2004R-LU-NT 2004R Hydraulic Lock Up Kit (No Tools-Refill)

For VB's missing inner shift TCC valve bore.
(models with only 1 Dummy plug)

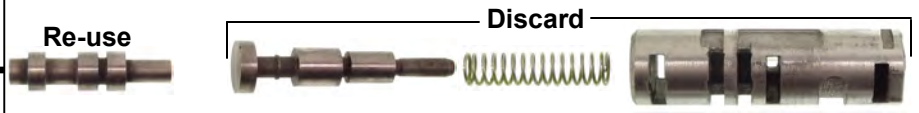
Enhanced Valve parts provided allow you to tune TCC shift point with **no electrical required!**
Shifts up and down just like any other gear!

For Professional Use Only!

Technical level required is **HIGH**
for required VB boring!

Do this only if your VB HAS Factory Shift Valves.

Factory GM TCC Shift Valve Assy. (Early VB's)



Re-use original shift valve, Install New Shift TV Valve, Red Spring & Bushing. Check plate for "B" hole. Install 5/16 ball in solenoid.
See last page for plate and solenoid data.

Single Dummy Plug

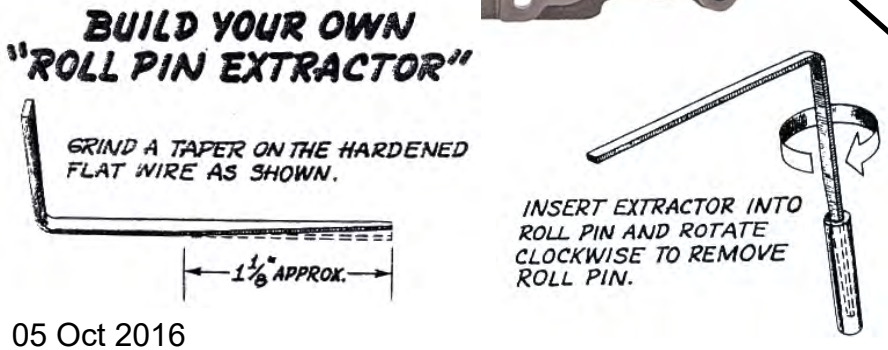
If your VB has NO TCC valves but it does have a Dummy Plug, this kit is what you need!

VB Boring Instructions Start on Page 2!
Return to this page after boring is completed.

Install roll pin upward from bottom side of VB.

New **Orange** Spring for **H.O.** VB & Gov
OR
New **Red** Spring for **Standard** VB & Gov.
See Last Page to ID and match VB & Gov parts!

Roll Pin Installs here!
No rotated bushing to worry about!



05 Oct 2016

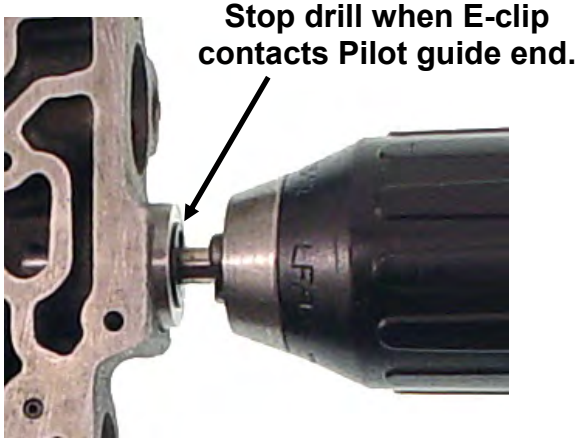
Tools Included With This Product

Small Pilot Guide | Large Pilot & Bottom Chase Guide | Final Reamer Guide

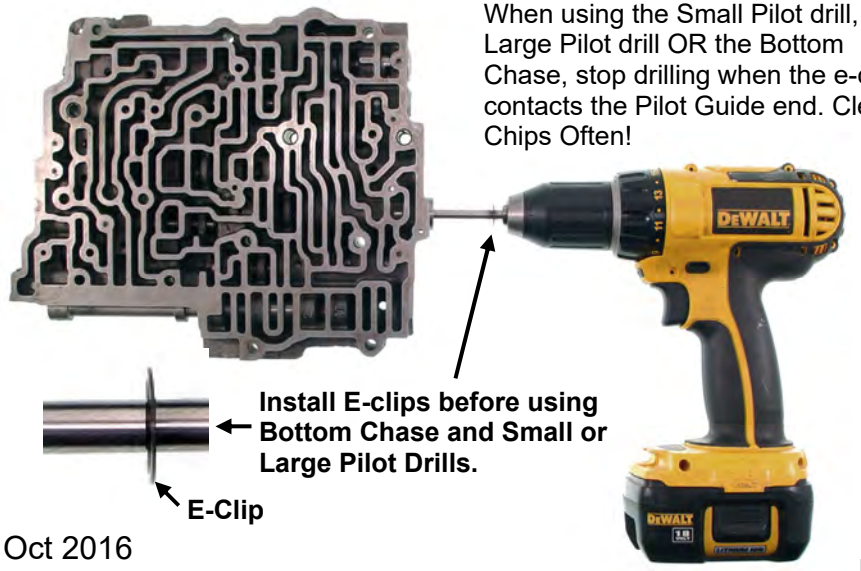
How to Modify VB for Valves

Step 1

Install small E-clip onto Small Pilot **Drill** groove. This is the stop for the drilling depth **on each drill**. Attach to drill set to low speed. Insert Small Pilot **Guide** into vb. Push firmly until seated. Dip drill bit into lube and begin drilling. Stop drilling occasionally and clean drill chips from VB. Lube drill again. Continue drilling until E-clip contacts pilot guide. STOP!



When using the Small Pilot drill, the Large Pilot drill OR the Bottom Chase, stop drilling when the e-clip contacts the Pilot Guide end. Clean Chips Often!



Step 2

Replace Small Pilot Guide with Large Pilot Guide. Install large E-clip on Large Pilot Drill next and enlarge bore. Clean VB of chips.

Step 3

Remove Large Pilot Drill. Using the same guide, continue cutting bottom of bore using the Bottom Chase. It's the drill with a slight point on the end. Don't forget to install the large E-clip first!

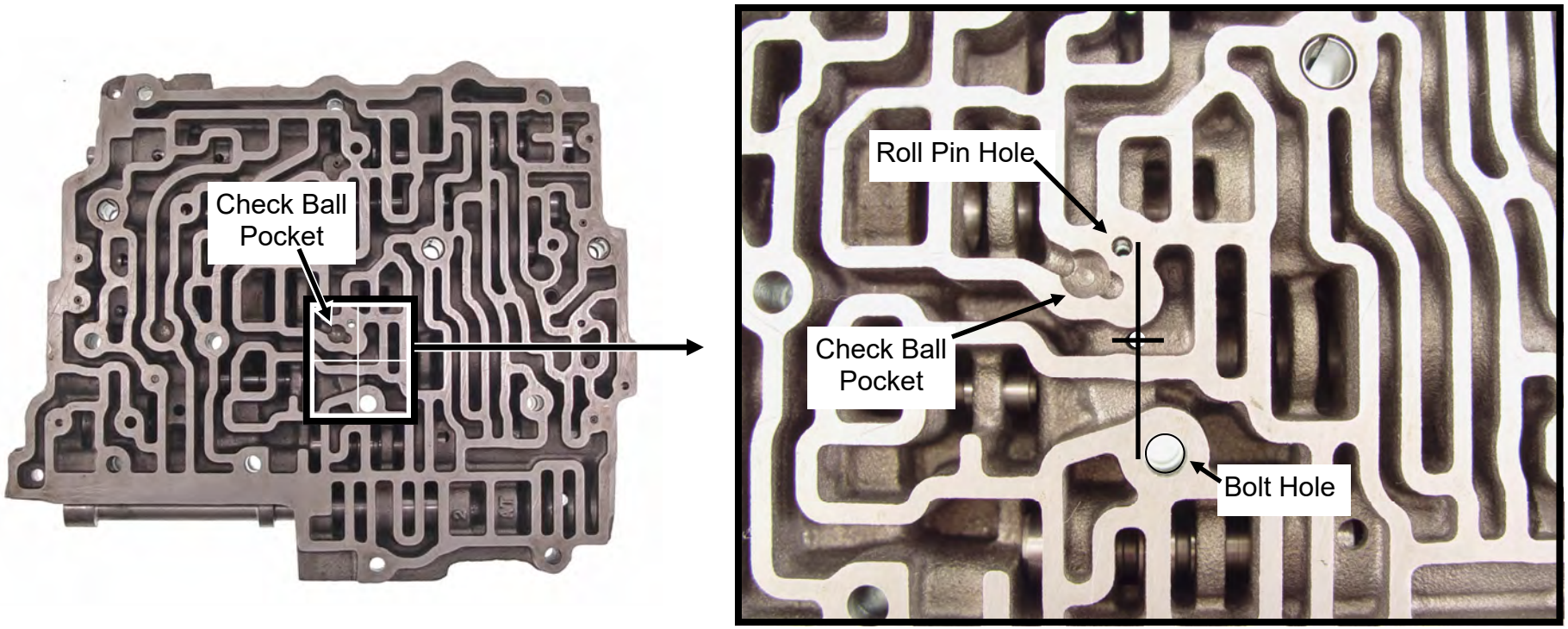
STOP! Do not ream VB at this time.

Modify VB Continued– Adding Governor Circuit

Step 1

With VB drilled but not reamed, we need to add the governor signal circuit. Using a straight edge, split the difference between the right side of the roll pin hole and the left side of the bolt hole. Make a center punch at the intersection shown in figure 1. Using the .125 drill provided, drill straight down **slowly** until **you just break into the bore**. Clean drilling debris.

Figure 1



Check ball pocket shown to reference work area only.

Modify VB Continued– Adding Exhaust Port

Step 1

Locate the “RIB” just below the flat “pad” area.
Center punch the pad, centered above the “RIB” but up against the raised wall of the “oil circuit rail” where the floor meets the wall. (fig. 2)

On the angle shown in (fig.3) drill a .125 hole that will break into the bore at the inboard end where the alum shift bushing will end. (It’s not too fussy, just get it close.)
When you’re done, look down the valve bore, (fig.4) the drill will be just in front of the TCC Shift Valve bore you drilled.
After finishing **Page 5**, blow air in this exhaust port, air must blast out other side of VB with valves installed. Perfect!

fig. 2

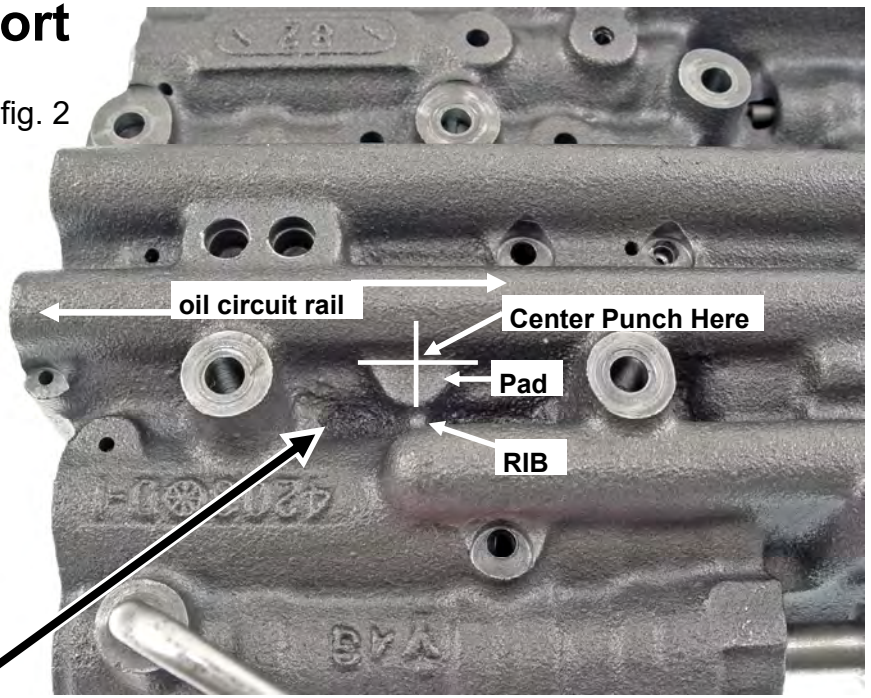


fig. 1

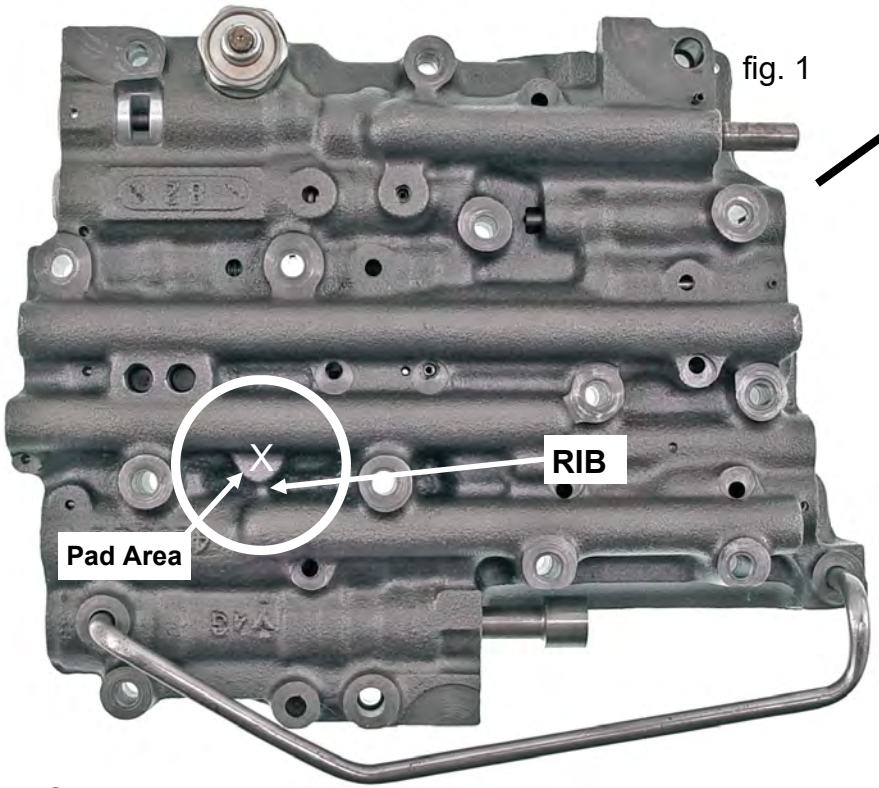
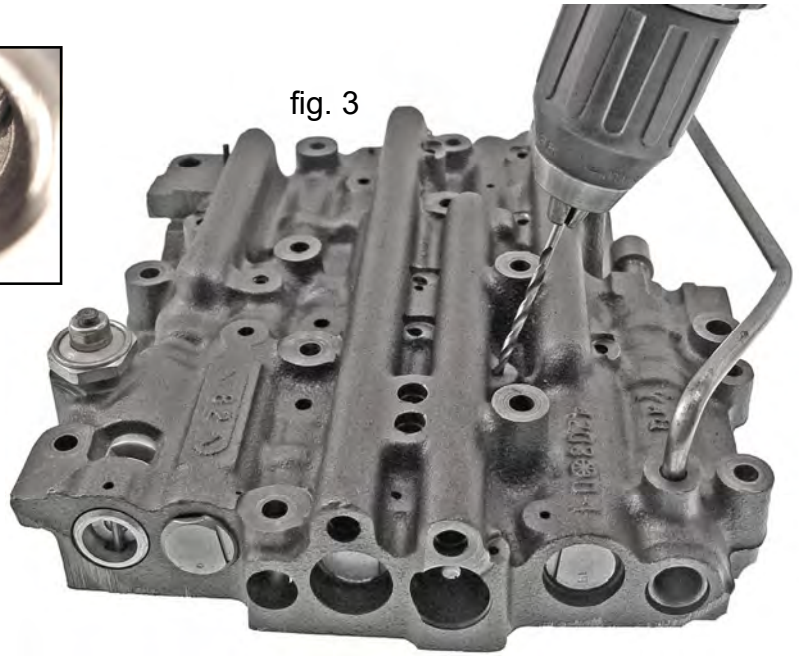


fig. 4

fig. 3



Modify VB Continued– Reaming Valve Bore

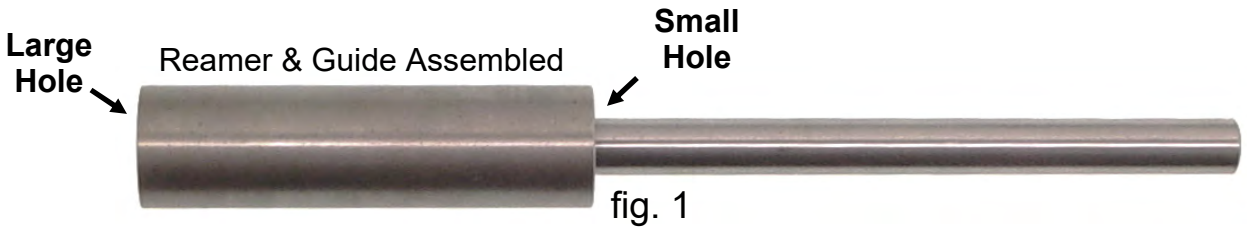
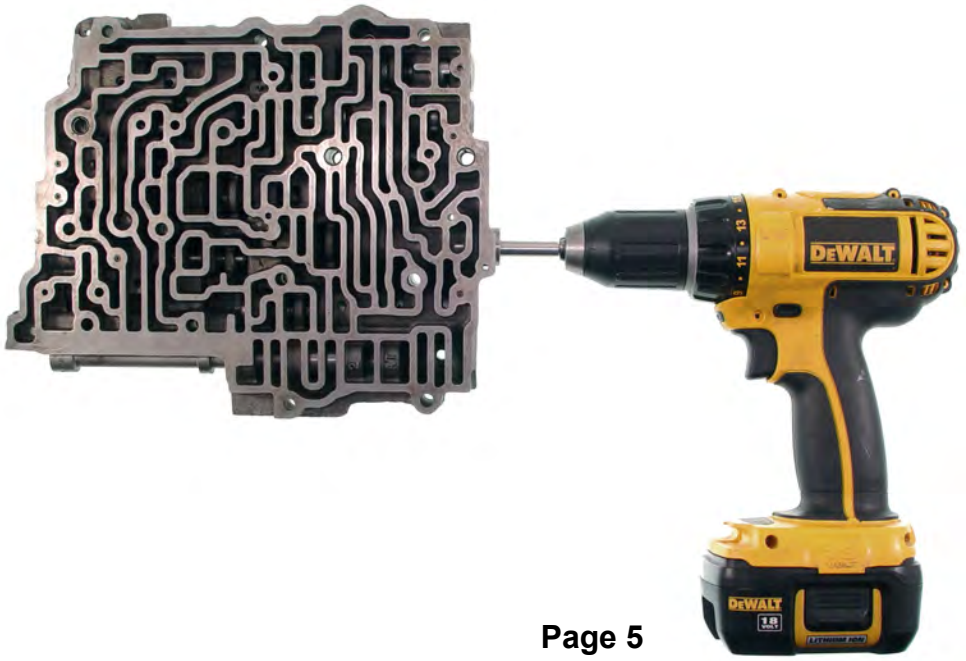
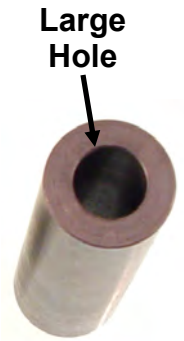


fig. 1

Step 1

With VB clean of debris, lube reamer cutting edge and insert Reamer shank end into large end of Final Reamer Guide until cutting edge is completely inside Guide. (fig. 1)
Now firmly insert Reamer and Guide assembly into VB. Attach Drill to Reamer. Using slow speed and adding lube ream bore until reamer bottoms in bore. Clean VB of debris. Use **TCC Shift Valve** supplied to check that the valve moves freely in the new bore. **See page 1 for Valve assembly.**





Final Reamer Guide

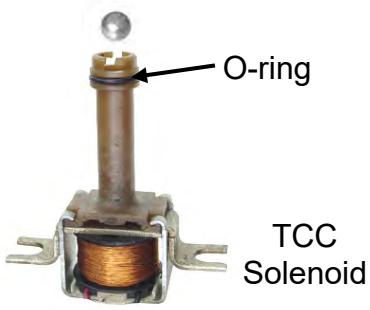
Don't Forget!
Separator Plate Modification & Solenoid assembly on last page.

2004R Plate modification for TCC Shift Valves.

Plate **must have** hole “B” and **NOT** hole “A” to use TCC Shift valves.

On Final Assy:
A solenoid with a good o-ring is required but the wires are optional.
Install the 5/16 check ball supplied into snout of lock-up solenoid. L/up timing is now done by the valves.

5/16 Check ball



TCC Solenoid

Step 1

When adding TCC valves to your VB, you **MUST** convert your Separator plate to a **“B”** style Plate. Using gasket as a guide, Drill hole “B” using the .125 drill furnished.

Step 2

Plugging hole “A”:
Enlarge hole “A” with .201 drill furnished. Now use the large Pilot Drill to chamfer both sides of hole “A” by hand. Lay Plate on a hard flat surface. Insert Slug into hole & gently whack it with a Hammer on both sides of Plate to expand it.

Step 3

On the CASE side of plate, rub slug flush with a sharpening stone or file it flush. VB side is not necessary to make flush.

Plate with:
Hole “B” uses VB **WITH** TCC Valves.
Hole “A” uses VB **WITHOUT** TCC Valves.
One or the other is a correct combination.
This kit turns it into a “B” combination.

Thank you for using this product.
We hope you enjoy it as much as we did making it!

Mr. Shift

2004R Identifying Governor Designs & Matching Valve Bodies

Always start with a combination that WORKS right from the START !

A High Output governor with a **matching** VB is a great place to start if you have one.
Standard Governor and **matching** VB will work as well, they just shift a little sooner at full throttle.
Don't use HO Governor and standard VB. You'll battle shift timing issues until you eventually give up tired & defeated.
For performance work, use either the **High Output** combinations or the **Standard** combinations. Avoid the governor on the right side of the page completely for performance work. Valvebody Codes are ink stamped on the VB.

VB Codes that Match
High Output (HO) Governor

BQ, BR, CQ, CZ, TT

HO Governors
Secondary weight
Measures .240

HO Governor and matching VB has
Max throttle shifts 5000 to 5500 RPM

VB Codes that Match
Standard Governor

OZ, KZ, AA, BY, CR, CT

Standard Governors
Secondary weight
Measures .355

Standard Governor and matching VB
Max throttle shifts 4000 to 4600 RPM

All Other VB's and this
Governor not suited for
Performance Applications

Other Governors
Secondary weight
Measures .500

Don't Use for Performance!