By Tosh Konya

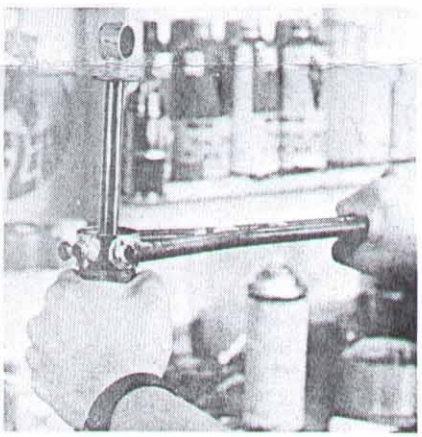
CURNUTT SHOCK REBUILD

Don't Throw Them Away!

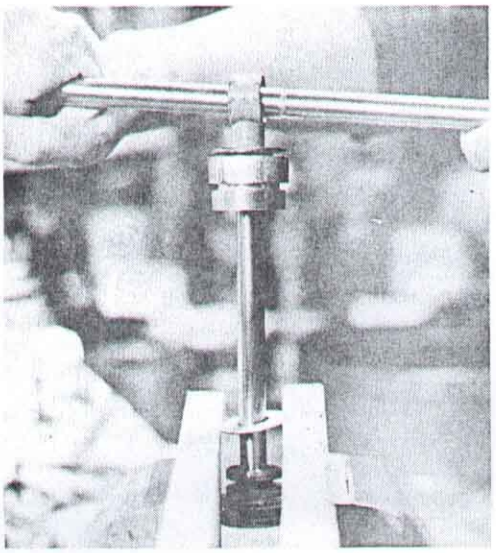
Looking up and down the line at any desert race you'll find that the majority of the bikes are equipped with strange looking grey and red shocks known as Curnutts. These shocks have rather unique dampening characteristics, but their durability is unexcelled, as a typical 80-mile course is no place for feeble shocks with little staying power. Each pair of shocks is custom-tailored for the bike and the weight of the rider by a special formula. All materials are made in America, a rarity these days, and are of very high quality. These shocks have been used on more bikes that carried the No. 1 Desert Expert plate (AMA Dist. 37) than all others combined. Since Southern California, which is Dist. 37, is the nation's hotbed of desert racing, this is quite a testimonial to the performance and quality of these dampeners.

Curnutt was actually the first one on the long-travel-rear bandwagon, as his 4.7-inch-travel shocks, fitted on bikes with normal frames and swingarms, will yield a bit over five inches of actual rear axle travel. He firmly believes that shocks mounted in the normal position are the best and is currently working on shocks with even more travel. There is much truth in this belief as when the axle travel and shock travel are kept close to a one-to-one ratio, the shocks will live a long and happy life. Many of the current LTR-mods are running at close to two-to-one, consequently the shocks don't last too long.

These are the required parts. All are readily available except the strap wrench, which you'll have to make or borrow.



With the homemade wrench in place and the bolt screwed in, unscrew the top cap by turning counterclockwise.



Clamp the piston in a vise using two blocks of wood to prevent damage.

Although Curnutt does offer a rebuild service at a super reasonable price, the time may come when you need a shock rebuild and just can't wait for the pony express to deliver and return your precious dampeners. Yeah . . . like you're starting to prep your bike on Thursday night for the big race on Sunday and you grimly discover that one or both shock seals are leaking. Instant panic! Since these shocks are custom-tailored for each bike and rider, you can't merely borrow a pair from someone and have them work okay for you. If you do blow a seal, rebuild them straight away as you can damage the shock by riding with a leaky seal. Not only does the shock oil get pumped out, but on the downstroke it brings in dirt. Dirt wears out parts prematurely, so rebuild them before the next ride.

The parts required were purchased at an industrial bearing supply house (also a good place to get American bearings for your non-American scooter) and came to a whopping $3.52. This is for two seals (Chicago Rawhide No. CR 4985), two large O-rings (1/8-by-1-1/8-by-1-3/8), and two small O-rings (3/32-by-1/2-by-11/16). You'll also need some automatic transmission fluid; just buy a quart at your local auto parts store for about a buck.

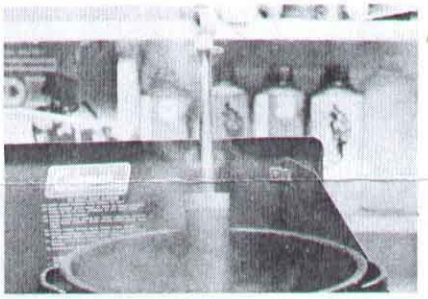
Once the shocks are off the bike, remove the bushings at both ends as this will make it easier to hold the dampeners in a vise. You'll need some sort of strap wrench to remove the top. I made one in about an hour from scraps I found around the garage. After the top cap is unscrewed, pull out the parts very slowly; otherwise you'll spray oil all over yourself and the garage. The bottom piston is screwed onto the shaft and quite often this part is a bear to remove. If so, just set the shock shaft and all the attached parts into some boiling water. The piston is aluminum and the shaft is steel; when heated, the aluminum will expand more than the steel so it should break loose. After heating in boiling water, you can clamp the piston in a vise using two small blocks of wood, so you won't damage the piston. Stick a large bar into the top shock eye and turn counterclockwise. Sometimes the top eye rather than the piston will unscrew itself. It doesn't matter as you can replace the seals from either end. If you find that any of the dampening parts are damaged, you should either send away for the parts or return both shocks to Curnutt.

After either the top eye or piston is broken loose, you should remove all the parts, then clamp the bare shock body in the vise. Now screw the top cap into the body all the way by hand. Use a screwdriver to pop out the old seal. Now unscrew the top cap and flip it upside down. Way at the bottom of the cap you'll see the small O-ring. Use a safety pin to remove this O-ring. Now remove the large O-ring from the piston.

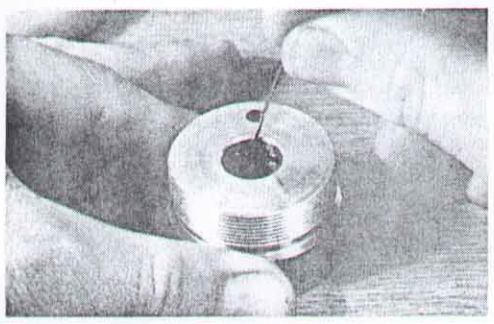
With everything disassembled, you should thoroughly wash all the parts and begin to assemble in reverse order. You can install the new seal by using a 19mm socket and tapping it gently into place with a small hammer. Apply a little Permatex to the outside of the seal to insure an oil-tight bond. After you install both O-rings, you should pour a little automatic transmission fluid on these and also the shaft seal to ease assembly and prevent damage. Use the blocks of wood and the vise to tighten down the piston or top eye, whichever you broke loose. Now place the clean shock body in the vise and pour the transmission fluid in until it's about one inch from the top. Next you can slip all the assembled dampener parts into the body; be careful as you don't want to damage the large O-ring. Oil will ooze out as you screw the top cap in place. Use the strap wrench to secure the cap firmly. Now duplicate this operation on the other shock.

Next you'll need a big coffee can or a deep pan. Fill it with water, bring it to boil, then drop in the shocks. I used the camping stove in the garage as I didn't want to stink up the kitchen. Leave the shocks in this boiling water for at least 10 minutes. The shock should be in the fully extended position when you drop them in the boiling water. After the proper time has elapsed, remove the shock and clamp it in the vise. Loosen the top cap 1/4-turn, then depress the shock all the way. This will bleed all the excess fluid and air from the shock. With the shock fully compressed, tighten down the top cap for the last time. The cap should be cinched down to at least 45 ft.-lbs. of torque. Clamp your torque wrench in the vise and see how much effort is required for 45 ft.-lbs., then duplicate this pressure with the strap wrench on the shock. Duplicate this operation on the other shock.

Your shock is now renewed and should feel much better. If you race regularly, it would be wise to rebuild the shocks every four to six months even though the seals aren't leaking. The oil breaks down after this period and wear is rapidly accelerated. If you do the rebuild trip every four months or so, you'll get excellent life out of the shocks for only a few dollars a year. In these days of $100 shocks that last only a short while, this has got to be a bargain.



Pour in the ATF until it is approximately one inch from the top, then set the assembled shock in boiling water for 10 minutes.



Remove the top cap and flip it upside down. Use a safety pin to remove the small O-ring.