TEREX®

Service Manual

RL™4 LED

Part No. 1287632GT
Rev A
March 2018

Introduction

Important

Read, understand and obey the safety rules and operating instructions in the appropriate Operator's Manual on your machine before attempting any maintenance 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 Terex dealer service center.

Technical Publications

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

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

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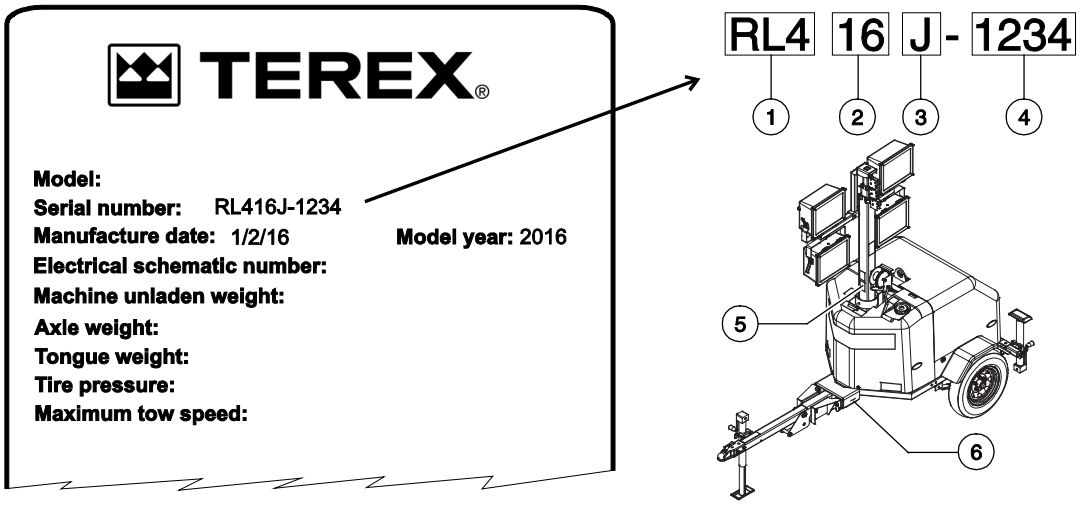
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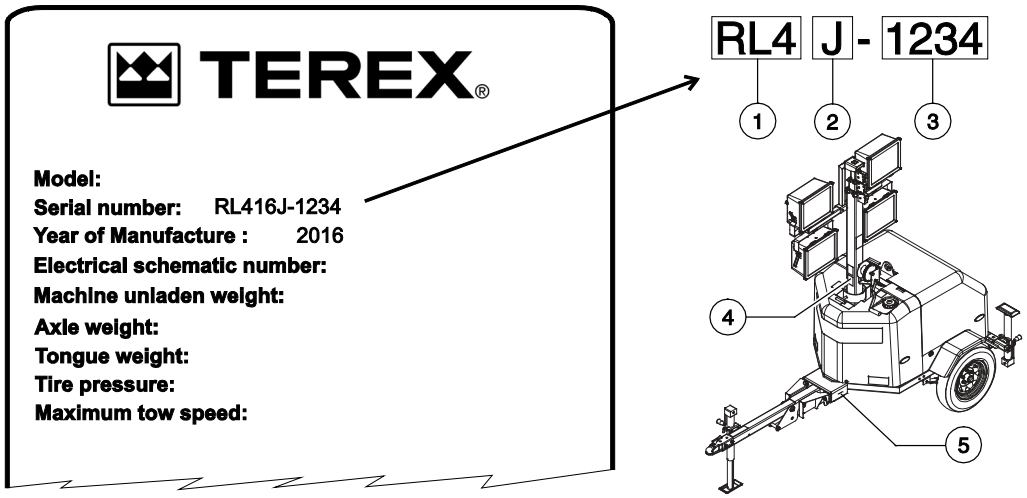
Serial Number Legend

To August 31, 2016



1 Model
2 Model year
3 Facility code
4 Sequence number
5 Serial number (stamped on chassis)
6 Serial label

From September 1, 2016



1 Model
2 Facility code
3 Sequence number
4 Serial number (stamped on chassis)
5 Serial label

Safety Rules



Danger

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

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

Do Not Perform Maintenance Unless:

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

☑ You read, understand and obey:

- manufacturer's instructions and safety rules
- employer's safety rules and worksite regulations
- applicable governmental regulations

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

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.

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

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

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

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



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



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

Workplace Safety

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.



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



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



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



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



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



Be sure that your workshop or work area is properly ventilated and well lit.

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Specifications

Machine Specifications

Total lighting wattage	4 X 230 Watt LED Modules
Fuel capacities	
Single tank	17.5 gallons 66.25 liters
Tires and wheels	
Tire size	ST175/80D13
Load range	C
Lug nut torque, dry	90 ft-lbs 122 Nm
Lug nut torque, lubricated	67.5 ft-lbs 91.5 Nm

Performance Specifications

Tongue weight, maximum	
With fuel (17.5 gallon tank)	203 lbs 92 kg
Run time	
17.5 gallon tank	80 hours

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

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

Inverter Options

Champion 3.5 KW Inverter	
Temperature, ambient maximum	104° F 40° C
Model	100467
Watts (Starting/Running)	4000/3500
AC Volts	120
AC Amps @ 120 V	29.2
DC Volts	12-24 VDC
DC Amps	4-8 amps DC
Frequency	60 Hz
Phase	Single

Machine Torque Specifications

Wheel lugs	
Lug nut torque, lubricated	67.5 ft-lbs 91.5 Nm
Lug nut torque, dry	90 ft-lbs 122 Nm

Specifications

SAE FASTENER TORQUE CHART

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

SIZE	THREAD	Grade 5				Grade 8				A574 High Strength Black Oxide Bolts	
		LUBED		DRY		LUBED		DRY		LUBED	
		in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
1/4	20	80	9	100	11.3	110	12.4	140	15.8	130	14.7
	28	90	10.1	120	13.5	120	13.5	160	18	140	15.8
		LUBED		DRY		LUBED		DRY		LUBED	
		ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
5/16	18	13	17.6	17	23	18	24	25	33.9	21	28.4
	24	14	19	19	25.7	20	27.1	27	36.6	24	32.5
3/8	16	23	31.2	31	42	33	44.7	44	59.6	38	51.5
	24	26	35.2	35	47.4	37	50.1	49	66.4	43	58.3
7/16	14	37	50.1	49	66.4	50	67.8	70	94.7	61	82.7
	20	41	55.5	55	74.5	60	81.3	80	108.4	68	92.1
1/2	13	57	77.3	75	101.6	80	108.4	110	149	93	126
	20	64	86.7	85	115	90	122	120	162	105	142
9/16	12	80	108.4	110	149	120	162	150	203	130	176
	18	90	122	120	162	130	176	170	230	140	189
5/8	11	110	149	150	203	160	217	210	284	180	244
	18	130	176	170	230	180	244	240	325	200	271
3/4	10	200	271	270	366	280	379	380	515	320	433
	16	220	298	300	406	310	420	420	569	350	474
7/8	9	320	433	430	583	450	610	610	827	510	691
	14	350	474	470	637	500	678	670	908	560	759
1	8	480	650	640	867	680	922	910	1233	770	1044
	12	530	718	710	962	750	1016	990	1342	840	1139
1 1/8	7	590	800	790	1071	970	1315	1290	1749	1090	1477
	12	670	908	890	1206	1080	1464	1440	1952	1220	1654
1 1/4	7	840	1138	1120	1518	1360	1844	1820	2467	1530	2074
	12	930	1260	1240	1681	1510	2047	2010	2725	1700	2304
1 1/2	6	1460	1979	1950	2643	2370	3213	3160	4284	2670	3620
	12	1640	2223	2190	2969	2670	3620	3560	4826	3000	4067

METRIC FASTENER TORQUE CHART

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

Size	Class 4.6				Class 8.8				Class 10.9				Class 12.9			
(mm)	LUBED		DRY		LUBED		DRY		LUBED		DRY		LUBED		DRY	
	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm
5	16	1.8	21	2.4	41	4.63	54	6.18	58	6.63	78	8.84	68	7.75	91	10.3
6	19	3.05	36	4.07	69	7.87	93	10.5	100	11.3	132	15	116	13.2	155	17.6
7	45	5.12	60	6.83	116	13.2	155	17.6	167	18.9	223	25.2	1.95	22.1	260	29.4
	LUBED		DRY		LUBED		DRY		LUBED		DRY		LUBED		DRY	
	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
8	5.4	7.41	7.2	9.88	14	19.1	18.8	25.5	20.1	27.3	26.9	36.5	23.6	32	31.4	42.6
10	10.8	14.7	14.4	19.6	27.9	37.8	37.2	50.5	39.9	54.1	53.2	72.2	46.7	63.3	62.3	84.4
12	18.9	25.6	25.1	34.1	48.6	66	64.9	88	69.7	94.5	92.2	125	81	110	108	147
14	30.1	40.8	40	54.3	77.4	105	103	140	110	150	147	200	129	175	172	234
16	46.9	63.6	62.5	84.8	125	170	166	226	173	235	230	313	202	274	269	365
18	64.5	87.5	86.2	117	171	233	229	311	238	323	317	430	278	377	371	503
20	91	124	121	165	243	330	325	441	337	458	450	610	394	535	525	713
22	124	169	166	225	331	450	442	600	458	622	612	830	536	727	715	970
24	157	214	210	285	420	570	562	762	583	791	778	1055	682	925	909	1233

Scheduled Maintenance Procedures



Observe and Obey:

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

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

⚠WARNING Failure to perform each procedure as presented and scheduled may cause death, serious injury or substantial damage.

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

☑ Repair any machine damage or malfunction before operating the machine.

☑ Use only Terex approved replacement parts.

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

Machine Configuration:

☑ Unless otherwise specified, perform each procedure with the machine in the following configuration:

- Machine parked on a firm, level surface
- Mast in the stowed position
- Engine Power switch in the off position
- The red Emergency Stop button in the off position on the electrical control box
- Wheels chocked
- Light switches in the off position
- All external AC power supply disconnected from the machine
- Fuel Valve in the OFF Position

Scheduled Maintenance Procedures

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.

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

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

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

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

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

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

Scheduled Maintenance Procedures

Maintenance Symbols Legend

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



Indicates that tools will be required to perform this procedure.



Indicates that new parts will be required to perform this procedure.



Indicates that dealer service will be required to perform this procedure.



Indicates that a cold engine will be required to perform this procedure.



Indicates that a warm engine will be required to perform this procedure.

Pre-delivery Preparation Report

The pre-delivery preparation report contains checklists for each type of scheduled inspection.

Make copies for each inspection. Store completed forms as required.

Maintenance Schedule

The *Scheduled Maintenance Procedures* section and the *Maintenance Inspection Report* have been divided into subsections. Use the following chart to determine which group(s) of procedures are required to perform a scheduled inspection.

Inspection	Checklist
Daily or every 8 hours	A
Quarterly or every 250 hours	A + B
Semi-annually or every 500 hours	A + B + C
Annually or every 1000 hours	A + B + C + D
Two-year or every 2000 hours	A + B + C + D + E

Maintenance Inspection Report

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

Make copies of the *Maintenance Inspection Repor*t to use for each inspection. Maintain completed forms for a minimum of 4 years or in compliance with your employer, jobsite and governmental regulations and requirements.

Pre-Delivery Preparation Report

Fundamentals

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

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

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

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

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

Instructions

Use the operator's manual on your machine.

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

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

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

Legend

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

Comments

Pre-delivery Preparation	Y	N	R
Pre-operation inspection completed			
Maintenance items completed			
Function tests completed			

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(44) 1476-584333

Model

Serial number

Date

Machine owner

Inspected by (print)

Inspector signature

Inspector title

Inspector company

Maintenance Inspection Report

Model	
Serial number	
Date	
Hour meter	
Machine owner	
Inspected by (print)	
Inspector signature	
Inspector title	
Inspector company	

Instructions

- Make copies of this report to use for each inspection.
- Select the appropriate checklist(s) for the type of inspection(s) to perform.

☐	**Daily or every 8 hours**	**A**
☐	**Quarterly or every 250 hours**	**A + B**
☐	**Semi-annually or every 500 hours**	**A + B + C**
☐	**Annually or every 1000 hours**	**A + B + C + D**
☐	**Two-year or every 2000 hours**	**A + B + C + D + E**

- Place a check in the appropriate box after each inspection procedure is completed.
- Use the step-by-step procedures in this section 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

Checklist A		**Y**	**N**	**R**
A-1	Inspect the manuals and decals			
A-2	Pre-operation inspection			
A-3	Function tests			
Perform after 8 hours:				
A-4	Perform Inverter Maintenance			
Perform before towing:				
A-5	Coupler			
A-6	Brakes (if equipped)			
Perform after 10 miles:				
A-7	Lug nuts			
Perform after 20 hours:				
A-8	Perform Inverter Maintenance			
Perform weekly:				
A-9	Tires and wheels			
A-10	Inspect the Cables and Cable Pulleys			
A-11	Adjust the Brakes (if equipped)			
Perform after 50 hours:				
A-12	Perform Inverter Maintenance			
Perform every 100 hours:				
A-13	Perform Inverter Maintenance			
Perform every 200 hours:				
A-14	Perform Inverter Maintenance			

Checklist B		**Y**	**N**	**R**
B-1	Electrical wiring			
B-2	Lug nuts			
B-3	Winch			
B-4	T-bolt			
Perform every 3000 miles:				
B-5	Brakes (if equipped)			
B-6	Suspension			
Checklist C		**Y**	**N**	**R**
C-1	Clean the LED Modules			
Perform every 6000 miles:				
C-2	Wheel bearings			
C-3	Brakes (if equipped)			
Checklist D		**Y**	**N**	**R**
D-1	Coupler			
Checklist E		**Y**	**N**	**R**
E-1	Cable			
E-2	Perform Inverter Maintenance			

Checklist A Procedures

A-1
Inspect the Manuals and Decals



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

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

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

1 Check to make sure that the operator's and safety manuals are present and complete in the storage container inside the cabinet.

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

⊙ Result: The operator's manual is appropriate for the machine and all manuals are legible and in good condition.

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

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

⊙ Result: The machine is equipped with all required decals, and all decals are legible and in good condition.

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

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

Note: Contact your authorized Terex distributor or Terex if replacement manuals or decals are needed.

Checklist A Procedures

A-2
Perform Pre-operation Inspection



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

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

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

A-3
Perform Function Tests



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

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

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

Checklist A Procedures

A-4
Perform Inverter Maintenance



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

- Inspect for debris and clean
- Inspect the Engine Air Filter
- Loose or missing fasteners
- Engine oil level – check

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

Digital Inverter Operator's Manual	
Genie part number	1287633

A-5
Perform Coupler Maintenance



Coupler specifications require that this procedure be performed before towing.

Maintaining the coupler in good condition is essential to safe operation and good performance. Coupler failure could result in a machine tip-over during transport, and component damage may also result if problems are not discovered and repaired in a timely fashion.

1 Check vehicle, mounting bracket, hitch ball and coupler for signs of wear or damage and that the coupler handle opens and closes freely.

☒ Result: if coupler and/or mounting bracket is deformed or damaged, replace complete coupler and mounting bracket. Replace bent, broken or worn parts before use.

2 Close coupler securely by ensuring that the hitch ball is fully seated in the coupler ball pocket and the pin is inserted behind the collar or latch.

3 Check mounting bracket hardware for wear and proper tightness.

☒ Result: Replace bent, broken or worn hardware.

A-6
Test the Brakes (if equipped)



Axle specifications require that this procedure be performed before towing.

Maintaining the axle brakes in good condition is essential to safe operation and good performance. Brakes which are out of adjustment can result in longer stopping distances and excessive brake wear on the towing vehicle. Component damage may also result if problems are not discovered and repaired in a timely fashion.

Test the brakes for proper function. Repair or replace any faulty components as needed.

A-7
Torque the Wheel Lug Nuts



Axle specifications require that this procedure be performed initially at 10, 25 and 50 miles of use, or after reinstallation of a tire.

Maintaining the wheel lug nuts at proper torque is essential to safe operation and good service life of the tires, wheel and axle.

1 Check each lug nut for proper torque. Refer to Specifications, Machine Specifications.

Checklist A Procedures

A-8
Perform Inverter Maintenance



Inverter specifications require that this procedure be performed the first month or 20 hours of use, whichever comes first.

- Engine oil - replace

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

Digital Inverter Operator's Manual	
Genie part number	1287633

A-9
Check the Tires and Wheels



Axle specifications require that this procedure be performed weekly.

Maintaining the tires and wheels in good condition and the tires at the correct pressure 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.

⚠WARNING Bodily injury hazard. An over-inflated tire can explode and could cause death or serious injury.

⚠WARNING Tip-over hazard. Do not use temporary flat tire repair products.

1 Check all tire treads and sidewalls for cuts, cracks, punctures and unusual wear.

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

3 Check each lug nut for proper torque. Refer to Specifications, *Machine Specifications*.

4 Check the pressure in each air-filled tire.

A-10
Inspect the Cables and Cable Pulleys



Terex specifications require that this procedure be performed monthly.

Detection of damage to the cables or pulleys is essential for safe machine operation. An unsafe working condition exists if these components are damaged and do not operate smoothly. Regular inspection of this system allows the inspector to identify changes in the operating condition that may indicate damage.

1 Visually inspect the electric winch and cable pulleys for the following:

- broken or damaged pulleys
- unusual or excessive pulley wear

☒ Result: A pulley is broken or damaged, or shows unusual or excessive pulley wear. The pulley must immediately be replaced.

2 Put on protective leather gloves and eye wear.

3 Fully unwind the cable from the winch.

4 Wearing leather gloves, run a hand up and down a length of the cable, inspecting the cable and components for the following:

- frayed or broken wire strands

☒ Result: In any given one-foot of cable length there are 4 or more broken wires on any 2 or more strands. The cable must immediately be replaced.

5 Visually inspect the winch cable for the following:

- nicks (partial strand cut through)
- kinks in the cable (permanent bends)
- weld splatter

☒ Result: Nicks, kinks in the cable or weld splatter are. The cable must immediately be replaced.

6 Visually inspect the winch cable for the following:

- crushed spot on the cable

☒ Result: A crushed spot on the cable measuring 125% of the cable diameter or more is found OR there is a broken wire at the crush point. The cable must immediately be replaced.

7 Wind cable onto the winch, ensuring that the cable is correctly installed onto each of the pulleys.

Checklist A Procedures

A-11
Adjust the Brakes (if equipped)



Axle specifications require that this procedure be performed initially at 250 miles of use.

Maintaining the axle brakes in good condition is essential to safe operation and good performance. Brakes which are out of adjustment can result in longer stopping distances and excessive brake wear on the towing vehicle. Component damage may also result if problems are not discovered and repaired in a timely fashion.

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

1 Select a wheel. Chock the front and rear of the tire at the opposite side of the machine.

2 Place a lifting jack under the axle near the brake to be adjusted. Lift the axle until the wheel is off the ground and place a jack stand under the axle. Lower the axle onto the jack stand.

3 Working from the back side of the wheel at the brake backing plate, locate and remove the small rubber plug from the lower side of the backing plate to access the star-shaped brake adjuster wheel. Set the plug to the side.

4 Insert a brake adjuster tool into the opening of the brake backing plate, engaging it with the teeth of the brake adjuster wheel. Move the tip of the adjuster tool in an upwards direction to tighten the brakes.

Note: It may be helpful to use a flashlight when locating the brake adjuster wheel.

5 Repeatedly move the tip of the adjuster tool in an upwards direction to tighten the brakes until the wheel locks up and will no longer turn.

Note: This centers the brake shoes on the brake drum, ensuring the shoes are positioned correctly.

6 Move the tip of the adjuster tool in a downwards direction 3 to 5 clicks to loosen the brakes only until the wheel spins freely with little drag.

7 Securely install the small rubber plaug into the brake backing plate.

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

⊙ There is no side to side or up and down movement. The bearing is good.

⊠ There is side to side or up and down movement. The bearing must be adjusted or replaced. See B-8, Inspect and Adjust the Brakes (if equipped).

9 Lift the axle slightly. Remove the jack stand and lower the machine to the ground. Chock the front and rear of the tire.

10 Repeat this procedure, beginning with step 2, for the other wheel.

Checklist A Procedures

A-12
Perform Inverter Maintenance



Inverter specifications require that this procedure be performed every 50 hours or quarterly, whichever comes first.

- Air filter - clean

  Clean more often when using generator in dusty areas.

- Run engine

  It is recommended that the generator is run for 15-30 minutes every three months to ensure the battery remains charged.

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

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A-13
Perform Inverter Maintenance



Engine specifications require that this procedure be performed every 100 hours or 6 months, whichever comes first.

- Engine oil - replace
- Spark plugs - clean/adjust/replace
- Spark arrestor - clean

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

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Checklist A Procedures

A-14
Perform Inverter Maintenance



Engine specifications require that this procedure be performed every 200 hours or yearly, whichever comes first.

- Inverter cooling fins - clean
- Engine valve lash – inspect/adjust

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

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Checklist B Procedures

B-1
Inspect the Electrical Wiring



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

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 electrically charged circuits could result in death or serious injury. Remove all rings, watches and other jewelry.

1 Inspect the following areas for burnt, chafed, corroded pinched and loose wires:

- Ground controls
- Battery
- Generator
- Mast
- Lighting junction box
- Trailer lighting wire harness

2 Inspect for a lite, even coating of dielectric grease in the following locations:

- Lighting junction box
- Ground controls
- All wire harness connectors
- Note: Do not apply excessive amounts of dielectric grease to harness connectors, pins or sockets.

B-2
Torque the Wheel Lug Nuts



Axle specifications require that this procedure be performed initially at 10, 25 and 50 miles of use, or after reinstallation of a tire.

Maintaining the wheel lug nuts at proper torque is essential to safe operation and good service life of the tires, wheel and axle.

1 Check each lug nut for proper torque. Refer to Specifications, Machine Specifications.

Checklist B Procedures

B-3
Inspect and Lubricate the Winch

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

Maintaining the winch is essential to good machine performance and safe operation. An unsafe working condition exists if the winch has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Carefully lubricate the winch.

B-4
Lubricate the T-bolt

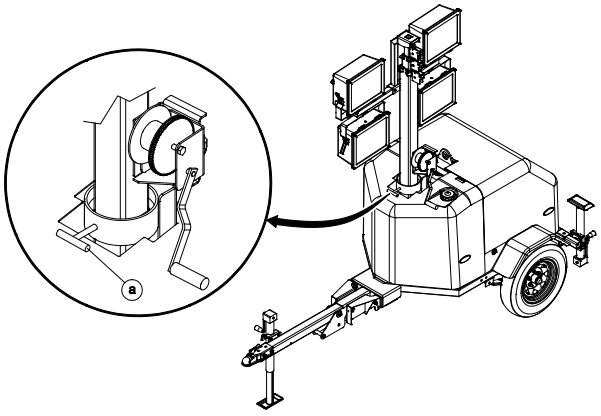
Terex specifications require that this procedure be performed every 250 hours or quarterly, whichever comes first.

Maintaining the T-bolt is essential to good machine performance and safe operation. An unsafe working condition exists if the T-bolt has excessive wear and/or does not operate smoothly, free of hesitation and binding.

1 Using the illustration as a guide, locate the T-bolt at the bottom of the mast assembly. Remove the T-bolt from the mast.

2 Remove all dust, dirt and copper anti-seize from the threaded surfaces of the T-bolt, and apply a few drops of light oil or copper anti-seize lubricant onto the threaded surfaces.

3 Fully install the T-bolt into the mast.



a T-bolt

B-5
Inspect and Adjust the Brakes (if equipped)



Axle specifications require that this procedure be performed every 3000 miles or quarterly, whichever comes first.

Maintaining the axle brakes in good condition is essential to safe operation and good performance. Brakes which are out of adjustment can result in longer stopping distances and excessive brake wear on the towing vehicle. Component damage may also result if problems are not discovered and repaired in a timely fashion.

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

1 Select a wheel. Chock the front and rear of the tire at the opposite side of the machine.

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

3 Place a lifting jack under the axle near the wheel to be removed. Lift the axle until the wheel is off the ground and place a jack stand under the axle. Lower the axle onto the jack stand and remove the wheel.

4 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

5 Remove the castle nut and washer.

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

7 Inspect the brake lining for wear (if equipped).

⊙ Result: the thickness of the brake lining is greater than 1/16 inch / 1.6 mm. The brake shoes are good.

⊠ Result: the thickness of the brake lining is 1/16 inch / 1.6 mm or less. The brake shoes must be replaced and the brake drums must be inspected for wear, scoring and other damage.

Note: The maximum bore of a good brake drum shall not be greater than 0.090 inch / 2.29 mm in excess of the drum diameter.

Note: If drum resurfacing is required, the brake drum should be resurfaced to a 120 micron finish.

Note: If replacing the brake shoes, apply a light coat of grease or anti-seize compound to the anchor pin, arm bushing and pin, and areas of the backing plate which contact the magnet arm and brake shoes frame. Apply a small amount of lube to the actuating cam at the top of the magnet arm. Do not allow grease or oil to contact the brakes shoes or the inside of the drum.

8 Slide the hub onto the yoke spindle.

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

9 Place the outer bearing into the hub.

10 Install the washer and the castle nut.

11 Tighten the castle nut to 50 ft-lbs / 68 Nm to seat the bearings.

12 Fully loosen the castle nut. Do not rotate the hub.

13 Finger tighten the castle nut until snug.

Checklist B Procedures

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

Note: Always replace the cotter pin with a new one when removing the castle nut.

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

16 Working from the back side of the wheel at the brake backing plate, locate and remove the small rubber plug from the lower side of the backing plate to access the star-shaped brake adjuster wheel. Set the plug to the side.

17 Insert a brake adjuster tool into the opening of the brake backing plate, engaging it with the teeth of the brake adjuster wheel. Move the tip of the adjuster tool in an upwards direction to tighten the brakes.

Note: It may be helpful to use a flashlight when locating the brake adjuster wheel.

18 Repeatedly move the tip of the adjuster tool in an upwards direction to tighten the brakes until the wheel locks up and will no longer turn.

Note: This centers the brake shoes on the brake drum, ensuring the shoes are positioned correctly.

19 Move the tip of the adjuster tool in a downwards direction 3 to 5 clicks to loosen the brakes only until the wheel spins freely with little drag.

20 Securely install the small rubber plug into the brake backing plate.

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

⊙ There is no side to side or up and down movement. The bearing is good.

⊠ There is side to side or up and down movement. The bearing must be adjusted or replaced. See B-8, Inspect and Adjust the Brakes (if equipped).

22 Lift the axle slightly. Remove the jack stand and lower the machine to the ground. Chock the front and rear of the tire.

23 Repeat this procedure, beginning with step 2, for the other wheel.

B-6
Inspect the Suspension



Axle specifications require that this procedure be performed every 3000 miles or quarterly, whichever comes first.

Maintaining the axle suspension in good condition is essential to safe operation and good performance. Towing the machine with worn or damaged suspension components could result in a tip-over. Component damage may also result if problems are not discovered and repaired in a timely fashion.

1 Working with a flashlight or in a well lit shop, carefully inspect all suspension components and fasteners. Replace as necessary.

Checklist C Procedures

C-1
Clean the LED Modules



Terex specifications require that this procedure be performed every 500 hours or semi-annually, whichever comes first.

Maintaining the LED Modules is essential to good machine performance. Failure to regularly clean the light assemblies may result in less light than expected and, over time, could result in damage to the machine.

Note: Perform this procedure with the light assemblies out of direct sunlight and cool to the touch.

1 Use clean, cool water to rinse the surface of each light assembly.

2 Clean each light assembly using a soft cloth, water and a mild dishwashing detergent.

NOTICE Component damage hazard. Harsh checmcals and cleaning agents will damage the surface of the light assembly. Do not allow harsh cleaning agents to make contact with the light surface..

3 Thoroughly rinse, then dry with a soft cloth.

C-2
Grease the Wheel Bearings



Axle specifications require that this procedure be performed every 6,000 hours or semi-annually, whichever comes first.

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

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

1 Select a wheel. Chock the front and rear of the tire at the opposite side of the machine.

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

3 Place a lifting jack under the axle near the wheel to be removed. Lift the axle until the wheel is off the ground and place a jack stand under the axle. Lower the axle onto the jack stand and remove the wheel.

4 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

Checklist C Procedures

5 Remove the castle nut and washer.

6 Pull the hub off of the 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 rear bearing.

8 Pack both bearings with clean, fresh grease.

9 Inspect the hub for wear. Replace if necessary.

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

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

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

12 Inspect the brake lining for wear (if equipped).

13 Inspect the brake cylinder for leaks (if equipped).

14 Inspect the brake springs for wear or loss of arch (if equipped).

15 Inspect the brake wiring/hoses for wear (if equipped).

16 Slide the hub onto the yoke spindle.

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

17 Place the outer bearing into the hub.

18 Install the washer and the castle nut.

19 Tighten the castle nut to 50 ft-lbs / 68 Nm to seat the bearings.

20 Fully loosen the castle nut. Do not rotate the hub.

21 Finger tighten the castle nut until snug.

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

Note: Always replace the cotter pin with a new one when removing the castle nut.

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

Checklist C Procedures

C-3
Inspect the Electric Brake Magnets (if equipped)



Axle specifications require that this procedure be performed every 6,000 hours or semi-annually, whichever comes first.

Maintaining the axle brakes in good condition is essential to safe operation and good performance. A faulty brake magnet can severely impact the stopping power of a trailer. While some magnet problems will be apparent upon visual inspection, there may also be electrical problems that can impact performance. A failing or faulty brake magnet can lead to weak or surging brakes, or cause the brakes to pull to one side. It is important to inspect and test the magnets at regular intervals to ensure maximum effectiveness.

1 Connect the electric brake wire harness to a tow vehicle capable of towing the machine.

2 Start the engine of the tow vehicle, and press down on the brake pedal.

⊙ Result: An audible 'click' is noted at each brake when the brake magnet is activated and pulls itself into contact with the brake drum. The brake circuit is functioning correctly.

☒ Result: An audible 'click' is not noted at each brake because the brake magnet is not activated and does not make contact with the brake drum. The brake circuit is faulty. Inspect the wire harness and harness connections and repair as required, and repeat this procedure beginning with step 2.

3 With the engine running, press down on the brake pedal and use a multimeter to measure the total amp draw of the brake circuit by positioning an amp clamp around the brake wire lead near the trailer connector. Note the reading.

⊙ Result: The total amp draw measures 5.5 to 6.0 amps. The brake circuit is functioning correctly.

☒ Result: The total amp draw measures less than 5.5 amps. Replace the magnets and magnet springs on both sides of the axle, and resurface the brake drums. Repeat this procedure beginning with step 4.

4 Stop the engine of the tow vehicle.

5 Select a wheel. Chock the front and rear of the tire at the opposite side of the machine.

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

7 Place a lifting jack under the axle near the wheel to be removed. Lift the axle until the wheel is off the ground and place a jack stand under the axle. Lower the axle onto the jack stand and remove the wheel.

8 Remove the dust cap from the hub. Remove the cotter pin from the castle nut.

9 Remove the castle nut and washer.

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

11 Locate the brake magnet. Inspect the surface of the magnet for pitting and any irregular surface wear.

☒ Result: Replace the magnets and magnet springs on both sides of the axle if pitting or any irregular surface wear is detected, and resurface the brake drums.

12 Inspect the copper coil at the center of the magnet.

☒ Result: Replace the magnets and magnet springs on both sides of the axle if the exposed copper coil is visible in any way, and resurface the brake drums.

13 Slide the hub onto the yoke spindle.

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

14 Place the outer bearing into the hub.

15 Install the washer and the castle nut.

16 Tighten the castle nut to 50 ft-lbs / 68 Nm to seat the bearings.

17 Fully loosen the castle nut. Do not rotate the hub.

18 Finger tighten the castle nut until snug.

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

Note: Always replace the cotter pin with a new one when removing the castle nut.

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

21 Repeat this procedure, beginning with step 6, for the other side of the machine.

Checklist D Procedures

D-1
Perform Coupler Maintenance



Coupler specifications require that this procedure be performed annually.

Maintaining the coupler in good condition is essential to safe operation and good performance. Coupler failure could result in a machine tip-over during transport, and component damage may also result if problems are not discovered and repaired in a timely fashion.

1 Check coupler welds and mounting bolt torque. Torque the fasteners to 35 ft-lbs / 48 Nm.

⊙ Result: 1.5 full threads of the locking bolt must be exposed beyond the lock nut after the adjustment.

2 Apply automotive grease to the coupler ball pocket.

3 Oil coupler pivot points using SAE 30 motor oil.

E-1
Inspect the Cables and Cable Pulleys



Terex specifications require that this procedure be performed every two years.

Detection of damage to the cables or pulleys is essential for safe machine operation. An unsafe working condition exists if these components are damaged and do not operate smoothly. Regular inspection of this system allows the inspector to identify changes in the operating condition that may indicate damage.

1 Visually inspect the electric winch and cable pulleys for the following:

- broken or damaged pulleys
- unusual or excessive pulley wear

☒ Result: A pulley is broken or damaged, or shows unusual or excessive pulley wear. The pulley must immediately be replaced.

2 Put on protective leather gloves and eye wear.

3 Fully unwind the cable from the winch.

4 Wearing leather gloves, run a hand up and down a length of the cable, inspecting the cable and components for the following:

- frayed or broken wire strands

☒ Result: In any given one-foot of cable length there are 4 or more broken wires on any 2 or more strands. The cable must immediately be replaced.

5 Visually inspect the winch cable for the following:

- nicks (partial strand cut through)
- kinks in the cable (permanent bends)
- weld splatter

☒ Result: Nicks, kinks in the cable or weld splatter are. The cable must immediately be replaced.

6 Visually inspect the winch cable for the following:

- crushed spot on the cable

☒ Result: A crushed spot on the cable measuring 125% of the cable diameter or more is found OR there is a broken wire at the crush point. The cable must immediately be replaced.

7 Wind cable onto the winch, ensuring that the cable is correctly installed onto each of the pulleys.

If the mast cables need replacing, refer to Repair Procedure, How to Replace the Mast Lift Cables.

Checklist E Procedures

E-2
Perform Inverter Maintenance



Inverter specifications require that this procedure be performed every 2 years.

- Check fuel line - replace if needed

Required maintenance procedures and additional engine/generator information is available in the Operation Manual.

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Repair Procedures



Observe and Obey:

☑ Repair procedures shall be completed by a person trained and qualified on the repair of this machine.

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

☑ Repair any machine damage or malfunction before operating the machine.

Before Repairs Start:

☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.

☑ Be sure that all necessary tools and parts are available and ready for use.

☑ Use only Terex approved replacement parts.

☑ Read each procedure completely and adhere to the instructions. Attempting shortcuts may produce hazardous conditions.

Machine Configuration:

☑ Unless otherwise specified, perform each repair procedure with the machine in the following configuration:

- Machine parked on a firm, level surface
- Mast in the stowed position
- Key switch in the off position with the key removed
- The red Emergency Stop button in the off position on the electrical control box
- Wheels chocked
- Light switches in the off position
- All external AC power supply disconnected from the machine

Repair Procedures

About This Section

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

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

Symbols Legend



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

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

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

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

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

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

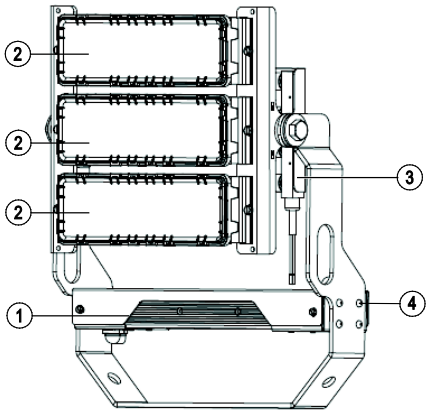
☒ Indicates that an incorrect result has occurred after performing a series of steps.

1-1
How to Remove a LED Module

⚠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 off all machine power.

2 Unplug the LED Module from the Current Driver.



1 LED current driver
2 LED module
3 LED connector
4 mounting fasteners

3 Remove the LED Modules mounting fasteners.

4 Wrap a clean cloth around the LED module and remove it from the socket.

Mast

2-1 How to Remove the Mast Assembly

⚠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.

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

1 Tag and remove the LED modules from the mast.

2 Remove the junction box from the light bar. Remove and retain the coil cord clamp and hardware from the base section of the mast. Lay the coil cord, junction box and lamp heads to the side.

3 Remove the fasteners securing the mast base to the chassis.

4 Attach a lifting strap from an overhead crane to the mast base beneath the rotating section and T-bolt. Remove the mast from the machine.

2-2 How to Disassemble the Mast Assembly

1 Remove the mast assembly. See 1-1, How to Remove the Mast Assembly.

2 Remove the T-bolt from the mast base assembly.

3 Remove the nut from the bottom of the mast base. Remove the mast base assembly from the 4" inch mast section.

⚠CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

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

4 Remove the light bar assembly and hardware from the 1.5 inch / 3.8 cm mast section and set aside. Remove the 1.5 inch / 3.8 cm mast section from the 2 inch / 5 cm mast section. Disconnect the cable from the 2 inch / 5 cm mast section by removing the cable retention pin.

5 Working at the top of the 3 inch / 7.5 cm mast section, use a drill to remove the rivets securing the wear pads in position.

6 Remove the 2 inch / 5 cm mast section from the 3 inch / 7.5 cm mast section. Disconnect the cable from the 3 inch / 7.5 cm mast section by removing the cable retention pin.

7 Working at the top of the 4 inch / 10 cm mast section, use a drill to remove the rivets securing the wear pads in position.

8 Remove the 3 inch / 7.5 cm mast section from the 4 inch / 10 cm mast section. Disconnect the cable from the 4 inch / 10 mast section by removing the cable retention pin.

9 Remove the clevis pin and sheave from the 2 inch / 5 cm mast section.

10 Remove the clevis pin and sheave from the 3 inch / 7.5 cm mast section.

11 Remove the clevis pin and sheave from the 4 inch / 10 cm mast section.

Note: For ease of assembly, note the location where each wear pad is removed.

Note: To ensure that the mast extends properly after assembly, carefully measure the cable to confirm that the new cable is the same length as the old one.

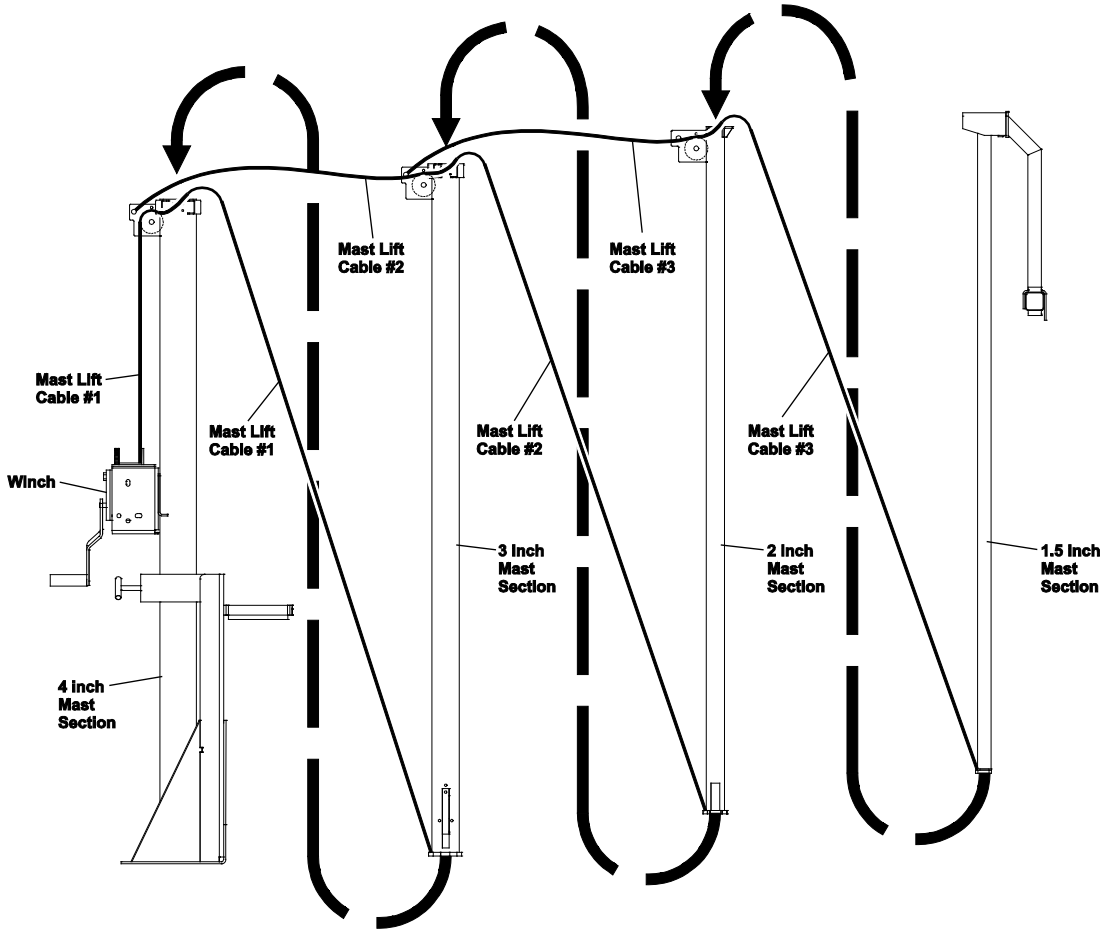
Note: During assembly, carefully install the mast cable. Refer to the illustration on the following page for cable routing.

Mast

2-3 How to Replace the Mast Lift Cables

See 2-2, *How to Disassemble the Mast Assembly*.

Note: Refer to the illustration below for cable routing detail.



2-4
How to Remove the Manual Winch

1 Turn the handle of the mast pivot winch and fully loosen the mast pivot cable. Remove the handle from the winch.

2 Open the cabinet doors and locate the winch. Remove the fasteners securing the handle to the winch, and remove the handle.

3 Remove the cable retaining fastener securing the cable to the winch drum. Unwind the cable from the winch drum.

⚠ CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

4 Remove the winch from the machine.

2-5
How to Disengage the Tower Lock

To disengage the light tower lock so the tower can be lowered to the stowed position and towed to a suitable workshop for repairs follow the steps below.

⚠ 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.

⚠ CAUTION Bodily injury hazard. Cables can fray. Always wear adequate hand protection when handling the cable.

Remove the front fairing:

1 Raise the rear hatch fairing. Disconnect the gas struts and close the rear hatch fairing.

2 Remove the hinge bolts that go through the front fairing.

3 Next remove the remaining front fairing fasteners and loosen the front fairing enough to access the trailer wiring harness connectors.

4 Disconnect the two connectors at the roll bar located on the upper road side of the light tower.

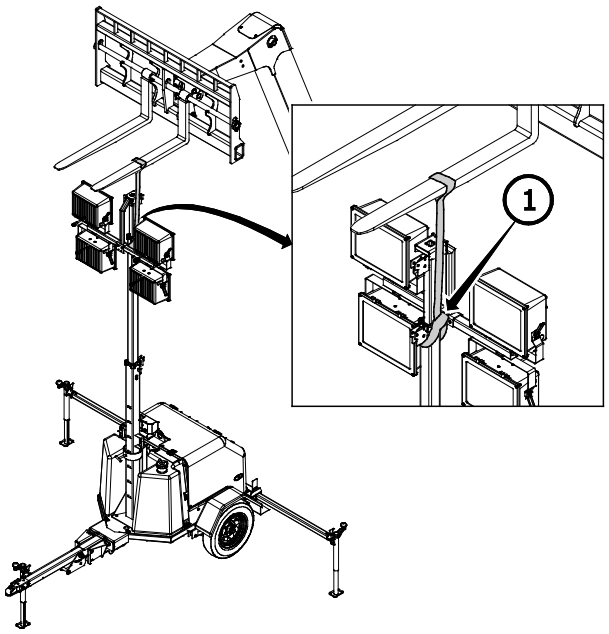
5 Feed the draw bar wiring up through the hole then remove the front fairing and set aside.

Mast

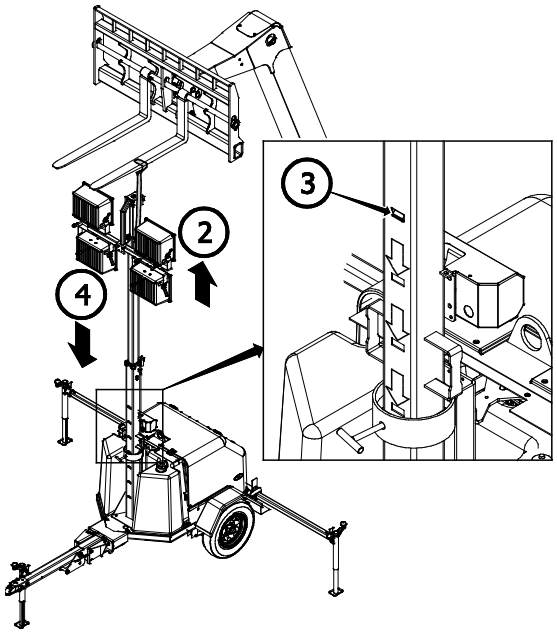
Unlock the tower:

6 Loosen the T-bolt and rotate the tower so that the lock holes are facing forward. Re-tighten T-bolt to secure the tower.

7 Using the figure below, attach a lifting strap around the first movable tower section (1) as shown.



8 Using a Telehandler or construction forklift slowly begin lifting up the first movable tower section (2) until the tower lock lever (3) disengages.



9 Slowly begin lowering the tower while using a pry bar to push in on the tower lock lever to prevent it from engaging the lock hole.

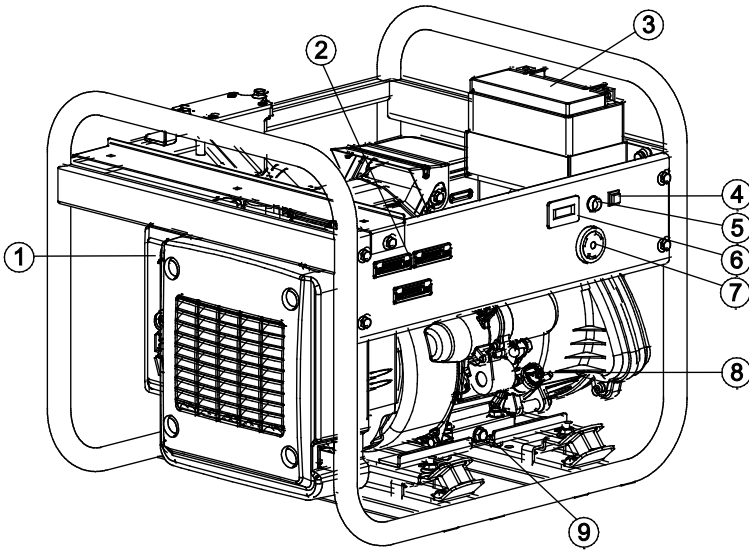
10 Repeat step 9 until the tower is completely down in the stowed position.

Transport the light tower to be repaired:

11 Once the light tower mast has been lowered to the stowed position reinstall the front fairing using the fasteners removed in the "Remove the front fairing" section above.

12 The light tower can now be towed to the nearest dealer service center for complete tower disassembly and rebuild.

3-1
Champion 3.5 KW Inverter



1 Air Cleaner
2 Connectors A, B, C - Interface between generator and Light Tower.
3 12VDC 9AH Battery - Used to power starter during remote starting.
4 Wireless Rest Button - Used to reset or pair remote fob.
5 Wireless Reset Indicator
6 Hour meter - Logs run time of generator.
7 120VAC, 30 Amp Receptacle (L5-30R)
8 Oil Fill Port
9 Oil Drain

Diagnostics



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 procedure with the machine in the following configuration:
  - Machine parked on a firm, level surface
  - Mast in the stowed position
  - Key switch in the off position with the key removed
  - The red Emergency Stop button in the off position on the electrical control box
  - Wheels chocked
  - Light switches in the off position
  - All external AC power supply disconnected from the machine

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.
- ☑ Read each appropriate fault code thoroughly. Attempting short cuts may produce hazardous conditions.
- ☑ Be aware of the following hazards and follow generally accepted safe workshop practices.

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

⚠DANGER High voltage. Exposure to electrical wires or electrical current will result in death or serious injury. Turn off all power when not needed for testing. Use extreme caution when working with high voltage electrical components.

⚠CAUTION Burn hazard. Beware of hot engine components. Contact with hot engine components may cause severe burns. Use caution when working around lamps or a hot engine.

Diagnostic Charts

Problem	Possible Cause	Solution
Mast will not rise to the operating position	Faulty cable or pulley	Inspect and repair as needed.
	Faulty winch	Inspect and repair as needed.
Engine will not turn over	No power	Inspect and repair battery cables and connections as needed. Inspect and charge or replace battery as needed. Inspect and replace fuse.
	Faulty starter	Inspect and repair as needed.
	Faulty starter switch	Inspect and repair switch and/or switch wiring as needed
Engine overheats	Thermostat faulty	Inspect and repair as needed.
	Head gasket faulty	Inspect and repair as needed.
	Unsuitable fuel used	Drain fuel system and replace with specified fuel.
Engine runs rough	Air or contaminated fuel in fuel system	Inspect and repair as needed.
	Clogged or leaking fuel system	Replace fuel lines, tighten all connections, inspect the fuel pickup tube and inspect the fuel filter.
	Clogged exhaust system	Inspect and repair as needed.
	Clogged air filter	Inspect and repair or replace as needed.
Engine turns over but will not start or is difficult to start	Empty fuel tank	Add fuel to tank.
	Leaking or pinched fuel lines	Inspect and repair as needed.
	Fuel valve off	turn on valve.
	Air or water mixed in fuel	Air: Tighten fule lines and vent fuel system air at injection pump. Water: Drain fuel and replace filter; inspect and clean or replace injector as needed.
	Faulty wiring connection in control box	Inspect and repair as needed.
	Battery is discharged or low	Charge or replace battery.
	Air cleaner is dirty	Clean or replace more frequently.

Diagnostic Charts

Problem	Possible Cause	Solution
Engine battery quickly discharged	Wiring loose or disconnected	Inspect and repair as needed.
	Faulty alternator, rectifier or diode	Inspect and repair as needed.
	Faulty battery	Replace battery.
Engine runs but battery voltage is low	Faulty alternator	Inspect and repair as needed.
Engine runs but lights will not operate	Circuit breaker has tripped	Reset circuit breaker.
	Loose wiring connections	Inspect and repair as needed.
	Faulty generator	Inspect and repair as needed.
Lamp light output low	Dirty light fixture	Clean light fixture.
	Power supply cable connector faulty or poor connection	Inspect and repair as needed.
Unusual noise from the generator		Inspect and repair as needed.
Generator produces full voltage at no load or voltage drops at full load	Loose or broken lead wires	Inspect lead wires and connections for broken wires and loose connections.

Schematics



Observe and Obey:

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

Before Troubleshooting:

- ☑ Read, understand and obey the safety rules and operating instructions in the appropriate operator's manual on your machine.
- ☑ Be sure that all necessary tools and test equipment are available and ready for use.

About This Section

There are two groups of schematics in this section.

Electrical Schematics

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

Hydraulic Schematics

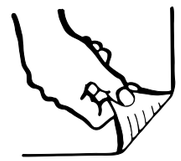
⚠WARNING Bodily injury hazard. Spraying hydraulic oil can penetrate and burn skin. Loosen hydraulic connections very slowly to allow the oil pressure to dissipate gradually. Do not allow oil to squirt or spray.

Wire Color Legend

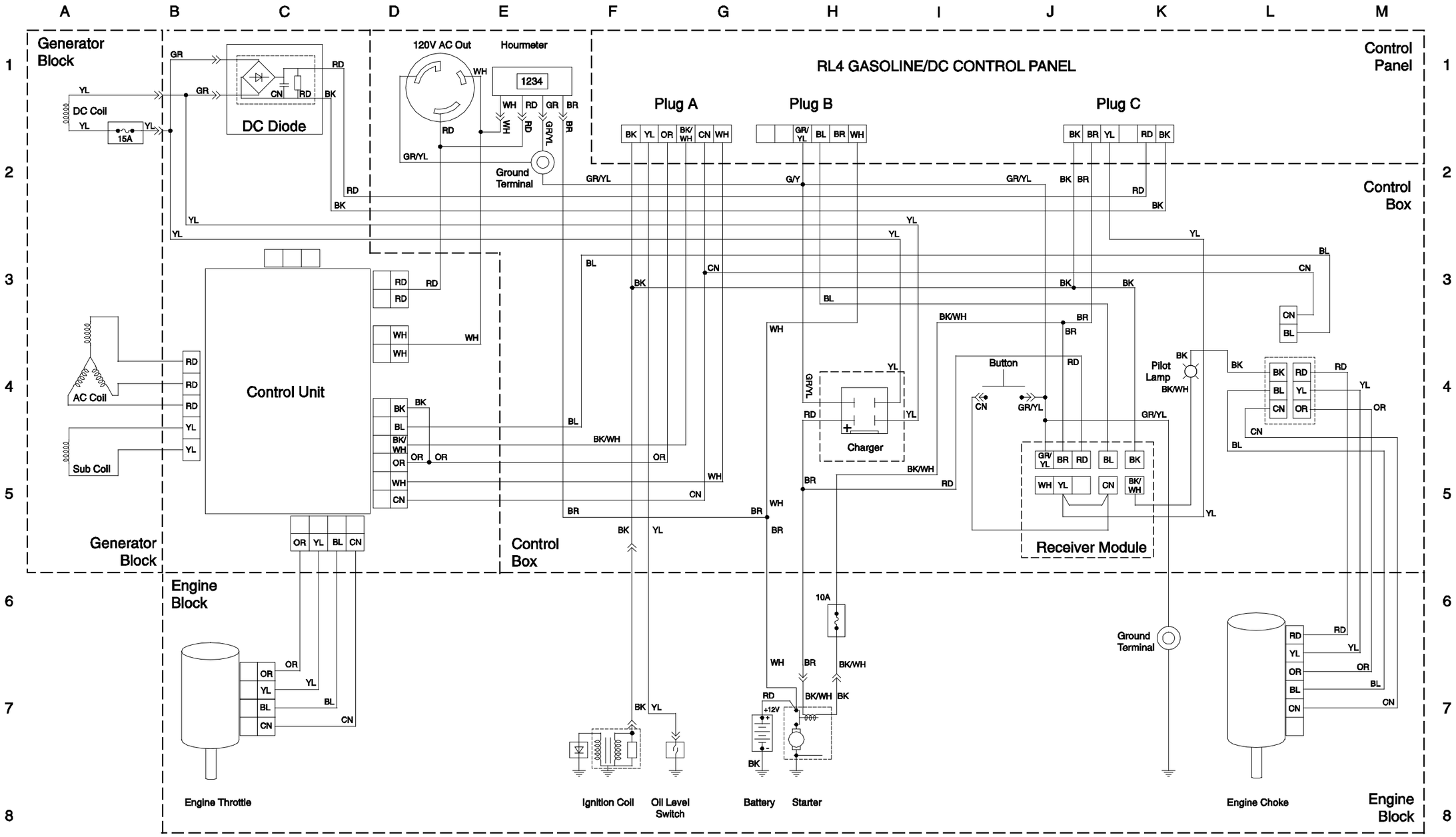
Wire Color Legend

BL	Blue
BK	Black
BR	Brown
GR	Green
OR	Orange
VI	Violet
RD	Red
WH	White
YL	Yellow
CN	Carnation
WH/GR	White/Green
OR/BK	Orange/Black
BK/WH	Black/White
WH/RD	White/Red
GR/YL	Green/Yellow
RD/BK	Red/Black
YL/RD	Yellow/Red
BL/WH	Blue/White

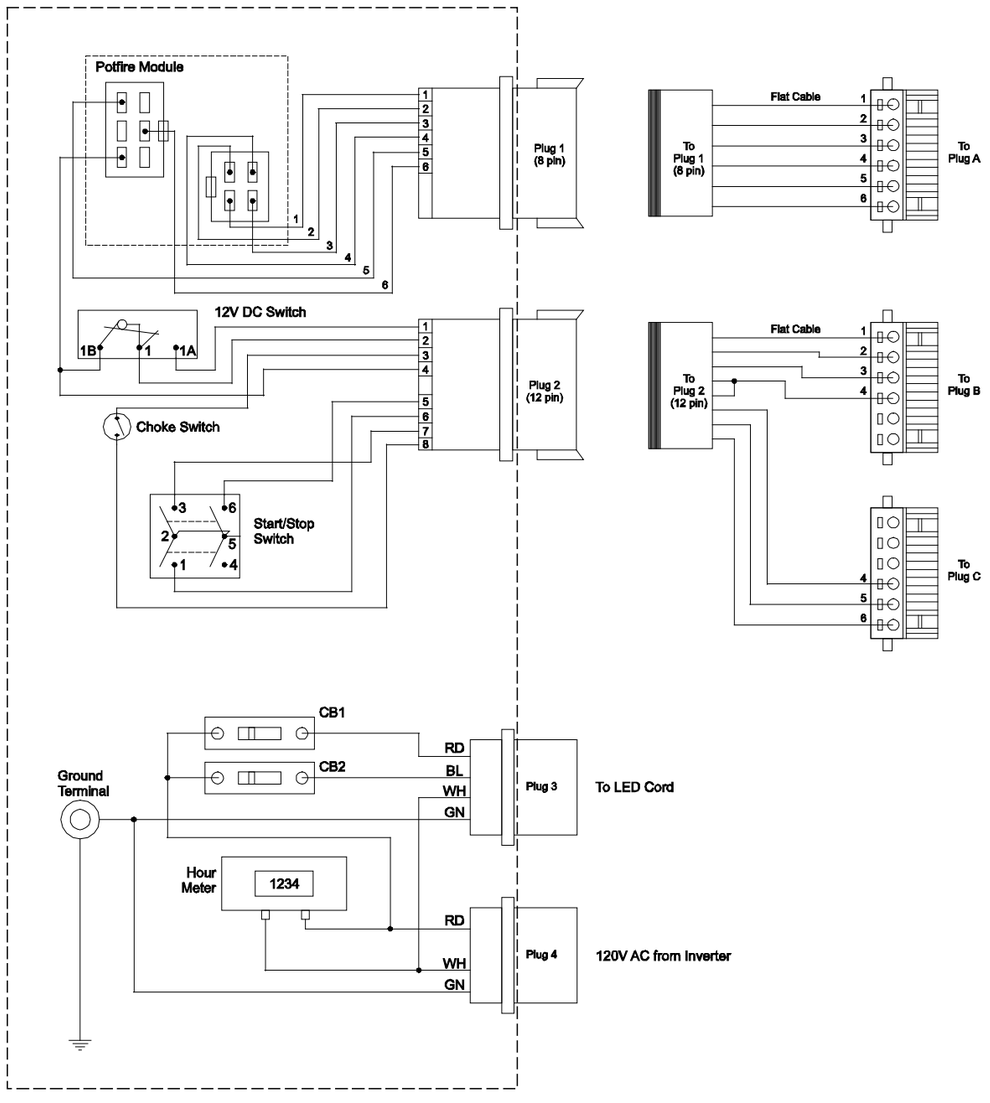
Engine Inverter Electrical Schematic



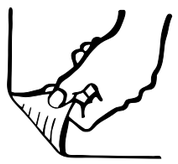
Engine Inverter Electrical Schematic



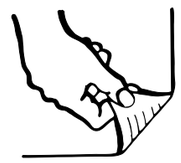
Engine Inverter Electrical Schematic



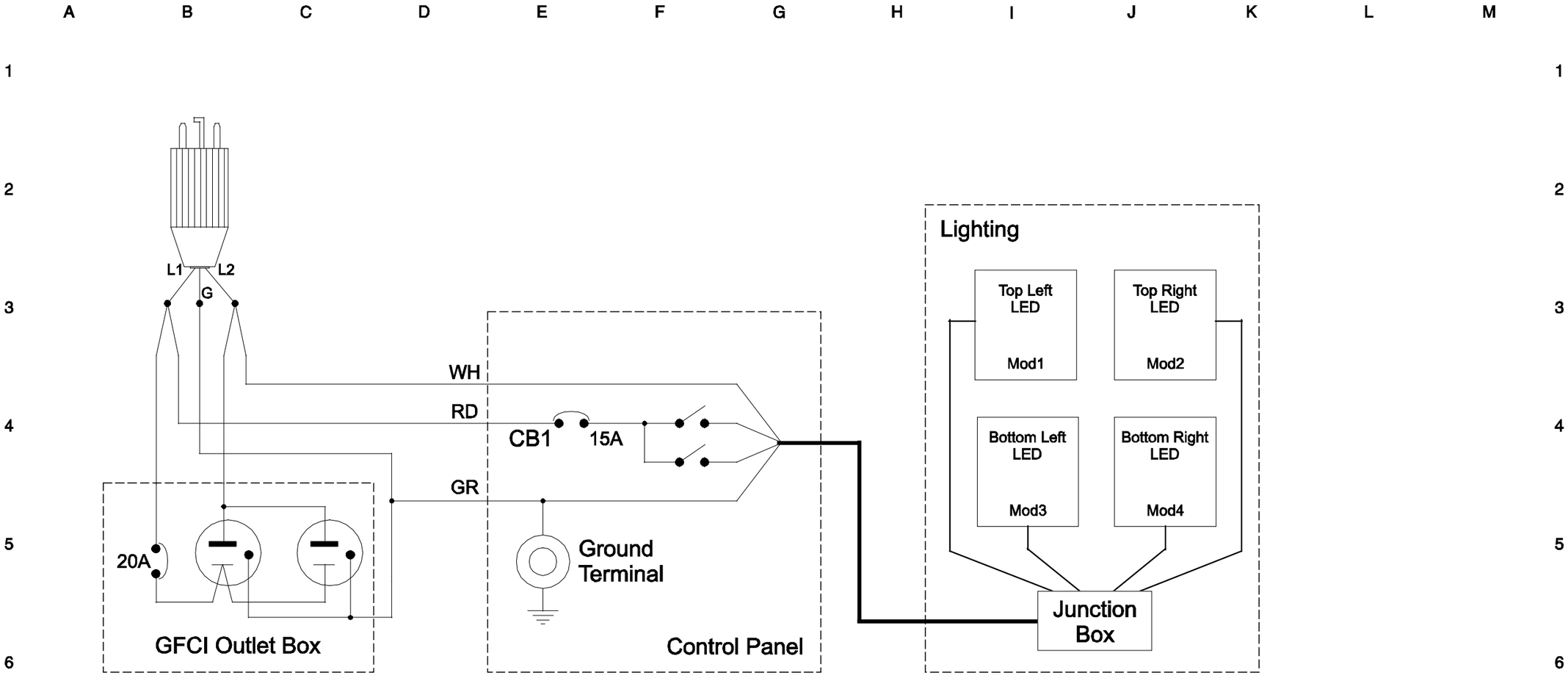
Engine Inverter Electrical Schematic



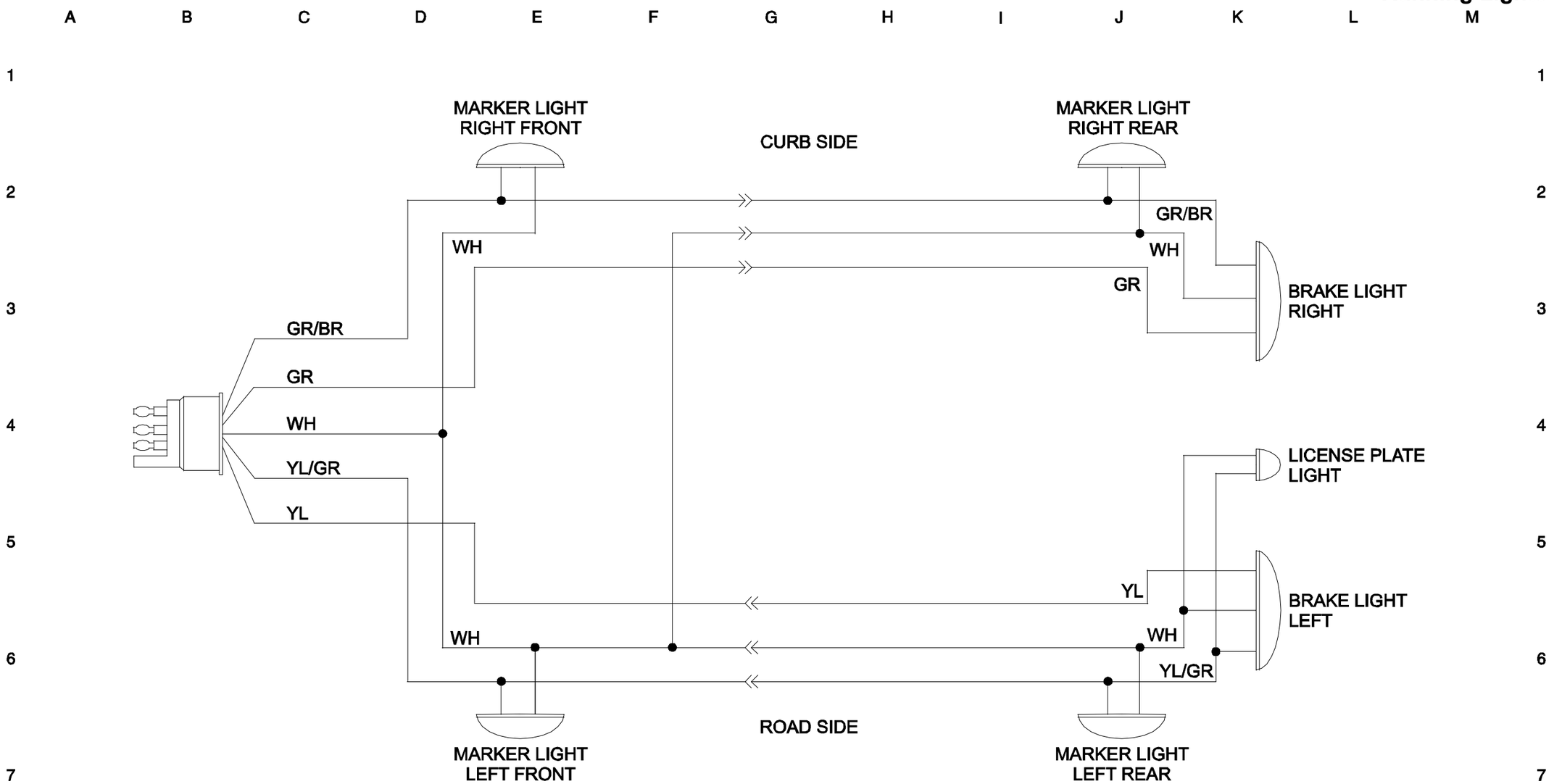
AC Control Schematic



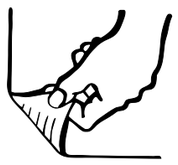
AC Control Schematic



Running Lights



Running Lights



California Proposition 65

WARNING

Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. These chemicals can be emitted from or contained in other various parts and systems, fluids and some component wear by-products. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your equipment and vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment or vehicle and after operation. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

www.genielift.com

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