



DMS Ground Kit

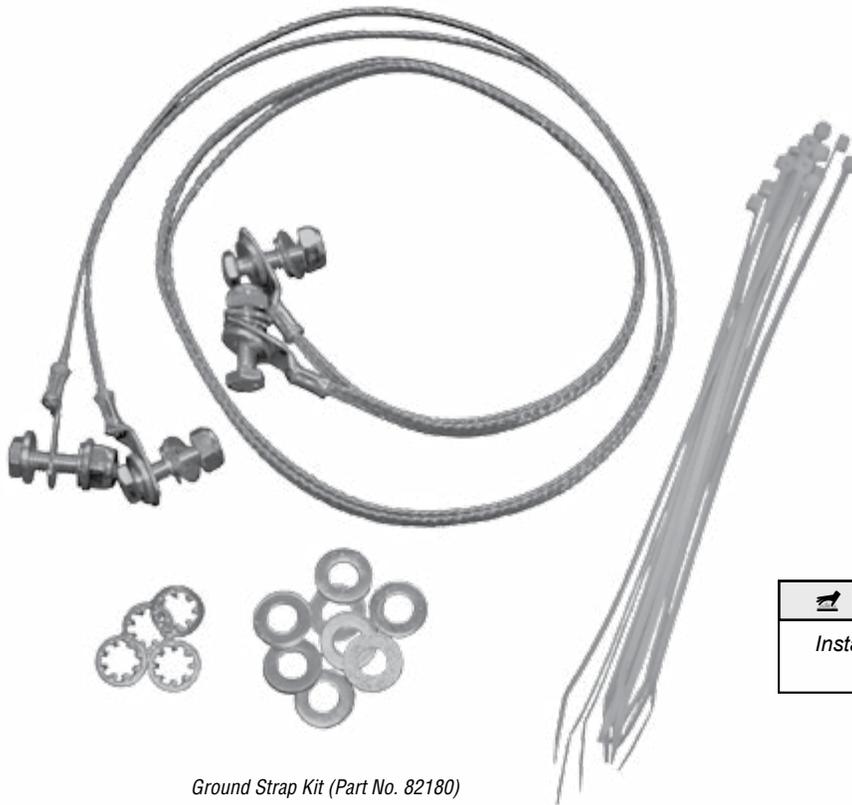
EM200-10GND
Pub. No. 500021

Instructions

Grounding the DMS

After the DMS is mounted, you must ensure that the DMS is properly grounded. Without a proper ground, the DMS is susceptible to damage in the event of static discharges and voltage spikes.

To protect the DMS, LC ships each unit with a ground strap kit (82180). Each kit contains two ground straps. One strap is for grounding the DMS support brackets to the chassis. The other strap grounds the seat to the chassis. If the truck has two seats, both seats must be grounded. An additional ground strap kit can be ordered from Liquid Controls.



Ground Strap Kit (Part No. 82180)

⚡ ESD Precaution ⚡

Install the DMS Ground Kit before wiring the DMS.

Grounding Truck Seats for the DMS

DMS units used while the operator is in contact with an ungrounded seat risk electrical damage. Adjustable, shock-absorbing seats are especially vulnerable. The pivots and hinges of these seats isolate the seat cushion from an electrical ground. If the seat is not properly grounded, electrostatic discharge (ESD) can build up between the seat cushion and the operator and transfer into the electrical system. If ESD occurs on or near the DMS, the truck's electrical system, its components, and the DMS are all susceptible to damage (in hazardous environments, ESD can cause an explosion). Properly grounded seats allow static electricity to "bleed off" the driver and the seat before it can build up, discharge, and interfere with the operation of the DMS or other truck components.

To prevent the occurrence of electrostatic discharge, it is mandatory that installers properly ground the truck seat(s). If you are installing a DMS into a truck with two seats, both seats must be grounded. In order to ground two seats, an additional ground strap is needed. Ground strap kits kit (82180) can be ordered from LC.

All seats are grounded in the same manner. This document contains illustrations that show grounding guidelines for three different seats. These instructions and guidelines are also printed in the DMS Installation Manual EM200-10 (500343).

GROUNDING TRUCK SEATS



To ground a truck seat:

1. Identify any adjustable, shock absorbing seat in the truck cab. These seats will typically have pivot points, hinges, or other mechanical design features that make seat adjustments possible.
2. Find an existing screw or hole near the back of the seat frame, close to the cab floor. If a hole or screw does not already exist, drill a 9/32" hole in the seat frame.
3. Attach one end of the ground strap to the seat frame bracket using the lock washer, flat washer and nut provided.
4. Find an existing screw or hole, or drill a 9/32" hole, in the part of the seat frame—above all pivots and adjustments—that is attached directly to the seat cushion. Make sure that there are no intervening pivot points, guides, adjustment mechanisms, etc., which could interfere with the ground path between the seat cushion and the ground strap.
- 4a. If the seat cushion has a wooden base, attach the strap lug to an existing screw from the metal bracket directly attached to the wood seat where the seat fabric is attached to the wood. There must be good contact between the seat fabric and ground strap lug.
5. Use the wire ties provided with the kit and tie off the strap so that it doesn't interfere with the movement of the seat and is clear of traffic areas in the cab.
6. Check the strap for a good ground connection (see below).

Grounded Passenger Seats

Some truck seats, typically passenger seats, are not adjustable and do not require grounding.

Check for a good ground connection along the ground strap:

1. Turn OFF all accessories, including the dome light, to prevent other currents from distorting the reading.
2. Take a multimeter and measure the resistance between the brackets the ground strap bolts are fastened to. Find a clean spot on the brackets without paint to use as contact points. Other bolts on the brackets are often suitable.
- 2a. If the resistance is less than 3Ω , the system is grounded adequately.
- 2b. If the resistance is still greater than 3Ω , check for proper metal to metal contact on both ends of the grounding strap. Clean any paint, dirt, or oxidation that may block the grounding point. If the resistance remains above 3Ω , attach the ground strap to a different ground point. Repeat the process until the ground resistance is below 3Ω .

Ensure a Good Ground

Remove any dirt or oxidation from the ground strap contact point. Lock washers should penetrate any paint to ensure a good electrical connection.

Turn Off Accessories

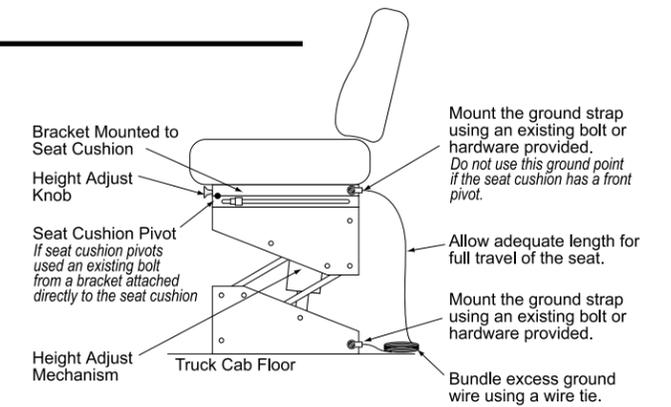
If the multimeter reads "MΩ" or "KΩ", typically, one of the accessories is still on.

TYPICAL ADJUSTABLE TRUCK SEATS



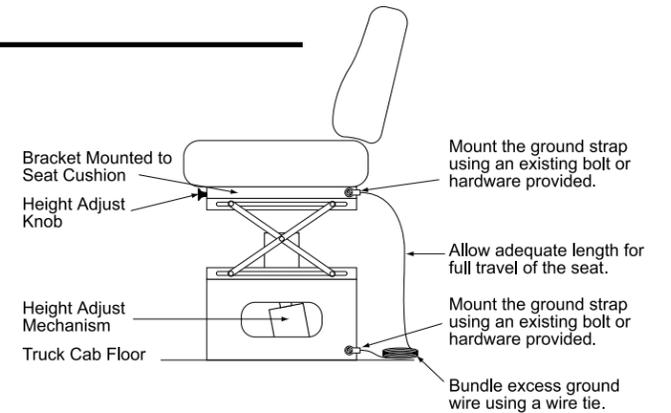
AIR CUSHION SEAT - ADJUSTABLE FOR HEIGHT

(Bostrom 914 Series, National 2000 Series, or equivalent)



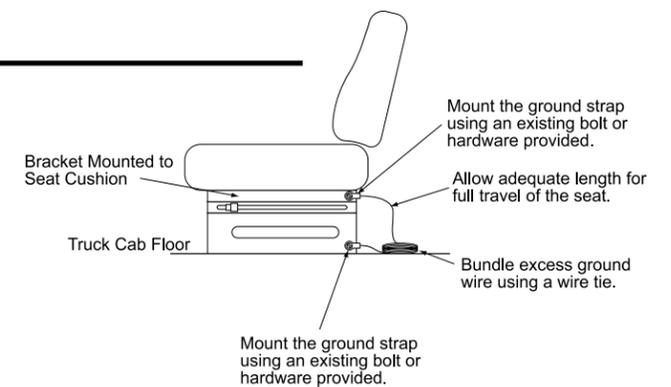
AIR CUSHION SEAT - ADJUSTABLE FOR HEIGHT

(Dura-Form or equivalent)



BENCH SEATS - ADJUSTABLE FOR DISTANCE TO THE STEERING WHEEL

(Manufacturer Standard or equivalent)





GROUNDING DMS SUPPORT BRACKETS

Grounding DMS Support Brackets

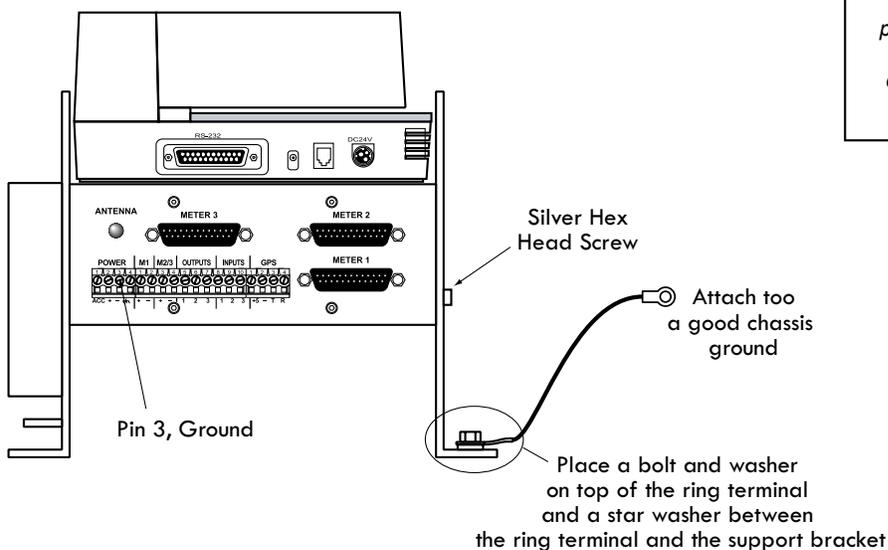
The DMS must be grounded to a good chassis ground. In many cases, a good ground is established when the support brackets are bolted to the chassis. Check for a good chassis ground. If the ground is inadequate, attach a ground strap to the support brackets.

Check for a good ground connection between the DMS and the chassis:

1. Turn OFF all accessories, including the dome light, to prevent other currents from distorting the reading.
2. Take a multimeter and measure the resistance between one of the silver, hex head screws on the support brackets and the ground terminal of the DMS, pin 3 on the power plug (see figure below).
 - a. If the resistance is less than 3Ω , the system is grounded adequately.
 - b. If the resistance is greater than 3Ω , install a ground strap between a support bracket and a clean ground point on the cab chassis.

Ground a DMS support bracket to the cab chassis:

1. Find a suitable ground point, and bolt one ring terminal of the ground strap to the chassis of the cab. An ideal grounding point is clean, out of the way, and easily drilled and bolted.
2. Remove a mounting bolt from the support bracket.
3. Rebolt the support bracket to the cab chassis with the ring terminal and a star washer. Place the star washer directly onto the support bracket, and turn it into the bracket until it penetrates the coat of paint.
4. Measure the resistance between the silver, hex head screw and Pin 3 again.
5. If the resistance is still greater than 3Ω , check for proper metal to metal contact on both ends of the grounding strap. Clean any paint, dirt, or oxidation that may block the grounding point. If the resistance remains above 3Ω , attach the ground strap to a different ground point. Repeat the process until the ground resistance is below 3Ω .



Check the Ground

Check the ground connection periodically. Connections can become susceptible to electrostatic discharge over time due to corrosion and gunk.