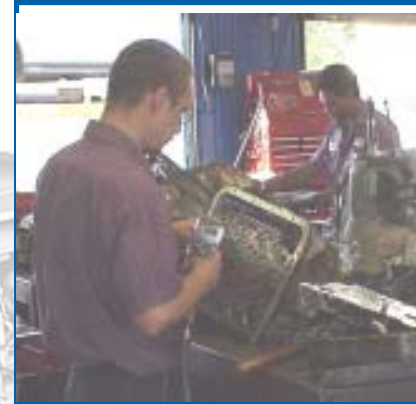




Do These or CB's





Enclosed is a General List of tests, checks and basic things you should do as part of an EDS, Rebuilding, Inspection of a transmission or installing a fresh rebuild. Read them over, become familiar with them, if you're not already, and put them into practice.

Transcan/Protect Check

- Scan all computer controlled vehicles
- Check battery and charging voltage, grounds and cables
- Look for aftermarket electrical accessories

Rebuilding

- Do a complete teardown and inspect all parts inside transmission
- Check electrical parts during teardown
- Check planets and bearings during teardown
- Check the separator plate for wear from checkballs
- Check for any needed thread repairs in the case
- Keep all reference material close at hand:
 - DirecTech
 - Kwik Reference Guide

- Soak ALL friction clutches and bands in clean ATF
- Pre-lube torque converter with one-quart of ATF before installation
- Replace all seals, sealing rings, rubber molded servos and pistons, plus all other soft parts
- Check bushing clearance and fit. Replace any bushing that shows more than .002' clearance..
 - Bushings affect gear-train alignment
 - Bushings affect clutch apply/shift quality
- Install bushings and metal clad seals with a driver, not a hammer
 - Your Sealing Rings are only as good as your bushings.
 - Bushings control lube oil.

(Continued on reverse)



Rebuilding *(continued)*

- Check and set endplay on ALL units using selective shims, washers and bearings
- Valve Bodies
 - Take **all** the valves out of the valve body
 - Check valves and bores for wear
 - Flat file valve body mating surfaces
- Pumps
 - Check all clearances
 - Check for wear in the pump pocket
 - Check the gears, rotors, vanes and slides for wear
 - Remove any valves and check valves and bores for wear
 - Flat file pump mating surfaces
- Steel Plates
 - Replace if they have hot spots
 - Do NOT sand/resurface steel plates in any way
 - Check clutch pack clearances
- Solenoids
 - Check shift and ON/OFF lock-up solenoids electrically, clean and reuse
 - Pulsed solenoids, EPC and lock-up should be replaced
- TORQUE ALL BOLTS EVERY TIME!
- Prepare accumulator bores using green Scotchbrite
- Flush the cooler with hot ATF until it's clean
- Grind 1/16" off of torque converter bolts
 - Allows for machining done to converter during rebuild
- Add ground straps from bell housing to the frame
- Check line pressure during final road test
- Always do a final lift check — check for leaks, loose bolts, etc.

1.

Important
Inspect piston & drum for cracks caused by high line pressure.

Note
If aluminum piston is cracked, replace it with the molded rubber style which is stronger.

PN 24204961

2.

Check accumulator bores for wear. Minor wear can be cleaned up with Scotch Brite.

Housing # 8677450

Make sure this cup plug is not missing. GM part # 8611710

3.

Sun gear teeth always have ugly looking gear pattern. Looks bad works OK in truck. Just make sure there's no pitting.

Check for wear from OD rollers.

4.

Important
Inspect TCC regulator bore for wear from valve. Bore wears in area that large land of valve rides in.

1. TCC Solenoid
2. TCC Regulator Apply Valve
3. Actuator Feed Limit Valve
4. Accumulator Valve

Sonnax Kit # 34994-01k
1991 - 1996 VB

5.

The back of the filter likes to blow out and cause 2nd gear starts

Important
This filter sits in the bore behind the manual valve. Always remove it and replace it with new. Old filters are brittle and crack.

6.

Check for Wear

- Sleeve with o-rings
- Retaining Ring
- Spring
- Servo Piston with Teflon seal

Piston goes onto pin, and the retainer follows (only 1 retainer used).

OEM piston seal can be tested here for for leakage (WAT)

Worn Bores mean Low Pressure
Sonnax 34989-028

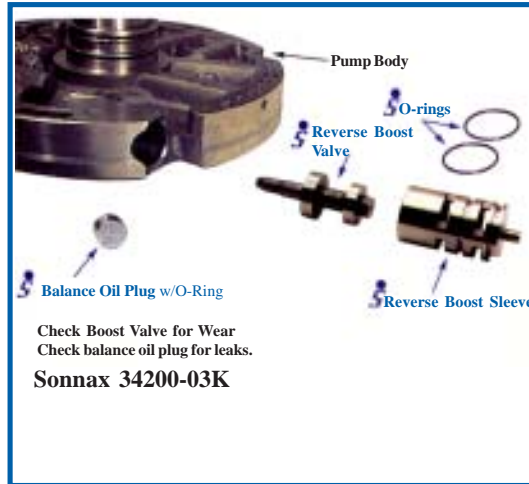
7.



Always use the updated 1-2 accumulator with rubber seals. GM # 8680929

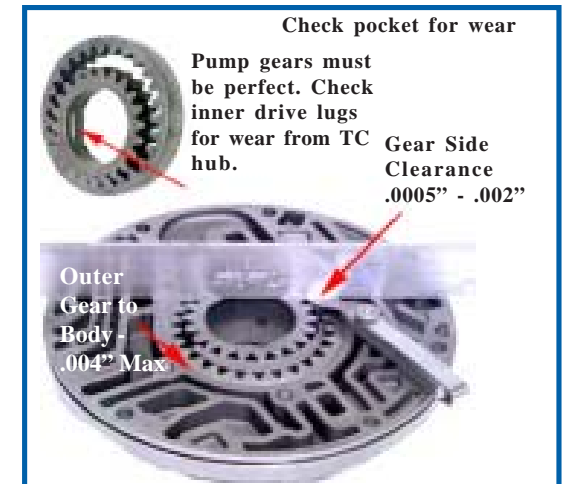
Check Overrun and Reverse Servo Bores real close for wear.

8.



Check Boost Valve for Wear
Check balance oil plug for leaks.
Sonnax 34200-03K

9.



Check pocket for wear
Pump gears must be perfect. Check inner drive lugs for wear from TC hub.

Outer Gear to Body - .004" Max

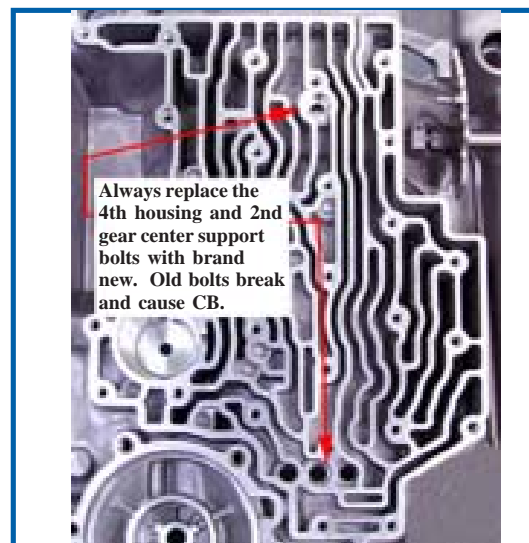
10.

Important

Just like 400 units the plastic washer that sits on top of the rear planet likes to wear out. Always replace it with the metal style which is the same as the washer that is on back of output shaft.

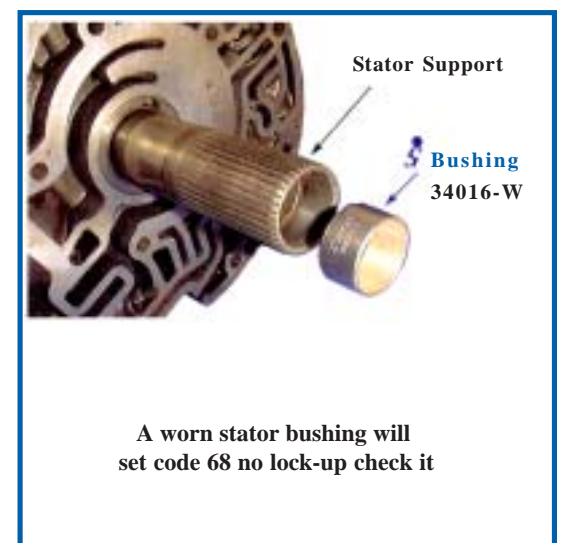


11.



Always replace the 4th housing and 2nd gear center support bolts with brand new. Old bolts break and cause CB.

12.



A worn stator bushing will set code 68 no lock-up check it



Do These or CB's

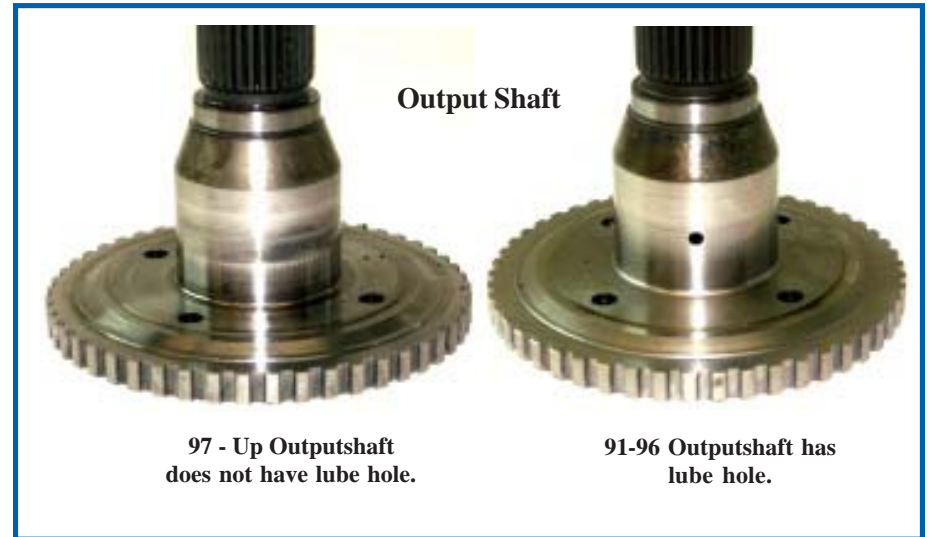
4L80-E

13.



99 - Up Planet Pinions Slightly Longer (.075) than earlier versions

14.



97 - Up Outputshaft does not have lube hole.

91-96 Outputshaft has lube hole.

15.



Rear Ring Gear

97 - Up Rear Ring Gear has Lube Passages with Splines

16.



Rear Ring Gear

91-96 No Lube Slots with Splines

17.

Sun Gear Shaft

Long Bushing Journal →

Shorter Bushing Journal .041 ←

← ID Groove

91-96 97-98 99-Up

Be Careful when replacing gear train components, there are different variations depending on year. Using wrong or mismatched parts can cause gear train failure.

18.

Sun Gear

Deeper Grooves

Large Lube Hole

Smaller Lube Hole

91-96 97-Up

19.

2004 - Up, this hole in the pump must be blocked or the overdrive gear train will be destroyed. Starting in 2004 the boss in the case for this lube channel was deleted. Any 97 and Up center lube type pump can be used if hole is blocked. Use GM Kit # 24232339.

20.

97-98 Support 4.225 Tall
99-Up Support 4.187 Tall

21.

1999-Up 1997-1998

There are two different center lube type center supports. The 99-Up support is shorter than the 99-98 to accommodate the shim added under the rear ring gear bearing.

22.

91-96 97-Up 99-Up

Rear ring gear bearings and shim. Shim used on 99 and up units to center sun gear in wider planet pinions.



Do These or CB's

4L80-E

23.



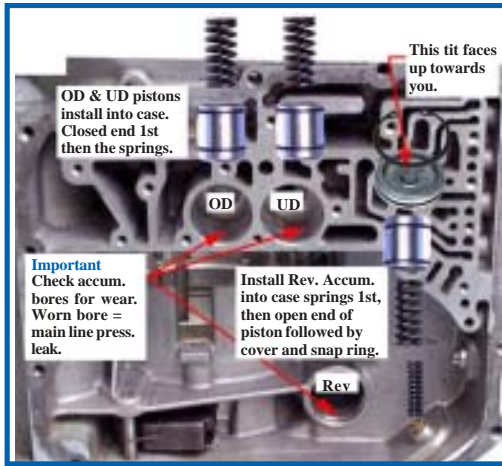
97-Up



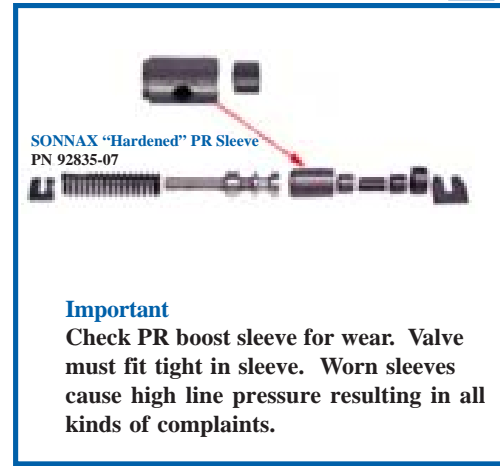
91-96

Hollow rear ring gear shaft with lube holes 91-96.
Solid rear ring gear shaft 97-Up.

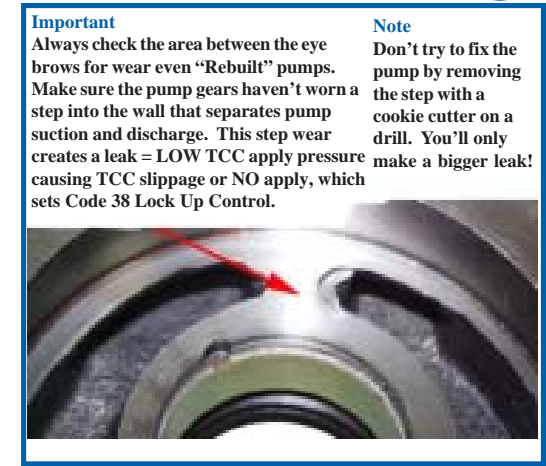
1.



2.



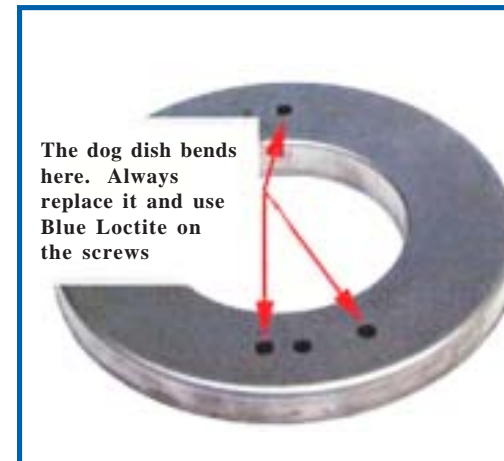
3.



4.



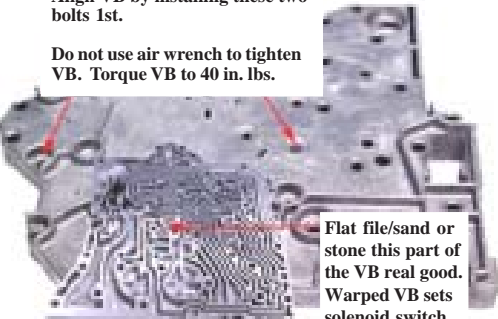
5.



6.

Align VB by installing these two bolts 1st.


Do not use air wrench to tighten VB. Torque VB to 40 in. lbs.



Flat file/sand or stone this part of the VB real good. Warped VB sets solenoid switch codes.

Warped valve bodies can and do set pressure switch codes

7.



The 2 bushings down inside the hub love to wear out or move and block the lube hole = planet set failure.

Important
Always replace the 2 single bushings with the SONNAX 1 piece long style. Long bushing helps fix shaft breakage & planet failures!

Make sure gear train lube hole in end of UD hub is not blocked with debris. Modify for more lube by enlarging hole to .093".

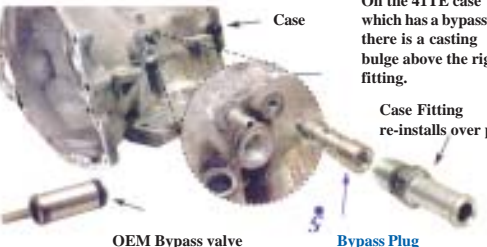
Sonnax Bushings reduce clearance Fixing Problems

8.

Note
Always check bushings. Replace with Sonnax parts if worn



9.



On the 41TE case which has a bypass, there is a casting bulge above the right fitting.

Case Fitting re-installs over plug

OEM Bypass valve

Bypass Plug installs into case

Always install a new OEM Bypass valve or better install a Sonnax Bypass valve #92836-01K


10.

Convex End




Sonnax #92835-03k Torque Converter Regulator kit reduces converter shudder

11.



Inspect inside bore of UD piston for wear and ridges. Worn bore causes leaks that produce delayed forward and other complaints.

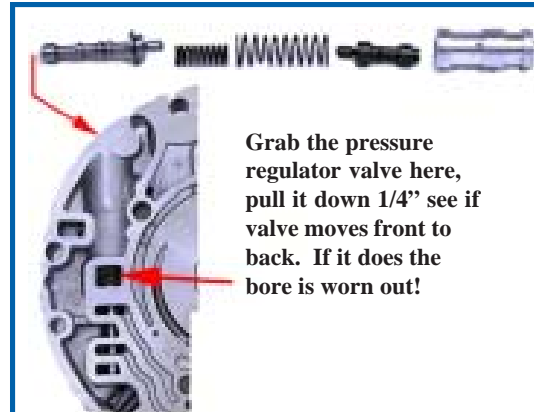
1.



Plastic capsule side installs into hole 1st

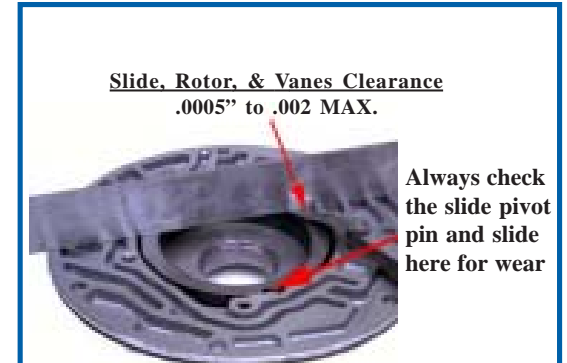
Important
Plastic capsule likes to break up than moves down into TCC bore & locks valve solid.

2.



Grab the pressure regulator valve here, pull it down 1/4" see if valve moves front to back. If it does the bore is worn out!

3.

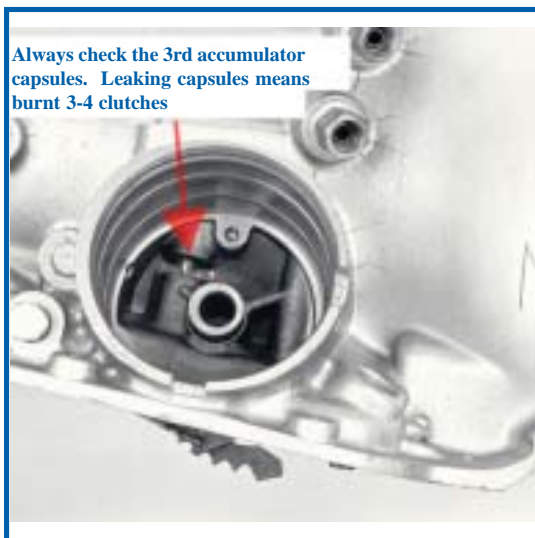


Slide, Rotor, & Vanes Clearance
.0005" to .002 MAX.

Always check the slide pivot pin and slide here for wear

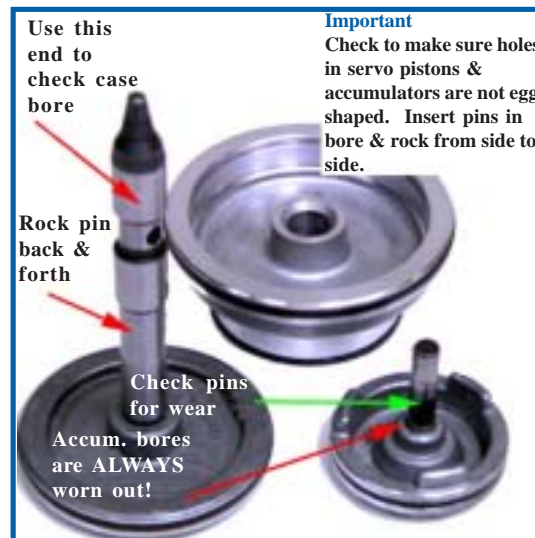
Important
Always check pump clearance. Rebuilds are usually TOO TIGHT or TOO LOOSE

4.



Always check the 3rd accumulator capsules. Leaking capsules means burnt 3-4 clutches

5.



Use this end to check case bore

Important
Check to make sure holes in servo pistons & accumulators are not egg shaped. Insert pins in bore & rock from side to side.

Rock pin back & forth

Check pins for wear

Accum. bores are ALWAYS worn out!

6.



Check for cracks all around the base

Look Real Close!

Sun shells stamped A or B are prone to fail, use updated shell

GM # 8683439

7.

Worn TCC Regulator Valves will set code 1870 harsh 1-2
Sonnax # 77754-04K*

Always check for worn valve bores

8.

Always use the SOLID Teflon rings. Early scarfs cuts cross leak real bad.

Important
3-4 air bleed is not necessary and produces a large leak in the 3-4 oil circuit = burned 3-4 clutches. Remove input shaft punch out orifice thread hole #10 x 32 install allen screw loctite shaft back in

9.

Worn AFL Valve (Actuator Feed Limit Valve) and bores will cause Low Line Pressure at the shift and EPC Solenoids

Sonnax # 77754-09K*

Always check valve bores for wear

10.

Always check drum surface for flatness. No hot spots or scoring. Check lugs for flaring, check splines in drum for wear.

Important
This orifice is TOO BIG from the factory. Causes Rev delay & burned clutch pack. Fix it by installing special cup plug from Fitzall - part #

1987 - 1993 with Aluminum Piston

11.

3-4 Load Release Springs

Important
On all drums with 3-4 springs set 3-4 clearance down to .015" - .035" to prevent release springs from bottoming out and causing clutch to not apply.

Always Install the 3-4 release springs! They help the 3-4 clutch get off quicker on a 4-2 downshift which prevents a tie up between 2-4 band and 3-4 clutches.

12.

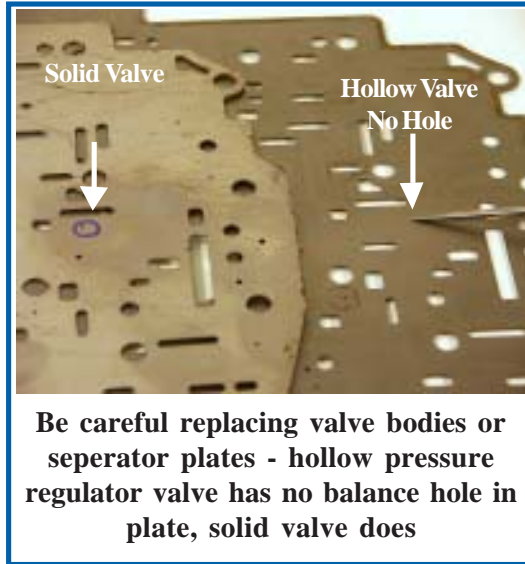
Use AOD forward hub bearing on the Input drum.

Grind Off

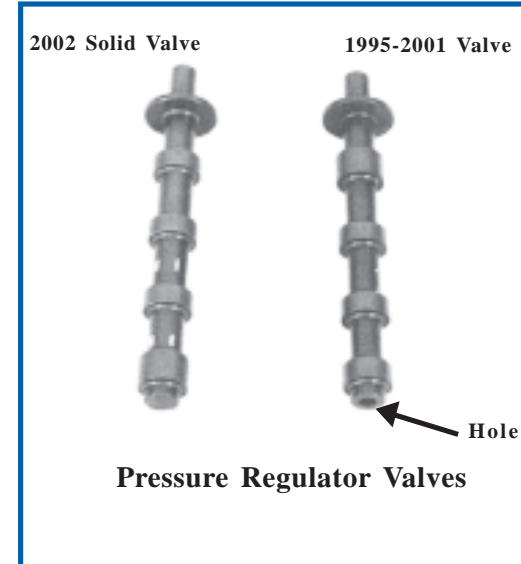
AOD has larger rollers = Heavy Duty

*Reaming Required

1.



2.



3.

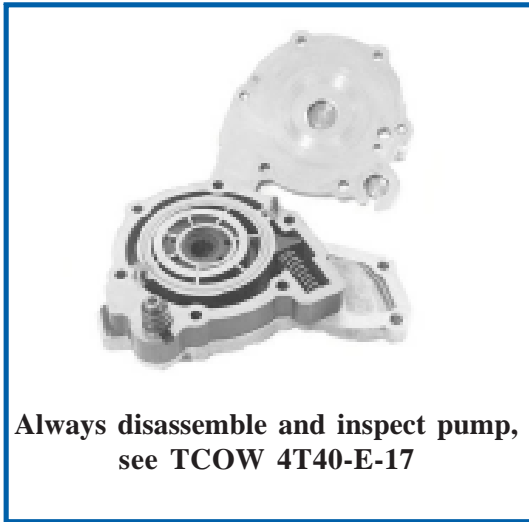


4.





5.



6.

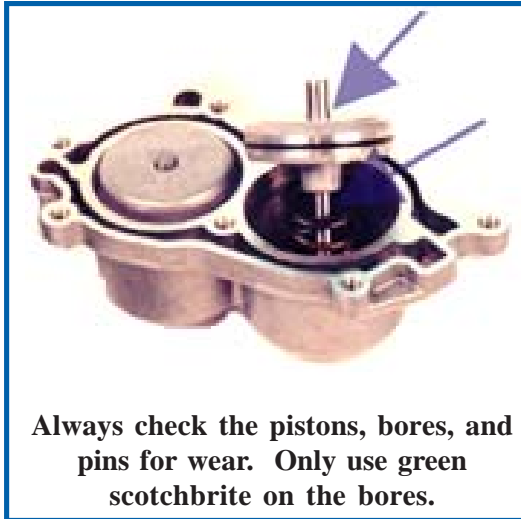


1.



Always check the weld for cracks, leaks.

2.



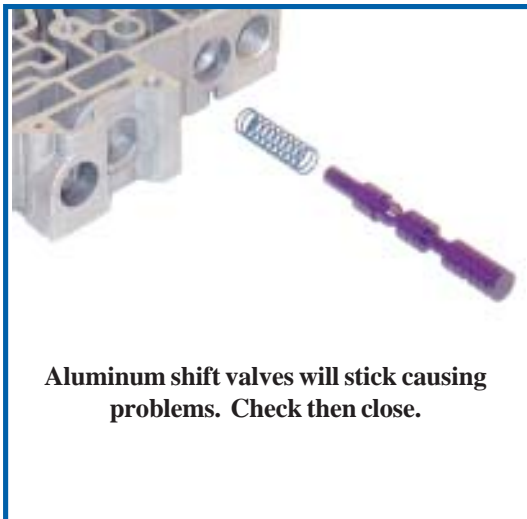
Always check the pistons, bores, and pins for wear. Only use green scotchbrite on the bores.

3.



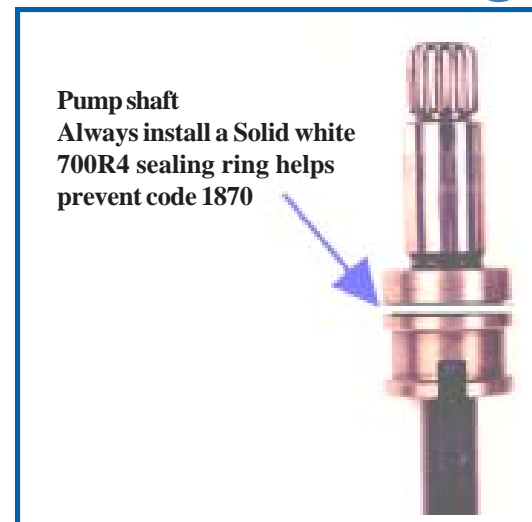
Code 1870 can be set with wear in these areas

4.



Aluminum shift valves will stick causing problems. Check then close.

5.



Pump shaft
Always install a Solid white 700R4 sealing ring helps prevent code 1870

6.

Pressure Regulator Valve

Spring

Identifier

Reverse boost valve & sleeve w/OEM spring and retaining clip

Modulated boost valve & sleeve

Worn boost valve means low line rise slips in reverse

Sonnax Parts will fix
84754-01K Low ratio
84754-017K High ratio

7.

Sonnax # K84956-SP

Roller Clutch

Springs

Always check for damaged 1-2 roller springs

8.

Always use the black hardened shell

9.

This bore wears out. Check it. Fix it.
Sonnax # 84754-01K Late
Sonnax # 84754-08K Early*
Worn bore sets codes 1870, 39, 740
Converter Overheat

Isolator Valve

TCC Regulator Valve

TCC Regulator Sleeve '91 & '92 Applications

'93 & Up Applications

Isolator Valve

TCC Regulator Valve

TCC Regulator Sleeve

10.

Valve

Teflon Seal

OEM stock size 84754-22K

Spring

Valve body bore wear here, requires reamer and oversized valve 84754-16K*

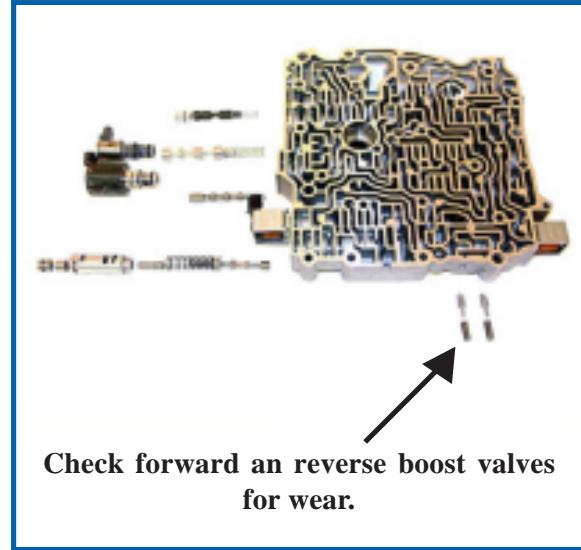
This bore wears out. Check it. Fix it. Sonnax 84754-16K Worn bore means code 1870

1.



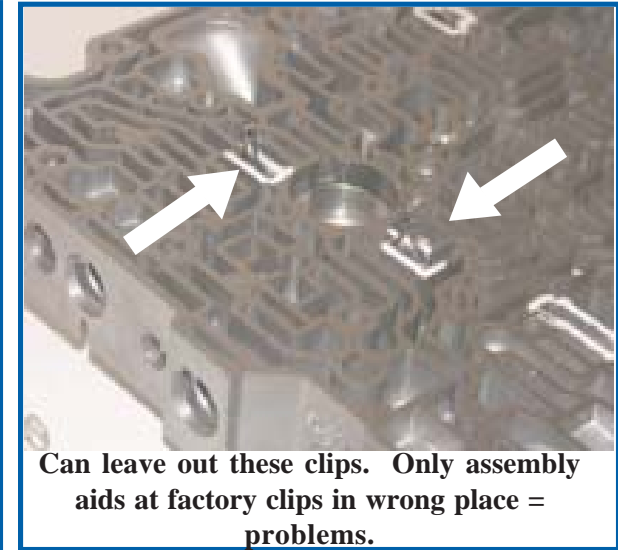
1. Check TCC regulated apply valve for wear. Always replace "O" Rings on end plug.
2. Check TCC apply valve for wear.
3. Always replace EPC solenoid. Bad Solenoid=Code P1811.
4. Use Correct TCC Solenoid not the same as 4L60-E. ID by purple paint daub.
5. Check pressure regulator boost valve and sleeve.

2.



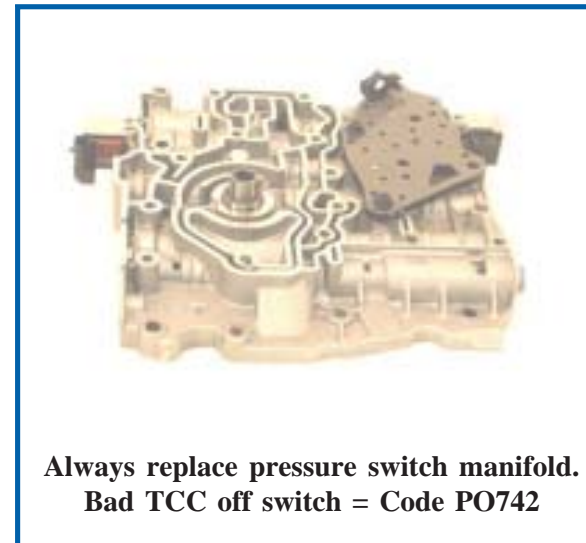
Check forward an reverse boost valves for wear.

3.



Can leave out these clips. Only assembly aids at factory clips in wrong place = problems.

4.



Always replace pressure switch manifold.
Bad TCC off switch = Code PO742

5.



Heavy duty applications set clutch clearance to .010 per friction or .005 per one sided friction. Alto Kit - #062757

6.



One sided frictions - start with external spline with friction material up and alternate with internal spline plates.

7.



Always check actuator feed limit valve for wear. Causes TCC Piston failure, High Line Pressure, Poor EPC Control and 2nd Gear Starts. Sonnax 84596-02K*

8.



Make sure internal mode switch is assembled properly

1.

Important
Always check inside of PR Boost Sleeve & lands on PR valve for wear.

Always check the manual valve bore for wear. Worn bore means delayed, slips in drive HOT! Very common in Police and Taxis.

Look real close!

2.

Updated 2-3 accumulator piston F7AZ-7H292-A

3.

Important
Correct way to check rotor style pumps is to:

1. Install a new pump bushing
2. Then place the pump body over converter hub
3. Install inner and outer gears
4. Line up lobes and take all measurements

. side gear - .0005" to .002"
. outer rotor to pump body is .006 max.
. Lobe to lobe .004" to .006" max. excessive clearance
. Low pump volume and cooler flow, which kills converter and geartrain.

4.

Check for Wear!

Important
EPC case bore & solenoid snout wear are caused by movement of the EPC solenoid.

5.

Check For Wear

Important
Check both accumulator bores for wear. 1-2 bore loves to wear out because of the aluminum piston contacting the walls. If it has slight wear hone it out with scotchbrite & drill, then install updated rubber piston.

6.

Important
Aluminum style 1-2 piston loves to wear out the small bore in the case. This causes a line press leak. Burnt 2nd clutches.

F7AZ-7H292-AA

7.



Check drum for Flatness.
No hot spots.

Important

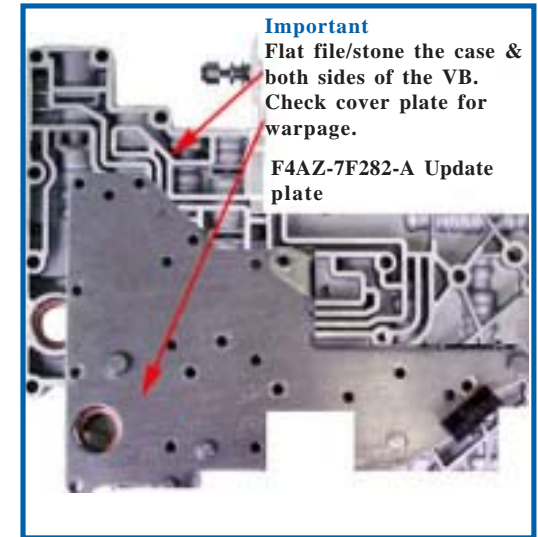
7 & 14 element roller drums love to explode in Police, Taxi, Limo, and HD useage vehicles. Always replace them with Mechanical Diode drum assembly.

8.



Always check for pin to case wear.
Sonnax # 7833E
Always replace molded rubber, Servo cover and servo's.

9.



Important
Flat file/stone the case & both sides of the VB. Check cover plate for warpage.
F4AZ-7F282-A Update plate

10.



Check ball in direct piston likes to leak and cause clutch to burn up. Reseat by tapping check ball down against seat with a punch and hammer.

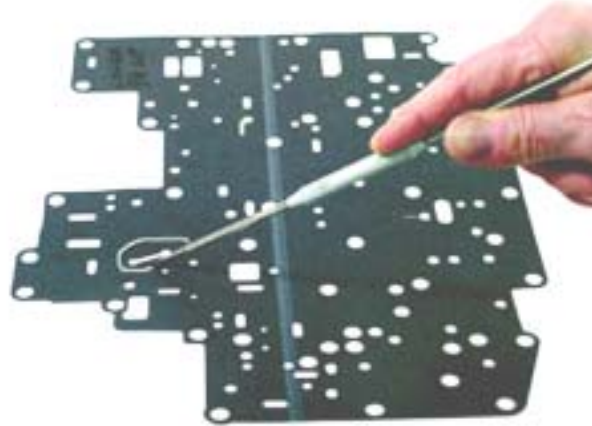
11.



If there is ATF present in "Any" case connectors replace the connectors or harness. ATF will cause shift problems. (4L60-E shown)



92 - 94 No slot between these holes



95 - 00 Has slot between holes



01 - Up Has slot between holes and slot added to hole shown

**Be careful of valve body gaskets. There are 3 lower and 2 upper gaskets for these units.
Use pictures for easy ID.**



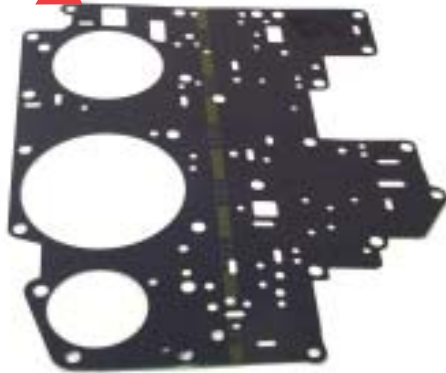
Do These or CB's

AOD-E/4R70/75W

2.

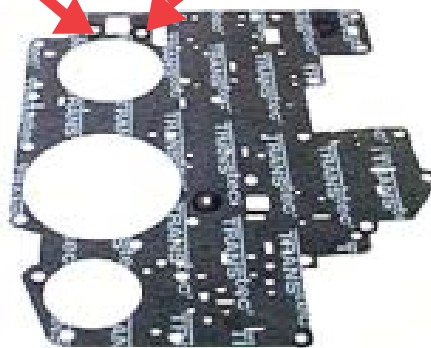
3.

Narrow No hole



92 - 95

Slot here is larger Has hole in this location



96 - Up



Check case for ring wear

4.

5.

6.



Look close in this area late style plates crack from direct clutch accumulator cover hitting.



Units with a bonded intermediate clutch piston use an L shaped retainer and cushion spring on top of the top steel clutch plate.



Always line up intermediate clutch piston checkball capsule to the pump cover as shown.



Do These or CB's

AOD-E/4R70/75W

7.



2004 Up units with a turbine speed sensor use a non ferrous (Non magnetic) sun gear shell. Some shells are easily identified by being revited together although there are shells that are not. Bottom line is if you use a ferrous metal shell the turbine sensor will not read - use the correct parts

8.



1992-2003

2004-Up

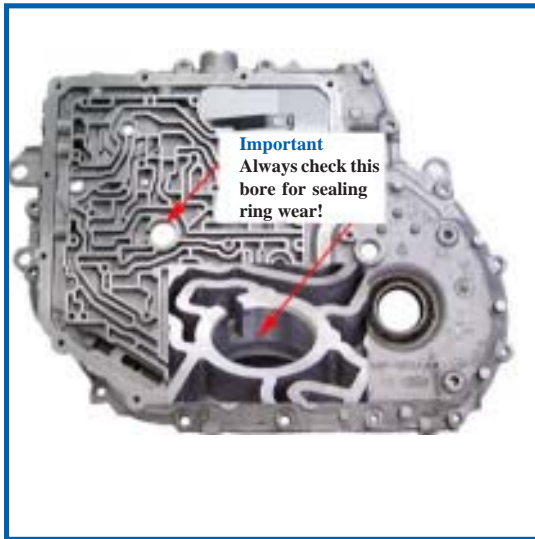
2004 Up rear internal gear is changed. The parking lugs trigger the output shaft speed sensor rather than the holes in the gear. Use the wrong parts and the speedo will read high or not at all.



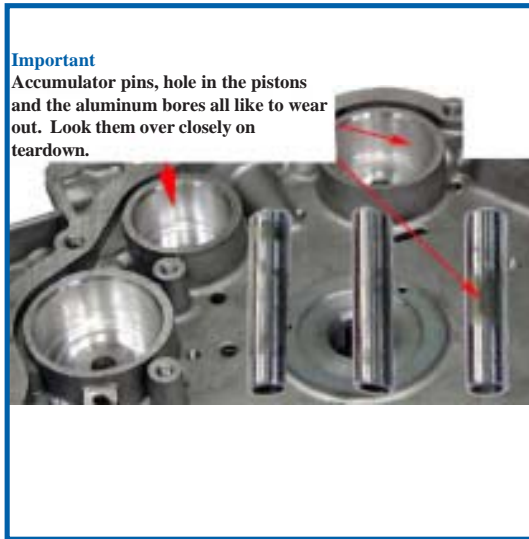
Do These or CB's

AXOD-E

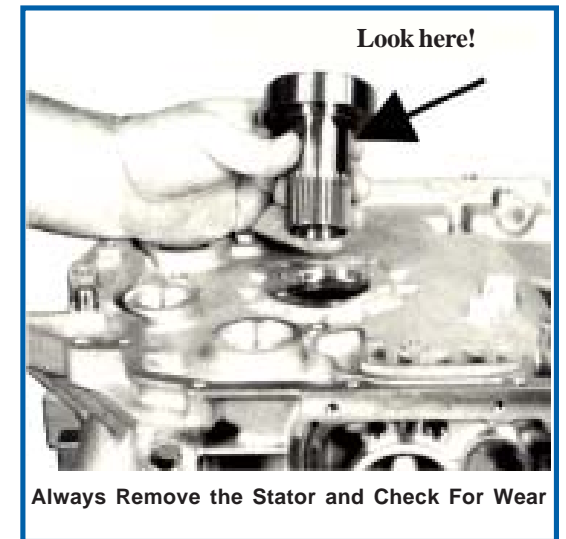
1.



2.



3.



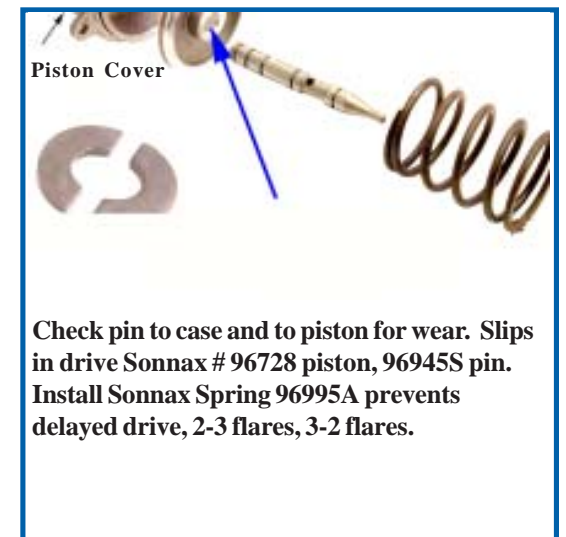
4.



5.



6.



7.

Check boost valve for wear.
Wear= Poor line rise or Extremely high line.
Sonnax # 96201-01K

8.

Differential lube tube F2DZ-7G086-A

Important
Always update 1991 & 1992 AXODE's lube tubes to the updated style that provide more lube oil to the planets.

9.

Available from Recon Transmission Parts

Install Lube Sleeve between Driven Sprocket Support and Front Planet. Part # 96028

10.

This bore wears out. Check it. Fix it. Sonnax # 96206-01K worn bore sets code 628

11.

This bore wears out. Check it. Fix it. Sonnax # 96201-06K worn bore sets code 628 TCC apply and release problem's

12.

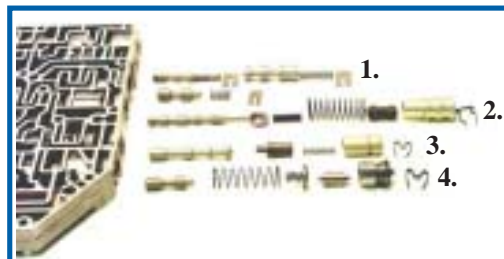
You must line up the valve body and pump sections. Failure to do so will result in failure!

1.



Always install pump shaft seal toward V.B. for better bearing lube

2.



These Bores Wear, Check Them, Fix Them.

1. Solenoid regulator and converter regulator valves. Causes TCC Problems. Sonnax 96201-21K,* 96201-23K*
2. Pressure regulator boost valve and sleeve. Causes 1-2 & 2-3 Upshift Flare. Sonnax 96201-12K (3.0L), 96201-01K (3.8 & 4.6L)
3. Bypass clutch control valve, plunger and sleeve. Causes TCC Codes. Sonnax 96206-05K*
4. Line pressure modulator valve and sleeve (up to 97). Causes Soft 1-2 & 2-3 shifts. Sonnax 96948-01K

3.

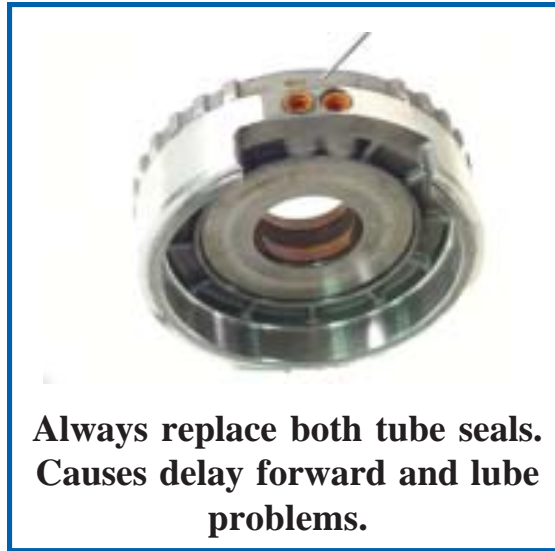


Check Forward clutch control valve for sticking and broken retainer. Causes No Forward, No 4th. Sonnax 96206BST

4.



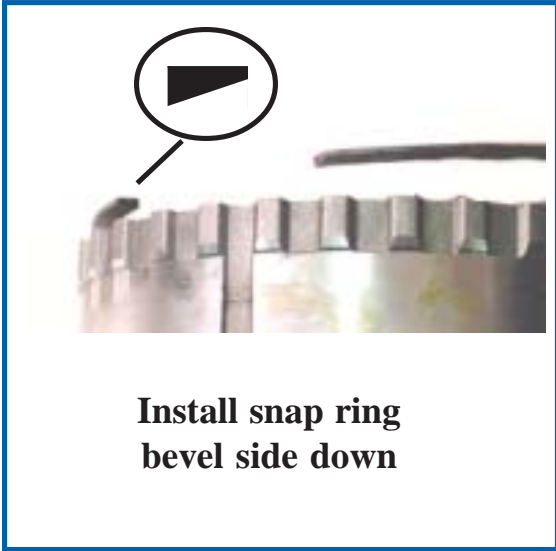
5.



6.



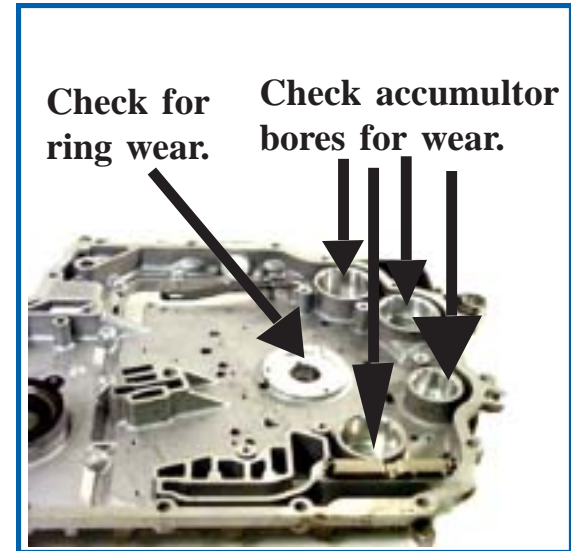
7.



8.



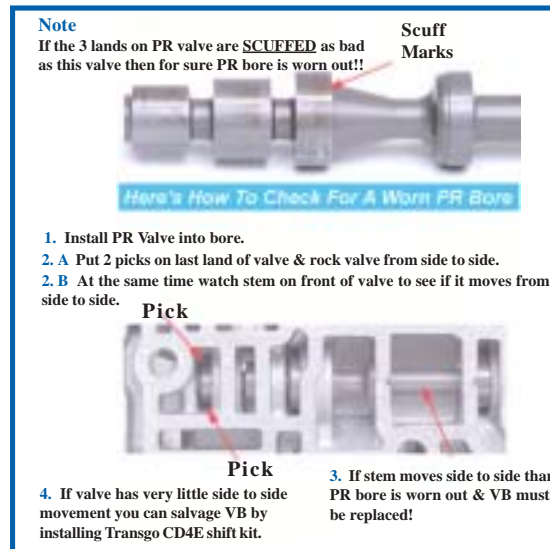
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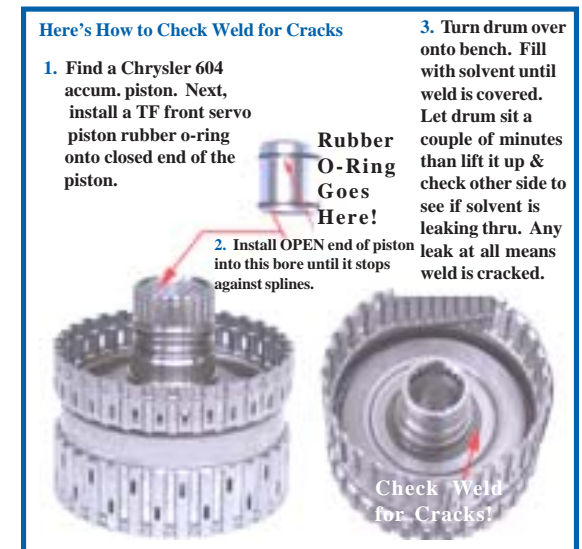
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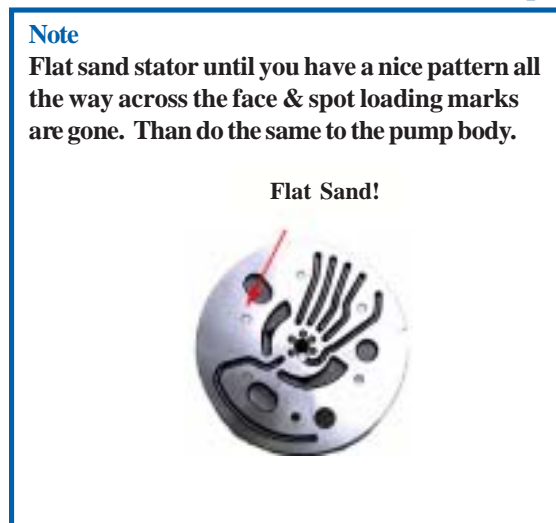
2.



3.



4.



5.



6.

Early Pump Plate

Note
Gasket blows out here & sets code 628 - TCC slippage

Late Pump Plate

Has 2 ports for intake & discharge

Has 1 port for intake & discharge

Ford PN F7RZ-7A142-AA

7.

Important
Make sure the 2 OIL SLOTS on the reverse clutch hub **LINE UP** with the 2 LUBE OIL HOLES on the forward/direct drum when you install it into the reverse input drum. If not lined up you will starve the reverse drum bushing for lube oil & **wipe it out** on the roadtest.

Oil slots not lined up WIPES out this bushing.

Lube Oil Hole

Line up LUBE OIL HOLES in drum with SLOTS in HUB!

Lube Slot

8.

Washer Breakage
Black colored 4 tang plastic washer is almost always found broken on teardown. Make sure you stock some!

Ford PN F3RZ-7G116A

9.

Spring installs 1st, then check ball!

Important
Always replace the rubber O-Rings in solenoid block. The 3 large O-Rings are all the same size.

Note
This inner O-Ring is smaller than the other 2 & sits down in bottom of bore.

10.

Important
Always change molded rubber cover & 2-4 piston. Always check the case for wear where the pin rides.

Note
Late servo does not use this washer & spring!
Early & Late servos are interchangeable.

11.

Press and release the Overdrive button. If the engine RPM's raise and lower, you have a broken drum!

With the engine running place the shifter in the Overdrive position, brake applied



Do These or CB's

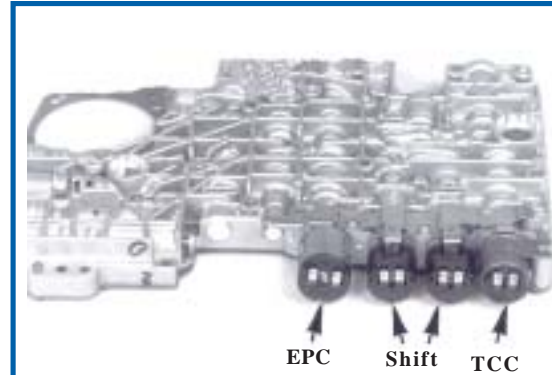
4R44E and 5R55E

1.



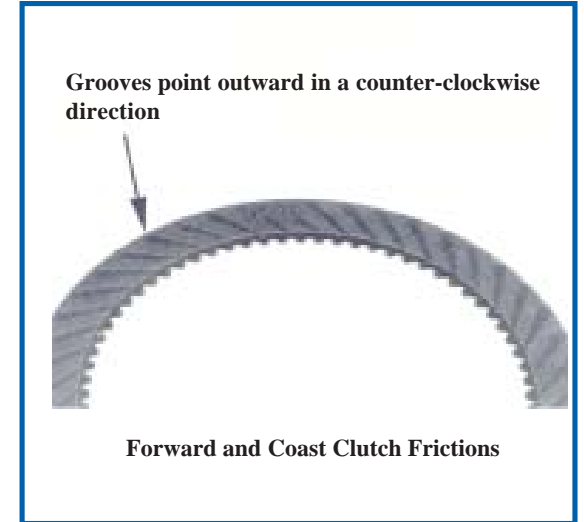
Always remove the sensor ring from the overdrive clutch drum, it's not needed.

2.

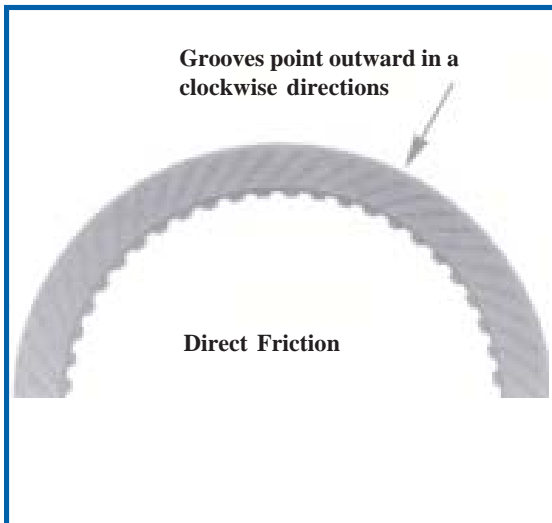


There are many problems with the EPC's. Only use correct replacement.

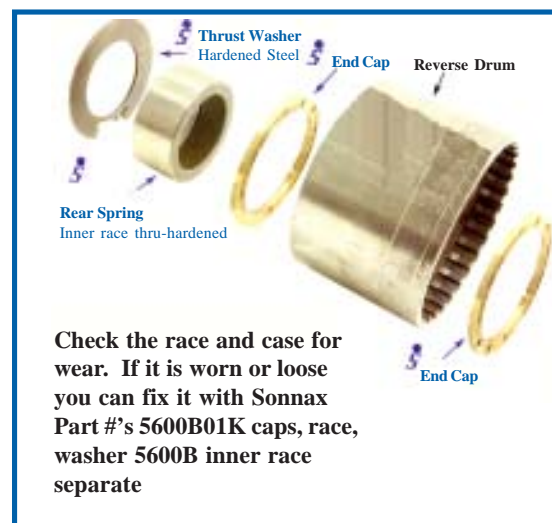
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4.

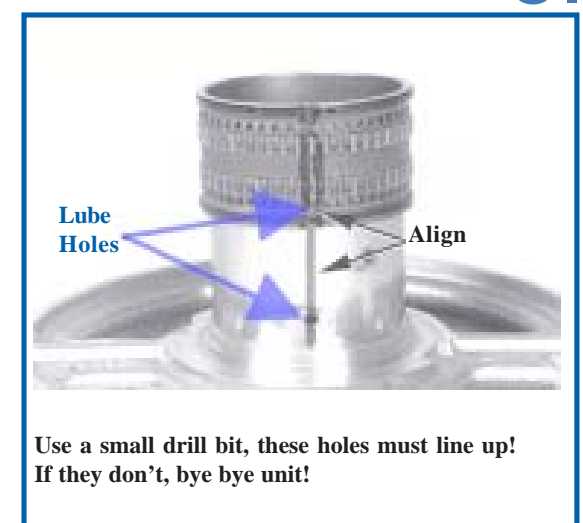


5.



Check the race and case for wear. If it is worn or loose you can fix it with Sonnax Part #'s 5600B01K caps, race, washer 5600B inner race separate

6.





Do These or CB's

4R44E and 5R55E

7.



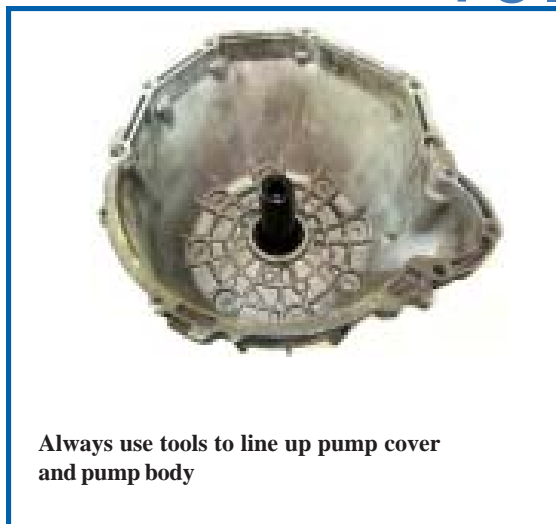
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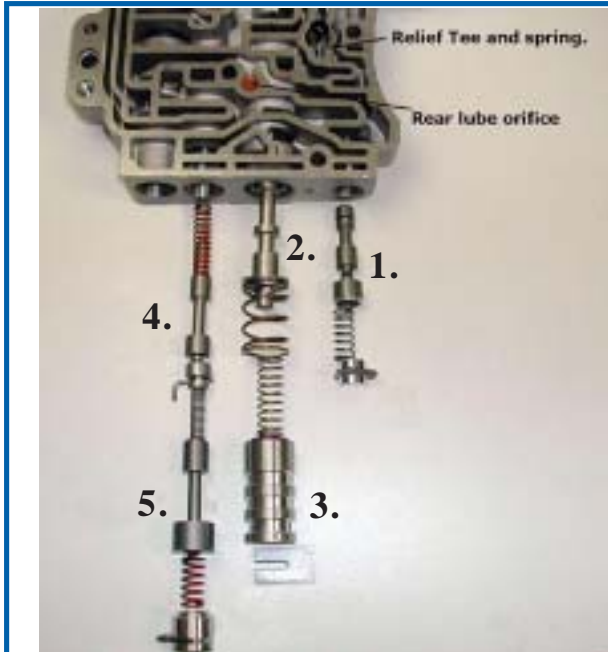
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10.



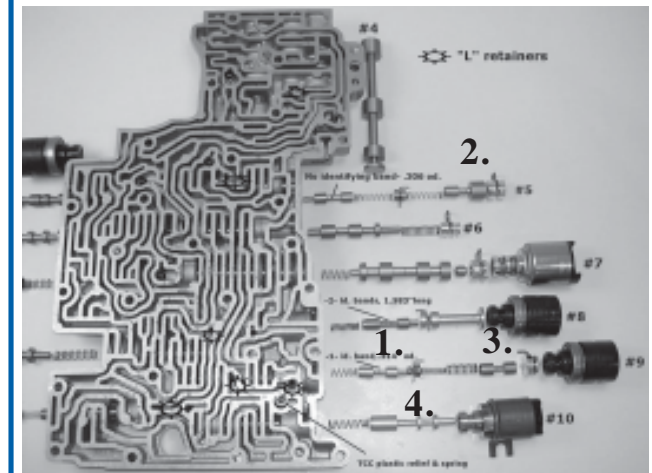
11.



These Bores Like to Wear. Check Them. Fix Them

1. Forward Engagement Control Valve - Causes Delayed Forward Engagement. 1 & 3 are in Sonnax Kit 37947-EZ
2. Worn Pressure Regulator - Causes Delayed Engagements, High or Low Line Pressure. Sonnax 37947-05K
3. Worn Pressure Boost Valve - Causes Soft Shifts, Delayed Reverse. Sonnax 37947-01K
4. Worn EPC Boost Valve and/or Loose Boost Valve Plug - Causes Poor Shift Quality, Delayed Forward or No Reverse.*
5. Worn Forward Modulator - Causes Poor Shift Quality, Delayed Forward or No Reverse. 4 & 5 are in Sonnax Kit 37947-11K*

12.



These Bores Like to Wear. Check Them. Fix Them.

1. Worn Coast Clutch Shift Valve - Causes No 4th Gear 4R44, No 2nd and 5th Gear 5R55, Sonnax 37947-33K
2. Worn Reverse Modulation Valves - Causes Delay in Reverse. Sonnax 37947-11K*
3. Worn TCC Regulator Valve - Causes Converter Apply Issues, High TCC Slip RPM, TCC Slip Codes. Sonnax 37947-09K
4. Worn TCC Modulator Valve - Causes Converter Apply Issues, High TCC Slip RPM, TCC Slip Codes. Sonnax 37947-07K

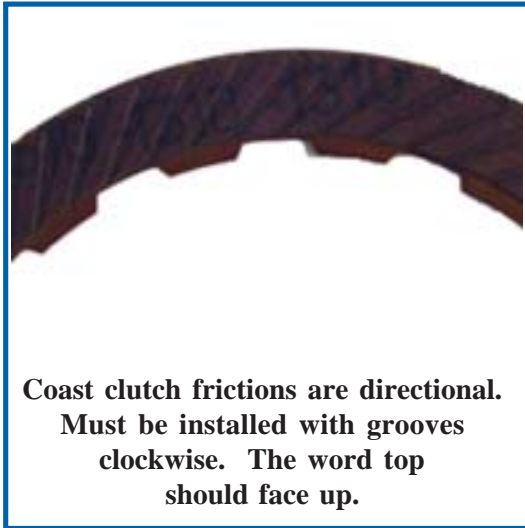
***Large Kit - Requires
Several Tools to Ream
and Install**



Do These or CB's

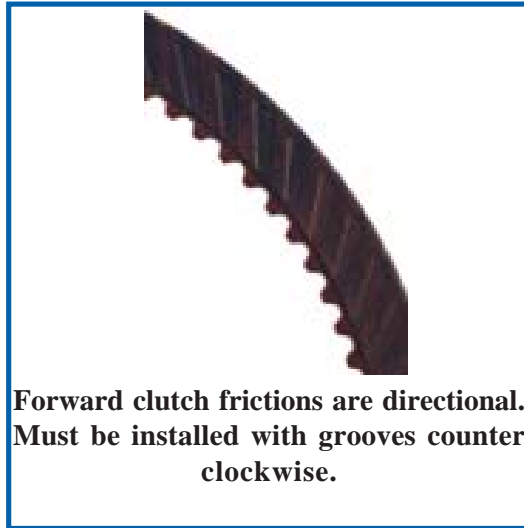
5R55W/S/N

1.



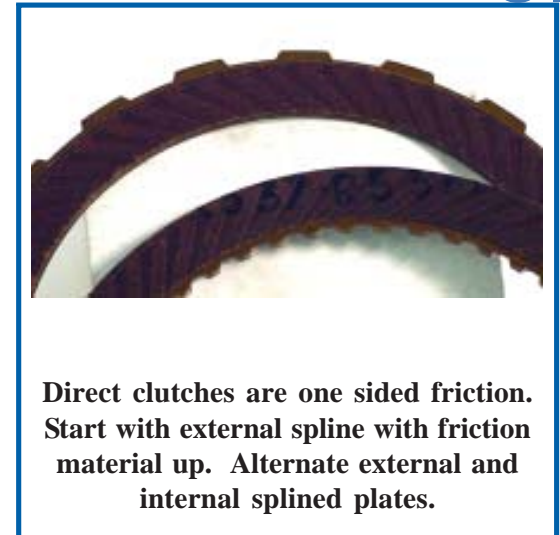
Coast clutch frictions are directional. Must be installed with grooves clockwise. The word top should face up.

2.



Forward clutch frictions are directional. Must be installed with grooves counter clockwise.

3.



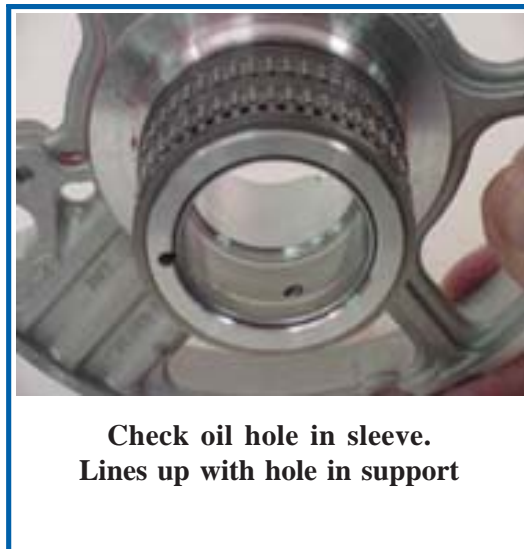
Direct clutches are one sided friction. Start with external spline with friction material up. Alternate external and internal splined plates.

4.



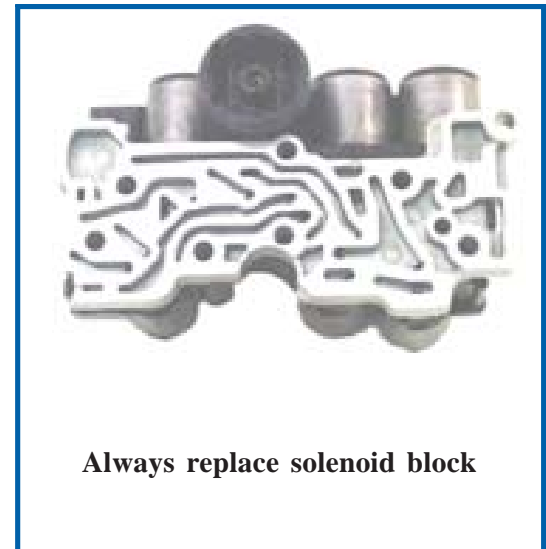
Check servo pin bores for wear. Replace molded servo apply pistons.

5.



Check oil hole in sleeve. Lines up with hole in support

6.



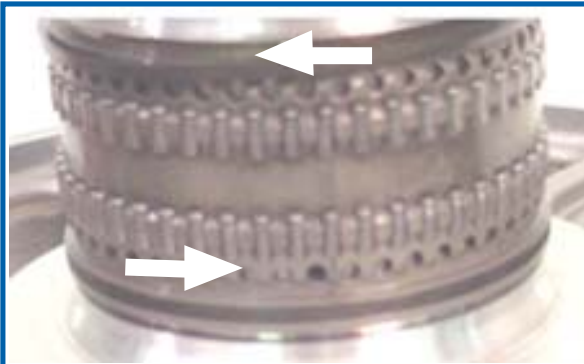
Always replace solenoid block

7.



Check oil hole in sleeve. Lines up with hole in drum.

8.



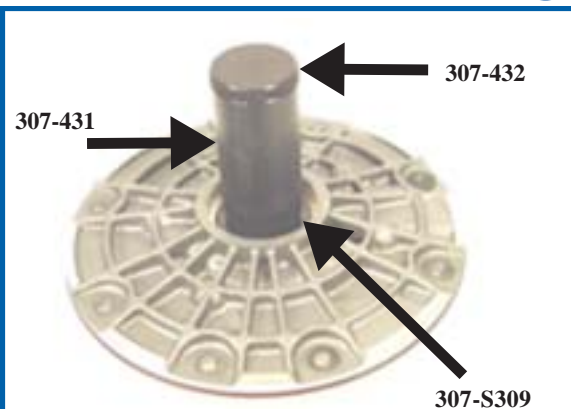
Check oil hole in bearing lines up with hole in support. Check race for cracks.

9.



Always replace flow control valve and o-rings.

10.



Always use special tools to line-up pump

11.



If equipped-use the flex plate aligner 307-403 (or equivalent) to install the torque converter flex plate adapter and nuts.

12.



5R55N make sure intermediate clutch inlet tube seal is seated correctly. Must Fit in hole in Case



Do These or CB's

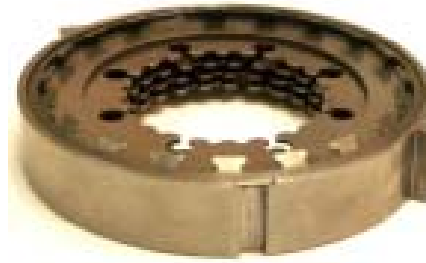
5R55W/S/N

13.



Band struts are critical. If installed incorrectly, it will cause slips, missed shifts.

14.



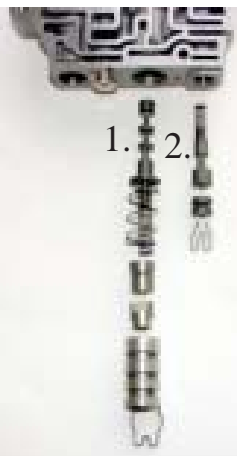
Be careful intermediate clutch assembly. Cushion spring goes up.

15.



Always check 4-3 prestroke valve spring. Frequently breaks - causes codes. Sonnax # 56947J-S1

16.



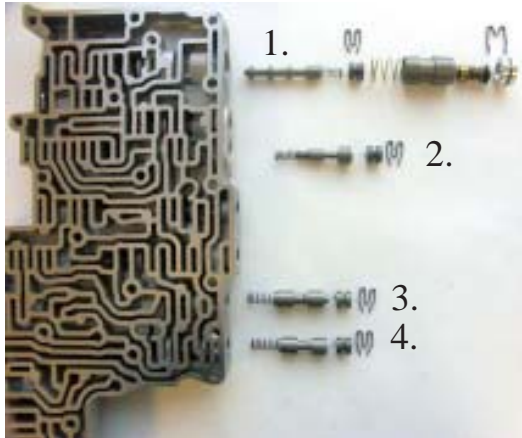
These Bores Wear, Check Them, Fix Them

1. Worn Pressure Regulator Valve Bore - Causes Delayed Engagements, High Line Pressure in Reverse, Soft Shifts, Insufficient Line Rise, Erratic Buzz. Sonnax 56947J-09K*

2. Worn VFS1 Modulator Valve - Causes Solenoid Performance Codes, Line Pressure Concerns, Slipping Upshifts. Sonnax 56947J-19K*

*Reaming Required

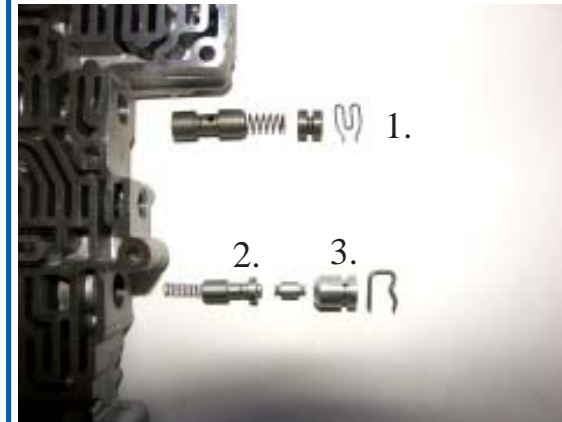
17.



These Bores Wear. Check Them. Fix Them.

1. Worn TCC Control Valve Bore - Causes Excessive TCC Slip, Code P0741, Overheated Converters, Restricted Cooler Flow. Sonnax 56947J-05K*
2. Worn VFS2 Modulator Valve Bore - Causes Solenoid Performance codes, Line Pressure Concerns, Slipping Upshifts. Sonnax 56947J-19K*
3. Worn Reverse Modulator Valve - Causes Delayed Reverse Engagement, Loss of 4th and 5th Gear, Burned Direct Clutch. Sonnax 56947J-23K*
4. Worn Reverse Engagement Valve - Causes Slipping or Loss of Reverse, Burned Direct Clutch, Delayed Reverse Engagement. Sonnax 56947J-29K*

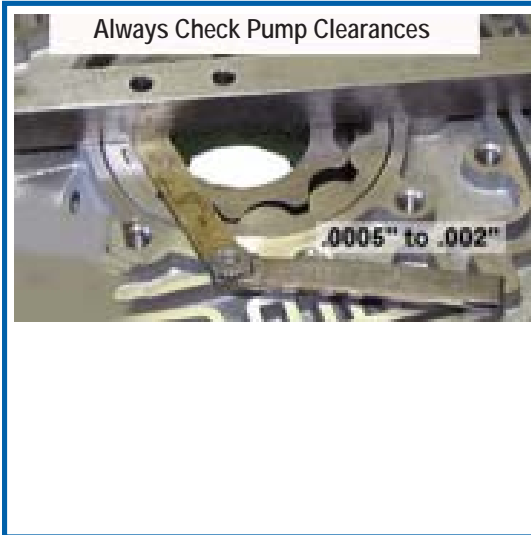
18.



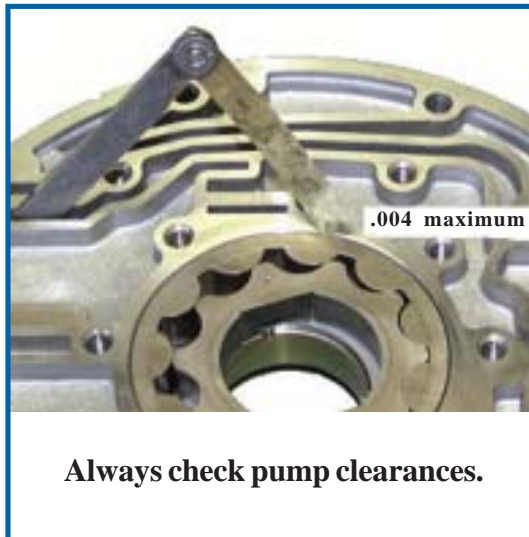
These Bores Wear. Check Them. Fix Them.

1. Worn Forward Engagement Valve Bore - Causes Slipping or Loss of Forward Gears, Burned Forward Clutch, Delayed Forward Engagement. Sonnax 56947J-26K*
2. Worn TCC Modulator Valve Bore - Causes Excessive TCC Slippage, Codes P0741, P1783, Transmission Overheating, High Line Pressure. Sonnax 56947J-15K*
3. Worn TCC Modulator Sleeve and/or Plunger - Causes TCC Slip Codes, Transmission Overheating. Sonnax 56947J-01K

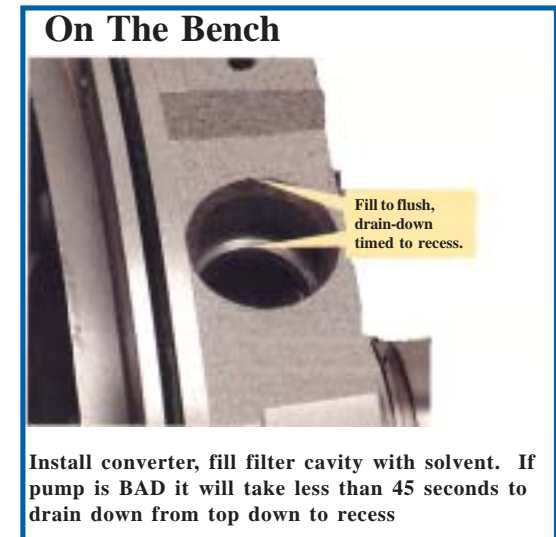
1.



2.



3.



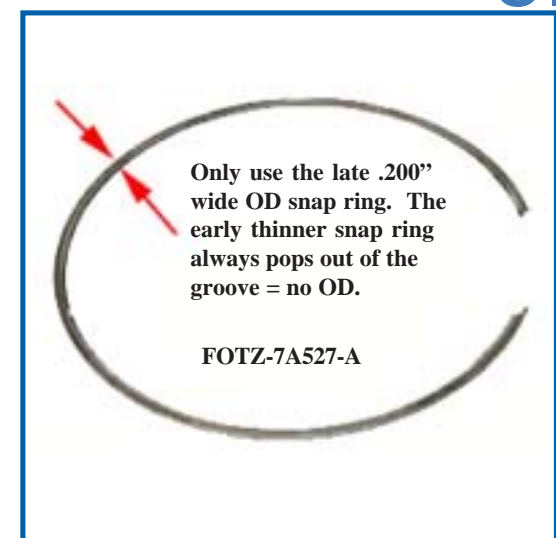
4.



5.



6.



7.

Check hub for cracks and splines for stripping. If hub is cracked OD sprag is bad. If you install a bushing in the OD planet support, Machine planet neck .020 - .030"



8.



Prevent burnt forward and direct clutches.

Always install a gasket it prevents leaks use Sonnax # 367743G

9.

Look for wear Here and in the Case. Worn Case will wear out New Supports without modification below.



Remove support tower. Machine outer edge of support down .050 inch. Place a .050" ATX Reverse Case snap-ring into case 1st. Install modified support just like a 400 transmission.

10.



Make sure the rear case fitting is free from debris. If it is not, bye bye geartrain.

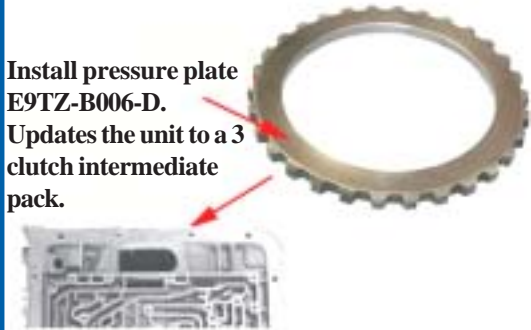
11.

Install a bronze GM ext. housing bushing into hub.



12.

Install pressure plate E9TZ-B006-D. Updates the unit to a 3 clutch intermediate pack.





Do These or CB's

4R100

1.



Always check converter clutch control sleeve and valve assembly for wear. Worn Bore Causes TCC Concerns.

2.



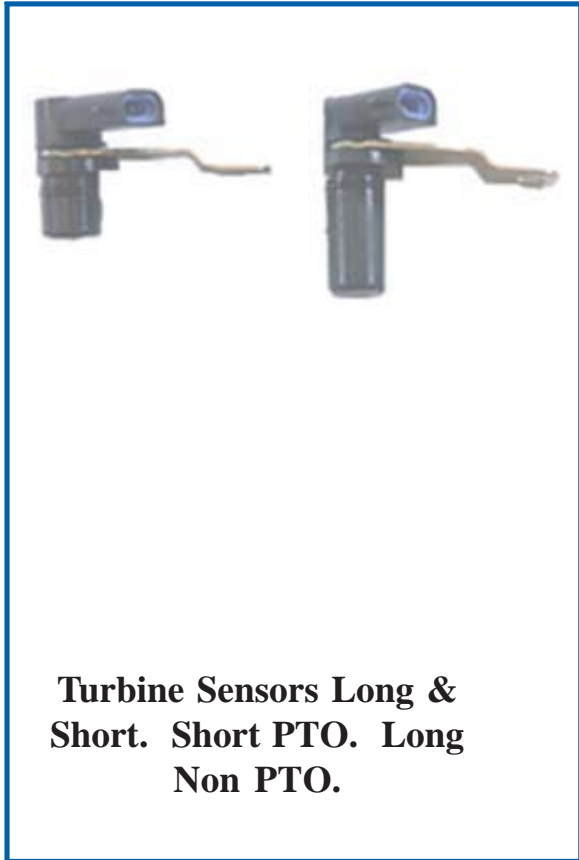
Never Reuse. Mechanical diode it always breaks

3.



Always clean out or replace cooler bypass tube

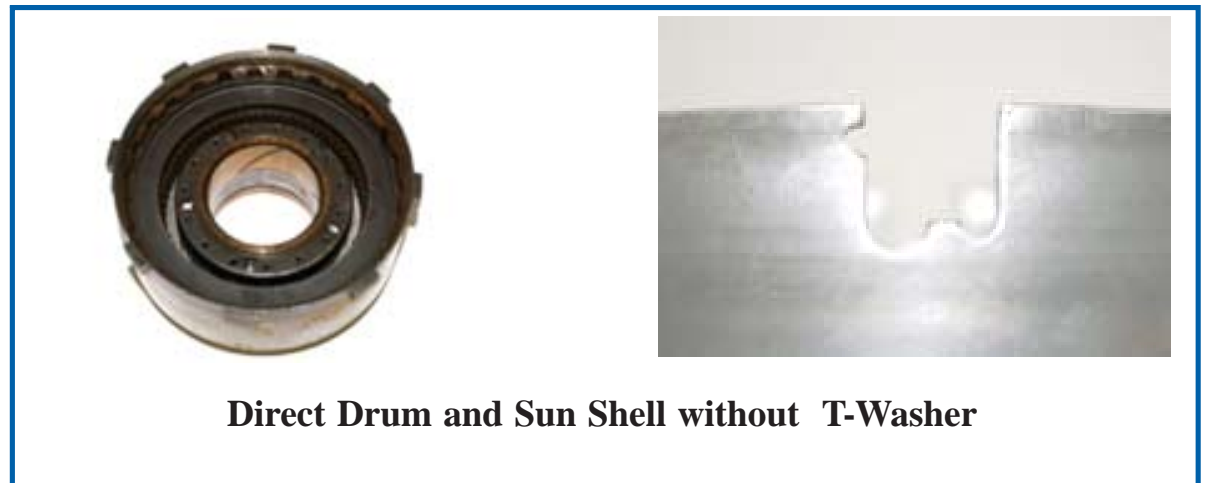
4.



5.



6.

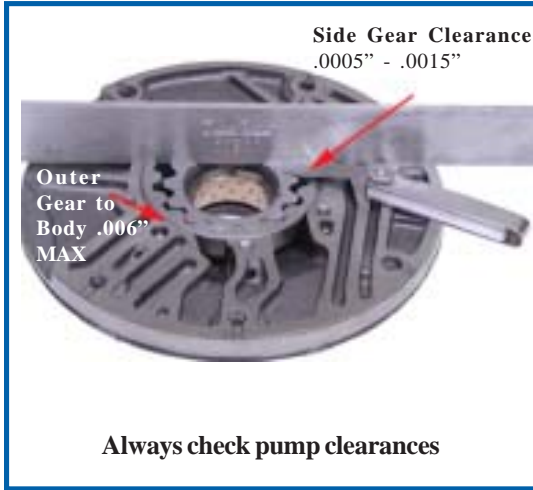




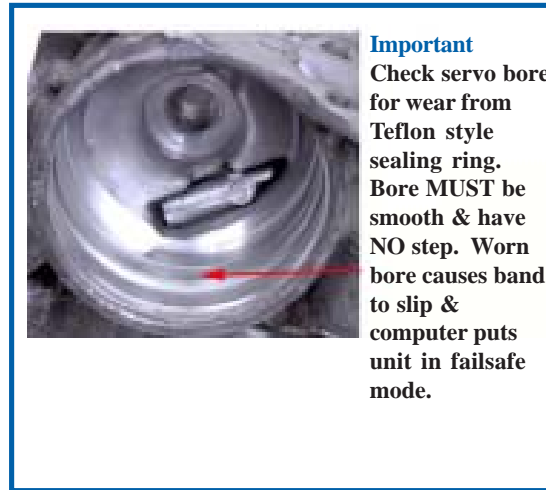
Do These or CB's

KM175/77 - F4A20/30 Series

1.



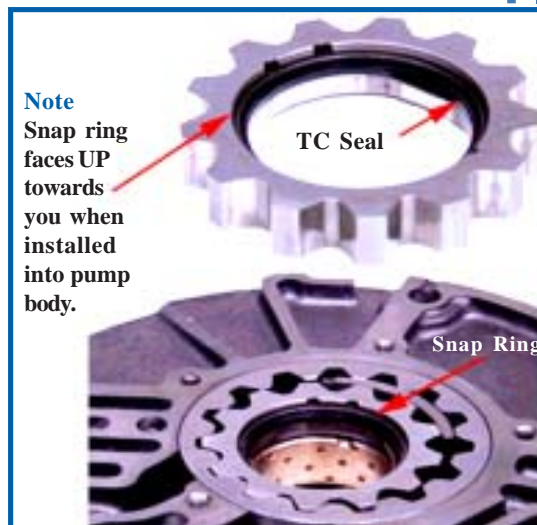
2.



3.



4.



5.





Do These or CB's

KM 175/77 - F4A20/30 Series

6.

Punch Mark

Oil Slot

Note
Leave sealing rings off shaft until after it's installed in drum.

Important
Input shaft has 3 oil slots, make sure you line one of them up with punch mark in forward drum.

7.

Blow into here

Flush clean with solvent & air until spotless!

Important
Always flush lube holes out with solvent & air real good. Passage likes to build up with debris. Causes repeat planet failure.

8.

Cushion sits in piston here

MD70-7399 Large
MD71-9830 Small
MD73-1120 F4A3-1

Important
Always replace wave cushion that sits in Low/Reverse piston groove. They love to break. 2 different sizes of outside diameters.

9.

Always adjust the band.
Zoom tool # KMBAT

10.

OEM	SONNAX	<p>Important Always replace OEM manual valve with redesigned Sonnax. This valve reduces delayed engagement, spun converter bushing, front seal leak & most important planet and converter overheating.</p>

Sonnax 41750-03



Do These or CB's

Honda 5 Speed

1.



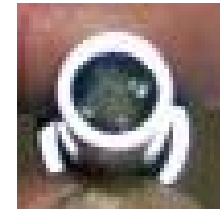
Always Check Pump Clearance .003 Max.

2.



Apply voltage and ground to CPC solenoids. Make sure the valves move freely, check valves for side wear. Clean solenoid feed tube screens.

3.



Clean solenoid feed tube screens

4.



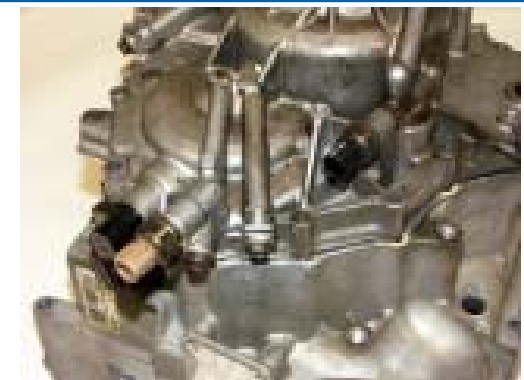
Check all shaft bushings. Use 1/4 wide piece of scotch tape on feed tube.

5.



Check case for bearings spinning. Common Problem.

6.



Never run electronic components through parts washer - Pressure switches guaranteed to be bad afterwards

7.



TURN

HOLD

Sprag Rotation - Hold clutch Hub Gear. Turns clockwise.

8.



Check for wear here

Always disassemble. The 1st clutch sprag. Inner race is commonly worn, causes no forward, falls out of gear at stop.


9.



Mark Location Before Moving

Adjusting CPC Solenoids in 1/8 - 1/4 turns will help firm up shifts.

10.




Worn bore plugs can cause shift & torque converter clutch concerns. Check with caliper on micrometer. No More than .0015 wear. Sonnax 98892-01K

11.



Drilling line to lube can help converter charge, TCC and lubrication problems. Will work on most Honda units. No larger than .040

12.




Sonnax Tool 88950-T

Honda CPC Solenoids - Can adjust in small increments to help soft shifts. Make sure you mark starting point. Sonnax Tool 88950-T, makes it easy. This modification will work on any Honda unit using these solenoids. You can also remove one of the valves for cleaning. Make sure you count the turns if you remove the end plugs.

1.

Early Style




Top 1 or 2 Steel Plates are selective

.118 Thick Plate on Bottom

Improperly stacked B2 clutch can = slips 1-2 and/or 3-4. Binds in reverse and manual low.

2.

Late Style



Selective Shim or Shims

Dish Plates

.118 Thick Plate on Top

.118 Thick Plate on Bottom


Improperly stacked B2 clutch can = slips 1-2 and/or 3-4. Binds in reverse and manual low. Dish Plates go in retainer with first dish plate with the dish up and the second dish plate with the dish down

3.



Install Outer Pump Gear with Dot Up. Install Inner Gear with Deeper Recess Up. Installing Inner Gear Upside Down Results in TCC Codes Being Set.

4.



If you are replacing pump or stator make sure you have the correct parts - O1M or Phase 2 units will have O1M cast in the pump body and pump cover. 096 or Phase 0 & 1 units will have 095

5.



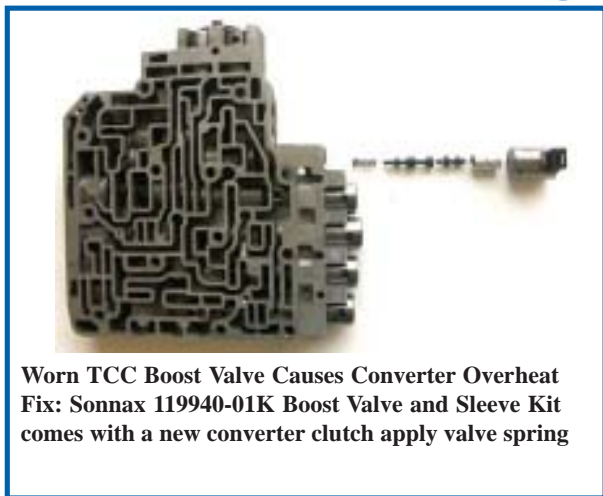
When replacing any of these parts use exactly what comes out. There are two different ratio planetary assemblies and several transfer gears and differentials. Wrong parts can give TCC and ratio codes plus poor vehicle performance.



Do These or CB's

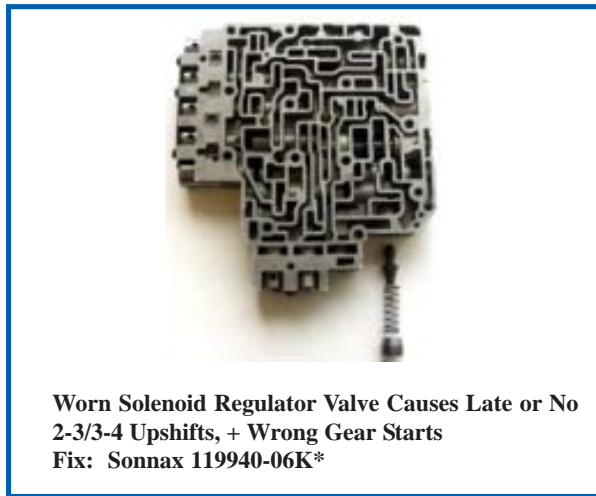
VW 01M/01N/01P

6.



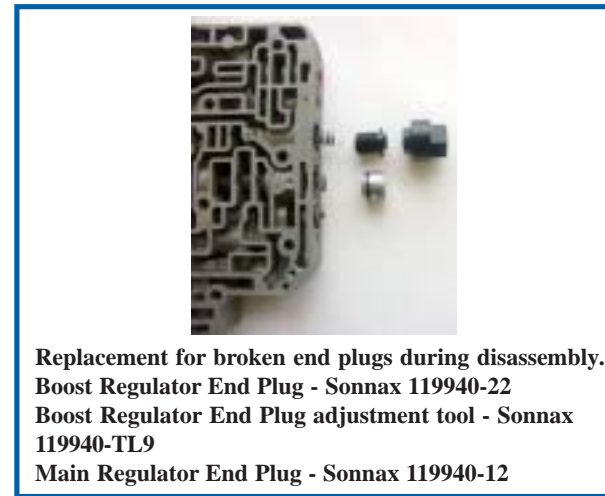
Worn TCC Boost Valve Causes Converter Overheat
Fix: Sonnax 119940-01K Boost Valve and Sleeve Kit comes with a new converter clutch apply valve spring

7.



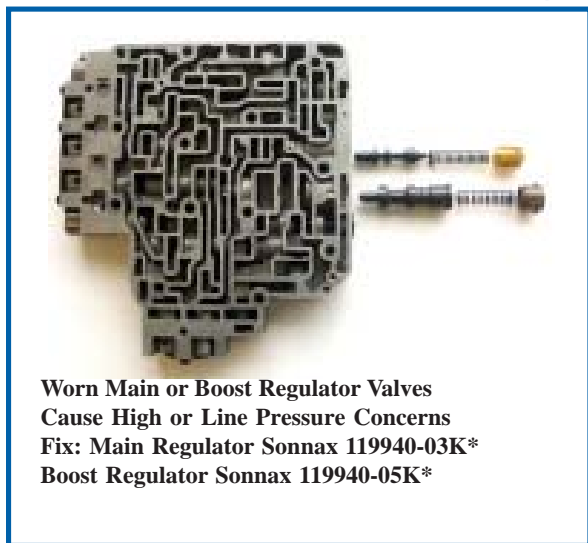
Worn Solenoid Regulator Valve Causes Late or No 2-3/3-4 Upshifts, + Wrong Gear Starts
Fix: Sonnax 119940-06K*

8.



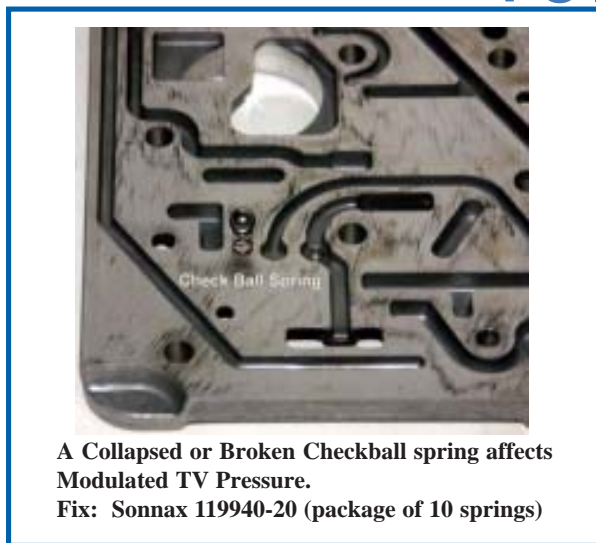
Replacement for broken end plugs during disassembly.
Boost Regulator End Plug - Sonnax 119940-22
Boost Regulator End Plug adjustment tool - Sonnax 119940-TL9
Main Regulator End Plug - Sonnax 119940-12

9.



Worn Main or Boost Regulator Valves Cause High or Line Pressure Concerns
Fix: Main Regulator Sonnax 119940-03K*
Boost Regulator Sonnax 119940-05K*

10.



A Collapsed or Broken Checkball spring affects Modulated TV Pressure.
Fix: Sonnax 119940-20 (package of 10 springs)

*Reaming Required



Do These or CB's

AW 55-50SN

1.



Use OE replacement band whenever possible.
Nicer 2-3 shift.

2.



If you are replacing the forward and direct clutch housing make sure you have the correct size input shaft
.844 or .874

3.



If you are replacing the pump or stator make sure you have the correct replacement, .844 or .874

4.



On Volvo units if your servo cover looks like this, update to snap ring style, Volvo #
30751262



Do These or CB's

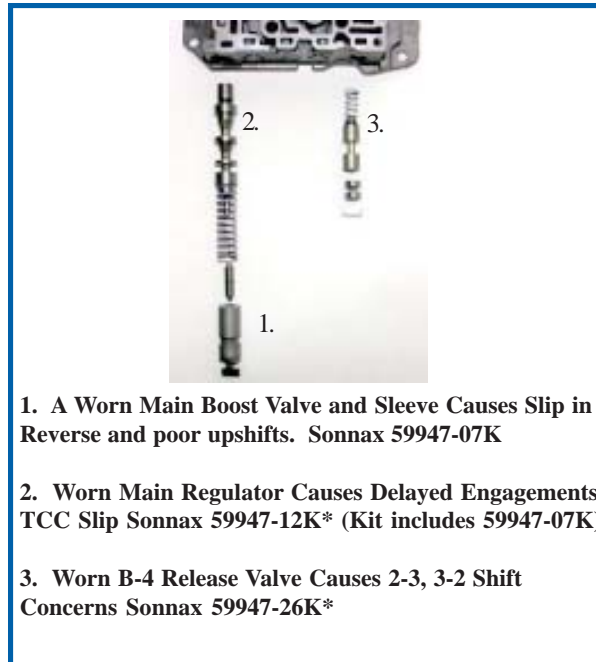
AW 55-50SN

5.



A Worn Lock-Up Relay Valve and/or Sleeve can Cause TCC Apply/Release Problems. Sonnax 59947-01K

6.



- 1. A Worn Main Boost Valve and Sleeve Causes Slip in Reverse and poor upshifts. Sonnax 59947-07K
- 2. Worn Main Regulator Causes Delayed Engagements, TCC Slip Sonnax 59947-12K* (Kit includes 59947-07K)
- 3. Worn B-4 Release Valve Causes 2-3, 3-2 Shift Concerns Sonnax 59947-26K*

7.



- 1. A Worn Secondary Regulator Valve Causes Overheating of fluid, bushings and converter. Harsh reverse engagement Sonnax 59947-16K*
- 2. Worn LPC Accumulator Bore Causes Delay Forward, Low Line, Lube and Converter Pressure. Sonnax 59947-LPC.

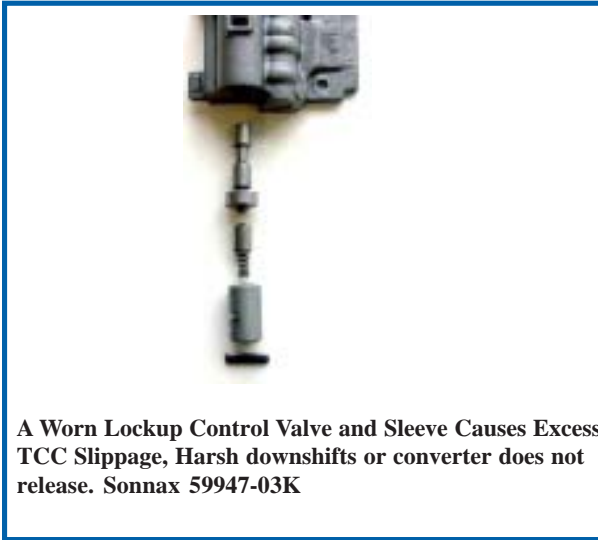
*Reaming Required



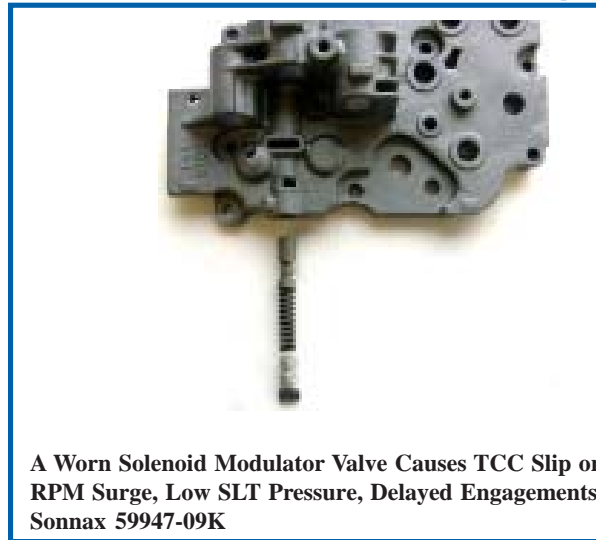
Do These or CB's

AW 55-50SN

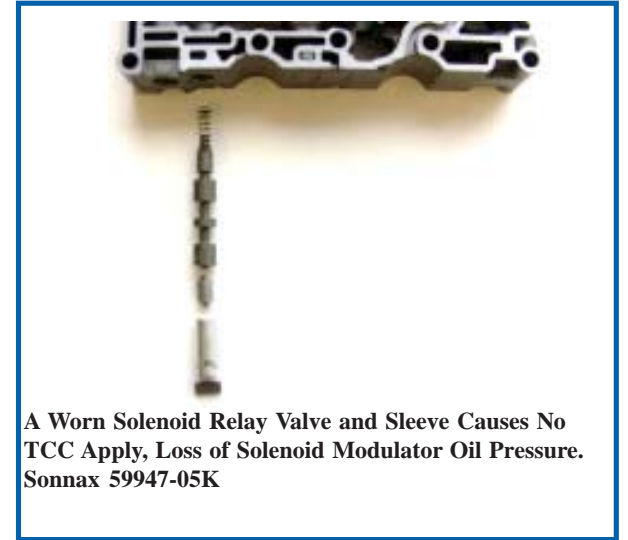
8.



9.



10.





Do These or CB's