Z™-34/22N
(before serial number 6291)
Z™-34/22 DC
(before serial number 5427)
Genie Z-34/22 & Genie Z-34/22N

Introduction

Important

Read, understand and obey the safety rules and operating instructions in the Genie Z-34/22 & Genie Z-34/22N Operator’s Manual before attempting any maintenance or repair procedure.

This manual provides detailed scheduled maintenance information for the machine owner and user. It also provides troubleshooting 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.

Genie Industries 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 other manuals. Please write to the technical publications team in care of Genie Industries, PO Box 97030, Redmond WA 98073-9730 USA.

If you have any questions, please contact Genie Industries.

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Genie Z-34/22 & Genie Z-34/22N
Part No. 36540
Danger

Failure to obey the instructions and safety rules in this manual and the Genie Z-34/22 & Genie Z-34/22N Operator’s Manual 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.
SAFETY RULES

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.

Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

CAUTION

Indicates special operation or maintenance information.

Workplace Safety

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.

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 that 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.
Power Source

The Genie Z-34/22 & Genie Z-34/22N are powered by eight six-volt (315 AH) batteries, separated into two groups of four. Each group of four batteries is wired in series to produce 24V DC. The two battery groups are then joined to produce 48V DC. The drive system uses 48V DC and the control system uses 24V DC.

Hydraulic System

All machine functions are performed by the hydraulic system. The hydraulic system is powered by a single-section gear pump. When the pump is activated, it supplies hydraulic fluid under pressure to the function manifold, where the control valves are located. To protect from over-pressurization of the hydraulic system, the pump is provided with a pressure relief valve, set at 3200 psi (221 bar).

Activating a machine function is accomplished by actuating or moving a toggle switch and/or control handle, which sends voltage to the appropriate directional control valve. The directional valve determines which direction the hydraulic fluid will travel. The amount of hydraulic fluid volume is determined by the proportional valve input voltage from the boom function speed controller at the platform controls. Each boom lift cylinder incorporates a counterbalance valve to prevent movement in the event of a hydraulic line failure.

Electrical System

Drive system

All Z-34/22 and Z-34/22N machines utilize a DC drive motor on each non-steer wheel. The two motors are connected in series and are controlled by a solid-state motor controller. The motor controller regulates the amount of current applied to the drive motors based upon the position of the drive controller (joystick), which allows proportional drive speed control.

Z-34/22 machines (before serial number 1734) and Z-34/22N machines (before serial number 2227) use series-wound DC drive motors and a solid state motor controller designed for series motors. A mechanical forward/reverse contactor provides directional control of the drive motors. These machines also have a proportional braking system, which is active in the drive controller (joystick) range between neutral position and half way to full deflection in both drive directions. The drive controller has a 0-5 V DC voltage output which activates the motor controller, as well as a proportional coil output for the brake system.

Z-34/22 machines (after serial number 1733) and Z-34/22N machines (after serial number 2226) use separately excited (Sepex) DC drive motors and a Sepex motor controller. No forward/reverse contactor is required in this system, as the controller does the switching automatically. The Sepex drive system utilizes regenerative braking, which means that the drive motors are used to slow down and stop the machine. The resulting
energy is then returned to the batteries. Regenerative braking allows the use of a simple, non-proportional parking brake which applies after the machine has come to a stop, or if the Emergency Stop button is pushed in to the OFF position.

The Sepex motor controller also incorporates self diagnostics. An LED on the motor controller will flash a fault code when a fault is present to aid in troubleshooting. Refer to the fault code chart in Section Five.

Limit switches
There are two types of limit switches, which are found in various locations on the machine: drive speed limit switches and a drive enable limit switch.

The function of a drive speed limit switch is to limit the raised machine drive speed to 0.6 miles per hour (1 km/h) when either the primary or secondary boom is raised more than 2 feet (0.6 m) OR when the primary boom is extended more than 12 inches (30 cm).

The function of the drive enable limit switch is to limit the ability of the machine to drive when the boom is rotated outside the area between the non-steer wheels.

Machine Controls
The Z-34/22 and Z-34/22N machines are equipped with operational controls which are found in two locations: the ground controls, located opposite the hydraulic tank side of the machine, and the platform controls, located in the platform. All lift and drive functions are available at the platform controls. Only boom functions are available at the ground controls. Moving a boom function toggle switch in the direction indicated on the control panel decal will determine which boom function will operate and its direction of travel.

The platform controls incorporates a rotary boom function speed controller which, by varying the position of the controller, controls the amount of voltage to the boom function proportional valve. This controller determines the speed at which the function will operate.

The drive controller (joystick) is fitted with a potentiometer that communicates the drive controller position with the motor controller. A thumb rocker switch on the top of the drive controller is used for steering.

Washing electronic components is not suggested. Instead, use compressed air to remove debris.

CAUTION Component damage hazard. Avoid shock or impact to the motor controller. Internal damage may not be visible from the outside.
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<td>3-3 Jib Boom Lift Cylinder ...............................................</td>
</tr>
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<td>Primary Boom Components</td>
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<tr>
<td></td>
<td>4-1 Plastic Cable Track ....................................................</td>
</tr>
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<td>4-3 Primary Boom Lift Cylinder .........................................</td>
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<td>Secondary Boom Components</td>
</tr>
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<td>5-1 Secondary Boom ..........................................................</td>
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<td>5-2 Secondary Boom Lift Cylinder .......................................</td>
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<td>Function Manifold Components</td>
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<td>(Z-34/22 before serial number 674 and</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N before serial number 935)</td>
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<td>8-2</td>
<td>Function Manifold Components</td>
</tr>
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<td>(Z-34/22 from serial number 674 to 1733 and</td>
</tr>
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<td></td>
<td>Z-34/22N from serial number 935 to 2226)</td>
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<td>8-3</td>
<td>Function Manifold Components</td>
</tr>
<tr>
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<td>(Z-34/22 after serial number 1733 and</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N after serial number 2226)</td>
</tr>
<tr>
<td>8-4</td>
<td>Valve Adjustments - Function Manifold</td>
</tr>
<tr>
<td>8-5</td>
<td>Jib Boom / Platform Rotate Manifold Components</td>
</tr>
<tr>
<td></td>
<td>(Z-34/22 before serial number 1734 and</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N before serial number 2227)</td>
</tr>
<tr>
<td>8-6</td>
<td>Jib Boom / Platform Rotate Manifold Components</td>
</tr>
<tr>
<td></td>
<td>(Z-34/22 from serial number 1734 to 2005</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N from serial number 2227 to 2771)</td>
</tr>
<tr>
<td>8-7</td>
<td>Jib Boom / Platform Rotate Manifold Components</td>
</tr>
<tr>
<td></td>
<td>(Z-34/22 after serial number 2005 and</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N after serial number 2771)</td>
</tr>
<tr>
<td>8-8</td>
<td>Steer / Brake Manifold Components</td>
</tr>
<tr>
<td></td>
<td>(Z-34/22 before serial number 781 and</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N before serial number 1030)</td>
</tr>
<tr>
<td>8-9</td>
<td>Steer / Brake Manifold Components</td>
</tr>
<tr>
<td></td>
<td>(Z-34/22 from serial number 781 to 1733</td>
</tr>
<tr>
<td></td>
<td>Z-34/22N from serial number 1030 to 2226)</td>
</tr>
</tbody>
</table>
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### Stowed dimensions

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>18 ft 7 in</td>
<td>18 ft 6 in</td>
</tr>
<tr>
<td></td>
<td>5.7 m</td>
<td>5.6 m</td>
</tr>
<tr>
<td>Width</td>
<td>4 ft 10 in</td>
<td>5 ft 8 in</td>
</tr>
<tr>
<td></td>
<td>1.5 m</td>
<td>1.7 m</td>
</tr>
<tr>
<td>Height</td>
<td>6 ft 7 in</td>
<td>6 ft 7 in</td>
</tr>
<tr>
<td></td>
<td>2 m</td>
<td>2 m</td>
</tr>
<tr>
<td>Machine Weight</td>
<td>11,500 lbs</td>
<td>10,500 lbs</td>
</tr>
<tr>
<td></td>
<td>5216 kg</td>
<td>4763 kg</td>
</tr>
<tr>
<td>Ground clearance</td>
<td>5 3/4 in</td>
<td>6 in</td>
</tr>
<tr>
<td></td>
<td>14.6 cm</td>
<td>15.2 cm</td>
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</tbody>
</table>

### Platform dimensions

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>56 in</td>
<td>142 cm</td>
</tr>
<tr>
<td>Width</td>
<td>30 in</td>
<td>76 cm</td>
</tr>
<tr>
<td>Maximum capacity</td>
<td>500 lbs</td>
<td>227 kg</td>
</tr>
</tbody>
</table>

### Operational dimensions

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height, platform maximum</td>
<td>34 ft 4 in</td>
<td>34 ft 8 in</td>
</tr>
<tr>
<td></td>
<td>10.5 m</td>
<td>10.6 m</td>
</tr>
<tr>
<td>Height, working maximum</td>
<td>40 ft 4 in</td>
<td>40 ft 8 in</td>
</tr>
<tr>
<td></td>
<td>12.3 m</td>
<td>12.4 m</td>
</tr>
<tr>
<td>Horizontal reach, maximum</td>
<td>22 ft 4 in</td>
<td>22 ft 4 in</td>
</tr>
<tr>
<td></td>
<td>6.8 m</td>
<td>6.8 m</td>
</tr>
<tr>
<td>Turntable tailswing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>6 ft 2 in</td>
<td>6 ft 2 in</td>
</tr>
<tr>
<td></td>
<td>1.9 m</td>
<td>1.9 m</td>
</tr>
<tr>
<td>Turning radius (outside)</td>
<td>12 ft 9 in</td>
<td>13 ft 1 in</td>
</tr>
<tr>
<td></td>
<td>3.9 m</td>
<td>4 m</td>
</tr>
<tr>
<td>Turning radius (inside)</td>
<td>6 ft</td>
<td>5 ft 8 in</td>
</tr>
<tr>
<td></td>
<td>1.8 m</td>
<td>1.7 m</td>
</tr>
<tr>
<td>Turntable rotation (degrees)</td>
<td>355°</td>
<td>355°</td>
</tr>
<tr>
<td>Platform rotation (degrees)</td>
<td>160°</td>
<td>160°</td>
</tr>
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</table>

### Tires and wheels, Z-34/22

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire size</td>
<td>9-14.5 LT</td>
<td></td>
</tr>
<tr>
<td>Tire ply rating</td>
<td>Tread 8</td>
<td>Sidewall 6</td>
</tr>
<tr>
<td>Tire contact area</td>
<td>43.5 sq in</td>
<td>280 sq cm</td>
</tr>
<tr>
<td>Overall tire diameter</td>
<td>28 in</td>
<td>37 cm</td>
</tr>
<tr>
<td>Wheel diameter</td>
<td>14.5 in</td>
<td>45 cm</td>
</tr>
<tr>
<td>Wheel width</td>
<td>7 in</td>
<td>18 cm</td>
</tr>
</tbody>
</table>

### Tires and wheels, Z-34/22N

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire size</td>
<td>22 x 7 x 17.75 in</td>
<td>56 x 18 x 45 cm</td>
</tr>
<tr>
<td>Load range</td>
<td>7600 lbs</td>
<td>3447 kg</td>
</tr>
<tr>
<td>Tire contact area</td>
<td>35 sq in</td>
<td>226 sq cm</td>
</tr>
<tr>
<td>Overall tire diameter</td>
<td>22 in</td>
<td>56 cm</td>
</tr>
<tr>
<td>Wheel diameter</td>
<td>17.75 in</td>
<td>45 cm</td>
</tr>
<tr>
<td>Wheel width</td>
<td>7 in</td>
<td>18 cm</td>
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### Wheel lugs

<table>
<thead>
<tr>
<th></th>
<th>Z-34/22N</th>
<th>Z-34/22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>8 @ 5/8-18</td>
<td></td>
</tr>
<tr>
<td>Rear</td>
<td>9 @ 5/8-18</td>
<td></td>
</tr>
<tr>
<td>Lug nut torque</td>
<td>125 ft-lbs</td>
<td>169.5 Nm</td>
</tr>
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### Fluid Capacities

#### Z-34/22 before serial number 809 and
#### Z-34/22N before serial number 1116:

<table>
<thead>
<tr>
<th></th>
<th>Hydraulic tank capacity</th>
<th>5 gallons</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hydraulic system (including tank)</td>
<td>18.9 liters</td>
</tr>
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#### Z-34/22 after serial number 808 and
#### Z-34/22N after serial number 1115:

<table>
<thead>
<tr>
<th></th>
<th>Hydraulic tank capacity</th>
<th>4 gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hydraulic system (including tank)</td>
<td>15.1 liters</td>
</tr>
</tbody>
</table>

**Continuous improvement of our products is a Genie policy. Product specifications are subject to change without notice.**
SPECIFICATIONS

**Performance Specifications**

<table>
<thead>
<tr>
<th>Drive speeds (maximum) Z-34/22</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(before serial number 1734)</td>
<td></td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td>4 mph</td>
</tr>
<tr>
<td>35:1 torque hubs</td>
<td>40 ft/6.8 sec</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td>3.1 mph</td>
</tr>
<tr>
<td>47:1 torque hubs</td>
<td>40 ft/9.1 sec</td>
</tr>
<tr>
<td>(after serial number 1733)</td>
<td></td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td>3.7 mph</td>
</tr>
<tr>
<td>47:1 torque hubs</td>
<td>40 ft/7.5 sec</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td>2.8 mph</td>
</tr>
<tr>
<td>49:1 torque hubs</td>
<td>40 ft/10 sec</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td>0.6 mph</td>
</tr>
<tr>
<td>booms raised or extended</td>
<td>40 ft/40 sec</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Drive speeds (maximum) Z-34/22N</th>
</tr>
</thead>
<tbody>
<tr>
<td>(before serial number 2227)</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
</tr>
<tr>
<td>35:1 torque hubs</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
</tr>
<tr>
<td>47:1 torque hubs</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
</tr>
<tr>
<td>booms raised or extended</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gradeability (boom stowed) Z-34/22</th>
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</tr>
</thead>
<tbody>
<tr>
<td>(before serial number 1734)</td>
<td></td>
</tr>
<tr>
<td>49:1 drive hubs</td>
<td>35%</td>
</tr>
<tr>
<td>35:1 drive hubs</td>
<td>30%</td>
</tr>
<tr>
<td>Z-34/22 (after serial number 1733)</td>
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</tr>
<tr>
<td>47:1 drive hubs</td>
<td>30%</td>
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<table>
<thead>
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<th>Gradeability (boom stowed) Z-34/22N</th>
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<tbody>
<tr>
<td>(before serial number 2227)</td>
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<tr>
<td>49:1 drive hubs</td>
</tr>
<tr>
<td>35:1 drive hubs</td>
</tr>
<tr>
<td>Z-34/22N (after serial number 2226)</td>
</tr>
<tr>
<td>47:1 drive hubs</td>
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</table>

**Boom function speeds, maximum from platform controls (with 500 lbs in platform)**

<table>
<thead>
<tr>
<th>Z-34/22 before serial number 1734 and Z-34/22N after serial number 2227</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jib boom up</td>
</tr>
<tr>
<td>Jib boom down</td>
</tr>
<tr>
<td>Primary boom up</td>
</tr>
<tr>
<td>Primary boom down</td>
</tr>
<tr>
<td>Primary boom extend</td>
</tr>
<tr>
<td>Primary boom retract</td>
</tr>
<tr>
<td>Secondary boom up</td>
</tr>
<tr>
<td>Secondary boom down</td>
</tr>
<tr>
<td>Turntable rotate - 355°</td>
</tr>
<tr>
<td>Platform rotate - 160°</td>
</tr>
<tr>
<td>Platform level up</td>
</tr>
<tr>
<td>Platform level down</td>
</tr>
</tbody>
</table>

**Boom function speeds, maximum from platform controls (with 500 lbs in platform)**

<table>
<thead>
<tr>
<th>Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jib boom up</td>
</tr>
<tr>
<td>Jib boom down</td>
</tr>
<tr>
<td>Primary boom up</td>
</tr>
<tr>
<td>Primary boom down</td>
</tr>
<tr>
<td>Primary boom extend</td>
</tr>
<tr>
<td>Primary boom retract</td>
</tr>
<tr>
<td>Secondary boom up</td>
</tr>
<tr>
<td>Secondary boom down</td>
</tr>
<tr>
<td>Turntable rotate - 355°</td>
</tr>
<tr>
<td>Platform rotate - 160°</td>
</tr>
<tr>
<td>Platform level up</td>
</tr>
<tr>
<td>Platform level down</td>
</tr>
</tbody>
</table>
### Hydraulic Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Z-34/22</th>
<th>Z-34/22N</th>
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<tbody>
<tr>
<td><strong>Hydraulic fluid</strong></td>
<td>10 micron with 25 psi</td>
<td>10 micron with 25 psi</td>
</tr>
<tr>
<td><strong>Displacement</strong></td>
<td>0.153 cu in</td>
<td>0.153 cu in</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Fixed displacement gear pump</td>
<td>Fixed displacement gear pump</td>
</tr>
<tr>
<td><strong>Displacement per revolution</strong></td>
<td>1.6 gpm</td>
<td>1.6 gpm</td>
</tr>
<tr>
<td><strong>Displacement (2500 psi/172 bar)</strong></td>
<td>2.5 cc</td>
<td>2.5 cc</td>
</tr>
<tr>
<td><strong>Displacement (2500 psi/172 bar)</strong></td>
<td>6 l/min</td>
<td>6 l/min</td>
</tr>
<tr>
<td><strong>Function manifold</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Function relief valve pressure</strong></td>
<td>3200 psi</td>
<td>3200 psi</td>
</tr>
<tr>
<td><strong>Primary boom down relief</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(before serial number 3216)</td>
<td>1400 psi</td>
<td>1400 psi</td>
</tr>
<tr>
<td>(after serial number 3215)</td>
<td>1600 psi</td>
<td>1600 psi</td>
</tr>
<tr>
<td><strong>Secondary boom down relief</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(after serial number 3766)</td>
<td>1600 psi</td>
<td>1600 psi</td>
</tr>
<tr>
<td>(before serial number 3767)</td>
<td>1600 psi</td>
<td>1600 psi</td>
</tr>
<tr>
<td><strong>Primary boom extend relief</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(before serial number 2901)</td>
<td>1800 psi</td>
<td>1800 psi</td>
</tr>
<tr>
<td>(from serial number 2901 to 3215)</td>
<td>2800 psi</td>
<td>2800 psi</td>
</tr>
<tr>
<td>(after serial number 3533)</td>
<td>1800 psi</td>
<td>1800 psi</td>
</tr>
<tr>
<td>(from serial number 3533 to 3766)</td>
<td>2800 psi</td>
<td>2800 psi</td>
</tr>
<tr>
<td><strong>Turntable rotate relief valve pressures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(before serial number 674)</td>
<td>1750 psi</td>
<td>1750 psi</td>
</tr>
<tr>
<td>(from serial number 674 to 1733)</td>
<td>2800 psi</td>
<td>2800 psi</td>
</tr>
<tr>
<td>(after serial number 1733)</td>
<td>1100 psi</td>
<td>1100 psi</td>
</tr>
<tr>
<td>(after serial number 935)</td>
<td>1750 psi</td>
<td>1750 psi</td>
</tr>
<tr>
<td>(from serial number 935 to 2226)</td>
<td>2800 psi</td>
<td>2800 psi</td>
</tr>
<tr>
<td><strong>Auxiliary pump</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Fixed displacement gear pump</td>
<td>Fixed displacement gear pump</td>
</tr>
<tr>
<td><strong>Displacement</strong></td>
<td>0.75 gpm</td>
<td>0.75 gpm</td>
</tr>
<tr>
<td></td>
<td>2.8 l/min</td>
<td>2.8 l/min</td>
</tr>
</tbody>
</table>
Hydraulic Hose and Fitting Torque Specifications

Your machine is equipped with Parker Seal-Lok® O-ring face seal fittings and hose ends. Machines that utilize Parker Seal-Lok® O-ring face seal hoses and fittings require that the fittings and hose ends be torqued to specification when they are removed and installed, or when new hoses or fittings are installed.

Torque Procedure

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.

   **NOTICE** 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 above.

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

### Hydraulic Hose and Fitting Torque Specifications

<table>
<thead>
<tr>
<th>SAE Dash Size</th>
<th>Installing into...</th>
<th>SAE Dash Size</th>
<th>ft. lbs.</th>
<th>Nm</th>
</tr>
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<tbody>
<tr>
<td>-4 Aluminum</td>
<td>11</td>
<td>-4 Steel</td>
<td>18</td>
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</tr>
<tr>
<td>-6 Aluminum</td>
<td>23</td>
<td>-6 Steel</td>
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SPECIFICATIONS
### SAE Fastener Torque Chart

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

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<thead>
<tr>
<th>SIZE</th>
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<th>Grade 8 High Strength Black Oxide Bolts</th>
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<td>DRY</td>
<td>LUBED</td>
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<tr>
<td></td>
<td>1/4</td>
<td>in-lbs</td>
<td>Nm</td>
<td>in-lbs</td>
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<tr>
<td></td>
<td>20</td>
<td>80</td>
<td>9</td>
<td>100</td>
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<td></td>
<td>28</td>
<td>90</td>
<td>10.1</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>5/16</td>
<td>ft-lbs</td>
<td>Nm</td>
<td>ft-lbs</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td>80</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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<thead>
<tr>
<th>Size (mm)</th>
<th>Class 4.6</th>
<th>Class 8.8</th>
<th>Class 10.9</th>
<th>Class 12.9</th>
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</thead>
<tbody>
<tr>
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<td>LUBED</td>
<td>DRY</td>
<td>LUBED</td>
<td>DRY</td>
</tr>
<tr>
<td></td>
<td>in-lbs</td>
<td>Nm</td>
<td>in-lbs</td>
<td>Nm</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>1.8</td>
<td>21</td>
<td>2.4</td>
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<tr>
<td>6</td>
<td>19</td>
<td>3.05</td>
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<td>4.07</td>
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<td>7</td>
<td>45</td>
<td>5.12</td>
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<td>6.83</td>
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</tbody>
</table>
Scheduled Maintenance Inspections

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, hourly, quarterly, annually and every 2 years as specified on the Maintenance Inspection Report.

⚠️ Failure to properly complete each inspection when required could 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.

☑ Machines that have been out of service for a period longer than 3 months must complete the hourly and quarterly inspections.

About This Section

The Schedule

There are five types of maintenance inspections that must be performed according to a schedule—daily, hourly, quarterly, annual and two year. To account for repeated procedures, the Maintenance Tables and the Maintenance Inspection Report have been divided into four subsections—A, B, C, D. 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>Table or Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>A</td>
</tr>
<tr>
<td>Hourly and Quarterly</td>
<td>A + B</td>
</tr>
<tr>
<td>Annual</td>
<td>A + B + C</td>
</tr>
<tr>
<td>Two year</td>
<td>A + B + C + D</td>
</tr>
</tbody>
</table>

Maintenance Tables

The maintenance tables contained in this section provide summary information on the specific physical requirements for each inspection.

Complete step-by-step instructions for each scheduled maintenance procedure are provided in section 4, Scheduled Maintenance Procedures.

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.
# Maintenance Tables

## Table A

<table>
<thead>
<tr>
<th>A-1</th>
<th>Inspect the Operator's and Safety Manuals</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>Inspect the Decals and Placards</td>
</tr>
<tr>
<td>A-3</td>
<td>Inspect for Damage and Loose or Missing Parts</td>
</tr>
<tr>
<td>A-4</td>
<td>Check the Hydraulic Oil Level</td>
</tr>
<tr>
<td>A-5</td>
<td>Check for Hydraulic Leaks</td>
</tr>
<tr>
<td>A-6</td>
<td>Test the Platform and Ground Controls</td>
</tr>
<tr>
<td>A-7</td>
<td>Test the Auxiliary Power Operation</td>
</tr>
<tr>
<td>A-8</td>
<td>Test the Tilt Sensor</td>
</tr>
<tr>
<td>A-9</td>
<td>Test the Limit Switches</td>
</tr>
<tr>
<td>A-10</td>
<td>Test the Lift/Drive Select Switch (if equipped)</td>
</tr>
<tr>
<td>A-11</td>
<td>Perform 30 Day/50 Hour Service</td>
</tr>
</tbody>
</table>

## Table B

<table>
<thead>
<tr>
<th>B-1</th>
<th>Check the Batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-2</td>
<td>Inspect the Electrical Wiring</td>
</tr>
<tr>
<td>B-3</td>
<td>Inspect the Tires and Wheels (including lug nut torque)</td>
</tr>
<tr>
<td>B-4</td>
<td>Confirm the Proper Brake Configuration</td>
</tr>
<tr>
<td>B-5</td>
<td>Check the Oil Level in the Drive Hubs</td>
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### Table B, continued

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Tools are required</th>
<th>New parts required</th>
<th>Warm engine required</th>
<th>Cold engine required</th>
<th>Dealer service suggested</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-6</td>
<td>Test the Key Switch</td>
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<td>B-7</td>
<td>Test the Emergency Stop Buttons</td>
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<td>B-8</td>
<td>Test the Ground Control Override</td>
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<td>B-9</td>
<td>Test the Platform Self-leveling</td>
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</tr>
<tr>
<td>B-10</td>
<td>Test the Horn</td>
<td></td>
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</tr>
<tr>
<td>B-11</td>
<td>Test the Foot Switch</td>
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<tr>
<td>B-12</td>
<td>Test the Drive Enable System</td>
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<tr>
<td>B-13</td>
<td>Test the Drive Brakes</td>
<td></td>
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<tr>
<td>B-14</td>
<td>Test the Drive Speed - Stowed Position</td>
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<td>B-15</td>
<td>Test the Drive Speed - Raised or Extended Position</td>
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<tr>
<td>B-16</td>
<td>Test the Alarm Package (if equipped)</td>
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<tr>
<td>B-17</td>
<td>Test the Turntable Rotation Stop</td>
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<tr>
<td>B-18</td>
<td>Check the Electrical Contactors</td>
<td></td>
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<tr>
<td>B-19</td>
<td>Perform Hydraulic Oil Analysis</td>
<td>See D-1 Test or Replace the Hydraulic Oil</td>
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</tr>
</tbody>
</table>

**Every 250 hours, perform the following maintenance procedure:**

- Replace the Hydraulic Tank Return Filter
- Perform Hydraulic Oil Analysis

See D-1 *Test or Replace the Hydraulic Oil*
MAINTENANCE TABLES

Table C

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Tools are required</th>
<th>New parts required</th>
<th>Warm engine required</th>
<th>Cold engine required</th>
<th>Dealer service suggested</th>
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</thead>
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<td>Check the Primary Boom Wear Pads</td>
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<td>Check the Turntable Rotation Bearing Bolts</td>
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<td>C-3</td>
<td>Check the Free-wheel Configuration</td>
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<td>C-4</td>
<td>Grease the Turntable Rotation Bearing and Worm Drive Gear</td>
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<td>C-5</td>
<td>Replace the Drive Hub Oil</td>
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<td>Bleed the Platform Rotator</td>
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Table D

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<th>New parts required</th>
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<td>D-1</td>
<td>Test or Replace the Hydraulic Oil</td>
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<td>D-2</td>
<td>Grease the Steer Axle Wheel Bearings</td>
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</table>
# Maintenance Inspection Report

## Checklist A

<table>
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<th>Item</th>
<th>Y</th>
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</thead>
<tbody>
<tr>
<td>A-1 Operator's and Safety manuals</td>
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</tr>
<tr>
<td>A-2 Decals and placards</td>
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<tr>
<td>A-3 Damage and loose or missing parts</td>
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<tr>
<td>A-4 Hydraulic oil level</td>
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<tr>
<td>A-5 Hydraulic leaks</td>
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<tr>
<td>A-6 Platform and ground controls</td>
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<td></td>
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<tr>
<td>A-7 Auxiliary power</td>
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<td></td>
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<tr>
<td>A-8 Tilt sensor</td>
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<td></td>
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<tr>
<td>A-9 Limit switches</td>
<td></td>
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<tr>
<td>A-10 Lift/Drive select switch (if equipped)</td>
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<tr>
<td>A-11 30 Day/50 Hour Service</td>
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Refer to Table A

## Checklist B

<table>
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<th>Item</th>
<th>Y</th>
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<tbody>
<tr>
<td>B-1 Batteries</td>
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<tr>
<td>B-2 Electrical wiring</td>
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<tr>
<td>B-3 Tires and wheels</td>
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<td>B-4 Brake configuration</td>
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<td>B-5 Drive hub oil level</td>
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<td>B-6 Key switch</td>
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<td>B-8 Ground control override</td>
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Refer to Table B

## Checklist C

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<th>Item</th>
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<td>C-1 Boom wear pads</td>
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<tr>
<td>C-2 Turntable bearing bolts</td>
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</tr>
<tr>
<td>C-3 Free-wheel configuration</td>
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<tr>
<td>C-4 Grease rotation bearing</td>
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<td>C-5 Drive hub oil</td>
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</tr>
<tr>
<td>C-6 Platform rotator</td>
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</table>

Perform quarterly or every 250 hours:

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<tbody>
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<td>B-9 Platform leveling</td>
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<tr>
<td>B-10 Horn</td>
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<tr>
<td>B-11 Foot switch</td>
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</tr>
<tr>
<td>B-12 Drive enable system</td>
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<tr>
<td>B-13 Drive brakes</td>
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<tr>
<td>B-14 Drive speed-stowed</td>
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<tr>
<td>B-15 Drive speed-raised</td>
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</tr>
<tr>
<td>B-16 Alarm package (if equipped)</td>
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<tr>
<td>B-17 Turntable stop</td>
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<td>B-18 Electrical contactors</td>
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<tr>
<td>B-19 Hydraulic oil analysis</td>
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Refer to Table C

## Checklist D

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<th>Item</th>
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<th>N</th>
<th>R</th>
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<tbody>
<tr>
<td>D-1 Hydraulic oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-2 Wheel bearings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to Table D

---

### Instructions

- Make copies of this page to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection to be performed.
- Place a check in the appropriate box after each inspection procedure is completed.
- Use the maintenance tables in this section and the step-by-step procedures in section 4 to learn how to perform these inspections.
- If any inspection receives an "N", tag and remove the machine from service, repair and re-inspect it. After repair, place a check in the "R" box.

### Legend

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

### Comments

---

Part No. 36540

Genie Z-34/22 & Genie Z-34/22N

3 - 5
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, hourly, quarterly, annually and every 2 years as specified on the Maintenance Inspection Report.

⚠️ 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.

☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:
  - Machine parked on a flat level surface
  - Boom in the stowed position
  - Turntable rotated with the boom between the non-steering wheels
  - Key switch in the off position with the key removed
  - Wheels chocked

About This Section

This section contains detailed procedures for each scheduled maintenance inspection.

Each procedure includes a description, safety warnings and step-by-step instructions.

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.

⚠️ Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠️ Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠️ Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

⚠️ Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

⚠️ Green—used to indicate operation or maintenance information.

⚠️ Indicates that a specific result is expected after performing a series of steps.
Table A Procedures

A-1  
Inspect the Operator’s and Safety Manuals

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.

1 Check to be sure the storage container is present and in good condition.

2 Check to make sure that the operator’s, responsibilities and safety manuals are present and complete in the storage container in the platform.

3 Examine the pages of each manual to be sure that they are legible and in good condition.

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

**NOTICE**  
Contact your authorized Genie distributor or Genie Industries if replacement manuals are needed.

A-2  
Inspect the Decals and Placards

Maintaining all of the safety and instructional decals and placards 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 Refer to the Decals section in the Genie Z-34/22 & Genie Z-34/22N Operator’s Manual and use the decal list and illustrations to determine that all decals and placards are in place.

2 Inspect all decals for legibility and damage. Replace any damaged or illegible decal immediately.

**NOTICE**  
Contact your authorized Genie distributor or Genie Industries if replacement decals are needed.
A-3
Inspect for Damage and Loose or Missing Parts

Daily machine condition inspections are essential to safe machine operation and good machine performance. Failure to locate and repair damage, and discover loose or missing parts may result in an unsafe operating condition.

1 Inspect the entire machine for damage and improperly installed or missing parts including:
   - Electrical components, wiring and electrical cables
   - Hydraulic power units, reservoir, hoses, fittings, cylinders and manifolds
   - Drive and turntable motors and drive hubs
   - Boom wear pads
   - Tires and wheels
   - Limit switches, alarms and horn
   - Nuts, bolts and other fasteners
   - Platform entry mid-rail/gate
   - Beacon and alarms (if equipped)

Check entire machine for:
   - Cracks in welds or structural components
   - Dents or damage to machine
   - Battery packs and connections
   - Compartment covers and latches

A-4
Check the Hydraulic Oil Level

Maintaining the hydraulic oil at the proper level is essential to machine operation. Improper hydraulic oil levels can damage hydraulic components. Daily checks allow the inspector to identify changes in oil level that might indicate the presence of hydraulic system problems.

Z-34/22 before serial number 572 and Z-34/22N before serial number 572:

1 Be sure that the boom is in the stowed position.
2 Remove the breather cap with dipstick from the hydraulic tank.
3 Visually inspect the dipstick.

Result: The hydraulic oil level should be at the full mark on the dipstick.

Z-34/22 from serial number 572 to 808 and Z-34/22N from serial number 572 to 1115:

1 Be sure that the boom is in the stowed position, then visually inspect the sight glass on the hydraulic tank.

Result: The hydraulic oil level should be within the top and bottom of the sight glass.
Z-34/22 after serial number 808 and
Z-34/22N after serial number 1115:
1 Be sure that the boom is in the stowed position.
2 Visually inspect the hydraulic tank.

Result: The hydraulic oil level should be within
the FULL and ADD marks on the hydraulic tank.

<table>
<thead>
<tr>
<th>Hydraulic Oil Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic oil type</td>
</tr>
</tbody>
</table>

Z-34/22 before serial number 809 and
Z-34/22N before serial number 1116:
Hydraulic tank capacity
5 gallons
18.9 liters

Hydraulic system (including tank)
7 gallons
26.5 liters

Z-34/22 after serial number 808 and
Z-34/22N after serial number 1115:
Hydraulic tank capacity
4 gallons
15.1 liters

Hydraulic system (including tank)
6 gallons
22.7 liters

A-5 Check for Hydraulic Leaks

Detecting hydraulic fluid leaks is essential to operational safety and good machine performance. Undiscovered leaks can develop into hazardous situations, impair machine functions and damage machine components.

1 Inspect for hydraulic oil puddles, dripping or residue on or around the following areas:
   • Hydraulic tank—filter, fittings, hoses and turntable surface
   • Compartments—hydraulic power unit, auxiliary power unit, pumps, suction filter, fittings, hoses, and turntable surface
   • All hydraulic cylinders
   • All hydraulic manifolds
   • Primary, secondary and jib booms
   • The underside of the turntable
   • The underside of the drive chassis
   • Ground area under the machine
A-6
Test the Platform and Ground Controls

Testing the machine functions and the Emergency Stop buttons for malfunctions is essential for safe machine operation. An unsafe working condition exists if any function fails to operate properly or either Emergency Stop button fails to stop all the machine functions. Each function should operate smoothly and be free of hesitation, jerking and unusual noise.

Z-34/22N before serial number 304 and Z-34/22 before serial number 153:

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

   Result: Beacon (if equipped) should flash.

2  Attempt to activate each boom and platform function toggle switch.

   Result: All machine functions should operate through a full cycle. The descent alarm (if equipped) should sound while the boom is lowering.

3  Push in the Emergency Stop button to the OFF position.

   Result: No function should operate. The machine should stop.

4  Turn the key switch to platform controls and pull out the Emergency Stop button to the ON position at both the ground and platform controls.

   Result: Beacon (if equipped) should flash.

5  Move the lift/drive select toggle switch to the lift position (if equipped).

6  Press down the foot switch and operate each machine function through a full cycle.

   Result: All machine functions should operate smoothly.

7  Push in the Emergency Stop button to the OFF position.

   Result: No function should operate. The machine should stop.

**NOTICE**

As a safety feature, selecting and operating the ground controls will override the platform controls, including the Emergency Stop button.

**NOTICE**

Machines equipped with Platform Level Control Disable Function: The platform level toggle switch will not operate when the primary boom is raised past the drive speed limit switch.
Z-34/22N after serial number 303 and 
Z-34/22 and after serial number 152:

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

☐ Result: Beacon (if equipped) should flash.

2 Do not hold the function enable switch to either 
side. Attempt to activate each boom and 
platform function toggle switch.

☐ Result: All boom and platform functions should not operate.

3 Hold the function enable switch to either side 
and activate each boom and platform function 
toggle switch.

☐ Result: All machine functions should operate 
through a full cycle. The descent alarm (if 
equipped) should sound while the boom is 
lowering.

Machines equipped with Platform 
Level Control Disable Function: 
The platform level toggle switch 
will not operate when the boom is 
raised past the drive speed limit 
switch.

☐ Result: No function should operate. The 
machine should stop.

4 Push in the Emergency Stop button to the OFF 
position.

5 Turn the key switch to platform control and pull 
out the Emergency Stop button to the ON 
position at both the ground and the platform 
controls.

☐ Result: Beacon (if equipped) should flash.

6 Press down the foot switch and operate each 
machine function through a full cycle.

☐ Result: All machine functions should operate 
smoothly.

7 Push in the Emergency Stop button to the OFF 
position.

☐ Result: No function should operate. The 
machine should stop.

As a safety feature, selecting 
and operating the ground 
controls will override the 
platform controls, including 
the Emergency Stop button.
A-7
Test the Auxiliary Power Operation

Detection of auxiliary power system malfunctions is essential for safe machine operation. An unsafe working condition exists if the auxiliary powered functions do not operate in the event of a main power loss. Auxiliary power is designed for short term emergency use only. Excessive use will result in battery drain and component damage.

1. Turn the key switch to ground control and pull out the Emergency Stop button to the ON position.

2. Lift the red auxiliary power switch cover.

3. Simultaneously hold the auxiliary power switch in the ON direction while activating each function through a partial cycle.

   ○ Result: Each function should operate smoothly.

4. Turn the key switch to platform control.

5. At the platform controls, pull out the Emergency Stop button to the ON position, then press down the foot switch.

6. Lift the red auxiliary power switch cover.

7. Simultaneously hold the auxiliary power switch ON while activating each function through a partial cycle.

   ○ Result: Each function should operate smoothly.

TABLE A PROCEDES

<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Lift the red auxiliary power switch cover.</td>
</tr>
<tr>
<td>7</td>
<td>Simultaneously hold the auxiliary power switch ON while activating each function through a partial cycle.</td>
</tr>
<tr>
<td></td>
<td>○ Result: Each function should operate smoothly.</td>
</tr>
</tbody>
</table>
**A-8 Test the Tilt Sensor**

The tilt sensor sounds an alarm in the platform when the incline of the machine exceeds the rating on the serial plate.

**NOTICE** Select a level test area. The tilt alarm should not be sounding prior to test.

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

2. Open the ground control side turntable cover and press down on one side of the tilt sensor. Hold for 5 seconds.

Result: The alarm located in the platform should sound.

**WARNING** Tip-over hazard. The alarm should be heard at the ground controls. If you can't hear the alarm at the ground controls, replace the alarm in the platform.

---

**A-9 Test the Limit Switches**

Detecting limit switch malfunctions is essential to safe machine operation. The drive limit switch is used to restrict drive speed when the boom is raised or extended. The drive enable limit switch activates a signal light to inform the operator that the platform is over the steering wheels, and stops drive movement unless the drive enable override switch is used. Improperly functioning limit switches will allow the boom to raise and/or drive into an unsafe position.

**Drive Speed Limit Switches**

1. With the boom in the stowed position, visually inspect the drive speed limit switches for the following:
   - Broken or missing rollers or arms
   - Missing fasteners
   - Loose wiring

   ![Diagram](image)

   - Primary boom drive speed limit switch (LS2) (Z-34/22 after serial number 367 and Z-34/22N after serial number 540)
   - Boom extend drive speed limit switch (LS1)
   - Secondary boom drive speed limit switch (LS4) (Z-34/22 after serial number 366 and Z-34/22N after serial number 539)
   - Primary/secondary boom drive speed limit switch (LS2) (Z-34/22 before serial number 367 and Z-34/22N before serial number 540)
2. Extend the primary boom approximately 12 inches (30 cm).
3. Manually activate the boom extend drive speed limit switch.
   Result: The drive speed limit switch arm should move freely and spring return to center. A distinct click should be felt and heard.
4. Fully retract the primary boom.
5. **Z-34/22 and Z-34/22N machines manufactured before May, 1999:** Remove the rear turntable cover mounting fasteners, then remove the cover. Manually activate the secondary boom drive speed limit switch.
   **Z-34/22 and Z-34/22N machines manufactured after April, 1999:** Manually activate the secondary boom drive speed limit switch.
   Result: The drive speed limit switch arm should move freely and spring return to center. A distinct click should be felt and heard.
6. Manually activate the primary boom drive limit switch.
   Result: The drive speed limit switch arm should move freely and spring return to center. A distinct click should be felt and heard.
7. Turn the key switch to platform control and pull out the Emergency Stop button to the on position at the platform controls.
8. Press down the foot switch and slowly move the drive control handle off center.
   Result: The machine should move at normal drive speeds.
9. Raise the primary boom approximately 5 feet (1.5 m).
10. Slowly move the drive control handle off center.
    Result: The machine should move at a reduced drive speed.
11. Lower the primary boom to the stowed position.
12. Raise the secondary boom approximately 5 feet (1.5 m).
13. Slowly move the drive control handle off center.
    Result: The machine should move at a reduced drive speed.
14. Lower the secondary boom to the stowed position.
15. Extend the primary boom 12 inches (30 cm).
16. Slowly move the drive control handle off center.
    Result: The machine should move at a reduced drive speed.

<table>
<thead>
<tr>
<th>Raised Drive speed (maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platform raised</td>
</tr>
<tr>
<td>40 ft/40 sec</td>
</tr>
<tr>
<td>12.2 m/40 sec</td>
</tr>
</tbody>
</table>
Drive Enable Limit Switch

1 With the boom in the stowed position, visually inspect the drive enable limit switch for the following:
   • Broken or missing roller or arm
   • Missing fasteners
   • Loose wiring

2 Turn the key switch to platform control and pull out the Emergency Stop button to the ON position at both the ground and platform controls.

   ○ Result: The drive enable indicator light should be ON.

3 At the platform controls, rotate the turntable to the left until the primary boom is past the left non-steer wheel.

   ○ Result: The drive function should not operate.

4 Move the drive control handle off center.

   ○ Result: The drive function should operate.

5 Move and hold the drive enable toggle switch to either side and slowly move the drive control handle off center.

   ○ Result: The drive function should operate.

6 Manually activate the drive enable limit switch.

   ○ Result: The drive enable limit switch roller should move freely and spring return to center. A distinct click should be felt and heard.

![Diagram of drive enable limit switch components]

- a swing chassis
- b limit switch cam
- c drive enable limit switch (LS3)
- d drive chassis
A-10
Test the Lift/Drive Select Switch (if equipped)

1 Move the lift/drive select switch to the lift position.
2 Press down the foot switch and move the drive control handle off center.
Result: No drive functions should operate.
3 Activate each boom function toggle switch.
Result: All boom functions should operate.
4 Move the lift/drive select switch to the drive position.
5 Press down the foot switch and activate each boom function toggle switch.
Result: No boom functions should operate.
6 Move the drive control handle off center.
Result: The drive functions should operate.

A-11
Perform 30 Day/50 hour Service

The 30 day maintenance procedure is a onetime 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-3 Inspect Tires and Wheels (including lug nut torque)
   • B-20 Replace the Hydraulic Tank Return Filter
   • C-2 Check the Turnable Rotation Bearing Bolts
Check the Batteries

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

**WARNING**

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

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

**NOTICE**

Perform this test after fully charging the batteries.

1. Put on protective clothing and eye wear.
2. Disconnect the battery packs from the machine.
3. Be sure the battery cable connections are free of corrosion.
4. Be sure the battery hold down and cable connections are tight.
5. Remove the battery vent caps and check the specific gravity of each battery cell with a hydrometer.
6. If any battery cell displays a specific gravity of less than 1.026, the battery must be replaced.
7. Check the battery acid level of the battery. If needed, replenish with distilled water to the bottom of the battery fill tube. Do not overfill.
8. Install the battery vent caps.
9. Check each battery pack and verify that the batteries are wired correctly.
10. Connect the battery packs to the machine.

---

Table B Procedures
B-2
Inspect the Electrical Wiring

Maintaining electrical wiring in good condition is essential to safe operation and good machine performance. Failure to find and replace burnt, chafed, corroded or pinched wires could result in unsafe operating conditions and may cause component damage.

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

1. Inspect the following areas for burnt, chafed, corroded and loose wires:
   - Electrical power panel
   - Electrical relay panel
   - Ground control panel
   - Turntable manifold wiring

2. Turn the key switch to ground control and pull out the Emergency Stop button to the **ON** position.

3. Raise the secondary boom until the lower mid-pivot is approximately 10 feet (3 m) off the ground.

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

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

6. Inspect the following areas for burnt, chafed, corroded, pinched and loose wires:
   - Cable track on the primary boom
   - Primary boom to platform cable harness
   - Inside of the platform control box
B-3
Inspect the Tires and Wheels (including lug nut torque)

Maintaining the tires and wheels in good condition 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.

1. Check the tire surface and sidewalls for cuts, cracks, and unusual wear.
2. Check each wheel for damage, bends and cracked welds.
3. Check each lug nut for proper torque.

<table>
<thead>
<tr>
<th>Tires and wheels</th>
<th>125 ft-lbs</th>
<th>169.5 Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lug nut torque, dry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lug nut torque, lubricated</td>
<td>95 ft-lbs</td>
<td>129 Nm</td>
</tr>
</tbody>
</table>

B-4
Confirm the Proper Brake Configuration

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.
B-5
Check the Oil Level in the Drive Hubs

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 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 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 Apply pipe thread sealant to the plugs and install the plugs into the hub.

5 Repeat this procedure for each drive hub.

Drive Hub Oil

| Type: SAE 90 multipurpose hypoid gear oil - API service classification GL5 |
|---|---|---|
| Capacity | 49:1 and 35:1 models | 47:1 models |
| (before serial number 1734) | 17 fluid ounces | 25.6 fluid ounces |
| (after serial number 1733) | 0.5 liters | 0.76 liters |
Test the Key Switch

Proper key switch action and response is essential to safe machine operation. The machine can be operated from the ground or platform controls and the activation of one or the other is accomplished with the key switch. Failure of the key switch to activate the appropriate control panel could cause a hazardous operating situation.

1. Pull out the Emergency Stop button to the **ON** position at both the ground and platform controls.
2. Turn the key switch to **platform control**.
3. Check the machine functions from the **ground controls**.
   - Result: The machine functions should **not** operate.
4. Turn the key switch to **ground control**.
5. Check the machine functions from the **platform controls**.
   - Result: The machine functions should **not** operate.
6. Turn the key switch to the **OFF** position.
   - Result: No function should operate. The machine should stop.

Test the Emergency Stop Buttons

Properly functioning Emergency Stop buttons are essential for safe machine operation. An improperly operating Emergency Stop button will fail to shut off power and stop all machine functions resulting in a hazardous situation.

**NOTICE**
As a safety feature, selecting and operating the ground controls will override the platform controls, including the Emergency Stop button.

1. Turn the key switch to ground control and pull out the Emergency Stop button to the **ON** position.
2. Push down the Emergency Stop button to the **OFF** position.
   - Result: No functions should operate. The machine should stop.
3. Turn the key switch to platform control and pull out the Emergency Stop button to the **ON** position at both the ground and platform controls.
4. Push down the platform Emergency Stop button to the **OFF** position.
   - Result: No machine functions should operate.

**NOTICE**
The ground Emergency Stop button will stop all machine operation, even if the key switch is switched to platform control.
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 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 down the platform Emergency Stop button to the **OFF** position.
2. Turn the key switch to ground control and pull out the ground controls 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.

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 Emergency Stop button to the **ON** position.
2. Lower the boom to the stowed position.
3. Adjust the platform to a level position using the platform leveling 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-10  Test the Horn

A properly functioning horn is essential to safe machine operation. The horn is activated at the platform controls and sounds at the ground as a warning to ground personnel. An improperly functioning horn will prevent the operator from alerting ground personnel of hazards or unsafe conditions.

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

2 Push down the horn button at the platform controls.

Result: The horn should sound.

If necessary, the horn can be adjusted to obtain the loudest volume by turning the adjustment screw near the wire terminals on the horn.

B-11  Test the Foot Switch

A properly functioning foot switch is essential to safe machine operation. Machine functions should activate and operate smoothly as long as the foot switch is pressed down, and promptly stop when the foot switch is released. An improperly functioning foot switch can cause an unsafe working condition.

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

2 Without pressing down the foot switch, attempt to operate the machine functions.

Result: The machine functions should not operate.

3 Press down the foot switch and operate the machine functions.

Result: The machine functions should operate.
Test the Drive Enable System

Proper drive enable system operation is essential to safe machine operation. When the primary boom is past the non-steering wheels, drive movement is stopped and the indicator light turns on. The drive enable toggle switch must be used to reactivate drive function and should inform the operator that the machine may move in the opposite direction that the drive and steer controls are moved. An improperly functioning drive enable system may allow the machine to be moved into an unsafe position.

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

2. At the platform controls, rotate the turntable to the right until the primary boom is past the right non-steer wheel.

   Result: The drive enable indicator light should come on and remain on while the boom is past the non-steer wheel.

3. Move the lift/drive select switch to the drive position.

4. Move the drive control handle off center.

   Result: The drive function should not operate.

5. Move and hold the drive enable toggle switch to either side and slowly move the drive control handle off center.

   Result: The drive function should operate.

   CAUTION Collision hazard. Always use the color-coded direction arrows on the platform control panel and the drive chassis to identify which direction the machine will travel.

6. Rotate the turntable to the left until the primary boom is past the left-steer wheel.

   Result: The drive enable indicator light should come on.

7. Repeat steps 3 through 5.
**TEST THE DRIVE BRAKES**

Proper brake action is essential to safe machine operation. The drive brake function should operate smoothly, free of hesitation, jerking and unusual noise. Hydrostatic brakes and hydraulically-released individual wheel brakes can appear to operateNormally when not fully operational.

**WARNING** Collision hazard. Be sure that the machine is not in free-wheel or partial free-wheel configuration. Refer to B-4 in this section, *Confirm the Proper Brake Configuration*.

**NOTICE** 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. Turn the key switch to platform control and pull out the Emergency Stop button to the *ON* position at both the ground and platform controls.
4. Move the lift/drive switch to the *DRIVE* position (if equipped).
5. Choose a point on the machine; i.e., contact patch of a tire, as a visual reference for use when crossing the test line.

6. 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.

7. Measure the distance between the test line and your machine reference point.

| Braking: paved surface | Stopping distance | 3 to 4 ft | 0.9 to 1.2 m |

**NOTICE** The brakes must be able to hold the machine on any slope it is able to climb.
B-14

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.

**NOTICE** 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. Turn the key switch to platform control and pull out the Emergency Stop button to the **ON** position at both the ground and platform controls.

4. Move the lift/drive switch to the **DRIVE** position (if equipped).

5. 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.

6. 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.

7. Continue at full speed and note the time when the machine reference point passes over the finish line.

### TABLE B PROCEDURES

<table>
<thead>
<tr>
<th>Drive speeds (maximum) Z-34/22</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive speed, stowed</td>
<td></td>
</tr>
<tr>
<td>35:1 torque hubs</td>
<td></td>
</tr>
<tr>
<td>4 mph</td>
<td>6.4 km/h</td>
</tr>
<tr>
<td>40 ft/6.8 sec</td>
<td>12.2 m/6.8 sec</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td></td>
</tr>
<tr>
<td>49:1 torque hubs</td>
<td></td>
</tr>
<tr>
<td>3.1 mph</td>
<td>5 km/h</td>
</tr>
<tr>
<td>40 ft/9.1 sec</td>
<td>12.2 m/9.1 sec</td>
</tr>
</tbody>
</table>

(after serial number 1733)

<table>
<thead>
<tr>
<th>Drive speeds (maximum) Z-34/22N</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive speed, stowed</td>
<td></td>
</tr>
<tr>
<td>35:1 torque hubs</td>
<td></td>
</tr>
<tr>
<td>3.4 mph</td>
<td>5.5 km/h</td>
</tr>
<tr>
<td>40 ft/8 sec</td>
<td>12.2 m/8 sec</td>
</tr>
<tr>
<td>Drive speed, stowed</td>
<td></td>
</tr>
<tr>
<td>49:1 torque hubs</td>
<td></td>
</tr>
<tr>
<td>2.8 mph</td>
<td>4.5 km/h</td>
</tr>
<tr>
<td>40 ft/10 sec</td>
<td>12.2 m/10 sec</td>
</tr>
</tbody>
</table>

(after serial number 2226)
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.

1. Create start and finish lines by marking two lines on the ground 40 feet (12.2 m) apart.
2. Turn the key switch to platform control and pull out the Emergency Stop button to the ON position at both the ground and platform controls.
3. Raise the primary boom more than 5 feet (1.5 m).
4. Move the lift/drive switch to the DRIVE position (if equipped).
5. 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.
6. 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.
7. Continue at full speed and note the time when the machine reference point passes over the finish line.

<table>
<thead>
<tr>
<th>Drive speeds (maximum): raised or extended</th>
<th>0.6 mph</th>
<th>1 km/h</th>
</tr>
</thead>
<tbody>
<tr>
<td>raised or extended</td>
<td>40 ft/40 sec</td>
<td>12.2 m/40 sec</td>
</tr>
</tbody>
</table>

**TABLE B PROCEDURES**
B-16
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 ground controls side turntable cover.

1. Turn the key switch to ground control and pull out the Emergency Stop buttons to the ON position.

   Result: The flashing beacon should be ON and flashing.

2. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the primary boom toggle switch to the down position, hold for a moment and then release it.

   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side. Move the primary boom toggle switch to the down position, hold for a moment and then release it.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the secondary boom toggle switch to the DOWN position, hold for a moment and then release it.

   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side. Move the secondary boom toggle switch to the DOWN position, hold for a moment and then release it.

4. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the jib boom toggle switch to the DOWN position, hold for a moment and then release it.

   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side. Move the jib boom toggle switch to the DOWN position, hold for a moment and then release it.

   Result: The descent alarm should sound when each control toggle switch is held down.

5. Turn the key switch to platform control.
6 At the platform controls pull out the Emergency Stop button to the ON position.

6 Move the lift/drive switch to the LIFT position (if equipped).

7 Press down the foot switch. Move the primary boom toggle switch to the DOWN position, hold for a moment and then release it. Move the secondary boom toggle switch to the DOWN position, hold for a moment and then release it. Move the jib boom toggle switch to the DOWN position, hold for a moment and then release it.

Result: The descent alarm should sound when each control toggle switch is held down.

8 Move the lift/drive switch to the DRIVE position (if equipped).

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.

B-17

Test the Turntable Rotation Stop

The turntable is capable of rotating the boom 355 degrees and is stopped midpoint between the steering wheels by the rotation stop. Detecting a rotation stop malfunction is essential to safe operation and good machine performance. If the turntable rotates past the rotation stop, component damage may result.

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

2 Move the lift/drive switch to the LIFT position (if equipped).

3 Rotate the turntable to the left as far as it will go.

Result: Movement should stop when the primary boom reaches midpoint between the steer tires.

4 Rotate the turntable to the right full circle as far as it will go.

Result: Movement should stop when the primary boom reaches midpoint between the steer tires.
**B-18**

**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 non-steer drive chassis cover 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 cause death or serious injury. Remove all rings, watches and other jewelry.

**NOTICE**  
Replace the contactors if any damage is found.

---

**B-19**

**Perform Hydraulic Oil Analysis**

See D-1, *Test or Replace the Hydraulic Oil.*
Replace the Hydraulic Tank Return Filter

Genie requires that this procedure be performed quarterly or every 250 hours, whichever comes first. Perform this procedure more often if dusty conditions exist.

Replacement of the hydraulic return filter is essential for good machine performance and service life. A dirty or clogged filter may cause the machine to perform poorly and continued use may cause component damage. Extremely dirty conditions may require that the filter be replaced more often.

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

**The hydraulic return filter is located on the bulkhead next to the hydraulic power unit.**

**Z-34/22 before serial number 810 and Z-34/22N before serial number 1117:**

1. Clean the area around the oil filter housing, then remove the filter with an oil filter wrench.
2. Apply a thin layer of fresh oil to the gasket on the new oil filter. Install the new filter.
3. Tighten it securely by hand.

**Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**

Turn the key switch to ground controls and pull out the Emergency Stop button to the **ON** position. Move the primary boom up toggle switch in the **UP** direction.

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**

Turn the key switch to ground controls and pull out the Emergency Stop button to the **ON** position. Hold the function enable toggle switch to either side and move the primary boom up toggle switch in the **UP** direction.

**Z-34/22 after serial number 809 and Z-34/22N after serial number 1116:**

1. Clean the area around the oil filter housing located on top of the tank.
2. Remove the oil filter housing cover fasteners, then remove the cover.
3. Remove the oil filter element from the housing.
4. Clean the oil filter housing with a mild solvent.

**TABLE B PROCEDURES**
5 Install the new oil filter element.

6 Install the oil filter housing cover and tighten the fasteners.

7 Turn the key switch to ground controls and pull out the Emergency Stop button to the ON position. Hold the function enable toggle switch to either side and move the primary boom up toggle switch in the UP direction.

8 Inspect the filter and related components to be sure that there are no leaks. Clean up any oil that may have spilled during the replacement procedure. Properly discard the oil.

Oil filters - Genie part numbers

<table>
<thead>
<tr>
<th>Model</th>
<th>From Serial</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z34/22</td>
<td>431 to 809</td>
<td>45087</td>
</tr>
<tr>
<td></td>
<td>810 to 2265</td>
<td>44788</td>
</tr>
<tr>
<td></td>
<td>2266 to 3110</td>
<td>58995</td>
</tr>
<tr>
<td></td>
<td>3110 to</td>
<td>74346</td>
</tr>
<tr>
<td></td>
<td>after serial</td>
<td>74634</td>
</tr>
<tr>
<td></td>
<td>number 3110</td>
<td></td>
</tr>
<tr>
<td>Z34/22N</td>
<td>1117 to 3032</td>
<td>44788</td>
</tr>
<tr>
<td></td>
<td>3033 to 3659</td>
<td>58995</td>
</tr>
<tr>
<td></td>
<td>after serial</td>
<td>74346</td>
</tr>
<tr>
<td></td>
<td>number 3660</td>
<td>74634</td>
</tr>
</tbody>
</table>

Table B - Procedures
Table C Procedures

C-1 Check the Primary Boom Wear Pads

Maintaining the primary 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 worn out wear pads may result in component damage and unsafe operating conditions.

1. Turn the key switch to ground control and pull out the Emergency Stop button to the ON position.
2. Extend the primary boom approximately 10 inches (25 cm).
3. Measure each wear pad. Replace the wear pad if it is less than 0.41 inches (1 cm) thick. If the wear pad is more than 0.41 inches (1 cm) thick, see 4-2, How to Shim the Primary Boom, in the Repair Section.
4. Extend and retract the primary boom through the entire range of motion to check for tight spots that could cause binding or scraping.

**NOTICE** Always maintain squareness between the primary boom outer and inner tubes.

C-2 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 secondary boom and place a safety chock on the secondary boom lift cylinder. Carefully lower the boom onto the lift cylinder safety chock.

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

The lift cylinder safety chock is available from Genie Industries (Genie part number 36555).
2. Check to ensure that each turntable bearing bolt is torqued in specified order to 190 ft-lbs (258 Nm).

3. Raise boom and remove the safety chock.
   Lower the boom to the stowed position.

4. Swing out the battery packs to expose the turntable bearing bolt access hole.

5. Check to ensure that each bearing mounting bolt under the drive chassis is torqued in specified order to 190 ft-lbs (258 Nm).

**Bolt torque sequence**

Z-34/22 before serial number 1735 and Z-34/22N before serial number 2240

Z-34/22 after serial number 1734 and Z-34/22N after serial number 2239
C-3
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 may cause 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 (15000 lbs/6804 kg) under the drive chassis between the non-steering wheels.

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-steering wheel hub.

5. Manually rotate each non-steering wheel.

° Result: Each non-steering wheel should rotate with minimum effort.

6. Engage the drive hubs by turning over the drive hub disconnect caps. Carefully remove the jack stands, lower the machine and remove the jack.

⚠️ WARNING ⚠️ Collision hazard. Failure to engage the drive hubs could cause death or serious injury and property damage.
C-4
Grease the Turntable Rotation Bearing and Worm Drive Gear

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

1. Locate the grease fitting mounted on the bulkhead next to the hydraulic power unit.

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. Locate the 3 grease fittings on the worm drive housing.

4. Pump grease into the gear until you see it coming out of the side of the gear housing.

| Lubricant Type | Multipurpose grease |

C-5
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. Drive the machine until one of the two plugs is at the lowest point.

2. Remove both plugs and drain the oil.

3. Drive the machine until one plug is at the top and the other 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 hole.
TABLE C PROCEDURES

5 Apply pipe thread sealant to the plugs, then install the plugs.
6 Repeat this procedure for each drive hub.

<table>
<thead>
<tr>
<th>Drive Hub Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>(before serial number 1734)</td>
</tr>
<tr>
<td>49:1 and 35:1 models</td>
</tr>
<tr>
<td>(after serial number 1733)</td>
</tr>
<tr>
<td>47:1 models</td>
</tr>
</tbody>
</table>

Type: SAE 90 multipurpose hypoid gear oil - API service classification GL5

C-6
Bleed the Platform Rotator
See Repair procedure 2-3, How to Bleed the Platform Rotator.
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.

The machine uses Dexron equivalent hydraulic oil. 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.**

Perform this procedure with the boom in the stowed position.

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 Two, **Hydraulic Hose and Fitting Torque Specifications.**

Z-34/22 before serial number 809 and Z-34/22N before serial number 1116:

1. Remove the tank mounting fasteners. Remove the tank from the power unit.

2. Completely drain the tank into a suitable container. See capacity specifications.

3. Remove the suction strainer and the magnet and then clean the tank with mild solvent.

4. Install the suction strainer.

5. Place the magnet inside the tank and install the tank on the power unit.

6. Fill the tank with hydraulic oil until the level is within the top 2 inches (5 cm) of the hydraulic oil decal. Do not overfill.

7. Clean up any oil that may have spilled.

Z-34/22 after serial number 808 and Z-34/22N after serial number 1115:

1. Close the hydraulic shut-off valve located at the hydraulic tank.

   **CAUTION** Component damage hazard. The machine must not be operated with the hydraulic tank shut-off valve in the CLOSED position or component damage will occur. If the tank valve is closed, remove the key from the key switch and tag the machine to inform personnel of the condition.

2. Place a suitable container under the hydraulic tank. See capacity specifications.
### TABLE D PROCEDURES

3. Disconnect and plug the hydraulic hose from the hydraulic tank shut-off valve.

   **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. Open the valve on the hydraulic tank and drain the oil into a suitable container.

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

5. Tag, disconnect and plug the hydraulic hoses from the hydraulic tank filter. Cap the fittings on the filter.

   **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.

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

6. Remove the hydraulic tank mounting fasteners.

7. Remove the hydraulic tank from the machine.

8. Remove the tank lid retaining fasteners and remove the lid and filter assembly from the tank.

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

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

11. Install the lid and filter assembly onto the hydraulic tank.

12. Install the suction strainer using a thread sealant on the threads.

13. Install the hydraulic tank on the machine. Install the hydraulic tank mounting fasteners and torque to 5 ft-lbs (6.8 Nm).

   **CAUTION** Component damage hazard. The hydraulic tank may become damaged if the tank mounting 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 the oil.

17. Open the hydraulic tank shut-off valve.

   **CAUTION** Component damage hazard. Be sure to open the hydraulic tank shut-off valve after installing the hydraulic tank.
18 Operate all machine functions through a full cycle and check for leaks.

19 Check oil level.

### Torque specification

<table>
<thead>
<tr>
<th>Fastener Type</th>
<th>Torque Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 - 20</td>
<td>5 ft-lbs 6.8 Nm</td>
</tr>
</tbody>
</table>

### Hydraulic Oil Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z-34/22 before serial number 809 and Z-34/22N before serial number 1116:</td>
<td></td>
</tr>
<tr>
<td>Hydraulic tank capacity</td>
<td>5 gallons 18.9 liters</td>
</tr>
<tr>
<td>Hydraulic system (including tank)</td>
<td>7 gallons 26.5 liters</td>
</tr>
<tr>
<td>Z-34/22 after serial number 808 and Z-34/22N after serial number 1115:</td>
<td></td>
</tr>
<tr>
<td>Hydraulic tank capacity</td>
<td>4 gallons 15.1 liters</td>
</tr>
<tr>
<td>Hydraulic system (including tank)</td>
<td>6 gallons 22.7 liters</td>
</tr>
</tbody>
</table>

---

### D-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-steering wheels, then center a lifting jack under the steer axle.

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

4. Remove the lug nuts, then 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.

6. Remove the dust cap from the hub, then remove the cotter pin from the castle nut.
<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Tighten the castle nut to 35 ft-lbs (47 Nm).</td>
</tr>
<tr>
<td>8</td>
<td>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, proceed to step 9 to replace the wheel bearings with new ones.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTICE</strong> When replacing a wheel bearing, both the inner and outer bearings, including the pressed-in races, must be replaced.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTICE</strong> Result: If there is no side to side or up and down movement, grease the wheel bearings.</td>
</tr>
<tr>
<td>9</td>
<td>Remove the castle nut. Always replace the cotter pin with a new one when removing the castle nut.</td>
</tr>
<tr>
<td>10</td>
<td>Pull the hub off of the spindle. The washer and outer bearing should fall loose from the hub.</td>
</tr>
<tr>
<td>11</td>
<td>Place the hub on a flat surface and gently pry the bearing seal out of the hub. Remove the inner bearing.</td>
</tr>
<tr>
<td>12</td>
<td>Pack both bearings with clean, fresh grease.</td>
</tr>
<tr>
<td>13</td>
<td>Place the large inner bearing into the rear of the hub.</td>
</tr>
<tr>
<td>14</td>
<td>Install a new bearing grease seal into the hub by pressing it evenly into the hub until it is flush. Always replace the bearing grease seal when removing the hub.</td>
</tr>
<tr>
<td>15</td>
<td>Slide the hub onto the yoke spindle. <strong>CAUTION</strong> Component damage hazard. Do not apply excessive force or damage to the lip of the seal may occur.</td>
</tr>
<tr>
<td>16</td>
<td>Place the outer bearing into the hub.</td>
</tr>
<tr>
<td>17</td>
<td>Install the washer and castle nut.</td>
</tr>
<tr>
<td>18</td>
<td>Tighten the castle nut to 35 ft-lbs (47 Nm) to seat the bearings.</td>
</tr>
<tr>
<td>19</td>
<td>Loosen the castle nut, then tighten to 8 ft-lbs (11 Nm).</td>
</tr>
<tr>
<td>20</td>
<td>Install a new cotter pin. Bend the cotter pin to lock it in place. <strong>NOTICE</strong> Always replace the cotter pin with a new one when removing the castle nut or when checking the torque of the castle nut.</td>
</tr>
<tr>
<td>21</td>
<td>Install the dust cap.</td>
</tr>
<tr>
<td>22</td>
<td>Install the tire and wheel assembly. Torque the wheel lug nuts to 125 ft-lbs (169.5 Nm).</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.
- Unless otherwise specified, perform each repair procedure with the machine in the following configuration:
  - Machine parked on a flat level surface
  - Boom in stowed position
  - Turntable rotated with the boom between the non-steering wheels
  - Key switch in the OFF position with the key removed
  - Wheels chocked

Before Troubleshooting:

- Be sure that all necessary tools and test equipment are available and ready for use.
- Read each appropriate flow chart 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 could result in death or serious injury. Remove all rings, watches and other jewelry.

**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.

**NOTICE**
Perform all troubleshooting on a firm level surface.

**NOTICE**
Two persons will be required to safely perform some troubleshooting procedures.
TROUBLESHOOTING FLOW CHARTS

About This Section

When a malfunction is discovered, the flow charts in this section will help a service professional pinpoint the cause of the problem. To use this section, basic hand tools and certain pieces of test equipment are required—voltmeter, ohmmeter, pressure gauges.

The location of terminals mentioned in this section can be found on the appropriate electrical or hydraulic schematics provided in Section 6, Schematics.

Since various degrees of a particular function loss may occur, selecting the appropriate flow chart may be troublesome. When a function will not operate with the same speed or power as a machine in good working condition, refer to the flow chart which most closely describes the problem.

On Z-34/22 models after serial number 1733 and Z-34/22N models after serial number 2227, an LED will flash a fault code to aid in troubleshooting. This LED is mounted on the ground controls panel, located behind the side cover on the ground controls side.
**Fault Code Chart**

*(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)*

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer Diagnostic Display</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fault Indicator Light is OFF or is ON but not blinking</td>
<td>COMMUNICATION ERROR</td>
<td>Machine will not drive. Controller fault indicator light may or may not be on at the platform controls.</td>
<td>The key switch or Emergency Stop button(s) was cycled on and off faster than 5 seconds OR controller sensed an internal error during start up.</td>
<td>Push in the ground control Emergency Stop button to the OFF position and wait for 5 seconds. Pull out the ground control Emergency Stop button to the ON position. If problem persists, replace the motor controller.</td>
</tr>
<tr>
<td>01</td>
<td></td>
<td>Normal operation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>M- SHORTED</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>The motor controller has an internal short between M- and B-terminals.</td>
<td>Test the motor controller. See Repair Section.</td>
</tr>
<tr>
<td></td>
<td>FIELD OPEN</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Motor wiring is loose OR 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. See Repair Section.</td>
</tr>
<tr>
<td>ARM SENSOR</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Defective motor controller.</td>
<td>Replace the motor controller.</td>
<td></td>
</tr>
<tr>
<td>FLD SENSOR</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Defective motor controller.</td>
<td>Replace the motor controller.</td>
<td></td>
</tr>
</tbody>
</table>
### FAULT CODE CHART

(Z-34/22 AFTER SERIAL NUMBER 1733 AND Z-34/22N AFTER SERIAL NUMBER 2226)

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer Diagnostic Display</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>THROTTLE FAULT 1</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Open in wht/red wire #32 at pin 14 or red/wht wire #29 at pin 16 on the motor controller going from drive joystick to pins 14 and 16 at the motor controller OR pin 14 is internally shorted to power or ground OR the potentiometer on the drive joystick is defective.</td>
<td>See Chart 29A</td>
</tr>
<tr>
<td></td>
<td>THROTTLE FAULT 2</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Pin 14 (wht/red #32) is shorted to power or ground OR the potentiometer on the drive joystick is defective.</td>
<td>See Chart 29A</td>
</tr>
<tr>
<td>31</td>
<td>CONT DRVR OC</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Main contactor (PR1) coil defective OR brake release relay CR5 defective.</td>
<td>Replace main contactor PR1 or brake release relay CR5 OR replace the motor controller.</td>
</tr>
<tr>
<td>32</td>
<td>MAIN CONT WELDED</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Main contactor (PR1) contacts stuck closed OR grn wire at pin 17 on motor controller shorted to ground OR open in motor armature wiring OR motor controller has an internal short to ground.</td>
<td>See Chart 29B</td>
</tr>
</tbody>
</table>
### Fault Code Chart

**Fault Code Chart**

(Z-34/22 AFTER SERIAL NUMBER 1733 AND Z-34/22N AFTER SERIAL NUMBER 2226)

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer Diagnostic Display</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>PRECHARGE FAULT</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>External short between B+ terminal on motor controller and ground OR motor controller is defective.</td>
<td>Repair short between B+ terminal on motor controller and ground OR replace motor controller. Note: Short can be on any part of circuit connected to the B+ terminal on the motor controller.</td>
</tr>
<tr>
<td>34</td>
<td>MISSING CONTACTOR</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Motor controller does not detect the main contactor PR1 or brake release relay CR5.</td>
<td>See Chart 29C</td>
</tr>
<tr>
<td>41</td>
<td>LOW BATTERY VOLTAGE</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Battery supply voltage to motor controller less than 32V.</td>
<td>Completely charge batteries OR check battery cable condition OR check for corrosion or loose connections at battery terminals and motor controller.</td>
</tr>
</tbody>
</table>
### FAULT CODE CHART
(Z-34/22 AFTER SERIAL NUMBER 1733 AND Z-34/22N AFTER SERIAL NUMBER 2226)

<table>
<thead>
<tr>
<th>Fault Code</th>
<th>Programmer Diagnostic Display</th>
<th>Condition</th>
<th>Possible Causes</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>42</strong></td>
<td>OVERVOLTAGE</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Battery supply voltage to motor controller more than 55V OR machine is being operated with the battery charger plugged in.</td>
<td>Be sure the battery charger is disconnected OR check for loose battery cables or poor connections.</td>
</tr>
<tr>
<td><strong>43</strong></td>
<td>THERMAL CUTBACK</td>
<td>Machine will not drive. Controller fault indicator light on at the platform controls.</td>
<td>Machine being operated outside of temperature range of -13°F to 185°F (-25°C to 85°C) OR machine being driven under 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 of the controller OR check for mechanical restrictions causing excessive load on the machine.</td>
</tr>
</tbody>
</table>
All Functions Will Not Operate

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the circuit breaker and fuses are not tripped or blown.

Be sure the battery packs are properly connected and fully charged.

If the Error Indicator light is on at the platform controls, please refer to the specific chart that relates to the error code that is displayed on the ECM.

Chart 1

- Disconnect battery packs and check voltage on each pack.
  - 24V or more
    - Connect battery packs and check voltage on the input side of 100A fuse F3.
      - 0V
        - Check battery condition and replace bad batteries OR check for short circuits OR check battery cables OR consult Genie Industries Service Department.
      - 24V
        - Check voltage at the output side of 100A fuse F3.
          - 0V
            - Repair open in 24V supply cables (positive and negative) from the battery packs.
          - 24V
            - Check voltage at the output side of 10A circuit breaker CB1.
              - 0V
                - Repair open in power wire from 100A fuse F3 to PR4 to CB1.
              - 24V
                - Check voltage at the input side of Emergency Stop button P1.
                  - 0V
                    - Reset or replace circuit breaker CB1 OR consult Genie Industries Service Department.
                  - 24V
                    - Continued on the next page.

- Continued on the next page.
Continued from the previous page.

Check voltage at the output side of the Emergency Stop button. 0V 24V

Check voltage at the input side of the key switch. 0V 24V

Turn key switch to ground controls and check voltage on output side of ground controls contact of the keyswitch. 24V

Check to see if Emergency Stop button contact is being activated. yes Replace Emergency Stop button contact. no Replace Emergency Stop button OR refer to Ground Controls Inoperative, Chart 6 OR consult Genie Industries Service Department.

Check to see if key switch internal cam is activating ground controls contact. yes Replace key switch contact for ground controls. no Replace key switch OR refer to Ground Controls Inoperative, Chart 6 OR consult Genie Industries Service Department.

Continued on the next page.
Check voltage on the output side of 500A fuse F1.

24V

Troubleshoot lift and drive systems separately OR consult Genie Industries Service Department.

0V

Replace key switch contact for platform controls.

yes

no

Check to see if the key switch internal cam is activating the platform controls contact.

Replace key switch OR refer to Platform Controls Inoperative, Chart 7 OR consult Genie Industries Service Department.

48V or more

Check voltage on the input side of 500A fuse F1.

48V or more

Repair open in 48V supply cables (positive and negative) from battery packs.

less than 48V

Check voltage on the output side of 500A fuse F1.

0V

Replace 500A fuse F1.
Chart 2

Lift Pump Motor Will Not Operate

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

48V

Check for continuity in the ground cable circuit from lift pump motor to ground.

continuity

Repair or replace the lift pump motor.

no continuity

Replace the ground cable on the lift pump motor OR repair open in the ground cable from the battery packs.

0V

Continued on the next page.
Z-34/22 before serial number 153 and Z-34/22N before serial number 304:
Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at the positive cable on the output side of PR3.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:
Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at the positive cable on the output side of PR3.

Z-34/22 after serial number 1733 and Z-34/22N after 2226:
Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at the positive cable on the output side of PR2.

Z-34/22 after serial number 152 and Z-34/22N after 303:
Repair or replace the positive cable from the lift pump motor to PR2.

Z-34/22 after serial number 1734 and Z-34/22N after serial number 2227:
Check voltage at the positive cable on the input side of PR3.

Z-34/22 after serial number 1733 and Z-34/22N after 2226:
Check voltage at the positive cable on the input side of PR2.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304:
Repair or replace the positive cable from the lift pump motor to PR3.

Z-34/22 after serial number 152 and Z-34/22N after 303:
Repair or replace the positive cable from the lift pump motor to PR2.

Z-34/22 after serial number 1734 and Z-34/22N after serial number 2227:
Replace the 100A fuse F2 OR repair open in the positive cable from the battery packs to the 100A fuse F2 to PR3 OR consult Genie Industries Service Department.

Z-34/22 after serial number 1733 and Z-34/22N after 2226:
Replace the 100A fuse F2 OR repair open in the positive cable from the battery packs to the 100A fuse F2 to PR2 OR consult Genie Industries Service Department.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227:
Replace the 100A fuse F2 OR repair open in the positive cable from the battery packs to the 100A fuse F2 to PR3 OR consult Genie Industries Service Department.
**CHART 2**

- **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
  - Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage on the grn/wht wire at PR3.

- **Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:**
  - Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage on the grn/wht wire at PR3.

- **Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:**
  - Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage on the grn/wht wire at PR3.

- **Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:**
  - Check for continuity in the brn ground wire circuit from PR3 to ground.

- **Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:**
  - Check for continuity in the brn ground wire circuit from PR2 to ground.

- **Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227:**
  - Replace PR3.

- **Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:**
  - Replace PR2.

**Continued from the previous page.**

**Continued on the next page.**
Z-34/22 before serial number 153 and Z-34/22N before serial number 304:
Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #2 on CR2.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:
Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #5 on CR8.

Z-34/22 after serial number 1733 and Z-34/22N after 2226:
Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #87 on CR20.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Repair open in wire circuit from terminal #2 on CR2 to PR3.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in wire circuit from terminal #5 on CR8 to PR3.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in wire circuit from terminal #87 on CR20 to PR2.
CHART 2

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #6 on CR2.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #9 on CR8.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #30 on CR20.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Repair open in grn/wht wire circuit from TB19 to terminal #6 on CR2 OR repair open in function switch wire circuit with diode to TB19 OR repair open in wire circuit from the key switch ground controls contact to the function switch wire circuit OR replace primary boom extend/retract toggle switch OR contact Genie Industries Service Department.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in red#20 wire circuit from PR4 to terminal #9 on CR8.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in red wire circuit from the key switch ground controls contact to the function enable switch to terminal #30 on CR3.

0V

24V

Continued from the previous page.

Continued on the next page.
Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Replace CR2.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #13 on CR8.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #86 on CR20.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in ground wire circuit from terminal #14 on CR8 to ground OR replace CR8 OR replace the relay socket.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in ground wire circuit with diode from terminal #86 on CR20 to ground OR replace diode OR replace CR20 OR replace the relay socket.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in the grn/wht wire circuit from terminal #2 on CR2.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in the grn/wht wire circuit from terminal #87A on CR3 to terminal #85 on CR20.
Continued from the previous page.

CHART 2

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #6 on CR2.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at terminal #30 on CR3.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Replace CR2.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Replace CR3.

24V

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in grn/wht wire circuit from TB19 to terminal #6 on CR2 OR repair open in the wire circuit from the key switch ground control contact to the function enable switch to the function switch wire circuit with diode to TB19 OR replace diode OR replace primary boom extend/retract toggle switch OR contact Genie Industries Service Department.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in grn/wht wire circuit from TB19 to terminal #30 on CR3 OR repair open in the wire circuit from the key switch ground control contact to the function enable switch to the function switch wire circuit with diode to TB19 OR replace diode OR replace primary boom extend/retract toggle switch OR contact Genie Industries Service Department.
Auxiliary Pump Motor Will Not Operate.

Be sure all other functions operate normally.

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position. Lift the red auxiliary pump switch cover and hold the auxiliary toggle switch Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS17 Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS51 in the ON direction. Move any boom function toggle switch and listen for the sound of the auxiliary pump motor operating.

If the motor operates, install a 0 to 5000 psi (0 to 345 bar) pressure gauge into the pressure port of the auxiliary pump and hold the auxiliary power toggle switch and move any boom function toggle switch. Note the pressure.

If the pressure is less than 2800 psi, repair or replace the pump OR consult the Genie Industries Service Department.

If the pressure is 2800 psi, check for a positive connection between the electric motor and the pump by removing the pump from the motor, but leave all the hoses connected. Visually check the coupling connection.

If the connection is bad, replace the auxiliary power unit. If the connection is good, replace the auxiliary pump motor.

Check continuity in the ground wire circuit from the negative terminal on auxiliary power unit to ground.

If there is continuity, replace the auxiliary pump motor. If there is no continuity, replace the ground cable from the auxiliary pump to ground.

Continued on the next page.
CHART 3

Continued from the previous page.

Hold the auxiliary pump toggle switch and move any boom function toggle switch. Check voltage at the grn/wht wire on PR3.

24V

Check voltage at the center terminal on the auxiliary pump toggle switch.

0V

24V

Hold the auxiliary pump toggle switch and check voltage at TB27.

0V

24V

Hold the auxiliary pump toggle switch and check the voltage red #27 wire on control relay Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: CR2
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: CR3.

24V

Continued on the next page.
Continued from the previous page.

- Check continuity of the brn ground wire from the control relay to ground.
  - Continuity
    - Hold the auxiliary pump toggle switch and move any boom function toggle switch. Check voltage at the control relay output terminal.
      - 0V
        - Replace control relay.
      - 24V
        - Repair open in the red wire from control relay to Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227; PR4
          - Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: PR3
  - No continuity
    - Repair open in the brn ground wire circuit from control relay to ground.
Chart 4

All Functions Inoperative, Power Unit Starts and Runs

Be sure the circuit breaker and fuse are not tripped or blown.

Be sure the battery packs are properly connected and fully charged.

1. Check the hydraulic fluid level.
   - low: Fill with Dexron equivalent hydraulic fluid.
   - OK: Check for a positive connection between the electric motor and the pump by removing the pump from the motor, but leave all hoses connected. Visually check coupling connection.
   - no good: Replace the pump coupling.
   - good: Test the hydraulic pump. See Repair section.
      - no good: Replace the pump.
      - good: Consult Genie Industries Service Department.
All Lift and Steer Functions Inoperative, Drive Function Operational

Be sure the battery packs are properly connected and fully charged.

Install a 0 to 5000 psi (0 to 345 bar) pressure gauge to the test port on the function manifold. Turn key switch to ground controls and pull Emergency Stop buttons out to the ON position, Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move the boom extend/retract toggle switch TS13 in the RETRACT direction and check the hydraulic pressure.
Z-34/22 after serial number 152 and Z-34/22N after 303: Hold the function enable toggle switch TS19 to either side and move the boom extend/retract toggle switch TS13 in the RETRACT direction and check the hydraulic pressure.

3200 PSI or more

Troubleshoot each function individually OR consult the Genie Industries Service Department.

less than 3200 PSI

Continued on the next page.
Continued from the previous page.

Adjust the relief valve on the function manifold (item AB or BB or BC) all the way in (clockwise), counting the number of turns. Move the boom extend/retract switch in the RETRACT direction. Check the pressure.

less than 3200 PSI

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move any boom function toggle switch and manually activate the boom proportional valve (item AU or BU or CH). Does the function operate?

Z-34/22 after serial number 152 and Z-34/22N after 303: Hold the function enable toggle switch to either side and move any boom function toggle switch and manually activate the boom proportional valve (item AU or BU or CH). Does the function operate?

no

Check function pump (See Repair section).

bad

Replace the pump.

good

Replace the boom proportional valve OR replace the differential sensing valve (item AA or BA or CQ) OR function or steer/brake manifolds could have an internal defect. Consult Genie Industries Service Department.

yes

Continued on the next page.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move TS13 in the RETRACT direction and adjust the relief valve pressure to 3200 PSI OR consult Genie Industries Service Department.

Z-34/22 after serial number 152 and Z-34/22N after 303: Hold the function enable toggle switch to either side and move TS13 in the RETRACT direction and adjust the relief valve pressure to 3200 PSI OR consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move any boom function toggle switch and manually activate the boom proportional valve (item AU or BU or CH). Does the function operate?
Continued from the previous page.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Check for continuity in the ground wire circuit from the proportional valve coil to TB48 to the wht wire at the boom function speed controller.
Z-34/22 after serial number 152 and Z-34/22N after 303: Check for continuity in the ground wire circuit from the proportional valve coil to the boom function speed controller.

Z-34/22 after serial number 152 and Z-34/22N after 303: Move any boom function toggle switch and check voltage on the wht/red #6 wire on the proportional valve coil.
Z-34/22 after serial number 152 and Z-34/22N after 303: Hold the function enable toggle switch to either side and move any boom function toggle switch and check voltage on the wht/red #6 wire on the proportional valve coil.

24V

Repair open in the ground wire circuit.

Continued on the next page.
CHART 5

Continued from the previous page.

Repair open in wht/red-3 wire circuit with diode from TB6 to the blk/red wire at the boom function speed controller or replace diode. OR troubleshoot ground and platform control functions separately (refer to charts 6 and 7). OR consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move any boom function toggle switch and check voltage on the wht/red #6 wire at TB6.

Z-34/22 after serial number 152 and Z-34/22N after 303:
Hold the function enable toggle switch to either side and move any boom function toggle switch and check voltage on the wht/red #6 wire at TB6.

24V

0V

Repair open in wht/red #6 wire circuit from TB6 to the boom function proportional valve.

Z-34/22 after serial number 152 and Z-34/22N after 303:
Hold the function enable toggle switch to either side and move any boom function toggle switch and check voltage on the wht/red #6 wire at TB6.
Ground Controls Inoperative, Platform Controls Operate Normally

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

---

**Chart 6**

Check voltage at the red wire on the input side of the ground controls contact of the key switch (this wire should originate at the Emergency Stop button).

24V

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position. Check voltage at the output side of the ground controls contact of the key switch.

24V

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Hold the secondary boom toggle switch (TS11) in the UP direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Move the function enable toggle switch to either side and hold the secondary boom toggle switch in the UP direction and check voltage at TB6.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (TS11)

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: (TS60)

0V

Check the voltage on the red wire at the center terminal of each ground control toggle switch.

0V

Check to see if the key switch internal cam is activating the ground controls contact.

yes

Replace the key switch contact for ground controls.

no

Replace the key switch.

0V

Repair open in the red wire circuit from the Emergency Stop button to the input side of the ground controls contact of the key switch.

Repair open in wht/red wire circuit with diode from TS60 to TB6 OR replace the diode.

24V

Repair open in red wire circuit supplying 24V to the center terminal of each ground control toggle switch.

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Continued on the next page.
CHART 6

Move the function enable toggle switch to either side and hold the secondary boom toggle switch in the UP direction. Check voltage at TB19.

- 0V
  - Consult Genie Industries Service Department.
- 24V
  - Repair open in grn/wht wire circuit from TS60 to TB19 OR replace the diode.

Continued from the previous page.
**Chart 7**

**Platform Controls Inoperative, Ground Controls Operate Normally**

(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

---

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Check voltage at the red wire on the input side of the platform controls contact of key switch (this wire should originate at the Emergency Stop button).

**0V**

- **20V or more**
  - Check voltage at the output side of platform controls contact of the key switch.
  
  **0V**
  
  - **20V or more**
    - Check voltage at TB22.
    
    **0V**
    
    - **20V or more**
      - Check voltage at the input side of the platform Emergency Stop button contact.
      
      **0V**
      
      - **20V or more**
        - Check voltage at the output side of platform Emergency Stop button contact.
        
        **0V**
        
        - **20V or more**
          - Check to see if the key switch internal cam is activating the platform controls contact.
          
          yes
          
          - Replace the key switch contact for platform controls.
          
          no
          
          Replace the platform Emergency Stop button.

- **Repair open in blk #22 wire circuit from key switch to TB22.**

- **Repair open in blk-2 wire circuit from TB22 to platform Emergency Stop button OR repair open in ground wire circuit from platform controls to ground.**

- **Replace the platform Emergency Stop button contact.**

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Continued on the next page.
CHART 7

Continued from the previous page.

Check the voltage at the input side of the foot switch.

20V or more

Press down foot switch and check voltage on Before serial number 747: the wht wire at the foot switch After serial number 746: the blu/wht wire at the foot switch.

0V

Replace foot switch contacts OR replace the foot switch.

20V or more

Press down foot switch and check voltage at TB12.

0V

Repair open in the blu/wht-3 wire circuit from foot switch to TB12.

20V or more

Press down foot switch and check voltage at blk #12 wire on LS3.

0V

Replace LS3.

20V or more

Press down foot switch and check voltage at red #16 wire on LS3.

0V

Repair open in red #16 wire from LS3 to TB16.

20V or more

Press down foot switch and check voltage at TB16.

Continued on the next page.
Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in the org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Press down foot switch and check voltage at terminal "+" on the drive controller.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in the org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Turn the boom function speed controller to 9, press down foot switch and move any boom function toggle switch and check the voltage at the red wire on the boom function speed controller.

Repair open in the org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Repair open in the brn ground wire circuit from CR5 to ground.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in the org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Press down foot switch and check voltage at terminal "+" on the drive controller.

20V or more

Repair open in the org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Repair open in the brn ground wire circuit from CR5 to ground.

Continue on the next page.
CHART 7

With the boom function speed controller turned to 9, press down foot switch and move any boom function toggle switch and check voltage at the wht/red wire on the proportional valve coil item AU or BU or CH.

- Disconnect the wire to the proportional valve coil. Test the resistance of the valve coil. See Repair Section.
- 0V → Repair open in wht/red wire circuit from proportional valve coil to TB6.
- 20V or more → 0 or infinite ohms
- 19 to 20 ohms → Replace proportional valve coil.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in the blu/wht wire circuit from the proportional valve coil to TB48 to the boom function speed controller OR replace proportional valve (item AU or BU or CH) OR troubleshoot lift and drive functions individually OR consult Genie Industries Service Department.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in brn ground wire circuit from proportional valve to ground OR replace proportional valve (item AU or BU or CH) OR troubleshoot lift and drive functions individually OR consult Genie Industries Service Department.
Chart 8

Platform Controls
Inoperative, Ground Controls Operate Normally

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Check voltage at the red wire on the input side of the platform controls contact of the key switch (this wire should originate at Emergency Stop button P1).

Check voltage on the output side of the platform controls contact on the key switch.

Check voltage at TB22.

Check voltage at the input side of the platform Emergency Stop button contact.

Check voltage at the output side of platform Emergency Stop button contact.

Continued on the next page.

Check to see if the key switch internal cam is activating the platform controls contact.

Check to see if the Emergency Stop button is activating the contact.

Repair open in red wire circuit from Emergency Stop button to the key switch.

Repair open in blk#22 wire circuit from key switch to TB22.

Repair open in blk-2 wire circuit from TB22 to the platform Emergency Stop button OR repair open in brn ground wire circuit from TB52 to the platform.

Replace the platform Emergency Stop button contact.

Replacing the platform Emergency Stop button.

Replace the key switch contact for platform controls.

Replace the key switch.

Repair open in red wire circuit from Emergency Stop button to the key switch.

Repair open in blk#22 wire circuit from key switch to TB22.

Repair open in blk-2 wire circuit from TB22 to the platform Emergency Stop button OR repair open in brn ground wire circuit from TB52 to the platform.

Replace the platform Emergency Stop button contact.

Replace the key switch.

Repair open in red wire circuit from Emergency Stop button to the key switch.

Repair open in blk#22 wire circuit from key switch to TB22.

Repair open in blk-2 wire circuit from TB22 to the platform Emergency Stop button OR repair open in brn ground wire circuit from TB52 to the platform.

Replace the platform Emergency Stop button contact.

Replace the key switch.
CHART 8

Turn key switch to platform controls and pull both Emergency Stop buttons out to the on position. Press down the foot switch and check voltage at terminal 6 on the drive controller.

Press down the foot switch and check voltage at the center terminal of each function toggle switch.

Press down the foot switch and move any boom function toggle switch and check voltage at the red wire on the boom function speed controller.

With the boom function speed controller set to 9, press down the foot switch and move any boom function toggle switch and check voltage at the blk/red wire on boom function speed controller.

Test the foot switch. See Repair Section.

Replace the drive controller or consult Genie Industries Service Department.

Repair open in power supply circuit to boom function speed controller from each individual boom function toggle switch OR consult Genie Industries Service Department.

Adjust boom function speed controller (see Repair Section) OR replace boom function speed controller OR consult Genie Industries Service Department.

Repair open in red wire circuit from foot switch to the center terminal of TS1 to terminal 6 on the drive controller.

Repair open in red wire circuit from terminal 6 to terminal 7 on the drive controller to each function toggle switch.

Replace the foot switch.

Replace the drive controller or consult Genie Industries Service Department.

Adjust boom function speed controller (see Repair Section) OR replace boom function speed controller OR consult Genie Industries Service Department.

Replace the foot switch.

Replace the drive controller or consult Genie Industries Service Department.
Press down the foot switch and move any boom function toggle switch and check voltage at TB6.

0V

Replace the diode on the blk/red wire on boom function speed controller OR repair open in wht/red-3 wire circuit from boom function speed controller to TB6.

20V or more

Press down the foot switch and move any boom function toggle switch and check voltage at the wht/red wire on the proportional valve (item AU or BU or CH).

0V

Repair open in wht/red wire from TB6 to the proportional valve.

20V or more

Repair open in brn ground wire circuit to the proportional valve OR troubleshoot lift and drive functions individually OR consult Genie Industries Service Department.
Chart 9

Primary Boom Up Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch TS12 in the UP direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch TS12 in the UP direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch TS12 in the UP direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch in the UP direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom toggle switch in the up direction and check voltage at TB6.

Repair open in the wht/red #6 wire circuit from TB6 to the boom function proportional valve coil OR repair open in the brn ground wire circuit from the boom function proportional valve coil to ground.

Repair open in the blk/red wire to the wht/red wire to TB6.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the primary boom toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS3

Continued on the next page.

Continued on page 36.
Press down the foot switch and move the primary boom toggle switch in the UP direction. Check for voltage at the red wire on the boom function speed controller.

24V

Repair open in the wire circuit through the boom function toggle switches to the red wire on the boom function speed controller.

0V

Press down the foot switch and move the primary boom toggle switch in the UP direction. Check voltage at the blk/red wire on the boom function speed controller.

24V

Repair open in the ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

Repair open in the blk/red to wht/red wire from the boom function speed controller to TB6.
CHART 9

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch in the UP direction and check voltage on the red #1 wire on the primary boom up directional valve coil (item AD or BD or CU).

Z-34/22 after serial number 153 and Z-34/22N after serial number 304: Hold the function enable toggle switch to either side and move the primary boom toggle switch in the UP direction and check voltage on the red #1 wire on the primary boom up directional valve coil (item AD or BD or CU).

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the primary boom toggle switch.

Z-34/22 after serial number 1734 and Z-34/22N after serial number 2227: TS3
Z-34/22 after serial number 1735 and Z-34/22N after serial number 2226: TS11
in the UP direction. Check voltage at TB1.

Troubleshoot the primary boom toggle switch at ground controls OR replace the diode on toggle switch OR repair open in the red #1 wire circuit from toggle switch to TB1 OR replace toggle switch.

Repair open in the red #1 wire circuit from TB1 to the primary boom up directional valve coil OR repair open in the brn ground wire circuit to the manifold.

Repair open in the red-3 wire circuit from primary boom toggle switch to TB1.

Continued on page 34.
CHART 9

Disconnected the red #1 wire to the primary boom up directional valve coil (item AD or BD or CU) and test the resistance of the valve coil. See the Repair Section.

0 or infinite ohms

Replace the primary boom up directional valve coil.

23 to 25 ohms

Exchange the primary and secondary boom directional valves (items AD and AE or (items BD and BE or items CU and CT). Activate the primary boom up function.

Function does not operate

Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch in the up direction and check the pressure. Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom toggle switch in the up direction and check the pressure.

Less than 3200 PSI

Adjust the system relief valve (item AB or BB or CR) (see Repair Section) OR repair or replace the cylinder or the cylinder counterbalance valve OR the function manifold could have an internal defect. Consult Genie Industries Service Department.

3200 PSI

Check for mechanical restrictions keeping the primary boom up function from operating OR repair the cylinder or cylinder counterbalance valve OR consult Genie Industries Service Department.

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Part No. 36540  Genie Z-34/22 & Genie Z-34/22N  5 - 37
Primary Boom Down Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Chart 10

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch TS12 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch TS12 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch TS61 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Hold the function enable toggle switch to either side and move the primary boom toggle switch in the DOWN direction and check the voltage at TB6.

24V

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit from the boom function proportional valve coil to ground.

Press down the foot switch and move the primary boom toggle switch in the DOWN direction. Check voltage at the red wire on the boom function speed controller.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the primary boom toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS3
Z-34/22 before serial number 1733 and Z-34/22N after serial number 2226: TS11 in the DOWN direction. Check voltage at TB6.

Repair open in wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Continued on page 40.
Press down the foot switch and move the primary boom toggle switch in the DOWN direction. Check the voltage at the blk/red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

Repair open in blk/red to wht/red wire circuit from the boom function speed controller to TB6.
Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move the primary boom toggle switch in the DOWN direction and check voltage on the red/blk #2 wire at the primary boom down directional valve coil (item I).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch in the down direction and check voltage on the red/blk #2 wire at the primary boom down directional valve coil (item I).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom toggle switch in the down direction and check voltage on the red/blk #2 wire at the primary boom down directional valve coil (item AC).

Troubleshoot the primary boom toggle switch OR replace diode on toggle switch OR repair open in red/blk #2 wire circuit from toggle switch to TB2 OR replace toggle switch.

Repair open in red/blk #2 wire circuit from TB2 to primary boom down directional valve coil OR repair open in brn ground wire circuit to manifold.

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Continued from the previous page.

Disconnect the red/blk wire to the primary boom down directional valve coil. Test the resistance of the valve coil. See Repair Section.

- 23 to 25 ohms: Replace defective directional valve.
- 0 or infinite ohms: Replace the primary boom down directional valve coil.

Exchange the primary and secondary boom directional valves
Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: Items D and E
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Items AC and AB. Activate the primary boom DOWN function.

Function operates

- less than 3200 PSI: Replace the primary boom down directional valve coil.
- 3200 PSI or more: Check for mechanical restrictions keeping the primary boom down function from operating OR repair cylinder or cylinder counterbalance valve OR consult Genie Industries Service Department.

Move the primary boom toggle switch in the DOWN direction and check the pressure.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: Move the primary boom toggle switch in the DOWN direction and check the pressure.

Adjust the system relief valve (see Repair Section)
Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: item B
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: item YY OR repair or replace cylinder or cylinder counterbalance valve OR function manifold could have an internal defect. Consult Genie Industries Service Department.

Hold the function enable toggle switch to either side and move the primary boom toggle switch in the down direction and check the pressure.
Chart 11

Secondary Boom Up Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch TS11 in the UP direction and check voltage on the whit/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the secondary boom toggle switch TS11 in the UP direction and check voltage on the whit/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Move the secondary boom toggle switch TS60 in the UP direction and check voltage on the whit/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

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Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the DOWN direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the DOWN direction and check voltage at TB6.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the secondary boom toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS2

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS10 in the UP direction. Check voltage at blk/red at boom function speed controller.

Repair open in whit/red wire circuit from TB6 to boom function proportional valve coil.

Repair open in brn ground wire circuit from the boom function proportional valve coil to ground.

Continued on the next page.
Press down the foot switch and move the secondary boom toggle switch in the UP direction. Check voltage at the red wire on the boom function speed controller.

0V

Press down the foot switch and move the secondary boom toggle switch in the UP direction. Check voltage at the blk/red wire on the boom function speed controller.

24V

Press down the foot switch and move the secondary boom toggle switch in the UP direction. Check voltage at the blk/red wire on the boom function speed controller.

24V

Repair open in blk/red wire circuit from the boom function speed controller to TB6.

0V

Repair open in wht/red wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in grn wire from the boom function speed controller to ground OR replace the boom function speed controller.

Continued from the previous page.
CHART 11

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the up direction and check voltage on the blu #10 wire on the secondary boom up directional valve coil (item E).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the up direction and check voltage on the blu #10 wire on the secondary boom up directional valve coil (item E).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the up direction and check voltage on the blu #10 wire on the secondary boom up directional valve coil (item AB).

0V

Troubleshoot the secondary boom toggle switch OR replace diode on toggle switch OR repair open in blu #10 wire circuit to TB10 OR replace toggle switch.

24V

Repaired open in blu #10 wire circuit from TB10 to secondary boom up directional valve coil OR repair open in the ground wire circuit to manifold.

24V

Repair open in blu-3 wire circuit to TB10.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the on position. With the boom function speed controller turned to 9, press down the foot switch and move the secondary boom toggle switch in the up direction and check voltage at TB10.

0V

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the up direction and check voltage at TB10.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the up direction and check voltage at TB10.

Continued on the next page.
Discharge the #10 wire to the secondary boom up directional valve coil. Test the resistance of the valve coil. See Repair Section.

23 to 25 ohms

Exchange the secondary and primary boom directional valves Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (items D and E)
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: (items AB and AC)
Activate the secondary boom UP function.

0 or infinite ohms

Replace the secondary boom up directional valve coil.

23 to 25 ohms

Replace defective directional valve.

Function inoperative

Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold.
Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the UP direction and check the pressure.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the UP direction and check the pressure.

Adjust the system relief valve (see Repair Section)
Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: item B
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: item YY
OR repair or replace cylinder(s) or cylinder(s) counterbalance valve(s)
OR function manifold could have an internal defect. Consult Genie Industries Service Department.

3200 PSI

Check for mechanical restrictions keeping the secondary boom up function from operating
OR repair cylinder(s) or cylinder(s) counterbalance valve(s)
OR consult Genie Industries Service Department.
Secondary Boom Down Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch TS11 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the secondary boom toggle switch TS11 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the secondary boom toggle switch TS60 in the DOWN direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Repair open in wht/red wire circuit from TB6 to boom function proportional valve coil.

Repair open in blk/red to wht/red wire circuit to TB6.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the DOWN direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the DOWN direction and check voltage at TB6.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the secondary boom toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS2
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS10 in the DOWN direction. Check voltage at blk/red at the boom function speed controller.

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CHART 12

Continued from the previous page.

Press down the foot switch and move the secondary boom toggle switch in the DOWN direction. Check the voltage at the red wire on the boom function speed controller.

24V

Press down the foot switch and move the secondary boom toggle switch in the DOWN direction. Check voltage at the blk/red wire on the boom function speed controller.

Repair open in blk/red wire from the boom function speed controller to TB6.

0V

Repair open in blk/red wire circuit from the boom function speed toggle switches to the red wire on the boom function speed controller.

24V

0V

Repair open in wht/red wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the UP direction and check voltage on the blu #10 wire on the secondary boom up directional valve coil (item AE or BE or CT).

Z-34/22 after serial number 153 and Z-34/22N after serial number 304: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the UP direction and check voltage on the blu #10 wire on the secondary boom up directional valve coil (item AE or BE or CT).

Troubleshoot the secondary boom toggle switch OR replace diode on toggle switch OR repair open in blu #11 wire circuit from to TB11 OR replace toggle switch.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the DOWN direction and check voltage at TB11.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the DOWN direction and check voltage at TB11.

Repair open in blu #11 wire circuit from TB11 to secondary boom down directional valve coil OR repair open in the ground wire circuit to manifold.

Repair open in blu-3 wire circuit to TB10.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the secondary boom toggle switch in the DOWN direction and check voltage at TB10.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the DOWN direction and check voltage at TB11.

Troubleshoot the secondary boom toggle switch OR replace diode on toggle switch OR repair open in blu #11 wire circuit from to TB11 OR replace toggle switch.
Disconnect the blu #11 wire to the secondary boom down directional valve coil. Test the resistance of the valve coil. See Repair Section.

23 to 25 ohms

Exchange the secondary and primary boom down directional valves (items AJ and AI or BJ and BI or CU and CT). Activate the secondary boom up function.

0 or infinite ohms

Replace the secondary boom down directional valve coil.

function operates

Replace defective directional valve.

function inoperative

Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom toggle switch in the DOWN direction and check the pressure.

Z-34/22 after serial number 153 and Z-34/22N after serial number 304: Hold the function enable toggle switch to either side and move the secondary boom toggle switch in the DOWN direction and check the pressure.

less than 3200 PSI

Adjust the system relief valve (see Repair Section) (item AB or BB or CR) OR repair or replace cylinder(s) or cylinder(s) counterbalance valve(s) OR function manifold could have an internal defect. Consult Genie Industries Service Department.

3200 PSI

Check for mechanical restrictions keeping the secondary boom down function from operating OR repair cylinder(s) or cylinder(s) counterbalance valve(s) OR consult Genie Industries Service Department.
Primary Boom Extend Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract toggle switch TS13 in the EXTEND direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch TS13 in the EXTEND direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch TS63 in the EXTEND direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU or CH).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract toggle switch in the EXTEND direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the EXTEND direction and check voltage at TB6.

Z-34/22 after serial number 1734 and Z-34/22N before serial number 2227: TS4
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS13
in the EXTEND direction.
Check voltage at TP6.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

Repair open in blk/red wire to TB6.

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Press down the foot switch and move the primary boom extend/retract toggle switch in the EXTEND direction. Check voltage at the red wire on the boom function speed controller.

- 24V

Check voltage at the blk/red wire on the boom function speed controller.

- 0V

Repair open in wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in blk/red to wht/red wire from the boom function speed controller to TB6.

Press down the foot switch and move the primary boom extend/retract toggle switch in the EXTEND direction. Check voltage at the red wire on the boom function speed controller.

- 24V

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract toggle switch in the EXTEND direction and check voltage on the blk #7 wire primary boom extend directional valve coil (item AT).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the EXTEND direction and check voltage on the blk #7 wire primary boom extend directional valve coil (item BT).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the EXTEND direction and check voltage on the blk #7 wire primary boom extend directional valve coil (item CK).

Continued on the next page.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the secondary boom extend/retract toggle switch in the EXTEND direction and check voltage at TB7.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the EXTEND direction. Check the voltage at TB7.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS4
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS13 in the EXTEND direction. Check voltage at TB7.

Repair open in blk #7 wire circuit from TB7 to primary boom extend directional valve coil OR repair open in brn ground wire circuit to manifold.

Repair open in blk-3 wire circuit to TB7.

Troubleshoot the primary boom extend/retract toggle switch on ground controls OR replace diode on toggle switch OR repair open in blk #7 wire circuit from toggle switch to TB7 OR replace toggle switch.
Continue from the previous page.

Discontinue the blk wire to the primary boom extend directional valve coil. Test the resistance of the valve coil. See Repair Section.

- 0 or infinite ohms
  - Replace the primary boom extend directional valve coil.

- 23 to 25 ohms
  - Exchange the primary boom extend and retract directional valves (items AT and AC or BT and BC or CK and CU). Activate the primary boom EXTEND function.

  - Function operates
    - Replace defective directional valve.

  - Function inoperative
    - Replace the primary boom extend directional valve coil.

Continued on the next page.
CHART 13

Continued from the previous page.

less than 3200 PSI

Check for mechanical restrictions keeping the primary boom extend function from operating OR repair cylinder or cylinder counterbalance valve OR consult Genie Industries Service Department.

3200 PSI

Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract function toggle switch in the EXTEND direction and check the pressure.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract function toggle switch in the EXTEND direction and check the pressure.

Adjust the system relief valve (see Repair Section) (item AB or BB or CR) OR repair or replace cylinder(s) or cylinder(s) counterbalance valve(s) OR function manifold could have an internal defect. Consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract function toggle switch in the EXTEND direction and check the pressure.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract function toggle switch in the EXTEND direction and check the pressure.

Continued from the previous page.
Chart 14

Primary Boom Retract Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract toggle switch TS13 in the RETRACT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch TS13 in the RETRACT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch TS63 in the RETRACT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Continued on page 57.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage at TB6.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the primary boom extend/retract toggle switch Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS4.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS13 in the EXTEND direction. Check voltage at TP6.

Repair open in wht/red #6 wire circuit from TB6 to the boom function proportional valve coil OR repair open in the ground wire circuit to the boom function proportional valve coil.

Repair open in blk/red wire circuit from TP6 to TB6.

Continued on the next page.
Press down the foot switch and move the primary boom extend/retract toggle switch in the RETRACT direction. Check voltage at the red wire on the boom function speed controller.

- **0V**: Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

- **24V**: Repair open in blk/red wire from the boom function speed controller to TB6.

Press down the foot switch and move the primary boom extend/retract toggle switch in the RETRACT direction. Check voltage at the blk/red wire on the boom function speed controller.

- **0V**: Repair open in wht/red wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

- **24V**: Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

**Z-34/22 before serial number 153 and Z34/22N before serial number 304**: Move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage on the blk/wht #8 wire primary boom retract directional valve coil (item AC).

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303**: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction and check voltage on the blk/wht #8 wire primary boom retract directional valve coil (item AC or BC or CK).

Continued on the next page.

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Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the primary boom toggle switch in the RETRACT direction and check voltage at TB8.

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303**: Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the RETRACT direction. Check the voltage at TB8.

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Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the primary boom extend/retract toggle switch in the RETRACT direction. Check voltage at TB8.

Troubleshoot the primary boom extend/retract toggle switch on ground controls OR replace diode on toggle switch OR repair open in blk/wht #8 wire circuit from toggle switch to TB8 OR replace toggle switch.

---

24V

Repair open in blk/wht #8 wire circuit from TB8 to primary boom retract directional valve coil OR repair open in brn ground wire circuit to the manifold.

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Continued from page 55.
Disconnect the blk wire to the primary boom extend directional valve coil. Test the resistance of the valve coil. See Repair Section.

- If the resistance is 0 or infinite ohms, replace the primary boom extend directional valve coil.
- If the resistance is 23 to 25 ohms, exchange the primary boom extend and retract directional valves.
  - Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: items AH and AC or BH and BC.
  - Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: items CK and CU.
  - Activate the primary boom RETRACT function.

If the function is inoperative, replace the defective directional valve.

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Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move the primary boom extend/retract function toggle switch in the RETRACT direction and check the pressure. Z-34/22 after serial number 152 and Z-34/22N after serial number 303: Hold the function enable toggle switch to either side and move the primary boom extend/retract function toggle switch in the RETRACT direction and check the pressure.

3200 PSI

Check for mechanical restrictions keeping the primary boom extend function from operating OR repair cylinder or cylinder counterbalance valve OR consult Genie Industries Service Department.

Less than 3200 PSI

Adjust the system relief valve (see Repair Section) Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (item AB or BB) Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: (item CR) OR repair or replace cylinder(s) or cylinder(s) counterbalance valve(s) OR function manifold could have an internal defect. Consult Genie Industries Service Department.
Chart 15

Turntable Rotate Left Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled up to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

- Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch TS10 in the LEFT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).
- Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch TS10 in the LEFT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).
- Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch TS62 in the LEFT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the LEFT direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the LEFT direction and check the voltage at TB6.

Z-34/22 before serial number 1734 and Z34/22N before serial number 2227: TS1
Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: TS12 in the LEFT direction. Check voltage at TP6.

Repair open in wht/red #6 wire circuit from TB6 to the boom function proportional valve coil OR repair open in the ground wire circuit to the boom function proportional valve coil.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the turntable rotate toggle switch:

- Z-34/22 before serial number 1734 and Z34/22N before serial number 2227: TS1
- Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: TS12

Check voltage at TP6.

Repair open in blk/red wire circuit from TP6 to TB6.

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Continued on the next page.
Press down the foot switch and move the turntable rotate toggle switch in the LEFT direction. Check the voltage at the red wire on the boom function speed controller.

24V

Press down the foot switch and move the turntable rotate function toggle switch in the LEFT direction. Check the voltage at the blk/red wire on the boom function speed controller.

0V

Repair open in blk/red wire circuit from the boom function speed controller to TB6.

Repair open in wht/red wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
Continued from page 60.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the LEFT direction and check voltage on the wht #4 wire on the turntable rotate directional valve coil (item AF).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 304 to 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the LEFT direction and check voltage on the wht #4 wire on the turntable rotate directional valve coil (item AF or BF).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the LEFT direction and check voltage on the wht #4 wire on the turntable rotate directional valve coil (item CD).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the LEFT direction and check voltage at TB4.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the LEFT direction and check voltage at TB4.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the turntable rotate toggle switch.

Z-34/22 after serial number 1734 and Z-34/22N before serial number 2227: TS4
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS13 in the LEFT direction. Check voltage at TB5.

Troubleshoot the turntable rotate toggle switch OR replace diode on toggle switch OR repair open in wht-3 wire circuit from toggle switch to TB4 OR replace toggle switch.

Repair open in wht/blk #4 wire circuit from TB4 to turntable rotate left directional valve coil OR repair open in brn ground wire circuit to manifold.

Repair open in wht-3 wire circuit to TB5.

Continued on the next page.
Exchange the turntable rotate and secondary boom directional valves Z-34/22 before serial number 674 and Z-34/22N before serial number 935:
item AF and AK.
Z-34/22 from serial number 674 to 1733 and Z-34/22N from serial number 935 to 2226:
item BF and BK.
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:
item CX and CJ.
Activate the turntable rotate LEFT function.

Disconnect the wire to the turntable rotate left directional valve coil. Test the resistance of the valve coil. See Repair Section.

0 or infinite ohms
Replace the turntable rotate left directional valve coil.

23 to 25 ohms
Replace defective directional valve.

Function operates

Continued on the next page.
CHART 15

Continued from the previous page.

Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the LEFT direction and check the pressure. Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the LEFT direction and check the pressure.

less than 3200 PSI

Check for mechanical restrictions keeping the turntable rotate left function from operating OR repair or replace the turntable rotation motor OR consult Genie Industries Service Department.

Adjust the system relief valve (see Repair Section) (item AB or BB or CR) OR repair or replace the turntable rotation motor OR function manifold could have an internal defect. Consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the LEFT direction and check the pressure.

3200 PSI
Turntable Rotate Right Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled up to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position. Z-34/22 before serial number 1733 and Z34/22N before serial number 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch TS10 in the RIGHT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU). Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch TS10 in the RIGHT direction and check voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the RIGHT direction and check the voltage at TB6. Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the RIGHT direction and check the voltage at TB6.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS1. Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS12. Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the RIGHT direction. Check voltage at TP6.

Repair open in wht/red #6 wire circuit from TB6 to the boom function proportional valve coil OR repair open in the ground wire circuit to the boom function proportional valve coil.

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Continued from the previous page.

Press down the foot switch and move the turntable rotate toggle switch in the RIGHT direction. Check the voltage at the red wire on the boom function speed controller.

- 24V → 0V
  - Repair open in blk/red wire circuit from the boom function speed controller to TB6.
  - Repair open in red/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Press down the foot switch and move the turntable rotate function toggle switch in the RIGHT direction. Check the voltage at the blk/red wire on the boom function speed controller.

- 24V → 0V
  - Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
CHART 16

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

**Z-34/22 before serial number 153 and Z34/22N before serial number 304:**
Move the turntable rotate toggle switch in the RIGHT direction and check voltage on the wht #5 wire on the turntable rotate directional valve coil (item AK).

**Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:**
Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the RIGHT direction and check voltage on the wht #5 wire on the turntable rotate directional valve coil (item AK or BK).

**Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:**
Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the RIGHT direction and check voltage on the wht #5 wire on the turntable rotate directional valve coil (item CX).

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**Z-34/22 before serial number 153 and Z34/22N before serial number 304:**
Move the turntable rotate toggle switch in the RIGHT direction and check voltage at TB5.

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the RIGHT direction and check voltage at TB5.

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**Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227:**
TS1

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**Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:**
TS12 in the RIGHT direction.
Check voltage at TB5.

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Repair open in wht/blk #5 wire circuit from TB5 to turntable rotate right directional valve coil OR repair open in brn ground wire circuit to the manifold.

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Repair open in wht/blk-3 wire circuit to TB5.

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Troubleshoot the turntable rotate toggle switch OR replace diode on toggle switch OR repair open in wht #5 wire circuit from toggle switch to TB5 OR replace toggle switch.
Function inoperative

1. Disconnect the wire to the turntable rotate right directional valve coil. Test the resistance of the valve coil. See Repair Section.

   - If resistance is 0 or infinite ohms, replace the turntable rotate right directional valve coil.
   - If resistance is 23 to 25 ohms, exchange the turntable rotate and secondary boom directional valves (items AE and AK or items BE and BK or items CX and CJ). Activate the turntable rotate right function.

Function operates

3200 PSI

- Check for mechanical restrictions keeping the turntable rotate left function from operating OR repair or replace the turntable rotation motor OR consult Genie Industries Service Department.

Less than 3200 PSI

- Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold.
  - Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the turntable rotate toggle switch in the right direction and check the pressure.
  - Z-34/22 after serial number 153 and Z-34/22N after serial number 304: Hold the function enable toggle switch to either side and move the turntable rotate toggle switch in the right direction and check the pressure.

- Adjust the system relief valve (see Repair Section) (item AB or BB or CR) OR repair or replace the turntable rotation motor OR function manifold could have an internal defect. Consult Genie Industries Service Department.
All Platform Level Functions Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

- **Z-34/22 before serial number 153 and Z34/22N before serial number 304**: Remove both hydraulic hoses from the function manifold (ports C1 and C2). Plug the hoses and cap the manifold fittings. Move the primary boom toggle switch TS12 in the UP direction. Does the platform level?
- **Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226**: Remove both hydraulic hoses from the function manifold (ports C1 and C2). Plug the hoses and cap the manifold fittings. Hold the function enable switch to either side and move the primary boom toggle switch TS12 in the UP direction. Does the platform level?
- **Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226**: Remove both hydraulic hoses from the function manifold (ports L1 and L2). Plug the hoses and cap the manifold fittings. Hold the function enable switch to either side and move the primary boom toggle switch TS61 in the UP direction. Does the platform level?

Replace the counterbalance valves in the function manifold (items AN and AO or items BN and BO or items CB and CC).
CHART 17

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Plumb a 0 to 5000 psi (0 to 345 bar) pressure gauge into master cylinder rod-end hydraulic hose (hose connected to port C2 OR L2) from the master cylinder and raise the primary boom one inch (2.5 cm) at a time. Continually monitor the pressure gauge while raising the primary boom. Do not allow the pressure to exceed 2500 PSI.

2000 PSI or more
Install a 0 to 5000 psi (0 to 345 bar) pressure gauge into the barrel-end hydraulic hose (hose connected to port C2 OR L2) from the master cylinder and raise the primary boom one inch (2.5 cm) at a time. Continually monitor the pressure gauge while raising the primary boom. Do not allow the pressure to exceed 2500 PSI.

less than 2000 PSI
Repair or replace the slave cylinder.

Continued from the previous page.

less than 2000 PSI
Check for mechanical restrictions keeping the platform level function from operating OR replace the slave cylinder counterbalance valves.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Plumb a 0 to 5000 psi (0 to 345 bar) pressure gauge into master cylinder rod-end hydraulic hose (hose connected to port C1) using a tee fitting. Move the primary boom toggle switch in the UP direction and check the pressure.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (hose connected to port C1)
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: (hose connected to port L1) using a tee fitting. Hold the function enable switch to either side and move the primary boom toggle switch in the UP direction and check the pressure.

Continued from the previous page.
Platform Level Up Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the on position.

Z-34/22 before serial number 153 and Z-34/22N before serial number 304: Move the platform level toggle switch TS 14 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the platform level toggle switch TS 14 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the platform level toggle switch TS 14 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Z-34/22 before serial number 153 and Z-34/22N before serial number 303: Move the platform level toggle switch in the UP direction and check the voltage at TB 6.

Z-34/22 after serial number 152 and Z-34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform level toggle switch in the UP direction and check the voltage at TB 6.

Repair open in wht/red #6 wire circuit from TB 6 to the boom function proportional valve coil OR repair open in the ground wire circuit to the boom function proportional valve coil.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the platform level toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS 5

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS 9

in the UP direction. Check voltage at TP 6.

Repair open in wht/red wire circuit from TP 6 to TB 6.

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Press down the foot switch and move the platform level toggle switch in the UP direction. Check the voltage at the blk/red wire on the boom function speed controller.

24V

Press down the foot switch and move the platform level toggle switch in the UP direction. Check the voltage at the red wire on the boom function speed controller.

0V

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

24V

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

Repair open in blk/red wire from the boom function speed controller to TB6.
CHART 18

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move platform level toggle switch in the UP direction and check voltage on the org #14 wire on the platform level up directional valve coil (item AG).

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move platform level toggle switch in the UP direction and check voltage on the org #14 wire on the platform level up directional valve coil (item AG or BG or CA).

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Z-34/22 before serial number 1734 and Z34/22N before serial number 2227: TS5
Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: TS9 in the UP direction. Check voltage at TB14.

Repair open in org #14 wire circuit from TB14 to platform level up directional valve coil OR repair open in brn ground wire circuit to the manifold.

Repair open in org #3 wire to TB14.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the platform level toggle switch

Z-34/22 before serial number 1734 and Z34/22N before serial number 2227: TS5
Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: TS9 in the UP direction. Check voltage at TB14.

Repair open in power supply wiring to platform level toggle switch
Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (TS14)
Z-34/22 after serial number 1734 and Z34/22N after serial number 2226: (TS9) on ground controls OR
Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: (TS5)
Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: (TS9) on the platform controls.

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CHART 18

Continued from the previous page.

Disconnect the org wire from the platform level up directional valve coil. Test the resistance of the valve coil. See Repair Section.

0 or infinite ohms

Replace platform level up directional valve coil.

23 to 25 ohms

Exchange the platform level and secondary boom directional valves (items AG, AL, and AE, AJ or BG, BL and BE, BJ or CA and CT). Activate the platform level UP function.

function operates

Replace defective directional valve.

function inoperative

Exchange the platform level counterbalance valves (items AN and AO or items BN and BO or items CC and CB). Activate the platform level UP function.

function operates

Replace defective counterbalance valve.

function inoperative

Continued on the next page.
Install a 0 to 3000 psi (0 to 345 bar) pressure gauge at the quick disconnect coupling on the boom function manifold.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: Move the platform level up toggle switch and check the pressure.
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the platform level up toggle switch and check the pressure.

2800 psi

Check for mechanical restrictions keeping platform level up function from moving OR replace slave cylinder counterbalance valves OR consult Genie Industries Service Department.

less than 2800 psi

Test master cylinder OR repair or replace slave cylinder or slave cylinder counterbalance valves OR boom function manifold could have an internal defect. Consult Genie Industries Service Department.
Platform
Level Down
Function
Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform level toggle switch TS14 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the platform level toggle switch TS14 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the platform level toggle switch TS59 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform level toggle switch in the DOWN direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform level toggle switch in the DOWN direction and check the voltage at TB6.

Repair open in wht/red #6 wire circuit from TB6 to the boom function proportional valve coil OR repair open in the ground wire circuit to the boom function proportional valve coil.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the platform level toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS5

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS9 in the DOWN direction. Check voltage at TP6.

Repair open in wht/red wire circuit from TP6 to TB6.

Continued on page 78.
Press down the foot switch and move the platform level toggle switch in the DOWN direction. Check the voltage at the blk/red wire on the boom function speed controller.

- 24V

- 0V

Repair open in blk/red wire from the boom function speed controller to TB6.

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.
CHART 19

Continued from page 76.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.  
Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move platform level toggle switch in the DOWN direction and check voltage on the org #15 wire on the platform level up directional valve coil (item AL).

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move platform level toggle switch in the DOWN direction and check voltage on the org #15 wire on the platform level up directional valve coil (item AL or BL or CB).

Continued on the next page.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform level toggle switch in the DOWN direction and check voltage at TB15.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform level toggle switch in the DOWN direction and check voltage at TB15.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch, and move the platform level toggle switch.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS5
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS9 in the DOWN direction. Check voltage at TB15.

Repair open in power supply wiring to platform level toggle switch at ground controls OR platform controls.

Repair open in org/blk #15 wire circuit from TB15 to platform level down directional valve coil OR repair open in brn ground wire circuit to the manifold.

Repair open in org/blk #15 wire to TB15.
CHART 19

Continued from the previous page.

Disconnect the org/blk wire from the platform level down directional valve coil. Test the resistance of the valve coil. See Repair Section.

0 or infinite ohms

Replace platform level down directional valve coil.

23 to 25 ohms

Exchange the platform level and turntable rotate directional valves (items AL and AJ or items BL and BJ or items CA and CT). Activate the platform level DOWN function.

function operates

Replace defective directional valve.

function inoperative

Exchange the platform level counterbalance valves (items AN and AO or items BN and BO or items CB adn CC). Activate the platform level DOWN function.

function operates

Replace defective counterbalance valve.

function inoperative

Install a 0 to 5000 PSI (345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Activate the platform level down function and check the pressure.

3200 PSI

Check for mechanical restrictions keeping the platform level down function from operating OR repair or replace the slave cylinder or slave cylinder counterbalance valves OR consult Genie Industries Service Department.

less than 3200 PSI

Test the master cylinder (refer to Chart #16) OR repair or replace the slave cylinder counterbalance valves OR function manifold could have an internal defect. Consult Genie Industries Service Department.
Platform Rotate Left Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled up to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

**Z-34/22 before serial number 153 and Z34/22N before serial number 304:** Move the platform rotate toggle switch TS15 in the LEFT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

**Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:** Hold the function enable toggle switch to either side and move the platform rotate toggle switch TS15 in the LEFT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

**Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:** Hold the function enable toggle switch to either side and move the platform rotate toggle switch TS15 in the LEFT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil.

**Z-34/22 before serial number 153 and Z34/22N before serial number 304:** Move the platform rotate toggle switch in the LEFT direction and check the voltage at TB6.

**Z-34/22 after serial number 152 and Z34/22N after serial number 303:** Hold the function enable toggle switch to either side and move the platform rotate toggle switch in the LEFT direction and check the voltage at TB6.

**Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.**

**Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the platform rotate toggle switch.**

**Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227:** TS6

**Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:** TS7 in the LEFT direction.

Check voltage at TP6.

**Repair open in wht/red wire circuit from TP6 to TB6.**

Continued on page 82.
Continued from the previous page.

Press down the foot switch and move the platform level toggle switch in the LEFT direction. Check voltage at the red wire on the boom function speed controller.

24V

Press down the foot switch and move the platform rotate toggle switch in the LEFT direction. Check the voltage at the blk/red wire on the boom function speed controller.

Repair open in blk/red wire from the boom function speed controller to TB6.

0V

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

24V

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

0V

Press down the foot switch and move the platform rotate toggle switch in the LEFT direction. Check voltage at the blk/red wire on the boom function speed controller.

Repair open in blk/red wire from the boom function speed controller to TB6.
Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move platform rotate toggle switch in the LEFT direction and check voltage on the grn wire on the platform rotate left directional valve coil (item D).
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform rotate toggle switch in the LEFT direction and check voltage on the grn wire on the platform rotate left directional valve coil (item D).

Repair open in the ground wire circuit on the platform rotate left directional coil.

Repair open in org wire circuit from TB17 to platform rotate left directional valve coil OR repair open in brn ground wire circuit to the manifold.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform rotate toggle switch in the LEFT direction and check voltage at TB17.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform rotate toggle switch in the LEFT direction and check voltage at TB17.
CHART 20

Disconnected the org wire from the platform rotate left directional valve coil. Test the resistance of the valve coil. See Repair Section.

0 or infinite ohms

Replace platform rotate left directional valve coil.

23 to 25 ohms

Exchange the platform rotate left and jib boom up directional valves (items D and A). Activate the platform rotate LEFT function.

function operates

Replace defective directional valve.

function inoperative

Install a 0 to 3000 psi (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold and activate the platform rotate LEFT function.

less than 2800 psi

Repair hydraulic rotation motor OR platform rotate/jib function manifold could have an internal defect. Consult Genie Industries Service Department.

2800 psi

Check for mechanical restrictions keeping platform rotate LEFT function from moving OR the Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227:

0.030" orifice (item W)
Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:
0.025" orifice (item W) could be plugged OR repair hydraulic rotation motor OR consult Genie Industries Service Department.
Platform Rotate Right Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform rotate toggle switch TS15 in the RIGHT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the platform rotate toggle switch TS15 in the RIGHT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the platform rotate toggle switch TS57 in the RIGHT direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the platform rotate toggle switch in the RIGHT direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the platform rotate toggle switch in the RIGHT direction and check the voltage at TB6.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: TS6 Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: TS7 in the RIGHT direction. Check voltage at TP6.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

Repair open in wht/red wire circuit from TP6 to TB6.

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Continued on the next page.
Press down the foot switch and move the platform rotate toggle switch in the RIGHT direction. Check voltage at the red wire on the boom function speed controller.

24V

Press down the foot switch and move the platform rotate toggle switch in the RIGHT direction. Check voltage at the blk/red wire on the boom function speed controller.

0V

Repair open in blk/red wire from the boom function speed controller to TB6.

0V

Repair open in grn/wht wire circuit through boom function toggle switches to the red wire on the boom function speed controller.

24V

Repair open in ground wire circuit from the boom function speed controller to ground OR replace the boom function speed controller.

Continued from the previous page.
Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

**Z-34/22 before serial number 153 and Z34/22N before serial number 304:** Move platform rotate toggle switch in the RIGHT direction and check voltage on the yel wire on the platform rotate right directional valve coil (item B).

**Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226:** Hold the function enable toggle switch to either side and move platform rotate toggle switch in the RIGHT direction and check voltage on the yel wire on the platform rotate right directional valve coil (item B).

**Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226:** Hold the function enable toggle switch to either side and move platform rotate toggle switch in the RIGHT direction and check voltage on the blu wire on the platform rotate right directional valve coil (item B).

**Z-34/22 before serial number 153 and Z34/22N before serial number 304:** Move the platform rotate toggle switch in the RIGHT direction and check voltage at TB18.

**Z-34/22 after serial number 152 and Z34/22N after serial number 303:** Hold the function enable toggle switch to either side and move the platform rotate toggle switch in the RIGHT direction and check voltage at TB18.

Repair open in wire circuit from TB18 to platform rotate right directional valve coil OR repair open in brn ground wire circuit to the manifold.

Repair open in the ground wire circuit on the platform rotate right directional coil.

Repair open in power supply wiring to platform rotate toggle switch on ground controls OR on the platform controls.

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Continued from page 84.

Continued on the next page.
Disconnect the wires from the platform rotate right directional valve coil. Test the resistance of the valve coil. See Repair Section.

- 0 or infinite ohms
  - Replace platform rotate right directional valve coil.

- 23 to 25 ohms
  - Exchange the platform rotate right and jib boom up directional valves (item B and A). Activate the platform rotate RIGHT function.
    - Function operates
      - Replace defective directional valve.
    - Function inoperative
      - Install a 0 to 3000 psi (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold and activate the platform rotate right function.
        - Less than 3200 psi
          - Check for mechanical restrictions keeping platform rotate right function from moving OR the Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: 0.030" orifice (item C)
            - Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: 0.025 orifice (item C) could be plugged OR repair hydraulic rotation motor OR consult Genie Industries Service Department.
        - More than 3200 psi
          - Replace defective platform rotate right directional valve.
Chart 22

Jib Boom Up Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch TS16 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Hold the function enable toggle switch to either side and move the jib toggle switch TS16 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the jib toggle switch TS58 in the UP direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

If voltage is 20V or more, check voltage at TB6.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB6.

If voltage is 20V or more, troubleshoot jib function toggle switch on ground controls OR repair open in wht/red #6 wire circuit from toggle switch to TB6 OR consult Genie Industries Service Department.

If voltage is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil.

If voltage to TB6 from toggle switch at ground control and toggle switch at platform control has been restored and jib up function is still inoperative, continue trouble shooting from beginning of chart.

Continued on the next page.
0V

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move jib toggle switch in the UP direction and check voltage on the blk wire on the jib up directional valve coil (item A).
Z-34/22 after serial number 152 and Z-34/22N after serial number 303: Hold the function enable toggle switch to either side and move jib toggle switch in the UP direction and check voltage on the yel wire on the jib up directional valve coil (item A).

20V or more

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

20V or more

Troubleshoot jib function toggle switch on ground controls OR replace diode on toggle switch OR repair open in grn-1 to blk-jib wire circuit from toggle switch to boom function directional valve coil OR consult Genie Industries Service Department.

0V

Repair open in the grn-1 to blk-jib wire circuit from TB43 to the jib up directional valve coil OR repair open in the ground wire circuit to valve coil.

0V

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move jib toggle switch in the UP direction and check voltage on the blk wire on the jib up directional valve coil (item A).
Z-34/22 after serial number 152 and Z-34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage on the yel wire on the jib up directional valve coil (item A).

20V or more

Troubleshoot jib function toggle switches on ground and platform controls OR replace diodes on toggle switches OR repair open in grn-1 to blk-jib wire circuit from toggle switches to jib up directional valve coil OR consult Genie Industries Service Department.

If voltage to boom function directional valve coil from ground toggle switch and platform toggle switch has been restored and jib up function is still inoperative, continue trouble shooting from beginning of chart.

Continued from the previous page.

Continued on the next page.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Troubleshoot jib function toggle switches on ground and platform controls OR replace diodes on toggle switches OR repair open in grn-1 to blk-jib wire circuit from toggle switches to jib up directional valve coil OR consult Genie Industries Service Department.

If voltage to boom function directional valve coil from ground toggle switch and platform toggle switch has been restored and jib up function is still inoperative, continue trouble shooting from beginning of chart.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the jib toggle switch in the UP direction. Check voltage on the blk-jib wire at jib up directional valve coil.

20V or more

Troubleshoot jib function toggle switches on ground and platform controls OR replace diodes on toggle switches OR repair open in grn-1 to blk-jib wire circuit from toggle switches to jib up directional valve coil OR consult Genie Industries Service Department.

If voltage to boom function directional valve coil from ground toggle switch and platform toggle switch has been restored and jib up function is still inoperative, continue trouble shooting from beginning of chart.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction and check voltage at TB43.
Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction and check voltage at TB43.
CHART 22

Continued from the previous page.

Disconnect the wires from the jib up directional valve coil. Test the resistance of the valve coil. See Repair Section.

23 to 25 ohms

Exchange the jib up and jib down directional valves (item A and E). Activate the jib up function.

0 or infinite ohms

Replace jib up directional valve coil.

Function inoperative

Install a 0 to 3000 PSI (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the UP direction.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the UP direction.

2800 PSI

Check for mechanical restrictions keeping jib up function from moving OR repair or replace jib cylinder OR replace jib cylinder counterbalance valves OR consult Genie Industries Service Department.

Less than 2800 PSI

Repair or replace jib cylinder OR replace jib cylinder counterbalance valves OR platform rotate/jib function manifold could have an internal defect. Consult Genie Industries Service Department.
Jib Boom Down Function Inoperative

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.
Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch TS16 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU).

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch TS16 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item AU or BU).

Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: Hold the function enable toggle switch to either side and move the jib toggle switch TS58 in the DOWN direction and check the voltage on the wht/red #6 wire at the boom function proportional valve coil (item CH).

Troubleshoot jib function toggle switch on ground controls OR repair open in wht/red #6 wire circuit to TB6 OR consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the DOWN direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the DOWN direction and check the voltage at TB6.

If voltage to TB6 from toggle switch at ground control and toggle switch at platform control has been restored and jib down function is still inoperative, continue troubleshooting from beginning of chart.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the boom function speed controller turned to 9, press down the foot switch and move the jib toggle switch.
Z-34/22 before serial number 1734 and Z34/22N before serial number 2227: TS7
Z-34/22 after serial number 1733 and Z34/22N after serial number 2226: TS8
in the DOWN direction. Check voltage at TB6.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the DOWN direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the DOWN direction and check the voltage at TB6.

If voltage to TB6 from toggle switch at ground control and toggle switch at platform control has been restored and jib down function is still inoperative, continue troubleshooting from beginning of chart.

Troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the DOWN direction and check the voltage at TB6.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the DOWN direction and check the voltage at TB6.

If voltage to TB6 from toggle switch at ground control and toggle switch at platform control has been restored and jib down function is still inoperative, continue troubleshooting from beginning of chart.

Troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.

Repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 0V, repair open in wht/red #6 wire circuit from TB6 to boom function proportional valve coil OR repair open in brn ground wire circuit to boom function proportional valve coil.

If voltage at TB6 is 20V or more, troubleshoot jib function toggle switches on ground and platform controls OR repair open in wht/red #6 wire circuit from ground controls toggle switch to TB6 and from platform controls toggle switch to red wire on boom rotary speed controller OR consult Genie Industries Service Department.
CHART 23

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move platform jib toggle switch in the DOWN direction and check voltage on the wht wire on the jib down directional valve coil (item E).

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move jib toggle switch in the DOWN direction and check voltage on the wht wire on the jib down directional valve coil (item E).

0V

20V or more

Repair open in grn/blk-1 to wht-jib wire circuit from TB44 to jib down directional valve coil OR repair open in ground wire circuit to valve coil.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the DOWN direction and check voltage at TB44.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the DOWN direction and check voltage at TB44.

0V

20V or more

Troubleshoot jib function toggle switches on ground and platform controls OR replace diodes on toggle switches OR repair open in grn/blk-1 to wht-jib wire circuit from toggle switches to jib down directional valve coil OR consult Genie Industries Service Department.

Troubleshoot jib function toggle switch on ground controls OR replace diode on toggle switch OR repair open in grn-1 to sht-jib wire circuit from toggle switch to jib down directional valve coil OR consult Genie Industries Service Department.

If voltage to jib down directional valve coil from ground toggle switch and platform toggle switch has been restored and jib up function is still inoperative, continue trouble shooting from beginning of chart.

Continued from the previous page.

Continued on the next page.
Continued from the previous page.

0 or infinite ohms

Replace jib down directional valve coil.

23 to 25 ohms

Exchange the jib up and jib down directional valves (item A and E). Activate the jib down function.

function operates

Replace defective directional valve.

function inoperative

Install a 0 to 3000 PSI (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Move the jib toggle switch in the DOWN direction.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Hold the function enable toggle switch to either side and move the jib toggle switch in the DOWN direction.

3200 PSI

Check for mechanical restrictions keeping jib down function from moving OR repair or replace jib cylinder OR replace jib cylinder counterbalance valves OR consult Genie Industries Service Department.

less than 3200 PSI

Repair or replace jib cylinder OR replace jib cylinder counterbalance valves OR platform rotate/jib function manifold could have an internal defect. Consult Genie Industries Service Department.
**Chart 24**

**Steer Left Function Inoperative**

*(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)*

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the **ON** position.

Be sure the battery packs are properly connected and fully charged.

Be sure all other functions operate normally.

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**Flowchart Diagram**

1. **Turn key switch to platform controls and pull both Emergency Stop buttons out to the **ON** position. Press down the foot switch and press the steer rocker switch in the **LEFT** direction and check voltage on **TB36**.**
   - **0V**
   - **20V or more**

2. **Press down the foot switch and press the steer rocker switch in the **LEFT** direction and check voltage on **TB19**.**
   - **0V**
   - **20V or more**

3. **Press down the foot switch and press the steer rocker switch in the **LEFT** direction and check voltage on blu #36 wire at the steer left directional valve coil (item I) on the steer/brake manifold.**
   - **0V**

4. **Repair open in blu #36 wire circuit from TB36 to the steer left directional valve coil.**

5. **Press down the foot switch and press the steer rocker switch in the **LEFT** direction and check voltage at the drive controller terminal with the blu-1 wire attached.**
   - **0V**
   - **20V or more**

6. **Repair open in the wire circuit with diode from TB36 to TB19.**

7. **Disconnect the wires from the steer left directional valve coil. Test the resistance of the valve coil. See Repair Section.**
   - **0 or infinite ohms**
   - **20 to 25 ohms**

8. **Install a 0 to 3000 PSI (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold. Press down the foot switch and press the steer rocker switch in the **LEFT** direction and check the pressure.**
   - **2800 psi**
   - **less than 2800 psi**

9. **Repair or replace steer cylinder OR the steer/brake function manifold could have an internal defect OR consult Genie Industries Service Department.**

10. **Check for mechanical restrictions keeping steer left function from moving OR the 0.085” orifice (item O) is plugged OR repair or replace steer cylinder OR consult Genie Industries Service Department.**

11. **Repair or replace steer left directional valve coil.**

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*Repair Section:*

- Disconnect the wires from the steer left directional valve coil.
- Test the resistance of the valve coil.
- See Repair Section.
Steer Left Function Inoperative

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the on position.

Be sure the battery packs are properly connected and fully charged.

Be sure all other functions operate normally.

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Turn key switch to platform controls and pull both Emergency Stop buttons out to the on position. Press down the foot switch and press the steer rocker switch in the left direction. Check voltage at TB36.

- 20V or more
  - Press down the foot switch and press the steer rocker switch in the left direction. Check voltage at TB19.
    - 20V or more
      - Press down the foot switch and press the steer rocker switch in the left direction. Check voltage on the blu #36 wire at the steer left directional valve coil (item CJ).
        - 23 to 25 ohms
          - Disconnect the blu #36 wire to the steer left directional valve coil. Test the resistance of the valve coil. See Repair Section.
        - Infinite ohms
          - Replace steer left directional valve coil.
    - Infinite ohms
      - Repair open in blu #36 wire circuit from TB36 to the steer left directional valve coil. OR repair open in brn ground wire circuit to the function manifold.

- 0V
  - Repair open in grn/wht #19 wire circuit with diode from TB36 to TB19 OR replace the diode.

- 0V
  - Repair or replace the steer microswitch on the drive controller OR consult Genie Industries Service Department.

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Continued on the next page.
CHART 25

Continued from the previous page.

- Install a 0 to 5000 PSI (0 to 345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Press down the foot switch and press the steer rocker switch in the LEFT direction and check the pressure.

  - Function operates
    - Replace defective directional valve.
  - Function inoperative
    - Check for mechanical restrictions keeping the steer right function from operating OR the 0.045" orifice (item CN) may be plugged OR repair or replace the steer cylinder OR consult Genie Industries Service Department.

- 3200 PSI
  - Repair or replace the steer cylinder OR the function manifold may have an internal defect. Consult Genie Industries Service Department.

- Less than 3200 psi
  - Replace defective directional valve.
Steer Right Function Inoperative
(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled up to the ON position.

Be sure the battery packs are properly connected and fully charged.

Be sure all other functions operate normally.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and press the steer rocker switch in the RIGHT direction and check voltage on TB37.

- 0V
  - Repair open in blu/blk #37 wire circuit from TB37 to the steer right directional valve coil.

- 20V or more
  - Press down the foot switch and press the steer rocker switch in the RIGHT direction and check voltage at the drive controller terminal where the blu/blk-1 wire is attached.

- 20V or more
  - Repair open in wire circuit with diode from TB37 to TB19.

- 20V or more
  - Repair open in wire circuit with diode from TB37 to TB19.

- 0V
  - Press down the foot switch and press the steer rocker switch in the RIGHT direction and check voltage on TB19.

- 20V or more
  - Press down the foot switch and press the steer rocker switch in the RIGHT direction and check voltage on blu/blk #37 wire at the steer right directional valve coil (item I) on the steer/brake manifold.

- 20V or more
  - Disconnect the wires from the steer right directional valve coil. Test the resistance of the valve coil. See Repair Section.

- 20 to 25 ohms
  - Install a 0 to 3000 PSI (0 to 207 bar) pressure gauge at the quick disconnect coupling on the boom function manifold. Press down the foot switch and press the steer rocker switch in the RIGHT direction and check the pressure.

- 3200 PSI
  - Check for mechanical restrictions keeping steer right function from moving OR the 0.085" orifice (item O) is plugged OR repair or replace steer cylinder OR consult Genie Industries Service Department.

- less than 3200 PSI
  - Repair or replace steer cylinder OR the steer/brake function manifold could have an internal defect OR consult Genie Industries Service Department.

- 0 or infinite ohms
  - Replace steer right directional valve coil.

Repair or replace the steer microswitch OR consult Genie Industries Service Department.
Chart 27

Steer Right Function Inoperative

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Be sure all other functions operate normally.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and press the steer rocker switch on the drive controller in the RIGHT direction. Check voltage at TB37.

20V or more

Press down the foot switch and press the steer rocker switch in the RIGHT direction. Check voltage on TB19.

20V or more

Press down the foot switch and press the steer rocker switch in the RIGHT direction. Check voltage on the blu/blk #37 wire at the steer right directional valve coil (item CJ).

0V

Repair open in blu/blk -1 wire circuit from drive controller terminal "10" to TB37.

20V or more

Repair or replace the steer microswitch on the drive controller OR consult Genie Industries Service Department.

0V

Repair open in grn/wht #19 wire circuit with diode from TB37 to TB19 OR replace the diode.

0 or infinite ohms

Replace steer right directional valve coil.

20V or more

Press down the foot switch and press the steer rocker switch in the RIGHT direction. Check voltage at terminal "10" on the drive controller.

0V

Repair open in blu/blk #37 wire circuit from TB37 to the steer right directional valve coil OR repair open in brn ground wire circuit to the function manifold.

23 to 25 ohms

Disconnect the blu/blk #37 wire to the steer right directional valve coil. Test the resistance of the valve coil. See Repair Section.

Continued on the next page.
Continued from the previous page.

Install a 0 to 5000 PSI (345 bar) pressure gauge at the quick disconnect coupling on the function manifold. Press down the foot switch and press the steer rocker switch in the RIGHT direction and check the pressure.

- **3200 PSI**
  - Check for mechanical restrictions keeping the steer right function from operating OR the 0.450" orifice (item CN) may be plugged OR repair or replace the steer cylinder OR consult Genie Industries Service Department.
  - Replace defective directional valve.

- **function operates**
  - Exchange the steer directional valve (item CJ) with turntable rotate directional valve (item CX). Test the steer left function.

- **function inoperative**
  - Repair or replace the steer cylinder OR the function manifold may have an internal defect. Consult Genie Industries Service Department.

- **less than 3200 psi**
Chart 28

All Drive Functions Inoperative, All Other Functions Operate Normally

(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure the unit is in the fully stowed position with the boom located between the drive tires.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and hold the drive enable toggle switch TS9 to either side and move the drive controller in the FORWARD direction.

Function operates

Press down the foot switch and check voltage at TB16.

20V or more

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in org/red wire circuit from TB16 to “+” terminal on the drive controller.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in org/red wire circuit from TB16 to CR5 OR repair open in ground wire circuit from CR5 to ground OR repair open in blu/wht wire circuit from center pole at TS9 to CR5 OR repair open in wire circuit from CR5 to terminal “+” on the drive controller OR replace CR5.

0V

Repair open in blu/wht-3 wire circuit from drive enable toggle switch to TB12 OR consult Genie Industries Service Department.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in wire circuit from TB12 to LS3 OR repair open in wire circuit from TB16 to LS3 OR replace LS3.

Press down the foot switch and check voltage at TB12.

20V or more

0V

Check voltage from B-terminal on the motor controller to input side of 500A fuse F1.

48V or more

Continued on the next page.

Less than 48V

Repair open in power cable from battery packs to F1 OR ground cable to B-terminal on the motor controller.

Repair open in power cable from battery packs to F1 OR ground cable to B-terminal on the motor controller.
Press down the foot switch and move the drive controller in the FORWARD direction and check voltage at the positive cable on output side of PR1.

If 48V or more:

Check voltage on the positive cable at input side of PR1.

If 0V:

Repair open in positive cable from output terminal of 500A fuse F1 to input side of PR1.

If 48V:

Block the steer wheels and raise the machine so the drive tires are off the ground. Place blocks under the drive chassis for support. Disconnect white wire on forward/reverse contactor PR2. With key switch turned to platform controls and both Emergency Stop buttons pulled out to the ON position, press down the foot switch and move the drive controller to full FORWARD direction and try to rotate the drive tires by hand. Note: this will require 2 people.

If tires don't move:

Go to Chart 28A, Brake Function Inoperative.

If tires move:

Continued on the next page.

Check voltage on output side of 500A fuse F1.

If 0V:

Replace 500A F1.

Check voltage on the positive cable at input side of PR1.

If 48V or more:

Repair open in wire circuit from terminal #1 on the motor controller to PR1 OR repair open in the ground wire circuit from PR1 to ground OR replace PR1 contacts OR replace PR1 OR consult Genie Industries Service Department.

Continued from the previous page.
Press down the foot switch and move the drive controller in the FORWARD direction and check voltage at terminal “X” on the drive controller.

20V or more
Repair open in org/blk wire circuit from terminal “X” on the drive controller to TB41.

0V
Repair or replace the drive controller.

CHART 28

Continued from the previous page.

Connect wht wire to forward/reverse contactor PR2. Press down the foot switch and move the drive controller to full FORWARD direction and check voltage at positive cable on output side of PR1.

48V or more

Press down the foot switch and move the drive controller to full FORWARD direction and check voltage at org/blk wire at TB41.

20V or more
Repair open in ground wire circuit to PR1 OR replace PR1.

0V

Press down the foot switch and move the drive controller in the FORWARD direction and check voltage at terminal “+” on the drive controller.

48V or more
Press down the foot switch and move the drive controller to full FORWARD direction and check voltage at org/blk wire on PR1.

20V or more
Repair open in org/blk wire circuit from TB41 to PR1.

0V
Repair open in org/blk wire circuit from terminal “X” on the drive controller to TB41.

Continued on the next page.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in power circuit from drive enable toggle switch TS9 to TB12 to LS3 to TB16 to “+” terminal on the drive controller.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in power circuit from drive enable toggle switch TS9 to TB12 to LS3 to TB16 to CR5 to the drive controller OR replace CR5 OR consult Genie Industries Service Department.
Press down the foot switch and move the drive controller in the FORWARD direction and check voltage at terminal B+ on the motor controller.

0V

Repair open in positive cable from PR1 to terminal B+ on the motor controller.

48V or more

Press down the foot switch and move the drive controller in the FORWARD direction and check voltage at terminal A1 on the left drive motor.

0V

Repair open in positive cable from PR1 to terminal A1 on the left drive motor.

48V or more

Press down the foot switch and move the drive controller in the FORWARD direction and check voltage on terminal #1 on the motor controller.

20V or more

Repair open in org/blk wire circuit from TB41 to terminal #1 on the motor controller.

Continued on the next page.
Continued from the previous page.

Check voltage at terminal #3 on the motor controller. Voltage should ramp up from 0V to 5V.

Press down the foot switch and slowly move the drive controller from neutral to full stroke in the FORWARD direction and check voltage on TB3. Voltage should ramp up from 0V to 5V.

Z-34/22 before serial number 153 and Z34/22N before serial number 304:
Press down the foot switch and slowly move the drive controller from neutral to full stroke in the FORWARD direction and check voltage at terminal "A" on the drive controller. Voltage should ramp up from 0V to 5V.

Z-34/22 after serial number 152 and Z34/22N after serial number 303:
Press down the foot switch and slowly move the drive controller from neutral to full stroke in the FORWARD direction and check voltage at terminal "D" on the drive controller. Voltage should ramp up from 0V to 5V.

Continued on the next page.

Adjust the drive controller OR refer to Chart 33 OR repair or replace the drive controller OR consult Genie Industries Service Department.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in red/wht wire circuit from terminal "A" at the drive controller to TB3 to #3 terminal on the motor controller.

Z-34/22 after serial number 152 and Z34/22N after serial number 303: Repair open in red/wht wire circuit from terminal "D" at the drive controller to TB3 to #3 terminal on the motor controller.
CHART 28

Continued from the previous page.

Disconnect wht wire on the forward/reverse contactor PR2. Connect a volt meter to terminals B+ and M- on the motor controller. Press down the foot switch and slowly move the drive controller from neutral to full stroke in the FORWARD direction. Voltage should ramp up from 0V to 48V.

Replace the motor controller.

Connect wht wire on forward/reverse contactor PR2. Connect a volt meter to terminals B+ and M- on the motor controller. Press down the foot switch and slowly move the drive controller from neutral to full stroke in the FORWARD direction. Voltage should ramp up from 0V to 48V.

Repair open in cable circuit from the motor controller to PR2 to the drive motors OR repair open in the ground wire circuit from PR2 coils to ground OR replace PR2 OR repair or replace the bad motor OR consult Genie Industries Service Department.

Disconnect the battery packs from the machine and disconnect the positive cable from terminal A2 on the motor controller. Using an ohmmeter, check resistance in both directions across terminals A2 and B+ on the motor controller. Resistance should be high in one direction and low in the other.

Replace motor controller.

Repair or replace the bad motor OR consult Genie Industries Service Department.
Chart 28A

Brake Function Inoperative

(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure the drive hubs are not disengaged

Be sure the remote brake release is removed.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position, press down the foot switch and move the drive controller in the FORWARD direction until the first micro switch activates. Check voltage at TB19.

- 0V
  - Press down the foot switch and move the drive controller in the FORWARD direction until the first micro switch activates and check voltage at TB47.
    - 20V or more
      - Repair open in grn/wht wire circuit with diode from pressure switch (item K) to TB19 OR replace pressure switch OR repair open in wire circuit from TB47 to the brake release valve N.C. (item K) to pressure switch.

- 0V
  - Press down the foot switch and move the drive controller in the FORWARD direction until the first micro switch activates and check voltage at TB41.
    - 20V or more
      - Repair open in org/blk wire circuit with diode from TB41 to TB47 OR replace diode.

- 0V
  - Press down the foot switch and move the joystick in the FORWARD direction until the first micro switch activates and check voltage at terminal "X" on the drive controller.
    - 20V or more
      - Repair open in org/blk wire circuit from terminal "X" on the drive controller to TB41.

- 0V
  - Press down the foot switch and move the joystick in the FORWARD direction until the first micro switch activates and check voltage at terminal "+" on the drive controller.
    - 20V or more
      - Repair open in power circuit from drive enable toggle switch TS9 to TB12 to LS3 to TB16 to terminal "+" on drive controller OR replace LS3 OR consult Genie Industries Service Department.

Repair or replace drive controller. Consult Genie Industries Service Department.
Press down the foot switch and move the drive controller in the FORWARD direction until the 1/2 stroke micro switch activates and check voltage at red/wht and ground wires on 1/2 stroke brake release valve (item H).

Press down the foot switch and move the drive controller in the FORWARD direction until the 1/2 stroke micro switch activates and check voltage at TB29.

Press down the foot switch and move the drive controller in the FORWARD direction until the 1/2 stroke micro switch activates and check voltage at red/wht wire on 1/2 stroke micro switch on drive controller.

Disconnected red/wht #29 and ground wires from 1/2 stroke brake release valve coil. Test the resistance of the valve coil. See Repair Section.

Disconnect red/wht #29 and ground wires from 1/2 stroke brake release valve coil. Test the resistance of the valve coil.

Repair open in red/wht wire circuit from TB29 to the brake release valve.

Repair open in red/wht wire with diode from 1/2 stroke micro switch on drive controller to TB29.

Replace brake release valve coil.

Repair or replace drive controller OR consult Genie Industries Service Department.

Continued on the next page.
CHART 28A

Continued from the previous page.

Press down the foot switch and move the drive controller in the FORWARD direction until the 1/2 stroke micro switch activates. Check voltage at red wire on brake release valve N.C. (item L).

20V or more

Disconnected the wires from the brake release valve N.C. coil. Test the resistance of the valve coil. See Repair Section.

0V

Replace brake release valve N.C. coil.

22 to 24 ohms

Disconnected the wires from the brake proportional valve coil. Test the resistance of the proportional valve coil (item N). See Repair Section.

0 or infinite ohms

Replace brake proportional valve coil.

18 to 20 ohms

Adjust drive controller (See Repair Section) OR repair open in wht/red-1 wire circuit from Z-34/22 before serial number 153 and Z34/22N before serial number 304; terminal "A" on drive controller to TB32.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226; terminal "B" on drive controller to TB32 OR repair open in the ground wire circuit to the proportional brake release valve coil OR repair or replace drive controller OR consult Genie Industries Service Department.

Continued on the next page.
Press down the foot switch and move the drive controller in the FORWARD direction to full stroke and check voltage at TB19.

20V

Install a 0 to 3000 psi (0 to 207 bar) pressure gauge at the quick disconnect coupling on the function manifold. Press down the foot switch and move the drive controller in the FORWARD direction and check pressure.

1200 psi

Replace pressure switch (item K) OR consult Genie Industries Service Department.

less than 1200 psi

Replace brake release valve half stroke (item G) OR replace brake proportional valve OR consult Genie Industries Service Department.

1200 psi

Check for mechanical restriction keeping drive function from operating OR consult Genie Industries Service Department.

less than 1200 psi

Replace pressure switch OR consult Genie Industries Service Department.

Continued from the previous page.
All Drive Functions Inoperative, all Other Functions Operate Normally
(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Troubleshooting drive function faults may also be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303).

Be sure to check the motor controller status indicator light on the ground control box or on the motor controller. If the motor controller status indicator light is flashing a fault code, refer to the fault code chart at the beginning of this section.

Be sure the circuit breakers and fuses are not tripped or blown.

Be sure the batteries are properly connected and fully charged.

Be sure the machine is not in the free wheel configuration.

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

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**Chart 29**

- **tires don't move**
  - Press down the foot switch and move the drive controller in the FORWARD direction. Check voltage at terminal #5 on the drive controller.
    - **20V or more**
      - Go to Chart 30, Brake Release Function Inoperative.
    - **0V**
      - Repair open in the wht-1 wire circuit from terminal #4 on the drive controller to TB30 to pin 10 on the motor controller harness connector.
      - **20V or more**
        - Press down the foot switch and move the drive controller in the REVERSE direction. Check voltage at terminal #3 on the drive controller.
          - **20V or more**
            - Repair open in the wht/blk-1 wire from terminal #3 on the drive controller to TB31 to pin 11 on the motor controller harness connector.
          - **0V**
            - Replace the drive controller.

- **tires move**
  - Press down the foot switch and check voltage on terminal #4 on the drive controller.
    - **0V**
      - Replace the drive controller.
    - **20V or more**
      - Press down the foot switch and check voltage on terminal #10 on the drive controller.
        - **0V**
          - Repair open in the wht-1 wire circuit from terminal #4 on the drive controller to TB30 to pin 10 on the motor controller harness connector.
        - **20V or more**
          - Repair open in the wht/blk-1 wire from terminal #3 on the drive controller to TB31 to pin 11 on the motor controller harness connector.

Continued on the next page.
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Press down the foot switch and move the drive controller in either direction. Check voltage at TB16.

20V or more → Repair open in org/red wire circuit from TB16 to terminal #5 on the drive controller.

0V → Press down the foot switch and move the drive controller in either direction. Check voltage at terminal #13 on LS3.

20V or more → Repair open in red-5 wire circuit from terminal #13 on LS3 to TB16.

0V → Press down the foot switch and move the drive controller in either direction. Check voltage at terminal #14 on LS3.

20V or more → Repair open in blk-5 wire circuit from terminal #14 on LS3 to TB12.

0V → Press down the foot switch and move the drive controller in either direction. Check voltage at TB12.

20V or more → Repair open in blu/wht #12 wire circuit from terminal #2 at the motor controller to TB12.

0V → Press down the foot switch and move the drive controller in either direction. Check voltage at terminal #2 at the motor controller.

20V or more → Repair open in blu/wht-3 wire circuit from the center terminal at TS15 to TB12.

0V → Replace the motor controller OR contact Genie Industries Service Department.
Chart 29A

Motor Controller Fault Code 21: Throttle Fault
(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Troubleshooting drive function faults may also be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303).

Be sure to check the motor controller status indicator light on the ground control box or on the motor controller. If the motor controller status indicator light is flashing a fault code, refer to the fault code chart at the beginning of this section.

Be sure the circuit breakers and fuses are not tripped or blown.

Be sure the battery packs are properly connected and fully charged.

Be sure the machine is not in the free wheel configuration.

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

Turn key switch to the OFF position and disconnect motor controller harness connector from the motor controller. Connect the leads from an ohmmeter to pins 14 and 16 on the connector (pins 14 and 16 are the wht/red and red/wht wires). Check the resistance.

- less than 4000 ohms
  - Repair open in the wire circuit from the potentiometer to terminals 1 and 2 on the drive controller OR replace the drive controller.
  - greater than 7500 ohms
    - Repair open in the ground wire circuit in the red/wht or wht/red wires from pins 14 and 16 to terminals #1 and #2 on the drive controller OR replace the drive controller.
- 4000 to 7500 ohms
  - Block the steer wheels and raise the machine so drive tires are off the ground.
    - With the leads from an ohmmeter connected to pins 14 and 16 on the connector, move the drive controller slowly to full stroke in both the FORWARD and REVERSE directions while watching the ohm meter. Does the resistance ramp smoothly down to 10 ohms or less in both directions? Note: This will require 2 people.
      - no
        - Replace the drive controller.
      - yes
        - Begin troubleshooting from the beginning of the chart OR consult Genie Industries Service Department.
Motor Controller Fault Code 32: Main Contactor Welded (Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Troubleshooting drive function faults may also be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303).

Be sure to check the motor controller status indicator light on the ground control box or on the motor controller. If the motor controller status indicator light is flashing a fault code, refer to the fault code chart at the beginning of this section.

Be sure the circuit breakers and fuses are not tripped or blown.

Be sure the battery packs are properly connected and fully charged.

Be sure the machine is not in the free wheel configuration.

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

### Chart 29B

- **Fault Code 32: Main Contactor Welded**
- **Main Contactor Welded**
- **Motor Controller**

**Chart 29B**

**Part No. 36540**

**Genie Z-34/22 & Genie Z-34/22N**

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Motor Controller Fault Code 34: Missing Main Contactor OR Main Contactor Did Not Close

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Troubleshooting drive function faults may also be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303).

Be sure to check the motor controller status indicator light on the ground control box or on the motor controller. If the motor controller status indicator light is flashing a fault code, refer to the fault code chart at the beginning of this section.

Be sure the circuit breakers and fuses are not tripped or blown.

Be sure the battery packs are properly connected and fully charged.

Be sure the machine is not in the free wheel configuration.

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

### Chart 29C

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**Block the steer wheels and raise the machine so drive tires are off the ground.** Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and check the voltage at pin 1 on the motor controller harness connector.

**Press down the foot switch and check the voltage at TB42.**

- **0V**: Check voltage at TB3.
- **24V**: Check the voltage at terminal #86 on CR2.
- **48V**: Check the voltage at terminal #30 on CR1.

**Repair open in org/red wire circuit with diode from TB42 to pin 1 on the motor controller harness connector OR replace the diode.**

**Repair open in red/wht wire circuit from TB3 to platform Emergency Stop button P2.**

**Repair open in red/wht wire from TB3 to terminal #85 on CR2.**

**Repair open in brn ground wire circuit from terminal #86 on CR2 to ground OR repair open in wire from terminal #87 on CR2 to terminal #30 on CR1 OR repair open in org/red #CR2 from the 10A fuse F5 to terminal #30 on CR2 OR replace CR2.**

**Check voltage at terminal #86 on CR2.**

- **0V**: Repair open in red/wht wire circuit from TB3 to terminal #85 on CR2.
- **24V**: Check voltage at TB3.
- **48V**: Check the voltage at terminal #30 on CR1.

**Repair open in brn ground wire from terminal #86 on CR1 to ground OR repair open in red/wht wire from TB3 to terminal #85 on CR1 OR replace CR1.**

**Repair open in org/red wire from terminal #87 on CR1 to TB42.**

**Check the voltage at terminal #30 on CR1.**

- **0V**: Repair open in red/wht wire circuit from TB3 to terminal #85 on CR1.
- **24V**: Check the voltage at TB3.
- **48V**: Check the voltage at terminal #87 on CR1.

**Repair open in brn ground wire from terminal #86 on CR1 to ground OR repair open in red/wht wire from TB3 to terminal #85 on CR1 OR replace CR1.**

**Check the voltage at terminal #87 on CR1.**

- **0V**: Repair open in org/red wire from terminal #87 on CR1 to TB42.
- **24V**: Check the voltage at terminal #30 on CR1.
- **48V**: Check the voltage at terminal #87 on CR1.

**Repair open in org/red wire from terminal #87 on CR1 to TB42.**

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Continued on the next page.
Continued from the previous page.

Check voltage on the battery cable on the input side of PR1. 48V

Press down the foot switch and check voltage at TB12. 0V

Press down the foot switch and check voltage at pin 2 on the motor controller harness connector. 20V or more

Turn key switch to the off position. Wait for 5 seconds and turn the key switch to platform controls. Do not press down the foot switch. Check voltage at the grn wire on PR1. 48V

Remove the diode from PR3 and install it onto PR1 with the band on the diode aligned with the org/red-42 wire. Push in the Emergency Stop button to the off position and wait for 5 seconds, then pull out the Emergency Stop button to the on position. Press down the foot switch and test the drive function. Does the machine drive? yes

no

Continued on the next page.

Repair open in cable circuit from battery packs to 500A fuse F4 OR replace the 500A fuse F4.

Repair open in blu/wht wire from TB12 to terminal "A" on the joystick controller.

Repair open in blu/wht wire from TB12 to pin 2 on the motor controller harness connector.

Repair open in org/red wire circuit from TB42 to PR1.

Replace PR1.

Check voltage on the org/red wire at PR1. 0V

Check voltage on the org/red wire at PR1. 48V

Install a new diode onto PR3 with the band on the diode aligned with the red-27 wire.
Continued from the previous page.

**Repair open in grn wire from PR1 to pin 17 OR replace PR1 OR test the motor controller. See Repair Section.**

Yes

**Check voltage between the terminals B+ and B- on the motor controller. Note the voltage. Press down the foot switch and check voltage between pin 1 on the motor controller harness connector and terminal B-. Is the voltage within 1V of the first reading?**

No

**Disconnect the batteries from the machine. Remove the PR1 mounting fasteners. Clean all 4 contact tips until they are clean and smooth. Install the contactor onto the power panel and connect the batteries. Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and test the drive function. Does the machine drive?**

Yes

**Drive function should be operating normally. If it does not, begin troubleshooting from beginning of chart.**

No

**Replace the motor controller.**

No
Brake Release Function Inoperative

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure all other functions operate normally.

Troubleshooting brake release faults may also be accomplished by using the hand-held pendant motor controller programmer (Genie part number 56303).

Be sure to check the motor controller status indicator light on the ground control box or on the motor controller. If the motor controller status indicator light is flashing a fault code, refer to the fault code chart at the beginning of this section.

Be sure the battery packs are properly connected and fully charged.

Be sure the circuit breakers and fuses are not tripped or blown.

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and check the status indicator light on the motor controller to see if there is a fault. Is there a fault?

no

Refer to the fault code chart at the beginning of this section to determine the cause of the fault.

yes

Block the steer wheels and raise the machine so drive tires are off the ground. With key switch turned to platform controls and both Emergency Stop buttons pulled out to the ON position, press down the foot switch and move the drive controller in either direction and check voltage at TB41.

Press down the foot switch and move the drive controller in either direction and check voltage at terminal #30 on CR5.

Press down the foot switch and move the drive controller in either direction and check voltage at terminal #87 on CR5.

Repair open in org/blk wire from TB41 to TP41.

Repair open in org/blk #41 wire from TB41 to terminal #30 on CR5.

Repair open in org/red wire circuit from TB42 to terminal #85 on CR5 OR repair open in red/blk wire from pin 20 to terminal #86 on CR5 OR replace CR5.

Do not press down the foot switch. Check voltage at the red/blk wire on pin 20 of the motor controller harness connector.

Press down the foot switch and check voltage at the red/blk wire on pin 20 of the motor controller harness connector.

Replace CR5.

Continued on the next page.

Press down the foot switch and move the drive controller in either direction and check voltage at terminal #87 on CR5.

Repair open in org/blk #41 wire from TB41 to terminal #30 on CR5.

Block the steer wheels and raise the machine so drive tires are off the ground. With key switch turned to platform controls and both Emergency Stop buttons pulled out to the ON position, press down the foot switch and move the drive controller in either direction and check voltage at TB41.

Press down the foot switch and move the drive controller in either direction and check voltage at terminal #30 on CR5.

Press down the foot switch and move the drive controller in either direction and check voltage at terminal #87 on CR5.
Press down the foot switch and move the drive controller in either direction and check voltage at TB48.

- **0V**: Repair open in red/wht wires from TB48 to the brake release valve coils (items G and K).
- **24V**: Remove the pressure switch plug and place a jumper between terminals 1 and 2 on the plug. Press down the foot switch and move the drive controller in either direction. Does the power unit turn on?
  - **yes**: Replace the pressure switch.
  - **no**: Repair open in red/wht wires from TB48 to the brake release valve coils (items G and K).

Insert a jumper wire between TB48 and TB19. Press down the foot switch and move the drive controller in either direction. Does the power unit turn on?

- **no**: Press down the foot switch and move the drive controller in either direction. Check voltage on the red/wht wires on the brake release valve coils (items G and K).
  - **0V**: Repair open in red/wht #48 wire from terminal #87 on CR5 to TB48 OR replace diode.
  - **24V**: Insert a jumper wire between TB48 and TB19. Press down the foot switch and move the drive controller in either direction. Does the power unit turn on?
    - **yes**: Replace the pressure switch.
    - **no**: Remove the brake release valve coil and clean the coil contact rings on both ends of the coil. Then install the coil onto the valve cartridge. Drive the machine. Do the brakes release?
      - **yes**: Drive and brake release functions should be operating normally. If they do not, begin troubleshooting from beginning of chart.
      - **no**: Drive and brake release functions should be operating normally. If they do not, begin troubleshooting from beginning of chart.

Continued on the next page.
Disconnected the wires from each of the valve coils and check the resistance of the valve coils. See Repair Section.

- No continuity
  - Check continuity from the brake release valve cartridge to the ground bolt inside the ground control box.
  - Continuity
    - 22 to 25 ohms
      - Consult Genie Industries Service Department.
  - 0 or infinite ohms
    - Repair open in brake ground wire circuit from the function manifold to the ground bolt inside the ground control box.
    - Replace defective valve coil.
Drive Forward Function Inoperative
(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

---

**Chart 31**

**Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the footswitch and move the drive controller in the FORWARD direction and check voltage on wht/blk #31 wire on forward contactor PR2.**

- **20V or more**
  - Remove wht/blk #31 and ground wires from PR2 coil and check resistance of forward coil.
  - 0 or infinite ohms → Repair or replace PR2.
  - 40 ohms → Repair or replace PR2 contacts OR repair open in ground wire circuit OR consult Genie Industries Service Department.
- **0V**
  - Repair or replace micro switch on the drive controller OR drive controller cams are out of adjustment. Consult Genie Industries Service Department.

**Press down the foot switch and move the drive controller in the FORWARD direction and check voltage on TB31.**

- **20V or more** → Repair open in white/blk #31 wire circuit from TB31 to the forward contactor.
- **0V**

**Press down the foot switch and move the drive controller in the FORWARD direction and check voltage on wht/blk-1 wire on micro switch on the drive controller.**

- **20V or more** → Repair open in wire circuit from wht/blk-1 wire on micro switch on drive controller to TB31.
- **0V** → Repair open in white/blk #31 wire circuit from TB31 to the forward contactor.
Drive Reverse Function
Inoperative
(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure key switch is in the appropriate position.

Be sure the Emergency Stop buttons are pulled out to the ON position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and move the drive controller in the REVERSE direction and check voltage on wht #30 wire on forward/reverse contactor PR2.

- **0V**
  - Press down the foot switch and move the drive controller in the REVERSE direction and check voltage on wht-1 wire on micro switch on the drive controller.
  - **0V**
    - Repair or replace micro switch on the drive controller OR drive controller cams are out of adjustment. Consult Genie Industries Service Department.
  - **20V or more**
    - Repair open in wire circuit from wht-1 wire on micro switch on the drive controller to TB31.

Remove wht #30 and ground wires from PR2 coil and check resistance of reverse coil.

- **0 or infinite ohms**
  - Repair or replace PR2.
  - **40 ohms**
    - Repair or replace PR2 contacts OR repair open in ground wire circuit OR consult Genie Industries Service Department.

Press down the foot switch and move the drive controller in the REVERSE direction and check voltage on TB30.

- **20V or more**
  - Repair open in wht #30 wire circuit from TB30 to forward/reverse contactor.

- **0V**
  - Repair open in wire circuit from wht-1 wire on micro switch on the drive controller to TB31.
Machine Will Not Drive At Full Speed  
(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure the unit is in the fully stowed position with the boom located between the non-steer end tires.

Be sure the battery packs are properly connected and fully charged.

**Chart 33**

**Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Check voltage on “R” terminal on the drive controller.**

- **20V or more**
  - **Adjust the drive controller (See Repair Section) OR repair or replace drive controller OR consult Genie Industries Service Department.**

- **0V**
  - **Check voltage on TB40.**
    - **20V or more**
      - **Repair open in org-1 wire circuit from TB40 to “R” terminal on the drive controller.**
    - **0V**
      - **Check voltage on TB23.**
        - **20V or more**
          - **Repair open in wire circuit from Z-34/22 before serial number 153 and Z34/22N before serial number 304: TB23 to LS1 to TB49 to LS2 to TB40. Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: TB23 to LS1 to TB49 to LS2 to TB52 to LS4 to TB40.**
        - **0V**
          - **Repair open in the wht-2 wire circuit with diode from the platform Emergency Stop button to TB23 OR replace the diode.**
Machine Will Not Drive At Full Speed

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure all other functions operate normally.

Be sure the boom is in the stowed position with the primary boom fully retracted.

Be sure the primary boom extension limit switch (LS1) is being activated when the primary boom is retracted.

Be sure the primary boom and secondary boom limit switches (LS2 and LS3) are not being activated when the primary and secondary booms are in the stowed position.

Be sure the battery packs are properly connected and fully charged.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the on position. Check the status indicator light on the motor controller to see if there is a fault. Is there a fault?

no

Check voltage at TB22. 0V

Check voltage at the whit-7 wire on the input side of LS1. 24V

Check voltage at TB49. 0V

Check voltage at TB50. 24V

no

yes

Repair open in blk #22 wire from key switch to TB22.

Repair open in whit-7 wire from TB22 to the input side of LS1.

Check to make sure LS1 is being activated when the primary boom is retracted OR repair open in blk-7 wire from the output side of LS1 to TB49 OR replace LS1 contacts OR replace LS1.

Check to make sure LS2 is not being activated when the primary boom is in the stowed position OR repair open in whit-6 wire from the output side of LS2 to TB50 OR replace LS2 contacts OR replace LS2.

Repair open in blk-6 wire from TB49 to the input side of LS2.

Repair open in whit-6 wire from TB50 to the input side of LS2.

Continued on the next page.
CHART 34

Continued from the previous page.

Check voltage at the wht-8 wire on the input side of LS4. 0V

Check voltage at TB40. 24V 0V

Check voltage at pin 3 on the motor controller harness connector.

Test the motor controller (see Repair Section) OR consult Genie Industries Service Department.

Repair open in org #40 wire circuit from TB40 to pin 3 on the motor controller harness connector.

Check to make sure LS4 is not being activated when the secondary boom is in the lowered position OR repair open in blk-8 wire circuit from the output side of LS4 to TB40 OR replace LS4 contacts OR replace LS4.

Repair open in wht-8 wire from TB50 to the input side of LS4.
Machine Drives At Full Speed With Platform Raised Or Extended

(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Remove the machine from service immediately.

Be sure the wiring to the limit switches is intact and shows no signs of damage or corrosion.

Be sure the primary boom drive limit switch is being activated by the cam on the boom when the primary boom is raised.

Be sure the secondary boom drive limit switch is being activated by the secondary boom compression arm when the secondary boom is raised.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. With the primary boom raised above the limit switch LS2, check voltage on TB49.

20V or more → Repair or replace LS2 OR check for mechanical restriction keeping LS2 activated. → 0V

Adjust drive controller OR repair or replace drive controller OR consult Genie Industries Service Department.

Extend the primary boom past the limit switch LS1 and check voltage on Z-34/22 before serial number 153 and Z34/22N before serial number 304: TB40.

20V or more → Repair or replace LS1 OR check for mechanical restriction keeping LS1 activated. → 0V

Adjust drive controller OR repair or replace drive controller OR consult Genie Industries Service Department.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Raise the secondary boom above the limit switch LS4 and check voltage on TB40.

20V or more → Repair or replace LS4 OR check for mechanical restriction keeping LS4 activated. → 0V

Adjust drive controller OR repair or replace drive controller OR consult Genie Industries Service Department.
Chart 36

Machine Drives At Full Speed With Platform Raised Or Extended
(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Remove the machine from service immediately.

Be sure the wiring to the limit switches is intact and shows no signs of damage or corrosion.

Be sure the primary boom drive limit switch is being activated by the cam on the boom when the primary boom is raised.

Be sure the secondary boom drive limit switch is being activated by the secondary boom compression arm when the secondary boom is raised.

Turn key switch to ground controls and pull both Emergency Stop buttons out to the ON position. Check the status indicator light on the motor controller to see if there is a fault. Is there a fault?

yes

Refer to the fault code chart at the beginning of this section to determine the cause of the fault.

no

With the boom in the lowered position, check voltage at pin 3 on the motor controller harness connector.

0V

Refer to Chart 34.

24V

Raise the primary boom approximately 10 feet (3m) and check voltage at pin 3 on the motor controller harness connector.

0V

Check for proper activation of primary boom limit switch LS2 OR replace LS2 contact OR replace LS2.

24V

Lower the primary boom to the lowered position and raise the secondary boom approximately 10 feet (3m). Check voltage at pin 3 on the motor controller harness connector.

0V

Check for proper activation of secondary boom limit switch LS4 OR replace LS4 contact OR replace LS4.

24V

Lower the secondary boom to the lowered position and extend the primary boom approximately 12 inches (30 cm). Check voltage at pin 3 on the motor controller harness connector.

0V

Check for proper activation of primary boom extend limit switch LS1 OR replace LS1 contact OR replace LS1.

24V

Replace the motor controller OR consult Genie Industries Service Department.
Drive Enable System Is Malfunctioning

(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

Be sure the machine is in the stowed position with the turntable rotated so the boom is in between the non-steer wheels.

Be sure all other functions operate normally.

Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and check voltage at TB12.

24V

Press down the foot switch and check voltage at TB16.

24V

Press down the foot switch and check voltage at terminal "+" on drive controller.

24V

Rotate the boom past either non-steer wheel and check voltage on TB16.

24V

Repair open in blu/wht-3 wire circuit from TB12 to center pole of TS9.

Z-34/22 before serial number 153 and Z34/22N before serial number 304: Repair open in org/red-3 wire circuit from TB16 to terminal "+" on the drive controller.

Z-34/22 from serial number 153 to 1733 and Z-34/22N from serial number 304 to 2226: Repair open in org/red wire circuit from TB16 to CR5 OR repair open in ground wire circuit from CR5 to ground OR repair open in blu/wht wire circuit from center pole at TS9 to CR5 OR repair open in wire circuit from CR5 to terminal "+" on the drive controller OR replace CR5.

Repair or replace LS3.

Continued on the next page.
Continued from the previous page.

Press down the foot switch and hold the drive enable toggle switch TS9 to either side and check voltage on terminal "+" on drive controller.

Repair open in wire circuit from drive enable toggle switch TS9 to terminal "+" on drive controller OR replace TS9 OR consult Genie Industries Service Department.

Adjust drive controller OR replace drive controller OR consult Genie Industries Service Department.

CHART 37
Drive Enable System Is Malfunctioning
(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

Be sure the machine is in the stowed position with the turntable rotated so the boom is in between the non-steer wheels.

Be sure all other functions operate normally.

1. Turn key switch to platform controls and pull both Emergency Stop buttons out to the ON position. Press down the foot switch and check voltage at TB12. 0V

2. Press down the foot switch and check voltage at terminal #14 on the drive enable limit switch LS3. 24V

3. Rotate the boom past either non-steer wheel and check voltage on the red-5 wire at terminal #13 of the drive enable limit switch LS3. 0V

4. Press down the foot switch and check voltage on org/blk wire at terminal #5 on drive controller. 24V

5. Press down the foot switch and check voltage at the wht wire on the center terminal on TS15. 0V

6. Press down the foot switch and hold the drive enable toggle switch TS15 to either side and check voltage at terminal #5 on the drive controller. 24V

7. Begin troubleshooting from the beginning of the chart OR consult Genie Industries Service Department. 0V

Repair open in blu/wht-3 wire circuit from TB12 to the wht wire on the center terminal of TS15.

Repair open in the blk-5 wire from TB12 to terminal #14 on the drive enable limit switch.

Check for proper activation of drive enable limit switch LS3 when the boom is rotated past either non-steer wheel OR replace LS3 contact OR replace LS3.

Replace drive controller.

Repair open in wht wire from terminal #6 on the drive controller to the center terminal on TS15.

Replace the drive enable toggle switch OR repair open in the wht wire from TS15 to center terminal on TS1.
Remote Brake Release Inoperative

(Z34/22 before serial number 3578 and Z34/22N before serial number 4261)

Be sure all other functions operate normally.

Be sure the battery packs are properly connected and fully charged.

Pull the Emergency Stop button at ground controls out to the ON position. Check voltage at the input side of the remote brake release jack J1 on the ground control panel.

0V

Repair open in red wire circuit from input side of the key switch to the input side of the remote brake release jack.

20V or more

With the remote brake release switch plugged into the remote brake release jack on the ground control panel, press down the remote brake release button and check voltage at the output side of the plug.

0V

Replace remote brake release button OR replace the remote brake release jack.

20V or more

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: Activate remote brake release and check voltage at TB46.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Activate remote brake release and check voltage at TB48.

Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227: Repair open in red/wht wire circuit from the output side of the remote brake release jack to TB46.

Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226: Repair open in red/wht wire circuit from the output side of the remote brake release jack to TB48.

Remote brake release function should be operating. Begin troubleshooting from the beginning of this chart.
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 printed in the Genie Z-34/22 & Genie Z-34/22N Operator’s Manual.

☑ 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.

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

Hydraulic Schematics

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
7. Problem solved
8. Problem still exists

Part No. 36540  Genie Z-34/22 & Genie Z-34/22N  6 - 1
## Electrical Components

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<td>CR</td>
<td>Relay, DPDT, 24V DC</td>
<td>42616</td>
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<td>Linemaster Switch Corp.</td>
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<td>45383</td>
<td>Floyd Bell Inc.</td>
<td>MW-09-530-Q</td>
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<td>H2</td>
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<td>56265</td>
<td>FIAMM</td>
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<td>Alarm, intermittent</td>
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<td>Floyd Bell Inc.</td>
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### ELECTRICAL COMPONENTS

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<th>Manufacturer Part Number</th>
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<tr>
<td>KS1</td>
<td>Contact - Key switch, N.O.</td>
<td>45081</td>
<td>Telemecanique</td>
<td>ZB2-BE101</td>
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<td>LS1-LS4</td>
<td>Contact - Limit switch</td>
<td>19491</td>
<td>Telemecanique</td>
<td>XESP2051</td>
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<td>Level sensor</td>
<td>Level sensor, 4.5° (ANSI &amp; CSA)</td>
<td>44586</td>
<td>Power Comp. of Midwest</td>
<td>LS36</td>
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<td>MC1</td>
<td>Motor controller, Curtis</td>
<td>23314</td>
<td>Curtis Instruments</td>
<td>1205-205</td>
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<td>MC1</td>
<td>Motor controller, Sepex 48V, 500 amp</td>
<td>56012</td>
<td>Curtis Instruments</td>
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<td>P1, P2</td>
<td>Contact, N.C.</td>
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<td>Relay, 180 amp</td>
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<td>Curtis Instruments</td>
<td>SW180 24DCCW/4</td>
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<td>PR2</td>
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<td>TS54</td>
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<td>Microswitch Control Inc.</td>
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<tr>
<td>TS7-TS13 and TS57-TS63</td>
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Load Sensor Option Diagram
(Z-34/22 before serial number 1734)
(Z-34/22N before serial number 2227)

Table:

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<tr>
<th>LABEL</th>
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<td>TS8</td>
<td>BCI</td>
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<tr>
<td>TS18</td>
<td>Horn button</td>
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<td>DP1</td>
<td>Drive controller</td>
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<tr>
<td>TS1</td>
<td>Tilt alarm (option)</td>
</tr>
<tr>
<td>TS6</td>
<td>Drive enable light</td>
</tr>
<tr>
<td>TS5</td>
<td>Battery charge indicator</td>
</tr>
<tr>
<td>TS4</td>
<td>Lift/Drive select (option)</td>
</tr>
<tr>
<td>TS3</td>
<td>Overload light (option)</td>
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Diagram:

- LOAD SENSOR
- LOAD SENSE PCB
- CR5
- CR6
- TILT ALARM
- JIB
- FOOT SWITCH
- CABLE #3
- CABLE #2
- CABLE #1
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
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- TS4
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- TS6 (option)
- DP1
- BCI
- FUSE
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- RED/GRN
- RED/WHT
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- P3
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- TS2
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- TS4
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- TS6 (option)
- DP1
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- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
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- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
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- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
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- TS6 (option)
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- P3
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- TS6 (option)
- DP1
- BCI
- FUSE
- RED/BLK
- RED/GRN
- RED/WHT
- CR5
- CR6
- L1
- L2
- P2
- P3
- TS1
- TS2
- TS3
- TS4
- TS5
- TS6 (option)
Load Sensor Option Diagram
(Z-34/22 from serial number 1734 to 2060)
(Z-34/22N from serial number 2227 to 2870)

Part No. 36540
Genie Z-34/22 & Genie Z-34/22N 6 - 5
Load Sensor Option Diagram
(Z-34/22 from serial number 2061 to 3577)
(Z-34/22N from serial number 2871 to 4260)
Power Cable Diagram
(Z-34/22 before serial number 3578)
(Z-34/22N before serial number 4261)

Power Cable Diagram
(Z-34/22 before serial number 1734)
(Z-34/22N before serial number 2227)

Power Cable Diagram
(Z-34/22 from serial number 1734 to 3577)
(Z-34/22N from serial number 2227 to 4260)
Power Cable Diagram
(Z-34/22 after serial number 3577)
(Z-34/22N after serial number 4260)

LEFT SIDE
BATTERY PACK

+ + +
A1
D1
A2
F2 A2
F1 A1

48V

D1

AP2 AP1

LEFT SIDE
DRIVE MOTOR

RED (10)
BLK (10)
RED (10) RED (10)
BLK (2)

RIGHT SIDE
BATTERY PACK

24V

AUXILIARY LIFT PUMP

BLK (4) PRIMARY LIFT PUMP

BLK (2) PRIMARY LIFT PUMP CONTACTOR

PR1 PRIMARY LIFT PUMP CONTACTOR

RED (4)

BLK (2)

RED (2)

RIGHT SIDE
DRIVE MOTOR

RED (10)

AMMETER

WHT (10)
BLK (10)

CURTIS MOTOR CONTROLLER

BLK (2)

3 DIODES

BLK (2)

RED (10)

BLK (2)

RIGHT SIDE
AUXILIARY LIFT PUMP

RED (2)

AP1

NOTES:
1. WIRE GAUGE NOTED IN PARENTHESES AFTER WIRE COLOR.
2. DO NOT ROUTE POWER CABLES ACROSS FRONT OF THE MOTOR CONTROLLER. DOING SO CAN AFFECT INTERNAL CURRENT SENSORS, CAUSING REDUCED MOTOR PERFORMANCE.
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<thead>
<tr>
<th>LABEL</th>
<th>DESCRIPTION</th>
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<tr>
<td>AP</td>
<td>Anderson Plug</td>
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<td>BCI</td>
<td>Battery charge indicator (option)</td>
</tr>
<tr>
<td>BP</td>
<td>Boom function speed controller</td>
</tr>
<tr>
<td>CB</td>
<td>Circuit breaker</td>
</tr>
<tr>
<td>CR</td>
<td>Control relay</td>
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<tr>
<td>DE</td>
<td>Drive enable</td>
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<td>DP1</td>
<td>Drive proportional controller</td>
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<tr>
<td>F</td>
<td>Fuse</td>
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<tr>
<td>FB</td>
<td>Flashing beacon</td>
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<td>FS</td>
<td>Foot switch</td>
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<td>Brake release receptacle</td>
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Electrical Schematic
(Z-34/22 before serial number 153)
(Z-34/22N before serial number 304)
Electrical Schematic
(Z-34/22 from serial number 153 to 1733)
(Z-34/22N from serial number 304 to 2226)
Electrical Schematic
(Z-34/22 from serial number 153 to 1733)
(Z-34/22N from serial number 304 to 2226)

Part No. 36540  Genie Z-34/22 & Genie Z-34/22N  6 - 16

NOTE
Z-34/22: Control Relay CR5 was added after serial number 551
Z-34/22N: Control Relay CR5 was added after serial number 689
Electrical Schematic
(Z-34/22 from serial number 1835 to 2060)
(Z-34/22N from serial number 2448 to 2870)
Electrical Schematic
(Z-34/22 from serial number 1835 to 2060)
(Z-34/22N from serial number 2448 to 2870)
Electrical Schematic
(Z-34/22 from serial number 2061 to 3577)
(Z-34/22N from serial number 2871 to 4260)
Electrical Schematic
(Z-34/22 from serial number 3578 to 4799)
(Z-34/22N from serial number 4261 to 5619)
Electrical Schematic
(Z-34/22 after serial number 4799)
(Z-34/22N after serial number 5619)
Ground Control Panel Wiring Diagram (Z-34/22 from serial number 153 to 1733) (Z-34/22N from serial number 304 to 2226)

Part No. 36540
Genie Z-34/22 & Genie Z-34/22N
Ground Control Panel Wiring Diagram
(Z-34/22 from serial number 153 to 1733)
(Z-34/22N from serial number 304 to 2226)
Ground Control Panel Wiring Diagram
(Z-34/22 from serial number 1734 to 1999)
(Z-34/22N from serial number 2227 to 2750)
Ground Control Panel Wiring Diagram
(Z-34/22 from serial number 2000 to 3577)
(Z-34/22N from serial number 2751 to 4260)
Ground Control Panel Wiring Diagram
(Z-34/22 from serial number 2000 to 3577)
(Z-34/22N from serial number 2751 to 4260)
**Ground Control Panel Wiring Diagram**  
(Z-34/22 from serial number 3578 to 4799)  
(Z-34/22N from serial number 4261 to 5619)
Ground Control Panel Wiring Diagram
(Z-34/22 after serial number 4799)
(Z-34/22N after serial number 5619)

Part No. 36540

Ground Control Panel Wiring Diagram

AUXILIARY TOGGLE SWITCH
FUNCTION ENABLE TOGGLE SWITCH
PLATEFORM LEVEL TOGGLE SWITCH
PLATFORM ROTATE TOGGLE SWITCH
PRIMARY BOOM UP/DOWN TOGGLE SWITCH
SECONDARY BOOM UP/DOWN TOGGLE SWITCH
TILT SENSOR
TRAVEL ALARM

AUXILIARY TOGGLE SWITCH
FUNCTION ENABLE TOGGLE SWITCH
PLATEFORM LEVEL TOGGLE SWITCH
PLATFORM ROTATE TOGGLE SWITCH
PRIMARY BOOM UP/DOWN TOGGLE SWITCH
SECONDARY BOOM UP/DOWN TOGGLE SWITCH
TILT SENSOR
TRAVEL ALARM
Ground Control Panel Wiring Diagram
(Z-34/22 after serial number 4799)
(Z-34/22N after serial number 5619)
Ground Control Terminal Strip Wiring Diagram  
(Z-34/22 after serial number 4799)  
(Z-34/22N after serial number 5619)
Platform Control Box Wiring Diagram
(Z-34/22 before serial number 1734)
(Z-34/22N before serial number 2227)
Platform Control Box Wiring Diagram
(Z-34/22 from serial number 1734 to 1834)
(Z-34/22N from serial number 2227 to 2448)

CABLE
#1
CABLE
#2
CABLE
#3

A1 NO NC NC

WHT/RED-3
GRN/WHT-3
WHT-2
BLK-F.S.
BLK-2
BLK/RED-3
RED/WHT-3
RED/WHT-1
WHT/RED-1
WHT/BLK-1
WHT-1
WHT-FS
BLU-1
BLU/BLK-1
RED-1
BLK-3
ORG/BLK-3
ORG-3
RED/BLK-3
RED-3
GRN/BLK-3
GRN-3
BLK/WHT-3
WHT/BLK-3
WHT-3
BLU/BLK-3
BLU-3
GRN/BLK-1
GRN-1
ORG/BLK-1
ORG/RED

REMOVE JUMPER JP1 FOR CE VERSION.

TURNTABLE ROTATE TOGGLE SWITCH
PLATFORM LEVEL TOGGLE SWITCH
EXTEND/RETRACT TOGGLE SWITCH
SECONDARY BOOM UP/DOWN TOGGLE SWITCH
PRIMARY BOOM UP/DOWN TOGGLE SWITCH
JIB BOMM UP/DOWN TOGGLE SWITCH

DRIVE ENABLE TOGGLE SWITCH
PLATFORM ROTATE TOGGLE SWITCH

DESCRIPTION
BOOM FUNCTION SPEED CONTROLLER
DRIVE CONTROLLER
EMERGENCY STOP BUTTON
AUXILIARY TOGGLE SWITCH
HORN BUTTON
DRIVE ENABLE LIGHT

BCI BATTERY CHARGE INDICATOR

REMOVE THIS WIRE WHEN LOAD SENSE OPTION IS REQUIRED.
Platform Control Box Wiring Diagram
(Z-34/22 from serial number 1734 to 1834)
(Z-34/22N from serial number 2227 to 2448)
Platform Control Box Wiring Diagram
(Z-34/22 from serial number 1835 to 2060)
(Z-34/22N from serial number 2449 to 2870)

NOTES:
1. REMOVE JUMPER JP1 FOR CE VERSION.
2. REMOVE THIS WIRE WHEN LOAD SENSE OPTION IS REQUIRED.
Platform Control Box Wiring Diagram
(Z-34/22 from serial number 2061 to 3577)
(Z-34/22N from serial number 2871 to 4260)

CABLE #3
CABLE #2
CABLE #1

NOTES:
> REMOVE JUMPER JP1 FOR CE VERSION.
> REMOVE THIS WIRE WHEN LOAD SENSE OPTION IS REQUIRED.
Platform Control Box Wiring Diagram
(Z-34/22 from serial number 2061 to 3577)
(Z-34/22N from serial number 2871 to 4260)
Hydraulic Schematic
(Z-34/22 before serial number 674)
(Z-34/22N before serial number 935)

Section 6 • Schematics
First Edition • Third Printing

6 - 41
Genie Z-34/22 & Genie Z-34/22N
Part No. 36540
Hydraulic Schematic
(Z-34/22 from serial number 674 to 1733)
(Z-34/22N from serial number 935 to 2226)
Hydraulic Schematic
(Z-34/22 from serial number 2006 to 2900)
(Z-34/22N from serial number 2772 to 3532)

Part No. 36540
Genie Z-34/22 & Genie Z-34/22N
Hydraulic Schematic
(Z-34/22 from serial number 2006 to 2900)
(Z-34/22N from serial number 2772 to 3532)
Hydraulic Schematic
(Z-34/22 after serial number 2900)
(Z-34/22N after serial number 3532)
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.

Red—used to indicate the presence of an imminently hazardous situation which, if not avoided, will result in death or serious injury.

Orange—used to indicate the presence of a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Yellow with safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may cause minor or moderate injury.

Yellow without safety alert symbol—used to indicate the presence of a potentially hazardous situation which, if not avoided, may result in property damage.

Green—used to indicate operation or maintenance information.

Indicates that a specific result is expected 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 Genie Z-34/22 & Genie Z-34/22N Operator’s Manual.
✓ 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 flat, level surface
  • Boom in stowed position
  • Turntable rotated with the boom between the non-steering wheels
  • Key switch in the OFF position with the key removed
  • Wheels chocked

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 Genie Z-34/22 & Genie Z-34/22N Operator’s Manual.
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✓ 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 flat, level surface
  • Boom in stowed position
  • Turntable rotated with the boom between the non-steering wheels
  • Key switch in the OFF position with the key removed
  • Wheels chocked
Controllers

The drive controller (joystick) is connected by a control cable to the drive motor controller located under the non-steer end drive chassis cover. Maintaining the controllers at the proper setting is essential to safe machine operation. Each controller should operate smoothly and provide proportional speed control through its entire range of motion. For further information or assistance, contact the Genie Industries Service Department.

Drive Controller Adjustments

Z-34/22: before serial number 153
Z-34/22N: before serial number 304

- Do not adjust the controllers unless the static battery supply voltage is above 24V DC.
- This procedure will require the use of two multi-meters. One will be used for measuring amperage and the other for voltage.

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

- Individual trim potentiometers (trimpots) are used to adjust various output signals from the drive and boom function speed controllers. The trimpots will be identified as the following:
  - Max out trim potentiometer (max out trimpot)
  - High range trim potentiometer (max out trimpot)
  - Lo range trim potentiometer (lo range trimpot)
  - Dual range trim potentiometer (lo range trimpot)
  - Threshold trim potentiometer (threshold trimpot)
  - Ramp rate trim potentiometer (ramp rate trimpot)

1. Block the steering wheels.
2. Center a lifting jack of ample capacity (15000 lbs/6804 kg) under the drive chassis between the non-steering wheels.
3 Lift the wheels off the ground approximately 1 to 2 inches (2.5 to 5 cm) and place jack stands under the drive chassis for support.

4 Open the platform control box lid and locate the brake controller printed circuit board.

5 Disconnect the white/red wire from the "A" terminal on the brake controller printed circuit board.

6 Connect the black (-) lead from an ammeter to the white/red wire that was removed from the brake circuit board. Connect the red (+) lead to the "A" terminal on the brake controller printed circuit board.

7 Locate the drive controller printed circuit board.

8 Connect the red (+) lead from a volt meter to the "A" terminal on the drive controller printed circuit board. Connect the black (-) lead to ground.
9 Turn the key switch to platform controls and pull both Emergency Stop buttons out to the ON position.

10 Set the threshold on the brake circuit board:
Press down the foot switch and slowly move the control handle off center until you hear the pump motor turn ON. Adjust the amperage to 0.16 amps. Turn the threshold trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

11 Set the max out on the brake circuit board:
Press down the foot switch and slowly move the control handle off center until you hear the pump motor turn OFF. Adjust the amperage to 0.91 amps. Turn the max out trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

12 Set the threshold on the drive circuit board:
Press down the foot switch and slowly move the control handle off center until you see 0.28 to 0.3 amps on the ammeter. Adjust the threshold trimpot on the drive circuit board to 0.8 to 0.9V DC. Turn the threshold trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

13 Set the max out on the drive circuit board:
Press down the foot switch and slowly move the control handle all the way to the FORWARD position. Adjust the max out trimpot on the drive circuit board to 5 to 5.2V DC. Turn the max out trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

14 Raise the primary boom approximately 2 feet (0.6 m).

15 Set the lo range on the drive circuit board:
Press down the foot switch and move the control handle all the way to the FORWARD position. Adjust the lo range trimpot on the drive circuit board to 2.4 to 2.7V DC. Turn the lo range trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

16 Lower the boom to the stowed position and remove the jack stands from under the drive chassis.

17 Raise the primary boom approximately 2 feet (0.6 m).

18 Create start and finish lines by marking two lines on the ground 40 feet (12.2 m) apart. Choose a reference point on the machine as a visual reference for use when crossing the start and finish lines.

19 Bring the machine to top drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

20 Continue at full speed and note the time when the reference point crosses the finish line.

21 Adjust the lo range trimpot on the drive circuit board to achieve a 40 second drive speed time. Turn the lo range trimpot clockwise to decrease the time or counterclockwise to increase the time.

22 Lower the primary boom to the stowed position.

23 Bring the machine to top drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

24 Continue at full speed and note the time when the reference point crosses the finish line.
25 Adjust max out trimpot on the drive circuit board to achieve the specified drive speed time (refer to table below). Turn the high range trimpot clockwise to decrease the time or counterclockwise to increase the time.

**Drive controller specifications**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brake board</strong></td>
<td>Threshold: 0.16 amps (when pump motor turns ON)</td>
</tr>
<tr>
<td></td>
<td>Max out: 0.91 amps (when pump motor turns OFF)</td>
</tr>
<tr>
<td><strong>Drive board</strong></td>
<td>Threshold: 0.8 to 0.9V DC (when amp output is 0.28 to 0.3 amps)</td>
</tr>
<tr>
<td></td>
<td>Max out: 5 to 5.2V DC (with boom stowed and joystick in full forward position)</td>
</tr>
<tr>
<td></td>
<td>Lo range: 2.4 to 2.7V DC (with boom raised and joystick in full forward position)</td>
</tr>
</tbody>
</table>

**Drive speeds (maximum) Z-34/22**

- **Stowed position**
  - 49:1 drive hubs: 3.1 mph (5 km/h), 40 ft/9.1 sec, 12.2 m/9.1 sec
  - 35:1 drive hubs: 4 mph (6.4 km/h), 40 ft/6.8 sec, 12.2 m/6.8 sec

**Drive speeds (maximum) Z-34/22N**

- **Stowed position**
  - 49:1 drive hubs: 2.8 mph (4.5 km/h), 40 ft/10 sec, 12.2 m/10 sec
  - 35:1 drive hubs: 3.4 mph (5.5 km/h), 40 ft/8 sec, 12.2 m/8 sec

- Drive speed, booms raised or extended: 0.6 mph (1 km/h), 40 ft/40 sec, 12.2 m/40 sec

---

**Drive Controller Adjustments**

**Z-34/22 from serial number 153 to 1733**

**Z-34/22N from serial number 304 to 2226**

**NOTICE**

Do not adjust the controllers unless the static battery supply voltage is above 24V DC.

**NOTICE**

This procedure will require the use of two multi-meters. One will be used for measuring amperage and the other for voltage.

**WARNING**

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

1. Block the steering wheels and center a lifting jack under the drive chassis between the non-steer tires.

---

*a* boom function speed controller

*b* drive and brake printed circuit board

*c* drive controller
2  Raise the drive chassis approximately 1 to 2 inches (2.5 to 5 cm) off the ground and place jack stands under the chassis for support.

3  Open the platform control box lid and locate the printed circuit board on the drive controller.

4  Disconnect the white/red wire from the "B" terminal on the printed circuit board.

5  Connect the black (-) lead from an ammeter to the white/red wire that was removed from the circuit board. Connect the red (+) lead to the "B" terminal on the printed circuit board.

6  Connect the red (+) lead from a volt meter to the "D" terminal on the drive controller printed circuit board. Connect the black (-) lead to ground.

7  Turn the key switch to platform control and pull out the Emergency Stop button to the ON position at both the ground and platform controls.

8  Set the brake threshold on the circuit board: Press down the foot switch and slowly move the control handle off center until you hear the pump motor turn ON. Adjust the amperage to 0.16 amps. Turn the threshold trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

9  Set the brake max out on the circuit board: Press down the foot switch and slowly move the control handle off center until you hear the pump motor turn OFF. Adjust the amperage to 0.91 amps. Turn the max out trimpot adjustment screw clockwise to increase the amperage or counterclockwise to decrease the amperage.

10 Set the drive threshold on the circuit board: Press down the foot switch and slowly move the control handle off center until you see 0.28 to 0.3 amps on the ammeter. Hold the control handle in this position and adjust the drive threshold trimpot on the circuit board to 0.8 to 0.9V DC. Turn the threshold trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.
11 Set the drive max out on the circuit board: Press down the foot switch and slowly move the control handle all the way to the FORWARD position. Adjust the max out trimpot on the circuit board to 5 to 5.2V DC. Turn the max out trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

12 Raise the primary boom approximately 2 feet (0.6 m) to activate the drive limit switch.

13 Set the drive lo range on the circuit board: Press down the foot switch and move the control handle all the way to the FORWARD position. Adjust the drive lo range trimpot on the circuit board to 2.4 to 2.7V DC. Turn the lo range trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

14 Lower the boom to the stowed position and remove the jack stands from under the drive chassis.

15 Raise the primary boom approximately 2 feet (0.6 m) to activate the drive limit switch.

16 Create start and finish lines by marking two lines on the ground 40 feet (12.2 m) apart. Choose a reference point on the machine as a visual reference for use when crossing the start and finish lines.

17 Bring the machine to top drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

18 Continue at full speed and note the time when the reference point crosses the finish line.

19 Adjust the drive lo range trimpot on the circuit board to achieve a 40 second drive speed time. Turn the lo range trimpot clockwise to decrease the time or counterclockwise to increase the time.

20 Lower the primary boom to the stowed position.

21 Bring the machine to top drive speed before reaching the start line. Begin timing when your reference point on the machine crosses the start line.

22 Continue at full speed and note the time when the reference point crosses the finish line.

23 Adjust max out trimpot on the drive circuit board to achieve the specified drive speed time (refer to table below). Turn the max out trimpot clockwise to decrease the time or counterclockwise to increase the time.

### Drive controller specifications

- **Brake board**
  - Threshold (when pump motor turns ON): 0.16 amps
  - Max out (when pump motor turns OFF): 0.91 amps
- **Drive board**
  - Threshold (when amp output is 0.28 to 0.3 amps): 0.8 to 0.9V DC
  - Max out (with boom stowed and joystick in full forward position): 5 to 5.2V DC
  - Lo range (with boom raised and joystick in full forward position): 2.4 to 2.7V DC

### Drive speeds (maximum) Z-34/22

<table>
<thead>
<tr>
<th>Drive speed</th>
<th>49:1 drive hubs</th>
<th>40 ft/9.1 sec</th>
<th>12.2 m/9.1 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>49:1 drive hubs</td>
<td>3.1 mph</td>
<td>5 km/h</td>
<td></td>
</tr>
<tr>
<td>35:1 drive hubs</td>
<td>4 mph</td>
<td>6.4 km/h</td>
<td></td>
</tr>
</tbody>
</table>

### Drive speeds (maximum) Z-34/22N

<table>
<thead>
<tr>
<th>Drive speed</th>
<th>49:1 drive hubs</th>
<th>40 ft/10 sec</th>
<th>12.2 m/10 sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>49:1 drive hubs</td>
<td>2.8 mph</td>
<td>4.5 km/h</td>
<td></td>
</tr>
<tr>
<td>35:1 drive hubs</td>
<td>3.4 mph</td>
<td>5.5 km/h</td>
<td></td>
</tr>
</tbody>
</table>
PLATOFORM CONTROLS

Boom Function Speed Controller Adjustments

**NOTICE** Do not adjust the controllers unless the static battery supply voltage is above 24V DC.

**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 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. Locate the diode between the black/red wire from the boom function speed controller and the white/red wire.

4. Connect the red (+) lead from a volt meter to the wire connector of the white/red wire next to the diode. Connect the black (-) lead to ground.

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

6. Set the threshold: Press down the foot switch, and move the primary boom toggle switch to the **DOWN** position. Adjust the voltage to 8V DC. Turn the threshold trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

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 to the **DOWN** position. Adjust the voltage to 15.5V DC. Turn the max out trimpot adjustment screw clockwise to increase the voltage or counterclockwise to decrease the voltage.

If equipped:

9. Set the ramp rate: Turn the ramp rate trimpot to obtain a 2 second delay from 0 to 15.5V DC. Turn the trimpot clockwise to increase the time or counterclockwise to decrease the time.

<table>
<thead>
<tr>
<th><strong>Boom function speed controller specifications</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Threshold</strong> (controller turned to <strong>CREEP</strong>)</td>
<td>8V DC</td>
</tr>
<tr>
<td><strong>Max out</strong> (controller turned to <strong>9</strong>)</td>
<td>15.5V DC</td>
</tr>
<tr>
<td><strong>Ramp</strong> (controller turned to <strong>9</strong>)</td>
<td>2 seconds</td>
</tr>
</tbody>
</table>

Added after serial numbers:

- Z34-1924
- Z34N-2553
### Foot Switch

#### How to Test the Foot Switch

1. Turn the key switch to the **OFF** position and separate the wiring quick disconnect plug from the platform toe board.

2. Do not press down the foot switch. Connect the leads from an ohmmeter or continuity tester to each wire combination listed below and check for continuity.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>red to black</td>
<td>continuity</td>
</tr>
<tr>
<td></td>
<td>(zero Ω)</td>
</tr>
<tr>
<td>red to white</td>
<td>no continuity</td>
</tr>
<tr>
<td></td>
<td>(infinite Ω)</td>
</tr>
<tr>
<td>black to white</td>
<td>no continuity</td>
</tr>
<tr>
<td></td>
<td>(infinite Ω)</td>
</tr>
</tbody>
</table>

**NOTICE** Do not use the color of the connector as a guide for these tests. Use the actual wire color to identify which connector to use for testing.

3. Press down the foot switch. Connect the leads from an ohmmeter or continuity tester to each wire combination listed below and check for continuity.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>red to black</td>
<td>no continuity</td>
</tr>
<tr>
<td></td>
<td>(infinite Ω)</td>
</tr>
<tr>
<td>red to white</td>
<td>no continuity</td>
</tr>
<tr>
<td></td>
<td>(infinite Ω)</td>
</tr>
<tr>
<td>black to white</td>
<td>continuity</td>
</tr>
<tr>
<td></td>
<td>(zero Ω)</td>
</tr>
</tbody>
</table>
PLATFORM CONTROLS

1-3
Toggle Switches

Toggle switches used for single function switching are single pole double throw (SPDT) switches. Dual function switching requires a double pole double throw (DPDT) switch.

**How to Test a Toggle Switch**

**NOTICE** Continuity is the equivalent of 0 to 3 ohms. A simple continuity tester may not accurately test the switch.

This procedure covers fundamental switch testing and does not specifically apply to all varieties of toggle switches.

1. Turn the key switch to the OFF position. Tag and disconnect all wiring from the toggle switch to be tested.

2. Connect the leads of an ohmmeter to the switch terminals in the following combinations listed below to check for continuity.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Left position</strong></td>
<td></td>
</tr>
<tr>
<td>terminal 1 to 2, 3, 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 2 to 3</td>
<td>continuity (zero Ω)</td>
</tr>
<tr>
<td>terminal 2 to 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 3 to 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 4 to 5 &amp; 6</td>
<td>continuity (zero Ω)</td>
</tr>
<tr>
<td>terminal 5 to 6</td>
<td>continuity (zero Ω)</td>
</tr>
</tbody>
</table>

**Center position**

There are no terminal combinations that will produce continuity (infinite Ω)

**Right position**

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal 1 to 2</td>
<td>continuity (zero Ω)</td>
</tr>
<tr>
<td>terminal 1 to 3, 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 2 to 3, 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 3 to 4, 5 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 4 to 5</td>
<td>continuity (zero Ω)</td>
</tr>
<tr>
<td>terminal 4 to 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 5 to 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
</tbody>
</table>
### Platform Components

#### 2-1 Platform

**How to Remove the Platform**

1. Separate the foot switch wiring quick disconnect plug from the platform toeboard.

2. Remove the platform control box mounting fasteners, then lower the control box.

   - **NOTICE** If your machine is equipped with an air line to platform option, the air line must be disconnected from the platform before removal.

3. Place blocks under the platform for support and carefully lower the platform on the blocks.

4. Remove the platform mounting fasteners and remove the platform.

   - **CAUTION** Component damage hazard. Platform can be damaged if the fasteners are overtightened.

#### 2-2 Platform Leveling Slave Cylinder

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

**How to Remove the Slave Cylinder**

- **NOTICE** Before cylinder removal is considered, bleed the slave cylinder to be sure there is no air in the closed loop hydraulic circuit.

  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 Two, *Hydraulic Hose and Fitting Torque Specifications*.

1. Extend the boom until the slave cylinder barrel-end pivot pin is accessible.

2. Raise the boom slightly and place blocks under the platform for support. Lower the boom until the platform is resting on the blocks.

3. Remove the pin retaining fastener from the rod-end pivot pin. Do not remove the pin.
PLATEFORM COMPONENTS

4 Remove the external snap ring from the barrel-end pivot pin.
5 Place a block of wood under the barrel end of the slave cylinder.
6 Use a soft metal drift to remove the rod-end pivot pin.
7 Use a soft metal drift to remove the barrel-end pivot pin.
8 Carefully pull the cylinder out of the boom.

**WARNING** Crushing hazard. The slave cylinder will fall unless it is properly supported.

9 Tag and disconnect the hydraulic hoses from the slave cylinder and connect them together with 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.

---

**How to Bleed the Slave Cylinder**

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

The platform rotator is a hydraulically activated helical gear assembly used to rotate the platform 160 degrees.

How to Remove the Platform Rotator

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Remove the platform. See 2-1, How to Remove the Platform.

2. Tag, disconnect and plug the hydraulic hoses from the platform rotate manifold. Cap the manifold fittings.

3. Support the platform mounting weldment, but do not apply any lifting pressure.

4. Remove the six mounting bolts from the platform mounting weldment. Remove the center bolt and slide the platform mounting weldment off of the platform rotator.

5. Support the platform rotator with a suitable lifting device. Do not apply any lifting pressure.

6. Remove the pin retaining fasteners from the jib boom and leveling links to platform rotator pivot pins. Do not remove the pins.

7. Support the jib boom, jib boom cylinder and leveling links with an overhead crane.

8. Use a soft metal drift to drive both pivot pins out. Remove the platform rotator from the machine.

Crushing hazard. The platform rotator may become unbalanced and fall if it is not properly supported.
PLATFORM COMPONENTS

How to Bleed the Platform Rotator

**NOTICE** This procedure will require two people.

1. Turn the key switch to ground controls and pull out the Emergency Stop button to the **ON** position.

2. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the primary boom toggle switch in the **up** direction until the platform is approximately 6 feet (1.8 m) off the ground.
   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side and move the primary boom toggle switch in the **up** direction until the platform is approximately 6 feet (1.8 m) off the ground.

3. Connect a clear hose to the top bleed valve. Place the other end of the hose in a container to collect any discharge. Open the top bleed valve, but do not remove it.

4. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the platform rotate toggle switch to the right for approximately 5 seconds, then release it. Repeat three times.
   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side and move the platform rotate toggle switch to the right for approximately 5 seconds, then release it. Repeat three times.

**WARNING** Crushing hazard. Keep clear of the platform during rotation.
5 **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
Move the platform rotate toggle switch to the left for approximately 5 seconds, then release it. Repeat three times.

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
Hold the function enable switch to either side and move the platform rotate toggle switch to the left for approximately 5 seconds, then release it. Repeat three times.

6 Fully rotate the platform to the left and continue holding the platform rotate toggle switch until air stops coming out of the bleed valve. Immediately release the platform rotate toggle switch and close the bleed valve.

7 Rotate the platform to the right until the platform is centered.

8 Connect the clear hose to the bottom bleed valve and open the valve. Do not remove the valve.

9 Move the platform rotate toggle switch to the right and continue holding the platform rotate toggle switch until air stops coming out of the bleed valve.

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

10 Close the bleed valve and remove the hose.

11 Rotate the platform full left and right and inspect the bleed valves for leaks.

12 Turn the key switch to the **OFF** position and clean up any hydraulic oil that may have spilled.
How to Remove the Jib Boom

Perform this procedure with the boom in the stowed position.

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Remove the platform. See 2-1, How to Remove the Platform.
2. Remove the platform mounting weldment and the platform rotator. See 2-3, How to Remove the Platform Rotator.
3. Tag, disconnect and plug the jib boom lift cylinder hydraulic hoses. Cap the fittings on the jib boom lift cylinder.
4. Remove the cable cover from the side of the jib boom.
5. Remove the mounting fasteners from the jib boom/platform rotate manifold. Do not remove the hoses.
   **CAUTION** Component damage hazard. Hoses and cables can be damaged if they are twisted or kinked.
6. Attach a lifting strap from an overhead crane to the jib boom.
7. Remove the pin retaining fastener from the jib boom pivot pin at the jib boom bellcrank. Use a soft metal drift to remove the pin, then remove the jib boom from the jib boom bellcrank.
   **WARNING** Crushing hazard. The jib boom will fall when the pin is removed if it is not properly supported.
8. Remove the pin retaining fasteners from the jib boom lift cylinder rod-end pivot pin. Do not remove the pin.
9. Remove both of the jib boom compression arms from the bellcrank.
10. Attach a lifting strap from an overhead crane to the rod-end of the jib boom lift cylinder.
11. 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 jib boom bellcrank.
   **WARNING** Crushing hazard. The jib boom lift cylinder will fall when the pin is removed if it is not properly supported.
12 Support and secure the jib boom bellcrank to an appropriate lifting device.

13 Remove the pin retaining fasteners from the slave cylinder rod-end pivot pin. Do not remove the pin.

14 Remove the pin retaining fasteners from the jib boom mounting weldment at the jib boom bellcrank. Use a soft metal drift to remove the pin.

15 Use a soft metal drift to remove the slave cylinder rod-end pivot pin.

16 Remove the jib boom bellcrank from the boom.

**WARNING** Crushing hazard. The jib boom bellcrank may become unbalanced and fall when the pins are removed if it is not properly supported and secured to the lifting device.

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### JIB BOOM COMPONENTS

### 3-2 Jib Boom Bell Crank

**NOTICE** Perform this procedure with the boom in the stowed position.

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 Two, *Hydraulic Hose and Fitting Torque Specifications*.

1 Remove the platform. See 2-1, *How to Remove the Platform*.

2 Remove the Jib Boom, See 3-1, *How to Remove the Jib Boom*.

3 Support and secure the jib boom bell crank to an appropriate lifting device.

4 Remove the pin retaining fasteners from the slave cylinder rod-end pivot pin. Do not remove the pin.

5 Remove the pin retaining fasteners from the jib boom bell crank at the extension boom. Use a soft metal drift to remove the pin.

6 Use a soft metal drift to remove the slave cylinder rod-end pivot pin.

7 Remove the jib boom bell crank from the extension boom.

**WARNING** Crushing hazard. The jib boom bell crank may become unbalanced and fall when the pins are removed if it is not properly supported and secured to the lifting device.
How to Remove the Jib Boom Lift Cylinder

**NOTICE** Perform this procedure with the boom in the stowed position.

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the jib boom slightly and place blocks under the platform mounting weldment. Lower the jib boom until the platform is resting on the blocks.

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

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 rod-end pivot pin half way out and lower one of the leveling links to the ground. Tap the pin the other direction and lower the opposite leveling link. Do not remove the pin.

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

6. Remove the pin retaining fasteners from the jib boom lift cylinder barrel-end pivot pin. Use a soft metal drift to remove the barrel-end pivot pin.

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

**WARNING** Crushing hazard. The jib boom lift cylinder may fall when the pins are removed if it is not properly supported by the overhead crane.
Primary Boom Components

4-1 Plastic 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 Repair the Plastic Cable Track

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

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

4-2 Primary Boom

How to Shim the Primary Boom

NOTICE Measure each wear pad. Replace the pad if it is less than 0.41 inch (1 cm) thick. If the pad is more than 0.41 inch (1 cm) thick, perform the following procedure.

1 Extend the boom until the wear pads are accessible.
2 Loosen the wear pad mounting fasteners.
3 Install the new shims under the wear pad to obtain zero clearance and zero drag.
4 Tighten the mounting fasteners.
5 Extend and retract the boom through an entire cycle. Check for tight spots that could cause scraping or binding.

NOTICE Always maintain squareness between the outer and inner boom tubes.
PRIMARY BOOM COMPONENTS

How to Remove the Primary Boom

**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. Perform this procedure with the boom in the stowed position.

**NOTICE** 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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Remove the platform. See 2-1, How to Remove the Platform.
2. Remove the platform rotator. See 2-3, How to Remove the Platform Rotator.
3. Remove the jib boom. See 3-1, How to Remove the Jib Boom.
4. Remove the jib boom bellcrank. See 3-2, How to Remove the Jib Boom Bellcrank.
5. Locate the 4 cables from the primary boom cable track to the platform control box. Number each cable and its entry location at the platform control box.

6. Open the platform control box.
7. Label and disconnect each wire of the 4 cables in the platform control box.

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

8. Pull all of the cables out of the platform control box.
9. Tag, disconnect and plug the hydraulic hoses from the slave 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.

10. Tag, disconnect and plug the hydraulic hoses from the jib/rotate 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.

11. Remove the upper cable track mounting fasteners from the platform end of the boom.
12 Remove the cable track mounting fasteners, then remove the cable track from the boom and lay it flat on the ground.

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

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

14 Remove the turntable end cover.

15 Remove the extension boom drive limit switch from the side of the primary boom at the pivot end. Do not disconnect the wiring.

16 Pull all of the electrical cables and hydraulic hoses out of the plastic cable track.

17 Remove the pin retaining fastener from the master cylinder rod-end pivot pin. Use a soft metal drift to remove the pin. Pull the cylinder back and secure it from moving.

18 Tag, disconnect and plug the 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.

19 Attach an overhead 5 ton crane to the center point of the boom.

20 Attach a similar lifting device to the lift cylinder.

21 Place support blocks under the cylinder, across the secondary boom.

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

**CAUTION** Crushing hazard. The boom lift cylinder will fall unless it is properly supported.

23 Lower the rod end of the lift cylinder onto support blocks.

24 Remove the pin retaining fastener from the primary boom pivot pin.

25 Remove the primary boom pivot pin with a soft metal drift, then carefully remove the boom from the machine.

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

How to Disassemble the Primary Boom

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

1. Remove the boom. See 4-2, How to Remove the Primary Boom.

2. Place blocks under the extension cylinder for support.

3. Remove the retaining fasteners from the extension cylinder barrel-end pivot pin. Use a soft metal drift to remove the pin.

4. Remove and label the location of the wear pads from the top side of the boom tube at the platform end of the boom.

5. Carefully rotate the base end of the extension cylinder until the pin mounting bore is in a vertical position.

6. Support the extension tube with an overhead crane at the platform end of the boom.

**WARNING** Crushing hazard. The boom tubes will fall when they are removed from the boom if they are not properly supported.

7. Support and slide the extension tube out of the primary boom tube. Place the extension tube on blocks for support.

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

8. Remove the retaining rings from the extension cylinder rod-end pivot pins at the platform end of the extension tube. Use a soft metal drift to remove the pins.

9. Support and slide the extension cylinder out of the pivot end of the boom extension tube. Place the extension cylinder on blocks for support.

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

10. Remove and label the wear pads from the extension cylinder.

**NOTICE** Pay careful attention to the location of each wear pad.
4-3
Primary Boom Lift Cylinder

The primary boom lift cylinder raises and lowers the primary boom. The primary boom lift cylinder is equipped with counterbalance valves 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.

**NOTICE**  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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the primary boom enough to access the primary boom lift cylinder rod-end pivot pin.

2. Attach an overhead crane to the primary boom for support. Do not lift it.

3. Remove the pin retaining fastener from the ground controls side upper compression arm pivot pin.

4. Place a block of wood across the upper secondary boom to support the cylinder when the rod-end pivot pin is removed.

5. Place a rod through the compression arm pivot pin and twist to remove the pin. Lower the compression arm down.

6. Support the primary boom lift cylinder with a lifting device.

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

8. Lower the rod end of the cylinder onto the blocks that were placed on the upper secondary boom.

9. 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.
PRIMARY BOOM COMPONENTS

10 Support the primary boom lift cylinder with straps or ropes to restrict it from swinging freely.

11 Remove the pin retaining fastener from the primary boom lift cylinder barrel-end pivot pin. Do not remove the pivot pin.

12 Use the overhead crane to lift the primary boom 1 inch (2.5 cm). This will relieve pressure on the barrel-end pivot pin.

13 Place a rod through the barrel-end pivot pin and twist to remove the pin.

⚠️ CAUTION ⚠️ Crushing hazard. The primary boom lift cylinder will swing down if it is not properly supported when the barrel-end pivot pin is removed.

14 Attach and secure the rod-end of the primary boom lift cylinder to an overhead crane or similar lifting device. Carefully lower the straps and allow the primary boom lift cylinder to slowly swing down.

15 Carefully remove the cylinder from the machine.

⚠️ CAUTION ⚠️ Crushing hazard. The primary boom lift cylinder may become unbalanced and fall if it is not properly supported when the rod-end pivot pin is removed.
4-4
Extension Cylinder

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

How to Remove the 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.

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Raise the primary boom to the horizontal position. Extend the boom approximately 3 to 4 feet (0.9 to 1.2 m) until the extension cylinder rod-end pivot pins are accessible.

2. Remove the external snap rings from the extension cylinder rod-end pivot pins. Use a soft metal drift to remove the pins.

3. Remove the front counterweight cover.

4. Raise the secondary boom until the master cylinder rod-end pivot pin is accessible.

5. Remove the drive limit switch from the pivot end of the primary boom. Do not disconnect the wiring.

6. Remove the retaining fastener from the master cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

7. Manually retract the master cylinder and push it toward the platform end of the boom to obtain enough clearance for the extension cylinder removal.

8. Tag, disconnect and plug the 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.

9. Remove the retaining fastener from the extension cylinder barrel-end pivot pin. Use a soft metal drift to remove the pin.
10 Carefully pull out and properly support the extension cylinder from the primary extension boom tube.

**WARNING** Crushing hazard. The cylinder will fall if it is not properly supported when it is pulled out of the extension boom tube.

To make installation of the extension cylinder easier, be sure that the cylinder rod is extended approximately 3 to 4 feet (0.9 to 1.2 m).

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4-5 **Platform Leveling Master Cylinder**

The master cylinder acts as a pump for the slave cylinder. It is part of the closed circuit hydraulic loop that keeps the platform level through the entire range of primary boom motion. The master cylinder is located inside the upper mid-pivot at the pivot end of the primary boom.

**How to Remove the Platform Leveling Master 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.

Before cylinder removal is considered, bleed the cylinder to be sure that there is no air in the closed loop. See 2-2, *How to Bleed the Slave Cylinder*.

**NOTICE** 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 Two, *Hydraulic Hose and Fitting Torque Specifications*. 
1. Remove the rear turntable cover.

2. Raise the secondary boom until the master cylinder barrel-end pivot pin is above the turntable counterweights.

3. Raise the primary boom until the master cylinder rod-end pivot pin is accessible.

4. Attach an overhead crane to the pivot end of the primary boom. Do not lift it.

5. Secure the upper secondary boom to the pivot end of the primary boom with a strap (this will prevent the upper secondary boom from falling when the master cylinder barrel-end pivot pin is removed from the cylinder).

6. Tag, disconnect and plug the master cylinder hydraulic hoses. Cap the fittings on the master 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. Attach a lifting strap to the lug on the rod end of the master cylinder. Secure the strap to the primary boom (use this strap to lower the master cylinder out of the upper mid-pivot).

8. Remove the pin retaining fastener from the master cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.

9. Remove the pin retaining fastener from the master cylinder barrel-end pivot pin. Do not remove the pin from the upper mid-pivot.

10. Use a soft metal drift to push the pin to one side only far enough to remove the cylinder. The pin should remain in one side of the upper secondary boom and upper mid-pivot.

**WARNING** Crushing Hazard. The upper secondary boom and the upper mid-pivot will fall if the pivot pin is completely removed.

11. Use the strap around the rod-end lug to lower the master cylinder out of the machine.
Secondary Boom Components

Secondary Boom Components Diagram:
- a upper mid-pivot
- b upper compression arm
- c compression link
- d lower mid-pivot
- e lower secondary boom
- f turntable pivot
- g lower compression arm
- h upper secondary boom
SECONDARY BOOM COMPONENTS

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 reassemble the secondary boom by following the disassembly steps in reverse order.

**NOTICE** 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 Two, Hydraulic Hose and Fitting Torque Specifications.

5 Remove the wire loom from the cables at the platform control box.

6 Locate the 4 cables from the primary boom cable track to the platform control box. Number each cable and its entry location at the platform control box.

7 Open the platform control box.

8 Label and disconnect each wire of the 4 cables in the platform control box.

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

9 Pull the cables out of the platform control box.

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

11 Remove the hose clamps from the bottom side of the primary boom.

12 Tag, disconnect and plug the platform rotator hydraulic hoses at the union, located on the bottom side of the primary boom.

**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 from the side of the primary boom at the pivot end.

1  Lower the boom to the stowed position.

2 Place a lifting device under the front of the platform.

3 Remove the rear turntable cover.

4 Remove the cable cover from the side of the jib boom.
14 Remove the drive speed limit switch mounted on the side of the pivot end of the primary boom. Do not disconnect the wiring.

15 Attach a strap from an overhead crane to the pivot end of the primary boom.

16 Carefully lift the secondary and primary boom assembly until the master and primary lift cylinder hydraulic hoses are accessible.

17 Remove the cable covers from the top of the upper secondary boom.

18 Tag, disconnect and plug the primary boom lift cylinder and master cylinder hydraulic hoses.

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

19 Lower the booms to the stowed position.

20 Pull all the cables and hoses through the upper mid-pivot.

21 Position the strap from the overhead crane approximately 2 feet (0.6 m) from the platform end of the primary boom. Measure from the end of the primary boom tube.

**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.

22 Remove the pin retaining fasteners from the upper mid-pivot to upper compression arm pivot pins. Use a soft metal drift to remove the pins.

23 Swing the compression arms down and out of the way. Secure them from moving.

24 Remove the pin retainers from the upper mid-pivot to upper secondary boom pivot pin. Use a soft metal drift to remove the pin.

25 Carefully remove the entire primary boom assembly (primary boom assembly, jib boom assembly, platform, master cylinder, primary lift cylinder and upper mid-pivot) from the machine.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the primary boom assembly may become unbalanced and fall when it is removed from the machine. Do not remove the assembly from machine until it is properly balanced.

26 Place the entire assembly onto a structure capable of supporting it.

27 Remove the pin retaining fasteners from the upper compression arm pivot pins. Do not remove the pins.
28 Position the lifting strap from an overhead crane at the center of the control box side upper compression arm, then remove it from the machine. Repeat this step for the engine side upper compression arm.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the upper compression arm may become unbalanced and fall when it is removed from the machine.

29 Remove the pin retaining fastener from the rod end of the secondary boom lift cylinder. Use a soft metal drift to remove the pin. Secure the cylinder from moving.

30 Remove the pin retaining fastener from the lower pivot pin on the compression link. Use a soft metal drift to remove the pin.

31 Attach the strap from an overhead crane to the upper secondary boom.

32 Remove the pin retaining fastener from the upper secondary boom to lower mid-pivot pivot pin. Use a soft metal drift to remove the pin.

33 Remove the upper secondary boom with compression link from the machine.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the upper secondary boom with compression link may become unbalanced and fall when it is removed from the machine.

34 Remove the cable covers from the top of the lower secondary boom. Pull all the cables and hoses to the back of the turntable.

35 Remove the retaining fasteners from the secondary boom lift cylinder barrel-end pivot pins.

36 Attach the strap from the crane to the lug on the rod end of the secondary boom lift cylinder.

37 Tag, disconnect and plug the hydraulic hoses from the secondary boom lift 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.

38 Use a slide hammer to remove the barrel-end pins (access the pins from the access holes in the bulkheads, one on each side). Then remove the cylinder from the machine.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the secondary boom lift cylinder may become unbalanced and fall when it is removed from the machine.

39 Attach the strap from the crane to the lower mid-pivot.
SECONODARY BOOM COMPONENTS

40 Remove the pin retainers from the lower mid-pivot to lower compression arm pivot pins. Use a slide hammer and remove the pin.

41 Remove the pin retainers from the lower mid-pivot to lower secondary boom pivot pins. Use a soft metal drift to remove the pin.

42 Remove the lower mid-pivot from the machine.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the lower mid-pivot may become unbalanced and fall when it is removed from the machine.

43 Remove the drive speed limit switch mounted on the inside of the lower mid-pivot. Do not disconnect the wiring.

44 Attach the strap from the crane to the control box side lower compression arm.

45 Remove the pin retainer from the lower compression arm to turntable pivot pin. Use a slide hammer and remove the pin. Remove the arm from the machine. Repeat for the engine side lower compression arm.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the lower compression arms may become unbalanced and fall when it is removed from the machine.

46 Attach the strap from the crane to the lower secondary boom.

47 Remove the pin retainer from the lower secondary boom to turntable pivot pin. Use a soft metal drift to remove the pin.

48 Remove the lower secondary boom from the machine.

**WARNING** Crushing hazard. If the overhead crane is not properly attached, the lower secondary boom may become unbalanced and fall when it is removed from the machine.
SECONDARY BOOM COMPONENTS

5-2
Secondary Boom Lift Cylinder

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

How to Remove the Secondary 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.

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Rotate the turntable to the side until the boom is centered between the steer and non-steer tires.
2. Raise the primary boom to full height. Do not extend it.
3. Attach the strap from an overhead crane to the lug on the rod end of the secondary boom lift cylinder.
4. From the bottom side of the cylinder, remove the retaining fasteners from the secondary boom lift cylinder barrel-end pivot pins.
5. Use a slide hammer to remove the barrel-end pins (access the pins from the access holes in the bulkheads, one on each side).
6. Remove the pin retaining fastener from the secondary boom lift cylinder rod-end pivot pin. Use a soft metal drift to remove the pin.
7. Carefully lower the cylinder down through the secondary boom, enough to access the hydraulic hoses. Do not pinch the hoses.

**CAUTION** Component damage hazard. Hoses can be damaged if they are kinked or pinched.

8. Tag, disconnect and plug the hydraulic hoses from the secondary boom lift cylinder. Cap the fittings 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.

9. Remove the cylinder through the top of the secondary boom.
6-1 Control Relays

Relays used for dual function switching are double pole double throw (DPDT) relays.

How to Test a Double Pole Double Throw Relay

**WARNING**

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

This procedure covers fundamental relay testing and does not specifically apply to all varieties of relays.

1 Turn the key switch to the OFF position and remove the key.

2 Label and then disconnect all the wiring from the relay to be tested.

3 Connect the leads from an ohmmeter to each terminal combination and check for continuity. Terminals 7 and 8 represent the coil and should not be tested in any other combination.

4 Connect 24V DC to terminal 8 and a ground wire to terminal 7, then test the following terminal combinations.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal 7 to 8</td>
<td>640 to 650Ω</td>
</tr>
<tr>
<td>terminal 1 to 2, 3, 4 &amp; 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 2 to 3, 4 &amp; 5</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 3 to 6</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 2 to 6</td>
<td>continuity (zero Ω)</td>
</tr>
<tr>
<td>terminal 1 to 5</td>
<td>continuity (infinite Ω)</td>
</tr>
</tbody>
</table>
How to Test a Single Pole Double Throw Relay

Relays used for single function switching are single pole double throw (SPDT) relays.

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

This procedure covers fundamental relay testing and does not specifically apply to all varieties of relays.

1. Turn the key switch to the OFF position and remove the key.
2. Label and then disconnect all the wiring from the relay to be tested.
3. Connect the leads from an ohmmeter to each terminal combination and check for continuity. Terminals 85 and 86 represent the coil and should not be tested in any other combination.

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal 85 to 86</td>
<td>85 to 95Ω</td>
</tr>
<tr>
<td>terminal 87 to 87a &amp; 30</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 87a to 30</td>
<td>continuity (zero Ω)</td>
</tr>
</tbody>
</table>

4. Connect 24V DC to terminal 85 and a ground wire to terminal 86. Test the following terminal combinations:

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal 87a to 87 &amp; 30</td>
<td>no continuity (infinite Ω)</td>
</tr>
<tr>
<td>terminal 87 to 30</td>
<td>continuity (zero Ω)</td>
</tr>
</tbody>
</table>
6-2 Toggle Switches

See 1-3, *Toggle Switches*.

6-3 Wago® Components

**WARNING**

Electrocution/burn hazard. Contact with electrically charged circuits may cause death or serious injury. Remove all rings, watches and other jewelry.

**NOTICE**

Wago® tools are available from the Genie Service Parts Department (Genie part number 33996).

1. Label the wiring from the component to be removed.

2. Push the Wago® tool firmly into the slot to release the wire from the component.

3. Locate the removal tab on the bottom or top side of the component.

4. Use the Wago® tool to gently pry up on the tab of the component and remove it.
Hydraulic Pumps

7-1
Auxiliary Pump

How to Test the Auxiliary Pump

1 Disconnect and plug the high pressure hydraulic hose from the auxiliary 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.

**NOTICE** 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 Two, Hydraulic Hose and Fitting Torque Specifications.

2 Connect a 0 to 5000 psi (0 to 350 bar) pressure gauge to the high pressure port on the pump.

3 Turn the key switch to ground control and pull out the Emergency Stop button to the ON position at both ground and platform controls.

4 Activate any function using auxiliary power.

- Result: If the pressure gauge reads 3200 psi (220 bar), immediately stop. The pump is good.

- Result: If pressure fails to reach 3200 psi (220 bar), the pump is bad and will need to be serviced or replaced.

5 Remove the pressure gauge and reconnect the hydraulic hose.

How to Remove the Auxiliary Pump

1 Tag, disconnect and plug the hydraulic hoses from the pump. Cap the fittings on 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.

2 Remove the pump mounting bolts. Carefully remove the pump.
7-2
Main Function Pump

How to Test the Main Function Pump

1 Disconnect and plug the high pressure hydraulic hose from the main function 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.

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 Two, Hydraulic Hose and Fitting Torque Specifications.**

2 Connect a 0 to 5000 psi (0 to 350 bar) pressure gauge to the high pressure port on the pump.

3 Turn the key switch to ground control and pull out the Emergency Stop button to the **ON** position at both the ground and platform controls.

4 **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:** Move any boom function toggle switch at the ground controls.

**Z-34/22 after serial number 152 and Z-34/22N after serial number 303:** Hold the function enable switch to either side and move any boom function toggle switch at the ground controls.

- Result: If the pressure gauge reads 3200 psi (220 bar), immediately stop. The pump is good.
- Result: If pressure fails to reach 3200 psi (220 bar),

**Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
the external relief valve setting is incorrect or the pump is faulty and will need to be serviced or replaced.

**Z-34/22 from serial number 153 to 809 and Z-34/22N from serial number 304 to 1116:**
the internal relief valve setting is incorrect or the pump is faulty and will need to be serviced or replaced.

**Z-34/22 after serial number 809 and Z-34/22N after serial number 1116:**
the relief valve setting on the function manifold (item YY) is incorrect or the pump is faulty and will need to be serviced or replaced.

5 Remove the pressure gauge and reconnect the hydraulic hose.
How to Remove the Main Function Pump

Z-34/22 before serial number 810 and Z-34/22N before serial number 1117

1. Remove the support angle from the side of the hydraulic power unit.
2. Remove the mounting fasteners from the hydraulic tank and lower the tank.
3. Remove the pump mounting bolts. Carefully remove the pump.

How to Remove the Main Function Pump

Z-34/22 after serial number 809 and Z-34/22N after serial number 1116

1. Tag, disconnect and plug the hoses from the main function pump.
2. Remove the pump mounting bolts from the pump. Carefully remove the pump from the electric motor.
Manifolds

8-1
Function Manifold Components
(Z-34/22 before serial number 674 and Z-34/22N before serial number 935)

The function manifold is mounted to the turntable under the ground controls.

<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>Differential sensing valve</td>
<td>AA</td>
<td>Differential sensing circuit</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>2</td>
<td>Relief valve, 3200 psi (221 bar)</td>
<td>AB</td>
<td>System relief</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>3</td>
<td>2 position 3 way solenoid valve</td>
<td>AC</td>
<td>Boom retract</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>4</td>
<td>2 position 3 way solenoid valve</td>
<td>AD</td>
<td>Primary boom up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>5</td>
<td>2 position 3 way solenoid valve</td>
<td>AE</td>
<td>Secondary boom up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>6</td>
<td>2 position 3 way solenoid valve</td>
<td>AF</td>
<td>Turntable rotate left</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>7</td>
<td>2 position 3 way solenoid valve</td>
<td>AG</td>
<td>Platform level up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>8</td>
<td>2 position 3 way solenoid valve</td>
<td>AH</td>
<td>Boom extend</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>9</td>
<td>2 position 3 way solenoid valve</td>
<td>AI</td>
<td>Primary boom down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>10</td>
<td>2 position 3 way solenoid valve</td>
<td>AJ</td>
<td>Secondary boom down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>11</td>
<td>2 position 3 way solenoid valve</td>
<td>AK</td>
<td>Turntable rotate right</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>12</td>
<td>2 position 3 way solenoid valve</td>
<td>AL</td>
<td>Platform level down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>13</td>
<td>Orifice 0.050 inch (1.27 mm)</td>
<td>AM</td>
<td>Turntable rotate circuit</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Counterbalance valve</td>
<td>AN</td>
<td>Platform level down</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>15</td>
<td>Counterbalance valve</td>
<td>AO</td>
<td>Platform level up</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>16</td>
<td>Relief valve, 1750 psi (121 bar)</td>
<td>AP</td>
<td>Turntable rotate left</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>17</td>
<td>Relief valve, 1750 psi (121 bar)</td>
<td>AQ</td>
<td>Turntable rotate right</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>18</td>
<td>Relief valve, 1600 psi (110 bar)</td>
<td>AR</td>
<td>Secondary boom down</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>19</td>
<td>Relief valve, 1400 psi (97 bar)</td>
<td>AS</td>
<td>Primary boom down</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>20</td>
<td>Relief valve, 1800 psi (124 bar)</td>
<td>AT</td>
<td>Boom extend</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>21</td>
<td>Proportional solenoid valve</td>
<td>AU</td>
<td>System flow regulating circuit</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>22</td>
<td>Diagnostic fitting</td>
<td></td>
<td></td>
<td>Testing</td>
</tr>
</tbody>
</table>

Plug Torque Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>1/8</td>
<td>50 in-lbs / 6 Nm</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>3/16</td>
<td>13 ft-lbs / 18 Nm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 6</td>
<td>1/4</td>
<td>18 ft-lbs / 24 Nm</td>
</tr>
<tr>
<td>SAE No. 8</td>
<td>5/16</td>
<td>50 ft-lbs / 68 Nm</td>
</tr>
</tbody>
</table>
MANIFOLDS

8-2
Function Manifold Components

(Z-34/22 from serial number 674 to 1733 and Z-34/22N from serial number 935 to 2226)

The function manifold is mounted to the turntable under the ground controls.

<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>Differential sensing valve</td>
<td>BA</td>
<td>Differential sensing circuit</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>2</td>
<td>Relief valve, 3200 psi (221 bar)</td>
<td>BB</td>
<td>System relief</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>3</td>
<td>2 position 3 way solenoid valve</td>
<td>BC</td>
<td>Boom retract</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>4</td>
<td>2 position 3 way solenoid valve</td>
<td>BD</td>
<td>Primary boom up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>5</td>
<td>2 position 3 way solenoid valve</td>
<td>BE</td>
<td>Secondary boom up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>6</td>
<td>2 position 3 way solenoid valve</td>
<td>BF</td>
<td>Turntable rotate left</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>7</td>
<td>2 position 3 way solenoid valve</td>
<td>BG</td>
<td>Platform level up</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>8</td>
<td>2 position 3 way solenoid valve</td>
<td>BH</td>
<td>Boom extend</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>9</td>
<td>2 position 3 way solenoid valve</td>
<td>BI</td>
<td>Primary boom down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>10</td>
<td>2 position 3 way solenoid valve</td>
<td>BJ</td>
<td>Secondary boom down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>11</td>
<td>2 position 3 way solenoid valve</td>
<td>BK</td>
<td>Turntable rotate right</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>12</td>
<td>2 position 3 way solenoid valve</td>
<td>BL</td>
<td>Platform level down</td>
<td>8-10 ft-lbs (11-14 Nm)</td>
</tr>
<tr>
<td>13</td>
<td>Orifice 0.050 inch (1.27 mm)</td>
<td>BM</td>
<td>Turntable rotate circuit</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Counterbalance valve</td>
<td>BN</td>
<td>Platform level down</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>15</td>
<td>Counterbalance valve</td>
<td>BO</td>
<td>Platform level up</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>16</td>
<td>Counterbalance valve</td>
<td>BP</td>
<td>Turntable rotate right</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>17</td>
<td>Counterbalance valve</td>
<td>BQ</td>
<td>Turntable rotate left</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>18</td>
<td>Relief valve, 1600 psi (110 bar)</td>
<td>BR</td>
<td>Secondary boom down</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>19</td>
<td>Relief valve, 1400 psi (97 bar)</td>
<td>BS</td>
<td>Primary boom down</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>20</td>
<td>Relief valve, 1800 psi (124 bar)</td>
<td>BT</td>
<td>Boom extend</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>21</td>
<td>Proportional solenoid valve</td>
<td>BU</td>
<td>System flow regulating circuit</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>22</td>
<td>Diagnostic fitting</td>
<td>Testing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plug Torque Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>1/8</td>
<td>50 in-lbs / 6 Nm</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>3/16</td>
<td>13 ft-lbs / 18 Nm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 6</td>
<td>1/4</td>
<td>18 ft-lbs / 24 Nm</td>
</tr>
<tr>
<td>SAE No. 8</td>
<td>5/16</td>
<td>50 ft-lbs / 68 Nm</td>
</tr>
</tbody>
</table>
MANIFOLDS
8-3

Function Manifold Components

(Z-34/22 after serial number 1733 and Z-34/22N after serial number 2226)

The function manifold is mounted to the turntable under the ground controls.

<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>3 position 4 way spool valve ..........</td>
<td>CA ..........</td>
<td>Platform level up/down ..........</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>2</td>
<td>Counterbalance valve ....................</td>
<td>CB ..........</td>
<td>Platform level down ...............</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>3</td>
<td>Counterbalance valve ....................</td>
<td>CC ..........</td>
<td>Platform level up .................</td>
<td>35-40 ft-lbs (47-54 Nm)</td>
</tr>
<tr>
<td>4</td>
<td>Relief valve, 1100 psi (75.8 bar) .......</td>
<td>CD ..........</td>
<td>Turntable rotate left/right ........</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>5</td>
<td>Relief valve, 1600 psi (110 bar) ........</td>
<td>CE ..........</td>
<td>Secondary boom down ...............</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>6</td>
<td>Relief valve, 1400 psi (96.5 bar) .........</td>
<td>CF ..........</td>
<td>Primary boom down ..................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td></td>
<td>(Before serial number: Z34/22-2901 and Z34/22N-3533)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Relief valve, 1800 psi (124 bar) ......</td>
<td>CG ..........</td>
<td>Primary boom extend ...............</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>(Before serial number: Z34/22-2901 and Z34/22N-3535)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Proportional solenoid valve ..........</td>
<td>CH ..........</td>
<td>System flow regulating circuit ......</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>9</td>
<td>Check valve ................................</td>
<td>CI ..........</td>
<td>Brake circuit .....................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>10</td>
<td>Solenoid valve, 3 position 4 way ......</td>
<td>CJ ..........</td>
<td>Steer left/right ...................</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>11</td>
<td>3 position 4 way spool valve ..........</td>
<td>CK ..........</td>
<td>Primary boom extend/retract .......</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>12</td>
<td>Pressure switch ..........................</td>
<td>CL ..........</td>
<td>Brake circuit .....................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>13</td>
<td>Solenoid valve, N.C. poppet ..........</td>
<td>CM ..........</td>
<td>Brake circuit .....................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>14</td>
<td>Orifice, 0.045 inch (1.02 mm) ..........</td>
<td>CN ..........</td>
<td>Steer/Brake circuit ...............</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Orifice, 0.045 inch (1.5 mm) ..........</td>
<td>CO ..........</td>
<td>Brake circuit .....................</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Solenoid valve, N.O. poppet ..........</td>
<td>CP ..........</td>
<td>Brake circuit .....................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>17</td>
<td>Differential sensing valve ..........</td>
<td>CQ ..........</td>
<td>Differential sensing circuit ......</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>18</td>
<td>Relief valve, 3200 psi (220.6 bar) ......</td>
<td>CR ..........</td>
<td>System relief .....................</td>
<td>25-30 ft-lbs (34-41 Nm)</td>
</tr>
<tr>
<td>19</td>
<td>Orifice, 0.035 inch (0.89 mm) ..........</td>
<td>CS ..........</td>
<td>T2 tank port .....................</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Added after serial number: Z34/22-2894 and Z34/22N-3517)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Diagnostic fitting ....................</td>
<td>CT ..........</td>
<td>Pressure test port ...............</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>3 position 4 way spool valve ..........</td>
<td>CU ..........</td>
<td>Secondary boom up/down ..........</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>22</td>
<td>3 position 4 way spool valve ..........</td>
<td>CV ..........</td>
<td>Primary boom up/down .............</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>23</td>
<td>Flow regulator valve, 1.5 gpm (5.7 l/min)</td>
<td>CW ..........</td>
<td>Turntable rotate circuit ..........</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>24</td>
<td>Flow regulator valve, 0.8 gpm (3 l/min)</td>
<td>CX ..........</td>
<td>Jib boom/platform rotate circuit ..</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
<tr>
<td>25</td>
<td>3 position 4 way spool valve ..........</td>
<td>CY ..........</td>
<td>Turntable rotate left/right ......</td>
<td>10-12 ft-lbs (14-16 Nm)</td>
</tr>
</tbody>
</table>
Valve Adjustments - Function Manifold

How to Adjust the System Relief Valve

Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 5000 psi (0 to 345 bar) pressure gauge to the test port on the function manifold.

2. Turn the key switch to ground control and pull out the Emergency Stop button to the ON position.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:** Move 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.

   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:** Hold the function enable toggle switch to either side and move 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.

4. Turn the machine off. Hold the relief valve and remove the cap
   - **Z-34/22**
     - Before serial number 674: (item AB).
     - From serial number 674 to 1733: (item BB).
     - After serial number 1733: (item CR).
     - **Z-34/22N**
     - Before serial number 935: (item AB).
     - From serial number 935 to 2226: (item BB).
     - After serial number 2226: (item CR).

5. 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.

6. Repeat steps 2 and 3 to confirm the relief valve pressure setting.

---

**System relief valve specifications**

| Pressure | 3200 psi | 221 bar |
### How to Adjust the Primary Boom Down Relief Valve

**NOTICE** Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 3000 psi (0 to 206 bar) pressure gauge to the test port on the function manifold.

2. Turn the key switch to ground control and pull out the Emergency Stop button to the **ON** position.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   - Move the primary boom up/down toggle switch in the down direction with the primary boom fully lowered. Observe the pressure reading on the pressure gauge.

4. **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   - Hold the function enable toggle switch to either side and move the primary boom up/down toggle switch in the down direction with the primary boom fully lowered. Observe the pressure reading on the pressure gauge.

#### Primary boom down relief valve specifications

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Before Serial Number</th>
<th>Pressure</th>
<th>Bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z34/22-2901</td>
<td>Z34/22N-3533</td>
<td>1400 psi</td>
<td>97</td>
</tr>
<tr>
<td>Z34/22-2900</td>
<td>Z34/22N-3532</td>
<td>1600 psi</td>
<td>110</td>
</tr>
</tbody>
</table>

4. Turn the machine off. Hold the relief valve and remove the cap
   - **Z-34/22**
     - Before serial number 674: (item AS).
     - From serial number 674 to 1733: (item BS).
     - After serial number 1733: (item CF).
   - **Z-34/22N**
     - Before serial number 935: (item AS).
     - From serial number 935 to 2226: (item BS).
     - After serial number 2226: (item CF).

5. 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.

6. Repeat steps 2 and 3 to confirm the relief valve pressure setting.
MANIFOLDS

How to Adjust the Secondary Boom Down Relief Valve

**NOTICE** Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 3000 psi (0 to 206 bar) pressure gauge to the test port on the function manifold.

2. Turn the key switch to ground control and pull out the Emergency Stop button to the ON position.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move 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.

   **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side and move 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.

4. Turn the machine off. Hold the relief valve and remove the cap
   - **Z-34/22**
     Before serial number 674: (item AR). From serial number 674 to 1733: (item BR). After serial number 1733: (item CE).
   - **Z-34/22N**
     Before serial number 935: (item AR). From serial number 935 to 2226: (item BR). After serial number 2226: (item CE).

5. 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.

6. Repeat steps 2 and 3 to confirm the relief valve pressure setting.

**Secondary boom down relief valve specifications**

| Pressure | 1600 psi | 110 bar |
How to Adjust the Primary Boom Extend Relief Valve

**NOTICE** Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 3000 psi (0 to 206 bar) pressure gauge to the test port on the function manifold.

2. Turn the key switch to ground control and pull out the Emergency Stop button to the **ON** position.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   Move the primary boom extend/retract toggle switch in the extend direction with the primary boom fully extended. Observe the pressure reading on the pressure gauge.

4. **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   Hold the function enable toggle switch to either side and move the primary boom extend/retract toggle switch in the extend direction with the primary boom fully extended. Observe the pressure reading on the pressure gauge.

   **Primary boom extend relief valve specifications**

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Pressure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Before serial number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z34/22-2901</td>
<td>1800 psi</td>
<td>124 bar</td>
</tr>
<tr>
<td>Z34/22N-3533</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After serial number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z34/22-2900</td>
<td>2800 psi</td>
<td>193 bar</td>
</tr>
<tr>
<td>Z34/22N-3532</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Turn the machine off. Hold the relief valve and remove the cap
   **Z-34/22**
   Before serial number 674: (item AT).
   From serial number 674 to 1733: (item BT).
   From serial number 1733 to 3215: (item CG).
   Removed after serial number 3215.

   **Z-34/22N**
   Before serial number 935: (item AT).
   From serial number 935 to 2226: (item BT).
   From serial number 2226 to 3766: (item CG).
   Removed after serial number 3766.

5. 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.

6. Repeat steps 2 and 3 to confirm the relief valve pressure setting.
How to Adjust the Turntable Rotate Relief Valves

Perform this procedure with the boom in the stowed position.

1. Connect a 0 to 3000 psi (0 to 206 bar) pressure gauge to the test port on the function manifold.

2. Turn the key switch to ground control and pull out the Emergency Stop button to the ON position.

3. **Z-34/22 before serial number 153 and Z-34/22N before serial number 304:**
   - Move the turntable rotate right/left toggle switch in the RIGHT direction until turntable stops against the rotation stop. Observe the pressure reading on the pressure gauge.

4. **Z-34/22 after serial number 152 and Z-34/22N after serial number 303:**
   - Hold the function enable toggle switch to either side and move the turntable rotate right/left toggle switch in the RIGHT direction (until turntable stops against the rotation stop). Observe the pressure reading on the pressure gauge.

5. Turn the machine off. Hold the relief valve and remove the cap:
   - **Z-34/22**
     - Before serial number 674: (items AP and AQ).
     - After serial number 1733: (item CD).
   - **Z-34/22N**
     - Before serial number 935: (items AP and AQ).
     - After serial number 2226: (item CD).

6. Adjust the internal hex socket. Turn it clockwise to increase the pressure or counterclockwise to decrease the pressure. Install the relief valve cap.

7. **Z-34/22 before serial number 674 and Z-34/22N before serial number 935:**
   - Repeat steps 2 through 6 to adjust the turntable rotate left relief valve.

   **NOTE** If adjusting the turntable rotate left, hold the switch to the left and adjust the left relief valve (item AQ, function manifold).

### Turntable rotate relief valve specifications

<table>
<thead>
<tr>
<th></th>
<th>Pressure</th>
<th>Bar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Z-34/22</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>before serial number 674</td>
<td>1750 psi</td>
<td>121 bar</td>
</tr>
<tr>
<td>from serial number 674 to 1733</td>
<td>Not adjustable</td>
<td></td>
</tr>
<tr>
<td>after serial number 1733</td>
<td>1100 psi</td>
<td>76 bar</td>
</tr>
</tbody>
</table>

| **Z-34/22N** |
| before serial number 935 | 1750 psi | 121 bar |
| from serial number 935 to 2226 | Not adjustable |
| after serial number 2226 | 1100 psi | 76 bar |
8-5
Jib Boom / Platform Rotate Manifold Components
(Z-34/22 before serial number 1734 and Z-34/22N before serial number 2227)

The jib boom/platform rotate manifold is mounted to the jib boom.

1. Solenoid valve, 2 position 3 way .......... A ........... Jib boom up ....................................... 8-10 ft-lbs (11-14 Nm)
2. Solenoid valve, 2 position 3 way ...... B ........... Platform rotate right ........................... 8-10 ft-lbs (11-14 Nm)
3. Orifice plug, 0.025 inch (0.76 mm) .... C ........... Platform rotate circuit
4. Solenoid valve, 2 position 3 way ...... D ........... Platform rotate left ............................. 8-10 ft-lbs (11-14 Nm)
5. Solenoid valve, 2 position 3 way ....... E ........... Jib boom down ................................. 8-10 ft-lbs (11-14 Nm)
6. Orifice plug, 0.030 inch (0.89 mm) .... F ........... Jib boom/platform rotate circuit
(Added after serial number: Z-34/22-781 and Z-34/22N-1030)

Valve Coil Resistance Specification

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position 3 way valve - 20V (schematic items A, B, D and E)</td>
<td>23.5 to 24.5Ω</td>
</tr>
</tbody>
</table>

Plug Torque Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>1/8</td>
<td>50 in-lbs (6 Nm)</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>3/16</td>
<td>13 ft-lbs (18 Nm)</td>
</tr>
</tbody>
</table>
8-6  
Jib Boom / Platform Rotate Manifold Components  
(Z-34/22 from serial number 1734 to 2005 and Z-34/22N from serial number 2227 to 2771)

The jib boom/platform rotate manifold is mounted to the jib boom.

1. Solenoid valve, 2 position 3 way ...... A ........... Jib boom up ...................................... 8-10 ft-lbs (11-14 Nm)
2. Solenoid valve, 2 position 3 way ...... B ........... Platform rotate right ........................... 8-10 ft-lbs (11-14 Nm)
3. Orifice plug, 0.025 inch (0.64 mm) .... C ........... Platform rotate circuit  
   (Before serial number: Z34/22-1892 and Z34/22N-2548)  
   Orifice plug, 0.022 inch (0.56 mm)  
   (From serial number: Z34/22-1892 to 2005 and Z34/22N-2548 to 2771)
4. Solenoid valve, 2 position 3 way ...... D ........... Platform rotate left ........................... 8-10 ft-lbs (11-14 Nm)
5. Solenoid valve, 2 position 3 way ...... E ........... Jib boom down ............................... 8-10 ft-lbs (11-14 Nm)
6. Orifice plug, 0.030 inch (0.89 mm) .... F ........... Jib boom/platform rotate circuit

**Plug Torque Specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>1/8</td>
<td>50 in-lbs (6 Nm)</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>3/16</td>
<td>13 ft-lbs (18 Nm)</td>
</tr>
</tbody>
</table>

**Valve Coil Resistance Specification**

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position 3 way valve - 20V (schematic items A, B, D and E)</td>
<td>23.5 to 24.5Ω</td>
</tr>
</tbody>
</table>
Jib Boom / Platform Rotate Manifold Components
(Z-34/22 after serial number 2005 and Z-34/22N after serial number 2771)

The jib boom/platform rotate manifold is mounted to the jib boom.

1. Solenoid valve, 3 position 4 way ...... A ........... Jib boom up/down ...................... 20-25 ft-lbs (27-34 Nm)
2. Solenoid valve, 3 position 4 way ...... B ........... Platform rotate right/left ............... 20-25 ft-lbs (27-34 Nm)
3. Flow regulator valve,
   0.3 gpm / 1.14 L/min ......................... C ........... Platform rotate circuit .................. 20-25 ft-lbs (27-34 Nm)

---

Valve Coil Resistance Specification

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 position 4 way valve, 20V DC</td>
<td>22 Ω</td>
</tr>
</tbody>
</table>
MANIFOLDS

8-8
Steer / Brake Manifold Components
(Z-34/22 before serial number 781 and Z-34/22N before serial number 1030)

<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>Check valve</td>
<td>G</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>2</td>
<td>Normally open poppet valve</td>
<td>H</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>3</td>
<td>3 position 4 way spool valve</td>
<td>I</td>
<td>Steer left/right</td>
<td>10-12 ft-lbs (14-16Nm)</td>
</tr>
<tr>
<td>4</td>
<td>Orifice washer 0.040 inch (1.02 mm)</td>
<td>J</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pressure switch</td>
<td>K</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Normally closed poppet valve</td>
<td>L</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>7</td>
<td>Orifice washer 0.052 inch (1.32 mm)</td>
<td>M</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Proportional solenoid valve</td>
<td>N</td>
<td>Brake circuit</td>
<td>10-12 ft-lbs (14-16Nm)</td>
</tr>
</tbody>
</table>

Valve Coil Resistance Specification

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally open poppet valve</td>
<td>23 to 25Ω</td>
</tr>
<tr>
<td>3 position 4 way valve</td>
<td>21 to 23Ω</td>
</tr>
<tr>
<td>Normally closed poppet valve</td>
<td>22 to 24Ω</td>
</tr>
<tr>
<td>Proportional solenoid valve</td>
<td>18 to 20Ω</td>
</tr>
</tbody>
</table>

Plug Torque Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Hex Size</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE No. 2</td>
<td>1/8</td>
<td>50 in-lbs (6 Nm)</td>
</tr>
<tr>
<td>SAE No. 4</td>
<td>3/16</td>
<td>13 ft-lbs (18 Nm)</td>
</tr>
</tbody>
</table>
### 8-9
**Steer / Brake Manifold Components**  
(Z-34/22 from serial number 781 to 1733 and Z-34/22N from serial number 1030 to 2226)

<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>Normally open poppet valve</td>
<td>H</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>2</td>
<td>3 position 4 way spool valve</td>
<td>I</td>
<td>Steer left/right</td>
<td>10-12 ft-lbs (14-16Nm)</td>
</tr>
<tr>
<td>3</td>
<td>Pressure switch</td>
<td>K</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Orifice 0.040 inch (1.02 mm)</td>
<td>J</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Normally closed poppet valve</td>
<td>L</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>6</td>
<td>Orifice washer 0.052 inch (1.32 mm)</td>
<td>M</td>
<td>Brake circuit</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Check valve</td>
<td>G</td>
<td>Brake circuit</td>
<td>25-30 ft-lbs (34-41Nm)</td>
</tr>
<tr>
<td>8</td>
<td>Proportional solenoid valve</td>
<td>N</td>
<td>Brake circuit</td>
<td>10-12 ft-lbs (14-16Nm)</td>
</tr>
</tbody>
</table>

Refer to previous page for Plug Torque and Valve Coil Specifications
Hydraulic Tank

9-1

Hydraulic Tank

The primary functions of the hydraulic tank are to cool, clean and deaerate the hydraulic fluid during operation. It utilizes internal suction strainers for the pump supply lines and has a return filter mounted inside the reservoir.

Component damage hazard. The work area and surfaces where this procedure will be performed must be clean and free of debris that could get into the hydraulic system.

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 Two, Hydraulic Hose and Fitting Torque Specifications.

How to Remove the Hydraulic Tank

Z-34/22 before serial number 809 and
Z-34/22N before serial number 1116

1. Open the tank side turntable cover.
2. Remove the tank mounting fasteners. Remove the tank from the power unit.
3. Completely drain the tank into a suitable container. See capacity specifications.
4. Remove the suction strainer and the magnet. Clean the tank with mild solvent.
5. Clean up any oil that may have spilled.

Hydraulic Oil Specifications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic oil type</td>
<td>Dexron equivalent</td>
</tr>
<tr>
<td>Z-34/22 before serial number 809 and Z-34/22N before serial number 1116:</td>
<td></td>
</tr>
<tr>
<td>Hydraulic tank capacity</td>
<td>5 gallons</td>
</tr>
<tr>
<td></td>
<td>18.9 liters</td>
</tr>
<tr>
<td>Hydraulic system (including tank)</td>
<td>7 gallons</td>
</tr>
<tr>
<td></td>
<td>26.5 liters</td>
</tr>
</tbody>
</table>
How to Remove the Hydraulic Tank

Z-34/22 after serial number 808 and Z-34/22N after serial number 1115

1. Open the tank side turntable cover.
2. Close the hydraulic shutoff valve located at the hydraulic tank.

Description: Component damage hazard. The machine must not be operated with the hydraulic tank shut-off valve in the CLOSED position or component damage will occur. If the tank valve is closed, remove the key from the key switch and tag the machine to inform personnel of the condition.

3. Place a suitable container under the hydraulic tank. See capacity specifications.
4. Disconnect and plug the hydraulic hose from the hydraulic tank shutoff valve.

Description: 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 drain plug from the hydraulic tank and drain the oil into a suitable container.

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

6. Tag, disconnect and plug the hydraulic hoses from the hydraulic tank filter. Cap the fittings on the filter.

Description: 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 hydraulic tank mounting fasteners.
8. Remove the hydraulic tank from the machine.
9. Remove the tank lid retaining fasteners. Remove the lid from the tank.

Description: Caution. Component damage hazard. Do not overtighten the hydraulic tank mounting fasteners. Torque the hydraulic tank mounting fasteners to 5 ft-lbs (6.8 Nm).

Description: Torque specification

| 1/4-20 fasteners | 5 ft-lbs | 6.8 Nm |

Description: Hydraulic Oil Specifications

| Hydraulic oil type | Dextron equivalent |

Description: Z-34/22 after serial number 808 and Z-34/22N after serial number 1115:

| Hydraulic tank capacity | 4 gallons 15.1 liters |

Description: Hydraulic system (including tank):

| Hydraulic system (including tank) | 6 gallons 22.7 liters |
Turntable Rotation Components

10-1
Turntable Rotation Hydraulic Motor

The turntable rotation hydraulic motor is the only serviceable component of the turntable rotation assembly. The worm gear must not be removed from the housing. In order to remove the housing, the turntable has to be removed.

How to Remove the Turntable Rotation Motor

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1 Tag, disconnect and plug the hydraulic hoses from the turntable rotation motor. Cap the fittings on the motor.

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 turntable rotation motor mounting bolts. Remove the motor.
11-1
Yoke and Hub

How to Remove the Yoke and Hub

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

2. Block the non-steering wheels. Center a lifting jack under the steering axle.

3. Raise the machine approximately 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. Remove the cotter pin and the clevis pin from both the steering cylinder and the tie rod.

**NOTICE** Always replace the cotter pin with a new one when removing the clevis pin.

6. Remove the retaining fasteners from the upper and lower yoke pivot pins. Do not remove the pins.

7. Support and secure the yoke/hub assembly to a lifting jack.

8. Place a rod through the yoke pivot pins and twist to remove the pins.

**CAUTION** Crushing hazard. The yoke/hub assembly may become unbalanced and fall when the yoke pivot pins are removed if it is not properly supported and secured to the lifting jack.

**Torque specifications**

<table>
<thead>
<tr>
<th>Component</th>
<th>Dry</th>
<th>Wet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lug nuts</td>
<td>125 ft-lbs</td>
<td>169.5 Nm</td>
</tr>
<tr>
<td>Lug nut torque, lubricated</td>
<td>94 ft-lbs</td>
<td>127 Nm</td>
</tr>
</tbody>
</table>
STEERING AXLE COMPONENTS

How to Remove the Hub and Bearings

1. Loosen the wheel lug nuts. Do not remove them.
2. Block the non-steering wheels and place a lifting jack under the steering axle.
3. Raise the machine approximately 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. Remove the dust cap, cotter pin and castle nut.
6. Pull the hub off the yoke spindle. The washer and outer bearing should fall loose from the hub.
7. Place the hub on a flat surface and gently pry the bearing seal out of the hub. Remove the inner bearing.

NOTICE Always replace the cotter pin with a new one when removing the castle nut.

How to Install the Hub and Bearings

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

1. Be sure that both bearings are packed with grease.
2. Place the large inner bearing into the rear of the hub.
3. Press the inner bearing seal evenly into the hub until it is flush.
4. Apply a small amount of grease onto the yoke spindle.
5. Slide the hub onto the yoke spindle.

CAUTION Component damage hazard. Damage to the lip of the seal may occur if excessive force is applied.

6. Place the outer bearing into the hub.
7. Install the washer and castle nut.
8. Tighten the castle nut to 35 ft-lbs (47 Nm).
9. Loosen the castle nut and tighten to 8 ft-lbs (11 Nm).
10. Install a new cotter pin. Bend the cotter pin to lock it.

NOTICE Always replace the cotter pin with a new one when installing the castle nut.

11. Install the dust cap. Install the tire and wheel assembly. Torque the wheel lug nuts to 125 ft-lbs (169.5 Nm).
11-2 Steer Cylinder

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 Two, Hydraulic Hose and Fitting Torque Specifications.

1 Tag, disconnect and plug the hydraulic hoses from the steer 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.

2 Remove the cotter pins. Remove the clevis pin from each end of the steer cylinder.

**NOTICE** Always replace the cotter pin with a new one when removing the clevis pin.

3 Remove the steer cylinder from the machine.

11-3 Tie Rod

**How to Remove the Tie Rod**

1 Remove the cotter pins. Remove the clevis pin from each end of the tie rod.

**NOTICE** Always replace the cotter pin with a new one when removing the clevis pin.

2 Remove the tie rod from the machine.
Non-steer Axle Components

12-1 Drive Motor

How to Remove a Drive Motor

A drive motor can only be removed from the inside of the drive chassis.

1. Disconnect the battery packs from the machine.

2. Remove the chassis cover from the non-steer end of the machine.

3. Tag and disconnect the power cables from the drive motor.

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

4. Remove the drive motor mounting fasteners.

5. Guide the drive motor shaft out of the brake and remove the drive motor from the machine.

12-2 Drive Hub

How to Remove a Drive Hub

The drive motor must be removed in order to access the drive hub mounting bolts.

**WARNING** 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 Two, Hydraulic Hose and Fitting Torque Specifications.

1. Remove the drive motor. See 11-1, How to Remove a Drive Motor.

2. Disconnect the hydraulic hose from the brake and plug it. Cap the fitting on the brake.

**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. Chock the steer wheels.

4. Loosen the wheel lug nuts on the wheel of the drive hub to be removed. Do not remove the lug nuts.
5 Center a lifting jack under the non-steer end of the machine. Raise the machine approximately 6 inches (15 cm) and place blocks under the chassis for support.

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

7 Place a second lifting jack under the drive hub for support. Secure the drive hub to the lifting jack.

8 Remove the brake mounting bolts. Remove the brake from the machine.

9 Remove the drive hub mounting bolts. Remove the drive hub from the machine.

**Caution** Crushing hazard. The drive hub may become unbalanced and fall when the mounting fasteners are removed if it is not properly supported and secured to the lifting jack.

<table>
<thead>
<tr>
<th>Torque specifications</th>
<th>ft-lbs</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lug nuts, dry</td>
<td>125</td>
<td>169.5</td>
</tr>
<tr>
<td>Lug nuts, lubricated</td>
<td>94</td>
<td>127</td>
</tr>
<tr>
<td>Drive hub bolts, dry</td>
<td>210</td>
<td>285</td>
</tr>
<tr>
<td>Drive hub bolts, lubricated</td>
<td>94</td>
<td>127</td>
</tr>
</tbody>
</table>
Motor Controller

13-1
Motor Controller
Z-34/22 after serial number 1733 and
Z-34/22N after serial number 2226

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 Fault Code 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 Industries 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. Tag and disconnect all power cables from the motor controller.

3. Press the release tab on the motor controller harness connector and remove the motor controller harness connector from the motor controller.

4. Set an ohmmeter to diode test mode.

5. Connect the leads from an ohmmeter to test each motor controller terminal combination listed below and check the forward / reverse bias (diode test).

Result: All desired results must be within the specified range. If any test has a result not within the specified range, replace the motor controller.

### Forward Bias

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>B- M-</td>
<td>0.4 to 0.45</td>
</tr>
<tr>
<td>B+ M+</td>
<td>0.45 to 0.5</td>
</tr>
<tr>
<td>B- F1</td>
<td>0.45 to 0.5</td>
</tr>
<tr>
<td>B- F2</td>
<td>0.45 to 0.5</td>
</tr>
</tbody>
</table>

### Reverse Bias

<table>
<thead>
<tr>
<th>Test</th>
<th>Desired result</th>
</tr>
</thead>
<tbody>
<tr>
<td>B+ M-</td>
<td>Rises to .0L V</td>
</tr>
<tr>
<td>M- B-</td>
<td>Rises to .0L V</td>
</tr>
<tr>
<td>B+ F1</td>
<td>Rises to .0L V</td>
</tr>
<tr>
<td>B+ F2</td>
<td>Rises to .0L V</td>
</tr>
<tr>
<td>F1 B-</td>
<td>Rises to .0L V</td>
</tr>
<tr>
<td>F2 B-</td>
<td>Rises to .0L V</td>
</tr>
</tbody>
</table>
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