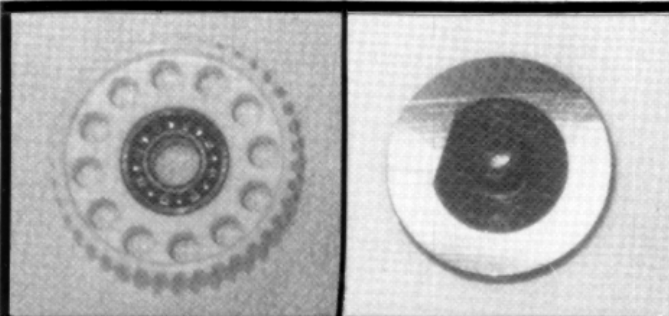
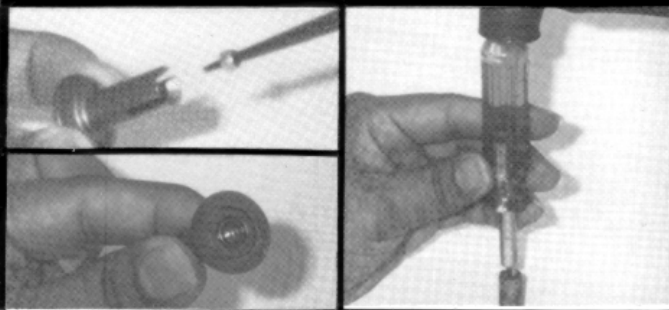


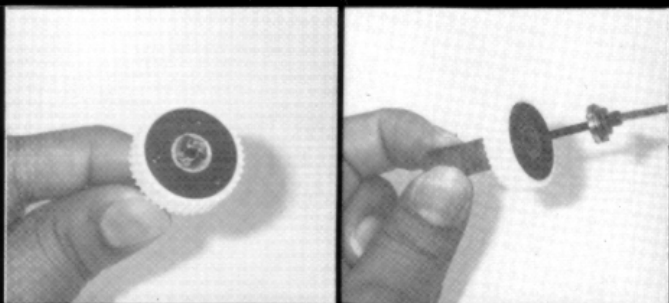
DIFF ASSEMBLY INSTRUCTIONS



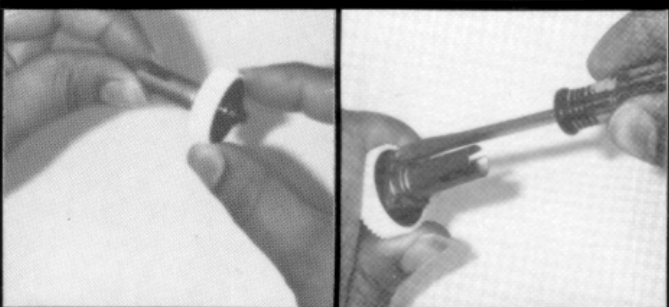
STEP 1: Locate and install special 5 x 11 x 3mm bearing #5015 (the thinnest of the five 5 x 11's) into the diff gear #219, making sure it's centered in gear from side to side. Now put one of the diff rings #216 onto the thrust plate #240. Be sure to lock the "D" shapes of the parts into each other.



STEP 3: Take the 3-48 Nylock nut #238 and put it on a wooden tooth pick or a smooth pointed piece of metal (nylon end first). Work it down into the thrust drive adapter #236 or #237 making sure it seats into the hex cut down inside. With the drive on a work bench, gently tap nut down (tap around the top of nut and tap only on the outside metal part of nut). Once set, pull out tooth pick and continue tapping nut down until it's seated at bottom of drive. Turn drive over and place 5 x 8mm bearing #5014 (smallest of all the bearings) into center of drive. Then put remaining diff ring in place, "D" shapes interlocked. set aside for now.

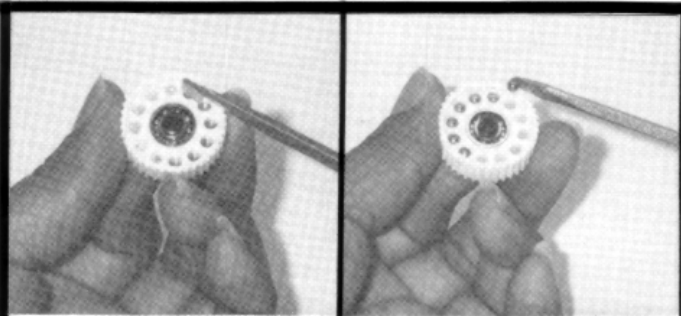


STEP 5: Turn this complete assembly drive end down in one hand and place the remaining steel thrust washer into recess of thrust plate. Put on a little black grease. Install clamp screw group, starting it slowly to keep from cross threading it.

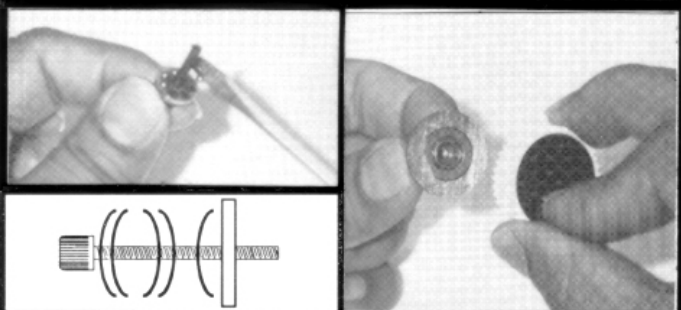


STEP 7: At this time check for smooth diff rotation. If diff is not smooth, disassemble diff backwards through the steps until you find the problem and have it corrected before continuing on. Now put drive adapter #234 or #235 into place on thrust plate and line up three holes. Install the three small 2-56 screws and tighten down with regular size screw driver. **Be sure they are good and tight, because if they come loose (out), they will cause severe damage to the belt and gears.**

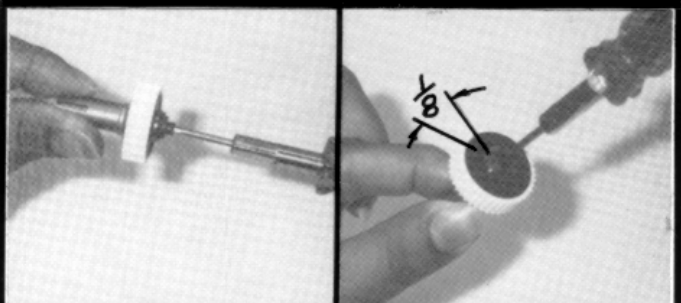
NOTE: READ AND FOLLOW ALL DIRECTIONS FOR LONG, PROBLEM-FREE USE OF YOUR LETHAL WEAPON 2.



STEP 2: Keeping the diff ring locked in place, put the diff gear onto the thrust plate. Using a small screwdriver put some of the light grease in each of the holes of gear. Once their all packed, place a 1/8" ball into each hole (larger ones). Set assembly aside for now.



STEP 4: Find the 3-48 clamp screw group #223. Put the cone washers on screw alternating their direction as in above drawing. Then put on one of the steel thrust washers and spread a thin layer of black grease on it. Then put on the yellow brass thrust washer and pack the holes with black grease. Place a 3/32" ball into each hole and set aside. Take thrust drive adapter assembly & thrust plate/diff gear group and put the two together. Be sure both diff rings stay properly locked into their "D" shaped cuts.



STEP 6: Be careful not to over tighten clamp screw, as this will damage outer steel thrust washer. Stop when the cone washers have just become flat against each other and back screw off 1/8 turn.



We highly recommend the use of a **POWER CLUTCH** on all vehicles, especially those using modified motors and trucks. This prolongs the life of the diff and belt, lowering operational costs.

THE PROBLEM: Not enough slip in the diff will cause the belt to skip over the top gear (making a clicking sound), and damaging both the gear and belt. However, **ANY SLIP** at all in the diff greatly increases wear to diff rings, balls and grease. The more the slip, the faster the wear. This is a common problem with all R/C trannies, the difference is stripped teeth off of gears in a gear tranny instead of a skipping belt in the Lethal Weapon.

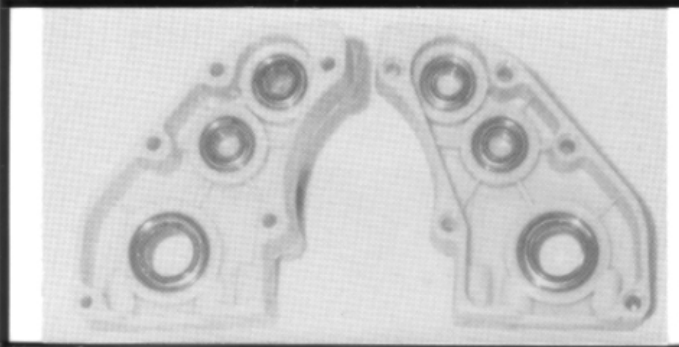
THE SOLUTION: Put simply **SLIPPERS**. A&L Power Clutch is designed and engineered to withstand hours and hours of slippage without damage (resulting in the need for parts replacement) as compared to a diff's ability to last only a few minutes subjected to the same slippage. This is why all top racers use slippers—fewer breakdowns (DNF's), greater control of **HOT WIND MOTORS** and less maintenance.

Then to set diff, give vehicle full throttle from a standing stop on a smooth carpet surface; to aid in longer diff and belt life, the diff should slip from 1 1/2 feet to 3 1/2 feet on your smooth carpet surface. This is a base point for diff adjustment. Diff should be readjusted for different track conditions (traction) to the 1 1/2 to 3 1/2 feet of slip.

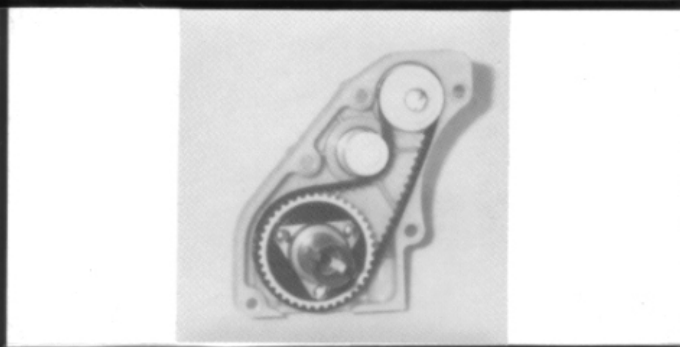
STEP 8: (A) To set diff adjustment for use with A&L's Power Clutch, put a small screw driver or Allen drive into each out drive slot. Hold as pictured above. Pinch diff gear with thumb and index finger and try to spin gear. When properly adjusted you should not be able to move diff gear or barely be able to move it. Diff should still spin smoothly. (Younger racers should get help from an adult for correct pressure setting.) Read Performance Hints for more facts on proper diff use and maintenance.

(B) Setting diff adjustment for use without A&L's Power Clutch, leave diff adjusted as assembled from Step 6 until tranny is completely assembled and in car or truck.

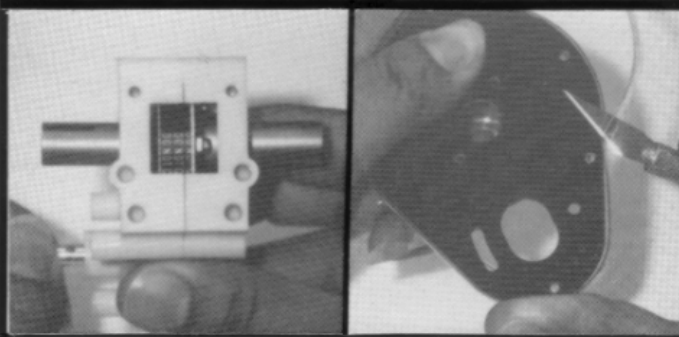
TRANNY ASSEMBLY/CASE GROUP



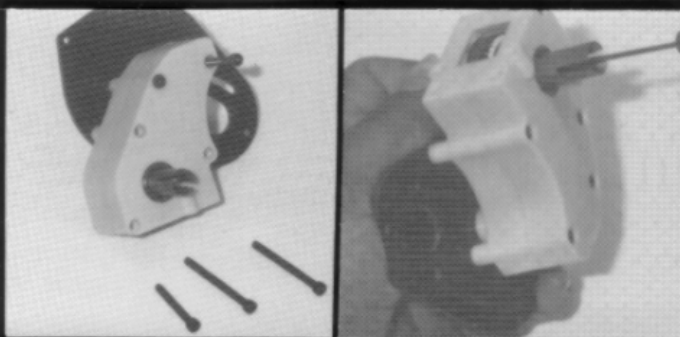
STEP 1: Place the four 5 x 11mm bearings #5005 into the two case halves, as well as the two 3/8 x 5/8 bearings #5004. Be sure they go all the way into bearing holes. Find the 3/8 x .010" shims and put one on each side of diff.



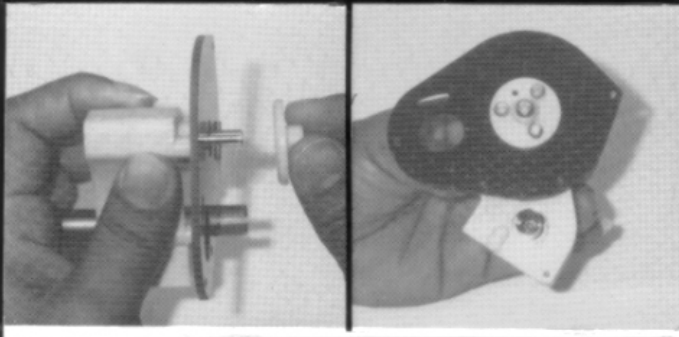
STEP 2: Put the short end of top shaft/pulley into top bearing of right case half (one without hole). Then install idler pulley & diff. Install diff going into right case half so that diff adjustments are done on the left side of tranny. Then put belt around top pulley first, loop to back of idler and slide on to diff gear as in above picture. Spinning top shaft will help bring belt down on diff gear.



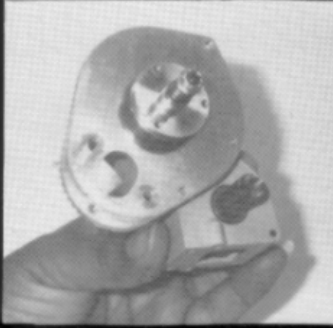
STEP 3: Now put the other case half in place. This may take a little work to get the three parts lined up in their bearings. Looking through the opening at bottom of case, pinch two sides together and spin the top shaft clockwise. The belt will not center perfectly on diff gear, but should not hang off either side of gear. The belt position on diff gear is easily moved by changing a 3/8 x .010" shim from the side of diff that belt overhangs to the side the gear is visible on. Before putting motor plate on tranny, put it into the gear cover and trim cover to fit motor plate.



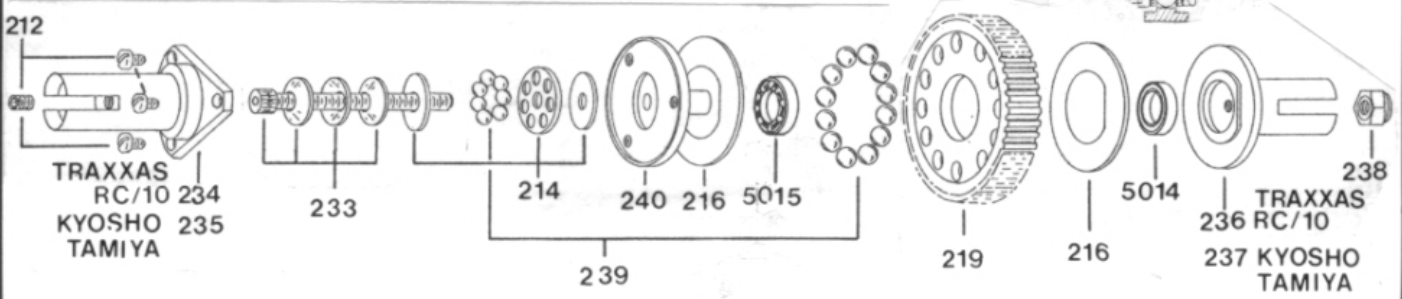
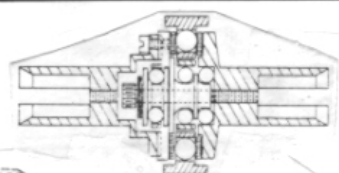
STEP 4: Place motor plate onto dirt shield around top shaft and line up the four screw holes. The four 4-40 x 1 1/4" screws go through case into motor plate. The other 4-40 x 7/8" screw goes at the bottom of case. When tightening case screws, do not over tighten them, which could cause a bind in bearings. Just snug case closed. Put the 4-40 x 1/8" set screw on a .050 hex driver and flatten a thread in two spots with a pair of wire cutters. This will keep it from falling out or in. It goes into the drive adapter side of diff (diff adjustment side). It's there to keep dirt out of thrust assembly, not to lock the diff adjustment. If you put it all the way in against the clamp screw, it will cause the diff adjustment to back off under power (vehicle will stop moving).



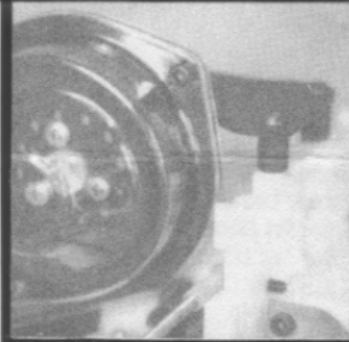
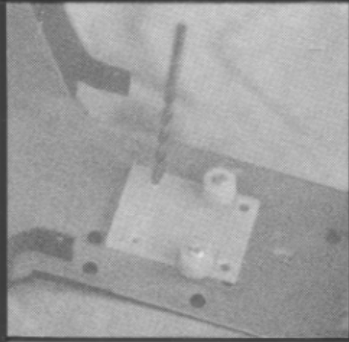
STEP 5: If you purchased a Lethal Weapon 2 with a Power Clutch included, refer to Power Clutch instructions now. For those without, find the 2 x 12mm pin #290 and gear hub #223. Put pin into small cross drilled hole of top shaft and slide gear hub over it, locking pin into machined slot of hub. The 6-32 Phillips pan head screw goes into shaft to hold hub on. The 4-40 x 3/16" Phillips pan head screws are to mount spur to hub. A number of manufacturers make spurs with holes in them for this type of mounting in 32, 48, 64 pitch teeth.



NOTE: This is a picture of the Lethal Weapon 2 Tranny with a Power Clutch on it, as well as our optional fined aluminum motor plate.
Part # 232 retail \$12.95



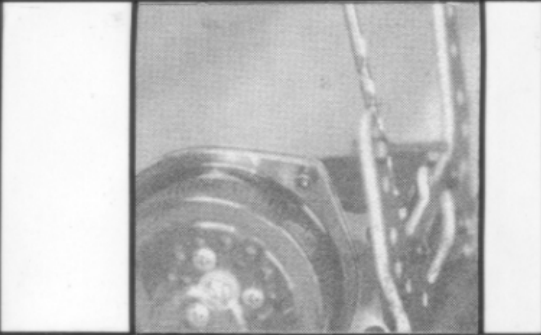
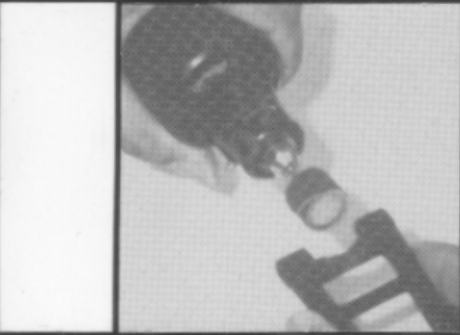
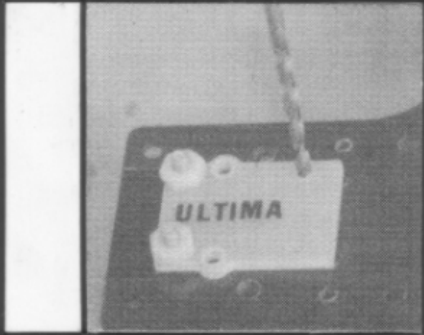
RC/10 & RC/10T It is recommended that you drill two new mounting holes in chassis for front of tranny. For proper hole locations, a drill jig #227 has been supplied to you with your new Lethal Weapon 2. To do this you will need to remove rear bulkhead, stock tranny and suspension from chassis.



STEP 1: Use two stock 8-32 flathead screws and nuts, and place in the two front holes for mounting the older style stock tranny on chassis and through the two bug eyed holes of drill jig. Put jig on top of chassis. Measure from front side edge of drill jig to side of chassis on both sides to make sure jig is mounted straight on chassis. Then drill through the two front holes in drill jig with a 1/8" drill bit. Then countersink the two holes on the bottom side of chassis with a 45° countersink (as the stock ones are). Now put top brace #226 on top of tranny using the two 4-40 x 1/4" screws supplied with tranny.

STEP 2: Now mount tranny to chassis using supplied 8-32 x 3/8" flat head screws in the two larger holes. (Do not use stock RC/10 8-32's. They're too long and will cause a malfunction in tranny operation.) Also supplied are two 4-40 x 3/8" flathead screws. They go into the two holes you drilled in chassis. Put the two black spacers supplied with tranny between top brace and rear bulkhead and use two longer 4-40 screws (not supplied) to secure top brace to rear bulkhead. Drill out two holes in gear cover with a hobby knife. In with tranny came a 4-40 x 1/8" and a 4-40 x 3/16" socket head screw for mounting the gear cover. Use the 1/8" screw on the bottom by the motor, and use the 3/16" screw on the top.

KYOSHO – Ultima Pro/Sideways/Outlaw Truck/Triumph & Specialty Cars and Trucks based on Ultima. It is recommended that you drill two new mounting holes in chassis for front of tranny. For proper hole locations, a drill jig #227 has been supplied to you with your new Lethal Weapon 2. To do this you will need to remove rear bulkhead, stock tranny and suspension from chassis.

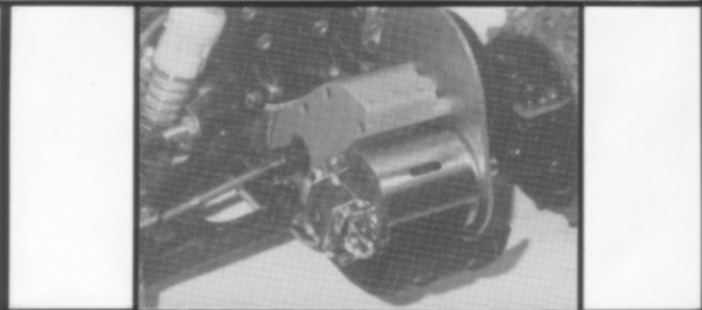
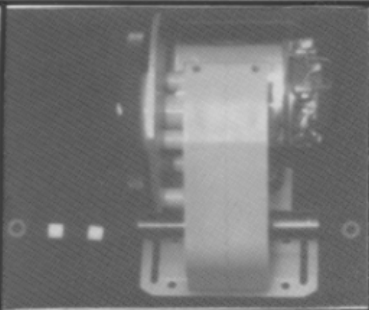
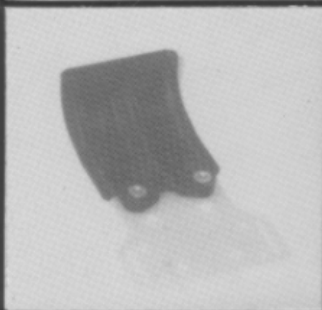


STEP 1: Using the two rear stock tranny mounting holes in chassis and the two large inset holes of jig, screw jig to top of chassis with two stock 4mm flathead screws and nuts. Measure from front side edge of jig to side of chassis on both sides to make sure jig is mounted straight on chassis. Then drill through the two front holes in drill jig with a 1/8" drill bit, remove jig, turn over chassis and countersink holes with a 45° countersink. Now put top brace #226 on tranny using the two 4-40 X 1/4" screws supplied with tranny.

SPECIAL NOTE TO Ultima Pro & Triumph OWNERS: Due to the long rear suspension arms of both cars, it is necessary to cut or grind off the two bubbles on the bottom outside of case halves, which are for mounting tranny to RC/10 chassis. Clearance for suspension arms under outrives is also a problem on these two Kyosho cars. One way to take care of this is to mount tranny to chassis using drill jig as a spacer. Longer 8/32 or 4mm flathead screws close to 1/2" long but not longer will be needed (not supplied). The other way is to cut or grind the needed clearance into the cross member of arm near hinge pin as pictured above. Check for needed clearance as you make modifications to arms.

STEP 3: Mount tranny to chassis using supplied 8-32 x 3/8" flathead screws in the two rear holes and the two supplied 4-40 x 1/4" flathead screws into the front holes. Now two holes must be drilled into bulkhead. Using top brace as jig, drill through the two holes in it, into bulkhead with either a #38 or #40 drill bit. Using two stock 3mm screws (not supplied), put supplied yellow spacers between bulkhead and top brace; bolt top brace to bulkhead. Drill out the two holes in gear cover with a hobby knife. In with tranny came a 4-40 x 1/8" & a 4-40 x 3/16" socket head screw for mounting of gear cover. Use the 1/8" screw on the bottom by the motor, and use the 3/16" screw on the top.

TAMIYA ASTUTE *** To start installation of assembled Lethal Weapon 2 into car. Remove stock tranny, rear bumper and suspension from chassis. **Note:** With the Astute/Lethal Weapon 2 is a special adapter plate for mounting tranny on stock chassis.



STEP 1: Remove "O" rings out of stock tranny outrives. Place the two white spacers supplied with your Lethal Weapon 2 inside the right side outrive (side with 3-48 nut down inside). Now place one of your stock "O" rings inside each outrive of Lethal Weapon 2 and mount it to adapter plate using supplied screws: The two 8-32 x 3/8" flatheads in rear and the two smaller 4-40 x 3/8" flatheads in front. Install bumper on back of adapter plate using stock screws and nuts.

STEP 2: Place adapter plate assembly on chassis lining up holes in both. Take rear suspension mounting blocks and put raised bar into lined up slots of adapter and chassis. Then bolt suspension blocks in place with supplied screws and stock nuts. Now replace dog bones and reassemble rear suspension of car. **Note:** Check for dog bone binding through full travel of rear suspension. It may be necessary to limit travel of rear shocks or to move top mounting point of shocks to eliminate dog bone binding. Any binding will greatly increase wear of all related parts and increase possibility of their breakage while greatly reducing performance and speed of car.