

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

MSD **Programmable Shift Controller** **PN 7559**

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

Parts Included:

1 – Shift Controller	8 – #10 Screws	10 – Butt Splices
1 – Pro-Data+ Disk	4 – #10 Nuts	2 – Ring Terminals
1 – 9-Pin Harness, 10-Feet	4 – #10 Washers	
2 – Deutsch Terminated Harnesses	1 – 1-Pin Harness	

Note: Solid core spark plug wires cannot be used with this controller.

The MSD Programmable Shift Controller allows you to program different rpm points to trigger the shift solenoids. Any transmission configuration may be used up to a six speed trans. Programming the rpm and options of the Shift Controller can be done with MSD's Hand Held Monitor, PN 7550, or with the MSD Pro-Data+ Software on a Windows based PC.

The optional Hand Held Programmer/Monitor, PN 7550, connects through the 9-pin connector on the Control and features an LCD display that allows you to walk through the programs as well as monitor the engine's rpm, the current gear, alerts and more. (Figure 1).

There is also a computer disk supplied with the MSD ProData+ software. This software is for PC's running windows 95, 98, or NT. All of the adjustable parameters can be reviewed and set then uploaded to the Controller. More information on using this software begins on page 5.



Figure 1 Hand Held Programmer, PN 7550.

PROGRAMMABLE FEATURES

Application

The number of cylinders and number of gears must be programmed. The Cylinder Count, (CylCnt) default is 8-cylinders, and can be programmed for 4 or 6-cylinders. The Transmission needs to be configured as well. The default is 6-gears and can be programmed for 2, 3, 4, 5 and 6-gear transmissions on the (LastGear) menu.

Gear Solenoids

There are different shift solenoids available and will need to be selected. The default is a Sequence-On which is activated with 12 volts and remains on. There is also a Pulsed solenoid that receives a Pulsed signal to activate the solenoid. The time of the Pulse signal is also adjustable from 0.100 to 2.5 seconds in 0.010 increments. (The solenoid manufacturer should specify a pulse time.)

Shift RPM

The rpm for each gear change needs to be programmed from the Gear Select (GearSel) menu. The rpm can be programmed from 1000 to 12,500 rpm in 100 rpm increments.

Launch Wire Activation

This program (LaunchIn) selects the input signal. The Dark Blue wire is the Set/Reset wire and can be activated by either being grounded or when connected to 12 volts. The default is the ground setting.

Note: To test the Dark Blue wire's operation the engine must be running, so the Shift Controller receives a trigger signal. MSD offers an optional tester, PN 8998, that allows you to test the Controller without the engine running. See page 6.

Shift Inhibit

This program is programmable from 300 to 600 milliseconds. It will inhibit or delay the next shift from occurring by the amount of time programmed. This (Inhibit) is used during the launch or in cases of wheel spin. The default is 300 milliseconds.

Display	Default	Data Low-High (increments)
CylCnt \$	8	4/6/8
ShiftLt1 ###00 Rpm	7,000	1,000-12,500 (100)
ShiftLt2 ###00 Rpm	7,500	1,000-12,500 (100)
ShiftLt3 ###00 Rpm	8,000	1,000-12,500 (100)
ShiftLt4 ###00 Rpm	8,500	1,000-12,500 (100)
LastGear #	6	2-6 (1)
LaunchRst Sw \$\$\$\$	Gnd	Gnd/Pwr
OutSel \$\$\$\$\$	SeqOn	SeqOn/Pulse
PulseTime #.##	.50	.10-2.50 Sec (.01)
Inhibit ###	300	300-600 ms (10)
AlertsPerScan #	0	0-1 (1)

Figure 2 Default Setting Chart.

LEDS

There are six LED's on the end panel of the Controller. The Red status LED will be on steady when the unit is turned On. Once the launch reset wire is activated (Dark Blue) this LED will blink rapidly (this is handy during clutch setup). When the launch reset wire is deactivated the status LED will turn off.

The Green LEDs indicate each shift. Each LED will light up as the gearshift is activated. In Sequence-On mode they stay on until the power is turned Off or the Launch Reset wire is activated again. In Pulse mode each LED will blink for the gearshift.

If there is a shorted solenoid or an over heated solenoid driver the status LED will blink a fault code to indicate which solenoid output is at fault. The fault codes will continue until the Launch Reset is active or the power is turned off. The blink codes are:

Two blinks	Shift 1 output
Three blinks	Shift 2 output
Four blinks	Shift 3 output
Five blinks	Shift 4 output
Six blinks	Shift 5 output

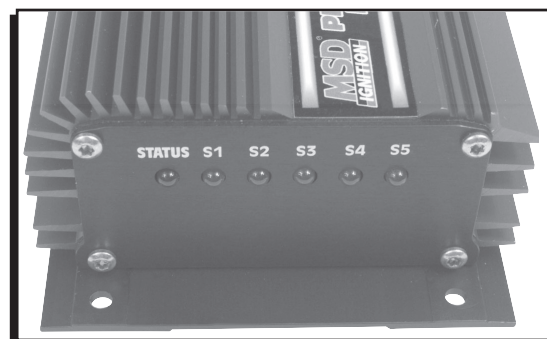


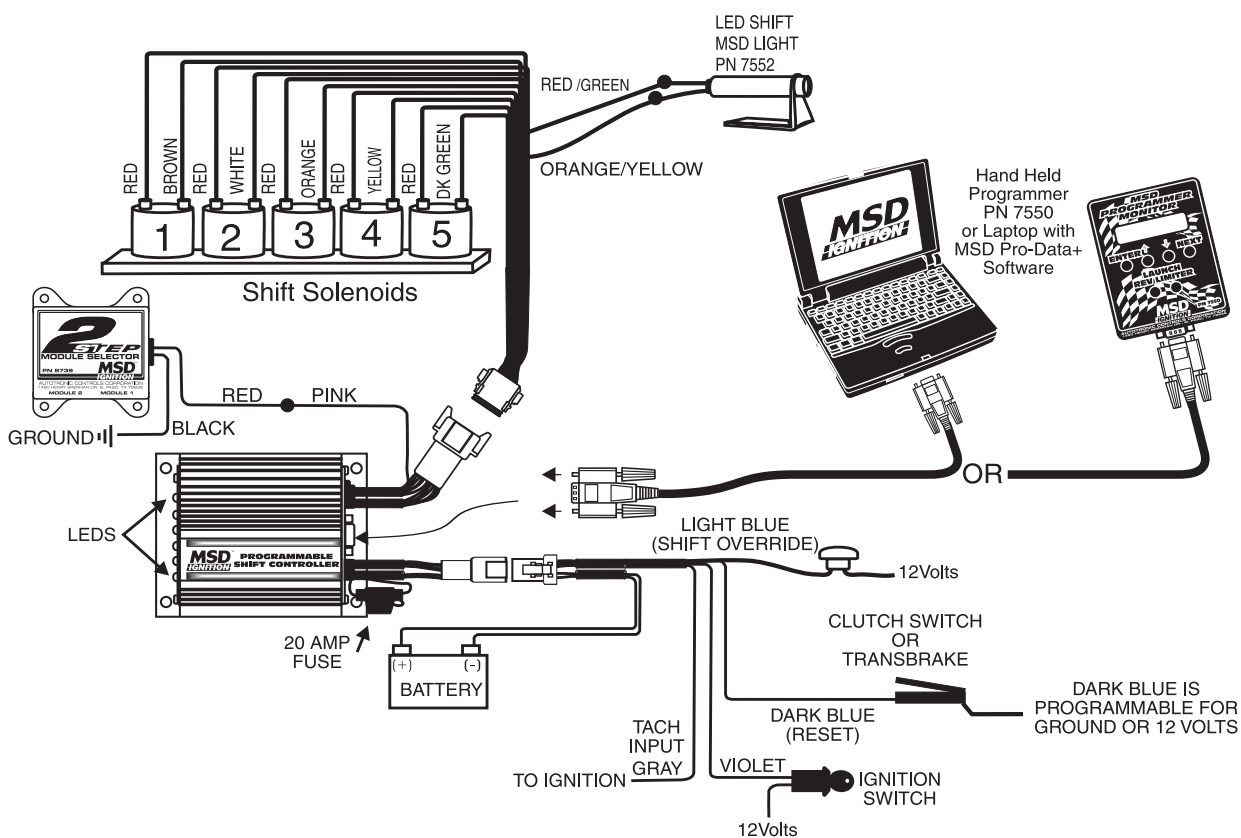
Figure 3 Shift LEDS.

WIRING

Heavy Red	To Battery positive (+)
Heavy Black	To Battery negative or other good ground
Violet	To 12 volts at the ignition switch.
Dark Blue	Launch Reset input wire to +12 volts or ground
Light Blue	Shift Override input wire to +12 volts momentary switch
Pink	12 Volt activation output for RPM Module Selectors
Gray	Tach input, 12 volt signal from ignition
Orange/Yellow	This is the signal wire for a shift light
Fuse	Mini Blade, 20 Amp Fuse

Shift Solenoid Wires

Red Wires	These five wires provide the positive 12 volts to each shift solenoid. They are protected by a 20 amp fuse.
Brown	Coil negative (-), Solenoid 1
White	Coil negative (-), Solenoid 2
Orange	Coil negative (-), Solenoid 3
Yellow	Coil negative (-), Solenoid 4
Dark Green	Coil negative (-), Solenoid 5
Red/Green	This wire provides the positive 12 volts to the Shift Light. Protected by 20Amp Fuse.



Note: NHRA rules only allow one wire to be connected to the Trans Brake. Connect the MSD Dark Blue (reset) to the Trans Brake Switch. The Two or Three Step Activation wire can connect to the Pink wire of PN 7559.

Figure 4 Wiring the Programmable Shift Controller.

PRO-DATA+ PROGRAMMING INSTRUCTIONS

Installing the Software

1. Insert the installation disk.
2. In Windows click **Start** then select **Run**.
3. In the box type **A:\Setup** then press **Enter**.
4. Follow the on-screen instructions.
5. At this point there should be two MSD icons on your desktop.
6. Select the one that says **MSD Graph View**.
7. In the upper left corner of the screen select **File**.
8. Select the folder **7559**.
9. Select the file that says **7559vXX.IGN** (XX means the latest version such as 02).
10. Click on Open.

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 Controller. 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.

Tachometer

The tachometer on the monitor will show real time rpm when the engine is running with the laptop connected.

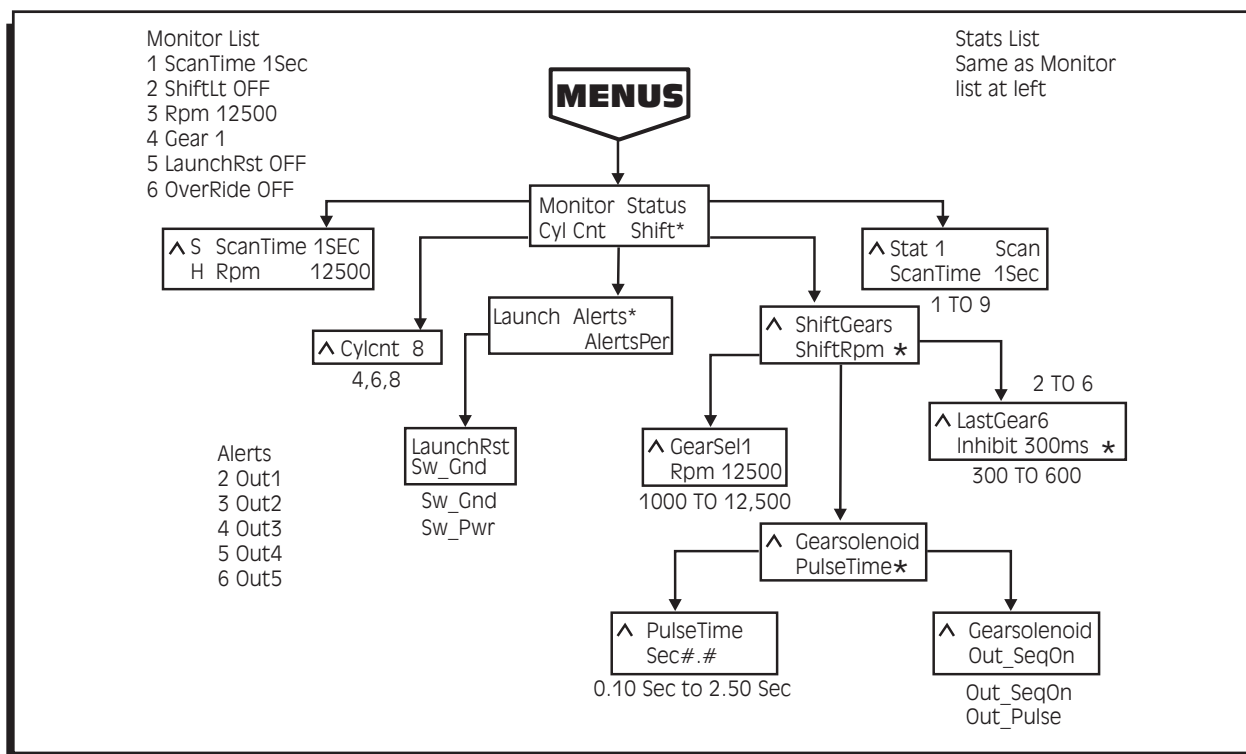


Figure 5 Monitor Screen Menu

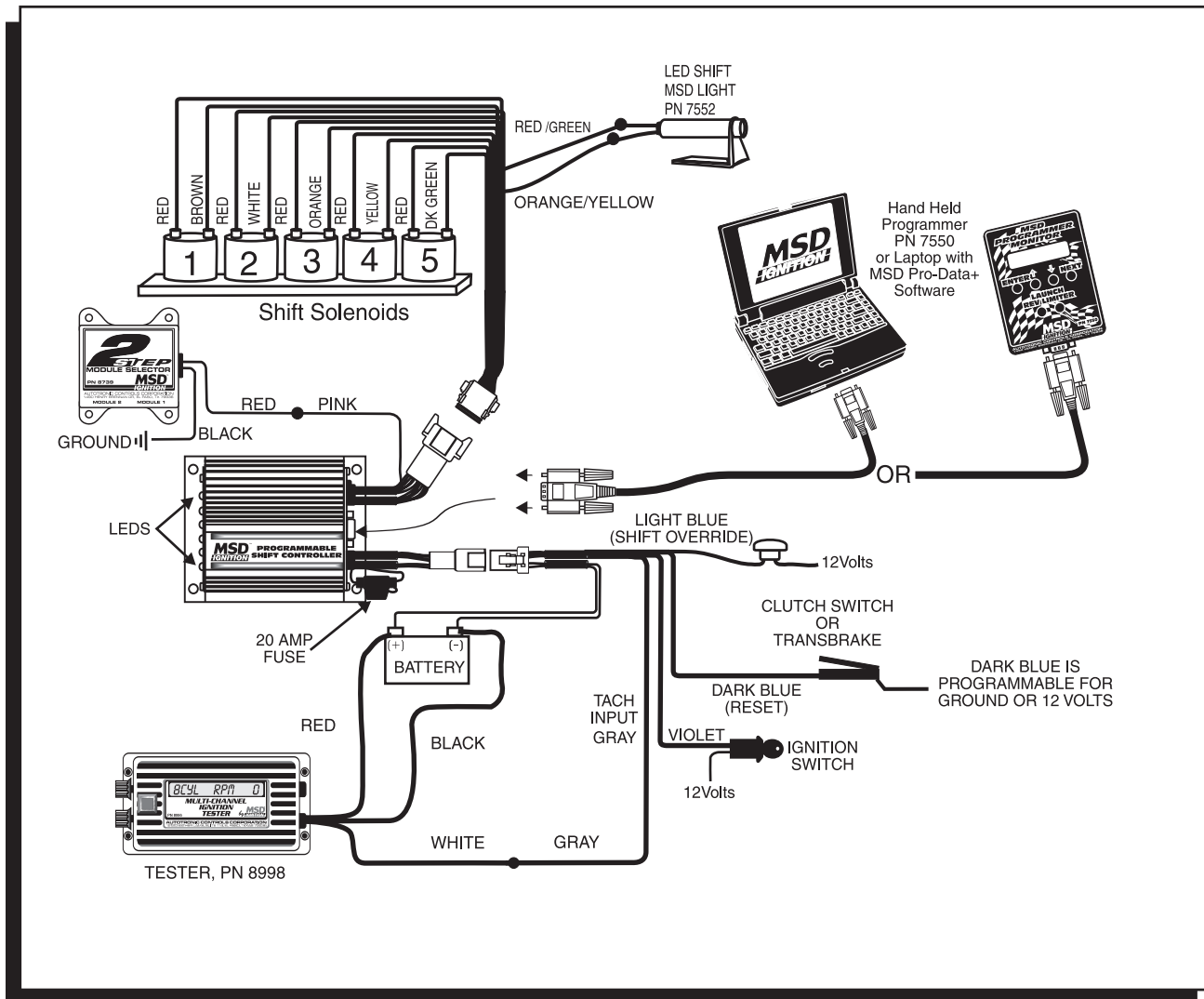


Figure 6 Wiring the Programmable Shift Controller.

Testing the Programmable Shift Controller with optional Ignition Tester, PN 8998.

1. Connect the Tester's Red wire to 12 volts and Black wire to ground.
2. Connect the Tester's White wire to the Gray tach input wire of the Shift Controller.
3. Reset the Dark Blue wire to start test.
4. Accelerate the Ignition Tester by rotating the RPM knob to the 1st gear shift point then drop the RPM. Repeat and check accuracy of desired RPM through all gears.

This image shows a full page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook or legal stationery. There are no margins, text, or other markings on the page.

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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).

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