



## Reference Guide and Step-by-Step Installation Manual

### IMPORTANT NOTE

Some adjustable features listed on the following pages are **NOT** applicable for all applications. The year, make, and model of the vehicle will determine the feature set. During the installation, only the available adjustable features for that particular application will appear on the programmer screen.

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This programmer is legal for sale or use on California pollution-controlled motor vehicles according to the CARB Executive Order process. In the interest of improved air quality, the California Air Resources Board (CARB) requires new vehicle and manufacturers of aftermarket parts to develop engine and emissions equipment that either reduce or maintain specific air pollutants affected by vehicle use. Both the California Vehicle Code (section 27156) and Federal Clean Air Act (administered by the Environmental Protection Agency) prohibit modifications that increase vehicle emissions. Aftermarket parts manufacturers,

particularly in the high-performance segment, are required to obtain CARB approval in the form of Executive Orders (E.O.s) for any product not qualifying as a direct replacement for an original equipment part. **This includes meeting all E.O. requirements in its product development process. This guarantees that users of this product will meet certification requirements when registering, selling, or needing to pass various emissions tests or Inspection and Maintenance (I&M) programs administered by state or local enforcement agencies.** Make sure that any emissions-related product you buy and install carries an E.O. number or is pending an E.O. **Without this verification you are at risk, in potential violation of regulations and may incur unnecessary financial obligations during vehicle inspections or emissions tests.**

The installation process is very easy and should not take long for programming and installation to be accomplished. To speed and streamline the installation, follow these recommendations.

**It is very important in the programming process that the vehicle's battery is fully charged and you do not have a drain on the battery.** For this reason these precautions should be taken. Please check and remove the following if they are installed on the vehicle.

**DO NOT program with a battery charger connected to the vehicle.**

**Close and keep all doors shut. (This eliminates interior lights and alarms from sounding.)**

**DO NOT operate electrical accessories (radio, windows, wipers, etc.). If it's hot, roll the window(s) down BEFORE programming the vehicle.**

**Vehicles equipped with OnStar, satellite radio, remote starter, and/or aftermarket speakers/amplifiers MUST have the fuse/fuses removed in order to disable those devices PRIOR to and during the programming process. (Refer to the owners manual for location of radio, remote start, and amp fuses.)**

**Make sure nothing is plugged into the cigarette lighter or any other auxiliary power port on the vehicle BEFORE programming.**

After inspection of the vehicle and removal of the fuse(s) that operate any accessory packages, continue with the installation of the programmer.

**Once the programming cable has been connected to the vehicle's diagnostic port and to the programmer, DO NOT remove or disturb the cable during the ENTIRE programming process. Only remove the cable from the diagnostic port when the installation is complete.**

**DO NOT leave the vehicle during programming. The programmer screen will display instructions for you to follow i.e., turning the key to the On position (but NOT starting the engine), and you will be asked to select certain engine tuning and vehicle adjustment features.**

During the installation and programming if an error should occur, a help number will be displayed on the programmer screen. Write down the error message and contact the tech support team on the provided telephone number from 8am-5pm, Central Time, Monday-Friday. You may also use the web tech support address found on the provided Quick Start instructions.

## **SECTION 1: PROGRAMMING INSTRUCTIONS**

**Set the parking brake and turn the key to the RUN position but DO NOT start the engine.**

Connect one (1) end of the provided cable to the programmer.

Locate the diagnostic port under the driver's side of the dash. Plug the programmer cable into the diagnostic port. Make sure the cable is plugged in completely to ensure a good connection. **DO NOT disturb the cable once it is connected to the diagnostic port.**

The programmer will show applications and copyright information and identify the vehicle. This screen will appear:

CHECKING FOR DIAGNOSTIC TROUBLE CODES

The programmer is checking the vehicle for any diagnostic trouble codes (DTCs). If no DTCs are found, this screen will now appear:

NO DTCs  
REPORTED

If no DTCs are found, the programmer will then go to Engine Tuning. If any DTCs are found, this screen will now appear:

"X" DTCs REPORTED

"X" represents the number of DTCs found in the vehicle. This screen will now appear:

VIEW DTCs = Y  
CLEAR DTCs = N

Press 'Y' to view the DTC(s) found in the vehicle. Press 'N' to clear the DTC(s) without viewing them. If 'Y' is pressed, these screens will appear:

WRITE DOWN THE FOLLOWING DTCs AND REFER TO  
FACTORY MANUALS FOR EXPLANATION

DTC #1 --- PXXXX  
NEXT DTC = N

### IMPORTANT NOTE

**For DTC interpretations, refer to factory manuals, see a local parts dealer, or refer to internet sites that provide this type of information. An example of such a website is [www.obdii.com](http://www.obdii.com).**

Press the 'N' button to view the next DTC (if any). Once all the DTCs have been viewed, this screen will appear:

NO MORE DTCs, TO VIEW AGAIN, PRESS Y  
TO CONTINUE, PRESS N

Press 'Y' to view the DTC(s) again. Press 'N' to continue. If 'N' is pressed, this screen will appear:

DTCs MUST BE CLEARED BEFORE CHANGING PROGRAM. TO CLEAR DTCs PRESS Y  
TO KEEP DTCs AND EXIT PROGRAM PRESS N

Press 'Y' for the programmer to clear the DTC(s).  
These screens will now appear:

CLEARING DTCs

ALL DTCs HAVE  
BEEN CLEARED

The programmer has now successfully cleared the DTC(s) found in the vehicle computer. This screen will now appear:

TO ENTER PROGRAMMER MODE, PRESS Y  
TO EXIT PROGRAM, PRESS N

For each option, press the 'Y' button to make a change. Press the 'N' button to make no change and proceed to the next option. For some options, use the ▲ and ▼ arrows to point to a particular selection. Pressing the 'Y' button will then lock in the selection.

### IMPORTANT NOTE

**Some adjustable features listed on the following pages are NOT applicable for all applications. The year, make, and model of the vehicle will determine the feature set. During the installation, only the available adjustable features for that particular application will appear on the programmer screen. Screens for each of the features may vary slightly from those shown.**

## ENGINE TUNING

TO INSTALL ENGINE TUNING, PRESS Y  
TO KEEP FACTORY ENGINE TUNING, PRESS N

Press the 'Y' button to install optimized engine tuning. Then follow the prompts on the screen for each particular application. Press 'N' to keep the stock vehicle tuning.

## REV LIMITER

TO ADJUST ENGINE REV LIMITER, PRESS Y  
TO KEEP STOCK ENGINE REV LIMIT, PRESS N

If 'N' is pressed, the programmer will proceed to the next feature.

Press 'Y' to adjust the engine rev limiter to a value other than stock. The stock rev limiter may vary depending on year and engine size of the vehicle. Please refer to the owner's manual for the stock engine rev limiter.

Use the ▲ and ▼ arrows to increase or decrease the engine rev limiter. The rev limiter can be increased or decreased in 100 RPM increments. Press ‘Y’ to select the desired value.

USE UP/DOWN ARROWS TO ADJUST ENGINE REV LIMITER, THEN PRESS Y TO SELECT OR N TO EXIT.

\_\_\_RPM

### IMPORTANT NOTE

**If changes are made to the rev limiter, the shift points must also be adjusted accordingly (See chart below). Not doing so may result in damage to the engine or powertrain.**

Rev Limit	Shift Points	Rev Limit	Shift Points
-500	-500	+100	+100 or lower
-400	-400 or lower	+200	+200 or lower
-300	-300 or lower	+300	+300 or lower
-200	-200 or lower	+400	+400 or lower
-100	-100 or lower	+500	+500 or lower
Stock	Stock or lower		

### ELECTRIC COOLING FAN OPERATING RANGE

TO PROGRAM ENGINE COOLING FAN TEMPERATURE RANGE, PRESS Y

TO LEAVE COOLING FAN TEMPERATURE UNALTERED, PRESS N

When ‘Y’ is pressed to lower the temperature at which the electric cooling fans turn on and turn off, this screen will appear:

USE UP/DOWN ARROWS TO SELECT THERMOSTAT TEMP, THEN PRESS Y TO SELECT OR N TO EXIT.

\_\_\_F

Use the ▲ and ▼ arrows and choose the correct temperature thermostat that is installed on the vehicle. Press ‘Y’ to lock in the selection.

### TOP-SPEED LIMITER

TO ADJUST TOP SPEED LIMIT TO MATCH SPEED RATING OF HIGH-PERFORMANCE TIRES, PRESS Y

TO KEEP STOCK TOP SPEED LIMIT, PRESS N

When ‘Y’ is pressed to change the vehicle’s top-speed limiter, this screen will appear:

USE UP/DOWN ARROWS TO ADJUST TOP SPEED LIMIT, THEN PRESS Y TO SELECT OR N TO EXIT.

\_\_\_ MPH

Use the ▲ and ▼ arrows to scroll through the available top-speed limits available for the vehicle. Press ‘Y’ to lock in the selection.

## IMPORTANT NOTE

Changes to top-speed limiter is not recommended for load rated tires. Serious damage or injuries could occur. Also, for safety reasons, the actual top-speed limit set in the vehicle is two (2) miles-per-hour less than the selected tire's speed rating.

### TIRE SIZE

IF TIRE HEIGHT HAS BEEN CHANGED FROM ORIGINAL, PRESS Y  
IF TIRE HEIGHT HAS NOT BEEN CHANGED, PRESS N

Press 'Y' if the tires installed have an overall height that is different than the original factory tire size. This will allow for correction of speedometer and odometer readings for the new tire height. Pressing 'Y' will display this screen:

USE UP/DOWN ARROWS TO SELECT CORRECT TIRE HEIGHT, THEN PRESS Y TO SELECT OR N TO EXIT.

-- -- "

Use the ▲ and ▼ arrows to adjust the tire height in 1/4" increments. The minimum and maximum tire size will be shown on the programmer screen. Press the 'Y' button to lock in the new tire height.

### HOW TO DETERMINE TIRE HEIGHT

If the tire height is not known, ask a tire dealer or use the following steps below:

1. Place a chalk mark on the tire where it contacts the pavement and also mark the pavement. These marks should be at the center of the tire footprint pointing straight down to the pavement.
2. Roll the vehicle in a straight line until the chalk mark makes one revolution and is pointing straight down at the pavement again. Mark the pavement again at this new spot.
3. Measure (in inches) the distance between the two (2) marks on the pavement. Divide the measurement by 3.1416. This will give you the tire height in inches.

## REAR GEAR RATIO

IF REAR AXLE RATIO HAS BEEN CHANGED FROM ORIGINAL, PRESS Y  
IF REAR AXLE RATIO HAS NOT BEEN CHANGED, PRESS N

Press 'Y' if the installed rear gear has a ratio that is different than the original factory gear. This feature will recalibrate the speedometer/odometer readings and part-throttle shifting for automatic transmissions for the new gear ratio. This screen will now appear:

USE UP/DOWN ARROWS TO SELECT CORRECT REAR AXLE RATIO, THEN PRESS Y TO SELECT OR N TO EXIT.

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Use the ▲ and ▼ arrows to see all of the gear ratios available for the vehicle. Press 'Y' to lock in the gear ratio that is installed on the vehicle.

## TRANSMISSION SHIFT POINTS (AUTOMATICS ONLY)

The shift point option allows the user to change the RPM at which the transmission shifts **at wide-open throttle** to find the very best shift points for maximum acceleration. For shift point optimizing, test only one (1) shift point at a time until the best RPM shift point is found for each.

TO ADJUST TRANSMISSION SHIFT POINTS, PRESS Y  
TO KEEP STOCK SHIFT POINTS, PRESS N

When 'Y' is pressed, this screen will appear:

USE UP/DOWN ARROWS TO ADJUST SHIFT POINT. THEN PRESS Y TO SELECT OR N TO EXIT

1-2 SHIFT \_ \_ \_ RPM

Press the ▲ arrow once for 100 RPM, twice for 200 RPM, etc. and then press the 'Y' button to enter the 1-2 shift point selection. If there is no change to the 1-2 shift point, enter a zero, and press 'Y'. Use this same process for each of the shift points in the vehicle. **The shift point adjustment range is +/-500 RPM in approximately 100 RPM increments for each of the shift points for the vehicle.**

## IMPORTANT NOTE

If changes are made to the shift points, the rev limiter must also be adjusted accordingly (See chart below). Not doing so may result in damage to the engine or powertrain.

Rev Limit	Shift Points	Rev Limit	Shift Points
-500	-500	+100	+100 or lower
-400	-400 or lower	+200	+200 or lower
-300	-300 or lower	+300	+300 or lower
-200	-200 or lower	+400	+400 or lower
-100	-100 or lower	+500	+500 or lower
Stock	Stock or lower		

## TRANSMISSION SHIFT FIRMNESS (AUTOMATICS ONLY)

IF YOU HAVE INSTALLED AN AFTERMARKET SHIFT KIT, PRESS Y  
TO CONTINUE, PRESS N

Press 'Y' if an aftermarket shift kit is installed on the vehicle. The shift kit has already firmed up your shifts. **You do not want the programmer to make them even firmer because transmission damage may occur.**

Press 'N' if an aftermarket shift kit is NOT installed on the vehicle. This screen will now appear:

TO INCREASE TRANSMISSION SHIFT FIRMNESS, PRESS Y  
TO KEEP STOCK SHIFT FIRMNESS, PRESS N

Press 'N' to keep the stock shift firmness. Press 'Y' to increase the firmness of shifts. Pressing 'Y' will show this screen:

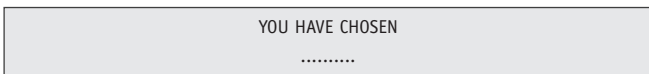
USE UP/DOWN ARROWS TO CHOOSE AMOUNT OF SHIFT FIRMNESS TO ADD, THEN PRESS Y TO SELECT OR N TO EXIT.

--\_%

Select between 25%, 50%, 75%, and 100% for the degree in which to enhance shifting firmness. 100% represents the maximum shift firmness increase allowable. **It does not mean 100% firmer!** 75%, 50%, and 25% are percentages of the maximum increase in transmission shift firmness.

## REPORT

This screen will now show all the selections that have been made:



Watch the selections scroll by on the screen. If all the selections are correct, press 'Y' to start programming the vehicle. If changes need to be made to any of the selection(s), press the 'N' button to start over from the beginning.

## PROGRAMMING

Follow all of the prompts on the programmer screen during the entire programming process for the vehicle. **While the unit is programming, the following is EXTREMELY IMPORTANT:**

**DO NOT leave the vehicle while programming is in process.**

**DO NOT unplug or disturb the cable, turn the key off, or start the engine (unless instructed to by the programmer). If the unit stops programming or is interrupted, please make a note of any message(s) that appear on the programmer screen and call the provided tech service line.**

### IMPORTANT NOTE

**On certain applications, the dash message center may display random code information such as REDUCED ENGINE POWER. This is a NORMAL step during the programming process for certain applications.**

After the programmer has successfully programmed the vehicle, wait thirty (30) seconds, then unplug the programmer from the vehicle and start the engine, making sure the "Check Engine" light on the instrument cluster goes out (If it stays on or flashes, call the provided phone number). Warm up the engine and make sure it is running smoothly.

**FOR ONSTAR or SATELLITE RADIO EQUIPPED VEHICLES. Plug any connector(s) back into the original location and reinstall any panels and/or other interior components that were removed prior to programming.**

## **For gas applications, CHECK FOR DETONATION.**

Whether engine tuning for premium (the highest octane rating available in your area) or regular octane engine tuning has been used, check for detonation. This is a “pinging” sound heard during heavy acceleration. Make sure the correct octane of gasoline is being used for the engine tuning that is installed. If any “pinging” is heard, back off the throttle and call the provided tech service line.

## **SECTION 2: PROGRAMMING VEHICLE BACK TO STOCK OR CHANGING OPTION SETTINGS**

Reconnect the programmer to the vehicle as in Section 1. Turn the key to the RUN position but **DO NOT** start the engine. The programmer will turn on and this screen will appear:

TO RETURN VEHICLE TO FACTORY SETTINGS, PRESS Y  
TO ACCESS PROGRAMMER FEATURES, PRESS N

Press ‘Y’ to return to the original factory settings. Follow the prompts on the screen for the particular application.

Press ‘N’ to allows viewing of the features in Section 1.

## **SECTION 3: TROUBLESHOOTING GUIDE**

### **IMPORTANT NOTE**

**Use this as a general reference ONLY. Some screens may vary from those shown.**

### **LOSS OF COMMUNICATION**

COMMUNICATION LOST:  
RETRYING

This screen will appear if the programmer is unable to communicate with the vehicle’s computer. If the problem is corrected, the programmer will automatically restart the programming process. Take these steps to correct the problem:

1. Make sure that the ignition key is in the RUN position and that the engine is not running.
2. Make sure that both ends of the cable are securely attached.
3. Wait at least five (5) minutes for the programmer to re-establish communication and program the vehicle.
4. If the three (3) steps above do not correct the problem, call the tech service line that appears on the programmer screen.

## CABLE REMOVED WHILE PROGRAMMING

The programmer will lose power during programming if the cable is removed for any reason. If this happens, simply reconnect the cable. The programmer will identify the vehicle and then display these screens:

PROGRAMMING WAS  
INTERRUPTED...

PROGRAMMING WILL  
CONTINUE NOW

The programmer will then continue programming from where it was interrupted.

### IMPORTANT NOTE

**If the programmer was interrupted during the Reading stage, programming will NOT be considered interrupted, and the programmer will proceed to Section 1 on page 3.**

## ATTEMPTING TO PROGRAM A DIFFERENT VEHICLE

If attempting to program the computer in another vehicle without first programming the original vehicle back to stock, the following screen will appear:

CODE 91: PROGRAM YOUR VEHICLE BACK TO STOCK BEFORE  
PROGRAMMING ANOTHER VEHICLE

## CALIBRATION NOT FOUND

If the vehicle has a factory program that is not recognized by the programmer, it cannot continue. This screen will appear:

CODE 6D:  
CAL NOT FOUND

Call the tech service line that appears on the programmer screen. Please have the vehicle VIN number ready.

## SOMEONE REPROGRAMS YOUR COMPUTER

If a service facility reprograms the vehicle's computer with an update, the optimized engine tuning and performance features changed with the programmer will be erased. However, all that needs to be done is to reconnect the programmer as shown in Section 1. If the new vehicle computer calibration is identified by the programmer, the options in Section 1 will be shown. If the new vehicle computer calibration can not be identified by the programmer, this screen will appear:

CODE 6D:  
CAL NOT FOUND

Use the included internet software or call the tech service line that appears on the programmer screen. Please have the vehicle VIN number ready.

## BLANK SCREEN

If the programmer does not turn on when, make sure that both ends of the cable are fully inserted. If the programmer still does not turn on, **check for a blown fuse in the vehicle fuse panel for either the cigarette lighter or the accessory circuit.** Replace with the proper amperage fuse.

## What To Do Before Taking The Vehicle In For Service

### Return Vehicle To The Stock Programming.

When the vehicle is taken to a dealership or repair shop for any service, the vehicle's computer must be returned to the original stock calibrations, prior to taking the vehicle for service. To do this, simply plug the programmer back into the diagnostic port and select the "Return To Stock" option on the programmer. This allows the original factory calibrations to be transferred from their stored location in the programmer and reinstalled into the vehicle's computer. This process returns the computer to factory stock and resets the programmer to allow the user to reprogram the vehicle AFTER repairs or service.

### Why Is It Necessary To Return To The Stock Tuning?

The reason that this should be done is because the factory diagnostic equipment will only recognize factory calibration information. If that information is not stored it will automatically

update the vehicle's computer to the original calibrations or to the most recent updated version, erasing the optimized tuning and other adjustable features that were installed by the programmer.

### **Reprogramming The Vehicle After Service Or Repair.**

After the vehicle has been serviced or repaired, you may retune your vehicle. If the factory has reprogrammed the vehicle with a calibration that is new and not recognized by the programmer, the programmer will display a **“Code 6D - Cal Not Found”**. If this occurs, the user will be instructed on how to update the programmer. This is a safety feature of the programmer. We do not want to rewrite any information if it is different from the calibrations currently stored in the vehicle. Following the instructions will allow the vehicle to have the latest and most current performance calibration that will match the updated factory version. Call the tech service line that appears on the screen for instructions on how to update the programmer. Due to the factory update of the computer, the programmer will have to be upgraded to match the new calibrations that have been installed in the vehicle's computer. **The updated calibrations are at no cost but if shipping and/or freight charges are incurred these are the responsibilities of the vehicle owner.**

## **PRODUCT WARRANTY**

### **Factory Direct Limited Lifetime Warranty**

This programmer is warranted against defects in materials or workmanship. The liability under this warranty shall be limited to the prompt correction or replacement of any defective part of the product which is determined to be necessary. This Limited Lifetime Warranty is to the **ORIGINAL** purchaser for as long as he or she owns the vehicle on which the product is originally installed, providing all the information requested is furnished. A copy of the original sales invoice or receipt **MUST** be retained. Without proper documentation, a service fee will be applied. **Resold units and/or units with more than one Vehicle Identification Number (VIN) or Calibration files are not covered under this warranty.** Shipping and/or handling fees are the responsibility of the vehicle owner unless the failure is determined to be a defect in materials and/or workmanship. The correction or replacement of any defective part will be returned to the owner freight prepaid by common carrier.