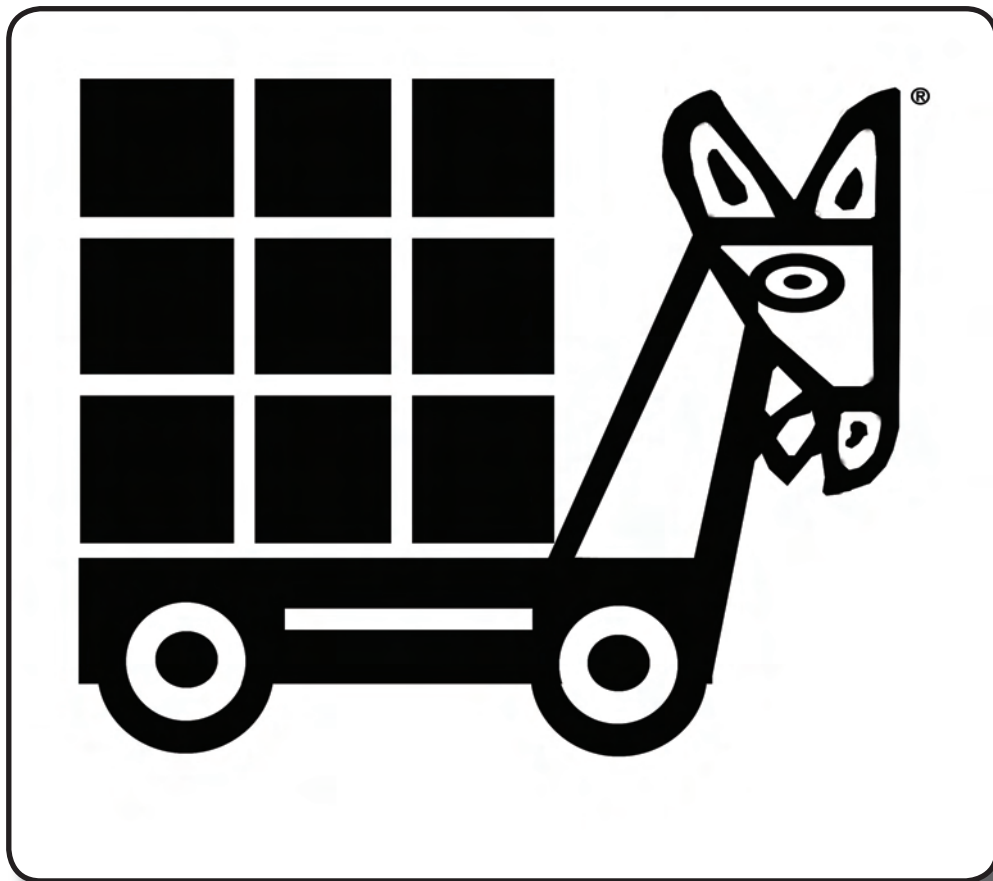


Pack Mule Power Mule



Electric Utility Vehicle Owner's Manual for DC-Powered Vehicles

Effective May 22, 2009



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Wesley's Service Partnership With You

Introduction

Thank you for choosing a Wesley International electric utility vehicle. We are committed to delivering excellent service before, during and after the sale. By following the operating and maintenance instructions provided in this manual, we can work together to ensure you get the best from your Pack Mule® or Power Mule™ product.

Record Your Product Information

Model #: _____ Serial #: _____

Purchase Date: _____

Register Your Product

PRODUCT REGISTRATION IS REQUIRED FOR WARRANTY COVERAGE. Complete and return the enclosed warranty card immediately. See “Warranty” in this manual for coverage information.

Read This Manual

Before operating your new electric vehicle, read this manual to become familiar with the safety guidelines, operating instructions and maintenance procedures.

If You Need Service

You will find many answers to common problems in the Troubleshooting section. If do not find an answer there, we are always ready and willing to help you. Just e-mail us at info@WesleyIntl.com or call 800-241-2869.

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Vehicle Inspection Checklist

After Delivery

Use the following checklist to inspect your vehicle upon delivery.

Item	Yes	No
1. Did you receive all accessories?		
2. Did you open and inspect all accessories?		
3. Are any accessories damaged?		
4. Are there dents or cracks on the vehicle?		
5. Are the tires in good condition and properly inflated to 60 psi?		
6. If you received an optional external battery charger, is the battery charger in good condition?		
7. Are the steering controls and front steering gears operating freely and properly?		

IMPORTANT: Notify the carrier immediately of any damage that occurred during shipping. Call Wesley at 800-241-2869 for all other problems or questions.

Before Operating the Vehicle

Before operating the vehicle, make sure the:

- tire pressure is at least 60 psi.
- wheel lug nuts are tight.
- all battery connections are tight.

Safety Instructions

Introduction

The responsibility for safety lies with four main groups: manufacturers, owners, operators and maintenance personnel. As a manufacturer, our responsibility is to ensure that you are acquainted with the capabilities of the vehicle and to recommend guidelines for safe operation based on the vehicle's characteristics.

Training

Vehicle owners are responsible for instructing their personnel in its safe operation. Owners must explain the vehicle's characteristics, features and the operation of its controls. We strongly recommend that owners first become familiar with the conditions of the place where the vehicle will be operated in order to assess their effect on safe operation. Training should occur under the conditions of the operating environment while adhering to the safety guidelines and include:

- Safety guidelines
- Operation of the vehicle under the conditions in which it will be operated
- Operation of all controls
- A driving and operating test

Operator Qualifications

Operators should be selected based on their ability to safely operate the vehicle, including vision, hearing, physical and mental capabilities. Operators must:

- demonstrate a working knowledge of all controls.
- understand all safety guidelines.
- be able to properly drive and park the vehicle under the conditions in which the vehicle will be used.
- know how to properly load and unload cargo and passengers.
- recognize maintenance problems.

Safety Guidelines

All Pack Mule and Power Mule vehicles are designed for use on smooth surfaces in and around industrial plants, warehouses, nurseries and greenhouses. They are not designed for use on public highways.

Driving

Follow these guidelines to safely drive the vehicle:

- Read this manual before operating the vehicle.
- Do not start the vehicle without checking the brakes first.
- Do not mount or dismount the vehicle when the key is in the ON position.
- Do not drive the vehicle if the accelerator requires excessive pressure.
- Do not park or operate the vehicle near flammable objects or in a flammable or hazardous environment.
- Use only necessary power.
- Keep both hands on the steering wheel while operating the vehicle.
- Accelerate and decelerate slowly.

Safety Instructions (cont'd)

Safety Guidelines (continued)

Driving (continued)

- Exercise extreme caution when driving in reverse.
- Keep arms and legs within the operator's platform while driving.
- Do not use the vehicle to push objects.
- Perform all recommended maintenance procedures at the specified intervals.
- Do not operate in sand, gravel or snow.
- Do not use the accelerator to hold the vehicle at a standstill on an incline.
- Do not allow the tires to lose contact with the ground.
- Do not overload the vehicle above its rated load or towing capacity.
- Make sure the area of operation is clear of trash, litter and other foreign objects.
- Proceed around low overhangs with caution. Be sure there is enough clearance for the operator's head and the ladder and/or backrest.
- Never abruptly change direction.
- Adjust speed according to the surface conditions.
- Always drive directly up an incline; never across.
- Remain in the operator's position when operating the vehicle.
- Do not exceed the designated passenger, load or towing capacity.

Loading and Unloading

Follow these guidelines when loading and unloading cargo:

- Turn the vehicle off while loading.
- Do not exceed the maximum passenger or cargo load capacity.
- Carefully and evenly position all loads.
- Secure cargo so that nothing can easily fall off of the vehicle.
- Be extremely careful carrying loads that extend beyond the vehicle's deck.

Towing

Follow these guidelines when towing:

- Turn the vehicle off when connecting to the equipment that will be towed.
- Always use a properly installed hitch. (Optional hitches are available from Wesley International. Call 800-241-2869 to order.)
- Do not exceed the maximum towing capacity.
- Do not exceed 5 mph when towing.

Safety Instructions (cont'd)

Fuses

Follow these instructions when servicing the electrical system:

- Never install a wire instead of the proper fuse, even for a temporary fix. It may cause extensive damage and possibly a fire.
- Do not use a screwdriver or other metal object to remove fuses. Doing so may cause an electrical short circuit and damage the system.
- Do not modify or tamper with any part of the operating or speed control systems. All inspections and adjustments must be made by a qualified technician.

Wheels and Tires

When replacing tires, make sure the new wheels and tires are equivalent in diameter, rim width, off-set and load range rating to those you are removing. An incorrect size may adversely affect the wheel and bearing life, braking and stopping capability, handling characteristics, ground clearance and body-to-tire clearance.

General Safety Practices

Follow these instructions each time you service the vehicle:

- Completely remove and secure the deck lid before checking any portion of the drive train, batteries, etc.
- Chock the wheels at all times.
- Before returning the deck lid to its normal position, make sure the battery charging plug is disconnected from the receptacle, the battery-charging wires are securely tied and all tools removed before operating the vehicle.

Operating Instructions

Vehicle Controls

Accelerator Pedal

Seated Vehicles: The accelerator pedal is located to the right of the brake pedal. It controls the speed of the vehicle. It is operated with the right foot like the accelerator of an automobile.

Standing Vehicles: One pedal functions as the accelerator and the brake. The speed is proportionate to the amount of pressure applied to the pedal. The vehicle brakes as pressure on the pedal is decreased.

Key Switch

The vehicle only operates when the key is in the switch. The switch (Part # EV-E100) has three positions: run, off and charge only.



Function	Key Position
Run	Right
Off	Center
Charge Only	Left

Directional Switch

The directional switch (Part # EV-E035) is on the instrument panel. It has three positions: forward, reverse and neutral.



Direction	Switch Position
Forward	Up
Reverse	Down
Park/Neutral	Center

WARNING

Be sure the vehicle has completely stopped before changing directions. Rapidly changing direction while the vehicle is moving may cause the cargo to shift and possibly injure the operator and/or others.

Damage resulting from failure to operate the vehicle according to the instructions in this manual is not covered by the warranty.

Operating Instructions (cont'd)

Charging

Place the vehicle in a well-ventilated area and follow these steps to charge the battery:

1. Remove the deck for battery ventilation.
2. Check the battery's water levels.
3. Plug the charger cord into the wall receptacle and into the charger receptacle located on the rear of the vehicle.
4. Turn the key switch to the CHARGE position.

Driving

Follow these steps to operate your Pack Mule or Power Mule vehicle:

1. Disconnect the battery charger.

Remove the charger cord from the 120-Volt power outlet. Disconnect the charger cord from the charger receptacle located on the rear of the vehicle. Ensure that the area is clear of all obstructions.

2. Turn the key switch to the ON position.

Be sure that the direction switch is in the neutral position and the accelerator pedal is not depressed. Insert the key into the ignition switch located on the instrument panel. Turn the key completely to the right. The indicator light (BDI) located immediately above the ignition switch should come on. If not, do not attempt to operate the vehicle.

3. Move the directional switch to the desired setting.

The vehicle will not operate if the accelerator pedal is depressed and the directional switch is in the middle or neutral position. (See "Key Switch" on page 8.)

NOTE: If the directional switch is left in the FORWARD or REVERSE position for 10 seconds or more without depressing on the accelerator pedal, the delay safety feature engages, and the vehicle will not move. The operator must turn the directional switch to the NEUTRAL position, and then back to the desired direction to resume motion.

4. Press the accelerator.

Depress the accelerator with your foot. The speed of the vehicle will be proportional to the amount of pressure that is applied to the pedal. The controller regulates the speed, acting as an automatic transmission.

5. Stopping.

Standing Vehicles: Remove your foot from the accelerator pedal. The brake will automatically engage upon releasing the accelerator.

Seated Vehicles: Press on the separate brake pedal.

Operating Instructions (cont'd)

Loading

Follow these guidelines when loading:

- Do not exceed the specified number of passengers or load capacity for the vehicle. The maximum load capacity includes the combined weight of the passengers and cargo.
- Make sure the cargo is balanced and securely loaded. Do not load cargo that can easily fall off of the vehicle.
- Be very careful when handling cargo that is longer or wider than the vehicle.
- Do not stack cargo so that the driver's view is obstructed.

Unloading

Follow these guidelines when unloading:

- Make sure the vehicle has come to a complete stop before passengers disembark.
- Turn off the vehicle when unloading cargo.
- Be careful to place cargo a safe distance away from the vehicle and out of its path.

Parking

Follow these guidelines when parking the vehicle:

- Do not block fire aisles, fire equipment or stairways.
- Place the directional switch in the PARK/NEUTRAL position.
- Turn the key switch to OFF.
- If parking on an incline, block the wheels.

Towing

Following these guidelines when towing:

- Attach one of the optional hitches from Wesley International to the vehicle. (We offer a variety of hitches. Call 800-241-2869 to order.)
- Make sure the hitch is properly installed and secure.
- Do not exceed the specified towing capacity of the vehicle. The maximum capacity includes the combined weight of the passengers and cargo.
- Do not exceed 5 mph when towing.

NOTICE

Performance parameters (e.g., maximum speeds, acceleration, braking and back-up/proximity alarm) may be adjusted on some models using a diagnostic handset. Call Wesley International at 800-241-2869 to determine if a handset is available for your vehicle and what variables may be adjusted on your unit.

Maintenance

Maintenance Schedule

Safe, trouble-free operation of your electric utility vehicle depends on regular and proper preventive maintenance. The following chart is a guide for servicing all Pack Mule and Power Mule vehicles.

WARNING

Always disconnect the battery ground cable before servicing your vehicle. Failure to do so may result in serious injury or vehicle damage.

Service	Daily	Weekly	Monthly	3-6 Months	Annually
Check all gauges.	X				
Check horn.	X				
Check BDI for battery charge.	X				
Plug in battery charger when the vehicle is not in service. Leave it on charge overnight, if possible. ¹	X				
Check all battery cells for water levels.		X			
Check the pneumatic tire pressure with tires cold. ²		X			
Check brake linkage.			X		
Check brake linings and other components for wear and deterioration.			X		
Oil all moving parts that do not have fittings with an oiler or brush (SAE 30).			X		
Tighten any loose battery terminals and coat terminals with petroleum jelly.			X		
Tighten nuts and bolts.			X		
Check the electrolyte levels of all battery cells using a hydrometer. ³				X	

NOTES:

1. In freezing temperatures, recharge the batteries after adding distilled water to make sure the water mixes with the electrolyte properly. Otherwise, the water may freeze and damage the batteries.
2. The recommended tire pressure is 60 psi for all tires except the foam-filled and solid tires. Over or under inflation can reduce tire life and adversely affect vehicle handling. It may also lead to sudden tire failure, which can result in the driver losing control of the vehicle.
3. A hydrometer is used to determine if a battery is properly charged. It measures the specific gravity of the electrolyte (liquid) in the battery. The electrolyte is about 1260 in specific gravity when the battery is fully charged and about 1100 in specific gravity when the battery is fully discharged.

Maintenance (cont'd)

Maintenance Schedule (continued)

Service	Daily	Weekly	Monthly	3-6 Months	Annually
Grease fork pivot fittings and gears with automotive grease using a grease gun.				X	
Inspect steering operations, gear housing and linkage.				X	
Wash batteries with baking soda and water. (Be sure charger is not plugged in). Dry batteries thoroughly before returning to service.				X	
Change oil level in transaxle.					X
Clean, inspect, repack and reseal front axle and steering fork bearings.					X
Lubricate steering chain and sprockets.					X
Check steering drive chain (link from steering wheel to steer gear) for wear.					X
NOTE: This does not apply to PC 300, PC 325, and PCT 3500 units.					

WARNING

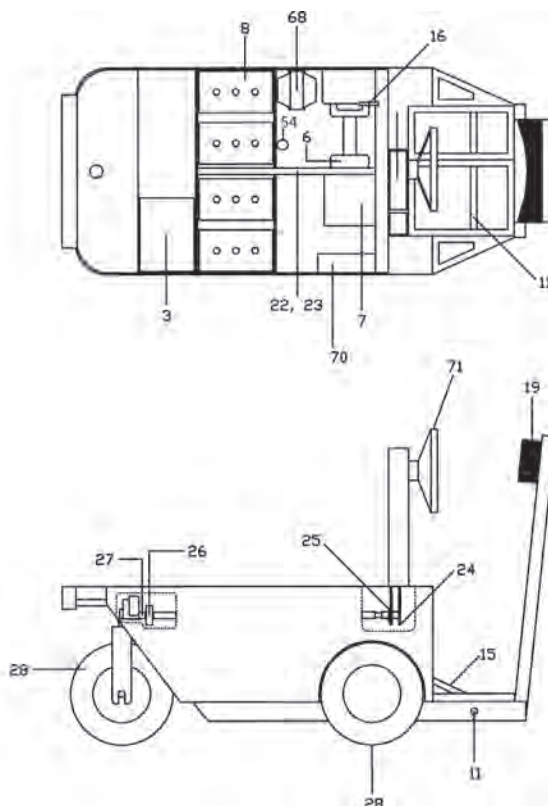
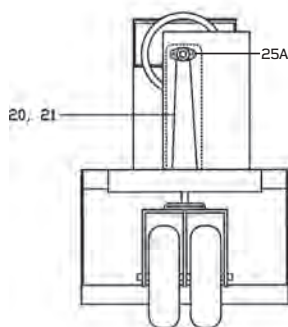
Do not expose the batteries to flames or electrical sparks. Hydrogen gas is generated during the battery charging operation. Hydrogen gas is explosive. Do not allow battery acid to come in contact with skin, eyes, clothing or painted surfaces. If it gets into eyes or on skin, immediately flush with water for 15 minutes and seek medical attention right away.

Basic Mechanical Components

The following diagram shows the **basic mechanical components** in all Pack Mule and Power Mule vehicles. Although this is a drawing of the Stock Chaser SC 775, it generally applies to all vehicles.

#	Description	Part #	Qty
3	Caution Sticker	EV-A003	2
6	Transaxle 29" (4 lug)	EV-D007	1
6	Transaxle 32" (4 lug)	EV-D031	1
6	Transaxle 32" Tugger (5 lug)	EV-D041	1
6	Transaxle 36" (4 lug)	EV-D036	1
6	Transaxle 36" Tugger (5 lug)	EV-D037	1
7	Motor, Separated Excited	EV-D040	1
7	Motor, Brush Assembly (Separated Excited Motor)	EV-E193	1
8	Battery, 6 volt, 220 amp	Not for resale	4 - 24 volt 6 - 36 volt 8 - 48 volt
8	Battery, 6 volt, 245 amp	Not for resale	4, 6, 8
8	Battery, 8 volt	Not for resale	6
11	Treadle Rod	EV-F022	1
15	Accelerator Pedal (Standing Vehicles)	EV-F034	1
15	Accelerator Pedal (Sit-down Vehicles)	EV-528	1
16	Electronic Throttle Control Assembly	EV-E278	1
19	Backrest Pad (Seated Vehicles)	EV-F037	1
20	Drive Chain #40	EV-S001	1
21	Master Link	EV-S002	1
22	Steer Rod (Stock Chaser)	EV-S008	1
23	Insulator, Steering	EV-S009	1
24	Lower Steering Sprocket	EV-S029	1
25	Flange Bearing	EV-S033	2
25A	Insert Bearing	EV-S011	1

#	Description	Part #	Qty
26	Pillow Block	EV-S021	1
27	Pinion Gear	EV-S022	1
28	Pneumatic Tire/Rim Assembly (4 lug)	EV-W002	4
28	Pneumatic Tire/Rim Assembly (5 lug)	EV-W037	4
28	Lug Nut	EV-W023	4 or 5 per wheel
54	Solenoid, 4 Terminal	EV-E014 HD	1
66	Charger Cord	EV-E026	1
68	Battery Charger, 24 volt, 25 amp	EV-E028	1
68	Battery Charger, 36 volt, 25 amp	EV-E075	1
68	Battery Charger, 48 volt, 25 amp	EV-E099	1
70	Controller	EV-E177	1
71	Steering Wheel	EV-S037	1



Electrical Components

The following table lists all of the parts in the electrical system.

Part	Part Number	QTY
Motor	EV-D040	1
Resilient Bumper (Inside Motor Spine)	EV-D030	1
Key Switch, 3-Position	EV-E100	1
Horn (24, 36 and 48 volt vehicles)	EV-E130	1
Battery Discharge Indicator (24 and 36 volt vehicles)	EV-E093	1
Battery Discharge Indicator (48 volt vehicles)	EV-E126	1
Solenoid, 4-Terminal (24, 36 and 48 volt vehicles)	EV-E014 HD	1
10 Amp Fuse	EV-E015	1
Fuse Holder	EV-E016	1
Charger Receptacle	EV-E027	1
Charger Cord	EV-E026	1
Battery Charger, 24 volt	EV-E028	1
Battery Charger, 36 volt	EV-E075	1
Battery Charger, 48 volt	EV-E099	1
DC Motor Controller, 350 amp	EV-E177	1
External Resistor for Controller	EV-E125	1
Electronic Throttle Control - Stand-up Units (24, 36 and 48 volt vehicles)	EV-E278	1
Electronic Throttle Control - Seated Units (24, 36 and 48 volt vehicles)	EV-E528	1
Direction Switch - Toggle (all models except PC 300, PC 325, PCT 3500)	EV-E035	1
Direction Switch - Rocker (for PC 300, PC 325, PCT 3500)	EV-E156	1
Horn Button (all models except PC 300, PC 325, PCT 3500)	EV-E041	1
Horn Button - Foot Operated (for PC 300, PC 325, PCT 3500)	EV-E120	1
Key Replacement (set of 2)	EV-E160	1
Seat Safety Switch - Seated Unites	EV-E127	1
Brake Light Switch	EV-E119	1

Transaxle Maintenance and Repair

Introduction

Important considerations in assembling and disassembling the transaxle for the Pack Mules and Power Mules include cleanliness, replacement of bearings and seals, careful removal of snap rings, and the application of adequate torque on bolts, bearings and screws. For these procedures, the proper tools are required. Some of the service operations require special tools, e.g., oil seal, bearing and slide hammer pullers.

Wesley International recommends that original Wesley service parts be used if parts need to be replaced. Call 800-241-2869 to order replacement parts.

All maintenance personnel should be aware that the transaxle is a precision assembly, and as such, repair and replacement of parts must be done with great care in a clean environment. The following are general recommendations that relate to working on the transaxle:

WARNING

Safety glasses should be worn at all times when assembling and disassembling the transaxle.

- Handle all gears with extreme care.
- Degrease the transaxle assembly before disassembling.
- Clean parts in a small wash tank prior to assembly.
- Replace bearings, seals, and O-rings if removed, regardless of hours of use.
- Replace nuts used on the ring gear and brake installation during service regardless of the hours of use.
- Remove bearings and seals with special pullers.
- When removing the cover plate, position the transaxle over a drain pan.
- Bearing caps are marked for identification. Letter or numbers are stamped in horizontal or vertical positions. During reassembly, use caution to not damage sealing surfaces such as the housing sealing surfaces. Snap rings must be removed or installed with care to prevent damage to bearings, seals and bearing boxes.
- Use soft, clean, lintless towels to dry components after cleaning.
- Do not air dry bearings with compressed air.
- Apply anti-seize compound to the axle shaft spline to prevent wear and corrosion.
- Use SAE 90 wt. (ISO 220) gear oil. (The vehicle uses 12 oz. of oil when empty.)

Transaxle Maintenance and Repair (cont'd)

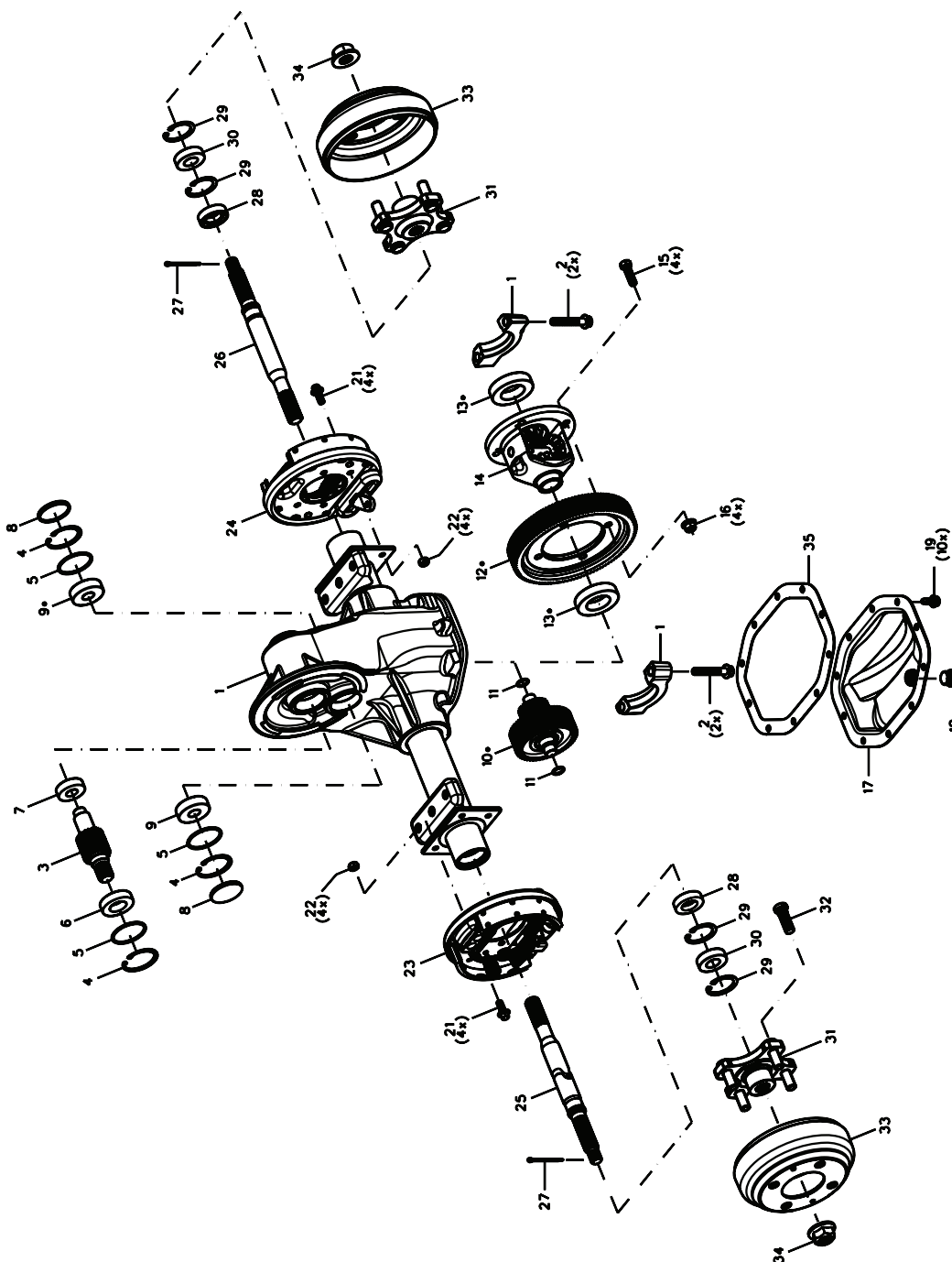
Torque Information

Apply the following torque to the components listed below:

Differential Bearing Caps	35–45 Ft. Lbs.
Ring Gear Bolts.....	35–45 Ft. Lbs.
Cover Plate Screws.....	18–25 Ft. Lbs.
Brake Hardware	23–35 Ft. Lbs.
Spindle Nut	65–75 Ft. Lbs. (Then tighten to next slot.)

Transaxle Maintenance and Repair (cont'd)

Pack Mule Transaxle Assembly



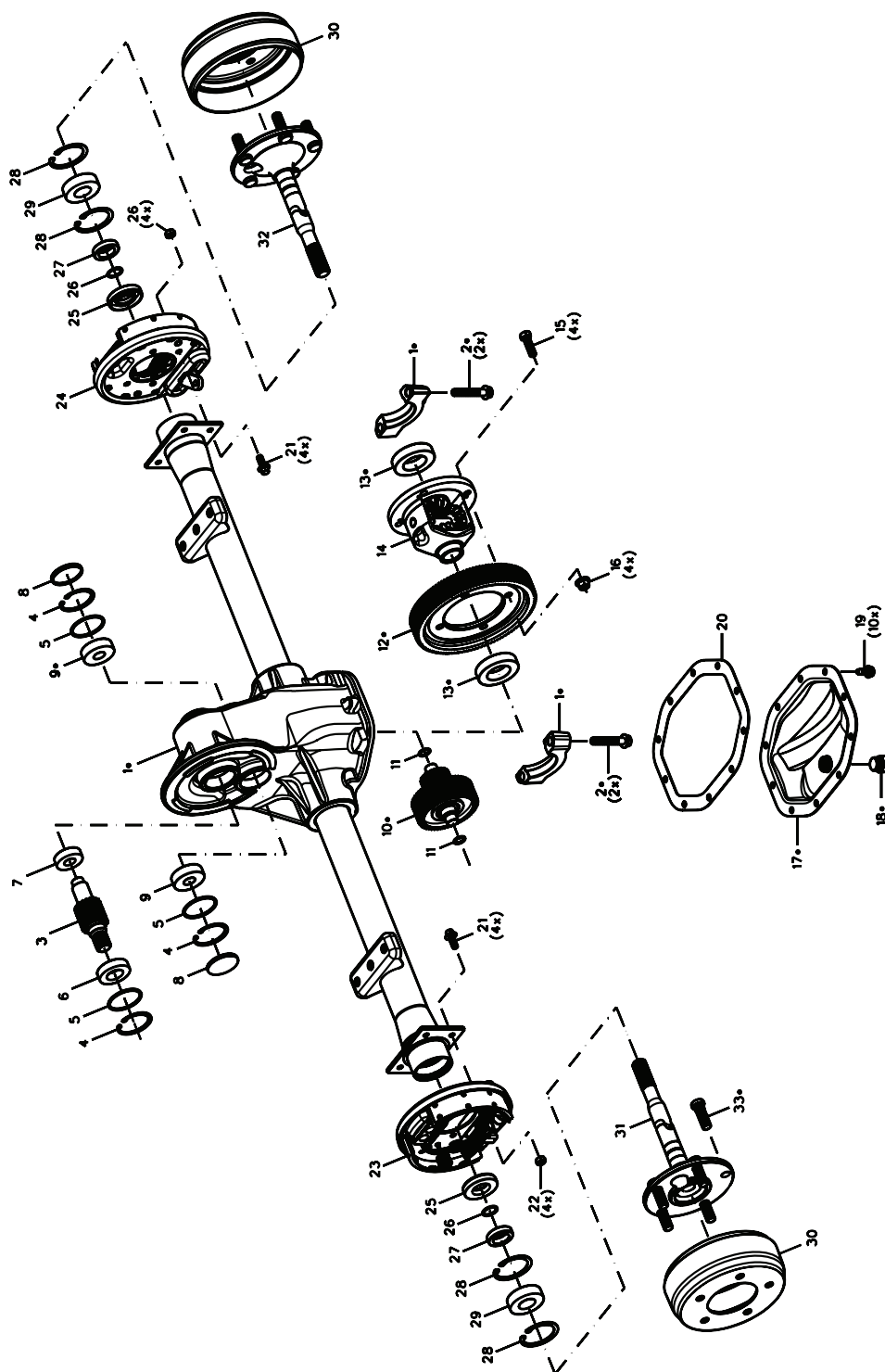
Transaxle Maintenance and Repair (cont'd)

Pack Mule Transaxle Parts List

#	Part	Part Number	QTY
3	Gear, Input	See Kit	1
4	Ring, Retaining	EV-T016	3
5	O-Ring	EV-T014	3
6	Bearing, Ball	EV-T015	1
7	Bearing, Ball	EV-T013	1
8	Plug, End Cap	EV-T017	2
9	Bearing, Ball	EV-T011	2
10	Gear, Intermediate Assembly	See Kit	1
11	O-Ring	EV-T010	2
12	Gear, Final Drive	See Kit	
13	Bearing, Ball	EV-T008	2
15	Screw, Cap	EV-T006	4
16	Nut, Lock	EV-T007	4
17	Plate, Cover	EV-T018	1
18	Plug, Fill	EV-T020	1
19	Screw, Cover Plate	EV-T021	10
23	Brake Assembly, Left Hand Shoe Type	EV-T054	1
23	Brake Assembly, Left Hand Shoe Type (Stock Chaser)	EV-T054-S	1
24	Brake Assembly, Right Hand Shoe Type	EV-T055	1
24	Brake Assembly, Right Hand Shoe Type (Stock Chaser)	EV-T055-S	1
25	Shaft, Axle 29" Left Hand (15 1/4" length)	EV-T023-29	1
25	Shaft, Axle 32" Left Hand (18 1/8" length)	EV-T023-32	1
25	Shaft, Axle 36" Left Hand (23 1/4" length)	EV-T023-36	1
26	Shaft, Axle Right Hand	EV-T025	1
28	Seal, Oil	EV-T030	2
29	Ring, Retaining	EV-T029	4
30	Bearing, Ball	EV-T028	2
31, 32, 33	Hub and Drum – 4-lug assembly with studs	EV-T058	2
34	Nut, Flange Hex	EV-T064	2
Kit	Kit, Gear Set (Includes #3, #10, #12)	EV-T065	1

Transaxle Maintenance and Repair (cont'd)

Power Mule Tugger Transaxle Assembly



Transaxle Maintenance and Repair (cont'd)

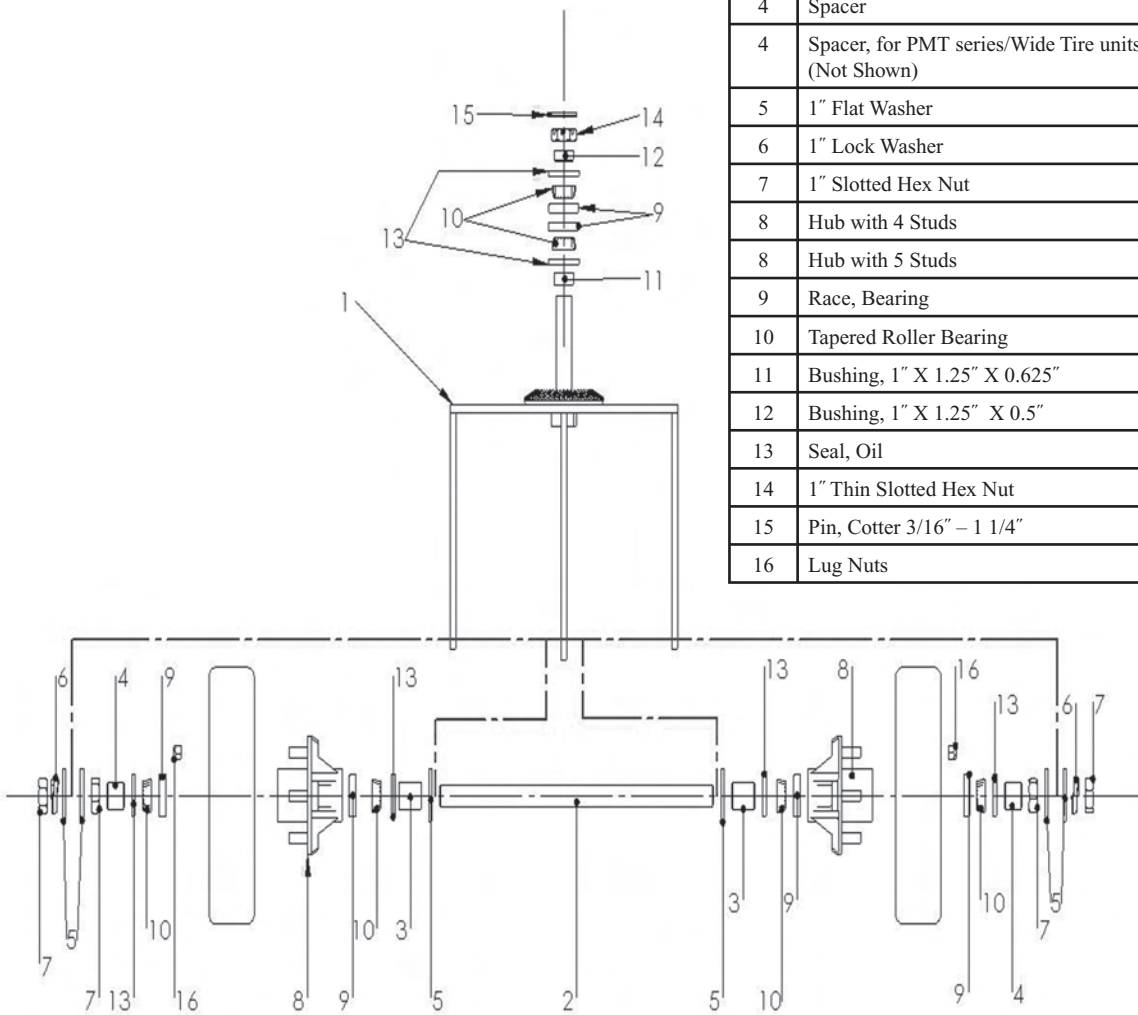
Power Mule Tugger Transaxle Parts List

#	Part	Part Number	QTY
3	Gear, Input	See Kit	1
4	Retaining, Ring	EV-T016	3
5	O-Ring	EV-T014	3
6	Bearing, Ball	EV-T015	1
7	Bearing, Ball	EV-T013	1
8	Plug, End Cap	EV-T017	2
9	Bearing, Ball	EV-T011	2
10	Gear, Intermediate Assembly	See Kit	1
11	O-Ring	EV-T010	2
12	Gear, Final Drive	See Kit	1
13	Bearing, Ball	EV-T008	2
15	Screw, Cap	EV-T006	4
16	Nut, Lock	EV-T007	4
17	Plate, Cover	EV-T018	1
18	Plug, Fill	EV-T020	1
19	Screw, Cover Plate	EV-T021	10
23	Brake Assembly, Left Hand Shoe Type	EV-T054	1
23	Brake Assembly, Left Hand Shoe Type (Stock Chaser)	EV-T054-S	1
24	Brake Assembly, Right Hand Shoe Type	EV-T055	1
24	Brake Assembly, Right Hand Shoe Type (Stock Chaser)	EV-T055-S	1
25	Seal, Oil	EV-T076	2
26	Ring, Retaining	EV-T077	2
27	Ring, Retaining, Wheel Bearing	EV-T078	2
28	Ring, Retaining	EV-T079	4
29	Bearing, Ball	EV-T080	2
30	Drum, Brake (5 lug)	EV-T075	2
31	Shaft, Left Hand Axle 32"	EV-T081-32	1
31	Shaft, Left Hand Axle 36"	EV-T081-36	1
32	Shaft, Right Hand Axle	EV-T082	1
Kit	Kit, Gear Set (Input, Intermediate Assembly, Final Drive)	EV-T083	1
37	Drum Assembly (5 lug)	EV-T075	1

Front Wheel Steering Assembly

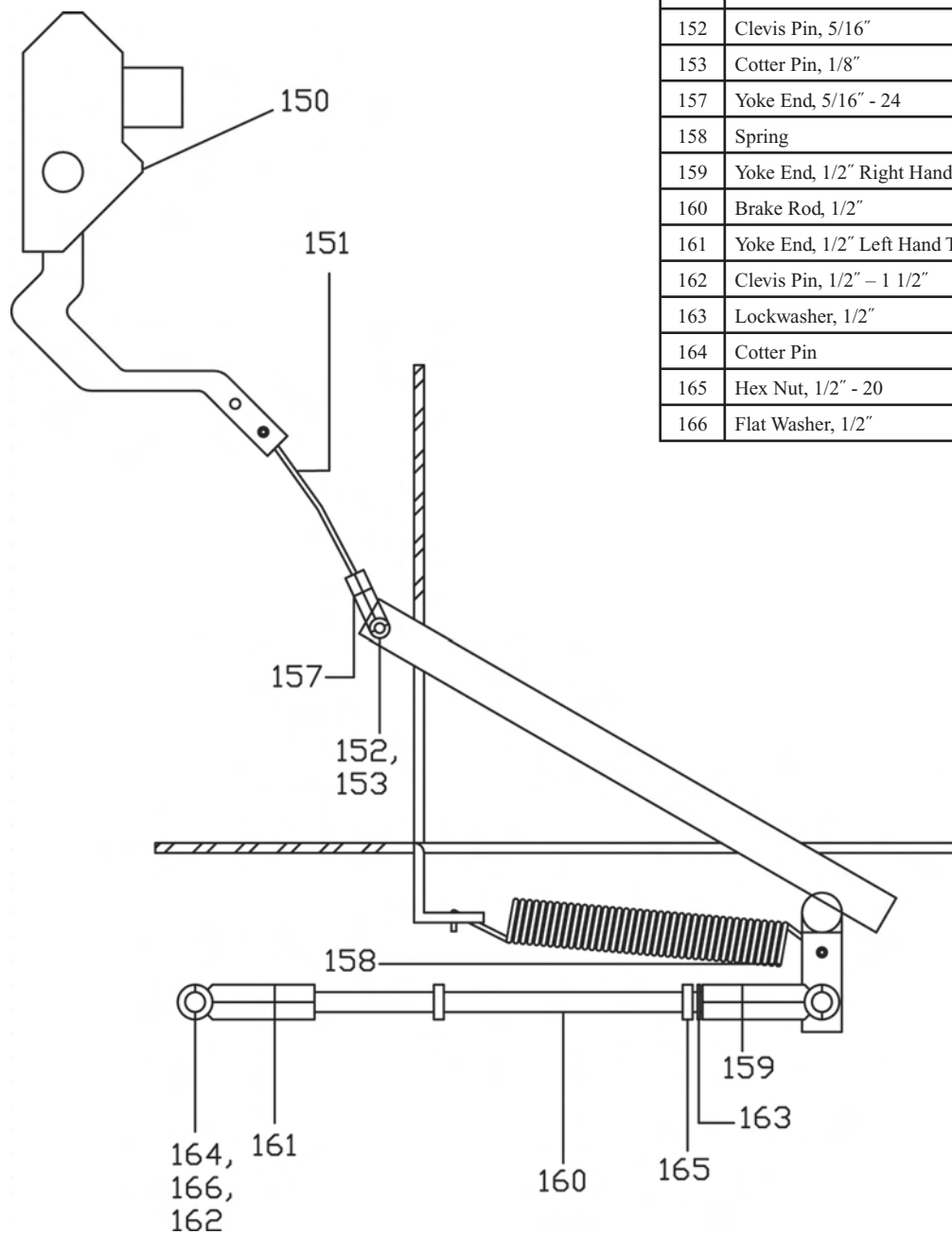
Front Wheel Assembly

#	Description	Part #	Qty
1	Dual Fork Assembly	EV-W016	1
1	Dual Fork Assembly, for PC series units (Not Shown)	EV-W016-PC	1
1	Dual Fork Assembly, for PMT series units (Not Shown)	EV-W016-PMT	1
2	Dual Front Wheel Axle, 1" X 18"	EV-W017	1
3	Sleeve	EV-W007	2
3	Sleeve, for PMT series/Wide Tire units (Not Shown)	EV-W007L	2
4	Spacer	EV-W014	2
4	Spacer, for PMT series/Wide Tire units (Not Shown)	EV-W011	2
5	1" Flat Washer	EV-W027	6
6	1" Lock Washer	EV-W026	2
7	1" Slotted Hex Nut	EV-W006	4
8	Hub with 4 Studs	EV-W001	2
8	Hub with 5 Studs	EV-W034	2
9	Race, Bearing	EV-W010	6
10	Tapered Roller Bearing	EV-W009	6
11	Bushing, 1" X 1.25" X 0.625"	EV-W011	1
12	Bushing, 1" X 1.25" X 0.5"	EV-W011-S	1
13	Seal, Oil	EV-W008	6
14	1" Thin Slotted Hex Nut	EV-W013	1
15	Pin, Cotter 3/16" – 1 1/4"	EV-W025	1
16	Lug Nuts	EV-W023	4 or 5



Accelerator Linkage Assembly

Accelerator Linkage (Standing Vehicles Only)



#	Description	Part #	Qty
150	ETC Throttle Assembly	EV-E278	1
151	Chain	EV-F216	1
152	Clevis Pin, 5/16"	EV-D004	1
153	Cotter Pin, 1/8"	EV-D016	1
157	Yoke End, 5/16" - 24	EV-D015	1
158	Spring	EV-D006	3
159	Yoke End, 1/2" Right Hand Tread	EV-D001	2
160	Brake Rod, 1/2"	EV-D005	2
161	Yoke End, 1/2" Left Hand Tread	EV-D003	2
162	Clevis Pin, 1/2" - 1 1/2"	EV-D010	4
163	Lockwasher, 1/2"	EV-D011	2
164	Cotter Pin	EV-D012	4
165	Hex Nut, 1/2" - 20	EV-D017	2
166	Flat Washer, 1/2"	EV-D018	4

Troubleshooting

Introduction

Be sure to follow all safety precautions when checking or repairing any part of the vehicle. Electrical adjustments control system adjustments should only be made by qualified personnel due to the use of special equipment and instruments. If you have questions about the sensitivity or difficulty of an adjustment, call Wesley International at 800-241-2869.

Troubleshooting Tips

Problem	Possible Causes	What to Do
Vehicle does not run	Motor	Send the motor to an authorized motor service center or replace the motor.
	Small 10 amp fuse blown	Trace the wires from the fuse and check for a short (any bare wire that touches the chassis or common ground wire).
	Faulty control circuit: <ul style="list-style-type: none">• Solenoid• Battery• Key Switch• Fuse	Replace the faulty component. Check all connections to ensure that all are clean and tight.
	Faulty batteries	Check electrolyte levels with a hydrometer, and replace batteries if necessary.
	Malfunction of motor controller	Check controller faults. Consult the manufacturer and replace if necessary.
Motor runs in the wrong direction	Reversed toggle switch wires	Check the forward and reverse toggle switch for proper connections.
Vehicle loses speed	Malfunction of solid state DC motor controller or accelerator	Consult the manufacturer and replace if necessary.

Troubleshooting (cont'd)

Troubleshooting Tips (continued)

Problem	Possible Causes	What to Do
Rough or insufficient braking	Worn brake shoes	Replace and adjust brake shoes.
Battery charger does not operate	Blown fuse or tripped circuit breaker	Inspect the circuit and replace the fuse or reset the circuit breaker.
	Faulty connections	Check all battery and charger connections.
	Batteries fully charged	Unplug the battery charger.
	Battery charger failure	Replace the battery charger.
Batteries do not fully recharge	Battery fluid level low	Check water level of batteries and fill with distilled water. (DO NOT OVER FILL.)
	Batteries worn out	After allowing enough time for the batteries to recharge, check specific gravity with a hydrometer. Replace batteries, if necessary.

Troubleshooting (cont'd)

Diagnosing Faults

The controller includes a number of features designed to help the user track down operational, wiring, or internal controller faults. The diagnostic LED mounted next to the calibrator connectors on the front of the controller serves as a simple diagnostic tool. Use the table below to identify faults. **Faults are cleared by re-initiating the start sequence.**

Diagnostic LED Flash Fault Descriptions

LED Display	Description
ON	No fault, normal conditions
OFF	Internal controller fault
1 Flash	Personality out of range
2 Flashes	Illegal start condition (Traction)
3 Flashes	MOSFET Short circuit
4 Flashes	Contactor fault or motor open circuit
5 Flashes	Motor stalled
6 Flashes	Accelerator wire off fault
7 Flashes	Low or high battery voltage or BDI cutout operating
8 Flashes	Over temperature or timed cutback
9 Flashes	Internal monitor function tripped / Maintenance required
10 Flashes	Power up autozero has not been completed

Calibrator Fault Identification Codes

In addition to the LED indication, a more detailed description of the fault may be found by using the calibrator. Menu item 13.01 gives a fault identification code which further defines the detected fault. The following table lists the fault ID codes.

ID Code	Fault Name	Flash Fault
0	NO_FAULT	LED_ON
1	UNIT_TOO_HOT	8
2	MONITOR_TRIPPED	11
3	I2T_CURRENT_LIMIT	8
4	MOTOR_TOO_HOT	12
5	MAINTENANCE_CLOSE_FAULT	9
6	ACCELERATOR_FAULT	6
7	ACCELERATOR_POWER_UP_FAULT	6

Troubleshooting (cont'd)

Calibrator Fault Identification Codes (cont'd)

ID Code	Fault Name	Flash Fault
7	BELLY_SWITCH_PRESSED	2
8	SEAT_FAULT	2
9	IDLE_FAULT	2
10	MAINTENANCE_FAULT	9
11	FS1_RECYCLE_FAULT	2
12	SRO_FAULT	2
13	TWO_DIRECTION_FAULT	2
14	SEQUENCE_FAULT	2
15	LOW_BATTERY_FAULT	7
16	HIGH_BATTERY_FAULT	7
17	HIGH_CAP_VOLTAGE_FAULT	7
18	MOTOR_STALL_DETECTED	5
19	HIGH_BATTERY_WITHOUT_LINE_FAULT	7
20	CONFIGURATION_RANGE_FAULT	1
21	CONFIGURATION_CRC_FAULT	1
22	LINE_CONTACTOR_WELDED	4
23	LINE_CONTACTOR_DID_NOT_CLOSE	4
24	NO_FAULT	LED_ON
25	MOTOR_OPEN_CIRCUIT	4
26	ARMATURE_MOSFET_SHORT_CIRCUIT	3
27	VA_DETECT_FAIL	LED_OFF
28	ARMATURE_MOSFETS_OFF	LED_OFF
29	ARMATURE_MOSFETS_ON	LED_OFF
30	ARMATURE_P_UP_MOSFET_SHORT_CIRCUIT	3
31	DRIVE_2_OFF	LED_OFF
32	DRIVE_2_ON	LED_OFF
33	DRIVE_1_OFF	LED_OFF
34	DRIVE_1_ON	LED_OFF
35	DRIVE_3_ON	LED_OFF
36	DRIVE_3_OFF	LED_OFF
37	AUTOZERO_NOT_VALID	10

Warranty

Warranty Policy

PRODUCT REGISTRATION IS REQUIRED FOR WARRANTY COVERAGE.

To register your product, complete and return the enclosed warranty card to Wesley International. Wesley International warrants to the original purchaser that their Pack Mule and Power Mule electric utility vehicles are free from defective factory material and workmanship. All warranties begin on the date of delivery to the first user. **All warranty service must be approved by Wesley International prior to initiating repairs.**

Components, which fail under normal usage within the following specified time periods and are proven to be defective will be replaced by Wesley International without charge for parts unless stated otherwise herein. Faulty components must be returned to Wesley International for inspection and warranty consideration.

Warranty Time Periods

- Battery Charger: 2 years or 4,000 hours (whichever occurs first)
- Electronic throttle control: 2 years or 4,000 hours (whichever occurs first)
- Drive Motor: 1 year or 2,000 hours (whichever occurs first)
- DC Motor Controller: 1 year or 2,000 hours (whichever occurs first)
- Transaxle: 1 year or 2,000 hours (whichever occurs first)
- All other components except tires and batteries: 6 months or 1,000 hours (whichever occurs first)
- Batteries: Manufacturer's limited warranty applies. Contact the local Exide battery distributor in your area.
- Tires are warranted against defects and workmanship by their manufacturer.

Warranty is void if:

- The equipment is modified or repaired in any manner not approved by Wesley International.
- The vehicle is overloaded beyond its rated capacity.

The following are not covered under warranty:

- Warranty service not authorized by Wesley International
- Repairs to faulty components (Faulty components must be replaced and returned to Wesley International for inspection.)
- Adjustments, including initial field set-up (Adjustments are considered part of normal maintenance procedures.)
- Purchaser's labor costs or other charges for correcting defects or making additions
- Repairs or service calls required as a result of:
 - Failure to follow maintenance, lubrication, or operational procedures specified in the owner's manual
 - Abuse, willful damage, accident or neglect
 - Shipping damage (Such claims must be made with the freight carrier.)
 - Damage caused by using components or accessories not supplied or approved by Wesley International

Warranty (cont'd)

NOTICE OF LIABILITY

All other warranties or conditions, expressed or implied, including merchantability, fitness for a particular purpose or otherwise, are limited in duration to the expressed warranty period and disclaimed in their entirety thereafter.

Wesley International's obligation under this warranty is strictly and exclusively limited to the replacement of defective parts. Wesley International does not assume or authorize anyone to assume any other obligation.

Wesley International assumes no responsibility for incidental, consequential or other damages.

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