



75035 Snow Plow Array Instructions

The following is a list of recommended practices for the installation and operation of your light.

FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY AND/OR DEATH TO YOU AND YOUR PASSENGERS

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures. You may need to consult a professional for installation.
- SWS Warning Systems Inc. recommends the use of waterproof butt splices and/or connectors for all electrical connections. It is recommended that the use of good dielectric grease be used on all connections where possible.
- SWS Warning Systems Inc. does not recommend leaving a magnetically mounted light on a vehicle while the vehicle is in motion. The owner does so at their own risk.
- If mounting this product requires drilling holes, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Also de-burr the holes and remove any metal shards or remnants. Grommets are recommended for all wire holes.
- Do not mount the light close to antennae or radio equipment, as they may cause electromagnetic interference. After installation of the light, it is necessary to test all electronic equipment simultaneously to ensure that they operate free of interference from other components within the vehicle.
- Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment.
- Do not install this product or route any wires in the deployment area of your air bag or areas that interfere with the operation of the vehicle. Refer to your vehicle owner's manual for the air bag deployment area and recommended mounting areas for warning lights and other equipment.
- Do not attempt to activate or control the device with the vehicle in motion or in a hazardous driving environment. The vehicle should be stopped and in park before control of the light is attempted.
- Do not stare directly into these lights. Momentary blindness and/or eye damage could result.
- Use only soap and water to clean the product. Use of other chemicals could result in degradation and discolouration of the lens/dome.
- Do not use a pressure washer to clean this product.
- Inspect and operate this product regularly to confirm its proper operation and mounting condition.
- It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.
- SWS Warning Systems Inc. and its subsidiaries are not responsible for any damages due to improperly mounted or improperly wired lighting equipment.

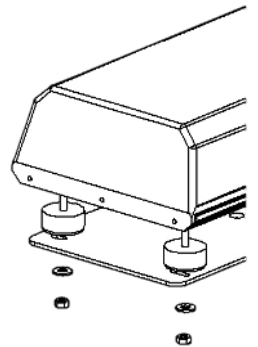
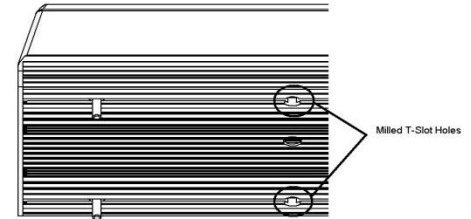
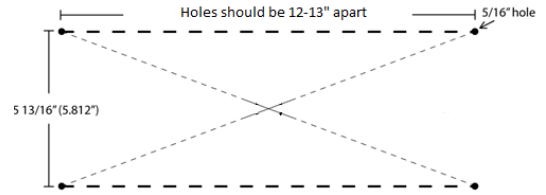
Mounting

- The 96043 Main Junction Box can be mounted anywhere on the vehicle, to facilitate the connection requirements and summer/winter modifications as per the owners requirement.

Minibar Permanent Mount

Select a surface where the light is visible and free of obstruction. Mounting brackets are available from the manufacturer if required.

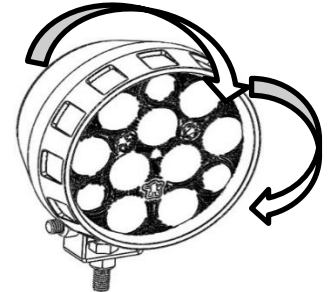
- A straight level is highly recommended to ensure the light is level on two axes.
 - Ensure the vehicle is on level ground when installing.
 - Outer dome does not require removal for installation.
 - Take note of the "Pattern Starts Here" label. It must face the front of the vehicle.
- If you are not using an SWS mounting bracket, use the images on the right as a guide. Drill four $\frac{5}{16}$ " holes as shown and wire holes of appropriate size (if desired).
 - Take the four $\frac{1}{4}$ "-20 bolts and insert them into the T-slots on the bottom of the base of the light. Look for the milled holes to insert the bolt heads.
 - Slide one bolt to each corner of the base approximately 1.5 - 2 inches in from the edge.
 - Place the large rubber grommet into the hole drilled in the mounting surface for wires.
 - Place the 4 rubber standoffs on each bolt from the underside of the light.
 - If your light has an external connector, connect the wiring pigtail to the connector prior to the next step. A small amount of dielectric grease is recommended.
 - Pass the bolts through the mounting surface keeping the rubber standoffs between the light and the mounting surface. Be sure to pass the wires through their grommet.
 - From the underside of the mounting surface, place a flat washer and self-locking nut onto each bolt.
 - Tighten the nuts with a $\frac{7}{16}$ " wrench while using a straight level to ensure the light is level.



Flashing Floodlight Permanent Mount

Select a surface where the light is visible and free of obstruction.

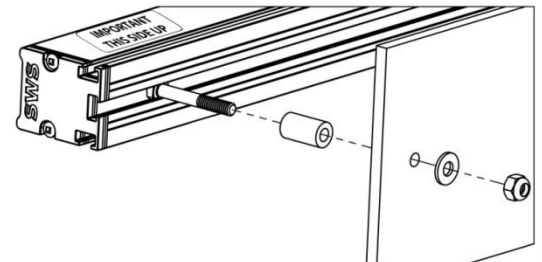
- Drill a $\frac{3}{8}$ " hole into the mounting surface.
- Pass the vertical bolt through the mounting surface and secure with the supplied nylock.
- Adjust the pivot to the desired position, and then tighten with a $\frac{1}{2}$ " wrench or socket.
- Adjust the tilt to the desired location, and then tighten the horizontal bolt



Warning Stick Permanent Mount

- Select a surface where the light is visible and free of obstruction. Mounting brackets are available from the manufacturer.
- A straight level is highly recommended to ensure the light is level.
- Ensure the vehicle is on level ground when installing.
- Vertical sticks should have the wires to the bottom of the mounting orientation.

- If you are not using SWS mounting brackets, you must drill $\frac{5}{16}$ " diameter holes in the mounting surface. A minimum of two per stick are required.
- Slide the head of the $\frac{1}{4}$ "-20 bolt into one of the T-slots in the body of the light. The T-slots can be accessed through the endcap.
- Place a nylon spacer onto each bolt, then pass the bolt through the mounting surface.
- From the opposite side of the mounting surface, place the flat washers and self-locking nuts onto the bolts.
- Tighten the nuts with a $\frac{7}{16}$ " wrench or ratchet and socket.



Array Orientation/Layout

****Look at Page 5 for Layout****

- The warning sticks should be oriented with the wires down on the vertical sticks, and the wires towards center on the horizontal sticks
- The minibars should be centered on the vehicle, with FRONT Minibar closest to the cab.
- Floodlights should be mounted about the rear minibar, one on each side.

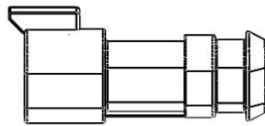
Wiring

- This snowplow system is meant to connect to the Main Junction Box for all devices.
- Connect all devices to the connectors of the junction box, using your desired extension cables. Flashing floodlights should be connected to the **TL2** labeled connectors.
- The Main Junction Box will distribute power and communication connections to all connected devices.
- The FRONT Minibar controls the colour selection and flashing nature of the system (see below for connections).
- Connect the RED (or White) wire on the junction box to the Positive of the vehicle (via ignition switch or positive switch), and the BLACK wire to the Ground/Negative of the vehicle

Minibar

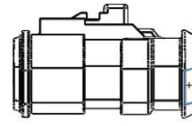
The FRONT Minibar is the master light in the system and will control the colours of the other lights.

- There are two connectors on the minibar, which function as in the images below



Power, Ground, &
Communication.

Connect to Main Junction Box



Amber, Secondary, & Dim

Connect to Switches with
supplied wire lead.

Switch Connections

<u>Wire Lead Colour</u>	<u>Function</u>	<u>Connection</u>
Red	Amber Flashing Control	Connect to Ignition Switch or 12Vdc Positive Switch
Black	Secondary Flashing Control	Connect to 12Vdc Positive Switch or Plow Activation Switch
White	Manual Dim	Connect to 12Vdc Positive switch

Function

- The sticks will steadily burn 2 modules per stick when power is applied to the junction box.
- Applying positive power to the Amber Flashing Control wire (Red) of the front minibar, will enable the other modules in the sticks, the floodlights, and the minibars to flash in sequence.
- The lights will AutoDim automatically, but if you require further dimming or dimming during the daytime, apply positive to the Manual Dim wire (White) of the front minibar.

Spare Lead Connections (Summer Month Connections)

- The other spare wire lead included with 16363 is for summer month operation of the minibar once it is disconnected from the Main Junction Box.
- This spare lead can be wired into the vehicle and stowed away for the winter months if desired.
- If the snowplow system will not be removed from the vehicle, or the minibar will not be disconnected from the Main Junction Box, this lead can be stored or discarded.

<u>Wire Lead Colour</u>	<u>Function</u>	<u>Connection</u>
Red	Positive (+)	Connect to Ignition Switch or 12Vdc Positive Switch
Black	Ground/Negative (-)	Connect to chassis ground or Negative connection
White	No Function	No Connection

Blue Transition (Secondary Colour)

When blue legislation occurs please do the following to enable Amb/Blu(Secondary) mode:

Warning Sticks

- Replace flashing Amber heads with Blue heads via sliding clip system (instructions supplied with blue heads).

Minibars

- Remove the dome on the FRONT minibar, and cut the GREEN wire on the inside of the reflectors.
- The rear minibar does not require any modification.

Floodlights

- Install floodlights and Y-harnesses as required. Ensure amber floodlights are connected to TL2 output and Secondary floodlights are connected to TL1 output of the junction box.

Test

- With power applied to the junction box, the sticks will steady burn the amber heads
- Apply positive power to the Secondary Flashing Control wire (Black) of the front minibar. The minibars will alternate between Amber and Secondary rotating patterns.
- The sticks should flash the blue modules, and the blue floodlights will flash with the blue flash of the minibars
- The amber floodlights will flash with the amber flash of the minibars.
- The amber on the sticks will not flash.

Reordering

- To reorder the original Amber only Warning Stick, the SWS part number is: #56045
- To reorder the newer Amber/Blue Warning Stick, the SWS part number is: #56046

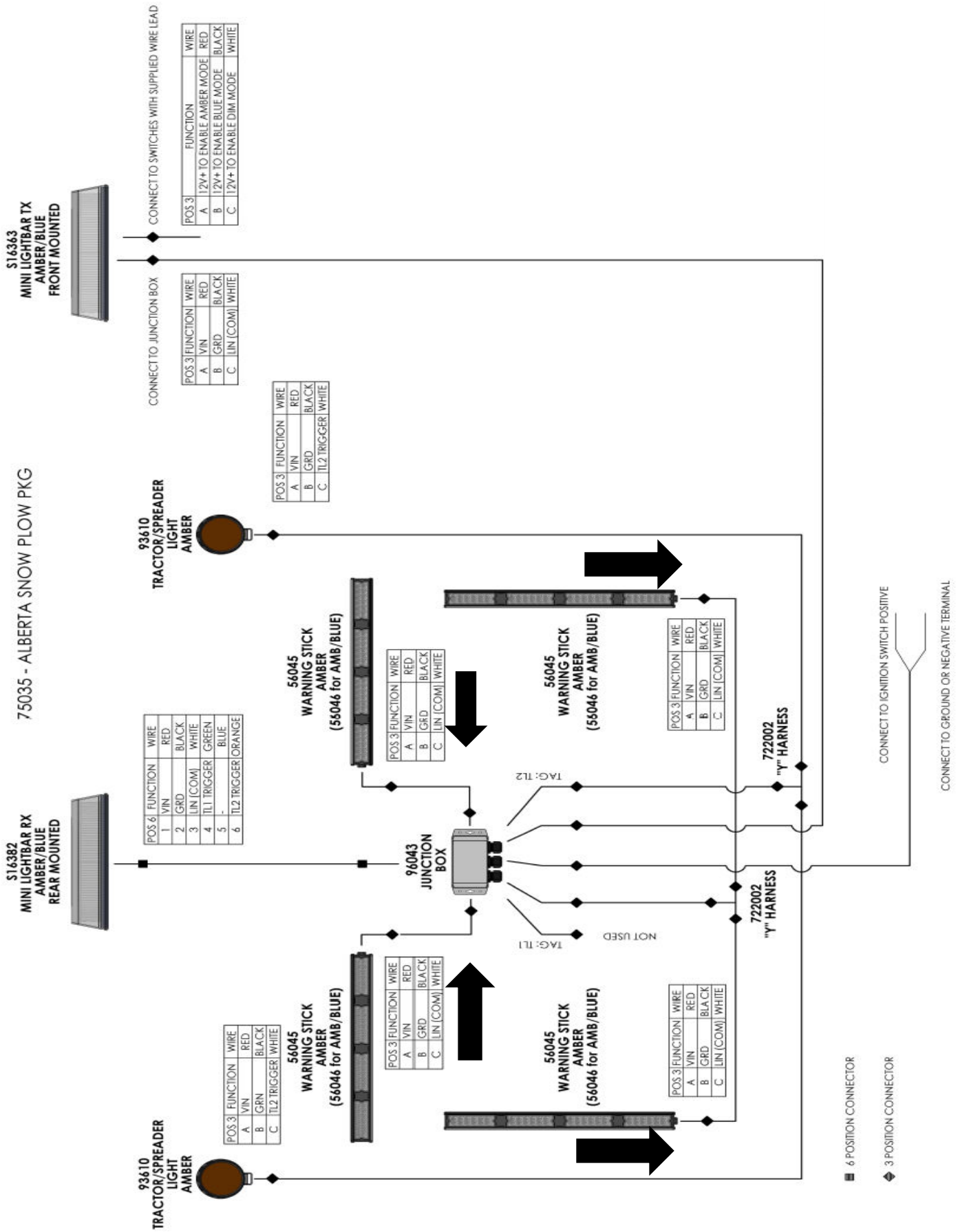
Minibar 16367 (Amber/White)

This rear minibar will always have the secondary colour(white) active.

Minibar 16368 and 16369

These minibars do not have secondary colour.

75035 - ALBERTA SNOW PLOW PKG



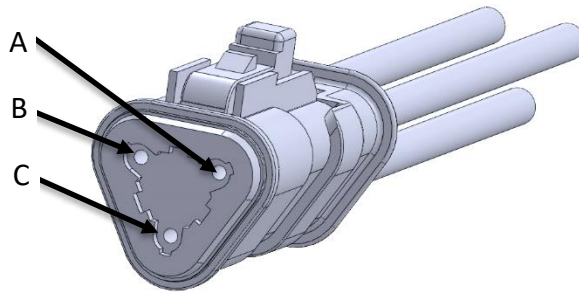
Troubleshooting

If your light fails to work, please follow these troubleshooting tips before calling the factory:

- Check all connections for breakage or corrosion.
- Check to see if the fuse has blown within the vehicle. If it has, replace it with a fuse of the exact same amp rating.
- For long power wire lengths, ensure the voltage at the light connection is adequate. If not, you may have to shorten the length or increase the wire gauge.
- If no light is working and power is confirmed: Check communication line from the Master/Transceiver Light
- If the Front Minibar is working but nothing on the back is, check communication from the Front Minibar.
- If either of the tractor lights are not working, check the connections, check to see if the tractor light works alone and check the rear minibar to see if it is working.
- For the sticks, if one stick is out, check the connections and check to see if the stick works on its own.
- If the package does not light up when the switch is flipped, check the wiring on the switches.
- Ensure the vehicle's battery is charged and that the charging system is functional.
- If the light fails to come out of AutoDim, be sure the top of the dome/lens of the minibar/beacons is clear of debris.
- The six pin minibar extension cable includes a secondary trigger cable that is dormant for this system. If this blue wire is attached to ground, or 12V+, the system will not function properly. Typically, the rear minibar will flash the secondary only in this case. If this happens, ensure that the secondary trigger is isolated, and not connected to ground or power.
- If the rear minibar is unplugged from the junction box, TL1 will have power, and will steady burn the lights that are attached to the TL1 circuit.
- For pinout locations, see sketches below.

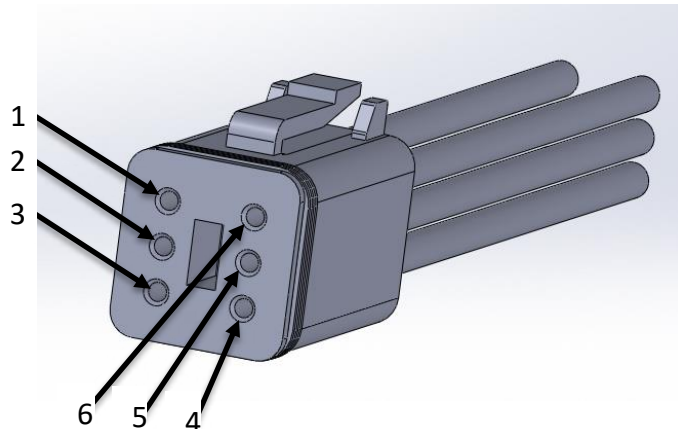
Three Pin Deutsch style connectors

- A - Red (12V +)
- B - Black (Ground)
- C - White (Comm.)



Six Pin Deutsch style connector

- 1 - Red (12V +)
- 2 - Black (Ground)
- 3 - White (Comm.)
- 4 - Green (Tractor Light TL1 trigger)
- 5 - empty
- 6 - Orange (Tractor Light TL2 trigger)



CALL SWS (1-877-357-0222) FOR FURTHER ASSISTANCE