SK® CD4E-Jr Shift Kit® Series 7D

Corrects/Prevents/Reduces

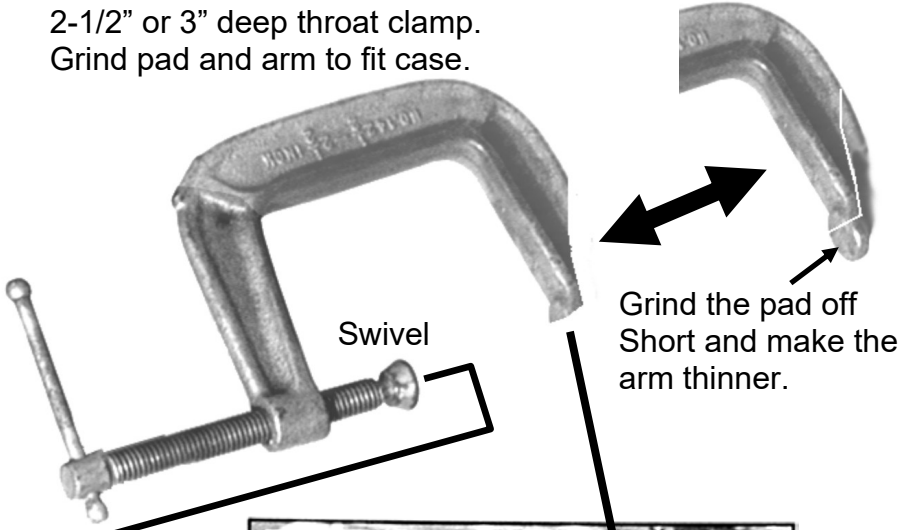
Converter Slip and Code 628

Drum Blow-out due to run-away line pressure.
Bushing wear due to accidental Lube cut-off.

Ford CD4E
Mazda LA4A-EL

Kit corrects / prevents the pressure run-away caused by cross leaks, sticking EPC, or electrical malfunction that blows out forward drum, gaskets or breaks pump shaft. Kit corrects low Converter and lube flow that causes Code 628 and fast bushing wear. Don't let all the papers in the kit fake you out. Kit installs quick and easy. The lengthy info is to prevent hard part re-work.

2-1/2" or 3" deep throat clamp.
Grind pad and arm to fit case.

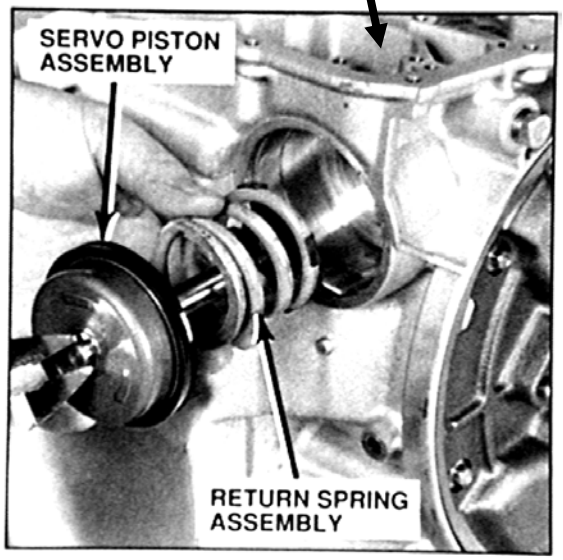


2-4 Servo [Band Adjustment]

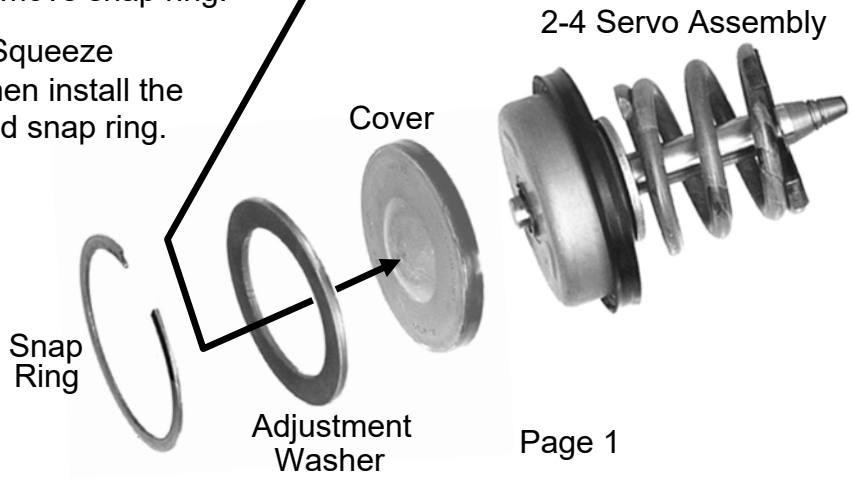
Listen: Be careful. Go buy a Stone Age "C" clamp. It makes servo job really easy.

Step 1 Disassembly: Insert the clamp arm just beyond the steel bracket bolt. Do not put the clamp into an oil circuit. Squeeze cover in with clamp and remove snap ring.

Step 2 Assembly: Squeeze cover in with clamp. Then install the Adjustment Washer and snap ring.




Mr. Shift

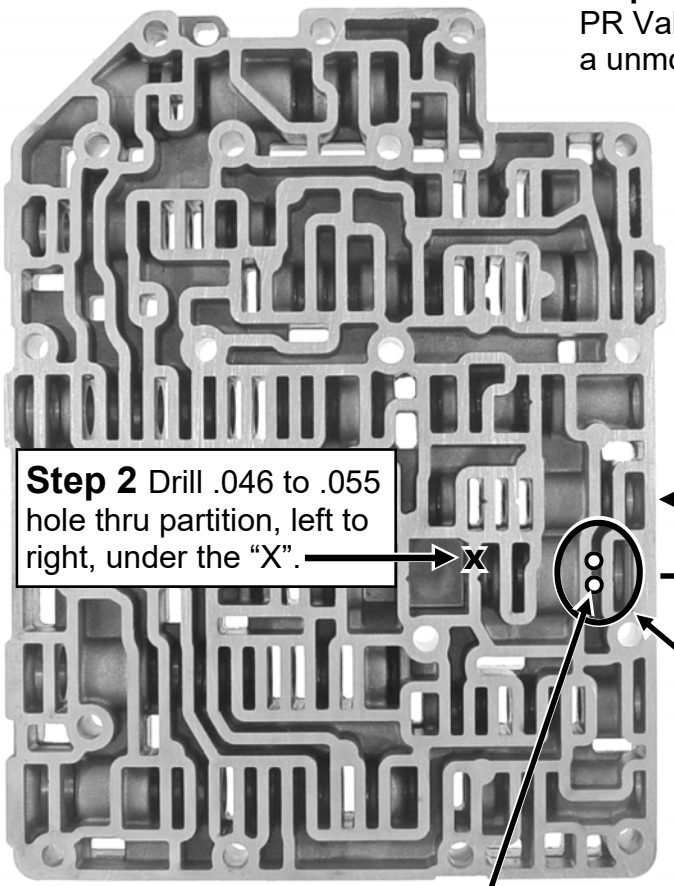


With this kit, a new forward drum and some bushings this job will be twice as good as new. So don't quote it cheap.

Main VB

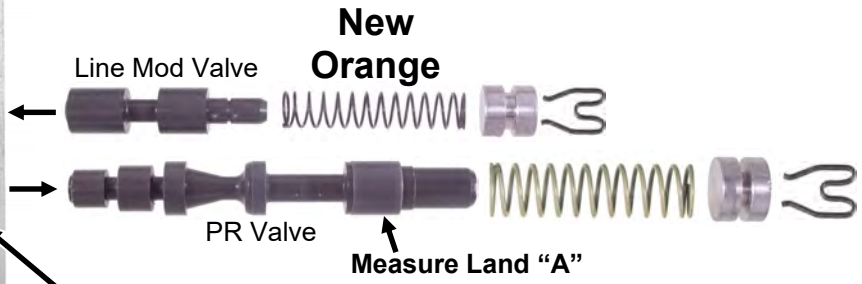
Step 1

Remove all parts in the PR Valve bore. Measure land **"A"** on your PR valve. If **Land "A"** measures approx .472, proceed to **Step 2**. If not, the valve body has been bored for an oversized PR Valve. **STOP!** You will need to change the main body with a unmodified, main body and main plate (if plate was drilled).



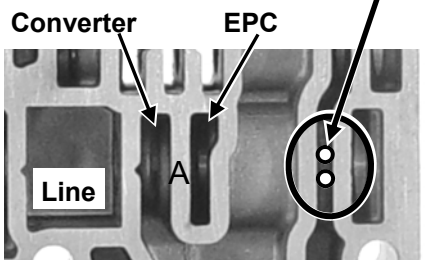
Step 4

Clean Line Mod Valve bore and replace original spring with **NEW Orange** spring and reassemble.



Step 3

Drill two .060 to .094 holes through the floor of this passage just enough to enter into the PR valve bore, **STOP! Don't drill out the back side of the VB!** De-burr holes & clean out chips.
Do not reassemble PR yet.

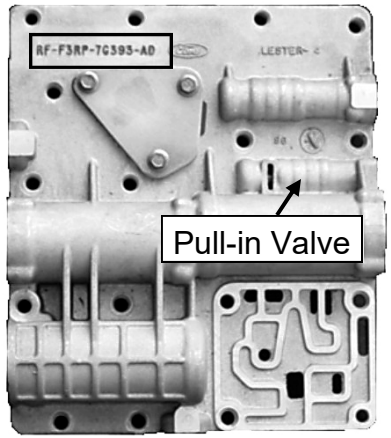


The bore at "A" erodes over size. Converter and EPC then mix which causes high line pressure and converter slip with blinking OD light-Code 628.
No worries! You're ***fixing the problem*** with this kit!

Heads Up!

High Gear Starts in Man 1
Installing wrong VB can result in High gear start in M1 that may feel like a bind-up. Solenoid firing order in M1 is different for "F6" & "F3" valve bodies & must match the computer strategy.

VB ID by Casting Number



93-96 Casting # starts with "**RF-F3**" and has a "Pull-in Control Valve".

97up Casting # starts with "**RF-F6**" and does *NOT* use a "Pull-in Control Valve".

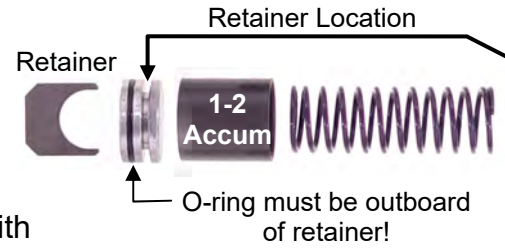
Designs **match** Computers!

Step 1

Clean TCC control valve bore and replace original spring, bushing & matching valve with **NEW small Orange** spring & **NEW** *matched* **TCC valve** & **bushing** and reassemble.

Step 2

Clean Converter Reg bore and replace original spring, with **NEW LARGE Orange** spring and reassemble.

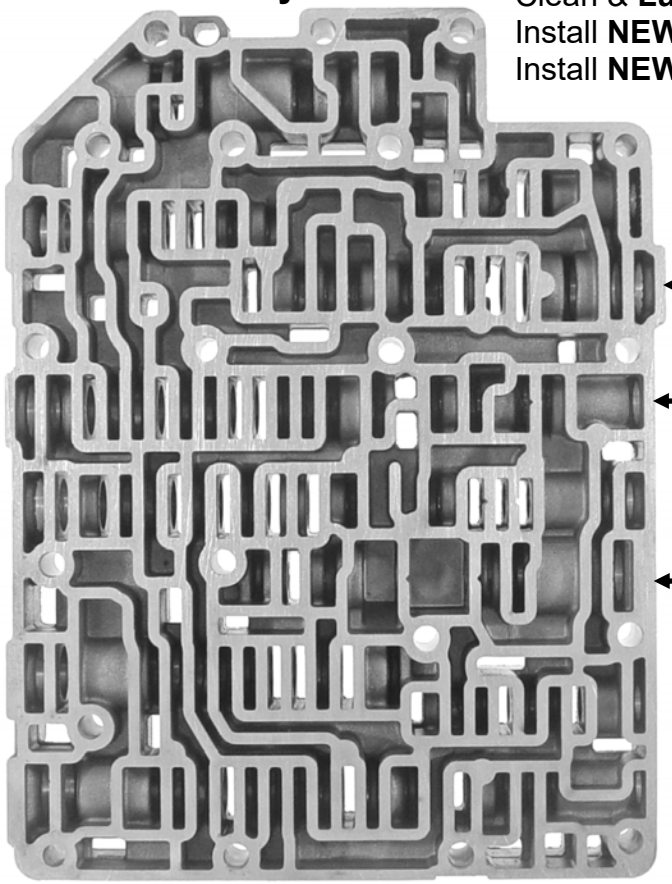


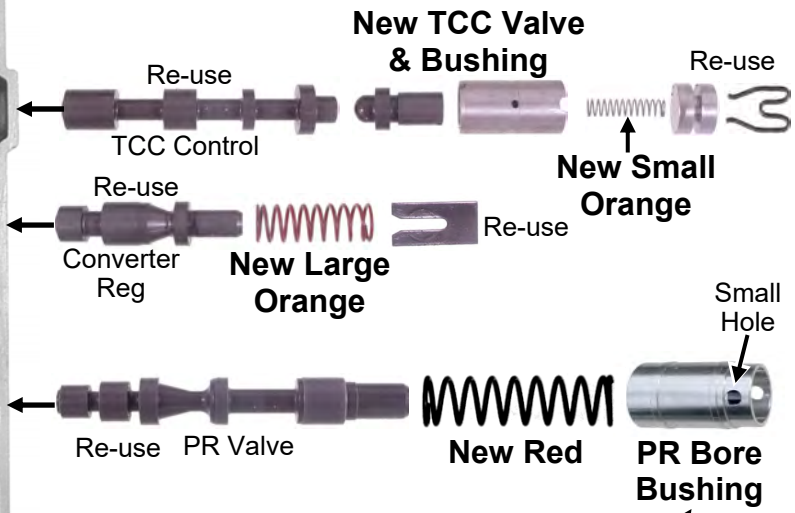
Accumulator Valve Body

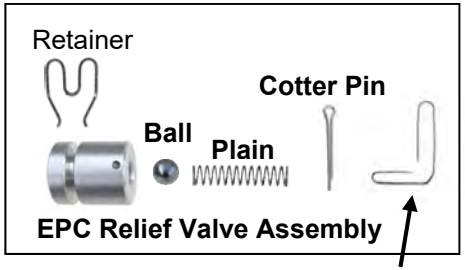
Step 3

Clean & **Lube** (PR) bore. Install PR Valve fully into the bore.
Install **NEW PR Bore Bushing** with small hole outboard.
Install **NEW Red** spring & **New** *assembled* **EPC Relief Assy**.

Main Valve Body







Small loop of a paper clip installs spring easily. Install Cotter pin & then pull out the paper clip with pliers.

New **extreme precision Bore Bushing FIXES** valve body better than new.
New **EPC Relief Assembly** protects trans from Over-Boost induced Extreme line pressure!

Step 1

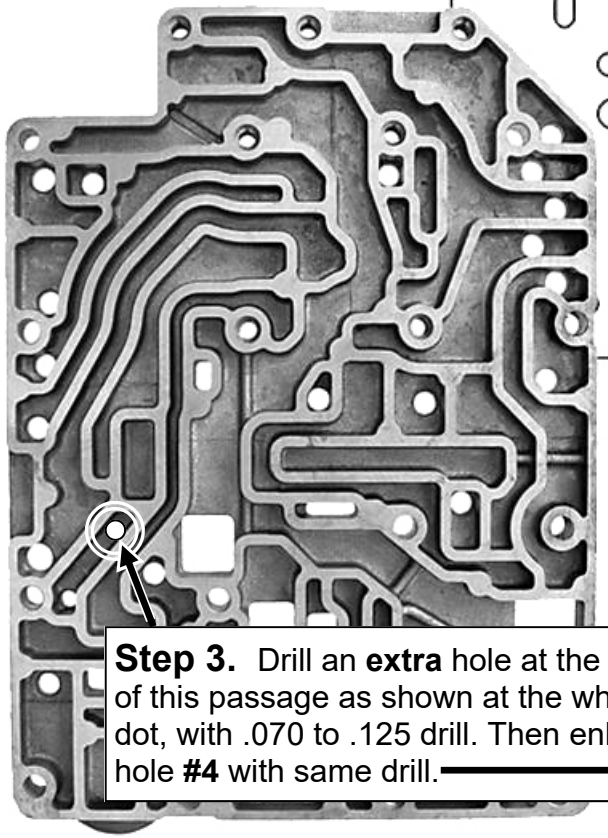
Drill Holes: 1, 1a, 2, 3, & 5 with .063 (1/16") drill furnished, OK if already bigger. Don't skip any steps!

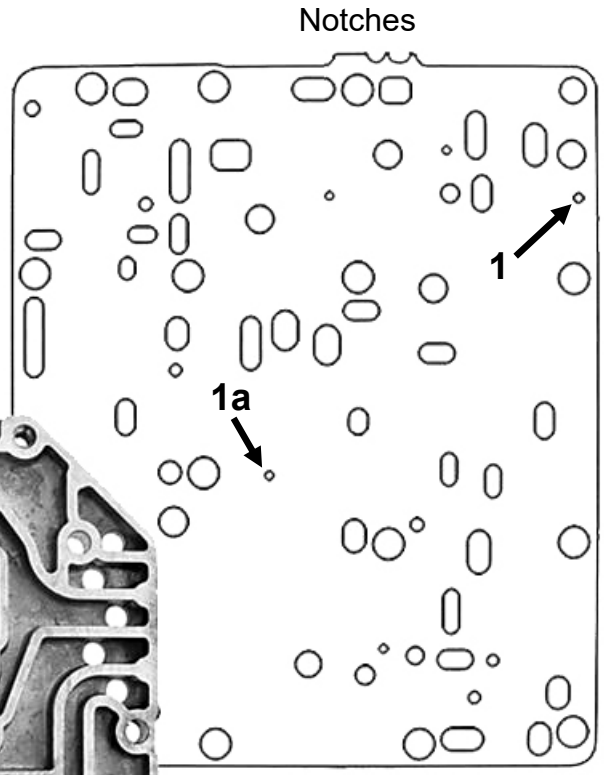
Every change has been carefully evaluated and coordinates with other pressure and flow changes. So, please do it just like these instructions and **DON'T** do any other **"TECH"**—Thank You!

Series 7D

You need to know: On a 10 block road test this trans will not act different than without the kit.

However: A **HOT** trip, without the kit, this trans will probably abort lockup and suffer lost lube flow. "Thanks for Listening." Gil

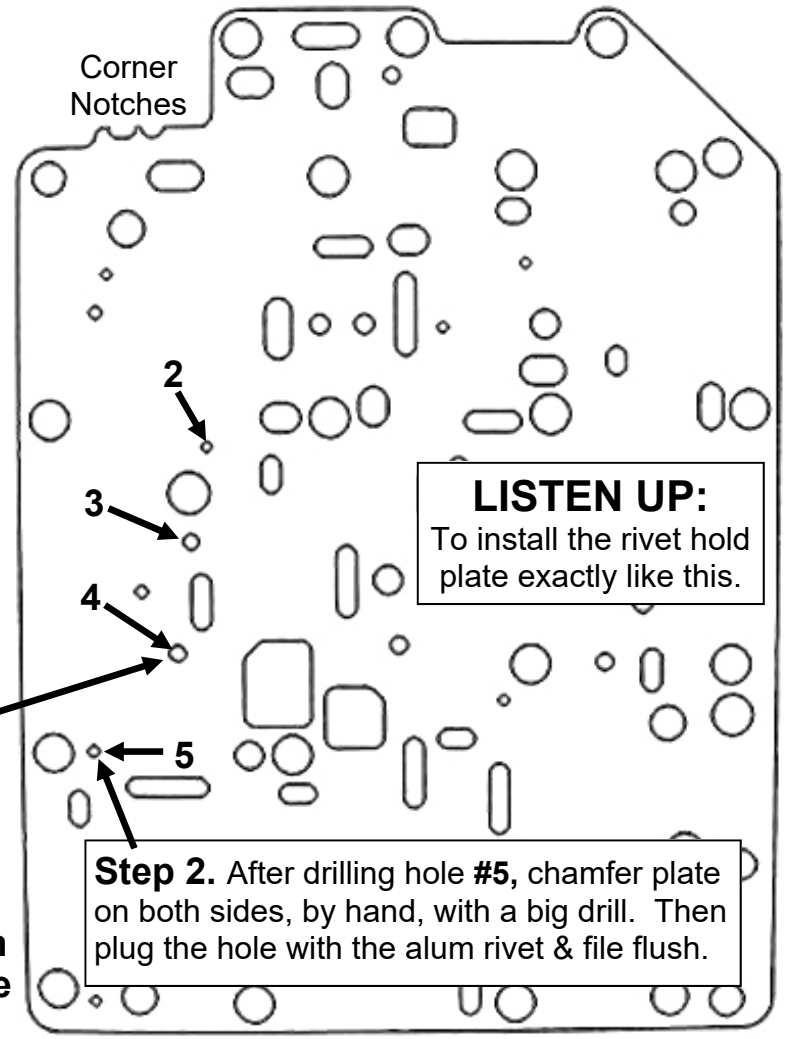




Accumulator Plate

Channel Casting

Step 3. Drill an **extra** hole at the end of this passage as shown at the white dot, with .070 to .125 drill. Then enlarge hole **#4** with same drill.



LISTEN UP:
To install the rivet hold plate exactly like this.

Step 2. After drilling hole **#5,** chamfer plate on both sides, by hand, with a big drill. Then plug the hole with the alum rivet & file flush.

Main Plate

Rivet

READ THIS: CD4E Repair Data

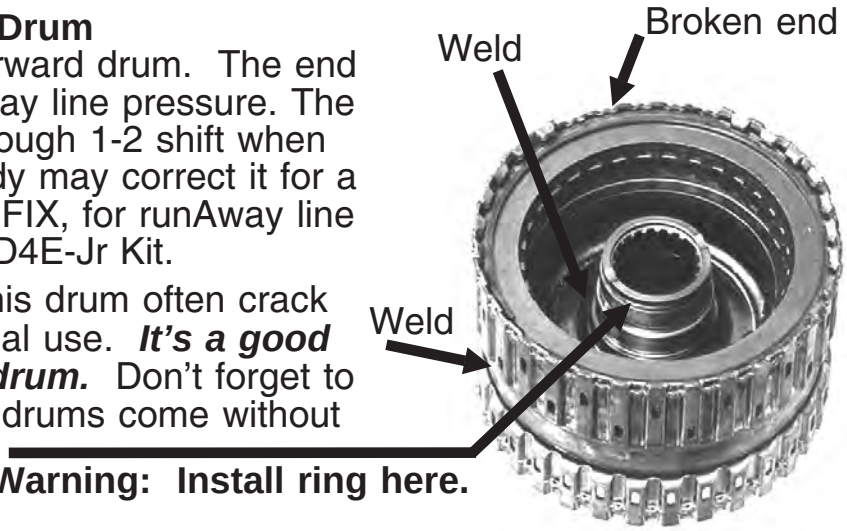
This is a great little trans. You are going to see a lot of them. We are confident that the upgrades in the SK® kit will correct the hydraulic malfunctions including runAway line, accidental cutoff to converter apply and lube, blinking light, converter slip, and Code 628/PO741.
However, there's also problems with hard parts that need your attention.

Some shops have been installing a new solenoid pack and a valve body plate upgrade from Ford. We have no reports that these items fix or prevent the complaints. Spend the money for hard parts instead.

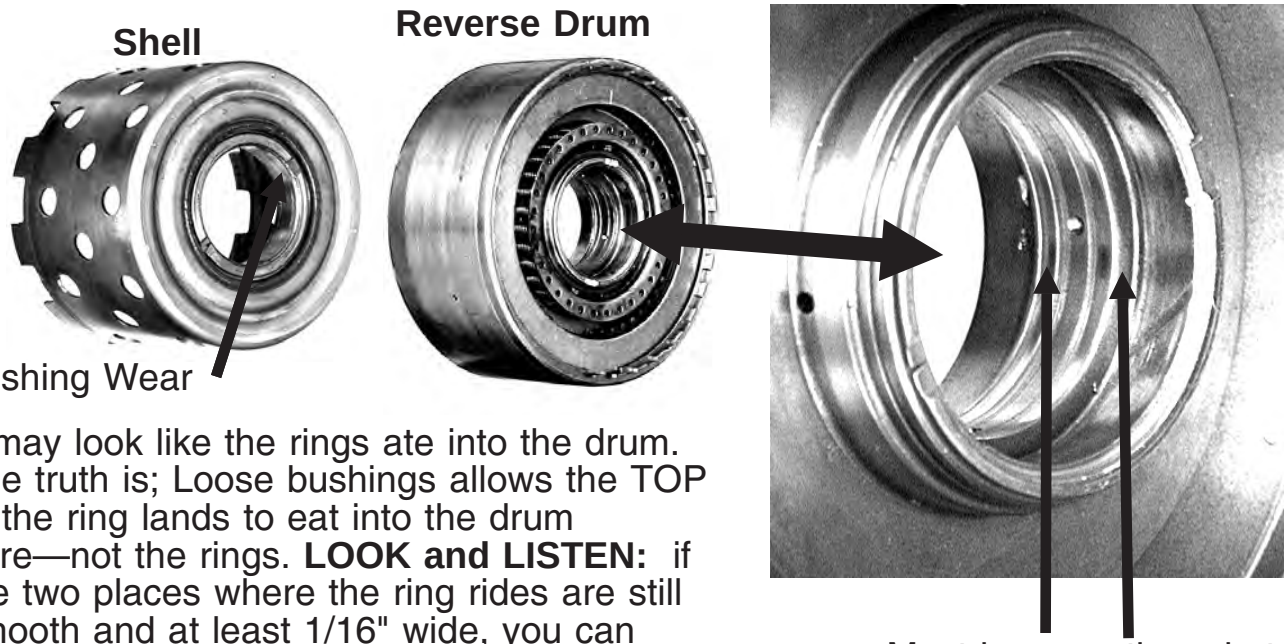
Forward Drum

A common failure is forward drum. The end blows off due to runAway line pressure. The driving complaint is a rough 1-2 shift when HOT. A new valve body may correct it for a while. The permanent FIX, for runAway line is the TransGo SK® CD4E-Jr Kit.

ALSO: The welds in this drum often crack with high miles in normal use. ***It's a good idea to install a new drum.*** Don't forget to add the lube ring, new drums come without the lube ring.



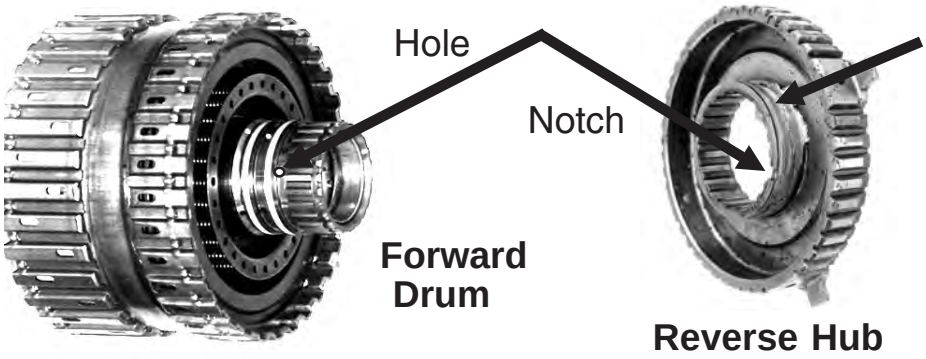
Bushings: The drum bushings are usually in bad condition from lack of lube or bad connection at the ground strap. This kit will restore lube flow and cooling, but its up to you to file clean the block and the ground strap. Because the bushings are not blue, from overheat, you may be tempted to reuse them—Don't. Loose bushings allow 2-4 band to push the gear train off-center and the rings will then deform and leak.



It may look like the rings ate into the drum. The truth is; Loose bushings allows the TOP of the ring lands to eat into the drum bore—not the rings. **LOOK and LISTEN:** if the two places where the ring rides are still smooth and at least 1/16" wide, you can re-use the drum by installing new bushings.

Repair Information Continued

Listen Up: To prevent lube cut-off problem careful assembly is required. Notches in Reverse Hub must align with Lube holes at forward splines.

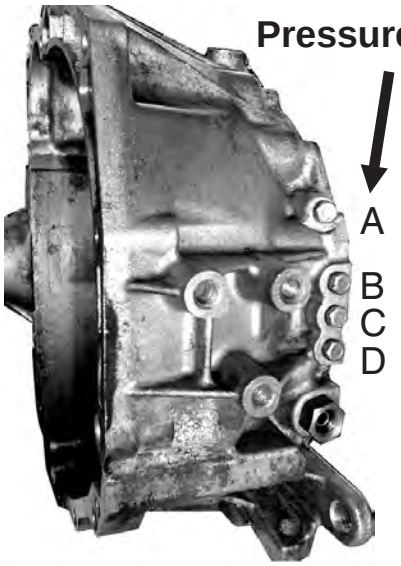


This Picture: Notice the bushing is welded to this hub due to mis-alignment of the splines.

It went out out in one weekend.

Don't make a sad Story: You'd fill most trans's to the COLD mark knowing it will come up HOT. If you do that with this trans you may see it burn down on a hot trip. **WHY?** COLD mark, on this trans, is the high one, not the low one. **BECAUSE:** This trans has a temp controlled flap valve that causes fluid level to go up in the side pan and down in sump to prevent foaming when really HOT. As much as 2-1/2 qts can be held in the Side pan.

Correct Fluid Level: After your repair, BEFORE the trans gets hot, run it 20 seconds in PARK and bring fluid level to the COLD/top mark. On road test the level will go DOWN slightly as the trans warms, but even very hot it should never be more than 3/8" below COLD mark.



Pressure Ports: A= Differential lube B= Front Lube C= Converter Mid D= Converter Rear.

Hot Trip Complaint: Rough 1-2, no Lockup, blinking light and/or Code 628/PO741. AFTER the SK® Kit is installed this could be lockup slip or a 10-15% ignition miss. Without SK® kit you won't fix it.

Check 628/PO741Code like this: Gauge port "C". Drive till hot. At 200F Port "C" should be ***at least*** 70 psi with light throttle in 4th. Restart to clear code. Drive 65 to 75 mph, in lockup, and watch tach while adding throttle. If rpm comes up without an increase in car speed, the converter is slipping.

Line Pressure port is fitting next to pump: Remove the fitting. Drill it 11/32" and tap it with 1/8" pipe tap. Now your gauge fits it.

Operating line pressures when HOT:
Forward gears: Min 53-70 Stall 170-200
Park, Rev, "N": Min 68-90 Max 280-300

"Thanks for Listening, let us hear from you."

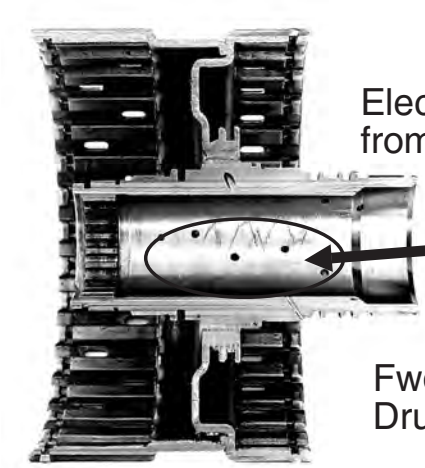
TransGo Tech Team

Both you and your R&R person must read this.

1994 to 97 4cyl Probes and Mazda 626's have a serious ground strap problem that will eat this trans up in a few days—Unless you prevent it.

It may look like a lack of lube, but the cause is the engine is starting through the bushing and the gears instead of through the ground strap.

The parts shown are out of trans that came back three times.

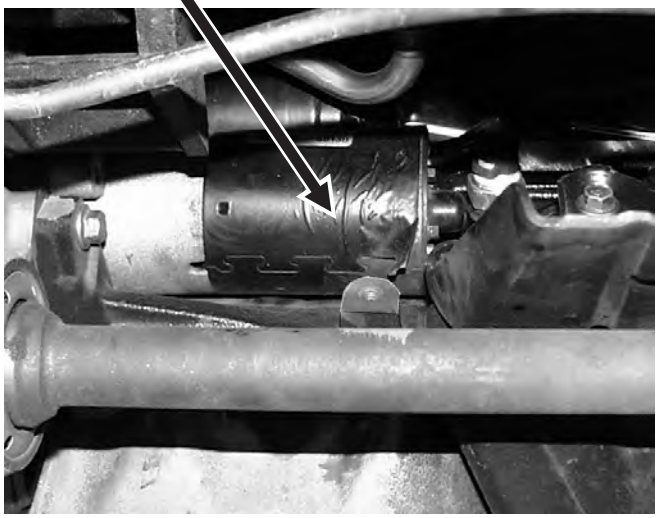


Electrical arc flash from drum to shaft.

Fwd/Direct Drum. Drum cut in half.

Melted bushing

Starter



Engine Ground Strap Pad
File the pad and both sides of the ground strap.

The car factory put locktite here which can insulate the strap.

Remove the ground strap that goes from battery to the fender. Clean the paint and the strap and reconnect it.

How to check for solid ground: Attach a volt meter from the negative terminal of battery over to the trans. It must read .09V or less, even while starting the engine.

"Thanks for listening"

CD4E & LA4A-EL Electrical Data

If trans slipped or failed PCM may be commanding LIMP or late/hard shifts in a high pressure mode.

Before startup and fluid fill: Cleanse PCM with this routine: Disconnect the positive battery cable. Touch it against the engine and the body, then let it hang. Turn ignition switch on and hit the brake 4 times. Reconnect battery cable.

No 4th/lockup when hot: Above 60,000 miles consider new plugs and wires.

Limp Mode: Or No power to PCM;
Or No signals from PCM.

Has high line pressure:
"D" is 3rd "2" is 3rd
"1" is 2nd No lockup or 4th.

Shift Sol Complaints: Pressure gauge must be attached: While driving at 40mph line pressure must go up and down with throttle and must come down to 53-68 with lift throttle. If lift throttle is above 53-68, don't fuss with shift sols.

———Check /Fix pressure first———

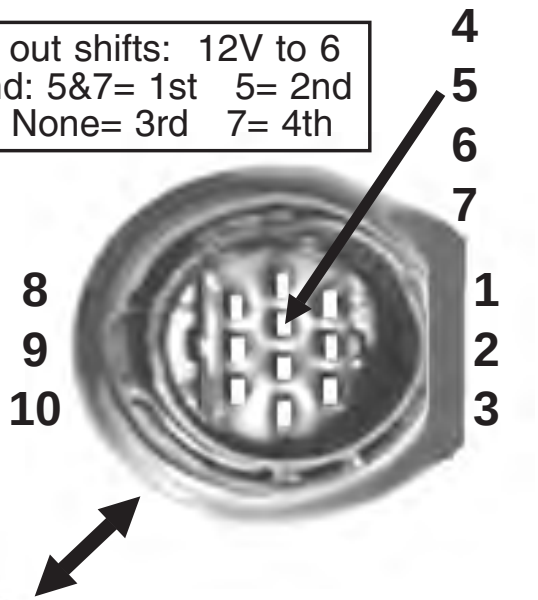
Gear	SS1	SS2	3-2T/CCS
1st	ON	ON	▫ NA
2nd	OFF	ON	▫ NA
3rd	OFF	OFF	▫ NA
4th	ON	OFF	OFF (unlocked)
4th	ON	OFF	ON (lockup)

*Temp Data: Pin 1&2
70F = 35K to 45K
140F = 8K to 5K
200F = 2.6K to 1.7K

Connector in the Trans

Ohms	Function	Pin
*Varies	Temp Send	1
*Varies	Temp Return	2
	TCC Power	3
94/95=1.-3.	TCC Grnd	4
96/97=12-20	TCC Grnd	4
12-22	SS2 Grd	5
	Sol Power	6
12-22	SS1 Grd	7
3.7-5.9	3-2T/CCS grd	8
	EPC Power	9
3.7-5.9	EPC Grd	10

Break out shifts: 12V to 6
Ground: 5&7= 1st 5= 2nd
None= 3rd 7= 4th



Thank you
For Listening!
Mr Shift®