TAYLOR-DUNN®

Commercial and Industrial Vehicles Since 1949

Operator's Manual

BIGFOOT®

BIGFOOT® XL

Serial Number Range:
Starting: 204000
Ending: See Introduction Chapter

Use with Model Numbers:
B5-440-36
B5-440-48
B5-540-48XL
BF-030-48

⚠WARNING

READ AND UNDERSTAND THIS MANUAL BEFORE OPERATION OR PERFORMING MAINTENANCE.

This manual contains important information regarding the safe operation and maintenance of this vehicle. This manual must be kept with the vehicle.

My Vehicle information

Serial Number: _____

Date Purchased: _____

Date Delivered: _____

Dealer Purchased From: _____

Salesperson Name: _____

Your satisfaction is our #1 goal. If you have questions or concerns with your vehicle, please contact your Sales Representative or Service Advisor at your local dealership.

Taylor-Dunn has a worldwide dealer and distribution network to provide replacement parts and service for our vehicles.

Refer to our web site, www.taylor-dunn.com, for a dealer lookup application.

Originally Published 12/28/2016
Revision H, 8/13/2018, Contents subject to change without notice
Taylor-Dunn® Mfg.
2114 W. Ball Rd.
Anaheim, CA 92804
(800)-688-8680
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(FAX) (714) 956-0504

Visit our Web site: www.taylor-dunn.com

CONTACT INFORMATION

Service, Parts, Sales:

Taylor-Dunn has a network of dealers distributed around the globe to support our vehicles. Information regarding vehicle sales, replacement parts, or service should be obtained through your local dealer.

A dealer locator can be found on the Taylor-Dunn website at www.taylor-dunn.com.

If you do not have access to the Internet, you can call the factory direct at:

01 (714) 956-4040

Feedback regarding this or any Taylor-Dunn manual can be sent to:

Taylor-Dunn Manufacturing
Attn: Tech Writer
2114 West Ball Road
Anaheim, CA 92804

The Taylor-Dunn Corporation:

Leading Provider of Commercial & Industrial Vehicles since 1949

Taylor-Dunn Manufacturing:

From the day we shipped our first vehicle in 1949, we have pursued a singular goal: to build tough, rugged, dependable vehicles to help our customers move personnel, equipment, and materials. It's that simple. For over sixty years, our standard and custom vehicles - Burden Carriers, Personnel Carriers, Stock Chasers, Electric Carts, Tow Tractors and more - have been the leading solution for customers in a broad range of industrial, commercial, and ground-support markets.

Decades of experience are an invaluable asset, and it is an asset we cherish and protect. Our guiding principle is to provide application-specific solutions, which are reliable, efficient, and economical.

Our domestic and international network of quality Taylor-Dunn Dealers and Parts & Service Support keeps our customers moving.

Tiger Tractor:

Tiger manufacturing has become a leading manufacturer of internal combustion engine industrial tractors and ground support equipment. With tractor capacities ranging from 3,000 - 12,000 pounds drawbar pull, they are ideal for industrial applications as well as aircraft ground support. As with all Taylor-Dunn vehicles; quality, service, support and reliability are built into all Tiger Tractor products.

Shown below is just a small sample of what Taylor-Dunn has to offer to keep your business moving:









Table of Contents

Introduction

Who Should Read This Manual

This manual is intended for use by anyone operating or performing routine maintenance on this vehicle. Each person should be familiar with the parts of this manual that apply to their use of this vehicle.

About This Manual

This manual is valid only for the serial numbers listed on the front cover. If the ending serial number is blank, then this manual was for current production vehicles when printed. If you did not receive this manual with the vehicle, you should confirm this manual is valid for your serial number at the Taylor-Dunn web site. A place to record your vehicle information is provided on the inside front cover

This manual is subject to change without notice. Updates are available through your dealer or the Taylor-Dunn web site at www.taylor-dunn.com.

Taylor-Dunn is not to be held liable for errors in this manual or any consequential damage that results from the use of this manual.

The purchase of this vehicle shows a belief in high quality products manufactured in the USA.

Taylor-Dunn, a leading manufacturer of electric burden and personnel carriers since 1949, wants to be sure this vehicle provides years of reliable service. Please continue to read this manual and enjoy this high quality Taylor-Dunn vehicle.

This manual is to serve as a guide for the operation and maintenance of your Taylor-Dunn vehicle. Taylor-Dunn has made every effort to include as much information as possible about the operation and maintenance of this vehicle.

This manual contains information about the standard equipment and options available for this model. This vehicle may not be equipped with all available options. If you do not know which information applies to your vehicle, then you should contact your dealer.

Included in this manual are:

- Vehicle Description
- Safety Rules and Guidelines
- Operational Information
- Operator Responsibilities
- Owner Responsibilities
- Control Operation and Location Information
- Maintenance Information

Before operating or performing maintenance on this or any other Taylor-Dunn vehicle, read the appropriate Taylor-Dunn manual.

Please, be aware of all cautions, warnings, instructions, and notes contained in this manual.

⚠WARNING

The only personnel authorized to repair, modify, or adjust any part of this or any Taylor-Dunn vehicle is a factory authorized service technician. Repairs made by unauthorized personnel may result in damage to the vehicle's systems which could lead to an unsafe condition resulting in severe bodily injury and/or property damage. Unauthorized repairs may also void the vehicle's warranty.

GLOSSARY OF TERMS

There are a number of words and phrases used in this document that may have a different, special, or specific definition when use in the context of this document.

Approved Operator Position Sit down vehicle	The operator shall be seated in the operator seat with back up against the operator seat back cushion. Additional back support may be added as needed. The back support shall be fastened to the operator seat back cushion to prevent it from falling off the vehicle or onto the seat cushion. The operator's left foot shall be on the floorboard. The right foot should be positioned for easy access to the brake or throttle pedals. Both hands should be on the steering wheel while the vehicle is in motion.
Approved Operator Position Stand up vehicle	The operator shall be standing on the operator platform with weight about equally distributed between left and right feet. The left foot shall be placed on the left side of the operator platform to properly engage the operator presence switch. Both hands shall be on the steering wheel while the vehicle is in motion.
BDI	Battery Discharge Indicator. Same as BSI:
BSI	Battery Status Indicator. The gauge on the dash showing the battery charge level. Also can be referred to as BDI.
Caution (signal word)	Refer to Signal Words and Their Definitions.
Danger (signal word)	Refer to Signal Words and Their Definitions.
Direction Control Switch	A switch typically located on the dash that is used to select the direction of travel.
DBP	Draw Bar Pull (see below).
Draw bar pull	The force seen by the trailer hitch at the rear of the vehicle.
Electrolyte	The fluid inside of a battery.
Fault	A "fault" is something that happens when the motor speed control system detects a problem with the vehicle. Some faults will prevent operation of the vehicle.
FLA battery	Flooded Lead Acid Battery. A battery that requires regular maintenance of electrolyte level.
FS-1	Switch inside of the throttle module that starts the vehicle moving.
High/Low	High speed, Low speed.
LOBB	Lift Out Battery Box, a type of removable battery.
Moderate injury	An injury treatable by first aid and/or follow up treatment by a doctor or other professional medical personnel.
Notice (signal word)	Refer to Signal Words and Their Definitions.
OPS	"Operator Protective Structure": Steel cab or cage around the occupants.
Regen	Short term for Regenerative Braking. "Regen" is the braking action provided by the motor. Similar to downshifting in an automobile. Energy created during regen is returned to the battery.
ROBB	Roll Out Battery Box a type of removable battery.
Seating position:	When used in the context of occupant seating positions, "seat" is defined as a single seat cushion or a span of 20 inches on a bench seat.

Sequence Fault	A type of fault that disables the vehicle. Occurs when the switches require to operate the vehicle are not operated in the correct order.
Service Brake	The primary braking system used to stop the vehicle.
Severe bodily injury	An injury that requires immediate treatment by a doctor or other professional medical personnel. Not first aid.
Signal word	A word used to define hazards to operator, passengers, service technician, or personnel in the immediate vicinity of the vehicle.
SLA battery	Sealed Lead Acid Battery. A battery that does not require maintenance of electrolyte level.
Small children	Children that must be transported in a child seat as defined by federal or state motor vehicle standards.
SRO	Static Return to Off. A fault action that disables the vehicle.
Start Switch	A switch typically located on the dash that enables the vehicle for operation. This switch may, or may not require a key to operate.
Warning (signal word):	Refer to Signal Words and Their Definitions.

CONVENTIONS

Symbols and/or words used to define Dangers, Warnings, Cautions, and Notices are found throughout this manual. The "Words" in this context will be referred to as "signal words." The words defined here as "signal words" may be used elsewhere in the text of this document without being a signal word. When used as a signal word, the signal word will be enclosed in a solid rectangle with white background (example below).

Signal Words and Their Definitions:

DANGER: This signal word will be accompanied by the safety alert symbol (see below). "DANGER" will indicate a hazard that, if not avoided, WILL result in death or serious bodily injury to yourself, the operator or passengers of the vehicle, or people in the immediate area of the vehicle.

WARNING: This signal word will be accompanied by the safety alert symbol (see below). "WARNING" will indicate a hazard that, if not avoided, may result in death or serious bodily injury to yourself, the operator or passengers of the vehicle, or people in the immediate area of the vehicle.

CAUTION: This signal word will be accompanied by the safety alert symbol (see below). "CAUTION" will indicate a hazard that, if not avoided, may result in minor or moderate injury to yourself, the operator or passengers of the vehicle, or people in the immediate area of the vehicle.

NOTICE: This signal word will not be accompanied by the safety alert symbol. "NOTICE" will indicate a condition that if not avoided may result in property damage. "Property" is defined as the vehicle, components in the vehicle and/or the surrounding area such as buildings, other vehicles, etc.

Safety Alert Message

Important information notifying you of any conditions that may result in hazards to yourself, persons nearby, and/or hazards to the vehicle will be presented in a text box with a black border and may include a signal word (see above). To the right is an example of a safety message.

⚠WARNING

This is an example of a safety alert message. This message will contain information about a hazard and/or instructions on avoiding a hazard. The actual size, location, and signal word used for the message box may vary.

The safety message may include additional warning icons representing the type of hazard. Below is a list of these icons and what they represent. These icons may also be included on the various warning and information decals applied to the vehicle.


Safety alert symbol (see above).


High voltage hazard.


Explosion hazard.


Corrosive chemical hazard.


Fire hazard.


Poisonous chemical hazard.

Decals applied to the vehicle may have other icons representing their function. The icons and their definitions are listed below:


Read the operator's manual.


Read the maintenance manual.


Keep arms and legs inside the vehicle.


Park brake engaged.


Park brake released.


Do not get wet.


Do not spray wash.

RESPONSIBILITIES

Of the Owner...

The owner of this or any Taylor-Dunn vehicle is responsible for the overall maintenance and repairs of the vehicle, as well as the training of operators.

The owner is responsible for operator training. Refer to Driver Training section for details.

The owner shall provide a copy of this manual if rented or loaned to another party and instruct the other party to read and understand the contents of this manual.

The owner shall provide a copy of this manual when and if the vehicle is transferred to another party.

Of the Operator...

All operators should complete an operator training course provided by the owner of the vehicle.

The operator is responsible for the proper use of the vehicle on authorized roads, highways, and approved installations only.

The operator is responsible to confirm that all passengers are properly seated and properly using the available restraints.

The operator is responsible for the safe operation of the vehicle, preoperational and operational checks on the vehicle, and the reporting of any problems to service and repair personnel.

Of the Passengers...

The passengers are responsible to remain fully seated, keeping their hands, arms, and legs inside the vehicle at all times. Each passenger should be fully aware of the vehicle's operation. All forms of recklessness must never occur.

Of the Service Personnel...

The service personnel are responsible for the service and maintenance of the vehicle. At no time should a service person allow any untrained personnel to service or repair this or any Taylor-Dunn vehicle. For the purposes of training, a qualified service person may oversee the repairs or services being made to a vehicle by an individual in training. At no time should an untrained individual be allowed to service or repair a vehicle without supervision. This manual is not a training guide.

⚠WARNING

The only personnel authorized to repair, modify, or adjust any part of this or any Taylor-Dunn vehicle is a factory authorized service technician. Repairs made by unauthorized personnel may result in damage to the vehicle's systems which could lead to an unsafe condition resulting in severe bodily injury and/or property damage. Unauthorized repairs may also void the vehicle's warranty.

Personnel performing service and repair should have knowledge of:

- Basic standard automotive repair procedures
- Basic DC and AC electrical theory
- AC motor speed control operation
- Use of digital and analog multi-meters
- Lead acid batteries

Personnel performing maintenance should have a basic knowledge of standard automotive maintenance procedures and lead acid batteries.

VEHICLE MODIFICATIONS

Taylor-Dunn vehicles are designed and manufactured in accordance with ANSI/ITSDF and OSHA regulations. Per ANSI/ITSDF and OHSA, modifications to the vehicle must be approved by the manufacturer. Listed below are the specific regulations:

ANSI/ITSDF 56.8-2006 Personnel and Burden Carriers:

Paragraph 8.2q:

Modifications and additions which affect capacity and safe machine operation shall not be performed by the customer or user without the manufacturer's prior written authorization; where authorized modifications have been made, the user shall ensure that capacity, operation, warning, and maintenance instructions plates, tags, or decals are changed accordingly.

Paragraph 8.2r:

Care shall be taken to ensure that all replacement parts are interchangeable with the original parts and of a quality at least equal to that provided in the original equipment.

ANSI/ITSDF 56.9 – 2007 Safety Standard for Operator Controlled Industrial Tow Tractors:

Paragraph 6.2.14:

Modifications and additions which affect capacity and safe tow tractor operation shall not be performed without the manufacturer's prior written approval. Capacity, operation, and maintenance instructions plates, tags, or decals are changed accordingly.

Code of Federal Regulations (CFR) Title 29, Subtitle B, Chapter Xvii OSHA, Part 1910.178 Powered Industrial Trucks (2011)

1910.178(a)(4)

Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without the manufacturer's prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

1910.178(q)(6)

Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts, except as provided in paragraph (q)(12) of this section. Additional counterweighting of fork trucks shall not be done unless approved by the truck manufacturer.

Motor Speed Control Programming:

Taylor-Dunn programmable motor speed controls are programmed at the factory for optimum safe, efficient, and smooth operation of the vehicle. The program settings are based on many factors including but not limited to: Vehicle Model, Maximum Safe Speed, System Voltage, Drive Axle Configuration, Vehicle Configuration, etc.

Some of the parameters can be changed in the field using PC software or handsets.

Contact the factory for information regarding available alternate program settings.

⚠WARNING

Improper programming may cause unexpected operation of the vehicle and/or damage the electrical components. This could result in severe bodily injury and/or property damage.

Taylor-Dunn will only authorize the use of settings obtained from the factory for a specific vehicle. Any other alterations to the programming ARE NOT AUTHORIZED and are at your own risk.

DO NOT interchange program settings from different vehicle models or models with different configurations.

REPLACEMENT PARTS

⚠WARNING

To maintain peak performance, always use original Taylor-Dunn replacement parts intended for use on your vehicle. Taylor-Dunn components are designed and tested for use on specific Taylor-Dunn model vehicles. Only use the correct Taylor-Dunn replacement components for your Taylor-Dunn vehicle.

Do not modify your vehicle:

Modifications to this vehicle may have an undesirable effect on the operation of the vehicle, result in additional frame stress, or stress other components resulting in premature failure or an unsafe condition and may lead to an accident resulting in serious injury or death.

Using Non-OEM Replacement Components:

To maintain peak performance, always use original Taylor-Dunn replacement parts intended for use on your vehicle.

Taylor-Dunn components are designed and tested for use on specific Taylor-Dunn model vehicles. Only use the correct Taylor-Dunn replacement components for your Taylor-Dunn vehicle.

Electrical Components:

Electrical components not tested by Taylor-Dunn (or intended for use on other Taylor-Dunn vehicles) may have unanticipated interaction and/or interference with the vehicle's control system resulting in unsafe operation or damage to the electrical system.

Mechanical Components:

Mechanical components not tested by Taylor-Dunn (or from other model Taylor-Dunn vehicles) may have an undesirable affect on the operation of the vehicle, result in additional frame stress, or stress other components resulting in premature failure or an unsafe condition.

Due to the unknown properties of non-Taylor-Dunn tested components or from components not originally equipped on the vehicle, we cannot approve their use in a Taylor-Dunn vehicle.

About Your Vehicle

The purchase of your Taylor-Dunn vehicle shows a belief in high quality products manufactured in the USA. Your new vehicle operates entirely on electric battery power. It is an emissions free vehicle.

Taylor-Dunn, a leading manufacturer of electric burden and personnel carriers since 1949, wants to be sure this vehicle provides years of reliable service. Please continue to read this manual and enjoy this high quality Taylor-Dunn vehicle.

Each base model is available in numerous configurations depending on what options were requested when the vehicle was ordered.

⚠WARNING

This vehicle does not provide protection from lightning, flying objects, or other storm related hazards. If caught in a storm, immediately seek shelter in accordance with local safety guidelines for your area. Not seeking shelter may result in severe personal injury.

Licensing Requirements

This vehicle **IS NOT** approved for licensed operation on public roads and highways. This model conforms to:

- American National Standards Institute Controlled Personnel and Burden Carriers ANSI B56.8.
- O.S.H.A. Standard Section 1910.178, Powered Industrial Trucks Type E

Vehicle compliance

This vehicle complies with one of the following designations: E, G, LP, or D. The vehicle identification tag lists the specific compliance designation. Operate this vehicle only in environments consistent with the compliance designation. Operation in other more hazardous environments can cause injury or death. Vehicles complying with more stringent designations are labeled as to the designation. Type EE compliance vehicles will have the EE[1] label applied.

Burden carriers

This vehicle is designed for operation in various applications including both indoor[2] and outdoor operation on paved, improved or groomed road surfaces. This vehicle should not be operated in off road areas such as a rocky environment, soft sand, or dirt roads with ruts or uneven road surfaces exceeding 4 inches.

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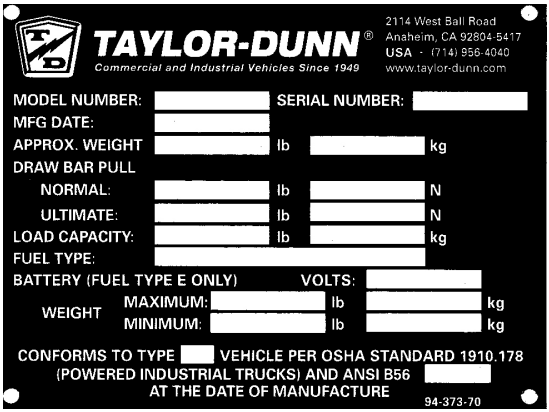
1 *Vehicles approved for EE operation will have a special "EE" decal applied.*

2 *Vehicles with internal combustion engines give off various fumes, gases, and soot while running, including carbon monoxide. Do not start or run the engine in a closed or poorly ventilated building where the exhaust gases can accumulate. Breathing these gases may result severe personal injury or death. LP fuel is recommended when operating indoors but does not negate the hazards listed above.*

HOW TO IDENTIFY YOUR VEHICLE

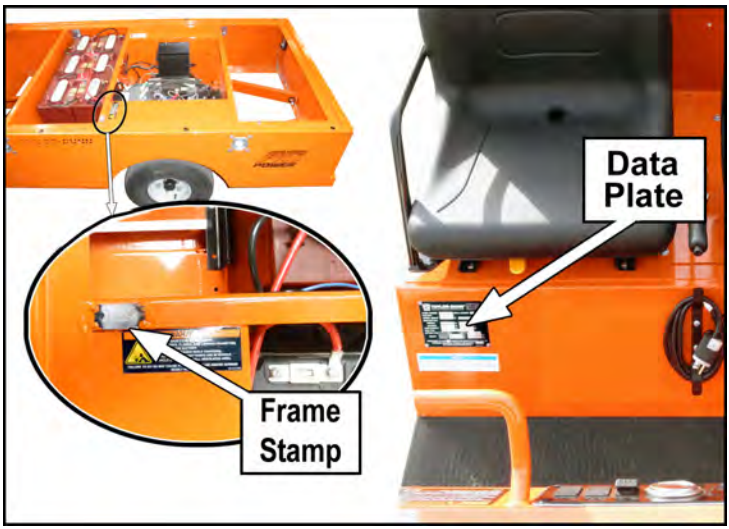
Data Plate

To identify the model series of your vehicle, refer to the vehicle data plate.



Where to Find Data Plate and Serial Number

The vehicle identification number can be found in the location(s) shown below:



Taking Delivery

Inspect the vehicle immediately after delivery. Use the following guidelines to help identify any obvious problems:

- Examine the contents of all packages and accessories that may have come in separate packages along with the vehicle.
- Make sure everything listed on the packing slip is there.
- Check that all wire connections, battery cables, and other electrical connections are secure.
- Check battery cells to be sure they are filled.
- Check the tire pressure and tightness of the lug nuts.
- Check for any signs of damage.

NOTICE

New front wheel bearing adjustment must be inspected after the first 24 hours of operation. This includes new vehicle installations. Failure to inspect the bearings after the break-in period may result in premature failure of the bearings.

Check the operation of each of the following controls:

- Accelerator Pedal
- Brake Pedal
- Park Brake
- Key Switch
- Directional Control Switch
- Reverse Warning Alarm
- All Lights
- Steering Wheel
- Horn
- High/low wiper
- Strobe (if fitted)

IF A PROBLEM IS FOUND

If there is a problem or damage as a result of shipping, note the damage or problem on the bill of lading and file a claim with the freight carrier. The claim must be filed within 48 hours of receiving the vehicle and its accessories. Also, notify your dealer of the claim.

If there is any problem with the operation of the vehicle, DO NOT OPERATE THE VEHICLE. Immediately contact your dealer and report the problem. The report must be made within 24 hours of receiving the vehicle and its accessories.

The only personnel authorized to repair, modify, or adjust any part of this or any Taylor-Dunn vehicle is a factory authorized service technician.

⚠WARNING

The only personnel authorized to repair, modify, or adjust any part of this or any Taylor-Dunn vehicle is a factory authorized service technician. Repairs made by unauthorized personnel may result in damage to the vehicle's systems which could lead to an unsafe condition resulting in severe bodily injury and/or property damage. Unauthorized repairs may also void the vehicle's warranty.

Driver Training

Per the following regulations, the owner of this vehicle shall conduct an Operator Training program for all those who will be operating this vehicle:

- ANSI/ITSDF 56.8-2006 Personnel and Burden Carriers: Part II, Paragraph 6.2a.
- ANSI/ITSDF 56.9 – 2007 Safety Standard for Operator Controlled Industrial Tow Tractors: Part II, paragraph 4.11.
- Code of Federal Regulations (CFR) Title 29, Subtitle B, Chapter Xvii OSHA, Part 1910.178 Powered Industrial Trucks (2011): 1910.178, Section (l).
- Per OSHA Regulation, 29 CFR 1910.178 Powered Industrial Truck Operator Training, the owner must keep a record of conducted training and maintenance performed on the vehicle.

The training program shall not be condensed for those claiming to have previous vehicle operation experience. Successful completion of the Operator Training program shall be required for all personnel who operate this vehicle.

The Operator Training program shall include the following:

- Operation of this vehicle under circumstances normally associated with your particular environment.
- Emphasis on the safety of cargo and personnel.
- All safety rules contained within this manual.
- Proper operation of all vehicle controls.
- A vehicle operation and driving test.

Driver Qualifications

Only those who have successfully completed the Operator Training program are authorized to drive this vehicle. Operators must possess the visual, auditory, physical, and mental ability to safely operate this vehicle as specified in the American National Standards Institute Controlled Personnel and Burden Carriers ANSI B56.8.

The following are minimum requirements necessary to qualify as an operator of this vehicle:

- Demonstrate a working knowledge of each control.
- Understand all safety rules and guidelines as presented in this manual.
- Know how to properly load and unload cargo.
- Know how to properly park this vehicle.
- Recognize an improperly maintained vehicle.
- Demonstrate the ability to handle this vehicle in all conditions.

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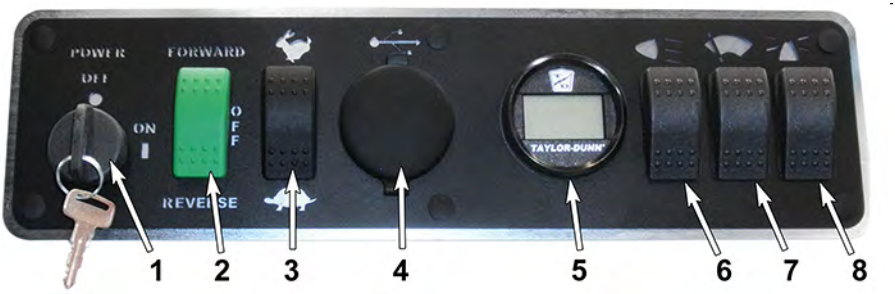
Vehicle Controls

INSTRUMENT PANEL



Start Switch

#1: The Start switch turns on the vehicle electrical control system. This switch may or may not require a key to operate. Rotate the switch clockwise to turn the vehicle system "ON" and counterclockwise to turn the vehicle system "OFF."

The switch should be in the "OFF" position whenever the operator leaves the driver's seat.

This switch is designed to secure and disable the vehicle. The key can only be removed when the switch is in the "OFF" position.

Note: All electrical devices including lights, horn, etc will not function unless the switch is ON.

Directional Control Switch

#2: Direction Control Switch

This switch determines the direction of travel. Your vehicle will have one of two types of switch depending on when it was manufactured.

The Rocker switch shown in the above dash illustration has three positions:

- **FORWARD**: Push the top of the switch all the way in to travel forward.
- **REVERSE**: Push the bottom of the switch all the way in to travel reverse.
- **OFF**: There is a center position between forward and reverse, this is the "direction" OFF position. The direction OFF position does **NOT** turn the vehicle control system OFF. Use the Start switch to turn the vehicle control system OFF. Refer to Start Switch in this section for details regarding turning the vehicle control system OFF.

Note: The OFF position IS NOT neutral and does NOT disconnect the motor from the drive train.

Hi-Low Speed Switch

#3: Push on the bottom of the High/Low switch (turtle) for slow vehicle speed. Push on the top of the switch (rabbit) for normal speed.

USB Port

#4: This port allows the vehicle operator to charge devices (for example, a smart phone or tablet). The dual-port design is capable of charging two devices at the same time. Note: The port is only active with the start switch is on.

Dash Display

#5: The Smart View Display (SVD) Indicator shown.

Depending on your vehicle's specifications, one of two available Dash Displays will be installed in this location. Refer to the following pages for additional information

Headlight Switch

#6: Push the top of the headlight switch to turn the lights on. Push the bottom of the switch to turn the lights off.

Windshield Wiper Switch

#7 (optional):

Standard Bigfoot: Push the top of the wiper switch to turn the wiper on. Push the bottom of the switch to turn the wiper off.

Bigfoot Deluxe Cab 2 Speed Wiper: Push the top of the switch to 1st position for slow and to 2nd position for fast. Push the bottom of the switch all the way in to turn the wiper off. Below the switch is a button (not shown) to operate the window washer.

Strobe Light Switch

#8 (optional): Push on top of the Strobe Light switch to turn on the strobe light. Push the bottom of the switch to turn the strobe light off.

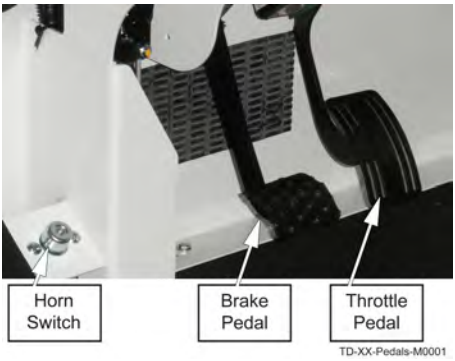
OPERATOR CONTROLS

Throttle Pedal

The throttle pedal is located to the right of the brake pedal. It controls the speed of the vehicle and operates similar to the throttle pedal in an automobile. Depress the pedal to increase speed and release the pedal to decrease speed.

Foot Brake Pedal

The foot brake pedal is located to the left of the throttle pedal. This pedal is designed for operation with the driver's right foot. It works similar to the brake in an automobile. Applying pressure to the brake pedal slows the vehicle according to the amount of pressure applied. Relieving pressure from the pedal releases the braking action. Pressing the brake also activates a higher level of regen.



Horn Switch

The horn switch for this vehicle was designed to be activated using the operator's foot. The foot horn switch is located to the left of the foot brake pedal. To activate the vehicle horn, press the foot horn switch with your foot.

Steering

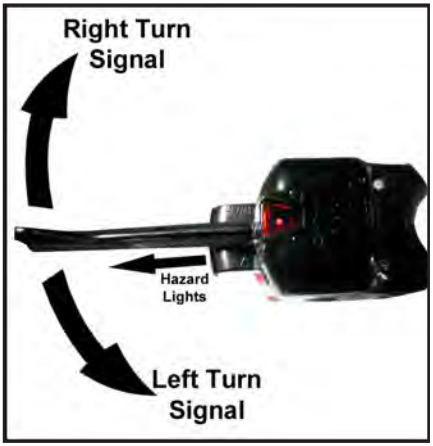
The steering wheel and steering system are similar to an automobile. To turn right, turn the steering wheel clockwise. To turn left, turn the steering wheel counter-clockwise.

Turn Signal Switch (optional)

The turn signal switch lever is located on the left side of the steering column. Pull the lever up to activate the right turn signal and push the lever down to activate the left turn signal. The switch is not self-canceling. You must return the switch to the center, off position after the turn is completed.

Hazard Light Switch (optional)

The hazard light switch is located on the Turn Signal Switch. The switch is a small tab or knob under the turn signal lever. To activate the hazard lights, pull the tab out. To turn the hazard lights off, you must activate the turn signal switch.



Emergency Power Cut Switch

The Emergency Power Cut Switch should be used if the vehicle starts to operate in an unexpected manner or if there is an odor or sound that may indicate an overloaded electrical circuit. If any of the above occurs, immediately and safely pull to the side of the road and stop. Then push on the switch knob and exit the vehicle. Do not reengage the switch until the vehicle has been inspected by a qualified technician.

The Emergency Power Cut Switch should only be activated if the vehicle must be stopped. Do not use the switch when only parking the vehicle.

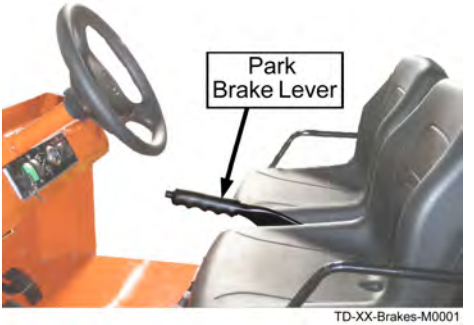
The location of the switch will vary depending on vehicle configuration. The switch is a large red knob located within reach of the driver. See the illustration to the right for a typical power cut switch knob.

Pull up on the knob to reengage

TD-XX-Controls-M0001

Park Brake, Manual (Standard on BIGFOOT Models)

The park brake is actuated with a hand lever. To set the park brake, push down on the brake pedal and pull the lever back firmly. To release the park brake, press the foot brake pedal, push the button on the end of the handle, then push the handle forward and downward until it stops.



TD-XX-Brakes-M0001

Park Brake, Automatic Electric

The automatic electric park brake is standard on BIGFOOT XL and optional on the BIGFOOT.

The automatic electric park brake will be applied whenever the vehicle is not in motion. While coasting or using the foot brake, the motor speed control monitors the motor rpm, the park brake will be applied after the motor stops rotating.

The automatic electric park brake will be applied when the driver gets up off the driver's seat. If the driver gets off the seat while the vehicle is in motion, the vehicle will rapidly decelerate and then apply the park brake.

Refer to **Towing This Vehicle** for information on temporarily disabling the automatic electric park brake.

⚠WARNING

The park brake should be disabled for servicing or towing procedures only. Do not operate the vehicle while the automatic park brake is disabled. Operating the vehicle with the automatic park brake disabled could lead to severe bodily injury and/or property damage.

Adjustable Seats

⚠WARNING

DO NOT attempt to adjust the driver or passenger seats while the vehicle is in motion. Adjusting the seat while in motion could result in sudden and violent uncontrolled movement of the seat. The sudden movement of the seat could cause the driver to lose control of the vehicle or eject the occupant from the vehicle resulting in severe personal injury and/or property damage.

The position of the driver and passenger seats can be adjusted. The adjustment latch levers are located under the seats.

To move the seat forward or backward:

1. Stop the vehicle.
2. Push the lever under the seat to unlatch the seat.
3. Move the seat to the desired position (forward/back).
4. Release the lever once you have reached the desired position.
5. Make sure the seat has locked securely before driving the vehicle.

Windshield Washer

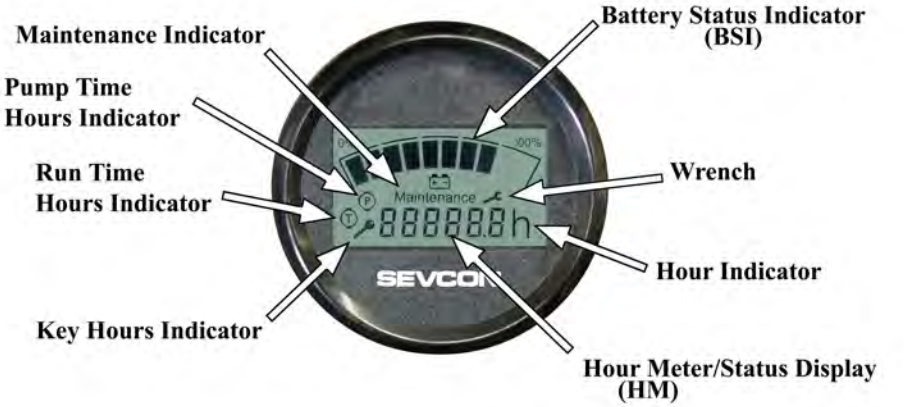
Deluxe Cab only.

The windshield washer switch is located on the dash below the wiper switch. Press the switch to spray washer fluid on the windshield.

The washer reservoir is located under the frame below the driver seat. Access to fill the reservoir by moving the seat forward.

AVAILABLE DASH DISPLAYS

SmartView Display



The Smart View Display (SVD) functions as a Battery Status Indicator (BSI), Hour Meter (HM), speed controller status monitor, and as an optional maintenance monitor feature. The operation of each of these functions is described below and continued on the following page.

BSI:

A bar graph representing the current state of charge is located across the top of the display. When the batteries are fully charged, all segments of the bar graph will be on. As the batteries are used, segments will turn off in the order of right to left.

When the batteries are discharged to 75%, the last three segments will flash indicating that you are approaching the end of the battery cycle. At this time, the vehicle's batteries should be charged as soon as possible.

At 90%, all segments will flash and the vehicles speed will be reduced. At this time, the vehicle should be removed from service for charging. Discharging beyond 90% will result in damage to the batteries that will shorten the battery life-span.

*Note: The BSI will only reset to full after a full charging cycle has completed. In addition, the BSI **will not** reset to full unless the battery is discharged below 75% before starting the charge cycle.*

HM:

The Hour Meter has three functions: Key Hours, Run Time Hours, and Pump Hours. One of the functions will be displayed whenever either of the Hours Indicators are visible at the right side of the display.

Key Hours: Accumulated length of time in hours that the key switch is in the "ON" position. When the display is turned on, the Key Hours will be displayed for approximately 5 seconds as indicated by the Key Hours Indicator located at the lower left of the display. The icon represents the silhouette of a key.

Pump hours: Accumulated length of time the hydraulic pump has been in operation. This is an optional feature. After the Key Hours, the Pump Hours will be displayed for approximately 5 seconds as indicated by the Pump Hours Indicator located at the lower left of the display. The icon represents a motor symbol with a "P" in the center.

Run Time Hours: Accumulated length of time that the vehicle has been in operation. Time is accumulated when the FS-1 switch in the accelerator module is closed. After the Pump Hours, the Run Time Hours will be displayed as indicated by the Run Time Hours Indicator located at the left of the display. The icon represents a motor symbol with a "T" in the center.

Maintenance Monitor:

Note: The Maintenance Monitor function is optional. The Maintenance Monitor function can be turned ON or OFF by your dealer.

Operation: The SVD notifies the operator 10 hours (standard) before a scheduled maintenance is due. During this warning period, the meter will continue to alert the operator. This should allow sufficient time for the operator to schedule the maintenance that is due, with minimal down time. If the scheduled maintenance is not performed before the warning period elapses, the vehicle's maximum speed will be significantly reduced.

Warning Period: The warning starts when the *Maintenance Indicator* is ON and the Wrench icon is flashing. The Wrench icon will continue to flash until the warning time has expired.

Maintenance Due: Once the warning has expired and the maintenance is due, the Wrench icon will stop flashing and remain ON. Additionally, the vehicle's maximum speed will be significantly reduced until the maintenance is performed and the display is reset. The display should only be reset by an authorized technician.

Speed Controller Status: The display will indicate a fault code whenever the control system logic detects a problem with the control system. A fault code is being displayed whenever the Fault Code Indicator (the letter 'F') is visible at the left of the numeric display. Refer to the fault code table below for a description of possible fault codes.

Display	Flash	Message	Action
F10101	10	Unit in preoperational	Refer to dealer for repair.
F15101	15	Vehicle Service Required	Service the vehicle
F16010	6	Seat (warning)	Operator presence switch is open. Confirm driver seat properly positioned.
F17001	7	BDI Warning	Low battery voltage. Charge the batteries.
F17002	7	BDI Cutout	Low battery voltage. Charge the batteries.
F17003	7	Low Battery Cut	Low battery voltage. Charge the batteries.
F17004	7	High Battery Cut	Refer to dealer for repair.
F17006	7	Vbat below rated min	Low battery voltage. Charge the batteries.
F17007	7	Vbat above rated max	Refer to dealer for repair.
F17009	7	Motor in low voltage cutback	Warning only (not a fault) due to transient low voltage.
F18001	8	Device too cold	Move to warmer location.
F18002	8	Device too hot	Overloaded, allow controller to cool.
F18003	8	Motor in thermal cutback	Overloaded, allow controller to cool.
F18004	8	Motor too cold	Move to warmer location.

Display	Flash	Message	Action
F22001	2	Seat Fault	Operator presence switch is open. Confirm driver seat properly positioned.
F22002	2	Two Direction Fault	Refer to dealer for repair.
F22003	2	SRO Fault	Throttle pedal pressed without direction selected.
F22004	2	Sequence Fault	Throttle or direction selected at power up.
F22006	2	Inch Fault	Inching switch active along with any drive switch, seat switch indicating operator present or handbrake switch active.
F26001	6	Throttle Fault	Refer to dealer for repair.
F35002	5	Motor Open Circuit Fault	Refer to dealer for repair.
F35003	5	No Motor Speed Signal	Refer to dealer for repair.
F37003	7	Power Supply Critical	Refer to dealer for repair.
F41101	11	DSP Encoder Fault	Refer to dealer for repair.
F41102	11	DSP Overcurrent Fault	Possible overloaded vehicle.
F41103	11	DSP Control Fault	Refer to dealer for repair.
F41104	11	Motor Overspeed Fault	Uncontrolled coasting down hill or towing at excessive speed.
F44001	4	Line Contactor o/c	Refer to dealer for repair.
F44002	4	Line Contactor welded	Refer to dealer for repair.
F46003	6	Analogue Output Over Current	Refer to dealer for repair.
F46006	6	Analogue Output Over Temperature	Refer to dealer for repair.
F47002	7	Capacitor Precharge Failure	Refer to dealer for repair.
F48001	8	Heatsink overtemp	Overloaded, allow controller to cool.
F53001	3	DSP Overvoltage	Refer to dealer for repair.
F53002	3	DSP Powerframe Fault	Possible overloaded vehicle.
F53003	3	MOSFET s/c M1>B+	Refer to dealer for repair.
F53004	3	MOSFET s/c M1>B-	Refer to dealer for repair.
F53005	3	MOSFET s/c M2>B+	Refer to dealer for repair.
F53006	3	MOSFET s/c M2>B-	Refer to dealer for repair.
F53007	3	MOSFET s/c M3>B+	Refer to dealer for repair.
F53008	3	MOSFET s/c M3>B-	Refer to dealer for repair.

ClearView Display

The ClearView display is a multi-function dashboard graphics display that functions as a Speedometer, Trip Odometer, Battery Status Indicator, Vehicle System Status Monitor, and Control System Diagnostics.

The three buttons on the right side of the display are used to access all of the available screens and functions.

- Pressing any one of the three buttons opens the button navigation window in the display which indicates the function of the three buttons.
- Pressing the middle button (Enter ↵ will toggle through all of the screens available to the operator.
- The upper and lower buttons will perform the action that is displayed in the navigation window.

Messages on the ClearView Dash Display

The dash display may show the following messages while operating the vehicle:

System Fault: If a system fault occurs, the fault message will be displayed along the bottom of the screen. Fault information details are provided later in this section.

Battery Watering Reminder: A battery watering reminder icon will pop up in the lower right corner of the display after every 5 charging cycles. This is a reminder to check the battery water level. To reset the icon, press and hold the upper display navigation button ↑ for a few seconds.

ClearView Dash Display Screens

The Main Screen displays the following:

- Speedometer
- Total Hours
- Trip Odometer
- Direction Selected (N=OFF, D=Forward, R=Reverse
- Battery Status Indicator (BSI)
- Battery Water Reminder

Details regarding each of these items can be found later in this section.

TD-XX-Clearview-M0002

Should a system fault occur, all screens will display a popup message at the bottom of the screen indicating the fault.

Shown to the right is an example of a sequence fault. A complete fault list can be found later in this section.

If a fault is currently displayed, additional information on the fault can be viewed by pressing any one of the navigation buttons on the right of the display and then the Fault Help button (top).

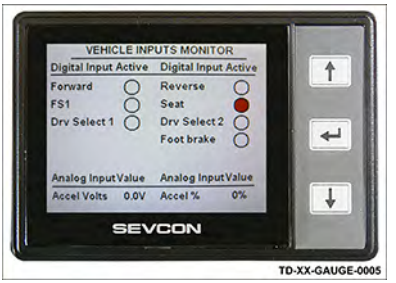
The Trip Odometer and hour meter is shown at the bottom of the main screen.

To reset the trip odometer: Press and hold the lower display navigation button ↓ for about 1-second.

TD-XX-GAUGE-0013

The Vehicle Inputs Monitor screen displays the current condition of the vehicle's various control switches.

A circle that is filled in red indicates a closed switch.



TD-XX-GAUGE-0005

The Time to Distance screen displays how long it takes to drive a predefined distance.

Also included on this screen are the total hours of operation.

The Fault Log screen displays the fault log history. The “ID” column is the fault ID code.

Then “No” column is the number of specific faults that have occurred.

Faults

Any current fault will be displayed along the lower edge of the screen as shown in the illustration. In addition, there is a fault log screen that will show the recent fault history. The fault code list is located at the end of this section.

The Vehicle Status screen displays the current operating condition of the vehicle.

Fault Messages on the Dash Display

An example of a typical control system fault message is shown to the right. The following list is the list of faults that can be corrected by the driver/operator. Any other fault should be referred to a qualified technician for repair.

Most faults will clear once the fault is corrected. If the fault does not clear by itself, then cycle the start switch. If the fault still does not clear, refer the repair to a qualified technician.

Fault ID (ref)	Fault Display	Definition	Possible Cause
45C1	BDI Warning	Battery discharged below warning threshold voltage	Battery is getting low on charge.
45C2	BDI Cutout	Battery empty	The battery is empty and requires charging. Vehicle speed is reduced to protect the battery and control system from low voltages.
45C3	Low Battery Cut	Battery voltage dropped below protection threshold voltage	Possibly an overloaded vehicle. Vehicle speed is temporarily reduced until overload condition is corrected.
4602	Device Too Hot	Controller internal temperature exceeded high temperature threshold	Motor speed controller has overheated. Reduce the load or stop until temperature is reduced.
4603	Motor in Thermal Cutback	Motor temperature exceeded high temperature threshold	Motor has overheated. Reduce the load or stop until temperature is reduced.
4881	Seat Fault	Seat or foot or battery box interlock switch open when throttle pedal was pressed. (Your vehicle may not have the battery box interlock switch option)	Driver must remain seated while operating vehicle. If equipped with a foot switch, the switch must remain pressed.
4883	SRO Fault	Startup switches operated out of order	All operator switches must be actuated in the correct sequence.
4884	Sequence Fault	Startup switches operated out of order	All operator switches must be actuated in the correct sequence.
4885	FS-1 Recycle Fault	Startup switches operated out of order	All operator switches must be actuated in the correct sequence.

Additional fault information can also be viewed on the display.

When a fault is displayed, press any one of the three buttons to open the button navigation window and then press the FltHlp button to display the help screen for the fault currently displayed.

Shown to the right is a close up of a screen showing the button navigation window and in the top right corner is the text “Flt Hlp” indicating that the top navigation button will display Fault Help information.

In the illustration shown to the right is an example of the additional fault information available for an SRO fault. Note that the information shown in this illustration is for reference only and may vary or change without notice.

Press any one of the navigation buttons to close this screen.

Battery Status Indicator

The Battery Status Indicator (BSI) is shown on the right side of the dash display main screen. This gauge functions similar to a fuel gauge in an automobile. At the top of the gauge, it shows the percentage remaining in the battery.

The BSI is not an absolute gauge of power remaining in the battery. The amount of available power is relative to the amount of power required. As the power requirements are increased, such as driving up a hill, the relative available power in the battery is decreased. The motor speed control system estimates the battery power remaining by monitoring the current driving conditions.

There are 10 bars in the bargraph display, each bar representing 10% of battery power.

At 20% estimated battery power remaining (last bar showing), a warning message will pop up at the bottom of the display informing the driver of the low battery condition. It is important to drive to a charging station as soon as possible.

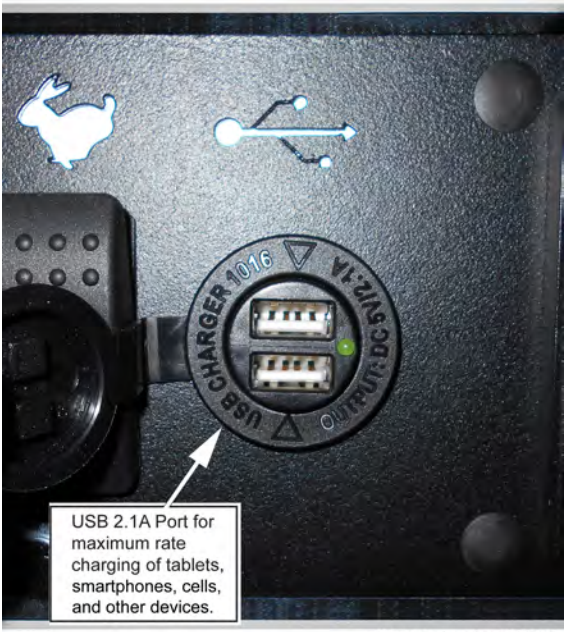
If the estimated battery power remaining drops below 10%, the control system will reduce the power to the motor in order to conserve energy. To avoid damage to the battery, the vehicle should be immediately taken to a charging station.

*Note: The BSI will only reset to full after a full charging cycle has completed. In addition, the BSI **will not** reset to full unless the battery is discharged below 75% before starting the charge cycle.*

While coasting, the batteries are being charged through a process called regenerative braking (regen). It is possible that the BSI could reset to full while in the regen braking mode. Details regarding the regen braking mode can be found in the Vehicle Operation section of this manual.

USB Port

The BIGFOOT vehicles have a USB charging port as standard equipment. This port allows the vehicle operator to charge devices (for example, a smartphone or tablet). The dual-port design is capable of charging two devices at the same time.



TD-BF-Electrical-M0001

Unless your vehicle has the cab option, do not use the ports when it's raining. Secure the attached protective cap over the charger when not in use.

TD-BF-Electrical-M0013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Vehicle Operation

General Safety Guidelines

⚠WARNING

Your ability to operate a motor vehicle can be seriously impaired with blood alcohol levels far below the legal minimum.

If you have been drinking alcohol, don't drive. Ride with a designated non-drinking driver, call a cab, or use public transportation.

⚠WARNING

The advanced technology built into the vehicle motor control has many systems to monitor the condition and operation of the vehicle to maintain safe operation.

Even with advanced technology, it is not possible to change the laws of physics. Improper driving technique for the current conditions could result in loss of vehicle control.

- Only qualified and trained operators with no physical, mental, or sensory disabilities may operate this vehicle or any of its components.
- Only licensed drivers shall operate this vehicle.
- Before operating this vehicle, perform all Daily and Pre-operation checks as defined in the Vehicle Maintenance section.
- Confirm proper operation of all vehicle controls before operating the vehicle.
- Wear closed toe low heel shoes when operating the vehicle.
- No reckless driving.
- Do not operate a motor vehicle while under the influence of alcohol or any drug that may impair your ability to drive.
- Keep all body parts (head, arms, legs) inside this vehicle while it is moving.
- All occupants must remain seated, one passenger per seating position. No passengers are allowed to be transported in the cargo area of the vehicle.
- The operator shall confirm that all passengers are physically able to secure themselves while being transported in this vehicle.
- No occupants should exit the vehicle until the vehicle has come to a complete stop.
- Do not transport small children. This vehicle is not designed to accommodate child seats.
- Do not leave children unattended in the vehicle.
- Keep a clear view ahead at all times.
- Keep the vehicle under control at all times.
- Observe all traffic regulations and speed limits.
- The vehicle shall be equipped with head and tail lights if operated at night.
- This vehicle may overturn if turned sharply when driven at high speeds.
- Drive slowly when making a turn, especially if the ground is wet or when driving on an incline.
- Yield right of way to pedestrians, ambulances, fire trucks, or other emergency vehicles.
- Sound your horn when approaching pedestrians. DO NOT assume the pedestrian is aware of your presence; before passing, slow down and allow sufficient clearance between the vehicle and pedestrian.
- Do not overtake another vehicle at intersections, blind spots, narrow isles, or other dangerous locations.

- Stop and sound horn at all intersections regardless if it is posted with a stop sign.
- Do not operate this vehicle in areas at risk to falling objects.
- Do not drive over loose objects, holes, or bumps.
- Do not drive under any object that is less than 80 inches (203 cm) from the ground.
- Do not drive off of curbs or other steep drop-offs more than 2 inches high.
- Stay in your driving lane under normal conditions, maintaining a safe following distance from other vehicles.
- If equipped with doors, the doors must remain closed and latched while vehicle is in motion.
- Driving through water or mud may affect brake performance. ALWAYS test brakes by pressing the brake pedal after driving through water or mud.

Seat Belts (optional)

Your vehicle may be equipped with safety seat belts. The requirement for the use of safety seat belts is to be determined by the application where the vehicle is operated.

Safety seat belts should only be installed on vehicles equipped with Taylor-Dunn approved Operator Protective Structure (OPS) such as a steel cab or cage. Fiberglass cabs or sun tops do not qualify as an OPS.

The use of safety seat belts helps to restrain you and your passengers in case of a collision.

Safety belts provide the best restraint when:

- The occupant is sitting upright (not slouched)
- The lap belt is snug and low on the hips
- The shoulder belt is snug against the chest
- The knees are straight forward

Refer to the following pages for directions on how to properly use safety belts.

⚠WARNING

In the event of a vehicle tip over, studies have indicated that it is safer to be able to move away from the vehicle unless the vehicle is equipped with an OPS.

Do not use seat belts unless the vehicle is equipped with an OPS. Using seat belts in a vehicle without OPS may result in occupants being crushed while restrained in the vehicle.

⚠WARNING

- **Do Not use seat belts in a vehicle that is not equipped with OPS.**
- **Make sure you (the driver) and all passengers are properly seated in approved seating positions and wearing seat belts. Improper sitting and/or failure to wear seat belts may result in severe bodily injury in a collision or other vehicle accident.**
- **If equipped with a shoulder belt, do not wear the shoulder belt under the arm. Never swing it around the neck over the inside shoulder.**
- **Never use a single belt for more than one person or across more than one seating position.**
- **Do not allow a passenger to hold a child while the vehicle is moving. The passenger cannot protect a child in a collision and the child may be severely injured.**
- **Failure to follow these rules will increase the risk of injury in a collision or other vehicle accident.**
- **All seat belts and seat belt hardware should be inspected by a qualified technician after any collision. Failure to confirm proper operation of seat belt assemblies may result in failure of the seat belt in another collision leading to severe bodily injury.**

⚠WARNING

Doors (optional) on this vehicle are designed for protection against the weather. Do not rely on the doors to keep the occupants contained within the vehicle or to protect against injury in an accident.

All Seat Belt Types

Refer to additional information below for details applying to different types of seat belts.

Before fastening the seat belt:

- If equipped with adjustable seats, adjust the seat to the position that suits you best.
- Make sure the shoulder and/or lap belt is not twisted and freely passes through any guides.

To unfasten the belt, push the release button on the buckle.

Combination Lap and Shoulder Belts

While your vehicle is in motion, the combination lap and shoulder belt adjusts to your movement. However, if you brake hard, corner hard or if your vehicle receives an impact of 5 mph (8 kph) or more, the lap and shoulder belt locks and helps reduce your forward movement. The retractor can also be made to lock by rapidly pulling on the belt.

To fasten the belt, pull the lap/shoulder belt from the retractor so that the shoulder portion of the belt crosses your shoulder and chest. Insert the belt tongue into the proper buckle until you hear a snap and feel it latch.

To unfasten the belt, push the release button on in the buckle. This allows the tongue to unlatch from the buckle. Guide the tongue to its stowed position while the belt retracts. If you do not guide the tongue, it may strike you or part of the vehicle.

Lap Belts Only

With Auto Retractor: To fasten the belt, pull the belt from the retractor and insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Make sure the tongue is securely fastened in the buckle.

When unfastening the belt, guide the belt tongue to its stowed position. If you do not guide the tongue, it may strike you or part of the vehicle.

Without Auto Retractor: To fasten the belt, insert the belt tongue into the proper buckle until you hear a snap and feel it latch. Pull the belt adjustor strap until the belt is snug against your lap.

After unfastening the belt, stow the belt in a position so that it cannot fall out of the vehicle while the vehicle is in motion and the belt is not in use.

Seat Belts While Pregnant

If equipped with seat belts, always wear a seat belt. Wearing your seat belt protects you and your baby from injury or death in the event of a collision. You should wear a seat belt no matter where you sit in the vehicle.

Be sure to wear your seat belt correctly. The lap strap should go under your belly, across your hips and as high as possible on your thighs. The shoulder strap should go between your breasts and off to the side of your belly. Seat belt straps should never go directly across your stomach. The seat belt should fit snugly.

Safety Belt Maintenance

Check the safety belt systems periodically to make sure that they work properly and are not damaged.

All safety belt assemblies, including retractors, buckles, front seat belt buckle support assemblies and attaching hardware, should be inspected by a qualified technician after any collision.

Taylor-Dunn recommends that all safety belt assemblies used in vehicles involved in a collision be replaced. However, if the collision was minor and a qualified technician finds that the belts do not show damage and continue to operate properly, they do not need to be replaced. Safety belt assemblies not in use during a collision should also be inspected and replaced if either damage or improper operation is noted.

Starting

Before operating this vehicle: Refer to General Safety Guidelines at the beginning of this chapter.

Note: This vehicle is equipped with a charger interlock which is designed to disable the vehicle from being driven while the AC charger cord is plugged into a functioning power source.

Note: This vehicle is equipped with a operator presence switch which disables the vehicle when the driver seat is not occupied. The driver must be properly seated for the vehicle to operate.

⚠WARNING

The operator presence switch is only one part of the vehicle safety system. The switch should not be relied upon as the only safety feature used to disable or disengage this vehicle. Do not bypass or in any way disable the operator presence switch. Doing so could result in unexpected movement of the vehicle causing severe bodily injury and/or property damage.

1. Make sure all occupants are properly seated and prepared for vehicle movement.
2. Sit in the driver seat and press the service brake pedal.
3. If your vehicle is equipped with a mechanical park brake, disengage it.
4. Place the Directional Control switch in the center OFF position.
5. Place the Start switch in the ON position and wait 1 second.
6. Select a direction of travel.
7. Slowly press the throttle pedal to accelerate to the desired speed.

⚠WARNING

DO NOT transport passengers in the cargo area. All passengers must be seated in the available seats, one passenger per seating position.

Refer to the Driving section for additional information on the operation of your vehicle.

⚠WARNING

DO NOT exceed the maximum rated speed for your vehicle, locally imposed speed limits, or the safe operating speed for conditions. Exceeding any of these speed limits will increase the likelihood of an accident causing personal injury. In addition, exceeding the maximum rated speed for your vehicle may result in damage to the vehicle drive train and/or control system.

⚠WARNING

Do not turn the Start switch OFF unless the vehicle must be stopped in an emergency due to a control system fault. Turning the Start switch OFF will disable the motor control system safety features and may result in loss of control of the vehicle causing a collision with severe bodily injury.

Driving

Before operating this vehicle:

- Perform all daily and pre-operation checks as defined in the Vehicle Maintenance section.
- Refer to General Safety Guidelines at the beginning of this chapter.

⚠WARNING

DO NOT exceed the maximum rated speed for your vehicle, locally imposed speed limits, or the safe operating speed for conditions. Exceeding any of these speed limits will increase the likelihood of an accident causing personal injury. In addition, exceeding the maximum rated speed for your vehicle may result in damage to the vehicle drive train and/or control system.

⚠WARNING

DO NOT "ride the brakes" or drive with your left foot resting on the brake pedal.

Riding the brakes will cause excessive heat build up and rapid wear in the brake system and could result in brake failure causing a collision or accident with severe injury.

Selecting Direction of Travel

The direction of travel is selected with the Directional Control switch. The direction of travel must be selected ***after*** the Start switch is turned ON. If a direction is selected before the Start switch is turned ON, then a sequence fault will occur. If the sequence fault occurs, you can clear the fault by placing the Directional Control switch in the center OFF position and then re-selecting the desired direction of travel.

Your vehicle may be equipped with a reverse motion alarm.

- The reverse alarm will only sound when the reverse direction is selected.

Changing Direction of Travel

The direction selected by the Directional Control switch can be changed at any time.

If the vehicle is in motion when the direction is changed, the motor control system will reverse the current flow in the motor slowing the vehicle to a stop and then continue in the new direction selected. For more information, refer to the section on Stopping.

Driving in Forward

1. Turn the start switch ON, then select FORWARD using the Directional Control switch.
2. Release the park brake
3. Slowly press the throttle pedal to accelerate to the desired speed.

Driving in Reverse

1. Check and confirm that there are no obstacles behind the vehicle before backing up.
2. Turn the start switch ON, then select REVERSE using the Directional Control switch.
3. Release the park brake
4. Slowly depress the throttle pedal to accelerate to the desired speed.

Note: The maximum reverse speed will be slower than the forward speed.

Stopping

Release the throttle pedal and use your right foot to press the brake pedal. The amount of force required to stop the vehicle will vary depending on the environment and load on the vehicle.

This vehicle is equipped with regenerative (regen) braking. Regen braking uses the stored energy of the moving vehicle to generate electricity. The generation of electricity slows the vehicle down and the power generated is put back into the batteries increasing the driving time of your vehicle.

There is more than one regenerative braking mode. The mode used depends on the current driving conditions as follows:

- While Coasting: When you release the throttle pedal, the Neutral Regen mode is selected and gradually slows the vehicle. Only a small amount of power is generated.
- While Braking: When the brake pedal is pressed, the Foot Brake Regen mode is selected with a dramatically increased amount of power generated with a more rapid slowing of the vehicle.
- Changing Direction: The Direction Regen mode is selected when the direction of the vehicle is changed while the vehicle is in motion. In this mode the motor current is reversed and slows the vehicle to a stop and then the motor direction changes and the vehicle drives in the opposite direction.

⚠WARNING

This vehicle does not have a "park" function in the transmission. Always apply the park brake. Failure to apply the park brake may result in a runaway vehicle.

Parking

1. Bring the vehicle to a stop at an authorized parking space.
2. Place the Directional Control switch in the center OFF position.
3. If your vehicle is NOT equipped with an automatic electric park brake, firmly set the park brake.
4. Turn the start switch OFF.
5. Remove the key from the Start switch. The driver should keep the key in his/her possession.

Note: If parking this vehicle on an incline, turn the wheels to the curb, or block the wheels.

⚠CAUTION

Unless in an emergency, do not activate the Emergency Power Cut Switch while the vehicle is in motion. This vehicle may be equipped with an automatic electric park brake. If the vehicle is equipped with the electric park brake, activating the Emergency Power Cut Switch will immediately apply the brake, abruptly stopping the vehicle. This may result in injury to the occupants and/or upsetting the load being carried or towed.

Park Brake

This vehicle may be equipped with an automatically actuated electromagnetic park brake.

During normal operation, the park brake will be applied when the throttle pedal is released and the motor comes to a stop. The brake will release again when the throttle pedal is pressed.

Do not turn the start switch OFF while the vehicle is in motion. Turning the start switch OFF will immediately apply the park brake resulting in accelerated wear and premature failure of the brake.

Some motor control system faults will result in park brake application and not allow the brake to be released. Refer to section Park Brake Bypass Switch if a fault occurs that does not allow the brake to release

Collisions or Accidents

A collision or accident may damage the electrical circuits or batteries resulting in a fire hazard or chemical spill. In the event of a collision or accident, immediately turn the Start switch OFF, set the park brake, then exit the vehicle.

Call emergency personnel if there is any indication of smoke, burning smell, electrical arcing, or leaking fluid.

Tip Over

In the event of a tip over AND the vehicle is equipped with OPS, stay inside the confines of the vehicle. Exit the vehicle after the vehicle has come to a complete stop.

In the event of a tip over and the vehicle IS NOT equipped with OPS. Quickly exit the vehicle and quickly move out of its path.

Loading Cargo

⚠WARNING

DO NOT transport or load cargo in the front passenger area or leave loose items on the front floorboard. Cargo placed in the front passenger area may interfere with the driver causing loss of control of the vehicle and result in a collision or accident with severe injury.

NOTICE

When vehicle is in operation carrying a full load, the bump-stops will be against the frame. This will not cause damage to the vehicle as this is an active part of the vehicle suspension system.

- Use only Taylor-Dunn approved rear cargo accessories.
- Do not exceed the load capacity of the vehicle.
- All cargo should only be transported in the designated cargo area of the vehicle and evenly distributed with the center of gravity close to the center of the cargo area.

⚠WARNING

DO NOT transport passengers in the cargo area. All passengers must be seated in the available seats, one passenger per seating position.

- Do not load cargo in the passenger compartments.
- All cargo should be secured to prevent falling from the vehicle or shifting position while the vehicle is in motion.
- Do not transport cargo that is wider than the vehicle.
- Cargo consisting of fluid in tanks should have fluid baffles in the tank to help reduce shifting load weight.

If vehicle is equipped with cab option:

- The cab is not designed to carry any cargo. Do not mount roof racks or cargo carriers to the roof of the cab.

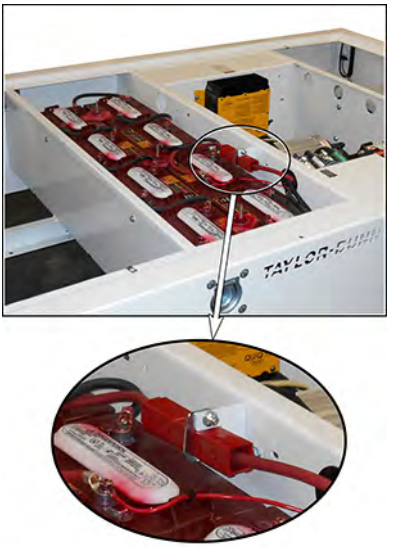
Transporting Pets

Pets should only be transported in a pet carrier that is securely tied down on the rear cargo deck.

Battery Disconnect

Vehicles without BIB option: A connector is mounted in the battery compartment that allows the battery to be quickly disconnected from the vehicle's electrical systems. See illustration to the right.

Vehicles with the BIB option: A connector for each box is located on the side of the vehicle. Removal of either of the boxes connectors will disconnect the battery from the vehicle's electrical systems. See illustration below.



Vehicle Load Capacity, Definition

The rated maximum load capacity of a vehicle is the load carrying capacity of the ***standard*** model. The maximum load is on the vehicle's data plate.

Occupants and optional equipment added to the vehicle at time of manufacture or installed after delivery by the dealer or user reduces the capacity.

Example: Standard Load Capacity = 3,000 pounds:
3,000 - Driver (200) - Steel Cab/Doors Option (300) - Cargo Box (400) = 2,100 pounds maximum load on deck. Add a passenger and the maximum load is reduced to 1,900 pounds.

The definition of maximum load is the maximum weight than can be carried on a vehicle under ideal conditions. There are many conditions that will reduce the maximum safe load a vehicle can carry.

Some of these conditions are, but not limited to:

- Uneven road surface.
- Tall loads.
- Wide loads.
- Long loads.
- Liquid loads (sloshing).
- Traveling up or down grades.
- Traveling across grades.

The rated capacity assumes the load has a low center of gravity and is centered on the deck. As example: A 20 foot tall, 3,000 pound statue on the deck of a 3,000 pound capacity vehicle is not approved.

Liquid loads sloshing around in a tank will shift the center of gravity and may result in stability and braking issues. Liquid loads must be secured and have fluid baffles in the tank to help reduce shifting load weight due to sloshing.

4-Passenger Foldaway Seat Operation

Open the Seat

⚠WARNING

1) Place the Directional Control switch in the center "OFF" position (neutral).

2) Turn the Start switch OFF.

3) Set the park brake.

4. Stop the vehicle on a level surface, set the direction control switch in the center OFF position and set the park brake.
5. If there is any cargo on the deck, move the cargo off the area of the seat and the area behind the seat hinge.
6. Lift the seat assembly and rotate to the rear using the handle as shown and carefully set it down on the deck.
7. Pivot the seat back into the upright position confirming that it is locked in place.

⚠WARNING

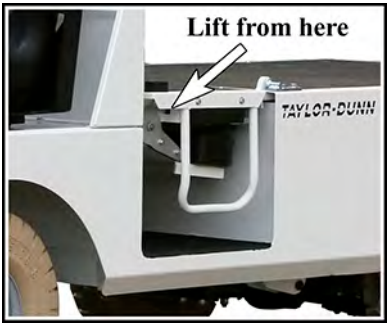
1) Place the Directional Control switch in the center "OFF" position (neutral).

2) Turn the Start switch OFF.

3) Set the park brake.

Close the Seat

4. Lift the locking lever and pivot the seat back forward.
5. Left the seat assembly and rotate it forward carefully lowering it onto the frame.



Dump Bed Operation

Note: This feature is optional and must be factory installed; field kits are not available.

⚠DANGER

Do not operate the dump bed while under overhead electrical wires. Contact with electrical wires may result in serious injury or death.

⚠WARNING

Before operating the dump bed, place the Directional Control switch in the center (OFF) position, turn the key switch OFF and set the parking brake.

- **Do not operate the dump bed while parked sideways across a grade.**
- **Confirm that there is enough vertical clearance above the vehicle before raising the dump bed**

Failure to comply with these restrictions could result in severe bodily injury and/ or property damage.

⚠WARNING

Do not operate the vehicle unless the dump bed is fully lowered. Operation with a raised bed may result in:

- **Vehicle instability with an increased risk of tip over resulting in severe personal injury and/or property damage.**
- **Property damage due to running into low overhead clearances.**

⚠WARNING

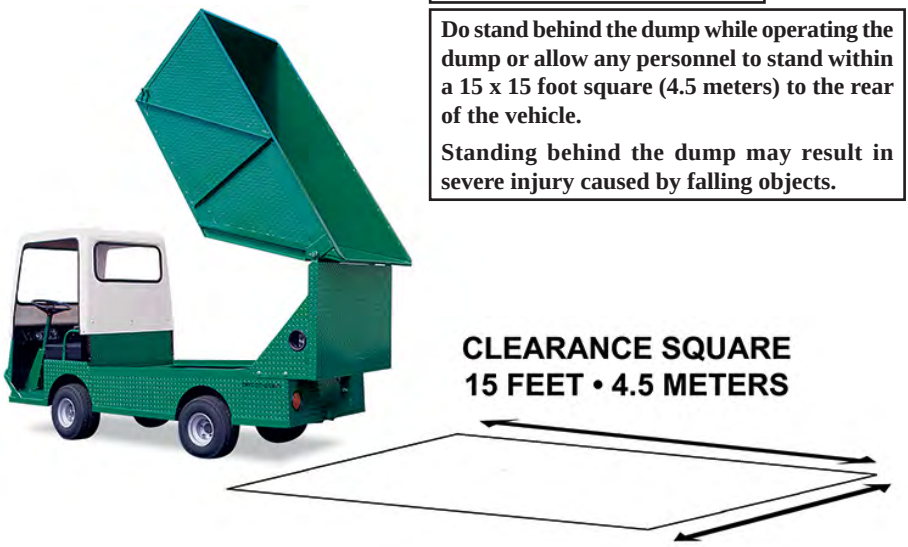
Do not place any body part underneath a raised bed unless the bed prop rod is in place. Severe bodily injury will result if the bed lowers unexpectedly.

There are numerous variations of the dump bed that are available for the BIGFOOT models. Although the physical design varies, the operation is basically the same. Refer to the original vehicle sales order for specific information regarding the dump bed option equipped on your vehicle.

⚠WARNING

Do stand behind the dump while operating the dump or allow any personnel to stand within a 15 x 15 foot square (4.5 meters) to the rear of the vehicle.

Standing behind the dump may result in severe injury caused by falling objects.



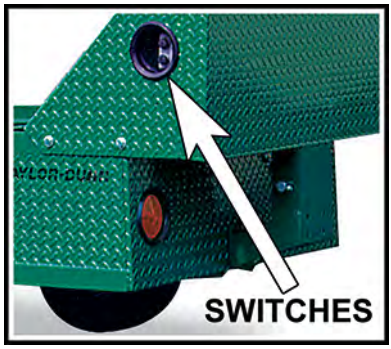
Operation

⚠WARNING

Do not place any body part underneath a raised bed unless the bed prop rod is in place. Severe bodily injury will result if the bed lowers unexpectedly.

The dump bed is operated hydraulically through two push button switches.

The actual location of these switches will vary depending on the type of dump bed. The switches are typically located at the rear of the vehicle on the left or right side. An illustration of a typical switch assembly is show to the right.



- Press and hold the top button to raise the bed.
- Press and hold the bottom button to lower the bed.

The bed should remain in the raised position when the 'UP' button is released. If the bed does not hold its position, then the hydraulic system should be serviced by a qualified technician.

The bed should be fully lowered within 3 to 15 seconds while the 'DOWN' button is pressed. If the bed does not lower, or lowers very slow, then the hydraulic system should be serviced by a qualified technician.

Lowering the Dump Manually

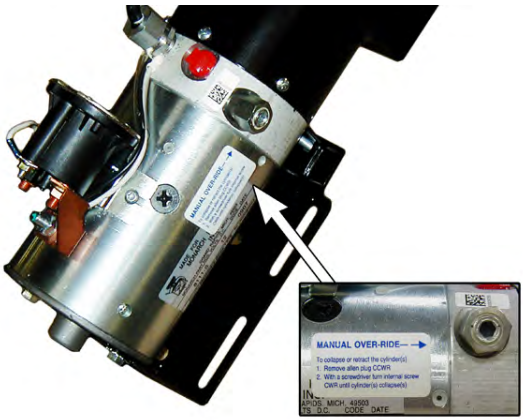
There is a manually operated valve located on the side of the hydraulic pump assembly (see illustration). This valve should only be used if the dump fails to lower by pressing the lowering button. The valve is covered by an Allen screw. Remove the Allen screw to access the valve then turn the internal screw clockwise to lower the dump.

⚠WARNING

Do not place any body part underneath a raised bed unless the bed prop rod is in place. Severe bodily injury will result if the bed lowers unexpectedly.

If the dump fails to reach is fully raised position, then it may be low on hydraulic fluid. Refer inspection and servicing of the hydraulic system to a qualified technician.

Note: Overfilling will result in fluid exiting the fill port when the bed is lowered.



TOWING

⚠WARNING

Use caution when towing trailers wider than the tow tractor allowing for additional isle clearance and corner cutting of the trailers.

Not allowing for additional clearance may result in collision with severe bodily injury and/or property damage.

Towing a Trailer

Note: Towing up or down grades will significantly reduce the capacity of the vehicle.

When towing trailers:

- Do not exceed the DBP towing capacity of the vehicle. See Specifications and DBP definition.
- Only use Taylor-Dunn approved trailer hitches.
- Do not exceed the capacity of the trailer hitch installed on the vehicle.
- Do not exceed the load capacity of the trailer. Refer to documentation supplied with your trailer for information regarding load capacity of the trailer.
- Make sure all loads are securely tied down. Refer to documentation supplied with your trailer for information regarding attaching loads to the trailer.
- Cargo consisting of fluid in tanks shall have fluid baffles in the tank to help reduce shifting load weight.
- Do not back up when towing more than one trailer.
- Drive slowly when towing loads with a high center of gravity.
- When turning, be sure to allow for “corner cutting” of the trailer.
- Allow for longer stopping distances when towing heavy loads.
- Allow for longer stopping distances when driving down a grade.
- Block the trailer wheels before disconnecting from the vehicle.
- Do not disconnect a trailer while parked on a grade.

Draw Bar Pull (DBP), Definition

DBP is a measure of pulling force required to move a load. The load may be a trailing load or a pushed load. It is normally expressed in pounds or Newtons.

The DBP of a tow tractor is the horizontal force exerted on a load at its coupler while towing or pushing a load. To measure the DBP, a scale would be connected in line with the tractor coupler and the load. The scale will directly read the DBP as the tractor tows the load.

Tow tractor DBP specifications, definition:

- Normal DBP: Highest DBP that can be sustained for a given duty cycle.
- Ultimate DBP: Also referred to a Maximum DBP. Highest DBP achieved while traveling at a minimum speed of approximately 0.5 mph (0.8 kph) for a minimum of 30 seconds. This specification is used in calculations for getting a load moving.

Notes:
Tow tractor DBP specifications are based on:

- Road surface consisting of level dry clean asphalt, brushed concrete or equivalent.
- Maximum battery weight installed per tow tractor battery specification.

Towing a load up any grade will significantly increase the DBP required.

Most paved roads and parking lots have a drainage grade to allow water to run off. When operating a tow tractor at or near its maximum capacity, this drainage grade will significantly affect DBP required to pull the load and may result in exceeding the tractor specifications.

The load capacity and towing capacity of a burden carrier cannot be combined. The towing capacity is reduced as weight is added to the burden carrier. This weight includes the passengers and optional equipment as well as the load on the deck.

The formula for calculating reduced towing capacity DBP is:

Reduced DBP = DBP - Vl * (DBP/Vc) where:

- Vc = Vehicle Rated Capacity
- DBP = Normal Draw Bar Pull specification
- Vl = Vehicle Load (includes passengers and options)

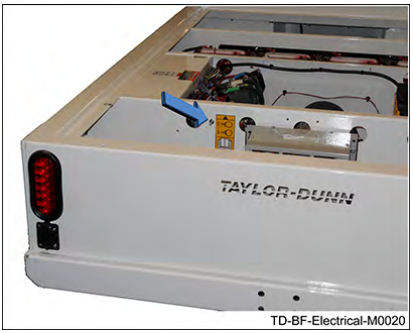
The weight that the vehicle can pull can be calculated based on the DBP. This capacity would be for a single standard 4-wheel trailer with a front steer axle and includes the weight of the trailer.

- Level Surface: Towed Weight = DBP * 50
- Up a grade: Towed Weight = DBP/(2 + %g) * 100 where %g = the percent of grade

Park Brake Bypass Switch

⚠WARNING

The park brake should be disabled for servicing or towing procedures only. Do not operate the vehicle while the automatic park brake is disabled. Operating the vehicle with the automatic park brake disabled could lead to severe bodily injury and/or property damage.



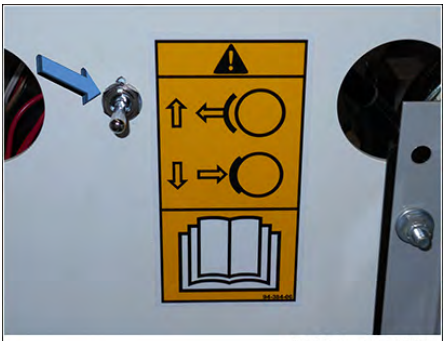
TD-BF-Electrical-M0020

This vehicle may be equipped with an automatically applied electric park brake. The automatic brake is standard on the XL model.

During normal operation, the park brake will be applied when the throttle pedal is released and the motor comes to a stop. The brake will release again when the throttle pedal is pressed. The park brake will also be applied when the start switch is turned off or the operator leaves the driver seat.

In addition, some motor control system faults will result in application of the park brake.

The park brake is powered by the vehicle battery. It will be applied whenever the batteries are disconnected. It may be also be applied if the batteries are severely discharged.


TD-BF-Electrical-M0018

Switch Operation

There is a switch near the control panel that can be used to bypass the brake and allow the vehicle to be pushed or towed. Note: The start switch will need to be in the OFF position to push the vehicle. Refer to Towing This Vehicle for detail regarding towing.

See illustrations for the location of the switch. There will be an audible alarm when the switch is in the bypass position.

The brake bypass switch will not function if the batteries are disconnected or there is a failure in the vehicle power supply. Should this occur and the vehicle must be moved, the drive wheels must be placed on a towing dolly or the brake must be removed from the motor. Removal of the brake should only be performed by a qualified technician.

NOTICE

The bypass switch should not be left ON for more than 10 minutes. Leaving the switch ON will discharge the batteries and may overheat and damage the brake and/or control system.

Towing This Vehicle

⚠WARNING

The only personnel authorized to remove the automatic electric park brake from any Taylor-Dunn vehicle is a factory authorized service technician. Repairs made by unauthorized personnel may result in damage to the vehicle's systems which could lead to an unsafe condition resulting in severe bodily injury and/or property damage. Unauthorized repairs may also void the vehicle's warranty.

Note: This vehicle may be equipped with an automatic electric park brake. The Park Brake Bypass switch must be engaged or the brake removed from the motor before towing the vehicle.

To tow this vehicle, attach a tow strap to the front bumper tow-bar. Use another driver to steer this vehicle while it is being towed. Be sure the driver uses the brakes when the towing vehicle slows or stops.

Do not tow the vehicle faster than 5 m.p.h. or its maximum designed speed, whichever is lower.

If at all possible, this vehicle should be placed on a carrier, rather than towing.

NOTICE

This vehicle is equipped with regenerative braking. Follow these steps before towing this vehicle.

1) **To tow this vehicle, the start switch *MUST* be in the "OFF" position.**
2) **Place the Directional Control switch in the center "OFF" position.**

Failure to follow these instructions may result in damage to the vehicle.

Trailering This Vehicle

Use tie points illustrated below to securely strap the vehicle to a trailer or truck bed.

Note: The tow-bar for the XL is located under the floorboard. An illustration was not available at time of publication.

Charging Your Vehicle

GENERIC SAFETY GUIDELINES

⚠DANGER

The charger must be connected to a properly grounded AC receptacle. Improper connection will increase the risk of electric shock and can cause severe personal injury or death.

⚠WARNING

- **Explosive mixtures of Hydrogen gas are present within battery cells at all times. Do not work with or charge a battery in an area where open flames (including gas furnace or water heater pilots), sparks, cigarettes, or any other sources of combustion are present. Always provide ample ventilation in rooms where batteries are being charged. Failure to do so may result in severe bodily injury and/or property damage.**
- **DO NOT disassemble the charger. There are no user serviceable components in the charger. Refer all repairs to a qualified technician. Incorrect repair or reassembly of the charger can result in an explosion, electric shock, or fire.**
- **Use of extension cords is not recommended. Improper use of an extension cord may result in fire.**
- **The Signet, Lester, and Delta-Q chargers are for lead acid batteries only. Charging other types of batteries may cause the battery to burst or explode causing severe personal injury and/or property damage.**
- **Do not attempt to operate the vehicle while charging the battery. Operating the charger and vehicle at the same time may lead to damage to the charger and/or the vehicle resulting in personal injury and/or property damage.**
- **This charger requires a standard household 15 Amp electrical circuit. Before plugging the charger in, confirm that your charging station is configured correctly. DO NOT attempt to charge two vehicles on one standard household 15A circuit. Failure to confirm the proper charging station configuration or attempting to charge two vehicles may result in fire.**
- **Do not charge any battery that is, or is suspected to be frozen. Charging a frozen battery may result in explosive rupturing of the case due to a build up of internal pressure. This may causing severe bodily injury and will cause property damage.**
- **The charger should not be used by children or any personnel with mental or sensory disabilities. Incorrect usage due to inability to understand operation may cause severe personal injury and/or property damage.**

NOTICE

The Start switch must be in the "OFF" position when charging the batteries. Failure to turn the Start switch "OFF" may result in damage to the vehicle's electrical system.

NOTICE

Check battery electrolyte before charging. Do not charge batteries with low electrolyte level. Charging with low electrolyte level will result in premature failure of the battery.

Charging Receptacle (BIGFOOT XL)

⚠DANGER

High Voltage Electrocution Hazard.

Make sure that the receptacle, inside and outside, is clean and dry before connecting the charger cord.

Connection of AC power to a contaminated receptacle may result in electric shock, sever personal injury or death.

The BIGFOOT XL has an AC charging receptacle mounted on the rear panel. The receptacle will accept any standard industrial rated grounded cord with a NEMA 5-15 receptacle (see illustration below). Make sure the cord used is approved for 15 Amps.

Make sure that the receptacle is clean and dry before connecting the charger cord.

Always remove the charging cord before operating the vehicle. There is a storage area in the driver compartment to stow the cord.

Note: The receptacle is equipped with a cap. The cap should be securely installed after the charging cord is removed.

⚠WARNING

Use of extension cords is not recommended. Improper use of an extension cord may result in fire.

Cord with NEMA 5-15 connectors

NOTICE

The charger originally supplied with the vehicle is for use with the batteries originally supplied with the vehicle. If installing a different charger or batteries, consult the charger and/or battery manufacturer to confirm that the charger used is compatible with the batteries. Use of an incorrect charger will result in damage and premature failure of the batteries.

Charging Time

Average charging time is typically 8 to 10 hours. The time required to fully charge your batteries will vary depending on:

- Capacity of the batteries: Higher capacity battery requires longer charge time.
- Output of the charger: Higher charger output requires less charge time.
- Depth of discharge: The deeper a battery is discharged, the longer it takes to charge.
- Temperature: Low temperatures require longer charge time.

It is not unusual for charge times to exceed 15 hours, especially with new batteries.

NOTICE

Charging batteries emit hydrogen. Hydrogen is known to cause false alarms in carbon monoxide detectors.

To Obtain the Maximum Battery Life

Charge the battery only after it reaches a normal discharge (20%) as indicated on the Battery Status Indicator (BSI). Failure to follow this guideline could result in the battery entering an overcharge state, which will reduce the life of the battery. If you find it necessary to charge the battery before it is completely discharged, we recommend waiting until it is discharged a minimum of 30% to reduce the possibility of overcharging. Refer to Vehicle Controls in this section for information on how to read the BSI.

Do not discharge the battery beyond a normal discharge as indicated on the BSI. Discharging your battery too deep will result in premature failure of the battery. Refer to Vehicle Controls in this section for information on how to read the BSI.

Check the battery electrolyte level once a week. Do not charge the battery if the battery electrolyte is low. Charging when the electrolyte is low will damage the batteries and shorten the life-span of the battery. Only authorized personnel should perform battery maintenance including maintaining the battery electrolyte level. Refer to the Battery Maintenance Section for battery maintenance information.

It is not recommended to interrupt the charging cycle. Allow the charger to turn off before disconnecting the AC plug. Interrupting the charging cycle could lead to overcharging or discharging the batteries too deep. Both circumstances will result in premature failure of the battery.

New Battery Break-In

New batteries (except AEM) require a break-in period of up to 40 cycles. The batteries will not have their full capacity during this break-in period and may result in longer charging times.

AC Power Source

The AC power source required by the charger will vary depending on the charger installed in the vehicle. Refer to the specifications printed on the charger for details.

Use of extension cords is not recommended. If you find it necessary to use an extension cord, make sure the extension cord power rating exceeds the power requirements of the charger.

⚠WARNING

Use of extension cords is not recommended. Improper use of an extension cord may result in fire.

The United States Federal, State or local regulations may require the use of a Ground Fault Interrupter (GFI) cable or AC outlet equipped with a GFI for charging your vehicle. A charger cord with an integral GFI is available through your Taylor-Dunn dealer.

Signet Model HBS Charger

NOTICE

This charger is rated for 115 VAC or 230 VAC operation (nominal). When switching from one input voltage to the other, wait until all LEDs are off. Switching voltage when any of the LEDs are on will result in damage to the charger.

Sealed Lead Acid batteries (SLA) must be charged with a charger configured for SLA batteries. Use of any other charger will result in damage and premature failure of the batteries.

Description of Operation

The Signet model HBS charger is designed as an automatic charger. It is available with charging profiles for SLA and FLA batteries. The charger turns itself on when it is plugged into the wall outlet and turns off when the batteries are fully charged. The charger continues to monitor the battery voltage and if the battery voltage drops below a threshold value, the charger will turn on again for a short cycle to keep the batteries topped off.

The charger face plate has a series of lamps to enable monitoring of the charging cycle. More details of the lamp's operation are shown later in this section.

Status Light Panel

Charging with the Signet Charger

⚠WARNING

Refer to grouped safety warnings and information at the start of this chapter.

Note: Opportunity charging is not recommended. For maximum battery life, it is recommended that the batteries be discharged a minimum of 30% (7 bars showing on the BSI) before starting a charging cycle.

This charger requires a standard household electrical circuit rated at a minimum of 15 Amps. Consult an authorized electrician if you do not know the configuration of your circuits.

1. Park the vehicle at an authorized charging station. Refer to Parking in the Driving section.
2. Connect the charging cord to the vehicle charging port and then plug the cord into the AC power receptacle.
3. The charger status LEDs will flash in sequence as the charger performs a self-diagnosis and systems check.
4. The charger will start the charging cycle only after it has determined that all systems are OK.

Note: It is recommended that the charging cycle be allowed to complete normally before disconnecting the AC power cord.

A beeping noise from the charger is an indication of a fault during the charging cycle. Refer to the table below for fault information.

There is a status light panel on the charger faceplate that displays the current status of the charger. The first light on the left (POWER) should be ON when the AC cord is connected to a working AC power source.

The three STATUS LED lights will indicate the current charging condition as follows:

- **Left** Charge cycle is ON and is in constant current mode.
- **Left & Middle** (80%): Charge cycle is ON and is in constant voltage mode.
- **Right** (100%): Charge cycle completed.

The FAULT light will turn ON and flash a fault code only if an abnormal charging condition has occurred. Refer to the following fault code table for more information.

Note: Critical faults will be accompanied with an audible beeping.

Fault Code	Description	Action Required
1 (no flash)	Time out	The charging cycle did not complete when expected. This could be due to too deep of a discharge or faulty batteries. If the fault reoccurs, have the batteries tested by a qualified technician.
2*	Open circuit or reverse polarity to the battery	Check the charger connections to the battery.
3*	Battery voltage too high	Wrong charger installed. Confirm that the charger voltage matches the battery voltage.
4	Charger overheated	Check for dirt, mud, or other debris on the charger cooling fins and clean as needed.
5*	AC line voltage out of range	**Check the input AC line voltage. The voltage must be within 85-135 VAC or 170-264 VAC.
6	Low battery voltage	Battery discharged too deep, faulty battery, or incorrectly wired battery. The charger will operate in low current mode until the battery voltage is up to a normal level, then resume normal charging. If this fault does not reset, have the battery tested by a qualified technician and check the battery wiring.
*	These faults will be accompanied with an audible beep which indicates that the charging cycle was terminated prematurely.	
**	Only a qualified electrician should check the AC line voltage.	

Lester Summit Charger

NOTICE

Confirm the chargers active profile is the same type as the batteries installed in the vehicle. Charging with an incorrect profile will result in premature failure of the batteries.

The charging profile code is the last two characters in Lesters part number. Contact Lester Electrical for additional information

This charger is rated to operate from on AC voltages from 100 to 264 but will function down to 90 volts with reduced output.

Charging Profiles			
Charger Model	Volts	Profile Code	Battery Type
28000	48	W1	FLA 6A Finish
		W4	FLA 8A Finish
		W6	FLA 11A Finish
		A1	AGM
		G1	GEL
28230	36	W1	FLA 7A Finish
		W4	FLA 9A Finish
		W6	FLA 11A Finish
		A1	AGM
		G1	GEL
27950	24	W1	FLA 7A Finish
		W4	FLA 9A Finish
		W6	FLA 11A Finish
		A1	AGM
		G1	GEL

Description of Operation

The Lester Summit charger is designed as an automatic charger.

The charger turns itself on when it is plugged into the wall outlet and turns off when the batteries are fully charged.

The charger has a storage mode that will periodically start a short charge cycle to keep the batteries fresh. Disconnecting the batteries or AC power will disrupt the storage mode function.

The charger face plate has a series of lamps to enable monitoring of the charging cycle.

- Charge Status (yellow): Indicates the charge cycle status
- Charge Complete (green): Indicates a completed charge cycle.
- Fault (red): Indicates a fault

Tables on following pages provide details on the function of these lamps.

Charging with the IC650 Charger

⚠WARNING

Refer to grouped safety warnings and information at the start of this chapter.

Note: Opportunity charging is not recommended. For maximum battery life, it is recommended that the batteries be discharged a minimum of 30% (7 bars showing on the BSI) before starting a charging cycle.

This charger requires a standard household electrical circuit rated at a minimum of 15 Amps. Consult an authorized electrician if you do not know the configuration of your circuits.

1. Park the vehicle at an authorized charging station. Refer to Parking in the Driving section.
2. Connect the charging cord to the vehicle charging port and then plug the cord into the AC power receptacle.
3. The charger status lamps will flash in sequence as the charger performs a self-diagnosis and systems check.
4. The charger will start the charging cycle only after it has determined that all systems are OK.

Note: It is recommended that the charging cycle be allowed to complete normally before disconnecting the AC power cord.

Charger Lamp Status		
Charge Status	Charge Complete	Description
Slow Blink	OFF	Bulk/Start charge cycle phase (constant power or constant current).
Fast Blink	OFF	Absorption/Plateau charge cycle phase (constant voltage). Greater than 80% charged.
ON	Off	Finish charge cycle phase (constant current). Not all charge profiles include a Finish phase.
OFF	Fast Blink	Balance/Equalize phase. An extended charge cycle is occurring because a trigger condition has been met (cycle count, etc). Not all charge profiles include a Balance/Equalize phase.
OFF	ON	Charge cycle complete.
OFF	Slow Blink	Charge cycle complete. Post Charge phase (constant voltage float, etc). Not all charge profiles include a Post Charge phase.

Diagnostic Fault Codes

If the fault LED is on or flashing then a fault has occurred. The status of the three lamps indicate a fault code. Note: “Slow Flash” = about once per second.

Fault Lamp	Status Lamp	LED 3	Condition
Slow Flash	ON	ON	Not a valid code for Taylor-Dunn charging systems
Slow Flash	OFF	ON	Charger overheated
Slow Flash	ON	OFF	Low battery voltage. Must be > 10 volts to start.
Slow Flash	OFF	OFF	AC power interrupted during charge cycle. Will restart when AC power restored
Slow Flash	ON	Slow Flash	Faulty charger
Slow Flash	Slow Flash	OFF	Faulty charger
Slow Flash	Slow Flash	ON	Faulty charger
Fast Flash	-	-	Faulty charger
ON	OFF	OFF	Charge time too long during one of the phases. Likely faulty batteries or batteries too large.
ON	OFF	Slow Flash	Maximum voltage was achieved. Possible faulty or wrong batteries installed
ON	OFF	ON	Minimum voltage was NOT achieved. Likely faulty batteries
ON	Slow Flash	OFF	Maximum power (Amp hours) for charge cycle was exceeded. Likely faulty batteries or batteries too large.
ON	Slow Flash	Slow Flash	Maximum time for charge cycle was exceeded. Likely faulty batteries or batteries too large.

Lester Summit II Charger

Description of Operation

The Summit II charger is designed as an automatic charger. It is available with charging profiles for SLA and FLA batteries. Refer to the factory specifications on the charger for the type of battery it was configured for when manufactured. Use of different batteries not listed may result in premature failure of the batteries.

The charger turns itself on when it is plugged into the wall outlet and turns off when the batteries are fully charged. The charger continues to monitor the battery voltage and if the battery voltage drops below a threshold value, then the charger will turn on again for a short cycle to keep the batteries topped off.

There are three lamps on the charger used to indicate the active charging status and if any faults occurred during the charging cycle.

The charger features Bluetooth® wireless communication, which enables a smart phone or tablet running the ChargerConnect™ app to be used to:

- View the real-time charge cycle status
- Download charge cycle history records from the charger
- Upload charge cycle history records to the Cloud for access anywhere in the world
- Select the active battery profile
- Download new battery profiles from the Cloud
- Upload battery profiles to the charger

Detailed operating instructions and the ChargerConnect™ app can be downloaded from the Lester Electrical web site. *http://www.lesterelectrical.com*

Instructions for using the ChargerConnect™ app are also available on the Lester web site.

The charger data plate includes a label with the Factory Specifications programed in the charger at time of manufacture. If the program settings are changed then a new label should be applied with the specifications. Replacement labels are not available from the factory.

Charging, Summit II Charger

⚠WARNING

Refer to grouped safety warnings and information at the start of this chapter.

Note: Battery pack voltage must exceed 10 volts for the charger to start.

This charger requires a standard household electrical circuit rated at minimum of 15 Amps. Consult an authorized electrician if you do not know the configuration of your circuits.

1. Park the vehicle at an authorized charging station. Refer to Parking in the Driving section.
2. Connect the charging cord to the AC power receptacle.
3. The charger will start the charging cycle after it has determined that all systems are OK. This will be indicated by the Status lamp flashing slowly (≈1/second).

Note: It is recommended that the charging cycle be allowed to complete normally before disconnecting the power cord.

Note: The charger will wait 1 minute before starting if the plug is removed and reconnected.

The Charge Status lamp (yellow) will indicate the active charging phase as follows:

- **Slow flash**: Charge cycle is ON and is in constant current mode.
- **Rapid flash**: Charge cycle is ON and is in constant voltage mode.
- **Solid**: Charge cycle is in finish mode.

The Charge Complete lamp (green) will indicate the charging status as follows:

- **Slow flash:** Charge cycle is complete and is in post charging phase.
- **Rapid flash:** Normal cycle is complete and now in equalizing phase.
- **Solid:** Charge cycle is complete.

All 3 status lamps will be ON solid when the charge cycle is started and the charger is in the boot up phase.

All 3 status lights will flash slowly when Bluetooth device is connected.

The FAULT lamp will turn ON solid or flash only if an abnormal charging condition has occurred. All three lamps are used to indicate a fault condition. Refer to the following fault code table for more information.

Fault lamp	Status lamp	Complete lamp	Fault Description
Slow flash	OFF	ON	Charger overheated
Slow flash	Fast flash	Slow flash	Unable to start due to temperature below -25°C. Cycle will start when temperature irises
Slow flash	ON	OFF	Battery voltage below 10 volts
Slow flash	OFF	OFF	AC power interrupted. This fault will only display for 1 minute and then clear.
Slow flash	ON	Slow flash	Charger internal fault
Slow flash	Slow flash	OFF	Charger internal fault
Slow flash	Slow flash	ON	Charger internal fault
Fast flash	-	-	Charger internal fault
The following conditions are an indication of battery problems			
ON	OFF	OFF	Time out: One or more charging phases exceeded a time limit
ON	OFF	Slow flash	Battery voltage exceeded threshold indicating one or more faulty batteries
ON	OFF	ON	Battery voltage too low indicating one or more faulty batteries
ON	Slow flash	OFF	Time out: Possible too large AH battery installed.
ON	Slow flash	Slow flash	Time out: Total charging time exceeded a time limit indicating one or more faulty batteries

Delta-Q QuiQ Charger

Description of Operation

NOTICE

Confirm the chargers active profile is the same type as the batteries installed in the vehicle. Charging with an incorrect profile will result in premature failure of the batteries.

The Delta-Q QuiQ is designed as an automatic charger. It is available with charging profiles for SLA and FLA batteries. The charger turns itself on when it is plugged into the wall outlet and turns off when the batteries are fully charged. The charger continues to monitor the battery voltage and if the battery voltage drops below a threshold value, the charger will turn on again for a short cycle to keep the batteries topped off.

The charger face plate has a series of lamps to enable monitoring of the charging cycle. More details of the lamp's operation are shown later in this section.

Charging with the QuiQ Charger

⚠WARNING

Refer to grouped safety warnings and information at the start of this chapter.

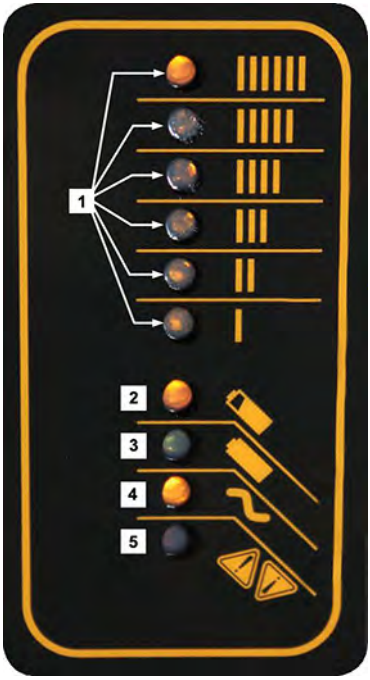
Note: Opportunity charging is not recommended. For maximum battery life, it is recommended that the batteries be discharged a minimum of 30% (7 bars showing on the BSI) before starting a charging cycle.

This charger requires a standard household electrical circuit rated at a minimum of 15 Amps. Consult an authorized electrician if you do not know the configuration of your circuits.

1. Park the vehicle at an authorized charging station. Refer to Parking in the Driving section.
2. Connect the charging cord to the vehicle charging port and then plug the cord into the AC power receptacle.
3. The charger status LEDs will flash in sequence as the charger performs a self-diagnosis and systems check.
4. The charger will start the charging cycle only after it has determined that all systems are OK.

Note: It is recommended that the charging cycle be allowed to complete normally before disconnecting the AC power cord.

There is a status light panel on the charger faceplate that displays the current status of the charger.



1) Ammeter

- **Solid**: Displays scale of output during bulk phase.
- **Flashing**: Output has been reduced due to high internal charger temperature.
- **No battery connected**: Displays charge profiles 1-6.

2) Bulk Charge Indicator

- **Solid**: Bulk charge phase completed (80% charged) and is in absorption phase.
- **Flashing**: Displays charge profile number if no battery is connected.

3) Charge Completion Indicator

- **Solid**: Charging complete and maintenance mode is active.
- **Flashing**: Absorption phase completed and is in finishing phase.

4) AC Indicator

- **Solid**: AC power is present.
- **Flashing**: Low AC voltage. Refer to qualified technician.

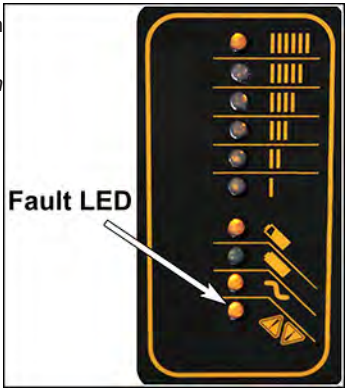
5) Fault Indicator

- Charger fault. Refer to troubleshooting information below.

Troubleshooting Instructions

If a fault occurs, count the number of flashes between pauses and refer to the table below.

Note: If there is no discernible pause then it is an indication of fault code 1.



FLASHES	CAUSE	SOLUTION
1	High battery voltage	Check battery size and condition. This fault will clear automatically once the condition has been corrected.
2	Low battery voltage	Check battery size and condition. This fault will clear automatically once the condition has been corrected.
3	Charge time out caused by battery pack not reaching required voltage or charger output reduced due to high temperatures.	Check battery connections. Confirm that the battery type matches selected charge profile Operate the charger at a lower ambient temperature. Reset the charger by interrupting AC power for 15+ seconds.
4	Battery could not be trickle charged up to minimum voltage.	Check for shorted or damaged cells. Reset the charger by interrupting power for 15+ seconds.
5	Charger shutdown due to high internal temperature.	Ensure sufficient cooling airflow. Reset the charger by interrupting AC power for 15+ seconds.
6	Internal charger fault	Reset the charger by interrupting AC power for 15+ seconds. Refer to qualified technician if fault persists.

Delta-Q IC650 Charger

NOTICE

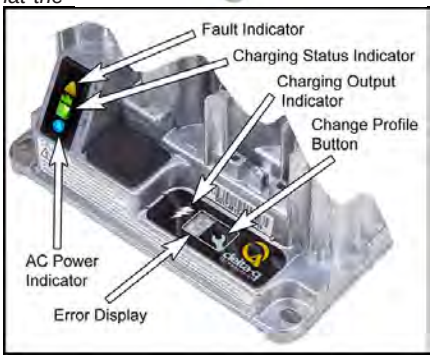
Confirm the chargers active profile is the same type as the batteries installed in the vehicle. Charging with an incorrect profile will result in premature failure of the batteries.

The Delta-Q IC650 is designed as an automatic charger. It is available with charging profiles for SLA and FLA batteries. The charger turns itself on when it is plugged into the wall outlet and turns off when the batteries are fully charged. The charger continues to monitor the battery voltage and if the battery voltage drops below a threshold value, the charger will turn on again for a short cycle to keep the batteries topped off.

The charger face plate has a series of lamps to enable monitoring of the charging cycle. More details of the lamp's operation are shown later in this section.

Charging with the IC650 Charger

Note: Opportunity charging is not recommended. For maximum battery life, it is recommended that the batteries be discharged a minimum of 30% (7 bars showing on the BSI) before starting a charging cycle.



This charger requires a standard household electrical circuit rated at a minimum of 15 Amps. Consult an authorized electrician if you do not know the configuration of your circuits.

1. Park the vehicle at an authorized charging station. Refer to Parking in the Driving section.
2. Connect the charging cord to the vehicle charging port and then plug the cord into the AC power receptacle.
3. The charger status lamps will flash in sequence as the charger performs a self-diagnosis and systems check and the AC Power Indicator will be ON.
4. The charger will start the charging cycle only after it has determined that all systems are OK and will turn on the Charging Output Indicator.

Note: It is recommended that the charging cycle be allowed to complete normally before disconnecting the AC power cord.

There is a status light panel on the charger faceplate that displays the current status of the charger

Charging Indicator Status	
Lower Segment Flashing	Bulk charge stage
Lower Segment Solid	Bulk charge complete
Upper segment flashing	Finish charge cycle
All Solid	Charge cycle complete

Fault Indicator Status		
Solid Red	Internal charger fault	Get fault code from the Error Display
Flashing Amber	External charging fault	Get fault code from the Error Display
Flashing Green	USB port is active	DO NOT remove USB thumb drive
Solid Green	USB port idle	OK to remove USB thumb drive

Diagnostic Trouble Codes

Code	Description	Solution
E-0-0-1 E-0-2-1	Battery high voltage	Possible causes: wrong battery voltage for charger, other charger also attached, resistive battery. Possible solutions: check the battery voltage and cable connections. Check battery size and condition. This error will automatically clear once the voltage is in range.
E-0-0-2 E-0-2-2	Battery low voltage	Possible causes: battery disconnected, battery over discharged. Possible solutions: check the battery voltage and cable connections. Check battery size and condition. This error will automatically clear once the voltage is in range.
E-0-0-3	Charge time out caused by battery pack not reaching required voltage within safe time limit (charge profile dependent)	Possible causes: charger output reduced due to high temperatures, poor battery health, very deeply discharged battery and /or poorly connected battery. Possible solutions: operate at lower ambient temperature. Replace battery pack. Check DC connections. This error will clear once the charger is reset by cycling DC or AC.
E-0-0-4	Battery could not meet minimum voltage (charge profile dependent)	Possible causes: check for shorted or damaged cells. Possible solutions: replace battery pack. Check DC connections. This error will automatically clear once the charger is reset by cycling DC or AC.
E-0-0-7	Battery amp hour limit exceeded	Possible causes: poor battery health, very deeply discharged battery, poorly connected battery, and / or high parasitic loads on battery while charging. Possible solutions: replace battery pack. Check DC connections. Disconnect parasitic loads. This error will automatically clear once the charger is reset by cycling DC or AC.
E-0-0-8	Battery temperature is out of range	Possible battery temperature sensor error. Check temperature sensor and connections. Reset charger. This error will clear once the condition has been corrected.
E-0-1-2	Reverse polarity error	Battery is connected to the charger incorrectly. Check the battery connections. This error will clear once the condition has been corrected.
E-0-1-6 E-0-1-8 E-0-2-6	USB operation failed (software)	Software upgrade failure or script operation failure. Ensure the USB flash drive is properly formatted and reinsert the USB flash drive.
E-0-1-7	USB operation failed (hardware)	Remove and reinsert the USB drive. If condition persists, cycle AC and retry by reinserting the USB drive.
E-0-2-3	High AC voltage error (>270VAC)	Connect charger to an AC source that provides stable AC between 85 - 270 VAC / 45-65 Hz. This error will clear once the condition has been corrected.
E-0-2-4	Charger failed to initialize	The charger has failed to turn on properly. Disconnect AC input and battery for 30 seconds before retrying.
E-0-2-5	Low AC voltage oscillation error	AC source is unstable. Could be caused by undersized generator and /or severely undersized input cables. Connect charger to an AC source that provides stable AC between 85 - 270 VAC / 45-65 Hz. This error will clear once the condition has been corrected.
F-0-0-1, F-0-0-2, F-0-0-3, F-0-0-4, F-0-0-6		Internal charger fault. Remove AC and battery for minimum 30 seconds and retry charger. If it fails again, please contact the manufacturer of your vehicle or machine.

Storing and Returning to Service

Both storing your vehicle and returning it to service should only be performed by authorized personnel.

Storing Your Vehicle

- Clean the batteries, then fill and charge before putting the vehicle in storage. Do not store batteries in a discharged condition.
- Lube all grease fittings.
- Clean, dry, and check all exposed electrical connections.
- Inflate the tires to proper pressure (if applicable).
- For extended storage, the vehicle should be elevated so that the tires are not touching the ground.

NOTICE

Storing batteries that are discharged or allowing stored batteries to discharge while in storage causes sulphation of the battery plates. This will result in reduced capacity and premature failure of the batteries.

If stored for a prolonged period, the batteries should be charged as follows:

Storage Temperature (F)	Charging Interval (Months)
Over 60	1
Between 40 and 60	2
Below 40	6

Returning to Service

- Check the battery state of charge and charge if required.
- Perform all applicable maintenance checks in the Maintenance Schedule.
- Remove any blocks from the vehicle and/or place the vehicle down on to the ground.
- Test drive before putting into normal service.

Vehicle Maintenance

Daily Inspection

The following items should be inspected once every day before the vehicle is put into service:

- External frame damage (body).
- Operation of all lights, warning alarms.
- Smooth and proper operation of seat belts (if equipped).
- Smooth and proper operation of all controls such as but not limited to:
  - Throttle pedal
  - Brake pedal
  - Steering
  - Horn
  - Park brake
  - Etc.
- Proper operation of all locking devices such as but not limited to:
  - Tool box
  - Removable battery trays
  - Battery lid
  - Cargo box
  - Cab doors
  - Etc.
- Proper operation of all interlocking switches such as but not limited to:
  - Key switch
  - Seat interlock switch
  - Charger interlock switch
  - Etc.
- Inspect for leaking fluids or grease.

Pre-Operation Inspection

The following items should be inspected every time before the vehicle is driven:

- Confirm all removable seat cushions are correctly installed and secured in position. .
- Rear and side view mirror adjustments.
- Steering operation.
- Brake operation (service and park brake).
- Tire pressure (visual inspection only).
- Trailer hitch operation, latch, and wear.

⚠WARNING

Remove cargo before raising the vehicle, rasing or removing the deckboard, or servicing the vehicle. Failure to remove the cargo may result in cargo falling from the vehicle causing severe personal injury and/or property damage.

INTERLOCK SWITCH INSPECTION

The interlock switches should disable vehicle operation when activated. Perform the following to confirm proper operation. If any one test fails, then immediately remove the vehicle from service and refer repair to a qualified technician.

⚠WARNING

These procedures may result in unexpected vehicle movement.

- **All procedures shall be performed in an area that allows for possible movement of the vehicle and room to safely stop the vehicle if it moves.**
- **DO NOT allow any personnel to stand in front or behind the vehicle while performing these procedures.**

Failure to follow the above instructions may result in severe personal injury and/or property damage.

DO NOT bypass, modify, or disable any interlock switch. Doing so could result in unexpected movement of the vehicle causing severe bodily injury and/or property damage.

All procedures are done with the charger disconnected from its power source except for the procedure testing the charger interlock. If using a portable charger, disconnect the charger cable from the vehicle.

If equipped with a battery disconnect switch, make sure it is in the run position before performing procedures.

Start Switch

Sit in the operator position, select a direction, then slowly press the throttle pedal.

- The vehicle should not operate.

Release the pedal and place the direction control switch in the center OFF position.

Turn the start switch ON, select a direction and slowly press the throttle pedal.

- The vehicle should operate normally.

Operator Presence Switch

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should operate normally.

Release the throttle pedal, lift up off the driver seat and again slowly press the pedal.

- The vehicle should not operate.

Parking Brake Switch:

Note: This switch is optional and may not be installed on your vehicle. Refer to you original vehicle option list to determine if the vehicle is equipped with this switch.

Sit in the operator position and set the park brake.

Turn the start switch ON, select a direction, and press the throttle pedal.

- The vehicle should not operate.

Release the park brake.

- The vehicle should operate normally.

Brake Interlock Switch

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should operate normally.

While operating at a slow speed; press the brake pedal with your left foot.

- The motor control system should turn off and a DTC should be displayed on the dash display.

Charger Interlock Switch

Connect the charger to its power source. If using a portable charger, connect the charger cable to the vehicle.

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should not operate.

Disconnect the charger and wait 1 minute.

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should operate normally.

Battery Door Switch

Remove all battery access doors.

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should not operate.

Replace one door at a time and attempt to operate the vehicle after each door is installed.

- The vehicle should not operate until the last door is installed, then it should operate normally.

Battery Inspection Box

Unlatch each battery door.

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should not operate.

Properly latch each box one at a time and attempt to operate the vehicle after each box is latched.

- The vehicle should not operate until the last box is latched, then it should operate normally.

Dump Bed Interlock

Raise the dump bed no more than 3 inches.

Sit in the operator position, turn the start switch ON, select a direction, and slowly press the throttle pedal.

- The vehicle should not operate.

Fully lower the bed.

- The vehicle should operate normally.

Maintenance Schedule

Maintenance shall only be performed by a qualified technician. Details regarding the service procedures can be found in the vehicle service manual.

Any problems found during an inspection should be repaired before the vehicle is put back into service.

Every Week

- All daily items plus the following:
  - Battery electrolyte level (all cells).
  - Check the tread of all tires for debris or damage.
  - Check the air pressure of all tires.

First 10 hours of Operation

- Re-torque the wheel nuts.
- Inspect all hardware for tightness.

Every Month or 100 hours

- All weekly items plus the following:
  - Brake fluid level.
  - Check all tires for tread wear.
  - Wash the battery compartment.
  - Clean the charger cooling fins or vents.
  - Clean the drive motor exterior.
  - Tighten steering couplers and U-joints.
  - Inspect all electrical interlocks.
  - Inspect all hardware for tightness.

Every 6 months or 500 hours

- All monthly items plus the following:
  - Clean the control panel.
  - Re-torque the wheel nuts.
  - Inspect all hardware for tightness.
  - Adjust park brake.
  - Inspect all electrical connections for signs of overheating.
  - Tighten all power electrical connections.
  - Inspect all wiring for cracks, fraying, or wear.
  - Inspect all steering linkages.
  - Lubricate the vehicle.
  - Test the batteries.

Every year or 1,000 hours

- All 6 month items plus the following:
  - Inspect and adjust front wheel bearings.
  - Inspect steering king pins.
  - Inspect suspension bushings and bumpers.
  - Rotate tires.
  - Align the front end.
  - Inspect frame for damage.

Every 2 years or 2,000 hours

- All yearly items plus the following:
  - Clean and repack front wheel bearings.
  - Flush and replace the brake fluid.
  - Flush and replace the transaxle oil.

Maintenance Guidelines for Severe Duty Applications

The above maintenance schedule is based on the average typical application. If the vehicle is operated under “severe conditions,” service procedures should be conducted more frequently than specified. The frequency of service under severe conditions is determined by the use of the vehicle. The owner/operator must evaluate the operating environment to determine the increase in maintenance frequency.

In addition, the entire vehicle should be inspected monthly for signs of damage.

The following list is meant as a guide and is not all-inclusive of a “severe duty” application.

- Mileage in excess of 500 miles (800) per month.
- Extreme temperature.
- Bumpy, dusty, or ill-maintained roads.
- Excessively wet areas.
- Corrosive or contaminated areas.
- Frequent loading of the vehicle at/near capacity.

BATTERY MAINTENANCE

⚠WARNING

High Voltage is present in the battery compartment. DO NOT touch the battery terminals during servicing of the battery as this may result in severe electric shock and/or death.

⚠DANGER

- **Battery electrolyte is poisonous and corrosive. It contains sulfuric acid. Avoid contact with skin, eyes, or clothing. Wear rubber gloves and face safety shield while servicing batteries. DO NOT INGEST! This will result in severe bodily injury.**
- **Wear a full face shield when working on or around batteries. A full face shield will help protect your eyes from battery electrolyte. If battery electrolyte gets in your eyes, immediately flush your eyes with large amounts of water and seek medical attention.**
- **Wear heavy duty long rubber gloves when working on or around batteries. If battery electrolyte gets on your skin, immediately flush with large amounts of water to prevent chemical burns.**
- **Explosive mixtures of Hydrogen gas are present within battery cells at all times. Do not work with or charge batteries in an area where open flames (including gas furnace or water heater pilots), sparks, cigarettes, or any other sources of combustion are present. Always provide ample ventilation in rooms where batteries are being charged. Failure to do so may result in severe bodily injury and/or property damage.**
- **Lead is poisonous. Batteries and battery terminals contain lead and lead components. Avoid touching the battery terminals and always thoroughly wash hands after servicing the batteries.**
- **A battery is a live electrical source. It cannot be disconnected or neutralized. Do not drop any tool or conductive object onto the battery. A conductive object that comes in contact with the battery terminals will initiate a short circuit of the battery. This could cause the battery to explode resulting in severe bodily injury and/or property damage.**
- **Do not leave cables on batteries that have been removed from the vehicle. Cables left on batteries could cause a short circuit resulting in battery explosion, severe bodily injury and/or property damage.**

NOTICE

- **Battery electrolyte will stain and corrode most surfaces. Immediately and thoroughly clean any surface outside of the battery that the battery electrolyte comes in contact with. Failure to clean may result in property damage.**
- **When torquing battery hardware, use a backup wrench on the battery bolt and tighten the nut. Failure to use a backup wrench may damage the battery post.**
- **DO NOT remove the caps on a maintenance free battery. Removing the caps will damage or destroy the battery seals resulting in premature battery failure.**
- **Do not operate or charge a vehicle equipped with moist charged batteries until the batteries have been filled with electrolyte. Operating or charging moist charged batteries before filling with electrolyte will damage the batteries resulting in premature failure of the batteries.**

Cleaning

⚠WARNING

1) **Refer to battery warnings at the start of this chapter.**
2) **Place the Directional Control switch in the center "OFF" position (neutral).**
3) **Turn the Start switch OFF.**
4) **Set the park brake.**
5) **Place blocks under the front or rear wheels to prevent vehicle movement.**
6) **Disconnect the battery main positive and negative cables or disconnect the main battery plug.**

6. Dry dirt can be readily blown off with low-pressure air or brushed off.
7. Wetness or wet dirt on the battery indicates battery acid. Using a nonmetallic brush with flexible bristles, wash the battery off with a strong solution of baking soda and hot water (one pound of soda to a gallon of water). Continue until all fizzing stops, which indicates that the acid has been neutralized. Then rinse thoroughly with clear water. DO NOT get any of the solution into the battery cells.
8. Remove the blocks from the wheels and test drive.

Watering

Non-maintenance free batteries only.

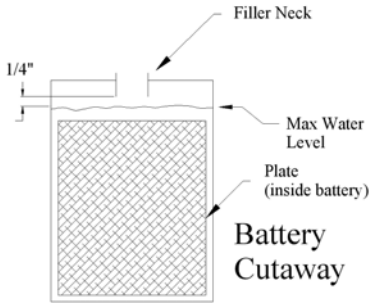
⚠CAUTION

Do not overfill the batteries. Overfilling the batteries may cause the batteries to boil over and result in chemical burns and/or property damage.

Note: The electrolyte level in a battery rises while charging and will be close to its highest level after the end of a charging cycle. It is recommended to fill the battery at the end of a charging cycle. If the electrolyte is below the top of the battery plates, then fill just enough to cover the plates and top off when the charging cycle is complete.

⚠WARNING

1) **Refer to battery warnings at the start of this chapter.**
2) **Place the Directional Control switch in the center "OFF" position (neutral).**
3) **Turn the Start switch OFF.**
4) **Set the park brake.**
5) **Place blocks under the front or rear wheels to prevent vehicle movement.**
6) **Disconnect the battery main positive and negative cables or disconnect the main battery plug.**



7. Clean the battery. Refer to Cleaning section for information on cleaning the battery.
8. Check the electrolyte level in all battery cells. If low, fill to the correct level with distilled water using part number 77-201-00 battery filler. Never add additional battery electrolyte to the batteries.
9. Remove the blocks from the wheels and test drive.

BATTERY INSPECTION BOX

The Battery Inspection Box (BIB) is optional and may not be installed on your vehicle.

The BIB allows the vehicle operator to inspect and maintain the batteries without removing the deckboard.

There are two BIB's, one on each side of the vehicle.

Slide the BIB Out

Disconnect the battery connector.

Lift the BIB handle up and rotate it counterclockwise to release the latch then pull.

Note: There is a stop that will prevent the box from coming off of the vehicle.

Slide the BIB In

Rotate the BIB handle counterclockwise and push the BIB all the way in then rotate the handle clockwise to latch the box in place. When lock in place, push the handle down into the recess.

Connect the battery connector.

Note: The vehicle will not run unless the both BIB's are locked in place.

TIRES

⚠WARNING

Incorrect tire inflation can result in sudden failure of the tire and/or braking / steering problems leading to loss of control of the vehicle.

Never exceed the maximum pressure as indicated on the side wall of the tire. Exceeding the maximum pressure may cause explosive failure of the tire resulting in severe bodily injury.

Air Pressure

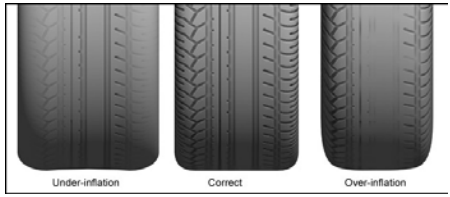
Maintaining the correct tire pressure is important to the safe operation of the vehicle as well as ensuring long tread life.

Under-inflated tires result in:

- Excessive tire side wall flexing that can result in sudden tire failure.
- Excessive tread wear resulting in shortened tire life.

Over-inflated tires result in:

- Tire explosion due to excessive pressure.
- Reduced road surface traction.
- Increased vibration from the road surface.
- Excessive tread wear resulting in shortened tire life.



Unequal tire inflation may result in:

- Uneven braking and loss of control of the vehicle.
- Steering pulling to the left or right.

Only check the tire pressure when the tire is cold. When checking tire pressure, you must check all tires including your spare tire.

The correct tire size and pressure can be found in the specifications list in the manual. The tire pressure shall only be adjusted when cold (i.e., "cold" is defined as the tires' internal temperature matches the ambient temperature before the vehicle has been driven). *Note: The front and rear tires may have a different tire pressure specification.*

⚠WARNING

DO NOT operate a vehicle if the cord is visible on any tire (see illustration). A tire in this condition may suddenly fail at any time resulting in loss of control of the vehicle.

Tire Tread Wear

It is important to periodically inspect the tread on each tire for wear. Driving with inadequate tread increases the risk of losing control of the vehicle due to hydroplaning on a wet road surface. It also increases the risk of a flat tire due to road debris. Extreme tire wear can result in sudden tire failure and loss of control of the vehicle.

Refer to the maintenance schedule in this manual for the recommended tire inspection interval.

Minimum recommended tread depth is 1/16 inch (1.5 mm). There are a series of tread depth wear indicators around the circumference of the tire. They will appear as 1/2 inch (13 mm) bands across the tread as the tire approaches its wear limit (see illustration). The tire should be replaced if any tread depth indicator can be seen or any part of the tread depth is 1/16 inch or less.

Changing a Tire/Wheel Assembly

⚠WARNING

If you have a flat tire while driving your vehicle, it is highly recommended that you slowly and carefully drive the vehicle off of any main road or highway before attempting to change the tire. Attempting to change a tire on a main road or highway exposes you to extreme danger of being struck by other vehicles.

⚠WARNING

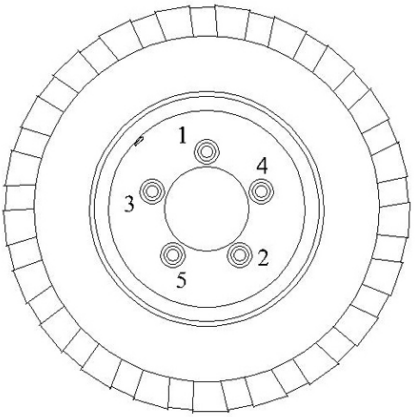
1) Park the vehicle on a hard level surface off of any main road or highway.
2) Make sure the Start switch is in the OFF position, then remove the key.
3) Place the Directional Control switch in the center OFF position.
4) Set the park brake.
5) Block the wheels on the opposite side of the tire to be changed.

⚠WARNING

When lifting the vehicle, always use a hoist with a lifting strap, or a jack of adequate capacity. Use jack stands to support the vehicle before starting any repairs. Failure to use lifting and support devices of rated load capacity may result in severe bodily injury.

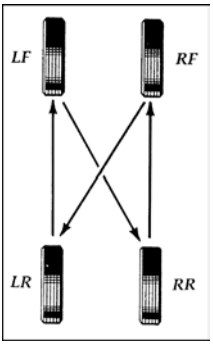
Note: A spare tire, jack, or lug wrench is not attached to the vehicle.

6. Loosen the wheel nuts (do not remove) before raising the tire off of the ground.
7. Raise the tire to be changed off of the ground and support it with a jack stand.
8. Remove the wheel nuts and tire/wheel assembly.
9. Install the replacement tire/wheel assembly.
10. Install the wheel nuts and cross tighten per the illustration below to 85 foot pounds (115 Nm).
11. Check the tire for proper inflation.
12. Lower the vehicle to the ground and remove the blocks from the wheels.
13. ***Wheel nuts should be checked for tightness after the first 100 miles (10 hours of operation).***



5-Bolt Pattern

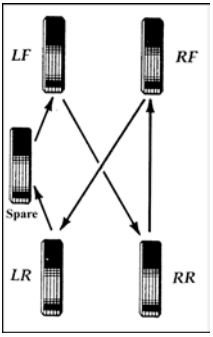
Tire Rotation



Front and rear tires as well as left and right tires can wear at different rates. It is important to periodically rotate your tires to extend the tire life. Refer to the maintenance schedule in this manual for the recommended interval.

Use the following pattern for a vehicle with no spare tire:

- Right Rear to Right Front
- Right Front to Left Rear
- Left Rear to Left Front
- Left Front to Right Rear



Use the following pattern for a vehicle with spare tire:

- Right Rear to Right Front
- Right Front to Left Rear
- Left Rear to Spare
- Spare to Left Front
- Left Front to Right Rear

Replacing a Tire

⚠WARNING

Tire replacement should only be performed by an authorized technician trained in tire replacement.

Improper tools or procedures can result in explosion of the tire/wheel assembly causing severe bodily injury or death.

⚠WARNING

Never mix tire types, tire sizes, speed ratings, or load capacity.

Only use the tire types and sizes approved for use on this model. Contact your authorized Taylor-Dunn dealer to confirm approved tire types and sizes.

Mixing tires or installing a tire that is not approved may:

- **Cause handling problems with the vehicle.**
- **Cause sudden tire failure due to mechanical interference.**
- **Accelerated tire wear and premature failure.**

Any of the above may cause loss of control of the vehicle resulting in a collision or accident with severe bodily injury.

BRAKE FLUID LEVEL

⚠WARNING

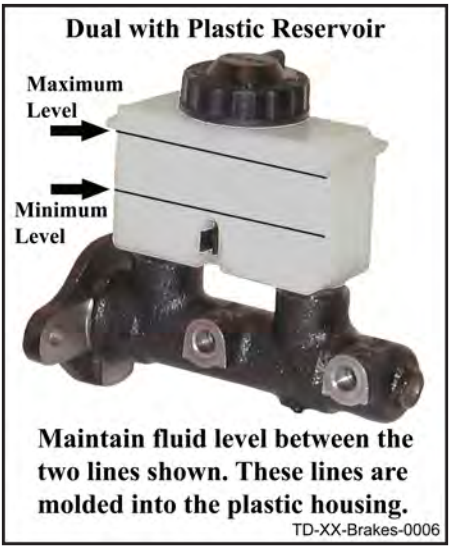
- **Only use DOT 3 brake fluid from a new sealed container.**
- **DOT 3 brake fluid is corrosive and will damage paint finishes.**
- **Dispose of brake fluid in accordance with local state and federal regulations.**
- **Read and follow all warnings provided on the brake fluid container.**
- **Wear protective gloves when handling brake fluid and thoroughly wash hands after handling brake fluid.**
- **Before removing the master cylinder cap, thoroughly clean the area around the master cylinder cap. If any contaminates or debris enter the master cylinder, it may result in diminished and/or loss of braking power resulting in a collision or accident with severe bodily injury.**

Periodically visually inspect the brake fluid level in the master cylinder. Low fluid level could result in diminished and/or loss of braking power.

The master cylinder is located behind the dashboard. Thoroughly clean the area around the master cylinder before removing the master cylinder cap.

Note: Refer to the maintenance schedule in this manual for the recommended inspection interval.

Refer to illustration for proper brake fluid level



CLEANING

Glass
The front, rear, and hard door windows are made of standard automotive glass and can be cleaned with any standard household glass cleaner.

Plastic Windows
The soft door windows are made of clear soft plastic that is easily scratched and can be damaged from some cleansers or solvents.

To remove any road tar or grease, use a 70% isopropyl alcohol solution and soft cloth, then wash with water and dry with a soft cloth.

- Do not use any abrasives or abrasive cleaners.
- Do not use any chemical cleaners or cleaning solvents.

Seats / Soft Doors
Clean your seats with any standard automotive vinyl cleaner.

Interior

NOTICE

DO NOT spray the interior with water. Large amounts of water may damage the electronics in the dash.

Use a mild liquid detergent in warm water to wipe down the interior of your vehicle.

Exterior Body

NOTICE

DO NOT use an automated car wash facility of any type. This vehicle is not designed to fit in any automated car wash and it is likely that the vehicle will be damaged.

Use any standard automotive exterior car wash solution. Do not use any abrasive cloths or cleaners.

Finish with a quality automotive wax to preserve the finish of your vehicle.

Cleaning the Seat Belts
Clean the safety belts with any mild soap solution that is recommended for cleaning upholstery or carpets. Do not bleach or dye the belt webbing because this may weaken it.

Battery Charger
The battery charger gets hot during normal operation and it is important that the cooling fins or vents are not caked with mud or dirt.

Refer to your maintenance schedule for the recommended cleaning interval.

Allow the charger to dry before starting a charging cycle.

⚠DANGER

DO NOT clean the vehicle will the charger is connected to an AC power source.

Failure to follow these instructions will lead to severe electric shock and/or death.

Under Carriage
For long life, it is important to keep the under carriage of the vehicle clean from caked on dirt, mud, or road salt. Any of these substances will cause accelerated corrosion of the frame and lead to premature failure.

When cleaning the under carriage, be careful not to get any cleaning solutions or excessive water into any electrical compartments.

Batteries
Refer to the Battery Maintenance section.

Control Panel
The electrical control panel is located in the rear of the vehicle, under the deckboard. This compartment is not sealed and requires periodic cleaning. Refer to your maintenance schedule for the recommended cleaning interval.

Remove the deckboard and use compressed air to blow out any debris.

If the control panel has been contaminated with any chemicals, mud, excessive dirt, road salt, etc., then the panel should be removed from the vehicle and thoroughly cleaned by a qualified technician.

BIGFOOT Standard Specifications

Models: B5-440-36 (36V) and B5-440-48 (48V)

ITEM		SPECIFICATION
Occupancy		1 Driver, 1 Passenger Max weight 250 pounds each (113 kg)
Dimensions		130.5 L x 44 W x 51.5 H Inches 3,314.7 L x 1,117.6 W x 1308.1 H Millimeter
Turning Radius		137 Inches (3,479.8 Millimeters)
Ground Clearance		5.5 Inches (139.7 Millimeters)
Weight	36V 48V	1,510 lbs. (684.9 kg) 1,650 lbs. (748.4 kg)
Maximum Load*		Total 3,000 lbs. (1,360.8 kg) On Deck 2,600 lbs. (1,179.3 kg) Occupants 400 lbs. (181.4 kg)
Electrical System	36V 48V	36 Volts (traction)12 Volts (accessories) 48 Volts (traction) 12 Volts (accessories)
Transmission		Helical Gear, Oil Bath Transaxle
Motor		7.5 HP AC 36 Volts/12.5 HP AC 48 Volts
Maximum Speed		12 mph (19.3 kph)
Brakes		Rear disc brakes with manual park brake
Steering		Manual, Rack and Pinion
Tires Pressure Front Pressure Rear		Pneumatic Tires, 5.70 x 8, load range C 70 psi (482.6 kpa) 70 psi (482.6 kpa)
Frame		Steel Unitized Frame
Seats		Dual adjustable bucket seats Driver's seat operator presence switch
Instrumentation Optional		Battery status indicator, Horn, Reverse motion Alarm, Key switch, light switch, high/low speed switch, Fwd/rev switch SmartView 52mm round CAN LCD display Multi-Function Display (Battery Status Indicator, Hour Meter, fault codes indication)
Lighting Accessories		Front Head Lights, Rear Tail/Brake Lights, Turn Signal Lights, LED Center Brake Light
Charger	36V 48V	Built-in, 110V AC, 1kW w/interlock Built-in, 110V AC, 1kW w/interlock (SCR)

Note: The above table is Standard Vehicle Specifications for models B5-440-36 and B5-440-48. This table does not reflect information for special order vehicles or after market revisions.

Specifications subject to change without notice.

This vehicle conforms to requirements for Type E vehicles as described in O.S.H.A. Standard Section 1910.178 (Powered Industrial Trucks) and with all applicable portions of the American National Standard for Personnel and Burden Carriers (ANSI B56.8).

BIGFOOT XL Standard Specifications

Model: B5-540-48XL

ITEM	SPECIFICATION
Occupancy	1 Driver, 1 Passenger Max weight 250 pounds each (113 kg)
Dimensions	130.5 L x 54 W x 52 H Inches 332 L x 137 W x 132 H Centimeters
Turning Radius	145 Inches (368 Centimeters)
Ground Clearance	5.8 Inches (14.7 Centimeters)
Weight	1,965 lbs. (855 kg)
Maximum Load*	Total 3,000 lbs. (1,360.8 kg) On Deck 2,600 lbs. (1,179.3 kg) Occupants 400 lbs. (181.4 kg)
Electrical System	48 Volts (traction) 12 Volts (accessories)
Transmission	Helical Gear, Oil Bath Transaxle
Motor	17 hp AC
Maximum Speed (Unloaded)	18 mph (29 kph)
Brakes	Front and Rear hydraulic disc with electric park brake
Steering	Manual, Rack and Pinion
Tires Pressure Front Pressure Rear	Pneumatic Tires, 20.5 x 8 x 10, load range E 90 psi 90 psi
Frame	Steel Unitized Frame
Seats	Dual adjustable bucket seats Driver's seat operator presence switch
Instrumentation	Clear View Display (Speed, Distance, Battery Status Indicator, Hours, Input Diagnostic & Fault Code Display), Dual USB Port, Emergency Power Cut Switch, Light Switch, Directional Control Selector, Reverse Alarm, High / Low Speed Selector, Key Switch, DC / DC Converter (on with key switch), and Electric Horn
Lighting Accessories	Dual LED Headlights, Taillights, and Brake Lights
Charger	48V Built-in, 17 amp SCR, 115 VAC, 1kW w/interlock

Note: The above table is a Standard Vehicle Specification for the BIGFOOT XL model. This table does not reflect information for special order vehicles or after market revisions.

Specifications subject to change without notice.

This vehicle conforms to requirements for Type E vehicles as described in O.S.H.A. Standard Section 1910.178 (Powered Industrial Trucks) and with all applicable portions of the American National Standard for Personnel and Burden Carriers (ANSI B56.8).

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TAYLOR-DUNN MANUFACTURING
TAYLOR-DUNN

⚠WARNING

Operating, servicing and maintaining a passenger vehicle or off-highway motor vehicle 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. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle.

For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

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