

# Corolla Transaxle Overhaul

Have you done any automatic transmission work? If so, the automatic transaxle in Toyota's Corolla (and Chevy's Nova) shouldn't scare you. This unit is just a three-speed lockup automatic that happens to have a differential attached to it.

Toyota has developed and refined the basic tranny shown here into units that have overdrives and/or computer controls. We'll examine those slicker units at another time. After all, you have to master this simpler tranny before you can tackle the more-sophisticated versions.

When you dig into a Corolla automatic transaxle, keep these details in mind:

- If you have to tow one of these cars, pick up the front of the car or else dolly the front wheels. There's no other safe way to tow it!
- To identify the trans, look at the ID plate on the car's firewall. The last five digits on the lower right of this plate identify the trans. Examples are 130L, 131L, etc.
- A double seal on the pinion gear shaft separates the

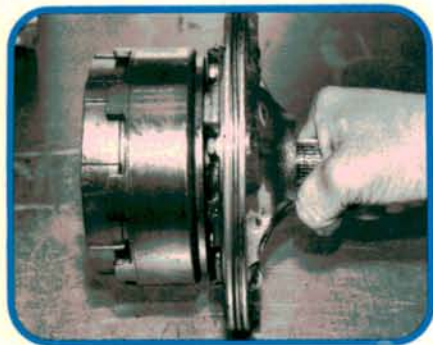
trans sump from the differential sump. All of these trannies take Dexron II ATF. But some differentials use ATF, others use gear oil. Check the manual for fluid requirements!

- Unlike many other import and domestic trannies, replacement bushings aren't available for this unit. Choices? Buy a new pump, clutch drum, or sun gear. Or, contact an aftermarket parts specialist such as those listed in this story. Please note that besides servicing direct drums, C-T Transmission Parts also offers bronze-bushed sun gears for this tranny.

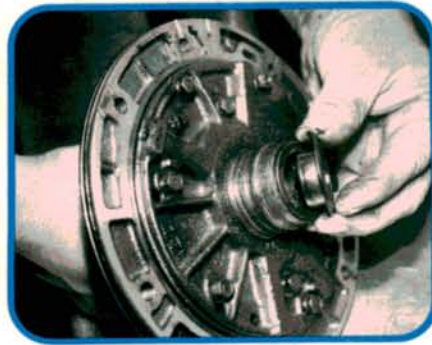
- If the unit hasn't eaten any hard parts, the end-play will usually be within spec when you assemble the trans. However, always check end-play the way the manual tells you. Only fools and gamblers ignore end-play checks.

- Play it safe. Thoroughly backflush the oil cooler before you install that freshly overhauled unit back in the car.

—By Dan Marinucci



See how the input shaft, the pump/stator, and these drums work together? Whenever the stator shaft bushings wear, they can cause a chain-reaction of damage in these other parts. Be sure the new drums, stator shaft, and sun gears you buy have bronze bushings in them.



Worn stator bushings also ruin these rings and ring lands. The worn rings cause direct clutch failure. Then the trans begins slipping. When you reinstall the pump, seat it by hand before you tighten the bolts. Otherwise, you may cock the pump and jam it against the input shaft.





# 3

Usually, severe stator bushing wear wipes out the rings and/or ring grooves on the input shaft. Don't gamble with new rings on worn ring lands! If the new rings don't spin freely in the grooves—or if they flop side to side within the grooves—replace the input shaft.



# 4

Direct drum bushings aren't available separately. But outfits such as Aceomatic (Circle No. 400), C-T Transmission Parts (Circle No. 401), and RPM Merit (Circle No. 402) do offer bronze-bushed direct drums for these trannies. Always check for ring-wear grooves inside this drum!



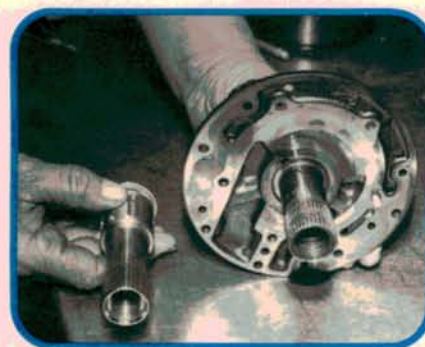
# 5

When you tear down this trans, always note which way each needle bearing faces. Some face up, some face down. If you reverse one, you'll wonder why 1) you have the wrong end-play; 2) you have no end-play at all; or 3) the trans locked up or broke up after you installed it without checking end-play!



# 6

The pump checks good internally but its stator shaft is junk. You can save that pump—and some dough—by replacing the shaft with something such as this bronze-bushed Aceomatic part. For more information on this Aceomatic replacement stator shaft, Circle No. 403 on the reader service card.



# 7

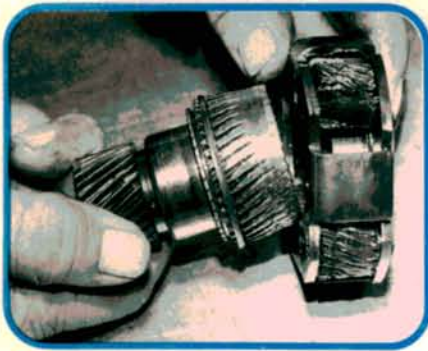
If you decide to press in a new stator shaft, properly support the pump cover or you'll crack the cover. See how the original shaft's indexed to the cover? Be sure you line up the oil holes in the new shaft with those in the cover before you press in the new stator shaft.



# 8

If your overhaul kit has scarf-cut rings in it, remember that this is the correct way to install those rings. Ring ends should mate as shown here. Correct side clearance for input shaft sealing rings is .001-.0025 inch (.025-.063 mm). No, this isn't the correct ring for this application!





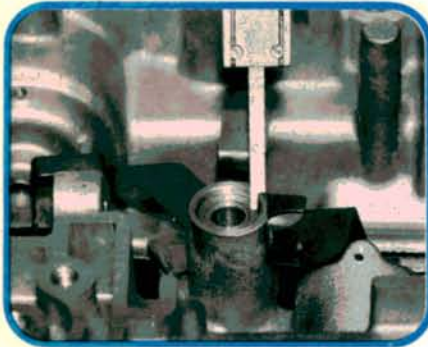
# 9

Want to strip the sun gear and grenade the planetaries? Want to ruin the overdrive unit in the overdrive version of this trans? It's easy—just tow the car with the front wheels on the ground! This trans was probably quite rebuildable until some moron towed it with the front wheels down.



# 10

Always install this seal *after* you've installed the second-gear clutch assembly. If you install the seal first, you'll cut it when you install the clutch. If the seal leaks, the trans will slip in second gear or it'll begin slipping after it warms up. Air-check the seal with 45 PSI pressure.



# 11

Second-gear clutch seal (seal B2) is supposed to be 29 mm below the valve-body surface. If it's exactly 29 mm deep, always air-check it anyway. If it leaks, gently tap it deeper into the case and air-check it again. Later OE B2 seal has a collar on it that eliminates installation guesswork.



# 12

Remember the passage where the B2 seal goes? This washer-shaped seal seals the valve body to the top of that passage. It's easy to overlook this seal. If you forget to install it, the trans will shift great until it warms up. After it warms up, the trans'll slip and slip badly.



# 13

Don't trust your memory! During teardown, carefully mark the top of each accumulator piston. Put a matching mark on the case next to each piston. That way, the right piston goes back in the right bore. And don't go overboard with your punch or you'll invite a leak here!



# 14

Always check the fit of the accumulator o-rings *one* o-ring at a time. Install the inner o-ring, lube it, and push the piston into its bore. You should feel a slight drag. Then remove the inner o-ring, install the outer o-ring, lube it, and repeat the drag test. Then air-check your work.





# 15

Always air-check the accumulators. Blow regulated shop air (45 PSI maximum) into each hole in the accumulator cover. With each blast of air, you should hear the piston apply with a crisp popping or snapping sound. And, you shouldn't feel any air escaping from these vent holes in the case, either.



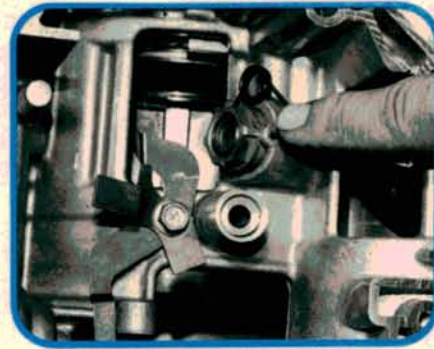
# 16

The governor pressure tap's on the left front, near the dipstick/oil fill tube. Remember that governor pressure almost equals road speed. It should also mimic *changes* in road speed. Smoothly and consistently, it should increase and decrease when the car speeds up and slows down.



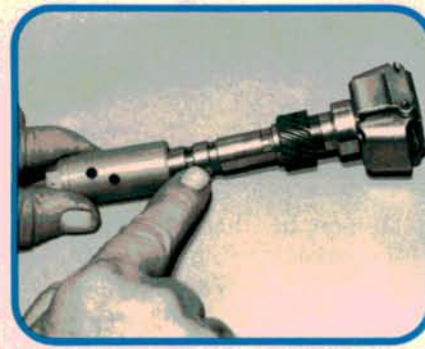
# 17

Find lots of metal in the pan? Among other problems, you may find that you can't remove the governor with hand effort alone. If the governor doesn't come out easily, you can bet that both the governor and its sleeve are trash.



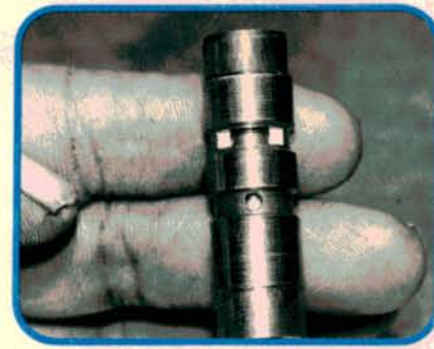
# 18

Governor won't budge? Using a punch, try to gently drive the governor out from the inside of the case. If you sledgehammer it, you might crack the case! If the governor still won't budge, just pull this retaining clip and slide the governor sleeve and governor out of the case together.



# 19

The governor must spin freely and smoothly in this sleeve. If the bore of this sleeve is damaged beyond a crocus-cloth cleanup, replace the sleeve. If the governor lands are gouged or scored, replace the governor. And don't cheat by installing a new governor in a gouged-up governor sleeve!



# 20

When you move the governor weights, this little spool valve inside the governor should slide up and down freely. Always check spool valve movement several times. Sometimes, that sneaky little valve will decide to stick on the second or third try. Keep everything clean, clean, clean!