

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

## **Hand Held Programmer/Monitor PN 7550, for the MSD Programmable Digital-7 Ignition Control**

These instructions are meant to illustrate the operation of the Programmer/Monitor and how to navigate its program menus. Reading the instructions as you operate the Programmer to become familiar with the screens and menus will assist in your programming.

### **Parts Included**

1 – Programmer/Monitor, PN 7550

The PN 7550 Programmer connects to the MSD Programmable Digital-7 Ignition Control with the supplied 9-pin wiring harness. It can be left connected when making passes or removed. If you choose to remove it after making changes in the program, you must go to the Save menu to store the new programs in the Ignition before disconnecting the harness.

There are six buttons on the PN 7550 (Figure 1). The top four are used for programming all of the features of the PN 7530 Ignition. The two Launch Control buttons put you directly to the Launch RPM setting adjustment for last minute starting line changes.

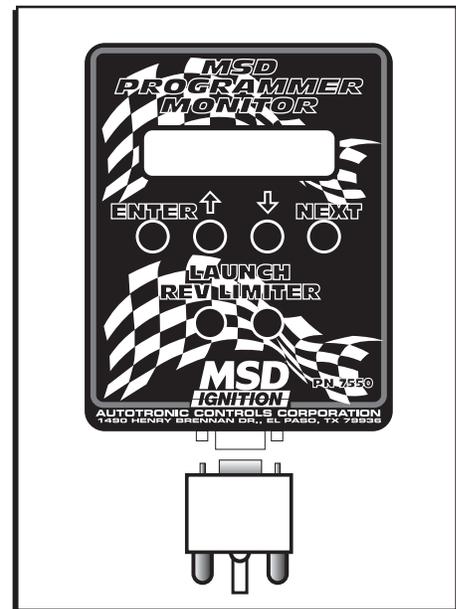
**ENTER** – This is used to open the selected field for further programming or to load a new program.

**NEXT** – Pressing this button moves the cursor to the next field. After making an adjustment to a program, pressing NEXT will take you to the Save menu.

**Up (↑) and Down (↓) Arrows** – These buttons are used to change the settings of programs such as rpm or timing. Pressing the up button increases the rate while the down arrow lowers it.

### **LAUNCH REV LIMITER -**

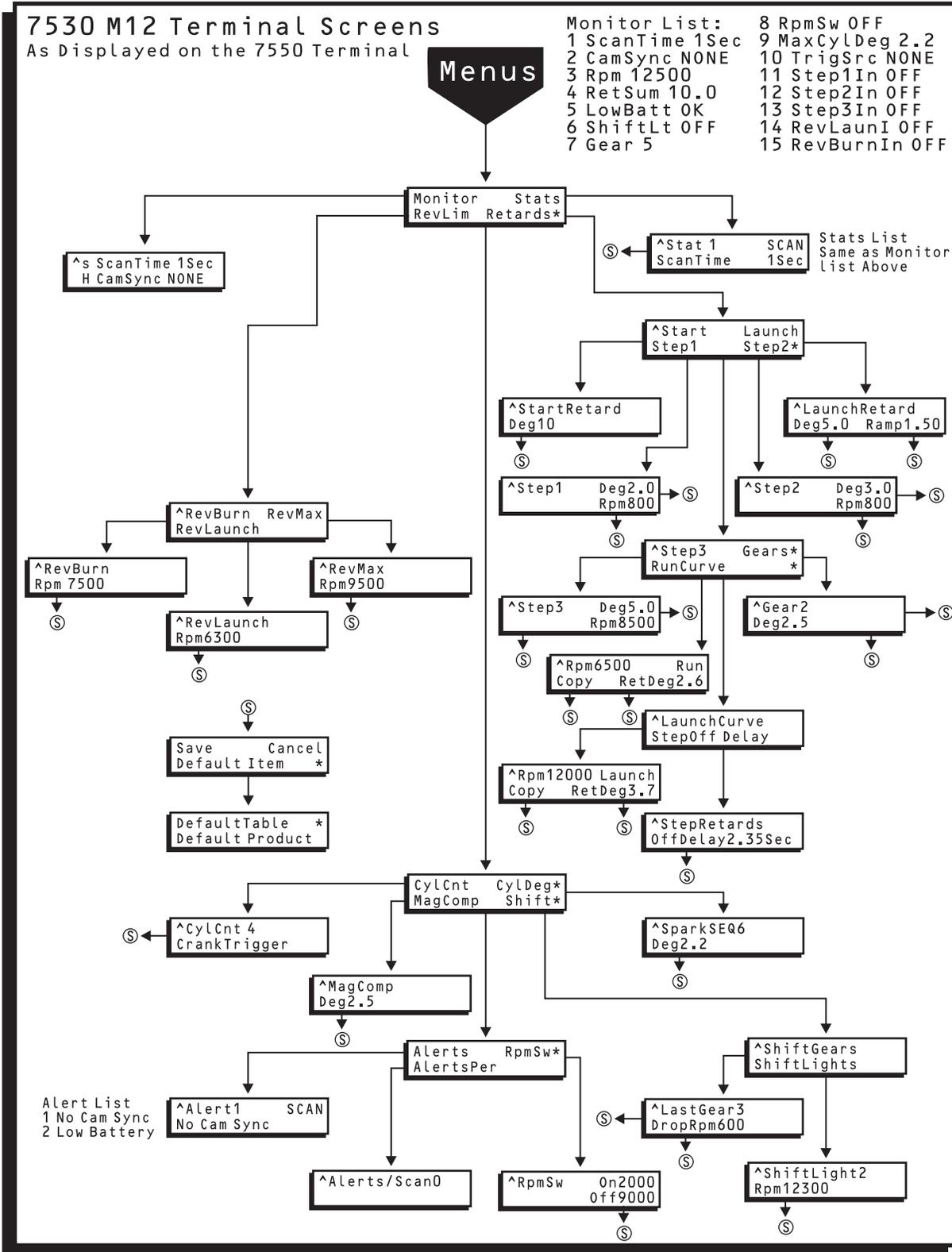
Pressing one of these buttons takes you directly to the RPM Launch limit for quick starting line changes. Once at this menu, use the arrow keys to adjust the rpm limit. Note that this rpm limit will automatically be saved without having to go to the Save menu.



**Figure 1 Button Operation.**

**MENU TREE**

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



**Alert List**  
1 No Cam Sync  
2 Low Battery

Figure 2 The Menu Tree.

When you first turn the ignition on, the Programmer will display a short introduction with MSD, the ignition version and other information. You can bypass this to get to the Main Menu by pressing Enter.

**MAIN MENU**

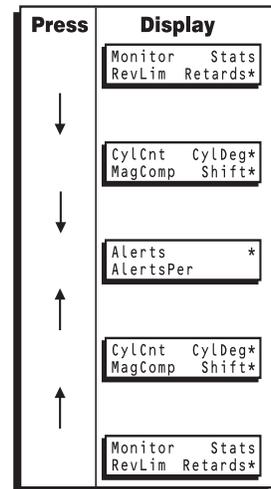
The Main Menus are shown in Figure 3. Note the \* on the right side of the screen. This means that there is more to this menu above or below list shown. By pressing ↓ you will get to the next part of the Main Menu. Note that three screens comprise the Main Menu.

**NAVIGATING THE MENUS**

To move around to the options in a menu, use the Next button. Whichever subject's first letter is flashing, that is the active choice. That is, when you press Next, the next screen will be that choice. Also note that there is an Previous symbol (^) in the left corner of the monitor. This will take you to the previous menu. When this is flashing and you select Enter, you will be taken to the previous screen.

**SAVE MENU**

This is the Menu that you have to go to in order to change a program. When you hit Enter or Next after making a change in a program, it automatically takes you to the Save Menu. Note that there is another screen below the one that comes up (as indicated by the lower \*). There are five choices at the Save Menu:



**Figure 3 Main Menus.**

**SAVE MENU**

<b>Save</b>	This will save the new program value in the Ignition.
<b>Cancel</b>	This will restore the previous value.
<b>Default Item</b>	This restores the program to the default value.
<b>Default Table</b>	Restores the complete table back to the default value. This is handy in cases such as the Launch Curve where there are numerous values.
<b>Default Product</b>	Entering this will restore EVERY PROGRAM back to default properties. Take note that you will start completely over by entering this!

When the Save screen comes up, the Save command is already flashing. By hitting Enter (or Next) the value will be saved and the monitor will display the new value.

**RPM Example:**

Following is an example of how to edit the MaxRev rpm limit (Figure 4).

**Main Menu**

Press Next until RevLim flashes. Then press Enter

### RPM Limit Menu

Press Next until RevMax flashes, then press ENTER. This takes you to the RevMax rpm program screen.

### RevMax Menu

Press Next until the RPM flashes, then push the ↓ or ↑ button until your value is shown. Then press Enter which will take you to the Save Menu.

### Save Menu

Save will be flashing so press Enter. The screen will go back to the RevMax rpm value to show the new value/program.

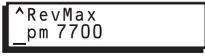
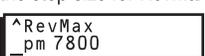
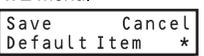
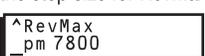
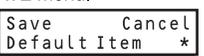
Press	Display	Press	Display	Press	Display	Press	Display
NEXT	The RevLim field is blinking. The RevLim field is selected on the Main Menu. 	ENTER	After the ENTER button is pressed, the Return field (^) is blinking on the RevMax menu. 	UP (HELD DOWN)	When the UP button is held down, the rpm value will continue to step up by 100. When the value reaches 8000 rpm, the step size will step up by 1000 Rpm. The number sequence resulting from HOLDING the UP button becomes: 7700, 7800, 7900, 8000, 9000, 10000. After releasing the UP button, the larger step is removed. Pressing the UP button again will step up by 100 (from 10000 to 10100).	ENTER	After the ENTER button is pressed, the Rpm RevMax value is saved in the ignition and the screen displays the RevMax Rpm value. 
ENTER	After the ENTER button is pressed, the RevLim is now displayed. The Return field is blinking (^ is used for "return to previous menu") 	NEXT	After the NEXT button is pressed, the Rpm field is blinking on the RevMax menu. 	UP	The UP and DOWN buttons can now be used to change the RevMax rpm value. After the UP button is pressed, the rpm value is larger by 100 (the step size for RevMax.) 	NEXT	After the NEXT button is pressed, the SAVE menu is displayed. The SAVE field is blinking on the SAVE menu. 
ENTER	After the ENTER button is pressed again, the display is returned to the Main Menu. The RevLim field is blinking. Press ENTER. 	UP	The UP and DOWN buttons can now be used to change the RevMax rpm value. After the UP button is pressed, the rpm value is larger by 100 (the step size for RevMax.) 	NEXT	After the NEXT button is pressed, the SAVE menu is displayed. The SAVE field is blinking on the SAVE menu. 		
ENTER	After the ENTER button is pressed again, the display is returned to the Main Menu. The RevLim field is blinking. Press ENTER. 						
NEXT	Press NEXT until RevMax is blinking. Now the RevMax field is blinking. 						

Figure 4 Changing the Overrev RPM Setting.

## PROGRAMMING A RUN TIMING CURVE

When using the Programmer to build a timing curve, you must program a timing value for every 100 rpm. If you skip a step, the timing retard will return to the default setting (no retard) for that rpm range. It is highly recommended to draw the timing curve on a graph and figure out the degree/rpm steps before attempting to program it into the Ignition.

MSD built in a copy function that will program the same amount of timing for each rpm though each step still needs to be Entered.

Following is an example of programming the Run curve. With the timing on the engine set at 36°, we want it to be 16° at idle and begin ramping up at 1,000 rpm. By 3,000 rpm we want to be back at the full 36° (This means 1° per 100 rpm steps).

To get this incremental amount, divide the rpm range of the curve by 100 (rpm increments). Take this result and divide it by the total amount of timing changes to come up with the amount of timing that needs to be adjusted per step (100 rpm).

### Main Menu

Press Next until Retards flashes, then press Enter

**First Retard Menu**

Note that RunCurve is not listed, but there is an \* on lower right of the monitor which means that there is more to this menu. Push the ↓ button to get to the next part of the menu, then click Next until RunCurve flashes. Press Enter.

**RunCurve Menu**

Use the Next button to get to the RPM down to 800 rpm, the lowest programmable rpm. Then use Next to maneuver to the RetDeg and use the arrows to set it to 20° of retard, then press Enter. This goes to the Save menu and select Enter again.

Instead of moving through the entire menu Run Curve menu again, press Next until Copy is active. Now by pressing Enter, you'll notice that the rpm setting is saved and the Monitor moves to the next rpm step (rpm). You only need to change the retard rate then press Copy again. Repeat this procedure for the complete curve. At Deg 0, press NEXT, and ENTER to save the programmed retard curve.

**Monitor Mode**

In Scan mode the monitor will scroll through all of the settings (or the ones you choose) so you can view each parameter when the engine is running.

**MENU DEFINITIONS**

<b>Alert</b>	This will display a 1 for No Cam Sync, or a 2 for Low Battery.
<b>CamSync</b>	This confirms that the ignition is receiving a sync signal. It will display either Sync or None.
<b>Copy</b>	This comes up on the Run and Launch Curve menus. It eases programming each step by copying the value of the previous step, with auto increment of Rpm.
<b>CylCnt</b>	Cylinder Count, for the number of cylinders of your engine.
<b>Distributor/ Cranktrigger</b>	Selects type of input trigger device connected for optimization of the RevLimiter.
<b>CylDeg</b>	The amount of timing that you want to pull out of the accompanying cylinder. 0°-5.0° per cylinder in .1 Deg increments. You also need to program which cylinder is receiving the retard rate, but note that this is the cylinder sequence order on distributor, not cylinder number.
<b>GearRetard</b>	The amount of retard that occurs with each gear shift. A different amount of retard can be activated for each gear from third to sixth.
<b>LaunchCurve</b>	This is the menu where you program the entire rpm curve in 100 rpm increments of 0.1° from 0 to 25.0°. This is active in gear 1.
<b>LaunchRetard</b>	This menu lets you program the retard amount and the setting to ramp it back to the LaunchCurve.
<b>MagComp</b>	Magnetic Pickup Compensation. You can compensate for different magnetic style pickups (crank trigger or distributor) from 0° - 3°.
<b>Monitor</b>	This lets you choose what parameters you can view while the engine is running, how long the view time lasts and confirm the Cam Sync signal.



**DEFAULT SETTINGS AND ADJUSTMENTS**

The following list shows all of the default values and adjustable increment of the PN 7530 Ignition.

Display	Default	Data Low-High (step by)
ShiftLt1 ###00 Rpm	12,500	2,000-12,500 (100)
ShiftLt2 ###00 Rpm	12,300	2,000-12,500 (100)
ShiftLt3 ###00 Rpm	12,100	2,000-12,500 (100)
ShiftLt4 ###00 Rpm	11,900	2,000-12,500 (100)
ShiftLt5 ###00 Rpm	11,700	2,000-12,500 (100)
LastGear #	5	2-6
MagComp #.# Deg	2.0	0-3.0 (.5)
RevBurn ###00 Rpm	7,000	2,000-12,500 (100)
RevLaunch ###00 Rpm	6,200	2,000-12,500 (100)
RevMax ###00 Rpm	9,500	2,000-12,500 (100)
RetStart ## Deg	10	00-25
Retard1 #.#.# Deg	2.0	0-15.0 (.5)
Retard2 #.#.# Deg	3.0	0-15.0 (.5)
Retard3 #.#.# Deg	5.0	0-15.0 (.5)
Retard1 ###00 Rpm	800	800-12,500 (100)
Retard2 ###00 Rpm	800	800-12,500 (100)
Retard3 ###00 Rpm	800	800-12,500 (100)
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)
Spark5 #.# Deg	0	0-5.0 (.1)
Spark6 #.# Deg	0	0-5.0 (.1)
Spark7 #.# Deg	0	0-5.0 (.1)
Spark8 #.# Deg	0	0-5.0 (.1)
CylCnt \$	8	4/6/8
Distributor	Distributor	Distributor/CrankTrigger
DropRpm ###00	600	500-1500 (100)
RunCurve Rpm ###00	800	800-12500 (100)
RunCurve Deg #.#.#	0	0.0-25.0 (.1)
LaunchCurve Rpm ###00	800	800-12500 (100)
LaunchCurve Deg #.#.#	0	0.0-25.0 (.1)
StepOffDelay #.#.#	.50	0-2.50 (.01)
AlertsPer #	0	0-1
RpmSw On	2000	2000-12,500 (100)
RpmSw Off	6000	2000-12,500 (100)
Gear3 Retard Deg #.#	0	0.0-5.0 (.5)
Gear4 Retard Deg #.#	0	0.0-5.0 (.5)
Gear5 Retard Deg #.#	0	0.0-5.0 (.5)
Gear6 Retard Deg #.#	0	0.0-5.0 (.5)
ScanTime #Sec	1	1-9
CamSync \$\$\$\$		NONE/SYNC
Rpm #.#.#.#		monitor
RetSum #.#.#		monitor
ShiftLt \$\$		OFF/ON
LowBatt \$\$\$		OK/LOW
Gear #		1-5
RpmSw \$\$\$		OFF/ON
MaxCylDeg		0.0-5.0
TrigScr		NONE/MAG/PTS
Step1In		OFF/ON
Step2In		OFF/ON
Step3In		OFF/ON
RevLaunIn		OFF/ON
RevBurnIn		OFF/ON

