MSD IGNITION INSTALLATION INSTRUCTIONS

MSD Dual Hall HVC Pro-Billet Distributor
Chevrolet - PN 83921, Ford 351W – PN 83922
SB Chrysler - PN 83923, Toyota - PN 83924,
Chevrolet R07 - PN 83925, Dodge - PN 83926

Parts Included:
1 - Distributor
1 - Wire Retainer
1 - Coil Wire Retainer
2 - Retainer Screws
1 - Gasket (Chevy Only)
2 - O-Rings (Chevy Only)
1 - O-Ring (Ford/Chrysler/Toyota Only)

Parts Required:
Distributor Gear
Harness Assembly, PN 8857
HVC Distributor Reluctor Removal Tool, PN 83492

Note: The HVC Pro-Billet Distributor is NOT supplied with a gear. See page 2 for gears.

IMPORTANT

The MSD HVC Pro-Billet Distributors are the most advanced racing distributors available. Take the time to read these instructions thoroughly before installing the distributor. There are a variety of adjustments that can be made to improve the performance of your engine and should be understood prior to running the engine.

Use of a distributor spin machine (or equivalent), is recommended to take full advantage of the HVC's adjustable features. With a degree wheel and pointer, you will be able to easily and accurately set the timing of the secondary pickup.

WIRING

These Distributors have four 2-wire Deutsch connectors that connect to the ignition control.

2-PIN CONNECTORS		
MALE CONNECTOR		
BLACK	**Pin 1**	Connect to a common ground.
RED	**Pin 2**	12-volt input. Connect to switched 12 volts.
FEMALE CONNECTOR		
BROWN	**Pin 1**	Shielded Ground. Connect to Ground.
WHITE	**Pin 2**	Trigger Wire. Connect to the points input (White) wire of the MSD Ignition Control.

Figure 1 Separate Pickup Connectors.

PICKUP ALIGNMENT AND ADJUSTMENTS

The HVC Pro-Billet Distributor features a primary and secondary pickup.
These are stacked together with the primary positioned on the bottom. The primary is fixed while the secondary pickup is adjustable +/- 8°. The pickups are aligned at the factory at 0° advance/retard. **The position of the secondary pickup will need to be set to your specifications.**

When installing the distributor there is an alignment indicator (Figure 3). By aligning the reluctor paddle with the indicator, the timing will be within approximately +/- 3° of the desired amount. To adjust the secondary pickup, loosen the two allen head screws on the top pickup. Next, turn the eccentric using an 11/32" wrench to move the pickup (Figure 3). Secure the screws when the desired timing is reached.

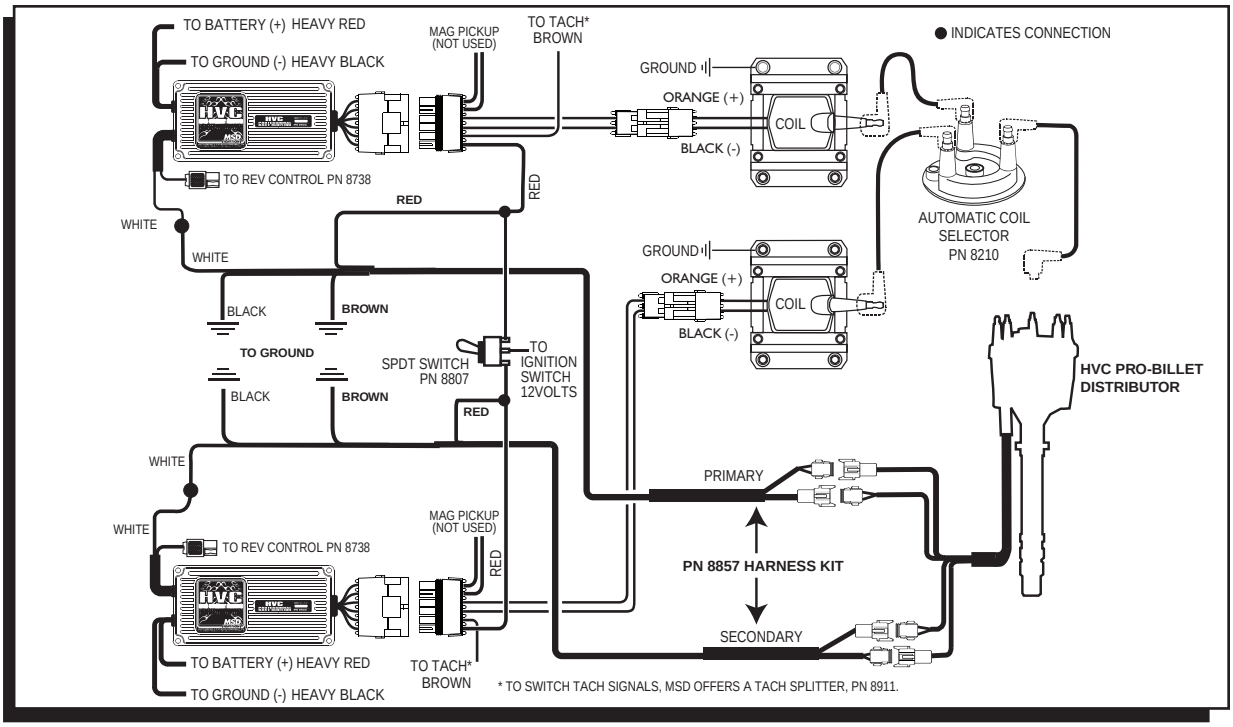

Figure 2 Wiring a Complete Redundant System.

SERVICE

MSD designed the HVC Pro-Billet Distributor to be completely serviceable. Replacement parts are listed below.

SERVICE PARTS:

4 - Pin Deutsch Connector - PN 8181
Rotor - PN 8484
Extension Harness (set) - PN 8857
Reluctor Installation/Removal Tool - PN 83492
Finished Reluctor - PN 8349
Unfinished Reluctor - PN 83491

Pickup Assemblies
CW - Lower Chevrolet - PN 87571
CW - Upper Chevrolet - PN 87573
CCW - Lower Ford/Mopar/Toyota - PN 87572
CCW - Upper Ford/Mopar/Toyota - PN 87574

Bronze Gears
Chevrolet
Standard - PN 8471
+0.006" - PN 8472
+0.009" - PN 84722
+0.012" - PN 84723
+0.015" - PN 84724
Ford Windsor
Standard - PN 8585
Chrysler
Standard - PN 8525
+0.006" - PN 8526
Toyota
N/A: Contact TRD for information

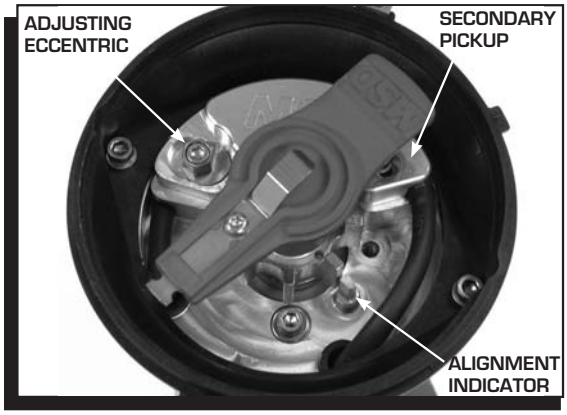

Figure 3 Adjusting the Secondary Pickup.

Figure 4 Unfinished Reluctor, PN 83491.

An unfinished reluctor, PN 83491 is available. This reluctor does not have the individual cylinder paddles machined. Individual cylinder timing values can be determined on the dyno using our electronic controls. These values can then be machined into the reluctor.

SERVICE PROCEDURE

LOWER HOUSING

To replace the distributor bearings and seals, the lower housing must be disassembled. Both disassembly and re-assembly require the lower housing to be heated for proper clearance. Review the following procedure before starting the service. Figures 5 and 6 show exploded views of the five distributors available.

1. Remove distributor cap.
2. Remove the reluctor. Use the installation/removal tool PN 83492 to prevent the shaft from turning (Figure 7). Remove the reluctor attaching bolt using a 5/16", 12pt deepwell socket.
3. Remove the two bolts that retain the pickups.
4. Remove the four bolts retaining the upper housing and take it off.
5. Remove the distributor gear and any spacers if so equipped.
6. The upper bearing is an interference fit and needs to be heated to be removed. Place the lower housing and shaft assembly in an oven at 300°F for approximately 30 minutes. When heated, the shaft and bearing assembly should slide out of the aluminum housing. A slight tap on the shaft may be necessary.
7. If distributor is equipped with a lower bearing remove it while the housing is hot. If equipped with a lower bushing, it can be replaced if necessary.
8. Remove and replace the two seals in the housing. The new seals install with their flat sides facing each other. Lubricate the seals with grease (Figure 8).
9. Place the lower housing in an oven at 250° for approximately 30 minutes.

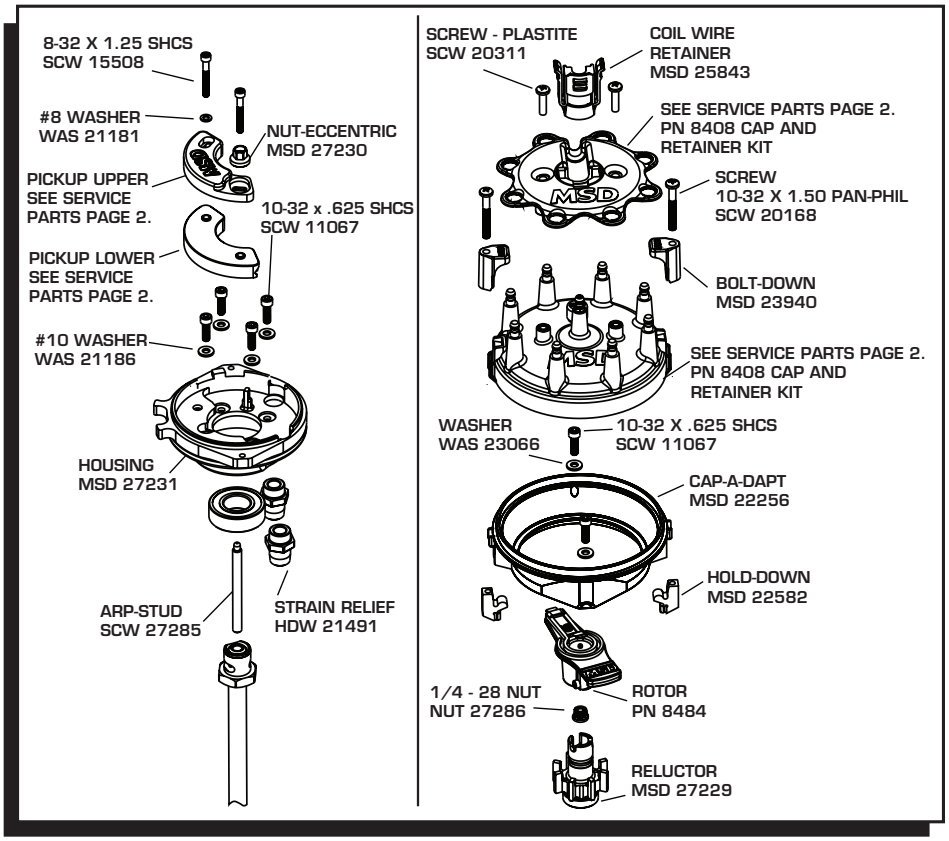

Figure 5 Upper Housing Exploded Views.

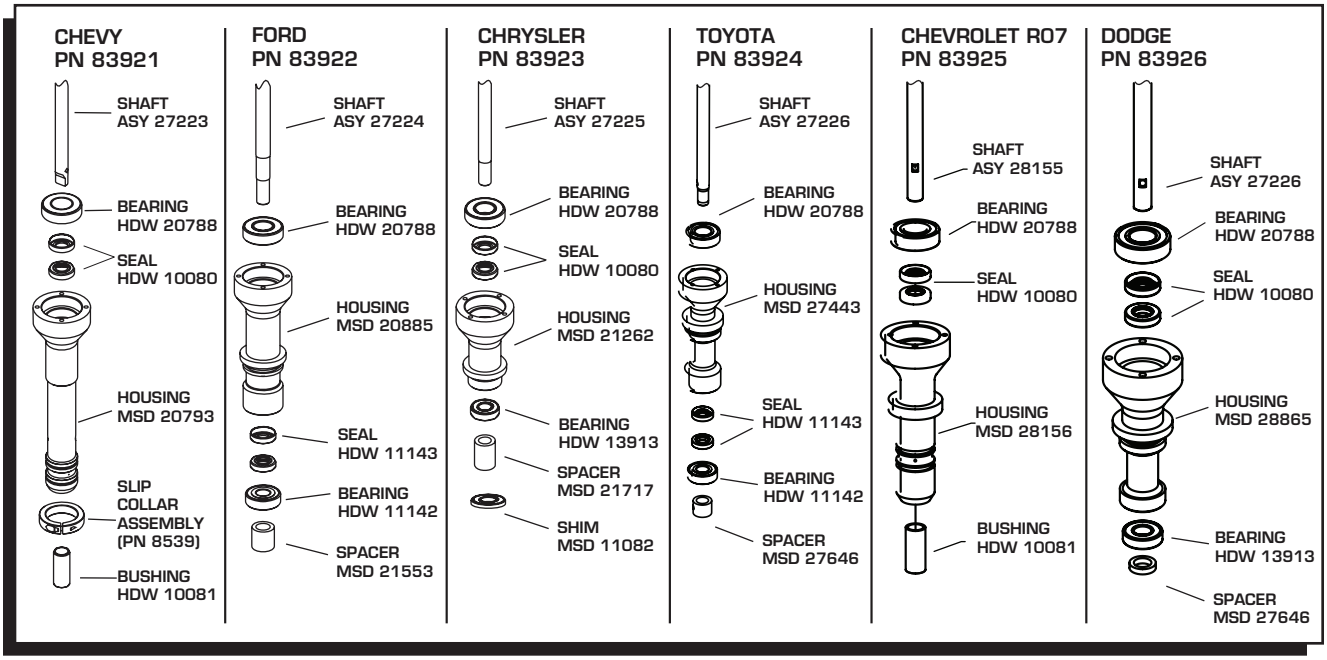

Figure 6 Lower Housing Exploded Views.

10. While the lower housing is heating, install the new bearing on the shaft (Figure 9).
11. Install the shaft assembly into the lower housing. It is fully seated when the bearing protrudes approximately 0.005" – 0.010" out of the housing (Figure 10). If the clearance is more, the housing may have cooled too much before the bearing was fully installed.

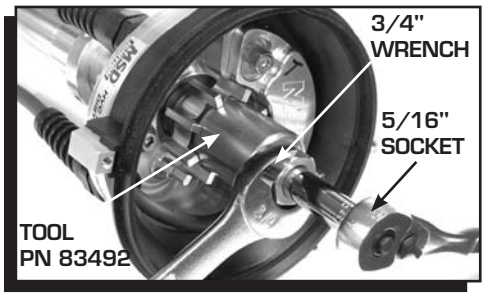

Figure 7 Removing the Reluctor.

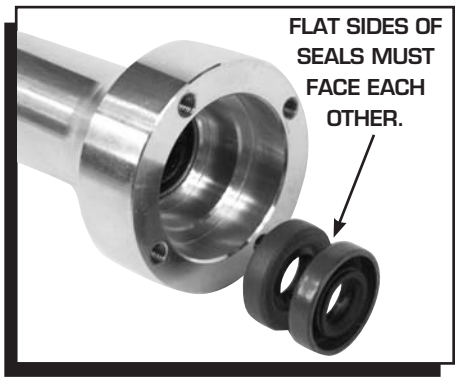

Figure 8 Installing New Seals.

12. Install the gear.
    a. Chevrolet – Check clearance between gear and housing. It should be greater than 0.015". If under 0.015" the bearing may not be seated correctly (Figure 11).
    b. Ford – Install gear spacer. Press on gear leaving 0.005" clearance between it and the spacer.
    c. Mopar R5 – Install gear spacer and shim. Check clearance between gear and spacer. It should be between 0.005"-0.010". If under 0.005" the bearing may not be seated correctly.
    d. Toyota – Install gear spacer with roll pin. Press on gear until it stops against the spacer.

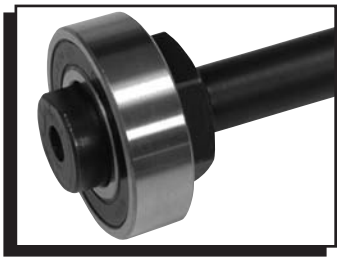
Figure 9 Installing the New Bearing.

13. Assemble the upper housing.
14. Install Pickup screws.
15. Install reluctor using special tool PN 83492. Apply moly lube to the nut and torque to 10 lb-ft. (Figure 7).
16. Adjust pickup phasing and tighten the pickup bolts.

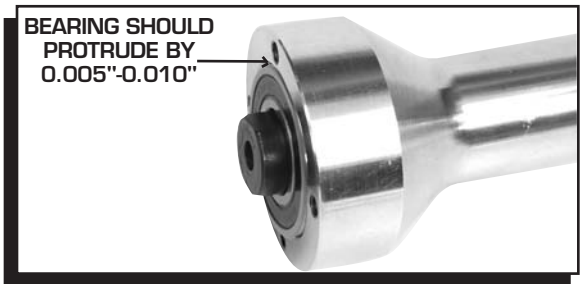

Figure 10 Checking Bearing to Housing Clearance.

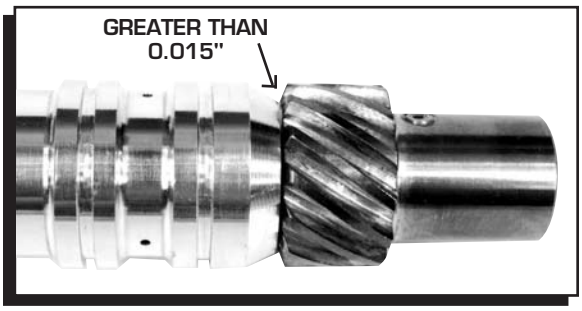

Figure 11 Checking Gear to Housing Clearance.

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 warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

All returns must have a Return Material Authorization (RMA) number issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) MSD-7859 or visit our website at www.msdignition.com/rma to automatically obtain a number and shipping information.

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 using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD Ignition at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 6:00 p.m. Monday - Friday (mountain time).