

# **HYPERAKTIVE**

## **PERFORMANCE SOLUTIONS**

### **Hyperkontrol Boost Management System**



### **Installation and Operation Manual**

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## INTRODUCTION

Thank you for purchasing the Hyperkontrol Boost Management System. We truly believe it represents the next level in competition-grade boost control. We sincerely appreciate that you have chosen Hyperaktive Performance Solutions to help you with your boost control, and we hope that this product will exceed your highest expectations.

This instruction manual will explain some of the concepts of the operation of the Hyperkontrol Boost Management System, and will show you how to properly install, configure, and use it. If this is your first time using a Hyperaktive Performance Solutions product, or if you're a veteran, we hope that this instruction manual will provide you with the information you need to maximize your use of the Hyperkontrol Boost Management System.

Should you have any questions or require technical assistance, feel free to call (847) 321-1982, email [sales@hyperaktiveps.com](mailto:sales@hyperaktiveps.com), or post your question in the "Electrical" section on the YellowBullet.com forums which we proudly sponsor.

Sincerely,

Joe Oplawski

Hyperaktive Performance Solutions

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[www.hyperaktiveps.com](http://www.hyperaktiveps.com)

## DISCLAIMER

It is the responsibility of the purchaser to follow all guidelines and safety procedures supplied with this product. Any other manufacturer's products used with this product must have their guidelines and safety procedures appropriately followed. It is also the responsibility of the purchaser to determine compatibility of this device with the vehicle and other components used in the operation of this product.

Hyperaktive Performance Solutions assumes no responsibility or liability for damages resulting from accident, improper installation, misuse, abuse, improper operation, lack of reasonable care, incompatibility with other products or components, or any other reasons.

Hyperaktive Performance Solutions assumes no responsibility or liability for damages resulting during the use of products manufactured or sold by Hyperaktive Performance Solutions on vehicles used for racing or competition purposes.

Hyperaktive Performance Solutions neither recommends nor approves the use of products manufactured or sold by Hyperaktive Performance Solutions on vehicles which may be driven on public highways or roads, and assumes no responsibility or liability for damages resulting from such use.

Installation, correctly or otherwise, of this product signifies that you have read this document and agree to the terms and conditions for use stated within.

## PRODUCT PACKAGE CONTENTS

Your package should include the following items:

- Hyperkontrol main unit
- Hyperkontrol solenoid valve assembly
- Two pressure sensors (0-75 PSI or 0-75 PSI boost and optional 0-100 PSI wastegate)
- Serial communications cable
- Wiring harness

Please inspect your package contents for completeness before beginning installation. If you should find that a component has not been included, please contact Hyperactive Performance Solutions as soon as possible by calling (847) 321-1982 or emailing [sales@hyperactiveps.com](mailto:sales@hyperactiveps.com).

## OPERATIONAL MODES

The Hyperkontrol Boost Management System is one of the most advanced boost control products available on the market today. Generally speaking, the Hyperkontrol unit controls boost pressure by manipulating gas pressure at the wastegate. This is achieved by carefully controlling the solenoid valve assembly. As the user, you simply configure the software for the desired pressures at the wastegate and the Hyperkontrol takes care of the rest. Additionally, Hyperkontrol allows you to configure two ground-switched auxiliary outputs.

Hyperkontrol offers four modes of operation that support almost any racing scenario:

### MPH Mode

In MPH Mode, Hyperkontrol uses an internal accelerometer and other components to determine the vehicle's speed from initial launch to 250 MPH. Users will configure Hyperkontrol to manipulate wastegate pressure based on the vehicle's speed in 1 MPH increments (for example, 55 PSI of wastegate pressure at 163 MPH).

### Time Mode

In Time Mode, Hyperkontrol allows the user to specify wastegate pressure based on elapsed time since the launch, in 0.05 second increments up to 12.5 seconds (for example, 55 PSI of wastegate pressure at 3.65 seconds).

### MPH Wheel Race

MPH Wheel Race mode is used for street cars, “Texas Mile”, Bonneville/land speed and etc. Use of this mode requires a vehicle speed sensor. Similar to MPH and Time modes, MPH Wheel Race mode uses a launch input to signify the beginning of the run and begin datalogging.

### MPH Wheel Street

MPH Wheel Street mode is similar to MPH Wheel Race mode. It requires a vehicle speed sensor but it does not use a launch input and does not datalog.

### Dyno

Technically, dyno mode is not a “competition” mode. However, it is an advanced mode that allows users to view all of the sensors and switches the Hyperkontrol knows about in real-time. Dyno mode allows the user to specify a desired wastegate pressure and the Hyperkontrol will maintain this pressure. This mode provides an excellent tuning tool to aid in determining the relationship between wastegate pressure and manifold/boost pressure on a specific vehicle. Dyno mode can also act as a diagnostics and troubleshooting tool for both the Hyperkontrol system, finding system leaks and more.

## ADDITIONAL FEATURES

Hyperkontrol provides several unique additional features that sets it apart from other boost controllers:

### Zoom and Reduce Switches

Hyperkontrol has two switch inputs for “Zoom” and “Reduce”. While the Zoom switch is activated, Hyperkontrol will add the configured pressure at the wastegate in addition to the current setting. For example, if Zoom is configured for 10 PSI and at 63 MPH the Hyperkontrol is set to 30 PSI, activating the Zoom switch at 63 MPH will cause Hyperkontrol to maintain 30 (base) + 10 (Zoom) or 40 PSI total at the wastegate.

In Zoom mode, Hyperkontrol will only add wastegate pressure until the configured max boost level is reached. In the example above, if max boost is hit at 33 PSI of wastegate pressure, Hyperkontrol will not attempt to reach the full 40 PSI (30 + 10). Similarly, the Reduce switch will cause a reduction in wastegate pressure below the current setting. Using the example above, activating the Reduce switch at 63 MPH will cause Hyperkontrol to maintain 30 (base) - 10 (Reduce) or 20 PSI total at the wastegate.

These switches can be activated by the driver. If they are controlled by the engine management system, advanced boost control and/or traction control scenarios can be devised.

### Pre-Launch

The pre-launch setting is another unique feature of the Hyperkontrol. The setting for pre-launch represents the pressure that will be maintained at the wastegate after “Race” is enabled but before “Launch”. Pre-launch gives the user more fine-grained control of boost pressure after the burnout but before the run has started. This setting is typically used with cars that footbrake in order to assist in spooling during staging.

### Data Logging and Comparison

Hyperkontrol will log data throughout the run, and connecting the software to the controller will allow users to view the actual wastegate and boost pressures. Additionally, these values can be saved or loaded comparison purposes. The Hyperkontrol software will allow users to compare the current settings, the actual values from the run, and previous settings in both a table and graphical format.

### Max Boost

Unlike many boost controllers, Hyperkontrol also enables the user to configure a maximum boost pressure at all data points. This ensures that, regardless of the wastegate setting, no more boost will be made. This can be a valuable tuning tool for exploring new wastegate pressures, new plumbing, or even new wastegates. Additionally, the Max Boost setting can act as a safety in case of a failure of the wastegate pressure sensor. If the wastegate pressure sensor has failed before the run starts, the Hyperkontrol system will not activate. But, if the wastegate sensor fails after launch, Hyperkontrol will attempt to control the boost by manipulating the wastegate pressure automatically.

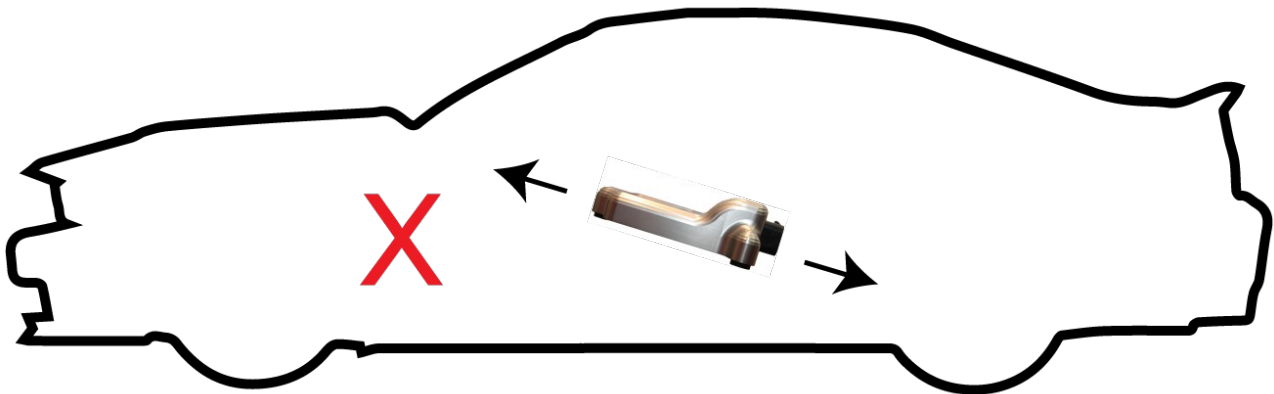
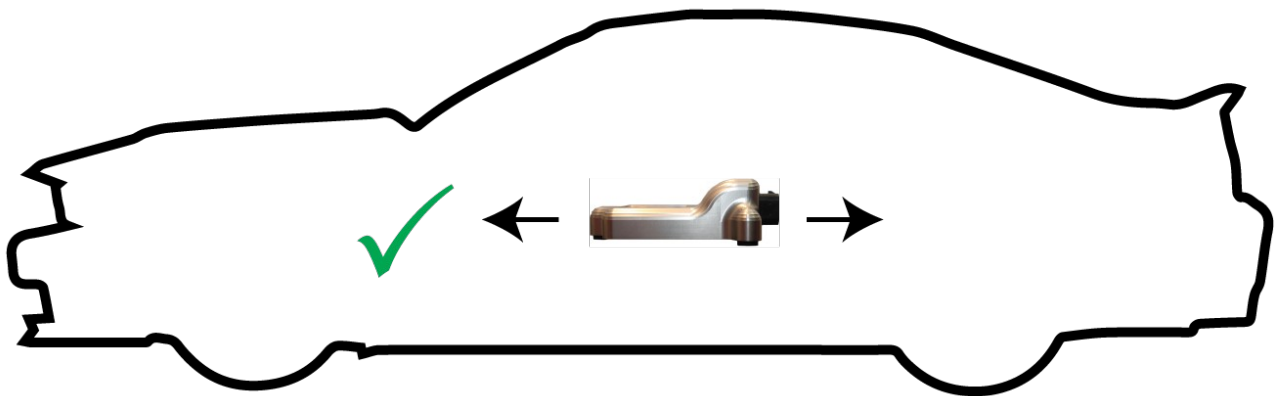
## PRODUCT INSTALLATION

### Mounting and Plumbing

The Hyperkontrol Boost Management System has a precisely calibrated accelerometer inside. Because of this, it is extremely important to mount the unit properly.

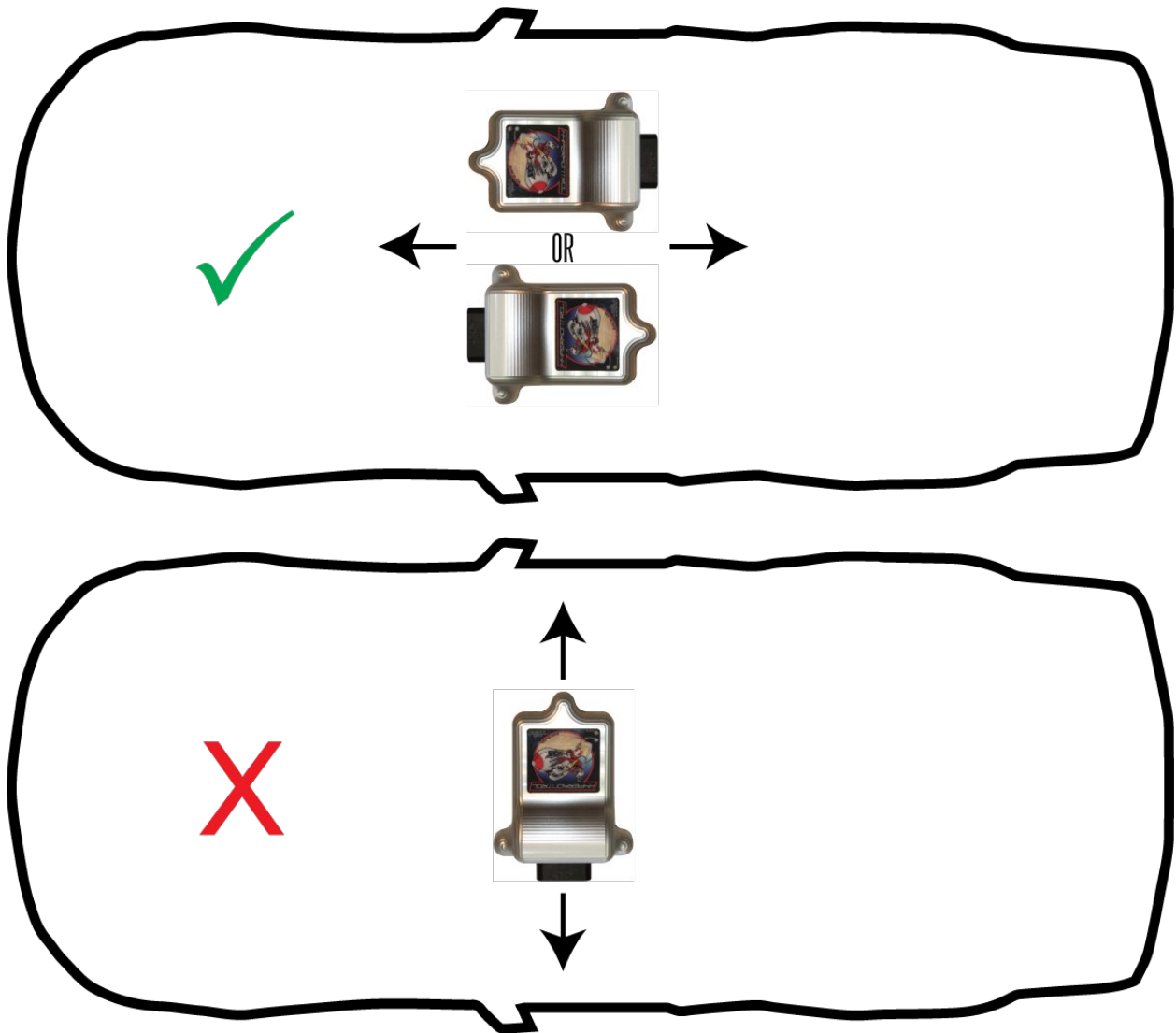
#### *The Hyperkontrol unit*

1. **must** be mounted inside the vehicle on the included rubber vibration isolation mounts.
2. **must** be mounted in a location where it will not be exposed to moisture or electromagnetic interference (EMI). For example: do **not** mount it next to ignition modules
3. **must** be mounted perfectly level, with the label facing up





4. **must** be mounted with the connector in-line with the direction of travel (facing front or rear)



Failure to mount the unit properly may result in imprecise boost control (at best) or unintended operation (at worst). When in doubt, contact Hyperaktive Performance for guidance on proper mounting and installation.

As programming the unit requires connecting the serial cable, it is suggested to mount the unit in an accessible location, or to make a serial cable to the appropriate length to reach the unit at all times.

### **The Solenoid Valve Assembly**

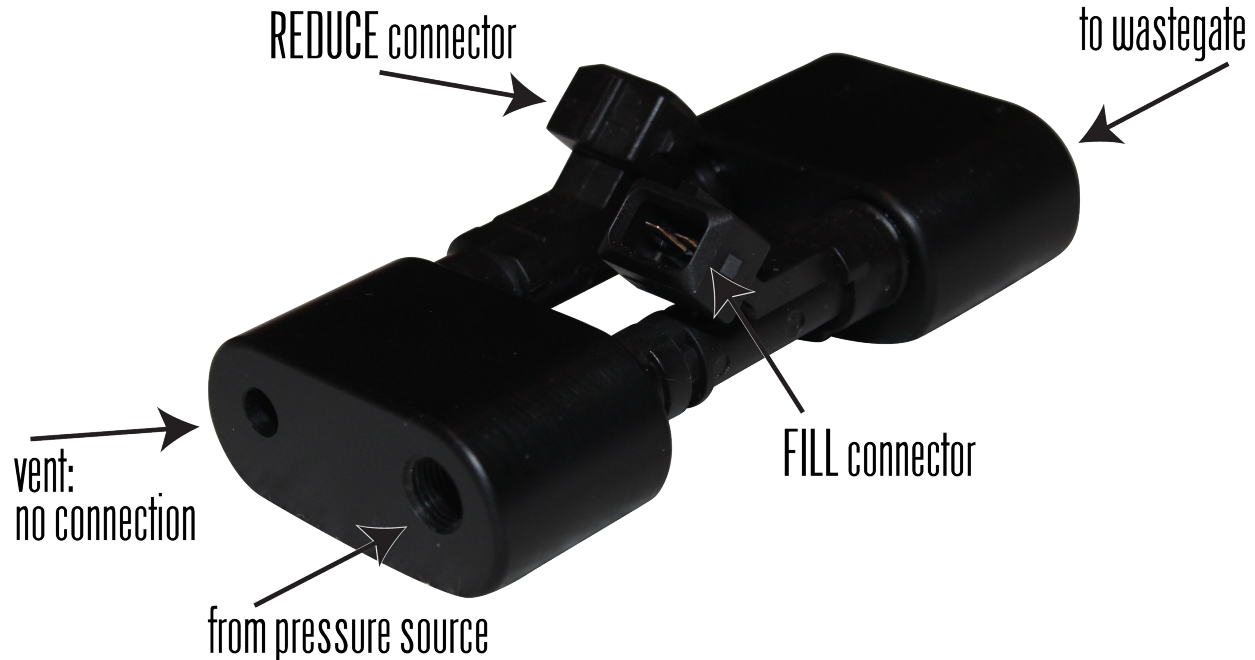
1. **must** be placed close to the wastegates
2. **must** use the mounting holes provided

The solenoid valve assembly has two electrical connections - one for each solenoid. Make sure to connect the appropriately labeled connector to the solenoid indicated in the picture above.

**FILL:** The fill side is connected to the pressure source (for example, the CO2 bottle). It has a 1/8 NPT fitting and a smaller port. The smaller port is to allow the REDUCE solenoid to vent excess pressure.

**DO NOT** attempt to connect anything to the empty port on the solenoid valve assembly. Blocking or connecting anything to the vent may result in imprecise boost control or may damage the solenoid valve assembly.

**REDUCE:** The reduce side is connected to the wastegate pressure control input.



Failure to properly mount the solenoid valve assembly may result in imprecise boost control. The further the solenoid valves are from the wastegate, the slower the response time.

### **The Pressure Sensors**

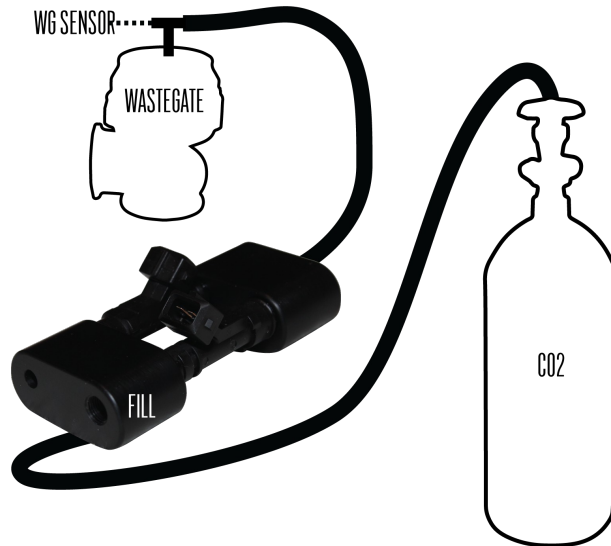
1. **must** be mounted directly on or fed directly from the intake manifold (boost pressure sensor)
2. **must** be mounted directly on the wastegate (wastegate pressure sensor)
3. **must not** be mounted directly on the solenoid valve assembly (wastegate pressure sensor)

Failure to mount the boost pressure sensor either directly on or using a short tube connecting to the intake manifold will result in imprecise boost pressure readings and may affect the performance of the Max Boost settings.

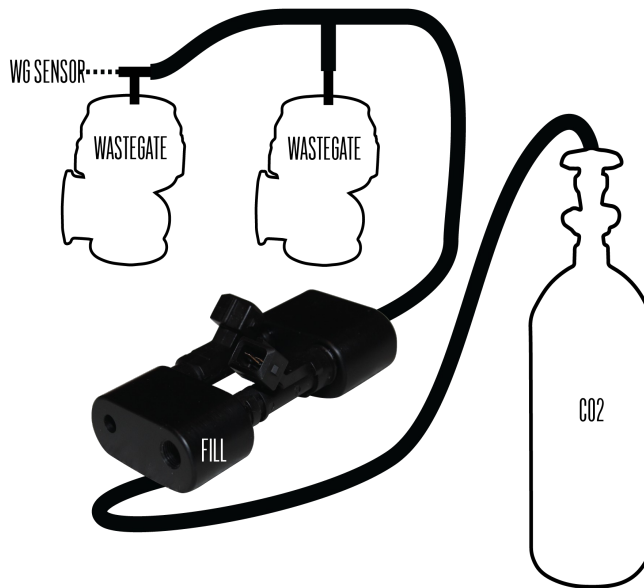
Mounting the wastegate pressure sensor on the output of the solenoid valve assembly will result in unintended operation of the controller. The solenoid assembly's operation will cause erratic wastegate pressure readings, which will lead to unintended operation of the controller. Mounting the wastegate pressure sensor on the wastegate is a good choice.

### ***Wastegate Plumbing***

The following diagram illustrates proper plumbing for a vehicle with a single wastegate. Note that a stainless steel T should be used to attach the pressure sensor if the wastegate only has one port.



For vehicles with two (or more) wastegates, install the sensor on one wastegate and use T connections to the other wastegates.



## Wiring and Lights

The Hyperkontrol Boost Management System comes with a pre-wired harness that has both terminated and non-terminated connections. The connections are detailed in the following table and pictures.

Connector or Color	Function
Black	Ground
Red	Power (+12V)
Purple	Race Mode
Blue	Launch
Green	Zoom
Brown	Reduced
Yellow	AUX Output 1
White	AUX Output 2
GATE	Gate Pressure Sensor
BOOST	Boost Pressure Sensor
FILL	Fill Solenoid
REDUCE	Reduce Solenoid
3-pin Deutsch	Program selector
4-pin Deutsch	VSS (Vehicle Speed Sensor)
DB9he	Serial Communications
23-pin AMP	The main connector to plug into the controller

### Lights

There are two lights on the Hyperkontrol unit. One to indicate the unit has power, the other to indicate Race Mode is active.

### Power and Ground

Make sure the power and ground connections are isolated from electrical noise. For ground, a direct connection to the battery or a battery cable run to the center of the car is preferred. For power, a +12V signal switched with the main power is recommended.

### Race and Launch

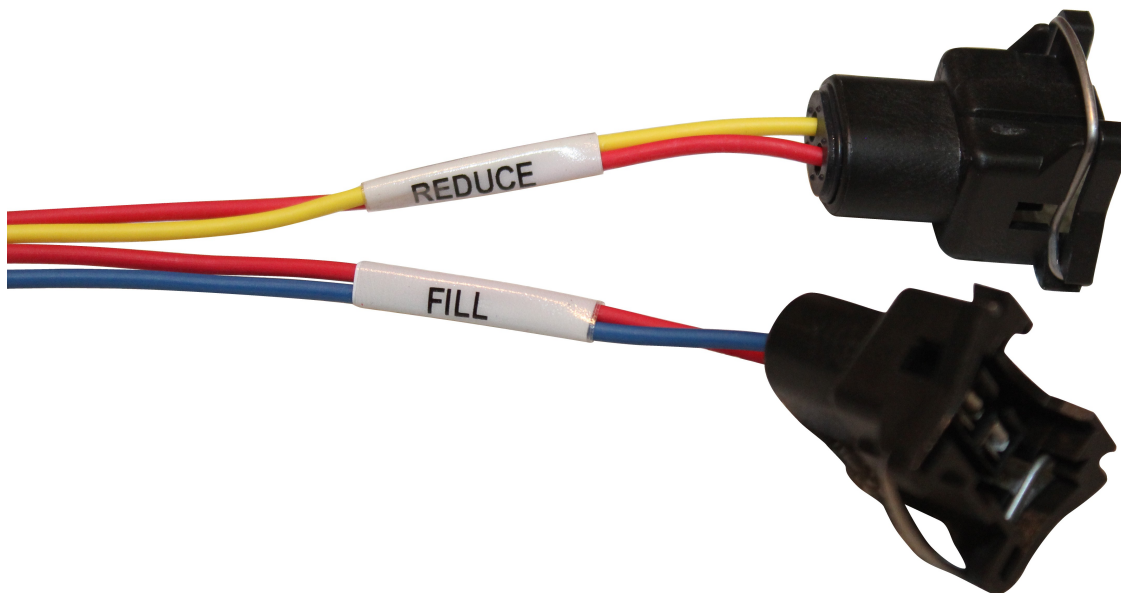
The race and launch connections may either be switched +12V or switched ground. You can configure the software depending on whether you will switch +12V or ground to each connection.

### Zoom and Reduce

The Zoom and Reduce functions are activated by connecting them to ground **ONLY**.

### ***Solenoid Valve Assembly***

The connectors should be appropriately attached to the solenoid valve assembly.



### ***Pressure Sensors***

The connection for each pressure sensor is labeled accordingly.



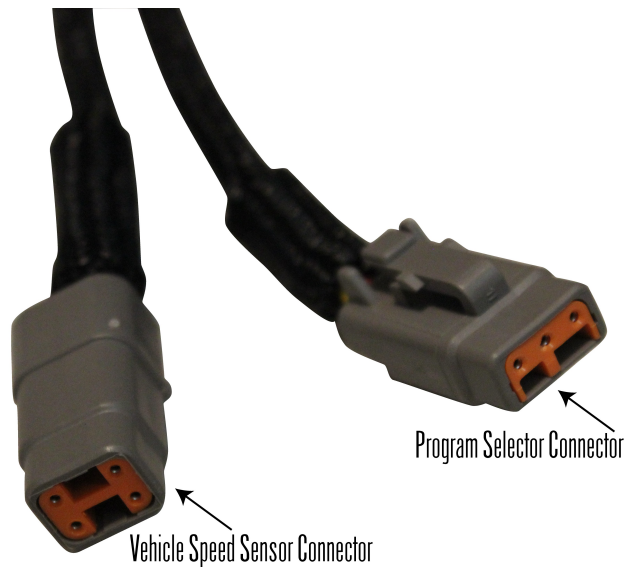
### **Program Selector**

The Hyperkontrol Boost Management System allows a 3-position selector switch to be attached to this plug. The switch allows the user to choose from three different boost management programs. Hyperaktive Performance Solutions provides a 3-position switch and harness for use with this connector.

### **Vehicle Speed Sensor**

If you wish to utilize a vehicle speed sensor, you will need to properly install it and then wire and connect it to the 4-pin Deutsch connector. You will need a DTM04-4P to mate with the Hyperaktive harness' connector. Hyperaktive Performance Solutions can provide a vehicle speed sensor and harness or you can source your own.

**Note:** The Hyperkontrol system will only interact with a wheel sensor that generates between 4-10 pulses per revolution.



The wiring connections for the vehicle speed sensor are:

<b>Connector Pin (Hyperaktive Harness Color)</b>	<b>Function</b>
1 (Black)	Ground
2 (Red/White)	+5V (Supply)
3 (Brown)	Signal
4 (Red)	+12V (Supply)

### ***Serial Connector***

The supplied serial communications cable connects between the DB9 (serial) connector on the Hyperkontrol harness and your computer.

### ***Main Connector***

The 23-pin AMP connector is the main connector that plugs into the Hyperkontrol unit.



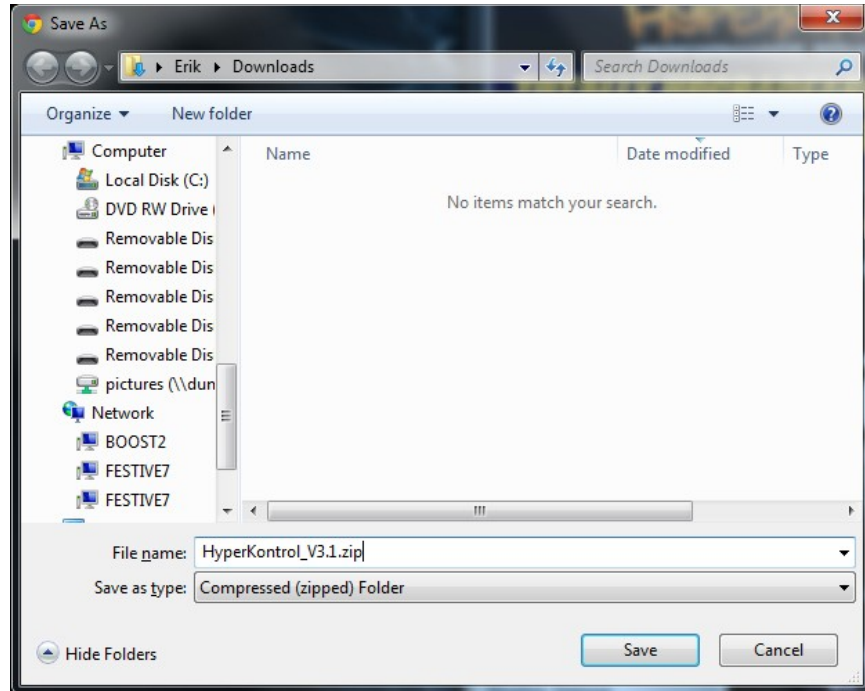
### ***Auxiliary Outputs***

The switched auxiliary outputs are used for connecting the Hyperkontrol Boost Management System to other devices. The auxiliary inputs can only be switched from “no connection” to **GROUND**. If your connected device cannot accept a **GROUND** input you will need an intermediary circuit or relay to accommodate switching your device.

## HYPERKONTROL SOFTWARE

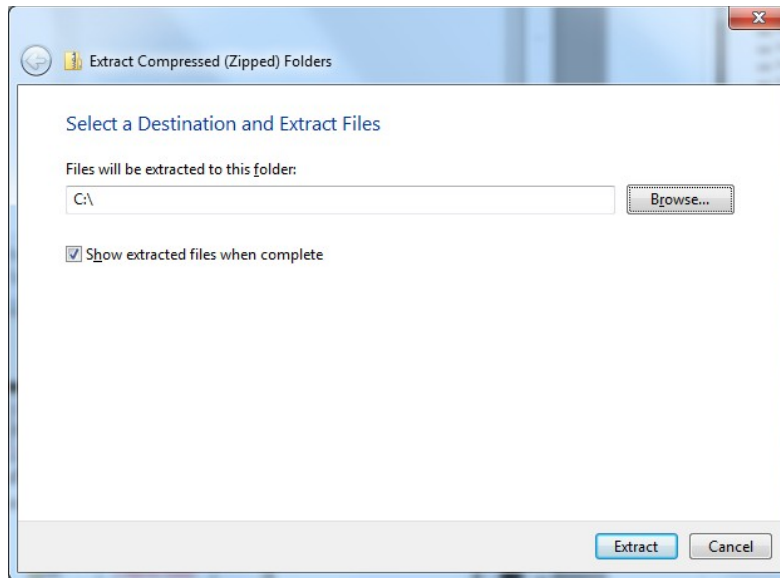
The computer software for the Hyperkontrol Boost Management System can be found on our website.

1. Visit <http://www.hyperaktiveps.com/boost-management/hyperkontrol-boost-management-system>
2. Click “Click here to download our Latest Software!!”.
3. Save the ZIP file to your computer.



4. Right-click the start button and select “Open Windows Explorer”.
5. Find the folder where you saved the ZIP file.
6. Right-click the ZIP file and select “Extract all...”.
7. Type “C:” in the text box.
8. Check the checkbox that says “Show extracted files when complete”.
9. Click “Extract”.

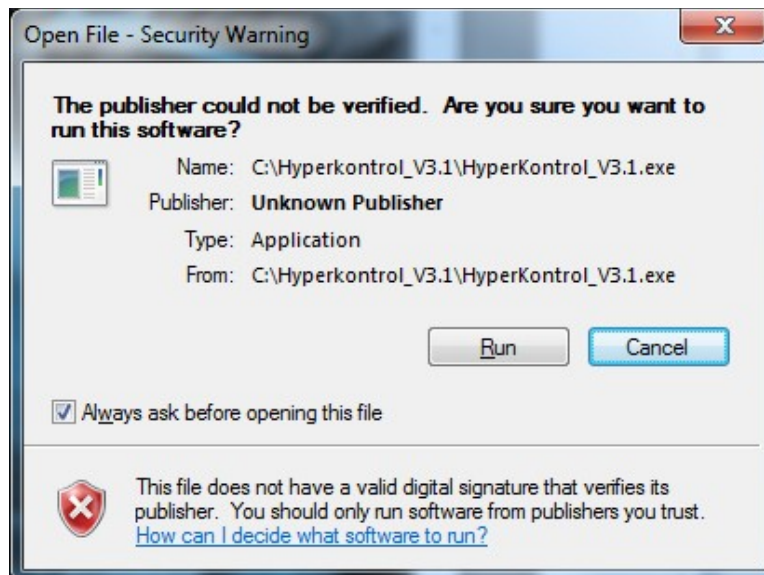




10. Double-click on the Hyperkontrol folder that you see in the new window.
11. Right-click on one of the HyperKontrol EXE files.
12. Select “Send to” and then select “Desktop (create shortcut)”.

**NOTE:** The executable file with “Q” in its name is the “quick” version of the Hyperkontrol software. It has a lower resolution of time/MPH for easier and faster set-up, or for users who do not require as much precision. The Q software has a resolution of 0.2 seconds and 4 MPH.

You now have a shortcut on your desktop that you can double-click to run the Hyperkontrol management software. The first time you run the software you may see a warning:



Be sure to uncheck the box that says “Always ask before opening this file”, or you will always see this warning when opening the software.

## GENERAL OPERATION OF HYPERKONTROL & SOFTWARE

Using your Hyperkontrol Boost Management System is not very difficult, but you should take a moment to familiarize yourself with the general operation of the software and, ultimately, the controller.

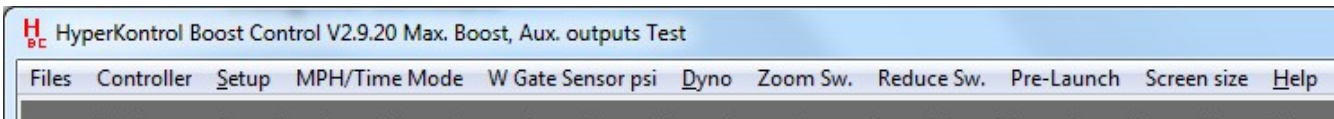
### Boost Management Theory with Hyperkontrol

Generally speaking, the wastegate allows exhaust gas to escape, or waste. Exhaust gas that passes through the wastegate does not pass through the turbine. The less gas that passes through the turbine, the slower it spins, which means the compressor side spins slower, and less boost is generated.

By applying more pressure to the wastegate input, Hyperkontrol can prevent the wastegate from opening. This means more gas passes through the turbine and spins it faster, which spins the compressor faster, which generates more boost.

Essentially, all of the boost management that is done with the Hyperkontrol is achieved by changing the setting of “W Gate psi”. Entering a value of “30”, for example, will cause the Hyperkontrol to maintain 30 PSI of pressure on the wastegate. Whether you are in an MPH-based mode or a Time-based mode, when the desired MPH or elapsed time is reached, Hyperkontrol will apply the pressure value of “W Gate psi” at the wastegate.

Depending on your particular combination of turbo, engine, wastegate and other factors, different



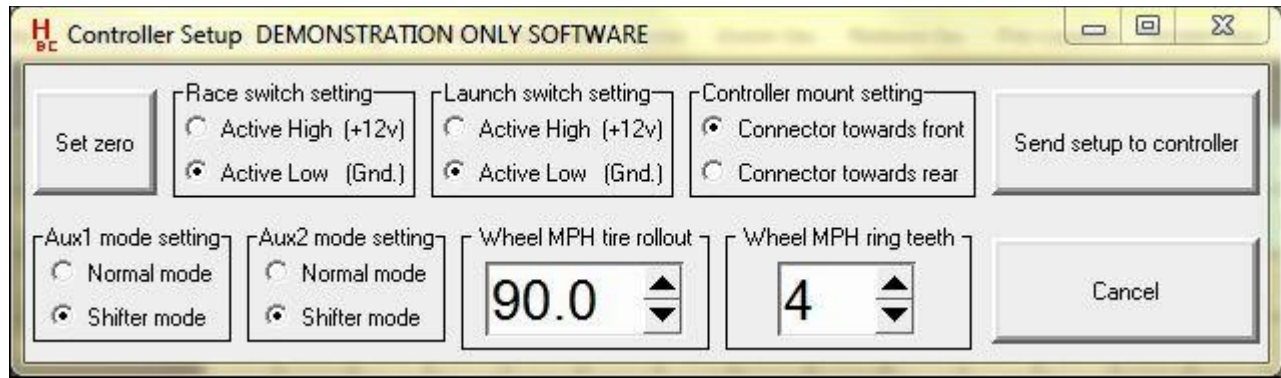
pressures applied at the wastegate will result in different boost pressures. You will need to tune and experiment to determine the wastegate vs boost relationship for your particular set-up.

### Hyperkontrol Software Menu

The Hyperkontrol software menu is fairly simple. All of the menus will be explained in this instruction manual. When you run the software for the first time, it is important to perform an initial set-up of your Hyperkontrol's settings.

### Initial Set-Up of Hyperkontrol

The first time you use the software, it is set to the factory default settings. You set-up the Hyperkontrol by clicking “Setup” in the menu of the Hyperkontrol software. There are several important settings that must be configured in order for Hyperkontrol to function properly based on your installation. Before you do anything else, make sure that you set up your controller. Connect the serial cable, run the software and click “Setup” in the menu bar.



### **Set Zero**

With the engine **off** and the car level, click the “Set zero” button. This will zero-out and calibrate the various sensors that the Hyperkontrol system uses. Setting the zero in this state is very important, as any offset from zero will affect the operation and performance of the controller. This means you must make sure the car is sitting as it will go down the track when setting zero. The tires should be properly inflated, the car should be sitting on the tires and not on stands or ramps, the car should not be in or on a trailer, etc. The process takes approximately 6-7 seconds.

**Note:** If the **Race Mode** switch is **ON**, the software **will not** communicate with the unit.

### **Race and Launch Switch Setting**

These two settings tell Hyperkontrol whether to look for a +12V signal or a Ground signal.

### **Controller Mount Setting**

If the wiring harness connector on the Hyperkontrol unit is facing the front of the car, select “towards front”. If the connector is facing the rear, select “towards rear”. This allows Hyperkontrol to know when the car is moving forwards.

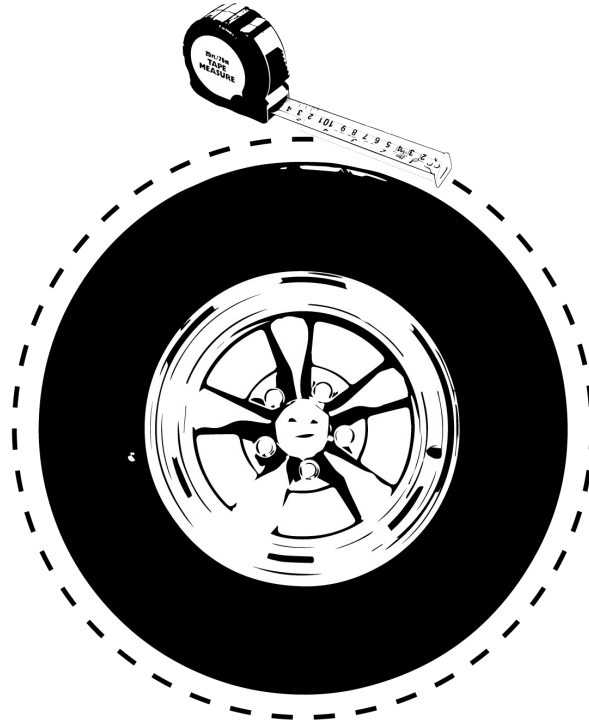
### **Wheel MPH Ring Teeth**

The wheel MPH ring teeth setting is used to determine how many pulses per revolution (PPR) there are for the sensed wheel. Hyperkontrol can utilize a sensor setup that uses anywhere from 4-10 pulses per revolution (PPR). Entering this value incorrectly will result in a speed reading that is wrong.

### **Wheel MPH Tire Rollout**

The tire rollout and ring teeth settings are used together to determine the speed of the vehicle. To measure rollout, you can either:

- Measure the circumference of your tire using a tape measure (more accurate)



- Multiply your tire diameter by 3.14 (approximate)

For example, if you measure a 78.5" circumference with a tape measure, you would enter 78.5 for the "Wheel MPH tire rollout" setting.

If you calculate with a 25" tire,  $25 \times 3.14 = 78.5$ , so you would also enter 78.5 for the "Wheel MPH tire rollout" setting.

### ***Aux1 and Aux2 Mode Setting***

Wastegate pressure, max boost and auxiliary output settings are configured for each increment (MPH or elapsed time). For example, 55 PSI of wastegate pressure at 163 MPH or 3.05 sec. In the case of the auxiliary outputs, you would either configure "ON" (1) or "OFF" (0). For example, "ON" at 163 MPH or 3.05 sec.

There are two modes to control the operation of the auxiliary outputs:

- **Shifter:** When using MPH for Hyperkontrol, an auxiliary output configured for "Shifter" will only activate once. If the vehicle MPH falls below the threshold, the auxiliary output will not reactivate.
- **Normal:** In normal mode, Hyperkontrol will enable/disable the output at each increment (MPH or elapsed time). When Hyperkontrol is using MPH, "Normal mode" will cause the output to turn on and off every time the MPH increment is crossed.

Example run with a setting of “ON” at 35 MPH+

<b>Vehicle Speed</b>	<b>Aux Output</b>
33 MPH	OFF
34 MPH	OFF
35 MPH	ON
34 MPH	OFF
35 MPH	ON
36 MPH	ON

When you are finished configuring the settings, be sure to click “Send setup to controller” in order to program Hyperkontrol.

### ***W Gate Sensor PSI***

Another setting you need to configure before using the controller is the “W Gate Sensor PSI” setting. The Hyperkontrol Boost Management System supports either 0-75 or 0-100 PSI wastegate pressure sensors. When you have made your selection, click the “Controller” menu and then “Send values to Controller”.

### ***MPH/Time (and Other Operation Modes)***

Use the MPH/Time Mode menu to configure Hyperkontrol to use either an MPH-based or time-based mode. There are additionally two other special modes:

- **MPH Wheel Street**
- **MPH Wheel Race**

See the “Operational Modes” and “Driving the Vehicle” sections of this manual for more information on these two special modes.

## PROGRAMMING AND USING THE HYPERKONTROL

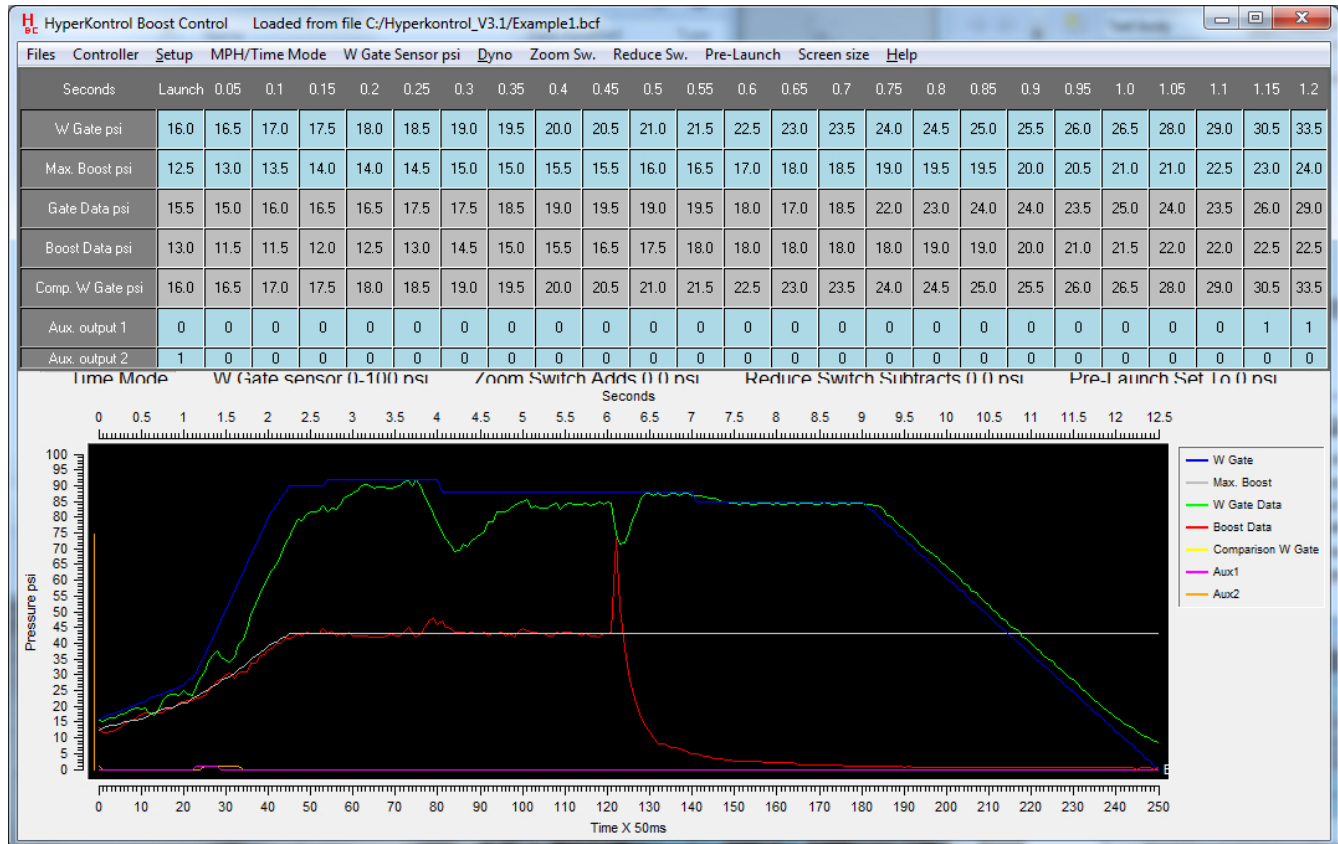
Now that you have configured all of the initial settings, you can start to program the Hyperkontrol for your vehicle. For information about the various keyboard shortcuts in the software, click “Help” and then “Table editing keys.” To adjust the size of the text, click “Screen Size” and select either “Large” or “Small”.

**Note:** If the **Race Mode** switch is **ON**, the software **will not** communicate with the unit.

It is suggested that you configure your computer so that your serial communications device is COM1. The software will look for the Hyperkontrol unit across all your com ports, however using COM1 is the most convenient.

### Entering Values

Clicking in a box or using the arrow keys will highlight the current field in blue. Typing a number in



the box will change its value. Using the +/- keys will increment or decrement the value, respectively.

You can also hold the “Shift” key while using the arrows to highlight a number of boxes. Typing a number will enter that number in all highlighted boxes, and +/- will increment or decrement the value in all highlighted boxes.

The gray-colored boxes are not user-editable. These boxes show you data values from a previous run or from a comparison file.

## **Zoom, Reduce and Pre-Launch**

Each of these menus simply contains a selection for a pressure value that is applied when the situation is active. You will see the set value appear above the graph area.

### **Graph Area**

Below the data points is a graph area. As you begin to enter values, you will see the graph start to take shape. You can zoom in on different areas of the graph:

1. Left-click once to set your first point.
2. Move the mouse to define the zoom-in area.
3. Left-click again

You can right-click on the graph to zoom back out. Left-clicking multiple times will zoom in again and again. Right-clicking will back up to the previous zoom level.

There is a legend to the right of the graph that depicts which colors are graphing which values. All of the sensor, setting, auxiliary and comparison values will appear in the graph.

### **Dyno Mode**

To engage the dyno mode click “Dyno” and then “Start dyno mode.” Hyperkontrol will enter dyno mode. In dyno mode, Hyperkontrol will maintain specific wastegate pressures and other settings until changed. It will ignore any MPH or time readings. Dyno mode is an excellent tuning tool to learn the wastegate-boost pressure response of your set-up.

### **Sending / Receiving Data**

Whenever you make changes to the set-up or configuration of your Hyperkontrol Boost Management System, it is recommended that you send those changes to the unit. This is done from the “Controller” menu. After a run you can download the logged data by connecting to the controller, clicking “Controller” and then “Receive values from controller”.

## **Working With Files**

### ***Loading and Saving***

The Hyperkontrol software can load or save files containing data, set-up and configuration. These operations are accessed from the “Files” menu. Saving values to a file saves the all the current configuration, including the current logged data, switch settings, operational mode, and etc. Loading values from a file loads in all the configuration, data and settings from that file.

### ***Loading Comparison Data***

The Hyperkontrol software supports two methods for loading comparison data, both accessible from the “Files” menu:

#### **Load comparison values from a file**

When selecting “load comparison values from a file”, the Hyperkontrol software will pull all of the “W Gate psi” values from the file and place them into the “Comp. W Gate psi” area. This will allow you to quickly see where your current “W Gate psi” settings are in relation to previously saved files.

#### **Load comparison values from table**

When selecting “load comparison values from table”, the Hyperkontrol software will take the current “W Gate psi” settings and copy them into the “Comp. W Gate psi” area. This lets you copy the current settings before beginning modifications so that you can easily see and compare to what settings you had previously.



## DRIVING THE VEHICLE - DRAG STRIP

The following section lays out a typical run when using the Hyperkontrol Boost Management System.

### The Burnout

When the vehicle is started just before the burnout, the **Race Mode** and **Launch** switches **should be OFF**. When the Hyperkontrol unit is powered and both of these switches are deactivated the Hyperkontrol unit is not managing wastegate pressure. The installed wastegate spring will control the boost in this scenario.

Race Mode	OFF
Launch	OFF
Hyperkontrol	No wastegate management

### Staging

If you are using the 3-position switch to select boost management programs, the desired program **must** be selected **BEFORE Race Mode** is turned on. Changing the position of the switch while **Race Mode** is on will have no effect.

After the burnout, the **Race Mode** switch should be **ON**.

#### *Staging With Foot-brake*

In a car that uses a foot-brake during staging, you should set the desired boost pressure using the **Pre-Launch** setting. During staging, the **Launch** switch should be **OFF**. The Hyperkontrol will maintain the **Pre-Launch** boost pressure.

Race Mode	ON
Launch	OFF
Hyperkontrol	Pre-Launch Pressure

#### *Staging With Bump Box*

In a car that uses a bump box during staging, the **Pre-Launch** setting is not used. During staging, the **Launch** switch should be turned **ON**. The Hyperkontrol will maintain the **Launch** wastegate pressure setting..

Race Mode	ON
Launch	ON
Hyperkontrol	Launch Pressure

## Staged

When the vehicle is staged the **Launch Mode** switch should be **ON**. **Race Mode** should still be **ON**. The Hyperkontrol will maintain the **Launch** wastegate pressure setting. It is common that the **Launch** switch is connected to the same input that controls the 2-step / launch limiter.

Race Mode	ON
Launch	ON
Hyperkontrol	Launch Pressure

## Launch

When **Race Mode** is **ON** and the launch switch is turned **OFF** *after being on*, Hyperkontrol treats this as the beginning of the run. Either the timer starts incrementing (**Time Mode**) or the accelerometer and other components start tracking vehicle speed (**MPH Mode**). The Hyperkontrol will begin following its programming and recording data.

Race Mode	ON
Launch	ON → OFF
Hyperkontrol	Programmed Pressures

## After the Run

The **Race Mode** switch should be turned **OFF** at the end of the run (the shutdown area is a good place to do this). This will cause the Hyperkontrol unit to save the logged data internally. Saving the data takes 6-8 seconds. **DO NOT** kill the power to the Hyperkontrol unit before this time is up. If the power is turned off before the save is completed you will lose the data from the run.

Once in the pits, the run data can be downloaded from the Hyperkontrol. Connect the serial cable, start the Hyperkontrol software and then click “Controller” and “Receive values from controller”. This will retrieve the wastegate and boost pressure data from the controller. The graph and table will both be populated with the data from the run.

## DRIVING THE VEHICLE - “STANDING MILE”

For “standing mile” or other long-distance type events, the MPH Wheel Race mode should be used. This mode is essentially the same as the standard MPH mode, but it uses a vehicle speed sensor.

## DRIVING THE VEHICLE - “STREET RACE”

For “street”-type races that have no “defined” start, the MPH Wheel Street mode should be used. Since there is no “launch” in this type of race, boost management begins as soon as the **Race Mode** switch is turned **ON**.

## TROUBLESHOOTING

If you are experiencing issues with your Hyperkontrol system, please check the following troubleshooting steps.

**Problem:** Controller wont connect.

**Possible Solution:** Verify that only one LED is on. The unit cannot be in Race mode when trying to connect. If both LEDs are on you must turn Race mode OFF. If you cannot turn Race mode OFF it is possible the polarity setting for the switch is incorrect. See the “Connecting the purple wire...” troubleshooting section.

**Possible Solution:** Make sure that you are using the latest version of the Hyperkontrol software. You can obtain the latest software by visiting:

<http://www.hyperaktiveps.com/boost-management/hyperkontrol-boost-management-system>

Older versions of the software had issues detecting the correct communications port. If you still have issues after updating to the latest software, please contact Hyperaktive Performance Solutions.

**Problem:** Connecting the purple wire causes the unit to go directly into Race Mode, which makes it impossible to connect the software.

**Solution:** Disconnect the Purple wire. Race mode should turn OFF. Connect to the Hyperkontrol unit with the software, go to Setup – Show Controller Setup and verify the polarity setting for the Race mode switch.

**Problem:** Solenoid valve cycles extremely fast when testing or driving.

**Possible Solution:** Make sure that the wastegate pressure sensor is not mounted on or very close to the solenoid valve assembly. Mounting the sensor too close to the solenoid valve assembly will almost always cause these types of oscillations. Re-mount the sensor as close to the wastegate as possible.

**Possible Solution:** Check the wastegate plumbing for leaks. By using Dyno mode and manually controlling the pressure to the gate you can listen for solenoid valve cycling. The more the valves cycle the bigger the leak likely is. Make adjustments to the fittings and tubing until the valve cycling is reduced.

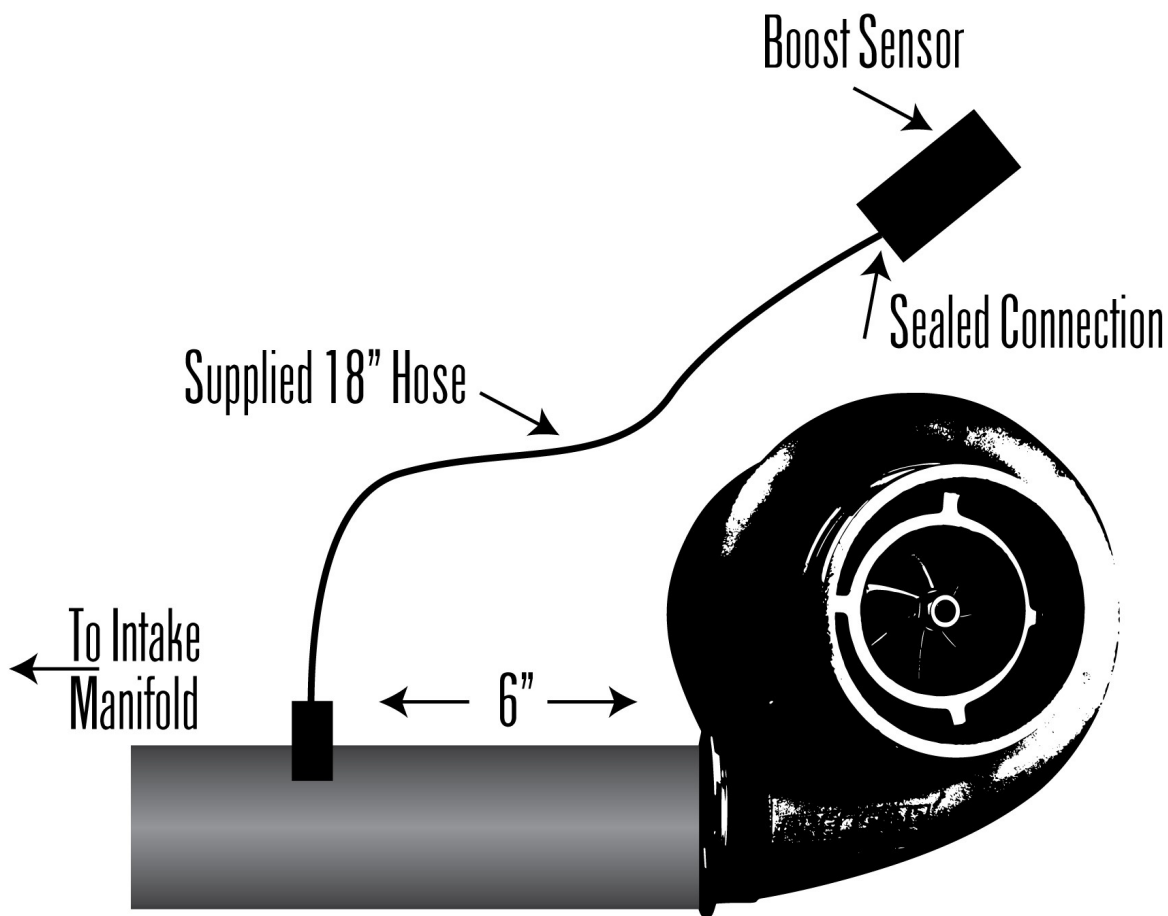
## APPENDIX A – NHRA PRO MOD INSTALLATION

For vehicles competing in the NHRA Pro Mod class, the Hyperkontrol Boost Management System is the spec/mandatory boost controller. NHRA and Hyperactive Performance Solutions have mandated specific installation instructions in the class rules.

### Boost Sensor

NHRA-versions of Hyperkontrol have very specific mounting instructions for the boost sensor. Hyperactive Systems provides an 18" hose with a boost sensor sealed to one end. This hose must be used **as supplied**.

The hose attachment must be no further than 6" from the compressor outlet of the turbocharger. The supplied 18" hose enables remote-mounting of the sensor in a convenient location and provides for easy access to NHRA officials for testing and inspection purposes.



## APPENDIX B – MOUNTING DIAGRAM

You can print this page and use the markings to drill your holes for mounting the Hyperkontrol unit.

