



**2022 + Freightliner Cascadia  
Installation Guide**

Model: SS-7

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Smart Starter Control Module



Ignition Harness



Datalink Harness



Auxiliary Harness



Auto Start Switch



Hood Switch



Start-up Buzzer



Warning (5) + Auto Start Switch (1) Decals

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## STEP 1: PRE-INSTALLATION SAFETY PROCEDURE

- Ensure that the vehicle is parked on level ground
- Place the transmission into Neutral
- Apply the Parking Brake and verify that it has been set
- Remove the key from the ignition

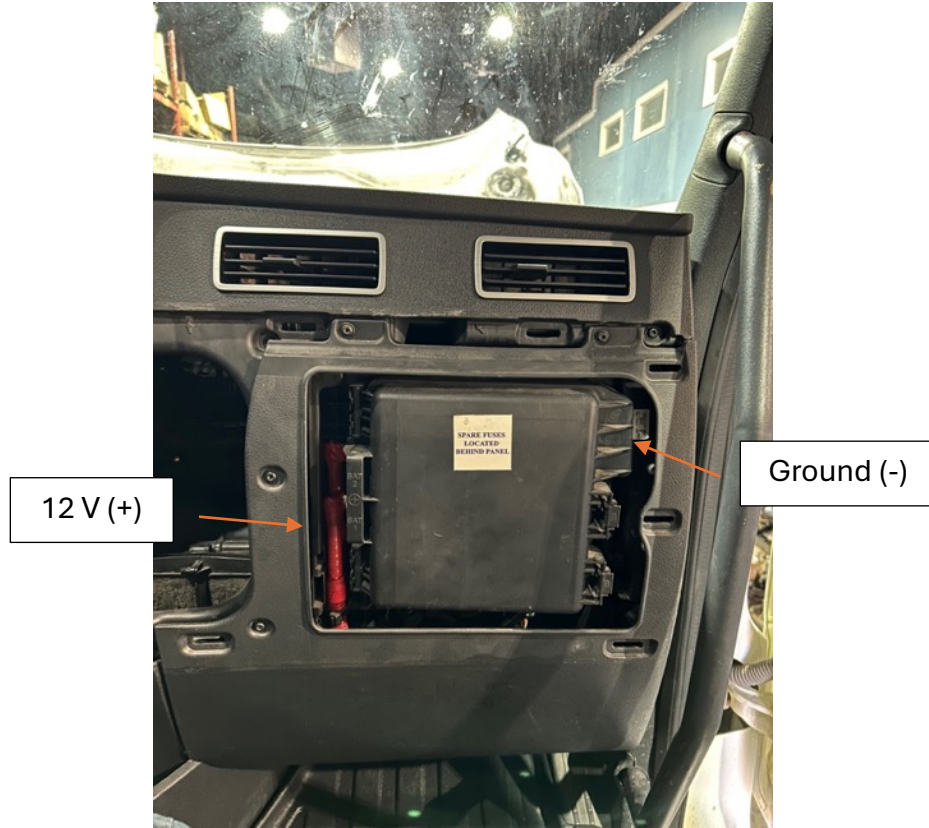
## STEP 2: SELECT LOCATION FOR SMART STARTER CONTROL MODULE

- The Smart Starter control module can be mounted in a variety of locations depending on user preference and space availability in the vehicle
- Common mounting locations include: 1) behind the doghouse, 2) behind the dash, and 3) behind the instrument cluster
- Select a location with easy access, ideally towards the top of the dash or as close to the windshield as possible, where the control module can be tightly secured with zip ties

## STEP 3: CONNECT THE POWER SUPPLY

- Locate the 8-pin connector harness labeled “Ignition Harness”.
- There will be 2 groups of wires connected to this harness: Group 1) a T-harness that is terminated with two ignition adaptors and Group 2) a power harness consisting of 2 wires (Red and Black) terminated with ring terminals.
- The red wire will contain a 10 amp in-line fuse close to its termination. Verify that the 10-amp fuse in the fuse holder is securely connected.
- Locate a constant 12V (+) supply that has power when the key is in the OFF position and locate a ground connection. Using a voltage tester, verify the constant 12V (+) supply has power when the key is in the off position and verify the ground connection. Once verified, connect the red wire to the constant 12V (+) supply and the black wire to the ground connection.
- Secure the harness with zip-ties as needed

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**NOTE:** There are (2) studs on the left side of the fuse box, these are the main 12V (+) supply for the fuse box. There is (1) stud on the right side of the fuse box, this is the ground supply. Use these studs to connect the 12V(+) and ground terminals of the Smart Starter power harness.

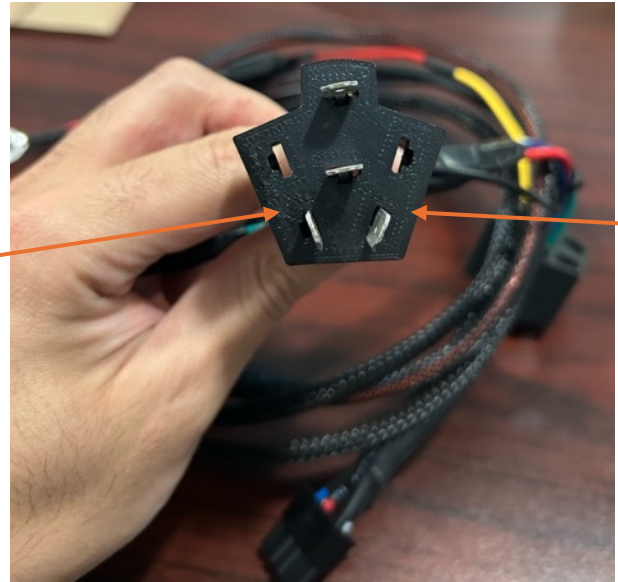
**DO NOT PLUG THE 8-PIN IGNITION HARNESS INTO THE SMART STARTER CONTROL MODULE UNTIL STEP 9 HAS BEEN COMPLETED**

## STEP 4: CONNECT THE IGNITION HARNESS

- Remove interior dash panels to expose the vehicle's ignition switch and ignition harness.
- Unplug the ignition switch from the vehicle's ignition harness.
- Run the Group 1 bundle of wires from the Smart Starter Ignition Harness to the vehicle's ignition.
- Connect the vehicle ignition switch to the female adapter on the Smart Starter harness and secure the connection with zip-ties.
- Connect the vehicle ignition harness to the male adapter on the Smart Starter harness and secure the connection with zip-ties.



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**NOTE:** The Ignition plug on the truck-side harness may have the top left & right positions empty and the terminals may be connected in the bottom row of the plug. In this case, de-pin the terminals in the top row of the Smart Starter male ignition plug and insert them into the bottom row of the plug, DO NOT cross the wires over when doing this.

## STEP 5: CONNECT THE DATALINK HARNESS

- Locate the harness labelled “Datalink Harness”.
- Remove the dash panel on the passenger side that is in front of the fuse box (it can be pulled from the bottom left corner).
- Locate the RP1226 connector, this will be a grey 14-pin rectangular connector, that has yellow/white and green/white wires plugged into it. This connector will be located by the bundle of wires to the left of the fuse box.
- Plug the “Datalink Harness” into the RP1226 connector.
- Push the orange tab on top of the RP1226 connector inward to secure the connection.

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**NOTE:** Confirm that the RP1226 connector has a yellow/white stripped wire plugged into the #2 pin and a green/white stripped wire connected to the #9 pin. If the wires are in a different location you **MUST** re-pin the connector so that the “Datalink Harness” yellow wire lines up with the truck-side yellow/white wire and the “Datalink Harness” green wire lines up with the truck-side green/white wire

## STEP 6: CONNECT THE AUXILIARY HARNESS

- Locate the 20-pin connector harness labeled “Auxiliary Harness”
- This harness will consist of three pairs of wires for: 1) the hood switch (15ft length), the start-up buzzer (10ft length), and the auto start switch (5ft length).
- Run the hood switch and start-up buzzer wires through the firewall to the engine bay. Some trucks have designated firewall pass-throughs cutout close to the brake pedal. If your truck does not have a designated pass-through, drill a hole through the firewall and run the wires through that.
- Run the auto start switch wires behind the dash to the location where you will be installing the auto start switch.
- Connect the 20-pin connector to the 20-pin connector on the Smart Starter control module.
- Secure the Auxiliary Harness with zip-ties as needed.



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**NOTE:** There is a cutout on the driver side of the firewall plugged with a rubber grommet. There may be an existing bundle of wires passing through this cutout. Remove the rubber grommet, carefully cut a V-shaped notch into the rubber grommet and pass the Smart Starter Auxiliary Harness wires through this notch. The cutout is located slightly below the level of the instrument cluster and can be accessed from inside of the cab by removing the instrument cluster.

## STEP 7: CONNECT THE HOOD SWITCH

- Locate the Hood Switch.
- The hood switch must be attached to the hood by the driver side headlight at an approximate 45 degrees angle. To determine the correct angle of placement, use a multimeter to ensure that the hood switch circuit is open when the trucks hood is fully opened, and the circuit is closed when the hood is closed. If the circuit remains closed when the hood is fully opened, adjust the angle of the hood switch such that the circuit is opened when the hood is fully open.
- Once the correct angle has been determined, secure the hood switch using the attached 2-way tape and the included screws. Ensure that the hood switch does not rub against anything when the hood is closed.
- Run the hood switch harness from the firewall, along the inside of the frame rail, up to the hood switch, and connect it to the hood switch. Ensure that the harness will not be pinched or rub when the hood is opened or closed.
- Secure the harness with zip-ties.



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## STEP 8: CONNECT THE START-UP BUZZER

- Locate the Start-up Buzzer.
- Secure the buzzer in an appropriate location in the engine compartment (this may require drilling a hole) using the included 1/4” bolts, washers and nuts, and thread locker.
- Run the Start-up buzzer harness from the firewall to the buzzer and connect the red wire to positive terminal on the buzzer and the black wire to the ground terminal on the buzzer.
- Secure the harness with zip-ties.

## STEP 9: CONNECT THE AUTO START SWITCH

- Locate the Auto Start Switch (On/Off toggle switch)
- Drill a hole at your desired location in the dash panel to mount the auto start switch.
- Pass the auto start switch harness through the hole and connect the spade terminals to the pins on the back of the auto start switch (polarity does not matter). Ensure that the connections are securely made.
- Push the auto start switch through the hole until it is securely mounted.



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## STEP 10: CONNECT THE IGNITION HARNESS TO THE SMART STARTER CONTROL MODULE

- Connect the 8-pin connector on the Ignition Harness to the 8-pin plug on the Smart Starter control module.
- The module should now power up. After a few seconds, the module will conduct a systems check by turning the trucks ignition on, and the instrument cluster will become illuminated. The systems check will take approximately 1 minute, after which the ignition will be turned off.

**TROUBLESHOOTING:** if a fault is found during the systems check the module will turn the ignition on in the following sequences:

Sequence	Fault
1 Cycle (On-Off) of Instrument Cluster	Network Connection Not Made
2 Cycles (On-Off-On-Off) of Instrument Cluster	J1939 Data Not Available
3 Cycles (On-Off-On-Off-On-Off) of Instrument Cluster	Network Connection Not Made & J1939 Data Not Available

## STEP 11: INSTALL WARNING & AUTO START SWITCH DECALS

- Locate the 5 warning decals: (4) larger sized and (1) smaller sized, and the Auto Start decal.
- Install (2) large decals on each of the frame rails in the engine bay and (2) large decals on each of the frame rails by the rear catwalk. Ensure that the decals are installed in such a location that they will be readily visible to any person working on OR around the truck. Prior to installing the decals clean the area with brake cleaner or isopropyl alcohol to ensure good adhesion.
- Install the (1) smaller sized decal inside the driver side door jamb OR on the dash by the key switch. Ensure that the decal is installed in such a location that it will be readily visible to any person who attempts to start the truck. Prior to installing the decal clean the area with brake cleaner or isopropyl alcohol to ensure good adhesion.
- Install the (1) Auto Start decal beside the auto start switch in the cab.

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## TROUBLESHOOTING

- If the control module does not power up check the power supply connections and verify that the constant 12V (+) supply and ground are properly connected.
- If audible clicks can be heard from the control module when the 8-pin connector is connected BUT the instrument cluster does not turn on, verify that the ignition T-harness is properly connected to the key switch and truck side ignition harness.

## CONTACT

If you have any questions or require any assistance during installation you can contact Smart Starter customer support at +1-855-729-0001.