



BLACK MAXX™

INSTALLATION MANUAL

Dodge 6.7L Cummins 2007.5 - 2009

GM 6.6 L Duramax 2007.5 - 2009

Ford 6.4L Powerstroke 2008 - 2009



TROUBLESHOOTING:

Please read and understand all installation instructions before proceeding with the installation.

If you have questions during the installation of this product, please call H&S Performance support at 1-888-628-1730

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INTRODUCTION

The Black Maxx™ is the most advanced vehicle downloader, controller, monitor and gauge in a single unit. This product is engineered to provide the most benefits and the greatest features of any combination of engine performance and monitoring enhancements in the automotive aftermarket. This product is easy to install on any applicable vehicle; all operations of the Black Maxx™ take place in-cab and feature on-the-fly adjustments. This owners manual comes with both installation instructions and operating instructions. For free technical support and all product related questions call: 888-628-1730.

This instruction set outlines how to install and operate the Black Maxx™ on the following:

Dodge 6.7L Cummins

'07.5-'09

Ford 6.4L Powerstroke

'08-'09

GM 6.6L Duramax

'07.5-'09



H&S Performance is the world leader in racing and performance tuning for Dodge Ram, Ford Powerstroke, and GM Duramax diesel engines. When you are ready for the best, go with products from H&S Performance. and get ready to...

BRING ON THE POWER!



BILL OF MATERIALS

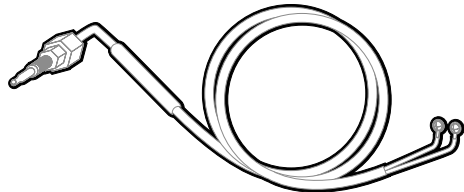
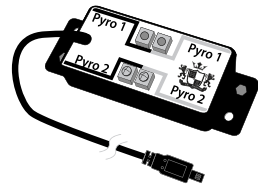
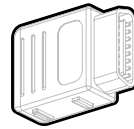
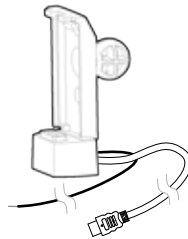
The list below includes by name the major parts included in your Black Maxx™ package. The tools list indicates all of the tools necessary to complete the Black Maxx™ install.

BILL OF MATERIALS

The Black Maxx™ Head Unit
 Black Maxx™ Cradle w/ Cradle Cable &
 Power Wire
 OBDII Adapter Plug
 Dash Mount Assembly
 Custom A-Pillar Mount Assembly
 *PCH Assembly w/PCH Cable
 *Pyrometer Cable
 SD Card Reader

TOOLS NEEDED

- Flat Head Screwdriver
- Phillips Head Screwdriver
- Wire Strippers
- Electric Drill
- 5/16" Drill Bit
- 1/8" Pipe Tap
- 9/16" Wrench
- 5/8" Wrench
- Fuse Puller



* Not included on Ford 6.4L Powerstroke



PARTS DESCRIPTION

This section describes each of the parts in the Bill of Materials, the descriptions provide a physical set of attributes and a purpose for each part. The parts descriptions also list everything that is included in each assembly.

The Black Maxx™ Head Unit

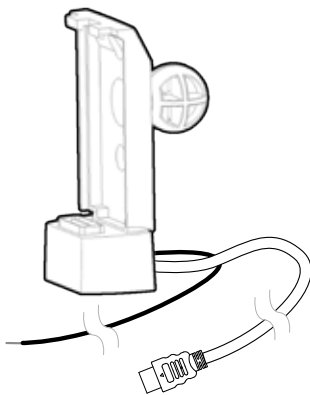
The main component is the Black Maxx™ Head Unit. The Head Unit is the interface in which you control vehicle performance parameters. It is also the brains that will save vehicle activity and defuel a vehicle. Notice that the head unit has: seven total buttons, five on the left side and two on the right, a large color screen, an electronic plug for docking on the bottom and a snap hinge on the top also used for docking. Note that this is the last piece that you will install.



Note: Black Maxx™ includes a SD card inserted in the side of the Head Unit.

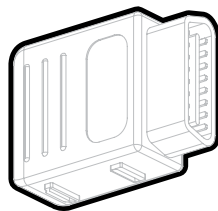
Black Maxx™ Cradle with Cradle Cable and Power Wire

The cradle itself is the docking station for the Black Maxx™ Head Unit. It acts as the means of communication for the Black Maxx™. Notice that two wires come out of the bottom back side of the cradle, the Cradle Cable and the Power Wire. During the installation, the Cradle Cable runs to the OBDII Adapter Plug and the Power Wire runs to the vehicle fuse box.



OBDII Adapter Plug

The OBDII Adapter is rectangular and has a total of four electronic ports. The largest port on the top of the adapter plugs into the vehicle OBDII port. The three smaller ports on the sides include: a Cradle Cable port on one side, and on the opposite side a 4 Pin PCH Cable port and a 5 Pin Peripheral port. The main purpose of the OBDII Adapter Plug is to act as a hub for all communication lines between the Black Maxx™ and the vehicle.

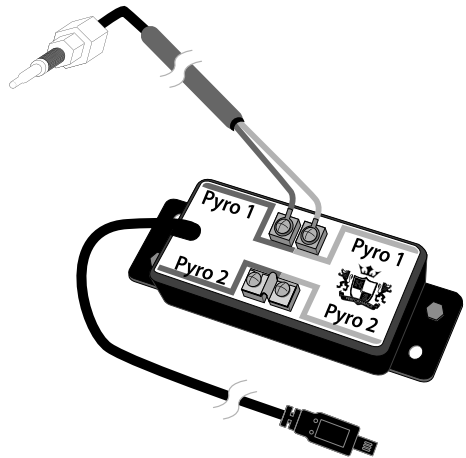


Pyrometer Connection Head (PCH) Board Assembly*

The PCH Board or Pyrometer Connection Head serves as a dock to connect the pyrometers into the Black Maxx™ system. The PCH Board includes the ability to connect two pyrometers. Attached to the PCH Board housing is a cable with four pin plug which connects to the OBDII Adapter Plug. The list below includes all separate parts that make up the entire PCH Board Assembly.

- PCH Board
- Velcro
- (2) Self-tapping Sheet Metal Screws
- Pyrometer Cable

* Not included on Ford 6.4L Powerstroke



Dash/Windshield Mounting Assembly

This mounting assembly is recommended mainly for use on the dash of the vehicle, but can also be used in the same manner on the windshield of the vehicle. The assembly includes all parts and pieces necessary to mount the cradle, along with the Black Maxx™ to the vehicle dash or windshield. The list below includes all parts and pieces of this assembly (must be assembled by installer):

- Mounting Base
- Top Cradle Arm
- Bottom Cradle Arm
- Top Aluminum Plate
- Bottom Steel Plate (threaded)
- (2) Flat-head Screws
- Double Stick Foam Tape.

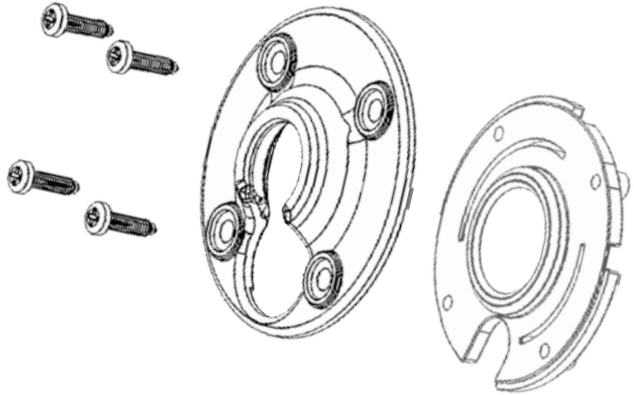


Custom A-Pillar Mount Assembly

This mounting assembly enables the Black Maxx™ to be mounted on the Custom A-Pillar Pod on the driver's side of the vehicle. Using this mounting style does require that a Custom A-Pillar Pod be purchased from H&S Performance, but it also offers the cleanest install.

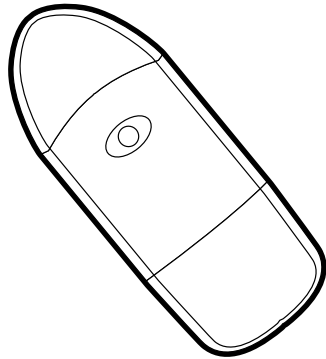
The Custom A-Pillar Mount Assembly includes:

- Front Mounting Plate
- Back Mounting Plate
- (4) Mounting Screws



USB to SD Card Adapter

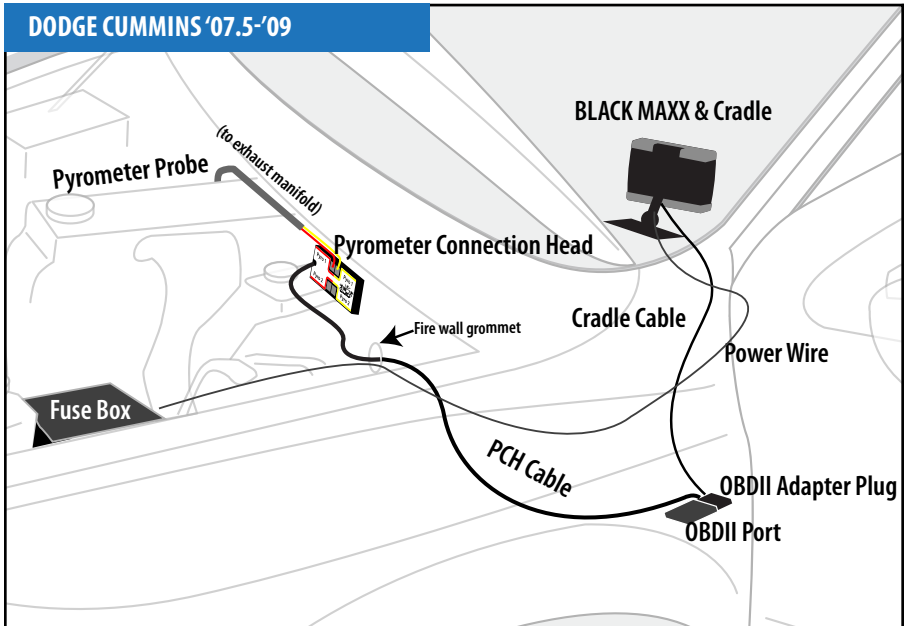
This Card Reader is used to update the Black Maxx™'s SD memory card. It is used primarily for internet updates.

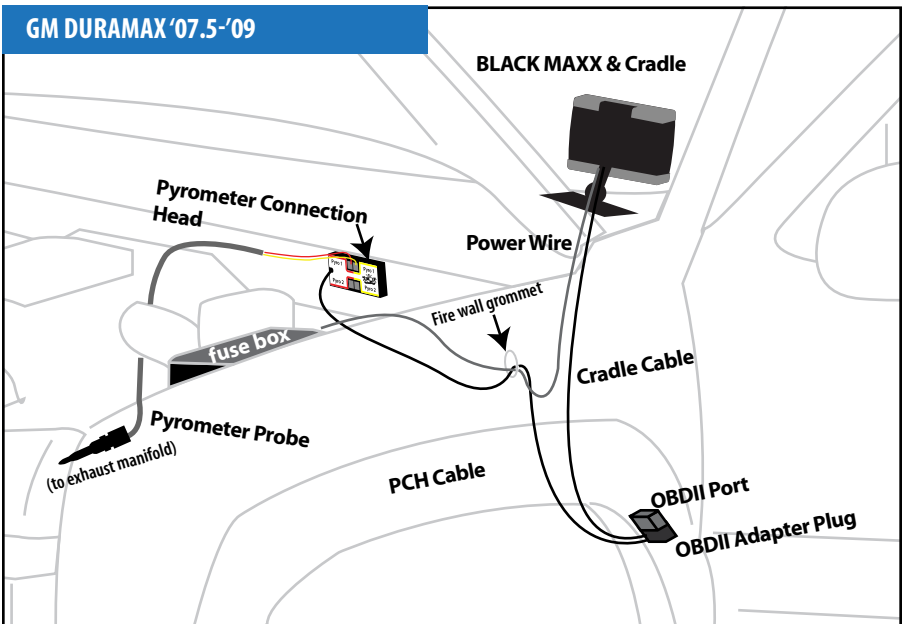
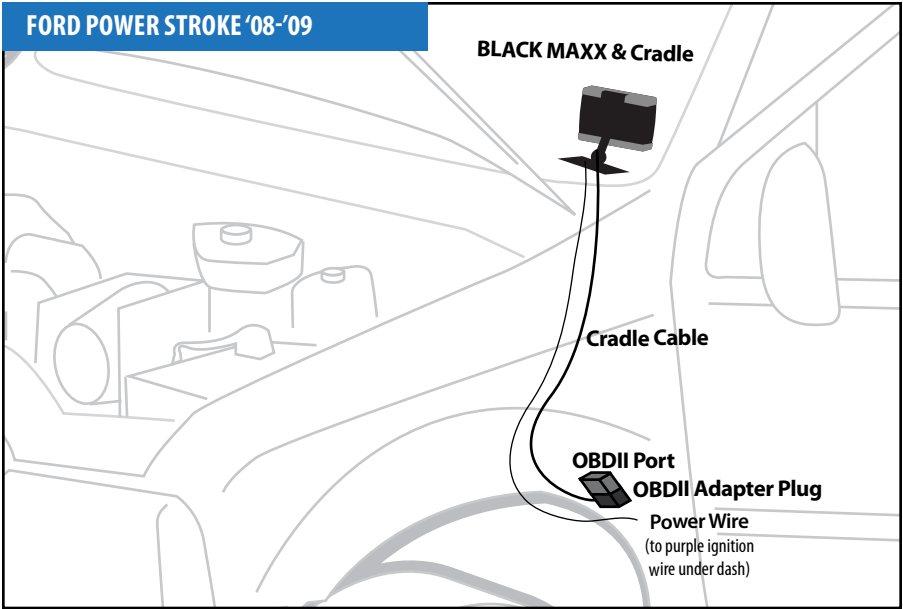




INSTALLATION OVERVIEW

The installation overview illustrates a totally installed and functional Black Maxx™ system. This overview is meant to help reference the general location of installed parts and pieces of the Black Maxx™. Notice that there are three different overview diagrams. Each diagram is vehicle specific; one for Dodge, Ford and GM. The rest of the installation instructions will instruct how to install the Black Maxx™ in detail.





BLACK MAXX™ INSTALLATION INSTRUCTIONS

These installation instructions are split into five sections. Each section provides a comprehensive description of installation for all vehicle applications. The five sections are:

- **SECTION 1:** *Mounting the Cradle*
- **SECTION 2:** *Installing the Pyrometer and the PCH Board*
- **SECTION 3:** *Installing the OBDII Adapter*
- **SECTION 4:** *Installing the Power Wire*
- **SECTION 5:** *Proper docking and removal of the Black Maxx™ from the Cradle*

SECTION 1: MOUNTING THE CRADLE

In this section you will decide where to mount the Black Maxx™ Cradle, so you are essentially choosing the location for the Black Maxx™ inside the vehicle cab. First, decide which mounting style you will choose for the Black Maxx™; we offer three different styles of mounting:

1. Custom A-Pillar mounting (most recommended)
2. Dash mounting
3. Windshield mounting

The following mounting instructions outline how to mount the Black Maxx™, explaining each mounting style individually.

CUSTOM A-PILLAR MOUNTING

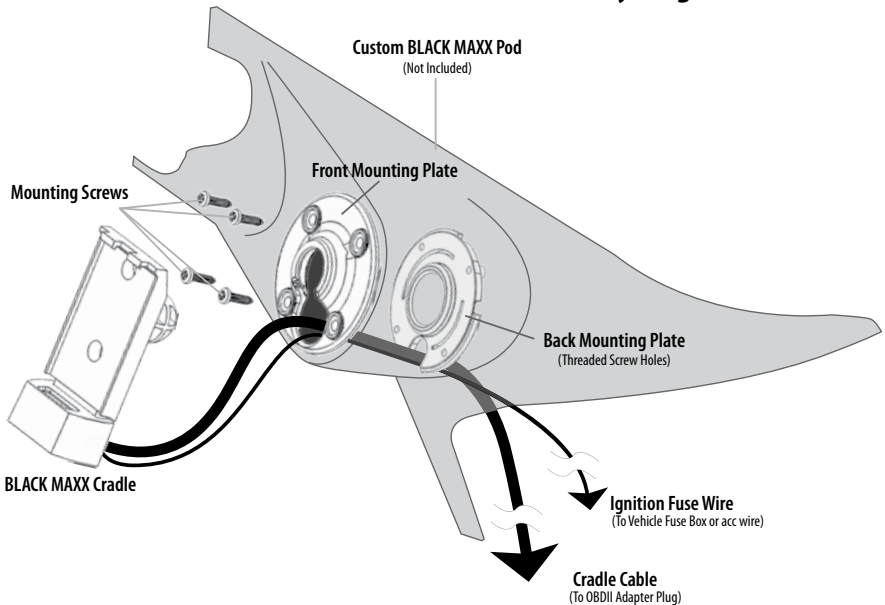
We recommend the Custom A-Pillar mounting style, because it makes for the best looking, most convenient and least intrusive mounting style. The Custom A-Pillar mounting style does require that a Custom A-Pillar Pod be purchased from H&S Performance; see part numbers and vehicle applications for a Custom A-Pillar Pod in the appendix. The Custom A-Pillar mounting assembly comes in separate pieces and first needs to be assembled before it is installed.

TO ASSEMBLE:

1. Gather the following parts to begin assembly:

- Black Maxx™ Cradle with Cradle Cable and Power Wire
- Four Mounting Screws
- Front Mounting Plate
- Back Mounting Plate
- Vehicle Specific A-Pillar Pod

Custom BLACK MAXX Pod Mount Assembly Diagram

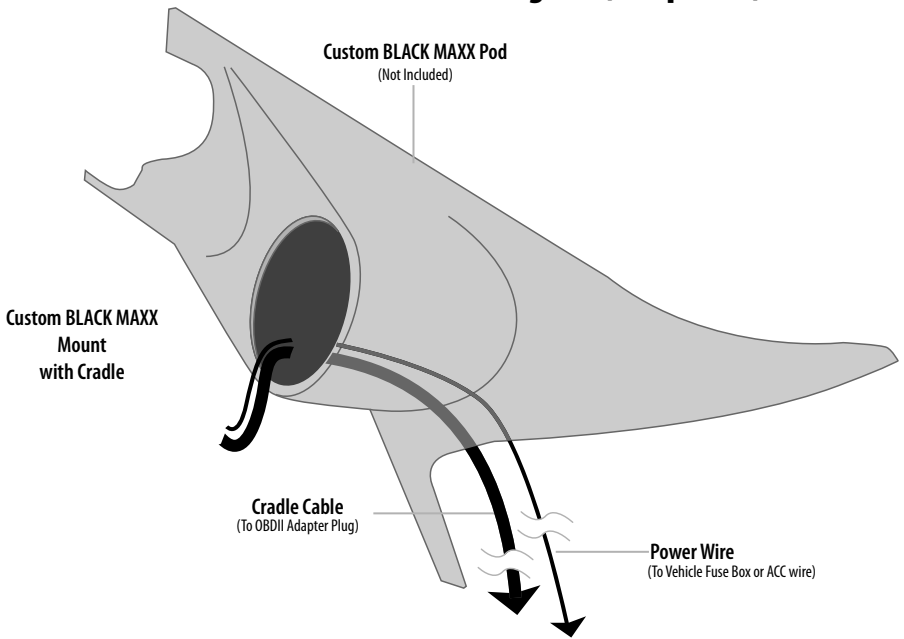


2. With all assembly pieces gathered, refer to the Pillar Pod Mount Assembly Diagram for a visual reference on how the assembly fits together. Steps 3 through 6 explain how to assemble the pieces, the A Pillar Mount Diagram shows what the assembled mounting style looks like.

Note that installation instructions for each vehicle specific Custom A-Pillar Pod are included with the Custom A-Pillar Pod, and are not described here.

3. Insert the ball that is on the back of the cradle into the lower hole on the front of the Front Mounting Plate and then shift the ball into the center of the Front Mounting Plate. Make sure that the extruded part of the Front Mounting Plate is facing the cradle when inserting the ball.
 4. Run the Cradle Cable and Power Wire through the lower hole on the front of the Front Mounting Plate and then through the hole on the front side of the Custom A-Pillar Pod. Pull all of the slack in the Cradle Cable and Power Wire through the Front Mounting Plate and the Custom A-Pillar Pod.
 5. With the Cradle still attached, put the Front Mounting Plate up to the hole on the Custom A-Pillar Pod, then place the Back Mounting Plate up to the backside of the hole on the Custom A-Pillar Pod. Make sure that the slot on the Back Mounting Plate is pointing downward like in the Custom A-Pillar Pod Mount Assembly Diagram so the Cradle Cable and Power Wire can get through the mount and down to the OBDII Adapter Plug and vehicle fuse box.
 6. Use the four mounting screws to secure the connection of all pieces in the assembly. Tighten the screws all the way down. See the Custom A-Pillar Pod mount diagram, finished assembly should look identical.
7. To install the A-Pillar Pod Mount assembly on a vehicle refer to the instructions included with the Custom A-Pillar Pod.
8. Run the end of the Cradle Cable and Power Wire down through the driver's side of the vehicle dash and pull all of the extra slack in the cable down also. The Cradle Cable plug will need to be connected to the OBDII Adapter Plug and the Power Wire will need to be hooked to a fuse in the vehicle fuse box.

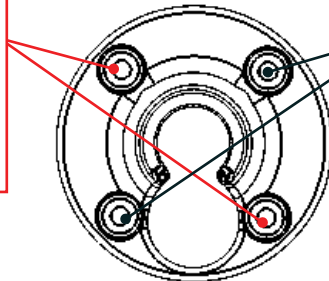
Custom BLACK MAXX Pod Mount Diagram (completed)



TIGHTENING THE CUSTOM A-PILLAR MOUNT SCREWS TIP

The four screws included with the Custom A-Pillar Mount work in pairs to perform two different functions in securing the cradle to the Custom A-Pillar Mount. See the diagram below for details in tightening the screws properly.

These two screw locations tighten the mount to the A-Pillar itself. Only completely tighten these screws down when the mount is in the A-pillar and the A-pillar is installed on the vehicle.



These two screw locations tighten the front and back mounting plates together to create a tight fit over the cradle ball. Use these two screws to adjust the tightness of the swivel effect of the cradle in the mount.

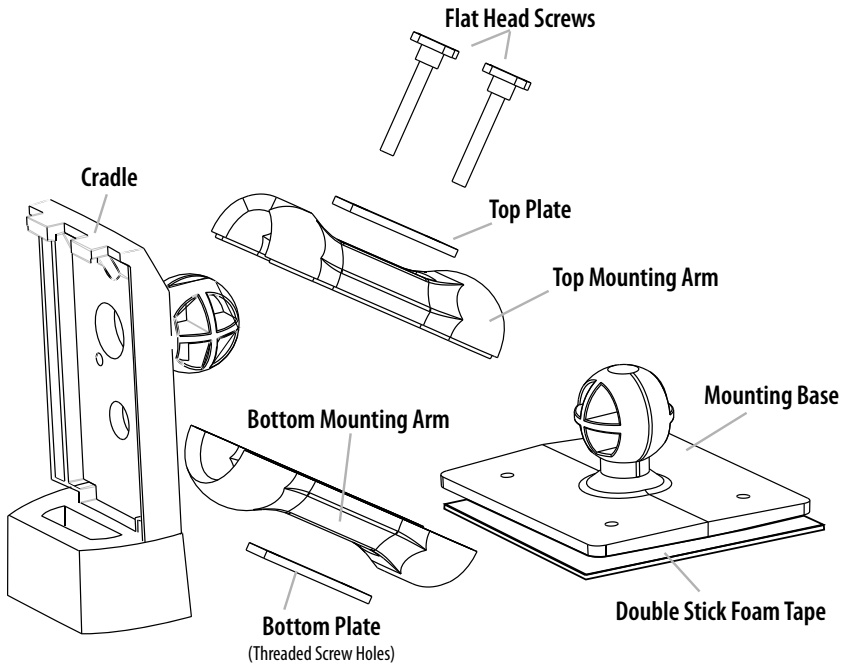
DASH MOUNTING

Dash mounting is a quick and easy way to mount the Black Maxx™. The dash mounting pieces do require some assembly. Dash mounting requires all parts in the dash mount assembly diagram (pg. 15).

TO ASSEMBLE:

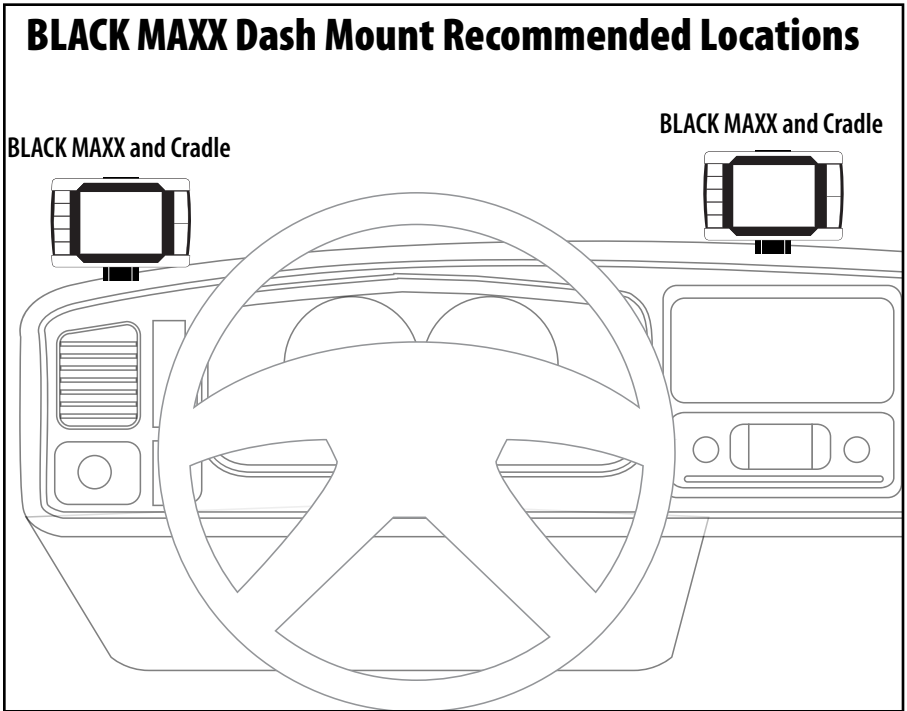
1. Gather the Dash Mounting assembly pieces:
 - Top Mounting Arm
 - Bottom Mounting Arm
 - The Cradle with Cradle Cable
 - Dash Mounting Base with Foam Tape
 - Top Plate
 - Bottom plate (with threads)
 - (2) Flat-Head Screws
2. Insert the metal top plate into the recessed area on top of the top mounting arm and hold it in place while inserting the bottom plate into the bottom mounting arm (note: the bottom plate has threaded screw holes).
3. Bring the arms together with the ends of the arms covering the ball on the cradle back and the ball on the mounting base. When together they will form two ball joints connected by a single arm.
4. Insert the two Flat-Head screws in the two holes in the top plate and then thread them into the bottom plate through both arm pieces. Hand tighten the screws just enough so that the assembly stays in one piece. You will fully tighten the screws once a mounting location on the dash has been located and a desired angle for mounting is chosen.

Dash Mount Assembly Diagram



TO MOUNT THE DASH ASSEMBLY:

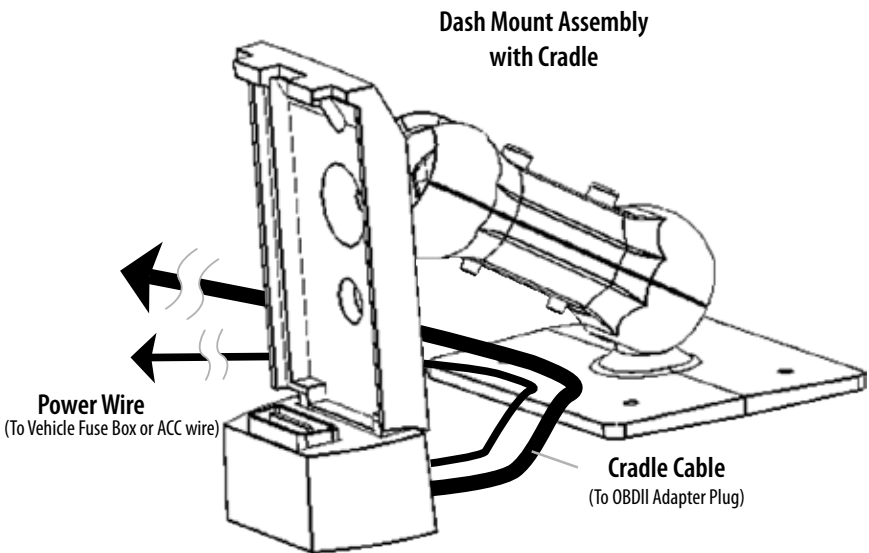
1. Use the Black Maxx™ to gauge where on the dash of the vehicle you want the Black Maxx™ to sit. See the dash mounting diagram for a quick example of the two recommended dash mounting locations.



TO MOUNT THE DASH ASSEMBLY: (CONTINUED)

2. Once a mounting location is chosen, determine the position of the Black Maxx™ and direction the Black Maxx™ will face by moving the ball and socket joints of the dash mount assembly. Once you find the right position tighten down the two Flat-Head screws to secure that position, the screws must be tightened sufficiently to hold the Black Maxx™ in position.
3. Make sure that the mounting location on the dash is cleaned, preferably with isopropyl alcohol. Peel the backing off of the double stick foam tape on the bottom of the dash mounting base and stick the dash mount assembly along with the cradle to the dash. Press down firmly to ensure that the adhesive reaches full contact with the dash.
4. Run the end of the Cradle Cable down through the driver's side of the vehicle dash and pull all of the extra slack in the cable down also. The Cradle Cable Plug will need to be connected to the OBDII Adapter Plug and the Power Wire will need to be hooked to a fuse in the vehicle fuse box.

Dash Mount Diagram (completed)



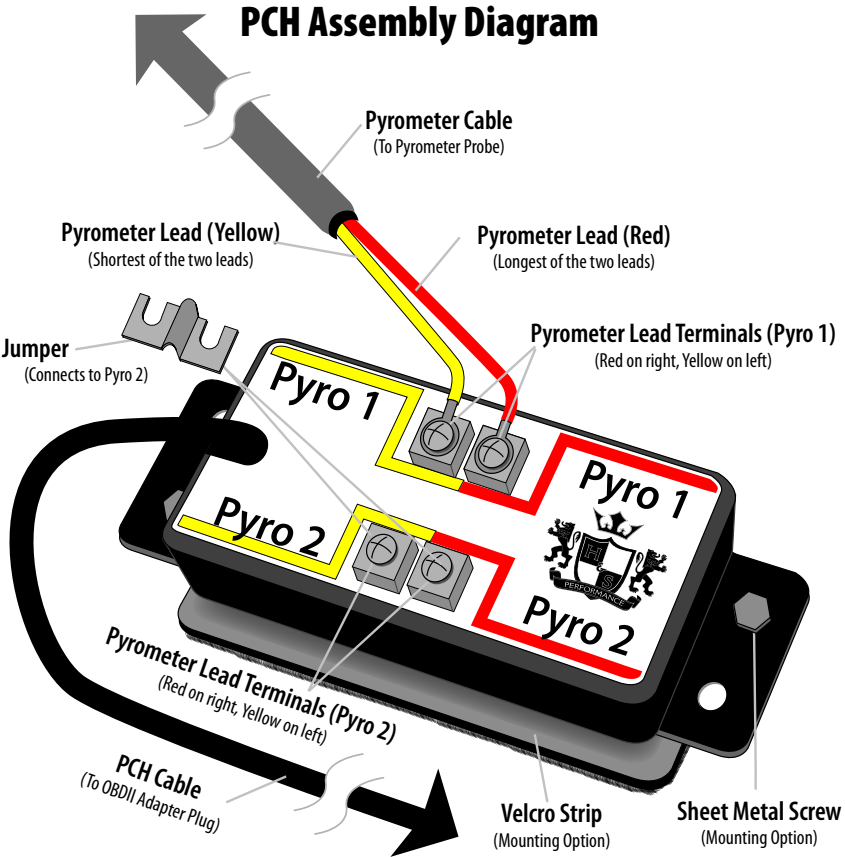
WINDSHIELD MOUNTING

Follow the same instructions for the dash mount procedure; apply the same instructions to the windshield of the vehicle rather than the dash.

SECTION 2: INSTALLING THE PYROMETER AND THE PYROMETER CONNECTION HEAD (PCH)

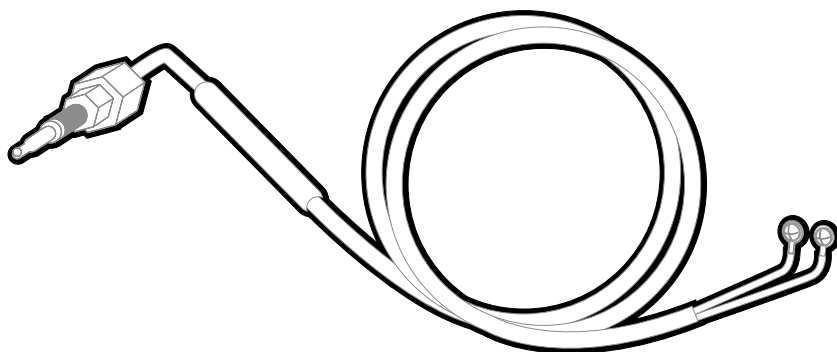
***When installing on the 6.4L Powerstroke, skip this step. On this platform there is an EGT Probe installed in the manifold from the factory. The Black Maxx™ will automatically read from this factory sensor.**

The PCH Assembly Diagram provides a quick visual description of all parts and pieces needed to acquire pyrometer temperatures. The parts described in the diagram below will be referred to in this section of the installation instructions.



INSTALLING THE PYROMETER PROBE

In this section you will drill and tap the Pyrometer Probe in the exhaust, either pre-turbo or post-turbo as a means to collect exhaust gas temperatures (EGT). Exhaust gas temperatures indicate how hot the motor is getting and can be used to set safety defueling parameters (see Operating Instructions Set Pyrometer defuel Level on pgs. 51-52).



POST-TURBO VS. PRE-TURBO

You must decide between mounting the Pyro Probe either post-turbo or pre-turbo. The difference in location determines what temperatures will read on your Black Maxx™. Pre-turbo mounting is generally recommended because it provides more accurate EGT readings; the Black Maxx™ is also capable of running both pre and post-turbo pyrometers simultaneously.

It is recommended that you mount both a pre-turbo and a post-turbo Pyrometer Probe if a vehicle is running more than 50 horsepower over stock. On screen, the Black Maxx™ can display Pyro 1 and Pyro 2 which correspond to the Pyro 1 and 2 locations on the PCH board. It is very important to note if Pyro 1 is displaying pre or post-turbo exhaust gas temperatures, and the same for Pyro 2.

Whether you mount post-turbo or pre-turbo, you need to monitor your temperatures; know what is safe and when to back off. Use the Pyrometer Calibration Procedure in the Appendix for these instructions to figure out what your safety limits are.

PRE-TURBO MOUNT:

1. Drill a $\frac{5}{16}$ " hole into the exhaust manifold where all the exhaust runners of the manifold come together, just before the turbo exhaust inlet. Then tap the hole with a $\frac{1}{8}$ " pipe tap and mount the Pyrometer Probe in the hole. Use a $\frac{9}{16}$ " wrench to tighten the probe holder or tube fitting to the down tube. Then tighten the Pyro Probe Cap to the holder using a $\frac{5}{8}$ " wrench.
2. Run the Pyro Cable up to engine bay; let the end of the cable sit while installing the PCH Board.



GM Pre-turbo Mount

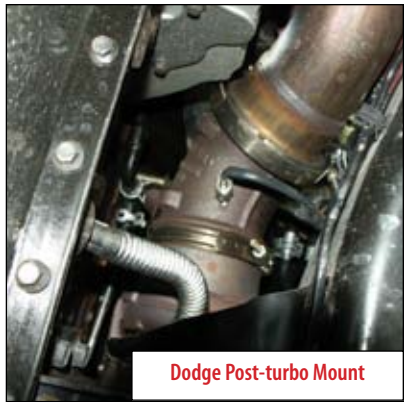
WARNING: If any debris such as drill bits and metal shavings drop inside the manifold, we advise that the manifold be removed from the vehicle so that the debris can be removed before starting the vehicle again.

TOOL TIP, PRE-TURBO MOUNT

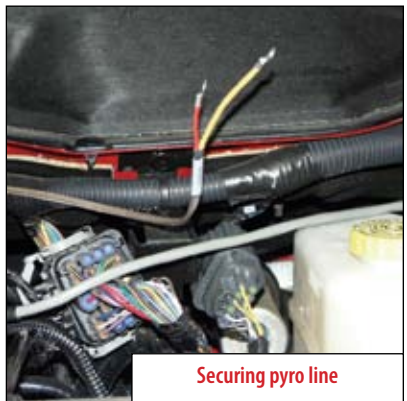
When drilling into the exhaust manifold, metal spews, shavings, and broken drill bits can fall inside. This can be hazardous to your turbo when the engine starts. Try doing four things to avoid this possible problem. One, use a high quality twist bit and a slow speed drill, about 500-800 rpm. Two, start with a small pilot bit about $\frac{1}{8}$ ", then use the full $\frac{5}{16}$ " bit after the smaller one has punched through. Three, grease your drill bit in addition to the normal lubricant, this will catch flying spews as they are cut. Four, just prior to punching through into the inside of the manifold, start the engine and build up exhaust pressure on the inside of the manifold (blows spews outside the manifold instead of letting them fall inside).

POST-TURBO MOUNT

1. Find a location on the exhaust pipe that is 3-6" downstream from the turbo charger output. Then drill a $\frac{5}{16}$ " hole and run a $\frac{1}{8}$ " pipe tap into the hole. Mount the Pyrometer Probe in the threaded hole using a $\frac{9}{16}$ " wrench to tighten the probe holder or tube fitting to the down tube. Then tighten the Pyro Probe Cap to the holder using a $\frac{5}{8}$ " wrench.
2. Run the Pyro Cable along the brim of the engine bay, and then let the end sit when installing the PCH Board.



Dodge Post-turbo Mount



Securing pyro line



Pyro line secured

INSTALLING THE PCH BOARD

The pyrometer that was installed will now have to be connected to the PCH Board, but first the PCH Board needs to be mounted in a secure location that both of the pyrometer ends can reach.

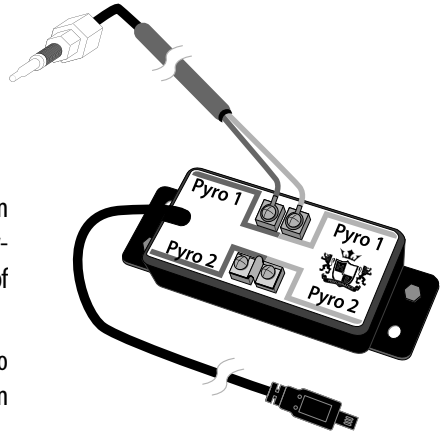
1. Gather all of the parts of the PCH Board assembly:

- Pyrometer Connection Head with PCH Cable
- Self-tapping Sheet Metal Screws
- Velcro
- Jumper
- Zip Ties

2. The PCH Board needs to be mounted in a location that is secure (away from extreme heat and moving parts), and in a location in which the end of the Pyrometer Cable can easily reach.

3. Use the sheet metal screws or Velcro, or both to securely attach the PCH Board to a safe location within the engine bay.

4. To connect the end of the Pyrometer Cable to the PCH Board, first remove the screw and nut on the end of the pyrometer leads, then remove the screws from the Pyro 1 heads on the PCH Board. Use those screws to secure the Pyrometer Cable leads to the PCH Pyro 1 heads, see the PCH Assembly Diagram (pg. 19) for a visual reference when connecting the pyrometer leads to the PCH Board.



Notice: Do not remove the jumper from the Pyrometer 2 location unless you are installing a second pyrometer.

If connecting two pyrometers keep track of which location, Pyro 1 or 2, each pyrometer was attached to on the PCH Board

5. Once the PCH Board is secure and the pyrometer(s) is/are connected to the PCH Board, use zip ties to secure the pyrometer cables away from extreme heat and moving parts.

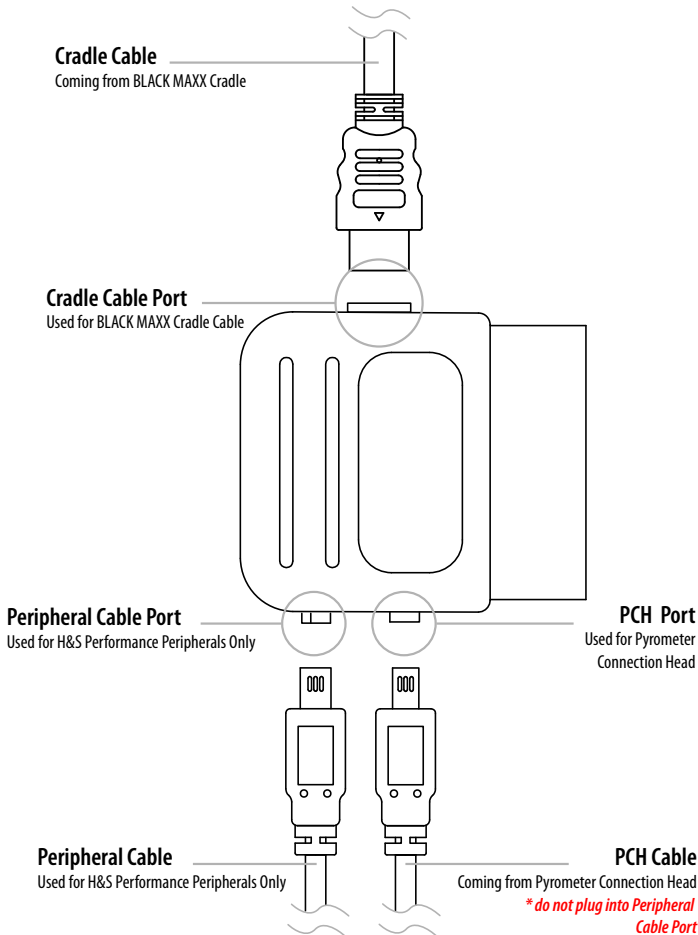
6. Run the end of the PCH Cable through the fire wall. It will need to be connected to the OBDII Adapter Plug. Use zip ties to secure all remaining cable left inside the engine bay.

SECTION 3: INSTALLING THE OBDII ADAPTER PLUG

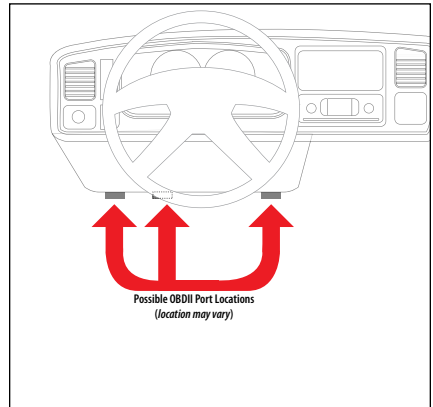
In this step you will connect the Cradle Cable and the PCH Cable to the OBDII Adapter Plug and then plug the OBDII Adapter plug into the to the Vehicle OBDII port.

1. Locate the OBDII Adapter Plug.
2. Plug the Cradle Cable and the PCH Cable into the OBDII Adapter Plug. See the OBDII Adapter Plug Diagram for a visual description.

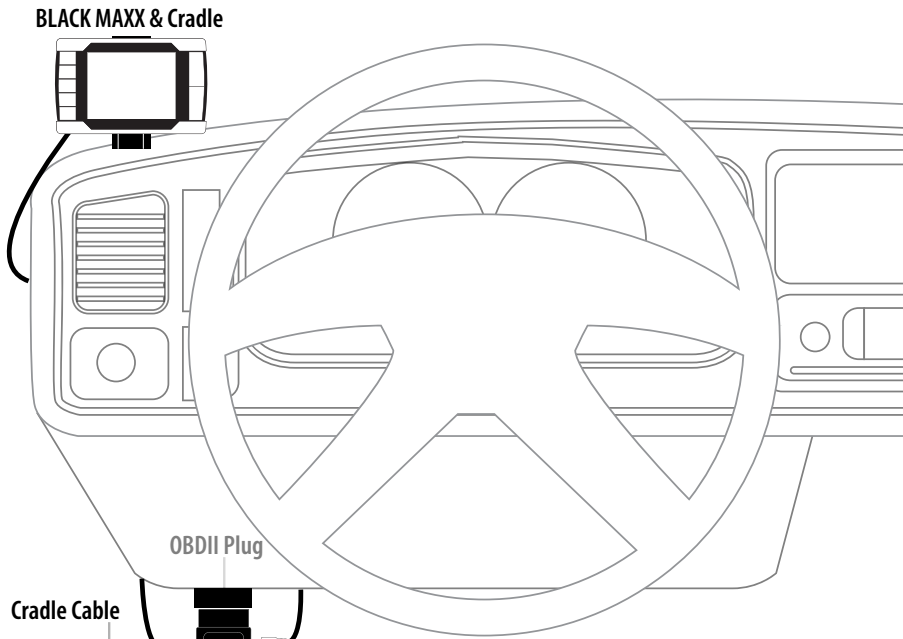
OBDII Adapter Plug Diagram



3. Locate the OBDII port on the vehicle; OBDII ports are located under the dash on the driver's side. These ports are located in different areas under the dash for different vehicle applications; see the OBDII port locations diagram.
4. Plug the OBDII Adapter Plug into the OBDII port; see the Installed OBDII Adapter Plug diagram for an example of the finished install.



OBDII Adapter Plug Installation Diagram



SECTION 4: INSTALLING THE POWER WIRE

In this section you will run the Power Wire coming from the Black Maxx™ Cradle to the vehicle fuse box and connect it to the fuse locations specified below. The fuse location for the Power Wire is different on each vehicle application.

CONNECTING THE POWER WIRE:

1. For Dodge and GM trucks the fuse boxes are located on the driver's side of the vehicle inside the engine bay. Please see your owner's manual for more details on fuse box locations. Once inside the fuse box, locate the appropriate fuse depicted in the vehicle-specific pictures below. For Ford trucks route power wire underneath drivers side dash and connect it to the purple ignition wire shown in picture below.



Power Wire w/90° Connector



GM Fuse Box
(Fuse number 45)



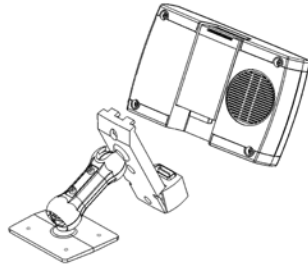
Ford Power Wire
(Capped from the factory)

2. Remove the fuse, indicated in the pictures, and insert the fuse jack. Make sure that the fuse jack is placed on the dead side of the fuse to ensure that the Black Maxx™ is protected by the fuse. Use a volt meter to verify the dead side of the fuse. With the fuse pulled and the truck powered on but not started, the volt meter should read 0 volts on the fuse jack to ground. Problems that can occur if the incorrect fuse is used for this connection: the power may stay on continuously even with the key off; or, the Black Maxx™ can receive power at the incorrect time of the power-on/starting cycle of the vehicle.
3. Run the power wire through the fire wall before preparing the Power Wire. Prepare the Power Wire by stripping the end of the wire about ¼". Connect the blue 90° connector to the end of the Power Wire using crimping pliers.
4. Connect the Power Wire to the fuse jack, place the fuse back into the slot, and close the fuse box.

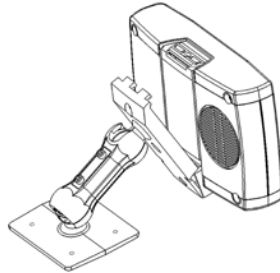
SECTION 5: HOW TO DOCK THE BLACK MAXX™ (make sure that the vehicle key is off)

The Black Maxx™ and cradle can be damaged if the Black Maxx™ is not carefully placed onto the cradle. See the diagrams below for proper installation. Note that the diagrams show the Black Maxx™ being docked on to the dash/windshield mounting styles, but the Black Maxx™ docking instructions are the same for the A-Pillar mount as well.

1. Make sure that the docking port on the bottom part of the cradle is flipped forward as far as it will go.

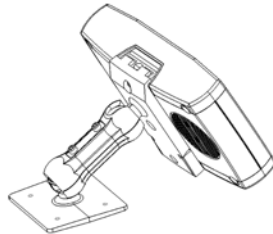


2. Dock the Black Maxx™ onto the cradle.



3. Once docked, rotate the Black Maxx™ back and snap it into the cradle.

Note: Check the cradle swivel to make sure that it is connecting up to the Black Maxx™ correctly. The bottom of the swivel should be flush with the bottom of the Black Maxx™.



Removing the Black Maxx™:

1. When removing the Black Maxx™, simply press down on the top part of the Black Maxx™ that snaps into the top of the cradle.
2. Rotate the Black Maxx™ forward on the docking port.
3. Pull the Black Maxx™ up and out of the cradle.



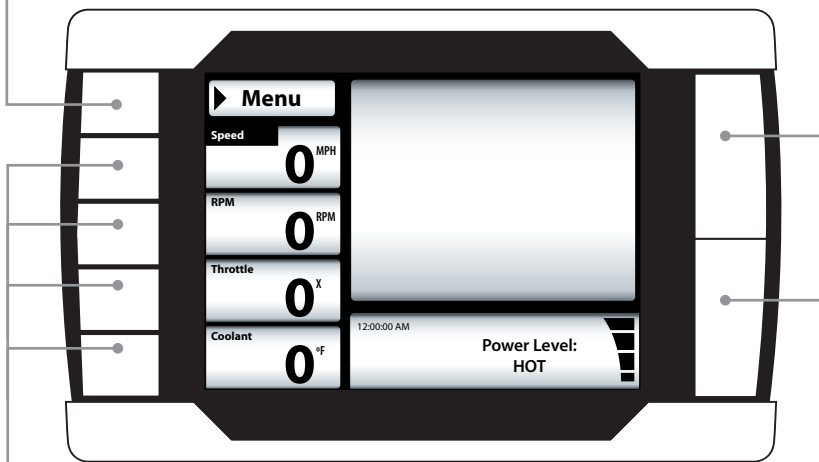
BLACK MAXX™ OPERATING INSTRUCTIONS

These operating instructions are split into four sections:

- **SECTION 1:** Button Navigation
- **SECTION 2:** Exploring the General Display
- **SECTION 3:** Main Menu and Sub Menus

SECTION 1: BUTTON NAVIGATION

Press the top left button to enter the Main Menu, also use this button to exit menus.



Press any of the four buttons on the left to select items on the screen that coincide with the button position.

In general these buttons work as up and down buttons, they may also be used to select items on the screen which coincide with the buttons.

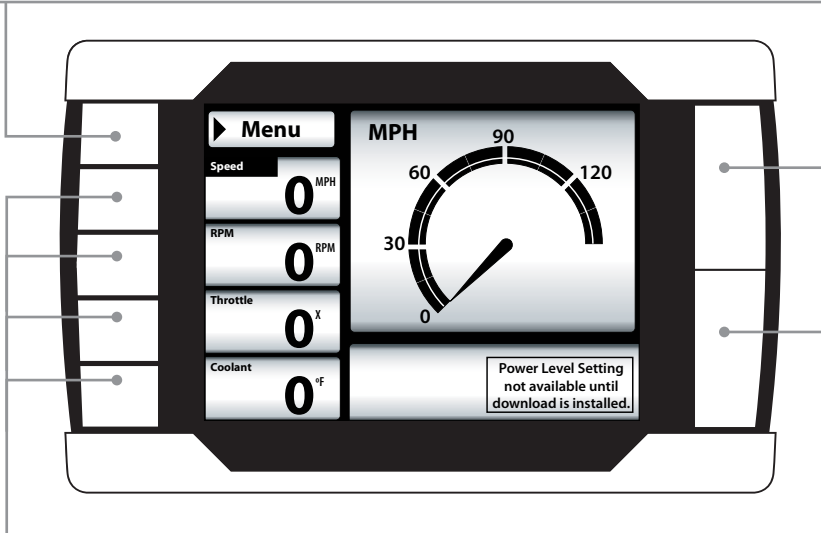
SECTION 2: EXPLORING THE MAIN SCREEN

The Main Screen is where you view all of the vehicle activity. In this section you will learn how to navigate the Main Screen and learn about all of the different parts of the Main Screen.

MAIN SCREEN NAVIGATION

Below are descriptions of how all of the Black Maxx™ buttons work and what they do while in the Main Screen. The buttons perform different functions while in a menu or submenu.

Press the top left button to enter the Main Menu, also use this button to exit menus.



Press any of the four buttons on the left that coincide with the four vehicle parameters to display that particular vehicle parameter on the large gauge in the upper right side of the screen. Hold a button down to view the different graph types for the large gauge. See the different graph types on page 34.

Power Level Up
Power Level Down
Use the power level buttons to control power levels on-the-fly only while in the main screen

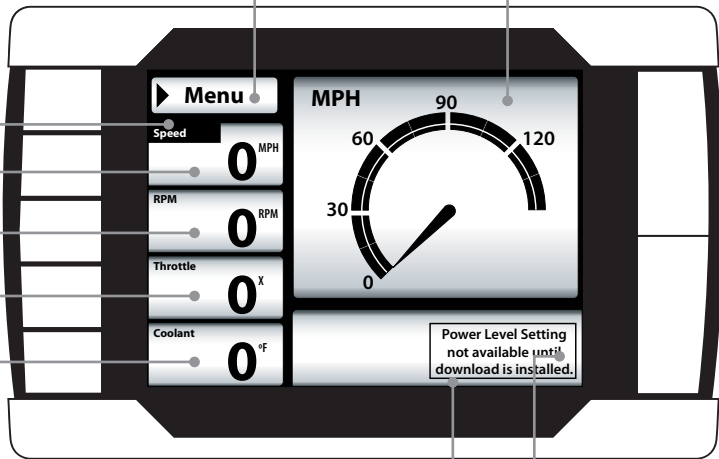
MAIN SCREEN PARTS DESCRIPTION

This section will describe all of the different parts of the Main Screen.

The black bar: The black bar highlights the title of one of the four displayed vehicle parameters to indicate that vehicle parameter is also being displayed on the large gauge.

Menu button: press to enter the main menu.

Large Gauge



Vehicle parameters: To change which vehicle parameter is displayed in the large gauge area simply press one of the four buttons next to the preferred vehicle parameter.

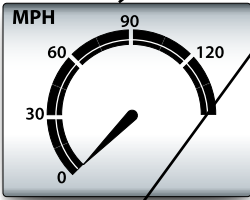
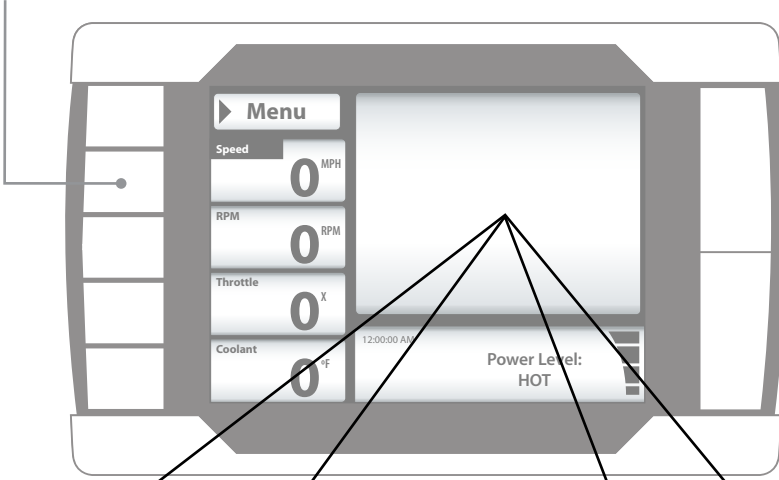
Power bar: indicates power level.

Power level text: Displays which power level is active, whether it be: Stock, Mild, Wild, or Hot.

LARGE GAUGE DISPLAY TYPES

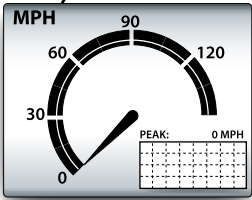
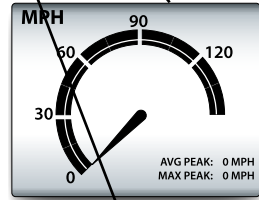
The large gauge area can be displayed in four different views.

Hold the button down next to the vehicle parameter currently displayed in the large gauge area to switch between the different large gauge display types.



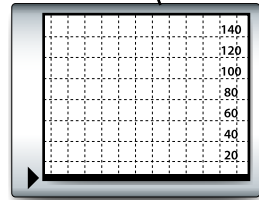
1.
Analog gauge display only

2.
Analog gauge with average and max peaks



3.
Analog gauge with mini graph

4.
Large real time graph



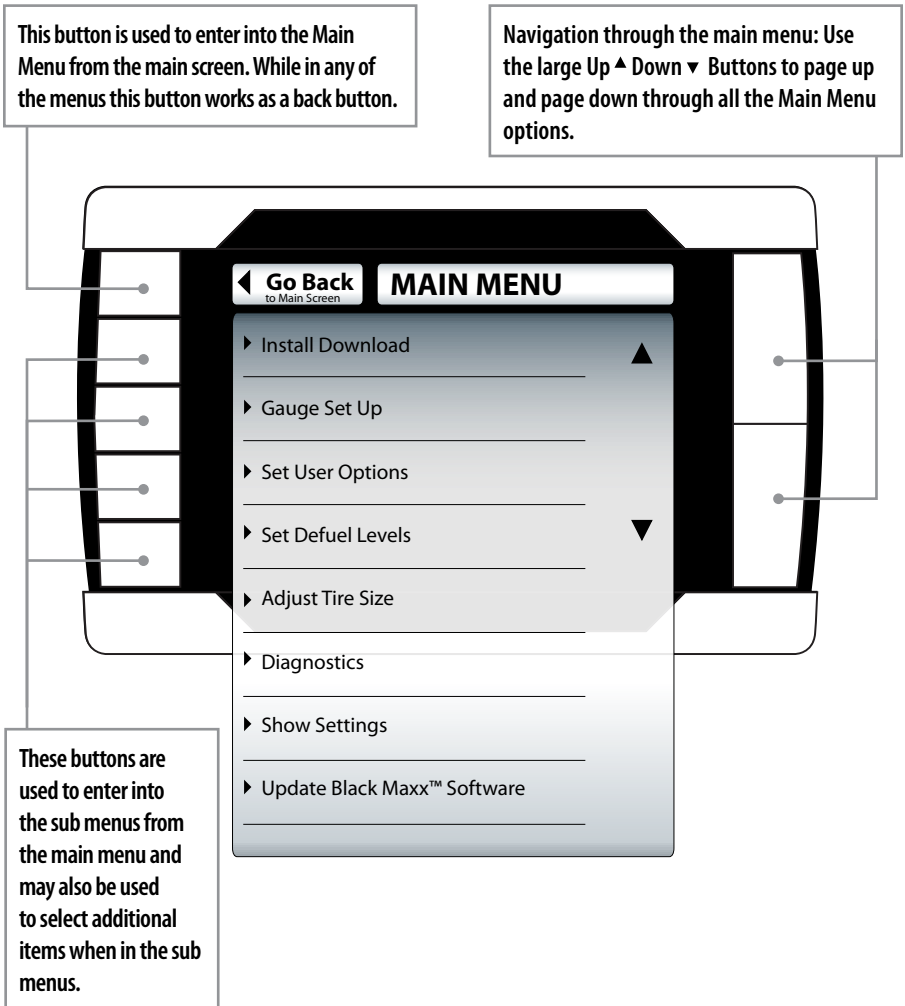
SECTION 3: EXPLORING THE MENU SYSTEM

EXPLORING THE MAIN MENU

Section 4 will explore the entire menu system including: each main menu item and all of the sub menus to those main menu items.

MAIN MENU DESCRIPTION/NAVIGATION

The diagram below shows all of the Main Menu items and explains the Main Menu navigation.

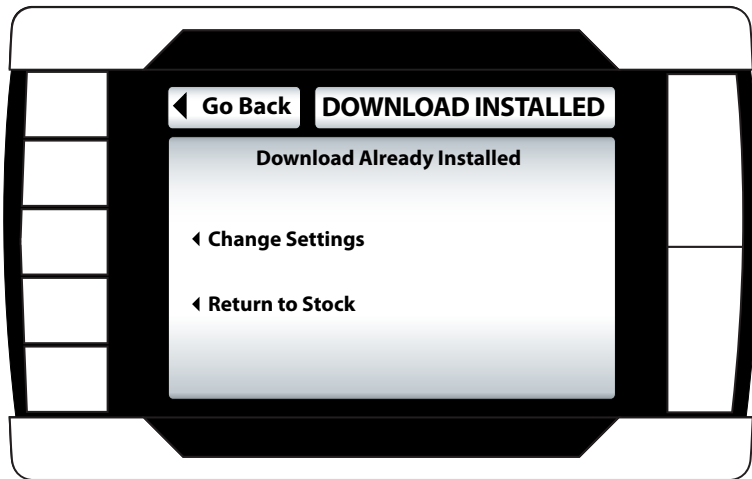


INSTALL DOWNLOAD:

The install download option comes in use for three different reasons:

- 1. Install a download onto a stock vehicle:** If the vehicle is stock and you enter the install download menu, simply follow the screen prompts to install a download on the vehicle.
- 2. Change Download Settings:** If the vehicle already has a download on it from the Black Maxx™ that is currently installed on that vehicle. You can perform another download to change the vehicle specific options contained in a download.
- 3. Return a vehicle to stock:** To completely return a vehicle to its factory stock conditions you need to select this option. This is highly recommended when taking the vehicle in for any kind of service.

This Black Maxx™ screen shot shows what you will see if a download has already been entered into a vehicle.



Note before installing a download:

- Make sure that the Black Maxx™ is properly docked in the cradle.
- Make sure that the harnesses have been properly installed.
- Make sure that the vehicle battery is fully charged.

THE SD CARD MUST BE INSERTED IN THE SIDE OF THE BLACK MAXX™ TO DOWNLOAD TO A VEHICLE.

DOWNLOADING VEHICLE SPECIFIC FEATURES:

Each vehicle make has vehicle specific features that prompt you to opt into or opt out of during the download process. Those vehicle specific features are described for Ford, GM and Dodge in this section.

'07.5-'09 GM 6.6L SPECIFIC FEATURES

SPEED LIMITER (GM 6.6L)

The Black Maxx™ gives racing enthusiasts the option to adjust the OEM speed limiter. This allows the vehicle to reach speeds in excess of where the OEM speed limiter was set. By selecting yes to remove the speed limiter you agree that your vehicle has tires rated for speeds in excess of 140 mph.

TRANSMISSION RE-LEARNING (GM 6.6L)

IMPORTANT! Performing a Transmission Reset is VERY important! A reset must be done to re-train the transmission to perform correctly with added horsepower.

CAUTION! When re-training the transmission, a series of 0-60 MPH Wide Open Throttle(WOT) runs are necessary for proper transmission shifting. ALWAYS follow posted speed limits. DO NOT attempt WOT runs in adverse weather conditions such as snowy, icy, rainy or other conditions which may affect your vehicles traction, or impair your visibility.

After download is complete, turn key to ON position. From the general display screen(initial start-up screen), press top left button to take you into the main menu screen. Use the down arrow on the right side of the unit to scroll down to "Reset Transmission". Press the button on the left side to agree to the transmission reset. Press the corresponding button on the left hand side of the unit to reset the transmission.

Once reset, it is highly recommended to perform a series of (3) 0-60 MPH runs.

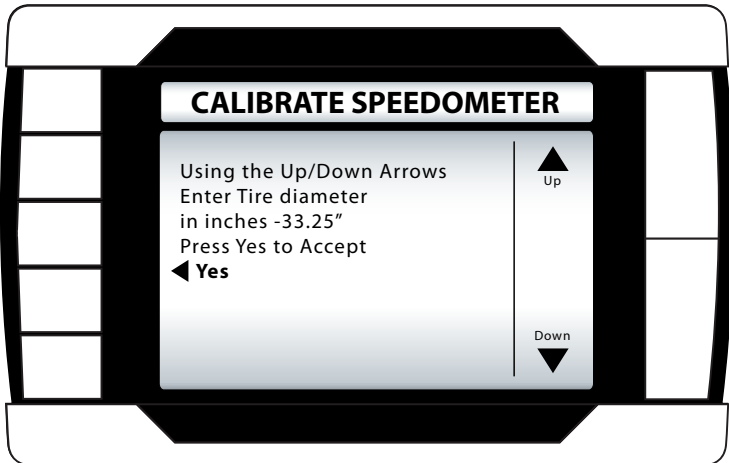
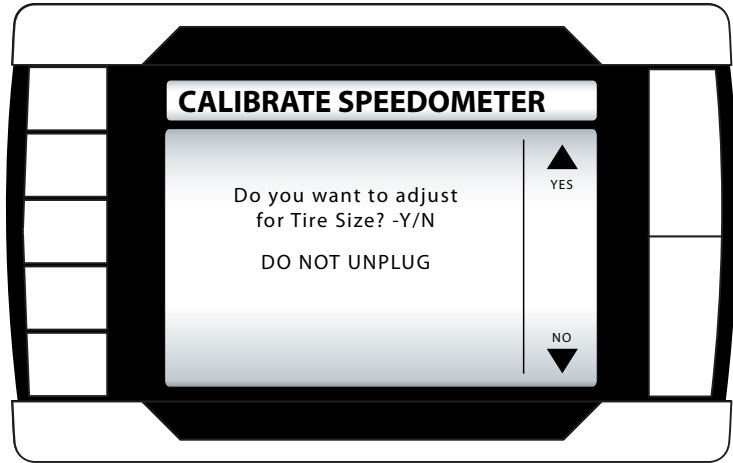
It is recommended that the Transmission learning process be done while in the "Hot" setting on your Black Maxx Tuner.

1. 0-60MPH @ 1/4 throttle position, then slow down and come to a complete stop
2. 0-60MPH @ 1/2 throttle position, then slow down and come to a complete stop
3. 0-60MPH @ wide open throttle position, then slow down and come to a complete stop

CALIBRATING THE OEM SPEEDOMETER (GM 6.6L)

Program in the vehicle's exact tire size to adjust the OEM speedometer so that it will correctly display vehicle speeds. The downloader can adjust for tires ranging from 25" to 45".

Note that adjusting the tire size over 35" may result in an ABS light turning on in the vehicle dash.



'08-'09 FORD 6.4L SPECIFIC FEATURES

TRANSMISSION RE-LEARNING (POWERSTROKE 6.4L)

IMPORTANT! During the programming of the Ford 6.4L Powerstroke the automatic transmission is cleared of all memory and must be re-learned. During this re-learn process you may experience hesitation during shift, hard shift, or defuel patterns. This is normal and you should continue through the learning process.

CAUTION! When re-training the transmission, a series of 0-80 MPH Wide Open Throttle(WOT) runs are necessary for proper transmission shifting. ALWAYS follow posted speed limits. DO NOT attempt WOT runs in adverse weather conditions such as snowy, icy, rainy or other conditions which may affect your vehicles traction, or impair your visibility.

Once your download is installed, please follow these steps to set-up your transmission correctly.

It is recommended that the Transmission learning process be done while in the "Hot" setting on your Black Maxx Tuner.

1. 0-60MPH @ 1/4 throttle position, then slow down and come to a complete stop
2. 0-60MPH @ 1/2 throttle position, then slow down and come to a complete stop
3. 0-80MPH @ wide open throttle position, then slow down and come to a complete stop

!!!IMPORTANT!!!

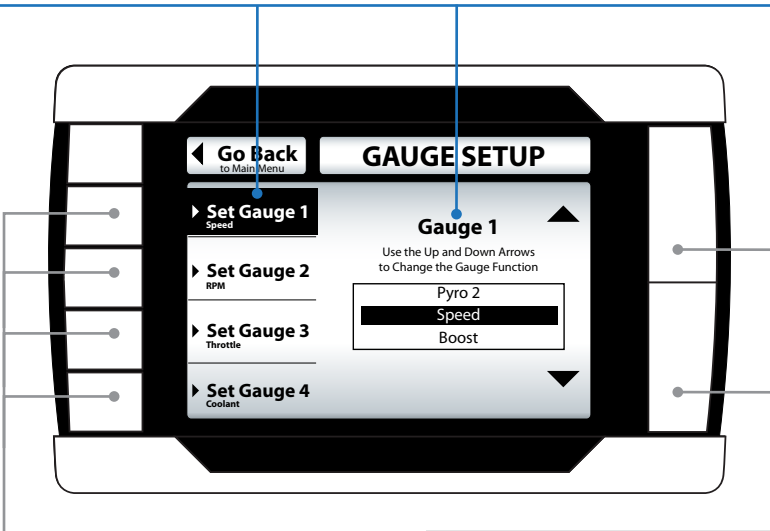
Any truck using larger than 3" blocks under the rear leafs will require installation of traction bars. Failure to do so will result in harsh shifting and can cause transmission damage.

GAUGE SETUP

Enter to change the vehicle parameters displayed on the four gauge locations in the Main Screen. This is also where you can see all of the most up-to-date vehicle parameters available to your vehicle make and model after running an internet upgrade.

Selecting a vehicle parameter to display in a particular location is done by highlighting the gauge location and then highlighting the desired vehicle parameter.

Notice that upon entering the gauge setup menu that, Set Gauge 1, is highlighted in black. When a gauge location is selected it is highlighted in black on the left and it also appears above the vehicle parameter selection box.



To highlight a different gauge location press the selection button that coincides with that gauge location. So to select gauge location 1, press the second button down on the left hand side of the Black Maxx™. To select the 4th gauge location press the bottom button or the 5th button down on the left side.

Use the large Up ▲ Down ▼ Buttons to highlight a particular vehicle parameter for any of the gauge locations.

Once the correct vehicle parameter for a gauge location has been highlighted, you do not need to press another button to select that vehicle parameter. Simply highlighting the vehicle parameter makes it active in that location.

VEHICLE PARAMETERS

This diagram shows vehicle parameters which can be displayed on the Black Maxx™. Due to vehicle specific availability the diagram also indicates which vehicle parameters are available to each vehicle application.

FEATURES	FORD	GM	DODGE
	'08-'09	'07.5-'09	'07.5-'09
Pyro 1	Factory EGT*	X	X
Pyro 2	X	X	X
Boost Pressure	X	X	X
Speed	X	X	X
RPM	X	X	X
Coolant	X	X	X
IPW (injection pulse width)	X		
Throttle Position	X	X	X
Intake Temperature	X	X	X
Barometer			
Battery Voltage	X		
Oil Temperature	X		
ICP (injection control pressure)	X	X	X
Transmission Temperature	X	X	X
Load	X	X	

* Reads from factory EGT sensor (Pre-Turbo)

**BLACK MAXX™ VEHICLE PARAMETER DESCRIPTIONS**

The following is a general list of vehicle parameters the Black Maxx™ can display.

PYRO 1:

Reads the signal received from the Pyro 1 connection. This measurement is used to defuel the engine based on the Pyrometer Probe Calibration Procedure listed previously in the manual. This measurement is permanently displayed in the bottom left quadrant of the Screen.

PYRO 2:

Reads the signal received from the Pyro 2 connection. Use this feature to display EGT measurements from Pyro 2 on the screen.

SPEED:

Vehicle rate of travel in miles per hour. This feature does not change the OEM speedometer.

BOOST PRESSURE:

A measure of air pressure generated by the turbo that is being forced into the engine cylinder. Knowing the pressure will indicate how much stress is being put on the turbo and the engine itself. On a stock pickup at high acceleration, a turbo will generate 18 to 40 lbs. of boost depending upon year and make of vehicle.

ENGINE RPM:

Number of crank revolutions per minute.

COOLANT TEMPERATURE:

Temperature of the vehicle coolant.

INJECTION PULSE WIDTH:

Amount of microseconds that the injectors are engaged to deliver fuel to the engine.

THROTTLE POSITION:

Display real-time percentage between idle and full throttle.

INTAKE TEMPERATURE:

Air temperature after it has passed through the air filter and before it has entered the engine turbo.

BAROMETER:

Outside atmospheric pressure.

BATTERY VOLTAGE:

Current measurement of battery volts.

OIL TEMPERATURE:

Temperature of the vehicle's motor oil.

INJECTION CONTROL PRESSURE:

Amount of pressure used to deliver fuel to the engine through the injectors.

TRANSMISSION TEMPERATURE:

Temperature of the vehicle's transmission fluid.

*Active Maxx software must be purchased seperately from H&S Performance.
Call 888-628-1730 for details.

CUSTOM TUNING

To activate your custom tuning you must first call H&S Performance at 1-888-628-1730.

After your custom tuning has been activated push the menu button to go to the main menu.

When you're at the main menu then push the button that says set user options.

At this screen you will push the button that says custom power levels.

At the custom adjust screen this will allow the user to custom tune MILD, WILD, and HOT power levels and save them seperately. Just simply select which power level you would like to adjust. It will then give you four options that you can increase or decrease FUEL PRESSURE, FUEL RATE, PULSE WIDTH, and TIMING. After you have set these adjustments where you would like them, just simply press the bottom left button and it will send all of your custom changes to that level.

RESETTING CUSTOM TUNING TO FACTORY DEFAULTS

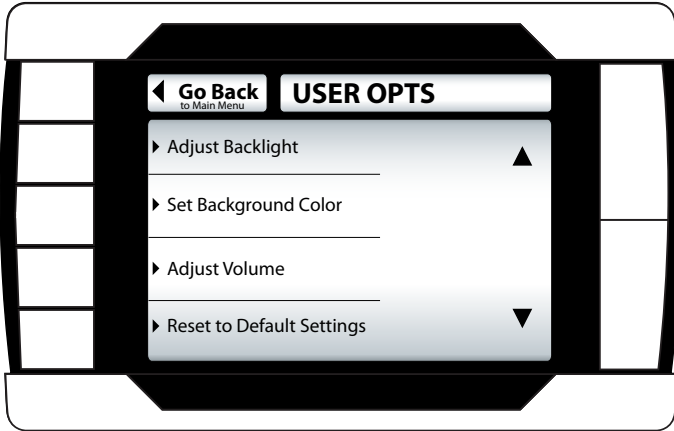
To set custom tuning back to factory defaults.

At the main menu press the button that says SET USER OPTIONS.

At the USER PREFS MENU toggle down to the bottom there will be a button that says RESET TO DEFAULT. Press the reset to default button. This will then take you to a screen where it will ask you if you are sure you want to reset the default setting if you would like to then press yes. It will then reset to all factory defaults.

USER OPTIONS

In this sub menu you get to personalize your Black Maxx™. The descriptions for all the user options are below. A more detailed description of each is on the following pages.

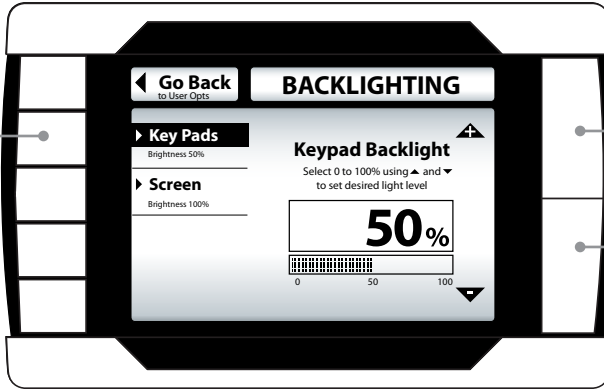


- **ADJUST BACKLIGHT:** Change screen backlighting and button backlighting.
- **SET BACKGROUND COLOR:** Choose between sixteen different colors for the menu.
- **ADJUST VOLUME:** Set button feedback volume.
- **RESET TO DEFAULT SETTING:** Revert back to H&S Performance factory settings.

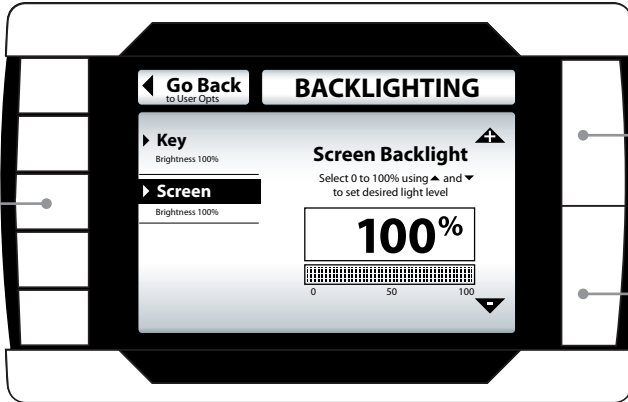
ADJUST BACKLIGHT

Highlight either keypad or screen and use the up and down buttons to adjust the lighting to your preference.

Use this button to select the Key Pads option.



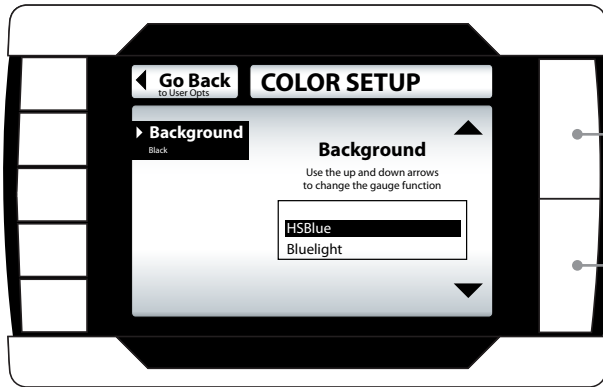
Use these buttons to adjust the backlight brightness level.



Use this button select the 'Screen' option.

ADJUST BACKGROUND COLOR

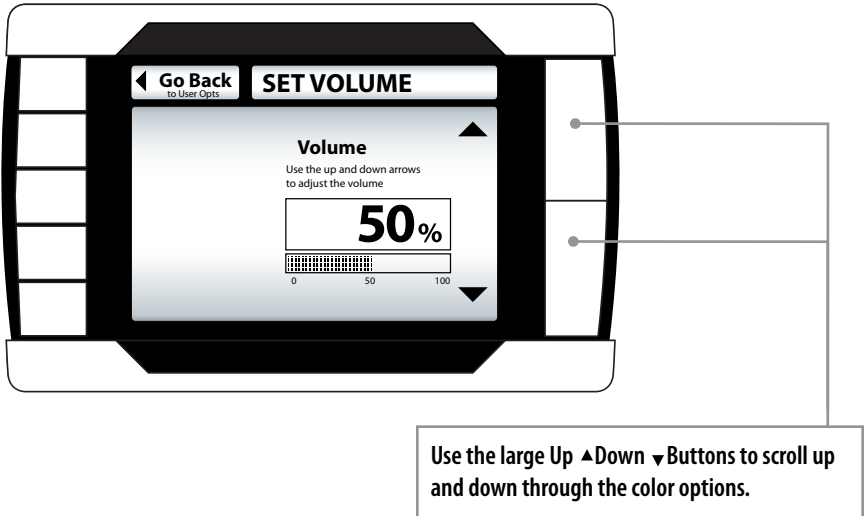
Use the up and down buttons to select a background color. The Black Maxx™ background will preview each color background as you scroll up and down through the color options. When the preferred color is highlighted, exit the color menu to select the color.



Use the large Up ▲ Down ▼ Buttons to scroll up and down through the color options.

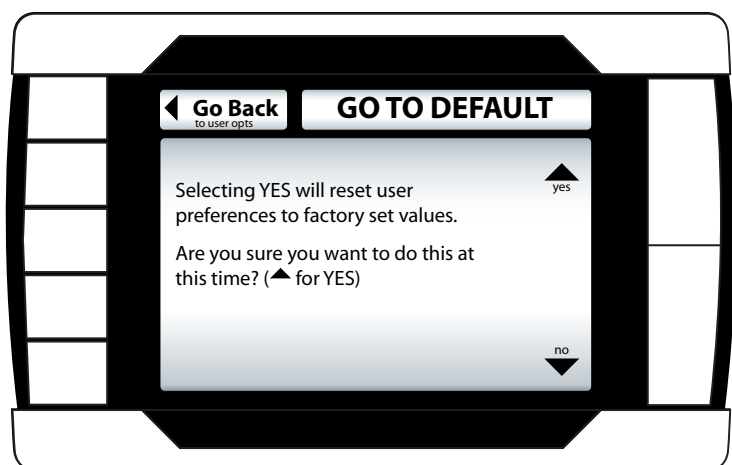
ADJUST VOLUME SETTING

To adjust the sound volume for button feedback and voice calls, simply scroll up and down to adjust the volume from zero to one hundred.



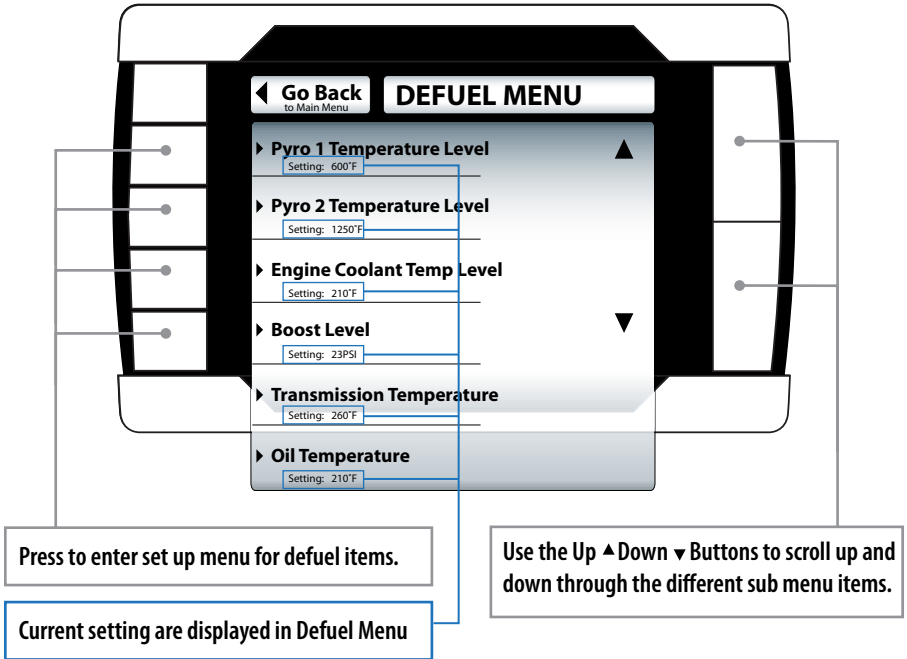
RESET TO DEFAULT SETTING

To reset the Black Maxx™ to H&S Performance factory settings press the up button to select yes, to keep current settings back out of this menu by pressing the go back button or by pressing the down button to select no.



DEFUELING PARAMETERS

Set up defueling parameters based on a number of different vehicle parameters. In this menu you can also turn vehicle parameters off. The defueling parameters available are vehicle specific, so not all defueling parameters are available for every make and model.

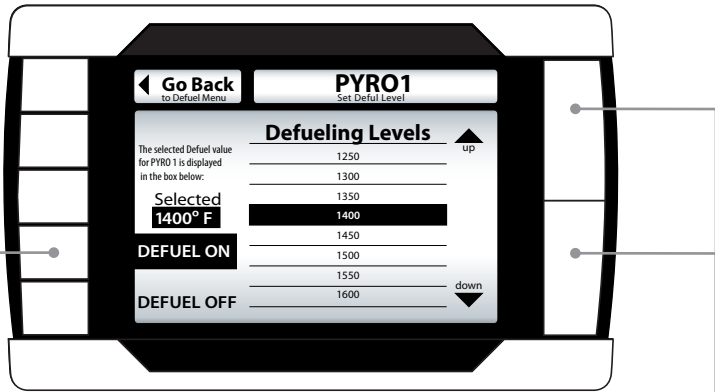


Below is a list of all of the defueling capabilities for the Black Maxx™. All defueling options can be activated at the same time, all can be turned off, or a mix of on and off. Each defueling option is adjusted individually to be on or off and set to a particular defueling temperature.

Default Defueling Settings	
Pyro 1 Temperature Level	1250° F
Pyro 2 Temperature Level	OFF
Engine Coolant Temp Level	220° F
Boost Level	OFF
Transmission Temp Level	OFF
Oil Temperature	OFF

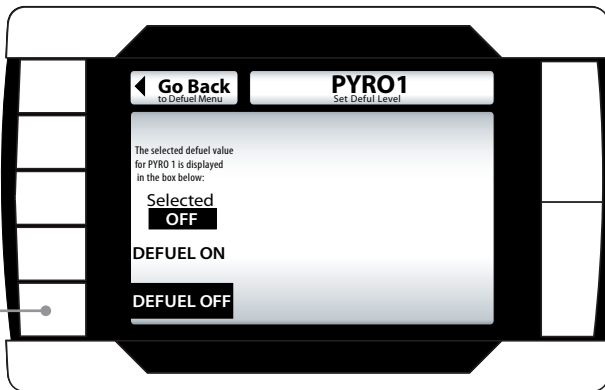
SET DEFUEL LEVELS:

When entering a setup menu for any of the defuel options the menu will have a list of defuel levels to select from based on that specific defuel parameter. The selected value is displayed on the left, to select a defuel level you need only highlight the amount and then exit the setup menu. To turn any particular defuel parameter off press the bottom left button.



Use this button to turn the defueling on.

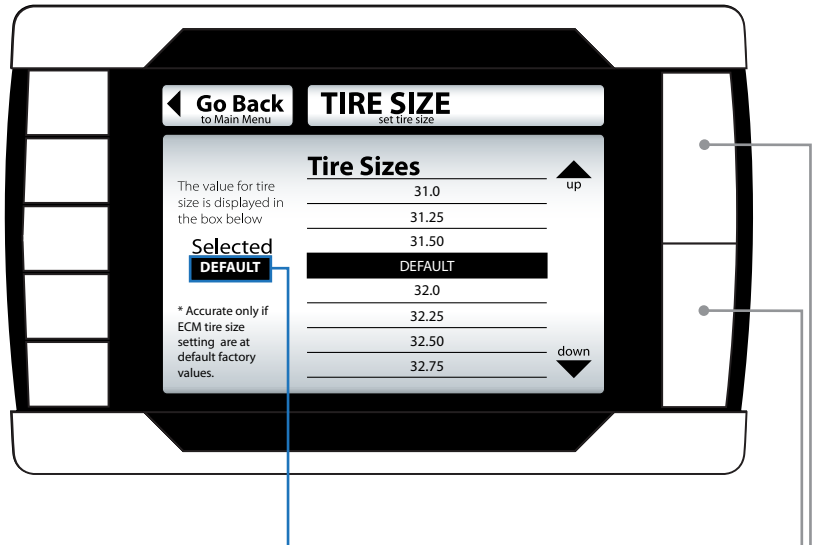
Use the large Up ▲ Down ▼ Buttons to scroll up and down through the different sub menu items.



Use this button to turn the defueling off.

ADJUST TIRE SIZE

The tire size function allows you to adjust the speed that the Black Maxx™ will display in one of the gauge locations to account for larger or smaller than stock tire sizes. The range of tire sizes that the Black Maxx™ will adjust for starts at 28" and goes up to 39" and it adjusts in incre-



Notice that the selected tire size is displayed in the box on the left side of the screen. Once the correct speed is highlighted simply press the go back button to exit. Your selection will automatically be saved.

Use the Up ▲ and Down ▼ buttons to scroll through the available tire sizes; highlight the tire size that fits what is currently mounted on the vehicle to display the speed accurately.

Default setting:

The default setting reads the speed directly off of the vehicle's computer. Use this setting if you have already calibrated the speedometer for larger or smaller aftermarket tires.

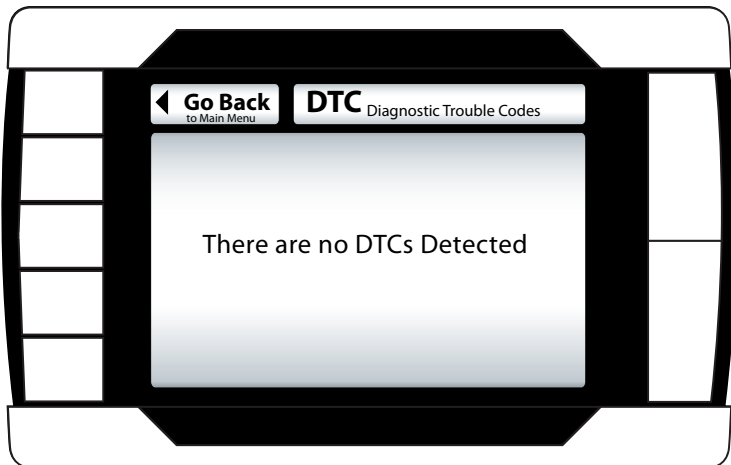
Notice that if a speedometer calibration has been performed on the vehicle that it will affect the value displayed on the Black Maxx™.

DIAGNOSTICS

This sub menu allows you to check vehicle Diagnostic Trouble Codes (DTCs). Upon entering this menu, the Black Maxx™ will automatically begin to check the vehicle for DTCs and it will then display those DTCs on the Black Maxx™ screen. Once it displays the DTCs value and description on the screen it will allow you to erase the DTCs from the vehicle.



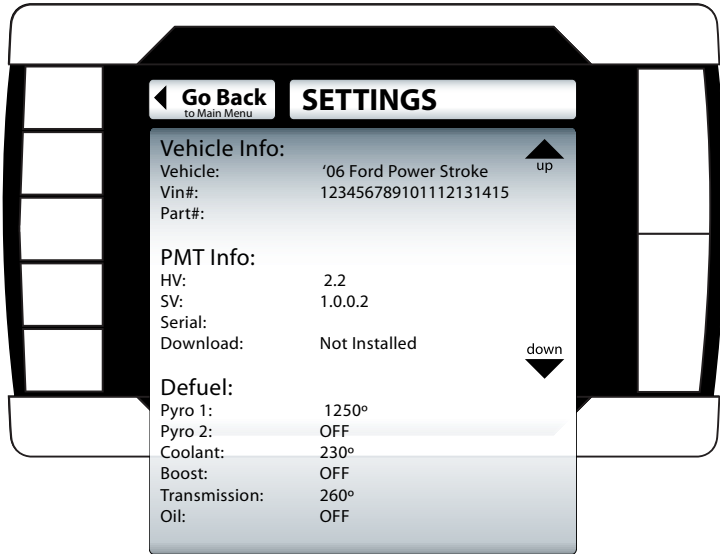
If no DTCs are displayed you can simply press the Go Back button to return to the main menu.



THE SD CARD MUST BE INSERTED IN THE SIDE OF THE BLACK MAXX™ TO READ AND ERASE DTCs

SHOW SETTINGS:

The Show Settings Menu will allow you to see vehicle information and also defuel settings. See the diagram below to see everything that is listed in this menu.



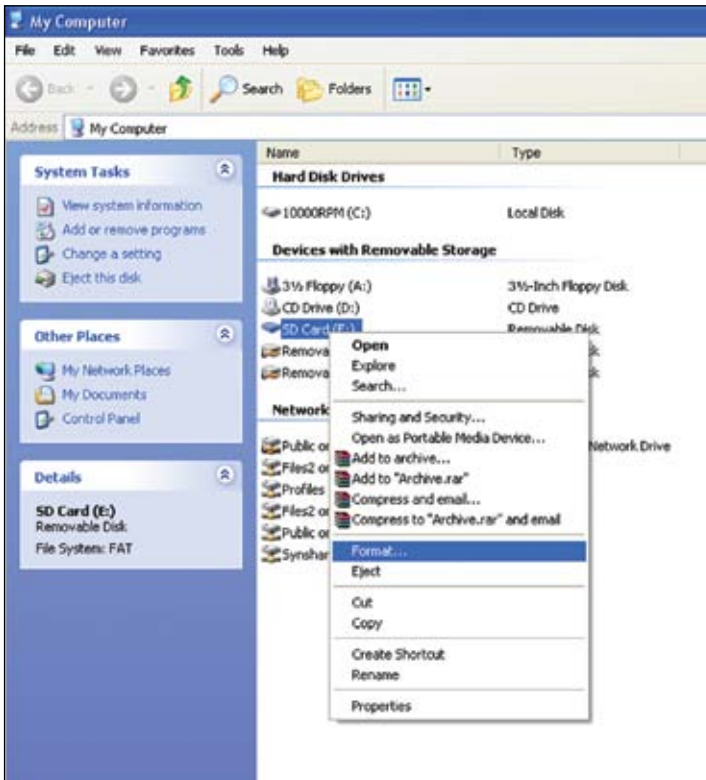


FORMATTING SD CARD

The SD card should only be taken out of the Black Maxx™ to perform internet upgrades. It is the primary means of performing internet upgrades for the Black Maxx™.

In case an SD Card is lost or broken, a new SD Card can be purchased and used to update the Black Maxx™. However, the new card will need to be formatted to work with our internet update software, The Update Agent. The reason a new SD card needs to be formatted is so that the Update Agent will automatically recognize that SD Card when the SD card is plugged into a PC. Below are steps and diagrams showing how to format a new SD Card:

1. Plug the SD Card into a PC via the USB to SD Card Reader.
2. Open the My Computer function in Microsoft windows to see all of the devices and drives on that PC. Find the new SD Card in the list under the heading, "Devices with removable storage."
3. Right click on the SD Card to show a drop down menu of options. In the drop down menu click on Format.



4. With the formatting dialog box open click the drop down men for "File System." Highlight and click on FAT.
5. Then change the Volume Label to read "H&S Performance," by typing it into the dialog box below that title.
- 6 Click "Start" to reformat the card with the new information.
7. After the reformat process is complete you need to contact H&S Performance to get the necessary files.



WARRANTY & DISCLAIMER

All Black Maxx race tuners are considered high performance racing parts, and are intended and developed for non-street-legal, off-highway, closed course racing use ONLY!

Installation of this product on a non-sanctioned race vehicle, on ANY road, public or private, is STRICTLY PROHIBITED in the United States and Canada. This product may cause the vehicle it is installed on to exceed federal emissions limits, and therefore cannot be installed on any vehicle that has been certified or registered for highway use. Removing your emissions equipment, including but not limited to, exhaust gas recirculation(EGR), catalytic converter, or Diesel Particulate Filter(DPF), is against federal regulations set forth by the EPA, when not used for closed-course sanctioned racing. H & S Performance, LLC strongly recommends that all emissions equipment be left in place at all times on any vehicle that has been registered or certified for highway use. By purchasing or installing this high performance product, you release H & S Performance, LLC of any and all liabilities, and assume all responsibility for making sure your vehicle is compliant with all local, state, and federal emissions regulations. By installing this product you agree to these terms and conditions, and also acknowledge that installing a high performance product on your vehicle may void your manufactures warranty. By installing this product, you assume all risks and liabilities, including but not limited to, loss of vehicle warranty, fines, and/or civil penalties. By installing this product, you assume all associated risks and liabilities, and in no way will hold H & S Performance, LLC liable for any unlawful use, mis-use, or consequential damages.