

SK® 325-4L™ SHIFT KIT™ VALVE BODY AND SERVO SYSTEM CORRECTION PARTS

THE COMPLAINTS:

This kit is designed to ELIMINATE, REDUCE & PREVENT ROUGH 1-2—SLIDE 1-2—SLIDE BUMP 1-2 RUNAWAY—3-2 SLIDE BANG—3-2 DOWNSHIFT CLUNK—2ND GEAR STARTS, 2-3 CLANK ON LIGHT THROTTLE—ROUGH 2-3, 3-4 BUMP or clang after FREEWAY passing gear BAND failure and 3rd CLUTCH failure.

Takes too long to kickdown above 45MPH

THE BENEFITS:

You and your customer are about to EXPERIENCE a really GOOD working TRANSMISSION. Most of the above complaints came with it when it left the showroom floor. Installing a new band and clutches does not correct the COMPLAINT that CAUSED their FAILURE, as I am sure you have probably found out. In fact, if I had a dollar for every one of these that was overhauled (without this kit) for a bad 1-2 or 2-3 or 3-2 runaway, that was no better or even worse AFTER the OVERHUAL, I could easily retire.

A long slide, bump or bang or clank is a malfunction. All of the UPSHIFTS in this transmission are ACCUMULATED. A bump, bang-clang is proof of a slipping friction unit, that then applies SUDDENLY, after the accumulator BOTTOMS. The only shift on this trans that should be abrupt is a manual shift from OVERDRIVE to DRIVE at speeds above 40 MPH, on a steady throttle or light acceleration. ANY other ABRUPTNESS is probably a SLIP-BUMP even though you may not feel the slip part of it.

This is a HI TECH product looking for a HI TECH mechanic. It is also looking for a **HIGH ETHIC** mechanic. One who believes that the customer deserves a good working trans. It is looking for the mechanic who is advanced enough to take some PRIDE in HOW they work and not in just; if they work. The mechanic who would like to FIX the CAUSE of the FAILURE, instead of just the result of it. The mechanic and shop who realizes that a GUARANTEE is a nice thing for the customer to have, but what he really is wanting when he pays his money is a transmission that is working like it should and not a 1-2 slide or bump or a 2-3 cutloose or a 3-2 runaway, even if it is GUARANTEED all the way to the salvage yard.

If your standard is to make it work nearly, or just as good as NEW you probably don't want this kit, because with this kit, it will not work that LAZY. Look honestly back into your own memory to the first time you drove a 4L. What was your opinion on how "THEY" worked? Have you downgraded your standard because YOU are having to FIX them? You can UPGRADE your standard right now and be that HI-TECH mechanic who has honored the customers car by fixing it.

READ THIS!!

Don't let this massive paper scare you. Most of the information is so you won't have to be going through a bunch of repair manuals to get it together.

THE SHIFT KIT™ IS THE EASY PART.

Are you wondering why I am talking like this? Could it be that I want you to be SUCCESSFUL? Did you know that HI ETHICS and HI TECH and SUCCESS are all companions. ETHICS (a level of rightness & caring), is what sets a persons GOALS and INTENTIONS. Surely you have been around, hired or worked with an unethical person. Did you notice that regardless how HARD they may have WORKED, that with the wrong goals and intentions, the TECHNICAL PART of the job SEEMED to keep them from succeeding? Like they had a kind of a BLIND spot or little JINX was on them? What good would a HI TECH product be to him?

A HI TECH ETHIC has a high intention. A low ETHIC sets a low intention. If a man's intention is; How little he can do and still "Get it out the door", he will build a lot of them that "Won't make it out the door" and he will exhaust his energy reworking fast, furious, frustrated and late, changing a whole lot of parts there is nothing wrong with and resenting every minute and nickel of it and it ends up costing him 3 or 4 times what he thought for parts and a big hunk of his "life" to boot. All because his intention was so low (get it out the door), that neither he nor the job had a fighting chance. If your intention is to get these transmission working like they really should, you won't build many that "won't deliver". And you are gonna build a whole bunch of them that'll work so good you might have to buy a bigger hat.

SHIFT KIT™ is the brand name for valve body kits designed by Gil Younger and manufactured by TRANSCO®. Be careful about calling other valve body kits by our brand name, "SHIFT KIT™" you might end up with some parts that will not be or do what you expected.

THE INFORMATION, both written and solid (parts) in a SHIFT KIT™ is the crispest, clearest, highest technical information available and we are here everyday, working, to make it even better whenever possible.

A SHIFT KIT™ does more to improve DRIVEABILITY of the whole car, than all other parts combined.

WHY? Because even a GOOD shift doesn't make the car feel good unless it also happens at the RIGHT TIME. That's what a SHIFT KIT™ is all about, A GOOD SHIFT AT THE RIGHT TIME.

Makes you FEEL good all over.

Sincerely,
GIL YOUNGER
Have a nice day!



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FIXING THROTTLE CABLE AND TV RELATIONSHIP:

GIVE your **CUSTOMER** the full **BENEFIT** of this **KIT** and your **TALENT** by giving him the **BEST** possible **RELATIONSHIP** between **SHIFTING** and engine **TORQUE**.

This may look like the “**LONG WAY AROUND**”, but in fact you will find it is the **FASTEST** way possible to give your work a real **TOUCH OF PERFECTION**.

Don't worry about **FIGURING IT OUT**, just follow the steps and in **5 MINUTES** you will be road **TESTING** the **RESULTS**.

1. **REMOVE** the **AIR CLEANER** and place it on your **BENCH (PLEASE)**.
2. Push the **TV** adjusting **TAB** and move the cable housing **1½ inches TOWARDS** the **CARB**.
3. Have someone floor the gas pedal from **INSIDE** the car. While they hold the pedal floored, you **BEND** the **THROTTLE CABLE BRACKET**, away from the carb, until the **CARB** arm **BOTTOMS SOLIDLY** against it's stop.
4. While someone is still holding the pedal floored, **DEPRESS** the adjusting **TAB** and slide the **TV** cable housing **AWAY** from **CARB FIRMLY** until it stops. Release **TAB** and let it lock.
5. **POCKETKNIFE** a deep **MARK** on the cable **HOUSING** tight up against the front of the adjustment assembly. This **MARK** is **MAX TV**.
6. Depress **TAB** and move mark **1/8"** towards carb. (Forward)
7. Road test **BEFORE** Installing air **CLEANER**.

SOME POINTERS: The mark you made is **MAX TV**. Adjusting cable housing **FORWARD REDUCES TV**. Forward more than **3/8"** can cause no detent (3-1), or no passing gear above **40 MPH**.

V8's work best between **1/8"** and **MAX** mark. **V6's** **1/8** to **3/16"** from mark.

WARNING: NEVER set the cable so that your **MARK DISAPPEARS**. (More than **MAX**). If you do, the first time somebody floors the gas **SOMETHING** will **BEND**.

THE POSITIVE ENGINEERING: By **FOLLOWING** these steps **EXACTLY** you will **FIX** a lot of cars nobody else in town could fix. Also when you have followed these steps and the trans is still not right, you won't need to be driving around for 45 minutes **JACKING** around with the **TV** adjustment, because you will **KNOW** it is **NOT** the **PROBLEM**.

DON'T BE A SUCKER: By believing **ANYONE** who says, “I have already set the **TV**, or I have **CHECKED** the **TV**”, you will just be wasting your time. Just **BENCH** the **CLEANER** and **GO FOR IT** before road test. If you do this, you will **FIX** these cars in less time than other people spend talking about it. **AND**, on **YOUR** road test you will already **KNOW** the **TV** is **RIGHT** and can place your **ATTENTION** on the trans and not have an aggravating half an hour fighting an air cleaner and fiddling with the **TV** cable.

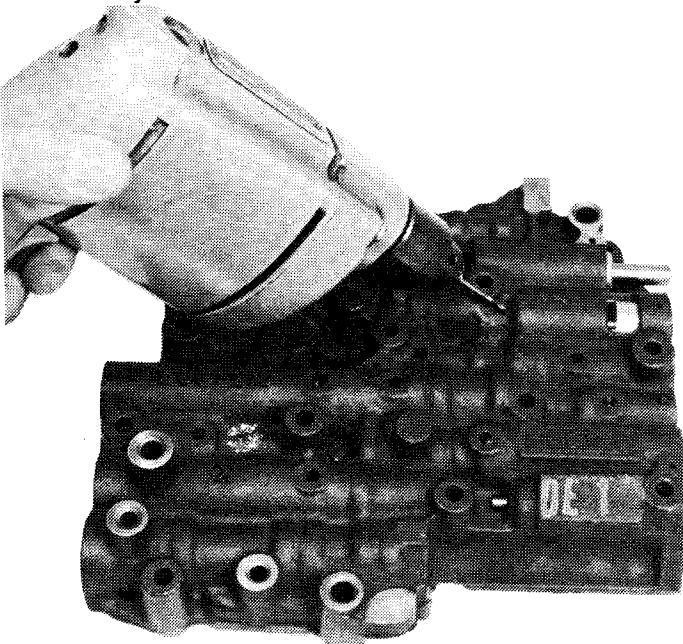
ATTENTION MECHANIC:

The hole sizes given on page 4, match the accm and servo system improvements furnished in this kit. When the pressure rise, accm and servo systems are working correctly, even a slight hole size change will make a **BIG** difference. Increasing the hole sizes, beyond what is recommended, will not increase the holding power or durability.

The friction durability problem with this trans is not because the 2nd, 3rd and 4th feed holes were too small, so making them bigger will only give you bumps and clangs and no more performance or durability. The main friction wear problem with this trans **WAS** a 1-2 Accumulation shortage, too much time during **DOWNSHIFTS** and excessive high clutch drag and band slide during downshifts (3-2 or 4-2 cutloose).

For turbo-charged engines, stretched limos, police and taxis, this is our maximum recommendation. Use a 2nd band servo assm with cover number ending in 141 or 692. Use these hole sizes.

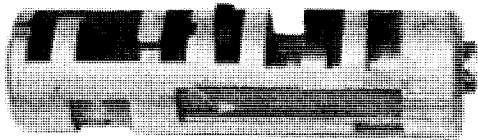
A = .116-.120	D = .076-.082
B = .096-.113	E = .082-.089
C = .059-.086	F = .078-.086



STEP 1.

REMOVE ACCUMULATOR VALVE ASSEMBLY

Drill an exhaust hole thru the casting at a **30-45°** angle to keep pressure from building up under the accumulator valve and bushing. Any size from **1/16"** to **5/32"** is OK. The drill from a **SK®-6 SHIFT KIT** is perfect. It's **.110**.

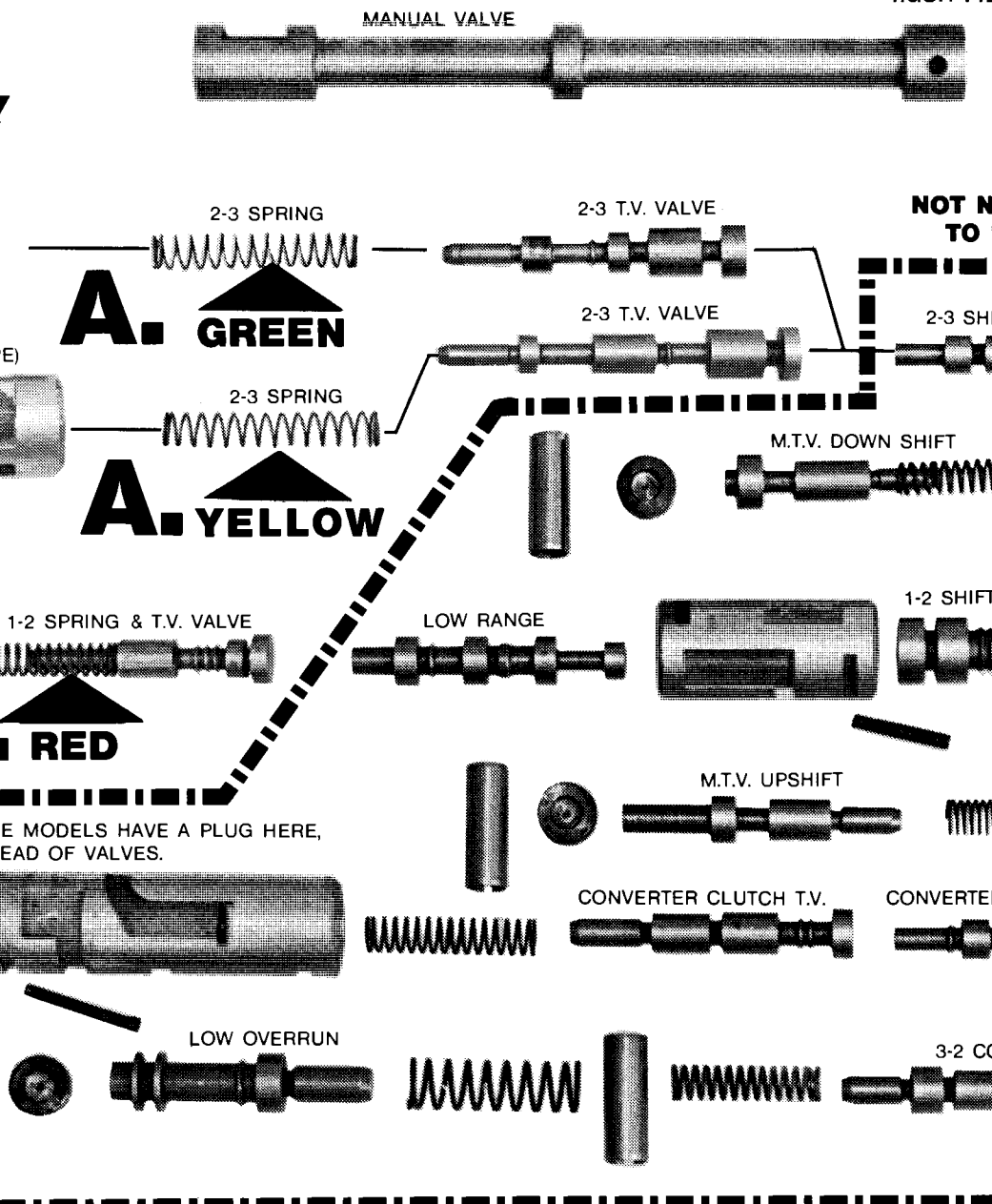


2-3 T.V. VALVE & BUSHING ASSEMBLY

2-3 T.V. BUSHING - (SHORT TYPE)



2-3 T.V. BUSHING - (LONG TYPE)



A. GREEN

A. YELLOW

B. RED

SOME MODELS HAVE A PLUG HERE, INSTEAD OF VALVES.

LOW OVERRUN

HOLD IT
stalling p
lever in
the man
be flush
flush-HE

There is more problem avoiding and system correcting Technology in this package than in all the manuals or tech bulletins you will ever see-elsewhere.

ALSO: There is plenty more—

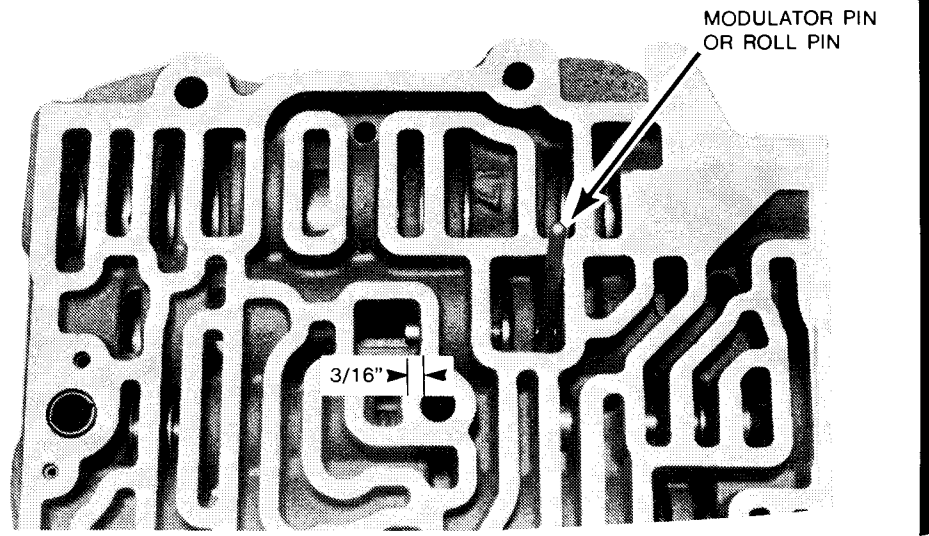
If you are genuinely interested in making them work right "On the first try" or soon after, TransGo TECH is accepting applicants for a HI-TECH trouble shooting and study course.

(626) 443-7456

1.

2-3 T.V. VALVE & BUSHING ASSEMBLY

Move the 2-3 shift valve to the left until you can see about 3/16" of it through the hole shown and place a modulator pin in the passage shown to hold it there.



Before in-
an. With the
3" position
al valve must
o 1/16" below
RE..

STEP 2.

INSTALL SPRINGS FURNISHED AT LOCATIONS SHOWN.

“Z”

IMPORTANT: There are two bolt holes marked with an “X”. These two holes are close fitting “Line Up” holes. Always install and tighten these two bolts first as the gaskets and separator plate will be aligned.

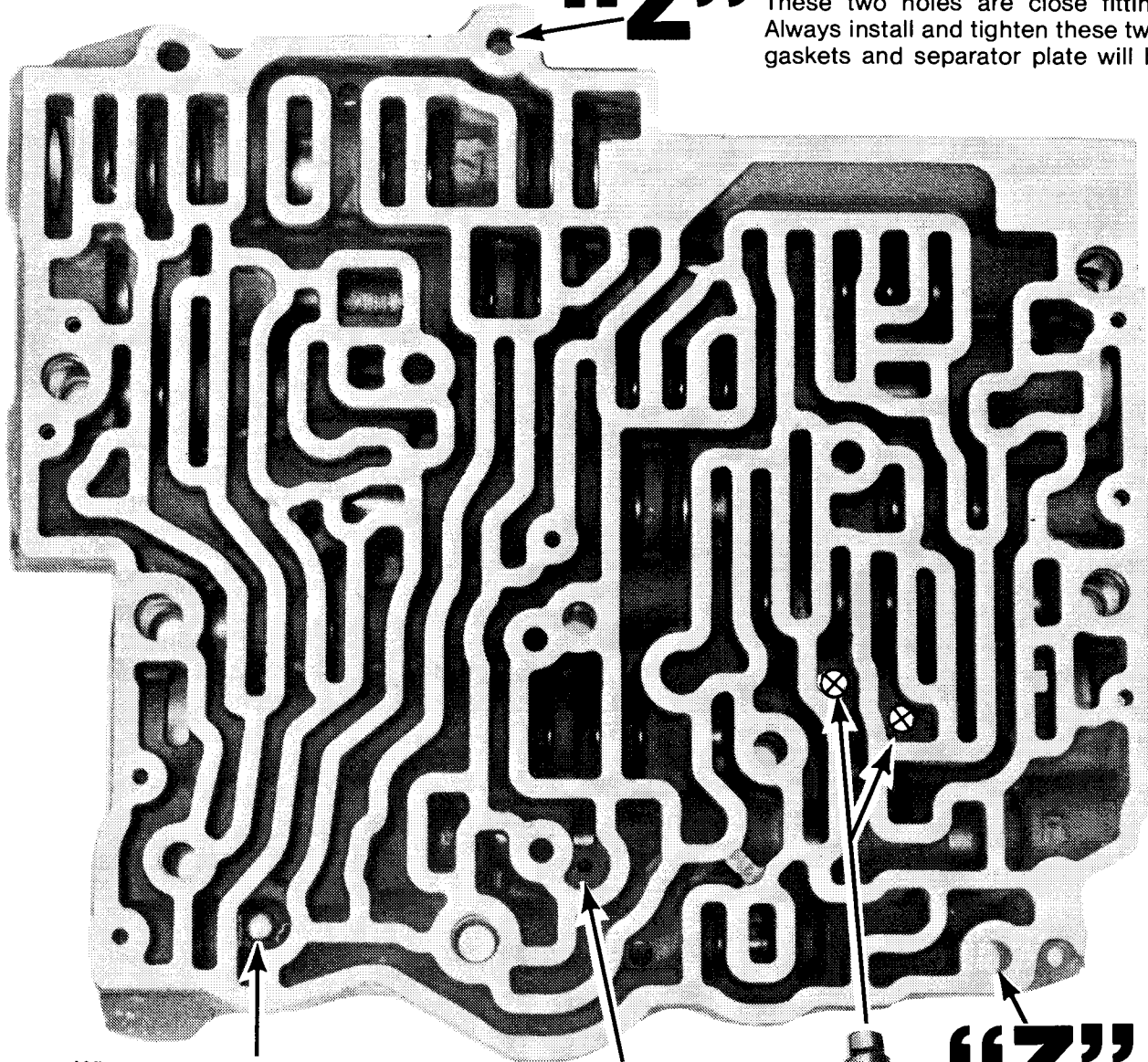
CESSARY REMOVE

VALVE

ALVE

SHIFT VALVE

TROL



When installing with the trans
IN THE CAR,
CHECKBALL GOES HERE.
The valvebody has **ONE** checkball

T.V. PIN

C. INSTALL PLUG FURNISHED IN HOLE SHOWN.

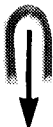
F.
LOOK AT
STAMPED
LETTER

325
See

D.

2.

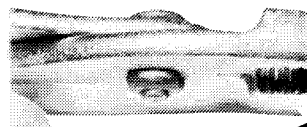
Double a piece of safety wire over a rollpin or modulator pin and cut it off about 3/8" long as shown. Or the inner loop of a paper clip.



Install the **GREEN** spring furnished and push the valve into the bushing until it is about 1/4" below flush. Install the "U" clip you made into the first oil port as shown and let the valve come against it.

3.

Install the bushing into the valve body with the ports "UP" so that you can pull the "U" clip out through the hole shown.



ALIGNING NOTCH

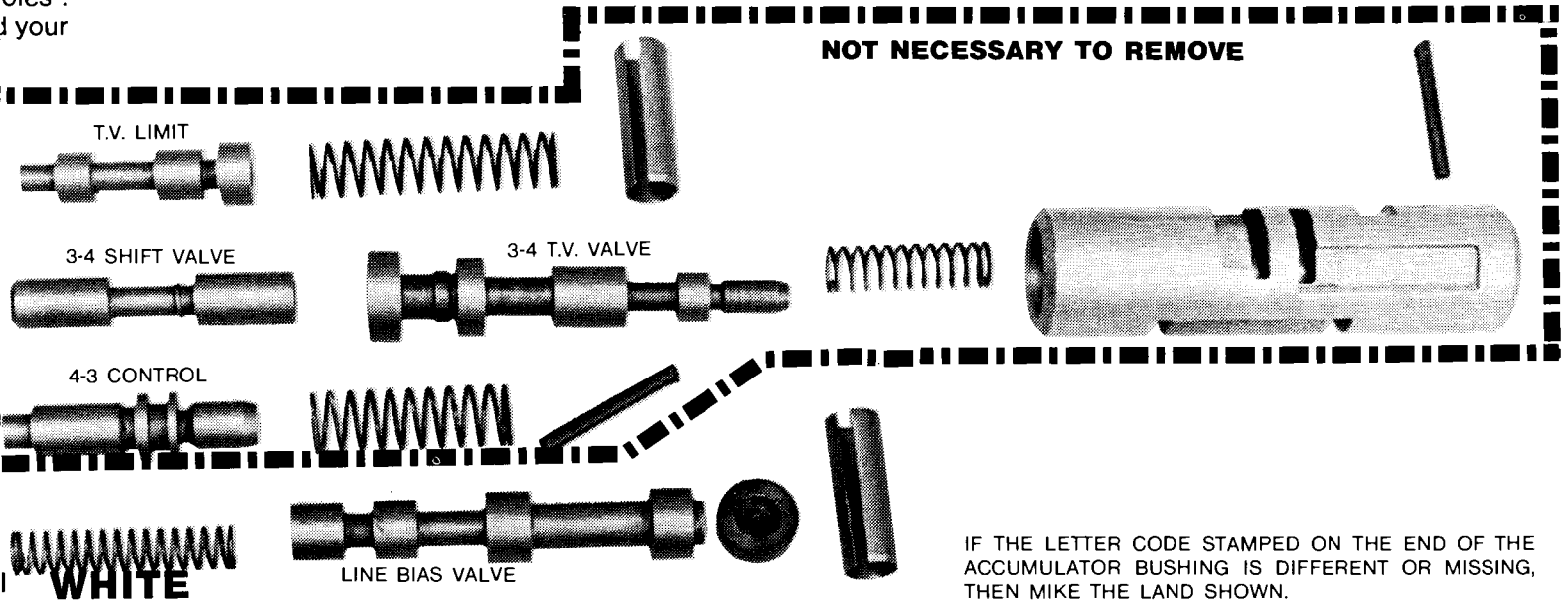
Move the bushing until it is sticking out the side of the valve body about 1/8" and turn it with a pair of pliers until the aligning notch is straight up and down. Now shove it in slowly till the rollpin installs. Remove modulator pin.

PAGE 3.

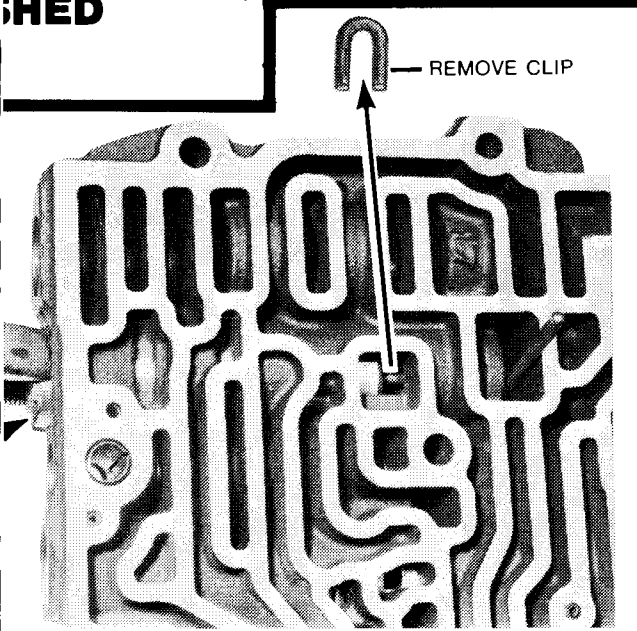
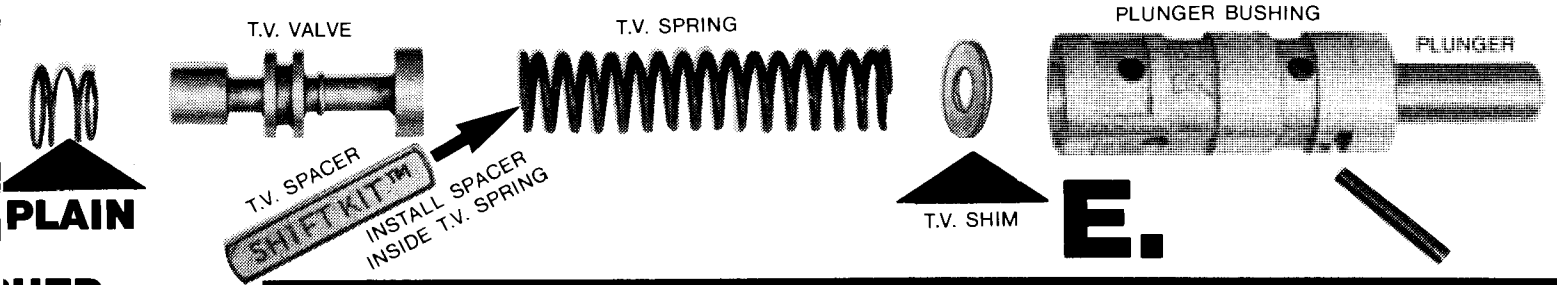
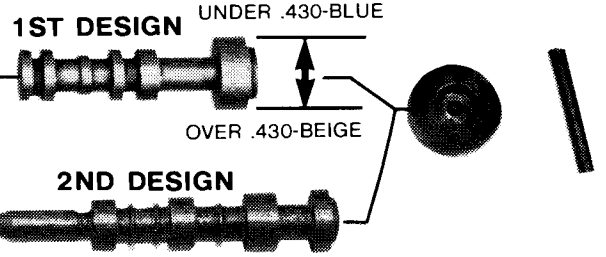
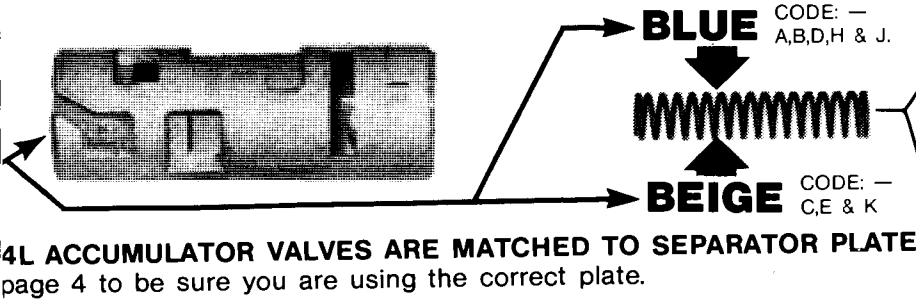
Gaskets are not normally furnished in this kit. If this kit has gaskets they are furnished for your convenience.

WE CARE ABOUT YOU: If you are still having a problem when you've got this trans back together, our TECHNICAL DEPT will be happy to help. Phone (626) 443-7451.

d "Z".
oles".
d your



IF THE LETTER CODE STAMPED ON THE END OF THE ACCUMULATOR BUSHING IS DIFFERENT OR MISSING, THEN MIKE THE LAND SHOWN.



ACCUMULATOR CASTING

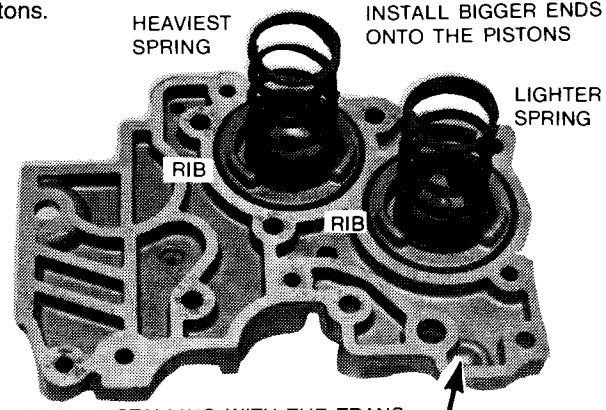
ACCM SEALS: 83 and later models used rubber seals on the pistons. They just work great.

81 & 82 models used teflon rings. They do not work well at this location.

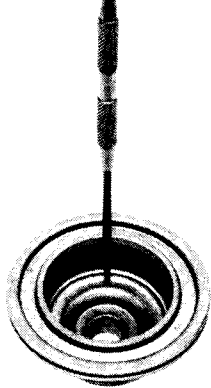
Replace the teflon rings with Sealed Power metal ring #TAW 490 ONLY.

In an emergency a teflon ring can be used. BUT, it must measure .0925 wide to even work temporarily. It also must be tight in the bore.

INSTALL BOTH PISTONS WITH THE RIBS UP, AS SHOWN



INTERMEDIATE SERVO AND BAND ADJUSTMENT



LOOK AT THE SERVO PISTON ORIFICE:

If it has a CUP PLUG in it, just leave it like it is. It's OK.

If it has a DRILLED HOLE in it — ENLARGE the hole with any drill between .154 & .161 and then INSTALL the CUP PLUG furnished.

Any of these drill sizes will work.
5/32"-#23-22-21-20 or 4mm.

INSTALL PISTON WITH THE CUP PLUG TOWARDS THE TOP OF TRANS

CHECKING BAND CLEARANCE

When the snap ring is installed, grab the servo cover with water pump pliers and pull it to make sure it is against the snap ring.

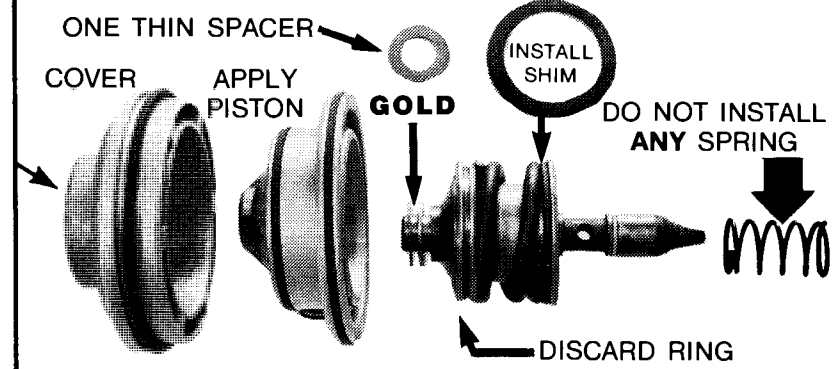
ON THE BENCH: If you can rotate the output shaft in both directions, by hand, the band clearance is OK. It will turn harder in one direction—gear reduction.

IN THE CAR: If you can turn the front wheels BACKWARD with just gear drag, the band clearance is OK.

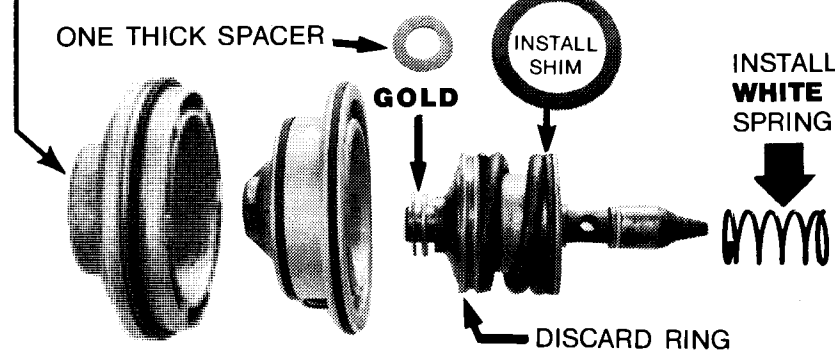
SAFETY CHECK: Push the cover IN and slide a paper match between the snap ring and the cover. It is OK to have some drag now, but you still should be able to turn the output shaft or wheels by hand. If it's TIGHT remove Gold spacer.

LOOK AT THE CASTING NUMBER ON THE SERVO COVER

WITH 8630569 COVER



ALL OTHER COVERS

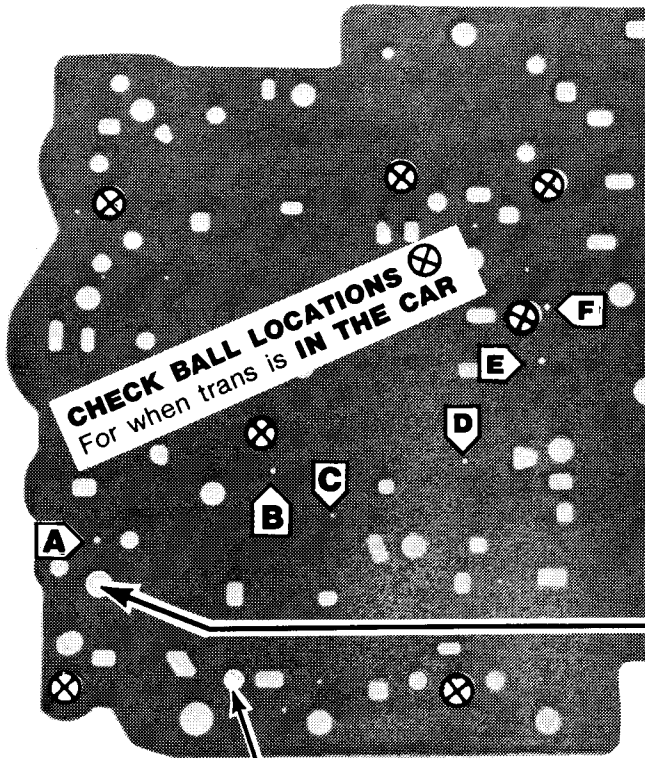


SEPARATOR PLATE: Hole sizes.

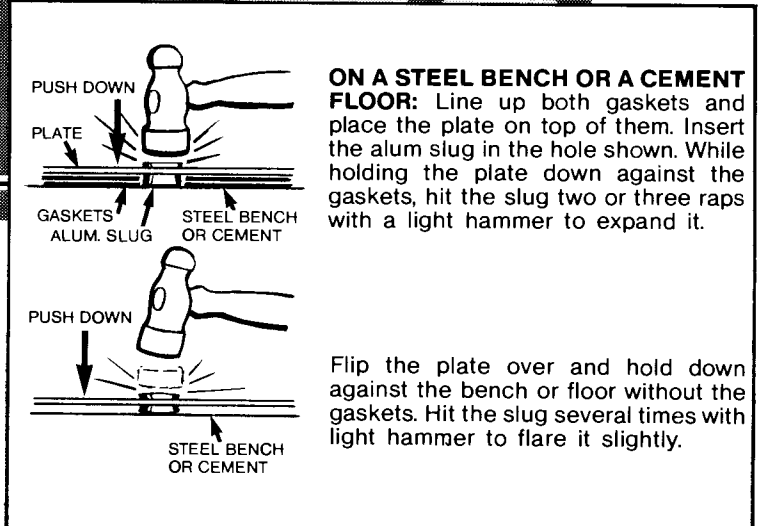
- A-3rd Acm = .110-.113
- B-2nd = .093-.113
- C-Govnr = .059-.086
- D-4th = .059-.067
- E-3rd = .076-.082
- F-3-2 = .076-.082

GOT A HOLE THAT IS TOO BIG?

Place the part of the plate with the hole, that's too big, onto the front or rear face of a sprag race. Put a checkball on the hole and hit it with a light hammer. Then, redrill it to the correct size.



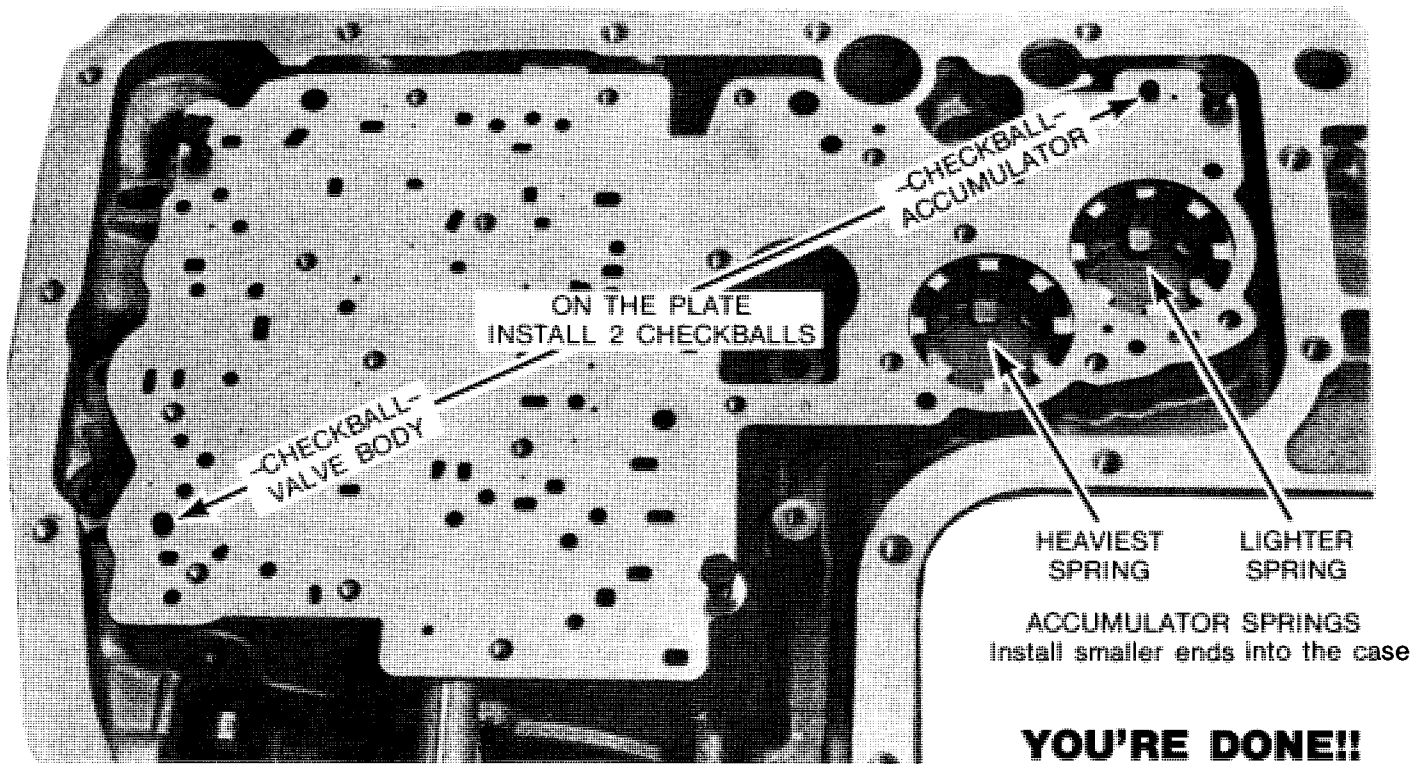
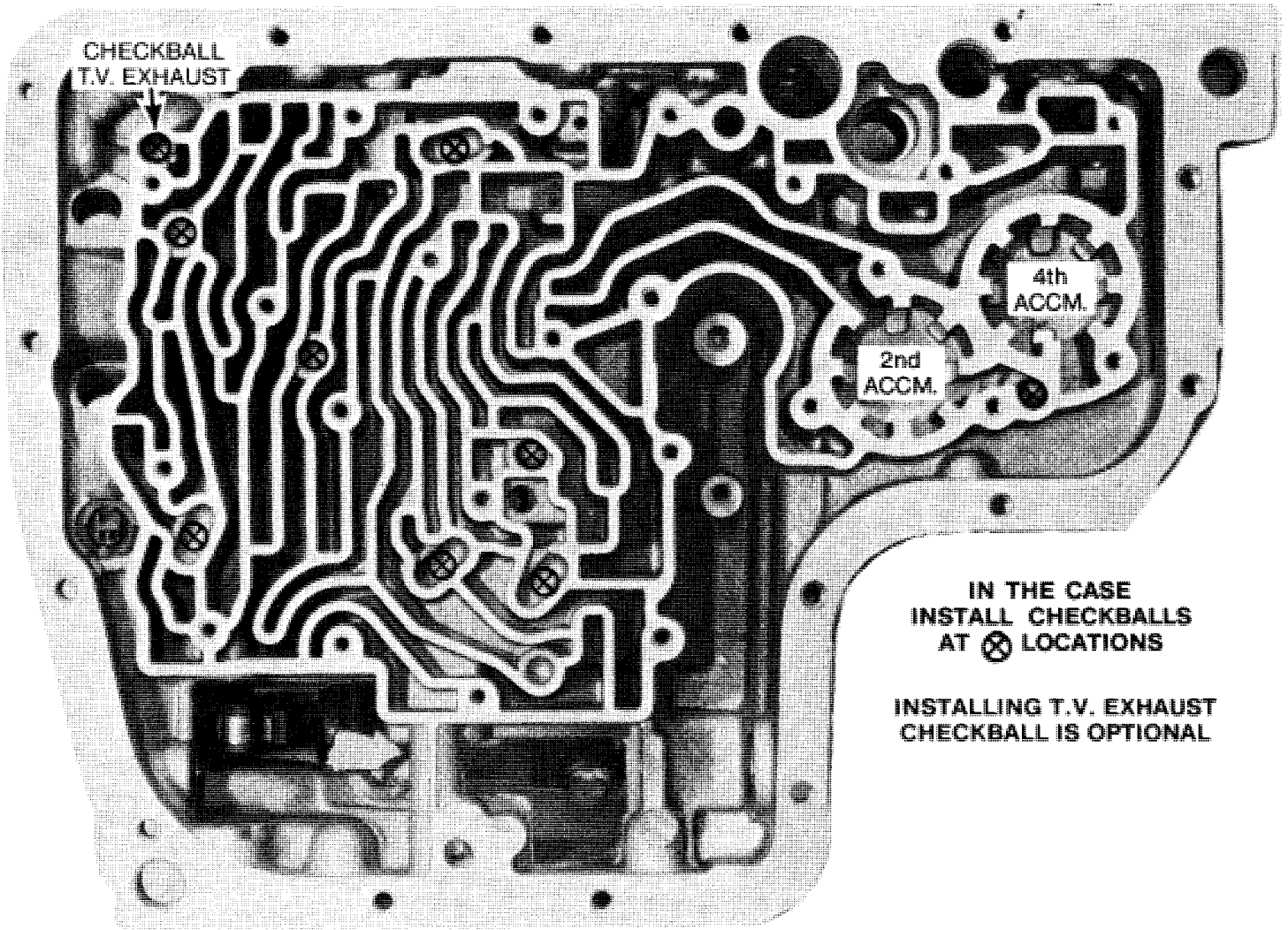
1st design plate does not have this hole #8635655. It matches 1st design accumulator valve.
2nd design plate has a hole here #8635661. It matches 2nd design accumulator valve.
 If your plate has this hole and your gaskets do not have the hole, add the hole to gaskets.



ON A STEEL BENCH OR A CEMENT FLOOR: Line up both gaskets and place the plate on top of them. Insert the alum slug in the hole shown. While holding the plate down against the gaskets, hit the slug two or three raps with a light hammer to expand it.

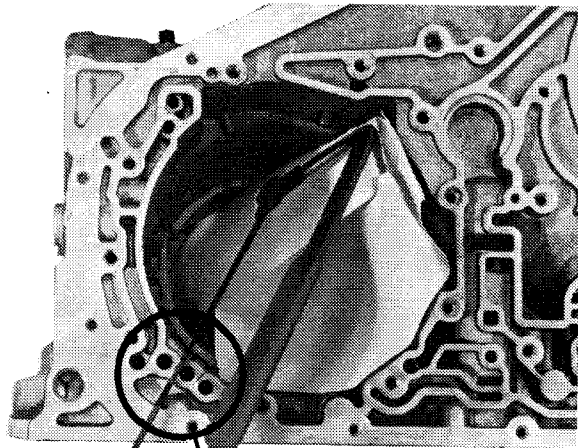
Flip the plate over and hold down against the bench or floor without the gaskets. Hit the slug several times with light hammer to flare it slightly.

CHECKBALL LOCATIONS ⊗ When trans is ON THE BENCH

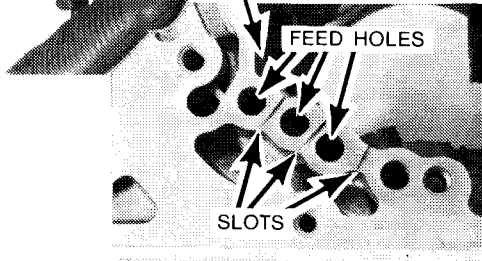


ADDITIONAL REPAIR AND OVERHAUL INFORMATION

To prevent governor shaft galling from dry assembly, put a **SMALL AMOUNT** of grease in shaft hole.

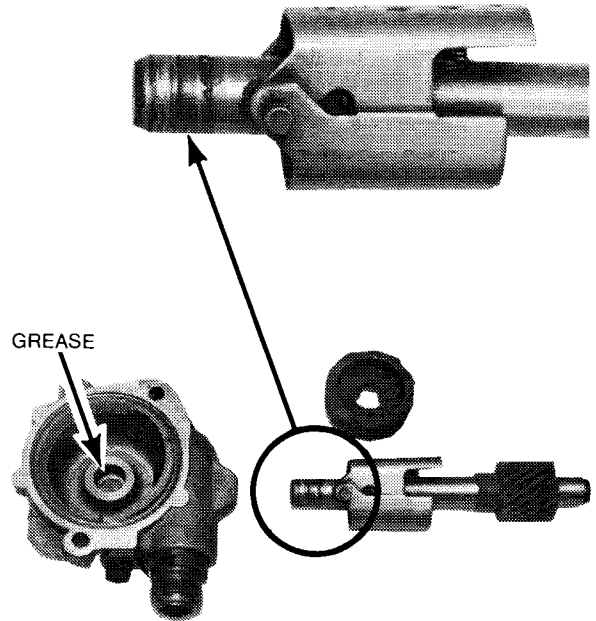


TO PREVENT CROSS LEAKS, CUT SLOT BETWEEN THE HOLES.

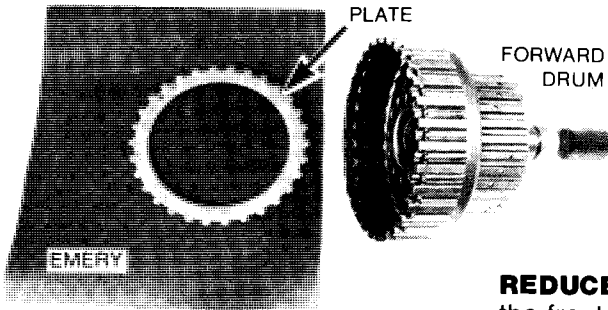


FEED HOLES

SLOTS



GREASE



PLATE

FORWARD DRUM

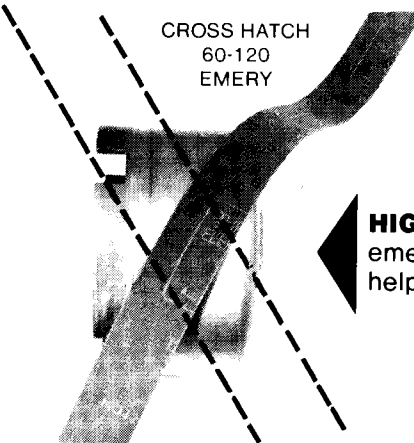
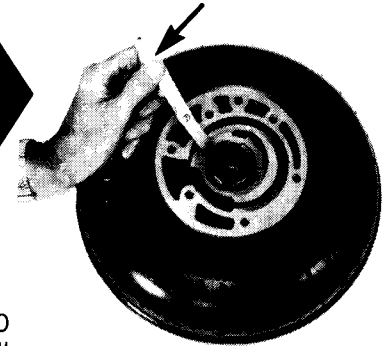
EMERY

If you are overhauling this trans, there are some other "NICE THINGS" you might want to do while it is apart.

FOR A SMOOTH NEUTRAL TO DRIVE ENGAGEMENT: Sand the forward clutch steel plates, by hand, with 40-180 grit emery. Yes, even NEW ones. HERES WHY: If the plates stop the trans rotation before the cushion spring bottoms, the engagement will be smooth.

.005 FEELER

REDUCE DRAINBACK COMPLAINT: Place the front pump on the converter and check the clearance between the pump bushing and converter with an .005 feeler blade. If it's tight **DO NOT REPLACE THE BUSHING**, a new one will be even looser.

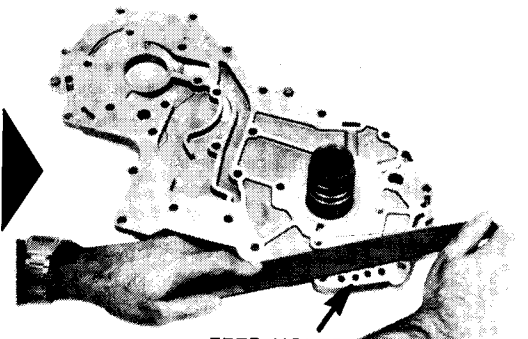


CROSS HATCH
60-120
EMERY

HIGH DRUM SURFACE: Sand around the drum with 60-120 emery on two angles to get a cross hatch pattern. This will help the trans have smoother shifts at light throttle openings.

CASE COVER FLATNESS: This is a most important NICE THING you can do during O.H. for yourself the trans and the customer. Crossleaks at the feed holes in the case cover is the most common cause of high clutch and band failure after O.H. It's easy to fix, takes about 3 minutes to get it FLAT.

HERES HOW: Use a really big mill file and file it with pressure at the heel and toe of file until it's shiny across the feed holes. Now tighten by hand, don't screw it up with an impact.



FEED HOLES