



Hyperpac

HYPERTECH PERFORMANCE AUTOMOTIVE COMPUTER

User Manual

Welcome and thank you for purchasing the HyperPAC™

You are now the owner of the world's first Performance Automotive Computer, packed with FIVE distinct programs...Performance Tuning, Drag Strip, Dynamometer, Engine Monitor, and Diagnostics. In addition, your HyperPAC™ has the ability to accept more exciting new software programs that are on the way.

Based on years of dynamometer-developed engine tuning and track testing experience, Hypertech designed the HyperPAC™ to be so easy to operate because each program is loaded with useful HELP screens that make this instruction book really not needed. However, keep it in the glove box and it will always be there, if you need it.

A high-resolution, 3"x4" touch screen provides an easy-to-navigate, user-friendly interface. The touch screen only shows the buttons that apply to the current screen being viewed, eliminating cumbersome button combinations and multiple operations to navigate through programs. A "Smart Keyboard" or number pad screen to enter numbers and text appears automatically, but only when needed. Simply follow the instructions for mounting the HyperPAC™, connect it to the vehicle's diagnostic port, press the "power on" button, and follow the instructions on the HyperPAC™ screen to complete the installation.

Remember, always drive safely and obey the traffic laws, whether you're using your HyperPAC™ or not. We hope that you have as much fun using your new HyperPAC™ as we have had creating and developing its many unique features!

Sincerely,
Hypertech

HyperPAC™ User Manual

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Installing the HyperPAC™

You should find included with the HyperPAC™ a clamp, plastic spacer, and 4 screws (fig. A). Several holes are provided to allow adjustment for the mounting location (fig. B). With the HyperPAC™ laying face down, align the plastic spacer to the holes on the back of the unit (fig C). Place the clamp on top of the plastic spacer, with the lift tab pointed to the left or right of the HyperPAC™ screen (fig D), and align it with the holes in the spacer. Insert the screws provided and tighten (fig E).



Figure A

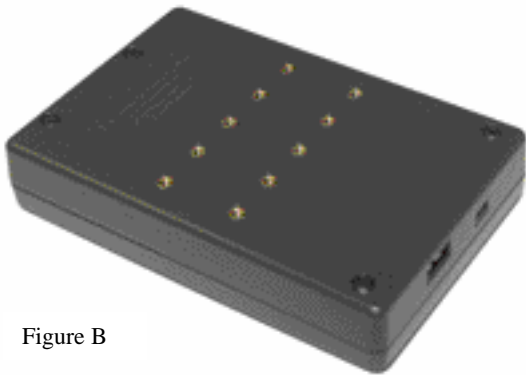


Figure B

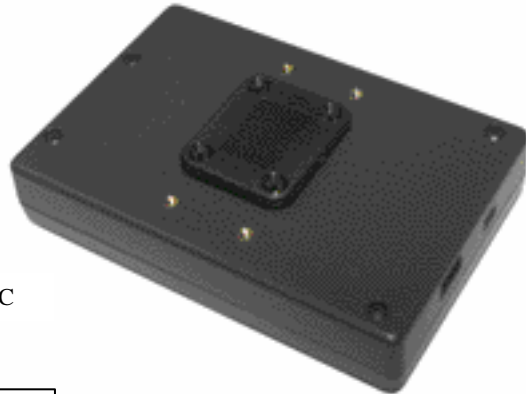


Figure C

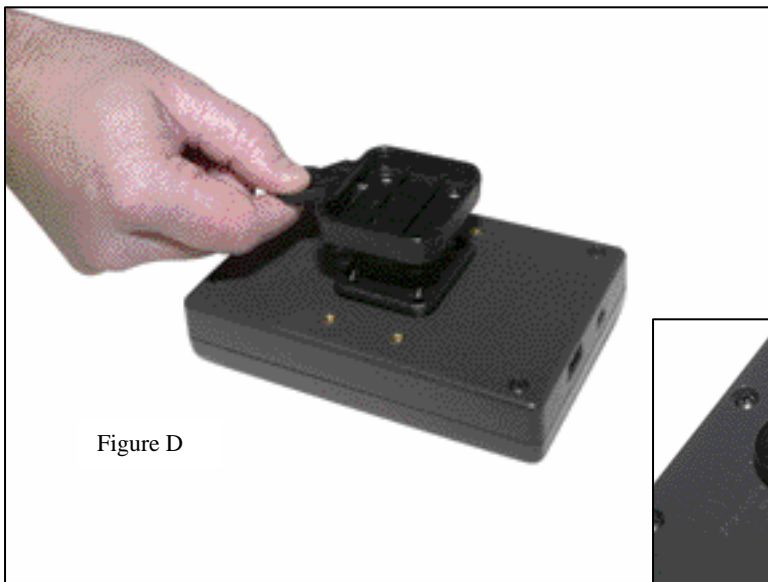


Figure D

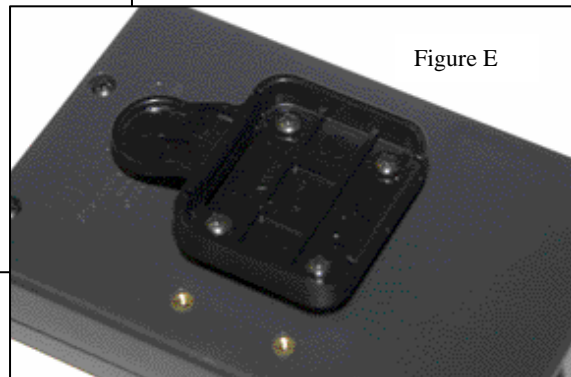


Figure E

HyperPAC™ User Manual

Installing the HyperPAC™
Included with the HyperPAC™ is a suction cup mount base (fig F). Locate a position on the windshield to mount the HyperPAC™ that will not obstruct the driver's view. Suggested mounting locations are in the center of the windshield (fig G), or on the far left of the driver, near the A-pillar (fig H).



Figure F



Figure G



Figure H

Installing the HyperPAC™ Secure the Suction Cup Mount

The suction cup mount can be adjusted by loosening the adjustment knobs and moving the mounting points (fig I). For best results when mounting, make sure the surface of the windshield and the suction cup are both clean. Position the suction cup with the latch pointing down towards the dash. Press in on the latch in the open position to extend the suction area away from the plastic cup. Press the suction cup against the windshield. Once the suction cup is stuck to the windshield, press the mount against the cup and secure the latch (fig J). The cup should be secured on the windshield. Test by tugging lightly on the mount to insure it is secure.



Figure I



Figure J

Mount the HyperPAC™

To mount the HyperPAC™ unit on the mount base, align the clamp with the platform on the mount base and lightly press the HyperPAC™ unit until it snaps into place (fig K). Make sure you have the HyperPAC™ screen positioned correctly. The power button and speaker vents should be on the right of the unit with the Hypertech logo at the bottom. Adjust the mount to position the screen in the desired location, and tighten the adjusting knobs. The platform on the mount base will swivel to allow for ultimate screen adjustability. To remove the unit, pull the tab on the clamp towards the HyperPAC™ unit to release the clamp.

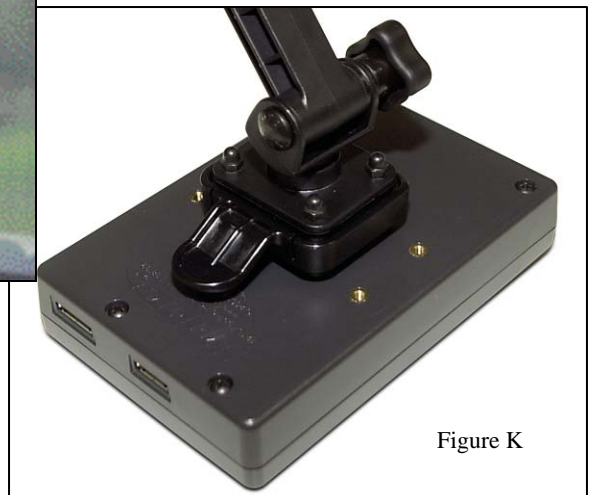


Figure K

Installing the HyperPAC™ Connect the Cables

With the key in the off position, connect one end of the provided cable to the port on the lower right side of the HyperPAC™ (fig L). Locate the Data Link Connector (DLC) under the driver's side dash panel. Plug the HyperPAC™ cable into the DLC. Make sure the cable is plugged in completely to ensure a good connection (fig M).



Figure L



Figure M

Route the cable up around the dash so as to not interfere with any accessories. DO NOT wrap the cable around any accessories such as the parking brake lever, gear selector, etc. Make sure any slack in the cable is located so that it doesn't interfere with the driver's feet, pedals, or other moving objects.

Getting Started and System Setup

Every time the unit first powers up the screen will display the HyperPAC™ logo for about 10 seconds while the system boots up. This process is necessary because the HyperPAC™ is not just a tuning programmer; but it is truly a “mini” computer with its own operating system similar to a PC. That is how the HyperPAC™ got its name, the “pac” in HyperPAC™ stands for “Performance Automotive Computer” and add HYPER to the front and you have the “Hypertech Performance Automotive Computer.”



After the system boots up the unit will display the welcome screen and then lead you through some system setup screens. This setup process will only take place the first time you use your HyperPAC™.

After the initial setup has been performed the unit will always go directly to the HyperPAC™ Main Menu after the system boots up.

If you ever need to change any of the setup parameters you can access them through the VEHICLE/OWNER INFORMATION button on the main menu.

Welcome to the HyperPAC experience.

The system has detected that this is your first time using your HyperPAC. Before getting started you will be taken through some setup screens where you will need to enter your Vehicle and Owner information.

This setup is only required the first time you use your HyperPAC and you will not be required to perform this setup for future use.

If you should need to change any of this information in the future you may do so by entering the "Vehicle / Owner Information" from the MAIN MENU.

Press "Next" to continue.

NEXT

WARNING: Obey all laws when using the HyperPac™ Performance Automotive Computer. Use the HyperPac™ with caution and an emphasis on safety. Do not operate the HyperPac™ while driving. Do not take your eyes off the road. Operating the HyperPac™ while driving can lead to a fatal or serious accident. The HyperPac™ is not intended for street use when in the Drag Strip or Dynamometer operating modes. When in these modes, use only in designated areas, closed courses, drag-strips, or racetracks. When making Drag Strip or Dynamometer runs, always perform the run setup procedures while the vehicle is not in motion. By touching ACCEPT you agree to have read and understand the HyperPAC™ user manual.

ACCEPT

The first step is to properly align the touch screen. Paying close attention, touch the center of the target. Once the touch screen has been properly aligned the unit will display "Touch Screen Setup Complete."

Touch Screen Alignment 1

The first step is to properly align your touch screen.

Touch the center of the target as it moves to different locations on the screen. Once the touch screen is properly aligned the screen will read:

"Touch screen setup complete"



Touch Screen Alignment 2

Touch the center of the target.



Touch Screen Alignment Complete


Touch Screen Setup Complete


Adjust the display brightness and contrast by moving the slider bar to the right or left. You may also set the display to be **White text** with a **Blue background** or **Blue text** with a **White background**. Most people may prefer to use the white background during the day and the blue background during the night. Touch ENTER after making display adjustments.

Display Settings

Use these controls to adjust the screen to your desired settings.

Blue on White


- **Brightness** +


- **Contrast** +

Use the up and down arrows to set the current time of day and select am or pm. Every test that you perform will be automatically time-stamped with the current time and date. Touch ENTER after making your selections.

Current Time

Enter the current time of day and touch ENTER.

am

: **pm**

HyperPAC™ User Manual

Use the up and down arrows to set the current time of day and select am or pm.
Touch ENTER after making your selections.

Current Date

Enter the current date and touch ENTER.

| Day | Month | Year |
|-----|-------|--------|
| ▲ | ▲ | ▲ |
| 1 | / 6 | / 2005 |
| ▼ | ▼ | ▼ |

BACK HELP ENTER

Use the keyboard to enter your user/owner name, and Touch ENTER to continue.

User Name

Enter a User Name, touch ENTER to continue.

Name :

| | | | | | | | | | |
|---|---|---|---|---|---|---|----|----|-----|
| Q | W | E | R | T | Y | U | I | O | P |
| A | S | D | F | G | H | J | K | L | . |
| Z | X | C | V | B | N | M | SP | BS | 123 |

BACK HELP ENTER

After you enter the User Name the HyperPAC™ will request information from the vehicle's computer. The screen will display "Please Wait" while the screen is receiving information.

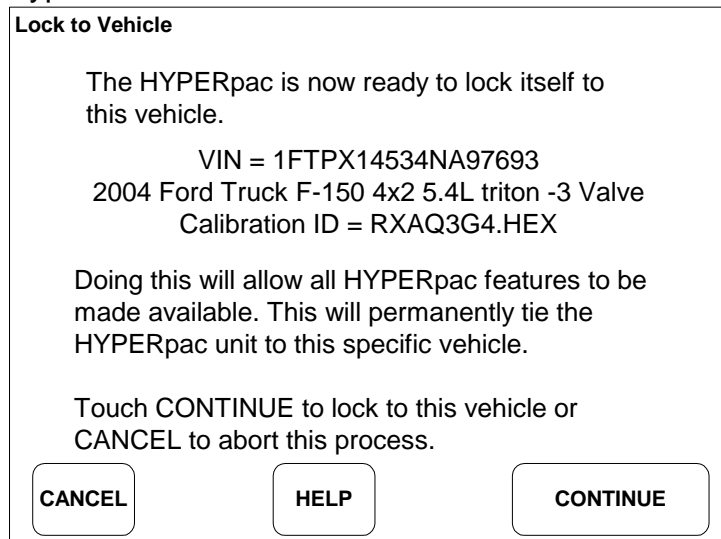


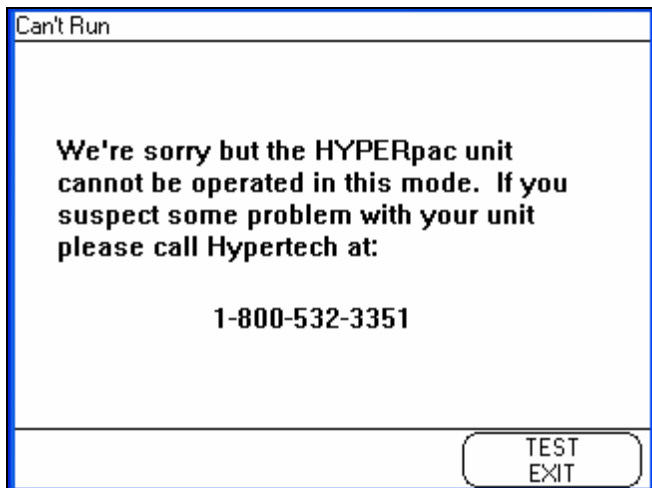
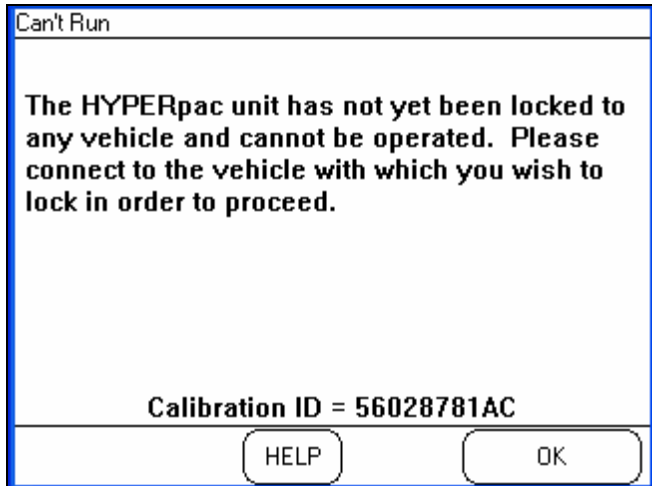
After the vehicle information is verified the unit is ready to be locked to the vehicle before allowing normal operation.

IMPORTANT - The HyperPAC™ can only be used on the vehicle that it is locked to. Once the unit has been locked to a vehicle it must be sent back to the factory to be unlocked before it can be connected to another vehicle.

Touch CONTINUE to lock the unit to the vehicle.

Touch CANCEL if you are not connected to the vehicle that you wish to install the HyperPAC™ unit on.





Select the unit of measure for all test results and touch ENTER to continue.

Example: US Standard will display vehicle speed in MPH (miles-per-hour and the Metric system will display vehicle speed KPH (kilometers-per-our.)

Unit of Measure

Select the desired unit of measure, touch ENTER to continue.

US STANDARD **METRIC**

BACK **HELP** **ENTER**

Select the type of transmission your vehicle is equipped with, Automatic or Manual shift.

Transmission Type

Select the type of transmission that your vehicle is equipped with, touch ENTER to continue.

Automatic **Manual**

BACK **HELP** **ENTER**

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For the HyperPAC™ to generate accurate test results the unit must be programmed for the correct Tire Size. You should **ONLY** answer yes to this question if you have changed the tire size on your vehicle from what it originally came with from the manufacturer.

NOTE: The original equipment tire size can be found on the label in the driver-side door jamb. Verify that the size shown on the label is the same as what is printed on the sidewall of the tires installed on the vehicle.

Tire Size Change

Have you changed your Tire Size?

No Yes

BACK HELP ENTER

First, use the up and down arrows to enter the Original Equipment Tire Size as shown on the label in the driver-side door jamb. Touch ENTER after making all selections.

Original Equipment Tire Size

Use the UP and DOWN arrows to select the Tire Size as originally equipped on the vehicle. Touch ENTER to select and continue.









| Width | Profile | Diameter | Height |
|-------|---------|----------|--------------|
| ▲ | ▲ | ▲ | ▲ |
| 265 | / 65 | × 16 | OR 29.50 in. |
| ▼ | ▼ | ▼ | ▼ |

BACK HELP ENTER

Second, use the up and down arrows to enter the New Tire Size as shown on the sidewall of the tires that are currently installed on the vehicle. Touch ENTER after making all selections.

New Tire Size

Use the UP and DOWN arrow keys to select the new tire size.
Touch ENTER to select and continue.
The stock tire size is 265/65x16

| Width | Profile | Diameter | Height |
|---|---|---|---|
|  |  |  |  |
| 265 | / 65 | x 16 | OR 29.50 in. |
|  |  |  |  |

BACK HELP ENTER

For the HyperPAC™ to generate accurate test results the unit must be programmed for the correct rear axle Gear Ratio. You should **ONLY** answer yes to this question if you have changed the rear axle gear ratio on your vehicle from what it originally came with from the manufacturer.

Gear Ratio Change

Have you changed your Gear Ratio?

BACK HELP ENTER

First, use the up and down arrows to enter the Original Gear Ratio as shown on the label in the driver-side door jamb.
Touch ENTER after making all selections.

Original Equipment Gear Ratio

Use the UP and DOWN arrow keys to select the Gear Ratio as originally equipped. Touch ENTER to select and continue.

Factory Gear Ratio

4.10:1

BACK HELP ENTER

Second, use the up and down arrows to enter the New Gear Ratio currently installed on the vehicle.
Touch ENTER after making all selections.

New Gear Ratio

Use the UP and DOWN arrow keys to select the new Gear Ratio. Touch ENTER to select and continue.

New Gear Ratio

4.10:1

BACK HELP ENTER

Note: Only factory optional gear ratios are supported.

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The vehicle weight is also used to calculate Horsepower and Torque and therefore it must be entered correctly to provide accurate test results.

Vehicle Weight refers to the “curb” weight of the vehicle as it will be tested. This is not only the weight of the vehicle alone, but should also include any additional weight for fuel, cargo, and the weight of any passengers that are present during a Drag Strip or Dynamometer test.

Your nearest race tracks should have scales to accurately measure the weight of the vehicle as it is to be tested. This is the best way to ensure the highest level of accuracy, but you can obtain the vehicle’s curb weight from the owner’s manual or internet and then add the weight of any passengers, fuel, and cargo. On average gasoline fuel weighs 6.2 lbs. per gallon, so keep this in mind when calculating your vehicle’s overall weight. If you make any changes to the vehicle remember to adjust the vehicle weight setting to maintain the highest level of accuracy.

Vehicle Weight

Enter the current vehicle weight and touch ENTER.

Weight = lbs.

0 1 2 3 4 5 6 7 8 9
.
SPC BS ABC

BACK HELP ENTER

Touch ENTER after entering the vehicle weight and the HyperPAC™ will display the complete Vehicle Information Report.

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Vehicle Information Report

Date: 10/19/2004
Time: 9:50 AM

User Name:

VIN# XXXXXXXXXXXXXXXXXXXX

Year: 2005 **Transmission:** Automatic
Make: Dodge **Tire size:** 275/60/20
Model: Ram **Gear ratio:** 3.92:1
Engine: 5.7L HEMI **Vehicle weight:** 4699 lbs.

MAKE CHNAGES **NEXT**

Touch MAKE CHANGES to update any of the vehicle information, or touch NEXT to complete the initial HyperPAC™ setup and go to the Main Menu.

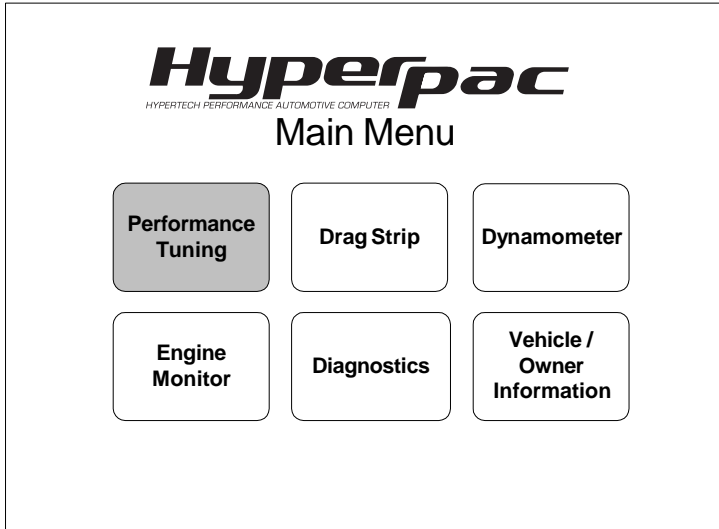
Hyperpac
HYPERTECH PERFORMANCE AUTOMOTIVE COMPUTER

Main Menu

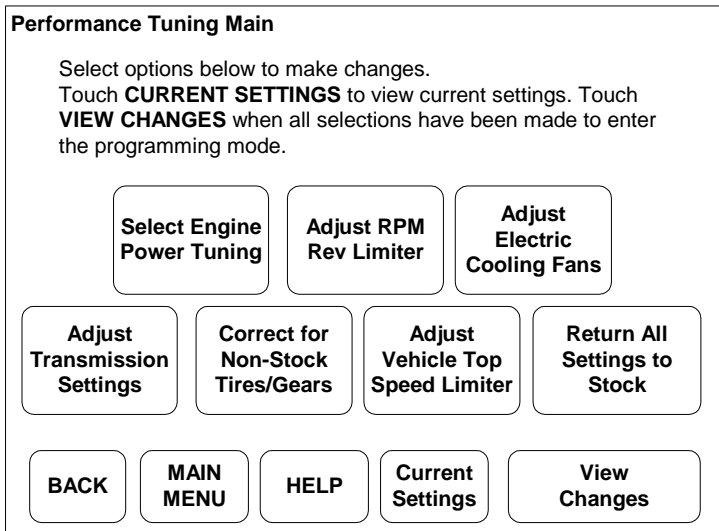
Performance Tuning **Drag Strip** **Dynamometer**

Engine Monitor **Diagnostics** **Vehicle / Owner Information**

PERFORMANCE TUNING PROGRAM



From the HyperPAC™ Main Menu, touch PERFORMANCE TUNING.



Select the Performance Tuning feature you wish to modify.

Note: The Performance Tuning options may vary depending upon vehicle year, make, and model. The HyperPAC™ will only display the features that are available for your vehicle.

Touch **CURRENT SETTINGS** to display a list of what is currently programmed in the vehicle's computer. The first time you connect the HyperPAC™ to the vehicle all performance settings are set to their stock value.

Current Settings

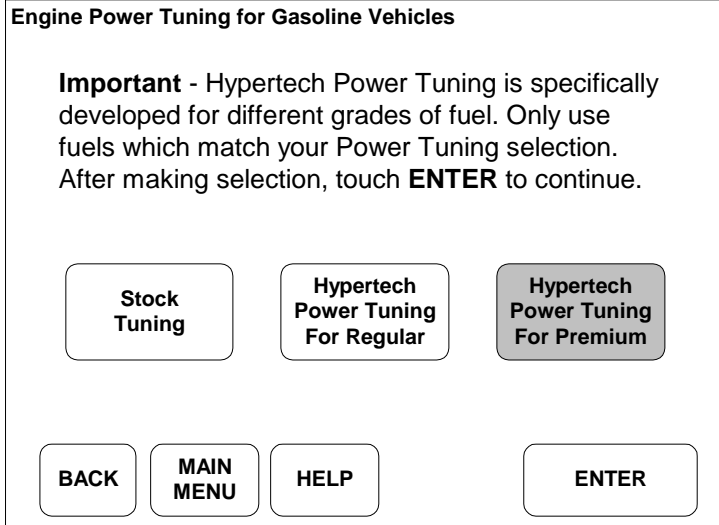
Currently Programmed Selections

| | |
|---------------------|---------|
| Engine Power Tuning | = Stock |
| RPM Rev Limiter | = Stock |
| 1 - 2 Shift | = Stock |
| 2 - 3 Shift | = Stock |
| 3 - 4 Shift | = Stock |
| Shift Firmness | = Stock |
| Top Speed Limiter | = Stock |
| Current Tire Size | = Stock |
| Current Gear Ratio | = Stock |

BACK **MAIN MENU** **HELP** **MAKE CHANGES**

Touch **MAKE CHANGES** to return to the Performance Tuning main menu and select the option that you wish to modify.

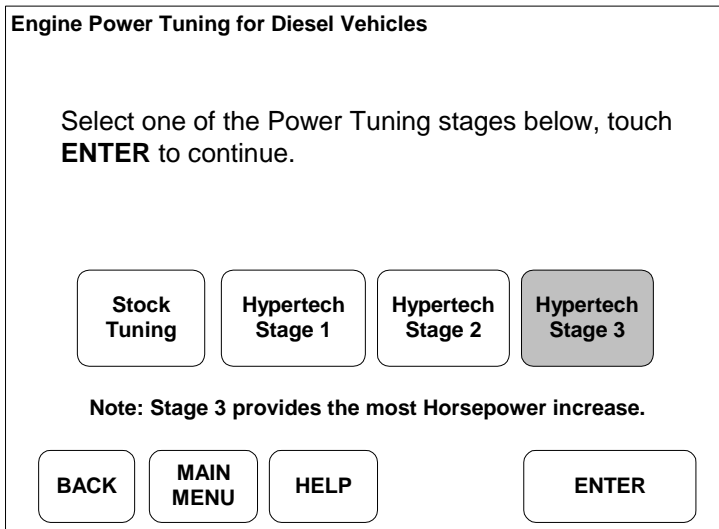
ENGINE POWER TUNING



Select the desired level of Power Tuning® and touch ENTER.

The most powerful 50-State, street legal engine tuning, Hypertech’s exclusive Dual Fuel™ engine tuning for both regular and premium is available for vehicle’s that were originally designed to run on regular low octane fuel. Power Tuning® for Regular should only be used with a minimum fuel rating of 87 octane. Hypertech Power Tuning® for Premium should only be used with a minimum fuel rating of 93 octane.

Visit www.hypertech.com and go to “Dyno Charts” to see the horsepower and torque gains for your vehicle and decide which Power Tuning® setting is best for your vehicle.



Hypertech diesel tuning is offered in 3 different stages to match your individual driving styles, with Stage 3 providing the maximum Horsepower and Torque increases. All Hypertech Power Tuning® is developed for the maximum towing weights allowed by the manufacturer. Refer to your vehicle’s owner’s manual for approved towing weights for your vehicle.

ADJUST RPM REV LIMITER

RPM Rev Limiter

Use **up** and **down** arrows to Raise or Lower the Engine RPM Rev Limiter in 100 RPM increments. Maximum adjustment is +/-500 RPM from stock. Touch **Enter** to select and continue.

Rev Limiter = **Stock**

▲

▼

BACK MAIN MENU HELP ENTER

Use the UP and DOWN arrows to increase or decrease your RPM rev limiter in 100 RPM increments. Touch ENTER after making your selection.

ADJUST ELECTRIC COOLING FAN SETTINGS

Electric Cooling Fan Settings

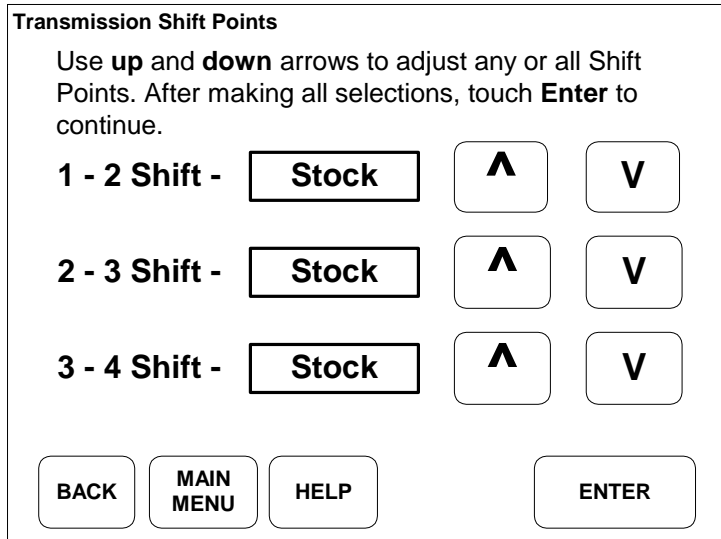
Select the Thermostat that is installed in your vehicle. After making selection, touch **Enter** to continue.

Stock Thermostat 180 Thermostat 160 Thermostat

BACK MAIN MENU HELP ENTER

If you have installed a lower temperature thermostat, select the temperature of the new thermostat and touch ENTER. The HyperPAC™ will adjust the electric cooling fan on/off temperatures for the new thermostat rating.

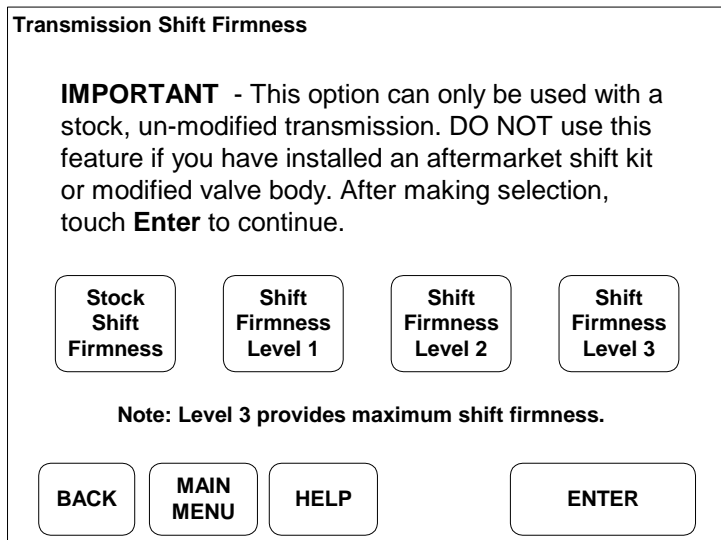
ADJUST TRANSMISSION SHIFT POINTS



For electronically controlled transmissions, The HyperPAC™ will allow you to adjust the vehicles shift points and increase the transmission shift firmness.

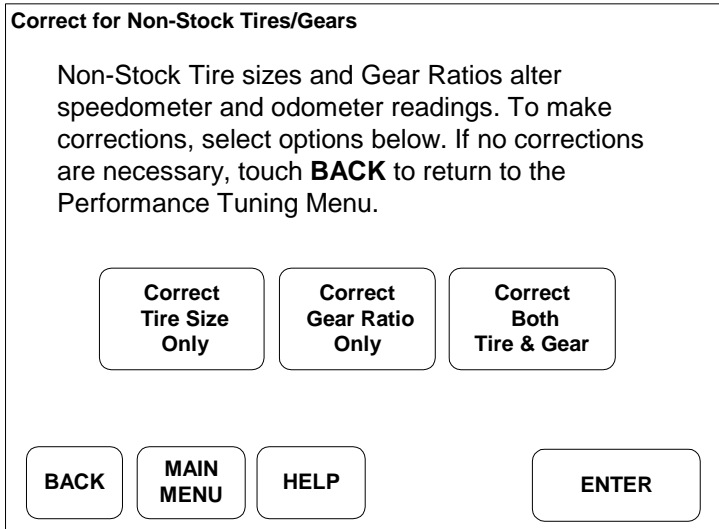
Use the UP and DOWN arrows to individually adjust each shift point and touch ENTER.

ADJUST TRANSMISSION SHIFT FIRMNESS



The Shift Firmness feature increases the transmission line pressure to provide both a firmer and quicker shift to reduce clutch wear and slippage, and reduce transmission temperatures. This feature is for the factory equipped transmission and should NOT be used in conjunction with aftermarket shift kits or other transmission modifications. Failure to comply may result in damage to the transmission. Select the desired level of shift firmness and touch ENTER.

CORRECT FOR NON-STOCK TIRES AND GEARS



Use this feature to calibrate your speedometer and odometer if you have changed the tire height or rear axle gear ratio. Not only will this correct the speedometer and odometer readings (as required by Federal Law), but it will also resynchronize transmission shift points for vehicles equipped with electronically controlled transmissions.

Select CORRECT TIRE SIZE ONLY if you have only changed the tire size.
Select CORRECT GEAR RATIO ONLY if you have only changed the rear axle gear ratio.
Select CORRECT BOTH TIRE & GEAR if you have changed both the tire size and rear axle gear ratio.
Touch ENTER after making your selection.

CORRECT SPEEDOMETER FOR NEW TIRE SIZE

New Tire Size

Use **up** and **down** arrows to select the New Tire Size.
Example: 265/75/16 or you may directly enter the tire height in inches.
After making all selections, touch **Enter** to continue.

| Width | Profile | Diameter | Height |
|----------------------|---------|----------------------|-----------------------------|
| ▲ | ▲ | ▲ | ▲ |
| <input type="text"/> | / | <input type="text"/> | X <input type="text"/> |
| ▼ | ▼ | ▼ | ▼ |
| | | | OR <input type="text"/> in. |

BACK MAIN MENU HELP ENTER

Use the up or down arrows to enter the new tire size as shown on the tire’s sidewall, or directly enter the tire height in inches.
Touch ENTER after making your selection.

CORRECT SPEEDOMETER FOR NEW GEAR RATIO

New Gear Ratio

Use **UP** and **DOWN** arrows to select the new Gear Ratio.
After making selection touch **ENTER** to continue.

New Gear Ratio

Stock

Note: Only Factory optional Gear Ratios are supported.

▲

▼

BACK MAIN MENU HELP ENTER

Use the UP or DOWN arrows to enter the new gear ratio that is installed in the vehicle.
Touch ENTER after making your selection.

ADJUST VEHICLE TOP SPEED LIMITER

Vehicle Top Speed Limiter

Use **UP** and **DOWN** arrows to adjust the Vehicle's Top Speed Limiter to match the speed rating of the tires installed on your vehicle. Example 265/75/H16 Where H = 128 MPH speed rating.
Touch **ENTER** to select and continue.

Tire Speed Rating

Stock

^

v

BACK

MAIN MENU

HELP

ENTER

This feature may only be used with Factory approved speed rated tires. Use the UP or DOWN arrows to select the speed rating of the tires installed on the vehicle.

NOTE: Always obey Federal Traffic Laws.

Programming New Changes

Performance Tuning Main

Select options below to make changes.
Touch **CURRENT SETTINGS** to view current settings. Touch **VIEW CHANGES** when all selections have been made to enter the programming mode.

Select Engine Power Tuning

Adjust RPM Rev Limiter

Adjust Electric Cooling Fans

Adjust Transmission Settings

Correct for Non-Stock Tires/Gears

Adjust Vehicle Top Speed Limiter

Return All Settings to Stock

BACK

MAIN MENU

HELP

Current Settings

View Changes

From the Performance Tunings Main Menu, touch VIEW CHANGES to see a complete list of all of the changes before reprogramming the vehicle.

View Changes & Program New Settings

New Performance Selections are Highlighted

| | |
|---------------------|---------------------|
| Engine Power Tuning | = Hypertech Regular |
| RPM Rev Limiter | = +200 RPM |
| 1 - 2 Shift | = +10 MPH |
| 2 - 3 Shift | = +12 MPH |
| 3 - 4 Shift | = Stock |
| Shift Firmness | = Level 3 |
| Top Speed Limiter | = H-Rated 128 MPH |
| Current Tire Size | = P225/50/16 |
| Current Gear Ratio | = Stock |

BACK **MAIN MENU** **HELP** **MAKE CHANGES** **START PROGRAMMING**

IMPORTANT:

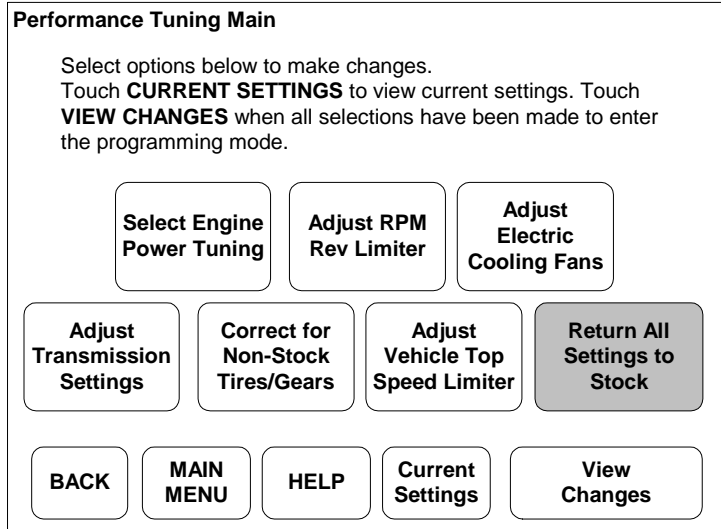
- DO NOT leave the vehicle while programming is in process.
- Make sure the vehicle battery is **FULLY** charged **BEFORE** programming.
- DO NOT operate electrical accessories (radio, windows, wipers, etc.) while programming.
- DO NOT attempt programming while the vehicle is connected to a battery charger.

If all of the changes are correct touch **START PROGRAMMING** to begin the programming process. The HyperPAC™ will lead you through some simple instructions screens requiring you to cycle the ignition on and off, simply follow the instructions on the screen. These Instruction screens may vary depending upon Year, Make, & Model and are not shown in this manual.

If you wish to make more changes before programming the vehicle, touch **MAKE CHANGES**.

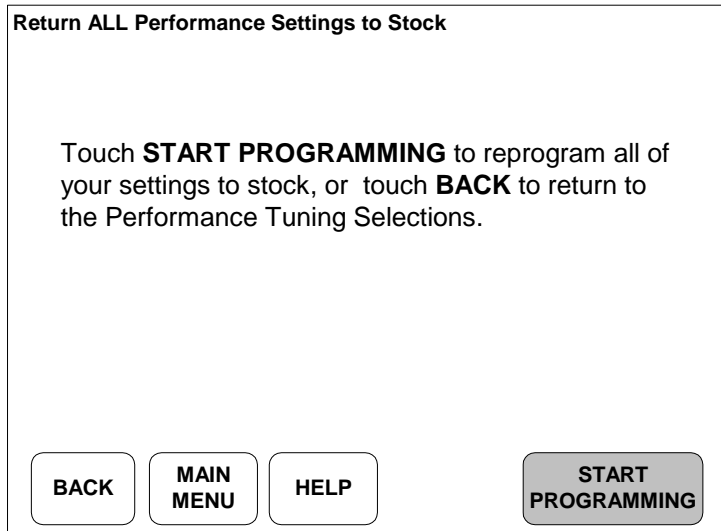
NOTE: The programming process takes approximately 5 minutes. The vehicle's engine cannot be running during the programming process. Never leave the vehicle unattended during the programming process.

RETURNING THE VEHICLE TO THE STOCK PROGRAM



From the Performance Tuning’s Main Menu, touch RETURN ALL SETTINGS TO STOCK.

NOTE: All of the performance tuning features will be reset to the original stock program.

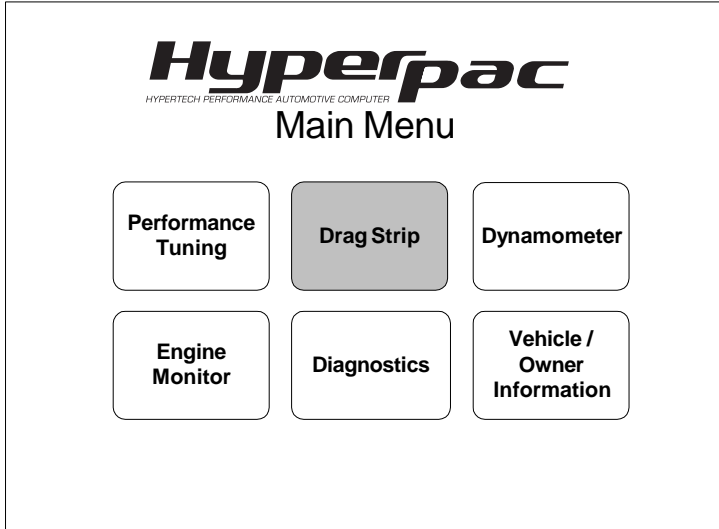


The HyperPAC™ will lead you through some simple instructions screens requiring you to cycle the ignition on and off, simply follow the instructions on the screen. These Instruction screens may vary depending upon Year, Make, & Model and are not shown in this manual.

NOTE: The programming process takes approximately 5 minutes. The vehicle’s engine cannot be running during the programming process.

DRAG STRIP Program

Enter the Drag Strip program from the HyperPAC™ Main Menu by touching the DRAG STRIP button.



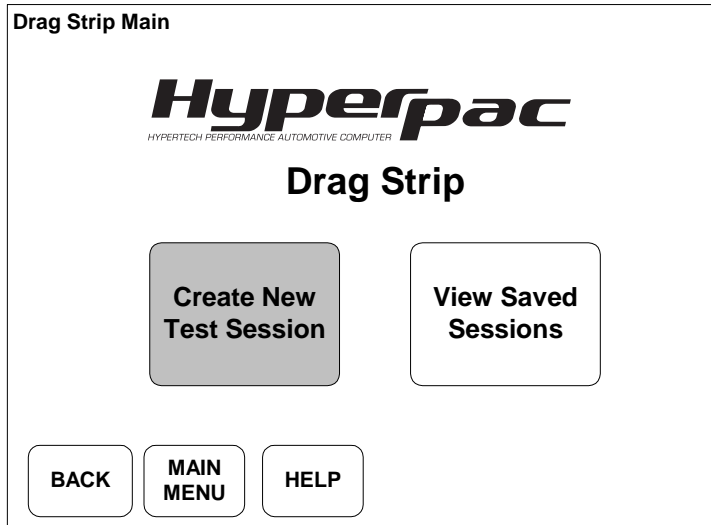
With a real “christmas tree” start, the Drag Strip program allows you to measure your vehicle’s performance and produces an exact duplication of a drag strip time slip, with reaction times, 60ft, 330ft, 1/8th mile, 1000ft, and ¼ mile speeds and E.T.s.

In addition to getting all of the standard time slip information, every run automatically generates a “magazine style” Road Test with acceleration measurements of 0-10, 20, 30, and continuing in ten mile-per-hour increments until you let off the accelerator pedal. You also get a detailed Drive Wheel Horsepower chart and graph, and Data Acquisition report for each run to let you know what the vehicle’s operating conditions were during the test.

For convenience, each run is automatically saved so you can go back and review the results at anytime.

Creating New Test Sessions

When you first enter the Drag Strip program from the Main Menu the following screen will be displayed allowing you to create new test sessions or review any saved test sessions.



To begin a new test session, Touch CREATE NEW TEST SESSION and the HyperPAC™ automatically names the session with the current date and brings up a keyboard for entering session notes.

Explanation of how sessions and runs are named

The HyperPAC™ groups and stores multiple runs within individual test sessions. Each test session is automatically named by the date it is performed on.

Any additional sessions performed on the same day are indicated by the number that appears after the underscore on the far right-hand of the session name.

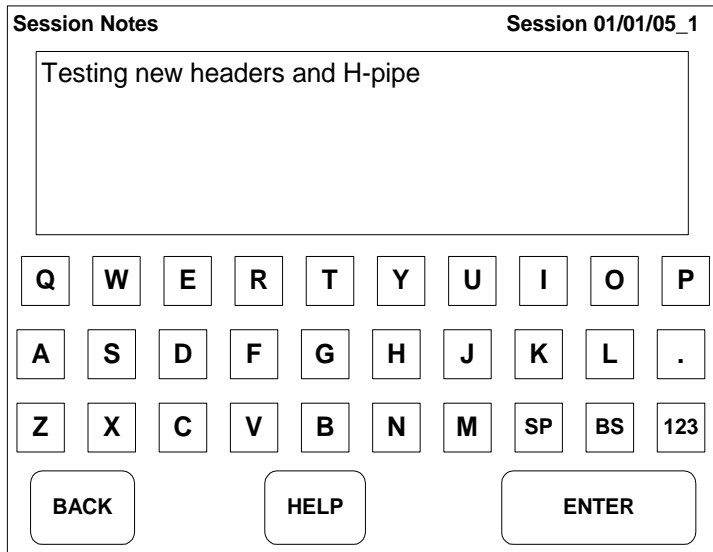
Example 1: (Session 01/01/2005_1 run# 5 of 5) indicates the fifth run of the first test session performed on January 1, 2005.

Example 2: (Session 01/01/2005_2 run# 1 of 1) indicates the first run of the second session performed on January 1, 2005.

NOTE: The session name and run # will always be displayed in the upper right hand corner of the screen.

SESSION NOTES

When you first select Create New Test Session a keyboard is automatically displayed for entering session notes. You are not required to enter session notes and may choose to skip this process by simply pressing enter. Session notes are for keeping track of information that will apply to ALL of the runs within the current session. This is the place to put information that will not change between runs. A good example of this would be entering the current configuration of your vehicle for that test day, example- new cold air kit, new headers, camshaft, etc...



Use the keyboard to type in the session notes and touch ENTER to proceed to the RUN SETUP screen.

NOTE: You can touch ENTER without entering any notes and go straight to the Run Setup screen.

RUN SETUP Screen

The Run Setup screen will always be displayed before making a Drag Strip or Dynamometer a run. This screen contains all of the information and settings that can effect horsepower and torque measurements.

Run Notes

Unlike session notes, the RUN NOTES window is used for entering data that may change for each individual run. An example of this would be things such as, the level of boost that you dialed in for the run, or how you launched the vehicle off of the line. Again, like session notes, it is not required to enter run notes and you can go straight to the Staging Lane by touching STAGE VEHICLE.

Touch the Run Notes window to bring up the keyboard to enter run notes.

NOTE: You can also go back after the run is finished and update the run notes to include information like a missed gear, etc...

Change Setup

For accurate horsepower and torque measurements, each of the settings shown under “Current Setup” must be entered correctly. These settings can be quickly updated before making a run by touching the CHANGE SETUP button.

Weight- Refers to the “curb” weight of the vehicle as it will be tested. This should include any additional weight for fuel, cargo, and the weight of any passengers. Most race tracks have scales to accurately measure the weight of the vehicle as it is to be tested, and this is the best way to ensure the highest level of accuracy. If you don’t have access to heavy duty scales that are designed for weighing vehicles, you can obtain the vehicle’s “curb” weight from the owner’s manual or the vehicle manufacturer’s website. You can estimate the weight of the fuel by using the following formulas: for “regular” octane fuel (6.216 x # of gallons), and for “premium” fuel use (6.350 x # of gallons).

Tire Size and Gear Ratio-The Tire Size and Gear Ratio settings should reflect what is currently installed on the vehicle.

Tire Pressure- refers to the current inflation pressure of the driving tires.

Humidity- The humidity setting is set to a default value of 50%, but for the highest level of accuracy you should enter the current humidity for your location. This can usually be obtained from the weather section of your local newspaper.

Air Temp- Indicates the current ambient (outside) temperature in degrees Fahrenheit or Celsius (the unit of measure is determined by the global setting in the vehicle/owner information).

Baro Pres- Indicates the current Barometric Pressure as measured in inches of mercury.

Tree- Indicates the type of drag strip “chistmas” tree that is currently selected. Choose between the standard “sportsman” and “pro” tree configurations. This selection is located in the Drag Strip Setup screen.

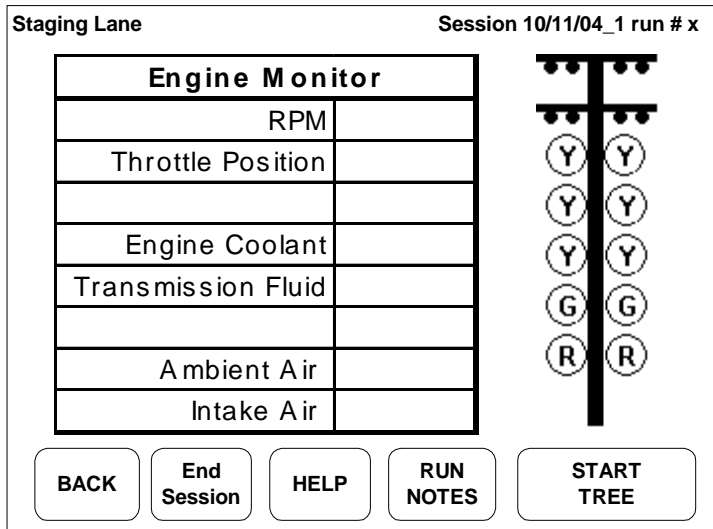
Track – Indicates the setting for a 1/8th mile or ¼ mile drag strip.

Staging the vehicle and making a Run

After verifying that all of your settings are correct, Touch STAGE VEHICLE to prepare to make a run.

The Staging Lane screen will display a racetrack “christmas tree” on the right-hand side of the screen and the Engine Monitor will show important operating conditions on the left-hand side.

Note: The items shown in the Engine Monitor window can vary depending on vehicle year, make, and model.

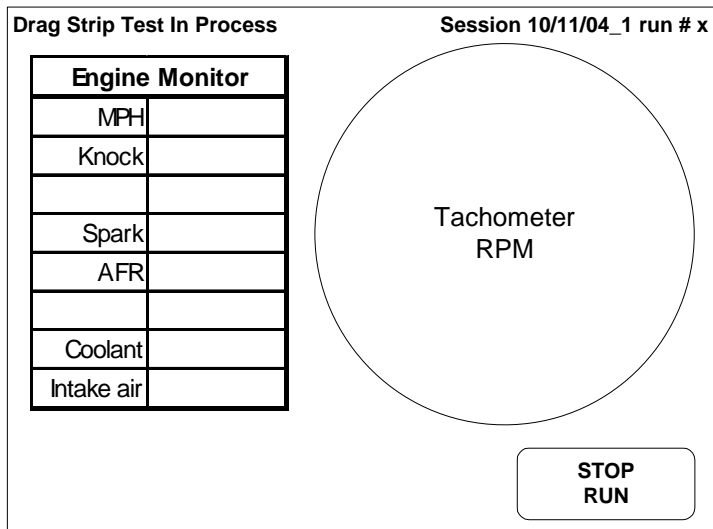


1. Bring the vehicle to a complete stop positioned on the starting line. With the brake pedal depressed, raise the engine RPM to the desired speed at which you want to leave the starting line. When you are staged and ready to make a run, touch START TREE.
2. The first stage light will come on.
3. The second stage light will come on after the HyperPAC™ verifies that the vehicle is not in motion.
4. The tree will begin 1 second after the second stage light comes on. Audible tones will sound in .5 second intervals with each yellow light and then a slightly longer tone for the green light. The standard “Sportsman” tree is the default setting, if you select the “Pro” tree all three (Y) (yellow) lights will come on simultaneously 1 second after the second staging light comes on. The (G) (green) and (R) (red) lights operate as normal.

NOTE: For greater accuracy and consistency between runs use the Engine Monitor window to view the real-time data conditions to start each run with the same operating temperatures.

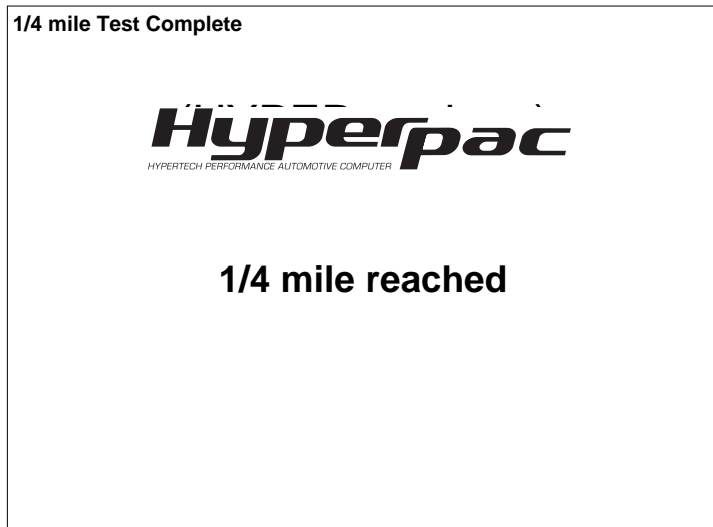
Test in Process

When you leave the starting line the HyperPAC™ will switch to a screen displaying the Engine Monitor readings and a large tachometer.



Note: You may abort the run by touching STOP RUN.

The HyperPAC™ will sound three short beeps once you reach the quarter-mile (or eighth-mile) mark, but the test results will not be displayed until the vehicle comes to a complete stop.



Drag Strip Test Complete



Test Complete

Results will be displayed when the vehicle comes to a complete stop.

Reviewing the test results

During each run the HyperPAC™ records all of the data and automatically processes it into user-friendly reports so you can easily review the test results.

NOTE: From any of the following report screens you can touch NEW RUN to exit and get ready for another run. All of the tests are automatically saved and can be viewed by selecting "Viewed Saved Sessions" from the Drag Strip program's main menu. This process will be explained in Section 2 – Viewing Saved Sessions.

The **Drag Time Slip** is the first screen displayed after the vehicle comes to a complete stop. The HyperPAC™ time slip is an exact replica of a time-slip like you get at the track. It includes the reaction time and 60ft, 330ft, 1/8th mile, 1000', and 1/4 mile speeds and ETs.

Review Drag Time Slip Session 10/20/04_1 run # 1 of x

Drag Time Slip

Road Test

Drive Wheel Horsepower

Data Acquisition

BACK End Session HELP RUN NOTES NEXT RUN

Hyperpac
HYPERTECH PERFORMANCE AUTOMOTIVE COMPUTER

Drag Time Slip

Reaction Time = .462

| | Speed | ET |
|----------|-------|-------|
| 60' ... | 28.70 | 2.74 |
| 330 ... | 55.90 | 6.88 |
| 1/8 ... | 72.90 | 10.34 |
| 1000 ... | 84.30 | 13.28 |
| 1/4 ... | 91.60 | 15.75 |

You can quickly view any of the other test results by touching a report button on the left-hand side of the display.

The **ROAD TEST** report displays acceleration times in 10 mile-per-hour increments from 0 until you let off the gas.

Road Test Session 10/20/04_1 run # x

Drag Time Slip

Road Test

Drive Wheel Horsepower

Data Acquisition

BACK End Session HELP RUN NOTES NEW RUN

| Speed | ET |
|----------|-------|
| 0-10 ... | 0.93 |
| 0-20 ... | 1.80 |
| 0-30 ... | 2.84 |
| 0-40 ... | 4.11 |
| 0-50 ... | 5.49 |
| 0-60 ... | 7.58 |
| 0-70 ... | 9.62 |
| 0-80 ... | 12.07 |

The **DRIVE WHEEL HORSEPOWER** report displays the horsepower at the rear wheels vs. vehicle speed. All of the results are corrected to the STP standard (Standard Temperature and Pressure) for ambient temperature, barometric pressure, and humidity.

Drive Wheel Horsepower Session 10/20/04_1 run # x

Drag Time Slip

Road Test

Drive Wheel Horsepower

Data Acquisition

| Speed | HP | ▲ |
|-------|-------|---|
| 10 | 92.7 | |
| 20 | 130.2 | |
| 30 | 174.8 | |
| 40 | 213.5 | |
| 50 | 251.6 | |
| 60 | 276.7 | ▼ |
| 70 | 266.1 | |

HORSEPOWER GRAPH

▲

▼

BACK

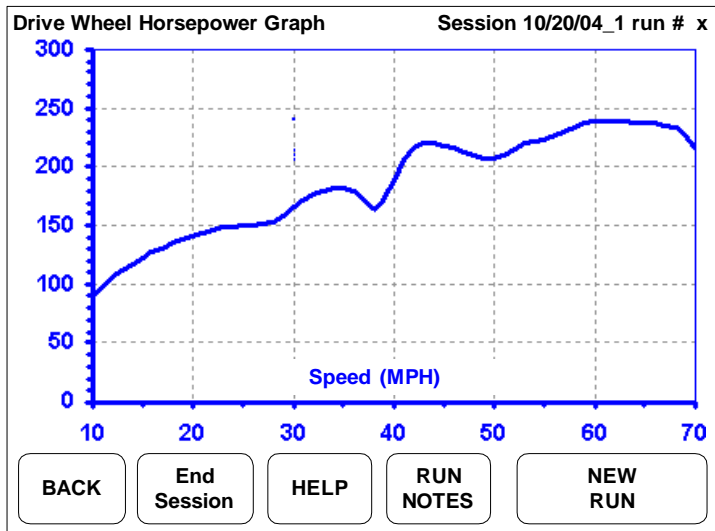
End Session

HELP

RUN NOTES

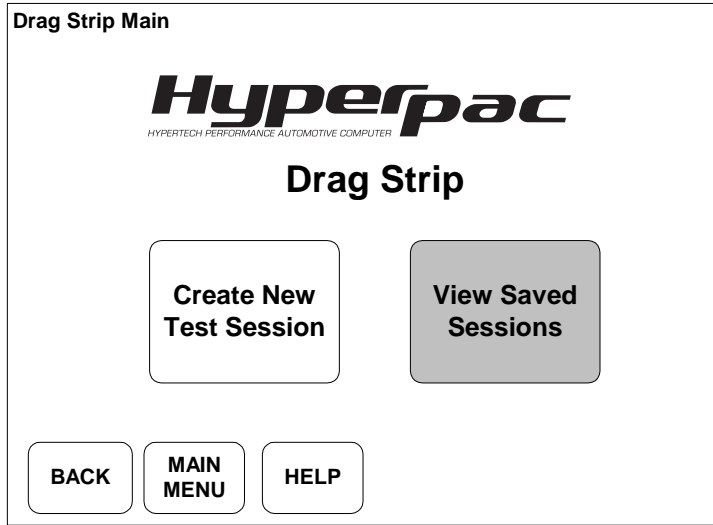
NEW RUN

Touch **HORSEPOWER GRAPH** to view the horsepower results in a graph format.



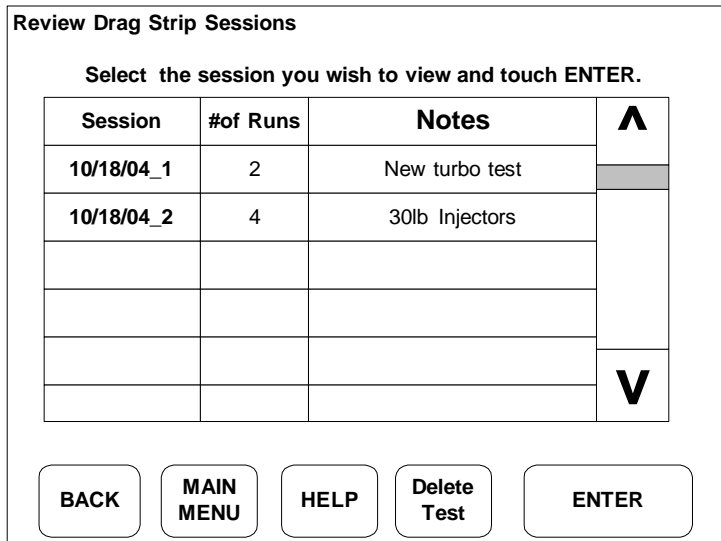
Touch the **BACK** button to return the Horsepower table or select another report.

Viewing Saved Sessions



From the Drag Strip program’s main menu, Touch **VIEW SAVED SESSIONS** to display a list of the saved test sessions.

A listing with all of the saved test sessions will be shown with the session name, number of runs within the session, and a snap shot of the session notes.



Use the vertical scroll bar to highlight the session you wish to view and touch ENTER.

The HyperPAC™ will display any additional session notes so you can see if you have selected the session you want to review.

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Session Notes Session 01/01/05_1

Testing new headers and H-pipe at Memphis Motorsports Park.

| | | | | | | | | | |
|---|---|---|---|---|---|---|----|----|-----|
| Q | W | E | R | T | Y | U | I | O | P |
| A | S | D | F | G | H | J | K | L | . |
| Z | X | C | V | B | N | M | SP | BS | 123 |

BACK

HELP

ENTER

Touch ENTER to proceed and view the test results for that session, or touch BACK to return to the list and select another test session.

In the review mode, once you have selected a test session to review, the report screens operate just like they do in the active mode except the NEW RUN button has been replaced with a NEXT RUN button.

When viewing any of the report screens, touch NEXT RUN to see the same report screen for the following run. Example – If you made three runs in a test session and you are only interested in the time slip information, simply select the DRAG TIME SLIP report and then use the NEXT RUN button to jump to the time slip for the other runs within that session. The session ID and run number are located in the upper right hand corner of the screen to indicate which run is currently displayed.

Review Drag Time Slip Session 10/20/04_1 run # 1 of x

Drag Time Slip

Road Test

Drive Wheel Horsepower

Data Acquisition


BACK

End Session

HELP

RUN NOTES

NEXT RUN



Hyperpac
HYPERTECH PERFORMANCE AUTOMOTIVE COMPUTER

Drag Time Slip

Reaction Time = .462

| | Speed | ET |
|----------|-------|-------|
| 60' ... | 28.70 | 2.74 |
| 330 ... | 55.90 | 6.88 |
| 1/8 ... | 72.90 | 10.34 |
| 1000 ... | 84.30 | 13.28 |
| 1/4 ... | 91.60 | 15.75 |

View each of the other reports (Road Test, Drive Wheel Horsepower, & Data Acquisition) or touch **END SESSION** to return to the Drag Strip program's main menu.

NOTE: The RUN NOTES may be updated in the review mode.

Deleting Saved Sessions

You may delete sessions from the list by highlighting a test session and touching DELETE TEST. The screen will warn you that you are about to delete a test session and give you the option to CONTINUE or touch BACK to keep the session and return to the review list.

Review Drag Strip Sessions

Select the session you wish to view and touch ENTER.

| Session | #of Runs | Notes | ▲ |
|------------|----------|----------------|---|
| 10/18/04_1 | 2 | New turbo test | |
| 10/18/04_2 | 4 | 30lb Injectors | |
| | | | |
| | | | |
| | | | |
| | | | V |

Drag Strip Delete Test Session

You are about to delete test session 10/04/04_1
If this is correct touch CONTINUE.

Touch keep test session 10/04/04_1
Touch BACK to return to the review list.

Using your HyperPAC™ At A Race Track

While one of the main reasons the HyperPAC™ was developed was to provide drag strip and dynamometer test results for those people who do not have access to a race track or chassis dynamometer, using your HyperPAC™ at the drag strip allows you to conveniently save all of your run information and review it at a later date. In addition to the time slip information, you get all of the other information that the HyperPAC™ saves with each run, acceleration times, horsepower and torque readings, and a data acquisition report for the engine operating conditions recorded during the run.

If you do choose to use the Drag Strip program of your HyperPAC™ at the track, follow the procedure for creating a new test session, and:

1. Touch STAGE VEHICLE on the HyperPAC™ and stage the vehicle based on staging lights on the race track's "Christmas" tree.
2. Once you are properly staged, touch START TREE on the HyperPAC™ and ignore the HyperPAC™'s "christmas" tree, allowing it to drop to the green light. Do not allow the vehicle to move or you will start the HyperPAC™ trigger.
3. Watch the race track's "christmas" tree and leave the starting line based upon its green light. When you finish the run, all of the data in the HyperPAC™ will be correct, except for the reaction time. If you wish keep track of your reaction times, use the run notes section to enter the reaction time from your track time slip for that run.

Note: You have up to one minute after the HyperPAC™ goes green to leave, before the HyperPAC™ will time-out and abort the run.

Calibrating the HyperPAC™ to the Drag Strip Time Clocks

The HyperPAC™ produces results consistent with the average drag strip timing system. However, these results can vary slightly from any particular track, for either or both of two reasons. First, the NHRA & IHRA allow tracks some latitude when setting up the staging lights and the guard beam. And second, the true "roll-out" distance is affected by all of the following conditions; tire air pressure, the amount of tire wear, and slight variations in sidewall construction and dimensions (for tires of the same size but from different manufacturers). For these reasons, slightly different results may be observed from track to track, and from your HyperPAC™ to any particular track.

If you regularly visit a drag strip, the HyperPAC™ contains a track calibration feature that allows you to calibrate the HyperPAC™ to your local track's timing set-up. To do this, you will need to make several consistent runs and enter the track times into your HyperPAC™. The HyperPAC™ will then automatically perform the calibration. After this calibration and on all subsequent runs, elapsed times and speeds displayed on your HyperPAC™ will agree very closely with the elapsed times and speeds recorded by the track's timing system. There may still be a few hundredths difference because the HyperPAC™ always begins each run with a perfect shallow stage to greater than 1/1000-inch accuracy. Therefore, "real life" staging at the track will always vary by more than the HyperPAC™.

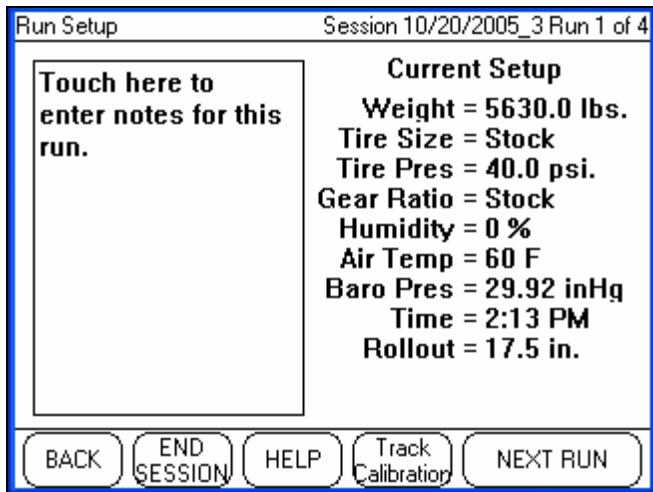
HyperPAC™ User Manual

To recalibrate your HyperPAC™ to a particular drag strip, follow the steps below.

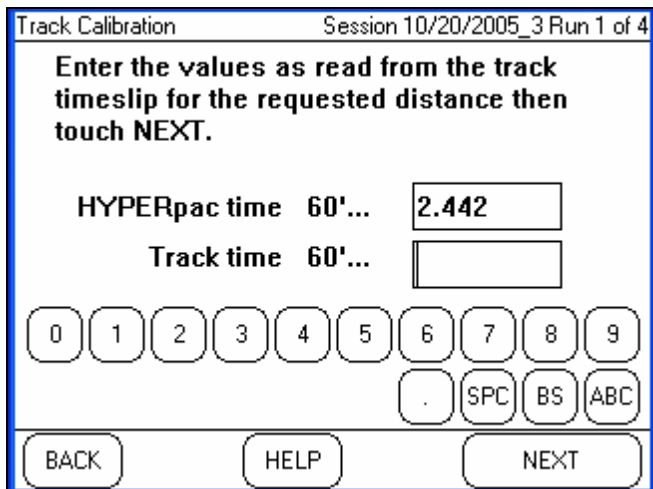
1. Select the Drag Strip program from the HyperPAC™ "Main Menu" and touch CREATE NEW TEST SESSION.
2. Carefully stage your vehicle as shallow as possible. If you bracket race and always deep stage, then stage as you would normally. However, since deep staging is not as precise as shallow staging, your calibration will not be quite as accurate.
3. Once you have properly staged, touch START TREE. Ignore the track Tree until after your HyperPAC™ Tree goes "Green." Then, if the track Tree shows a green light, you may leave. If not, let it turn green and then leave. Don't worry about either red lights or slow reaction times when doing calibration runs. Reaction times and red lights do not affect elapsed times or speeds. You have up to one minute after the HyperPAC™ goes green to leave. If you do not leave before the HyperPAC™ times out, a "Run Error" screen will be displayed. Touch OK, then touch STAGE VEHICLE and you will be ready to start the tree again.

NOTE: How many runs do you need for calibration? You can use just one run, but greater accuracy is achieved if you use as many runs as it takes to get at least three very consistent timing slips based on the 60-foot times and the 1/8- or 1/4-mile elapsed times and speeds. If your car is not very consistent, you may calibrate using 4, 5 or 6 of your best runs, but 3 is usually enough.
4. After you have 3 or more consistent runs (or one run if that is what you choose to do), touch END SESSION and enter the Drag Strip review mode by touching VIEW SAVED SESSIONS.
5. Go to the session you just completed and select the first run you wish to use for track calibration.
6. Select the "Review Setup" screen for that run and touch TRACK CALIBRATION.

HyperPAC™ User Manual



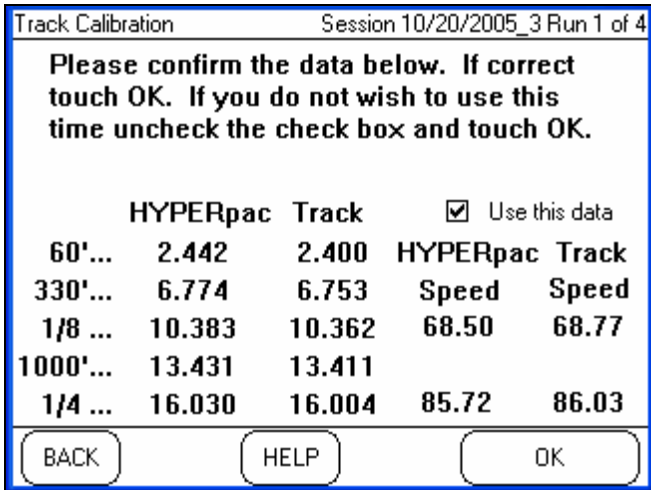
7. The HyperPAC™'s recorded 60-foot time will be displayed for that particular run, and a "Window" for entering the track's 60'-foot time will be displayed.



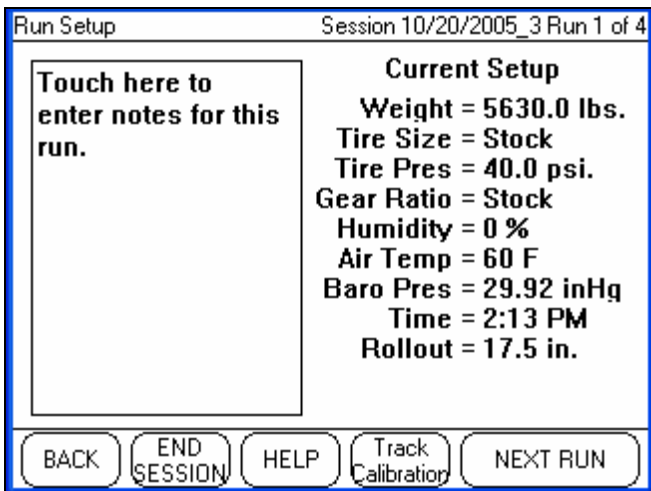
8. Use the numeric keypad to enter the track's 60'-foot time FOR THAT PARTICULAR RUN and touch NEXT.

9. Continue in a similar fashion and enter all the track times as well as the speeds for that run at the 1/8th mile if on an 1/8 mile track, and at both the 1/8 and 1/4 mile if on a 1/4 mile track. In order to prevent data entry mistakes, the HyperPAC™ will alert you if the track data you are attempting to use does not seem to match the expected value.

10. Once all of the track data for that run has been entered, the HyperPAC™ will display a complete list of both the track and HyperPAC™ data for a final review.



11. If the data was entered correctly and you wish to use this data for the track calibration, touch OK. If at any time in the future you wish to no longer use this time for a track calibration, return to this review screen and uncheck the “Use this Data” box. After touching OK, the unit will return to the “Run Setup” screen.



12. If you intend to use only one run for your calibration, touch END SESSION. But if you are using more runs for calibration, touch NEXT RUN, then touch TRACK CALIBRATION, and keep repeating these procedures until all runs have been entered. When you are finished, touch END SESSION.

13. The track calibration is now automatically active and will take effect on all subsequent runs.

14. If at any time in the future, you wish to either remove this calibration or calibrate your HyperPAC™ to a different track, simply return to the calibration verification screen (located where) and un-check the Use this Data check box for each run you entered during the calibration procedure .

15. This removes the track calibration, and you may recalibrate for a different track, if you choose. Unless or until you do a recalibration, all of your subsequent test results

will be HyperPAC™-based only.

How a Drag Strip starting line works

A drag strip starting line contains two photo-electric beams positioned slightly above the track's surface and at some distance apart. (This is the distance that contains the tolerance discussed in Track Calibration procedure.) These beams are referred to as the "pre-stage" and "stage" beams. The set of lights that a driver watches to know when to start a race is commonly referred to as a "Christmas Tree." The "Christmas Tree" contains lights to indicate when you have pre-staged and staged and has 5 additional lights; 3 yellow, 1 green, and 1 red. Each of the two lanes on the track has this set of lights.

When your vehicle moves forward and the front tires interrupt the first beam, the pre-stage bulb on the track's "Christmas Tree" comes on, just to alert you that you are approaching the second beam, the "Stage" beam. As you continue to slowly roll slowly forward, the front tires will block the Stage beam and the Stage light will come on, signaling that the vehicle is staged. The distance traveled from the point when the stage light comes on until the vehicle's front tires have cleared the stage beam is called "Roll Out". If you stop immediately at the point when the stage light just comes on, that is considered "shallow" staging. Shallow staging provides the most roll-out distance, which allows the vehicle to make a longer "running start" before starting the timing clocks, resulting in the quickest e.t.'s and fastest speeds.

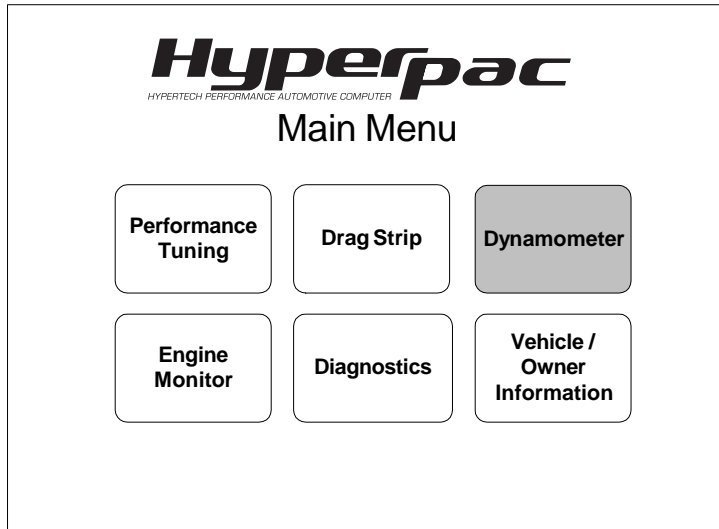
If you move past the point where the stage light comes on, you are "Deep" staging. If you clear the stage beam before the tree begins, the stage light will turn off, and you are no longer staged. One method of deep staging is to move forward slowly until the prestage yellow light goes out, and stage at that point. Deep staging is only used by bracket racers to reduce their reaction times, but for quickest and fastest runs, always shallow stage.

In general, most cars leave around the time the last yellow comes on, without red lighting. A "perfect" start is when you leave at just the right moment to clear the stage beam just as the green comes on, and that results in a .000 second reaction time. A reaction time less than .000 seconds is considered a red light. If you are getting reaction times of .100 to .300 seconds, you are "late" on the tree.

The best racers practice to try for reaction times between .010 to .030 seconds. Even good racers will sometimes red light, and will occasionally "be late." Since the HyperPAC™ provides reaction times, you can practice your starts on private property and in a safe place, to develop that skill.

DYNAMOMETER PROGRAM

Enter the Dynamometer program from the HyperPAC™ Main Menu by simply touching the DYNAMOMETER button.

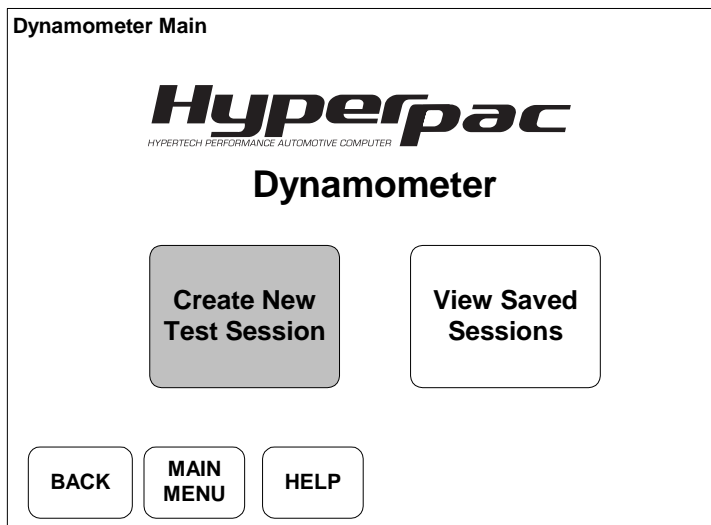


The Dynamometer program calculates Horsepower and Torque, at both the driving wheels. The results are displayed in both table and graph format and corrected to STP standards for temperature, atmospheric pressure, and altitude.

In the Dynamometer program you can create new test sessions and view saved test sessions.

Creating New Dynamometer Test Sessions

When you first enter the Dynamometer program from the Main Menu the following screen will be displayed allowing you to create new test sessions or review any saved test sessions.



HyperPAC™ User Manual

To begin a new test session, Touch CREATE NEW TEST SESSION and the HyperPAC™ automatically names the session by the current date and brings up a keyboard for entering session notes.

NOTE: Refer to section XX on page XXX for a more detailed explanation of how sessions and runs are named.

SESSION NOTES

When you first select Create New Test Session a keyboard is automatically displayed for entering session notes. You are not required to enter session notes and may choose to skip this process by simply pressing enter. Session notes are for keeping track of information that will apply to ALL of the runs within a session. This is the place to put information that will not change between runs. A good example of this would be entering the current configuration of your vehicle for that test day, new cold air kit, new headers, camshaft, etc...

Session Notes Session 01/01/05_1

Testing new headers and H-pipe at Memphis Motorsports Park.

| | | | | | | | | | |
|---|---|---|---|---|---|---|----|----|-----|
| Q | W | E | R | T | Y | U | I | O | P |
| A | S | D | F | G | H | J | K | L | . |
| Z | X | C | V | B | N | M | SP | BS | 123 |

BACK HELP ENTER

Use the keyboard to type in the session notes and touch ENTER to proceed to the RUN SETUP screen.

NOTE: You can touch ENTER without entering any notes and go straight to the Run Setup screen.

RUN SETUP

The Run Setup screen will always be displayed before making a run. This screen contains all of the information and settings that can effect horsepower and torque measurements.

The screenshot shows the 'Dyno Run Setup' interface. At the top left, it says 'Dyno Run Setup' and 'Session 10/11/04_1 run # x'. On the left is a 'Notes' box with the text 'Notes: Touch here to enter notes.' In the center, under 'Current Setup', the following values are listed: Weight = 3800 lbs., Tire Size = 265/75/16, Tire Pres. = 35F 22R, Gear Ratio = 4.10:1, Humidity = 50%, Air Temp = 67 F, Baro Pres = 29.92 inHg, Tree = Sportsman, and Distance = 1/4 mile. At the bottom are five buttons: BACK, End Session, HELP, Change Setup, and Make Run. To the right, a 'Run Notes' window is open for 'Session 01/01/05_1 run # 1', containing the text 'boost set to 12psi'. A keyboard overlay is visible below the Run Notes window, with keys for Q, W, E, R, T, Y, U, I, O, P; A, S, D, F, G, H, J, K, L, .; Z, X, C, V, B, N, M, SP, BS, 123; and BACK, HELP, ENTER.

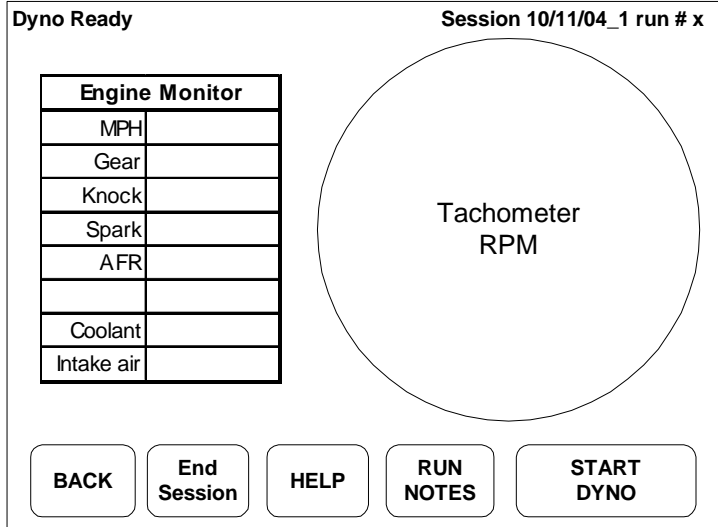
If all of your setting are correct, Touch MAKE RUN to prepare to make a run.

Each of the settings shown under “Current Setup” can be quickly updated before making a run by touching the CHANGE SETUP button.

Touch anywhere inside of the notes box to bring up the keyboard to enter Run Notes.

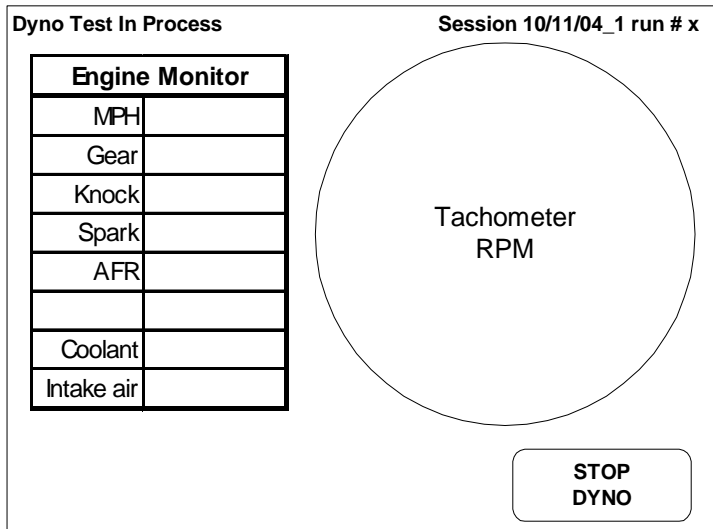
MAKING A RUN

Before making a run the DYNO READY SCREEN will display important engine operating conditions and a large tachometer. To start gathering data, touch START DYNO. The HyperPAC™ will record data until you touch the STOP DYNO button or until the time limit for a run has been reached.




Test in Process

After starting a Dyno run the START DYNO button becomes STOP DYNO. Touch STOP DYNO to end the run stop collecting data.



After touching STOP DYNO the results will be displayed after the vehicle has come to a complete stop.

Dyno Test Complete



Test Complete

Results will be displayed when the vehicle comes to a complete stop.

Reviewing the test results

During each run the HyperPAC™ records all of the data and automatically processes it into user-friendly reports so you can easily review the test results.

NOTE: From any of the following report screens you can touch NEW RUN to exit and get ready for another run. All of the tests are automatically saved and can be viewed by selecting “Viewed Saved Sessions” from the Dynamometer program’s main menu. This process will be explained in Section 2 – Viewing Saved Sessions.

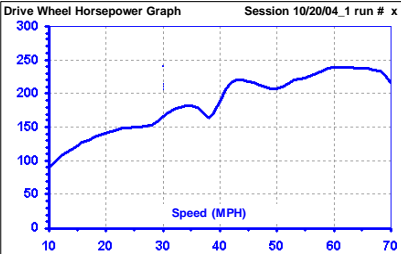
The **Drive Wheel Horsepower** report is first screen displayed when the vehicle comes to a complete stop. The Drive Wheel Horsepower is referenced to vehicle speed in 10 mph increments.

Drive Wheel Horsepower Session 10/20/04 _1 run # x

| | Speed | HP | |
|------------------------|-------|-------|---|
| Drive Wheel Horsepower | 10 | 92.7 | ^ |
| Engine Horsepower | 20 | 130.2 | |
| Data Acquisition | 30 | 174.8 | |
| | 40 | 213.5 | |
| | 50 | 251.6 | |
| | 60 | 276.7 | |
| | 70 | 266.1 | v |

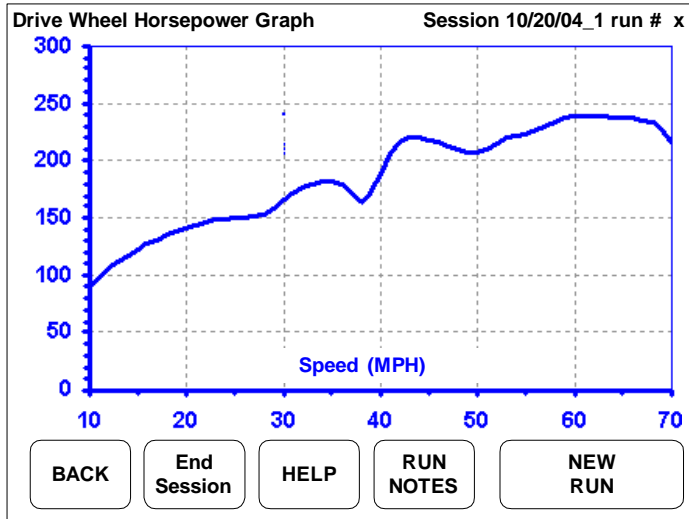
DYNAMOMETER GRAPH

BACK
End Session
HELP
RUN NOTES
NEW RUN



BACK
End Session
HELP
RUN NOTES
NEW RUN

Use the vertical scroll bar to view the horsepower results.
 Touch **DYNAMOMETER GRAPH** to see the results in graph format.



Touch **BACK** to return to the horsepower chart and select another report.

Touch **ENGINE HORSEPOWER** to view the calculated horsepower and torque at the engine crank.

Engine Horsepower Session 10/20/04_1 run # x

Drive Wheel Horsepower

Engine Horsepower

Data Acquisition

| RPM | HP | TQ |
|------|--------------|--------------|
| 1500 | 92.7 | 324.6 |
| 2000 | 130.2 | 341.9 |
| 2500 | 174.8 | 367.2 |
| 3000 | 213.5 | 373.8 |
| 3500 | 251.6 | 377.5 |
| 4000 | 276.7 | 363.3 |
| 4500 | 266.1 | 310.6 |
| 5000 | 245.2 | 257.6 |

DYNAMOMETER GRAPH

Engine Horsepower Graph Session 10/20/04_1 run # x

BACK

End Session

HELP

RUN NOTES

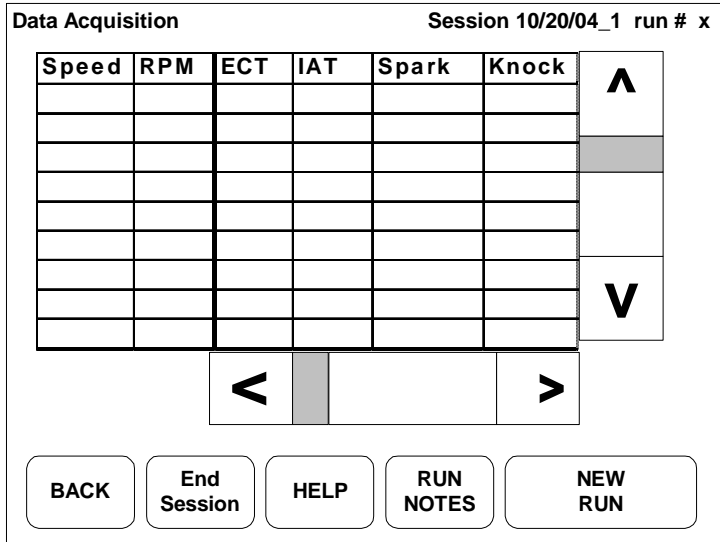
NEW RUN

Use the vertical scroll bar to view the horsepower & torque results in 500 RPM increments.

Touch **DYNAMOMETER GRAPH** to see the results in graph format.

Touch **DATA ACQUISITION** to see a report of the operating conditions recorded during the run.

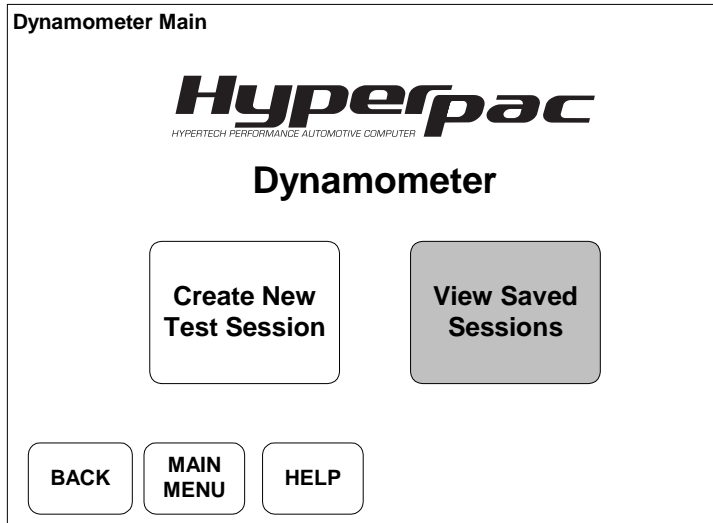
HyperPAC™ User Manual



Use the horizontal and vertical scroll bars to evaluate the operating conditions based on vehicle speed and RPM

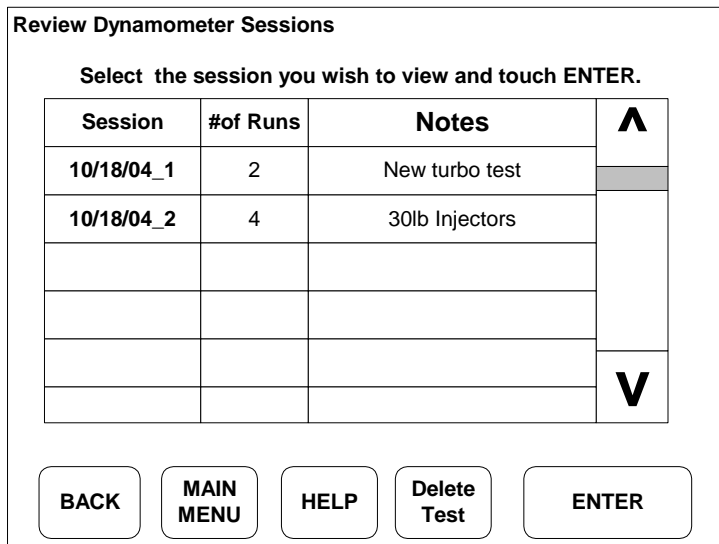
NOTE: From any of the report screens you can touch RUN NOTES to add additional information such as, "missed 2nd gear" or "let out due to knock".

Viewing Saved Dynamometer Sessions



From the Drag Strip program's main menu, Touch **VIEW SAVED SESSIONS** to display a list of the saved test sessions.

A listing with all of the saved test sessions will be shown with the session name, number of runs within the session, and a snap shot of the session notes.



Use the vertical scroll bar to find the session you wish to view, select the session and touch ENTER.

The HyperPAC™ will display any additional session notes so you can see if you have selected the session you want to review.

HyperPAC™ User Manual

Session Notes
Session 01/01/05_1

Testing new headers and H-pipe at Memphis Motorsports Park.

Q

W

E

R

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X

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B

N

M

SP

BS

123

BACK

HELP

ENTER

Touch ENTER to proceed and view the test results for that session, or touch BACK to return to the list and select another test session.

In the review mode, once you have selected a test session to review the report screens operate just like they do in the active mode except the NEW RUN button has been replaced with a NEXT RUN button.

When viewing any of the report screens, touch NEXT RUN to see the same report screen for the following run. Example – If you made three runs in a test session and are only interested in the engine horsepower, simply select the ENGINE HORSEPOWER report and then use the NEXT RUN button to jump to the engine horsepower results for the other runs within that session. The session ID and run number are located in the upper right hand corner of the screen.

Review Drive Wheel Horsepower
Session 10/20/04_1 run # 1 of x

**Drive Wheel
Horsepower**

| Speed | HP | ▲ |
|-------|-------|---|
| 10 | 92.7 | |
| 20 | 130.2 | |
| 30 | 174.8 | |
| 40 | 213.5 | |
| 50 | 251.6 | |
| 60 | 276.7 | |
| 70 | 266.1 | ▼ |

DYNAMOMETER
GRAPH

BACK

End
Session

HELP

RUN
NOTES

NEXT
RUN

View each of the other reports (Engine Horsepower & Data Acquisition) in the same way, or touch **END SESSION** to return to the Dynamometer program's main menu.
 NOTE: The RUN NOTES can be updated in the review mode.

Deleting Saved Sessions

You may delete sessions by highlighting a test session and touching DELETE TEST. The screen will warn you that you are about to delete a test session and give you the option to CONTINUE or touch BACK to keep the session and return to the review list.

Review Dynamometer Sessions

Select the session you wish to view and touch ENTER.

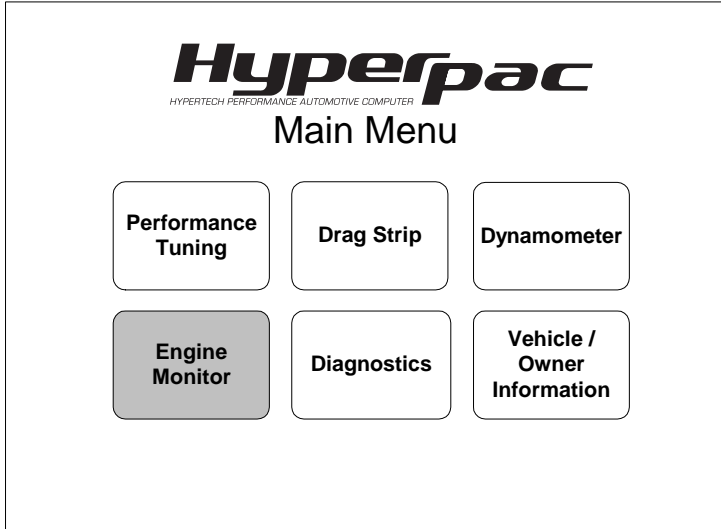
| Session | #of Runs | Notes | ▲ |
|------------|----------|----------------|---|
| 10/18/04_1 | 2 | New turbo test | |
| 10/18/04_2 | 4 | 30lb Injectors | |
| | | | |
| | | | |
| | | | |
| | | | V |

Dynamometer Delete Test Session

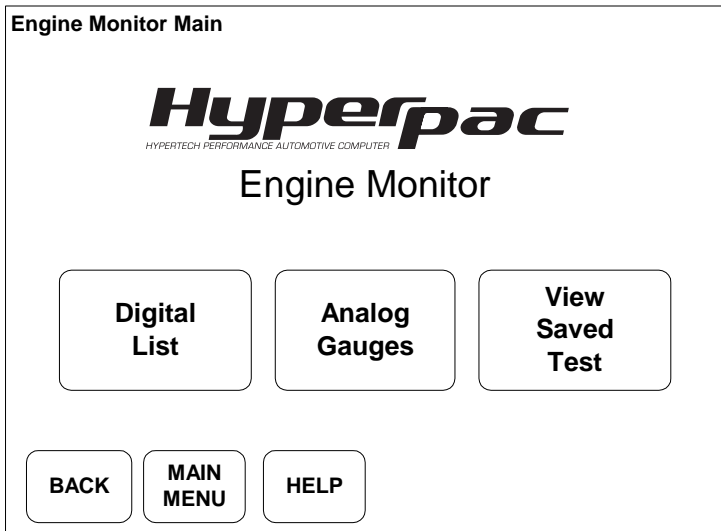
You are about to delete test session 10/04/04_1
 If this is correct touch CONTINUE.

Touch keep test session 10/04/04_1
 Touch BACK to return to the review list.

ENGINE MONITOR PROGRAM



From the HyperPAC™ Main Menu, touch ENGINE MONITOR.



The Engine Monitor program allows you to continuously display important engine operating conditions in real time. A record function allows you to record engine data while driving to help diagnose or trouble shoot problems. Sensor data can be viewed in digital or analog format. The amount and type of sensors that can be monitored can vary depending upon year, make, and model. Not all vehicles are equipped with the same sensors.

Select DIGITAL LIST or ANALOG GAUGES to view “live” data. Touch VIEW SAVED TEST to review a previously saved test.

Digital View

Engine Monitor Digital View

| | | | |
|-------------------|--|------------------|--|
| MPH | | Engine Coolant | |
| RPM | | Intake Air Temp | |
| Spark | | Ambient Air temp | |
| Knock | | Trans Temp. | |
| Throttle Pos. | | O2 voltage | |
| Accel. Pedal pos. | | Mass Air Flow | |
| Current Gear | | Manafold Pres. | |

Run Notes Session 10/11/04_1 run # x

| | | | | | | | | | |
|---|---|---|---|---|---|---|----|----|-----|
| Q | W | E | R | T | Y | U | I | O | P |
| A | S | D | F | G | H | J | K | L | . |
| Z | X | C | V | B | N | M | SP | BS | 123 |

The Digital View displays data in a list/table format. The NOTES button automatically pulls up a keyboard allowing you to enter information before recording a test. START RECORDING will automatically name a test and begin recording data. Tests are named by the date and the number of test performed on that day. For examples:

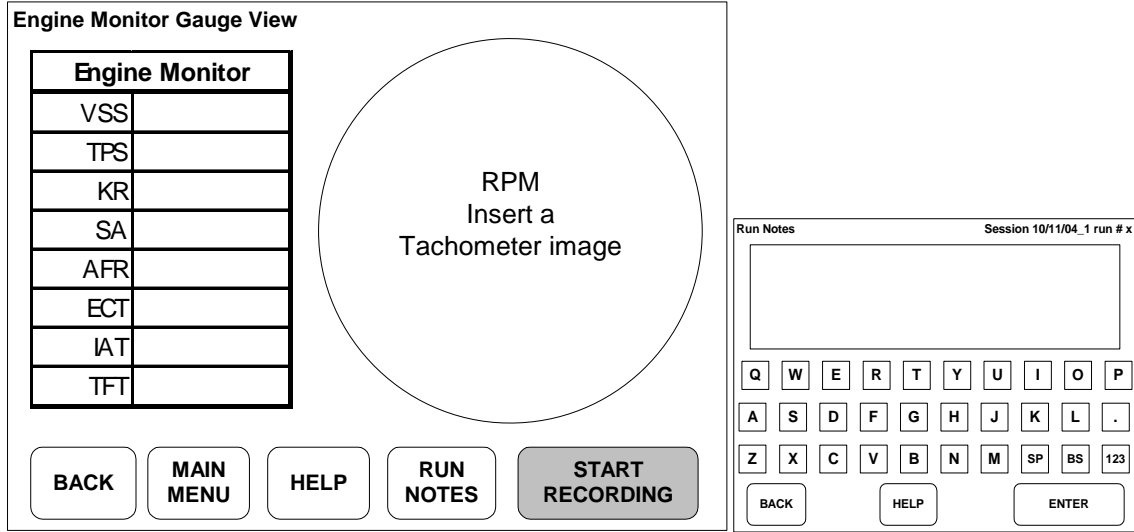
Test 01/01/05_1 would indicate the first test performed on January 1, 2005.
 Test 01/01/05_2 would indicate the second test performed on January 1, 2005.

Engine Monitor Digital View Recording Test 10/11/04_1

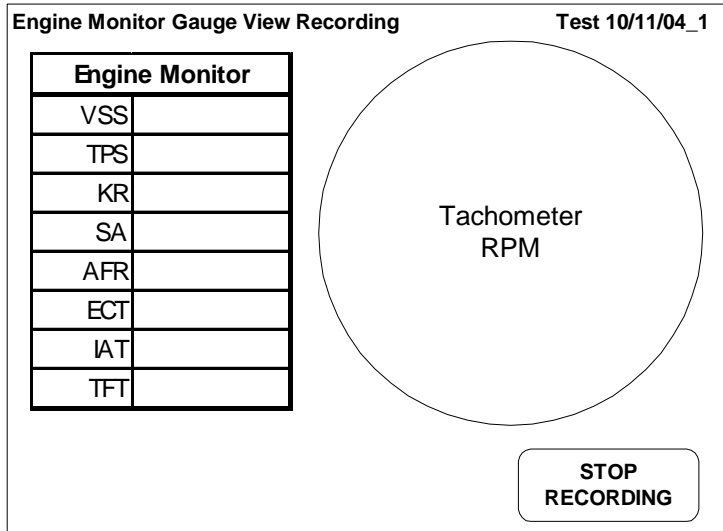
| | | | |
|-------------------|--|------------------|--|
| MPH | | Engine Coolant | |
| RPM | | Intake Air Temp | |
| Spark | | Ambient Air temp | |
| Knock | | Trans Temp. | |
| Throttle Pos. | | O2 voltage | |
| Accel. Pedal pos. | | Mass Air Flow | |
| Current Gear | | Manafold Pres. | |

STOP RECORDING automatically saves the test. You may review the test by selecting VIEW SAVED TESTS from the Engine Monitor program's main menu.

ANALOG GAUGES



ANALOG GAUGES displays data in gauge format. The NOTES button automatically pulls up a keyboard allowing you to enter information before recording a test. START RECORDING will automatically name a test and begin recording data. Data is saved and stored in the same manner as the Digital list view.



STOP RECORDING automatically saves the test. You may review the test by selecting VIEW SAVED TESTS from the Engine Monitor program's main menu.

VIEWING SAVED ENGINE MONITOR TESTS

Engine Monitor Select Test for Review

Select the test you wish to view and touch ENTER.

| Test # | Test Date | ▲ |
|--------|------------|---|
| 1 | 10/18/04_1 | |
| 2 | 10/18/04_2 | |
| 3 | 10/20/04_1 | |
| 4 | 01/01/05_1 | |
| 5 | 01/02/05_1 | |
| | | ▼ |

BACK
MAIN MENU
HELP
Delete Test
ENTER

Engine Monitor Delete Test

You are about to delete test 10/04/04_1, if this is correct touch CONTINUE.

Touch keep test 10/04/04_1, touch BACK to return to the review list.

BACK
HELP
CONTINUE

To review previously saved tests, use the up and down scroll bar to select the test you wish to view and then touch ENTER. You may also directly touch the test number on the screen to select a test for review.

If you wish to delete a test, highlight the test you wish to delete and touch DELETE TEST. The HyperPAC™ will display a screen identifying the test you are about to delete. If it is correct, touch CONTINUE. If you want to keep the test simply touch BACK to return to the review list.

Once you have selected a test to review, the HyperPAC™ will display the results as shown in the screen below.

Engine Monitor Review Test - 10/20/04_1

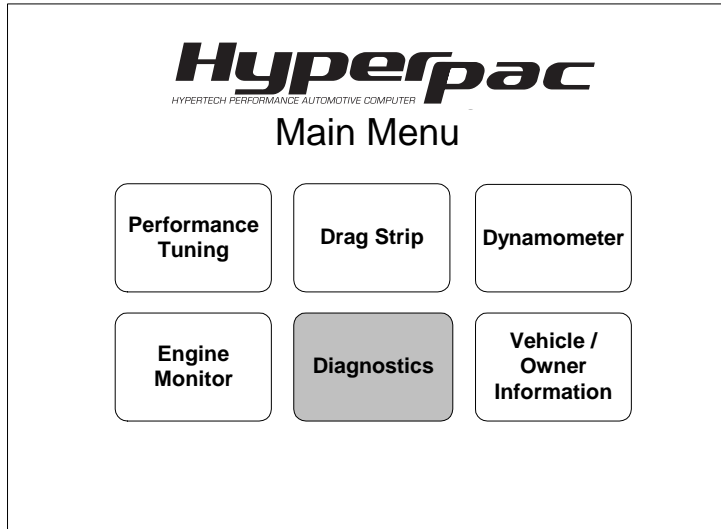
| Engine Monitor | | | | | | |
|----------------|------|-----|-----|-------|-------|---|
| Speed | RPM | ECT | IAT | Spark | Knock | |
| 0 | 1589 | 194 | 129 | 17.5 | 0 | ▲ |
| 10 | 2115 | 194 | 129 | 15.5 | 0 | |
| 20 | 2829 | 194 | 127 | 19.5 | 0 | |
| 30 | 3837 | 194 | 126 | 19.5 | 0 | |
| 40 | 5074 | 194 | 124 | 19.5 | 0 | |
| 50 | 3468 | 194 | 122 | 20.5 | 0 | |
| 60 | 4104 | 194 | 118 | 19 | 0 | ▼ |
| 70 | 4742 | 194 | 117 | 17 | 0 | |

< >

BACK
MAIN MENU
HELP
NOTES
NEW TEST

Use the horizontal and vertical scroll bars to view the report.

DIAGNOSTICS PROGRAM

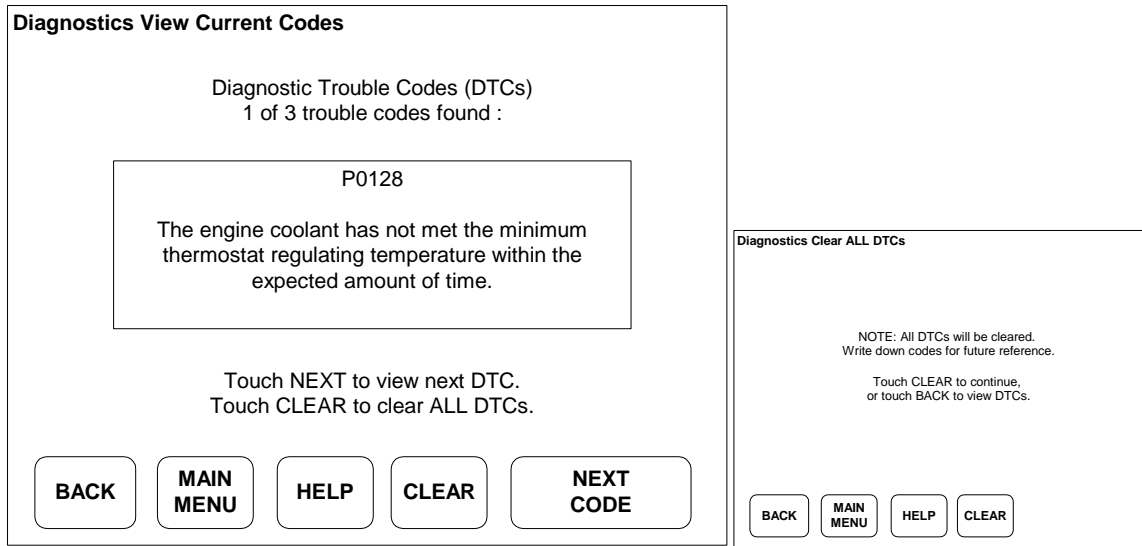


From the HyperPAC™ Main Menu, touch DIAGNOSTICS.

The Diagnostics program allows you to read and clear Diagnostic Trouble Codes (DTCs). The program not only displays the code, but it also gives you a description of what the code means. Use the Diagnostic program to trouble shoot problems and clear any codes after making the necessary repairs. Clearing the codes will also turn off any check engine lights that may have been triggered during the failure.

Enter the Diagnostic program from the HyperPAC™'s Main Menu by touching DIAGNOSTICS. If there are no DTCs presently active in the PCM the screen will read No Diagnostic Trouble Codes Found.

If the HyperPAC™ detects any codes the following screen will be shown.



If multiple codes are found, the display will show 1 of x trouble codes found. Touch NEXT CODE to see the other codes. Touch CLEAR to clear **all** of the DTCs. The clearing process will not allow you to clear individual codes. This is a limitation of the vehicle's computer, not the HyperPAC™. It's always a good idea to write down the codes and their information for future reference. The screen will notify you that all of the codes are about to be cleared, touch BACK if you wish to keep the codes without clearing them.

What To Do Before Taking Your Vehicle In For Service

If you take your vehicle to a dealer or mechanic for service, before uninstalling your HyperPAC™ you must first remove the Hypertech Power Tuning and restore the stock programming by using the Performance Tuning Program's "Return to Stock" feature. This is because diagnostic devices expect to find stock calibrations and will often overwrite the program if the latest calibration is not found in the computer memory. This will result in the loss of your Hypertech Power Tuning data. The HyperPAC™ has an internal security system that allows its Power Tuning program to be installed in only one vehicle at a time. In order to maintain the most current calibrations for your vehicle, the HyperPAC™ is designed to allow you to restore the stock tuning before you take your vehicle in for service so that the service technician can upgrade your stock calibrations. After the service is complete, you can reinstall your HyperPAC™ and then use the Performance Tuning Program to re-install the Engine Power Tuning. If you have any questions related to service issues, please call Hypertech at 901-382-8888.

PRODUCT WARRANTY

Factory Direct Limited Lifetime Warranty

HYPERTECH's HyperPAC is warranted against defects in materials or workmanship for one year from the date of purchase. Hypertech's liability under this warranty shall be limited to the prompt correction or replacement of any defective part of the product which HYPERTECH determines to be necessary. This Limited Lifetime Warranty is to the original purchaser providing all the information requested is furnished.

You must retain a copy of your original sales invoice or receipt.

Without proper documentation, a service fee will be applied. Resold units are NOT covered under this warranty.

If you have any problems or questions,
please call our technical staff at 901-382-8888
HOURS: 8AM - 5PM Central Time, Monday - Friday
Hypertech, Inc. 3215 Appling Road
Bartlett, TN. 38133-3999
Visit our website at www.hypertech.com
or e-mail us at sales@hypertech.com

SPECIALTY AUTO PARTS CONSUMER'S BILL OF RIGHTS
Your Rights To Personalize Your Vehicle

- Article 1: You have the Right to buy high-quality, reliable aftermarket performance and specialty parts, accessories, and styling options.
- Article 2: You have the Right to use high-quality aftermarket parts and know that your new vehicle warranty claims will be honored. In fact, your vehicle dealer may not reject a warranty claim simply because an aftermarket product is present. A warranty denial under such circumstances may be proper only if an aftermarket part caused the failure being claimed.
- Article 3: You have the Right to install and use emissions-legal aftermarket performance parts without incurring hassles and onerous procedures during state vehicle emissions inspections.
- Article 4: You have the Right to actively oppose any proposed (or existing) laws or regulations that will reduce your freedom to use aftermarket automotive parts and service or will curtail your ability to take part in the automotive hobbies of your choice.
- Article 5: You have the Right to patronize independent retail stores and shops for vehicle parts and service. The U.S. aftermarket offers the world's finest selection of performance and specialty parts, accessories, and styling options. These aftermarket products satisfy the most discriminating customers seeking personalized vehicles for today's lifestyle.

The Consumer's Bill Of Rights courtesy of
Specialty Equipment Market Association (SEMA)