



# Volvo Installation Guide



## The Idle Smart Installation:

- All components for the installation are included in the Idle Smart kit.
- Idle Smart is a plug-and-play installation and requires no cutting of wires
- All cables are labeled with corresponding connectors

## Average Installation Time:

- Day cab truck installations average ~90 minutes to complete
- Sleeper truck installations average ~2 hours to complete

## Customer Support:

- If you have a question about the installation at any time, give Idle Smart's support line a call at: (913) 744-4357

### □ **Step 1: Place vehicle in safe condition**

Park vehicle on flat, safe area and chock the wheels. Remove key from ignition switch and set the Parking Brake. If this is a manual transmission truck, put the truck in neutral.

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### □ **Step 2: Place Idle Smart Base Unit**

The Idle Smart Base unit is the black square enclosure located in the Idle Smart box. Remove the dash to find an appropriate location to place the Idle Smart Base Unit. This should be near the parking brake line behind the dash. The Base Unit should be close to a flat surface or area for mounting or securing behind the dash. Do not mount or secure the Base Unit until later.



### □ **Step 3: Connect Power to Idle Smart**

In the Idle Smart box, locate the red and black wires labeled "Ignition Power" with the black 4-pin Molex connector. Plug the black Molex connector into the black 4-pin receptacle on the Idle Smart Base Unit.

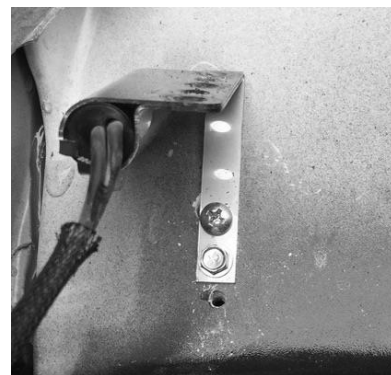
Take the un-terminated end of the wires and connect the red wire to a constant and direct 12v power source in the truck. Take the black wire and connect it to ground. Depending on the truck manufacturer, a good source of power can typically be found in the fuse panel or studs behind the dash. It is VERY important to be sure that Idle Smart is not sharing any power source with other equipment. If so, Idle Smart will get an incorrect battery voltage reading from the truck.

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### □ **Step 4: Install Hood Safety Switch**

In the Idle Smart box, locate the cable labeled "Hood Switch" with the white 2-pin Molex connector. Plug the white Molex connector into the white 2-pin receptacle on the Idle Smart Base Unit. Run this wire through the firewall.

To install the Hood Safety Switch, find a mounting location such that when the hood is closed, the Hood Safety Switch is angled downward and wires should be coming out of the bottom on the Idle Smart safety switch. When the hood is fully open, this switch should be angled upward. This switch is usually mounted on a flat surface next to the rear of the driver's side headlight on the hood. Screw the switch to the truck's hood.



After the safety switch is mounted, connect to the Hood Safety Switch cable making sure that the connector is plugged in and you hear 2 clicks. If this isn't plugged in securely, it could come loose and could cause problems later. When finished, secure wiring to the truck frame.

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### □ **Step 5: Install Outside Temperature Sensor**

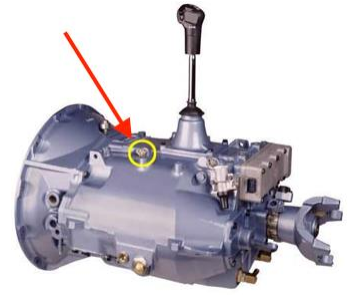
In the Idle Smart box, locate the cable labeled "Outside Temp" with the black 3-pin Molex connector. Connect the black Molex connector with the black 3-pin connector on the Idle Smart Base Unit.

Run this wire through the firewall (but do not connect the temperature sensor at this point). If not already done, run the whole cable behind the dash, through the firewall, and along the frame rail on the under side of the truck towards the back of the truck. Secure with zip ties. Connect the Temperature Sensor to the cable making sure that the connector is plugged in and you hear 2 clicks. If this isn't plugged in securely, it could come loose and could cause problems later. Make sure the tip of the temperature sensor is not touching any metal to ensure the most accurate outside temperature reading is captured. Coil any extra cable.

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#### □ **Step 6: Install Neutral Safety Switch**

Manual Transmission: In the Idle Smart box, locate the cable labeled “Neutral Switch” with the black 2-pin Molex connector. Plug the black Molex connector into the black 2-pin receptacle on the Idle Smart Base Unit.



Run this cable through the back and bottom of the dash and through the gearshift boot cover. Locate the Neutral Safety Switch plug on top of the transmission housing. This plug position varies with transmission manufacturer but the transmission will say “Neutral Switch” at the correct plug location. Remove the transmission plug and replace it with the provided Idle Smart Neutral Safety Switch. In most cases, both metric and standard threaded switches are provided by Idle Smart to accommodate the installation on various transmissions. Connect the cable to the safety switch.

iShift Transmission: In the Idle Smart box, locate the jumper connector with the black 2-pin Molex connector. Plug the black Molex connector into the black 2-pin receptacle on the Idle Smart Base Unit.

#### □ **Step 7: Install the Idle Smart Ignition Plug**

*Process to Connect to the Truck’s Ignition:*

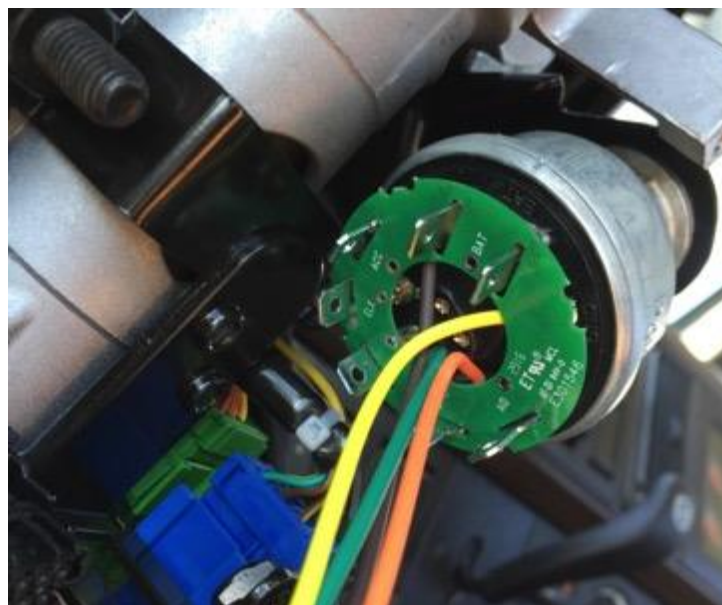
##### **Step 1: Run the Ignition Wire**

In the Idle Smart box, locate the cable labeled “Ignition Switch” with the white 6-pin Molex connector. Plug the white Molex connector into the white 6-pin receptacle on the Idle Smart Base Unit. Run the wire behind the dash towards the ignition switch.

##### **Step 2: Install the Volvo Ignition Plug**

##### **Connect Ignition Plug**

Remove the plastic steering column and pull the black plastic Volvo ignition receptacle from the Volvo ignition switch. Slide Idle Smart’s ignition plug through the terminals on the Volvo ignition switch. Be sure that the Idle Smart ignition plug is pressed firmly and evenly on the Ignition switch with the 4 wires and connector on the left side of the ignition switch.



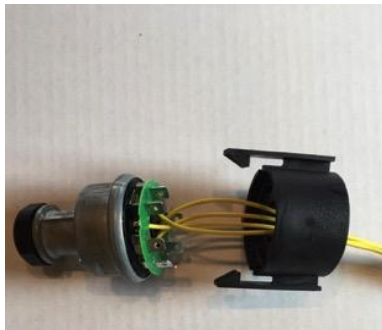
### Drill Hole in Receptacle

On the black ignition Volvo receptacle, drill a hole in the center circular area between all the harness wires. This hole should be large enough to fit the 4-pin Molex connector through from the Idle Smart ignition plug. Note: drilling a hole in this plastic plug has been approved by Volvo and does not void any warranties.



### Run Ignition Plug Wires

Place the Idle Smart white 4-pin Molex connector through the hole in the middle of the Volvo ignition plug receptacle. Plug the Idle Smart ignition plug connector into the Idle Smart ignition harness that is connected to the Idle Smart base unit. Secure the Idle Smart harness to the existing Volvo harness to ensure tilting or rotating of the steering wheel does not damage the Idle Smart wires.



### Step 3: Complete Installation

Plug the Volvo plastic ignition receptacle back into the Volvo ignition plug. The installation should now be complete. The ignition plug should fit exactly as it was before Idle Smart was installed. Put the steering column back and continue to the next steps on the installation guide.

#### □ **Step 8: Connect to the Truck's DL1J1939 Connector**

In the Idle Smart box, locate the cable with a 2-pin Amphenol connector and the white 4-pin Molex connector. Begin close to the truck's DL1J1939 female receptacle and run the cable behind the dash to connect the white Molex connector to the white 4-pin receptacle on the Idle Smart Base Unit.

Insert Idle Smart's 2-pin Amphenol connector into the DL1 receptacle and secure excessive cable neatly behind the dash

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#### □ **Step 9: Install Interior Temperature Sensor (optional)**

In the Idle Smart box, locate the cable labeled "Cabin Temp" with the white 3-pin Molex connector. Connect the white Molex connector with the white 3-pin receptacle on the Idle Smart Base Unit.

Run the wiring behind the dash along the floorboards on the driver side and back to the bunk area of the truck (but do not connect the temperature sensor at this point). Run the cable behind or beneath the bunk closet to the bunk air controls. The sensor can be placed anywhere but it is recommended that it be close to the driver's bunk controls so that it measures the most appropriate temperature. Connect the Temperature Sensor to the cable making sure that the connector is plugged in and you hear 2 clicks. If this isn't plugged in securely, it could come loose and could cause problems later.

Day Cabs: In most day cab solutions, the inside temperature sensor is not needed and will not be included in the Idle Smart kit. If the inside temperature sensor is not included, ignore this step.

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#### □ **Step 10: Install Mechanical Kill Switch**

In the Idle Smart box, locate the cable with the white 1x4 pin Molex connector with the physical on/off switch on the end of the cable.

Mount the physical on/off switch on the dash of the truck close to the diagnostic port but in a location that is accessible by a driver and a technician. Sometimes fleets provide an easier access for drivers by installing this on the dashboard of the truck. This will be a preference for each fleet. When you determine the location, drill a .79" diameter mounting hole and run the 1x4 white Molex connector through the mounting hole. Snap into place the on/off switch and then attach the 1"x1" Idle Smart sticker next to the switch.

Run the wiring behind the dash towards the diagnostic connection in the truck. Connect the white Molex connector with the white 1x4 pin receptacle on the Idle Smart Base Unit.

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#### □ **Step 11: Mount Idle Smart Tablet (Optional)**

In the Idle Smart box, locate the 15ft USB cable and plug the male end into the USB female receptacle on the Idle Smart Base Unit. Run the USB cable behind the dash along the floorboards on the driver side and back to the bunk area of the truck. Connect the 3ft USB cable to the female end of the 15ft USB cable. Run the cables behind or beneath the bunk closet to the bunk air controls.

In the Idle Smart box, locate the black metal bracket with 4 screws. Locate a suitable flat, vertical surface for mounting the Idle Smart mounting plate. This can be placed anywhere that is convenient for the driver, but it is recommended that it be close to the driver's bunk controls.

In the Idle Smart box, locate the Idle Smart tablet. Put the tablet on the wall and secure it with the mounting bracket. Screw in the mounting bracket to the plastic on the truck with the screw holes holding the tablet in place. The screw holes with a largest distance in between the holes should be located at the bottom of the bracket. Plug the 3ft USB cable into the Idle Smart tablet.

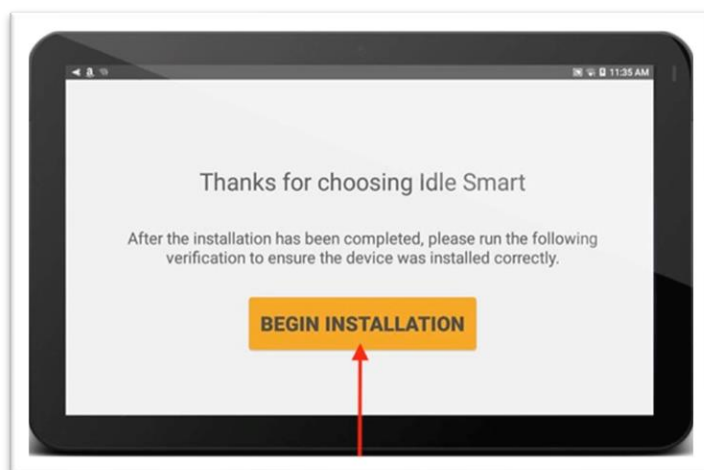
Day Cabs: In most day cab solutions, the tablet is not needed and will not be included in the Idle Smart kit. If the tablet is not included, ignore this step.



## □ Step 12: Run the Idle Smart Installation Software

Turn on the Idle Smart tablet by holding down the power button on the top left. Attach the USB cable from the Android tablet to the Idle Smart base unit. The application should now display the Installation Screen. When the system is ready to be validated, press the “BEGIN INSTALLATION” button on the screen. The truck will now start and run for 6 minutes.

During this 6 minute run, the Idle Smart system will perform its only perform checks and will shut down automatically after the 6 minute period. If anything is incorrect, the system will notify via the tablet screen.

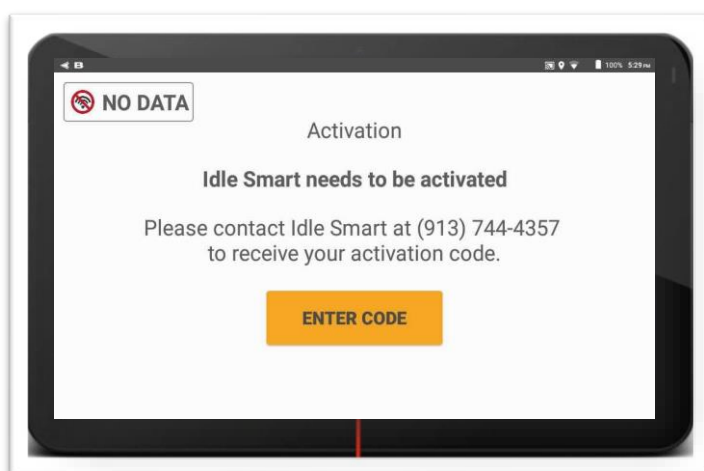


## □ Step 13: Activate Idle Smart

The application should now display the Activation Screen. Click the “Enter Code” button on the screen if this system uses the remote management ‘wireless’ features. If this system isn’t using wireless connectivity, click the “NO DATA” button on the top left of the activation screen and the system will transition to the main dashboard.

If this system requires wireless activation, you will be asked for an activation code. If you are:

- A Fleet Installer: Get the activation code from your fleet manager.
- A 3<sup>rd</sup> Party Installer or Dealership: Get the activation code from Idle Smart, the fleet’s management team, or truck owner.



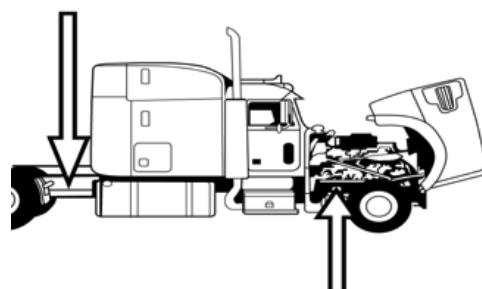
Enter the 4-digit activation code and click the green check mark on the keyboard or click “Continue” button on the screen. Idle Smart will now connect with the cellular tower and remotely pull down parameters and software updates to Idle Smart (if needed).

After the installation is complete, you will now be at the main screen of Idle Smart. The installation and activation is now complete. You don’t need to modify any parameters to ensure a correct installation. Idle Smart already ensured a correct installation through this process. Nice work! **Fleet Activation Code:** \_\_\_\_\_

## □ Step 14: Disable & Place Stickers

Disable Idle Smart from starting by enabling the Idle Smart kill switch. This will not have Idle Smart not start for any reason.

Then, place the four warning stickers provided on each frame rail within the engine compartment and between fuel tanks and tandems.



**The Installation is now complete and Idle Smart is ready for use.**