

GENERAL INFORMATION

1975 LOTUS CLINIC ANNUALENGINE

WEBER 40DCOE TUNING TIP - If you ever have trouble getting your engine to idle at a low speed after having disassembled and cleaned your carburetors, the first thing you might suspect is an air leak around the mounting flange O-rings. If the O-rings were in good condition when you installed them, the problem might lie in overtightened nuts on the end of the throttle shaft which jam the butterfly slightly open. These nuts should be just finger tight, then locked in place by bending the washer tabs over them.

Jim Kerswell

ELECTRICAL

HAVE YOU READ TECH MANUAL ENTRY 54EL057 and then turned away because you don't have an alternator; OR

COULD YOU BENEFIT FROM THE ADDITIONAL OUTPUT OF AN ALTERNATOR?

Judicious shopping of the Cortina/Capri line will find you an alternator and mounting which will fit almost all TC Lotus applications with no more than a belt change to complete the physical set up. The electrical is also no real problem. Just remember that you also need to replace your voltage regulator with one made for the alternator you pick. Two small but handy points. If yours is an early Lucas, the connection between the alternator and the regulator is eased by buying a kit called an alternator test lead kit. It is not anything fancy, but it does have the molded snap-in plug to fit the regulator and 6 inch leads for you to complete the connections. This application holds true if you plan to adapt a Pinto unit. The Bosch unit has provisions for molded plugs at each end; alternator and regulator, so visit your local slightly used auto parts dealer (auto wrecker) and acquire all the parts and wires you can con him out of.

As a further mention: There is a neat and reasonably complete guide to the care and repair of these units in the Capri Owners Workshop Manual by Autobook. I am sure this section is in other books also, but I have this one and it really helps. Replacing the diodes yourself can run about 12-to-18 bucks and it sure looks better than a new unit (92-115 bucks) or a rebuilt (40 or more)..Slip rings and brushes are also fairly reasonable, so it can really help to find out what isn't doing before opting for a replacement.. As a "fer-instance" the Bosch unit in the wife's Audi acted just as if one or more diodes were out (half wave charge coming out). Removed, dismantled, tested, found no fault except dirty contacts; reassembled, remounted, full charge, and no more problems..Only cost was about 2 hours of my time prior to the Ram disaster last Sunday.

Back to the installation of the alternator. If you have an ammeter, normal connections will take care of it. If you have a warning light only/also be sure that it is connected to the F+ lead to work correctly.. If your installation produces "run-on" with the key in your pocket, installation of a diode in the lead to the warning light will usually solve the problem.

Gregg Wright

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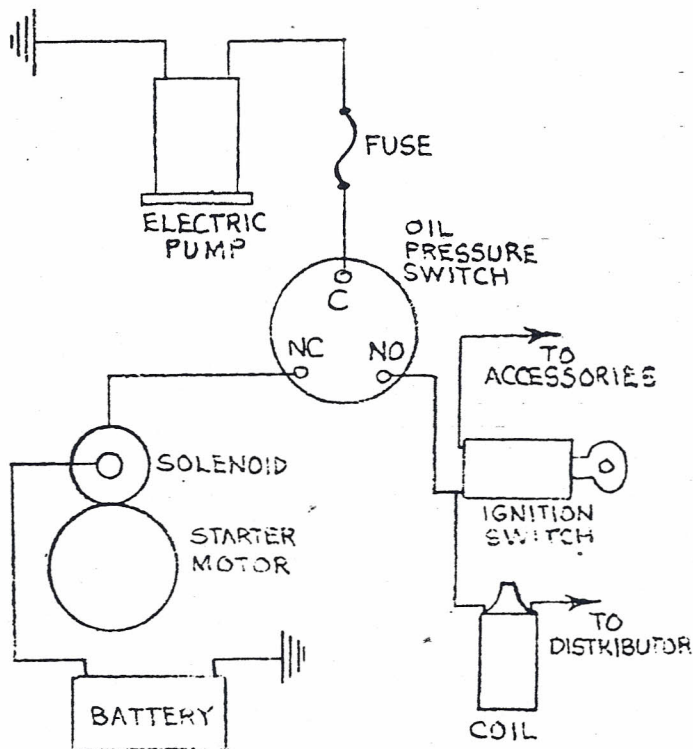
1975 LOTUS CLINIC ANNUALELECTRICAL (continued)

FIRE!! Glass does not burn, RIGHT! But resin and fiber does ... i.e. Fiberglass or Glassfiber (mother country) burns with tragic results...

Object lesson.. Removing the output side of a fuel pump, engine running, to gauge the pump's apparent capacity, with a hot "drop lamp" underneath the car can leave you as the proud (?) possessor of a metal, molten glass sculpture. It has happened, and just lately. Type 47s melted in this manner are not attractive nor do insurance companies appreciate your artistic abilities.

Second: A ruptured line or just a neat leak can do you in. I have seen electric fuel pump installations which were not routed through the ignition switch. Can you imagine shutting the engine off to combat said fire only to find that the fuel still flows? Again, it has happened. There is a melted Avanti setting on W. Magnolia Blvd. in Burbank due in part to this fault.

This brings me to a third point, and observation that we tend to forget. Tom Dill (that name again) was kind enough to refresh my memory on a neat, easy installation that can save major engine damage. The installation of an oil pressure activated switch in the fuel pump line. Try it, you might like it.



TYPICAL INSTALLATION

- 1) Disconnect battery ground cable
- 2) Remove original oil pressure switch and retain
- 3) Place 1/8" pipe nipple in hole just uncovered (use sealant, sparingly)
- 4) Attach 1/8" pipe tee to nipple and position so as to allow installation of original and new switches
- (NOTE) Terminals on new switch are: C-common; NC-normally closed; NO-normally open
- 5) Connect lead to fuel pump to C
Connect NO to the On terminal of the ignition switch
Connect NC to the starter solenoid
BE SURE TO FUSE FUEL PUMP LINE
Usually 7.5 amp will do
- 6) Reconnect battery ground cable.

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An alternate to the tee installation above, on FoMoCo you can use the "plugged hole" on carb side near the motor mount. Installation here will require notching the mount to clear a 90° elbow, again using 1/8" NPT.

One source of the switch is Holley #89R 641A; another is a "bubble pac" by Mr. Gasket. These are both of the rating of 5#, i.e. below that the switch opens.

For you all-out racers there are several which are rated at 45# and one by Holley rated at 60#.

Gregg Wright

DELTA DARTS

(Or how to keep your Delta ignition igniting your Lotus)

The Delta Mark Ten has been around for several years under several different names; Archerkit, Knight Kniter, Heath Kit, to name a few. They are all basically the same so these comments apply to each of them as well as the Mark 10 and Mark 10B. As was mentioned in another article, the system needs plenty of cooling. All of the problems I have seen are heat related, so keep it cool.

Did you know it has a fuse? Yes, it does and it is well hidden (this does not meet the requirements of Military Standard MIL-E-2120 or MIL-E-5400!!) On the Mark 10, it is a single strand of wire soldered to the circuit board closest to the top of the unit and located at the end having all the inter-connecting wires. In the B version, it is located on the board with the switch and mounted on the other end. While I have never had one blow, it could! To replace; use one strand of ordinary lamp cord wire about one inch long. As this does require disassembly, do be careful.

The real problems are with the transistors and the SCR. They have a very nasty habit of dropping dead from heat. An autocross on a hot afternoon doesn't help. The design dates back to the days before good high temperature transistors were available. Therefore, we have to make do with what Delta gives us. Things aren't all that bad though. Drop in to almost any electronics parts house, like Radio Shack, and ask for a 2N1554 or its equivalent. The circuit isn't hard to please. There are many transistors that will work. So, if you are offered a substitute, take it. Be sure to buy some heat transfer grease too. It is needed to assist in keeping the transistors cool.

The transistors aren't the only problem. The mechanical installation of the SCR is very poorly designed. If the SCR has failed, the best thing to do is install a different type. Although this is a very simple job, it is best left to someone with electronic experience. As you would expect, many SCR's

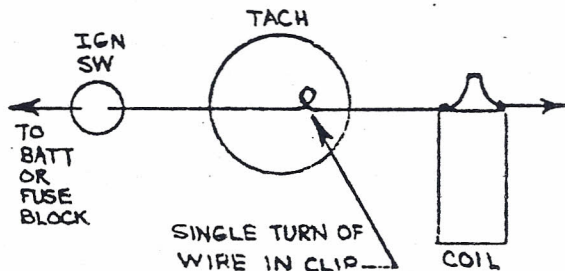
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1975 LOTUS CLINIC ANNUALDELTA DARTS (continued)

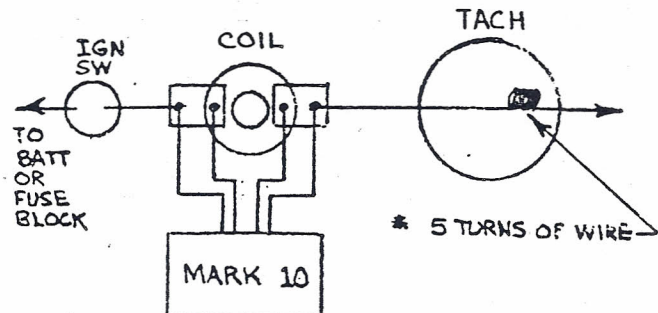
can be used in the circuit. The Motorola HEP-R1223 is readily available and is easy to install.

One additional point for the owners of cars with older Smith's tachometers that have a single turn of wire clipped to the back rather than a connector like the newer ones. These drawings are from an early Mark 10 manual and simplify the installation by eliminating the need for the resistor and diode.

EXISTING CONNECTIONS



CHANGE TO:



*You will have to remove the nylon insulator to have room for the five turns.

MISCELLANEOUS

Warren Pearce
Nashua, N.H.

Glass Peening - Let me pass along a warning to those of you who have seen articles in the automotive press on glass-bead peening and who now want to get that satin finish on aluminum heads, blocks, and parts. The process will certainly give you that clean, satin finish; but if you use it on engine parts, plug up threaded holes-it gives the threads a rough finish - and clean the parts very, very thoroughly afterward, especially all oil passages. The process uses microscopic glass beads, which are very hard and will do extensive damage if allowed to circulate in an engine.

Jim Kerswell