

# RaDesigns 1994 & newer 4L80E

Full Auto/ Full Manual switch package for Winters shifter



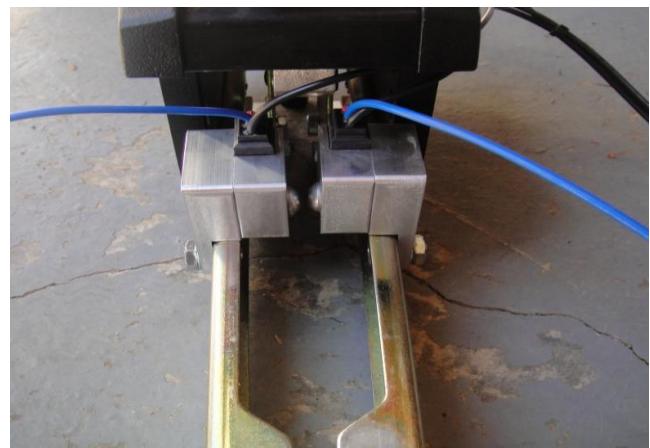
Remove shifter from vehicle. Now remove center bolt from Right side of shifter housing along with Allen head screw at front and rear of shifter. Remove Right side of shifter housing taking care not to lose the star lock washers. (some housings will pull right off some will take GENTLE prying to remove).



Install the Large billet switch bracket with preinstalled switch with roller facing toward the shifter. Use the 2 supplied  $\frac{1}{4}$ "-20 x  $\frac{3}{4}$ " bolts and star washers thru the existing holes from the outside of the shifter housing.

Reinstall Right side of shifter taking care not to pinch the wires. They can route to the outside of the small Allen head screw at the front of the shifter.

Install the billet cams L80 & R80 onto the corresponding sides of the center mechanism of the shifter using the shortest 4 bolts. These are metric 10mm head bolts. The counter bore of the cams will fit over the raised holes on the outsides of the mechanism. Using a little patience, thread the bolts by finger from the inside of the mechanism out into the cams using the supplied star washers. Snug these fasteners with an open end 10mm wrench.

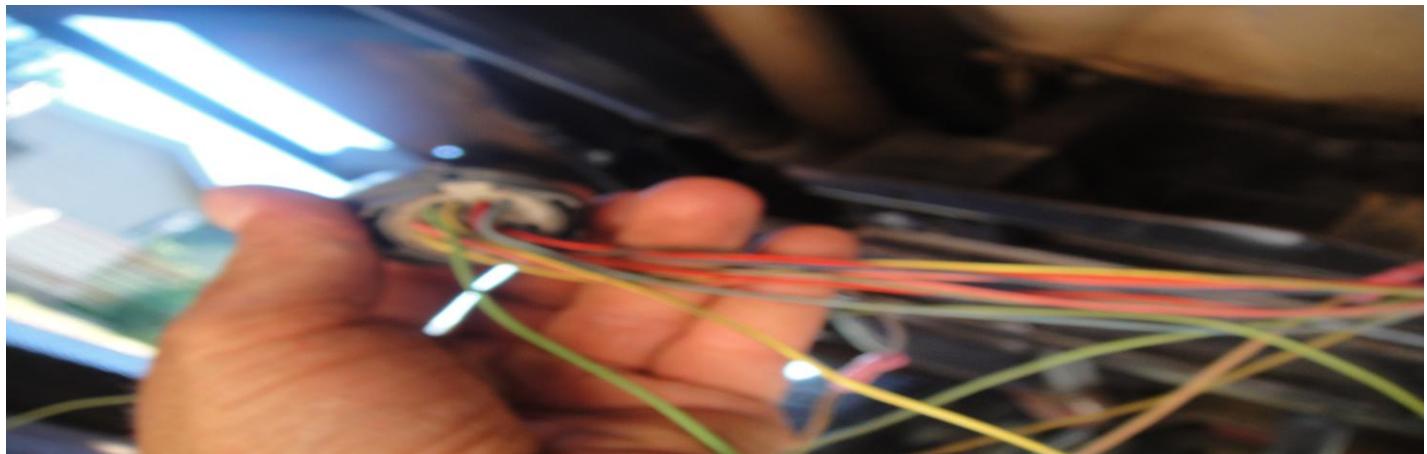


Install remaining 2 billet switches onto the sides of the lower shifter frame using the supplied  $\frac{1}{4}$ " -20 x  $\frac{1}{2}$ " hex head bolts and star washers. These will thread into the existing threaded holes in the shifter frame with the switch positioned on top of the frame so that it is facing inward on both sides.

Move shifter through 1<sup>st</sup>-4<sup>th</sup> gears watching the cams contact the switch and listening carefully for activation/deactivation as the cams roll onto or off of the switches. When satisfied tighten hex bolts. Now with cable installed be sure that cable end clevis and jam nut move freely between the newly installed 10mm bolts holding the cams in place. (This should not be an issue).

From underneath vehicle:

Unplug the main transmission plug from the left rear side of trans. Squeeze the front and back of the plug housing to disengage locks and gently pull outward. Carefully remove the split loom for about 1 foot and the plastic wire guard that routes the wire rearward, from the trans plug. This can be done with a small flat screwdriver. Be careful as this guard will be re-used. Locate the Light green wire at the top left of the plug (looking at it where the wires enter) Factory designates this as Pin "A". This is the 1-2 shift solenoid control. Cut this wire a few inches from the plug and using weather proof shrink seal butt connectors on all under vehicle connections, extend a matching light green wire from the "Wiring Harness" side of this cut inside the cabin to the shifter area.



Now, again from the wire side of the plug locate the Yellow/black tracer wire immediately beside the Light green. This Yel/Blk wire is Designated Pin "B" and is the 2-3 shift solenoid control. Cut this wire a bit farther from the plug to keep the connectors from bunching up. Again using a matching wire (or similar) and weatherproof connector extend the "Harness" side into the cabin. BE SURE YOU HAVE PIN "B" WIRE as there is another identical colored wire that is incorrect.

Locate Factory Pin "S" which is a brown wire 1 row down and on the opposite side of the plug from "A" & "B". This is the TCC solenoid control. Commonly referred to as Torque converter lockup. Several inches away from trans plug cut this wire and following the previous steps extend the "Harness" side of this wire into the cabin.

Simply wrap or loop these wires together and label to prevent confusion on the next step.....

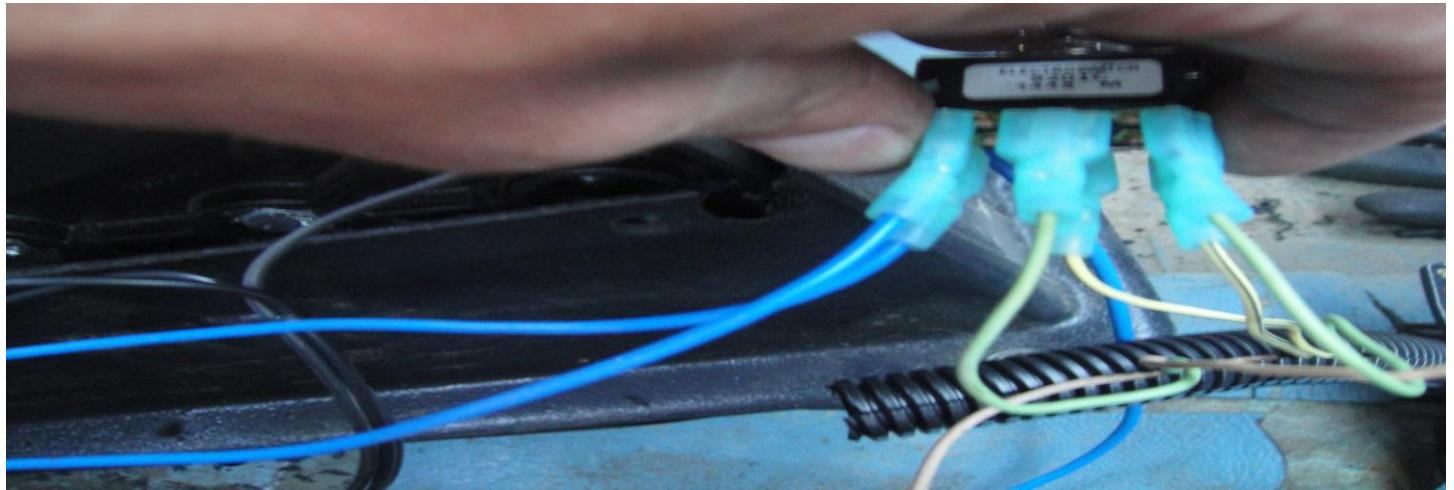
Using more of the matching color wire and weatherproof connectors, extend the "Transmission" side of the 3 cut wires into the cabin making sure you know them from the previously extended wires.

Re-install split loom and re-assemble wire guard on Transmission plug. Install additional split loom onto new wires from original harness into cabin. Tape all intersections of split loom, plug harness into Transmission and secure harness away from exhaust or moving parts of any kind.

Inside the vehicle:

Connect 3 Black Micro-switch leads together and Ground them to the vehicle !

Using a Double Pole Double Throw rocker switch with 6 terminals locate a good spot for this “Mode” switch and install. Now cut “TRANSMISSION” side of new Light Green and Yel/ Blk wire extensions to length and terminate to “CENTER” terminals on rocker switch. Now cut to length and terminate “HARNESS” side of new extension wires to corresponding terminals on rocker switch. Terminate Blue wire from new Right Side micro-switch and connect to rocker terminal in line with Green wires. Terminate Blue wire from Left side micro-switch and connect to rocker in line with Yel/Blk wires.



TCC control has a couple of options..... For lock-up to work ONLY while in Full Auto mode, simply plug Brown “Harness” wire to Brown “Trans” wire. For TCC to work ONLY while in Full Manual mode you will plug Blue front Micro-switch wire into Brown “TRANS” wire. The converter will then lock up ONLY when in 4<sup>th</sup> gear and shifter is moved to the right side of the gate. To “Mode” switch these you will need an additional Single Pole Double Throw switch with 3 terminals. This would be connected just as the other. “Transmission” wire to middle terminal, “Harness” wire to one terminal and Blue Micro-switch wire to other terminal. This would then be your “mode” switch for the TCC. Some people find that “manually” controlling the TCC is not always necessary and just leave it to work in Full Auto and not for Full Manual thus, not needing to add the second “mode” switch.

Carefully check the adjustment of the shifter cable for ALL “gates” to match “actual” gear detents in the transmission. Now Re-install shifter and enjoy the ultimate control of your 4L80E.