

Pro-Data+ Programming Instructions MC-4

These instructions will walk you through the different programming features of the MC-4 Ignition using the Pro-Data+ Software. If you need help with the installation of the MC-4 please refer to the Installation Instruction that came with your unit or you can download a new set from our web site at www.factorydirectperf.com

INSTALLATION

1. Insert the installation disk into your disk drive.
2. In Windows click "Start" then Select "Run".
3. In the box type "A:\Setup" Press Enter
4. Follow the on screen instructions.
5. At this point you should have two new icons on your desk top.
6. Select the one that says "MSD Graph View"
7. At this point you should see several timing graphs.
8. In the upper left corner of your screen select "File"
9. Scroll down and select "Open"
10. Select the folder that says "MC-4"
11. Highlight the file that says "MC4vxx.IGN" (xx = The latest version #; Example "03")
12. Click Open

At this point you are in the default setting for the MC-4 Ignition. When you make a change to this file always select the "Save As" option and rename the new file.

MONITOR

The rpm meter is a graphical interface that allows you to monitor the rpm, boost pressure and retard functions of the MC-4 while the engine is running. The dial on the left side will indicate the total rpm and boost pressure of the engine in real time. The dial on the right side will show the total degrees retard sum while the bar graph in the lower right corner will show you the total degrees for each cylinder.

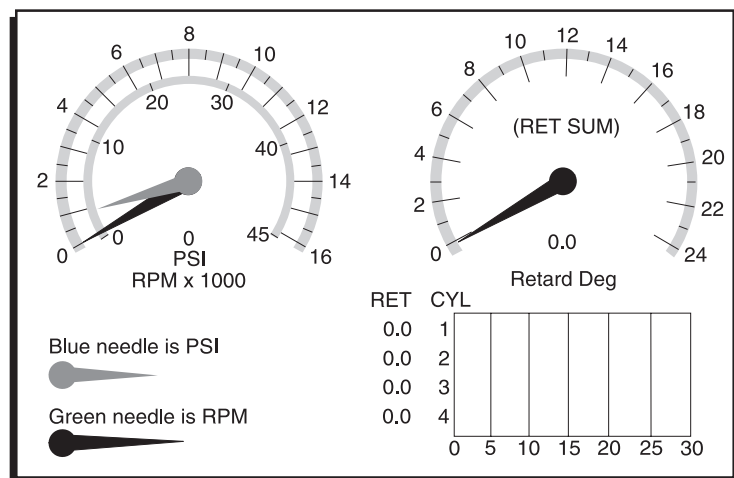


Figure 1 RPM and Retard Monitor.

INITIAL SETUP INFORMATION (SECTIONS 1 THRU 3)

The first step is going to tell the MC-4 what application you are using it on and what optional features you are using, if any. The default settings are for a four cylinder engine with a Waste Spark (Two spark plugs fire at the same time). This is the most common configuration. The default transmission is five gears.

INITIAL TIMING

Because of the advanced circuitry of the MC-4 Ignition, it is necessary to set the initial timing with the LED 4° more advanced than what you want your actual timing to be. For Example: If you want 32° of initial timing, then you will need to statically time your engine for 36° **using the LED light** on the MC-4.

Note: In order to use the LED on the MC-4 to static time your engine you should turn all alerts to Skip. See section 15.

TIMING COMPENSATION FEATURE - (DEFAULT 2°)

All ignition systems have an inherent amount of retard that occurs from the trigger pickups, coils and in some cases the Ignition itself.

The timing compensation feature of the MC-4 will make an adjustment automatically to compensate for this retard. In order for this feature to work properly the initial timing must be increased by 4°. (See Initial Timing above.) The default IgnComp setting is 2°. This is the recommended setting if you are using the FDP trigger pickups and coils. Most other applications will use between 2°-3° of compensation. The options are: 0°-3° in .5° increments.

IgnComp	
IgnComp	
*Deg	2.0

SECTION 1

ENGINE CONFIGURATION

CylCnt – (Default 4-Cyl.)

This tells the MC-4 how many cylinders your engine has. The options are:

CylCnt	
*CylCnt	4
*DisWs	WSON

Use the chart on the next page to help you figure out your settings.

1 – One Cylinder Applications – This is if you are using only the white trigger wire.

2 – Two Cylinder Applications – You will have the option of selecting either the White trigger wire (if you have a waste spark or distributor) or both the White and Green trigger wires (if you are firing each cylinder independently).

4 – Four Cylinder Applications – You will have the option of selecting either the White trigger wire (if you have a distributor) or both the White and Green trigger wires (if you are firing a waste spark)

Ws – (Default WSON – Waste spark On)

This tells the Ignition if you are using a distributor or if you are firing a wasted spark application or not. The options are:

Ws – None – This means you are using only the White trigger wire and you are using a distributor. **Note:** This would only be used for two or four cylinder applications using a distributor and only the White trigger wire.

WsON – This means “Waste Spark On” – This means you are firing a wasted spark system. **Note:** This would be used for Single Cylinder engines with the trigger pickup off the crankshaft or Two Cylinder applications using one trigger pickup or Four Cylinder applications using two trigger pickups. (Both the White and Green trigger wires.)

WsOFF – This means “Waste Spark Off” – This means you are firing each cylinder independently. **Note:** This would only be used for single cylinder applications or two cylinder applications using two trigger pickups triggering off the camshaft. (Both the White and Green trigger wires.)

ENGINE CONFIGURATION CHART

The MC-4 is primarily used with the four stroke engine in mind so the default is configured for these engines. If you plan to use the MC-4 on a two stroke application then you must understand that the firing duration sequence is different between a four stroke and two stroke. For example a four cylinder four stroke engine has the same firing duration sequence as a two cylinder two stroke. For this reason you must select the corresponding cylinder count for a two stroke. See below.

FOURSTROKE	Engine Configuration Chart
<p>Single Cylinder - Note: A cam sync will not be used. Waste Spark None (WsNONE) - Use with single cam triggered pickup. Waste Spark On (WsON) - Use with Crank Trigger pickup. • Briggs & Stratton</p>	
<p>Twin Cylinder - Waste Spark None (WsNONE) - Use on engines with distributors. Note: An external Cam Sync must be used to identify cylinder one. Waste Spark On (WsON) - Use with single pickup triggered from the crankshaft. This would use one double ended coil which fires both cylinders at the same time (Waste Spark) at TDC of each stroke. Note: This must be an even fire engine. Harley odd fire engines will not work in this mode. Note: An external cam sync must be used to identify cylinder one. Waste Spark Off (WsOFF) - Use with engines with two trigger pickups that are triggered from the camshaft. This also applies to distributor applications that have two trigger pickups and two coils. Note: The Cam Sync input can be set to Channel 1. • All Harley applications using two triggers and two coils.</p>	
<p>Four Cylinder - Waste Spark None (WsNONE) - Use on engines with distributors. Note: An external Cam Sync must be used. • All automotive and motorcycle applications that have a distributor rotated by the camshaft. Waste Spark On (WsON) - This is the most common four stroke application. This means you have two trigger pickups triggered from the crankshaft and two dual output coils. Note: An external Cam Sync must be used to identify cylinder one. • Kawasaki KZ • Suzuki GS • Suzuki GSXR Waste Spark Off (WsOFF) - This is not a valid option with the MC-4.</p>	

TWO STROKE	Engine Configuration Chart
<p>Note: The cylinder selection you will use for a two stroke application will be different than the actual cylinder count.</p>	
<p>Single Cylinder - Your selection on the Pro Data + will be 2 Cylinders. Waste Spark None (WsNONE) - This is the only option for a single cylinder two stroke engine. Note: Cam Sync Input will not be used.</p>	
<p>Twin Cylinder - Your selection on the Pro Data + will be 4 Cylinder. Waste Spark None (WsNONE) - This option will be used with one trigger pickup firing twice per revolution with a double ended coil. You would be firing both at TDC and at BDC.</p>	

SECTION 2

TRANSMISSION CONFIGURATION

The next step will tell the MC-4 how your transmission is setup to determine the correct shift kill procedure as well as shift light points.

Last Gear – (Default 5 - 5 Gears)

This tells the MC-4 how many gears your transmission has. The options are: 2-3-4-5-or 6 – Select the appropriate number of gears for your transmission.

```
Shift
ShiftGears
*LastGear 5
*DropRpm 600
```

Drop RPM – (Default 600 RPM)

This will tell the MC-4 how far the engine rpm will drop in order to recognize a shift. Keep in mind the engine speed has to increase by at least 200 rpm before the next gear change can be made to prevent double shifting. The options Are: 500 – 1,500 rpm in 100 rpm increments.

Kill Mode – (Default Auto 12)

This tells the MC-4 how you would like the kill feature to operate. The options are:

```
Mode
KillMode
*Auto 12
```

Manual – This provides a kill every time a shift is made.

Auto12 – This prevents a kill from occurring on the first shift but then provides a kill for each additional shift thereafter.

Auto123 – This prevents a kill from occurring on the first two shifts but then provides a kill for each additional shift thereafter.

Kill Delay – (Default 50 milliseconds)

This is the Kill Delay function. The Kill Delay provides a time based delay before the ignition becomes active again. This is especially important for air shifters so they have enough time to engage into the next gear. This feature will start as soon as the kill input is active.

```
Kill
Delay
KillDelay
*millisecond50
```

The options are: 20– 99 milliseconds in 1 millisecond intervals.

Kill Source – (Default Kill Wire)

This allows you to select how you want the kill feature to be activated. The options are:

```
Source
KillSource
*KillWire
```

KillWire – This makes the external Yellow wire the shift kill activation wire. This is for standard rider actuated air shifting. The kill delay time will start as soon as the kill wire is activated.

Shiftlight – This option will activate the kill feature and delay as soon as the shiftlight turns on. This is for applications where the shiftlight output is used to control the actuation of the airshifter.

SECTION 3

INDIVIDUAL CYLINDER MANAGEMENT

If you are going to take advantage of the MC-4's Individual Cylinder Management timing control then you will need to complete the following steps.

Note: If you are not using the Individual Cylinder Management then use the "Extern" option. It is also recommended you turn the alert feature OFF (Skip) for this option so you won't get the blink code.

CamSync – (Default - External)

This will tell the MC-4 what type of Cam Synchronization you will be using. The options are:

```
CamSync
*CamSyncExtern
```

Extern – This means you are using an external source such as our Cam Sync Sensor, PN 15-00-0520. This sensor will be mounted off the camshaft and synched to the number one cylinder.

Chan1 – This means you are running a single cylinder application or a two cylinder application with two trigger pickups using both the White and Green trigger wires. This will reference the White trigger pickup wire as the number one cylinder.

Note: This option cannot be used with either four cylinder engines or engines running waste spark.

CylDeg – (Default 0°)

This is where you actually program the individual retard for each cylinder. These are labeled by spark sequence since the firing order may vary between engines. There are four adjustments sequences. These are labeled SparkSEQ1 thru 4.

```
CylDeg
*SparkSEQ 1
*(1)Deg .0
*(2)Deg .0
*(3)Deg .0
*(4)Deg .0
```

SparkSEQ1 is going to refer to the cylinder that has the Cam Sensor on it or the cylinder attached to the White wire in non-waste spark engines.

SparkSEQ2 is going to be the next cylinder that is under compression and ready to fire. This may not be the #2 cylinder.

SparkSEQ3 is the Cylinder that will be under compression third in the firing order of the engine.

SparkSEQ4 is the Cylinder that will be under compression last in the firing order of the engine.

Note: This sequence number reflects the firing order of the engine not the cylinder numbers. For example if your engine has a firing order of 1,3,2,4 then Cylinder 1 will be SEQ1, Cylinder 3 will be SEQ2, Cylinder 2 will be SEQ3, and Cylinder 4 will be SEQ4.

The options for all four are: 0°-5° in .1° increments.

PROGRAMMABLE OPTIONS SECTIONS 4 THRU 14

SECTION 4

BOOST CURVE CONFIGURATION

If you are using a turbo or supercharger and you would like to map out a timing curve based on the intake manifold pressure then you will need to complete the following steps.

BoostSensor - (Default 3Bar)

The BoostSensor tells the MC-4 which Boost Sensor range you are using. There are two options for you to choose from.

```

BoostSensor
BoostSensor
*Range      3Bar

```

2Bar – This is our part number 15-00-0532 Pressure sensor. This unit will range from 2 psi up to 29 psi. Use this sensor if you want a timing curve between these two pressure extremes.

3Bar – This is our part number 15-00-0535 Pressure sensor. This unit will range from 2 psi up to 44 psi. Use this sensor if you want a timing curve between these two pressure extremes.

BoostCurve - (Default - See Map)

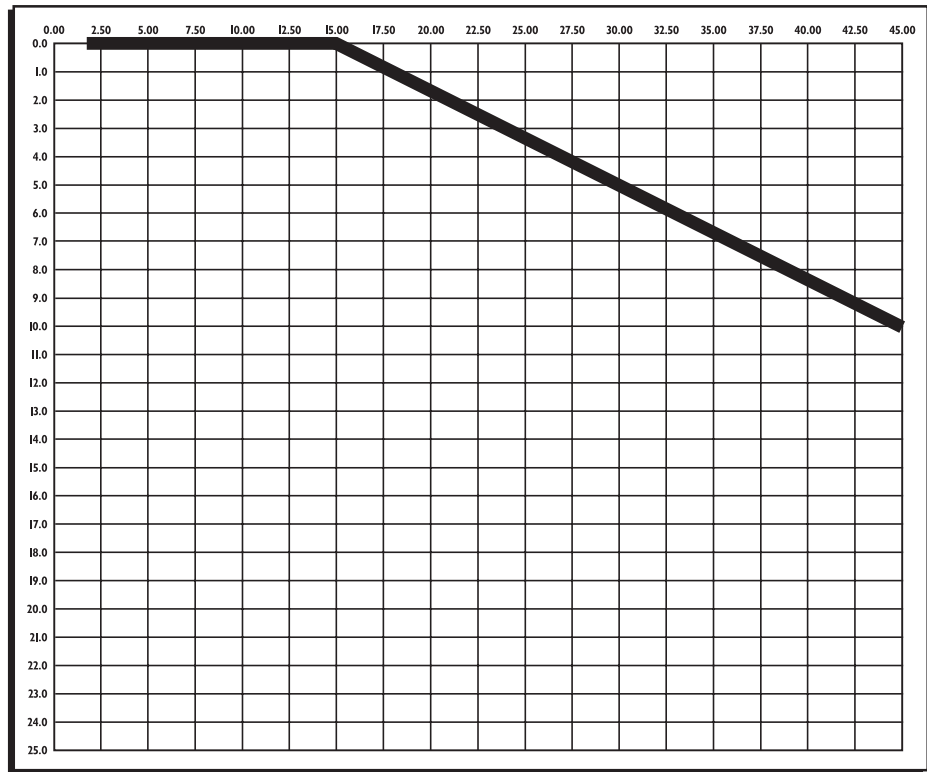
The Boost curve is a graphical map that allows you to drag the timing curve to the different settings in order to achieve the desired curve.

```

BoostCurve
*Psi        2.00
Boost
Copy@
RetDeg      .0

```

The easiest way to achieve this is to maximize the box that contains the Boost Curve. In order to move the curve you will need to place your mouse pointer over the portion of the graph that you would like to move. Right click your mouse and select "Add Dot". This will give you a red dot that you will be able to position anywhere along the curve. Continue to do this until your curve is completely mapped out. After the curve is edited,



then transfer it to the MSD by selecting "Plot to MSD" to load the new curve into the MC-4 Ignition, or File-Save As to save the change in a file on the PC.

SECTION 5

SHIFT LIGHT / SEQUENTIAL SHIFTER OPTIONS

The shift light output wires can be used one of two ways.

- It can be attached directly to our PN 15-00-0560 Shift light or the 15-00-6503 Launch Selector/Shift light and then programmed to turn on at a different rpm for each gear.
- It can also be connected directly to an air shifter which will shift the bike automatically into each gear at different rpm's if desired.

Note: If this mode is used then you must have the Shift Kill Source set to "ShiftLight" (See section 2 under "Kill Source")

```
ShiftLights
*ShiftLight 1
*(1) Rpm12500
*(2) Rpm12300
*(3) Rpm12100
*(4) Rpm11900
*(5) Rpm11700
```

The programmable options are:

Gear1 - with an adjustable RPM value from 2000 rpm to 15000 rpm. (Default 12,500)

Gear2 - with an adjustable RPM value from 2000 rpm to 15000 rpm. (Default 12,300)

Gear3 - with an adjustable RPM value from 2000 rpm to 15000 rpm. (Default 12,100)

Gear4 - with an adjustable RPM value from 2000 rpm to 15000 rpm. (Default 11,900)

Gear5 - with an adjustable RPM value from 2000 rpm to 15000 rpm. (Default 11,700)

SECTION 6

REV LIMITER OPTIONS

There are three Rev Limiter options with the MC-4. Two are activated by external wires and the third is active when the other two are not activated.

RevBurn – (Default 7,000)

This is the burnout rev limiter. If you want to do a burnout at a different rpm than your max rev limiter then you use this rev limiter. It is activated when you supply 12 volts to the Light Blue wire.

The options are: 2,000 rpm to 15,000 rpm in 100 rpm increments.

```
RevLim
RevBurn
*Rpm 7000
```

RevLaunch – (Default 6,200)

This is your Launch rev limiter. This rev limiter will be active when you supply 12 volts to the Dark Blue wire. Note: This rev limiter takes precedence over all other rev limiters if it is active.

This wire will also reset any counters such as gear retards, shift lights, time delays, Etc.

The options are from 2,000 rpm to 15,000 rpm in 100 rpm increments.

```
RevLim
RevLaunch
*Rpm 6200
```

RevMax – (Default 9,500)

This is the Max rev limiter. This option is active when no other rev limiter is active. The options are from 2,000 rpm to 15,000 rpm in 100 rpm increments.

```
RevLim
RevMax
*Rpm 9500
```

SECTION 7

START RETARD OPTION

Start retard is used to ease the load on the starter and to prevent backfires. This option is in effect from 0 to 800 rpm on start up. If the engine drops below 500 rpm, it will activate again.

```
Retards
Start
StartRetard
*Deg      10
```

Start Retard (Default 10°)

The options are:
0° to 25° in 1° increments

SECTION 8

PROGRAMMABLE LAUNCH RETARD RAMP BY TIME

This feature allows you to program from 0° - 15° of retard that will be active when the Dark Blue launch wire is active. When this Dark Blue wire is deactivated this retard will be progressively removed over the time period that is programmed into the MC-4. This is especially useful for controlling tire spin at the line. The options are:

Deg - (Default .0°)

This is the total retard that will be taken out when the Dark Blue wire is active. This is programmable from 0° - 15° in .5° increments.

```
Launch
LaunchRetard
*Deg      .0
*Ramp     .50
```

Ramp - (Default .50 seconds)

This is the total time it takes for the timing to be progressively put back in. This is programmable from 0 to 2.5 seconds in .010 second intervals.

SECTION 9

THREE STEP RETARD

There are three separate steps of retard that can be activated by rpm or an external 12 volt source. The third step can also progressively retard the timing over time by the release of the launch wire (Dark Blue), by rpm or by the external 12 volt source on the Tan wire. The options are:

Step1 - (Default 2° - 800 RPM)

This is the first step retard. The programmable values are from 0° - 15° in .1° increments from 800 to 15,000 rpm. The external activation wire is the Pink wire.

```
Step1
Step1
*Deg      2.0
*Rpm      800
```

Step2 - (Default 3° - 800 RPM)

This is the second step retard. The programmable values are from 0° - 15° in .1° increments from 800 to 15,000 rpm. The external activation wire is the Violet wire.

```
Step2
Step2
*Deg      3.0
*Rpm      800
```


Step3 – (Default 5° - 800 RPM)

This is the Third step retard. The programmable values are from 0° - 15° in .1° increments from 800 to 15,000 rpm in 100 rpm. The external activation wire is the Tan wire.

Step3	
Step3	
*Rpm	800
*Deg	5.0
*Ramp	.0

Ramp – (Default .0 seconds)

This is only for the Step 3 retard. By putting a value from .1 to 9.9 seconds this option will progressively increase the timing retard set in Step 3 over the course of the time value programmed. This is especially important for progressive nitrous applications. This feature is reset when the Launch wire (Dark Blue) is activated. This feature will also pause the timing if the power is interrupted from the Tan wire or the rpm drops below the Step 3 rpm value, and will pick up where it left off when power is reapplied to the Tan wire, or if the rpm climbs above the Step 3 value.

Note: Each step is independent & can be activated in any order.

Note: All step retards are added together for the total timing retard.

SECTION 10

GEAR SELECTABLE RETARD

This option will retard the timing a different value in gears 3 through 6. The options are:

Gear3 – (Default 0 Degrees)

When a retard value between 0° and 5° in .1° increments is programmed the timing will retard by that setting in this gear.

Gears	
*Gear	3
*(3)	Deg. 0
*(4)	Deg. 0
*(5)	Deg. 0
*(6)	Deg. 0

Gear4 - (Default 0 Degrees)

When a retard value between 0° and 5° in .1° increments is programmed the timing will retard by that setting in this gear, plus the Gear3 value.

Gear5 - (Default 0 Degrees)

When a retard value between 0° and 5° in .1° increments is programmed the timing will retard by that setting in this gear, plus the Gear3 + Gear4 value.

Gear6 - (Default 0 Degrees)

When a retard value between 0° and 5° in .1° increments is programmed the timing will retard by that setting in this gear, plus the Gear3, Gear4 and Gear5 value.

Note: Gear retards are added together with any other retard values.

SECTION 11

STEP OFF DELAY BY TIME

StepOffDelay – (Default .50 Seconds)

The Step Off Delay feature is active when any of the step retards (3-Step Retards or Launch Retard) are deactivated. This option will provide a time delay from 0 to 2.50 seconds in .010 second increments before the timing returns to normal. This ensures that any Nitrous has stopped flowing before the timing returns to normal.

StepOffDelay	
StepRetards	
*OffDelay	.50sec

SECTION 1 2

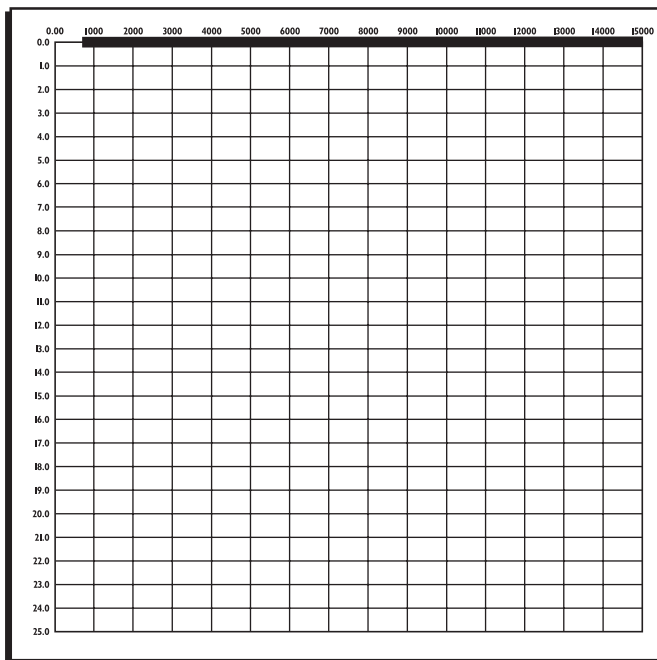
LAUNCH TIMING CURVE

LaunchCurve - (Default - See Graph)

The MC-4 allows you to program a timing curve that is only active when the you are in first gear. When this curve is active the word active appears on the bottom of this graph. This curve is programmable by the graphical map.

The easiest way to achieve this is to maximize the box that contains the Launch Curve. In order to move the curve you will need to place your mouse over the portion of the graph that you would like to move. Right click your mouse and select "Add Dot". This will give you a red dot that you will be able to position anywhere along the curve. Continue to do this until your curve is completely mapped out. After this curve has been edited, save it in the MC-4 with a transfer - Plot to MSD or File-Save As to save it in a file on the PC.

LaunchCurve	
*Rpm	800
Launch	
Copy@	
RetDeg	.0



SECTION 1 3

RUN TIMING CURVE

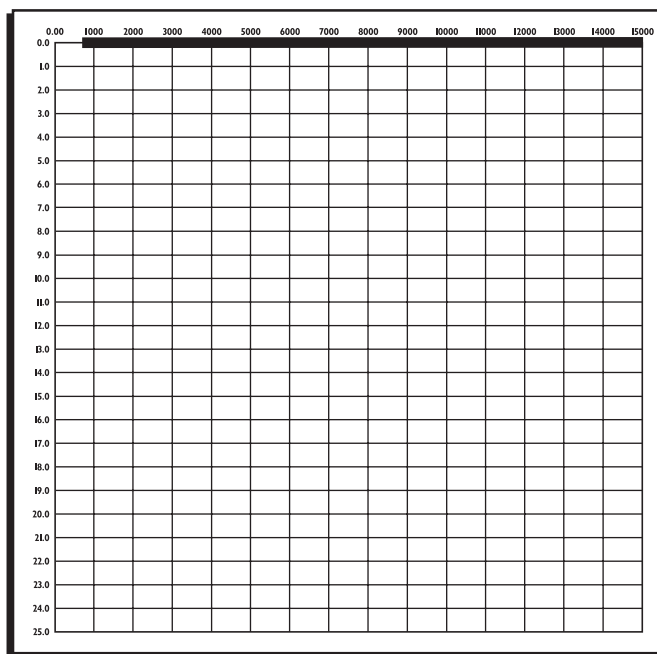
RunCurve - (Default - See Graph)

The MC-4 gives you the ability to map out a complete timing curve from 800 rpm all the way to 15,000 rpm. This timing curve can increase or decrease at any point along the graph.

The easiest way to achieve this is to maximize the box that contains the Run Timing Curve. In order to move the curve you will need to place your mouse over the portion of the graph that you would like to move. Right click your mouse and select "Add Dot". This will give you a red dot that you will be able to position anywhere along the curve. Continue to do this until your curve is completely mapped out. After this curve has been edited, save it in the MC-4 with a transfer - Plot to MSD or File-Save As to save it in a file on the PC.

Note: Any graph can be printed by selecting Transfer-Print. Also all other parameters can be printed from the Data Editor-Select-Print.

RunCurve	
*Rpm	800
Run	
Copy@	
RetDeg	.0



SECTION 14

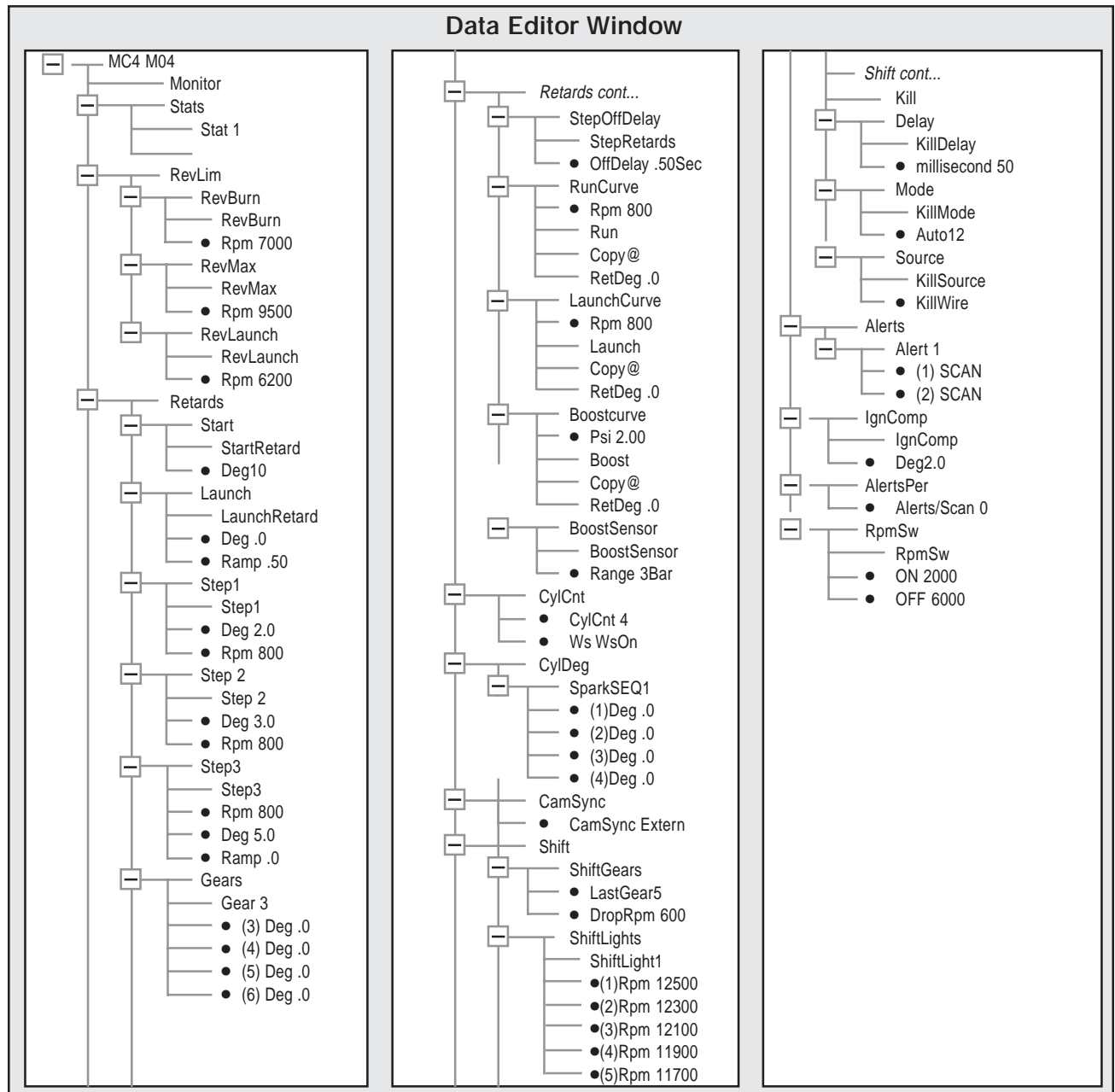
RPM ACTIVATED WINDOW SWITCH

RPMSW – (Default - On: 2,000 RPM; Off: 6,000 RPM)

This feature will supply ground to the Purple/Blue wire when the On rpm value is reached, then it will remove the ground when the Off rpm value is reached. This wire will handle a maximum 3 amp continuous draw.

The options are: ON 2,000 - 15,000 in 100 RPM increments
OFF 2,000 - 15,000 in 100 RPM increments

RpmSw	
RpmSw	
*On	2000
*Off	6000



SECTION 15

ALERTS

Alerts - (Default - (1) Scan - (2) Scan)

The alerts will provide a flash code to the LED on the outside of the MC-4.

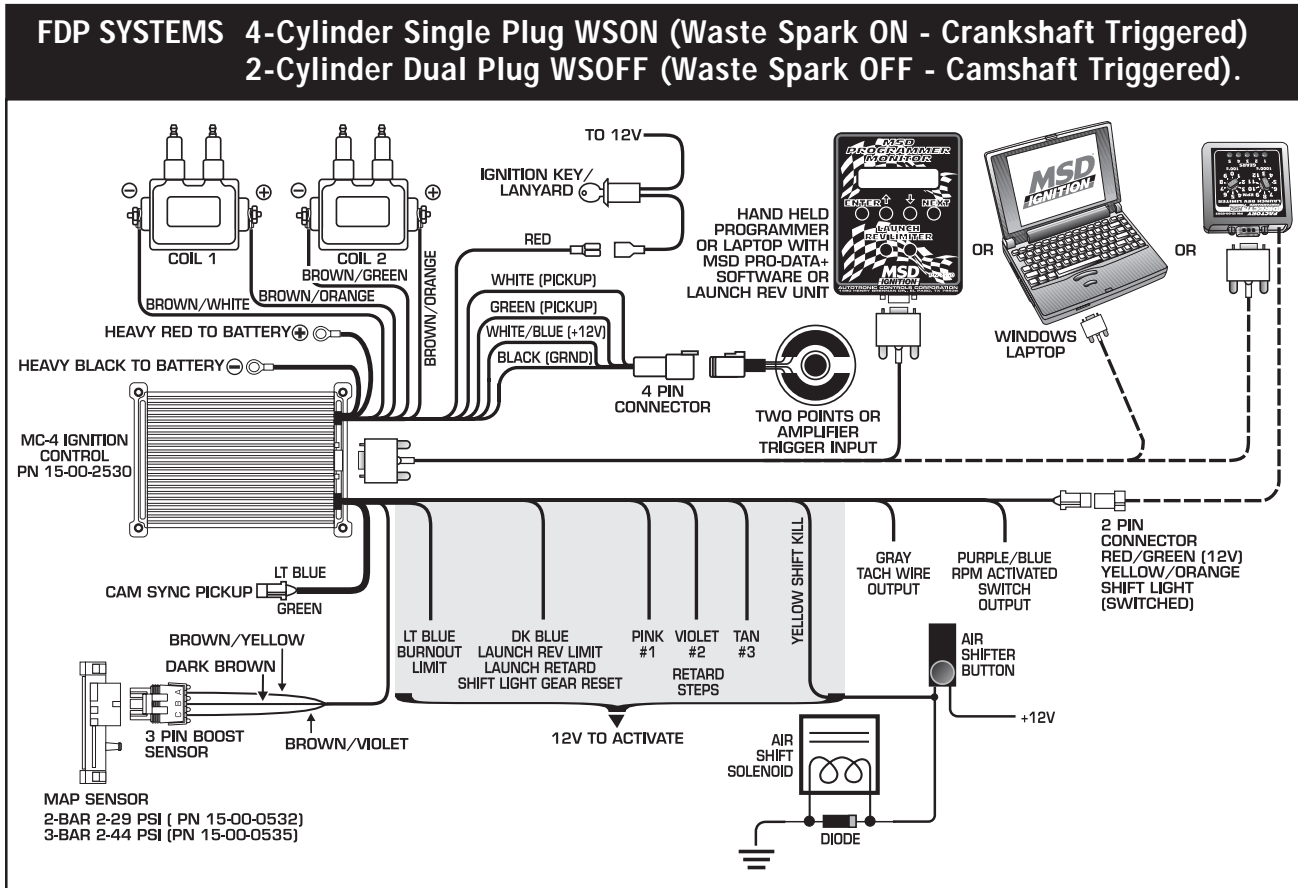
Alert
(1) SCAN
(2) SCAN

Alert 1 - This is the No Cam Sync Alert. This will blink the LED twice.

Alert 2 - This indicates a Low Battery situation. This will blink the LED three times.

The Options are: **Scan** (to enable)
Skip (to disable)

Note: In order to use the LED on the MC-4 to static time your engine you must turn all alerts off (Skip).



DEFAULT SETTINGS AND ADJUSTMENTS

The following list shows all of the default values and adjustable increment of the MC-4 Ignition.

Display	Default	Data Low-High (step by)
ShiftLt1 ###00 Rpm	12,500	2,000-15,000 (100)
ShiftLt2 ###00 Rpm	12,300	2,000-15,000 (100)
ShiftLt3 ###00 Rpm	12,100	2,000-15,000 (100)
ShiftLt4 ###00 Rpm	11,900	2,000-15,000 (100)
ShiftLt5 ###00 Rpm	11,700	2,000-15,000 (100)
LastGear #	5	2-6
RevBurn ###00 Rpm	7,000	2,000-15,000 (100)
RevLaun ###00 Rpm	6,200	2,000-15,000 (100)
RevMax ###00 Rpm	9,500	2,000-15,000 (100)
RetStart ## Deg	10	00-25
Retard1 ##.# Deg	2.0	0-15.0 (.1)
Retard2 ##.# Deg	3.0	0-15.0 (.1)
Retard3 ##.# Deg	5.0	0-15.0 (.1)
Retard1 ###00 Rpm	800	800-15,000 (100)
Retard2 ###00 Rpm	800	800-15,000 (100)
Retard3 ###00 Rpm	800	800-15,000 (100)
StepOffDelay#.#	.50	0-2.50 (.01)
RetLaun ##.# Deg	0.0	0-15.0 (.5)
RampTim #.# Sec	.50	0-2.50 (.01)
Spark1 #.# Deg	0	0-5.0 (.1)
Spark2 #.# Deg	0	0-5.0 (.1)
Spark3 #.# Deg	0	0-5.0 (.1)
Spark4 #.# Deg	0	0-5.0 (.1)
CylCnt \$	4	1/2/4
Ws \$\$\$\$	WsOn	WsNone/WsOff/WsOn
DropRpm ##00	600	500-1500 (100)
RunCurve Rpm ###00	800	800-15,000 (100)
RunCurve Deg ##.#	0	0.0-25.0 (.1)
LaunchCurve Rpm ###00	800	800-15,000 (100)
LaunchCurve Deg ##.#	0	0.0-25.0 (.1)
BoostCurve Psi###.#	2.0	2.0-45.0 (.25)
BoostCurve Deg ##.#	0	0.0-25.0 (.1)
BarType #Bar	3	2-3
AlertsPer #	0	0-1
RpmSw On	2000	2000-15,000 (100)
RpmSw Off	6000	2000-15,000 (100)
Gear3 Retard Deg #.#	0	0.0-5.0 (.1)
Gear4 Retard Deg #.#	0	0.0-5.0 (.1)
Gear5 Retard Deg #.#	0	0.0-5.0 (.1)
Gear6 Retard Deg #.#	0	0.0-5.0 (.1)
ShiftKillMode \$\$\$	Auto12	Auto12/Auto123/Manual
ShiftKillTime ##msec	50	20-99 (1millisecond)
CamSync \$\$\$\$\$	Extern	Extern/Chan1
Step3 Ramp	0	0-9.9 (.1 sec)
KillSource	KillWire	KillWire/ShiftLight
RpmDrop	600	500-1500 (100)
IgnComp	2.0	0-3.0 (.5 deg)
Alert 1	Scan	Scan/Skip
Alert 2	Scan	Scan/Skip

Tech Notes

Service

In case of malfunction, this component will be repaired free of charge according to the terms of the warranty. When returning 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, Factory Direct Performance, 1355 Pullman Dr., 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/Cashiers Check for any charges. For more information, call the FDP Customer Service Line **(915) 858-3365**. FDP technicians are available from 8:00 a.m. to 5:00 p.m. Monday - Friday (Mountain Time).

Limited Warranty

Factory Direct Performance warrants this product to be free from defects in material and workmanship under its intended normal use* and if properly installed, for a period of one year from the date of original purchase. If found to be defective as mentioned above, it will be repaired or replaced at the option of Factory Direct Performance. Any item that is covered under this warranty will be returned free of charge through standard shipping methods. If faster service is required the customer has the option of paying for this service.

This shall constitute the sole remedy of the purchaser and the sole liability of Factory Direct Performance. 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 Factory Direct Performance or its suppliers be liable for special or consequential damages.

*Intended normal use means that this item is being used as was originally intended and for the original application as sold by Factory Direct Performance. Any modifications to this item or if it is used on an application other than what Factory Direct Performance markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. Factory Direct Performance will accept no liability for custom applications.