

SK[®]G4A-B[™] Shift Kit[®] & Upgrade

Mazda G4A & Ford Probe 4EAT-A

Reduces/Corrects/Prevents

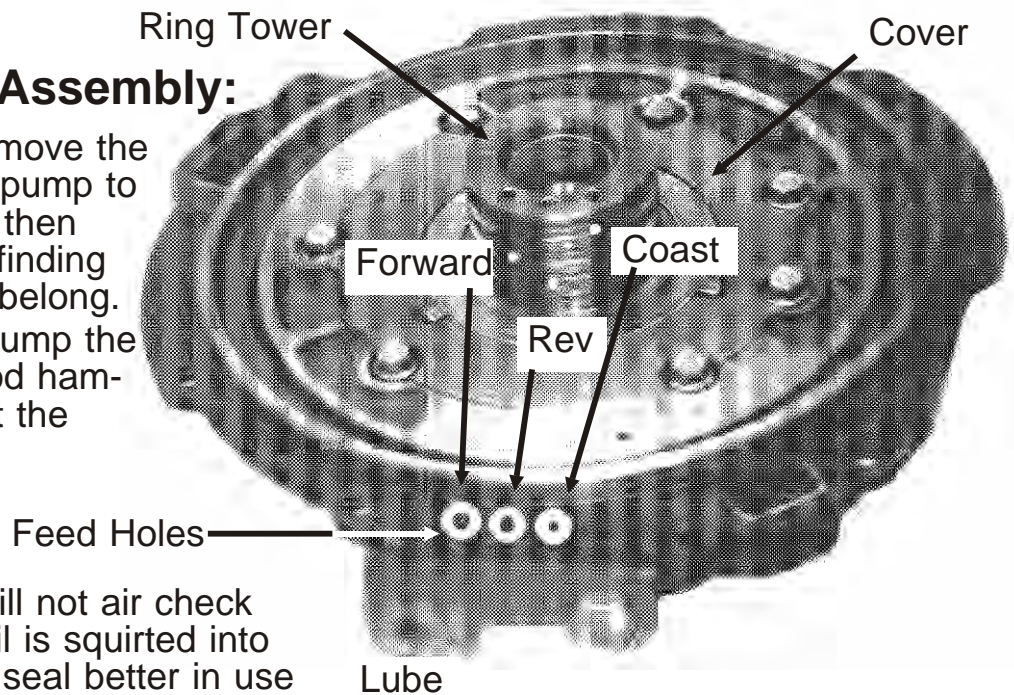
*Reverse clutch burnup—Bindup fwd or reverse—Bang 4-3
2-4 band burnup—No 1-2 shift when cold—Wrong gear
start*

A valve body set and pump gasket is available for rework or for installing this kit as a prevention in a trans that is still in good condition. Ask your local parts distributor for Precision International #K71900-2. This is a good little trans and you are going to make it twice as good as new. Don't forget to charge plenty, its' worth more fixed than a new one unfixed.

Kit installation is RED. Everything else is data to help you get it out the door, working right, on the first try.

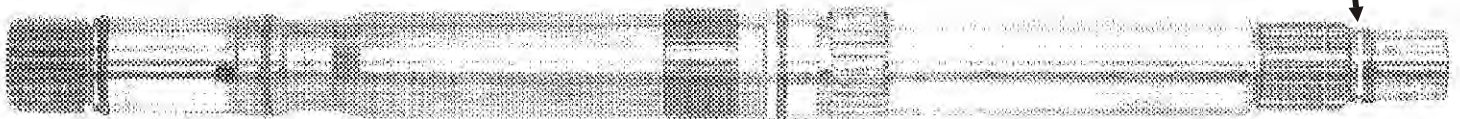
Pump & Cover Assembly:

CAREFUL: Don't remove the bolts and whack this pump to get it apart. You will then spend an extra hour finding out where little parts belong. Remove the bolts. Bump the ring tower with a wood hammer handle. Then lift the cover off gently.



The teflon rings will not air check unless plenty of oil is squirted into feed holes. They seal better in use because the drums are rotating.

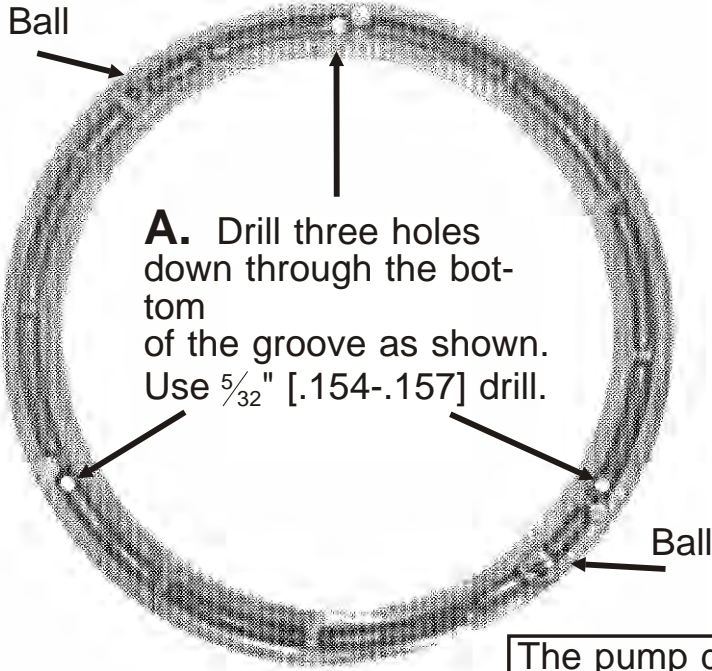
A new snap ring is furnished for shallow groove on the turbine shaft. OK to be loose in some grooves.



Do this trans a big favor: Crosshatch sand the drum where the 2-4 band rides with 60 to 180 grit emery.

1. Reverse Clutch Piston

Suck and blow two checkballs to make sure they are working.

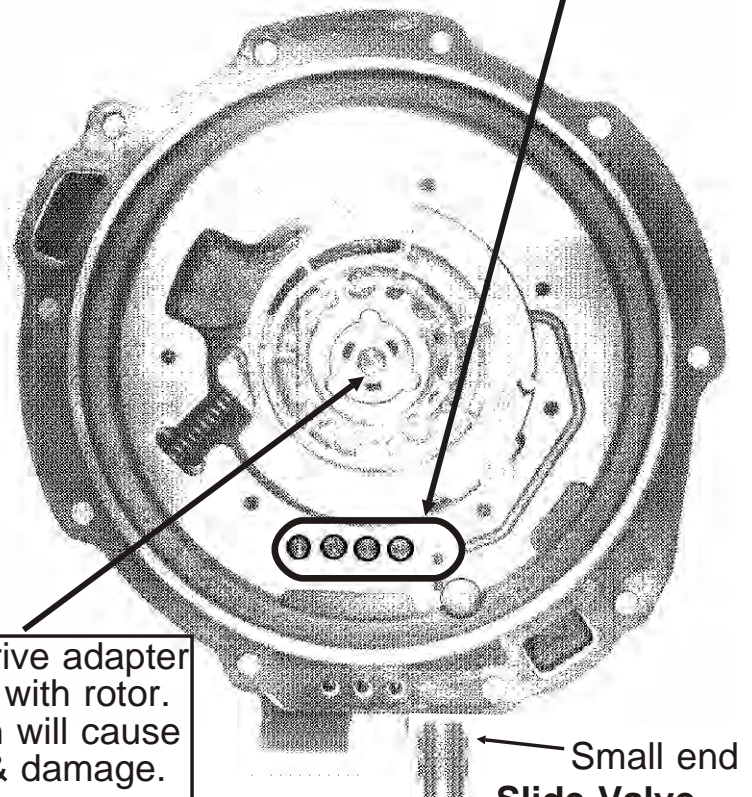


A. Drill three holes down through the bottom of the groove as shown. Use $\frac{5}{32}$ " [.154-.157] drill.

Ball

2. Pump Circuits

B. Install new O'rings and wire expanders. Select the size that fits recesses.



The pump drive adapter installs flush with rotor. Upside down will cause no endplay & damage.

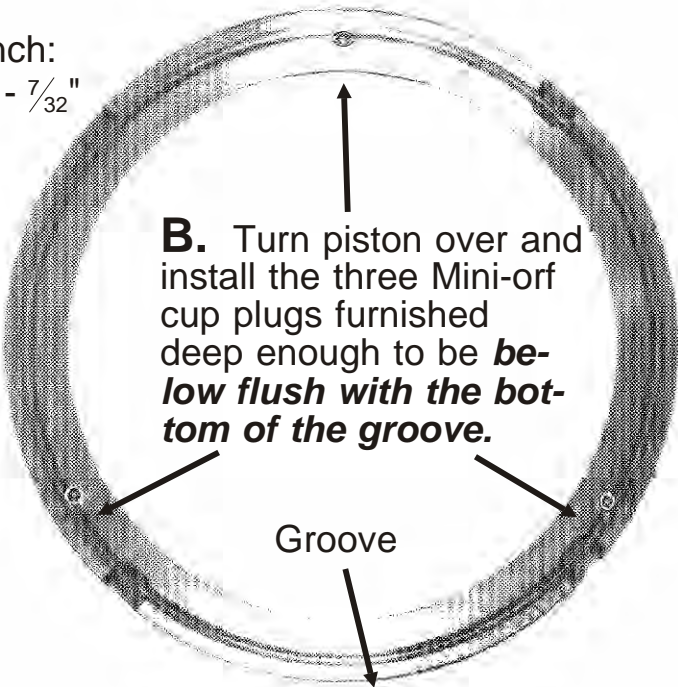
Small end Slide Valve

Reverse Piston

Bleed holes allows air to enter so that oil can get out.



Punch: $\frac{3}{16}$ " - $\frac{7}{32}$ "



B. Turn piston over and install the three Mini-orf cup plugs furnished deep enough to be **below flush with the bottom of the groove.**

Groove

3 Mini-orf cup plugs

A.

Install new GREEN slide valve spring.

GREEN G4-pmp-51

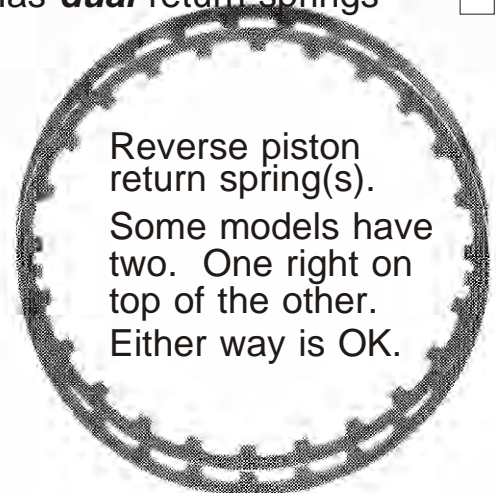


Plug

IMPORTANT: "X" correct box:

Has **single** return spring

Has **dual** return springs



Reverse piston return spring(s). Some models have two. One right on top of the other. Either way is OK.

Valve Body Identification

If Valve Body has four solenoids:

Use pages 3 through 8.

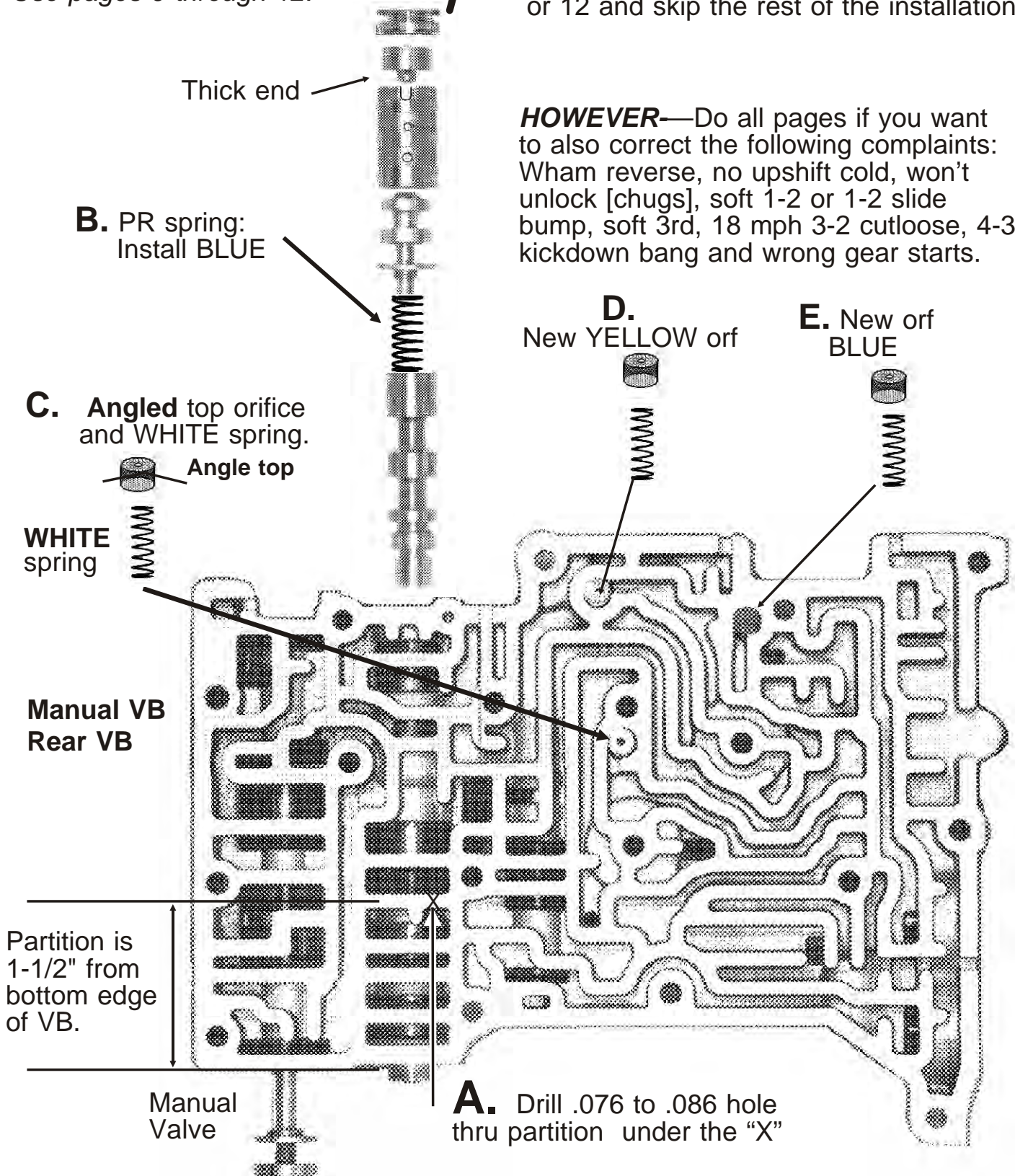
If Valve Body has ONE solenoid:

Use pages 9 through 12.

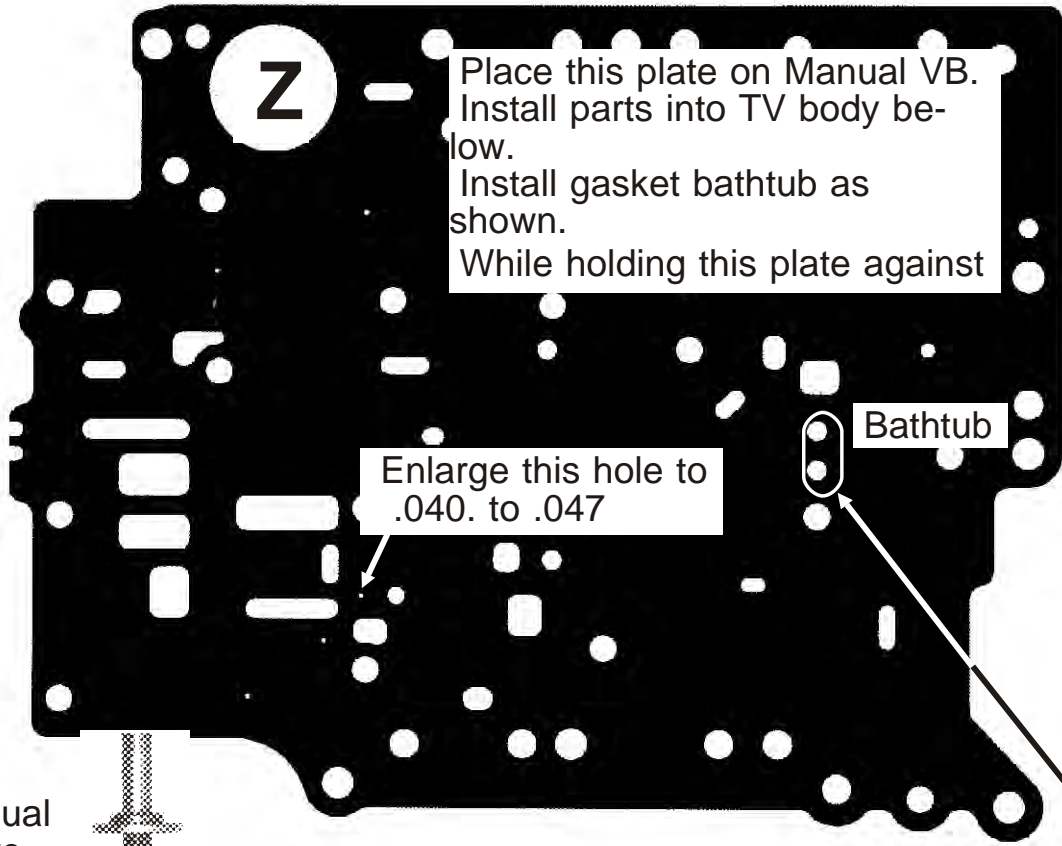
Read this **BEFORE** doing this page:

If you think VB is clean enough, and you just need to correct the main complaints of reverse clutch failure and 2-3 cutloose or no 3rd when hot, you can go to page 7 or 12 and skip the rest of the installation.

HOWEVER—Do all pages if you want to also correct the following complaints: Wham reverse, no upshift cold, won't unlock [chugs], soft 1-2 or 1-2 slide bump, soft 3rd, 18 mph 3-2 cutloose, 4-3 kickdown bang and wrong gear starts.



Gasket that goes against this VB has three holes bigger than the orifices. Stick gasket to plate with Vaseline.



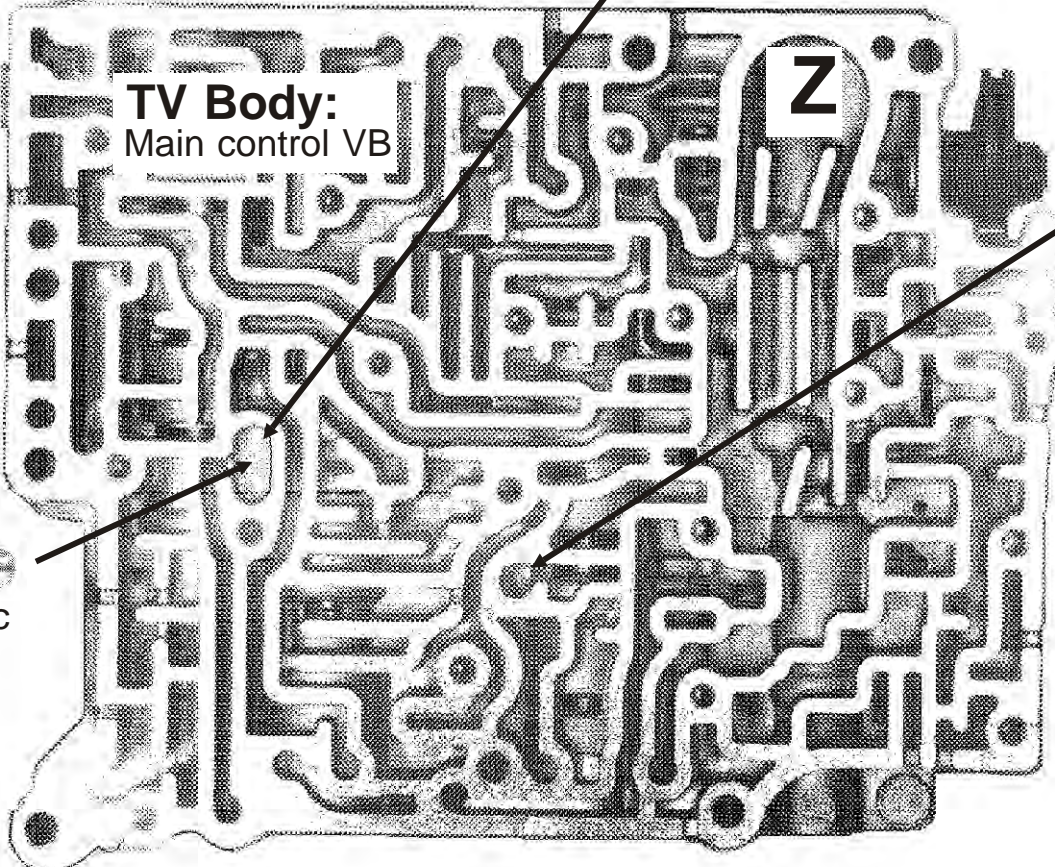
Z - Place this plate on Manual VB. Install parts into TV body below. Install gasket bathtub as shown. While holding this plate against

Enlarge this hole to .040. to .047

Bathtub

Manual Valve

Find gasket that matches bathtub in Valve Body. Stick it on the plate here.



TV Body:
Main control VB

Z

A.
New SILVER orifice



Plastic Ball

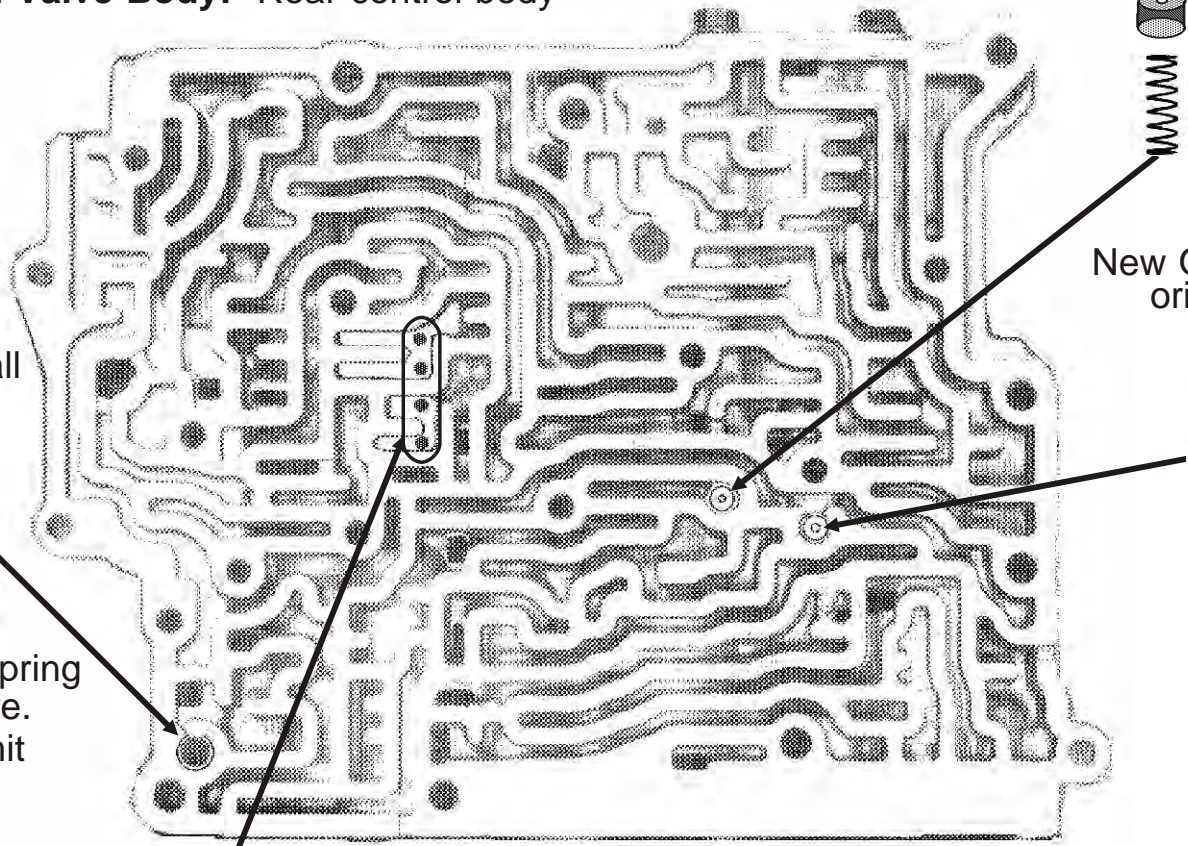
Accm Valve Body: Rear control body

A. New SILVER orifice

Steel Ball
1/4"

Match spring
to picture.
TV Limit

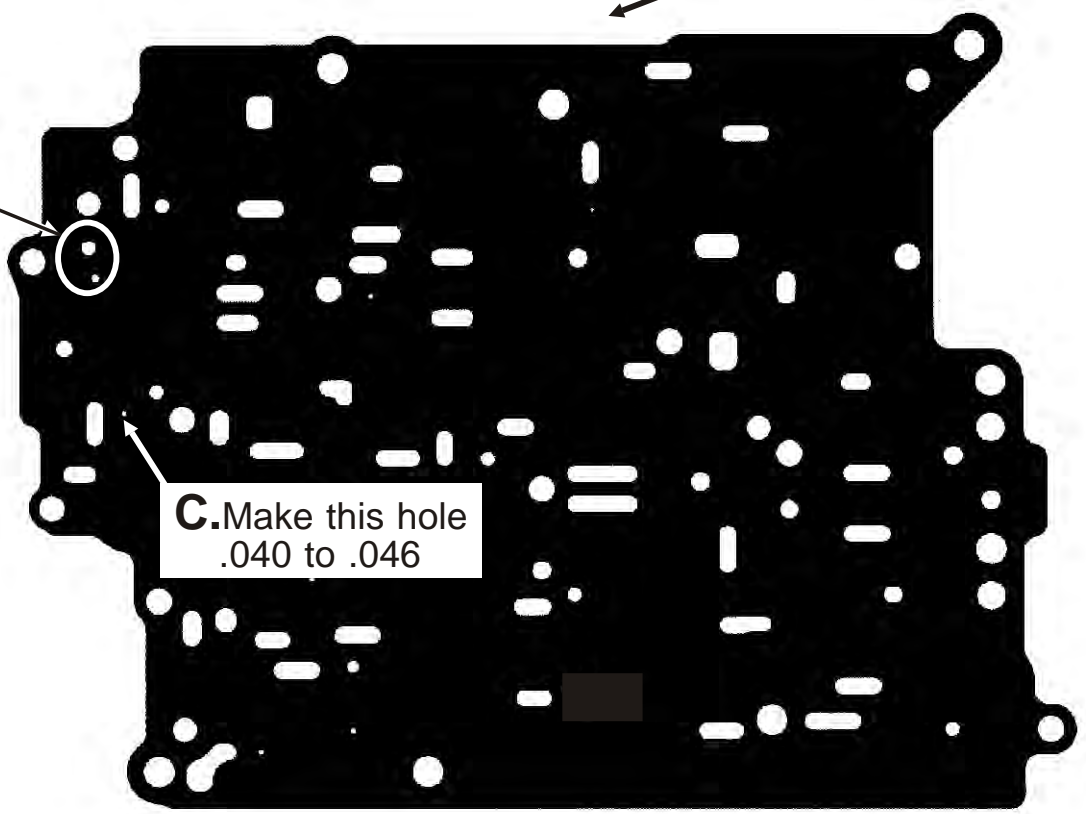
B.
New ORANGE
orifice



Gasket: Has four 1/8" holes here, in a straight line. Stick it under this plate, and place plate on the Accm Body. Then stick gasket that fits main body on top of this plate.

CAREFUL HERE:
Make sure the gas-
ket matches these
two holes perfectly.
Don't cut gasket,
you just have to
have the right one.

C. Make this hole
.040 to .046



Main Valve Body

Accm body side

Converter bypass:
Match spring to picture.
Listen: Ball in FIRST



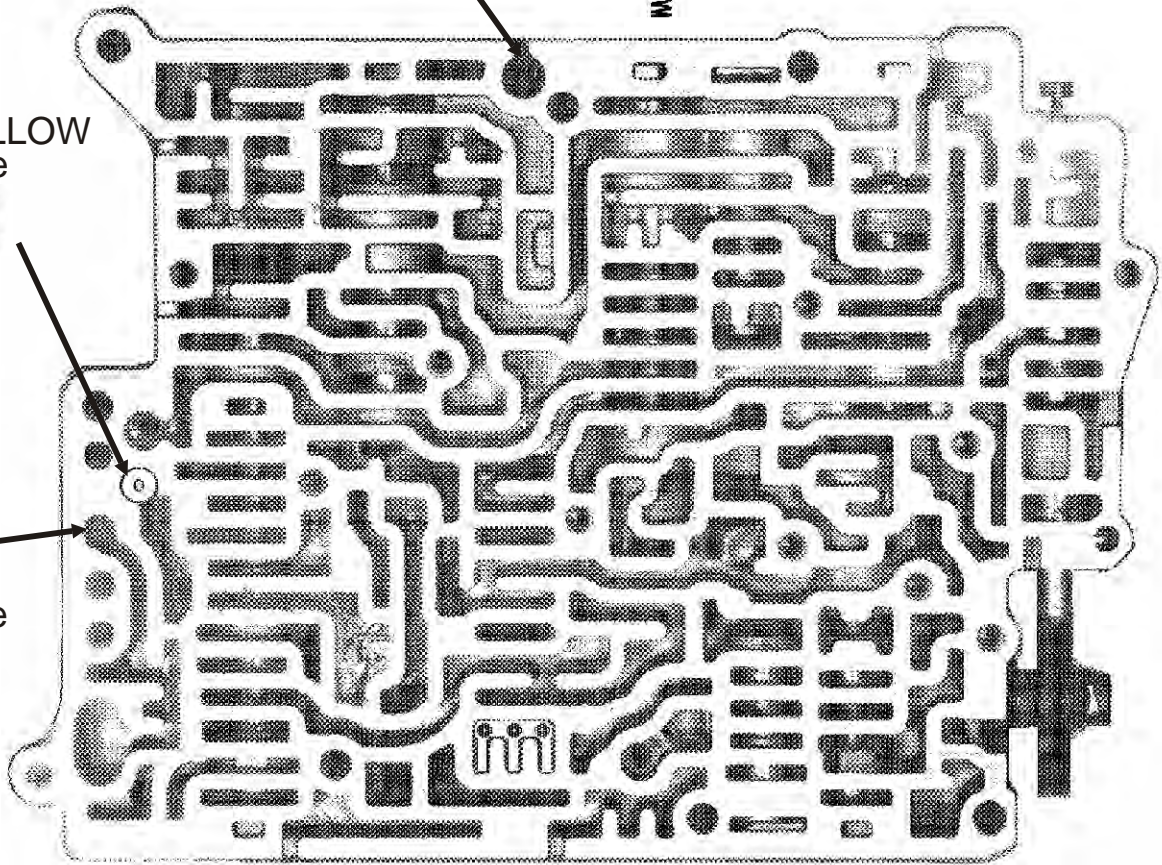
A. 1-2 TV valve:
Install new ORANGE in-
ner and outer springs



B.
New YELLOW
orifice



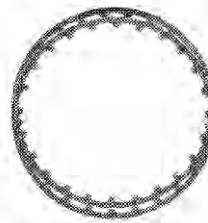
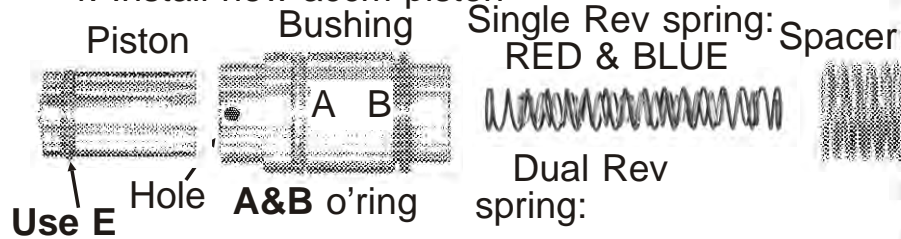
CAREFUL:
Nothing here



Gasket: Has big hole at orifice and conv bypass location.

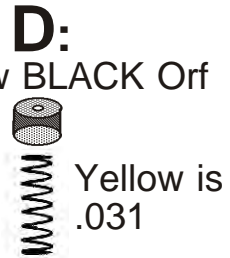
A: Does trans have *single* or *dual* rev clutch return spring?

1. Discard N-R accm piston. 2. Install spacer & bushing.
3. With single rev spring: Use RED & BLUE
With dual rev spring: Use RD, BLUE & WHITE
- Don't know which??: Use RED & BLUE
4. Install new accm piston



Reverse piston return spring(s).

Some models have two. One right on top of the other.
E92Z-7E085-E
FU9A-19-551



1-2 Accm: No turbo
Use A&D or A&F



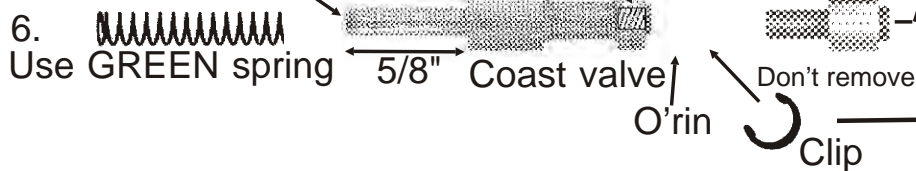
Turbo models: Reuse the inner teflon seal.



E: Bypass Valve
Install RED spring

B. Coast Valve Upgrade:

1. Install O'ring in the end groove.
2. Insert spacer into valve body
3. Install clip thru VB passage
4. Grind 1/8 to 5/32 flat across land.
5. Grind stem to fit picture.



Use A&F

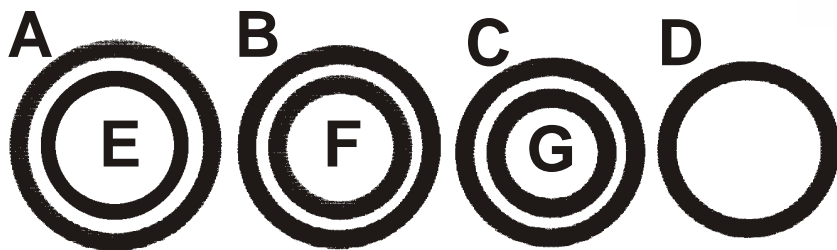
N-R Accm

N-D Accm

ACCM BODY

2-3 accm is not a common cross leak problem. It's deep in trans next to transfer gears. Air check it from the case. If its tight, you can skip working on it.

C: With alum accm pistons



C: With plastic accm pistons

Clean the sides of original teflon rings, one at a time, and reinstall them.

Correct gasket has holes bigger than orifice or checkballs.

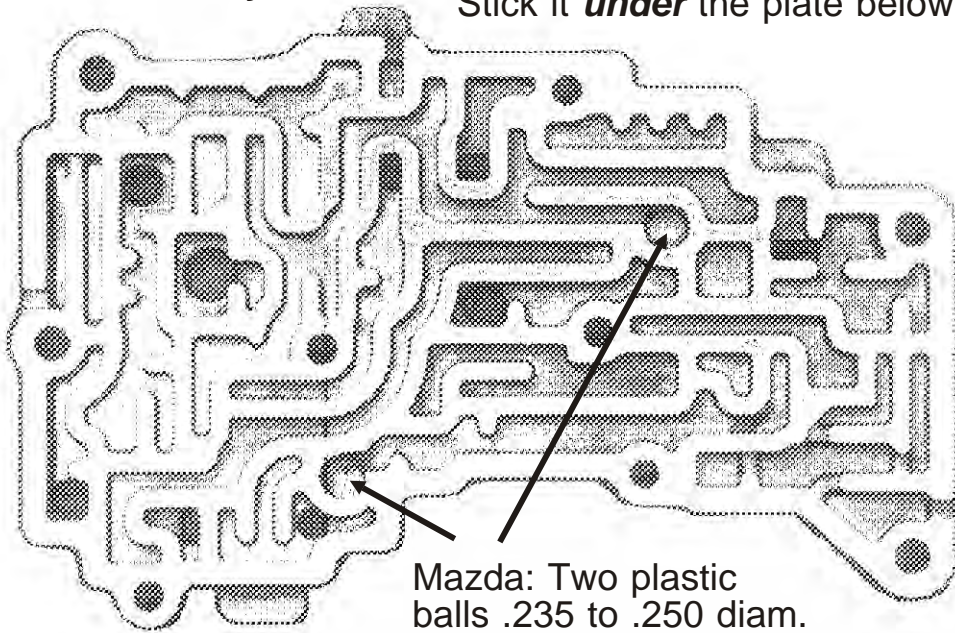
2-3 accm

Use C & G

2-3 Accm

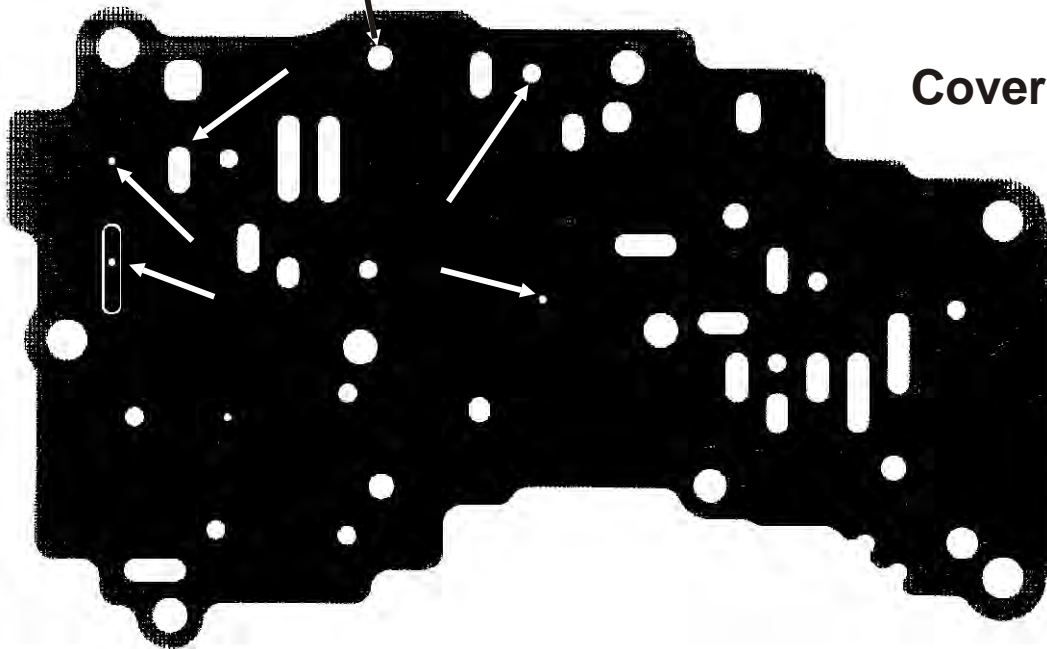
Cover Accm Body

The gasket that goes against this cover has a teardrop at the checkball locations. Stick it ***under*** the plate below.



Mazda: Two plastic balls .235 to .250 diam.
Probe: Don't use balls.

Gasket on this side of plate does not have teardrops, and the largest hole is here.

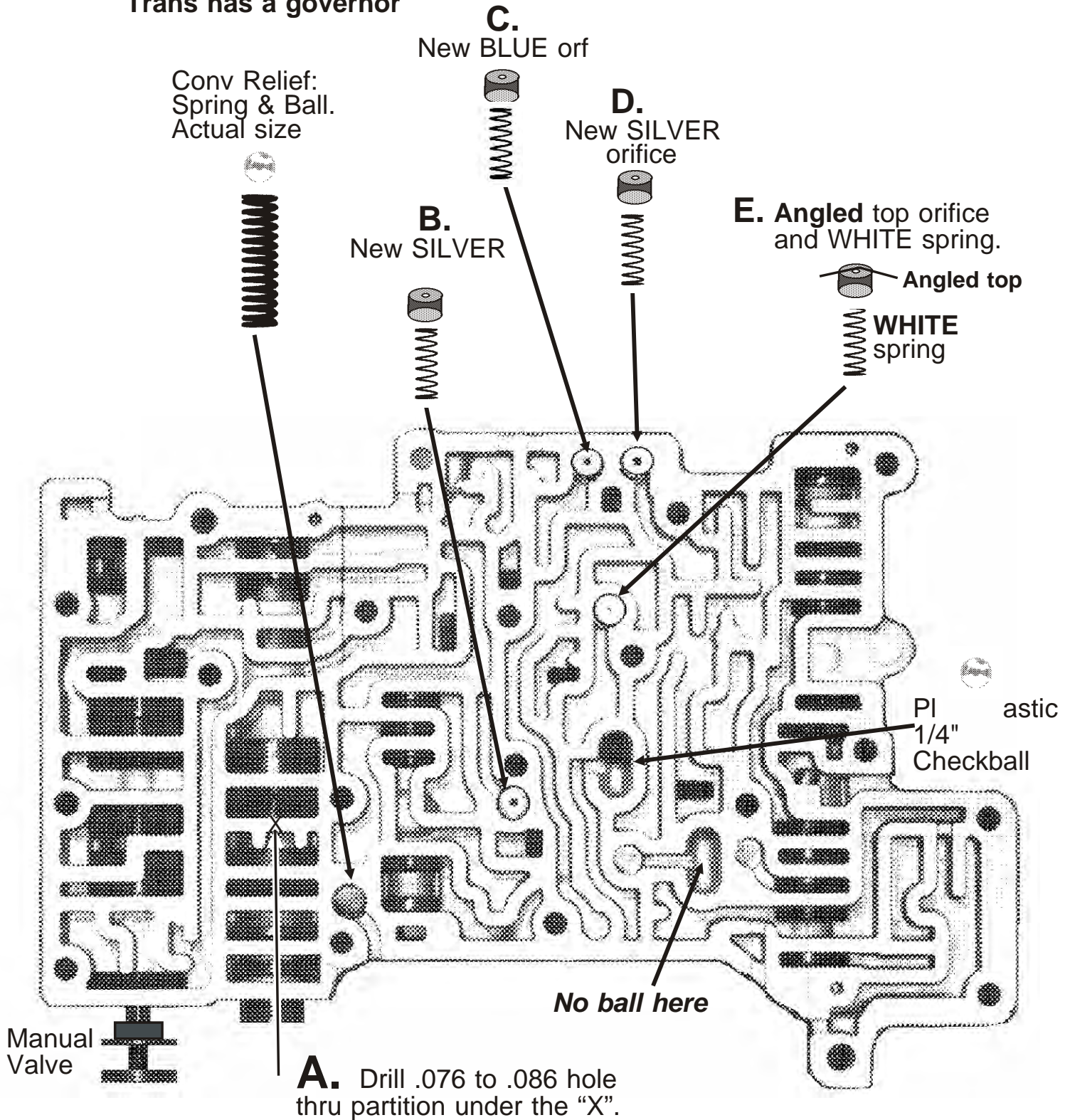


Cover Plate

Be very CAREFUL HERE: Look carefully at both gaskets to be sure they do not cover holes at white arrows. Cut holes in gasket if needed. A missing hole in gasket will cause brutal 1-2 shift.

Mazda G4A-HL & FU06 [Non-computer types]

Valve body has ONE Solenoid.
Trans has a governor



Gasket: Has two bathtubs and holes big enough to fit over the cupped orifices.
Stick gasket to plate with Vaseline or TransJel—Not grease.
Hold the plate against this casting while installing it against the main valve body.

Main Valve Body
Manual body side

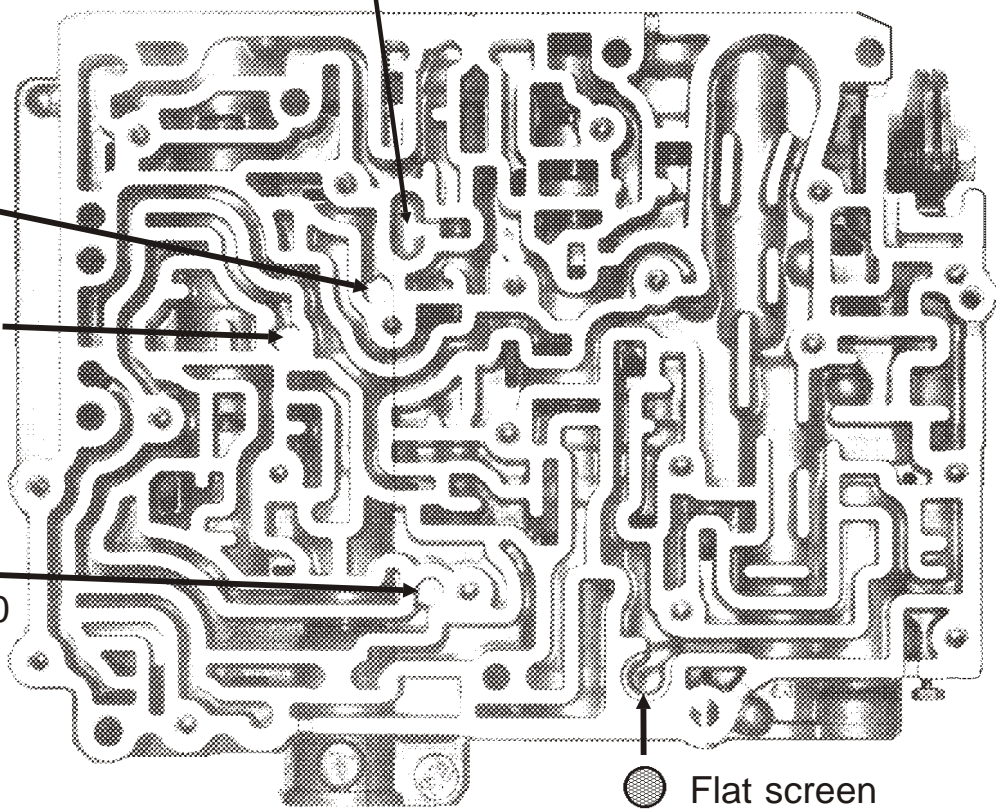
Checkball
1/4" steel

Gasket: Has bathtub at checkball location.
Stick gasket to plate with Vaseline—**Not grease**

Orifice
.039-.053
[L/S-Coast]

Nothing
goes

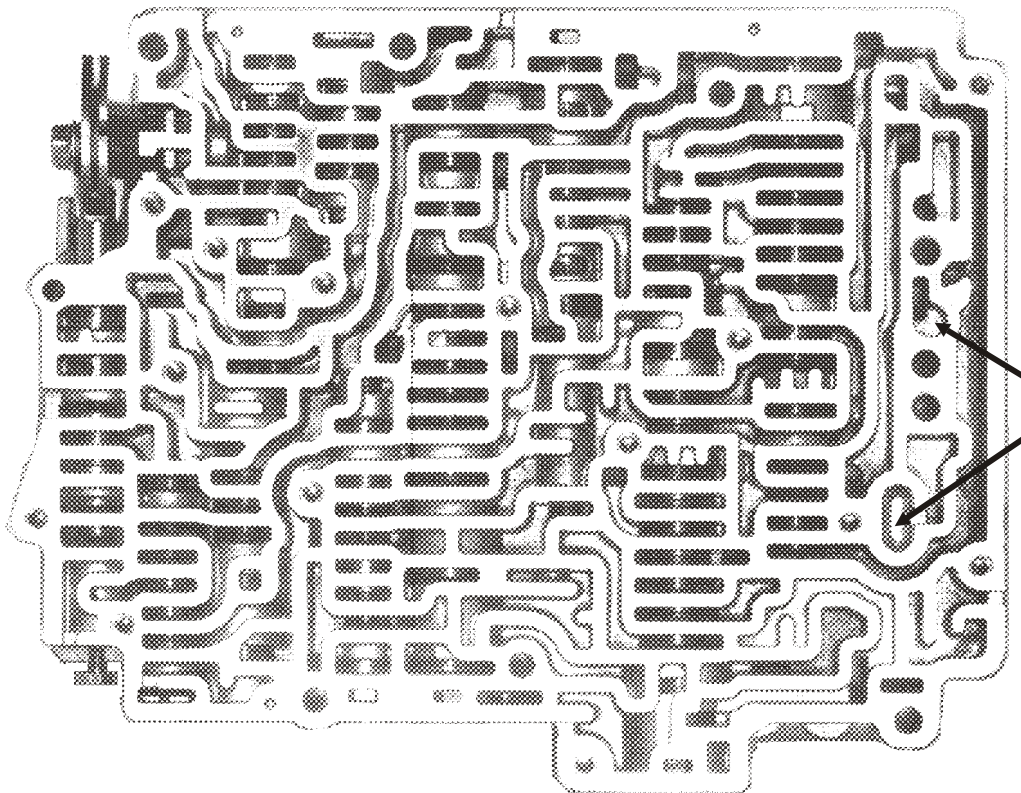
Orifice
.059 to .080
[BR/C/by]



Flat screen

Main Valve Body
Accm body side

Gasket: Has bathtub at lower checkball location.
Stick to plate with Vaseline or TransJel—**Not grease**



Checkballs
1/4" steel

Middle plate

Stick gaskets to plate

Gasket on other side of this plate has bathtub here.

Gasket this side has four holes for orifices and no bathtub.

A. New YELLOW orifice



Nothing here

Accm Valve Body Main VB side

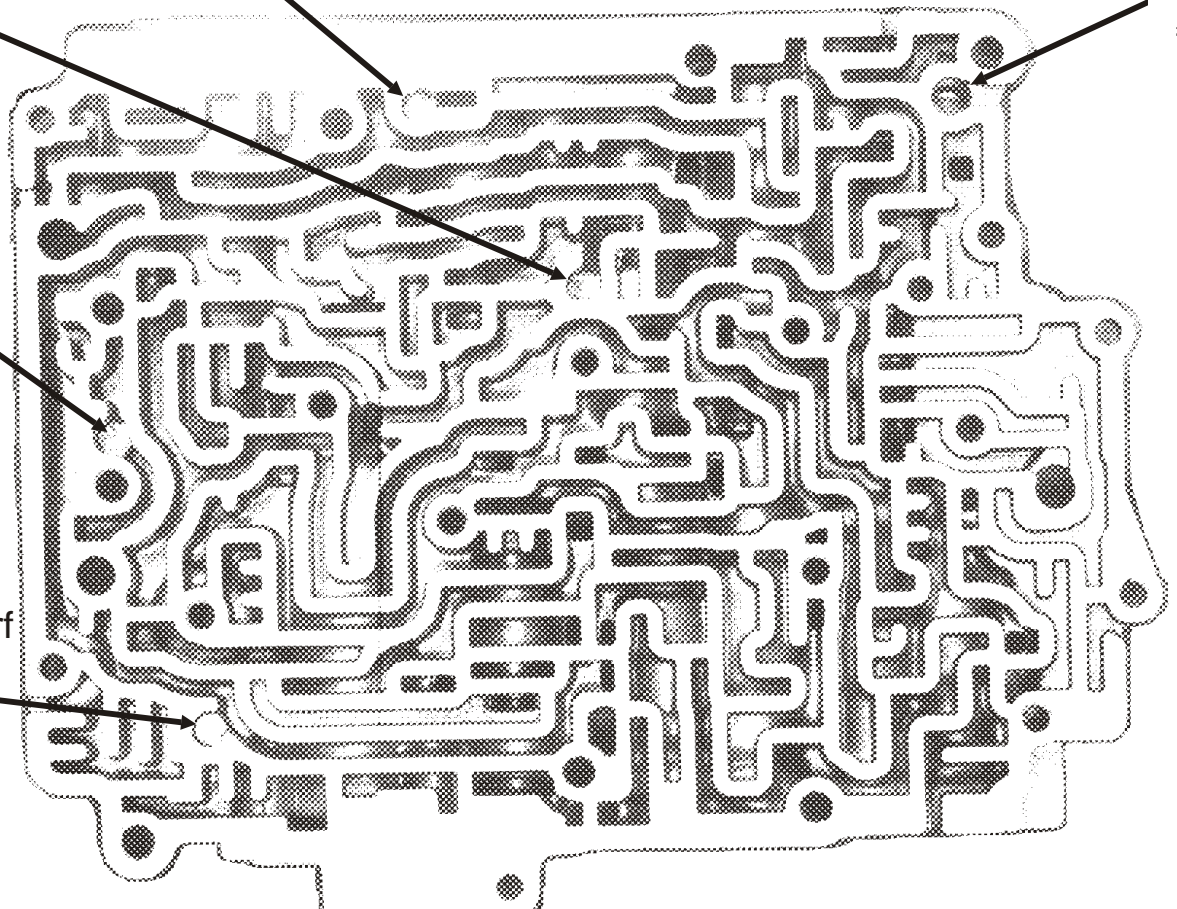
Match spring to picture. TV relief



B. New YELLOW



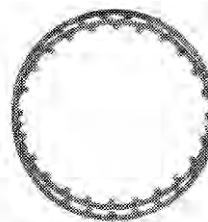
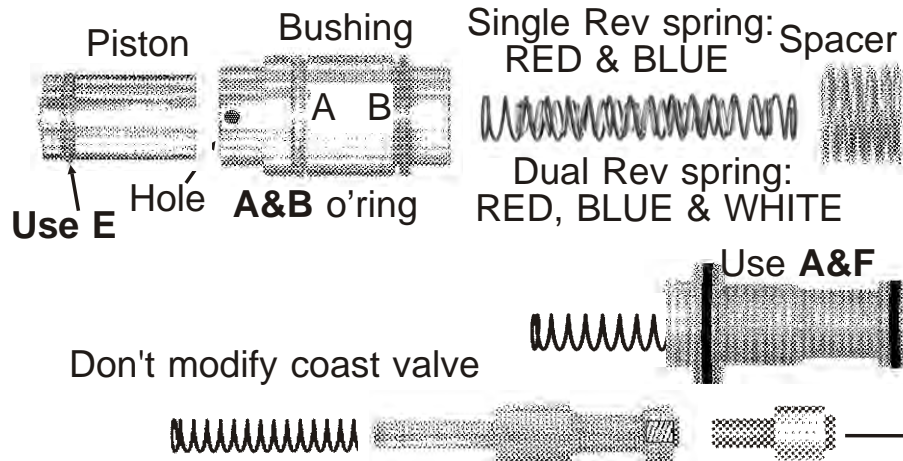
C. New BLACK orf



Gasket: Does not have any bathtub. Has holes big enough to fit over the orifices as shown above. Stick gasket to plate.

A: Does trans have *single* or *dual* rev clutch return spring?

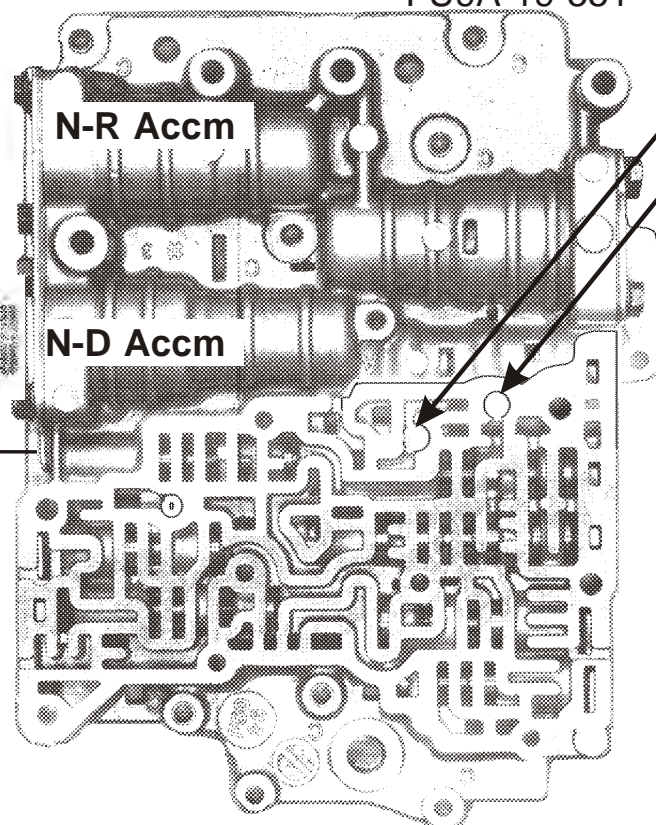
1. Discard N-R accm piston. 2. Install spacer & bushing.
3. With single rev spring: Use RED & BLUE
With dual rev spring: Use RD, BLUE & WHITE
Don't know which??: Use RED & BLUE
4. Install new accm piston



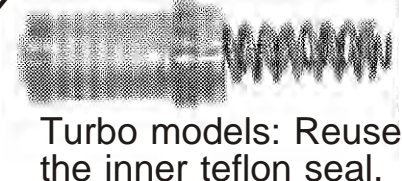
Reverse piston return spring(s).

Some models have two. One right on top of the other.
E92Z-7E085-E
FU9A-19-551

Two .235 to .250 (1/4) plastic balls



1-2 Accm: No turbo
Use A&D or A&F



Turbo models: Reuse the inner teflon seal.

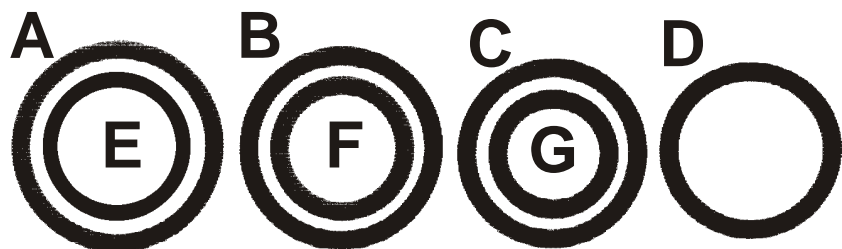


RED

E: Bypass Valve
Install RED spring

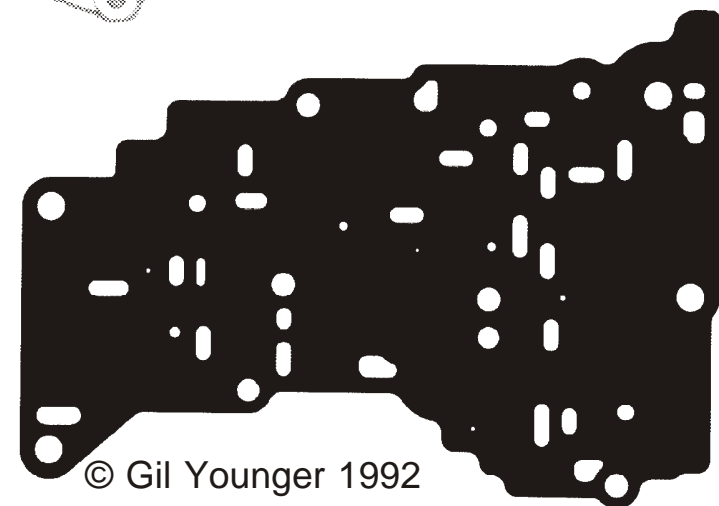
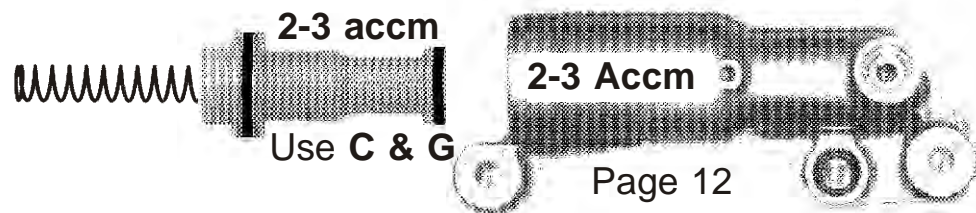
C: With alum accm pistons

Discard teflon seals. Install self-cleaning O'rings.



C: With plastic accm pistons

Clean the sides of original teflon rings, one at a time, and reinstall them.

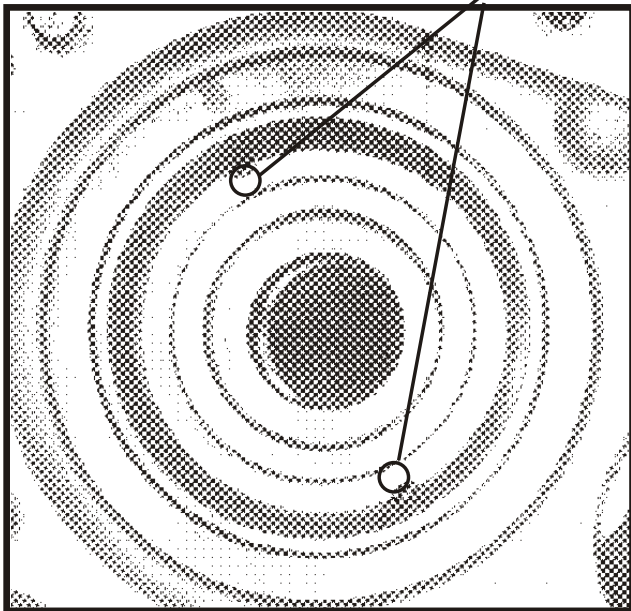


READ FIRST: G4A Success Information

Prevent front seal blowout.

The bearing race covers 2/3 of the front seal drainback holes.

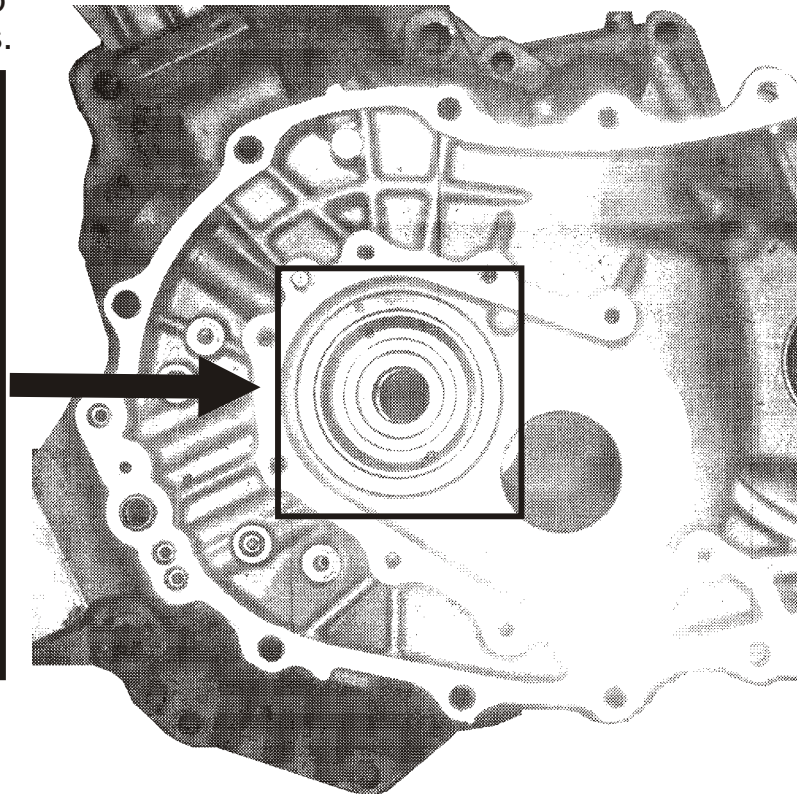
1. Use 1/4" drill. Drill about 1/4" deep just inboard of the moon shaped holes.



2. Then re—aim drill outboard and drill into the drainback holes.

3. Do not use goop on front seal. Install front seal clean and dry.

Bell housing



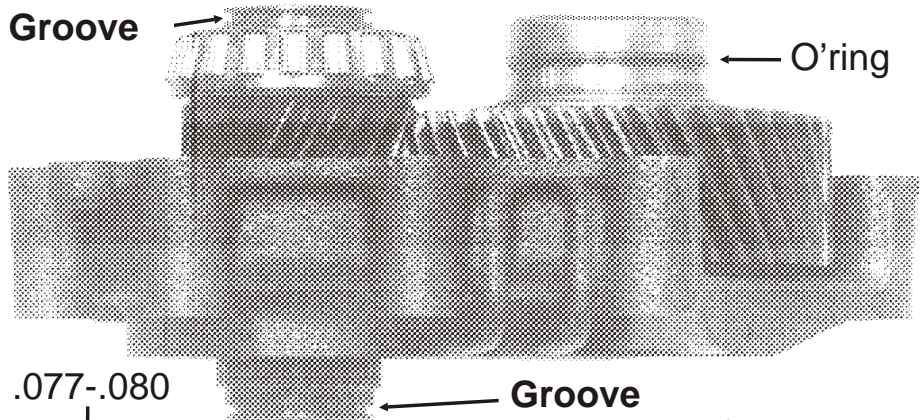
Transfer Gear Rings

Complaints: 3-4 clutch burn-up;
Runaway instead of 2-3 shift;
Long and soft 2-3 upshift.

Two things effect these rings.

Fix the rings: Grind a 45° chamfer about 1/3 of the way across the OD. Skip the portion close to the scarf cut. Run your finger nail around the edges to scrape off any fringe or grinding burrs. Then pull the ring out flat once to open it up. Install it in groove with Vaseline. *Some replacement rings are too narrow or wide. All Teflon rings in this trans must be .077 to .080 wide.*

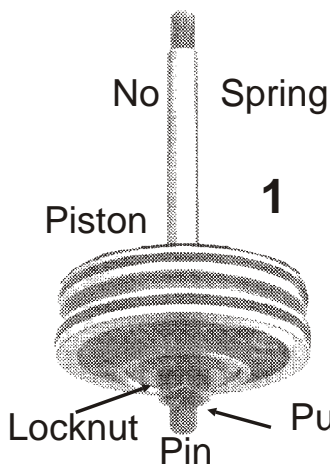
Chamfered ring: Install chamfer toward gears



.077-.080

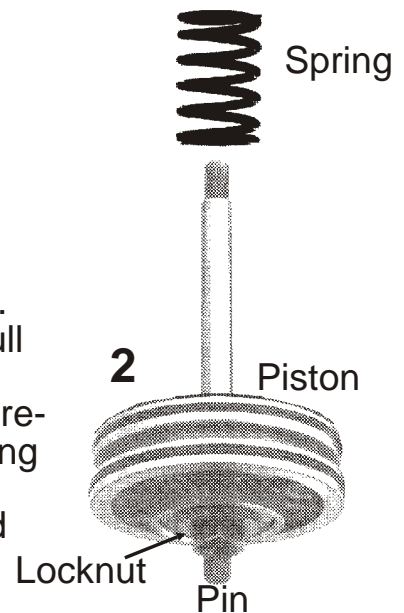


Chamfered ring: Install chamfer toward gears



Band Adjust: Valve body removed

- A. Remove return spring and seals.
- B. Install piston, pin, cover, and snap ring.
- C. Adjust pin until it will no longer push/pull wiggle in and out. Finger-tighten locknut.
- D. Remove entire assm, install seals and return spring. Reinstall into case while holding band up to engage the pin.
- E. Adjust pin 1 turn counter-clockwise and

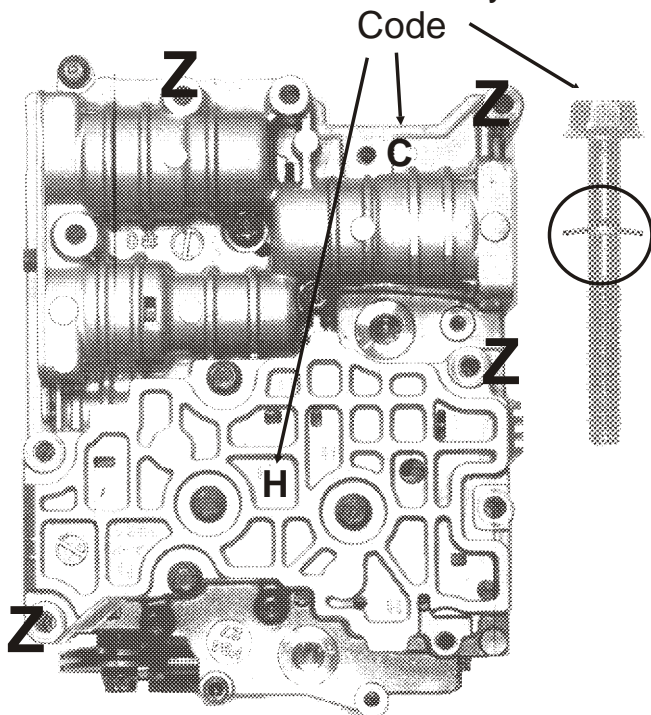


Band adjust: With VB installed

- A. Loosen locknut.
- B. Turn pin clockwise until snug with short wrench.
- C. Turn counter-clockwise 1-1/2 turns and tighten locknut.

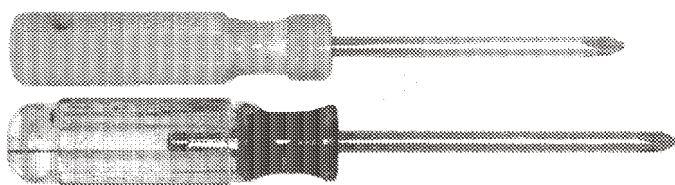
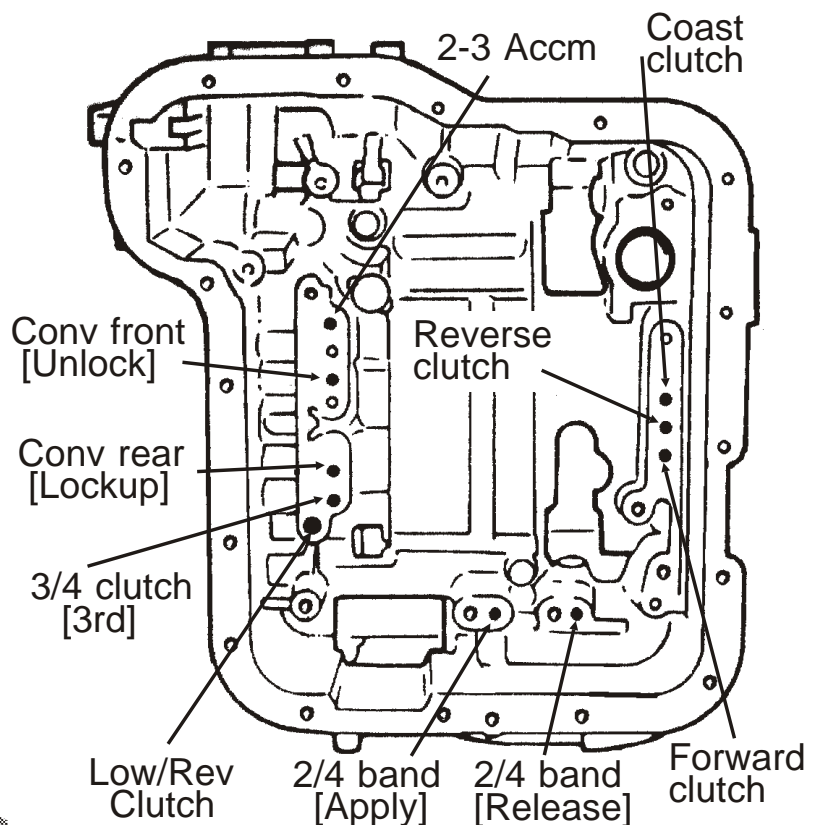
Valve Body

Bolts have special angled washers. The high side goes towards bolt head. Bolts have an alphabet **code** on head and matching **code** next to each hole in the VB. That's where they install.



Air checking

With pump oil can, pump 20 squirts into circuit. Apply with air. The 3/4 clutch may take 40 squirts to apply. With SK® G4 kit installed reverse has three mini air bleeds, so don't expect it to be air tight.

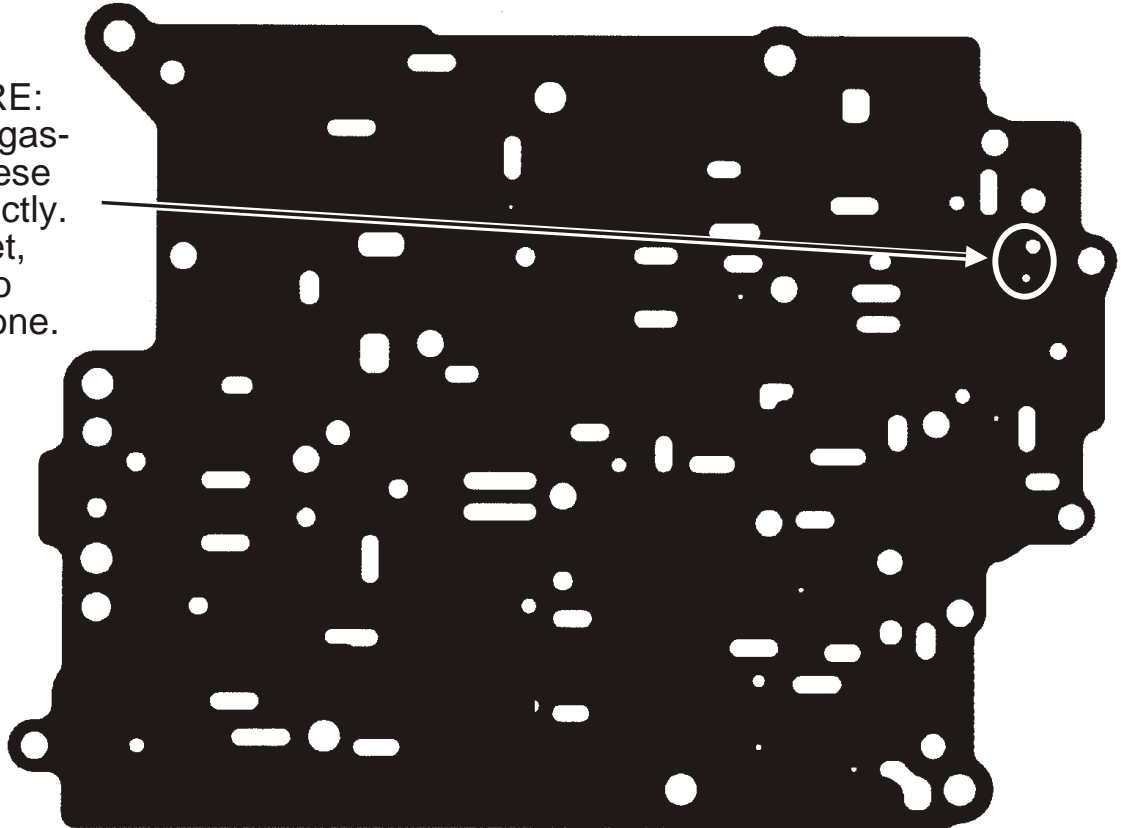


VB assembly: Use two or more #2 phillips to line up holes "Z".

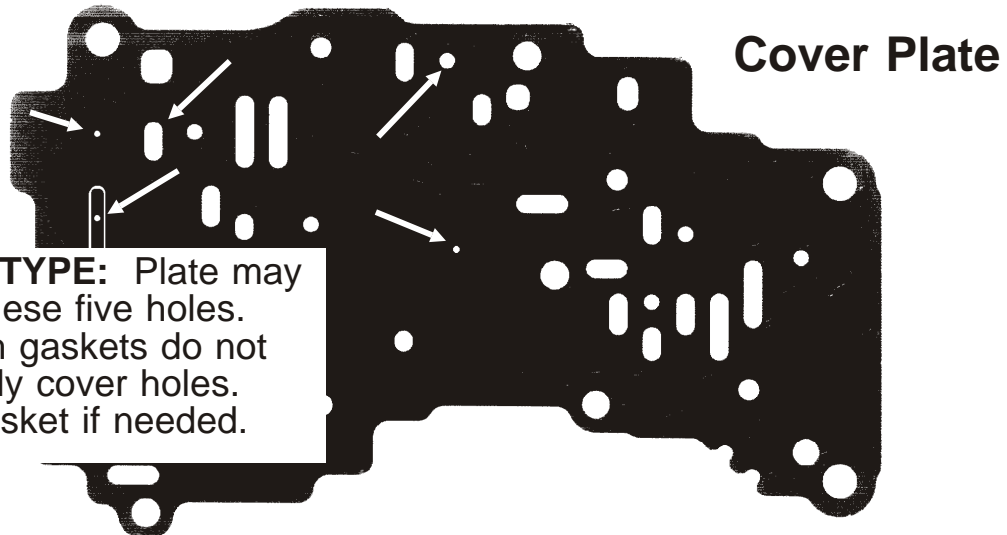
G4AEL—ECAT—4EAT-E [Electronic type]
COMPLAINT: Harsh 1-2, all shifts harsh.
QUALIFY: Pressure doe not return to min [48 to 65] at lift throttle
CAUSE: Gasket covers TV balance hole

G4AHL [Governor type]
COMPLAINT: Late shifts.
QUALIFY: Pressure doe not return to min [48 to 65] at lift throttle
CAUSE: Gasket covers TV hole

CAREFUL HERE:
 Make sure the gas-
 gasket matches these
 two holes perfectly.
 Don't cut gasket,
 you just have to
 have the right one.



COMPLAINT: Rough [even brutal] 2-3 upshift.
CAUSE: Hole covered with gasket [2-3 bypass Ex/TV hole]
SOLUTION: Cut hole in BOTH gaskets as needed.



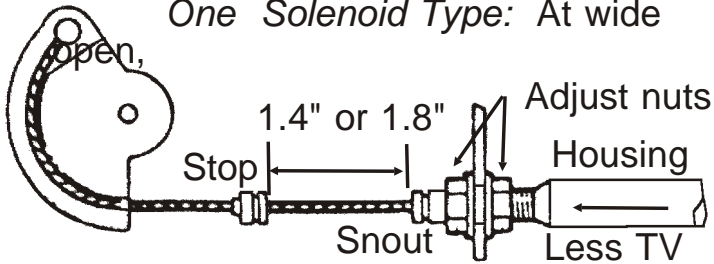
ELECTRONIC TYPE: Plate may
 have ANY of these five holes.
 Make sure both gaskets do not
 cover or partially cover holes.
 Cut holes in gasket if needed.

[G4AHL-Gov type, not shown.]

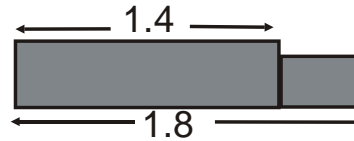
Typical TV Adjustment: [not all models]

A. Four Solenoid Type: At wide open throttle, adjust to 1.4 from stop to snout.

One Solenoid Type: At wide



Cut out a rectangle for use as gauge.



- B.** Make several 1-2 shifts at 21-22mph. The shift should be short and bumpy.
- C.** Adjust housing towards the cable until 21-22mph 1-2 shift is smooth.

Fluid level: After hot road test. Check in park at 2000 to 3000 RPM. Fluid level should be @ 5/8" ABOVE full mark—About even with start of twist.



Have You Met “Junior”?

***New!! “Junior” type valve body kits
Simple—Easy—Quick—Lo cost***

- SK® A4LD-Jr™** 3rd clutch failure, Lockup chug, Reverse bang
- SK® 440-Jr™** No or late upshift, Bad shifts & 2nd clutch failure
- SK® 440-RK-Jr™** Slide-bang & Harsh reverse
- SK® 604-Jr™ No Limp Kit™** Limp in, OD clutch & Soft shifts
- SK® 700-Jr™** Late shifts, Sticking TV & 3-4 clutch failure
- SK® 400-RK-Jr™** Fixes 400 harsh reverse—**Even the bad ones.**
- SK6-Truck™ Diesel & Gas** Early/Late shifts—No Max 1-2—Soft shifts

Converts gas valve body to diesel

Available from your parts distributor