

Kwikkee[®] PRODUCTS

by  Lippert Components[®]

KWIKEE[®] 42 SERIES STEP OWNER'S MANUAL

TABLE OF CONTENTS

Safety Information	2
Product Information	3
Step with Control Unit.....	3
Operation	3
General Service	4
Adjusting Extension Stops.....	5
Troubleshooting	6
Step Test Procedure.....	6
Testing The Motor	8
Testing The Four-Way Connector	8
Maintenance	10
Lubrication.....	10
Maintenance In A Salt Environment.....	10
Notes	11

Safety Information

Read all operating instructions first before using the Kwikiee® Electric Step.

WARNING

The “WARNING” symbol above is a sign that an installation procedure has a safety risk involved and may cause death or serious injury if not performed safely and within the parameters set forth in this manual. Always wear eye protection when performing this installation procedure. Other safety equipment to consider would be hearing protection, gloves, and possibly a full face shield, depending on the nature of the installation procedure.

WARNING

The coach **MUST** be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death or serious injury.

WARNING

There is an electric shock hazard associated with this procedure. Disconnect power before working on this unit. Failure to follow all safety procedures and all procedures in this manual could cause serious injury or death.

CAUTION

Failure to follow safety procedures and procedures in this manual may result in damage to the step control, the motor and/or the vehicle wiring. Such damage may also result in voiding the warranty.

CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

Product Information

Step with Control Unit

NOTE: This information was obtained from Kwikkee manual 1422258 Rev OA dated October 2005 and Kwikkee manual 1422259 dated March 2004 with manual updates dated March 2005 through October 2005. This manual pertains to products made after 2005 that have an IMGL (integrated motor/gearbox/linkage) control unit. This manual does not apply and should not be used as a reference to previous versions of the Kwikkee electric step.

This manual has been provided to assist with the identification, operation, maintenance and troubleshooting of any Kwikkee Electric Step that is equipped with a door switch, an override switch, control unit and a permanent magnet motor. It does not apply and should not be used as a reference to any other previous versions of a Kwikkee Electric Step.

The control unit is essentially a current sensor as well as a switching device. When the motor assembly moves the step tread to its extended position, or stops moving because of an obstruction such as a curb or the binding of a damaged or bent step frame, the motor draws a larger amount of current. The control unit senses the larger current draw and shuts off power to the motor.

Control units are equipped with an ignition override system. This system is designed so the vehicle will not be driven with the step in the extended position. When the step is overridden in the extended position, the door closed, and the ignition is turned on, the ignition override system will engage and the step will automatically retract.

The "Auto-Extend" feature is another safety feature designed to extend the step when the door is opened for the first time after the vehicle ignition is turned off, even if the override switch is turned on. When the ignition is switched on, the function of the override switch is disabled and the step will always extend when the door is opened and retract when the door is closed.

Operation

WARNING

If the vehicle is driven with the step in the extended position, there is the possibility of causing major damage to both the step and the coach.

1. After the installation is complete and with the entrance door open, turn the override switch off.

NOTE: Some steps are not equipped with an override switch. They are activated only with a door switch.

2. Close the door. The step should retract and lock in the "in" position.
3. Open the door. The step should extend and lock in the "out" position.
4. If your step is equipped with an override switch, turn it on. The step should remain in the extended position when the door is closed.
5. With the override switch on, the step extended and the entrance door closed, turn on the vehicle ignition. The ignition override system will go into effect and the step will automatically retract.

NOTE: If the yellow wire from the four-way connector is not connected to an ignition power source, the ignition safety system will be inoperative and the step will remain in the extended position. In this case, the override switch **MUST** be turned off for the step to retract.

6. Turn the vehicle ignition off and open the door. The step will extend and lock in the "out" position. This is the "Auto-Extend" feature.

NOTE: When the vehicle ignition is on, the step will always activate with the door movement, regardless of the override switch position.

NOTE: If the yellow wire from the four-way connector is not connected to an ignition power source, the step will not retract with the step in the override "On" position when the door is closed and the ignition is on.

⚠ WARNING

A 12V automotive battery contains sulfuric acid which can cause severe burns. Avoid contact with the skin, eyes and clothing. Automotive batteries produce hydrogen gas which is explosive. Keep cigarettes, open flames and sparks away from the battery at all times.

⚠ CAUTION

Keep fingers, arms and legs clear of step mechanism while performing these tests.

General Service

If the power wire to the step is disconnected from its source and reconnected, a spark is common. This is caused by the momentary charging of the control unit and does not necessarily indicate the system is staying on, which would cause a drain on the battery. If battery drain is suspected, observe the under step light (if so equipped) while the step is extending. The override switch must be off for the under step light to operate.

Make sure that all ground connections are securely fastened with good metal-to-metal contact. A good ground is required for proper step operation.

To determine if a control unit is not shutting off:

1. Remove the four-way connector to the chassis and the two-way connector between the step motor and the control unit.
2. Place a voltmeter between the red and yellow motor wires at the two-way connector from the control unit. Reconnect the four-way connector.
3. Turn the override switch on. If any voltage registers on the meter for more than five seconds, the control unit is not shutting off and may be defective.

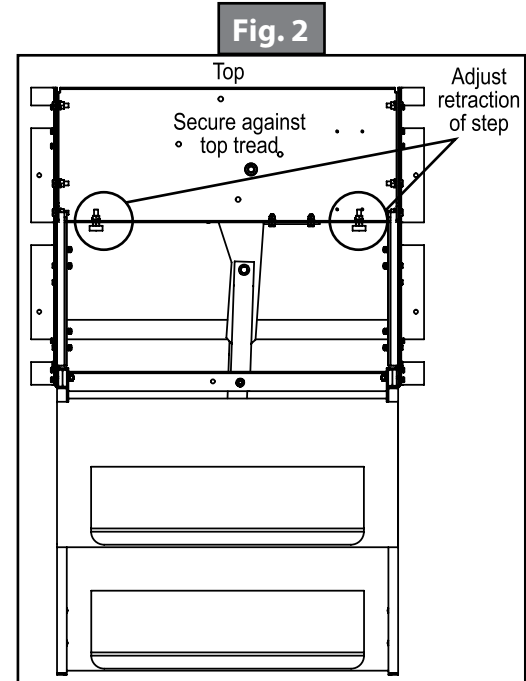
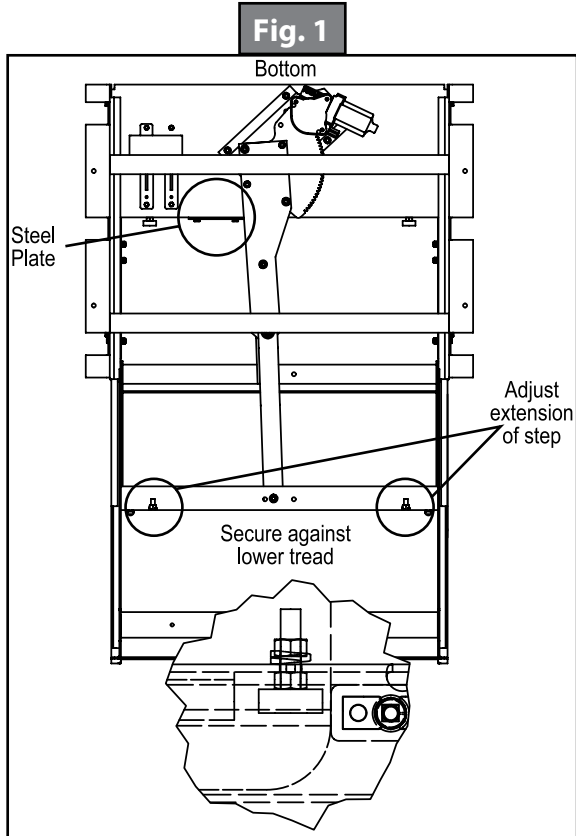
NOTE: When doing this test, switch the voltmeter leads back and forth between the red and yellow motor wires to make sure no voltage registers.

4. If any voltage does register, disconnect the four-way connector to keep the step motor from overheating.
5. If zero voltage is present, the control unit has shut off and is normal.

If the step assembly does not work or operates erratically, such as extending only part way and then shutting off:

1. Check vehicle's battery. Low supply voltage may cause erratic operation of the step. Poor ground connections may also cause erratic operation of the step assembly.
 - A. Check battery voltage and condition. A battery in good condition that is properly charged, will have a no load voltage reading of approximately 12.6 volts.
 - B. Check the voltage at the battery and then also at the four-way connector located on the control unit. Make sure all battery and step control unit connections are clean and secured.
 - C. Recharge or replace the battery as necessary, then retest the step for proper operation.
2. The step assembly may also operate erratically if the step is being operated directly from a converter, where the output from the converter is not adequate or properly filtered for a clean DC voltage. The converter **MUST** be capable of producing a minimum of 30 amps for proper step assembly operation.

3. If the ground to the control unit is lost, either between the step control unit and the vehicle chassis (the long green ground wire) or between the vehicle battery and the ground (negative battery cable), the step will not function.
 - A. Make sure the battery terminals and all wire connections are clean and tight.
 - B. Verify that all wires meet the minimum requirements.



Adjusting Extension Stops

Kwieke Steps are fitted with adjustable extension stops on the step frame that help lock the step in the "out" or extended position, creating a firm stepping platform. The extension stop is adjusted at the factory, but, due to the rigors of shipping, installation and normal use, the stop may fall out of adjustment and need to be tightened.

NOTE: When the extension stops are out of adjustment, the step may feel loose when stepped on.

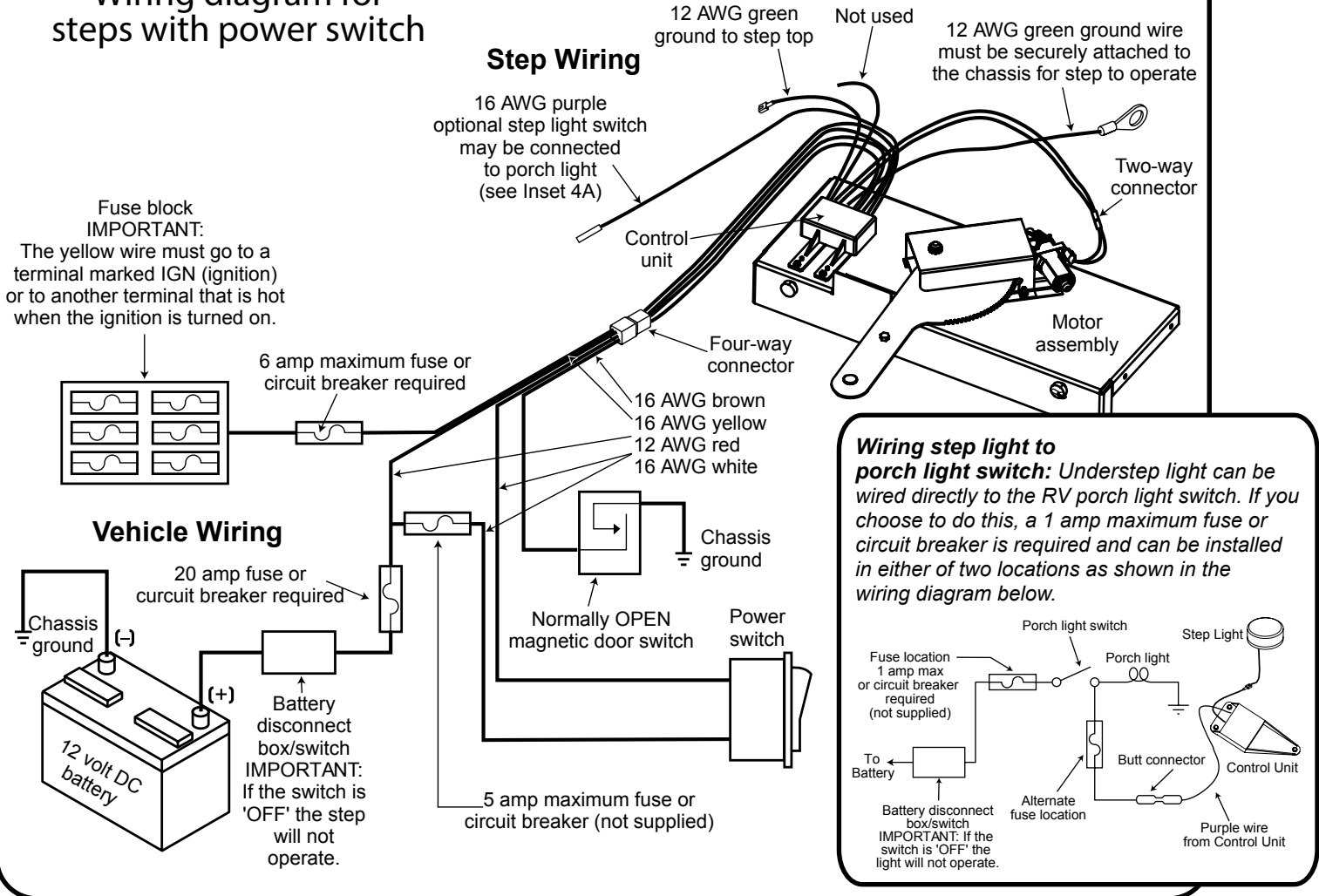
⚠ CAUTION

When working under the step, make sure that the step cannot be activated and that nothing can get caught in the step mechanism.

1. Loosen the extension stops so they move freely and retract the step assembly.
2. Extend the step fully to its locked extended position. Make sure the motor assembly linkage rests against the steel plate (Fig. 1). Repeat if needed until the motor assembly locks in the fully extended position.
3. Push the extension stops against the lower tread and tighten securely. Make sure that both stops are tightened and that they rest securely against the lower tread portion.
4. Retract the step assembly.
 - A. Make sure that both stops are secure against the top tread (Fig. 2).
 - B. Repeat the procedure if needed to properly adjust the stops.

Fig. 3

Wiring diagram for steps with power switch



Troubleshooting

The following Step Test Procedures have been provided to troubleshoot and test all of the Kwikiee Automatic Electric Step functions. They are designed to initially check the basic step functions separately from the RV wiring to determine whether or not the step is malfunctioning. The following procedures test the various components of the step until the source of the malfunction is located. Using these procedures will shorten and reduce the time spent troubleshooting.

Some portions of the test procedures require additional equipment. This equipment includes: a voltmeter, a well-charged 12V DC automotive battery and a four-way connector/pigtail PN [369243](#).

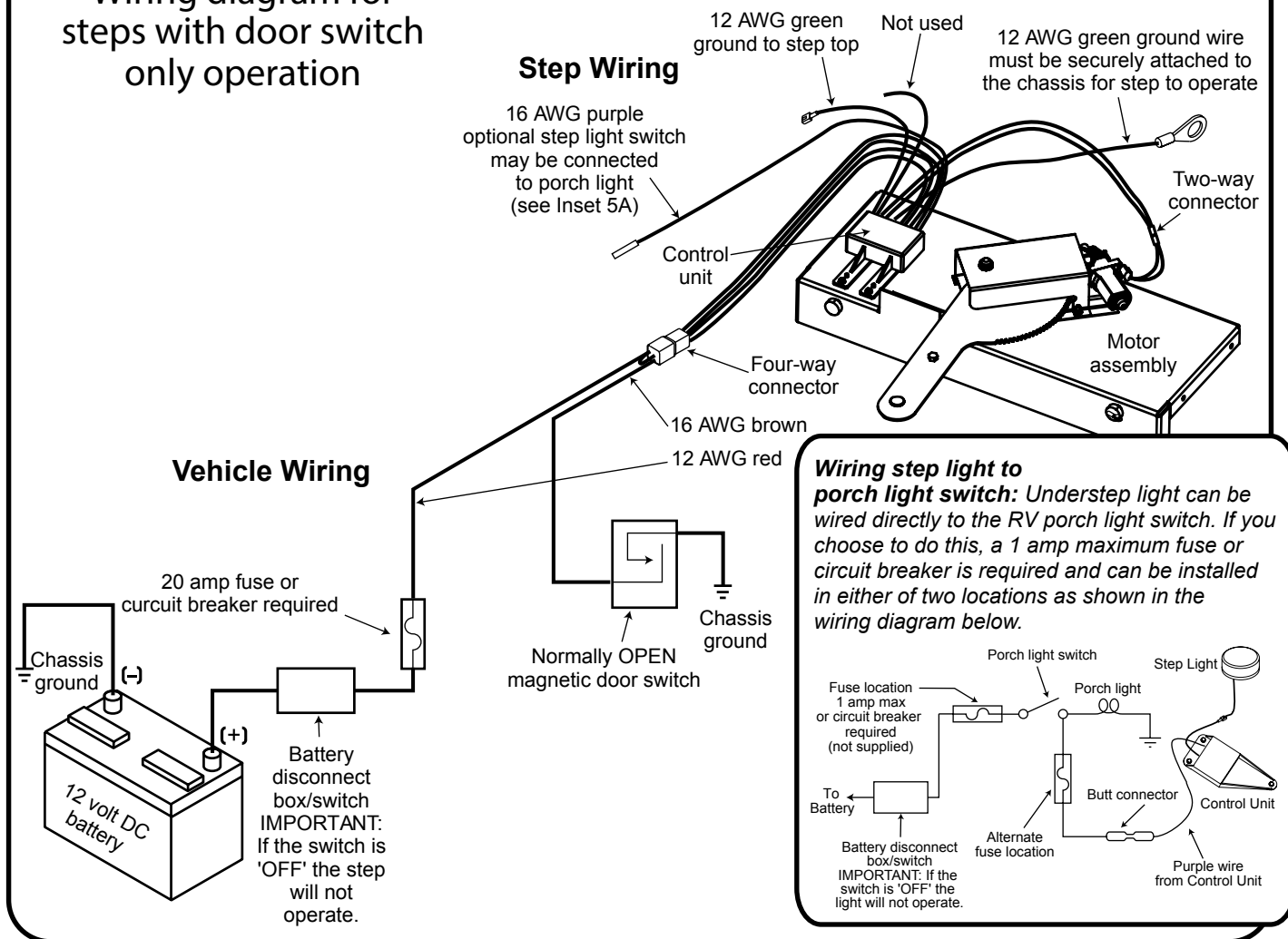
Step Test Procedure

1. Inspect the step for visible damage that might restrict the step's operation.
2. Obtain a four-way pigtail connector PN [369243](#).
3. Disconnect four-way connector on underside of step and connect step half of the connector to the four-way connector pigtail (Figs. 3 and 4).
4. Set a fully-charged 12V DC automotive battery beside the step.

NOTE: Do not allow the battery terminals to come in contact with step. Complete a ground for step testing by connecting 10 AWG wire from the negative battery terminal to the green ground wire of the control unit.

Fig. 4

Wiring diagram for steps with door switch only operation



5. To supply power, attach the red wire from pigtail to positive battery terminal. The step will extend.
6. With the power and ground connections complete, all functions of the control unit can be checked at the four wires of the pigtail. The brown wire is the door switch, the white wire is the override switch and the yellow wire is the ignition override.
7. To retract the step, touch the brown wire to the negative battery terminal.
8. To extend the step, remove the brown wire from the negative battery terminal.
9. To test the Ignition Override feature:
 - A. Extend the step as in step 8.
 - B. With the step extended, connect the white wire to the battery's positive terminal and attach the brown wire to the battery's negative terminal.
 - C. Touch the yellow wire to the positive battery terminal. The step should retract.
 - D. Remove the brown wire and the step should extend.
10. To test the Override Switch with the step retracted:
 - A. Touch the brown wire to the negative battery terminal to retract the step.
 - I. While holding the brown wire to the negative battery terminal, touch the white wire to the positive battery terminal and remove the yellow from the positive battery terminal. The step will stay retracted.
 - B. Remove the brown wire. The step should extend.
 - C. Touch the brown wire to the battery's negative terminal and the step should stay extended.

11. If any of the step functions do not work, the source of the malfunction is either in the control unit and/or the motor. Proceed to the Testing The Motor section.
12. If all of the step functions work, the malfunction is either in the door switch, power switch or the vehicle wiring. Proceed to Testing the Four-Way Connector section.

Testing The Motor



WARNING

Do not leave the wires connected during these tests once the step has cycled either in or out. Failure to remove the wires from the battery will burn out the motor, voiding any warranty.

If the step extends and retracts during this test, the condition of the step motor is good.

1. Disconnect the two-way connector between the step motor and the control unit.
2. Connect the motor's yellow wire to the positive terminal of the battery and touch the motor's red wire to the negative terminal of the battery to extend the step.
3. To retract the step, reverse the connections.

Fig. 5

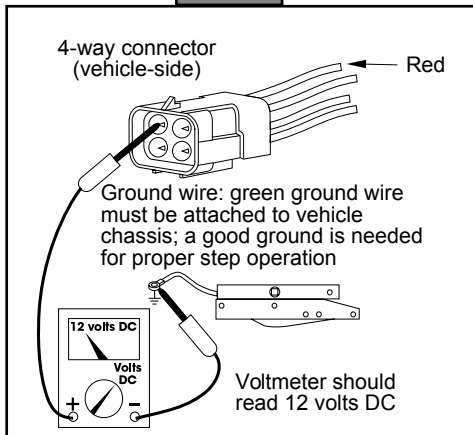


Fig. 6

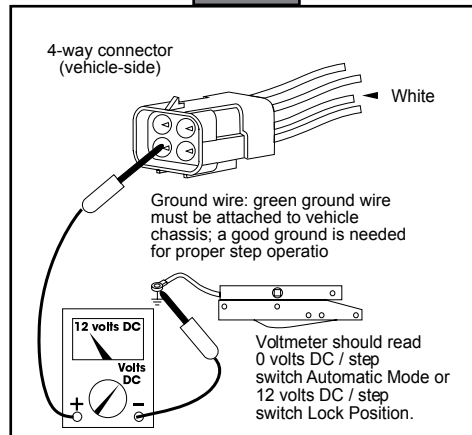


Fig. 7

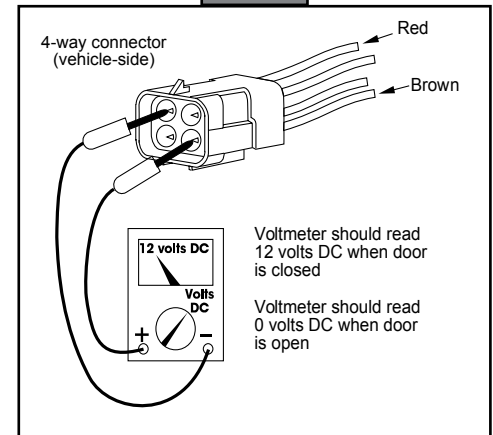


Fig. 8

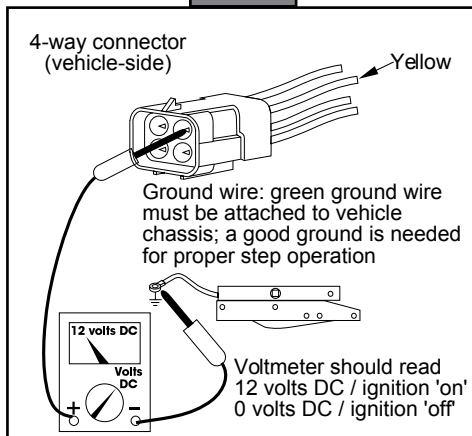
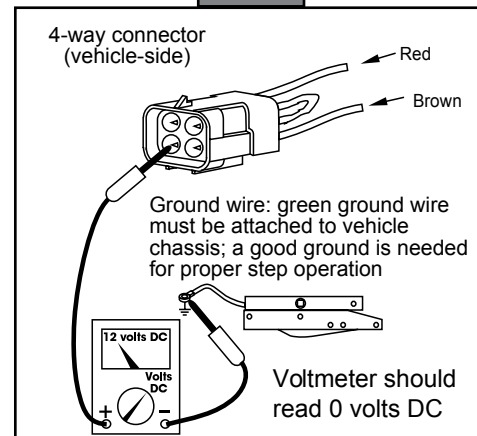


Fig. 9



Testing The Four-Way Connector

To check the main power source:

1. Connect a voltmeter between the red wire from the four-way connector (vehicle half) and the ground terminal at the end of the control unit's green ground wire (Fig. 5). The reading should be a minimum of 12V DC.
2. If the voltage reading is low, there may be a loose or corroded connection at the battery, a low charge level on the battery itself or a poor ground.

3. If the voltage reading is zero volts, check the step fuse/circuit breaker, all connections and the condition of the wiring between the battery and the plug, including the ground connection at the chassis.

To check the override switch:

1. Connect a voltmeter between the white wire from the four-way connector (vehicle half) and the terminal at the end of the control unit's green ground wire (Fig. 6).
2. The reading should be a minimum of 12V DC when the switch is on (the same as when checking the power source) and zero volts DC when the switch is off.
3. If the voltmeter reads zero volts when the override switch is on, there is a problem in the override switch circuit. Check the 6 amp in-line fuse, the override switch itself and the condition of the circuit wiring and terminal connections.

To check the door switch:

1. Connect a voltmeter between the red wire from the four-way connector (vehicle half) and the brown in the same connector (Fig. 7).
2. The voltage should be a minimum of 12V DC (the same as when checking the power source) when the door is closed and zero volts when the door is open.

If the readings are incorrect, there is a problem with the switch. Check the door switch and the condition of the circuit wiring and terminal connections.

To check the ignition override system:

1. Connect a voltmeter between the yellow wire from the four-way connector (vehicle half) and the ground terminal on the end of the control unit green ground wire (Fig. 8).
2. The voltage reading should be approximately 12V DC when ignition is on and zero volts when the ignition is off.
3. If the reading is zero volts when the ignition is on, check all terminal connections, wiring and the vehicle ignition fuse.

NOTE: The step wiring circuit must be independent. No other device (i.e. alarm systems, step well lights, etc.) can be connected to the step wiring circuit. Any device connected to the steps wiring can cause the step to malfunction and will void the warranty.

For steps equipped with door switch only operation:

1. Connect the white jumper wire from the vehicle half of the 4-way connector and the ground terminal at the end of the control unit green ground wire (Fig. 9). Make sure to use the terminal with only the white wire.
2. The reading should be zero volts DC. If the voltage reading is more, the white wire is connected to 12V DC and should be cut.

Maintenance

Lubrication

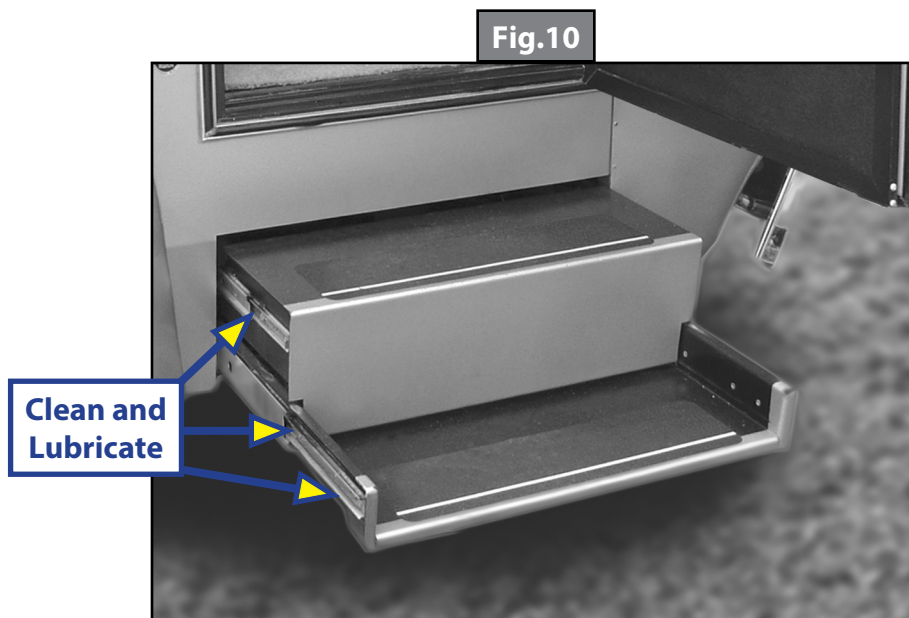
1. Clean all mud, salt, and road grime from the step before lubricating. Power wash and spray dry lubricant on the bearings on both sides of the step (Fig. 10).

NOTE: Silicone lubricants and WD-40® are not recommended as they have a tendency to evaporate and dry the mating surfaces which leave them vulnerable to the elements.

2. Maintain clean, dry electrical connections at the two-way and four-way connectors and any butt connections leading from the four-way connector to the vehicle. A small dab of dielectric grease at the connections and replacing corroded butt connections with heat shrink type crimp style automotive connectors will help maintain a good electrical source for the step.

Maintenance In A Salt Environment

1. To maintain step finish when the step is exposed to a salt environment for extended periods of time, routinely spray step with fresh water.





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