



INSTALLATION INSTRUCTIONS

UNILITE® CONVERSION FOR HARLEY-DAVIDSON

Part No. 554

APPLICATIONS: **1970-78 Big Twin**
All 1979-Later Big Twin models which have been converted to mechanical advance and points

NOTES

- 1) The Mallory UNILITE® Conversion for Harley Davidson is a dual fire system.
- 2) Any coil or combination of coils with a total primary resistance of at least 2.0 ohms may be used. The use of coil with 2.0-3.0 ohms is recommended for racing applications to obtain maximum spark energy. A 3.0-4.0 ohm coil is recommended for street use to keep the UNILITE® Module and the coil cool for maximum life. Coils from 4.0-5.0 ohms can be used but may reduce performance, even in street applications.
- 3) Check that the charging system is producing no more than 16 volts.
- 4) **Do not** use solid metal core spark plug wires. Use spiral-core wires or carbon core. Spiral-core wires are preferable for racing and performance applications.
- 9) Install the two Mallory standoffs. Place Loctite on the threads and torque to 16 in.lb. Do not use any washers with the standoffs.
- 10) Start the three wires of the Mallory UNILITE® Module through the hole in the nose cone housing. (The module goes in towards the advance assembly with the flat plate outward). Pull on the three wires to remove any slack and prevent the wires from rubbing on the shutter wheel.
- 11) Rotate the UNILITE® plate assembly until the slots in the plate are in the same position as the point plate was. This should make the timing close enough to start the engine. Slide the two Mallory 8-32 sleeve nuts (supplied) through the UNILITE® plate and onto the male threads of the Mallory standoffs. Tighten the sleeve nuts just enough to prevent the plate from moving.

INSTALLATION (See Figures 1, 2, 3, and 4)

- 1) Turn ignition switch to the OFF position. Disconnect the ground cable from the battery.
- 2) Disconnect the wire at the coil which runs down to the points. Remove the point cover plate.
- 3) Note the position of the slots in the point plate. When the Mallory UNILITE® plate is installed, use the position of the slots to approximate the timing.
- 4) Remove the wire to the points. Remove the O.E. standoffs and washers. Remove the point plate assembly.
- 5) Remove the O.E. cam sleeve from the advance assembly. Place a small amount of oil on the advance shaft which supported the cam sleeve.
- 6) Slide the Mallory shutter wheel onto the advance shaft. Make sure the shutter wheel is all the way down into the advance assembly (it will only go one way due to the roll pin in the advance assembly).
- 7) Install the advance and shutter wheel into the nose cone. Make sure that the pin on the bottom of the advance engages the slot on the end of the camshaft. Apply Loctite to the threads and install the advance bolt. Torque to 25 in.lb.
- 8) Rotate the shutter wheel by hand (counter-clockwise) and release. It should rotate about 10 degrees and "snap" back when released.
- 14) Route the wires from the UNILITE® Module to the ignition coil, carefully avoiding the exhaust system. Connect the red wire to the positive (+) terminal (12 volts) on the coil. Connect the green wire to the negative (-) terminal on the coil (where the point wire was connected). Connect the brown wire to ground. The best place for the brown wire is the negative (-) post on the battery, however, any part of the frame or engine which is grounded to the battery will work.
- 15) Extend a small screwdriver through the 1/2" hole in the UNILITE® plate and carefully rotate the shutter wheel to make sure that the advance is not bound up. The wheel should rotate about 10 degrees counter-clockwise and snap back when released. If the advance does not rotate freely, remove the UNILITE® plate and find the source of the interference before proceeding.
- 16) Follow a factory shop manual to set the timing for your particular engine. Loosen the two Mallory 8-32 sleeve nuts to rotate the UNILITE® plate and adjust the timing. Rotating the UNILITE® plate clockwise advances the timing, counter-clockwise retards.
- 17) After the timing is set, tighten the two sleeve nuts to prevent the UNILITE® plate from rotating. Put the cover plate gasket and cover plate in place.

WARNING!

Before re-connecting the battery cable, recheck all 3 of the wires from the UNILITE® Module. If the wires are connected incorrectly, the module will be destroyed when the ignition is placed in the ON position.

TROUBLESHOOTING

The UNILITE® Module supplied with this kit is the same one supplied in thousands of Mallory automotive distributors every year. If a replacement module is needed, most mail order and speed shops carry the module (part number 605).

To determine if the module is damaged, begin by pulling the UNILITE® plate assembly from the nose cone housing. Do not disconnect the wires to the coil(s). Turn the ignition key to the ON position. Connect volt meter leads to the negative side of the coil and to ground. The voltage should read between 10 and 13 volts. Now place a credit card or driver license in the path of the UNILITE® beam (i.e. place the card or license in the gap between the bulbs in the UNILITE® Module). With the UNILITE® blocked, the volt meter reading should drop to about 0-3 volts. If the voltage does not change when the UNILITE® is blocked, the module is damaged and/or wired incorrectly.

NOTE: If the UNILITE® Module is damaged, find the cause before installing a new one.

Check the following for possible causes of module failure:

- a) Are the spark plug wires solid core type? If so, replace with spiral-core or carbon core.
- b) What is the primary resistance of the coil? It should be at least 2.0 ohms for racing and at least 3.0 for street use.
- c) Are the 3 wires from the module connected to the correct locations? Be sure the brown wire is connected to a good ground.
- d) Check the battery voltage with the engine running about 3000 rpm. If the voltage is a greater than 16 volts, a new regulator may be needed. Excessive voltage may damage the UNILITE® Module.
- e) Has the shutter wheel been rubbing on the module? If so the module may have been overheated. Be sure to correct the interference before replacing the module.

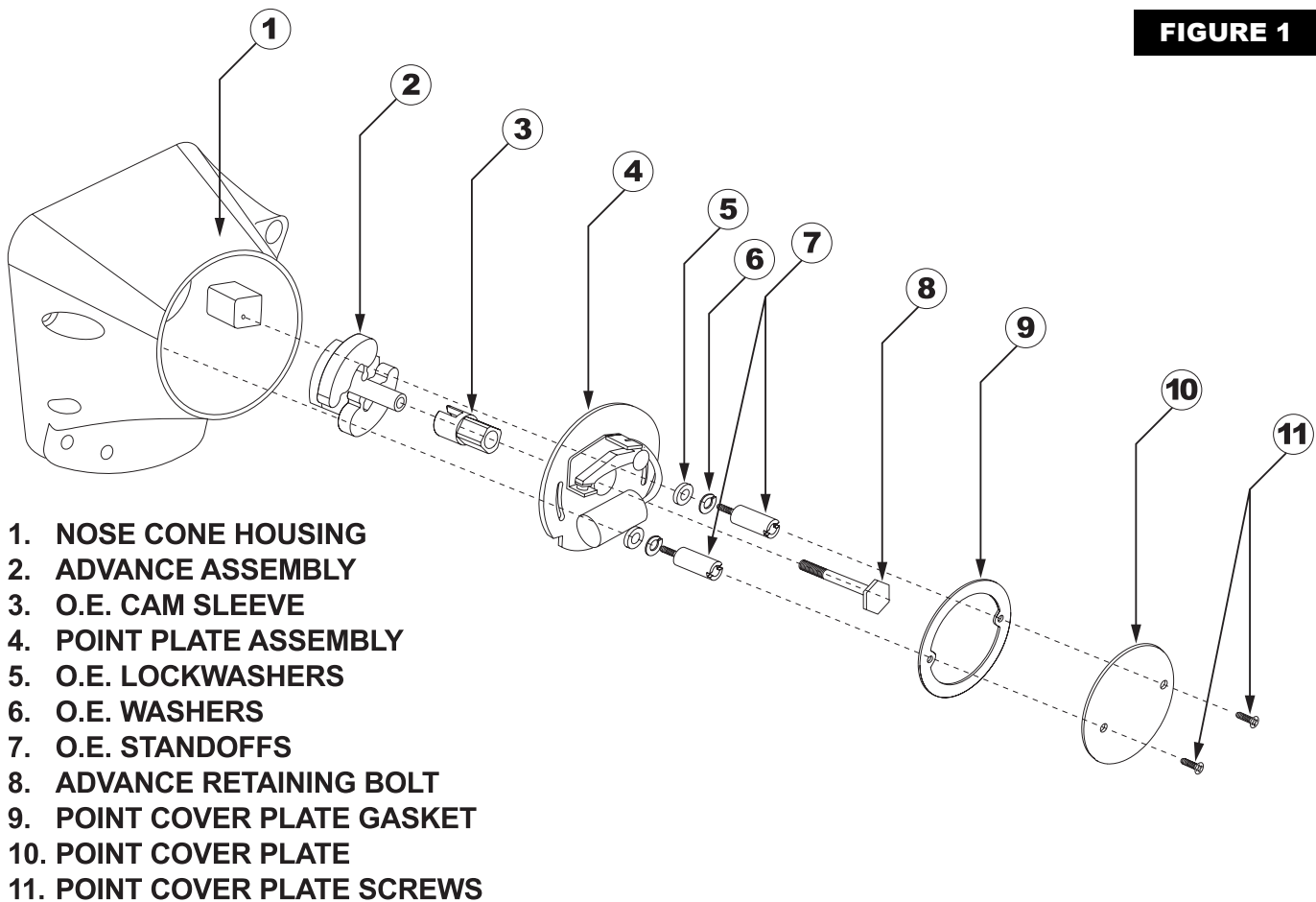
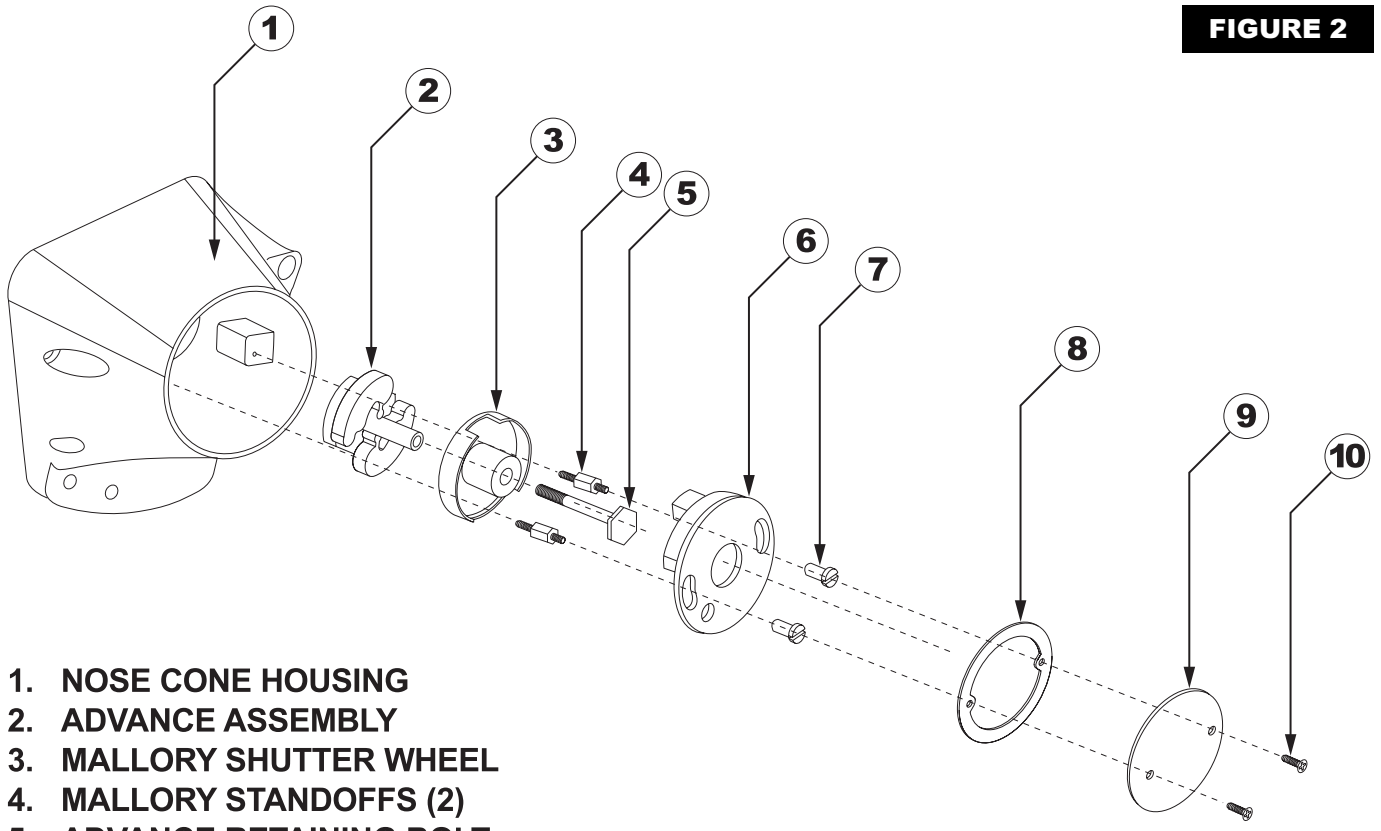


FIGURE 1

FIGURE 2



- 1. NOSE CONE HOUSING
- 2. ADVANCE ASSEMBLY
- 3. MALLORY SHUTTER WHEEL
- 4. MALLORY STANDOFFS (2)
- 5. ADVANCE RETAINING BOLT
- 6. UNILITE® PLATE ASSEMBLY
- 7. MALLORY 8-32 SLEEVE NUTS (2)
- 8. POINT COVER PLATE GASKET
- 9. POINT COVER PLATE
- 10. POINT COVER PLATE SCREWS (2)

FIGURE 3

SINGLE PLUG HEADS

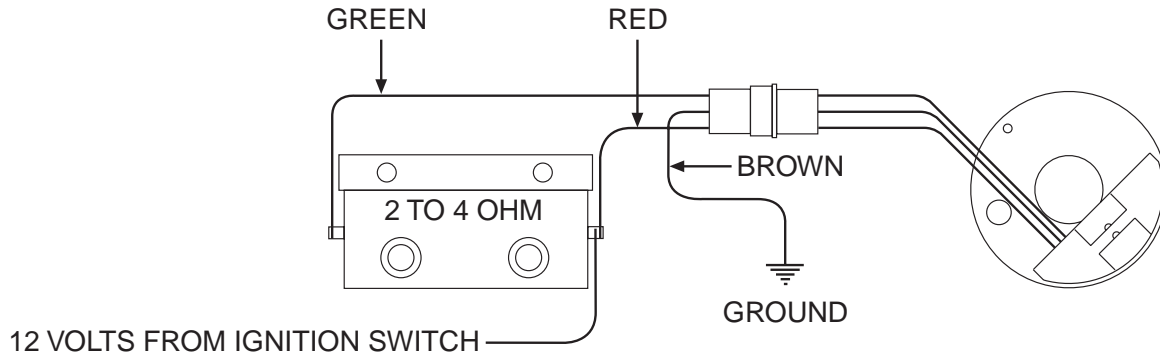


FIGURE 4

DUAL PLUG HEADS

