An Oshkosh Corporation Company

# Service & Maintenance Manual

## Models
## 3394RT
## 4394RT

***Prior to S/N 0200191606***
***excluding S/N's:***
***0200186972,***
***0200187002,***
***0200187013***

***3121133***

*October 6, 2008*

***ANSI***

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**Table 1-5. GM 3.0L Specifications**

| | |
|---|---|
| Fuel | Gasoline or Gasoline/LP Gas |
| No. of Cylinders | 4 |
| BHP<br>Gasoline<br>LP | <br>83 hp @ 3000 rpm<br>75 hp @ 3000 rpm |
| Bore | 4.0 in. (101.6 mm) |
| Stroke | 3.6 in. (91.44 mm) |
| Displacement | 181 cu.in. (3.0 L, 2966 cc) |
| Oil Capacity w/filter | 4.5 qts. (4.25 L) |
| Minimum Oil Pressure<br>at idle<br>Hot | <br>6 psi (0.4 Bar) @ 1000 rpm<br>18 psi (1.2 Bar) @ 2000 rpm |
| Compression Ratio | 9.2:1 |
| Firing Order | 1-3-4-2 |
| Max. RPM | 2800 |

## 1.4 TIRES

**Table 1-6. Tire Specifications**

| Size | Ply Rating | Inflation Pressure | Wheel Nut Torque (Dry) |
|---|---|---|---|
| 12 x 16.5 Pneumatic | 10 | 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 12 x 16.5 Foam Filled | 10 | Foam Fill to 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 12 x 16.5 Pneumatic (Non-Marking) | 10 | 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 12 x 16.5 Foam Filled (Non-Marking) | 10 | Foam Fill to 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 33/1550 x 16.5 Pneumatic | 14 | 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 33/1550 x 16.5 Foam Filled | 14 | Foam Fill to 90 psi (6 bar) | 170 ft lbs (238 Nm) |
| 33/16LLx16.1 Foam Filled - Sand | 10 | Foam Fill to 50 psi (3.4 bar) | 170 ft lbs (238 Nm) |
| 31 x 15.50-15 Grass Master | 10 | 60 psi (4 bar) | 170 ft lbs (238 Nm) |

## 1.5 MACHINE DIMENSIONS

| Description | 3394RT | 4394RT |
|---|---|---|
| Machine Height (rails down) | 61.75 in (1.6 m) | 70.4 in (1.8 m) |
| Machine Width | 7ft 10in (2.4 m) | |
| Machine Length | 13 ft (4 m) | |

## 1.6 PRESSURE SETTINGS

**Table 1-7. Pressure Settings**

| Description | 3394RT | 4394RT |
|---|---|---|
| Main Relief | 3000 psi (207 bar) | |
| Steer Relief | 2800 psi (193 bar) | |
| Lift | 2700 psi (186 bar) | |
| Leveling Jack Relief | 2500 psi (172 bar) | |

## 1.7 SERIAL NUMBER LOCATIONS

For machine identification, a serial number plate is affixed to the machine. The plate is located at the rear of the machine on the left side of the axle. In addition, should the serial number plate be damaged or missing, the machine serial number is stamped directly under the serial number plate.

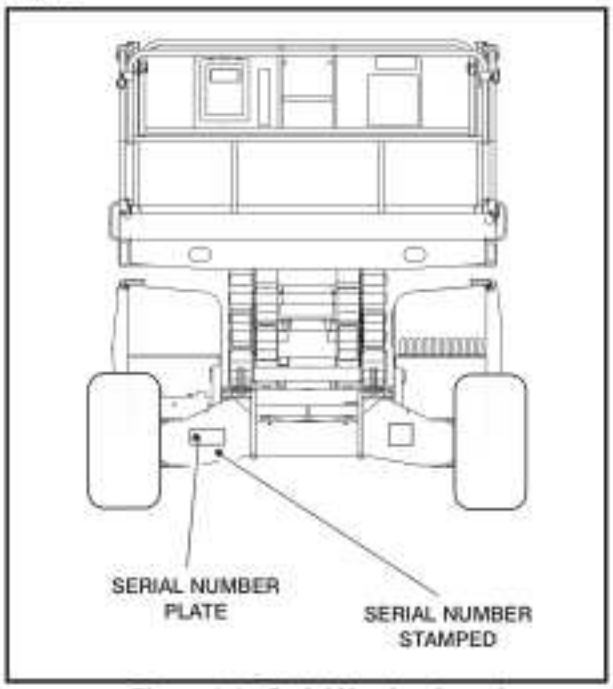



**Figure 1-1. Serial Number Location**



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**Table 3-14. Symptom Diagnosis**

| Checks | Action |
|---|---|
| Important Preliminary Checks | |
| Before Using This Section | Before using this section, you should have performed On Board Diagnostic Check and determined that:<br>1. The Control Module and MIL (Malfunction Indicator Lamp) are operating correctly.<br>2. There are no Diagnostic Trouble Codes (DTCs) stored, or a DTC exists but without a MIL.<br><br>Several of the following symptom procedures call for a careful visual and physical check. The visual and physical checks are very important. The checks can lead to correcting a problem without further checks that may save valuable time. |
| LPG Fuel System Check | 1. Verify the customer complaint.<br>2. Locate the correct symptom table.<br>3. Check the items indicated under that symptom.<br>4. Operate the vehicle under the conditions the symptom occurs. Verify HEGO switching between lean and rich.<br><br>**IMPORTANT! Normal HEGO switching indicates the LPG fuel system is in closed loop and operating correctly at that time.** |
| Visual and Physical Checks | Check all ECM system fuses and circuit breakers.<br>Check the ECM ground for being clean, tight and in its proper location.<br>Check the vacuum hoses for splits, kinks and proper connections.<br>Check thoroughly for any type of leak or restriction.<br>Check for air leaks at all the mounting areas of the intake manifold sealing surfaces.<br>Check for proper installation of the mixer module assembly.<br>Check for air leaks at the mixer assembly.<br>Check the ignition wires for the following conditions:<br>- Cracking<br>- Hardness<br>- Proper routing<br>- Carbon tracking<br>Check the wiring for the following items:<br>- Proper connections, pinches or cuts.<br>The following symptom tables contain groups of possible causes for each symptom. The order of these procedures is not important. If the scan tool readings do not indicate the problems, then proceed in a logical order, easiest to check or most likely to cause first. |
| Intermittent | |
| DEFINITION: The problem may or may not turn ON the Malfunction Indicator Lamp (MIL) or store a Diagnostic Trouble Code (DTC). | |
| Preliminary Checks | Refer to Important Preliminary Checks.<br>Do not use the DTC tables. If a fault is an intermittent, the use of the DTC tables may result in the replacement of good parts. |
| Faulty Electrical Connections or Wiring | Faulty electrical connections or wiring can cause most intermittent problems.<br>Check the suspected circuit for the following conditions:<br>- Faulty fuse or circuit breaker<br>- Connectors poorly mated<br>- Terminals not fully seated in the connector (backed out)<br>- Terminals not properly formed or damaged<br>- Terminal to wires poorly connected<br>- Terminal tension insufficient.<br>Carefully remove all the connector terminals in the problem circuit in order to ensure the proper contact tension. If necessary, replace all the connector terminals in the problem circuit in order to ensure the proper contact tension.<br>Checking for poor terminal to wire connections requires removing the terminal from the connector body. |
| Operational Test | If a visual and physical check does not locate the cause of the problem, drive the vehicle with a scan tool. When the problem occurs, an abnormal voltage or scan reading indicates the problem may be in that circuit. |



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## 6.6 SCHEMATICS

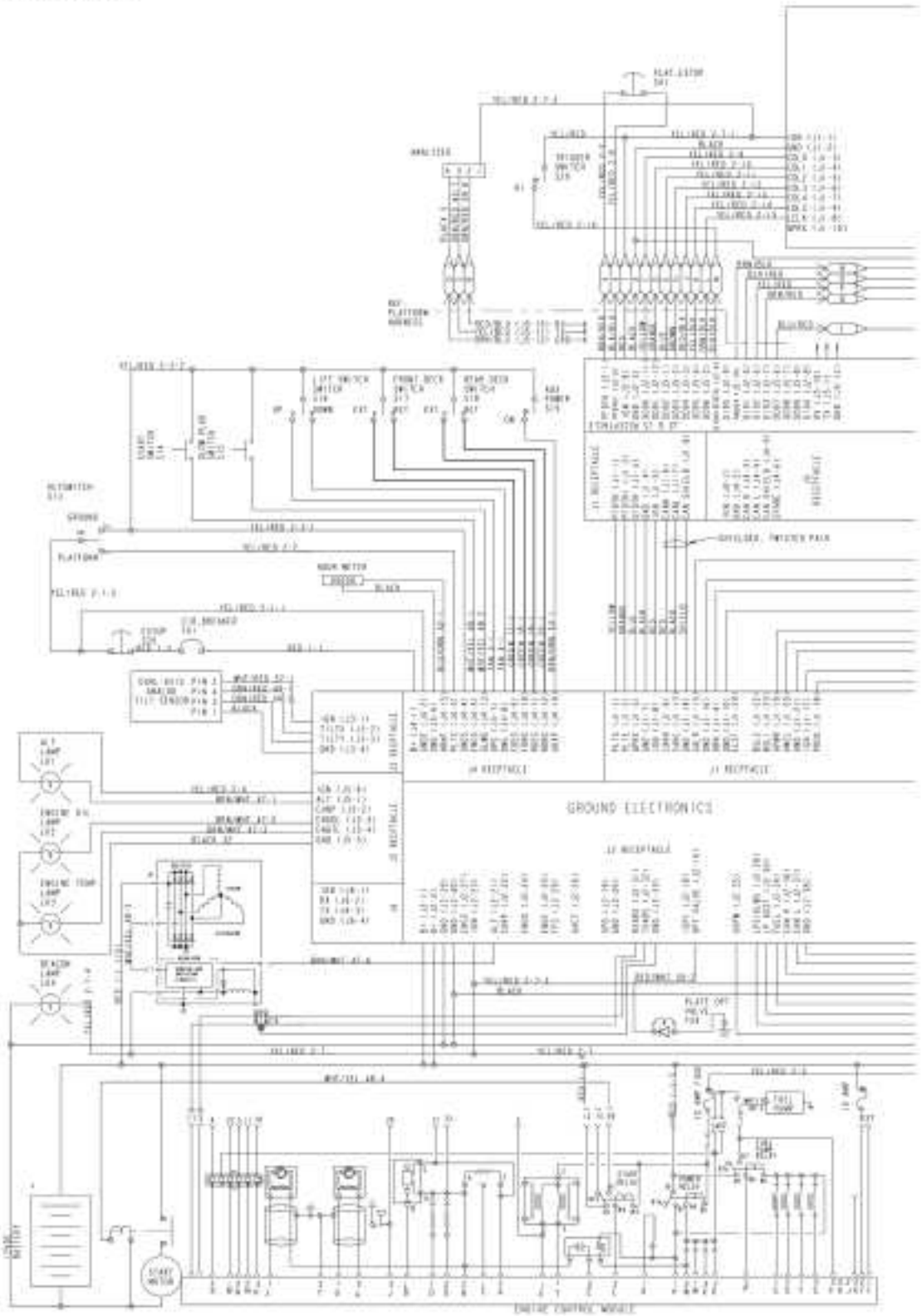



**Figure 6-18. Electrical Schematic - Dual Fuel - Sheet 1 of 3**



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## Gearbox Disassembly

For numbers in parenthesis, refer to Figure 3-8., Drive Motor/Hub Assembly.

1. Remove Screw Plugs (18, 19) and drain oil into appropriate container.



2. Remove Snap Ring (24).



3. Remove the assembled Cover (8) with Shift Rod (33) and O-ring (23).



4. Remove Sun Gear Shaft (25).



5. Remove complete 1st planet stage.



6. Remove ring gear fastening Bolts (20), Ring Gear (22), and O-ring (16)..





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## Electronic Throttle Control Replacement

*See Figure 3-40.*

**REMOVAL**

1. Disconnect the negative battery cable.
2. Remove the air intake duct.
3. Release the hose clamp on the vapor fuel line and remove the vapor hose.
4. Disconnect the TMAP electrical connector.
5. Disconnect the electronic throttle control connector.
6. Remove the manifold to throttle body adapter bolts and remove the throttle body mixer assembly.
7. Pull the throttle body assembly from the adapter.
8. Remove electronic throttle control device.
9. Remove the O-rings gasket and discard.

**INSTALLATION**

**NOTICE**

**LIGHTLY LUBRICATE BOTH THROTTLE CONTROL DEVICE TO ADAPTER O-RINGS.**

1. Install the O-ring on throttle body. Press it down to the bottom of the surface.




2. Install the two quad seals. Install one seal at a time to insure the seal does not roll. The seal must sit flat on the throttle body.




3. Attach mixer and throttle body together. The two parts do not bolt together; they will be secured when you mount it on the intake. Notice the orientation of the air inlet and throttle body cover.






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