



**TRAILER AUXILIARY POWER
SYSTEM (TAPS)
INSTALLATION GUIDE**

TRAILER AUXILIARY POWER SYSTEM



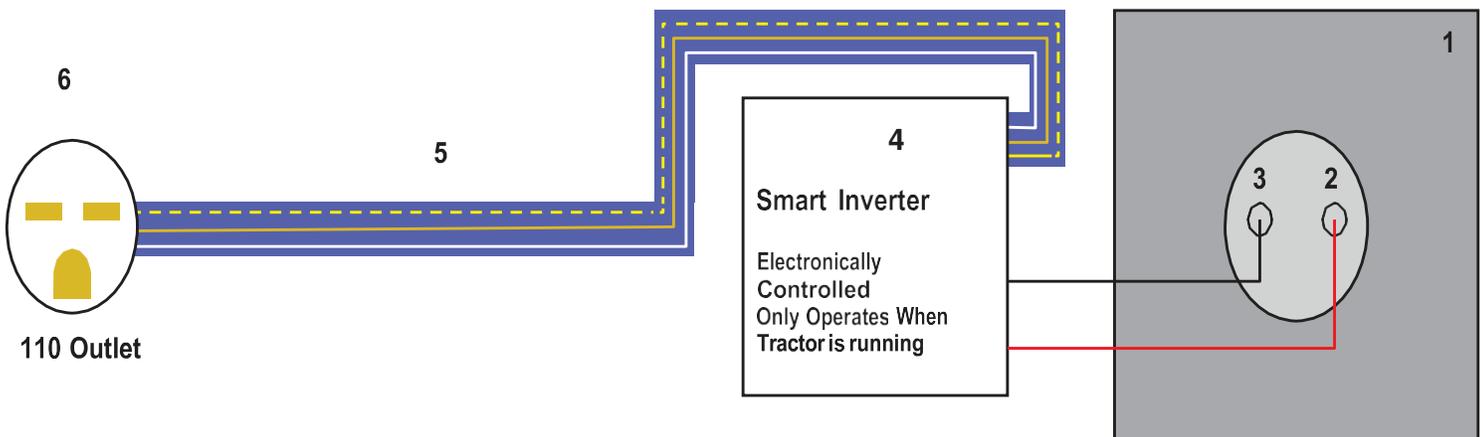
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GENERAL INFORMATION AND OPERATION OF A TAP SYSTEM

The TAPS kit is a system that is designed to provide auxiliary AC power at 110 volts in a trailer so that AC devices can be powered while on the trailer. In this application the AC power allows the electric pallet jack to be charged by its own AC battery charger only when the tractor is running and in between stops. It allows the pallet jack to be kept at a high enough state of charge so that it stays operational during the hours of operation. This trailer--based system receives DC power from the tractor via the dual pole power cord. If mounted on a straight truck then it receives DC power from the tractor batteries. From the dual pole nose box receptacle of the tractor batteries, the inverter and the TAP kit is powered. The inverter converts DC power to 110 volt AC power which is then delivered to the sealed 110 receptacle via a protected three wire conductor. The TAPS inverter is managed by a control module, which will not turn the inverter on until it sees DC input voltage of 13.4 volts. To achieve this voltage the tractor's engine must be running and the electrical system be functioning properly. Once the control module turns on the inverter it will stay on until the voltage drops below 12 volts for more than 60 seconds. Once the control module turns off the inverter, it will not turn back on until the voltage again reaches at least 13.3 volts. The tractor engine must be started and the engine running. With the control module logic built in, the inverter will only run in between stops and will turn off when the engine is turned off at each stop.

Diagram of TAPS Circuitry



Note: On Straight Truck application the TAPS Inverter positive and negative cables will connect directly to the tractors batteries.

Components

1. Dual Pole Receptacle
2. Dual Pole Positive (+)
3. Dual Pole Negative (-)
4. Smart Inverter
5. Blue Conduit with 110V AC Harness
6. 110V Receptacle

SYSTEM LOGIC

LOGIC OF THE SYSTEM - CHARGING ELECTRIC

- Tractor powers the inverter via dual pole stinger cable or directly from tractor batteries if Straight Truck.
- Inverter only operated when the tractors engine is running.
- Inverter is mounted in front of the trailer.
- AC line from inverter to back of trailer in blue tubing. Very little voltage drop in 110V AC lines versus 12V DC lines.
- Special 110V plug that only the add-on pallet jack can be plugged in to. **(Only applicable to TAPS-001 and TAPS-002 models).**
- Control module will make this entire operation automatic.

DIAGRAM OF A TAPS SYSTEM WITH DUAL POLE

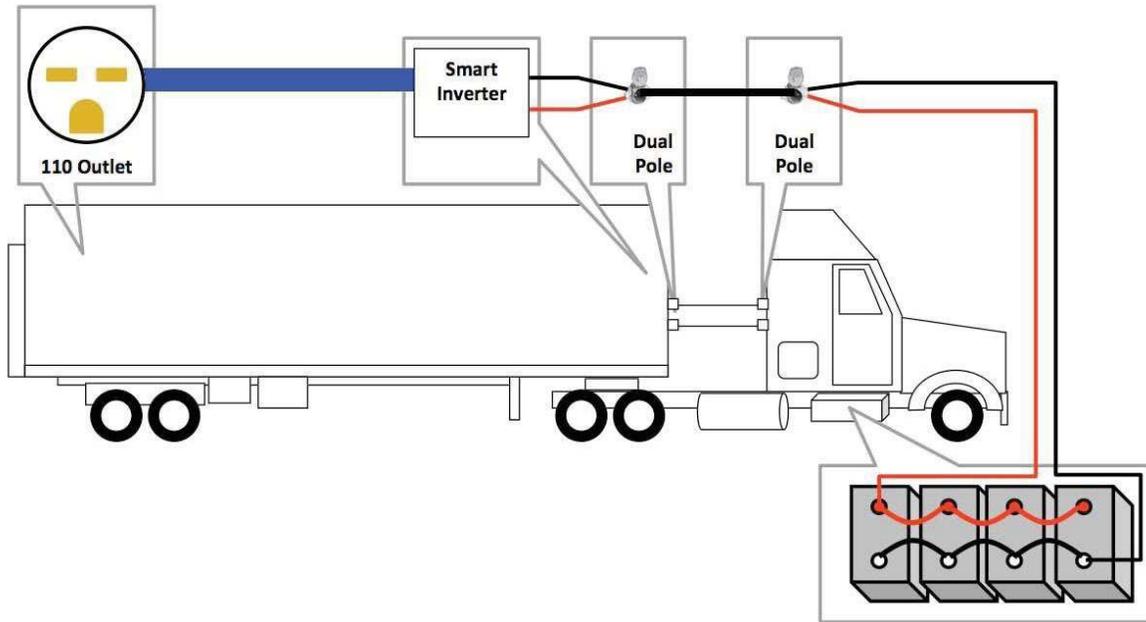
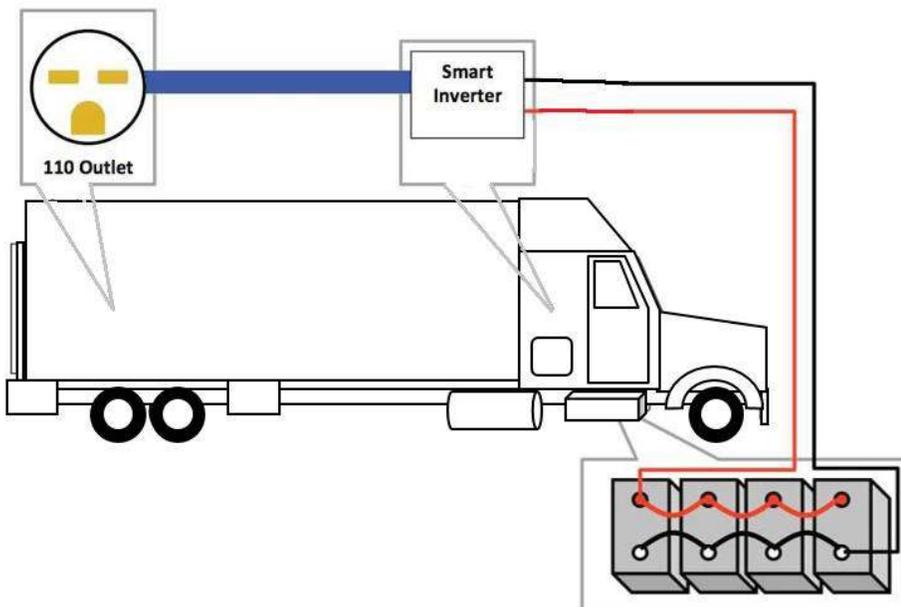


DIAGRAM OF A TAPS SYSTEM ON STRAIGHT TRUCK



INSTALLATION FOR DUAL POLE APPLICATION

STEP 1

Mount the TAPS box in a suitable location in the front of the trailer.



STEP 2

Mount the dual pole nose box to the front of the trailer if one is not already there.



STEP 3

Route the 00 black and red cables from the TAPS box to the dual pole nose box on the outside of the trailer.

STEP 4

Install the terminal end and add heat shrink to both terminals. Connect the red 00 cable to the positive terminal and the black 00 to the negative terminal.



Note: Make sure to use dome nuts if you pass through the trailer wall.

STEP 5

Route the blue tubing with the three AC power leads from the TAPS box to the corner where the side wall and ceiling meet. Route the blue tubing along this edge to the back of the trailer. Use the clamps to secure the tubing.



INSTALLATION FOR STRAIGHT TRUCK APPLICATION

STEP 1

Mount the TAPS box in a suitable location in the front of the straight truck.



STEP 2

Determine a location to route the 00 red and black cables through the straight truck wall or floor. Using a 3 1/2" hole saw, cut a hole in the wall or floor to mount the cable pass thru plate.



STEP 3

Once inside or near the tractors battery box then install the terminal ends and add heat shrink. Install the 150 amp fuse cube to the end of the 00 red positive cable.

Note: Do not connect to tractor batteries until the end of the installation.



STEP 4

Route the blue tubing with the three AC power leads from the TAPS box to the corner where the side wall and ceiling meet. Route the blue tubing along this edge to the back of the straight truck. Use the clamps to secure the tubing.



INSTALLATION OF AC RECEPTACLE

STEP 1

Mount the sealed receptacle box on the side-wall.



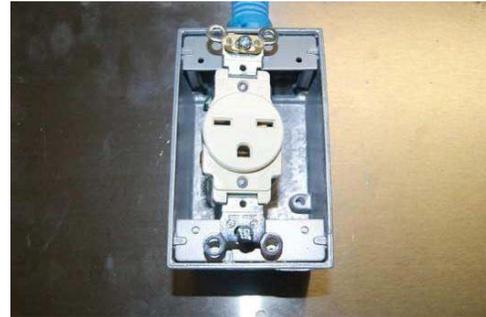
STEP 2

Route the blue tubing into the box and cut off the excess length of wire and tubing.



STEP 3

Connect the white wire to the silver screw, green wire to the green screw and the black wire to the gold screw. Based on various kits the AC receptacle shown may be different.



STEP 4

Insert the plug into the receptacle and tighten the screws. Based on various kits the AC receptacle shown may be different.



STEP 5

Test the System:

1. Plug in the tractor's dual pole stinger cable in the trailers dual pole nose box. (Not applicable on a Straight Truck)
2. Start the tractor. Tractor must be running during the test.
3. Inverter should turn on and the LED light should illuminate.
4. Plug into the AC outlet and you should have power.

Note: Do not use electric drill for the test load.

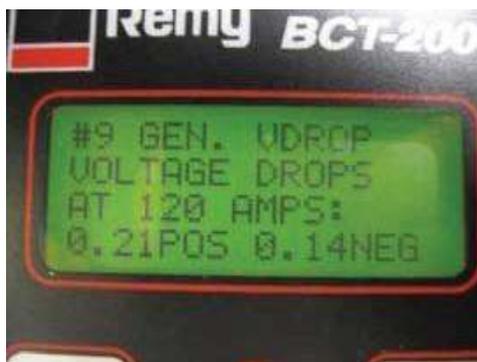
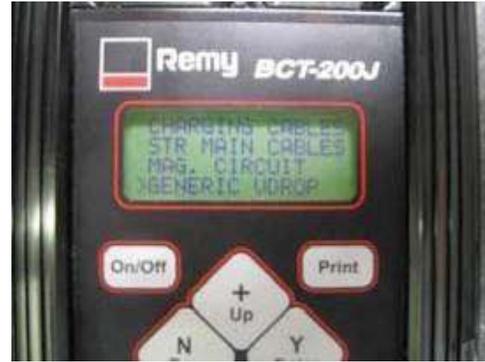
TROUBLESHOOTING

DC POWER ISSUES		
TROUBLE/INDICATION	POSSIBLE CAUSE	SUGGESTED REMEDY
No AC output: yellow LED lit; green LED not lit.	DC input below 10.5 volts.	Test batteries and conduct voltage drop test. Also check the vehicle charging system.
NO AC output: red and green LED not lit.	Inverter fuse cube open	Check fuse cube at battery.
Low battery alarm sounds abnormal.	Bad connection or wiring issues	Conduct voltage drop test and repair or replace as needed.
Low battery alarm sound.	Low battery voltage	Recharge or replace batteries. Also check the vehicle charging system.
Yellow LED lit when power is on.	Weak batteries or cable issues	Test batteries and conduct voltage drop test.

AC OUTPUT POWER ISSUES		
TROUBLE/INDICATION	POSSIBLE CAUSE	SUGGESTED REMEDY
No AC output: yellow LED lit; green LED not lit.	Inverter overheat.	Remove or reduce load, wait for inverter to cool.
NO AC output: red and green LED not lit.	Inverter output power limited by overload/short circuit protection circuit.	Reduce load or remove short circuit. Use Kill-A-Watt to measure load.
TV/Radio interference; snow in picture, buzz in speakers.	Appliance too close to inverter.	Keep inverter and antenna distant from each other. Use shielded antenna cable. Connect antenna with amplifier.
Motorized power tool won't start.	Excessive start up load.	If appliance does not start, then appliance is drawing excessive wattage and will not work with this inverter. Check with Kill-A-Watt tester.
Motorized power tool doesn't operate at correct speed.	Purely inductive load.	Make the load not purely inductive. Operate an incandescent lamp at the same time as motor.

INVERTER VOLTAGE DROP TEST

1. Using the Auto Meter BCT-200J tester: Turn the tester on, press “Y” for menu.
2. Select “V Drop Menu” and press “ENTER”.
3. Select “Generic V Drop” and press “ENTER”.
4. Enter in the rated current to test at (USE 120 Amps to test the inverter harness) and press “ENTER”.
5. Connect the large alligator clips to the inverter input posts (red to positive and black to negative) and press “ENTER”.
6. Connect the small alligator clips to the battery pack (red to positive and black to negative) and press “ENTER”.
7. The tester will show the results for the voltage drop on the positive cable and the results for the voltage drop on the negative cable.
8. The positive and negative results must be added together to get the total voltage drop for the complete circuit.
9. The total voltage drop for the complete circuit must be less than “.396” to be within spec.



KILL-A-WATT OPERATION

1. The LCD shows all meter readings: Volts, Current, Watts, Frequency, Power Factor and VA. The unit will start to accumulate KWH and powered duration time (hour) after power is applied.
2. Press the Volt button for true RMS Voltage (Volts) display.
3. Press the Amp button for true RMS output current (Amps) display.
4. The Watt/VA button is a toggle function button. Press the Watt/VA button once to display the Watt meter, then press button again to display VA meter. The LCD will display Watts as the active power, where VA is the apparent power. (VA—Vrms Arms)
5. The HZ/PF button is a toggle function button. Press the HZ/PF button once to display the frequency (Hertz), then press the button again to display the Power Factor. HZ is the Frequency of output Voltage, where PF is the Power Factor. (PF=W/Vrms Arms)



Warning: Don not exceed maximum ratings as detailed on the label.

Note: The KWH/Hour button is a toggle function button. Press the KWH/Hour button once to display the cumulative energy consumption since power was applied to the unit. Press the button again to display the cumulative time since power was applied to the unit.

Consumption will be displayed in Kilowatt-Hours (from 0.01 KWH to 9999 KWH). Time will initially be displayed as Hours: Minutes (from 00:00) and switch to Hours (to 9999). Counters will recycle to zero when they reach their maximum. To reset, remove power from unit momentarily.

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.