

PURKEYS

PLUS/FLEX/MAX NOSEBOX

INSTALLATION GUIDE





CONTENTS

General Information	2
Diagrams	3
Mounting the Nosebox	6
Reefer Harness Installation	7
Main Harness Installation	9
Interior Light Installation.....	13
Installation Connections Inside the Nosebox.....	13
Installation Connections Outside the Nosebox.....	14
Interior Light Installation with Severe Service (Max Only)	15
Momentary Switch (optional).....	16
Severe Service Installation (Max Only)	17
Installing Cables to the Nosebox	17
Routing the Severe Service Cables.....	18
Mounting the Switch	20
Part List.....	23
Limited Commercial Warranty Policy.....	36

GENERAL INFORMATION

The Purkeys Direct™ nosebox system combines all the best features of our original liftgate charging systems with a space-saving nosebox that helps standardize the front of the trailer. It also includes an interior light controller (harness sold separately) designed to turn the lights on inside a trailer and automatically shut them off either:

- via a timer
- if the liftgate batteries drop to a low state of charge.

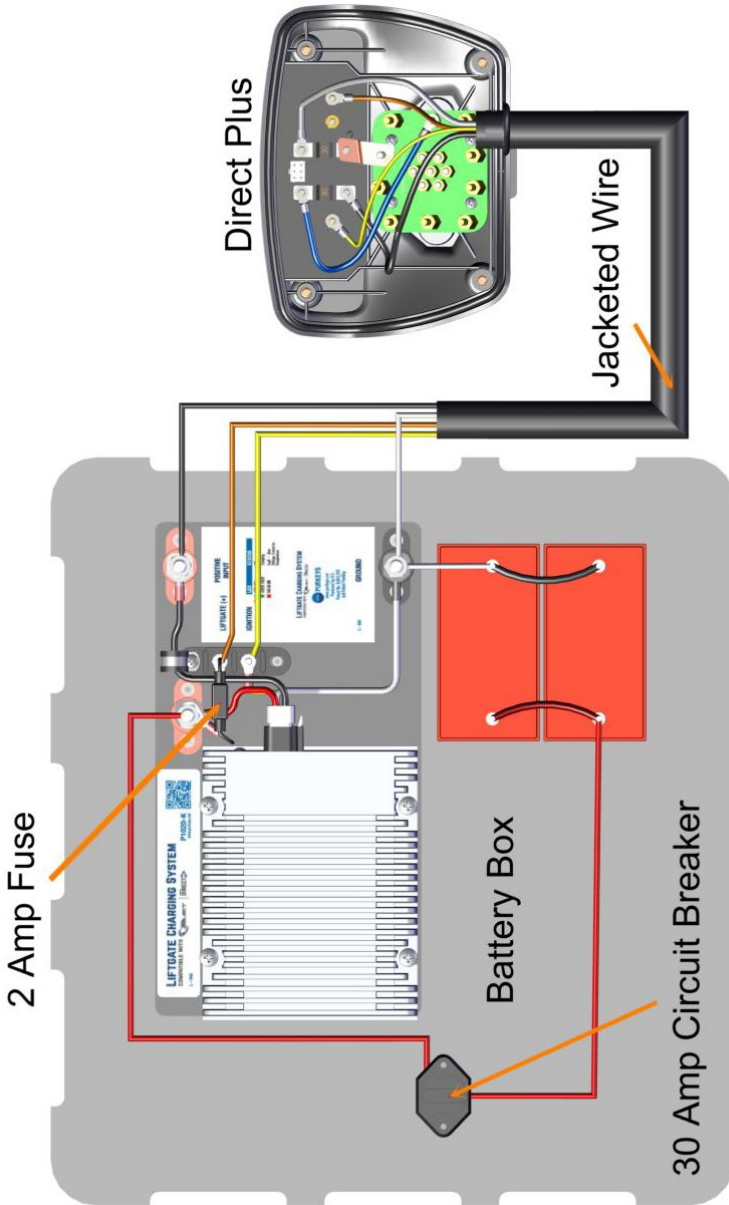
The Direct improves the charging of liftgate batteries by utilizing a DC/DC Converter to boost the voltage for optimal charging. The boost in voltage overcomes the normal voltage drop caused by the extended distance between the liftgate batteries and the vehicle charging system. Also, in cold temperatures batteries require increased charging voltages to maintain a high state of charge. The DC/DC Converter in the Direct system compensates for temperature as well as for voltage drop and provides the best voltage to the remotely located liftgate batteries. The result is well-charged liftgate batteries that will last longer and have ample power for liftgate operation.

The Direct nosebox system is automatic and has easy to interpret LED indicators to assure drivers and technicians of proper system function. The LED indicators clearly show the status of the source as well as the status of the liftgate batteries. A quick glance at the Direct Controller assures the driver that the liftgate batteries are ready to go, or alerts the driver that the batteries need maintenance.

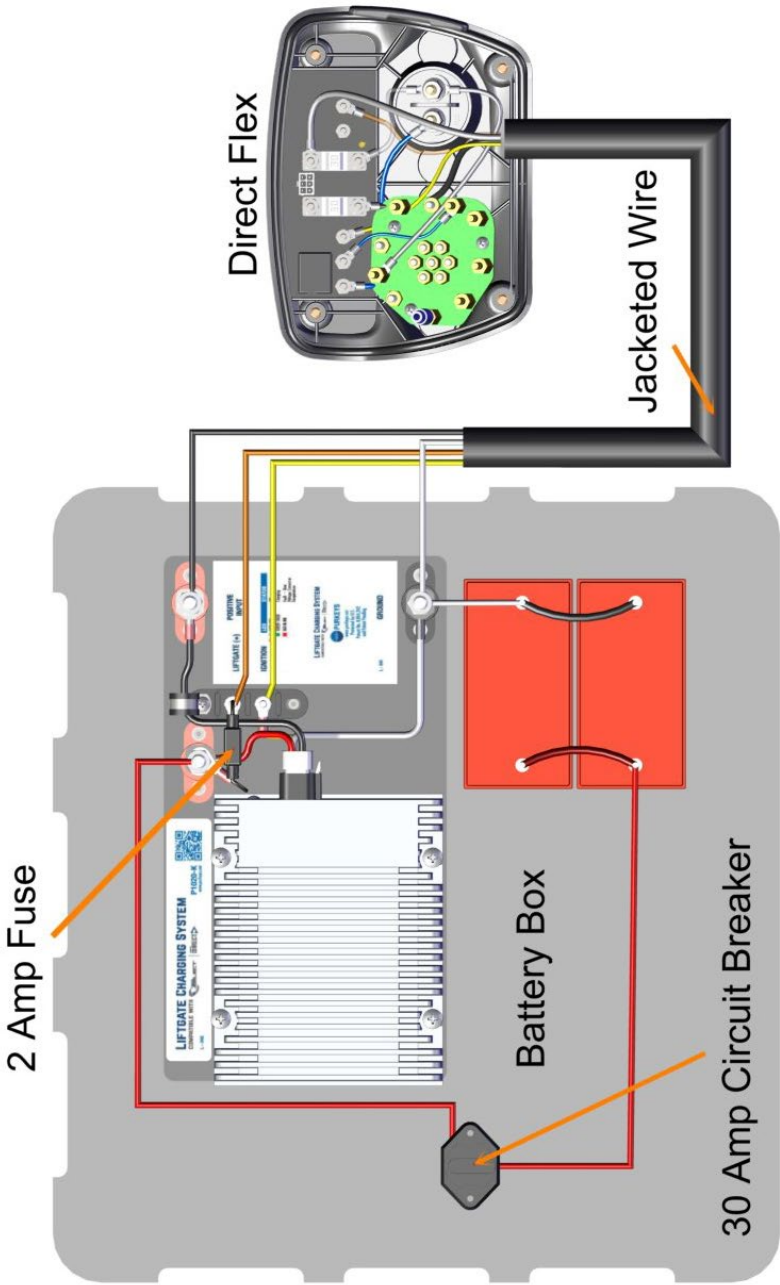
NOSEBOX INSTALLATION GUIDE

DIAGRAMS

DIRECT PLUS

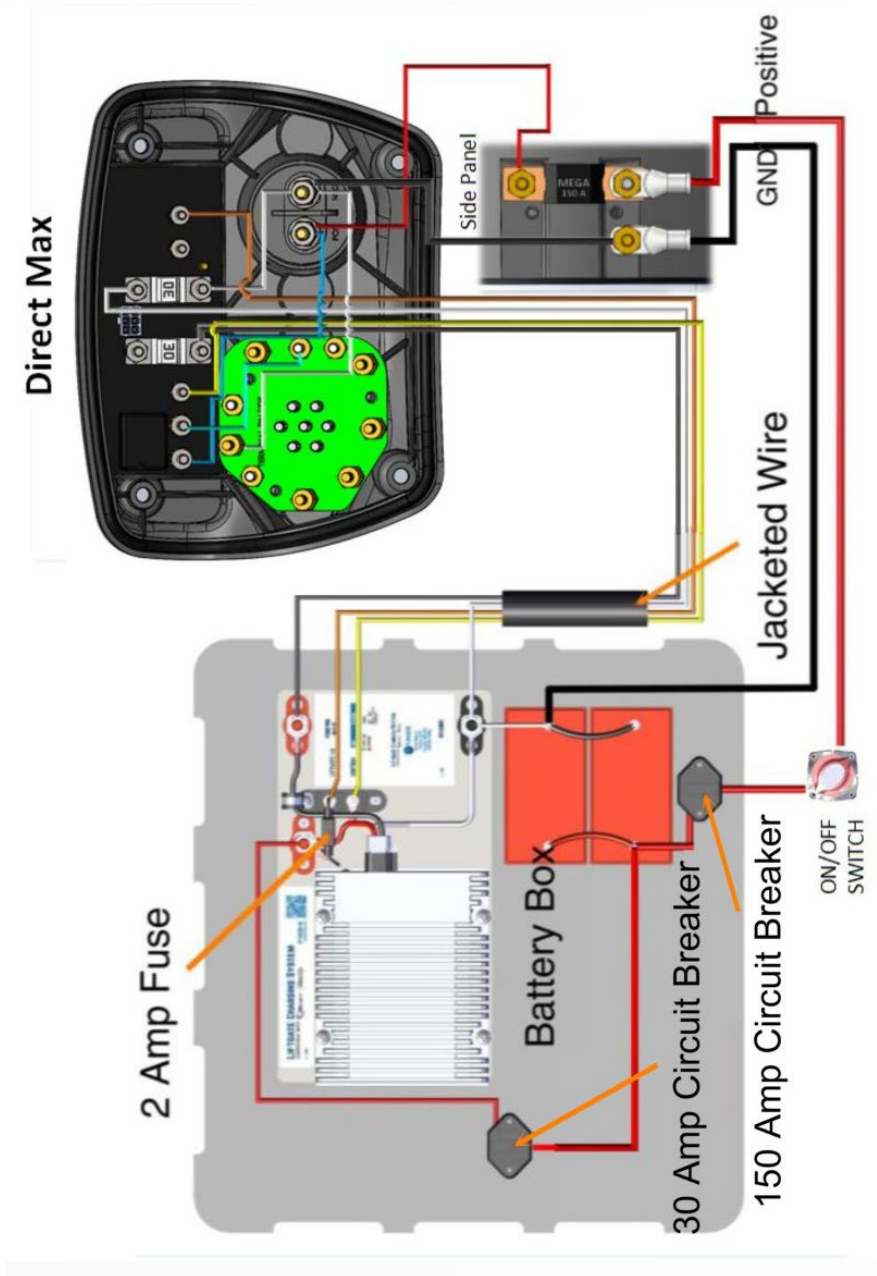


DIRECT FLEX



NOSEBOX INSTALLATION GUIDE

DIRECT MAX

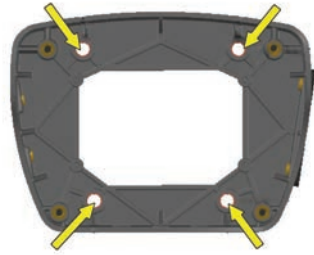


MOUNTING THE NOSEBOX

Step 1: Mount the Direct nosebox at the front of the trailer via the mounting holes on the mounting plate.



Note: The mounting plate can be removed if space is an issue or if a standard bolt pattern is wanted. Simply remove the plate and mount the nosebox to the trailer using the supplied mounting screws and the standard bolt holes inside the nosebox.



Note: Do not block the LED status decal on the side of the Direct when mounting the nosebox.



Note: The Direct Plus nosebox must be mounted with the wires facing down to help prevent water intrusion.

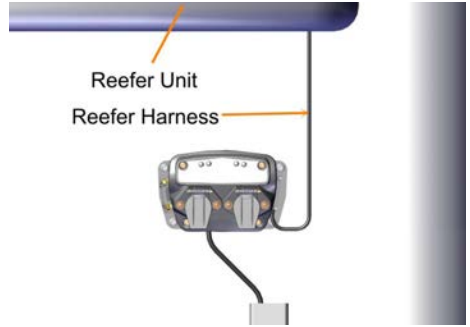
Direct Controller Mounting Complete.

NOSEBOX INSTALLATION GUIDE

REEFER HARNESS INSTALLATION: OPTIONAL

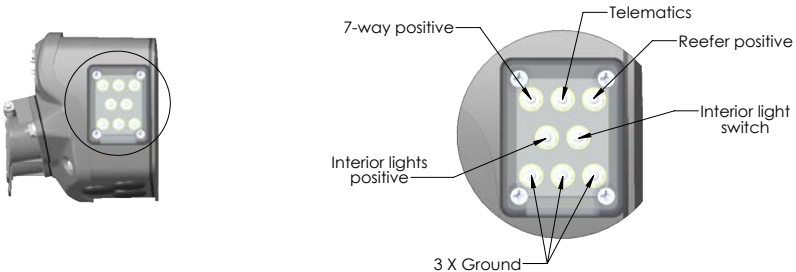
The reefer harness installation instructions apply only if you are installing the optional Purkeys Reefer Harness (Purkeys Part Number H-00289).

Step 1: Route the jacketed 2-conductor up toward the reefer compartment.



Note: Place the cable clamps along the reefer harness every 6 inches to ensure proper support for the cable. Avoid sharp edges and possible chaffing points.

Step 2: Using the connections on the side of the nosebox, connect the reefer harness white ground wire to one of the ground connections and the reefer harness blue positive wire to the Reefer Positive connection.



Step 3: Connect the reefer harness white ground wire to the reefer engine block ground and tighten.



Note: When adding a ground to the engine block, the terminals need to be mounted 30 degrees from each other with the biggest terminal closest to the engine block to ensure a good ground terminal connection.

Step 4: Connect the reefer harness blue positive wire with the 30 amp in-line fuse to the reefer starter positive post.



Note: Make sure wires are not hanging and that all clamps and cable ties are no further than 6 inches apart.

Reefer Harness Installation Complete.

NOSEBOX INSTALLATION GUIDE

MAIN HARNESS INSTALLATION

Step 1: Route the Direct jacketed 4-conductor main harness for the DC/DC converter behind the front plate then behind the header plate through the air/electrical tube to the center channel.



Step 2: Route the Direct jacketed 4-conductor main harness in the center channel toward the back of the trailer. Secure with wire ties or cable clamps as you go.



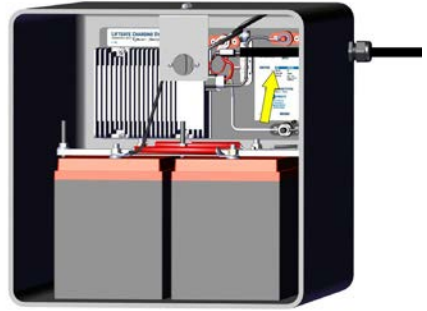
Note: Place the cable clamps along the 4-conductor jacketed main harness every 6 inches to ensure proper support for the cable. Avoid sharp edges and possible chaffing points.

Step 3: Once you are near the liftgate battery box, begin routing the Direct jacketed 4-conductor main harness into the liftgate battery box through a dome nut or rubber grommet.



Note: Ensure that the jacketed 4-conductor main harness enters the liftgate battery box through a dome nut or rubber grommet to prevent chaffing the harness, which could result in a possible electrical short in the system.

Step 4: Position the Direct jacketed 4-conductor main harness so it will reach the 2-stud strip and all the slack has been taken up. Mark the jacketed 4-conductor main harness so it can be taken back out of the battery box to be terminated.

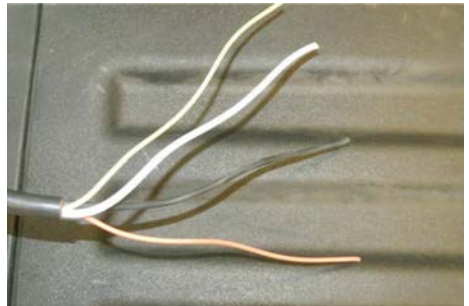


Note: If your battery box includes a slide-out tray, include enough slack to allow the tray to fully extend without tugging the wire connections.

Step 5: Pull the jacketed 4-conductor main harness out of the box (making it easier to work on), and cut off the excess at the mark.

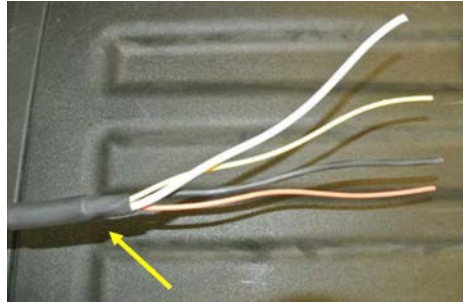


Step 6: Cut about 8 inches off the jacketed portion of the 4 wires.

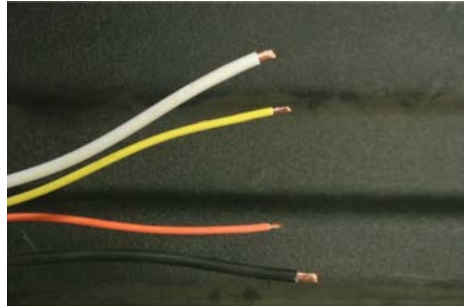


NOSEBOX INSTALLATION GUIDE

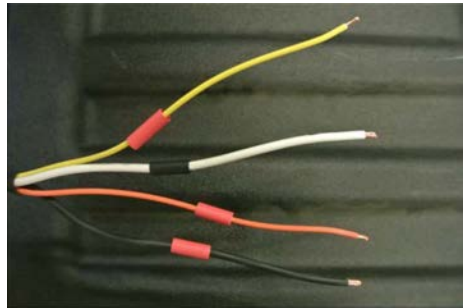
Step 7: Apply the supplied 3/4 inch black heat shrink where the jacket was stripped off.



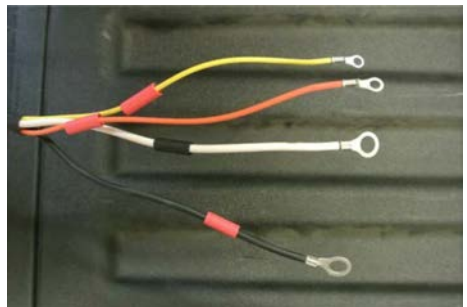
Step 8: Strip 3/8 inch of insulation off all 4 wires.



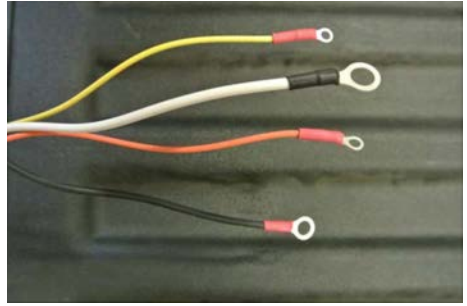
Step 9: Slide the supplied red 1/4 inch heat shrink over the orange, yellow, and black wires. Slide the supplied black 1/4 inch heat shrink over the white wire.



Step 10: Crimp 3/8 ring terminals onto the white and black 8-gauge wires. Crimp #10 ring terminals onto the 14-gauge orange and 16-gauge yellow wires.



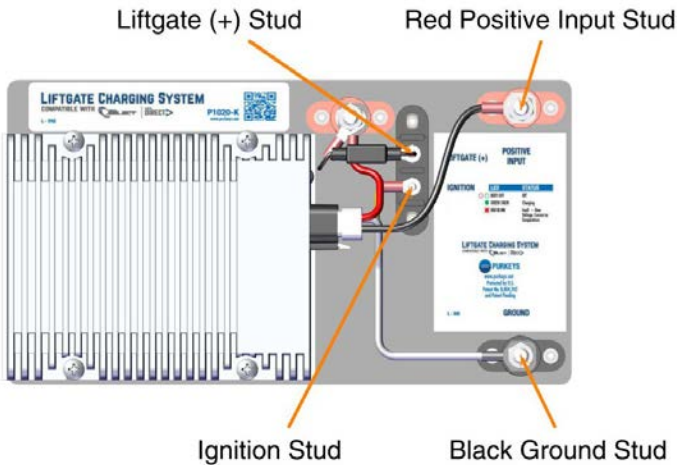
Step 11: Position the heat shrink over the crimps and apply heat to the 4 terminals.



Step 12: Re-route the jacketed 4-conductor main harness back into the battery box.



- Connect the 8-gauge black wire to the red positive input stud.
- Connect the 8-gauge white wire to the black ground stud.
- Connect the 14-gauge orange wire to the liftgate (+) stud.
- Connect the 16-gauge yellow wire to the ignition stud.



Main Harness Installation Complete.

NOSEBOX INSTALLATION GUIDE

INTERIOR LIGHT INSTALLATION

These interior light instructions apply if you are installing the Purkeys interior light harness (Purkeys Part Number H-00522: 50 ft Interior Light Harness), or if you are providing an equivalent harness.

Note: The Purkeys interior light harness (Purkeys Part Number H-00522: 50 ft Interior Light Harness) is sold separately as it is an optional device.

Installation Connections Inside the Nosebox:

Step 1: Route the Interior Light Input Harness from the battery to the nosebox and cut to length.

Note: Do NOT connect to the batteries until the interior light installation is complete. Doing so may result in coming in contact with a live wire.

Step 2: Terminate the positive input with a #10 ring terminal and connect to the Power terminal inside the nosebox (see Figure 1).

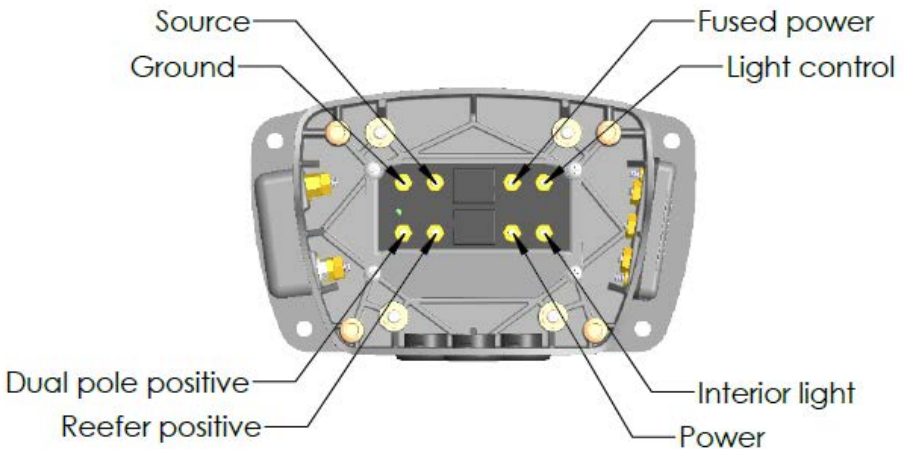


Figure 1

Step 3: Terminate the negative input with a #10 ring terminal and connect to the Ground pin inside the nosebox (see Figure 1).

Installation Connections Outside the Nosebox:

Step 1: Terminate the Interior Light positive wire with a #10 ring terminal and connect to the Interior Lights Positive (see Figure 2).

Step 2: Terminate the Interior Light negative wire with a #10 ring terminal and connect to Ground (see Figure 2).

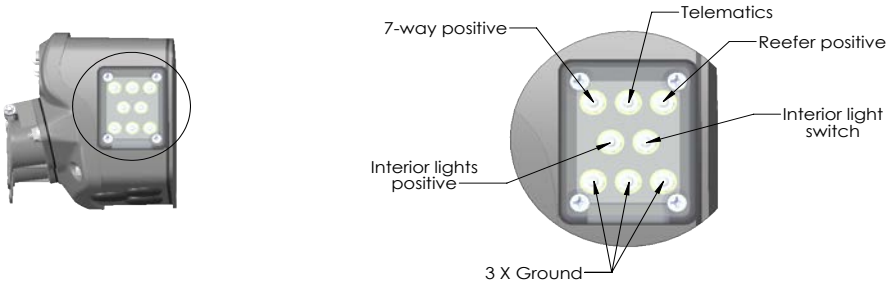


Figure 2

Interior Light Installation Complete.

NOSEBOX INSTALLATION GUIDE

INTERIOR LIGHT INSTALLATION WITH SEVERE SERVICE (MAX ONLY)

These interior light instructions apply if you are installing the Purkeys severe service kit (Direct Max only).

Step 1: Inside the nosebox, connect the severe service positive (point C) to the Power terminal (point A) (see Figure 3) using a 10 gauge wire.

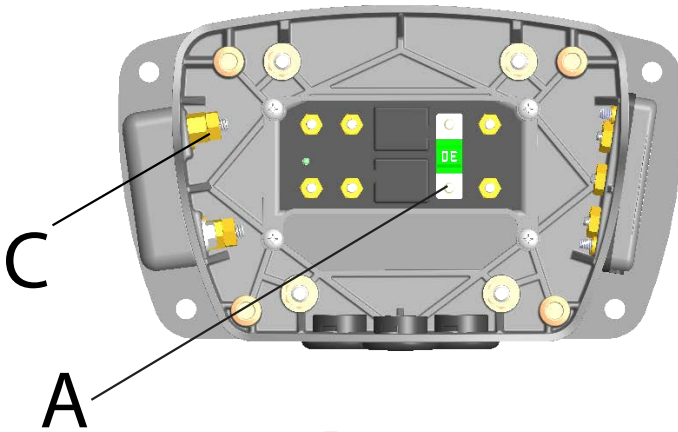


Figure 3

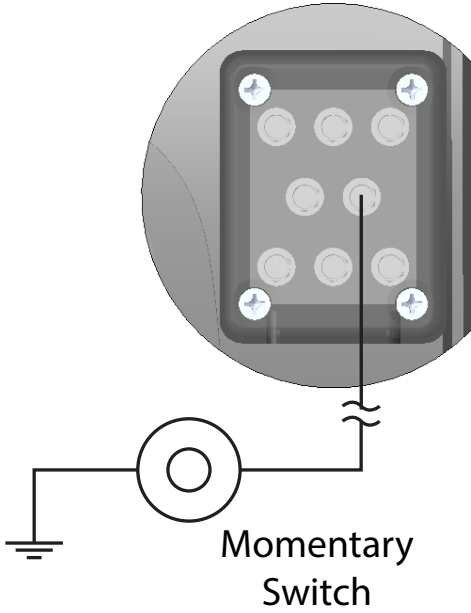
Step 2: Terminate the Interior Light positive wire with a #10 ring terminal and connect to the Interior Lights Positive (see Figure 2 on page 14).

Step 3: Terminate the Interior Light negative wire with a #10 ring terminal and connect to Ground (see Figure 2 on page 14).

Interior Light with Severe Service Installation Complete.

MOMENTARY SWITCH (OPTIONAL)

If your trailer is being spec'd with a momentary switch at the back of the trailer, wire the circuit as shown below using a #10 ring terminal.

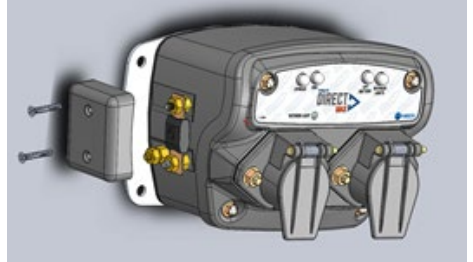


NOSEBOX INSTALLATION GUIDE

SEVERE SERVICE INSTALLATION (MAX ONLY)

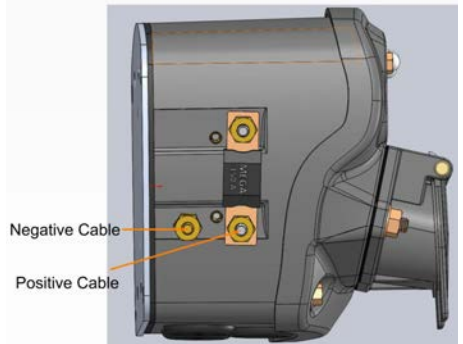
Installing Cables to the Nosebox

Step 1: Remove cover on the side of the DIRECT MAX.

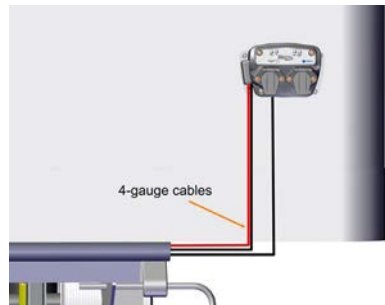


Step 2: Install 4-gauge cables as shown. Replace side cover.

Note: The mega fuse used here is a 150 amp fuse.



Step 3: Route the 4-gauge red and black cables behind the front cover, then under the header plate through the air/electrical tube to the center channel.



Important: Avoid sharp edges and possible chaffing points.

Routing the Severe Service Cables

Step 1: Route the red and black 4-gauge cable toward the back of the trailer via the center channel. Secure with wire ties as you go.



Important: Avoid sharp edges and possible chaffing points.

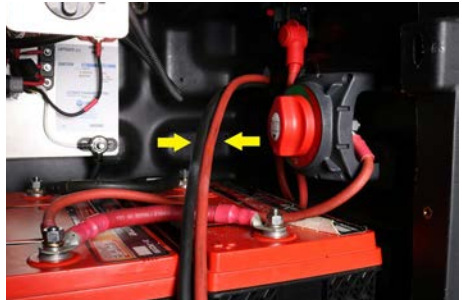
Step 2: When near the liftgate battery box, route the two 4-gauge red and black cables to the liftgate battery box. Again, secure the cables with wire ties as you go.



Step 3: Determine if the pre-terminated cables are an appropriate length. If they are, skip to Step 9.

If they are not the appropriate length, continue to Step 4. Use the supplied hardware (BK-1055) to terminate the cables.

Step 4: Mark how much excess will need to be cut off of the 4-gauge 40 ft red and black cables so that the 4-gauge red cable will reach the left (input) side of the 150 amp circuit breaker and the 4-gauge black cable will reach the liftgate battery negative post.



NOSEBOX INSTALLATION GUIDE

Step 5: Pull the 4-gauge red and black cables back out of the battery box so it is easier to work on them. Cut off the excess.



Step 6: Strip 1/2 inch of the insulation off the 4-gauge red and black cables.



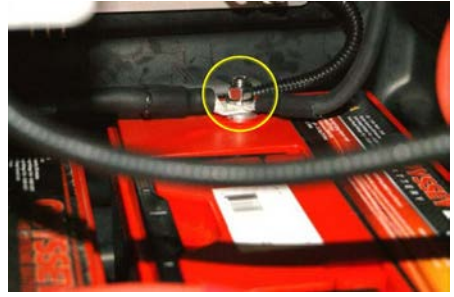
Step 7: Install the 1/4 inch ring terminal on the 4-gauge red cable and the 3/8 inch ring terminal on the black cable. Crimp the connections.



Step 8: Install the red heat shrink to the crimp area of the red cable and the black heat shrink to the crimp area of the black cable. Apply heat to both pieces to seal the connection.



Step 9: Route the two 4-gauge red and black cables back into the liftgate battery box. Connect the 4-gauge black cable to the liftgate battery negative post.

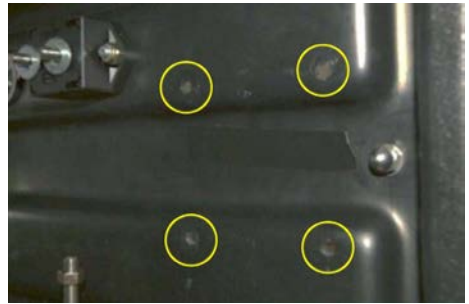


Step 10: Slide the supplied red rubber boot over the 4-gauge red cable and connect this cable to the left side of the 150 amp circuit breaker.



Mounting the Switch

Step 1: Mount the ON/OFF Switch to the inside of the liftgate battery box using the existing pre-drilled holes.



Note: If the ON/OFF Switch mounting holes do not exist, use the ON/OFF Switch as a template to drill these holes.

Step 2: Install flat washers on 2 inch bolts before pushing the bolts through the plastic or metal wall of the battery box.



NOSEBOX INSTALLATION GUIDE

Step 3: Mount the ON/OFF Switch using the provided hardware.



Step 4: Push the bolts through the battery box.



Step 5: Add flat washers, lock washers, and nuts to the bolts and tighten.



Step 6: Connect the short red 4-gauge cable marked “right (output) side circuit breaker” from the ON/OFF Switch to the right side of the circuit breaker (toward door), install the nut, and tighten.



Note: Make sure to slide the red boot over this connection to protect it from a short.

Step 7: Connect the 4-gauge red wire from the ON/OFF Switch marked “Liftgate Battery (+)” to the liftgate battery positive post. Install nut and tighten.



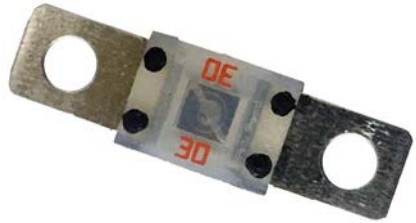
Installation Complete.

PART LIST: DIRECT PLUS

Part # F00062

MAXON # 907264-01

30 AMP Midi Fuse



Part # BK-1054

MAXON # 907267-01

Hardware Bag Kit



Part # BK-1049

MAXON # 907251-01

Terminal Bag Kit

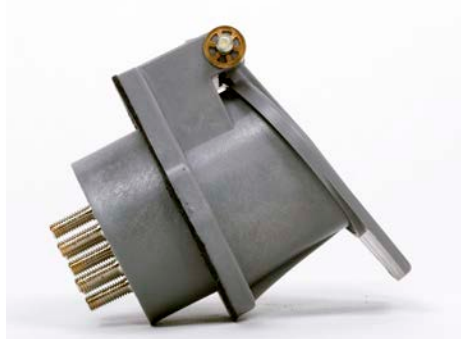


NOSEBOX INSTALLATION GUIDE

Part # NB00041

MAXON # 299213-01

Receptacle, Nylon 7-Way with #10-32 Studs - Solid Pins



Part # DF00094

MAXON # 299206-01

Direct Plus Cover Assembly



Part # MOD00094-K

MAXON # 299207-01

Direct, Plus Nosebox



Part # H-00508

MAXON # 299201-01

50 ft Main Harness

Part # H-00515

MAXON # 299201-02

25 ft Main Harness



Part # H-00516

MAXON # 299201-03

70 ft Main Harness

PART# PLUS-25-M

MAXON # 299205-25

Direct Plus Nosebox, 25 Ft For
Maxon

PART# PLUS-50-M

MAXON # 299205-50

Direct Plus Nosebox, 50 Ft For
Maxon



PART# PLUS-70-M

MAXON # 299205-70

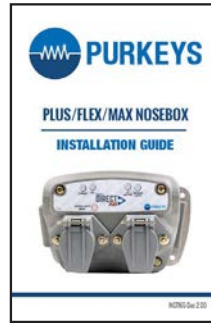
Direct Plus Nosebox, 70 Ft For
Maxon

NOSEBOX INSTALLATION GUIDE

PART# INST165-M

MAXON # 299215-500

Direct Plus, Flex, Max Installation
Guide



PART LIST: DIRECT FLEX

Part # F00062

MAXON # 907264-01

30 AMP Midi Fuse



Part # BK-1054

MAXON # 907267-01

Hardware Bag Kit



Part # BK-1049

MAXON # 907251-01

Terminal Bag Kit



Part # DF00095

MAXON # 299203-01

Direct Flex Cover Assembly



NOSEBOX INSTALLATION GUIDE

Part # MOD00095-K
MAXON # 299202-01
Direct Flex Nosebox



Part # NB00041
MAXON # 299213-01
Receptacle, Nylon 7-Way With #10-32 Studs - Solid Pins



Part # NB00048
MAXON # 299214-01
Receptacle, Nylon Dual Pole



PART# H-00508

MAXON # 299201-01

50 Ft Main Harness

PART# H-00515

MAXON # 299201-02

25 Ft Main Harness

PART# H-00516

MAXON # 299201-03

70 Ft Main Harness



PART # FLEX-25-M

MAXON # 299200-25

Direct Flex Nosebox, 25 Ft for
Maxon

PART # FLEX-50-M

MAXON # 299200-50

Direct Flex Nosebox, 50 Ft for
Maxon

PART # FLEX-70-M

MAXON # 299200-70

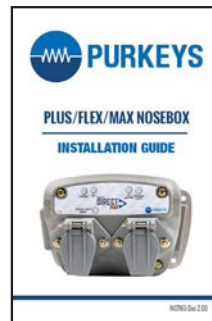
DIRECT FLEX NOSEBOX, 70 FT
FOR MAXON



PART# INST165-M

MAXON # 299215-500

Direct Plus, Flex, Max Installation
Guide



NOSEBOX INSTALLATION GUIDE

PART LIST: DIRECT MAX

Part # F00062

MAXON # 907264-01

30 AMP Midi Fuse



Part # BK-1054

MAXON # 907267-01

Hardware Bag Kit



Part # BK-1049

MAXON # 907251-01

Terminal Bag Kit



Part # DF00096

MAXON # 299212-01

Direct Max Cover Assembly



Part # MOD00096-K

MAXON # 299226-01

Direct Max Nosebox



Part # NB00041

MAXON # 299213-01

Receptacle, Nylon 7-Way with #10-32 Studs - Solid Pins



Part # NB00048

MAXON # 299214-01

Receptacle, Nylon Dual Pole



NOSEBOX INSTALLATION GUIDE

PART# CA00136-SW

MAXON # 299211-01

Severe Service Trailer Link 53FT, 4
AWG With Switch

PART# CA00138-SW

MAXON # 299211-02

Severe Service Trailer Link 23 Ft, 4
AWG With Switch



PART# CA00170-SW

MAXON # 299211-03

Severe Service Trailer Link 70 Ft, 4
AWG With Switch

PART# MAX-25-M

MAXON # 299210-25

Direct Max Nosebox, 25 Ft For Maxon



PART# MAX-50-M

MAXON # 299210-50

Direct Max Nosebox, 50 Ft For Maxon

PART# MAX-70-M

MAXON # 299210-70

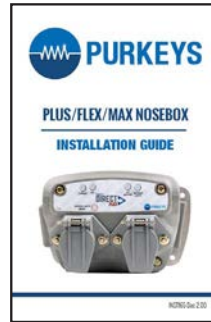
Direct Max Nosebox, 70 Ft For Maxon



PART# INST165-M

MAXON # 299215-500

Direct Plus, Flex, Max Instalation
Guide



NOSEBOX INSTALLATION GUIDE

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 36 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.



WATT Keeps You Trucking