Introduction

Important

Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine before attempting any maintenance or repair procedure.

This manual provides detailed scheduled maintenance information for the machine owner and user. It also provides troubleshooting fault codes and repair procedures for qualified service professionals.

Basic mechanical, hydraulic and electrical skills are required to perform most procedures. However, several procedures require specialized skills, tools, lifting equipment and a suitable workshop. In these instances, we strongly recommend that maintenance and repair be performed at an authorized Genie dealer service center.

Serial Number Information

Genie offers the following Service Manuals for these models:

<table>
<thead>
<tr>
<th>Title</th>
<th>Part No.</th>
</tr>
</thead>
</table>

Compliance

Machine Classification
Group B/Type 3 as defined by ISO 16368

Machine Design Life
Unrestricted with proper operation, inspection and scheduled maintenance.

Technical Publications

Genie has endeavored to deliver the highest degree of accuracy possible. However, continuous improvement of our products is a Genie policy. Therefore, product specifications are subject to change without notice.

Readers are encouraged to notify Genie of errors and send in suggestions for improvement. All communications will be carefully considered for future printings of this and all other manuals.

Contact Us:

http://www.genielift.com
e-mail: awp.techpub@terex.com

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Fifth Edition, Second Printing

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Printed on recycled paper
Printed in U.S.A.
## Revision History

<table>
<thead>
<tr>
<th>Revision</th>
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<th>Section</th>
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<tr>
<td>A</td>
<td>12/2012</td>
<td></td>
<td>New release</td>
</tr>
<tr>
<td>B</td>
<td>9/2015</td>
<td></td>
<td>Added ending serial break to front cover.</td>
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**REFERENCE EXAMPLES:**

- Kubota Engine _Section 2_ Specifications.
- A-6,B-3,C-7 _Section 3_ Maintenance Procedure.
- 3-2, 6-4, 9-1 _Section 4_ Repair Procedure.
- Fault Codes _Section 5_.
- 6-35, 6-56, 6-104 _Section 6_ Schematic Page #.

**Electronic Version**

Click on any procedure or page number highlighted in blue to view the update.
### REVISION HISTORY, CONTINUED

<table>
<thead>
<tr>
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<th>Section</th>
<th>Procedure / Schematic Page / Description</th>
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**REFERENCE EXAMPLES:**

- Kubota Engine _Section 2_ Specifications.
- A-6,B-3,C-7 _Section 3_ Maintenance Procedure.
- 3-2, 6-4, 9-1 _Section 4_ Repair Procedure.
- Fault Codes _Section 5_.
- 6-35, 6-56, 6-104 _Section 6_ Schematic Page #.

**Electronic Version**

Click on any procedure or page number highlighted in blue to view the update.
Serial Number Legend

Model: Z-45/25  
Serial number: Z452512A-12345  
Model year: 2005  Manufacture date: 04/12/05  
Electrical schematic number: ESXXXX  
Machine unladen weight:  
Rated work load (including occupants): XXX lb / XXX kg  
Maximum number of platform occupants: X  
Maximum allowable side force: XXX lb / XXX N  
Maximum allowable inclination of the chassis: 0 deg  
Maximum wind speed: XX mph / XX m/s  
Maximum platform height: XX ft / XX m  
Maximum platform reach: XX ft / XX m  
Gradeability: N/A  
Country of manufacture: USA  
This machine complies with:

Terex South Dakota, Inc.  
18340 NE 76th St.  
PO Box 97030  
Redmond, WA 98052  
USA
Safety Rules

Danger

Failure to obey the instructions and safety rules in this manual and the appropriate operator’s manual on your machine will result in death or serious injury.

Many of the hazards identified in the operator’s manual are also safety hazards when maintenance and repair procedures are performed.

Do Not Perform Maintenance Unless:

✔ You are trained and qualified to perform maintenance on this machine.

✔ You read, understand and obey:
  - manufacturer’s instructions and safety rules
  - employer’s safety rules and worksite regulations
  - applicable governmental regulations

✔ You have the appropriate tools, lifting equipment and a suitable workshop.

Personal Safety

Any person working on or around a machine must be aware of all known safety hazards. Personal safety and the continued safe operation of the machine should be your top priority.

Read each procedure thoroughly. This manual and the decals on the machine, use signal words to identify the following:

Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Indicates a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Be sure to wear protective eye wear and other protective clothing if the situation warrants it.

Be aware of potential crushing hazards such as moving parts, free swinging or unsecured components when lifting or placing loads. Always wear approved steel-toed shoes.
Workplace Safety

Be sure to keep sparks, flames and lighted tobacco away from flammable and combustible materials like battery gases and engine fuels. Always have an approved fire extinguisher within easy reach.

Be sure that all tools and working areas are properly maintained and ready for use. Keep work surfaces clean and free of debris that could get into machine components and cause damage.

Be sure any forklift, overhead crane or other lifting or supporting device is fully capable of supporting and stabilizing the weight to be lifted. Use only chains or straps that are in good condition and of ample capacity.

Be sure that fasteners intended for one time use (i.e., cotter pins and self-locking nuts) are not reused. These components may fail if they are used a second time.

Be sure to properly dispose of old oil or other fluids. Use an approved container. Please be environmentally safe.

Be sure that your workshop or work area is properly ventilated and well lit.
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<tr>
<td>A-11</td>
<td>Perform Engine Maintenance</td>
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<tbody>
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<th>Tires and wheels</th>
<th></th>
<th></th>
</tr>
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<tr>
<td>Wheel diameter</td>
<td>14.5 inches</td>
<td></td>
</tr>
<tr>
<td>Wheel width</td>
<td>7 inches</td>
<td></td>
</tr>
<tr>
<td>Wheel lugs</td>
<td>9 @ 5/8 -18</td>
<td></td>
</tr>
<tr>
<td>Lug nut torque (lubricated)</td>
<td>83 ft-lbs</td>
<td>112.5 Nm</td>
</tr>
<tr>
<td>(dry)</td>
<td>110 ft-lbs</td>
<td>149 Nm</td>
</tr>
</tbody>
</table>

| Tire size        | 9-14.5 LT |          |
| Tire ply rating  | Tread 8   | Sidewall 6 |
| Tire contact area| 43.5 sq in| 280 sq cm |
| Overall tire diameter | 28 in   | 71 cm    |

For operational specifications, refer to the Operator’s Manual.

## Fluid capacities

<p>| | | |</p>
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<tr>
<th></th>
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<tbody>
<tr>
<td>Fuel tank</td>
<td>9 gallons</td>
<td>34.1 liters</td>
</tr>
<tr>
<td>Hydraulic tank</td>
<td>8 gallons</td>
<td>30.3 liters</td>
</tr>
<tr>
<td>Hydraulic system (including tank)</td>
<td>11 gallons</td>
<td>41.6 liters</td>
</tr>
<tr>
<td>Drive hubs (refer to tag on drive hub to determine type)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EW1 type</td>
<td>17 fl oz</td>
<td>0.51 liter</td>
</tr>
<tr>
<td>W1 type</td>
<td>23 fl oz</td>
<td>0.68 liter</td>
</tr>
<tr>
<td>Drive hub oil type:</td>
<td>EP 80-90W gear oil</td>
<td>API service classification GL5</td>
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## Batteries

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<tr>
<td>Type</td>
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</tr>
<tr>
<td>Group</td>
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<td>Quantity</td>
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<tr>
<td>Capacity</td>
<td>350 AH</td>
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</tr>
<tr>
<td>Reserve capacity @ 25A rate</td>
<td>750 minutes</td>
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### SPECIFICATIONS

#### Performance Specifications

<table>
<thead>
<tr>
<th>Drive speeds, maximum</th>
<th></th>
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<tbody>
<tr>
<td>Drive speed, stowed</td>
<td>3 mph (4.8 km/h)</td>
</tr>
<tr>
<td></td>
<td>40 ft/9 sec (12.2 m/9 sec)</td>
</tr>
<tr>
<td>Drive speed, boom</td>
<td>0.6 mph (1 km/h)</td>
</tr>
<tr>
<td>raised or extended</td>
<td>40 ft/45 sec (12.2 m/45 sec)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Braking distance, maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>High range on paved surface</td>
</tr>
</tbody>
</table>

| Gradeability | See Operator's Manual |

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<table>
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<th>Boom function</th>
<th>Range</th>
</tr>
</thead>
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<td>Jib boom up, Z-45/25J</td>
<td>33 to 39 seconds</td>
</tr>
<tr>
<td>Jib boom down, Z-45/25J</td>
<td>22 to 28 seconds</td>
</tr>
<tr>
<td>Primary boom up</td>
<td>32 to 40 seconds</td>
</tr>
<tr>
<td>Primary boom down</td>
<td>26 to 30 seconds</td>
</tr>
<tr>
<td>Secondary boom up</td>
<td>38 to 46 seconds</td>
</tr>
<tr>
<td>Secondary boom down</td>
<td>38 to 46 seconds</td>
</tr>
<tr>
<td>Primary boom extend</td>
<td>14 to 18 seconds</td>
</tr>
<tr>
<td>Primary boom retract</td>
<td>17 to 21 seconds</td>
</tr>
<tr>
<td>Turntable rotate, 355°</td>
<td>95 to 125 seconds</td>
</tr>
<tr>
<td>Primary boom retracted</td>
<td></td>
</tr>
<tr>
<td>Platform rotate, 180°, Z-45/25</td>
<td>6 to 10 seconds</td>
</tr>
<tr>
<td>Platform rotate, 160°, Z-45/25J</td>
<td>6 to 10 seconds</td>
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**Hydraulic Specifications**

### Hydraulic Oil Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tr>
<td>Hydraulic oil type</td>
<td>Chevron Rando HD MV equivalent</td>
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<tr>
<td>Approximate SAE grade</td>
<td>5W-20</td>
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<tr>
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</tr>
<tr>
<td>Cleanliness level, minimum</td>
<td>15/13</td>
</tr>
<tr>
<td>Water content, maximum</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

Chevron Rando HD MV oil is fully compatible and mixable with Shell Donax TG (Dexron III) oils.

Genie specifications require hydraulic oils which are designed to give maximum protection to hydraulic systems, have the ability to perform over a wide temperature range, and the viscosity index should exceed 140. They should provide excellent antiwear, oxidation, corrosion inhibition, seal conditioning, and foam and aeration suppression properties.

### Optional fluids

<table>
<thead>
<tr>
<th>Type</th>
<th>Fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradable</td>
<td>Petro Canada Environ MV46</td>
</tr>
<tr>
<td></td>
<td>Statoil Hydra Way Bio Pa 32</td>
</tr>
<tr>
<td></td>
<td>BP Biohyd SE-S</td>
</tr>
<tr>
<td>Fire resistant</td>
<td>UCON Hydrolube HP-5046</td>
</tr>
<tr>
<td></td>
<td>Quintolubric 822</td>
</tr>
<tr>
<td>Mineral based</td>
<td>Shell Tellus S2 V 32</td>
</tr>
<tr>
<td></td>
<td>Shell Tellus S2 V 46</td>
</tr>
<tr>
<td></td>
<td>Chevron Aviation A</td>
</tr>
<tr>
<td></td>
<td>ARNICA 32</td>
</tr>
</tbody>
</table>

**NOTICE**

Continued use of Chevron Aviation A hydraulic oil when ambient temperatures are consistently above 32°F / 0°C may result in component damage.

Note: Use Chevron Aviation A hydraulic oil when ambient temperatures consistently below 0°F / -18°C.

Note: Use Shell Tellus S2 V 46 hydraulic oil when oil temperatures consistently exceed 205°F / 96°C.

Note: Genie specifications require additional equipment and special installation instructions for the approved optional fluids. Consult the Genie Service Department before use.

### Function pump

<table>
<thead>
<tr>
<th>Type</th>
<th>Fixed displacement gear pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>0.183 cu in / 3 cc</td>
</tr>
<tr>
<td>Flow rate</td>
<td>2.1 gpm / 7.9 L/min</td>
</tr>
<tr>
<td>Hydrualic tank</td>
<td>10 micron with return filter</td>
</tr>
<tr>
<td></td>
<td>25 psi / 1.7 bar bypass</td>
</tr>
</tbody>
</table>

### Function manifold

| System relief valve pressure | 3200 psi / 220.6 bar         |
| Secondary boom down         | 2100 psi / 138 bar           |
| relief valve pressure       | Platform level flow regulator |
|                            | 0.6 gpm / 2.27 L/min         |
| Jib boom/platform rotate flow regulator | 0.4 gpm / 1.5 L/min |

### Auxiliary pump

<table>
<thead>
<tr>
<th>Type</th>
<th>fixed displacement gear pump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>0.5 gpm / 1.9 L/min</td>
</tr>
</tbody>
</table>
SPECIFICATIONS

Manifold Component Specifications

<table>
<thead>
<tr>
<th>Plug torque</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>36 in-lbs / 4 Nm</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>10 ft-lbs / 13 Nm</td>
</tr>
<tr>
<td>SAE No. 6</td>
<td>14 ft-lbs / 19 Nm</td>
</tr>
<tr>
<td>SAE No. 8</td>
<td>38 ft-lbs / 51 Nm</td>
</tr>
<tr>
<td>SAE No. 10</td>
<td>41 ft-lbs / 55 Nm</td>
</tr>
<tr>
<td>SAE No. 12</td>
<td>56 ft-lbs / 76 Nm</td>
</tr>
</tbody>
</table>

Valve Coil Resistance Specification

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid valve, 3 position 4 way, 20V DC</td>
<td>25 to 29 Ω</td>
</tr>
<tr>
<td>(schematic items B, C, D, E, F and H)</td>
<td></td>
</tr>
<tr>
<td>Solenoid valve, 2 position 3 way, 20V DC</td>
<td>25 to 29 Ω</td>
</tr>
<tr>
<td>(schematic items A, K, S and AA)</td>
<td></td>
</tr>
<tr>
<td>Proportional solenoid valve, 24V DC</td>
<td>17 to 21 Ω</td>
</tr>
<tr>
<td>(schematic item I)</td>
<td></td>
</tr>
</tbody>
</table>

Machine Torque Specifications

<table>
<thead>
<tr>
<th>Platform rotator</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4 -10 center bolt, GR 8</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3/8 -16 bolts, GR 8</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Turntable rotate assembly

<table>
<thead>
<tr>
<th>Rotate bearing mounting bolts, lubricated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>180 ft-lbs</td>
</tr>
<tr>
<td>244 Nm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive motor/brake mounting bolts, dry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>110 ft-lbs</td>
</tr>
<tr>
<td>149 Nm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive motor/brake mounting bolts, lubricated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>80 ft-lbs</td>
</tr>
<tr>
<td>108 Nm</td>
</tr>
</tbody>
</table>

Drive motor and hubs

<table>
<thead>
<tr>
<th>Drive hub mounting bolts, lubricated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>180 ft-lbs</td>
</tr>
<tr>
<td>244 Nm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drive motor mounting bolts, lubricated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>55 ft-lbs</td>
</tr>
<tr>
<td>75 Nm</td>
</tr>
</tbody>
</table>
**Kubota Z482-E2B Engine**  
**Kubota Z482-E3B Engine**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Z482-E2B</th>
<th>Z482-E3B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Displacement</strong></td>
<td>29.23 cu in</td>
<td>0.48 liters</td>
</tr>
<tr>
<td><strong>Number of cylinders</strong></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Bore and stroke</strong></td>
<td>2.64 x 2.68 inches</td>
<td>67 x 68 mm</td>
</tr>
<tr>
<td><strong>Horsepower, gross intermittent</strong></td>
<td>13.3 @ 3600 rpm</td>
<td>9.9 kW</td>
</tr>
<tr>
<td><strong>Firing order</strong></td>
<td>1 - 2</td>
<td></td>
</tr>
<tr>
<td><strong>Compression ratio</strong></td>
<td>23:1</td>
<td></td>
</tr>
<tr>
<td><strong>Compression pressure</strong></td>
<td>412 to 469 psi</td>
<td>28.4 to 32.3 bar</td>
</tr>
<tr>
<td><strong>Low idle</strong></td>
<td>2000 rpm</td>
<td></td>
</tr>
<tr>
<td><strong>High idle</strong></td>
<td>3000 rpm</td>
<td></td>
</tr>
<tr>
<td><strong>Governor</strong></td>
<td>centrifugal mechanical</td>
<td></td>
</tr>
<tr>
<td><strong>Valve clearance, cold</strong></td>
<td>0.0057 to 0.0072 in</td>
<td>0.145 to 0.185 mm</td>
</tr>
<tr>
<td><strong>Engine coolant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>2.9 quarts</td>
<td>2.1 liters</td>
</tr>
<tr>
<td><strong>Lubrication system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oil pressure</strong></td>
<td>36 to 64 psi</td>
<td>2.48 to 4.41 bar</td>
</tr>
<tr>
<td><strong>Oil capacity (including filter)</strong></td>
<td>2.2 quarts</td>
<td>2.1 liters</td>
</tr>
<tr>
<td><strong>Fuel requirement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Injection system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Injection pump make</strong></td>
<td>Bosch MD</td>
<td></td>
</tr>
<tr>
<td><strong>Injection timing</strong></td>
<td>21° BTDC</td>
<td></td>
</tr>
<tr>
<td><strong>Injection pump pressure</strong></td>
<td>1991 psi</td>
<td>137 bar</td>
</tr>
<tr>
<td><strong>Starter motor</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Brush length, new</strong></td>
<td>0.5188 in</td>
<td>13 mm</td>
</tr>
<tr>
<td><strong>Fuel requirement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>12V DC, Group 70</td>
<td></td>
</tr>
<tr>
<td><strong>Quantity</strong></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Cold cranking ampere</strong></td>
<td>450A</td>
<td></td>
</tr>
<tr>
<td><strong>Alternator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>12V DC, 150 watts</td>
<td></td>
</tr>
<tr>
<td><strong>Fan belt deflection</strong></td>
<td>¼ to 3/8 inch</td>
<td>7 to 9 mm</td>
</tr>
</tbody>
</table>
### SPECIFICATIONS

#### Generator

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator output</td>
<td>54V DC, 100A</td>
</tr>
<tr>
<td>with engine @ 3000 rpm</td>
<td></td>
</tr>
<tr>
<td>Generator pulley to engine</td>
<td>1/16 inch</td>
</tr>
<tr>
<td>pulley offset, maximum</td>
<td>1.6 mm</td>
</tr>
<tr>
<td>Belt deflection, maximum</td>
<td>1/4 inch</td>
</tr>
<tr>
<td></td>
<td>6.5 mm</td>
</tr>
</tbody>
</table>

#### Generator Torque Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator pulley retaining nut torque</td>
<td>80-90 ft-lbs</td>
</tr>
<tr>
<td></td>
<td>108-122 Nm</td>
</tr>
<tr>
<td>Engine pulley retaining bolts</td>
<td>108 in-lbs</td>
</tr>
<tr>
<td></td>
<td>12.2 Nm</td>
</tr>
<tr>
<td>#10 screw</td>
<td>25 in-lbs</td>
</tr>
<tr>
<td></td>
<td>2.8 Nm</td>
</tr>
<tr>
<td>#10 nut</td>
<td>25 in-lbs</td>
</tr>
<tr>
<td></td>
<td>2.8 Nm</td>
</tr>
<tr>
<td>#4 nut</td>
<td>8-10 in-lbs</td>
</tr>
<tr>
<td></td>
<td>0.9-1.1 Nm</td>
</tr>
<tr>
<td>Voltage regulator mounting fasteners</td>
<td>25 in-lbs</td>
</tr>
<tr>
<td></td>
<td>2.8 Nm</td>
</tr>
</tbody>
</table>
### Hydraulic Hose and Fitting Torque Specifications

Your machine is equipped with Parker Seal-Lok™ ORFS or 37° JIC fittings and hose ends. Genie specifications require that fittings and hose ends be torqued to specification when they are removed and installed or when new hoses or fittings are installed.

#### Seal-Lok™ Fittings (hose end - ORFS)

<table>
<thead>
<tr>
<th>SAE Dash size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>10 ft-lbs / 13.6 Nm</td>
</tr>
<tr>
<td>-6</td>
<td>30 ft-lbs / 40.7 Nm</td>
</tr>
<tr>
<td>-8</td>
<td>40 ft-lbs / 54.2 Nm</td>
</tr>
<tr>
<td>-10</td>
<td>60 ft-lbs / 81.3 Nm</td>
</tr>
<tr>
<td>-12</td>
<td>85 ft-lbs / 115 Nm</td>
</tr>
<tr>
<td>-16</td>
<td>110 ft-lbs / 150 Nm</td>
</tr>
<tr>
<td>-20</td>
<td>140 ft-lbs / 190 Nm</td>
</tr>
<tr>
<td>-24</td>
<td>180 ft-lbs / 245 Nm</td>
</tr>
</tbody>
</table>

#### JIC 37° Fittings (swivel nut or hose connection)

<table>
<thead>
<tr>
<th>SAE Dash size</th>
<th>Thread Size</th>
<th>Flats</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>7/16-20</td>
<td>2</td>
</tr>
<tr>
<td>-6</td>
<td>9/16-18</td>
<td>1 1/4</td>
</tr>
<tr>
<td>-8</td>
<td>3/4-16</td>
<td>1</td>
</tr>
<tr>
<td>-10</td>
<td>7/8-14</td>
<td>1</td>
</tr>
<tr>
<td>-12</td>
<td>1 1/16-12</td>
<td>1</td>
</tr>
<tr>
<td>-16</td>
<td>1 5/16-12</td>
<td>1</td>
</tr>
<tr>
<td>-20</td>
<td>1 5/8-12</td>
<td>1</td>
</tr>
<tr>
<td>-24</td>
<td>1 7/8-12</td>
<td>1</td>
</tr>
</tbody>
</table>

#### SAE O-ring Boss Port (tube fitting - installed into Aluminum) (all types)

<table>
<thead>
<tr>
<th>SAE Dash size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>14 ft-lbs / 19 Nm</td>
</tr>
<tr>
<td>-6</td>
<td>30 ft-lbs / 40.7 Nm</td>
</tr>
<tr>
<td>-8</td>
<td>40 ft-lbs / 54.2 Nm</td>
</tr>
<tr>
<td>-10</td>
<td>60 ft-lbs / 81.3 Nm</td>
</tr>
<tr>
<td>-12</td>
<td>84 ft-lbs / 115 Nm</td>
</tr>
<tr>
<td>-16</td>
<td>125 ft-lbs / 169.5 Nm</td>
</tr>
<tr>
<td>-20</td>
<td>151 ft-lbs / 204.7 Nm</td>
</tr>
<tr>
<td>-24</td>
<td>184 ft-lbs / 249.5 Nm</td>
</tr>
</tbody>
</table>

#### SAE O-ring Boss Port (tube fitting - installed into Steel)

<table>
<thead>
<tr>
<th>SAE Dash size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4 ORFS / 37° (Adj)</td>
<td>15 ft-lbs / 20.3 Nm</td>
</tr>
<tr>
<td>ORFS (Non-adj)</td>
<td>26 ft-lbs / 35.3 Nm</td>
</tr>
<tr>
<td>37° (Non-adj)</td>
<td>22 ft-lbs / 30 Nm</td>
</tr>
<tr>
<td>-6 ORFS (Adj / Non-adj)</td>
<td>35 ft-lbs / 47.5 Nm</td>
</tr>
<tr>
<td>37° (Adj / Non-adj)</td>
<td>29 ft-lbs / 39.3 Nm</td>
</tr>
<tr>
<td>-8 ORFS (Adj / Non-adj)</td>
<td>60 ft-lbs / 81.3 Nm</td>
</tr>
<tr>
<td>37° (Adj / Non-adj)</td>
<td>52 ft-lbs / 70.5 Nm</td>
</tr>
<tr>
<td>-10 ORFS (Adj / Non-adj)</td>
<td>100 ft-lbs / 135.6 Nm</td>
</tr>
<tr>
<td>37° (Adj / Non-adj)</td>
<td>85 ft-lbs / 115.3 Nm</td>
</tr>
<tr>
<td>-12 (All types)</td>
<td>135 ft-lbs / 183 Nm</td>
</tr>
<tr>
<td>-16 (All types)</td>
<td>200 ft-lbs / 271.2 Nm</td>
</tr>
<tr>
<td>-20 (All types)</td>
<td>250 ft-lbs / 339 Nm</td>
</tr>
<tr>
<td>-24 (All types)</td>
<td>305 ft-lbs / 413.5 Nm</td>
</tr>
</tbody>
</table>
SPECIFICATIONS

Torque Procedure

Seal-Lok™ fittings

1. Replace the O-ring. The O-ring must be replaced anytime the seal has been broken. The O-ring cannot be re-used if the fitting or hose end has been tightened beyond finger tight.

Note: The O-rings used in the Parker Seal Lok™ fittings and hose ends are custom-size O-rings. They are not standard SAE size O-rings. They are available in the O-ring field service kit (Genie part number 49612).

2. Lubricate the O-ring before installation.

3. Be sure that the face seal O-ring is seated and retained properly.

4. Position the tube and nut squarely on the face seal end of the fitting and tighten the nut finger tight.

5. Tighten the nut or fitting to the appropriate torque per given size as shown in the table.

6. Operate all machine functions and inspect the hoses and fittings and related components to confirm that there are no leaks.

JIC 37° fittings

1. Align the tube flare (hex nut) against the nose of the fitting body (body hex fitting) and tighten the hex nut to the body hex fitting to hand-tight, approximately 30 in-lbs / 3.4 Nm.

2. Make a reference mark on one of the flats of the hex nut, and continue it on to the body hex fitting with a permanent ink marker. Refer to Figure 1.

3. Working clockwise on the body hex fitting, make a second mark with a permanent ink marker to indicate the proper tightening position. Refer to Figure 2.

Note: Use the JIC 37° Fittings table on the previous page to determine the correct number of flats for the proper tightening position.

Note: The marks indicate that the correct tightening positions have been determined. Use the second mark on the body hex fitting to properly tighten the joint after it has been loosened.

4. Tighten the hex nut until the mark on the hex nut is aligned with the second mark on the body hex fitting.

5. Operate all machine functions and inspect the hoses and fittings and related components to confirm that there are no leaks.
### SAE Fastener Torque Chart

This chart is to be used as a guide only unless noted elsewhere in this manual.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>THREAD</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>20</td>
<td>86</td>
<td>9</td>
<td>100</td>
<td>11.3</td>
<td>110</td>
<td>12.4</td>
<td>140</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>90</td>
<td>10.1</td>
<td>120</td>
<td>13.5</td>
<td>120</td>
<td>13.5</td>
<td>160</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIZE</th>
<th>THREAD</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
<th>LUBED</th>
<th>DRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/32</td>
<td></td>
<td>5</td>
<td>5.8</td>
<td>7</td>
<td>7.2</td>
<td>7</td>
<td>7.2</td>
<td>7</td>
<td>7.2</td>
</tr>
<tr>
<td>7/32</td>
<td></td>
<td>6</td>
<td>7.5</td>
<td>8</td>
<td>8.8</td>
<td>8</td>
<td>8.8</td>
<td>8</td>
<td>8.8</td>
</tr>
<tr>
<td>1/8</td>
<td></td>
<td>7</td>
<td>9.2</td>
<td>10</td>
<td>12</td>
<td>10</td>
<td>12</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>5/32</td>
<td></td>
<td>8</td>
<td>10.8</td>
<td>12.5</td>
<td>15.5</td>
<td>12.5</td>
<td>15.5</td>
<td>12.5</td>
<td>15.5</td>
</tr>
<tr>
<td>3/32</td>
<td></td>
<td>9</td>
<td>11.5</td>
<td>14</td>
<td>17</td>
<td>14</td>
<td>17</td>
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### Metric Fastener Torque Chart

This chart is to be used as a guide only unless noted elsewhere in this manual.

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<th>LUBED</th>
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</table>

Genie

Part No. 237062
Z-45/25 Bi-Energy • Z-45/25J Bi-Energy
Scheduled Maintenance Procedures

Observe and Obey:

☑ Maintenance inspections shall be completed by a person trained and qualified on the maintenance of this machine.

☑ Scheduled maintenance inspections shall be completed daily, quarterly, six months, annually and every 2 years as specified on the Maintenance Inspection Report. The frequency and extent of periodic examinations and tests may also depend on national regulations.

⚠️ Failure to properly complete each inspection when required may cause death, serious injury or substantial machine damage.

☑ Immediately tag and remove from service a damaged or malfunctioning machine.

☑ Repair any machine damage or malfunction before operating machine.

☑ Use only Genie approved replacement parts.

☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:
  • Machine parked on a firm, level surface
  • Boom in the stowed position
  • Turntable rotated with the boom between the non-steer wheels
  • Turntable secured with the turntable rotation lock
  • Key switch in the off position with the key removed
  • Wheels chocked
  • All external AC power disconnected from the machine
SCHEDULED MAINTENANCE PROCEDURES

Maintenance Symbols Legend

The following symbols have been used in this manual to help communicate the intent of the instructions. When one or more of the symbols appear at the beginning of a maintenance procedure, it conveys the meaning below.

- Indicates that tools will be required to perform this procedure.
- Indicates that new parts will be required to perform this procedure.
- Indicates that a cold motor, pump or engine will be required to perform this procedure.
- Indicates that a warm motor or pump will be required to perform this procedure.
- Indicates that dealer service will be required to perform this procedure.

Maintenance Schedule

There are five types of maintenance inspections that must be performed according to a schedule—daily, quarterly, six months, annual, and two year. The Scheduled Maintenance Procedures Section and the Maintenance Inspection Report have been divided into five subsections—A, B, C, D and E. Use the following chart to determine which group(s) of procedures are required to perform a scheduled inspection.

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily or every 8 hours</td>
<td>A</td>
</tr>
<tr>
<td>Quarterly or every 250 hours</td>
<td>A + B</td>
</tr>
<tr>
<td>Six months or every 500 hours</td>
<td>A + B + C</td>
</tr>
<tr>
<td>Annual or every 1000 hours</td>
<td>A + B + C + D</td>
</tr>
<tr>
<td>Two year or every 2000 hours</td>
<td>A + B + C + D + E</td>
</tr>
</tbody>
</table>

Maintenance Inspection Report

The maintenance inspection report contains checklists for each type of scheduled inspection.

Make copies of the Maintenance Inspection Report to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with employer, jobsite and governmental regulations and requirements.
Pre-Delivery Preparation

Fundamentals

It is the responsibility of the dealer to perform the Pre-delivery Preparation.

The Pre-delivery Preparation is performed prior to each delivery. The inspection is designed to discover if anything is apparently wrong with a machine before it is put into service.

A damaged or modified machine must never be used. If damage or any variation from factory delivered condition is discovered, the machine must be tagged and removed from service.

Repairs to the machine may only be made by a qualified service technician, according to the manufacturer's specifications.

Scheduled maintenance inspections shall be performed by qualified service technicians, according to the manufacturer's specifications and the requirements listed in the responsibilities manual.

Instructions

Make copies of this form to use for each Pre-Delivery Preparation.

Use the operator's manual on your machine.

The Pre-delivery Preparation consists of completing the Pre-operation Inspection, the Maintenance items and the Function Tests.

Use this form to record the results. Place a check in the appropriate box after each part is completed. Follow the instructions in the operator's manual.

If any inspection receives an N, remove the machine from service, repair and reinspect it. After repair, place a check in the R box.

Legend

Y = yes, completed
N = no, unable to complete
R = repaired

Comments

Pre-Delivery Preparation

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>N</th>
<th>R</th>
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<tbody>
<tr>
<td>Pre-operation inspection completed</td>
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<td>Function tests completed</td>
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</table>

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Legend

Y = yes, completed
N = no, unable to complete
R = repaired
## Maintenance Inspection Report

### Instructions
- Make copies of this page to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection to be performed.

### Daily or 8 hour Inspection:
- A

### Quarterly or 250 hour Inspection:
- A+B

### Six Month or 500 hour Inspection:
- A+B+C

### Annual or 1000 hours Inspection:
- A+B+C+D

### 2 Year or 2000 hour Inspection:
- A+B+C+D+E

- Place a check in the appropriate box after each inspection procedure is completed.
- If any inspection receives an "N", tag and remove the machine from service, repair and reinspect it. After repair, place a check in the "R" box.

### Legend
- Y = yes, acceptable
- N = no, remove from service
- R = repaired

### Comments

### Checklist A

<table>
<thead>
<tr>
<th>Procedure</th>
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<tr>
<td>A-1 Manuals and Decals</td>
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<tr>
<td>A-2 Pre-operation inspection</td>
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<tr>
<td>A-3 Function tests</td>
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<tr>
<td>A-4 Generator belts and pulleys</td>
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<tr>
<td><strong>Perform after 50 hours:</strong></td>
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<tr>
<td>A-5 30 Day Service</td>
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<tr>
<td>A-6 Perform engine maintenance</td>
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<td><strong>Perform every 75 hours:</strong></td>
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<td>A-7 Perform engine maintenance</td>
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<tr>
<td><strong>Perform every 100 hours:</strong></td>
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<td>A-8 Grease rotation bearing</td>
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<td>A-9 Perform engine maintenance</td>
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<td><strong>Perform every 150 hours:</strong></td>
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<td>A-10 Perform engine maintenance</td>
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<td><strong>Perform every 200 hours:</strong></td>
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<td>B-2 Exhaust system</td>
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<tr>
<td>B-3 Batteries</td>
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<td>B-4 Electrical wiring</td>
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<td>B-6 Brake configuration</td>
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<td>B-9 Ground control override</td>
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<td>B-13 Drive speed - stowed</td>
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<td>B-14 Drive speed - raised</td>
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<td>B-15 Alarm package (if equipped)</td>
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<td>B-16 Electrical contactors</td>
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<td>B-17 Hydraulic oil analysis</td>
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<td>B-18 Emergency power</td>
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<td><strong>Perform every 400 hours:</strong></td>
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<tbody>
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<td>C-1 Perform engine maintenance</td>
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<td>C-2 Grease platform overload (if equipped)</td>
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<td>C-3 Test platform overload (if equipped)</td>
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<td>C-4 Perform engine maintenance</td>
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*Genie*

Part No. 237062  
Z-45/25 Bi-Energy • Z-45/25J Bi-Energy  
3 - 5
## MAINTENANCE INSPECTION REPORT

<table>
<thead>
<tr>
<th>Model</th>
<th>Serial number</th>
<th>Date</th>
<th>Hour meter</th>
<th>Machine owner</th>
<th>Inspected by (print)</th>
<th>Inspector signature</th>
<th>Inspector title</th>
<th>Inspector company</th>
</tr>
</thead>
</table>

### Instructions
- Make copies of this page to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection to be performed.

#### Daily or 8 hour Inspection:

- A

#### Quarterly or 250 hour Inspection:

- A+B

#### Six Month or 500 hour Inspection:

- A+B+C

#### Annual or 1000 hours Inspection:

- A+B+C+D

#### 2 Year or 2000 hour Inspection:

- A+B+C+D+E

- Place a check in the appropriate box after each inspection procedure is completed.
- If any inspection receives an “N”, tag and remove the machine from service, repair and reinspect it. After repair, place a check in the “R” box.

### Checklist D

<table>
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<th>D-1</th>
<th>Boom wear pads</th>
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<td>Free-wheel configuration</td>
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<td>D-3</td>
<td>Drive hub oil</td>
</tr>
<tr>
<td>D-4</td>
<td>Hydraulic return filter</td>
</tr>
<tr>
<td>D-5</td>
<td>Calibrate platform overload system (if equipped)</td>
</tr>
<tr>
<td>D-6</td>
<td>Turntable bearing bolts</td>
</tr>
<tr>
<td>D-7</td>
<td>Turntable bearing wear</td>
</tr>
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</table>

**Perform every 1500 hours:**

| D-8 | Perform engine maintenance |

### Checklist E

<table>
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<th>Hydraulic oil</th>
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<td>Wheel bearings</td>
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<tr>
<td>E-3</td>
<td>Perform engine maintenance</td>
</tr>
</tbody>
</table>

**Perform every 3000 hours:**

| E-4 | Perform engine maintenance |

### Legend

- Y = yes, acceptable
- N = no, remove from service
- R = repaired

### Comments
A-1
Inspect the Manuals and Decals

Genie specifications require that this procedure be performed daily or every 8 hours, whichever comes first.

Maintaining the operator's and safety manuals in good condition is essential to safe machine operation. Manuals are included with each machine and should be stored in the container provided in the platform. An illegible or missing manual will not provide safety and operational information necessary for a safe operating condition.

In addition, maintaining all of the safety and instructional decals in good condition is mandatory for safe machine operation. Decals alert operators and personnel to the many possible hazards associated with using this machine. They also provide users with operation and maintenance information. An illegible decal will fail to alert personnel of a procedure or hazard and could result in unsafe operating conditions.

1 Check to make sure that the operator's and safety manuals are present and complete in the storage container on the platform.
2 Examine the pages of each manual to be sure that they are legible and in good condition.

☐ Result: The operator's manual is appropriate for the machine and all manuals are legible and in good condition.
☒ Result: The operator's manual is not appropriate for the machine or all manuals are not in good condition or are illegible. Remove the machine from service until the manual is replaced.

3 Open the operator's manual to the decals inspection section. Carefully and thoroughly inspect all decals on the machine for legibility and damage.

☐ Result: The machine is equipped with all required decals, and all decals are legible and in good condition.
☒ Result: The machine is not equipped with all required decals, or one or more decals are illegible or in poor condition. Remove the machine from service until the decals are replaced.

4 Always return the manuals to the storage container after use.

Note: Contact your authorized Genie distributor or Genie if replacement manuals or decals are needed.
A-2
Perform Pre-operation Inspection

Completing a pre-operation inspection is essential to safe machine operation. The pre-operation inspection is a visual inspection performed by the operator prior to each work shift. The inspection is designed to discover if anything is apparently wrong with a machine before the operator performs the function tests. The pre-operation inspection also serves to determine if routine maintenance procedures are required.

Complete information to perform this procedure is available in the appropriate operator’s manual. Refer to the Operator’s Manual on your machine.

A-3
Perform Function Tests

Completing the function tests is essential to safe machine operation. Function tests are designed to discover any malfunctions before the machine is put into service. A malfunctioning machine must never be used. If malfunctions are discovered, the machine must be tagged and removed from service.

Complete information to perform this procedure is available in the appropriate operator’s manual. Refer to the Operator’s Manual on your machine.
A-4
Check the Generator Belts and Pulleys

Maintaining the generator belts and the pulleys is essential to good engine performance and service life. The generator will not operate properly with loose or defective belts and continued use may cause component damage.

**WARNING** Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

**CAUTION** Bodily injury hazard. Beware of hot engine components. Contact with hot engine components may cause severe burns.

Note: Charging the batteries with the engine does not fully charge the batteries. Periodically, use the AC battery charger to fully charge the batteries.

1. Be sure that all fasteners and cables on the generator are tight.
2. Be sure that the pulley mounting fasteners are tight and that the pulleys show no signs of damage or unusual wear.

3. Check to be sure the engine pulley and the generator pulley are aligned within specification using a straightedge. Refer to Section 2, *Specifications*.

![Diagram](image)

Note: If alignment does not meet specification, refer to Repair Procedure 6-3, *How to Install the Engine Drive Pulley* to adjust the pulley alignment.
4 Inspect the generator belts for:

- Cracking
- Glazing
- Separation
- Breaks

5 Replace both belts if any damage is found.

6 Check the generator belts for proper tension. Refer to Section 2, Specifications.

Note: If the belt deflection is not within specification, see repair procedure 7-2, How to Adjust the Generator Belts.

7 Check the torque of the pulley retaining nut on the generator. Refer to Section 2, Specifications.

A-5
Perform 30 Day Service

The 30 day maintenance procedure is a one time sequence of procedures to be performed after the first 30 days or 50 hours of usage. After this interval, refer to the maintenance tables for continued scheduled maintenance.

1 Perform the following maintenance procedures:

- B-5 Check the Lug Nut Torque (including tires and wheels)
- D-3 Replace the Drive Hub Oil
- D-4 Replace the Hydraulic Tank Return Filter
- D-6 Check the Turnable Rotation Bearing Bolts
A-6
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed after the first 50 hours.

- Engine oil
- Engine oil filter

Required maintenance procedures and additional engine information are available in the Kubota Z482-E2B Operator's Manual (Kubota part number 16676-89167).
Kubota Z482-E3B Operator's Manual (Kubota part number 1G689-89160).

To access the engine:
1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.

A-7
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 75 hours.

- Engine oil

Required maintenance procedures and additional engine information are available in the Kubota Z482-E2B Operator's Manual (Kubota part number 16676-89167).
Kubota Z482-E3B Operator's Manual (Kubota part number 1G689-89160).

Genie part number 52958
Kubota Z482-E3B Operator's Manual
Genie part number 139420

To access the engine:
1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.
Grease the Turntable Rotation Bearing and Rotate Gear

Note: Genie specifications require that this procedure be performed every 100 hours of operation. Perform this procedure more often if dusty conditions exist.

Frequent application of lubrication to the turntable bearing and rotate gear is essential to good machine performance and service life. Continued use of an improperly greased bearing and gear will result in component damage.

1. Locate the grease fitting near the ground control box.

2. Pump grease into the turntable rotation bearing. Rotate the turntable in increments of 4 to 5 inches / 10 to 13 cm at a time and repeat this step until the entire bearing has been greased.

3. Apply grease to each tooth of the drive gear, located under the turntable.

Grease Specification

Chevron Ultra-duty grease, EP NLGI 2 (lithium based) or equivalent

Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 100 hours.

- Air filter
- Fuel filter
- Fan belt


Genie part number 52958

Kubota Z482-E3B Operator's Manual
Genie part number 139420

Note: The air filter must be replaced at every sixth cleaning or 600 hours, whichever comes first.

To access the engine:

1. Remove the engine pivot plate latch retainer.

2. Open the engine pivot plate latch and swing the engine out away from the machine.
A-10  
Perform Engine Maintenance  

Note: Engine specifications require that this procedure be performed every 150 hours.

- Engine oil filter


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To access the engine:

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.

A-11  
Perform Engine Maintenance  

Note: Engine specifications require that this procedure be performed every 200 hours.

- Radiator hoses and clamps
- Air intake hose


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To access the engine:

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.
Checklist B Procedures

B-1  
Check the Radiator

Maintaining the radiator in good condition is essential for good engine performance. Operating a machine with a damaged or leaking radiator may result in engine damage. Also, restricting air flow through the radiator (i.e., dirt or debris) will affect the performance of the cooling system. A frequent check allows the inspector to identify changes in the condition of the radiator that might indicate cooling system problems.

⚠️ WARNING: Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

⚠️ CAUTION: Bodily injury hazard. Beware of hot engine components. Contact with hot engine components may cause severe burns.

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine pivot plate out away from the machine to access the radiator.
3. Inspect the radiator for leaks and physical damage.
4. Clean the radiator fins of debris and foreign materials.
5. Swing the engine back to its original position and close the engine pivot plate latch.
6. Install the engine pivot plate latch retainer.

B-2  
Check the Exhaust System

Maintaining the exhaust system is essential to good engine performance and service life. Running the engine with a damaged or leaking exhaust system can cause component damage and unsafe operating conditions.

⚠️ WARNING: Bodily injury hazard. Do not inspect while the engine is running. Remove the key to secure from operation.

⚠️ CAUTION: Bodily injury hazard. Beware of hot engine components. Contact with hot engine components may cause severe burns.

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine pivot plate out away from the machine to access the exhaust system.
3. Be sure that all nuts and bolts are tight.
4. Inspect all welds for cracks.
5. Inspect for exhaust leaks; i.e., carbon buildup around seams and joints.
B-3
Check the Batteries

Genie requires that this procedure be performed every 250 hours or quarterly, whichever comes first.

Proper battery condition is essential to good machine performance and operational safety. Improper fluid levels or damaged cables and connections can result in component damage and hazardous conditions.

**WARNING**
Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

**WARNING**
Bodily injury hazard. Batteries contain acid. Avoid spilling or contacting battery acid. Neutralize battery acid spills with baking soda and water.

1. Put on protective clothing and eye wear.
2. Be sure that the battery cable connections are free of corrosion.

Note: Adding terminal protectors and a corrosion preventative sealant will help eliminate corrosion on the battery terminals and cables.

3. Be sure that the battery retainers and cable connections are tight.
4. Fully charge the battery. Allow the battery to rest 24 hours before performing this procedure to allow the battery cells to equalize.
5. Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer. Note the results.
6. Check the ambient air temperature and adjust the specific gravity reading for each cell as follows:
   - Add 0.004 to the reading of each cell for every 10° F / 5.5° C above 80° F / 26.7° C.
   - Subtract 0.004 from the reading of each cell for every 10° F / 5.5° C below 80° F / 26.7° C.

   **Result:** All battery cells display an adjusted specific gravity of 1.277 +/- 0.007. The battery is fully charged. Proceed to step 10.

   **Result:** One or more battery cells display a specific gravity of 1.269 or below. Proceed to step 7.
7. Perform an equalizing charge OR fully charge the batteries and allow the battery to rest at least 6 hours.
CHECKLIST B PROCEDURES

8 Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer. Note the results.

9 Check the ambient air temperature and adjust the specific gravity reading for each cell as follows:
   • Add 0.004 to the reading of each cell for every 10° F / 5.5° C above 80° F / 26.7° C.
   • Subtract 0.004 from the reading of each cell for every 10° F / 5.5° C below 80° F / 26.7° C.

〇 Result: All battery cells display a specific gravity of 1.277 +/- 0.007. The battery is fully charged. Proceed to step 10.

☒ Result: One or more battery cells display a specific gravity from 1.269 to 1.218. The battery is still usable, but at a lower performance so will need to be recharged more often. Proceed to step 11.

☒ Result: One or more battery cells display a specific gravity from 1.217 to 1.173. The battery is approaching the end of its life. Proceed to step 11.

☒ Result: The difference in specific gravity readings between cells is greater than 0.1 OR the specific gravity of one or more cells is 1.172 or less. Replace the battery.

10 Check the battery acid level. If needed, replenish with distilled water to 1/8 inch / 3 mm below the bottom of the battery fill tube. Do not overfill.

11 Install the vent caps and neutralize any electrolyte that may have spilled.

B-4 Inspect the Electrical Wiring

Electrocution/burn hazard. Contact with hot or live circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

1 Open the engine side turntable cover.

2 Remove the safety pin from the engine pivot plate latch.

Note: The engine pivot plate latch is located under the engine turntable pivot plate at the counterweight end of the machine.

3 Open the engine pivot plate latch and swing the engine pivot plate out and away from the machine.

4 Inspect the following areas for burnt, chafed, corroded and loose wires:
   • Power units
   • Inside of the ground control box
   • Generator and power units
   • Engine wiring harness
5 Open the ground controls side turntable cover.

6 Inspect the following areas for burnt, chafed, corroded and loose wires:
   - Inside of the ground control box
   - Hydraulic manifold wiring

7 Inspect for a liberal coating of dielectric grease at the following location:
   - All wire harness connectors to the ground control box

8 Raise the secondary boom until the mid-pivot is approximately 10 feet / 3 m off the ground.

9 Remove the center turntable cover.

10 Inspect the turntable center area for burnt, chafed and pinched cables.

11 Install the center turntable cover.

12 Lower the boom to the stowed position and turn the machine off.

13 Inspect the following areas for burnt, chafed, corroded, pinched and loose wires:
   - Cable track on the primary, jib and secondary booms
   - Jib boom to platform cable harness
   - Inside of the platform control box

14 Inspect for a liberal coating of dielectric grease at the following location:
   - All wire harness connectors to the platform control box

B-5
Check the Tires, Wheels and Lug Nut Torque

Maintaining the tires and wheels in good condition, including proper wheel fastener torque, is essential to safe operation and good performance. Tire and/or wheel failure could result in a machine tip-over. Component damage may also result if problems are not discovered and repaired in a timely fashion.

DANGER Tip over hazard. The tires on this machine are foam-filled and are essential to machine stability and safe machine operation. Using an air-filled tire on this machine can compromise machine stability and will cause the machine to tip over.

Note: The tires on this machine are foam-filled and do not need air added to them.

1 Check the tire surface and sidewalls for cuts, cracks, punctures and unusual wear.

2 Check each wheel for damage, bends and cracked welds.

3 Check each lug nut for proper torque. Refer to Section 2, Specifications.
 Proper brake configuration is essential to safe operation and good machine performance. Hydraulically-released, spring-applied individual wheel brakes can appear to operate normally when they are actually not fully operational.

1. Check each drive hub disconnect cap to be sure it is in the engaged position.

---

Failure to maintain proper drive hub oil levels may cause the machine to perform poorly and continued use may cause component damage.

1. Drive the machine to rotate the hub until one of the plugs is located on top and the other one is at 90 degrees.
2 Remove the plug located at 90 degrees and check the oil level.

☐ Result: The oil level should be even with the bottom of the side plug hole.

3 If necessary, remove the top plug and add oil until the oil level is even with the bottom of the side plug hole.

4 **Models with pipe plugs:** Apply pipe thread sealant to the plugs and install the plugs.

**Models with O-ring plugs:** Install the plugs into the drive hub.

5 Repeat steps 1 through 4 for the other drive hub.

6 Check the torque of the drive hub mounting bolts. Refer to Section 2, *Specifications*.

---

### B-8

**Check and Adjust the Engine RPM**

Maintaining the engine rpm at the proper setting for both low and high idle is essential to good engine performance and service life. The machine will not operate properly if the rpm is incorrect and continued use may cause component damage.

1 Remove the engine pivot plate latch retainer.

2 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

3 Connect an rpm gauge to the engine, and then start the engine from the ground controls.

☐ Result: Low idle should be 2000 rpm.
CHECKLIST B PROCEDURES

Skip to step 5 if the low idle rpm is correct.

4 Loosen the lock nut, then turn the low idle adjustment screw clockwise to increase the rpm or counterclockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.

Skip to step 7 if the high idle rpm is correct.

6 Loosen the lock nut on the solenoid, then turn the solenoid boot counterclockwise to increase the rpm or clockwise to decrease the rpm. Tighten the lock nut and recheck the rpm.

Note: Be sure the solenoid fully retracts when activating high idle.

7 Swing the engine back to its original position and close the engine pivot plate latch.

8 Install the engine pivot plate latch retainer.

5 Move the engine idle control switch to high idle (rabbit symbol) from the ground controls.

○ Result: High idle should be 3000 rpm.
B-9
Test the Ground Control Override

A properly functioning ground control override is essential to safe machine operation. The ground control override function is intended to allow ground personnel to operate the machine from the ground controls whether or not the Emergency Stop button on the platform controls is in the ON or OFF position. This function is particularly useful if the operator at the platform controls cannot return the boom to the stowed position.

1. Push in the platform red Emergency Stop button to the off position.
2. Turn the key switch to ground control and pull out the red Emergency Stop button to the on position.
3. Operate each boom function through a partial cycle at the ground controls.

○ Result: All boom functions should operate.

B-10
Test the Platform Self-leveling

Automatic platform self-leveling throughout the full cycle of boom raising and lowering is essential for safe machine operation. The platform is maintained at level by the platform leveling slave cylinder which is controlled by the master cylinder located at the base of the primary boom. A platform self-leveling failure creates an unsafe working condition.

1. Turn the key switch to ground control and pull out the red Emergency Stop button to the on position.
2. Lower the boom to the stowed position.
3. Hold the function enable toggle switch to either side and adjust the platform to a level position using the platform level toggle switch.
4. Raise and lower the primary boom through a full cycle.

○ Result: The platform should remain level at all times to within ±5 degrees.
B-11
Test the Engine Idle Select

A properly operating engine idle select switch is essential to good engine performance and safe machine operation. There are three settings.

**Low idle** (turtle symbol): Low idle and slow battery charging.

**High idle** (rabbit symbol): High idle and quickest battery charging.

**Foot switch activated high idle** (rabbit and foot switch symbols): Activates high idle only when the foot switch is pressed down.

1. Start the engine from the ground controls. Move the engine idle select toggle switch to high idle (rabbit symbol).
   © Result: The engine should change to high idle.

2. Release the engine idle select toggle switch.
   © Result: The engine should return to low idle.

3. Turn the key switch to platform controls.

4. At the platform controls, move the engine idle select toggle switch to high idle (rabbit symbol).
   © Result: The engine should change to high idle.

5. Move the engine idle select toggle switch to low idle (turtle symbol).
   © Result: The engine should change to low idle.

6. Move the engine idle select toggle switch to foot switch activated high idle (rabbit and foot switch symbol).
   © Result: The engine should **not** change to high idle.

7. Press down the foot switch.
   © Result: The engine should change to high idle.
B-12
Test the Drive Brakes

Proper brake action is essential to safe machine operation. The machine uses drive motor regenerative braking to stop the machine. Hydraulically-released individual wheel brakes hold the machine once it has stopped. The drive motor regenerative braking should operate smoothly, free of hesitation and jerking. Hydraulically-released individual wheel brakes can appear to operate normally when not fully operational.

Collision hazard. Be sure that the machine is not in free-wheel or partial free-wheel configuration. Refer to B-6, Confirm the Proper Brake Configuration.

Note: Select a test area that is firm, level and free of obstructions.

1 Mark a test line on the ground for reference.
2 Lower the boom into the stowed position.
3 Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the test line.
4 Bring the machine to maximum drive speed before reaching the test line. Release the drive joystick when your reference point on the machine crosses the test line.
5 Measure the distance between the test line and your machine reference point. Refer to Section 2, Specifications.

Note: The brakes must be able to hold the machine on any slope it is able to climb.

B-13
Test the Drive Speed - Stowed Position

Proper drive function movement is essential to safe machine operation. The drive function should respond quickly and smoothly to operator control. Drive performance should also be free of hesitation, jerking and unusual noise over the entire proportionally controlled speed range.

Note: Select a test area that is firm, level and free of obstructions.

1 Create start and finish lines by marking two lines on the ground 40 feet / 12.2 m apart.
2 Lower the boom into the stowed position.
3 Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the start and finish lines.
4 Bring the machine to maximum drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.
5 Continue at full speed and note the time when the machine reference point passes over the finish line. Refer to Section 2, Specifications.
B-14
Test the Drive Speed - Raised or Extended Position

Proper drive function movement is essential to safe machine operation. The drive function should respond quickly and smoothly to operator control. Drive performance should also be free of hesitation, jerking and unusual noise over the entire proportionally controlled speed range.

Note: Select a test area that is firm, level and free of obstructions.

1. Create start and finish lines by marking two lines on the ground 40 feet / 12.2 m apart.
2. Raise the platform more than 5 feet / 1.5 m.
3. Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the start and finish lines.
4. Bring the machine to maximum drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.
5. Continue at full speed and note the time when the machine reference point passes over the finish line. Refer to Section 2, Specifications.

B-15
Test the Alarm Package (if equipped)

The alarm package includes:
- Travel alarm
- Descent alarm
- Flashing beacon

Alarms and a beacon are installed to alert operators and ground personnel of machine proximity and motion. The alarm package is installed on the turntable covers.

Note: The alarms and beacon will operate with the engine running or not running.

1. Turn the key switch to ground control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.
   - Result: The flashing beacon should be on and flashing.
2. Move the function enable switch to either side and activate the primary boom toggle switch in the down position, hold for a moment and then release it.
   - Result: The descent alarm should sound when the switch is held down.
3 Move the function enable switch to either side and activate the secondary boom toggle switch in the down position, hold for a moment and then release it.

☐ Result: The descent alarm should sound when the switch is held down.

4 **Z-45/25J**: Move the function enable toggle switch to either side and activate the jib boom toggle switch in the down position, hold for a moment and then release it.

☐ Result: The descent alarm should sound when the switch is held down.

5 Turn the key switch to platform control.

☐ Result: The flashing beacon should be on and flashing.

6 Press down the foot switch. Activate the primary boom toggle switch in the down position, hold for a moment and then release it.

☐ Result: The descent alarm should sound when the control handle is held down.

7 Press down the foot switch. Activate the secondary boom toggle switch in the down position, hold for a moment and then release it.

☐ Result: The descent alarm should sound when the control handle is held down.

8 **Z-45/25J**: Press down the foot switch. Activate the jib boom toggle switch in the down position, hold for a moment and then release it.

☐ Result: The descent alarm should sound when the switch is held down.

9 Press down the foot switch. Move the drive control handle off center, hold for a moment and then release it. Move the drive control handle off center in the opposite direction, hold for a moment and then release it.

☐ Result: The travel alarm should sound when the drive control handle is moved off center in either direction.
CHECKLIST B PROCEDURES

B-16 Check the Electrical Contactors

Maintaining the electrical contactors in good condition is essential to safe machine operation. Failure to locate a worn or damaged contactor could result in an unsafe working condition and component damage.

1 Remove the drive chassis cover from the non-steer end of the machine and locate the electrical contactors mounted on the component mounting panel.

2 Visually inspect the contact points of each contactor for the following items:
   • Excessive burns
   • Excessive arcs
   • Excessive pitting

**WARNING** Electrocution/burn hazard. Contact with hot or live circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

Note: Replace the contactors if any damage is found.

B-17 Perform Hydraulic Oil Analysis

Replacement or testing of the hydraulic oil is essential for good machine performance and service life. Dirty oil and suction strainers may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require oil changes to be performed more often.

Note: Before replacing the hydraulic oil, the oil may be tested by an oil distributor for specific levels of contamination to verify that changing the oil is necessary. **If the hydraulic oil is not replaced at the two year inspection, test the oil quarterly. Replace the oil when it fails the test.** See E-1, Test or Replace the Hydraulic Oil.
Test the Emergency Power System

Note: Engine specifications require that this procedure be performed every 250 hours or quarterly, whichever comes first.

Testing the emergency power system regularly is essential to safe machine operation if the primary power source fails.

Note: Perform this procedure with the engine off.

1. Turn the key switch to ground control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

2. At the ground controls, break the security tie and lift the emergency power switch cover (if equipped).

3. Simultaneously hold the emergency power switch on and activate each boom function toggle switch.

Note: To conserve battery power, test each function through a partial cycle.

Result: All boom functions operate.

4. Close the emergency power switch cover and secure the cover with a security tie (if equipped).

5. Turn the key switch to platform controls.

6. At the platform controls, break the security tie and lift the emergency power switch cover (if equipped).

7. Press down on the foot switch and simultaneously hold the emergency power switch on and activate each boom function.

Note: To conserve battery power, test each function through a partial cycle.

Result: All boom functions operate.

8. Close the emergency power switch cover and secure the cover with a security tie (if equipped).
B-19
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 400 hours.

- Fuel filter

Required maintenance procedures and additional engine information are available in the

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To access the engine:

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.
Checklist C Procedures

C-1 Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 500 hours.

- Radiator
- Fan belt


Genie part number 52958
Kubota Z482-E3B Operator's Manual
Genie part number 139420

To access the engine:

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.

C-2 Grease the Platform Overload Mechanism (if equipped)

Note: Genie specifications require that this procedure be performed every 500 hours or 6 months, whichever comes first. Perform this procedure more often if dusty conditions exist.

Application of lubrication to the platform overload mechanism is essential to safe machine operation. Continued use of an improperly greased platform overload mechanism could result in the system not sensing an overloaded platform condition and will result in component damage.

1. Locate the grease fittings on each pivot pin of the platform overload assembly.
2. Thoroughly pump grease into each grease fitting.

Grease Specification

Chevron Ultra-duty grease, EP NLGI 2 (lithium based) or equivalent
Test the Platform Overload System (if equipped)

Note: Genie specifications require that this procedure be performed every 500 hours or six months, whichever comes first.

Testing the platform overload system regularly is essential to safe machine operation. Continued use of an improperly operating platform overload system could result in the system not sensing an overloaded platform condition. Machine stability could be compromised resulting in the machine tipping over.

Note: Perform this procedure with the machine on a firm, level surface.

1. Turn the key switch to platform control.
2. Level the platform from the platform controls.
3. Determine the maximum platform capacity. Refer to the machine serial plate.

4. Using a suitable lifting device, place an appropriate test weight equal to that of the maximum platform capacity in one of the locations shown.

   ☐ Result: The platform overload indicator light should be off at both the ground and platform controls.

5. Carefully move the test weight to each remaining location.

   ☐ Result: The platform overload indicator light should be off at both the ground and platform controls.

6. Add an additional 10 lbs / 4.5 kg of weight to overload the platform.

   ☐ Result: The alarm should be sounding. The platform overload indicator light should be flashing at both the ground and platform controls.

   ☒ Result: If the alarm does not sound and the platform overload indicator light does not come on with the test weights in any of the platform locations, the platform overload system needs to be calibrated. See D-5, Calibrate the Platform Overload System.

Note: There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.
CHECKLIST C PROCEDURES

7 Carefully move the test weights to each remaining location in the platform.

○ Result: The alarm should be sounding. The platform overload indicator light should be flashing at both the ground and platform controls.

☒ Result: If the alarm does not sound and the platform overload indicator light does not come on with the test weights in any of the platform locations, the platform overload system needs to be calibrated. See D-5, Calibrate the Platform Overload System.

Note: There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

8 Test all machine functions from the platform controls.

○ Result: All platform control functions should not operate.

9 Turn the key switch to ground control.

10 Test all machine functions from the ground controls.

○ Result: All ground control functions should not operate.

Note: Machine functions should still operate with auxiliary power at the ground controls.

11 Lift the test weights off the platform floor using a suitable lifting device.

○ Result: The platform overload indicator light and alarm should turn off at both the ground and platform controls.

Note: There may be an approximate 2 second delay before the overload indicator light and alarm turn off.

12 Test all machine functions from the ground controls.

○ Result: All ground control functions should operate normally.

13 Turn the key switch to platform control.

14 Test all machine functions from the platform controls.

○ Result: All platform control functions should operate.

Note: If the platform overload system is not operating properly, see D-5, Calibrate the Platform Overload System.
C-4
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 800 hours.

• Valve clearance

Required maintenance procedures and additional engine information are available in the
(Kubota part number 16676-89167).
Kubota Z482-E3B Operator's Manual
(Kubota part number 1G689-89160).

---

Genie part number 52958
Kubota Z482-E3B Operator's Manual
Genie part number 139420

---

To access the engine:

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine.
Checklist D Procedures

D-1 Check the Primary Boom Wear Pads

Maintaining the boom wear pads in good condition is essential to safe machine operation. Wear pads are placed on boom tube surfaces to provide a low friction, replaceable wear pad between moving parts. Improperly shimmed wear pads or continued use of extremely worn wear pads may result in component damage and unsafe operating conditions.

1 Measure each wear pad. Replace the wear pad once it reaches the minimum allowable thickness. If the wear pad is still within specification, shim as necessary to obtain minimum clearance with zero binding.

2 Extend and retract the primary boom through the entire range of motion to check for tight spots that may cause binding or scraping of the boom.

Note: Always maintain squareness between the outer and inner boom tubes.

<table>
<thead>
<tr>
<th>Primary boom wear pad specifications</th>
<th>New</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top, bottom and side wear pads</td>
<td>3/4 inch</td>
<td>5/8 inch</td>
</tr>
<tr>
<td>(platform end of boom)</td>
<td>19 mm</td>
<td>15.9 mm</td>
</tr>
<tr>
<td>Side and bottom wear pads</td>
<td>5/8 inch</td>
<td>1/2 inch</td>
</tr>
<tr>
<td>(pivot end of boom)</td>
<td>15.9 mm</td>
<td>12.7 mm</td>
</tr>
<tr>
<td>Top wear pads</td>
<td>3/4 inch</td>
<td>5/8 inch</td>
</tr>
<tr>
<td>(pivot end of boom)</td>
<td>19 mm</td>
<td>15.9 mm</td>
</tr>
</tbody>
</table>

D-2 Check the Free-wheel Configuration

Proper use of the free-wheel configuration is essential to safe machine operation. The free-wheel configuration is used primarily for towing. A machine configured to free-wheel without operator knowledge could result in death or serious injury and property damage.

**WARNING** Collision hazard. Select a work site that is firm and level.

**NOTICE** Component damage hazard. If the machine must be towed, do not exceed 2 mph / 3.2 km/h.

1 Chock the steer wheels to prevent the machine from rolling.

2 Center a lifting jack of ample capacity (20,000 lbs / 10,000 kg) under the drive chassis between the non-steer tires.

3 Lift the wheels off the ground and then place jack stands under the drive chassis for support.

4 Disengage the drive hubs by turning over the drive hub disconnect caps on each non-steer wheel hub.
5 Manually rotate each non-steer wheel.

 quizzes: Each non-steer wheel should rotate with minimum effort.

6 Re-engage the drive hubs by turning over the hub disconnect caps. Rotate each wheel to check for engagement. Lift the machine and remove the jack stands.

**WARNING** Collision hazard. Failure to engage the drive hubs could result in death or serious injury and property damage.

---

**D-3 Replace the Drive Hub Oil**

Replacing the drive hub oil is essential for good machine performance and service life. Failure to replace the drive hub oil at yearly intervals may cause the machine to perform poorly and continued use may cause component damage.

1 Select the drive hub to be serviced. Then drive the machine until one of the two plugs is at the lowest point.

2 Remove both plugs and drain the oil.

---

![Diagram of drive hub oil replacement](attachment: drive_hub_diagram.png)
CHECKLIST  D  PROCEDURES

3  Drive the machine to rotate the hub until one of
the plugs is located on top and the other one is
at 90 degrees.

4  Fill the hub with oil from the top hole until the oil
level is even with the bottom of the side plug
hole. Refer to Section 2, Specifications.

5  Models with pipe plugs: Apply pipe thread
sealant to the plugs and install the plugs.
   Models with O-ring plugs: Install the plugs
into the drive hub.

6  Repeat steps 1 through 5 for the other drive
hub.

---

D-4  Replace the Hydraulic Tank Return Filter

Bodily injury hazard. Beware of hot oil. Contact with hot oil may
cause severe burns.

1  Locate the hydraulic return filter next to the
hydraulic tank.

2  Place a suitable container under the hydraulic
filter.

3  Remove the filter with an oil filter wrench.

4  Apply a thin layer of oil to the new oil filter
gasket.

5  Install the new filter and tighten it securely by
hand. Clean up any oil that may have spilled
during the installation procedure.

6  Turn the key switch to ground controls and pull
out the red Emergency Stop button out to the
on position at both the ground and platform
controls.

7  Activate any boom function and inspect the filter
and related components to be sure that there
are no leaks.

8  Use a permanent ink marker to write the date
and number of hours from the hour meter on
the oil filter.
D-5
Calibrate the Platform Overload System (if equipped)

Note: Genie specifications require that this procedure be performed every 1000 hours or annually, whichever comes first.

Yearly calibration of the platform overload system is essential to safe machine operation. Continued use of an improperly calibrated platform overload system could result in the system failing to sense an overloaded platform. The stability of the machine is compromised and it could tip over.

Note: Perform this procedure with the machine on a firm, level surface.

1 Level the platform.
2 Determine the maximum platform capacity. Refer to the machine serial plate.
3 Using a suitable lifting device, place an appropriate test weight equal to that of the maximum platform capacity at the center of the platform floor.

Determine the limit switch trigger point:

4 Gently move the platform up and down by hand, so it bounces approximately 1 to 2 inches / 2.5 to 5 cm. Allow the platform to settle.

○ Result: The overload indicator light and the alarm is on. Slowly tighten the load spring adjustment nut by turning it clockwise just until the overload indicator light and alarm turns off.

Note: The platform will need to be moved up and down and allowed to settle in between adjustments.

Note: There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

○ Result: The overload indicator light and alarm is off. Slowly loosen the load spring adjustment nut by turning it counterclockwise just until the overload indicator light and alarm turn on.

Note: There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

Note: The platform will need to be moved up and down and allowed to settle in between adjustments.
CHECKLIST D PROCEDURES

**Confirm the setting:**

5  Turn the key switch to platform control.

6  Lift the test weight off the platform floor using a suitable lifting device.

7  Place the test weight back onto the center of the platform floor using a suitable lifting device.

Θ Result: The alarm should be off. The platform overload indicator light should be off at both the ground and platform controls.

Note: There may be an approximate 2 second delay before the overload indicator light and alarm turn off.

8  Add an additional 10 lb / 4.5 kg test weight to the original test weight to overload the platform.

Θ Result: The alarm should be sounding. The platform overload indicator light should be flashing at both the ground and platform controls.

Note: There may be an approximate 2 second delay before the overload indicator light turns on and the alarm sounds.

9  Test all machine functions from the platform controls.

Θ Result: All platform control functions should not operate.

10 Turn the key switch to ground control.

11 Test all machine functions from the ground controls.

Θ Result: All ground control functions should not operate.

Note: If the platform overload system is not operating properly, repeat steps 1 through 4.
D-6

Check the Turntable Rotation Bearing Bolts

Maintaining proper torque on the turntable bearing bolts is essential to safe machine operation. Improper bolt torque could result in an unsafe operating condition and component damage.

1. Raise the primary boom and place a safety chock on the lift cylinder rod. Carefully lower the boom onto the lift cylinder safety chock.

**WARNING** Crushing hazard. Keep hands away from cylinder and all moving parts when lowering the boom.

Note: A lift cylinder safety chock is available through Genie Service Parts (Genie part number 33484).

2. Check to be sure that each turntable mounting bolt is torqued in sequence to specification. Refer to Section 2, Specifications.
CHECKLIST D PROCEDURES

3 Lower the boom to the stowed position.
4 Remove drive chassis covers from both the steer end and the non-steer end of the machine.
5 Check to be sure that each bearing mounting bolt under the drive chassis is torqued in sequence to specification. Refer to Section 2, Specifications.

D-7 Inspect for Turntable Bearing Wear

Periodic inspection of turntable bearing wear is essential to safe machine operation, good machine performance and service life. Continued use of a worn turntable bearing could create an unsafe operating condition, resulting in death or serious injury and component damage.

Note: Perform this procedure with the machine on a firm, level surface and the boom in the stowed position.

1 Grease the turntable bearing. See A-8, Grease the Turntable Bearing and Rotate Gear.
2 Torque the turntable bearing bolts to specification. See D-6, Check the Turntable Rotation Bearing Bolts.
3 Start the machine from the ground controls and raise the primary and secondary booms to full height. Do not extend the primary boom.
4 Place a dial indicator between the drive chassis and the turntable at a point that is directly under, or in-line with, the boom and no more than 1 inch / 2.5 cm from the bearing.

Note: To obtain an accurate measurement, place the dial indicator no more than 1 inch / 2.5 cm from the turntable rotation bearing.

5 At the dial indicator, adjust it to "zero" the indicator.

6 Lower the secondary boom to the stowed position and lower the primary boom to a horizontal position. Fully extend the primary boom.

7 Note the reading on the dial indicator.

○ Result: The measurement is less than 0.055 inch / 1.4 mm. The bearing is good.

× Result: The measurement is more than 0.055 inch / 1.4 mm. The bearing is worn and needs to be replaced.

8 Fully retract the primary boom. Raise the primary and secondary booms to full height. Visually inspect the dial indicator to be sure the needle returns to the "zero" position.

9 Remove the dial indicator and rotate the turntable 90°.

10 Repeat steps 4 through 9 until the rotation bearing has been checked in at least four equally spaced areas 90° apart.

11 Lower the primary and secondary booms to the stowed position and turn the machine off.

12 Remove the dial indicator from the machine.
CHECKLIST  D  PROCEDURES

D-8
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 1500 hours.

• Fuel injectors

Required maintenance procedures and additional engine information are available in the
(Kubota part number 16676-89167).
Kubota Z482-E3B Operator's Manual
(Kubota part number 1G689-89160).

<table>
<thead>
<tr>
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<th>Genie part number</th>
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<td>52958</td>
</tr>
<tr>
<td>Kubota Z482-E3B Manual</td>
<td>139420</td>
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To access the engine:

1  Remove the engine pivot plate latch retainer.

2  Open the engine pivot plate latch and swing the engine out away from the machine.
**Checklist E Procedures**

**E-1 Test or Replace the Hydraulic Oil**

Replacement or testing of the hydraulic oil is essential for good machine performance and service life. Dirty oil and suction strainers may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require oil changes to be performed more often.

Note: Before replacing the hydraulic oil, the oil may be tested by an oil distributor for specific levels of contamination to verify that changing the oil is necessary. **If the hydraulic oil is not replaced at the two year inspection, test the oil quarterly. Replace the oil when it fails the test.**

Note: Perform this procedure with the boom in the stowed position.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications.*

1. Place a suitable container under the hydraulic tank.
2. Remove the drain plug from the hydraulic tank.
3. Completely drain the tank into a container of suitable capacity. Refer to Section 2, *Specifications.*

⚠️ **CAUTION**

Bodily injury hazard. Beware of hot oil. Contact with hot oil may cause severe burns.

4. Tag, disconnect and plug the hydraulic hose from the hydraulic tank filter at the tank.

⚠️ **WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

5. Remove the hydraulic tank mounting fasteners.
6. Pull the hydraulic tank out slightly to access the two suction hoses.
7. Tag, disconnect and plug the two suction hoses on the back of the hydraulic tank.

⚠️ **WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
CHECKLIST E PROCEDURES

8 Remove the hydraulic tank from the machine. Component damage hazard. The hydraulic tank is plastic and may become damaged if allowed to fall.

9 Remove the suction strainer from the tank and clean it using a mild solvent.

10 Rinse out the inside of the tank using a mild solvent.

11 Install the suction strainer and drain plug using a thread sealer on the threads.

12 Place the hydraulic tank onto the machine.

13 Install the hydraulic hoses.

14 Install the hydraulic tank retaining strap. Component damage hazard. The hydraulic tank may become damaged if the tank strap fasteners are over tightened.

15 Fill the tank with hydraulic oil until the fluid is within the FULL and ADD marks on the hydraulic tank. Do not overfill.

16 Clean up any oil that may have spilled. Properly discard of oil.

17 Operate all machine functions through a full cycle and check for leaks.

E-2
Grease the Steer Axle Wheel Bearings

Maintaining the steer axle wheel bearings is essential for safe machine operation and service life. Operating the machine with loose or worn wheel bearings may cause an unsafe operating condition and continued use may result in component damage. Extremely wet or dirty conditions or regular steam cleaning and pressure washing of the machine may require that this procedure be performed more often.

1 Loosen the wheel lug nuts. Do not remove them.

2 Block the non-steer wheels, then center a lifting jack under the steer axle.

3 Raise the machine 6 inches / 15 cm and place blocks under the drive chassis for support.

4 Remove the lug nuts. Remove the tire and wheel assembly.

5 Check for wheel bearing wear by attempting to move the wheel hub side to side, then up and down.

Result: There should be no side to side or up and down movement.

Skip to step 10 if there is no movement.
6 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

7 Tighten the castle nut to 150 ft-lbs / 203 Nm to seat the bearings.

8 Loosen the castle nut and retighten to 35 ft-lbs / 47 Nm.

9 Check for wheel bearing wear by attempting to move the wheel hub side to side, then up and down.

○ Result: If there is no side to side or up and down movement, continue with step 10 and grease the wheel bearings.

✗ Result: If there is side to side or up and down movement, continue to step 10 and replace the wheel bearings with new ones.

Note: When replacing a wheel bearing, both the inner and outer bearings, including the pressed-in races, must be replaced.

10 Remove the castle nut.

11 Pull the hub off of the spindle. The washer and outer bearing should fall loose from the hub.

12 Place the hub on a flat surface and gently pry the bearing seal out of the hub. Remove the rear bearing.

13 Pack both bearings with clean, fresh grease.

14 Place the large inner bearing into the rear of the hub.

15 Install a new bearing grease seal into the hub by pressing it evenly into the hub until it is flush.

Note: Always replace the bearing grease seal when removing the hub.

16 Slide the hub onto the yoke spindle.

NOTICE Component damage hazard. Do not apply excessive force or damage to the lip of the seal may occur.

17 Place the outer bearing into the hub.

18 Install the washer and castle nut.

19 Tighten the castle nut to 150 ft-lbs / 203 Nm to seat the bearings.

20 Loosen the castle nut and retighten to 35 ft-lbs / 47 Nm.

21 Install a new cotter pin. Bend the cotter pin to lock it in.

Note: Always use a new cotter pin when installing a castle nut.

22 Install the dust cap, then the tire and wheel assembly. Torque the wheel lug nuts to specification. Refer to Section 2, Specifications.
CHECKLIST  E  PROCEDURES

E-3  
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 2000 hours or every two years, whichever comes first.

• Radiator coolant
• Radiator hoses and clamps
• Fuel lines and clamps
• Air intake hose

Required maintenance procedures and additional engine information are available in the
Kubota Z482-E2B Operator’s Manual
(Kubota part number 16676-89167).
Kubota Z482-E3B Operator’s Manual
(Kubota part number 1G689-89160).

Kubota Z482-E2B Operator’s Manual
Genie part number 52958
Kubota Z482-E3B Operator’s Manual
Genie part number 139420

To access the engine:

1  Remove the engine pivot plate latch retainer.
2  Open the engine pivot plate latch and swing the engine out away from the machine.

E-4  
Perform Engine Maintenance

Note: Engine specifications require that this procedure be performed every 3000 hours.

• Injector pump

Required maintenance procedures and additional engine information are available in the
Kubota Z482-E2B Operator’s Manual
(Kubota part number 16676-89167).
Kubota Z482-E3B Operator’s Manual
(Kubota part number 1G689-89160).

Kubota Z482-E2B Operator’s Manual
Genie part number 52958
Kubota Z482-E3B Operator’s Manual
Genie part number 139420

To access the engine:

1  Remove the engine pivot plate latch retainer.
2  Open the engine pivot plate latch and swing the engine out away from the machine.
Repair Procedures

About This Section
Most of the procedures in this section should only be performed by a trained service professional in a suitably equipped workshop. Select the appropriate repair procedure after troubleshooting the problem.

Perform disassembly procedures to the point where repairs can be completed. Then to re-assemble, perform the disassembly steps in reverse order.

Symbols Legend
Safety alert symbol—used to alert personnel to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

NOTICE Indicates a potentially hazardous situation which, if not avoided, may result in property damage.

Indicates that a specific result is expected after performing a series of steps.

Indicates that an incorrect result has occurred after performing a series of steps.

Observe and Obey:
- Repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- Immediately tag and remove from service a damaged or malfunctioning machine.
- Repair any machine damage or malfunction before operating the machine.

Before Repairs Start:
- Read, understand and obey the safety rules and operating instructions in the appropriate Operator’s Manual on your machine before attempting any maintenance or repair procedure.
- Be sure that all necessary tools and parts are available and ready for use.
- Read each procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.
- Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Boom in stowed position
  - Turntable rotated with the boom between the non-steer wheels
  - Turntable secured with the turntable rotation lock
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power supply disconnected from the machine
Platform Controls

1-1 Controllers

Platform Controls

The drive joystick is connected to the drive motor controller located under the non-steer end drive chassis cover. The drive motor controller can also recognize machine drive malfunctions and display controller fault codes by flashing an LED at the ground controls. Refer to Section 5, Fault Codes for a list of fault codes and additional information. There are no adjustments needed on the drive joystick controller. For further information or assistance, consult the Genie Service Department.

Boom Function Speed Controller Adjustments

Note: Do not adjust the controllers unless the static battery supply voltage is above 24V DC at the platform red Emergency Stop button.

WARNING Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

1 Turn the key switch to platform control and pull out the red Emergency Stop button to the on position at both the ground and platform controls.

2 Open the platform control box lid and locate the boom function speed controller.

3 Disconnect the blk/red wire of the boom function speed controller from the wht/red wire.
4 Connect the red (+) lead from an amp meter to the blk/red wire. Connect the black (-) lead to the wht/red wire.

5 Turn the boom function speed controller to the CREEP position.

6 Set the threshold: With the boom in the stowed position, press down the foot switch and move the primary boom toggle switch in the down position until the amperage reading appears. Adjust the amperage to 0.17 to 0.18A. Turn the threshold trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

7 Turn the boom function speed controller to the 9 position.

8 Set the max-out: Press down the foot switch, then move the primary boom toggle switch in the down position. Adjust the amperage to 0.54 to 0.55A. Turn the max-out trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

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**Boom function speed controller specifications**

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Threshold</strong></td>
<td>0.17 to 0.18A</td>
</tr>
<tr>
<td><strong>Max-out</strong></td>
<td>0.54 to 0.55A</td>
</tr>
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</table>
Platform Components

2-1
Platform Leveling Slave Cylinder

The slave cylinder and the rotator pivot are the two primary supports for the platform. The slave cylinder keeps the platform level through the entire range of boom motion. It operates in a closed-circuit hydraulic loop with the master cylinder. The slave cylinder is equipped with counterbalance valves to prevent movement in the event of a hydraulic line failure.

How to Remove the Platform Leveling Slave Cylinder

Note: Before cylinder removal is considered, bleed the slave cylinder to be sure there is no air in the closed loop.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation.

Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1 Z-45/25J: Extend the primary boom until the slave cylinder barrel-end pivot pin is accessible.

2 Raise the primary boom slightly and place blocks under the platform for support.

3 Lower the primary boom until the platform is resting on the blocks just enough to support the platform.

Note: Do not rest the entire weight of the boom on the blocks.

4 Tag, disconnect and plug the hydraulic hoses from the slave cylinder at the unions and connect them together using a connector. Connect the hoses from the cylinder together using a connector.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

5 Remove the pin retaining fastener from the slave cylinder rod-end pivot pin. Do not remove the pin.

6 Z-45/25J: Remove the external snap rings from the slave cylinder barrel-end pivot pin. Do not remove the pin.

Z-45/25: Remove the pin retaining fastener from the slave cylinder barrel-end pivot pin. Do not remove the pin.

7 Place a block under the slave cylinder for support. Protect the cylinder rod from damage.
Use a soft metal drift to drive the rod-end pivot pin out.**WARNING** Crushing hazard. The platform could fall when the slave cylinder rod-end pivot pin is removed if not properly supported.

**NOTICE** Component damage hazard. The slave cylinder rod may become damaged if it is allowed to fall if not properly supported by the lifting device.

Use a soft metal drift and drive the barrel-end pin out.

Carefully pull the cylinder out of the primary boom.

**How to Bleed the Slave Cylinder**

1. Raise the primary boom to a horizontal position.
2. Move the platform level switch up and down through two platform leveling cycles to remove any air that might be in the system.

**2-2**

**Platform Rotator**

**How to Bleed the Platform Rotator**

Note: This procedure will require two people.

1. Move the function enable toggle switch to either side and activate the platform rotate toggle switch to the right then the left through two platform rotation cycles, then hold the switch to the right position until the platform is fully rotated to the right.
2. Place a suitable container underneath the platform rotator.
3. Open the top bleed screw on the rotator, but do not remove it. **WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
4. Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the left position until the platform is fully rotated to the left. Continue holding the toggle switch until air stops coming out of the bleed screw. Close the bleed screw. **WARNING** Crushing hazard. Keep clear of the platform during rotation.
PLATFORM COMPONENTS

5 Open the bottom bleed screw on the rotator, but do not remove it.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

6 Move the function enable toggle switch to either side and hold the platform rotate toggle switch to the right position until the platform is fully rotated to the right. Continue holding the toggle switch until air stops coming out of the bleed screw. Close the bleed screw.

**WARNING** Crushing hazard. Keep clear of the platform during rotation.

7 Clean up any hydraulic oil that may have spilled.

8 Rotate the platform fully in both directions and inspect the bleed screws for leaks.
How to Remove the Jib Boom

Note: Perform this procedure with the boom in the stowed position.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation.

Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Remove the platform.

2. Tag and disconnect the electrical connectors from the jib boom/platform rotate select manifold mounted to the platform support.

3. Tag, disconnect and plug all of the hydraulic hoses from the jib boom/platform rotate select valve manifold. Cap the fittings on the manifold and pull the hoses out through the platform rotator.

4. Remove the platform mounting weldment.

5. Attach a lifting strap from an overhead crane to the platform rotator for support.

6. Remove the pin retaining fastener from the jib boom lift cylinder rod-end pivot pin. Do not remove the pin.

7. Remove the pin retaining fasteners from both platform rotator pivot pins. Do not remove the pins.

8. Use a soft metal drift to remove the leveling arm pivot pin and let the leveling arms hang down.

9. Use a soft metal drift to remove the platform rotator pivot pin and remove the platform rotator from the machine.

10. Slide both of the jib boom leveling arms off of the jib boom cylinder rod-end pivot pin.

11. Remove the hose and cable cover from the side of the jib boom. Remove the hose and cable separators.

12. Attach a lifting strap from an overhead crane to the jib boom.

13. Support the barrel end of the jib boom lift cylinder with a suitable lifting device.

14. Tag, disconnect and plug the jib boom lift cylinder hydraulic hoses. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
JIB BOOM COMPONENTS, Z-45/25J

15 Remove the pin retaining fastener from the jib boom lift cylinder barrel-end pivot pin.
16 Use a soft metal drift to remove the pin and let the cylinder hang down.

**WARNING** Crushing hazard. The jib boom could fall when the barrel-end pivot pin is removed if not properly supported by the overhead crane.

17 Remove the pin retaining fastener from the jib boom pivot pin. Use a soft metal drift to remove the pin, then remove the jib boom from the bellcrank.

**WARNING** Crushing hazard. The jib boom could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

18 Attach a lifting strap from an overhead crane to the lug on the rod end of the jib boom lift cylinder.
19 Use a soft metal drift to remove the jib boom lift cylinder rod-end pivot pin, then remove the jib boom lift cylinder from the bellcrank.

**WARNING** Crushing hazard. The jib boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

---

3-2

**Jib Boom Lift Cylinder**

**How to Remove the Jib Boom Lift Cylinder**

Note: Perform this procedure with the boom in the stowed position.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1 Raise the jib boom slightly and place blocks under the platform mounting weldment. Then lower the jib boom until the platform is resting on the blocks just enough to support the platform.

Note: Do not rest the entire weight of the boom on the blocks.

2 Tag, disconnect and plug the jib boom lift cylinder hydraulic hoses. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
3 Remove the pin retaining fasteners from the jib boom lift cylinder rod-end pivot pin. Do not remove the pin.

4 Use a soft metal drift to tap the jib boom lift cylinder rod-end pivot pin half way out. Then lower one of the leveling arms to the ground. Tap the pin the other direction and lower the opposite leveling arm. Do not remove the pin.

5 Support the jib boom lift cylinder with a suitable lifting device.

6 Remove the pin retaining fastener from the jib boom lift cylinder barrel-end pivot pin. Use a soft metal drift to remove the barrel-end pin and let the cylinder hang down.

> **WARNING** Crushing hazard. The jib boom could fall when the barrel-end pivot pin is removed if not properly supported by the overhead crane.

7 Attach a lifting strap from an overhead crane to the lug on the rod end of the jib boom lift cylinder.

8 Use a soft metal drift to remove the jib boom lift cylinder rod-end pin. Remove the jib boom lift cylinder from the machine.

> **WARNING** Crushing hazard. The jib boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.
Primary Boom Components

4-1
Cable Track

The primary boom cable track guides the cables and hoses running up the boom. It can be repaired link by link without removing the cables and hoses that run through it. Removing the entire primary boom cable track is only necessary when performing major repairs that involve removing the primary boom.

How to Remove the Cable Track, Z-45/25

1 Locate the cables from the primary boom cable track to the platform control box. Number each cable and its entry location at the platform control box.

2 Disconnect the cables from the platform control box.

3 Pull all of the electrical cables out of the plastic cable track. Do not pull out the hydraulic hoses.

4 Raise the primary boom to a horizontal position.

5 Tag, disconnect and plug the platform rotator hydraulic hoses at the union located above the primary boom lift cylinder. Cap the fittings on the unions.

**WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

6 Tag, disconnect and plug the hydraulic hoses from the "V1" and "V2" ports of the counterbalance valve manifold at the platform rotator. Cap the fittings on the manifold.

**WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

7 Tag, disconnect and plug the hydraulic hoses from the platform leveling master cylinder. Cap the fittings on the cylinder.

**WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
8. Tag and disconnect the hydraulic hoses from the platform leveling slave cylinder and connect them together using a connector. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

9. Pull the four hydraulic hoses toward the platform to clear the rod end of the primary boom lift cylinder.

10. Place blocks in between the upper and lower cable tracks and secure the upper and lower tracks together.

**WARNING** Crushing hazard. If the upper and lower cable tracks are not properly secured together, the cable track could become unbalanced and fall when removed from the machine.

11. Remove all hose and cable clamps from the underside of the primary boom.

12. Attach a strap from an overhead crane to the cable track.

13. Remove the mounting fasteners from the upper cable track at the platform end of the extension boom.

14. Remove the cable track mounting fasteners that attach the lower cable track to the primary boom.

15. Remove the cable track from the machine and place it on a structure capable of supporting it.

**WARNING** Crushing hazard. The cable track could become unbalanced and fall if not properly attached to the overhead crane.

**NOTICE** Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

### How to Remove the Cable Track, Z-45/25J

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Locate the cables from the primary boom cable track to the platform control box. Number each cable and its entry location at the platform control box.

2. Disconnect the cables from the platform control box.

3. Remove the hose and cable cover from the side of the jib boom. Remove the hose and cable separators.
PRIMARY BOOM COMPONENTS

4 Remove the hose clamp on the primary boom bellcrank.

5 Pull all of the electrical cables out of the plastic cable track. Do not pull out the hydraulic hoses.

6 Tag, disconnect and plug the hydraulic hoses from the "V1" and "V2" ports of the counterbalance valve manifold at the platform rotator. Cap the fittings on the manifold.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

7 Tag and disconnect the hydraulic hoses from the platform leveling slave cylinder at the union and connect them together using a connector. Connect the hoses from the cylinder together using a connector.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

8 Tag, disconnect and plug the hydraulic hoses from the jib boom/platform rotate manifold. Cap the fittings on the manifold.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

9 Tag, disconnect and plug the platform rotator hydraulic hoses at the union located above the primary boom lift cylinder. Cap the fittings on the unions.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

10 Tag, disconnect and plug the hydraulic hoses from the platform leveling master cylinder. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
11 Raise the boom to a horizontal position.

12 Place blocks between the upper and lower cable tracks and secure the upper and lower tracks together.

**WARNING** Crushing hazard. If the upper and lower cable tracks are not properly secured together, the cable track could become unbalanced and fall when removed from the machine.

13 Attach a lifting strap from an overhead 5 ton / 5,000 kg capacity crane to the platform end of the primary boom for support. Do not lift it.

14 Remove all hose and cable clamps from the underside of the primary boom.

15 Support the rod end of the primary boom lift cylinder with a suitable lifting device.

16 Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Do not remove the pin.

17 Raise the primary boom slightly with the overhead crane to relieve the pressure on the primary boom lift cylinder rod-end pivot pin.

18 Use a soft metal drift to remove the primary boom lift cylinder rod-end pivot pin.

**WARNING** Crushing hazard. The primary boom lift cylinder could become unbalanced and fall if not properly supported by the lifting device.

19 Lower the rod end of the primary boom lift cylinder approximately 12 inches / 30 cm.

20 Pull all of the hoses and cables out and away from the mounting ears for the rod end of the primary boom lift cylinder.

21 Raise the rod end of the primary boom lift cylinder back into position and install the rod-end pivot pin. Install the pin retaining fasteners.

22 Attach a strap from an overhead crane to the cable track.

23 Remove the mounting fasteners from the upper cable track at the platform end of the extension boom.

24 Remove the cable track mounting fasteners that attach the lower cable track to the primary boom.

25 Remove the cable track from the machine and place it on a structure capable of supporting it.

**WARNING** Crushing hazard. The cable track could become unbalanced and fall if not properly attached to the overhead crane.

**NOTICE** Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

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**PRIMARY BOOM COMPONENTS**
How to Repair the Primary Boom Cable Track

Component damage hazard. The primary boom cable track can be damaged if it is twisted.

Note: A 7 link repair section of cable track is available through the Genie Service Parts Department.

![Diagram of cable track with labels a and b]

a link separation point  
b lower clip

1 Use a slotted screwdriver to pry down on the lower clip.
2 To remove a single link, open the lower clip and then use a screw driver to pry the link to the side.
3 Repeat steps 1 and 2 for each link to be removed.

How to Remove the Primary Boom

Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: Perform this procedure with the boom in the stowed position.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation.

Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1 Remove the platform.
2 **Z-45/25:** Remove the platform rotator and platform mounting weldment.

**Z-45/25J:** Remove the jib boom. See 3-1, How to Remove the Jib Boom.
3 Remove the cable track. See 4-1, How to Remove the Cable Track.
4 Raise the primary boom to a horizontal position.
5 Remove the hose and cable cover from the upper pivot.
6 Remove the pin retaining fastener from the master cylinder barrel-end pivot pin. Use a soft metal drift to remove the pin. Then lower the cylinder and let it hang down.

**NOTICE** Component damage hazard. When lowering the master cylinder down, be sure not to damage the master cylinder hoses or fittings.

7 Locate the primary boom drive speed limit switch inside of the upper pivot.
8 Remove the primary boom drive speed limit switch mounting fasteners. Do not disconnect the wiring.
9 Locate the primary extension boom drive speed limit switch inside of the extension boom.
10 Remove the primary extension boom drive speed limit switch mounting fasteners. Do not disconnect the wiring.
11 Pull the limit switch and the wiring out of the extension tube and move it out of the way.
12 Tag, disconnect and plug the primary boom extension cylinder hydraulic hoses. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

13 Remove the hose clamp at the pivot end of the boom.
14 Attach a 5 ton / 5,000 kg overhead crane to the center point of the primary boom.
15 Attach a similar lifting device to the primary boom lift cylinder.
16 Place support blocks under the primary boom lift cylinder.
17 Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

**WARNING** Crushing hazard. The boom lift cylinder and primary boom will fall if not properly supported.

18 Lower the rod end of the primary boom lift cylinder onto support blocks. Protect the cylinder rod from damage.
19 Remove the pin retaining fasteners from the primary boom pivot pin.
20 Remove the primary boom pivot pin with a soft metal drift, then carefully remove the primary boom from the machine and place it on a structure capable of supporting it.

**WARNING** Crushing hazard. The primary boom could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.
PRIMARY BOOM COMPONENTS

How to Disassemble the Primary Boom

Note: Complete disassembly of the boom is only necessary if the outer or inner boom tube must be replaced. The extension cylinder can be removed without completely disassembling the boom. See 4-4, How to Remove the Primary Boom Extension Cylinder.

1. Remove the primary boom. See How to Remove the Primary Boom.

2. Place blocks under the barrel end of the primary boom extension cylinder for support.

3. Remove the pin retaining fastener from the extension cylinder barrel-end pivot pin at the pivot end of the primary boom. Use a soft metal drift to remove the pin.

4. Remove and label the location of the wear pads from the platform end of the primary boom. Note: Pay careful attention to the location and amount of shims used with each wear pad.

5. Support and slide the extension tube and extension cylinder assembly out of the boom tube.

6. Remove the external snap rings from the extension cylinder rod-end pivot pin at the platform end of the extension tube. Use a soft metal drift to remove the pin.

7. Support and slide the extension cylinder out of the base end of the extension tube. Place the extension cylinder on blocks for support. Beware: Crushing hazard. The extension cylinder could become unbalanced and fall when removed from the primary boom extension tube if not properly supported.

Note: During removal, the overhead crane strap will need to be carefully adjusted for proper balancing.

WARNING Crushing hazard. The primary boom extension tube could become unbalanced and fall when removed from the primary boom tube if not properly supported.

Note: During removal, the overhead crane strap will need to be carefully adjusted for proper balancing.
Primary Boom Lift Cylinder

The primary boom lift cylinder raises and lowers the primary boom. The primary boom lift cylinder is equipped with a counterbalance valve to prevent movement in the event of a hydraulic line failure.

How to Remove the Primary Boom Lift Cylinder

**WARNING** Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the primary boom to a horizontal position.
2. Raise the secondary boom until the primary boom lift cylinder barrel-end pivot pin is above the turntable covers.
3. Attach a 5 ton / 5000 kg overhead crane to the primary boom for support.
4. Raise the primary boom with the overhead crane slightly to take the pressure off the primary boom lift cylinder pivot pins.
5. Support the rod end and the barrel end of the primary boom lift cylinder with a second overhead crane or similar lifting device.
6. Tag, disconnect and plug the primary boom lift cylinder hydraulic hoses. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

7. Remove the pin retaining fasteners from the primary boom lift cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

**WARNING** Crushing hazard. The primary boom lift cylinder could fall if not properly supported when the primary boom rod-end pivot pin is removed.

8. Place a support block across both turntable covers under the primary boom lift cylinder.
9. Lower the rod end of the lift cylinder onto the block. Protect the cylinder rod from damage.

**WARNING** Crushing hazard. The primary boom lift cylinder could fall if not properly supported.

10. Support the barrel end of the primary boom lift cylinder with an overhead crane or similar lifting device.
11. Remove the primary boom lift cylinder barrel-end pivot pin retaining fasteners. Use a slide hammer to remove the barrel-end pivot pin. Carefully remove the primary boom lift cylinder from the machine.

**WARNING** Crushing hazard. The lift cylinder could become unbalanced and fall if not properly supported and secured to the lifting device.
Primary Boom Extension Cylinder

The primary boom extension cylinder extends and retracts the primary boom extension tube. The primary boom extension cylinder is equipped with counterbalance valves to prevent movement in the event of a hydraulic line failure.

How to Remove the Primary Boom Extension Cylinder

**WARNING** Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation.

Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the primary boom to a horizontal position.
2. Extend the primary boom until the primary boom extension cylinder rod-end pivot pin is accessible in the primary boom extension tube.
3. Remove the hose and cable guard from the upper pivot.
4. Tag, disconnect and plug the primary boom extension cylinder hydraulic hoses. Cap the fittings on the cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

5. At the platform end of the boom, remove the external snap rings from the extension cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.
6. Remove the barrel-end pivot pin retaining fasteners.
7. Place a rod through the barrel-end pivot pin and twist to remove the pin.
8. Support and slide the extension cylinder out of the upper pivot.

**WARNING** Crushing hazard. The extension cylinder could fall when removed from the extension boom if not properly supported.

**NOTICE** Component damage hazard. Be careful not to damage the counterbalance valves on the primary boom extension cylinder when removing the cylinder from the primary boom.

**NOTICE** Component damage hazard. Hoses and cables can be damaged if the primary boom extension cylinder is dragged across them.

Note: Note the length of the cylinder after removal. The cylinder must be at the same length for installation.
4-5
Platform Leveling Master Cylinder

The master cylinder acts as a pump for the slave cylinder. It’s part of the closed circuit hydraulic loop that keeps the platform level through the entire range of boom motion. The master cylinder is located at the base of the primary boom.

How to Remove the Platform Leveling Master Cylinder

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the secondary boom until both the rod-end and barrel-end pivot pins on the master cylinder are accessible.
2. Tag, disconnect and plug the master cylinder hydraulic hoses. Cap the fittings on the cylinder.
3. Attach overhead crane or similar lifting device to the master cylinder.
4. Remove the pin retaining fasteners from the master cylinder barrel-end pivot pin.
5. Place a rod through the barrel-end pivot pin and twist to remove the pin.
6. Remove the pin retaining fastener from the rod-end pivot pin.
7. Place a rod through the rod-end pivot pin and twist to remove the pin.
8. Remove the master cylinder from the machine.

**WARNING** Crushing hazard. The master cylinder could become unbalanced and fall if not properly attached to the overhead crane.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
Secondary Boom Components

Secondary Boom components
a  upper secondary boom
   (number 1 arm)
b  upper tension link
   (number 2 arm)
c  lower tension link
   (number 3 arm)
d  mid-pivot
e  compression link
f  secondary boom lift cylinder (2)
g  lower secondary boom
   (number 4 arm)
h  turntable pivot
i  boom rest
j  upper pivot
5-1
Secondary Boom

How to Disassemble the Secondary Boom

**WARNING**
Bodily injury hazard. The procedures in this section require specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is required.

Follow the disassembly steps to the point required to complete the repair. Then re-assemble the secondary boom by following the disassembly steps in reverse order.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulid Hose and Fitting Torque Specifications.

1. Remove the platform.
2. **Z-45/25J**: Remove the jib boom. See 3-1, How to Remove the Jib Boom.
3. Remove the primary boom. See 4-2, How to Remove the Primary Boom.
4. Remove the master cylinder. See 4-5, How to Remove the Platform Leveling Master Cylinder.
5. Attach a lifting strap from an overhead crane to the lug on the rod end of the primary boom lift cylinder. Then raise the primary boom lift cylinder with the crane, to a vertical position.
6. Tag, disconnect and plug the hydraulic hoses at the primary boom lift cylinder. Cap the fittings on the cylinder.
7. Remove the pin retaining fastener from the primary boom lift cylinder barrel-end pivot pin.
8. Use a slide hammer to remove the pin. Remove the primary boom lift cylinder from the machine.
9. Tag, disconnect and plug the hydraulic hoses on both of the secondary boom lift cylinders. Cap the fittings on the cylinders.

**WARNING**
Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

**WARNING**
Crushing hazard. The primary boom lift cylinder could become unbalanced and fall if not properly supported by the overhead crane.

**WARNING**
Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.
SECONDARY BOOM COMPONENTS

10 Remove the pin retaining fasteners from both sides of the secondary boom lift cylinder rod-end pivot pin and barrel-end pivot pin. Do not remove the pins.

11 Attach a strap from an overhead crane to the lug on the rod end of one of the secondary boom lift cylinders for support. Do not apply any lifting pressure.

12 Use a soft metal drift to drive the barrel-end pivot pin half way out. Lower the barrel end of the secondary boom lift cylinder and let it hang down.

13 Use a soft metal drift to drive the rod-end pivot pin half way out.

14 Remove the secondary boom lift cylinder from the machine.

15 Repeat steps 11 through 14 for the other secondary boom lift cylinder.

**WARNING** Crushing hazard. The secondary boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

**NOTICE** Component damage hazard. When removing a secondary boom lift cylinder from the machine, be careful not to damage the counterbalance valve at the barrel end of the cylinder.

16 Attach a lifting strap from an overhead crane to the upper pivot for support. Do not lift it.

17 Attach a lifting strap from a second overhead crane to the number 1 arm at the midpoint between the upper pivot and mid-pivot.

18 Remove the pin retaining fasteners from the number 1 arm pivot pins at the mid-pivot and the upper pivot. Do not remove the pins.

19 Use a soft metal drift to drive both pins out.

20 Remove the number 1 arm from the machine.

**WARNING** Crushing hazard. The number 1 arm could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

**CAUTION** Crushing hazard. The upper pivot could fall when the number 1 arm is removed from the machine if not properly supported by the overhead crane.

21 Using the overhead crane attached to the upper pivot, raise the secondary boom assembly approximately 30 inches / 76 cm.

22 Insert a 4 x 4 x 11 inch / 10 x 10 x 28 cm block between the number 2 arm and the boom rest. Then lower the secondary boom assembly onto the block.

**WARNING** Crushing hazard. The secondary boom assembly could fall if not properly supported by the 4 x 4 x 11 inch / 10 x 10 x 28 cm block.
SECONDARY BOOM COMPONENTS

23 Pull all of the cables and hoses out through the upper pivot.

**NOTICE** Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

24 Remove the hose and cable covers from the top of the number 2 arm.

25 Pull all of the hoses and cables out of the upper pivot and out through the mid-pivot. Lay the hoses and cables on the ground.

**NOTICE** Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

26 Remove the pin retaining fastener from the number 2 arm pivot pin at the upper pivot. Use a soft metal drift to remove the pin.

27 Remove the upper pivot from the machine.

**WARNING** Crushing hazard. The upper pivot could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

28 Attach the lifting strap from an overhead crane to the number 2 arm at the upper pivot end.

29 Raise the number 2 arm slightly and remove the 4 x 4 x 11 inch / 10 x 10 x 28 cm block.

30 Lower the number 2 arm onto the boom rest pad.

31 Insert a 4 x 4 x 8 1/2 inch / 10 x 10 x 22 cm block between the number 3 arm and the number 4 arm at the mid-pivot end.

32 Attach a lifting strap from the overhead crane to the mid-pivot for support. Do not lift it.

33 Remove the pin retaining fasteners from the number 2, 3 and 4 arm pivot pins at the mid-pivot. Do not remove the pins.

34 Use a soft metal drift to drive each pin out. Then remove the mid-pivot from the secondary boom assembly.

**WARNING** Crushing hazard. The mid-pivot could become unbalanced and fall when removed from the secondary boom assembly if not properly supported by the overhead crane.

35 Attach the lifting strap from an overhead crane to the center point of the number 2 arm for support. Do not lift it.

36 Remove the pin retaining fasteners from both compression link pivot pins. Do not remove the pins.

37 Use a soft metal drift to remove the lower compression link pivot pin at the number 3 arm.

38 Support the compression link with an appropriate lifting device.
SECONDARY BOOM COMPONENTS

39 Use a soft metal drift to remove the upper compression link pivot pin from the number 2 arm. Remove the compression link from the machine.

**WARNING** Crushing hazard. The number 2 arm could fall when the compression link is disconnected from the number 2 arm if not properly supported by the overhead crane.

**CAUTION** Crushing hazard. The compression link may fall if not properly supported when removed from the secondary boom assembly.

40 Remove the number 2 arm from the machine.

**WARNING** Crushing hazard. The number 2 arm could become unbalanced and fall when removed from the secondary boom assembly if not properly supported by the overhead crane.

41 Remove the upper and lower hose and cable covers from the number 3 arm.

42 Pull all of the cables and hoses from the number 3 arm and lay them over the turntable counterweight.

**NOTICE** Component damage hazard. Cables and hoses can be damaged if they are kinked or pinched.

43 Open the ground controls side turntable cover.

44 Remove the fuel tank filler cap.

45 Using an approved hand-operated pump, drain the fuel tank into a container of suitable capacity. Refer to Section 2, Specifications.

**DANGER** Explosion and fire hazard. Engine fuels are combustible. Perform this procedure in an open, well-ventilated area away from heaters, sparks, flames and lighted tobacco. Always have an approved fire extinguisher within easy reach.

46 Tag, disconnect and plug the fuel hoses from the fuel tank. Clean up any fuel that may have spilled.

47 Remove the fuel tank mounting fasteners. Carefully remove the fuel tank from the machine.

**NOTICE** Component damage hazard. The fuel tank is plastic and may become damaged if allowed to fall.

Note: Clean the fuel tank and inspect for cracks and other damage before installing it onto the machine.
SECONDARY BOOM COMPONENTS

48 Remove the retaining fastener from the ground control box and function manifold pivot plate.

49 Lower the ground control box and function manifold pivot plate to access the number 3 arm pivot pin.

50 Attach the lifting strap from the overhead crane to the centerpoint of the number 3 arm for support. Do not lift it.

51 Remove the mounting fasteners from the cover located in the boom storage area to access the number 3 and number 4 arm pivot pin retaining fasteners at the turntable riser.

52 Remove the pin retaining fasteners from the number 3 arm at the turntable riser. Do not remove the pin.

53 Use a slide hammer to remove the number 3 arm pivot pin from the turntable pivot through the access hole behind the ground control box.

54 Remove the number 3 arm from the machine.

55 Remove the upper and lower hose and cable covers from the number 3 arm.

56 Remove the secondary boom drive speed limit switch mounting fasteners from the number 4 arm at the mid-pivot end. Do not disconnect the wiring.

57 Remove the pin retaining fasteners from the number 4 arm at the turntable riser. Do not remove the pin.

58 Attach a lifting strap from the overhead crane to the center point of the number 4 arm. Do not lift it.

59 Use a slide hammer to remove the number 4 arm from the turntable riser through the ground controls side bulkhead.

60 Remove the number 4 arm from the machine.

⚠️WARNING\
Crushing hazard. The number 4 arm could become unbalanced and fall when removed from the machine if not properly supported by the overhead crane.
SECONDARY BOOM COMPONENTS

5-2
Secondary Boom Lift Cylinders

There are two secondary boom lift cylinders incorporated in the structure of the secondary boom assembly. These cylinders operate in parallel and require hydraulic pressure to extend and retract. Each secondary boom lift cylinder is equipped with a counterbalance valve to prevent movement in the event of a hydraulic line failure.

How to Remove a Secondary Boom Lift Cylinder

**WARNING** Bodily injury hazard. This procedure requires specific repair skills, lifting equipment and a suitable workshop. Attempting this procedure without these skills and tools could result in death or serious injury and significant component damage. Dealer service is strongly recommended.

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1. Lower the secondary boom to the stowed position.
2. Raise the primary boom so that it is above the secondary boom lift cylinder rod-end pivot pin.
3. Tag, disconnect and plug the hydraulic hoses on the secondary boom lift cylinder.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

4. Remove the pin retaining fasteners from the secondary boom lift cylinder rod-end pivot pin and barrel-end pivot pin. Do not remove the pins.
5. Attach a strap from an overhead crane to the lug on the rod end of the secondary boom lift cylinder for support. Do not apply any lifting pressure.
6. Use a soft metal drift to drive the barrel-end pivot pin half way out. Lower the barrel end of the secondary boom lift cylinder and let it hang down.
7. Use a soft metal drift to drive the rod-end pivot pin half way out.
8. Remove the secondary boom lift cylinder from the machine.

**WARNING** Crushing hazard. The secondary boom lift cylinder could become unbalanced and fall when removed from the machine if not properly attached to the overhead crane.

Component damage hazard. When removing a secondary boom lift cylinder from the machine, be careful not to damage the counterbalance valve at the barrel end of the cylinder.
### 6-1 Timing Adjustment

Complete information to perform this procedure is available in the *Kubota Z482-E2B Workshop Manual* (Kubota part number 97897-01165). *Kubota Z482-E3B Operator’s Manual* (Kubota part number 1G689-89160).

| **Kubota Z482-E2B Workshop Manual** | Genie part number | 52956 |
| **Kubota Z482-E3B Operator’s Manual** | Genie part number | 139420 |

### 6-2 RPM Adjustment

See the scheduled maintenance procedure B-8, *Check and Adjust the Engine RPM*.

### 6-3 Engine Drive Pulley

#### How to Remove the Engine Drive Pulley

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine to access the engine drive pulley.
3. Loosen the tension adjustment bolt on the generator.
4. Pull the generator away from the machine and remove the belts from the generator pulley.
5. Remove the 3 bolts that attach the engine drive pulley to the shaft bushing.
6. Install the same 3 bolts that were removed in step 5 into the threaded holes of the engine drive pulley.
7. Carefully tighten each bolt evenly until the engine drive pulley slides off the shaft.
8. Loosen the set screw on the pulley bushing, then slide the pulley bushing off of the engine shaft.

**NOTICE** Component damage hazard. The engine drive pulley and/or shaft can be damaged if the bolts are not tightened evenly.
How to Install the Engine Drive Pulley

Note: The generator pulley must already be installed before performing this procedure. See 7-1, How to Install the Generator Pulley.

1. Align the woodruff key on the engine shaft with the slot in the pulley bushing and slide the pulley bushing onto the engine shaft. Do not tighten the set screw.

2. Align the flywheel side of the pulley bushing on the engine shaft with the outer face of the generator pulley using a straightedge.

3. Tighten the set screw on the pulley bushing hand tight.

4. Slide the engine pulley onto the pulley bushing.

5. Install the pulley mounting bolts and tighten them to specification. Refer to Section 2, Specifications.

Component damage hazard. Do not overtighten the pulley mounting bolts. There must be a gap visible between the engine drive pulley and the pulley bushing.

6. Check the alignment between the engine drive pulley and the generator pulley using a straightedge. Refer to Section 2, Specifications.

Note: If the pulley alignment is not within specification, remove the engine pulley and repeat steps 2 through 6. See How to Remove the Engine Drive Pulley.
How to Remove the Generator Pulley

1. Remove the engine pivot plate latch retainer.
2. Open the engine pivot plate latch and swing the engine out away from the machine to access the generator pulley.
3. Loosen the tension adjustment bolt on the generator.
4. Pull the generator away from the machine and remove the belts from the generator pulley.
5. Disconnect the battery cables from the engine battery.

**WARNING**
Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

6. Remove the engine battery hold down, then remove the battery from the machine.
7. Remove the generator pulley retaining nut from the generator shaft.
8. Slide the pulley off of the generator shaft.

How to Install the Generator Pulley

Note: The pulley on the generator must be installed before installing the engine drive pulley.

1. Align the woodruff key on the generator shaft with the slot in the pulley and slide the pulley all the way onto the generator shaft.
2. Install the flat washer and pulley retaining nut onto the generator shaft, then torque the nut to specification. Refer to Section 2, Specifications.
3. Adjust the tension of the generator belts. See 7-2, How to Adjust the Generator Belts.
7-2 Generator Belts
How to Adjust the Generator Belts

1. Disconnect the battery packs.
   
   **WARNING** Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

2. Remove the engine pivot plate latch retainer.

3. Open the engine pivot plate latch and swing the engine out away from the machine to access the generator belts.

4. Loosen the tension adjustment bolt on the generator.

5. Push the generator towards the machine and tighten the adjustment bolt.

6. Check the generator belts for proper tension. Refer to Section 2, Specifications. If the belt deflection is not within specification, perform steps 4 and 5 and re-check the belt tension.

7-3 Generator Voltage Regulator
How to Adjust the Generator Voltage Regulator

The voltage regulator regulates the output voltage of the generator. A properly adjusted voltage regulator is essential to good generator performance and service life. A defective or improperly adjusted voltage regulator could result in component damage.

Note: Be sure the batteries are fully charged before performing this procedure.

1. Remove the engine pivot plate latch retainer.

2. Open the engine pivot plate latch and swing the engine out away from the machine to access the generator.

3. Connect the positive lead of a voltmeter to the POS terminal on the generator and the negative lead of the voltmeter to the NEG terminal on the generator.

   **WARNING** Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.
4 Start the engine from the ground controls and move the rpm select toggle switch to the maintained high idle position. Check the voltage on the generator.

Result: The voltage should be 54V DC.

5 If the voltage reading is not 54V DC, insert a small flat blade screwdriver into the potentiometer located inside of the generator. Use the access hole on the back of the generator labeled VOLT ADJ. Component damage hazard. Be sure that the screwdriver is properly inserted into the potentiometer or the generator and/or voltage regulator may become damaged.

6 Carefully adjust the potentiometer to obtain a 54V DC voltage reading. Turn the potentiometer clockwise to increase the voltage or counterclockwise to decrease the voltage. Do not rotate the potentiometer past the internal stops. Component damage hazard. The voltage regulator inside the generator will become damaged if the potentiometer is rotated past the internal stops.

Note: The maximum range of motion of the potentiometer on the voltage regulator is 280° and the maximum allowed torque is 5 oz-in / 0.035 Nm.

How to Replace the Voltage Regulator

1 Disconnect the battery packs from the machine. 

**WARNING** Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

2 Remove the engine pivot plate latch retainer.

3 Open the engine pivot plate latch and swing the engine out away from the machine to access the generator.

4 Tag and disconnect the positive and negative battery cables from the generator.

5 Loosen the tension adjustment bolt on the generator.

6 Pull the generator away from the machine and remove the belts from the generator pulley.

7 Remove the generator mounting fasteners then remove the generator from the machine.

8 Remove the 3 nuts from the battery cable terminal posts.

9 Remove the 3 screws that hold the plastic cover onto the generator. Carefully remove the cover.
10 Locate the 3 white wires that lead from the voltage regulator to the negative rectifier assembly.

11 Remove the nuts on those 3 wires from the negative rectifier assembly, then remove the wires.

Note: Do not remove the spacers from the underneath the wires on the negative rectifier assembly.

12 Locate the red wire that leads from the voltage regulator to the positive rectifier assembly.

13 Remove the screw that attaches the red wire to the positive rectifier assembly.

14 Remove the #4 nut that attaches the black wire to the voltage regulator.

15 Remove the voltage regulator mounting screws.

16 Remove the voltage regulator while carefully guiding the red and black wires from underneath the bottom support of the positive and negative rectifier assembly.

17 Install the new voltage regulator by following the previous steps in reverse order.

18 Apply Loctite® removable thread sealant onto the voltage regulator mounting fasteners and torque to specification. Refer to Section 2, Specifications.

19 Torque all other fasteners to specification. Refer to Section 2, Specifications.

20 Install the plastic cover onto the generator then install the generator onto the machine.

21 Adjust the generator belts. See 7-2, How to Adjust the Generator Belts.

22 Adjust the voltage regulator. See How to Adjust the Voltage Regulator.

**NOTICE** Component damage hazard. The voltage regulator and/or generator may become damaged if the voltage regulator is not properly adjusted after replacement.
Hydraulic Pumps

8-1  
Auxiliary Pump

How to Remove the Auxiliary Pump

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1 Models with hydraulic tank shutoff valves: 
Locate the two hydraulic tank valves at the hydraulic tank through the access hole underneath the turntable. Close the valves.

Component damage hazard. The engine must not be started with the hydraulic tank shutoff valves in the closed position or component damage will occur. If the tank valves are closed, remove the key from the key switch and tag the machine to inform personnel of the condition.

Models without hydraulic tank shutoff valves: 
Remove the drain plug from the hydraulic tank and completely drain the tank into a container of suitable capacity. Refer to Section 2, Specifications.

WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

2 Remove the engine pivot plate latch retainer.

3 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

4 Tag, disconnect and plug the hydraulic hoses from the auxiliary pump.

5 Remove the auxiliary pump mounting bolts. Carefully remove the pump.

CAUTION Bodily injury hazard. Beware of hot oil. Contact with hot oil may cause severe burns.
HYDRAULIC PUMPS

8-2 Function Pump

How to Remove the Function Pump

Note: When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, Hydraulic Hose and Fitting Torque Specifications.

1 Models with hydraulic tank shutoff valves:
   Locate the two hydraulic tank valves at the hydraulic tank through the access hole underneath the turntable. Close the valves.

2 Remove the engine pivot plate latch retainer.

3 Open the engine pivot plate latch and swing the engine pivot plate out away from the machine.

4 Tag, disconnect and plug the hydraulic hoses from the pump.

   **WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

5 Remove the function pump mounting bolts. Carefully remove the pump.

   **NOTICE** Component damage hazard. The engine must not be started with the hydraulic tank shutoff valves in the closed position or component damage will occur. If the tank valves are closed, remove the key from the key switch and tag the machine to inform personnel of the condition.

   **Models without hydraulic tank shutoff valves:**
   Remove the drain plug from the hydraulic tank and completely drain the tank into a container of suitable capacity. Refer to Section 2, Specifications.

   **CAUTION** Bodily injury hazard. Beware of hot oil. Contact with hot oil may cause severe burns.
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Manifolds

9-1
Function Manifold Components

The function manifold is located next to the hydraulic tank underneath the ground controls side cover.

<table>
<thead>
<tr>
<th>Index No.</th>
<th>Description</th>
<th>Schematic Item</th>
<th>Function</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solenoid valve, 2 position 3 way</td>
<td>A</td>
<td>Primary boom retract</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>2</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>B</td>
<td>Primary boom up/down</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>3</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>C</td>
<td>Secondary boom up/down</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>4</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>D</td>
<td>Turntable rotate left/right</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>5</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>E</td>
<td>Platform rotate left/right and jib boom up/down (Z-45/25J)</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>6</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>F</td>
<td>Platform level up/down</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>7</td>
<td>Shuttle valve</td>
<td>G</td>
<td>Platform level circuit</td>
<td>4-5 ft-lbs / 5.5-6.7 Nm</td>
</tr>
<tr>
<td>8</td>
<td>Solenoid valve, 3 position 4 way</td>
<td>H</td>
<td>Steer left/right</td>
<td>25 ft-lbs / 34 Nm</td>
</tr>
<tr>
<td>9</td>
<td>Proportional solenoid valve</td>
<td>I</td>
<td>Controls flow to functions</td>
<td>27 ft-lbs / 37 Nm</td>
</tr>
<tr>
<td>10</td>
<td>Pressure switch</td>
<td>J</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Solenoid valve, 2 position 3 way</td>
<td>K</td>
<td>Primary boom extend</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>12</td>
<td>Flow regulator valve, 0.4 gpm / 1.5 L/min</td>
<td>L</td>
<td>Platform rotate and turntable rotate circuits</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>13</td>
<td>Needle valve</td>
<td>M</td>
<td>Platform level circuit</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>14</td>
<td>Relief valve, 2500 psi / 172 bar</td>
<td>N</td>
<td>Platform level circuit</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>15</td>
<td>Relief valve, 3200 psi / 220.6 bar</td>
<td>O</td>
<td>System relief</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>16</td>
<td>Check valve, 5 psi / 0.3 bar</td>
<td>P</td>
<td>Brake circuit</td>
<td>12-14 ft-lbs / 16-19 Nm</td>
</tr>
<tr>
<td>17</td>
<td>Orifice, 0.060 inch / 1.5 mm</td>
<td>Q</td>
<td>Steer circuit</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Orifice, 0.030 inch / 0.76 mm</td>
<td>R</td>
<td>Proportional valve circuit</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Solenoid valve, 2 position 3 way</td>
<td>S</td>
<td>Brake circuit</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>—</td>
<td>Orifice, 0.030 inch / 0.76 mm (located under item S)</td>
<td>T</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Orifice, 0.037 inch / 0.94 mm</td>
<td>U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Check valve, pilot operated</td>
<td>V</td>
<td>Platform level circuit</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
<tr>
<td>22</td>
<td>Relief valve, 2100 psi / 145 bar</td>
<td>W</td>
<td>Secondary boom down circuit</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
</tbody>
</table>
**MANIFOLDS**

**9-2**  
**Valve Adjustments - Function Manifold**

**How to Adjust the System Relief Valve**

Note: Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to the test port on the function manifold.

2. Move and hold the function enable toggle switch to either side and hold the primary boom extend/retract toggle switch in the retract direction with the primary boom fully retracted. Observe the pressure reading on the pressure gauge. Refer to Section 2, Specifications.

3. Turn the machine off. Hold the system relief valve with a wrench and remove the cap (item O).

4. Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

**WARNING** Tip-over hazard. Do not adjust the relief valve higher than specified.

5. Repeat steps 2 through 4 and recheck relief valve pressure.

**How to Adjust the Secondary Boom Down Relief Valve**

Note: Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 5000 psi / 0 to 350 bar pressure gauge to the test port on the function manifold.

2. Move and hold the function enable toggle switch to either side and hold the secondary boom up/down toggle switch in the down direction with the secondary boom fully lowered. Observe the pressure reading on the pressure gauge. Refer to Section 2, Specifications.

3. Turn the machine off. Hold the secondary boom down relief valve with a wrench and remove the cap (item W).

4. Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Then install the relief valve cap.

**WARNING** Tip-over hazard. Do not adjust the relief valve higher than specified.

5. Repeat steps 2 through 4 and recheck relief valve pressure.
9-3
Jib Boom / Platform Rotate Manifold Components

The jib boom / platform rotate manifold is mounted to platform support.

<table>
<thead>
<tr>
<th>Index No.</th>
<th>Description</th>
<th>Schematic Item</th>
<th>Function</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solenoid valve, 2 position 3 way</td>
<td>Y18</td>
<td>Jib boom / platform rotate select</td>
<td>20 ft-lbs / 27 Nm</td>
</tr>
</tbody>
</table>

Index Schematic

MANIFOLDS
MANIFOLDS

9-4
Turntable Rotation Manifold Components

The turntable rotation manifold is mounted to the turntable rotation motor located in the boom storage compartment.

<table>
<thead>
<tr>
<th>Index No.</th>
<th>Description</th>
<th>Schematic Item</th>
<th>Function</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shuttle valve 2 position 3 way</td>
<td>X</td>
<td>Turntable rotation brake release</td>
<td>10-13 ft-lbs / 14-18 Nm</td>
</tr>
<tr>
<td>2</td>
<td>Counterbalance valve</td>
<td>Y</td>
<td>Turntable rotate right</td>
<td>30-35 ft-lbs / 41-47 Nm</td>
</tr>
<tr>
<td>3</td>
<td>Counterbalance valve</td>
<td>Z</td>
<td>Turntable rotate left</td>
<td>30-35 ft-lbs / 41-47 Nm</td>
</tr>
</tbody>
</table>
9-5
Valve Coils

How to Test a Coil

A properly functioning coil provides an electromotive force which operates the solenoid valve. Critical to normal operation is continuity within the coil that provides this force field.

Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

1 Tag and disconnect the wiring from the coil to be tested.

2 Test the coil resistance.

Result: The resistance should be within specification, plus or minus 30%.

Result: If the resistance is not within specification, plus or minus 30%, replace the coil.

Valve Coil Resistance Specification

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>DC Voltage</th>
<th>Resistance Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid valve, 3 position 4 way, 20V DC (schematic items B, C, D, E, F and H)</td>
<td>25 to 29 Ω</td>
<td></td>
</tr>
<tr>
<td>Solenoid valve, 2 position 3 way, 20V DC (schematic items A, K, S and AA)</td>
<td>25 to 29 Ω</td>
<td></td>
</tr>
<tr>
<td>Proportional solenoid valve, 24V DC (schematic item I)</td>
<td>17 to 21 Ω</td>
<td></td>
</tr>
</tbody>
</table>

How to Test a Coil Diode

Properly functioning coil diodes protect the electrical circuit by suppressing voltage spikes. Voltage spikes naturally occur within a function circuit following the interruption of electrical current to a coil. Faulty diodes can fail to protect the electrical system, resulting in a tripped circuit breaker or component damage.

Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

1 Test the coil for resistance. See How to Test a Coil.
2 Connect a 10Ω resistor to the negative terminal of a known good 9V DC battery. Connect the other end of the resistor to a terminal on the coil.

Resistor, 10Ω
Genie part number 27287

Note: The battery should read 9V DC or more when measured across the terminals.

3 Set a multimeter to read DC current. Note: The multimeter, when set to read DC current, should be capable of reading up to 800 mA.

4 Connect the negative lead to the other terminal on the coil.

5 Momentarily connect the positive lead from the multimeter to the positive terminal on the 9V DC battery. Note and record the current reading.

6 At the battery or coil terminals, reverse the connections. Note and record the current reading.

- Result: Both current readings are greater than 0 mA and are different by a minimum of 20%. The coil is good.

- Result: If one or both of the current readings are 0 mA, or if the two current readings do not differ by a minimum of 20%, the coil and/or its internal diode are faulty and the coil should be replaced.


**Turntable Rotation Components**

10-1

**Turntable Rotation Assembly**

How to Remove the Turntable Rotation Assembly

When removing a hose assembly or fitting, the O-ring on the fitting and/or hose end must be replaced and then torqued to specification during installation. Refer to Section 2, *Hydraulic Hose and Fitting Torque Specifications*.

1. Raise the secondary boom until the upper pivot is above the turntable covers. Turn the machine off.
2. Secure the turntable from rotating with the turntable rotation lock.

**WARNING** Crushing hazard. The machine could tip over when the turntable rotation assembly is removed if the turntable rotation lock is not in the locked position.

3. Remove the engine pivot plate latch retainer.
4. Open the engine pivot plate latch and swing the engine out and away from the machine to access the turntable rotation assembly.
5. Remove the retaining fasteners from the center turntable cover. Remove the cover from the machine.
6. Disconnect the battery backs from the machine.

**WARNING** Electrocuton/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

7. Place a suitable container under the engine plate.
8. Tag and disconnect the fuel hose from the fuel filter and drain the fuel tank into a suitable container. Refer to Section 2, *Specifications*.
9. Tag, disconnect and plug the fuel hoses from the fuel tank.
10. Remove the fuel tank strap fasteners and remove the tank strap.
11. Remove the fuel tank from the machine.
12. Tag, disconnect and plug the hydraulic hoses from the turntable rotation motor manifold. Cap the fittings on the manifold.

**WARNING** Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

---

**Crushing hazard.** The machine could tip over when the turntable rotation assembly is removed if the turntable rotation lock is not in the locked position.
13 Attach a lifting strap from an overhead crane or other suitable lifting device to the turntable rotation assembly.

14 Remove the turntable rotation assembly mounting fasteners.

15 Carefully remove the turntable rotation assembly from the machine.

**WARNING** Crushing hazard. The machine could tip over when the turntable rotation assembly is removed if the turntable rotation lock is not in the locked position.

**WARNING** Crushing hazard. The turntable rotation assembly could become unbalanced and fall when removed from the machine if not properly supported by the overhead crane.
Motor Controller

11-1 Motor Controller

The drive motor controller is located under the non-steer end drive chassis cover. The drive motor controller can recognize machine drive malfunctions and display controller fault codes by flashing a LED at the ground controls and on the motor controller. See the Troubleshooting section of this manual for a list of fault codes and additional information. There are no adjustments needed on the drive joystick controller. For further information or assistance, consult the Genie Service Department.

How to Test the Motor Controller

Note: Use the following procedure to test the motor controller. If the motor controller is found to be faulty, note which test failed and which fault code (if any) was present at the time of failure.

1 Turn the key switch to the off position and disconnect the battery packs from the machine.
2 Remove the chassis cover from the non-steer end of the machine.
3 Tag and disconnect all power cables from the motor controller.

**WARNING** Electrocuton/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

4 Press the release tab on the motor controller harness connector and remove the motor controller harness connector from the motor controller.
5 Connect the leads from an ohmmeter to test each motor controller terminal combination listed below and check for resistance.

○ Result: All desired results must be 500 kilohms or more. If any test has a result less than 500 kilohms, replace the motor controller.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result (in kilohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 to F2</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F1 to B-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F1 to M-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F1 to B+</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F2 to B-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F2 to M-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>F2 to B+</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>B- to M-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>M- to B+</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>Pin 17 to B-</td>
<td>500kΩ or more</td>
</tr>
<tr>
<td>Pin 20 to B-</td>
<td>500kΩ or more</td>
</tr>
</tbody>
</table>
Fault Codes

Before Troubleshooting:

☑️ Read, understand and obey the safety rules and operating instructions in the appropriate Operator’s Manual on your machine before attempting any maintenance or repair procedure.

☑️ Be sure that all necessary tools and test equipment are available and ready for use.

☑️ Read each appropriate fault code thoroughly. Attempting shortcuts may produce hazardous conditions.

☑️ Be aware of the following hazards and follow generally accepted safe workshop practices.

⚠️ Danger
Crushing hazard. When testing or replacing any hydraulic component, always support the structure and secure it from movement.

⚠️ Warning
Electrocution/burn hazard. Contact with electrically charged circuits may result in death or serious injury. Remove all rings, watches and other jewelry.

Note: Perform all troubleshooting on a firm level surface.

Observe and Obey:

☑️ Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine.

☑️ Immediately tag and remove from service a damaged or malfunctioning machine.

☑️ Repair any machine damage or malfunction before operating the machine.

☑️ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Boom in stowed position
  - Turntable rotated with the boom between the non-steer wheels
  - Key switch in the off position with the key removed
  - Wheels chocked
  - All external AC power supply disconnected from the machine
FAULT CODES

⚠️ DANGER ⚠️ Tip-over hazard. When adjusting the raised drive speed settings, the maximum raised drive speed must not exceed specification. Refer to Section 2, Specifications. If the machine is allowed to drive faster than specification, the machine could become unstable and will tip over.

Note: Additional troubleshooting of the fault codes may by accomplished by using the hand-held pendant motor controller programmer (Genie part number 128551).

Note: When using the hand-held pendant motor controller programmer, the M1 MAX SPEED needs to be set to 33. If needed, adjust the M1 MAX SPEED higher or lower to achieve the maximum raised drive speed. Refer to Section 2, Specifications.

The controller status indicator light will flash a fault code to aid in troubleshooting. This indicator light is mounted on the left side of the ground control box.

Fault codes are two digits. The controller status indicator light will blink the first digit of a two digit code, pause for 1 second, and then blink the second digit. There will be a 2 second pause between codes.

For example: the indicator light blinks 4 consecutive times, pauses for 1 second, and then blinks 1 time. That would indicate Fault Code 41.
# Fault Code Chart

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Normal operation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>HW Failsafe 1-2-3</td>
<td>Machine will not drive</td>
<td>The motor controller failed self test.</td>
<td>Replace the motor controller.</td>
</tr>
<tr>
<td>13</td>
<td>M- shorted</td>
<td>Machine will not drive</td>
<td>The motor controller has an internal short between M- and B- terminals.</td>
<td>Test the motor controller, refer to Repair Procedure 11-1.</td>
</tr>
<tr>
<td></td>
<td>Field open</td>
<td>Machine will not drive</td>
<td>Drive motor wiring is loose OR drive motor is defective OR motor controller has an internal short.</td>
<td>Check for loose or open connections at the drive motors and motor controller OR replace the defective drive motor OR test the motor controller. Refer to Repair Procedure 11-1.</td>
</tr>
<tr>
<td></td>
<td>Arm sensor</td>
<td>Machine will not drive</td>
<td>Defective motor controller.</td>
<td>Replace the motor controller.</td>
</tr>
<tr>
<td></td>
<td>FLD sensor</td>
<td>Machine will not drive</td>
<td>Defective motor controller.</td>
<td>Replace the motor controller.</td>
</tr>
</tbody>
</table>
### FAULT CODE CHART

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Throttle</td>
<td>Machine will not drive</td>
<td>Open in the WH/RD wire #32, pin 14 OR the RD/WH wire #29, pin 16 between the motor controller and the drive joystick OR pin 14 is internally shorted to power or ground OR the potentiometer on the joystick is defective.</td>
<td>Consult the Genie service department.</td>
</tr>
<tr>
<td></td>
<td>fault 1</td>
<td>Throttle</td>
<td>Machine will not drive</td>
<td>WH/Rd wire #32, pin 14 is shorted to power or ground OR the potentiometer on the drive joystick is defective.</td>
</tr>
<tr>
<td>31</td>
<td>CONT DRVR</td>
<td>Machine will not drive</td>
<td>Main contactor PR1 coil is defective OR brake release relay CR5 is defective OR motor controller is defective.</td>
<td>Replace PR1 contactor OR CR5 relay OR motor controller.</td>
</tr>
<tr>
<td>32</td>
<td>Main cont</td>
<td>Machine will not drive</td>
<td>Main contactor PR1 contacts stuck closed OR green wire at pin 17 on the motor controller is shorted to ground OR an open in the drive motor armature wiring OR the motor controller has an internal short to ground.</td>
<td>Consult the Genie service department.</td>
</tr>
<tr>
<td>33</td>
<td>Precharge</td>
<td>Machine will not drive</td>
<td>External short between B+ terminal on motor controller and ground OR motor controller is defective.</td>
<td>Repair short between B+ terminal and ground OR replace motor controller. Note: Short can be on any part of the circuit connected to the B+ terminal on the motor controller.</td>
</tr>
</tbody>
</table>
## FAULT CODE CHART

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Missing contactor</td>
<td>Machine will not drive</td>
<td>Motor controller does not detect the main contactor PR1 OR the brake release relay CR5.</td>
<td>Consult the Genie service department.</td>
</tr>
<tr>
<td></td>
<td>Main CONT DNC</td>
<td>Machine will not drive</td>
<td>Main contactor PR1 or brake release relay CR5 did not close OR open in OR/RD wire to PR1 and/or CR5 OR PR1 and/or CR5 is defective.</td>
<td>Consult the Genie service department.</td>
</tr>
<tr>
<td>41</td>
<td>Low battery voltage</td>
<td>Machine will not drive</td>
<td>Battery supply voltage to motor controller is less than 32V DC.</td>
<td>Completely charge batteries OR check battery cable condition OR check for corrosion and/or loose connections at the battery terminals and the motor controller.</td>
</tr>
<tr>
<td>42</td>
<td>Overvoltage</td>
<td>Machine will not drive</td>
<td>Battery supply voltage to motor controller is more than 55V DC OR machine is being operated with the battery charger plugged in OR 48V DC alternator voltage regulator is improperly adjusted or is defective while the machine is being operated with the engine running.</td>
<td>Be sure the battery charger is disconnected OR check for loose and/or poor battery cable connections OR adjust the 48V DC voltage regulator OR replace the regulator.</td>
</tr>
<tr>
<td>43</td>
<td>Thermal cutback</td>
<td>Machine will not drive</td>
<td>Machine being operated outside of temperature range of -13°F to 185°F / -25°C to 85°C OR machine is being driven under an excessive load OR motor controller is not being cooled sufficiently.</td>
<td>Operate machine within specified temperature limits OR check for debris around motor controller preventing proper cooling OR check for mechanical restrictions causing excessive load on the machine.</td>
</tr>
</tbody>
</table>
Observe and Obey:

- Troubleshooting and repair procedures shall be completed by a person trained and qualified on the repair of this machine.
- Immediately tag and remove from service a damaged or malfunctioning machine.
- Repair any machine damage or malfunction before operating the machine.

Before Troubleshooting:

- Read, understand and obey the safety rules and operating instructions in the appropriate Operator's Manual on your machine before attempting any maintenance or repair procedure.
- Be sure that all necessary tools and test equipment are available and ready for use.

About This Section

There are two groups of schematics in this section.

Electrical Schematics

⚠️ **WARNING**

Electrocution/burn hazard. Contact with electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

Hydraulic Schematics

⚠️ **WARNING**

Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

General Repair Process

1. Malfunction discovered
2. Identify symptoms
3. Troubleshoot
4. Inspect and test
5. Perform repair
6. Return to service

If the problem still exists, repeat the process from step 4.
Electrical Schematic, (ANSI / CSA)
(from serial number Z452510A-39314 to Z452513A-45734)
Electrical Schematic, (ANSI / CSA)
(from serial number Z452510A-39314 to Z452519A-45734)
Ground Control Box Terminal Strip Wiring Diagram, (ANSI / CSA),
(from serial number Z452510A-39314 to Z452513A-45734)
Ground Control Box Switch Panel Wiring Diagram, (ANSI / CSA),
(from serial number Z452510A-39314 to Z452513A-45734)

<table>
<thead>
<tr>
<th>LABEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR1</td>
<td>48V DC POWER RELAY</td>
</tr>
<tr>
<td>CR2</td>
<td>48V DC POWER RELAY</td>
</tr>
<tr>
<td>CR3</td>
<td>AUXILIARY PUMP RELAY</td>
</tr>
<tr>
<td>CR4</td>
<td>HORN RELAY</td>
</tr>
<tr>
<td>CR5</td>
<td>BRAKE RELEASE RELAY</td>
</tr>
<tr>
<td>CR20</td>
<td>PRIMARY PUMP RELAY</td>
</tr>
<tr>
<td>G6</td>
<td>HOURMETER</td>
</tr>
<tr>
<td>KS1</td>
<td>KEY SWITCH</td>
</tr>
<tr>
<td>L2</td>
<td>LED - FAULT INDICATOR</td>
</tr>
<tr>
<td>P1</td>
<td>EMERGENCY STOP BUTTON</td>
</tr>
<tr>
<td>TS51</td>
<td>AUXILIARY PUMP TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS52</td>
<td>ENGINE START TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS54</td>
<td>ENGINE RPM SELECT TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS55</td>
<td>FUNCTION ENABLE TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS56</td>
<td>GLOW PLUG TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS57</td>
<td>PLATFORM ROTATE CW / CCW TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS58</td>
<td>JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)</td>
</tr>
<tr>
<td>TS59</td>
<td>PLATFORM LEVEL UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS60</td>
<td>SECONDARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS61</td>
<td>PRIMARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS62</td>
<td>TURNTABLE ROTATE CW / CCW TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS63</td>
<td>PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH</td>
</tr>
</tbody>
</table>

NOTE: DASHED LINES INDICATE OPTIONS.
Ground Control Box Switch Panel Wiring Diagram,
(ANSI / CSA),
(from serial number Z452510A-39314 to Z452513A-45734)
Platform Control Box Wiring Diagram, (ANSI / CSA),
(from serial number Z452510A-39314 to Z452513A-45734)

Component Index - Platform Controls

<table>
<thead>
<tr>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP1</td>
<td>Rotary Flow Control Dial</td>
</tr>
<tr>
<td>C1</td>
<td>Time Delay Capacitor (Option)</td>
</tr>
<tr>
<td>CR6</td>
<td>Drive Enable Relay</td>
</tr>
<tr>
<td>CR7</td>
<td>Jib Select Relay (Option)</td>
</tr>
<tr>
<td>CR14</td>
<td>Jib Valve Relay (Option)</td>
</tr>
<tr>
<td>DP1</td>
<td>Drive / Steer Joystick</td>
</tr>
<tr>
<td>H1</td>
<td>Tilt Alarm</td>
</tr>
<tr>
<td>L1</td>
<td>LED - Drive Enable</td>
</tr>
<tr>
<td>L48</td>
<td>LED - Tilt Alarm</td>
</tr>
<tr>
<td>P2</td>
<td>Emergency Stop Button</td>
</tr>
<tr>
<td>P3</td>
<td>Horn Button</td>
</tr>
<tr>
<td>TS1</td>
<td>Auxiliary Pump Toggle Switch</td>
</tr>
<tr>
<td>TS2</td>
<td>Engine Start Toggle Switch</td>
</tr>
<tr>
<td>TS4</td>
<td>Engine RPM Select Toggle Switch</td>
</tr>
<tr>
<td>TS6</td>
<td>Glow Plug Toggle Switch</td>
</tr>
<tr>
<td>TS7</td>
<td>Platform Rotate CW / CCW Toggle Switch</td>
</tr>
<tr>
<td>TS8</td>
<td>Jib Boom Up / Down Toggle Switch (Option)</td>
</tr>
<tr>
<td>TS9</td>
<td>Platform Level Up / Down Toggle Switch</td>
</tr>
<tr>
<td>TS10</td>
<td>Secondary Boom Up / Down Toggle Switch</td>
</tr>
<tr>
<td>TS11</td>
<td>Primary Boom Up / Down Toggle Switch</td>
</tr>
<tr>
<td>TS12</td>
<td>Turntable Rotate CW / CCW Toggle Switch</td>
</tr>
<tr>
<td>TS13</td>
<td>Primary Boom Extend / Retract Toggle Switch</td>
</tr>
<tr>
<td>TS15</td>
<td>Drive Enable Toggle Switch</td>
</tr>
</tbody>
</table>

Note: Dashed lines indicate options.
Platform Control Box Wiring Diagram, (ANSI / CSA),
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(from serial number Z452513A-45735)
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(from serial number Z452513A-45735)
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(from serial number Z452513A-45735)
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(from serial number Z452510A-39314 to Z4525Z452513A-45734)
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(from serial number Z452510A-39314 to Z452513A-45734)
Ground Control Box Terminal Strip Wiring Diagram, (CE), (from serial number Z452510A-39314 to Z452513A-45734)
Section 6 • Schematics

Ground Control Box Terminal Strip Wiring Diagram, (CE), (from serial number Z452510A-39314 to Z452513A-45734)

A B C D E F G H I J K L M N

[Diagram of Wiring Connections]
Ground Control Box Switch Panel Wiring Diagram,
(CE), (from serial number Z452510A-39314 to Z452513A-45734)

**Component Index - Ground Controls**

<table>
<thead>
<tr>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1</td>
<td>Controls Circuit Breaker, 15A</td>
</tr>
<tr>
<td>CR1</td>
<td>48V DC Power Relay</td>
</tr>
<tr>
<td>CR2</td>
<td>48V DC Power Relay</td>
</tr>
<tr>
<td>CR3</td>
<td>Auxiliary Pump Relay</td>
</tr>
<tr>
<td>CR4</td>
<td>Horn Relay</td>
</tr>
<tr>
<td>CR5</td>
<td>Brake Release Relay</td>
</tr>
<tr>
<td>CR20</td>
<td>Primary Pump Relay</td>
</tr>
<tr>
<td>G6</td>
<td>Hourmeter</td>
</tr>
<tr>
<td>KS1</td>
<td>Key Switch</td>
</tr>
<tr>
<td>L2</td>
<td>LED - Fault Indicator</td>
</tr>
<tr>
<td>L45</td>
<td>LED - Platform Overload</td>
</tr>
<tr>
<td>P1</td>
<td>Emergency Stop Button</td>
</tr>
<tr>
<td>TS51</td>
<td>Auxiliary Pump ToGGLE Switch</td>
</tr>
<tr>
<td>TS52</td>
<td>Engine Start ToGGLE Switch</td>
</tr>
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<td>RPM SELECT ToGGLE Switch</td>
</tr>
<tr>
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<tr>
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</tr>
<tr>
<td>TS57</td>
<td>Platform Rotate ToGGLE Switch</td>
</tr>
<tr>
<td>TS58</td>
<td>Jib Boom UP / DOWN ToGGLE Switch (OPTION)</td>
</tr>
<tr>
<td>TS59</td>
<td>Platform LEVEL UP / DOWN ToGGLE Switch</td>
</tr>
<tr>
<td>TS60</td>
<td>Secondary Boom UP / DOWN ToGGLE Switch</td>
</tr>
<tr>
<td>TS61</td>
<td>Primary Boom UP / DOWN ToGGLE Switch</td>
</tr>
<tr>
<td>TS62</td>
<td>Turntable Rotate ToGGLE Switch</td>
</tr>
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<td>Primary Boom EXTEND / RETRACT ToGGLE Switch</td>
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Platform Control Box Wiring Diagram, (CE)
(from serial number Z452510A-39314 to Z452513A-45734)
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Ground Control Box Switch Panel Wiring Diagram, (CE) (from serial number Z452513A-45735)

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</tr>
<tr>
<td>CR4</td>
<td>Horn Relay</td>
</tr>
<tr>
<td>CR5</td>
<td>Brake Release Relay</td>
</tr>
<tr>
<td>CR20</td>
<td>Primary Pump Relay</td>
</tr>
<tr>
<td>G6</td>
<td>Hourmeter</td>
</tr>
<tr>
<td>KS1</td>
<td>Key Switch</td>
</tr>
<tr>
<td>L2</td>
<td>LED - Fault Indicator</td>
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<td>LED - Platform Overload</td>
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</tr>
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</tr>
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<td>TS63</td>
<td>Primary Boom Extend / Retract Toggle Switch</td>
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(from serial number Z452513A-45735)
Electrical Schematic, (AS)
(from serial number Z452510A-39314 to Z452511A-40559)
(from serial number Z452510A-39314 to Z452511A-40559)
Electrical Schematic, (AS)
(from serial number Z452510A-39314 to Z452511A-40559)
Ground Control Box Terminal Strip Wiring Diagram,
(AS) (from serial number Z452510A-39314 to Z452511A-40559)
Ground Control Box Switch Panel Wiring Diagram,
(AS) (from serial number Z452510A-39314 to Z452511A-40559)

NOTE: DASHED LINES INDICATE OPTIONS.

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</tr>
</thead>
<tbody>
<tr>
<td>CB1 CONTROLS CIRCUIT BREAKER, 15A</td>
<td></td>
</tr>
<tr>
<td>CR1 48V DC POWER RELAY</td>
<td></td>
</tr>
<tr>
<td>CR2 48V DC POWER RELAY</td>
<td></td>
</tr>
<tr>
<td>CR3 AUXILIARY PUMP RELAY</td>
<td></td>
</tr>
<tr>
<td>CR4 HORN RELAY</td>
<td></td>
</tr>
<tr>
<td>CR20 PRIMARY PUMP RELAY</td>
<td></td>
</tr>
<tr>
<td>G6 HOURMETER</td>
<td></td>
</tr>
<tr>
<td>KS1 KEY SWITCH</td>
<td></td>
</tr>
<tr>
<td>L2 LED - FAULT INDICATOR</td>
<td></td>
</tr>
<tr>
<td>L45 LED - PLATFORM OVERLOAD</td>
<td></td>
</tr>
<tr>
<td>P1 EMERGENCY STOP BUTTON</td>
<td></td>
</tr>
<tr>
<td>TS51 AUXILIARY PUMP TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS52 ENGINE START TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS54 RPM SELECT TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS55 FUNCTION ENABLE TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS56 GLOW PLUG TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS57 PLATFORM ROTATE TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS58 JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)</td>
<td></td>
</tr>
<tr>
<td>TS59 PLATFORM LEVEL UP / DOWN TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS60 SECONDARY BOOM UP / DOWN TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS61 PRIMARY BOOM UP / DOWN TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS62 TURNTABLE ROTATE TOGGLE SWITCH</td>
<td></td>
</tr>
<tr>
<td>TS63 PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH</td>
<td></td>
</tr>
</tbody>
</table>
Ground Control Box Switch Panel Wiring Diagram, (AS) (from serial number Z452510A-39314 to Z452511A-40559)
Platform Control Box Wiring Diagram, (AS)
(from serial number Z452510A-39314 to Z452511A-40559)

<table>
<thead>
<tr>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCI</td>
<td>BATTERY CHARGE INDICATOR (OPTION)</td>
</tr>
<tr>
<td>BP1</td>
<td>ROTARY FLOW CONTROL DIAL</td>
</tr>
<tr>
<td>C1</td>
<td>TIME DELAY CAPACITOR (OPTION)</td>
</tr>
<tr>
<td>CR6</td>
<td>DRIVE ENABLE RELAY</td>
</tr>
<tr>
<td>CR7</td>
<td>JIB SELECT RELAY (OPTION)</td>
</tr>
<tr>
<td>CR8</td>
<td>LIFT / DRIVE RELAY</td>
</tr>
<tr>
<td>CR14</td>
<td>JIB VALVE RELAY (OPTION)</td>
</tr>
<tr>
<td>DP1</td>
<td>DRIVE / STEER JOYSTICK</td>
</tr>
<tr>
<td>H1</td>
<td>TILT ALARM</td>
</tr>
<tr>
<td>L1</td>
<td>LED - DRIVE ENABLE</td>
</tr>
<tr>
<td>L4</td>
<td>LED - PLATFORM OVERLOAD</td>
</tr>
<tr>
<td>LS18</td>
<td>LIMIT SWITCH - PLATFORM OVERLOAD</td>
</tr>
<tr>
<td>P2</td>
<td>EMERGENCY STOP BUTTON</td>
</tr>
<tr>
<td>P3</td>
<td>HORN BUTTON</td>
</tr>
<tr>
<td>R20</td>
<td>RESISTOR - 4.7K</td>
</tr>
<tr>
<td>TS1</td>
<td>AUXILIARY PUMP TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS2</td>
<td>ENGINE START TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS4</td>
<td>ENGINE RPM SELECT TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS6</td>
<td>GLOW PLUG TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS7</td>
<td>PLATFORM ROTATE CW / CCW TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS8</td>
<td>JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)</td>
</tr>
<tr>
<td>TS9</td>
<td>PLATFORM LEVEL UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS10</td>
<td>SECONDARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS11</td>
<td>PRIMARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS13</td>
<td>TURNTABLE ROTATE CW / CCW TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS15</td>
<td>DRIVE ENABLE TOGGLE SWITCH</td>
</tr>
<tr>
<td>U35</td>
<td>TIME DELAY RELAY - 2 SECOND, 30A</td>
</tr>
</tbody>
</table>

Note: Dashed lines indicate options.
Platform Control Box Wiring Diagram, (AS)
(from serial number Z452510A-39314 to Z452511A-40559)
Electrical Schematic, (AS)
(from serial number Z452511A-40560 to Z452513A-45734)
Electrical Schematic, (AS)
(from serial number Z452511A-40560 to Z452513A-45734)
Ground Control Box Terminal Strip Wiring Diagram, (AS) (from serial number Z452511A-40560 to Z452513A-45734)
Ground Control Box Switch Panel Wiring Diagram,
(AS) (from serial number Z452511A-40560 to Z452513A-45734)

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<table>
<thead>
<tr>
<th>LABEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1</td>
<td>CONTROLS CIRCUIT BREAKER, 15A</td>
</tr>
<tr>
<td>CR1</td>
<td>48V DC POWER RELAY</td>
</tr>
<tr>
<td>CR2</td>
<td>48V DC POWER RELAY</td>
</tr>
<tr>
<td>CR3</td>
<td>AUXILIARY PUMP RELAY</td>
</tr>
<tr>
<td>CR4</td>
<td>HORN RELAY</td>
</tr>
<tr>
<td>CR5</td>
<td>BRAKE RELEASE RELAY</td>
</tr>
<tr>
<td>CR20</td>
<td>PRIMARY PUMP RELAY</td>
</tr>
<tr>
<td>G6</td>
<td>HOURMETER</td>
</tr>
<tr>
<td>KS1</td>
<td>KEY SWITCH</td>
</tr>
<tr>
<td>L2</td>
<td>LED - FAULT INDICATOR</td>
</tr>
<tr>
<td>L45</td>
<td>LED - PLATFORM OVERLOAD</td>
</tr>
<tr>
<td>P1</td>
<td>EMERGENCY STOP BUTTON</td>
</tr>
<tr>
<td>TS51</td>
<td>AUXILIARY PUMP TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS52</td>
<td>ENGINE START TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS54</td>
<td>RPM SELECT TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS55</td>
<td>FUNCTION ENABLE TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS56</td>
<td>GLOW PLUG TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS57</td>
<td>PLATFORM ROTATE TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS58</td>
<td>JIB BOOM UP / DOWN TOGGLE SWITCH (OPTION)</td>
</tr>
<tr>
<td>TS59</td>
<td>PLATFORM LEVEL UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS60</td>
<td>SECONDARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS61</td>
<td>PRIMARY BOOM UP / DOWN TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS62</td>
<td>TURNTABLE ROTATE TOGGLE SWITCH</td>
</tr>
<tr>
<td>TS63</td>
<td>PRIMARY BOOM EXTEND / RETRACT TOGGLE SWITCH</td>
</tr>
</tbody>
</table>

Note: Dashed lines indicate options.
Ground Control Box Switch Panel Wiring Diagram,
(AS) (from serial number Z452511A-40560 to Z452513A-45734)
Platform Control Box Wiring Diagram, (AS)
(from serial number Z452511A-40560 to Z452513A-45734)
Electrical Schematic, (AS)
(from serial number Z452513A-45735)
Electrical Schematic, (AS)
(from serial number Z452513A-45735)

- Switch shown with boom extended.
- Switch shown with boom pointed past either non-stick barrier.

NOTES:
1. All boom switches shown with the boom in the stowed position except as noted.
2. All switches and relay coils are 24V DC except where noted.

Section 6 • Schematics September 2015
Ground Control Box Terminal Strip Wiring Diagram, (AS) (from serial number Z452513A-45735)
Ground Control Box Switch Panel Wiring Diagram,

(AS) (from serial number Z452513A-45735)
Platform Control Box Wiring Diagram, (AS)
(from serial number Z452513A-45735)
Platform Options Wiring Diagram
(from serial number Z452510A-39314 to Z452513A-45734)
Platform Options Wiring Diagram
(from serial number Z452510A-39314 to Z452513A-45734)

<table>
<thead>
<tr>
<th>Label</th>
<th>Description</th>
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<tbody>
<tr>
<td>BCI</td>
<td>Battery Charge Indicator</td>
</tr>
<tr>
<td>CR19A</td>
<td>Primary Boom Up Cutout Relay</td>
</tr>
<tr>
<td>CR19B</td>
<td>Secondary Boom Up Cutout Relay</td>
</tr>
<tr>
<td>CR45</td>
<td>Work Lights Relay</td>
</tr>
<tr>
<td>LVI</td>
<td>Low Voltage Interrupt Module</td>
</tr>
<tr>
<td>TS1</td>
<td>Auxiliary Pump Toggle Switch</td>
</tr>
<tr>
<td>TS4</td>
<td>Engine RPM Select Toggle Switch</td>
</tr>
<tr>
<td>TS10</td>
<td>Secondary Boom Up/Down Toggle Switch</td>
</tr>
<tr>
<td>TS11</td>
<td>Primary Boom Up/Down Toggle Switch</td>
</tr>
<tr>
<td>TS48</td>
<td>Drive Lights Toggle Switch</td>
</tr>
<tr>
<td>TS49</td>
<td>Work Lights Toggle Switch</td>
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</tbody>
</table>

Component Index - Platform Controls

Platform Control Box

Genie

6 - 76 Z-45/25 Bi-Energy • Z-45/25SJ Bi-Energy Part No. 237062
Platform Options Wiring Diagram
(from serial number Z452513A-45735)
Engine Panel Wiring Diagram
Engine Panel Wiring Diagram

<table>
<thead>
<tr>
<th>RELAY SOCKETS ARE SHOWN FROM THE RELAY SOCKET SIDE</th>
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</table>

<table>
<thead>
<tr>
<th>RELAY Sockets</th>
<th>Description</th>
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<tbody>
<tr>
<td>CB3</td>
<td>CIRCUIT BREAKER, 15A</td>
</tr>
<tr>
<td>CB7</td>
<td>CIRCUIT BREAKER, 10A</td>
</tr>
<tr>
<td>CR11</td>
<td>ENGINE START RELAY</td>
</tr>
<tr>
<td>CR12</td>
<td>ENGINE POWER RELAY</td>
</tr>
<tr>
<td>CR13</td>
<td>RPM CUTOUT MODULE</td>
</tr>
<tr>
<td>CR14</td>
<td>HIGH RPM RELAY</td>
</tr>
<tr>
<td>CR15</td>
<td>GLOW PLUG RELAY</td>
</tr>
<tr>
<td>CR16</td>
<td>FIELD RELAY</td>
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</table>

Component Index - Engine Panel

<table>
<thead>
<tr>
<th>Label</th>
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<tbody>
<tr>
<td>CB3</td>
<td>CIRCUIT BREAKER, 15A</td>
</tr>
<tr>
<td>CB7</td>
<td>CIRCUIT BREAKER, 10A</td>
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</tr>
<tr>
<td>CR12</td>
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</tr>
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<td>CR13</td>
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</tr>
<tr>
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<td>HIGH RPM RELAY</td>
</tr>
<tr>
<td>CR15</td>
<td>GLOW PLUG RELAY</td>
</tr>
<tr>
<td>CR16</td>
<td>FIELD RELAY</td>
</tr>
</tbody>
</table>

Engine Harness - To Drive Chassis

Engine Harness - To Engine

Engine Harness - To Ground Control Box
Power Panel Wiring Diagram

N M L K J I H G F E D C B A

NOTES:
1. ALL WIRE IS 16 GAUGE UNLESS OTHERWISE SPECIFIED.
Power Panel Wiring Diagram
CTE Option Wiring Diagram, (CE)
Charger Interlock Option

1. LED IS RED DURING PHASES I1 AND P (BULK CHARGE) (20% BATTERY CHARGED)
2. LED IS YELLOW DURING PHASES U AND I2 (80% BATTERY CHARGED)
3. LED IS GREEN AT THE END OF CHARGE (100% BATTERY CHARGED)
4. LED FLASHES GREEN DURING CYCLE EQUALIZATION
5. LED IS OFF WHEN THE CHARGER IS NOT POWERED.
6. LED FLASHES RED, INDICATES DEFECT / FAULT.

INTERLOCK RELAY (N.O.), 10A CONTACT
1. CHARGER NOT CONNECTED TO BATTERY OR MAIN SUPPLY, CONTACT OPEN.
2. CHARGER CONNECTED TO BATTERY, CONTACT CLOSED.
3. CHARGER CONNECTED TO BATTERY AND MAIN SUPPLY, CONTACT OPEN.
Charger Interlock Option
Hydraulic Schematic

Part No. 237062 Z-45/25 Bi-Energy • Z-45/25J Bi-Energy
Hydraulic Schematic
California Proposition 65
Warning
The exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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