



**PURKEYS LIFTGATE CHARGING SYSTEM
DOUBLE CHECK™**

USER GUIDE

DOUBLE CHECK USER GUIDE



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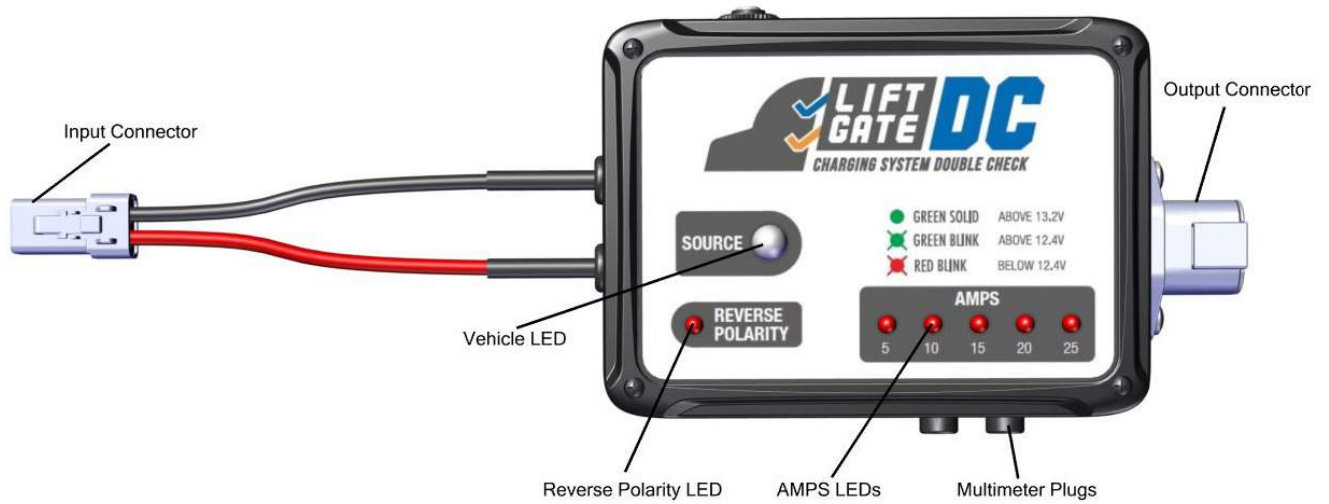


GENERAL INFORMATION

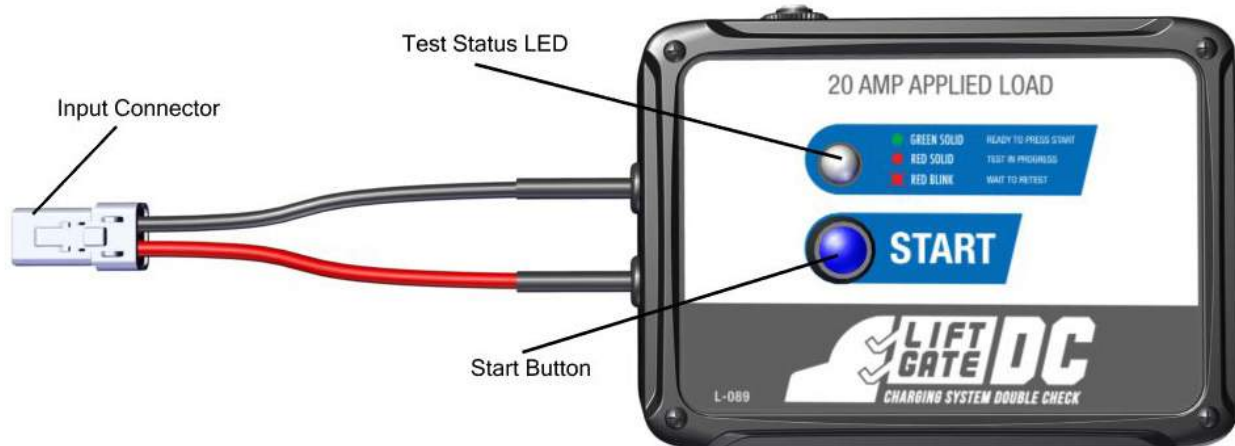
The Purkeys Liftgate Charging System Double Check™ (Double Check) is designed to provide a quick, convenient method for testing Purkeys Direct™ and Select™ liftgate charging systems. The Double Check can use any available vehicle as a power source. Before testing the liftgate charging system, the power source can be quickly tested with the 20 Amp Applied Load Tester to assure it is capable of delivering the necessary power.

Once a proper power source is established, it is simple to test the liftgate charging system. The Double Check has several attachments that allow it to check a 7-way, dual pole, or single pole connection to verify proper operation. The Double Check is easy to read and provides straightforward results.

DOUBLE CHECK DIAGRAM



20 AMP APPLIED LOAD TESTER DIAGRAM





OPERATING INSTRUCTIONS

CONNECTING TO POWER SOURCE

The Double Check can use any available vehicle as a power source (i.e. car, tractor), as long as the vehicle has a 12 V battery and an alternator. However, if a tractor is being used as the source, it cannot be coupled with the trailer, as the 5th wheel ground path will affect the test results.

The 20 Amp Applied Load Tester is used to test the power source. It is crucial to test the source while under a load to assure it can provide the proper voltage needed. Do not assume the vehicle is an adequate source, as a faulty source may cause a misdiagnosis of the liftgate charging system due to an inadequate power source.

When using the 20 Amp Applied Load, connect the tool to the Double Check and the power source and make sure the vehicle is running. The Test Status LED on the 20 Amp Applied Load Tester will turn on. See Table 1 for LED indications.

Table 1: 20 Amp Applied Load Tester LED Status

| LED | STATUS |
|--------------|--|
| Solid Green | Applied Load is ready to test power source |
| Solid Red | Source is being tested |
| Blinking Red | Applied Load is resetting |

TESTING THE POWER SOURCE

1

Step 1: Select a vehicle to be used as the power source and determine the appropriate input adapter:

- Battery input adapter
- 7-way adapter (if testing with a 7-way cord, see section *Testing the Source Vehicle with a 7-Way Cord* on page 7)
- 7-way for light-duty trucks adapter
- Dual Pole adapter
- Dual Pole female adapter
- Single Pole adapter
- Single Pole female adapter
- Quick disconnect adapter



2

Step 2: Connect the 20 Amp Load Tester to the Double Check.





3

Step 3: Connect the appropriate input adapter to the Double Check.



4

Step 4: Connect the external volt leads to the Double Check and to a digital voltmeter.



5

Step 5: Connect the input adapter to the vehicle with the vehicle running and the electrical loads off. (See connection examples below.)



6

Step 6: If the power source vehicle is functioning correctly, the 20 Amp Load Tester LED will be solid green, and the reading on the digital voltmeter will be above 13.2 volts.



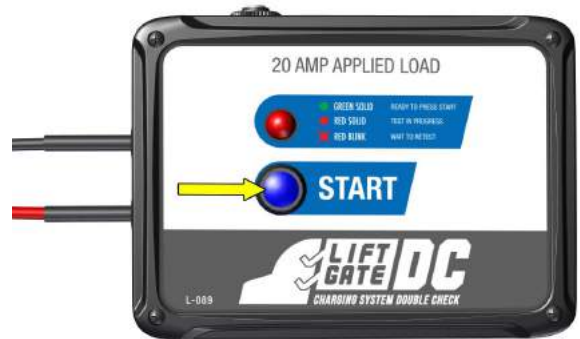


7

Step 7: If the LED is not solid green, or if the digital voltmeter reading is below 13.2 volts, the voltage is not sufficient and further vehicle power source diagnosis is needed.

8

Step 8: Press the START button on the 20 Amp Load Tester and note the voltage on the digital voltmeter while the Load Tester LED is solid red.



9

Step 9: If the digital voltmeter shows a voltage higher than 12.0 volts, the vehicle is sufficient to power a Select or Direct. If the voltmeter reads less than 12.0 volts, the power is not sufficient, and further vehicle power source diagnosis is needed.



TESTING THE POWER SOURCE WITH A 7-WAY CORD

1

Step 1: Select a vehicle to be used as the power source.

2

Step 2: Connect the 20 Amp Load Tester to the Double Check.



3

Step 3: Connect the 7-way input adapter to the Double Check.





4

Step 4: Connect the external volt leads to the Double Check and to a digital voltmeter.



5

Step 5: Connect the input adapter to the trailer end of the 7-way cord. Make sure the power source vehicle is running and the electrical loads are off.



6

Step 6: If the power source and the 7-way cord are functioning correctly, the 20 Amp Load Tester LED will be solid green, and the reading on the digital voltmeter will be above 13.2 volts.



7

Step 7: If the LED is not solid green, or if the digital voltmeter reading is close to 0 volts, check for an open fuse or circuit breaker in the truck or a faulty 7-way cord.

8

Step 8: Press the START button on the 20 Amp Load Tester and note the voltage on the digital voltmeter while the Load Tester LED is solid red.





9

Step 9: If the digital voltmeter shows a voltage higher than 11.0 volts, the vehicle and cord are sufficient to power the Select or Direct. If the voltmeter reads less than 11.0 volts, the power is not sufficient and the problem could be the power source vehicle or the 7-way cord. To isolate the problem, test the vehicle power source separately (*Testing the Power Source* on page 5).



TESTING THE LIFTGATE CHARGING SYSTEM

If the LEDs on the Direct or Select controller do not turn on, check the 2 amp fuse located on the charging plate inside the liftgate battery box.

If the LEDs on the Direct or Select controller alternate between green and red, there is insufficient power from the power source vehicle or the wiring. Perform the *Testing the Power Source* or *Testing the Power Source with a 7-Way Cord* procedures on pages 5 and 7 to diagnose the condition.

1

Step 1: Select the correct input adapter and connect to the Double Check.



2

Step 2: Connect the external volt leads to the Double Check and to a digital voltmeter.



3

Step 3: Connect the correct output harness to the Double Check and to the trailer.





4

Step 4: Connect the input adapter to the source vehicle with the vehicle running and the electrical loads off. (See connection examples below.)



5

Step 5: Note the SOURCE LED, which should be solid green, and the digital voltmeter, which should be above 13.2 volts. If the SOURCE LED is flashing green or red and the digital voltmeter is below 13.2 volts, the power source vehicle is not providing sufficient voltage and further diagnosis of the vehicle is needed.

6

Step 6: Connect the output adapter to the trailer and note the red AMPS LEDs, which show the liftgate charging current and the digital voltmeter, which should be above 11.0 volts.



7

Step 7: If the red AMPS LEDs show no current flow, the liftgate charging system is not functioning and further diagnosis is needed. Contact Purkeys Customer Service for assistance.

8

Step 8: If the red AMPS LEDs show no current flow and the digital voltmeter is below 11.0 volts, the power source vehicle is not providing sufficient voltage.

PART LIST

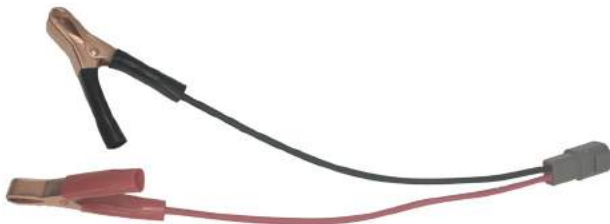
Part # TF-009
Tester, Liftgate Charging System (LGDC)
(Included in DC-100, DC-200, DC-300)



Part # TF-012
20 Amp Applied Load
(Included in DC-100, DC-200, DC-300)



Part # H-00415
External Voltmeter Leads
(Included in DC-100, DC-200, DC-300)



Part # H-00412
Harness, Battery Input Adapter
(Included in DC-100, DC-200, DC-300)



Part # H-00409
Harness, 7-Way Input Adapter
(Included in DC-200, DC-300)



Part # H-00414
Harness, Light-duty 7-Way Input Adapter
(Included in DC-300)



Part # H-00410
Harness, Dual Pole Input Adapter
(Included in DC-100, DC-300)



Part # H-00467
Harness, Dual Pole Female Input Adapter
(Included in DC-100, DC-300)



Part # H-00411
Harness, Single Pole Input Adapter
(Included in DC-300)



Part # H-00470
Harness, Single Pole Female Input Adapter
(Included in DC-300)



Part # H-00413
Harness, Quick Disconnect Input Adapter
(Included in DC-300)



Part # H-00342
Harness, 7-Way Output Adapter
(Included in DC-200, DC-300)



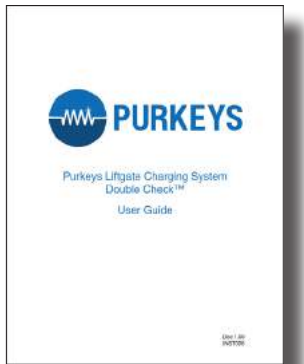
Part # H-00343
Harness, Dual Pole Output Adapter
(Included in DC-100, DC-300)



Part # H-00340
Harness, Single Pole Output Adapter
(Included in DC-300)



Part # H-00407
Harness, DC/DC Converter Output Adapter
(Included in DC-100, DC-200, DC-300)



Part # INST056
Guide, User
(Included in DC-100, DC-200, DC-300)



LIMITED COMMERCIAL WARRANTY POLICY

Purkeys Fleet Electric, Inc. (hereafter “Purkeys”), warrants each product to be free of defects in material or workmanship under normal use and service. This warranty is for the benefit of Original Equipment Manufacturers, Dealers, Warehouse Distributors, Fleets, or other End Users (hereafter “Customers”) and covers products manufactured by Purkeys and sold new to Customers either directly by Purkeys or by its authorized dealers, distributors, or agents. The length of the Warranty Period is 24 months.

The warranty period commences on the in-service or install date and is not transferable. Failure to provide the in-service or install date on the warranty claim form will cause the warranty period to begin on the date the part was manufactured or date of sale recorded on the original sales invoice, whichever is earlier.

A completed warranty claim form should accompany all parts submitted to Purkeys for consideration for repair or replacement under warranty. The submitted claim form should contain all of the information required. Lack of a properly or fully completed claim form will result in delay or denial of warranty claim. Claims must be submitted no later than 30 days after part is removed.

This warranty does not apply if, in sole judgement of Purkeys, the product has been damaged or subjected to accident, faulty repair, improper adjustment, improper installation or wiring, neglect, misuse, or alteration or if the product failure is caused by defects in peripheral vehicle components or components attached to the Product or failure of a part not manufactured by Purkeys.

This warranty shall not apply if any Purkeys product is used for a purpose for which it is not designed or is in any way altered without the specific prior written consent of Purkeys. ANY Product alleged by a Customer to be defective must be inspected by Purkeys as a part of the warranty claims process in order to confirm that the part has failed as a result of a defect in material or workmanship.

Transportation for products and parts submitted to Purkeys for warranty consideration must be prepaid by Customer. Repaired or replaced products and or components will be returned to Customer pre-paid by Customer or “freight collect” to the address provided by Customer in the warranty claim form. No charge will be made for labor or material in effecting such repairs.

The Warranty provided by Purkeys hereunder is specifically limited to repair or replacement of the Product as Purkeys deems most appropriate in its sole discretion. Purkeys neither assumes nor authorizes any other person to assume on its behalf any other warranty or liabilities in connection with Purkeys products. The Warranty does not apply to fuses or other “consumable” or maintenance items which are or may be a part of any Purkeys product.



THIS WARRANTY DOES NOT APPLY TO LOSS OF VEHICLE OR EQUIPMENT, LOSS OF TIME, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. PURKEYS SPECIFICALLY DISCLAIMS AND SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES arising out of or from the use of Purkeys products by the Customer.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, INCLUDING COMMON LAW WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, AND ANY OTHER EXPRESS OR IMPLIED WARRANTIES. ALL OTHER SUCH WARRANTIES ARE SPECIFICALLY DISCLAIMED.

This Limited Commercial Warranty supersedes all previous Warranty Policies issued by Purkeys and any of its suppliers.