INSTALLATION PROCEDURE - MALLORY UNILITE® DISTRIBUTOR

IMPORTANT: Before starting the installation of the Unilite® Ignition Distributor, make sure that the vehicle is originally equipped from the factory with an ignition ballast resistor or loom resistance wire. If the vehicle is not originally equipped from the factory with an ignition ballast resistor or loom resistance wire, a Mallory® ballast resistor PN 28127 must be installed in series on the wire from the ignition switch to the coil (+) terminal. Failure to use a resistor will result in the eventual destruction of the Unilite® Module.

OLD DISTRIBUTOR REMOVAL:

1. Disconnect the trigger wire from the coil (-) terminal.

2. Locate the spark plug wire on the original distributor cap which the engine timing is set from. (See a service manual for these locations.) Make a mark on the distributor cap and on the housing below, in line with this spark plug wire position on the distributor cap.

3. Turn the engine crankshaft in the direction of rotation until the timing mark lines up with the top dead center (TDC) mark on the timing tab. (See a service manual for these locations.)
NOTE: Removing the spark plugs may make it easier to turn the crankshaft.

4. Remove the distributor cap from original distributor. Do not remove the sparkplug wires or coil wire at this time. The rotor blade should be pointing at the mark made on the distributor housing (from step 2). If it is not, turn the engine crankshaft in the direction of rotation one full turn (repeating step 3) until the timing mark lines up (again) with the TDC mark on the timing tab.

NOTE: Once this step is finished, DO NOT turn the crankshaft until the new distributor is installed.

5. Note direction of the rotor blade. If a vacuum advance distributor is being replaced, note the direction the vacuum chamber is positioned. Remove the distributor hold down clamp and remove distributor from the engine.

UNILITE® DISTRIBUTOR INSTALLATION:

1. Prepare the Unilite® distributor by removing its distributor cap.
NOTE: If the Unilite® distributor does not come equipped with a drive gear or drive coupling, and one is required, remove the drive gear or drive coupling from the original distributor and install it on the Unilite® distributor as follows:
Pull the distributor shaft down and install the thrust washer and drive gear or drive coupling onto the distributor shaft. Place a .020" feeler gauge between the drive gear or drive coupling and thrust washer. Drill through, and pin, drive gear or drive coupling to the Unilite® distributor shaft.

2. Place the Unilite® distributor in the engine with the rotor pointing in the same general direction as the original distributor did.
If equipped with vacuum advance, place the Unilite® distributor in the engine with the rotor and vacuum chamber pointing in the same general direction as the original distributor did.
If the old distributor did not have a vacuum chamber, place the Unilite® distributor in the engine with the rotor pointing in the same general direction as the original distributor did, and point the vacuum chamber in a direction that will allow movement for timing purposes.
NOTE: The Unilite® distributor must be fully seated into the engine. It may be necessary to turn the oil pump drive, or turn the engine crankshaft in the direction of rotation two full turns until the timing mark lines up (again) with the TDC mark on the timing tab, to allow the Unilite® distributor to seat fully.

3. Rotate the Unilite® distributor housing in the opposite direction of rotor rotation until the nearest slot on the rotor's shutter wheel is approximately in the center of the optics of the Unilite® Module. This will generally give timing close enough for starting purposes. Set the distributor hold down clamp in place and tighten slightly, leaving it loose enough to turn the Unilite® distributor. Make a mark on the Unilite® distributor housing where the rotor points.

4. Install the Unilite® distributor cap. Remove the spark plug wire on the original distributor cap which the engine timing is set from, and install it onto the Unilite® distributor cap post above the mark on the Unilite® distributor housing where the rotor had pointed. Continue installing each remaining spark plug wire , one at a time, from the original distributor cap to the Unilite® distributor cap in the same sequence.
NOTE: It may be necessary to purchase and install distributor boots and terminals for the spark plug wires to correctly fit the Unilite® distributor cap.

UNILITE® IGNITION SYSTEM ELECTRICAL WIRING:

There are three wires coming from the Unilite® distributor that must be connected using the three wire harness provided.

RED WIRE: Connect to the coil (+) terminal.
GREEN WIRE: Connect to the coil (-) terminal.
BROWN WIRE: Connect to engine block ground. Clean away any grease, oil and paint from the mounting surface before the connection is made.

NOTE: If a HyFire® or other aftermarket ignition control is being used, connect the Unilite® distributor according to the instructions supplied with the ignition control.

ADDITIONAL CONNECTIONS:
For vacuum advance only: Connect original vacuum hose to Unilite® distributor chamber. Replace hose if cracked, damaged, or if it is not long enough. If the previous distributor was not equipped with vacuum advance, connect a vacuum hose to a ported vacuum outlet on the carburetor.
Tachometer operation: Connect tachometer wire or wires as recommended by the actual tachometer manufacturer.

STARTING ENGINE:
CAUTION: Before starting engine, be sure all tools, wires and miscellaneous objects are clear of moving engine parts and extreme heat.

1. Recheck all wires and connections to make sure they are correct. Check and clean, or replace spark plugs. If replacing spark plugs, use types

recommended by the engine manufacturer.

SPARK PLUG WIRES AND SPARK PLUG GAPS: To prevent false triggering and the possibility of premature ignition failures, use suppression type spark plug wire. Spiral core type ignition wire is highly recommended, such as Mallory PRO SIDEWINDER® Ignition Wire. Spark plug gap should set at .035" and not be changed until overall satisfactory operation is achieved.

For vacuum advance only: Disconnect the vacuum hose to Unilite® distributor chamber at the carburetor and temporarily plug this carburetor fitting.

2. Connect a timing light. Find the area with the best view of the timing marks.

3. Start the engine. If it fails to start, rotate the distributor in small increments clockwise or counterclockwise until engine starts. Do not exceed more than ten degrees of distributor housing rotation in either direction.

4. Set timing as recommended by engine manufacturer, then tighten distributor hold down clamp. Make sure timing is still correct. If timing has moved, repeat this procedure.

5. For vacuum advance only: Reconnect the vacuum hose to Unilite® distributor chamber at the carburetor.

UNILITE® ELECTRONIC DISTRIBUTOR POPULAR PARTS LIST

APPLICATION	DISTRIBUTOR CAP	SHUTTER/ROTOR (NON VAC. ADVANCE)	SHUTTER/ROTOR (VACUUM ADVANCE)
AUTOMOTIVE			
8 CYL. (STACK CAP)	209	335	322
8 CYL. (FLAT CAP)	221	360	-
6 CYL. (37, 38 SERIES)	226	331	-
6 CYL. (45, 46 & 47 SERIES)	270	339	323
4 CYL. (37, 38 SERIES)	225	337	-
4 CYL. (45, 46 & 47 SERIES)	271	340	325
MARINE			
8 CYL. (STACK CAP)	209D	335	-
8 CYL. (FLAT CAP)	221B	360	-
6 CYL. (SMALL HOUSING, 3.12" O.D.)	226B	331	-
6 CYL. (LARGE HOUSING, 3.65" O.D.)	270B	339	-
4 CYL. (SMALL HOUSING, 3.12" O.D.)	225B	337	-
4 CYL. (LARGE HOUSING, 3.65" O.D.)	271B	340	-
UNILITE® MODULE, ALL MODELS	605		
UNILITE® HARNESS, ALL MODELS	29349		

PERFORMANCE TIPS:

Additional performance may be found by testing different idle and total advance settings for optimum ignition timing. In most instances, increasing the ignition timing at idle may improve engine response. Setting the ignition timing at idle between 8° to 16° before top dead center (BTDC) might provide these desired results.
Also, most distributors have an adjustable advance curve using the appropriate advance curve change kit to change the basic curve configuration.
NOTE: Consult with local legislation concerning area emission standards before deviating from the engine manufacturers ignition timing specifications.

Although the Unilite® Ignition System will work with most stock (OEM) ignition coils, Mallory's series of PROMASTER® Ignition Coils are designed for today's specialized ignition requirements. The rugged, glass-filled polyester case along with oil filled construction assure long life and no energy losses due to arcing. All PROMASTER® coils include brass contact terminals and spark plug type (HEI) secondary posts for better wire retention.
The most popular Mallory PROMASTER® Ignition Coils are PN 29440 and PN 29625. They are high energy coils designed especially for optimum performance with Mallory Unilite®, as well as HyFire® I, HyFire® IA, HyFire® II, HyFire® IIA, HyFire® IIIA and HyFire® IV Ignition Controls.

The Unilite® Ignition System is compatible with the use of a High Inductive Discharge ignition control such as a HyFire® I, HyFire® IA, HyFire® II, HyFire® IIA or HyFire® IIIA. These HyFire® Ignition Controls are for performance applications where a high energy and reliable ignition is necessary. By increasing primary energy, the HyFire® increases coil output while a built-in dwell control assures more constant energy output throughout the rpm range. Also, the purpose of these ignition controls are to take over the job of switching the coil current, therefore relieving the stresses (or amperes) of coil current that may be safely switched through the Unilite® GREEN WIRE. All ballast resistors (including OEM loom resistance) shall be omitted while using this ignition control to allow maximum current to enter the coil primary. Connect the Unilite® distributor according to the instructions supplied with the ignition control. Installation of ballast resistors is necessary if these HyFire® Ignition Controls are disabled.

The Unilite® Ignition System is compatible with the use of a Capacitive Discharge (CD) ignition control such as a HyFire® IV, HyFire® V or HyFire® VII. These Mallory HyFire® Capacitive Discharge Ignition Controls are designed for performance applications where a high energy and reliable ignition is necessary. These capacitive discharge ignitions give stable uniform output throughout the rpm range with no drop off in output at higher rpm levels while still providing a strong spark at low speed for easy starting. Also, the purpose of these CD ignition controls are to develop a high current spike (amplify battery voltage) which will then be forced into a coil's primary, therefore relieving the stresses (or amperes) of coil current that may be safely switched at the Unilite® GREEN WIRE. The Unilite® GREEN WIRE lets the CD know when to send this spike to the coil. Connect the Unilite® distributor according to the instructions supplied with the ignition control. Installation of ballast resistors is necessary if the CD ignition control is disabled.