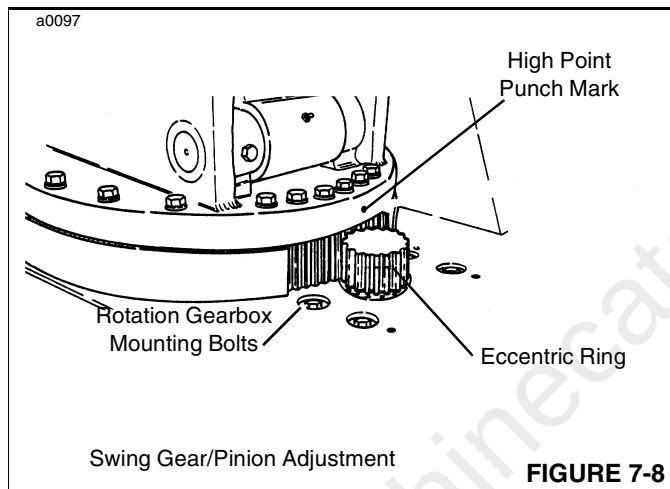


4. Start the engine and rotate the mast until a non-lubricated portion of the swing gear is exposed. Keep hand away from rotating pinion and gear.
5. Shut off the engine.
6. Using a brush, apply open gear lube to the swing gear teeth.
7. Repeat steps 4, 5 and 6 until the complete swing gear is lubricated.

SWING GEAR AND PINION ADJUSTMENT

NOTE: Be sure the swing gear and pinion are aligned at the high spot of the swing gear.

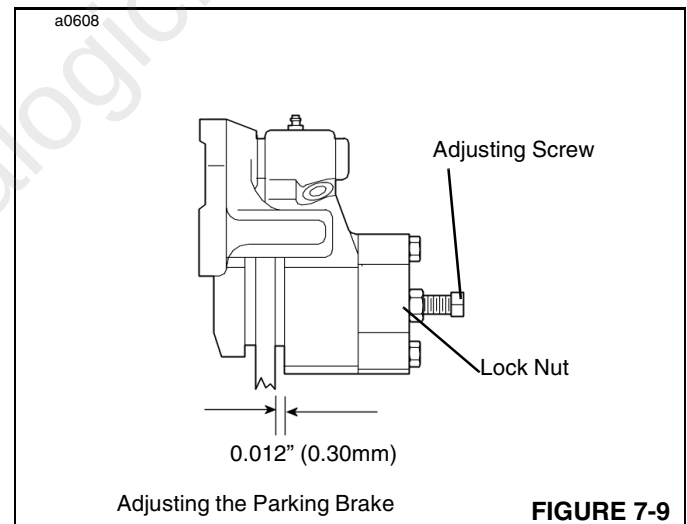
1. Remove the cover over the swing gear pinion.
2. Start the engine and rotate the mast until the high point on the swing gear is in alignment with the pinion (Figure 7-8). The high point is punch-marked on the mast base plate.
3. Slightly loosen the four bolts securing the swing gearbox (see Figure 7-8).
4. With a spanner wrench, turn the eccentric ring to move the pinion until it contacts the swing gear tooth (zero backlash).
5. Tighten the four bolts to the appropriate torque.
6. Install the swing pinion cover.



PARKING BRAKE ADJUSTMENT

NOTE: It is necessary to climb under the crane to adjust the parking brake. Be sure engine is shut off, the ignition key is removed and chock blocks are in place before climbing under the crane.

1. Turn the ignition key to RUN position and disengage the parking brake. Turn the ignition key to the OFF position.
2. Loosen the lock nut (Figure 7-9) and the adjusting screw.
3. Place a 0.012 inch (0.30 mm) feeler gauge between the brake disc and one of the linings.
4. Tighten the adjusting screw until it is just possible to remove the feeler gauge.
5. Tighten the lock nut while holding the adjusting screw with a wrench. Remove the feeler gauge.
6. Turn the ignition key to the RUN position and engage the parking brake. Turn the key to the OFF position.



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Grove 5540F and YB5515 Rough Terrain Crane Operator Manual

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