



PURKEYS

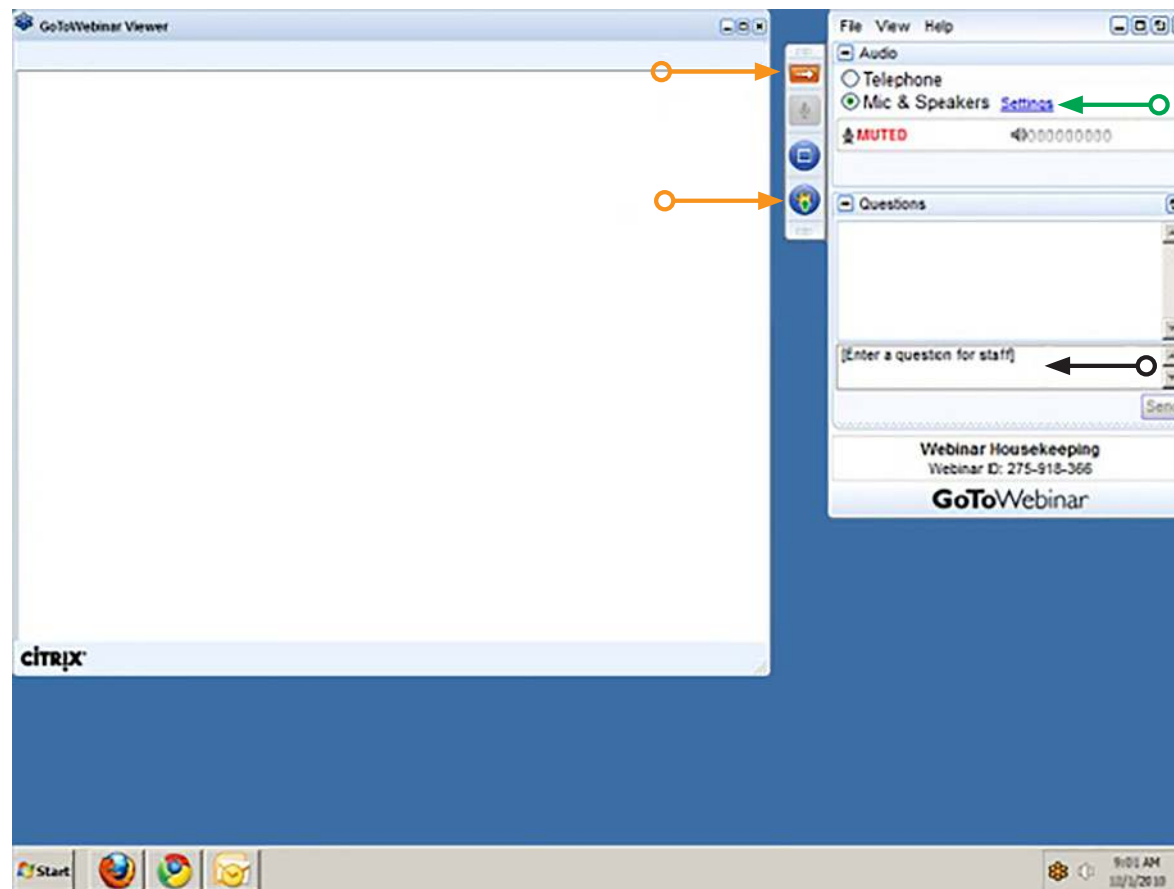
**TESTING
UNDER A LOAD
WITH THE
DOUBLE CHECK**

WATT Keeps You Trucking

HOUSE CLEANING

REMINDER:

This Webinar is being Recorded
Please Turn Off Cell Phones



ABOUT THE PRESENTER



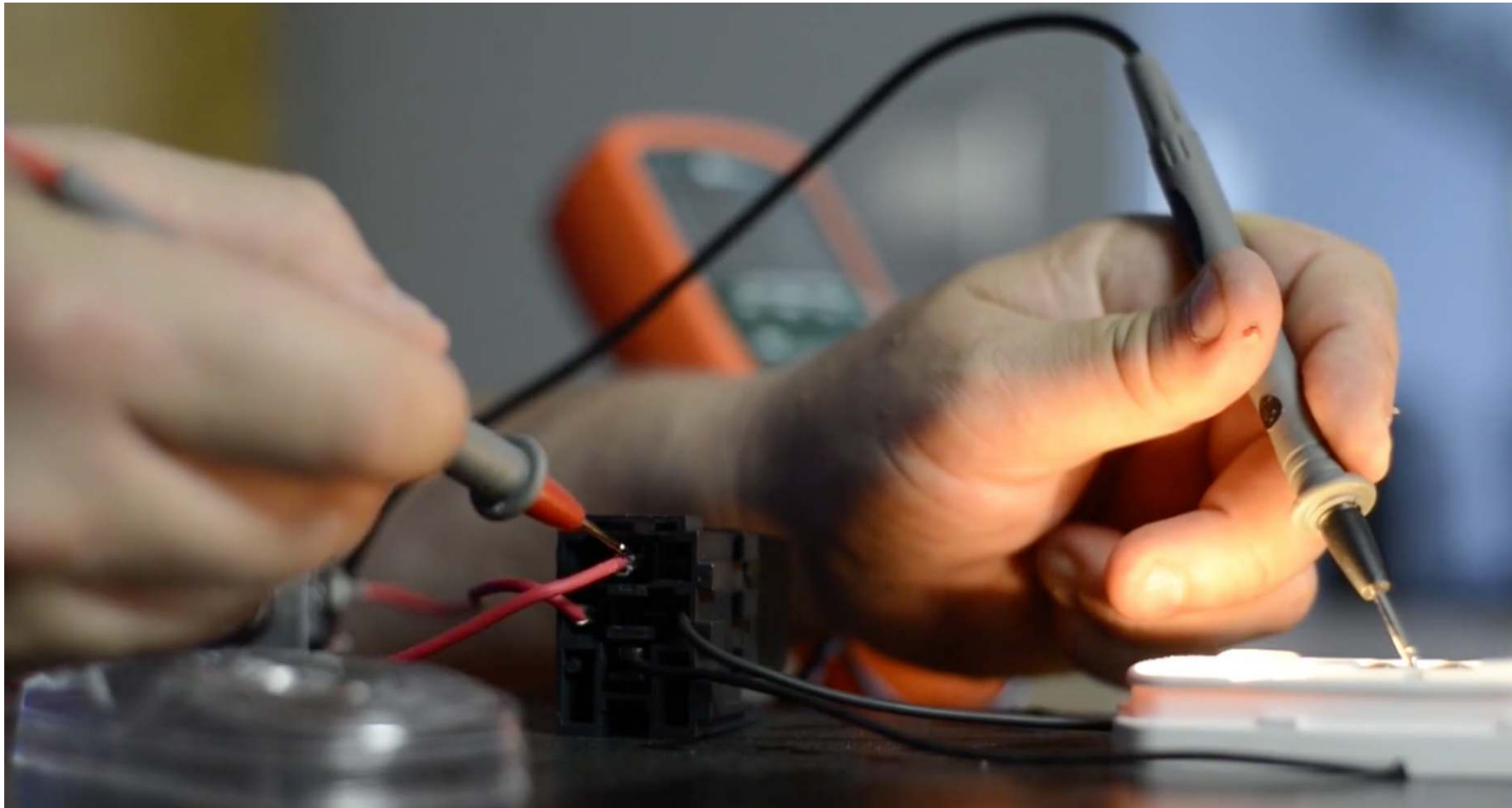
Rylar Masco | National OEM Representative

As the National OEM Representative Rylar leads Purkeys efforts to maintain and expand relationships with industry OEM clients. Rylar represents the entire range of Purkeys products and services to the industry OEM's, while leading the OEM planning cycle and ensuring assigned OEM's needs and expectations are met by the company. Rylar also focuses on the headquarters and key buying locations of OEM's, while coordinating closely with all other Purkeys sales and service representatives. Coming from Quantum Ingenuities, Purkeys' principal engineering firm, Rylar's experience with customer relations, sales, and marketing along with his MBA benefit Purkeys' marketing and sales plans.

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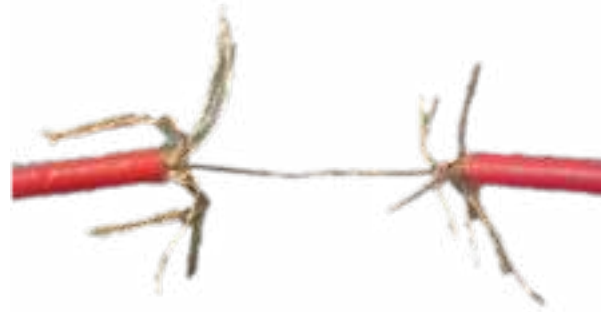
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VOLTAGE DROP – THE BASICS



- Difference in voltage at two points while current is flowing.
- No current flow = no voltage drop

VOLTAGE DROP – THE CAUSE



- Resistance caused by:
 - Corrosion
 - Undersized wires
 - Wicking
 - Poor connections and poor wiring

WHY TEST FOR VOLTAGE DROP?



- High amounts of Voltage Drop can cause issues with electrical components
- Recommended Practice (RP) 129, 137 & 141
 - Starting Cables
 - Charging Cables
 - 7-Way
 - Liftgate Charging

MEASURING VOLTAGE DROP

Point A- Batteries

Cables
Fuses
Connections
Etc

Point B:

- Starter
- 7-Way
- Liftgate Pump Motor
- Stinger Cord
- Etc

MEASURING VOLTAGE DROP

Point A- Batteries

Cables
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Point B:

- Starter
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- Liftgate Pump Motor
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12.8 V

MEASURING VOLTAGE DROP

Point A- Batteries

Cables
Fuses
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Point B:

- Starter
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- Liftgate Pump Motor
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- Etc

12.8 V

20A Load

MEASURING VOLTAGE DROP

Point A- Batteries

Cables
Fuses
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Etc

Point B:

- Starter
- 7-Way
- Liftgate Pump Motor
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- Etc

12.8 V

20A Load

12.1 V

MEASURING VOLTAGE DROP

Point A- Batteries

Cables
Fuses
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Etc

Point B:

- Starter
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- Etc

12.8 V

20A Load

12.1 V

12.8 – 12.1 = .7 Volt Drop @ 20Amps

PURKEYS DOUBLE CHECK



DOUBLE CHECK – BRIEF OVERVIEW

CHARGING SYSTEM TESTER



LOAD TESTER



DOUBLE CHECK COMPONENTS



- **Charging System Tester**
 - Source Light
 - Reverse Polarity Light
 - Amps
 - Multi-Meter Inputs
 - Breaker

DOUBLE CHECK COMPONENTS



- **Load Tester**
 - Indicator Light
 - Start Button
 - Breaker

DOUBLE CHECK COMPONENTS

COMPONENTS OF THE LIFTGATE DOUBLE CHECK

H-00340



Single Pole
Output Adapter

H-00343



Dual Pole
Output Adapter

H-00342



7 Way
Output Adapter

H-00407



DC/DC Converter
Output Adapter

H-00409



7 Way
Input Adapter

H-00410



Dual Pole
Input Adapter

H-00411



Single Pole
Input Adapter

H-00412



Battery Input
Adapter

H-00413



Anderson Connector
Input Adapter

H-00414



Light Duty 7
Way Input Adapter

H-00415



External Volt
Meter Leads

H-00429



Anderson Connector
for Service Truck

- **Input Power Harnesses**
 - Clamps
 - 7-Way
 - Dual/Single Pole
 - Anderson Connector
- **Output Harnesses**
 - Dual/Single Pole
 - 7-Way

LOAD TESTING

- ① Connect Load Tester to Double Check Charging Tester
- ② Connect Double Check to whatever you are testing
- ③ Connect Multi-Meter
- ④ Measure Voltage without load
- ⑤ Pull the load
- ⑥ Measure the Voltage under load
- ⑦ Calculate the voltage drop



CONVERTING RESULTS

Formula

(Desire Amperage / Tested Amperage) X Tested Voltage Drop

$$500A / 20A = 25$$

$$25 \times .35 = 8.75$$

Examples

- 1 Volt drop at 20 A = 2 Volt drop at 40 A
- 1V @ 20 A = 5V @ 100 A
- .35V @ 20A = 8.75 V @ 500 A

LOAD TEST REAL WORLD EXAMPLE – 7-WAY

- Driver complains about ABS or 7-Way Aux not working
- Test Trailer & Truck
- Use Harnesses to connect double check to tractor 7-Way

LOAD TEST REAL WORLD EXAMPLE – LIFTGATE CHARGING



- Driver complains about liftgate batteries going dead
- Test Both Truck and Trailer

LOAD TEST REAL WORLD EXAMPLE – TRUCK 7-WAY

- **Testing the Power Source (Truck & 7-Way Cable)**
 - Connect Double Check to Truck 7-Way
 - Start the Truck
 - Measure Voltage (No Load)
 - Push Start on Load Tester
 - Measure Voltage (Under Load)
 - Calculate Voltage Drop
- **Acceptable Voltage**
 - Truck and 7-Way >11.0 Volts
 - Truck Only > 11.5 Volts
- **Same procedure for Stinger Cord and Truck Only**

USING THE DOUBLE CHECK TO TEST DIRECT OR SELECT



- **Testing the Liftgate Charging System**
 - Connect Double Check to Power Source (Stinger or 7-Way)
 - Insure proper input voltage (multi-meter or source light)
 - Connect to Trailer Stinger or 7-Way
 - View amp meter

Questions & Answers

Thank you!