

PULSAR

User Manual

GM LT L5P 2020+



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Read Me

Safety Warning & Caution

Throughout this User Manual you will see important messages regarding your safety or the protection of your vehicle. These messages are designated by the words WARNING, CAUTION, or NOTICE.

WARNING

A WARNING indicates a hazardous situation which, if not avoided, will result in death or serious injury.

CAUTION

A CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

A NOTICE indicates a condition that could cause damage to the product or your vehicle.

NOTE

A NOTE is a step or reminder that is important to remember when installing or using the product.

The product you have purchased is a high-performance product. As such, it does present some risks of which you should be fully aware. Do not use this product until you have carefully read the following safety information and the Owner Agreement.

 WARNING: *Prior to use, read the User Manual. Misuse of the device could result in traffic accidents, death or serious injury, and/or damage to your vehicle. POWERTEQ IS NOT RESPONSIBLE FOR AND SHALL HAVE NO LIABILITY TO YOU FOR ANY CLAIMS ARISING OUT OF OR RELATING TO ANY MISAPPLICATION OF THE DEVICE, CUSTOM TUNES, IMPROPER USE OF CALIBRATIONS, MALFUNCTION OR LACK OF LEGAL COMPLIANCE FOR CUSTOM PROGRAMS CREATED BY THIRD PARTIES.*

 WARNING: *Do not leave the vehicle in Turbo Timer Mode unattended. Failure to do so could result in damage to the vehicle, and/or bodily harm. (For Turbo Timer Support, see FAQs Page about the INSIGHT Tool)*

Safety Guidelines



WARNING

Before using device, read and understand the user manual, including these additional safety instructions. Failure to do so could result in DEATH or SERIOUS INJURY.

- Do not exceed legal speed limits on public roadways. Violating traffic laws is dangerous and could result in injury or vehicle damage or both.
- Use any enhanced speed capabilities of this product only in closed circuit, legally sanctioned racing environments expressly for this purpose. Violating traffic laws is dangerous and could result in injury or vehicle damage or both.
- Do not operate the device while driving. Distracted driving could result in traffic accidents, death or serious injury, and/or damage to your vehicle.
- Always perform all adjustments or changes while stopped. Changing a setting while driving can interfere with your attention to roadway conditions and could result in injury or vehicle damage or both.
- Do not stack products. "Stacking" performance-enhancing devices or other improper installation can cause power train failure on the road. Other products may have features incompatible with your device. Follow all installation and operating instructions.
- Some modifications may affect other parts of your vehicle. For example, if you remove/adjust the speed limiter in your vehicle, be sure your tires and other components are rated for the increased speeds they will have to withstand. Not doing so can lead to loss of vehicle control. Modify the speed limiter only for use in closed circuit, legally sanctioned racing environments, not for use on public roadways.

NOTE: The stickers included in some products apply to products that have recieved CARB exemption for emissions compliance.

This product may meet the emissions compliance requirements of the California Air Resources Board and Federal Environment Protection Agency. If so, it is legal for sale and use on pollution-controlled vehicles operated on public streets and highways. The device must be installed and operated according to the instruction provided in this user manual. Included with these compliant products is a sticker for you to keep in your vehicle. You can either adhere it somewhere on the vehicle (e.g., the inside end of driver's door) or simply store it in your glove box. The purpose of these stickers is to inform anyone who may have questions regarding the use of this product and how it affects emissions. For example, it would be something to show an emissions technician if questioned when taking your vehicle in for an emissions check to let him/her know the product is CARB emissions compliant.

Installation L5P 2020+

Materials



Pulsar LT Module

Zip Ties



Velcro
Strips



Harness

Required Tools

Plastic Pushpin Puller / Flat Head Screwdriver
T-15 Torx Bit

Pulsar Installation

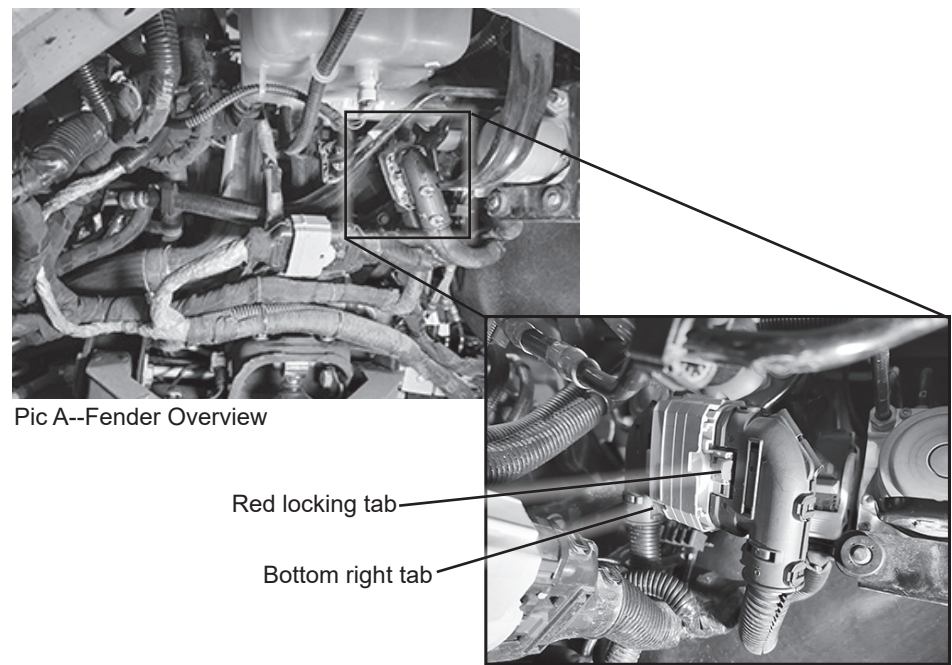
STEP 1 - Before installation, to prevent codes or other issues, disconnect the negative battery terminal connector from BOTH batteries.

STEP 2 - Remove driver's side inner fender to gain access to the stock connector. Using a T-15 Torx bit and a Flathead Screwdriver, remove all the retainer screws and pushpins and remove the inner fender well. For easier installation, you can remove the driver's side wheel, but this is not necessary.

STEP 3 - Locate and disconnect the stock connector (see Pic A for stock connector location). Release red locking tab by pushing the red tab up as shown. *Press the bottom right tab on the connector inward to release. Then the connector can slide upwards toward the red tab to take it apart as shown.*

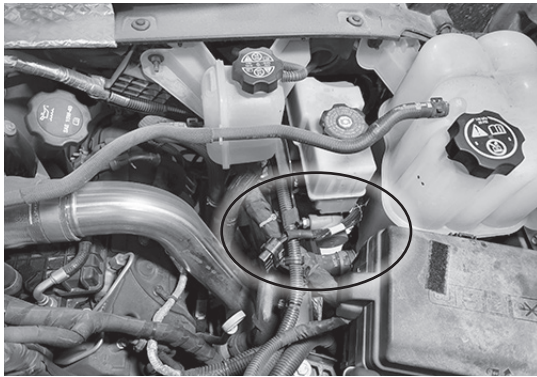
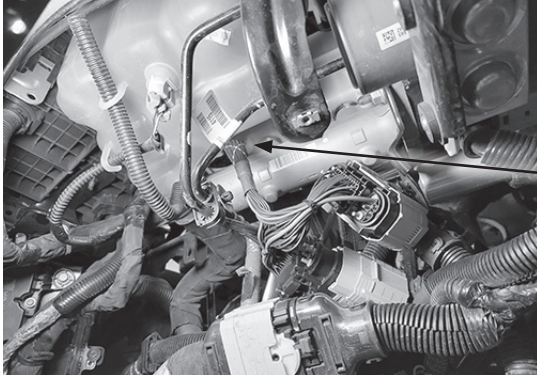
NOTE: *The Pulsar LT connector can plug into two locations in the fender well, so make sure you are connected to the one shown in Pic A.*

STEP 4 - Connect the Pulsar to the stock connector in the reverse order.

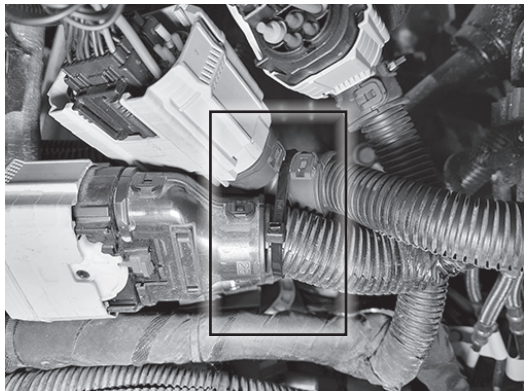


Pulsar Installation Cont'd

STEP 5 - Route the Pulsar LT harness up towards the engine bay. With the Pulsar LT module disconnected, feed the Pulsar LT harness between the coolant reservoir and the brake booster as shown.

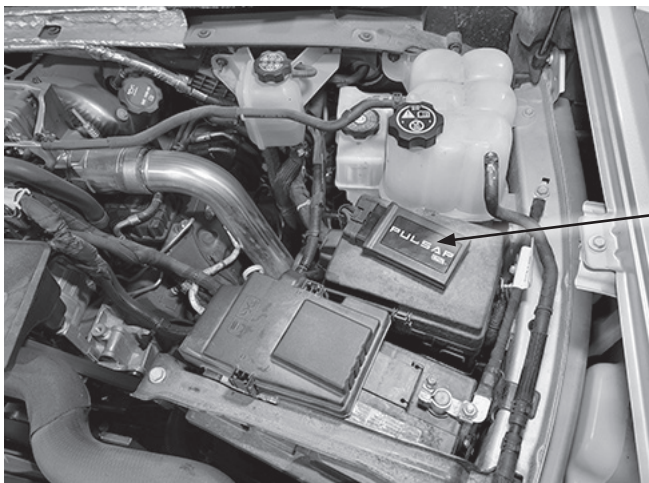


STEP 6 - Using the supplied 10-inch zip tie, secure the free connector to the lower as shown below.



Pulsar Installation Cont'd

STEP 7 - Clean the top of the fuse box lid, then mount the Pulsar LT to the fuse box using the supplied Velcro strips.



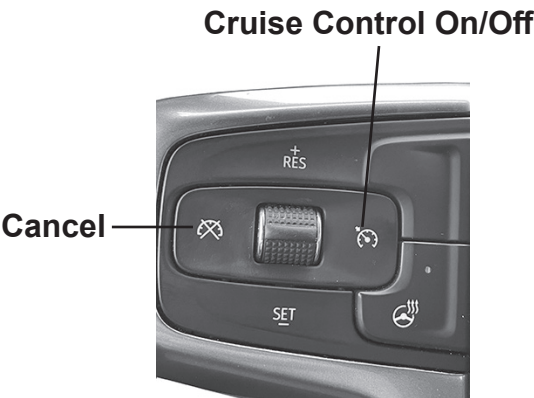
STEP 8 - Reinstall the fender liner.

STEP 9 - Reconnect batteries.

Controls

Steering Wheel Controls

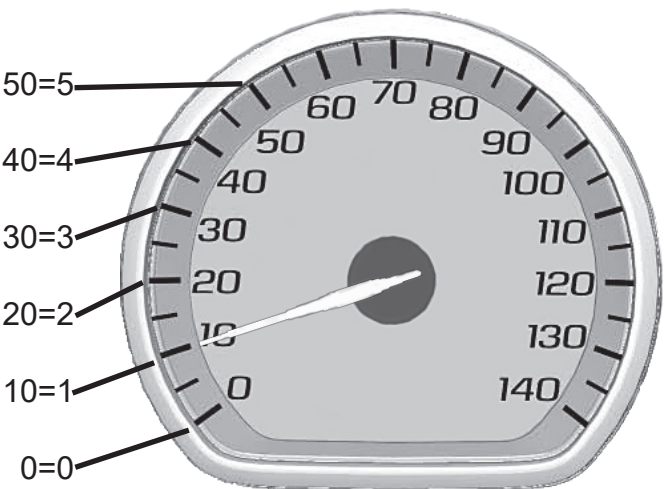
Pulsar power levels and Option menus are navigated using the left-side steering wheel buttons. Refer to the information below to better understand how these buttons are utilized.



Function	Key
Level Up	RES+
Level Down	SET-
View Level	Cancel

Speedometer Levels Explained

Power Levels and other settings are displayed through the Speedometer. Every 10 mph marker is one step higher: 10=1, 20=2, 30=3, 40=4, etc.



Power Levels

Levels Explained

There are 5 available level options:

- Level 0 - STOCK
- Level 1 - ECONOMY
- Level 2 - HEAVY TOW
- Level 3 - DRIVE / LIGHT TOW
- Level 4 - PERFORMANCE
- Level 5 - EXTREME

Changing Power Levels

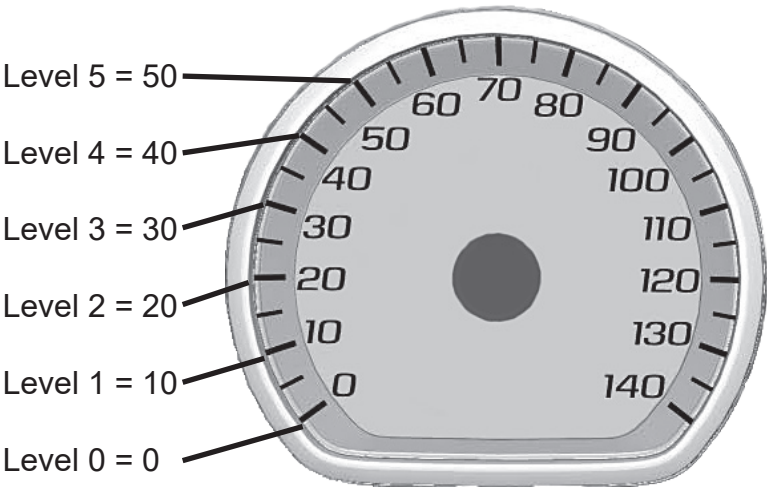
STEP 1 - Start the engine.

NOTE: Cruise Control cannot be active during power level changing. If Cruise Control is active, the left keypad cannot control the Pulsar module.

STEP 2 - Press the Cancel button on the left keypad, the speedometer spindle should immediately move to the currently set Power Level

STEP 3 - Use the RES+ and the SET- buttons to adjust Power Level, RES+ to increase and SET- to decrease.

To exit, simply wait 3 seconds for it to time out. Changes are instantly saved as they are adjusted.



High Idle Control

How to Activate and Adjust High Idle

The 2020-2021 Pulsar allows the engine to idle at adjustable RPM levels between **700 RPM to 1500 RPM**.

STEP 1 - Start the engine and leave the vehicle in PARK.

STEP 2 - While in PARK, turn on the Cruise Control by using the Left Keypad and then press RES+. The engine should immediately enter High Idle.

STEP 3 - Use the RES+ and SET- buttons to adjust RPM level by factors of 100; RES+ to increase, SET- to decrease.

Either turn off Cruise Control or push down on the brake to deactivate High Idle.

NOTE: See Instrument Cluster Screen for Cruise Control Icon. If the icon is there, then Cruise Control is on.

Cruise Control On/Off



Programmable Features

Programming Menu

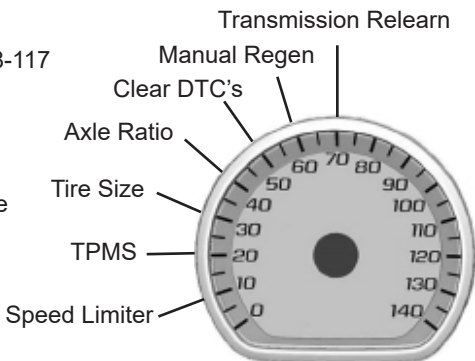
NOTE: To access the programming menu of the device, cruise control must be turned off.

The vehicle has to be running to turn off cruise control.

Access the Programming Menu

Seven modes can be accessed through the programming menu. The speedometer (MPH) gauge is used to display the modes and programming inputs. The cruise control switches will be used to navigate the programming menu.

- 10 - Speed Limiter Adjustment 2020-2021 (98-117 MPH)
- 20 - TPMS Adjustment (40-99 PSI)
- 30 - Tire Size Correction (Input stock then modified sizes for front and rear tires)
- 40 - Axle Ratio (Input stock then modified axle ratio)
- 50 - Clear DTC's
- 60 - Manual Regeneration
- 70 - Transmission Relearn



STEP 1 - The engine must be turned off with the ignition in the Run position.

STEP 2 - (Push Button Start only) Without putting your foot on the brake pedal, hold the Start Engine button until the gauges turn on and a green light is seen on the start button. (Approx. 5 seconds)

STEP 3 - Using the steering wheel controls on the Right Keypad (up or down buttons), change the menu on the Dash Cluster Screen to the Speed Screen in order to see changes. (Also seen on speedometer)

STEP 4 - Hold the cancel cruise control button until the speedometer sweeps to 140 (approx. 5 seconds).

STEP 5 - Using +RES or -SET, navigate to the desired programming mode.



STEP 6 - Press the cancel cruise control button to select the mode.

STEP 7 - The speedometer gauge will sweep and then stop at the current programmed condition. (The stock input will be displayed if not previously adjusted.)

Speed Limiter

⚠WARNING: *Removal / adjustment of the factory speed limiter is intended for use in a close-circuit, legally sanctioned racing environment. If you drive on public roads after removal or adjustment of the speed limiter, you must still obey all driving laws, including adhering to posted speed limits. To drive at racing speeds on public roads seriously endangers you, passengers, and others nearby. It is also your responsibility to ensure your tires and other vehicle components are rated to travel at increased speeds. Driving at high speeds with inadequate tires or other components can lead to serious or fatal injury.*

STEP 1 - Access the Programming Menu.

STEP 2 - Using +RES or -SET, select mode 10 (MPH).

STEP 3 - Press cancel cruise to select.

STEP 4 - Speedometer sweeps to 140 MPH for 3 seconds indicating Speed Limiter has been selected.

STEP 5 - Use +RES or -SET wheel to adjust to the desired value.

STEP 6 - Press the cancel cruise control button to save the input value.

STEP 7 - The speedometer will sweep to 140 MPH indicating the function is complete.

⚠CAUTION: *Removing / adjusting the speed limiter for purposes inconsistent with the product's intended function violates the product's intended use and will invalidate the product's warranty. Powerteq is not responsible for or liable for the consequences of improper product use.*

TPMS - Tire Pressure Monitor System

After adjusting the TPMS inflate to number, the min and max values automatically adjust. This mode reprograms the vehicle ECM.

STEP 1 - Access the Programming Menu.

STEP 2 - Using +RES or -SET, select mode 20 (MPH)

STEP 3 - Press cancel cruise to select.

STEP 4 - Speedometer sweeps to 140 MPH for 3 seconds indicating TPMS has been selected.

STEP 5 - Front tire set point.

- a. Using the +RES or -SET wheel to adjust to the desired value between 40 and 99 (PSI)
- b. Press the cancel cruise control button to save the input value.
- c. Speedometer will move to rear set point value.

STEP 6 - Rear tire set point.

- a. Using the +RES or -SET wheel to adjust to the desired value between 40 and 99 (PSI)
- b. Press the cancel cruise control button to save the input value.

STEP 7 - The speedometer will sweep to 140 MPH indicating the function is complete.

Tire Size

Input Stock and Modified Tire Size.

NOTE: The tire size adjustment feature is only for vehicles with aftermarket tires that are larger or smaller than factory. If your vehicle has a factory sized tire, please skip this feature.

STEP 1 - Access the Programming Menu.

STEP 2 - Using +RES or -SET, select mode 30 (MPH)

STEP 3 - Press cancel cruise control to select.

Tire Size Cont'd

STEP 4 - Enter Stock Tire Size

Example: 33.5" Tire -- Whole Number = 33, Decimal = 5

- a. Using +RES or -SET, adjust to the Stock Tire Whole number.
- b. Press cancel cruise to save the input.
- c. Using +RES or -SET, adjust the Stock Tire Decimal number.
- d. Press cancel cruise to save the input.
- e. The speedometer will sweep to 140 MPH, indicating the function is complete.

STEP 5 - Enter modified Tire Size

- a. Using the +RES or -SET wheel to adjust to the Modified Tire Whole number.
- b. Press cancel cruise to save the input.
- c. Use the +RES or -SET wheel to adjust the Modified Tire Decimal number.
- d. Press cancel cruise to save the input.
- e. The speedometer will sweep to 140 MPH, indicating the function is complete.

NOTE: *Adjusting Tire Size will modify the vehicle's displayed speed and odometer, corrected to the size of the modified tire.*

Axle Ratio

Input Stock and Modified Axle Ratio.

NOTE: *The axle ratio adjustment feature is only for vehicles with aftermarket axle ratios that have been physically changed in vehicle. If your vehicle has factory axle ratios, please skip this feature.*

STEP 1 - Access the Programming Menu.

STEP 2 - Using the +RES or -SET, select mode 40 (MPH)

STEP 3 - Press cancel cruise to select.

STEP 4 - Enter Stock Axle Ratio.

Example: 3.73 Axle -- Whole Number = 3, Decimal = 73

- Using +RES or -SET, adjust to the Stock Axle Whole number.
- Press cancel cruise to save the input.
- Using +RES or -SET, adjust the Stock Axle Decimal number.
- Press cancel cruise to save the input.
- The speedometer will sweep to 140 MPH, indicating the function is complete.

STEP 5 - Enter Modified Axle Ratio.

- Using +RES or -SET, adjust to the Modified Axle Whole number.
- Press cancel cruise to save the input.
- Using +RES or -SET, adjust the Modified Axle Decimal number.
- Press cancel cruise to save the input.

STEP 6 - The speedometer will sweep to 140 MPH, indicating the function is complete.

Clear DTC's

STEP 1 - Access the programming menu.

STEP 2 - Using +RES or -SET, select mode 50 (MPH)

STEP 3 - Press cancel cruise to select.

STEP 4 - The speedometer will sweep to 140 MPH, indicating the function is complete.

Manual Regeneration

Manual regeneration allows you to manually clear out the Diesel Particulate Filter (DPF). Completing a manual regeneration cycle will clear the soot mass in the filter, and lower exhaust back pressure to improve exhaust flow. ***The engine must be at operating temperature.***

NOTE: When manually initiating a regeneration cycle, some vehicles will require a drive cycle (i.e you have to drive the vehicle some distance) while others may allow you to initiate Service Regeneration where you can leave the vehicle parked and the engine running. If the latter is the case, be sure to use the following guidelines.

- 1 - Park the vehicle outdoors and keep people, other vehicles, and combustible materials away from it.
- 2 - Do not leave the vehicle unattended.
- 3 - Do not connect any shop exhaust hoses or vents to the tail pipe.

STEP 1 - Access the Programming Menu.

STEP 2 - Using the +RES or -SET, select mode 60 (MPH)

STEP 3 - The speedometer will sweep to 140 then back down to 0. When the speedometer goes back to 0 you may then start the engine.

STEP 4 - A few seconds after starting the truck, if all conditions are met, the regen will start. When regen is active, RPMs will increase up to 2500 RPM. If conditions are not met, the speedometer will sweep to 100 MPH for approximately 10 seconds and the Manual Regen will be canceled automatically.

NOTE: Vehicle must be to normal operating temperature for Manual Regen to initiate.

STEP 5 - When the Manual Regen is complete or after the 10 seconds at 100 MPH, the speedometer will sweep to 140 MPH, indicating the function is complete.

CAUTION

Exhaust temperatures may be greater than 300C (572 F) during service regeneration.

CAUTION

Due to the elevated temperatures during this procedure, open the hood and keep the front of the vehicle away from anything impeding the radiator.

DPF REGENERATION - If you own a newer diesel powered vehicle, your vehicle is equipped with a **Diesel Particulate Filter (DPF)**. This filter is used in conjunction with a diesel oxidation catalyst. Together they work to reduce the amount of soot and emissions emitted from the tailpipe. As soot builds up in the DPF it will begin restricting flow. The soot that gathers is automatically purged in one of two ways: **Passive Regeneration & Active Regeneration**. Both methods occur automatically and require no action on your part. During either of these regeneration methods, you may notice an increase or change in the exhaust noise & increased **Exhaust Gas Temperature (EGT)**.

Transmission Relearn

This vehicle is equipped with a transmission that will “learn” while you drive. Sometimes when these vehicles are programmed with an aggressive tune, the transmissions act differently. This feature forces the transmission to relearn and accommodate the new tune.

STEP 1 - Access the Programming Menu.

STEP 2 - Using the +RES or -SET, select mode 70 (MPH)

STEP 3 - The speedometer will sweep to 140 MPH, indicating the function is complete.

NOTE: *After the relearn commands are sent there might be some clunks, bumps, and/or short flares. This is normal. Completion of this feature will require a minimum of 3 upshifts at a steady throttle angle.*

Update Software

Downloading Update Agent 1.0 (Optional)

The Update Agent may be used to update the device via the USB connection. The software can be downloaded through the internet. This process currently can only be done on a Windows computer, **Mac devices are not supported**.

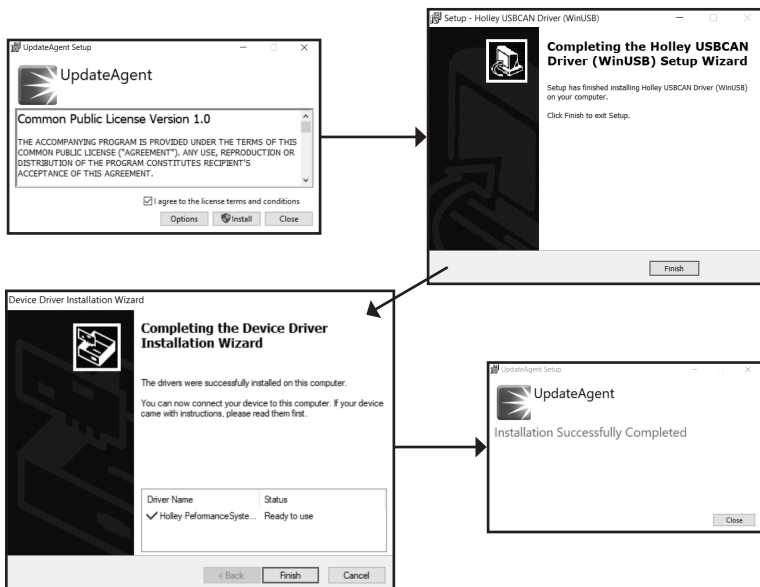
NOTE: *It is recommended to install Update Agent 1.0 on a laptop computer for best accessibility (you will need to connect the computer to the vehicle's OBDII port to perform updates).*

STEP 1 - Go to a computer with internet access, and go to one of the following websites: ***superchips.com - diabloSPORT.com - edgeproducts.com***

STEP 2 - Go to the website's Updates/Downloads tab and click the link "Download Update Agent 1.0" and save the .exe file to a findable location on the computer.

STEP 3 - Run the .exe installation program that you downloaded, and read through the license terms and conditions, check the agreement box and click Install. Continue through installation until it says Installation Successfully Completed. Click Close to finish the process.

NOTE: *If given a Security Warning pop-up upon install, click run to proceed. Also, if asked, install **Holley USBCAN Driver** as well as Update Agent 1.0. This driver is required to connect to the device.*



Product Updates (Optional)

This device has the ability to update via a USB connection. A USB to OBDII update cable is required to perform the update. The cable is sold separately. **It is recommended that a battery charger is attached and turned on during the update process.**

NOTE: The Pulsar must be installed into a vehicle before updating. When updating, you CANNOT use your vehicles Wi-Fi. It will be disabled during the update process. Use an external source such as your home Wi-Fi.

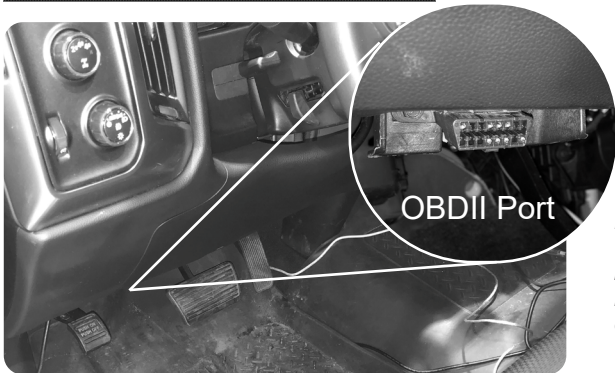
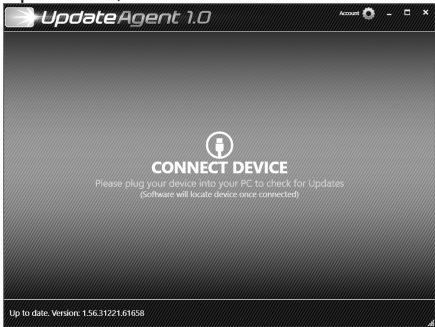
STEP 1 - Take computer with Update Agent 1.0 installed to the location of the vehicle with the Pulsar device.

STEP 2 - Turn the vehicle's ignition to the RUN position (**do not start the engine**) and then open Update Agent 1.0 on the computer, and plug in USB to OBDII cable into both the vehicle's OBDII port and a USB port on the computer.

STEP 3 - Update Agent 1.0 should automatically detect the Pulsar device, follow onscreen instructions until it checks for an update. If an update is available, click yes.

NOTE: If you have not yet registered for an account and/or signed in, you will be prompted to do so before you can proceed with the update.

STEP 4 - Follow update steps as shown onscreen. Do not power down the vehicle during the entire process unless prompted by the Update Agent. Once Update Agent 1.0 says "Your device is up-to-date," click ok and disconnect the USB to OBDII cable.



NOTE:
OBDII Port
location
may vary
depending on
vehicle

FAQs

Frequently Asked Questions

Question: Can I adjust power levels when cruise control is on?

Answer: No, only when cruise control is off.

NOTE: *Cruise control can be used as normal, you just can't change power levels when cruise control is on.*

Question: Should I remove the Pulsar prior to going to the dealer?

Answer: Yes, please remove the Pulsar as to eliminate it from the system so they can perform any updates or services.

Question: How do I check what level I am on when cruise control is off?

Answer: Simply press Cancel on the steering wheel cruise control buttons.

Question: Can I “stack” or use other tuners with this device?

Answer: No, please do not use any other tuners when the Pulsar is in use or installed. Stacking tuners with the Pulsar may cause serious damage to the vehicle.

Question: What is the best way to accurately measure tire size?

Answer: Mark a line on the ground where the center of the tire rests, then drive the vehicle for two full rotations of the tire and mark the spot where it comes to a rest with another line. Measure the length between the two lines and divide by two. Then divide that number by Pi π (3.14159265359).

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For additional questions not found in the user guide call:

Powerteq Technical Support: 1-888-360-3343 Mon-Fri 8am - 5pm, Sat 8am-2pm MST

**To expedite your support call, please have your Vehicle Information,
Part Number, and Serial Number ready prior to calling Technical Support.**