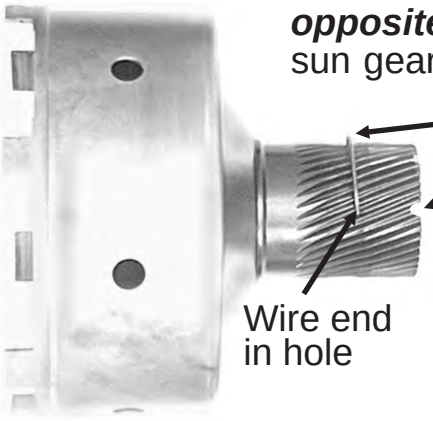
AXODE Shift Kit®

1991up AXODE & AX4S

Reduces/Corrects/Prevents

Planet burn up--Kickdown Runaway--No upshift
2nd Clutch failure---Rough shifts---Long shifts
Neutral on slow corners

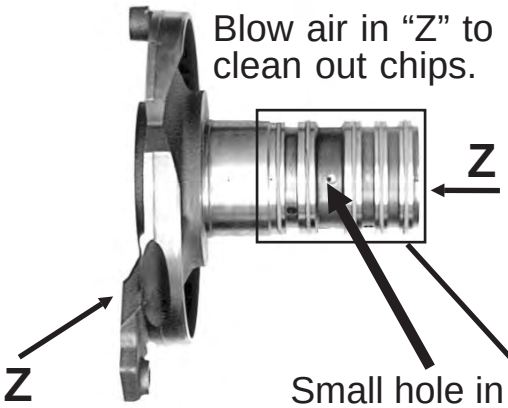
Sun Gear



A Grind ***two*** notches 1/32" to 1/16" deep ***opposite*** each other on the ***end*** of the sun gear. It's not fussy.

B Slide the **WIRE CLIP** over the end of the sun gear. Insert the ends into lube holes located in the middle of the gear teeth.

Positive lube flow now squirts out of the notches on end of sun gear directly onto the planetary gear teeth and the needle bearing.

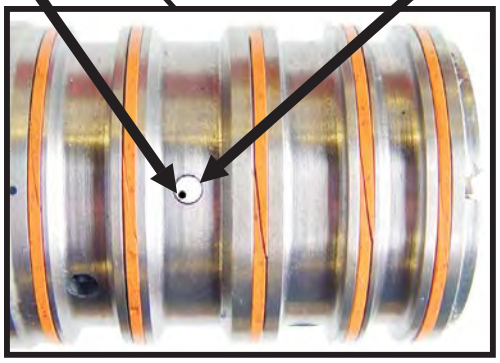


Sprocket Support

C Re-drill the small hole in the ***inner sleeve***, use .187 to .196 drill. De-burr hole inside the support with a file.

D With a punch install the **Bushing** furnished into lube hole and ***re-drill*** hole in **BUSHING** .073 to .086.

LISTEN UP:
Take care when drilling the small hole in inner sleeve. Do not disturb existing outer support hole. The **BUSHING** furnished must be able to press fit into the existing outer hole.

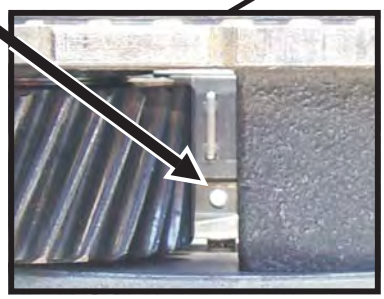


Front Planetary

A Enlarge the two holes just below the needle bearing with the .110 drill furnished.

Insert drill from the side between the pinion gear and housing.

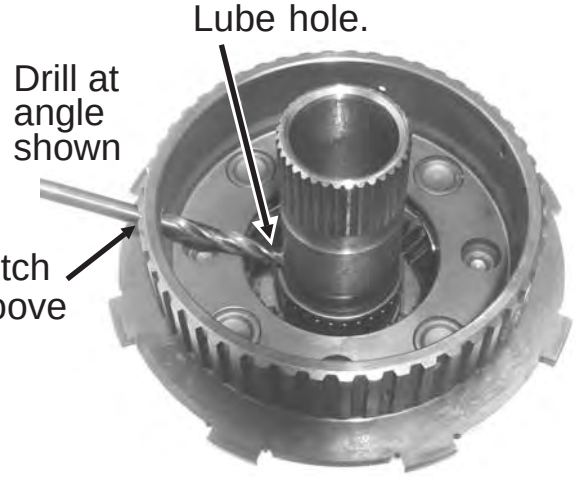
If you can't line up with the holes to drill them, it's **OK** to drill two new .110 holes.



B Find the lube hole just above the bearing.

Drill a ¼" hole through a clutch groove in line with the lube hole. Then enlarge the lube hole to ¼".

These upgrades increase lube to front planet about 10 times.



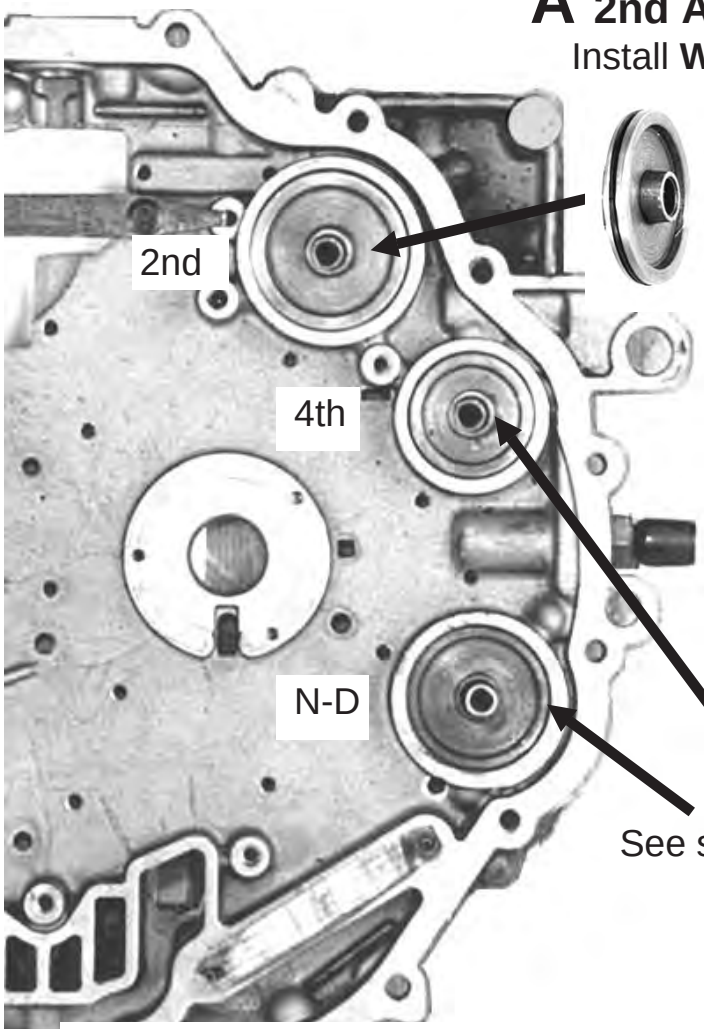
Sprocket Shaft

C Drill both sides ¼" to ⅜". De-burr inside with a file.

D 1-2 Servo (*on side of trans*)

Install **WIRE SHIM** in cover.

Channel Casting



A 2nd Accum Piston

Install **WIRE** then **RING.**

WIRE **RING**
pat 6,575,472

Spacer

The stepped end away from piston

BLUE

See spring ID page.

Pump & VB plates: VB, 2nd clutch plate type, and computer strategy match. Swappng parts that are not exactly the same may create driving complaints.

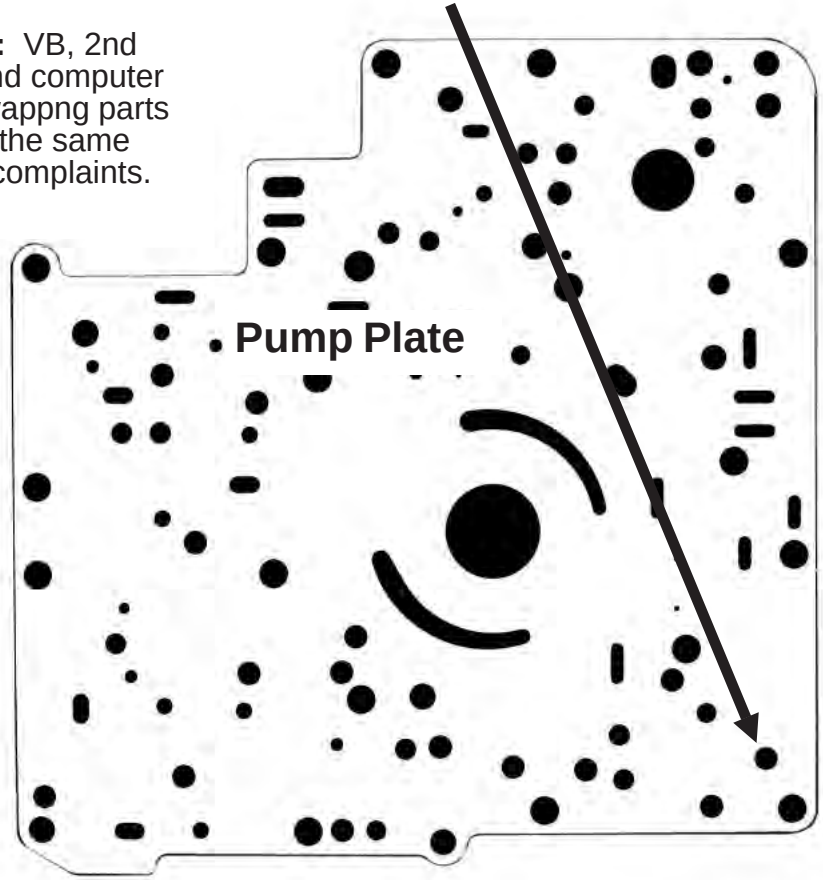
B If Pump Plate Has Hole AF:

Install new **BLUE** spring & **Spacer**. Use trans jel to hold spacer.

Pump Plate with No Hole AF:
Reuse the original spring(s).
Do not install Blue spring or spacer.

SHO: Reuse the **ORIGINAL** springs.
Do not install Blue spring or spacer.

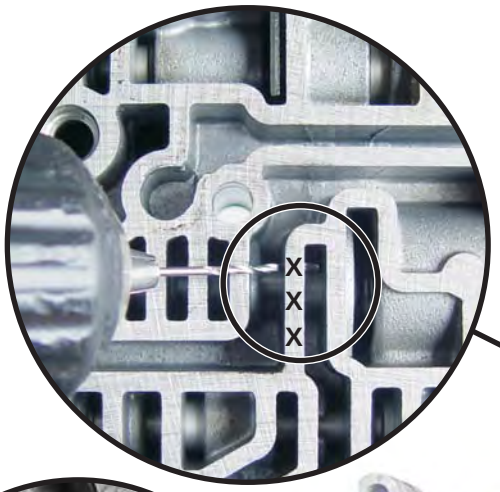
Hole AF



Avoid Gasket Blowout: Glue the gasket to chain cover and to case with a good, quick drying ***rubber or contact cement***. Tighten the cover bolts several times to compress gasket.

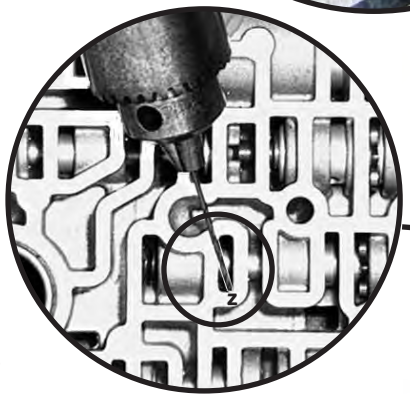
Valve Body Upgrades

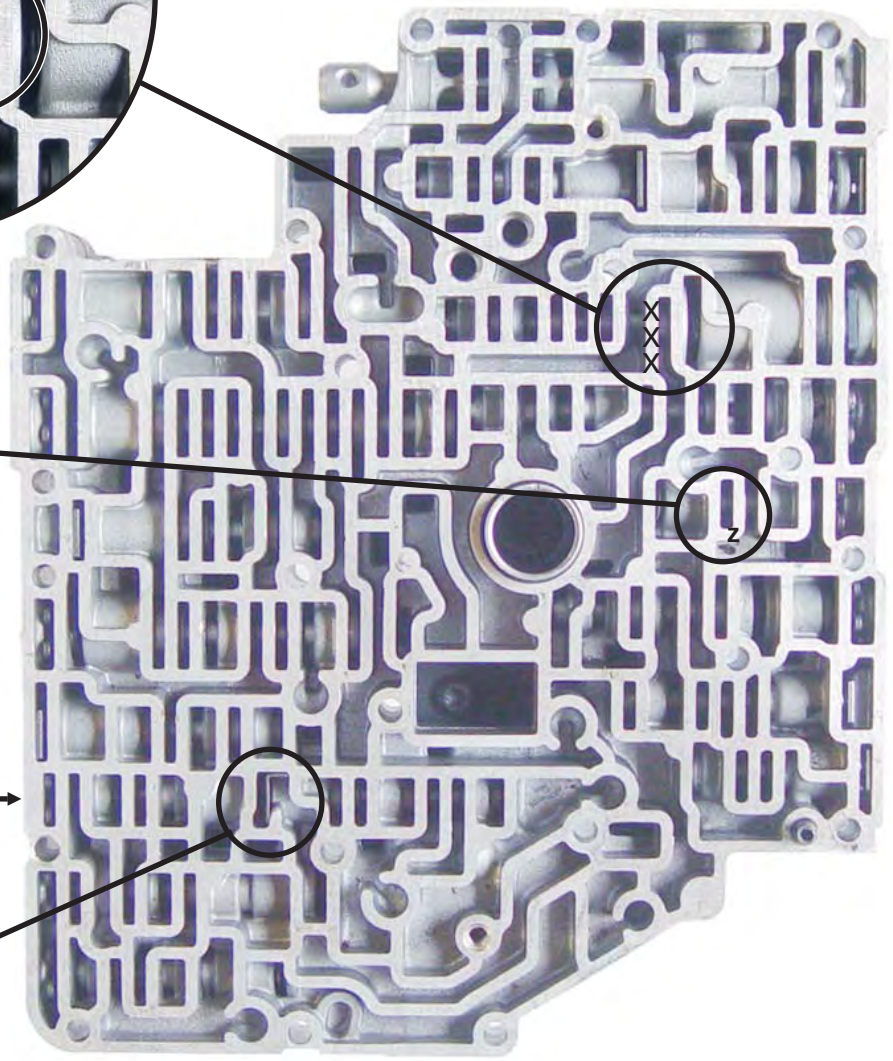
A Drill three .055 holes, left to right thru partition under **X's**.



B Drill .055 hole through VB web at angle shown, just under gasket surface at location **Z**. Install **Cotter Pin** furnished through hole and spread out ends.

Cotter pin





C Install **ORANGE** spring on the 3-2 control valve.

3rd pull in valve. Reuse 3-2 control valve

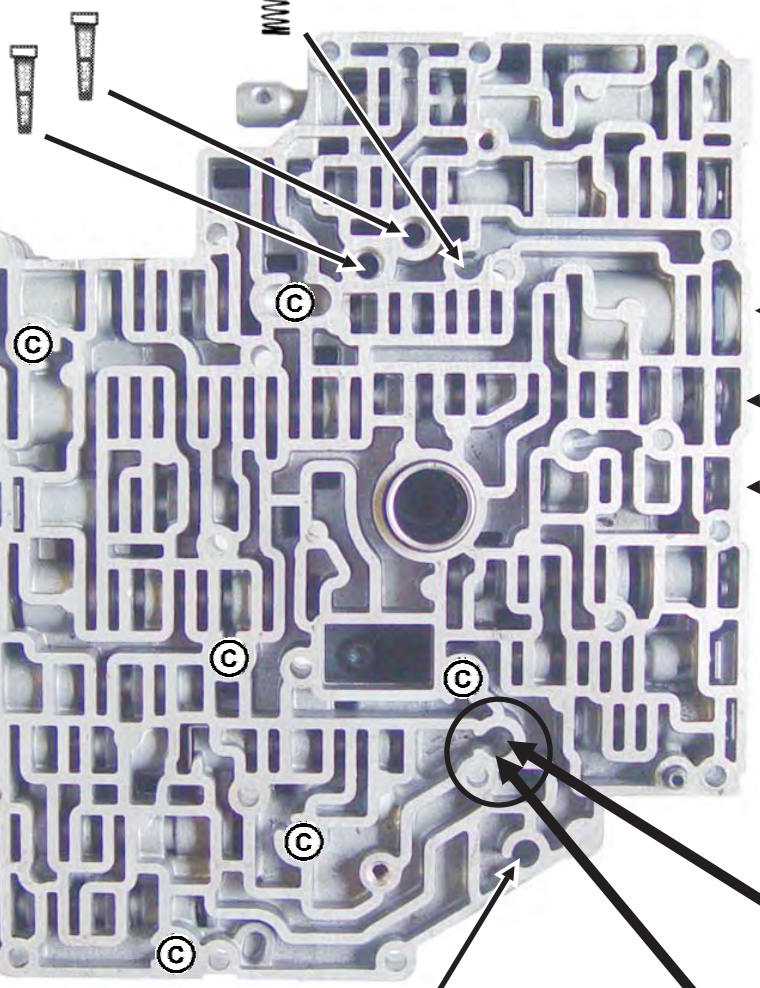
Not used some models.

Retainer clip

A All Models

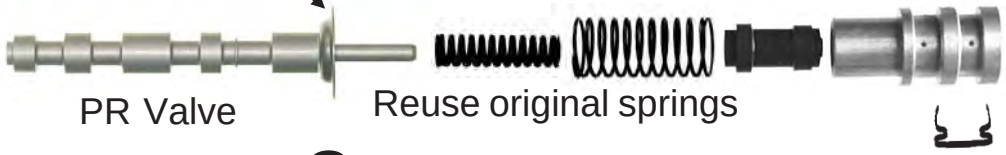
Drainback

Ⓒ **1st TYPE:** Seven 5/16" Plastic balls.
2nd TYPE: Six 5/16" Plastic balls & Relief Valve



SPRING SEAT:
Flare towards springs

B Install new **BOOST VALVE & BUSHING**



PR Valve

Reuse original springs

C Install new **Lockup Valve, Bushing and Orange spring.**

Bypass clutch control valve.

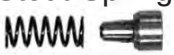
1-2 Capacity valve & spring

D Adjust 1-2 firmness with capacity spring:
Recommend: **YELLOW**
Firmer: Use **WHITE**

New Relief bushing

E Discard original fail safe valve. Install new relief bushing with ¼" ball and **WHITE** spring.

Stout Spring



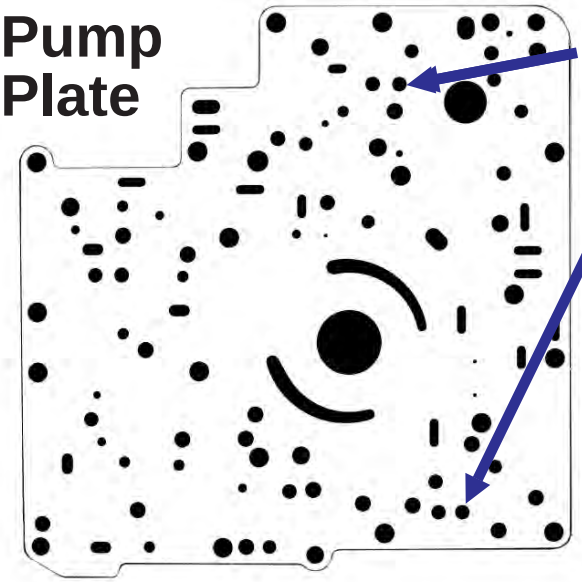
Relief Valve

LISTEN UP: Must ***reinstall*** original relief valve and spring here if VB had one.

Ⓒ **If VB *does not*** have relief valve, then install 5/16" plastic ball here**, even if VB did not have ball originally.**

F Install **Lube** VALVE if VB had one.

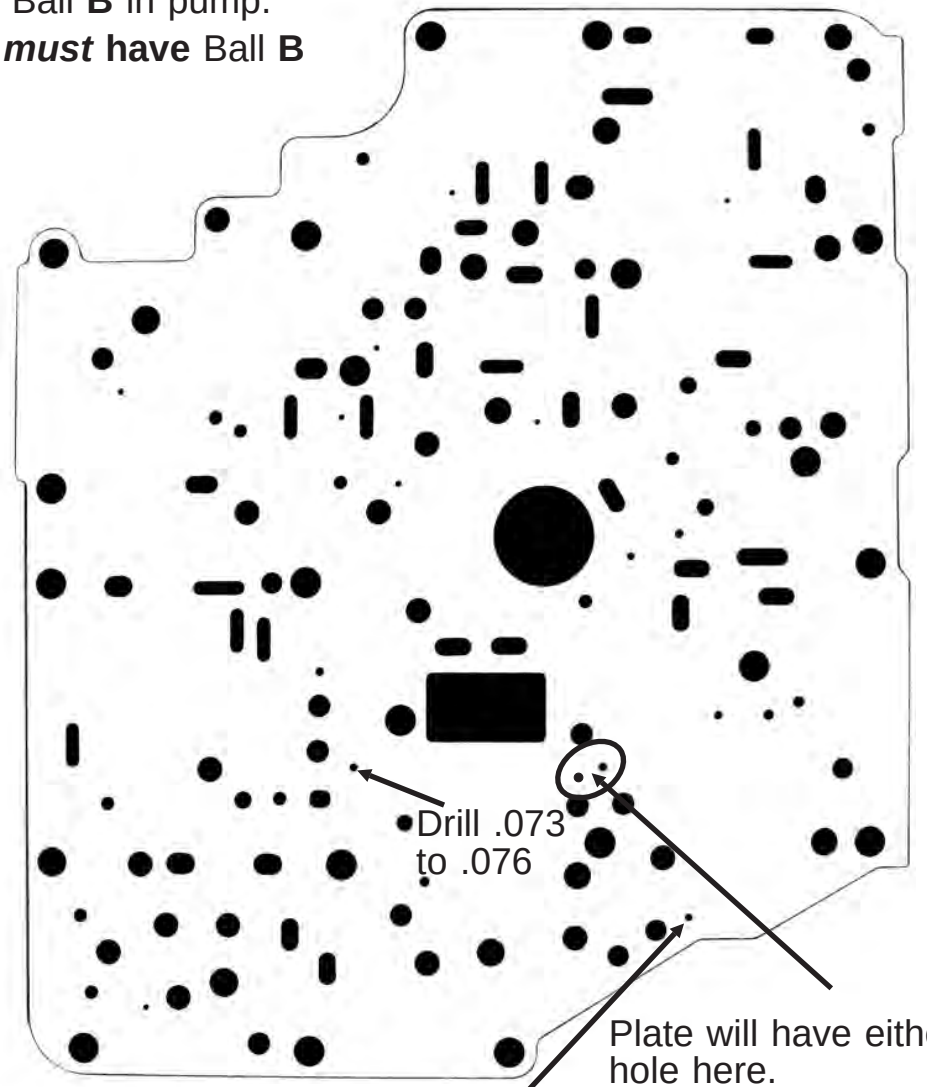
Pump Plate



No hole here: **No** Ball **A** in pump.
Has hole: Pump ***must*** **have** Ball **A**

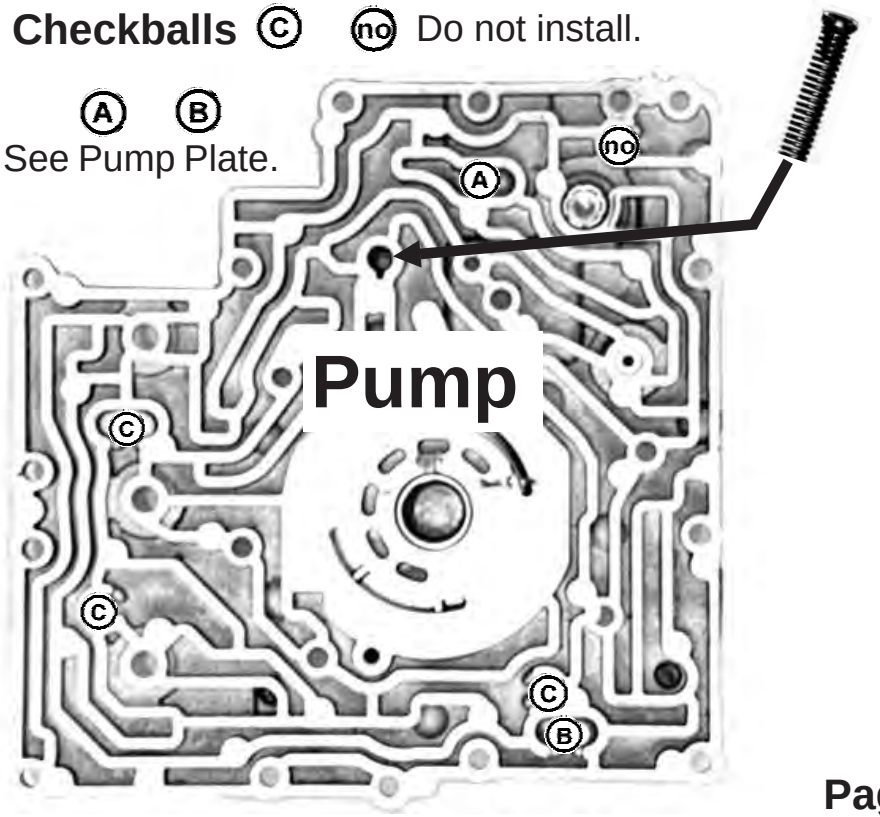
No hole here: **No** Ball **B** in pump.
Has hole: Pump ***must*** **have** Ball **B**

Valve Body Plate

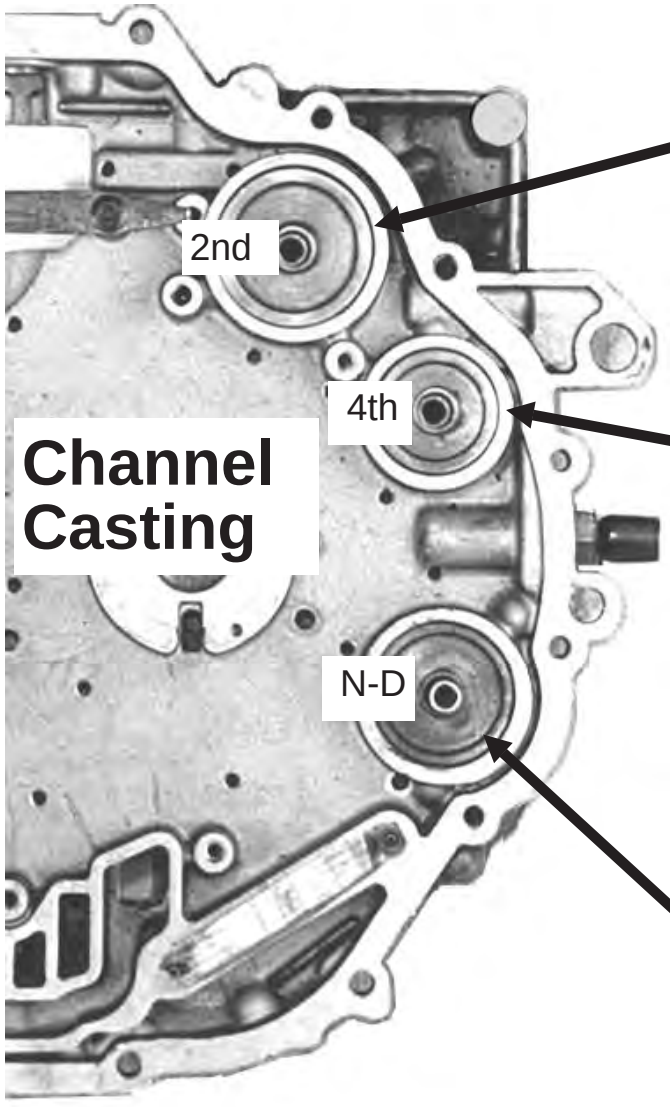


Checkballs (C) (no) Do not install.

(A) (B) See Pump Plate.



Accumulator Springs Identification 1996up



2nd Accumulator Springs


.125 x 1.600 x 1.500


.105 x 1.210 x 1.460


.082 x .900 x 1.540

Not used in all models.

4th Accumulator Springs


.095 x 1.200 x 1.780


.073 x .900 x 1.760

N-D Accumulator Springs


.132 x 1.490 x 1.750


.095 x 1.020 x 1.710

1st Type: Inner & Outer springs.


.133x.215 x 1.520 x 1.910

2nd Type: Single spring. Has ***oval*** shaped wire.

Over

READ THIS FIRST

Creating Quality Shifts and Avoiding Rework

1996-01 Vehicles: Came with Hi-Energy (Green) 2nd and 3rd clutches. During light acceleration the ECM commands pressure of 140 to 160 psi. Using brown clutches in these applications will cause rough shift complaint.

Even if the 2nd & 3rd plates look OK, Don't reuse them. They become glazed, hard, and lose their ability to hold which creates a long soft apply. Always install new friction plates. Hi-Energy does not mean the plate has more friction capacity, it means the plate will handle higher temperature without burning.

ALWAYS identify the year of vehicle

Due to exchange installations and mis-builds you may find many combinations coming in the door. 96up should be built with New Hi-Energy (Green) 2nd & 3rd clutch plates to match the ECM commands of pressure spike during shifts.

2nd Clutch wave plate

All 3.0L: Had 4 frictions and wave plate.

3.8L Before 1998½: Had 5 frictions and a wave.

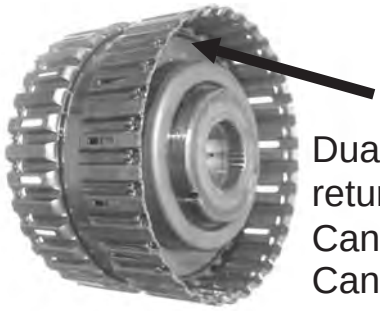
3.8L After 1998½: Had 5 frictions and no wave.

(Green) Hi-Energy 3rd plates with Kolene steels.

LISTEN UP: This trans can have shudders, clangs or bumps by using the wrong fluid:

Use Mercon V

(Green) Hi-Energy 2nd plates with Kolene steels.



Identify Piston

Dual 2nd clutch piston with heavy return springs shown Quick ID:

Can't see return springs = dual piston.

Can see return springs = single piston.

"Thanks for Listening"

The drum shown above with dual 2nd clutch pistons and heavy return springs was only used in 93-94 SHO Taurus, 96-99 Windstars with 3.8L engines. This drum also requires taller 2nd clutch hub. Using this setup or any part of this setup in another application can create complaints and failures.

OVER