

# **MSD** **IGNITION** **INSTALLATION INSTRUCTIONS**

## **MSD Multi-Function Ignition Controller, PN 8979** **MSD Multi-Function Ignition Controller with** **Boost Timing, PN 8977**

### **Parts Included:**

1 - Harness, PN 8860	7 - Faston Straight Terminals
1 - Shielded Harness, PN 8862	4 - Wire Caps
4 - Vibration Mounts and Hardware	2 - 10' Harness
2 - Wire Ties	1 - Pro-Data+ Disk
4 - Wire Splicers	

**Note:** Must be used with an MSD 6AL, 6BTM, SCI-L, 7AL-2, MSD 8 or 10 Series.

**WARNING:** During installation, disconnect the battery cables. When disconnecting the battery always remove the Negative cable first and install it last.

**Note:** Solid Core spark plug wires cannot be used with an MSD Ignition.

**Note:** The Rev Limiter output of these controllers is not compatible with a 7AL-3 Ignition.

## **OPERATION**

### **DIGITAL OPERATION**

The MSD Multi-Function Ignition Controllers are designed to be connected to single channel MSD Ignition systems to provide programming control over a variety of timing and rpm options. The Controllers wire to your current MSD Ignition system easily and will accept a magnetic pickup, amplifier or points style trigger input.

Programming the Controllers can be achieved with a Hand Held Monitor, PN 7550, or with a PC using MSD's Pro-Data+ software.

### **PROTECTION**

The MSD Multi-Function Ignition Controllers have a built in reverse polarity protection circuit. This will protect the Controller in the event of wrong connections.

### **LED INDICATOR**

There is an LED that monitors the status of the Ignition. The LED will verify trigger inputs and will flash trouble code such as a Code 11 for No Cam Sync.

### **CAMSHAFT SYNCHRONIZATION**

In order to take advantage of the Digital Timing Controllers' Individual Cylinder Management (ICM) timing control, a synchronization signal must be used. This signal alerts the Controller when the number one cylinder is being triggered which allows for individual cylinder timing programs. MSD provides two ways to achieve a sync signal.

**Inductive Pickup, PN 7555:** This pickup simply installs over the number one spark plug wire, much like a timing light pickup. A fiber optic cable connects to the Controller to deliver the sync signal.

**Universal Cam Sync Pickup, PN 2346:** This universal kit is supplied with a non-magnetic pickup, magnet and a retainer. The magnet is designed to be installed in the cam gear where the pickup can receive it's signal (much like a crank trigger). Fabrication is required for installation.

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## **PROGRAMMABLE FEATURES**

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The Multi-Function Ignition Controllers have many features that give you more control over your timing and rev limits. For more information on programming see the Help menu in the Pro-Data+ Software, or pages 12-13 for a menu tree with the Hand-Held programmer.

### **PROGRAMMER/MONITOR, PN 7550**

The hand held programmer allows you to select and program the different features of the Multi-Function Ignition Controls. It has an LCD that displays menu items that you scroll through. The PN 7550 connects to the Controller with a six or 10 foot harness with a molded 9-pin connector.

### **PRO-DATA+ SOFTWARE**

To program the Timing Controllers on your PC, you will need the MSD Pro-Data+ software. The easy to use software operates with any PC running Windows 95, 98, NT XP or ME. With this program you can design programs and save them to files or transfer the file to the Controller.

The Pro-Data+ features easy to plot graphs for timing curves as well as a real-time tachometer, retard and boost gauge. This way you can actually run the engine and view the timing and rpm! There are many more great features to this software and it is available on a 3.5" disk through MSD or can be downloaded through [www.msddignition.com](http://www.msddignition.com).

### **CYLINDER SELECTION**

The Ignition default is for 8-cylinder operation. It can also be programmed for 4 and 6-cylinder operation through the Programmer, CylCnt menu, or through the MSD Pro-Data+ Software.

### **MAGNETIC PICKUP COMPENSATION**

This feature allows the inherent retard of a magnetic pickup to be compensated to produce absolute timing accuracy from idle to maximum rpm. It is adjustable from 0°-3° in 0.5° increments. The default setting is a 2° compensation. (Dyno testing with the PN 8251 Coil and an MSD Crank Trigger showed 2.5° to be the optimum compensation. **Note:** Proper rotor phasing as well as Cam Sync must be set.)

### **3-STEP REV CONTROL**

There is a 2-pin module plug (two yellow wires) that connects in the rpm module receptacle of your MSD Ignition. You can set three different rev limits that can be used during the burnout, launch and as race overrev protection. Each limit is adjustable in 100 rpm increments from 2,000 – 12,500.

The different stages are selected by supplying either the Light Blue or Dark Blue wire with 12 volts. When 12 volts are supplied to the Light Blue wire, the Burnout limit is activated. Twelve volts on the Dark Blue wire activates the Launch rev limit (as well as the Launch Retard value, resets to Gear 1 indicator and timing curve). When 12 volts are removed from both wires, the overrev limit is in effect.

**Note:** If both wires are activated at the same time, the Launch limit (Dark Blue) will override the Burnout value.

## TIMING FEATURES

### START RETARD

This program will retard the timing from cranking through 800 rpm. It is automatically enabled and is adjustable from 0°-25° of retard. The retard will come in if the engine rpm drops below 500 rpm.

**Step Retard Deactivation Delay:** This program allows you to select a delay when a stage of retard is deactivated. This is useful to ensure that nitrous has stopped flowing through the engine. The delay time can be set from 0 – 2.5 seconds.

**Note:** All retards are added together when activated. If a stage of retard is activated at the same time as the Launch Retard, the programmed retards are added together. It is recommended to view the Retard Sum using the PN 7550 Programmer or the PC Pro-Data+ Graph View.

### MULTI-STAGE RETARD

The Timing Controller offers three stages of retard that can be activated at different times via three control wires or an rpm programmed value. Each retard is adjustable from 0°-15° in 0.1° increments (from 800-12,500 rpm). When used together the retard stages are added together. The maximum amount of the three step retards is 25°. Each stage is activated when 12 volts are supplied to the corresponding wire and the engine speed is above the rpm value. The retard value will remain active until 12 volts are removed from the wire, or the engine speed drops below the rpm value.

Pink Wire – Stage 1

Violet Wire – Stage 2

Tan Wire – Stage 3

**Note:** There are also other timing values that can be programmed such as a Launch retard value (also activated by the Dark Blue wire). These retard values will also work into the total sum of the retards.

### RUN TIMING CURVE

This is the program for the full ignition timing curve from 800 – 12,500 rpm. The curve is adjustable in 0.1° increments every 100 rpm with 25° retard maximum. The Run Timing Curve remains active at all times.

**Note:** The Run Timing Curve will be added to any Stage Retards, and Gear Retards that are activated throughout the run. Maximum retard using the Run Curve is 25°.

### LAUNCH RETARD

This feature lets you program a retard amount that will be activated when 12 volts are applied to the Dark Blue wire (also used for the Launch rpm limit). It is programmable from 0° - 15° in 0.5° increments and can be set to ramp back up to the Run Timing within 0 – 2.5 seconds after 12 volts are removed from the activation wire (Dark Blue).

### GEAR RETARDS

This feature allows you to program a different retard for each gear without any extra wiring. Once the shift sequence is reset with the Launch Control Wire, the MSD will retard the timing automatically following each shift. Zero to 5° can be removed in each gear and the retards are accumulative, (example - 3° in 3rd, 3° in 4th and 4° in 5th, total 10°). The Run Timing Curve allows 1st gear timing and 2nd gear uses the Run Retard Curve. Each additional shift can be programmed to have additional retards without the use of external switches.

## INDIVIDUAL CYLINDER MANAGEMENT (ICM)

This program allows you to select a retard for each cylinder. Each cylinder can be programmed to have up to 10° of timing removed and is adjustable in 0.1° increments. This amount is added to any retard amount being used with the Run Curve or Step Retards.

To take advantage of the ICM, a Cam Sync Sensor must be incorporated. MSD offers a Universal Sync Pickup as PN 2346 and a Fiber Optic Inductive Sync Kit as PN 7555. A Sync Sensor is necessary to alert the Ignition Control when the number one cylinder is being triggered. When the Ignition knows that the number one cylinder is firing, it starts the triggering sequence and uses the retard set for each cylinder at the correct time. The cylinder to fire will be the next post on the distributor cap and follows in that sequence.

The **Inductive Sync Kit, PN 7555**, slides over the number one plug wire much like a timing light's pickup. A fiber optic cable connects to the Ignition Control to deliver the signal. There is no adjustment required with this style sync pickup.

When using the **Cam Sync Pickup, PN 2346**, it must be phased correctly with the crank trigger or distributor pickup. It should be adjusted initially to lead the #1 cylinder by 5° - 10°. This will get it close enough to run the engine. You then need to center the pickup signal around the trigger pickup signal for correct operation over the entire rpm range of the engine. This is set by using the monitor mode on the Programming Unit. You can then move the Sync pickup until the monitor reads CamSync SYNC.

**Note: When not in use, the fiber optic terminal MUST be covered with the supplied plug.**

The Ignition monitors both ignition trigger and cam sync inputs for every revolution of the engine. If there is ever a problem with the Cam Sync signal, the Ignition will default to the largest retard rate programmed for ICM and use it for all of the cylinders. Also, the LED will flash a code 11 (one blink-pause-one blink) and the Hand Held Programmer will read CamSync None or No CamSync.

## BOOST RETARD CURVE, (PN 8977 ONLY)

This circuit allows you to retard the timing in relation to boost pressure from a supercharger or turbo. The amount of retard is adjustable from 0°-25° in 0.1° per 0.25psi of boost increments from 2-30psi.

To incorporate the Boost Retard Curve a hose must be routed from the intake manifold to the boost nipple on the side of the Controller. A 0-30psi transducer is used to monitor boost pressure.

## SEQUENCED SHIFT LIGHT

Different rpm levels can be set for each gear to turn on the shift light. Up to five different values can be programmed. The Orange/Yellow wire is the signal wire for the shift light and provides a ground path to activate the light when the programmed rpm levels are met. The sequence is reset when 12 volts are applied to the Launch Rev Limit wire (Dark Blue).

The Controller detects a gear change when an rpm rise is detected followed by at least a 500 rpm drop. This setting can also be adjusted under the Shift menu.

## OPTIONAL COMPONENTS

### SEQUENCED SHIFT LIGHT POINTS

Five different gear selected rpm can be programmed to turn a shift light On from 2,000 – 12,500 rpm in 100 rpm increments. This function is only enabled above 800 rpm.

**LAUNCH REV LIMIT ADJUSTER**

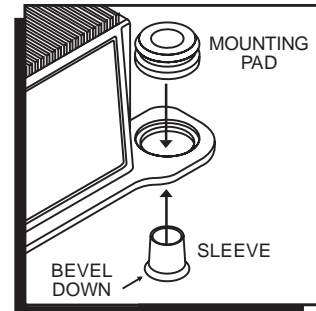
This Module, PN 7551, connects to the Ignition through the 9-pin harness and allows the driver an instant way to change the Launch Rev Limit settings. There are two rotary dials that control the launch rpm only and are adjustable from 3,000 – 12,500 in 100 rpm increments. There is also an LED that indicates communication and power from the PN 7530 Ignition.

**WIRING FUNCTIONS**

<b>Red</b>	This wire is responsible for turning the MSD On and Off. Connects to a switched 12 volt source such as the ignition key or switch.
<b>Black</b>	This wire connects to a good ground, either at the battery negative (-) terminal or to the engine.
<b>Trigger Wires</b>	There are two circuits that can be used to trigger the Controller; a Points circuit (the White wire) and a Magnetic Pickup circuit (the Green and Violet wires). The two circuits will <b>never</b> be used at the same time.
<b>White</b>	This wire is used to connect to breaker points, electronic ignition amplifier output or to the trigger output of the ECU. <b>When this wire is used, the Magnetic Pickup connector is not used.</b>
<b>Violet &amp; Green (Magnetic Pickup Connector)</b>	These wires are routed together in one harness as the magnetic pickup connector. The connector plugs directly into an MSD distributor or crank trigger. It will also connect to aftermarket pickups. The Violet wire is positive (+) and the Green wire is negative (-). When these wires are used, the White wire is not.
<b>Brown/White</b>	This is the output trigger signal. It connects to the points input of the MSD Ignition Control.
<b>Cam Sync</b>	
<b>Lt Blue and Lt Green</b>	This 2-pin connector plugs into a Cam Sync Sensor to indicate when the number one cylinder is triggered. The wires are Lt Blue and Lt Green.
<b>Fiber Optic Connection</b>	This is where the fiber optic cable of the PN 7555 Inductive Sync Kit connects to take advantage of the Individual Cylinder Management feature. <b>This must be covered when using the 2-pin cam sync input.</b>
<b>RPM Controls</b>	
<b>Yellow 2-Pin Plug</b>	This connector plugs into the MSD Ignition Control's rpm module receptacle.
<b>Dark Blue</b>	When 12 volts are applied, this wire activates several features including; Launch rev limit, Launch Retard value and will reset the Shift Light sequence to 1 <sup>st</sup> gear.
<b>Light Blue</b>	This wire activates the Burnout rev limit when 12 volts are applied.
<b>Orange/Yellow</b>	Shift Light activation wire. Supplies ground to activate a light.
<b>Retard Stages</b>	
<b>Pink</b>	This wire activates the first retard stage when it is applied to 12 volts. When 12 volts is removed the retard is deactivated.
<b>Dark Brown</b>	This wire activates the second retard stage when it is applied to 12 volts. When 12 volts is removed the retard is deactivated.
<b>Tan</b>	This wire activates the third retard stage when it is applied to 12 volts. When 12 volts is removed the retard is deactivated.

## MOUNTING

The Controller can be mounted in the engine compartment as long as it is away from direct engine heat sources. It is not recommended to mount the unit in an enclosed area such as the glovebox. It must be near the MSD Ignition so the rpm module harness reaches. Before mounting the Controller, install the supplied rubber grommets into the end panels. Also install the sleeve with the beveled edge facing down (Figure 1). Use the Control as a template and mark the mounting holes. Use a 3/16" bit to drill the mounting holes.



**Figure 1 Installing the Mounting Pads.**

## GENERAL WIRING INFORMATION

**Wire Length:** All of the wires of the MSD Ignition may be shortened as long as quality connectors are used or soldered in place. To lengthen the wires, use one size bigger gauge wire (10 gauge for the power leads and 16 gauge for the other wires) with the proper connections. All connections must be soldered and sealed.

**Grounds:** A poor ground connection can cause many frustrating problems. When a wire is specified to go to ground, it should be connected to the battery negative terminal, engine block or chassis. There should always be a ground strap between the engine and the chassis. Always securely connect the ground wire to a clean, paint free metal surface.

**Routing Wires:** The MSD wires should be routed away from direct heat sources such as exhaust manifolds and headers and any sharp edges. The trigger wires should be routed separate from the other wires and spark plug wires. It is best if they are routed along a ground plane such as the block or firewall which creates an electrical shield. **The magnetic pickup wires should always be routed separately and should be twisted together to help reduce extraneous interference.**

## SPARK PLUGS AND WIRES

Spark plug wires are very important to the operation of your ignition system. A good quality, helically wound wire and proper routing are required to get the best performance from your ignition, such as the MSD Heli-Core or 8.5mm Super Conductor Wire. Helically wound wires provide a good path for the spark to follow while keeping Electro Magnetic Interference (EMI) to a minimum. Excessive EMI, such as the amount that solid core wires produce, will interfere with the operation of the MSD. **Solid Core spark plug wires cannot be used with an MSD Ignition.**

## TROUBLESHOOTING

Every MSD Ignition product undergoes numerous quality control checks including a lengthy burn-in test. If you experience a problem with your MSD, our research has shown that the majority of problems are due to improper installation or poor connections.

The Troubleshooting section has several checks and tests you can perform to ensure proper installation and operation of the MSD. If you have any questions concerning your MSD, call our Customer Support Department at (915) 855-7123, 8 - 5 Mountain Time.

## LED

The LED on the side of the MSD Controller monitors several operating conditions. If the LED indicates that there is a problem with the ignition system, follow the steps through the Troubleshooting section. The LED flashes for every trigger signal so it will appear to be on steady at above idle speeds when everything is functioning properly.

- A Code 11 will flash if there is a problem with the Cam Sync Signal (Light-Pause-Light).



**MISSES AND INTERMITTENT PROBLEMS**

Experience at the races has shown that if your engine is experiencing a miss or hesitation at higher rpm, it is usually not directly ignition. Most probable causes include faulty wiring, a coil or plug wire failure, arcing from the cap or boot plug to ground or spark ionization inside the cap. Several items to inspect are:

- Always inspect the plug wires at the cap and at the plug for a tight connection and visually inspect for cuts, abrasions or burns.
- Inspect the Primary Coil Wire connections. Because the MSD is a Capacitive Discharge ignition and it receives a direct 12 volt source from the battery, there will not be any voltage at the Coil Positive (+) terminal even with the key turned On. During cranking or while the engine is running, very high voltage will be present and no test equipment should be connected.

**WARNING:** Do not touch the coil terminals during cranking or while the engine is running.

- Make sure that the battery is fully charged and the connections are clean and tight. If you are not running an alternator this is an imperative check. If the battery voltage falls below 11 volts during a race, the MSD current draw will increase.
- Is the engine running lean? Inspect the spark plugs and complete fuel system.
- Inspect all wiring connections for corrosion or damage. Remember to always use proper connections followed by soldering and seal the connections completely.

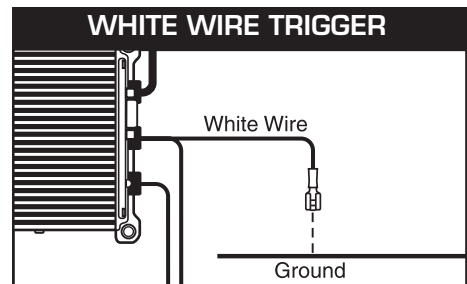
If everything checks good, use the following procedure to test the ignition for spark. MSD also offers an Ignition Tester, PN 8998. This tool allows you to check your complete ignition system while it is in the car as well as the operation of rpm limits, activated switches and shift lights and the Cam Sync Signal.

**CHECKING FOR SPARK**

The following procedure lets you test for spark. It will confirm the operation of the ignition control, coil and that the Controller is receiving a trigger signal and sending it to the ignition control.

**If triggering the ignition with the White wire:**

1. Make sure the ignition switch is in the "Off" position.
2. Remove the coil wire from the distributor cap and set the terminal approximately 1/2" from ground.
3. Disconnect the Controller's White wire from the distributor's points or ignition amplifier.
4. Turn the ignition to the On position. Do not crank the engine.
5. Tap the White wire to ground several times (Figure 2).

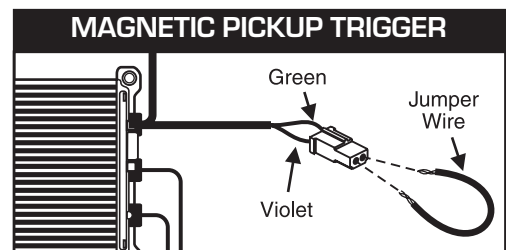


**Figure 2 Checking for Spark with the White Wire.**

Each time you pull the wire from ground, a spark should jump from the coil wire to ground. If spark is present, the ignition is working properly. If there is no spark skip to step 6 on next page:

**If triggering with the Magnetic Pickup:**

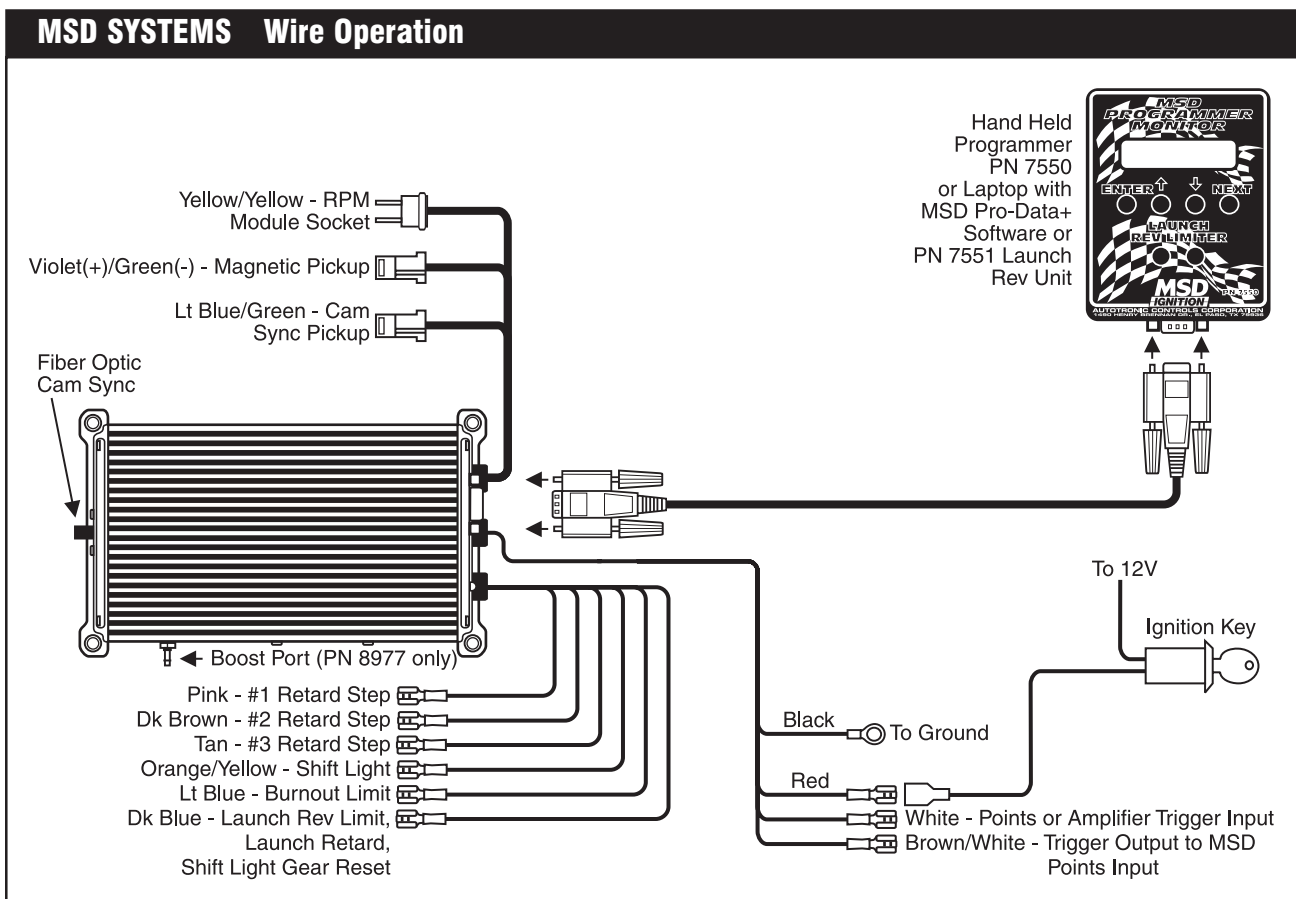
1. Make sure the ignition switch is in the "Off" position.
2. Remove the coil wire from the distributor cap and set the terminal approximately 1/2" from ground.
3. Disconnect the MSD magnetic pickup wires from the Controller.



**Figure 3 Checking for Spark with the Mag Pickup.**

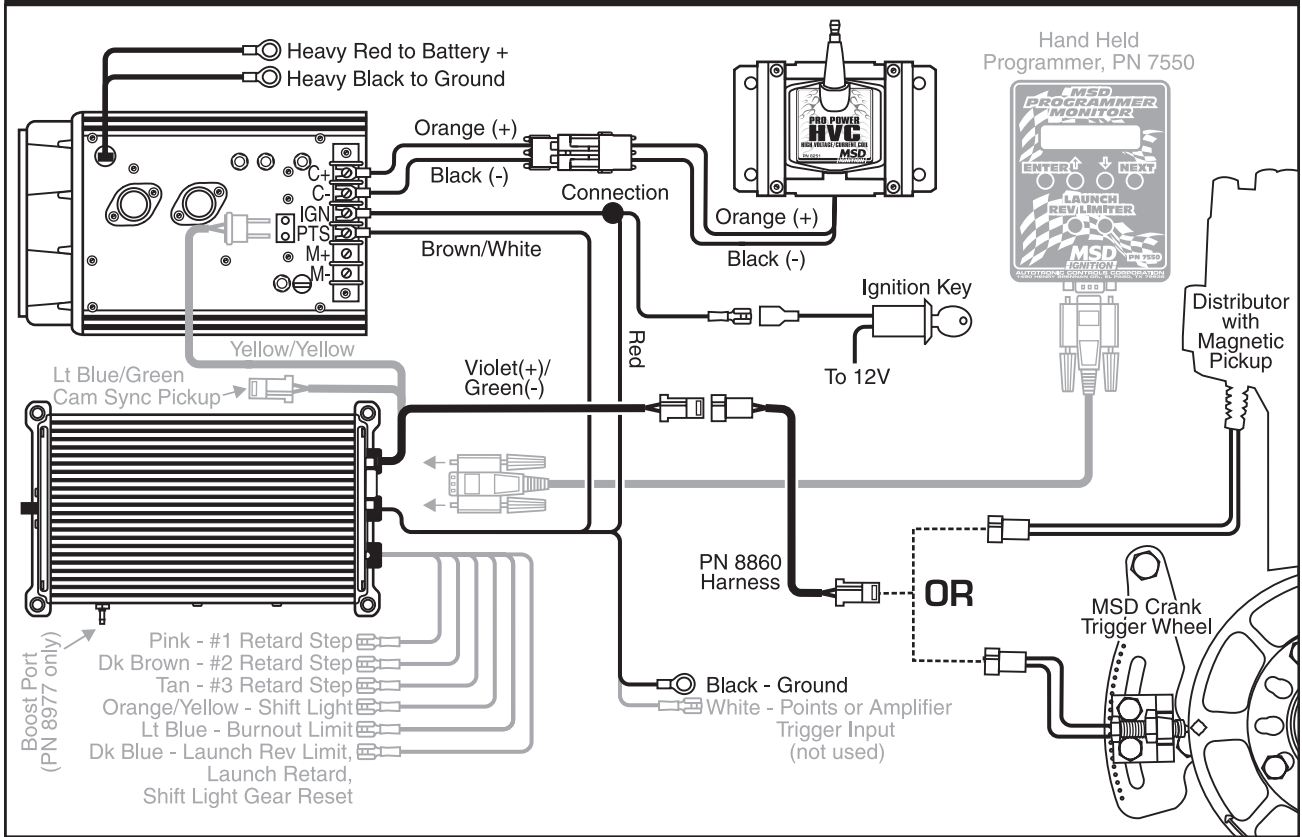
4. Turn the ignition to the On position. Do not crank the engine.
5. With a small jumper wire, short the Controller's Green and Violet magnetic pickup wires together several times (Figure 3). Each time you break this short, a spark should jump from the coil wire to ground. If spark is present, the ignition is working properly. If there is no spark skip to step 6 below:
6. If there is no spark:
  - A. Inspect all of the wiring.
  - B. Substitute another coil and repeat the test. If there is now spark, the coil is at fault.
  - C. If there is still no spark, check to make sure there are 12 volts on the small Red wire at the MSD and the Controller when the key is in the On position. If 12 volts are not present, find another switched 12 volt source and repeat the test.
  - D. Bypass the Controller and check for spark through the Ignition Control. If there is now spark, the Controller is at fault.
  - E. If, after following the test procedures and inspecting all of the wiring, there is still no spark, the MSD Ignition is in need of repair. See the Warranty and Service section for information.

The following wiring diagrams illustrate numerous installations on different vehicles and applications. If you experience difficulties when installing your MSD, contact our Customer Support Department at (915) 855-7123 (8 - 5 Mountain time) or e-mail us at: [msdtech@msdignition.com](mailto:msdtech@msdignition.com)

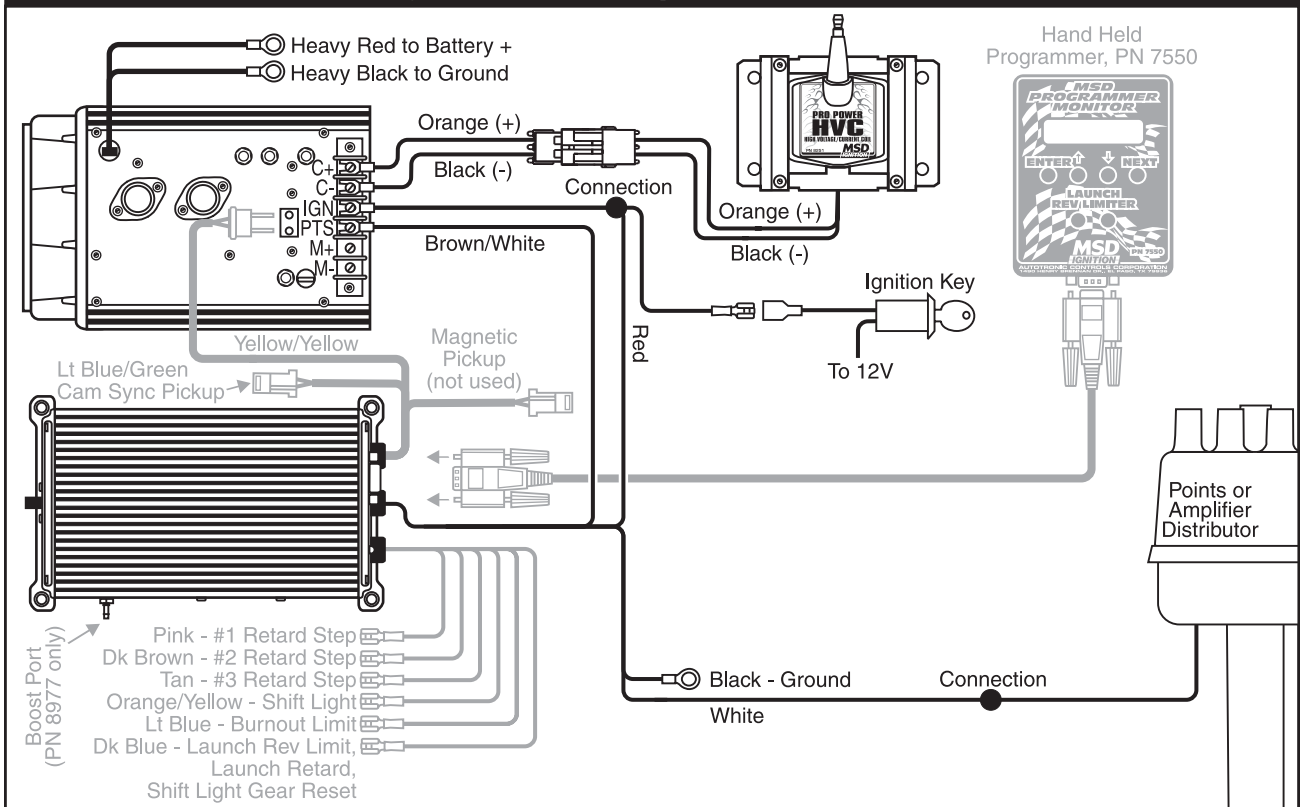




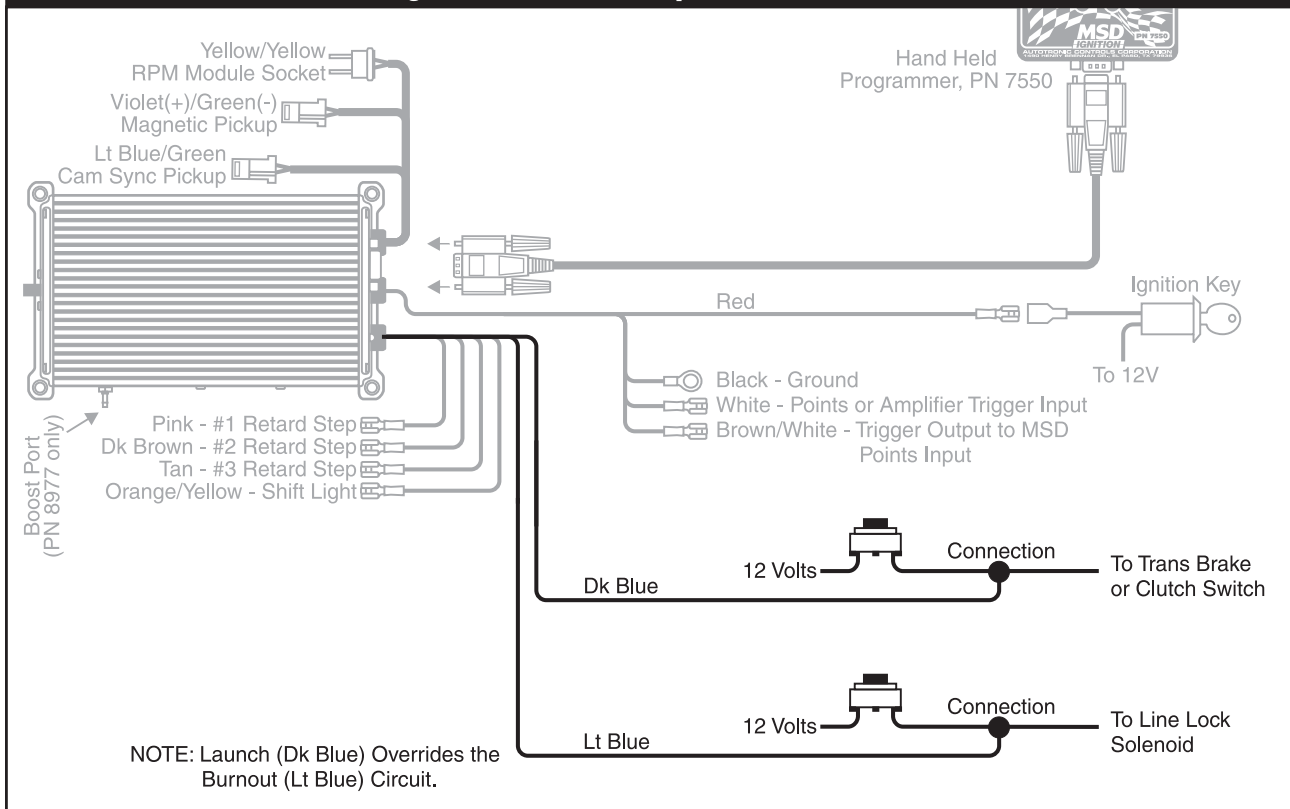
**MSD SYSTEMS Basic Wiring with an MSD 7AL-2 Ignition.**



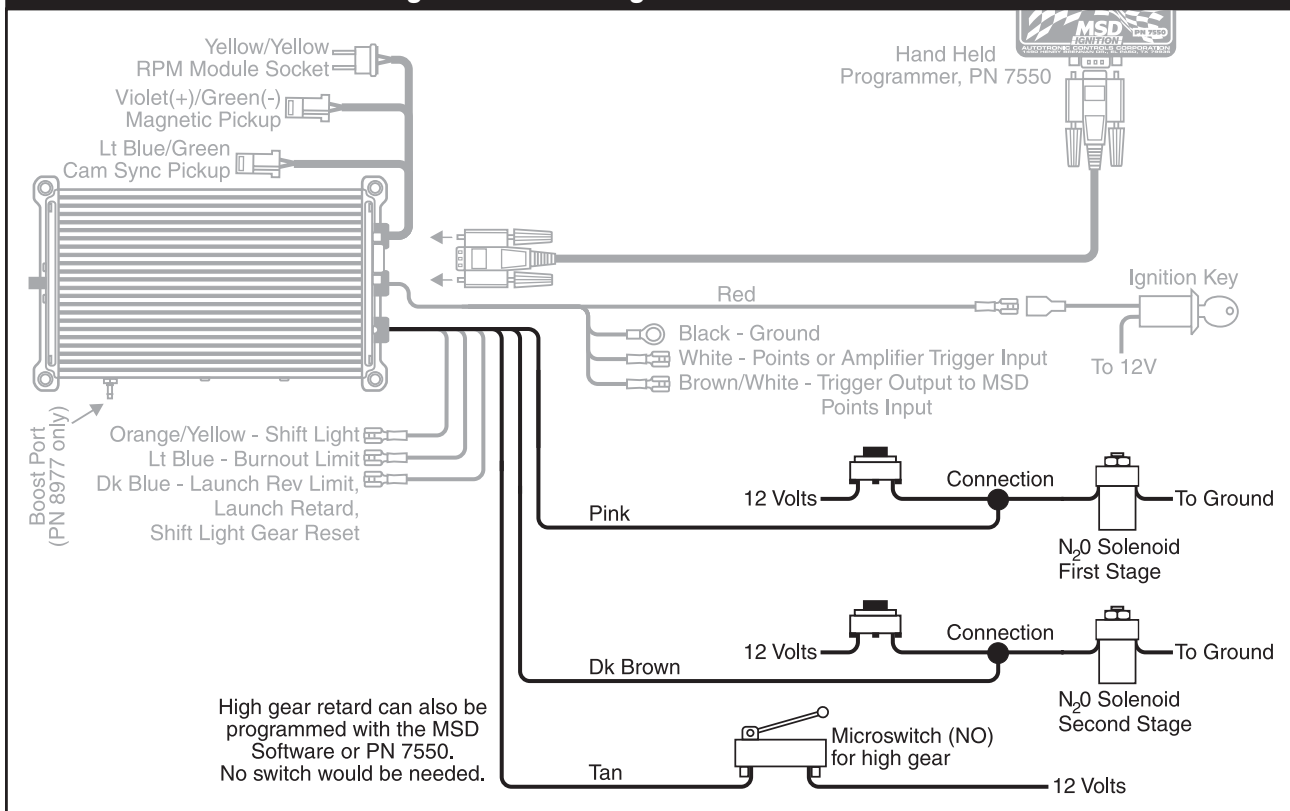
**MSD SYSTEMS Basic Wiring to a Points or Amplifier Distributor.**



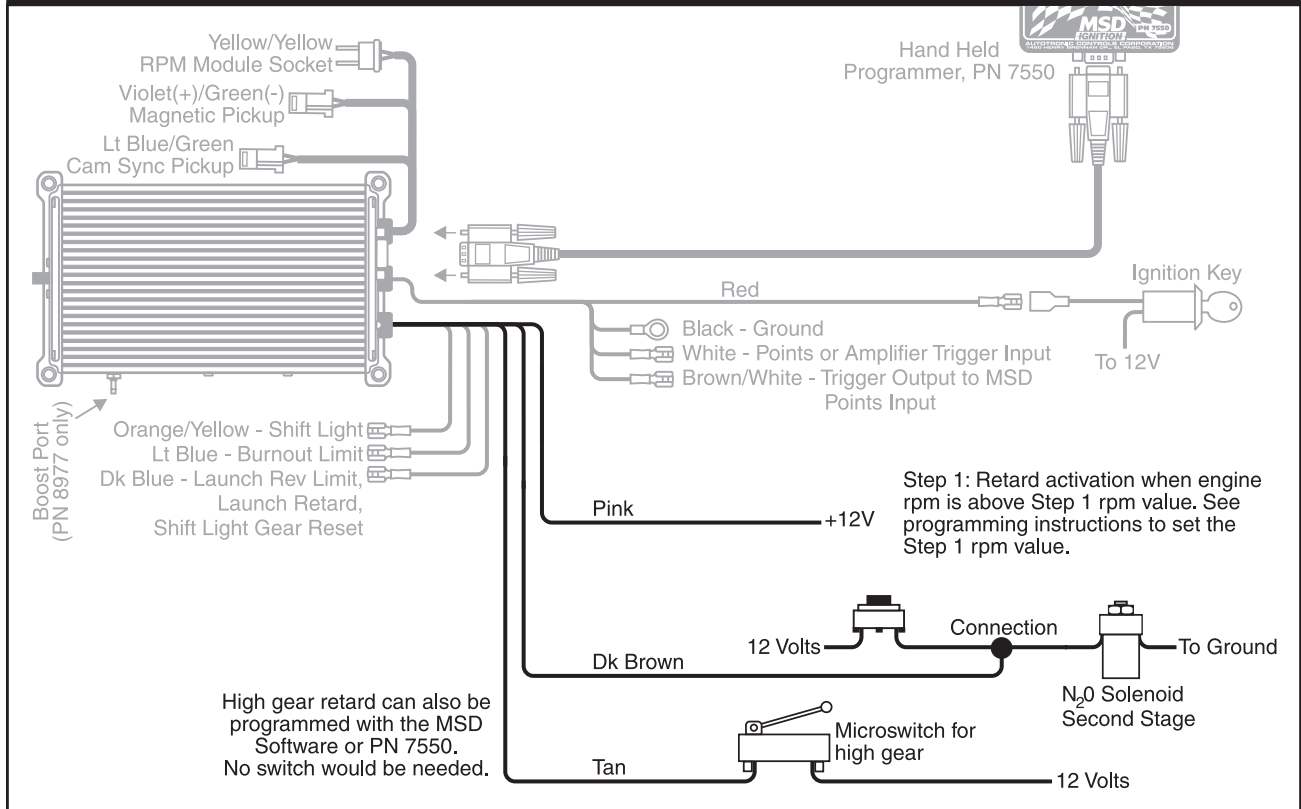
**MSD SYSTEMS Basic Wiring with the Three Step Rev Limits.**



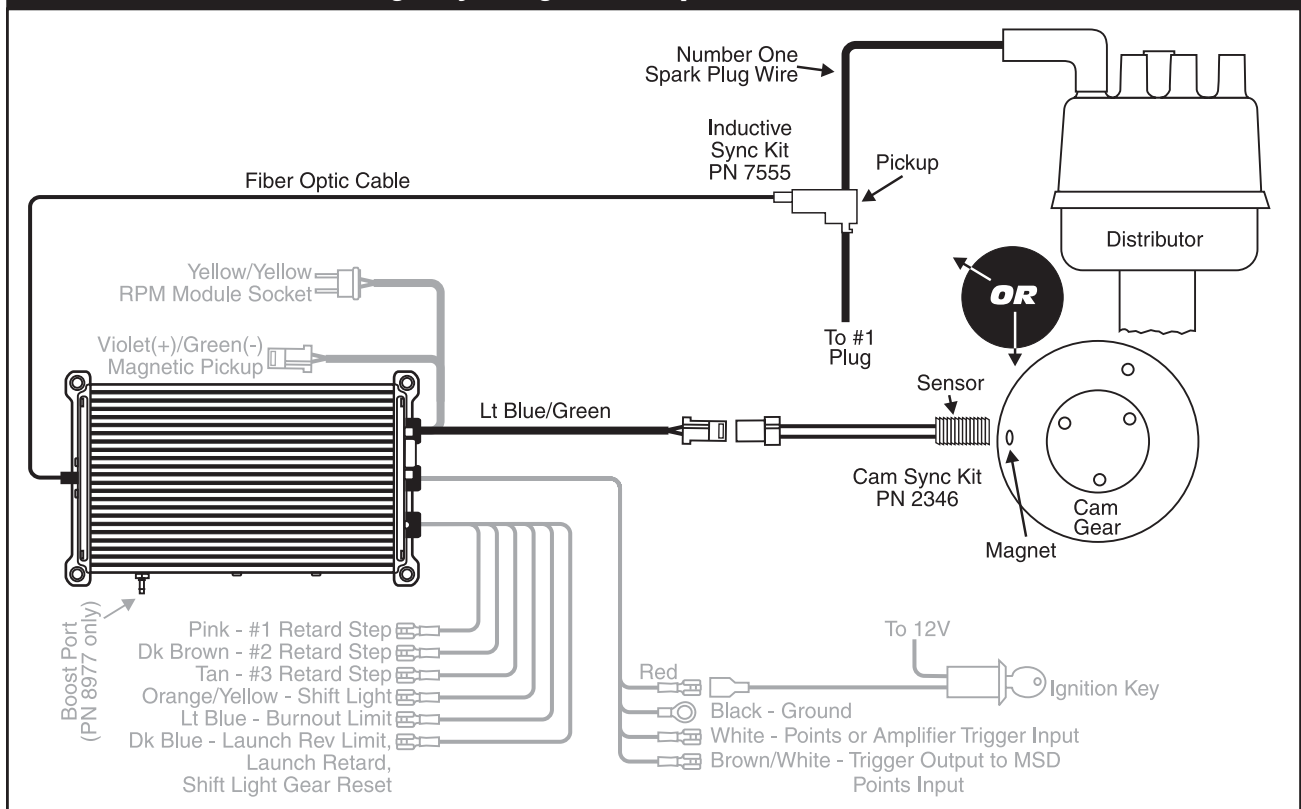
**MSD SYSTEMS Basic Wiring With Three Stage Retard.**



**MSD SYSTEMS Activating a Stage of Retard Through the RPM Activated Function.**

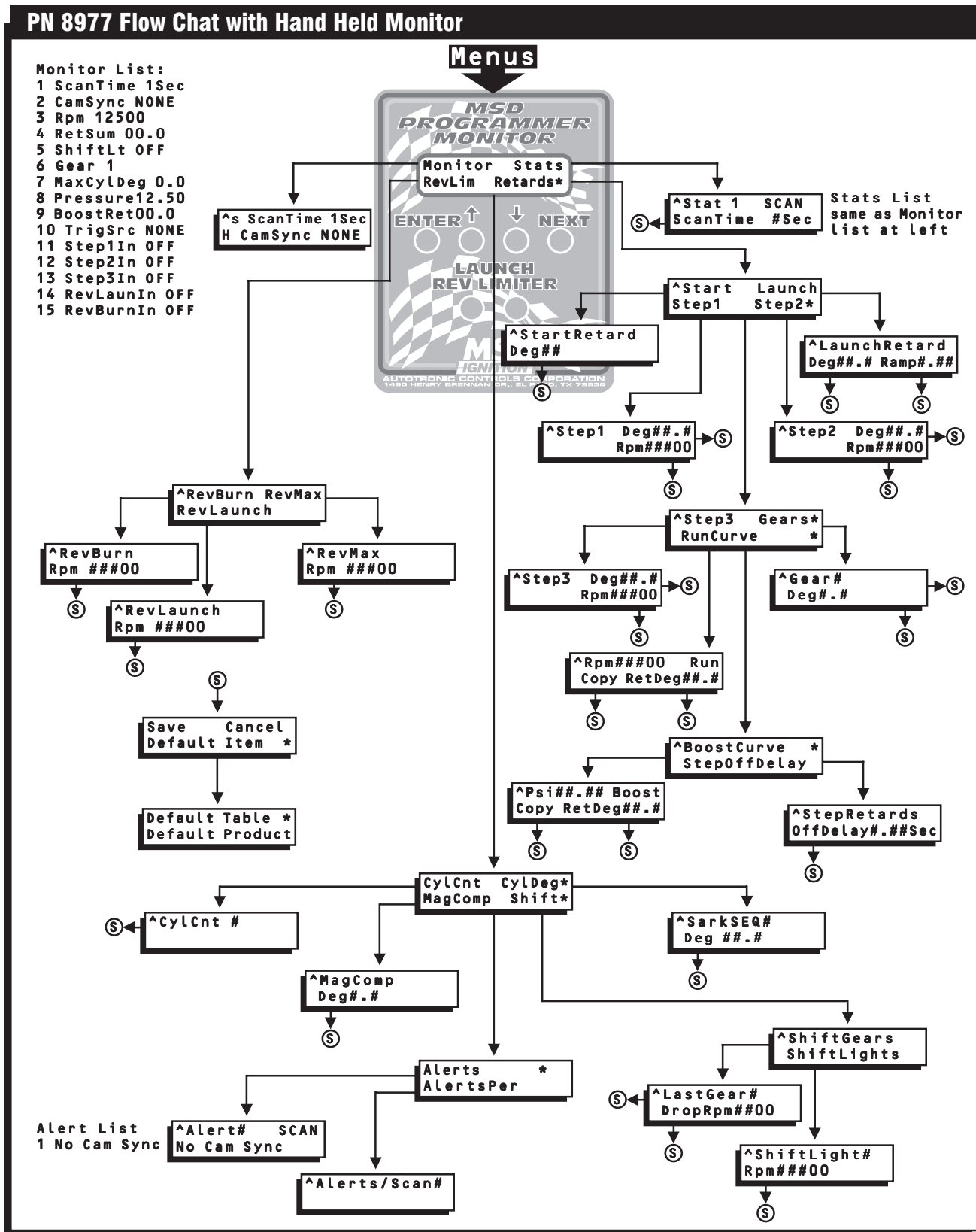


**MSD SYSTEMS Connecting a Sync Signal Pickup.**



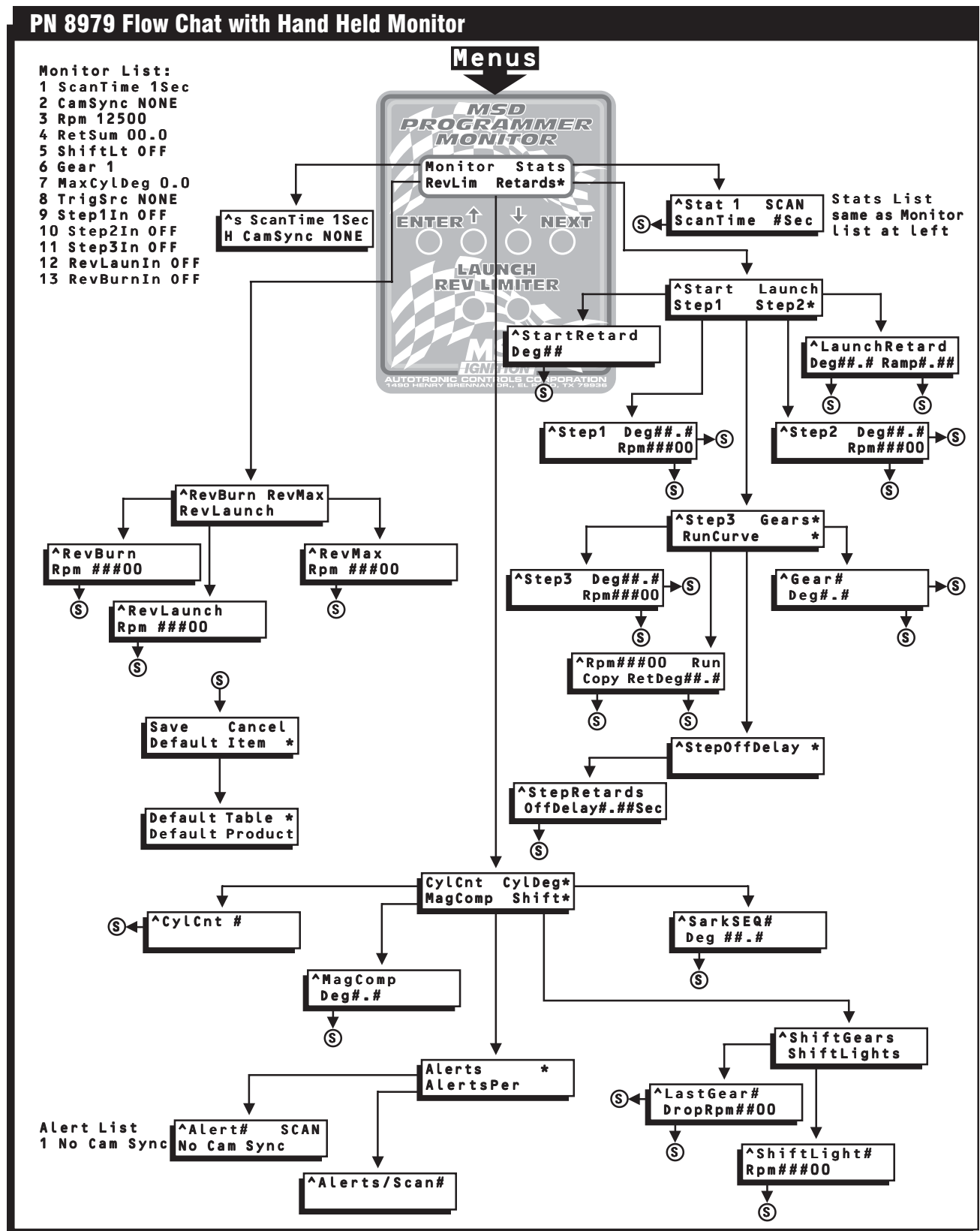
**MENU TREE**

The following menu tree shows the different screens and programs of the PN 8977 and Monitor.



MENU TREE

The following menu tree shows the different screens and programs of the PN 8979 and Monitor.



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## **PRO-DATA+ SOFTWARE**

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The Pro-Data+ Software is designed to provide a quick, accurate and easy way to program your Multi-Function Ignition Controller. The following information is a brief overview of some of the functions and procedures to create files and save changes. There is also a Help button on the Pro-Data+ menu so explanations and tips are only a click away. You can also contact our customer support department at (915) 855-7123.

If you have ever saved a file, copied or pasted text to a new page, printed or opened a file on a PC, you will be able to easily use the MSD Pro-Data+ software. It features the same style pull down menus, double clicking and highlighting moves as many windows style programs.

### **INSTALLING THE SOFTWARE**

The Pro-Data+ Software can be downloaded at no cost from our website; [www.msddignition.com](http://www.msddignition.com). You can also check periodically to download any updates.

1. Insert the supplied installation disk into your disk drive.
2. In Windows, click "Start" then select "Run".
3. Type in "A:\Setup" then press Enter and follow the on-screen instructions. Once the files are loaded, close all the windows that are open.
4. Two MSD icons should now appear on the desktop. Select "MSD Graph View"
5. One or more graphs should be on the screen (depending on the product). You will always have to Open the program file for the product, if the Controller or Ignition is not connected or its power is not on.

### **GETTING STARTED**

Double Click on the new MSD GraphView icon to open the Pro-Data+ software. Several windows will appear on the screen including one or two timing charts. Next you need to open the software for the product and version that you using.

In the top left window, with the title GraphView, go to File then Open. A list of versions of the PN 7530 appear. If you are not using the PN 7530 Programmable Digital 7 Ignition, click the back button on the Open menu (the icon with the folder and arrow on it). This takes you to a list of the other MSD products that can be programmed with this software. Select the product part number and version that you are using and double click. If you do not know the version number of your ignition, by connecting it to the PC and turning it on, the version number will come up automatically with the part number of the component. Also, the version number should be stamped on the bottom of the Controller.

When you open the MSD GraphView with the MSD connected to the PC and its power on it automatically transfers the data from the MSD to your PC screen. Note that in the GraphView window it will say "Product Connected" and display the MSD part number and the version number of the unit's program.

### **HELP**

There is a Help menu where you can easily access information on adjustments, wire colors or the activation of circuits. The Help icon is on the top right of the GraphView menu. It is recommended to print pages from the Help menu to have available.

**NOTE:** Page 16 shows the Pro-Data Screen.



## SAVES AND TRANSFERS

Whenever a change is made to a program, it either must be saved to your PC as part of the file you are programming or it must be saved/transferred to the MSD. The software gives you the choice of automatically transferring the change to the MSD or the PC.

**Save to MSD:** By saving the change right to the MSD, the new change is automatically put into the Controller.

**Save to PC:** This saves the changes on your PC screen only. The information still must be transferred to the MSD before it becomes active or saved to a file.

You can create numerous files with different options on your PC and download them at the track for testing.

## ADJUSTMENTS

To program items such as rev limits and retard stages view the Data Editor Tree along the left side of the screen. The values with a black bullet in front of them can be changed by clicking the mouse on them once. This brings up the adjustment window. Click on the up or down arrows until the value you want is shown. Next click on **Save to MSD** or **Save to PC**. Note that if you do not have the MSD connected, or turned on, you will only be able to save the change to the PC.

Also, note that when you save it to PC, the bullet turns Red. This means that the function has been changed, but not transferred to the MSD or saved as part of a file. Once you transfer the information to the MSD or save it as a file, the bullet will turn Black.

## PLOTTING TIMING CURVES.

The timing chart(s) provide an easy way to plot a curve for the entire span of the engine's rpm. The PN 8979 has one chart while the PN 8977 has two charts, one for the run timing and another for boost retard curve. The bottom curve is the Run curve. When you first open the software, the default screen(s) will have bullets that are used to adjust the curves. You can drag each bullet to a different rpm or retard value by moving the cursor over the point and holding the left mouse button down.

Adding a dot is done by moving the cursor to the designated value and right clicking the mouse. There is will give you a prompt to Add a Dot, Delete a Dot or Zoom in.

Zooming in will bring the rpm and timing plot to 100 rpm increments and 0.5° or 0.1° increments. Only a section of the graph will be viewed, but the screen will automatically scroll over by moving the cursor to the sides of the window. For best results, click the small box in the upper right corner of the window to expand the chart over your entire screen.

**Note:** After creating or modifying a timing curve, it must be saved as a PC file or transferred to the MSD ignition controller.

## USING AN MSD TESTER

Instead of running the engine to check your programs you can run the ignition or controller with an MSD Ignition Tester, PN 8998. This tester simulates a trigger signal and fires the coil while you control the rpm. This way, you can view the timing curve and rpm functions of your program. It will also confirm a Cam Sync signal so you know the sync sensor is functioning properly.



# INSTALLATION INSTRUCTIONS

**PULL DOWN MENUS**

**MINIMIZE SCREEN**

**MAXIMIZE SCREEN**

**CLOSE**

**PART AND VERSION NUMBER**

**BOOST RETARD CURVE CHART (PN 8977 ONLY)**

**NOTES**

**EDIT WINDOW**

**LADDER**

**RETARD**

**ICM GRAPH**

**RPM & BOOST (PN 8977 ONLY)**

**Run Curve Chart**

**Notes:** Any user notes may be entered for setup, data, track, and other important info for this setup.

**RevBurn Edit Window:** RevBurn Rpm 7000

**Ladder Data:** 12.50 Psi A, 1104 RPM x1000, 0.0 Retard Deg

**ICM Graph:** RET CYL ACTIVE

## Service

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for service, Proof of Purchase must be supplied for warranty verification. After the warranty period has expired, repair service is charged based on a minimum and maximum charge.

Send the unit prepaid with proof of purchase to the attention of: **Customer Service Department, Autotronic Controls Corporation, 12120 Esther Lama, Suite 114, El Paso, Texas 79936.**

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle.

The repaired unit will be returned as soon as possible after receipt, COD for any charges. (Ground shipping is covered by warranty). All units are returned regular UPS unless otherwise noted. For more information, call the MSD Customer Service Line (915) 855-7123. MSD technicians are available from 8:00 a.m. to 5:00 p.m. Monday - Friday (Mountain Time).

## Limited Warranty

Autotronic Controls Corporation warrants MSD Ignition products to be free from defects in material and workmanship under normal use and if properly installed for a period of one year from date of purchase. If found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of date of purchase. This shall constitute the sole remedy of the purchaser and the sole liability of Autotronic Controls Corporation. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Autotronic Controls Corporation be liable for special or consequential damages.