to construct a race engine.

If the procedures outlined for maximum performance are followed and the engine begins to detonate, you must decrease the timing advances until the detonation is eliminated. Detonation not only severely reduces power, it also destroys pistons, rings and rod bearings. DO NOT RUN AN ENGINE THAT IS DETONATING.

Tools required: Timing light, 3/32 allen wrench, vacuum gauge with long hose, vacuum source ("Mighty Vac") and a friend or helper.

1. Set the basic timing for total mechanical spark advance.
   a. Disconnect and plug the vacuum advance hose.
   b. Connect timing light to the battery and number 1 spark plug wire.
   c. Loosen the distributor hold down clamp so the distributor housing may be rotated by hand.
   d. Start the engine and allow it to warm up fully.
   e. Set the idle speed between 2600 and 2800 RPM.
   f. Set the timing according in accordance with the following chart:

Engine	Heads	Timing Spec.
A	Production - Pre 89 (Iron)	35° BTDC
A	Production - '89 & Newer (Iron)	32° BTDC
A	W2 (Iron)	35° BTDC
A	W5 (Alum)	35° BTDC
B/RB	Production (Iron)	38° BTDC
B/RB	Stage I,II,III (Iron)	38° BTDC
B/RB	Stage IV, V (Iron)	38° BTDC
B/RB	Stage VI (Alum)	38° BTDC
B/RB	Indy (Alum)	35° BTDC
B/RB	B1 (Alum) Under 475 cu. in.	37°-39° BTDC
B/RB	B1 (Alum) Over 475 cu. in., Under 15.0:1 Ratio	36°-38° BTDC
B/RB	B1 (Alum) Over 475 cu. in., Over 15.0:1 Ratio	34°-36° BTDC
B/RB	B1-TS	34° BTDC
Hemi	All (Iron or Alum)	35° BTDC

   g. Tighten the distributor hold down bolt
   h. Reduce the idle to the original setting, unplug and reconnect the vacuum advance line.

2. Set the vacuum advance for total ignition advance.
   a. After the basic timing has been set for total mechanical spark advance, disconnect the vacuum advance hose at the carburetor. Connect a vacuum gauge to the carburetor's vacuum advance port and route the gauge and hose in to the passenger compartment. Place the gauge in a location where an assistant can read the gauge while the vehicle is being operated.
   b. With the vehicle in operation, note the maximum amount of vacuum generated by the engine while in gear and being held at a steady speed between 2000 and 4000 RPM.
   c. Stop the vehicle, turn off the engine and connect a timing light to the battery and number 1 spark plug wire.
   d. Start the engine and raise the idle speed to 2600 RPM. Connect a vacuum source (Mighty Vac) to the distributor's vacuum canister and draw vacuum up to the reading noted in step b.
   f. Note the total advance shown on the harmonic balancer.
   g. Total advance, mechanical plus vacuum, should be set according to the following chart:

Engine	Total Advance
A	50° BTDC
B/RB	56° BTDC
Hemi	53° BTDC.

   h. Disconnect the vacuum source and insert a 3/32 allen wrench into the internal vacuum canister adjusting screw. Turn the allen screw (clockwise to decrease, counterclockwise to increase) to obtain the correct setting. Reconnect the vacuum source and recheck the timing. Continue repeating this procedure until the correct setting is obtained.
   i. Remove the timing light and vacuum source. Reconnect the vacuum advance hose. Reset the idle speed to your original setting.

Trouble Shooting:

If the vehicle does not operate properly, refer to the following trouble shooting chart for possible causes of the malfunction. If you are unable to correct the problem, call the Mopar Performance Tech Hotline at (313) 853-7290, Monday through Friday, 9:00 - 12:00 and 1:00 - 5:00, EST.

1. Engine turns over but will not start:
   a. Recheck all connections for being loose or poorly connected.
   b. Check to see if battery voltage (12 volts) is being supplied to the ballast resistor when the ignition key is held in the start position. If not, clean or repair all the electrical connections from the battery to the ballast resistor.
   c. Check to ensure that the ECU is grounded. This usually occurs when the ECU is bolted down, but a separate ground wire from the ECU bolt to the body or battery may be required.