RFE-HP-19UP

Reprogramming Kit™

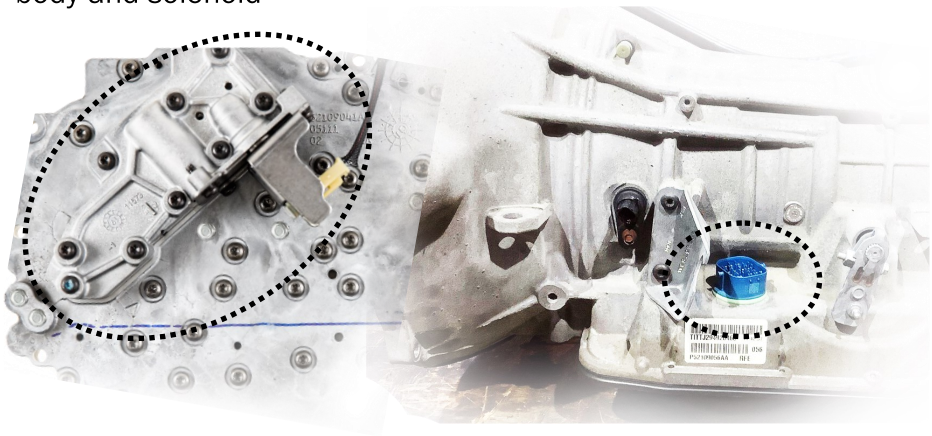
Fits: 68RFE 2019-on

Patent No. US 11,105,415 B2
and US 12,078,243 B2

2621 Merced Ave. El Monte, CA 91733
Product Support (626) 443-7451

Quick ID pan off:
Added lock-up auxiliary valve body and solenoid

Quick ID pan on:
Blue connector solenoid pack



Upgrade for the OD clutch!

New design OD/Reverse pressure plate allows:
14 single sided OD frictions 15% gain

Corrects—Prevents—Reduces

- **Stops** repeat UD clutch failure after engine tuning
- Reduces OD clutch failure with added power
- HD accumulator cover plate replacement

High Pressure Tuneless™ : Adds 36% more line pressure in forward ranges at all throttle openings without the need of computer software. Perfect for performance and hard working trucks.

All of the performance enhancements and UD failure protection can be installed without removing the transmission.

These optional features below require transmission removal

- Stops harsh lockup when using triple disc converter
- Converter drain back issue
- HD underdrive snap ring upgrade
- Salvage pump cover even with extremely worn TC limit bore

Short, clean shifts that hold the power!

Calibration that relearns quickly.

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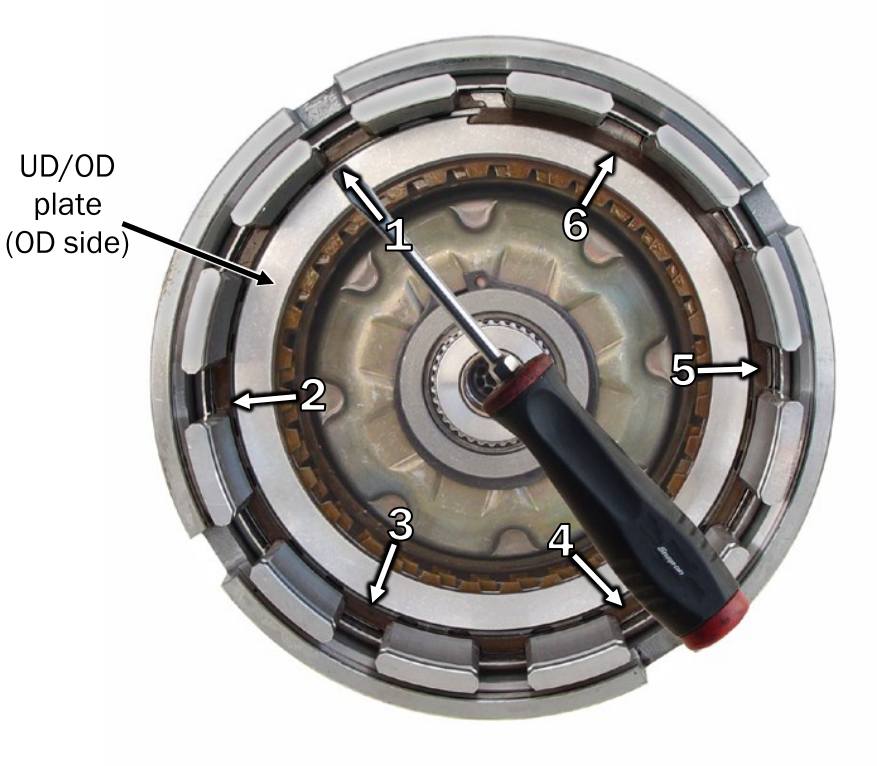
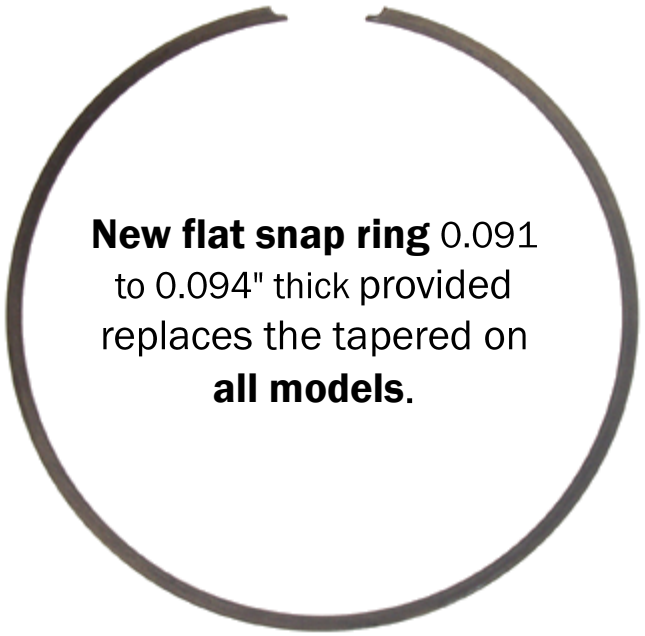
1. Replace the OE tapered snap ring with the **new heavy duty underdrive flat snap ring**.

Tip: Tap **new snap ring** into place as shown.
It should be tight!



Heavy duty underdrive snap ring
Replaces tapered ring that breaks and pops out.



If the transmission is still in the vehicle, skip this page.

2. Discard original TC limit valve, spring and retainer.

Worn lock-up valve regulator bore?
Get the new oversized valve TransGo® part number:
RFE-TCCREG-OS19 and RFE-TCCREG-TK19

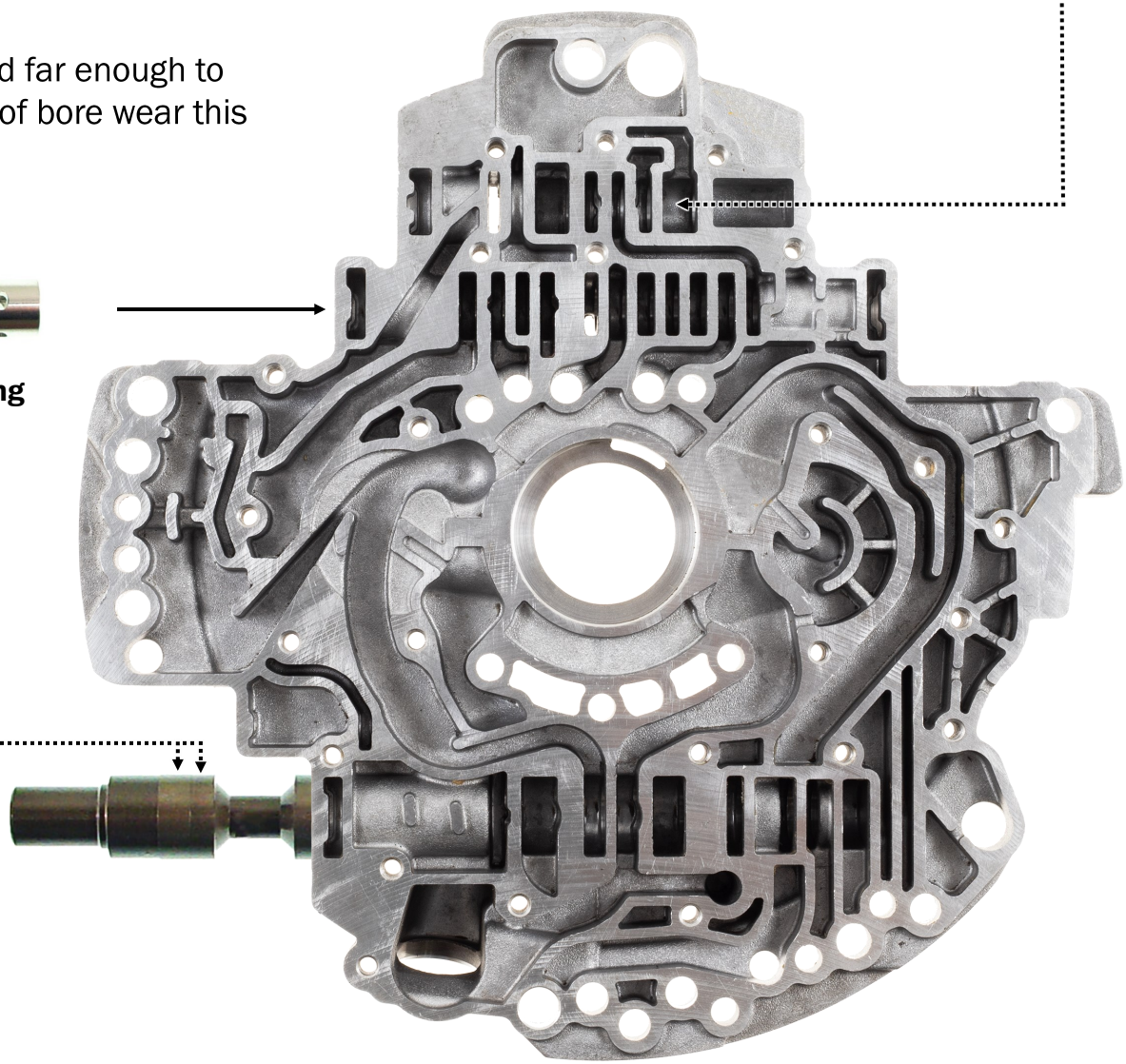
Install new bushing, gold ball, orange spring and V-notch retainer.

It is correctly installed when the bushing is inserted far enough to install the retainer. Now regardless of the amount of bore wear this system works perfectly!

Orange spring **Gold ball** **New bushing**

V-notch retainer must sit below flush in the pump. Grind the top of retainer if needed.

Information only, no need to remove the valve!
The slight difference in diameters here: of the OE pressure regulator valve provides all time line to converter charge right from the factory. The diameter difference is the equivalent of drilling a 0.073” hole into the pump. This is plenty with our kit and a stock tune, so there’s no need to add a hole to the pump. However, if someone has already drilled the pump casting in the past, it is ok to leave it as is.

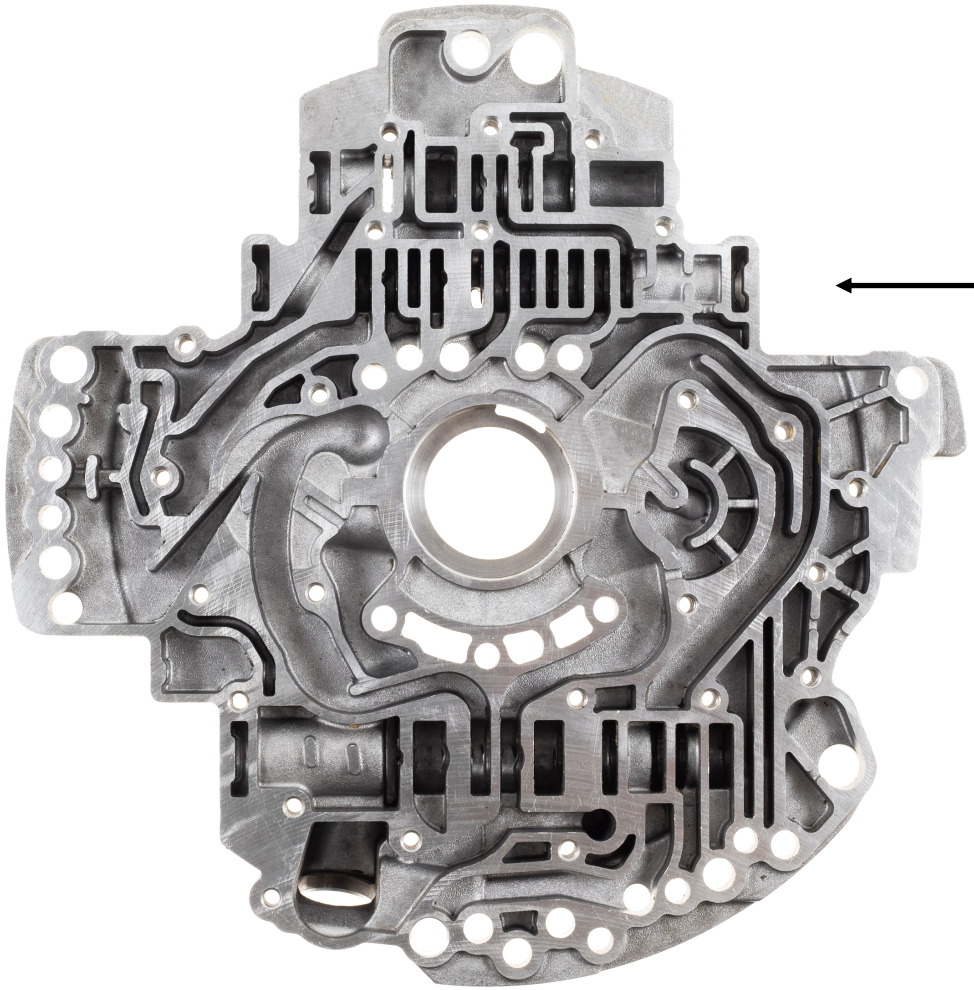


Pump cover

If the transmission is still in the vehicle, skip this page.

3. New RFE-TCC-3D triple-disc converter calibration valve. It is not needed or wanted if using factory type twin friction converter.

Only Use this Valve when using a triple-disc converter and want a smooth lock-up apply. Lock-up apply with a triple-disc converter in a 68RFE can often be very aggressive or harsh. This valve slows down the lock-up apply to reduce the aggressiveness or harshness with no change to holding capacity.



3a. Remove and discard original lock-up switch valve

3b. Install **new lock-up switch valve** and reusing original spring and retainer

New lock-up switch valve Spring Retainer

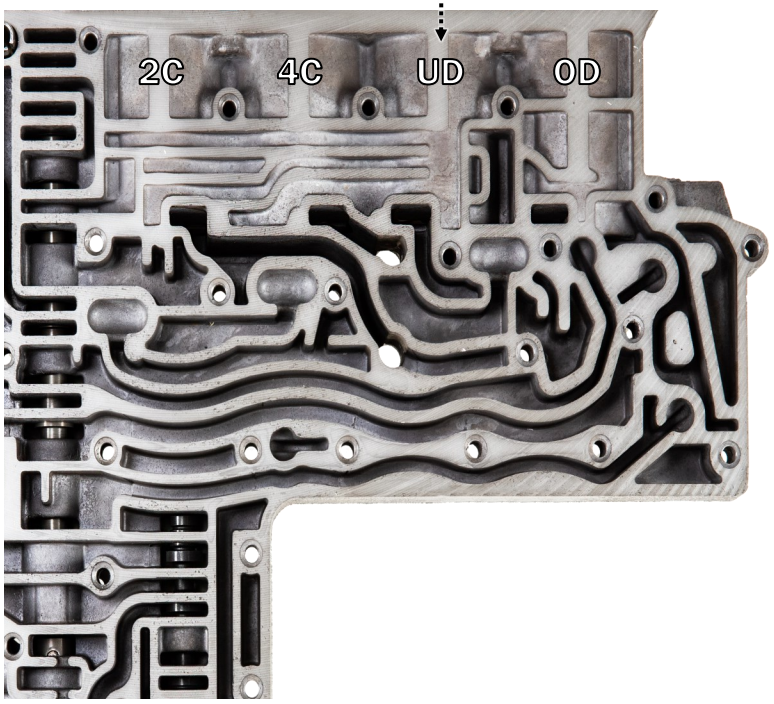
Patent No. US 11,105,415 B2

New HD accumulator cover

Shims
0.010”, 0.020”, 0.035”

New plain middle spring

New black UD piston

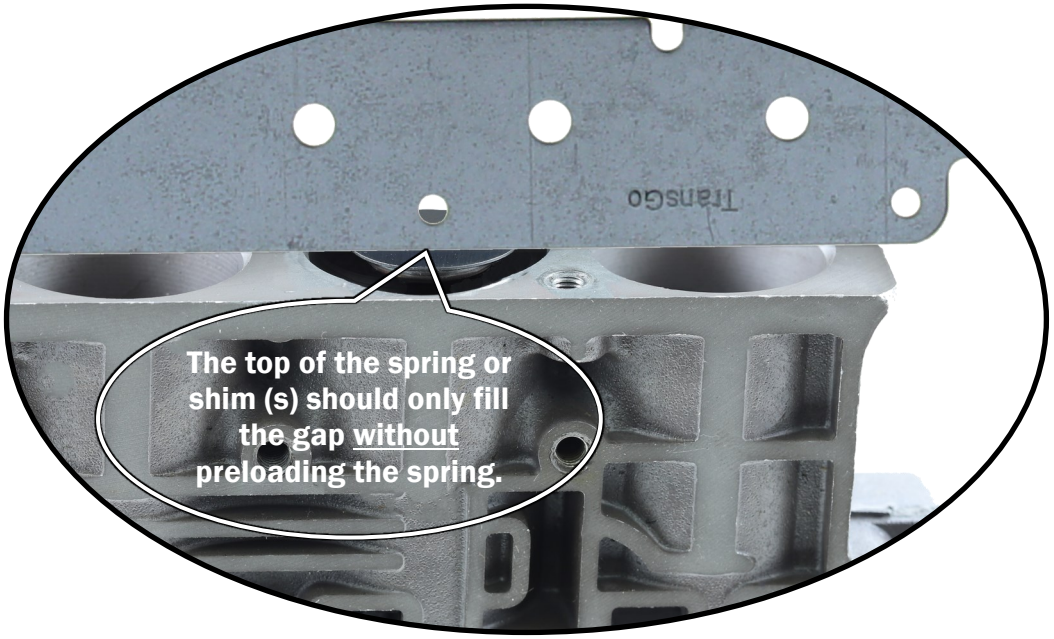


4. Valve body castings vary. Follow these steps to set the correct UD spring height:

a. Insert the **new black UD piston** and the **new plain middle spring** into the UD accumulator bore.

a. Lay the **new HD accumulator cover** across the valve body surface on top of the spring, using it as a straight edge.

a. Use the provided **shims** (0.010”, 0.020”, 0.035”). Select one or a combination to fill the gap **without preloading the spring:** 0.010”, 0.020”, 0.030” (0.010" + 0.020"), or 0.035”. Most cases require the 0.035” shim.



The illustration above is **to set clearance stack-up only.**

If you had to use **shim(s)** to achieve the correct clearance in the previous step, now move the **shim(s)** down **into the accumulator piston**. Then, add the **three new plain springs** on top of the **shim(s).**

See the final stack-up order on the right. ·····▸

Final stack-up order

5. Install **3 new rings** on all **5 new dual sealing billet accumulator pistons**. The **black piston** is for the UD and it uses the **3 new plain springs and shim** selection (if any) per step 4 on the previous page. Do not mix this up with the other accumulators.

Valve Body

5 plastic 1/4” checkballs ©
in location shown below

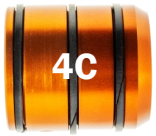
With factory OD clutch count

OR

With increased OD clutch count

New plain spring and spacer or **new white spring only**

3 new plain springs, shim(s) and **new black UD piston**



Reuse OE springs

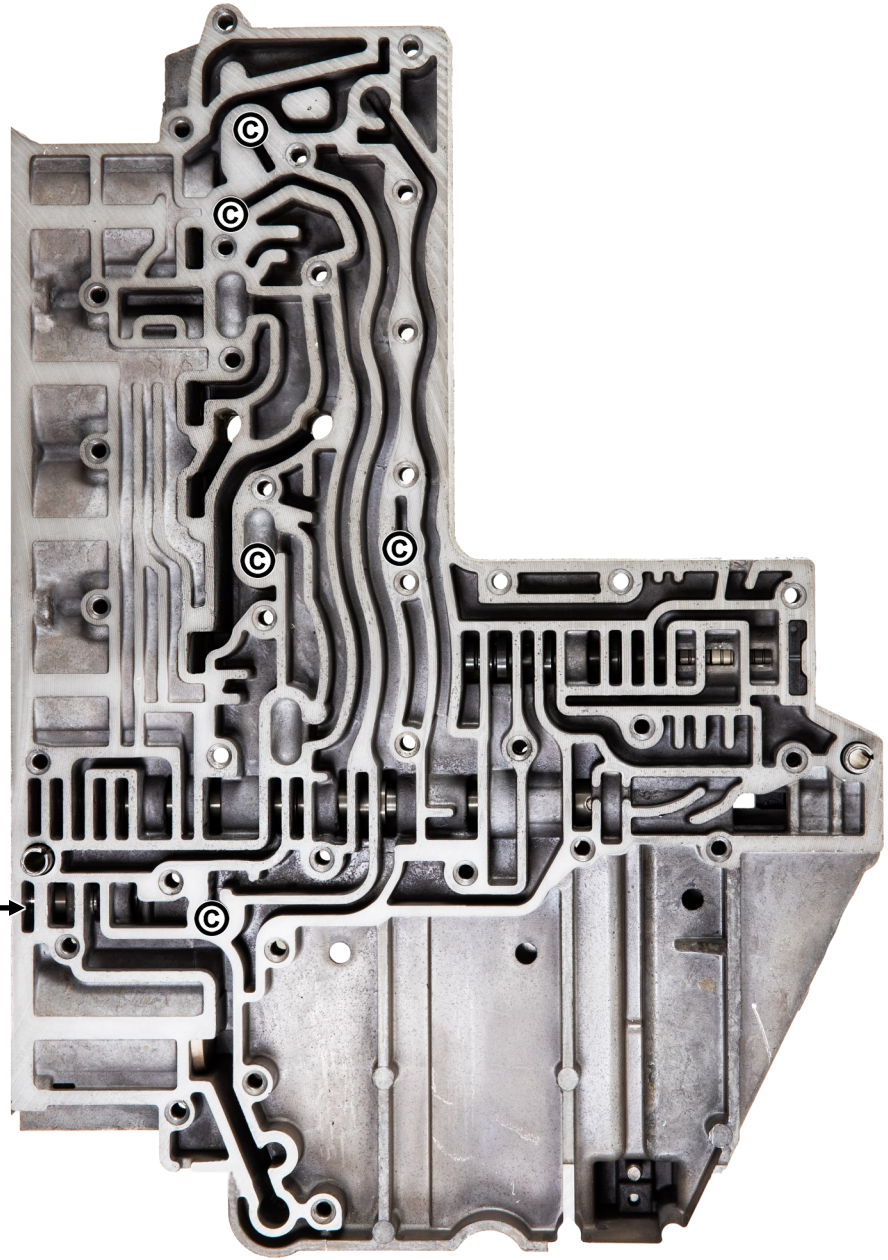
2C inner spring has larger wire

Reuse OE springs

6. Discard original valve and plug. Install **new self cleaning switch valve** and **new end plug** furnished.

End plug **Switch valve**

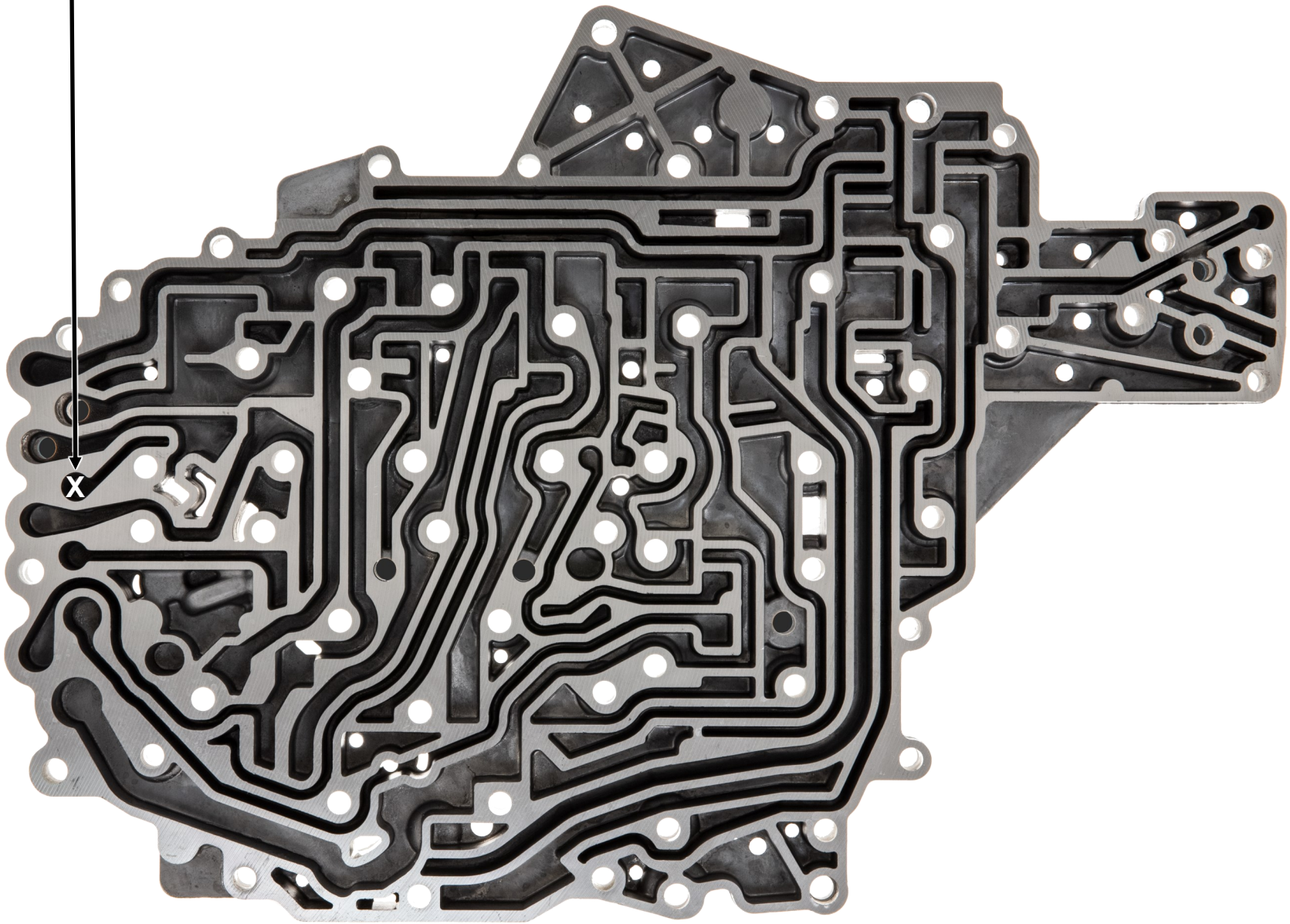
Reuse OE springs



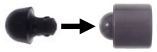
7. Install the **new HD cover** using blue Loctite™ on the screws and torque them to 60 lb·in

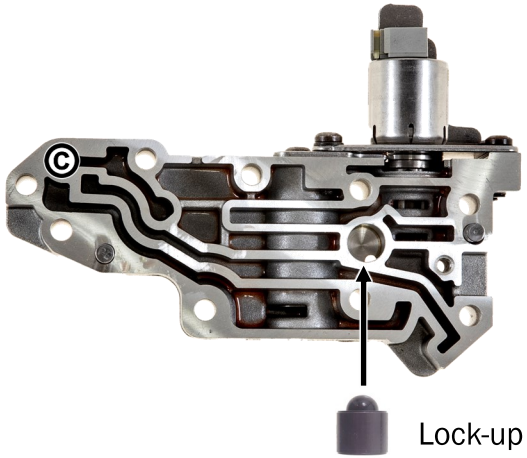
8. Using the drill bit provided, drill a 0.125” hole straight down thru the channel casting & out the other side at the **X** to vent this circuit

Note: When using an aftermarket billet channel casting, in many cases they have a threaded hole with a removable screw in that location that can be removed to achieve the same thing as drilling the OE channel casting.

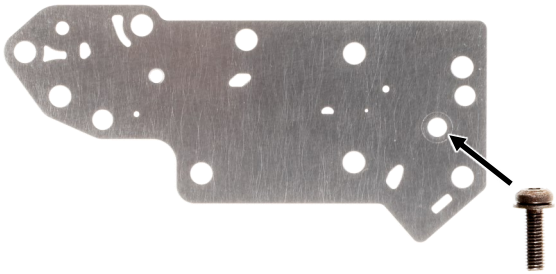


9.

- Replace damper rubber insert with the **new** one provided 
- Install the assembled damper in the lock-up valve body
- Install one plastic 1/4”checkball ©
- Install separator plate
- Bolt it together using the short bolt

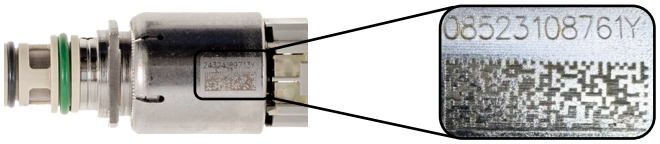


Lock-up solenoid pulse damper



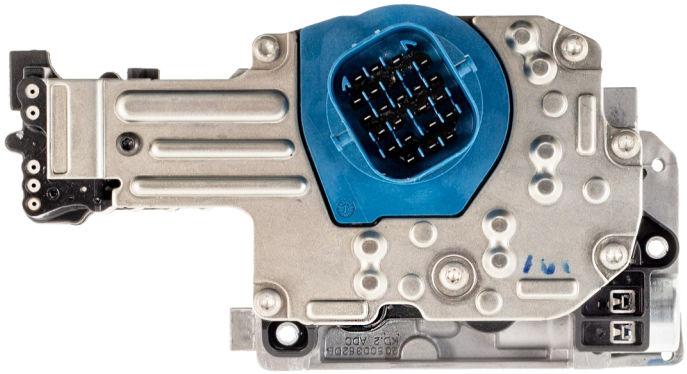
Separator plate bolt
torque to 50 lb-in

Tip! If you replace the lock-up solenoid, the manufacturer recommends entering the “PI Curve” of the new solenoid into the computer using a capable scanner. Scan the 2D barcode on the solenoid with your smart phone to read the code that needs to be entered.

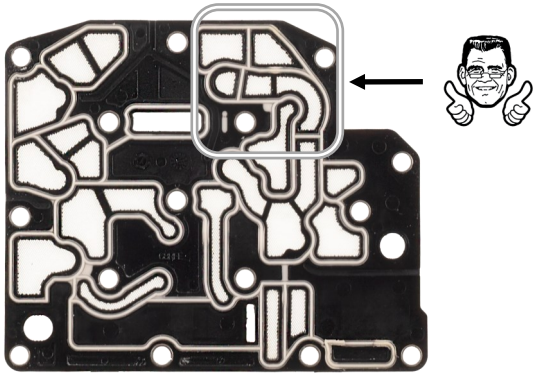


Lock-up Solenoid

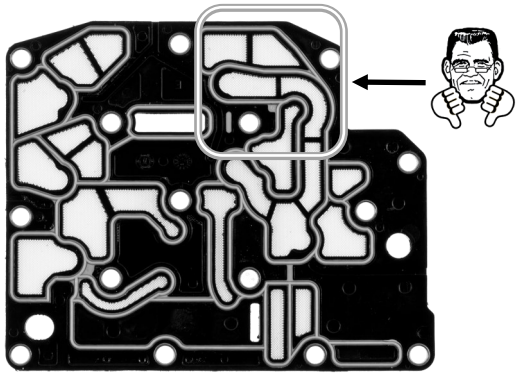
2D Barcode



2019-on solenoid pack can be identified by its **blue** plastic connector



2019-on

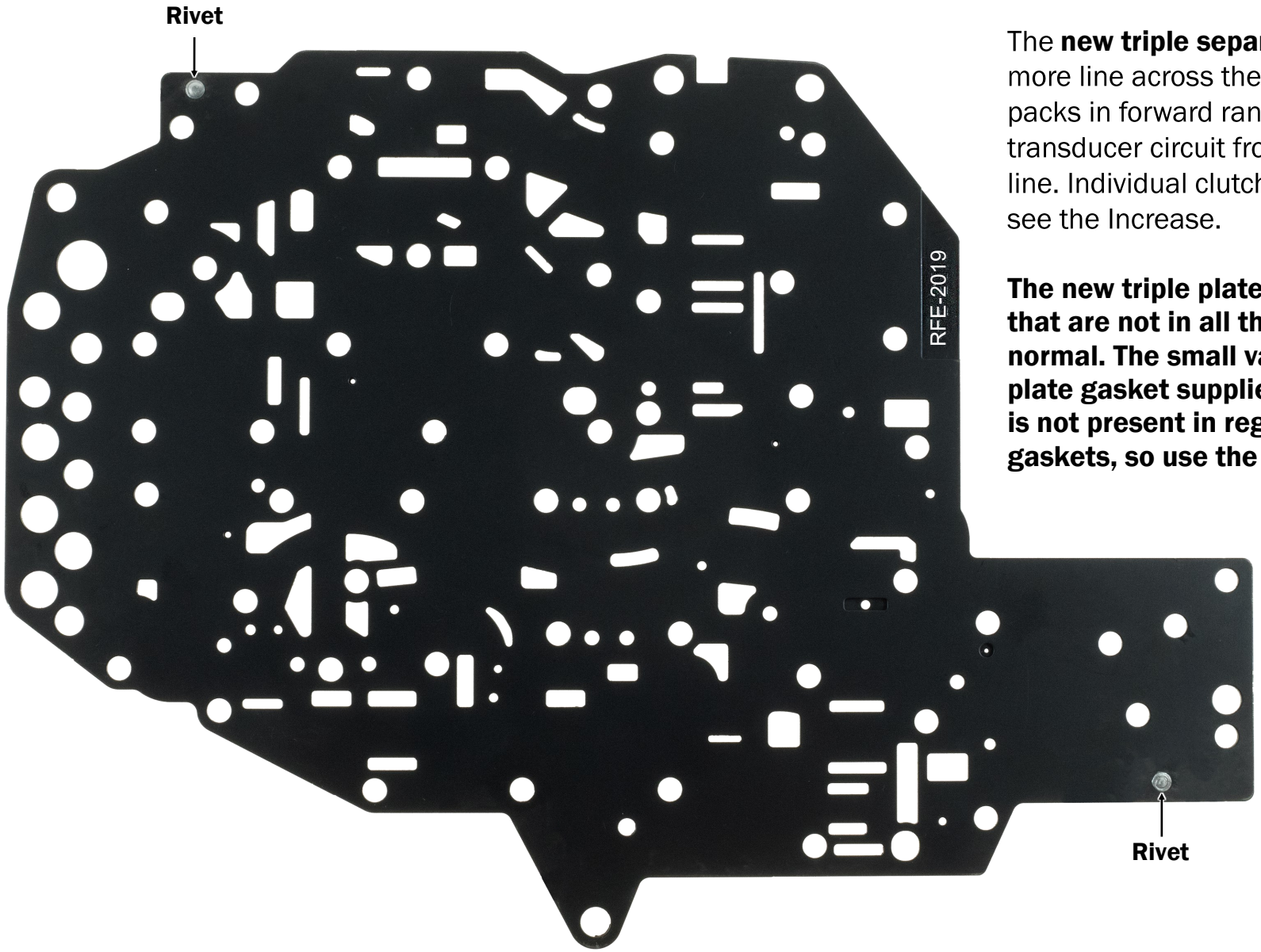


2007-2018

Listen up!

The solenoid pack gasket and filter plate is different in the area shown above for the 2019-on applications and the solenoid pack has a blue plastic connector. Techs in the field report that many rebuilding kits come with the previous design gasket. If the early style gasket is used on a 2019-on application the unit will bind in forward and reverse. Check this area carefully to make sure it is the correct one.

Hold it! The supplied plate in this kit can only be used on 2019-on.



The **new triple separator plate** adds 36% more line across the entire curve to all clutch packs in forward ranges and keeps the transducer circuit from seeing the increased line. Individual clutch ports is the only place to see the Increase.

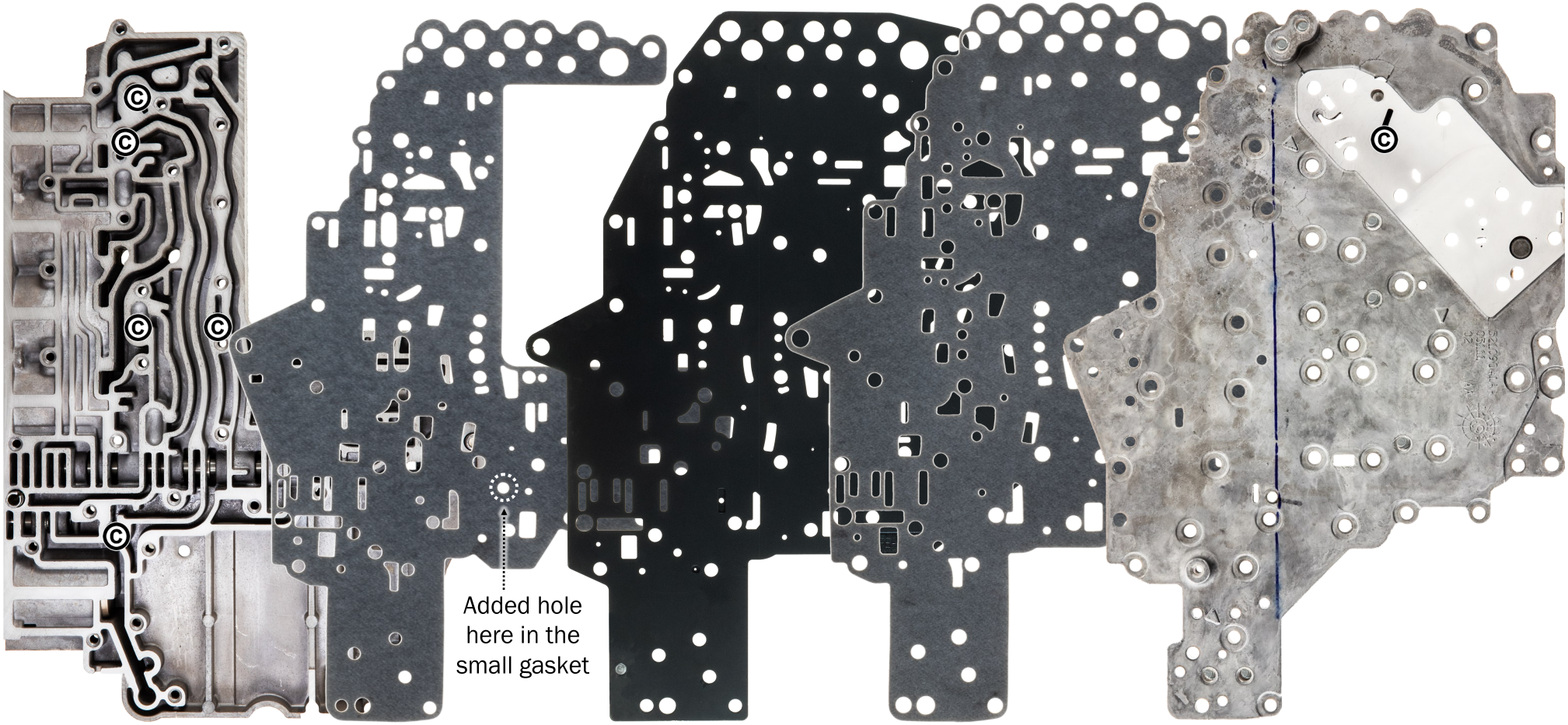
The new triple plate provided has some holes that are not in all three plates, this is ok and normal. The small valve body to separator plate gasket supplied has an extra hole that is not present in regular aftermarket gaskets, so use the supplied gaskets only.

Clutch tips: OE OD friction plates and good oil minimize the chance of a *squawk* on the shift. Clutch thickness's may vary with different manufacturers and can effect clearances especially on single sided clutches due to number of plates!

10.

- First install 5 plastic 1/4” checkballs in the valve body as shown ©
- Next install the **new smaller gasket** first against the valve body
- Then the **new triple separator plate**
- Then the **new larger gasket** on top of triple plate
- Then channel the casting and 1 plastic 1/4” checkball as shown ©
- Finally install the lock-up valve body assembly

Lock-up valve body



Valve body with 5 checkballs / **New small gasket** / **New triple plate** / **New large gasket** / Channel casting with 1 checkball

11.

9 

New long bolts and washer torque to 70 lb·in

7 

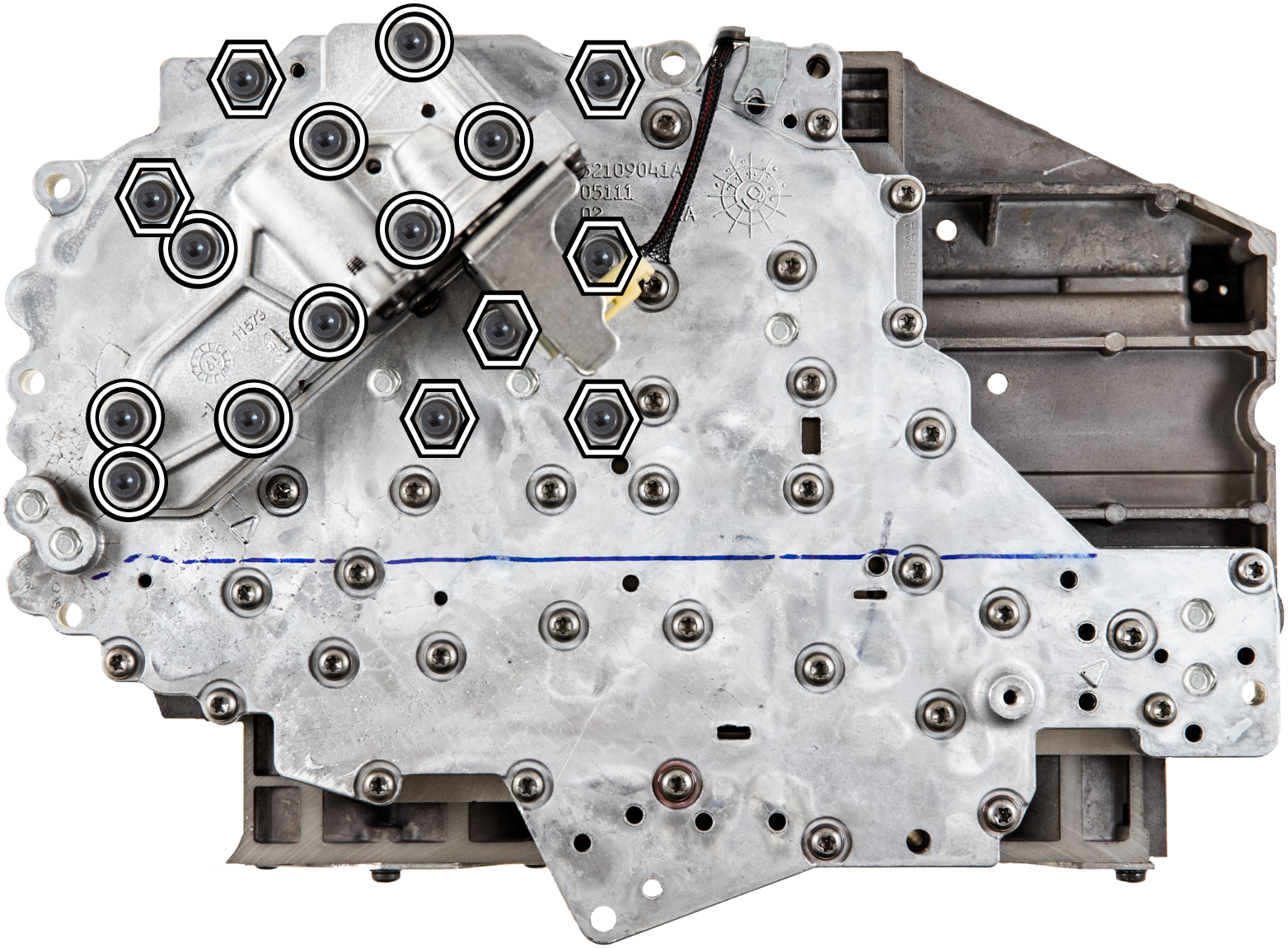
New medium length bolts and washer torque to 60 lb·in

34 

OEM bolts torque to 60 lb·in

Listen up!

Go around all bolts two or three times, with at least 1/2 hour between torquing's. This gives the gaskets some time to compress.



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Quick ID pan off:
Added lock-up auxiliary valve body and solenoid

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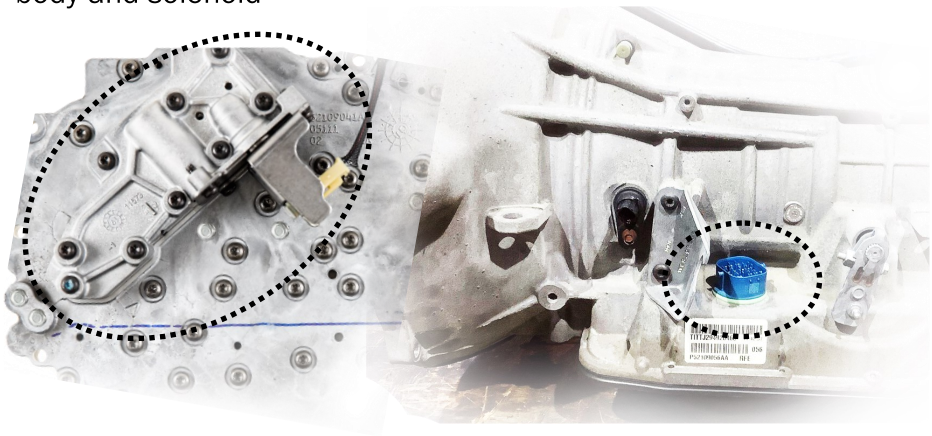

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- Salvage pump cover even with extremely worn TC limit bore

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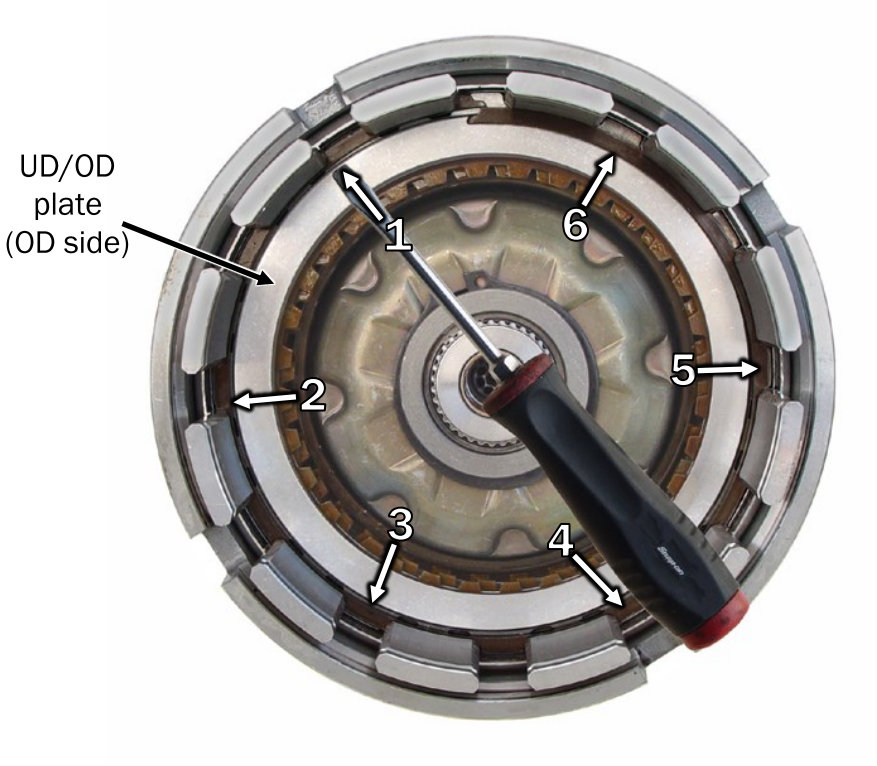

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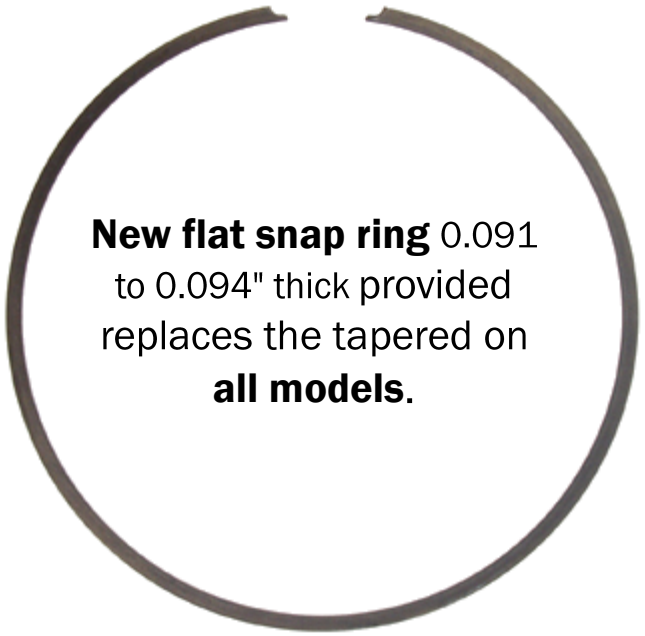

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Orange spring **Gold ball** **New bushing**

V-notch retainer must sit below flush in the pump. Grind the top of retainer if needed.

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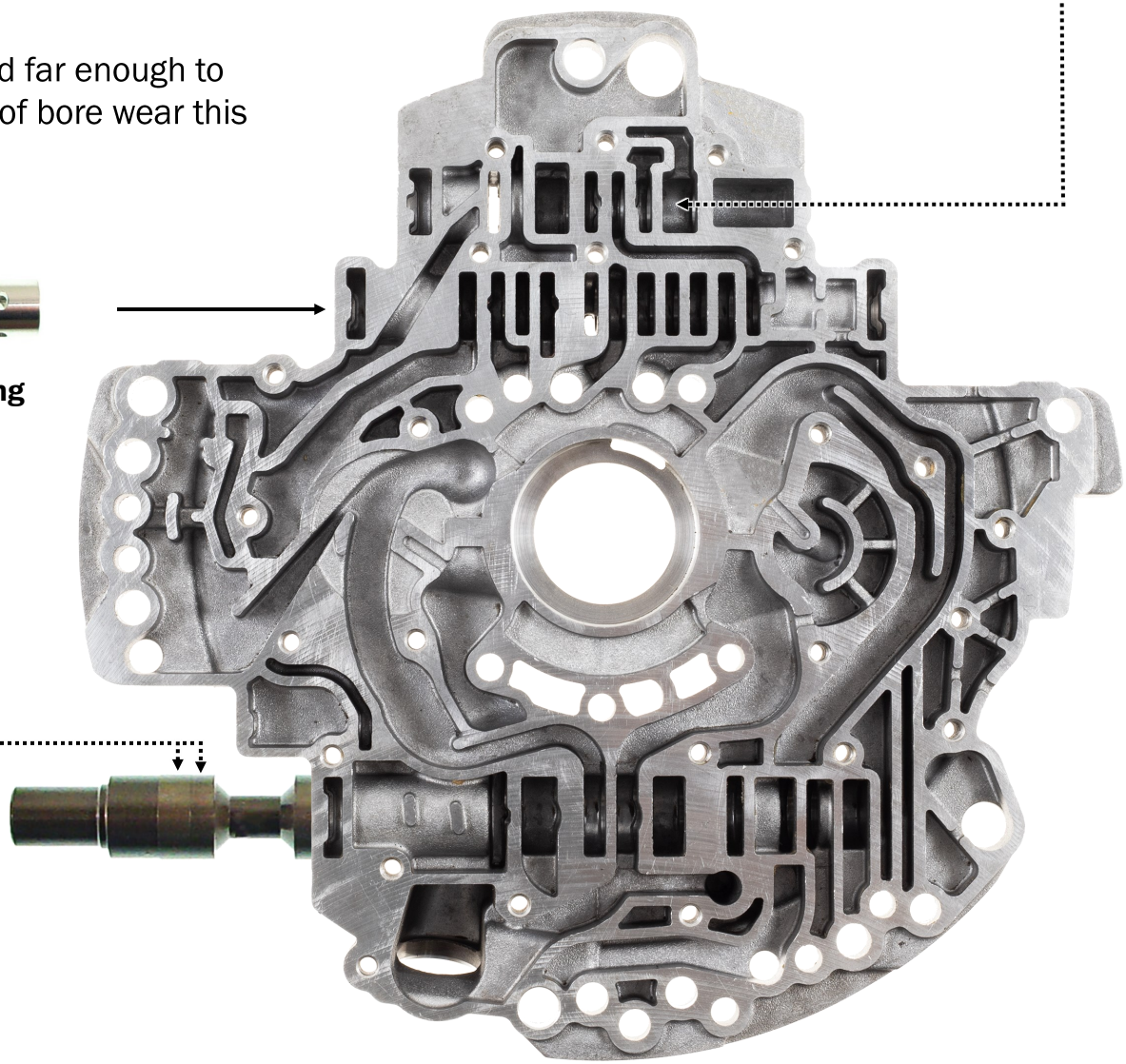
The slight difference in diameters here: of the OE pressure regulator valve provides all time line to converter charge right from the factory. The diameter difference is the equivalent of drilling a 0.073” hole into the pump. This is plenty with our kit and a stock tune, so there’s no need to add a hole to the pump. However, if someone has already drilled the pump casting in the past, it is ok to leave it as is.



Pump cover

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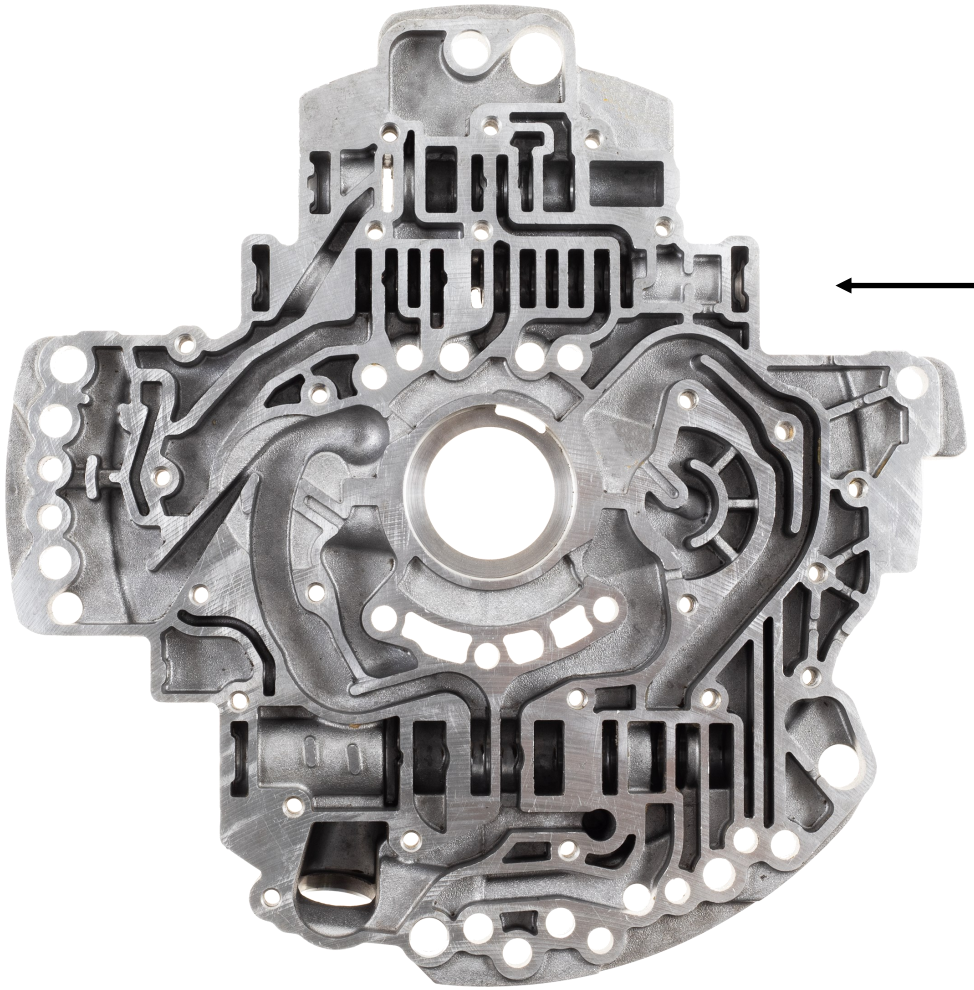


3a. Remove and discard original lock-up switch valve

3b. Install **new lock-up switch valve** and reusing original spring and retainer

New lock-up switch valve Spring Retainer

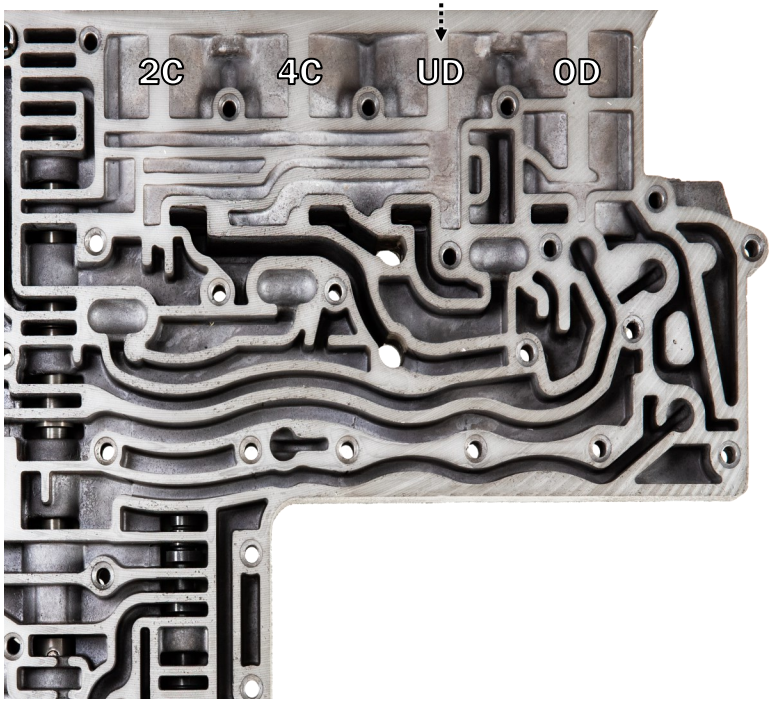
Patent No. US 11,105,415 B2

New HD accumulator cover

Shims
0.010”, 0.020”, 0.035”

New plain middle spring

New black UD piston



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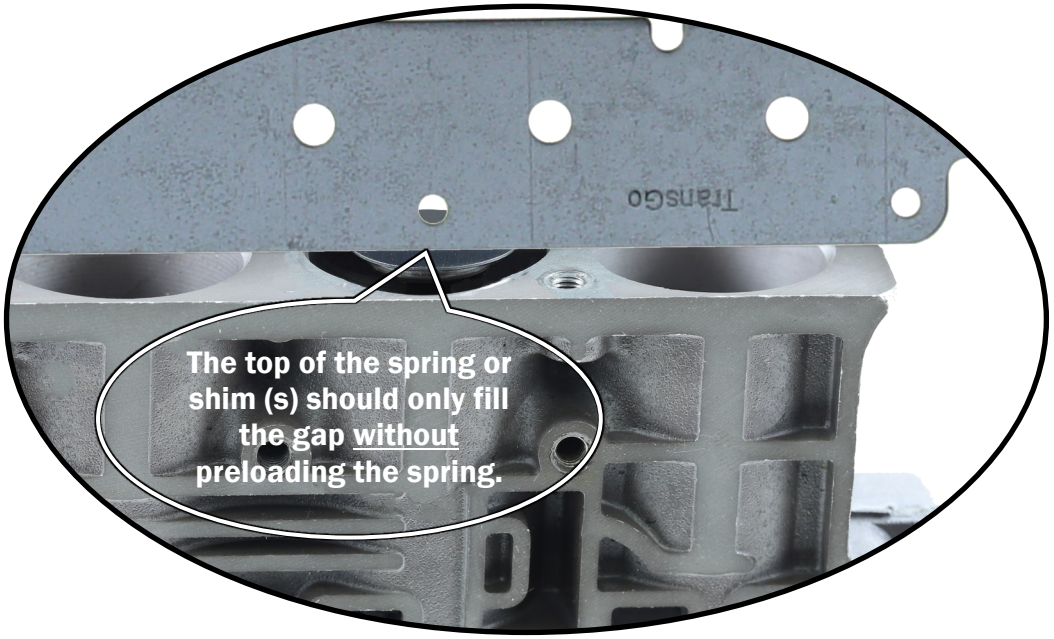

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See the final stack-up order on the right. ·····▸

Final stack-up order

5. Install **3 new rings** on all **5 new dual sealing billet accumulator pistons**. The **black piston** is for the UD and it uses the **3 new plain springs and shim** selection (if any) per step 4 on the previous page. Do not mix this up with the other accumulators.

Valve Body

5 plastic 1/4” checkballs ©
in location shown below

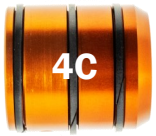
With factory OD clutch count

OR

With increased OD clutch count

New plain spring and spacer or **new white spring only**

3 new plain springs, shim(s) and **new black UD piston**



Reuse OE springs

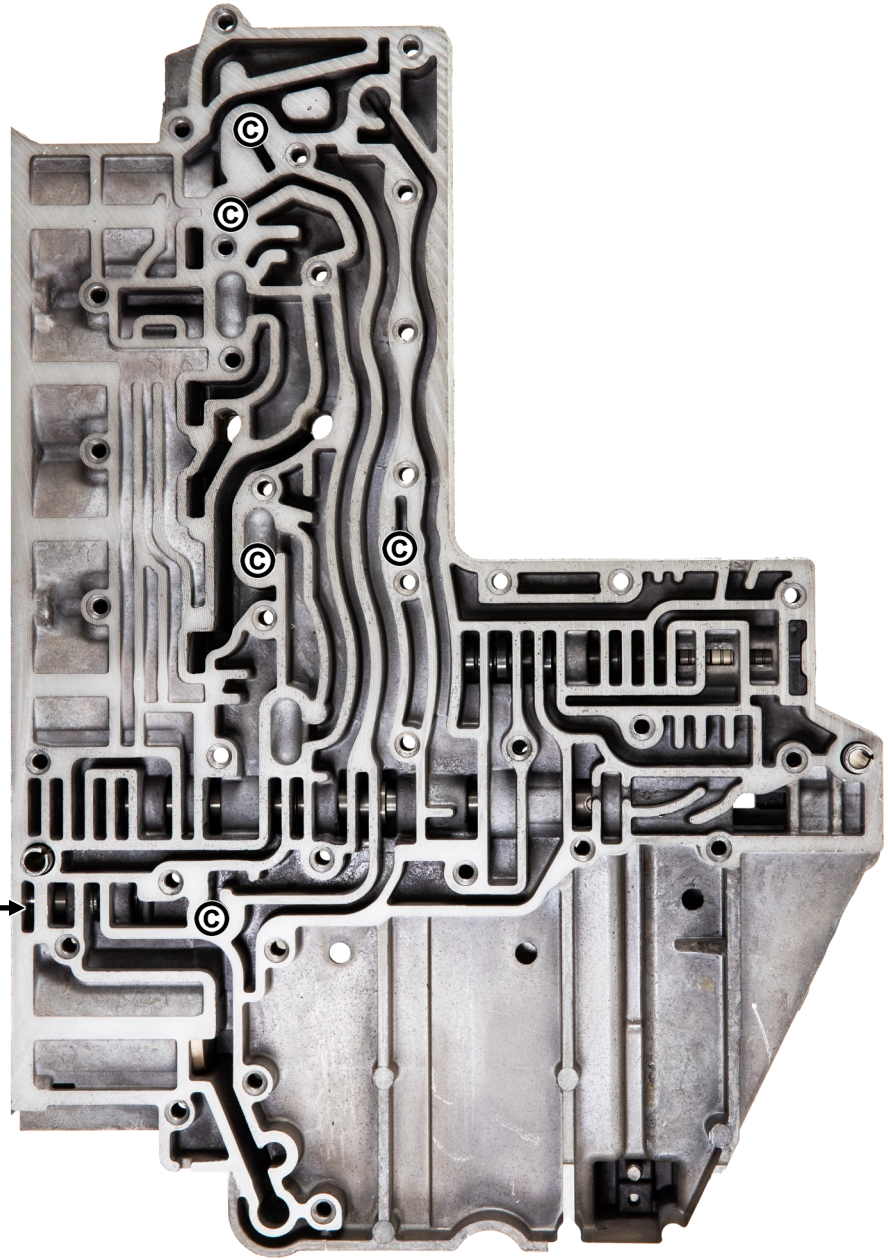
2C inner spring has larger wire

Reuse OE springs

6. Discard original valve and plug. Install **new self cleaning switch valve** and **new end plug** furnished.

End plug **Switch valve**

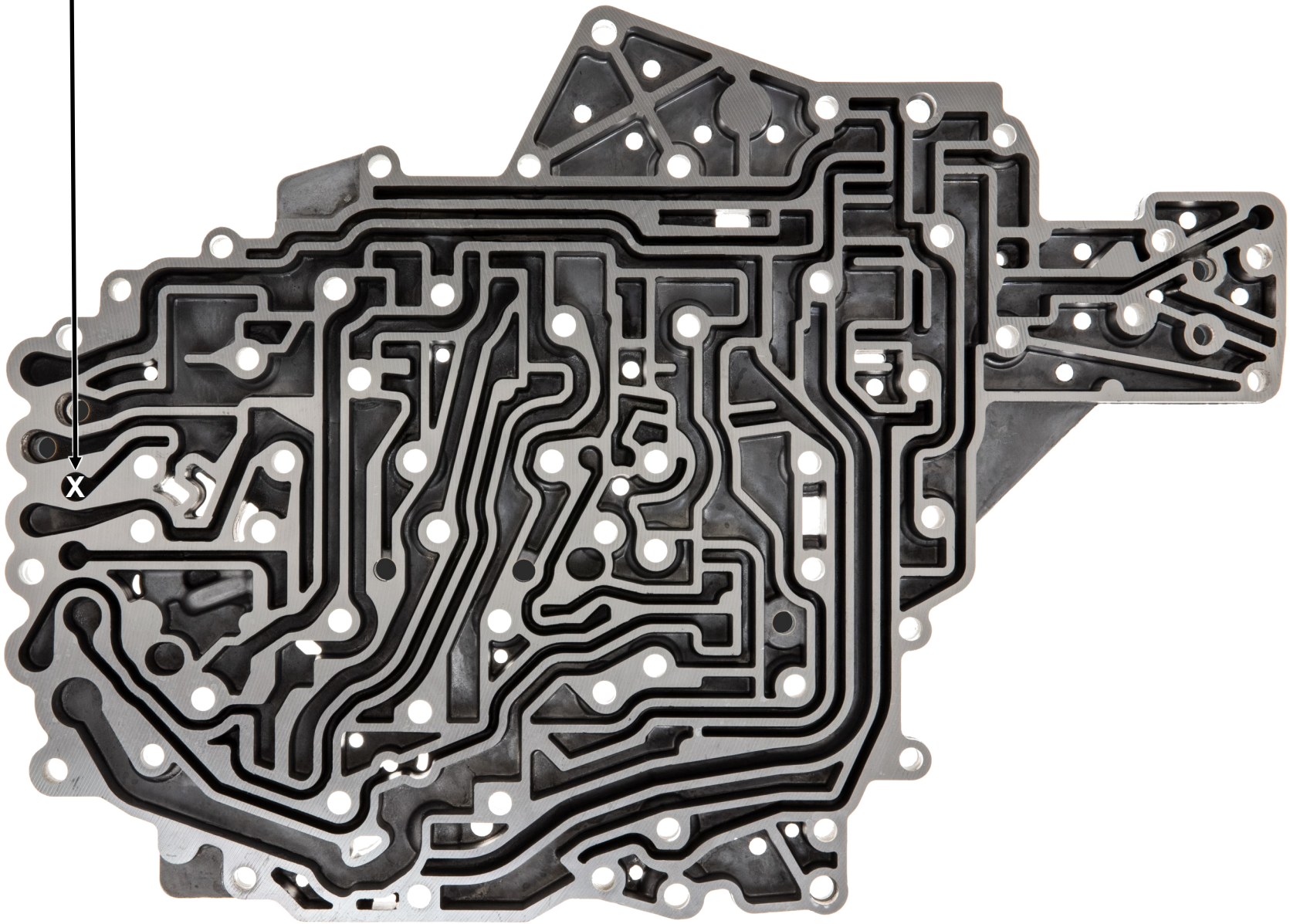
Reuse OE springs



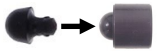
7. Install the **new HD cover** using blue Loctite™ on the screws and torque them to 60 lb·in

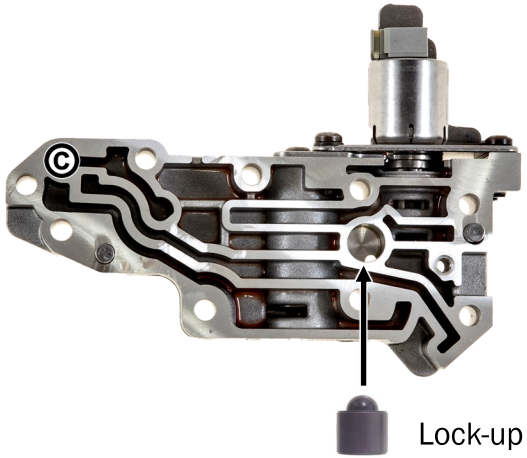
8. Using the drill bit provided, drill a 0.125” hole straight down thru the channel casting & out the other side at the **X** to vent this circuit

Note: When using an aftermarket billet channel casting, in many cases they have a threaded hole with a removable screw in that location that can be removed to achieve the same thing as drilling the OE channel casting.

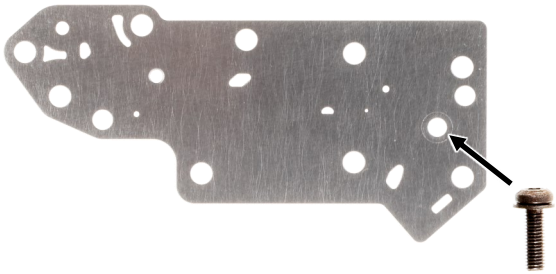


9.

- Replace damper rubber insert with the **new** one provided 
- Install the assembled damper in the lock-up valve body
- Install one plastic 1/4”checkball ©
- Install separator plate
- Bolt it together using the short bolt

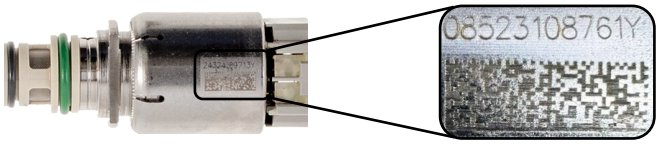


Lock-up solenoid pulse damper



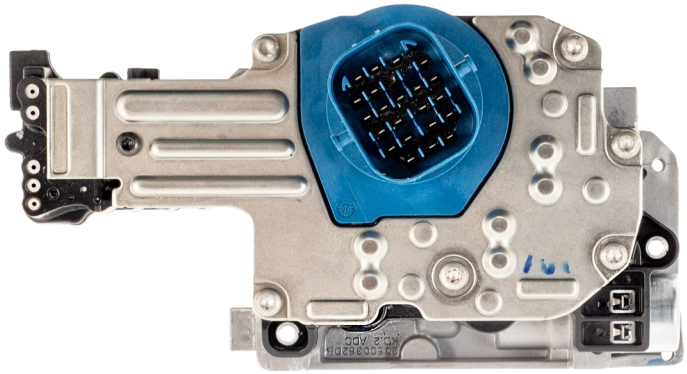
Separator plate bolt
torque to 50 lb-in

Tip! If you replace the lock-up solenoid, the manufacturer recommends entering the “PI Curve” of the new solenoid into the computer using a capable scanner. Scan the 2D barcode on the solenoid with your smart phone to read the code that needs to be entered.

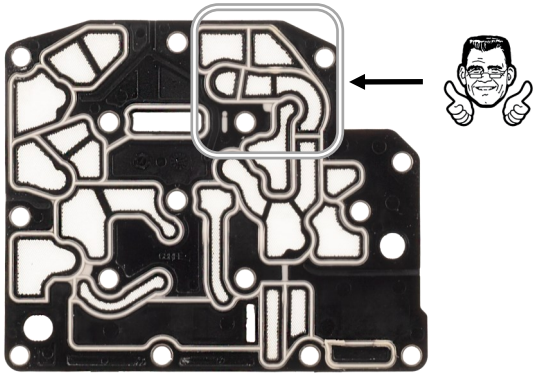


Lock-up Solenoid

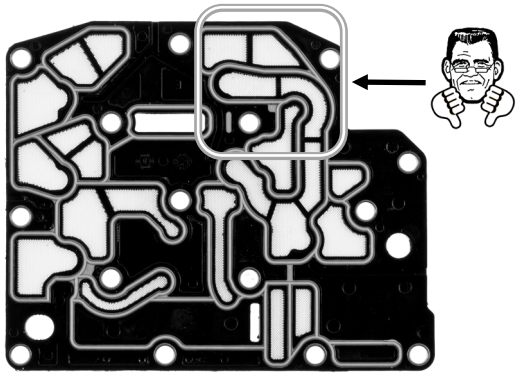
2D Barcode



2019-on solenoid pack can be identified by its **blue** plastic connector



2019-on

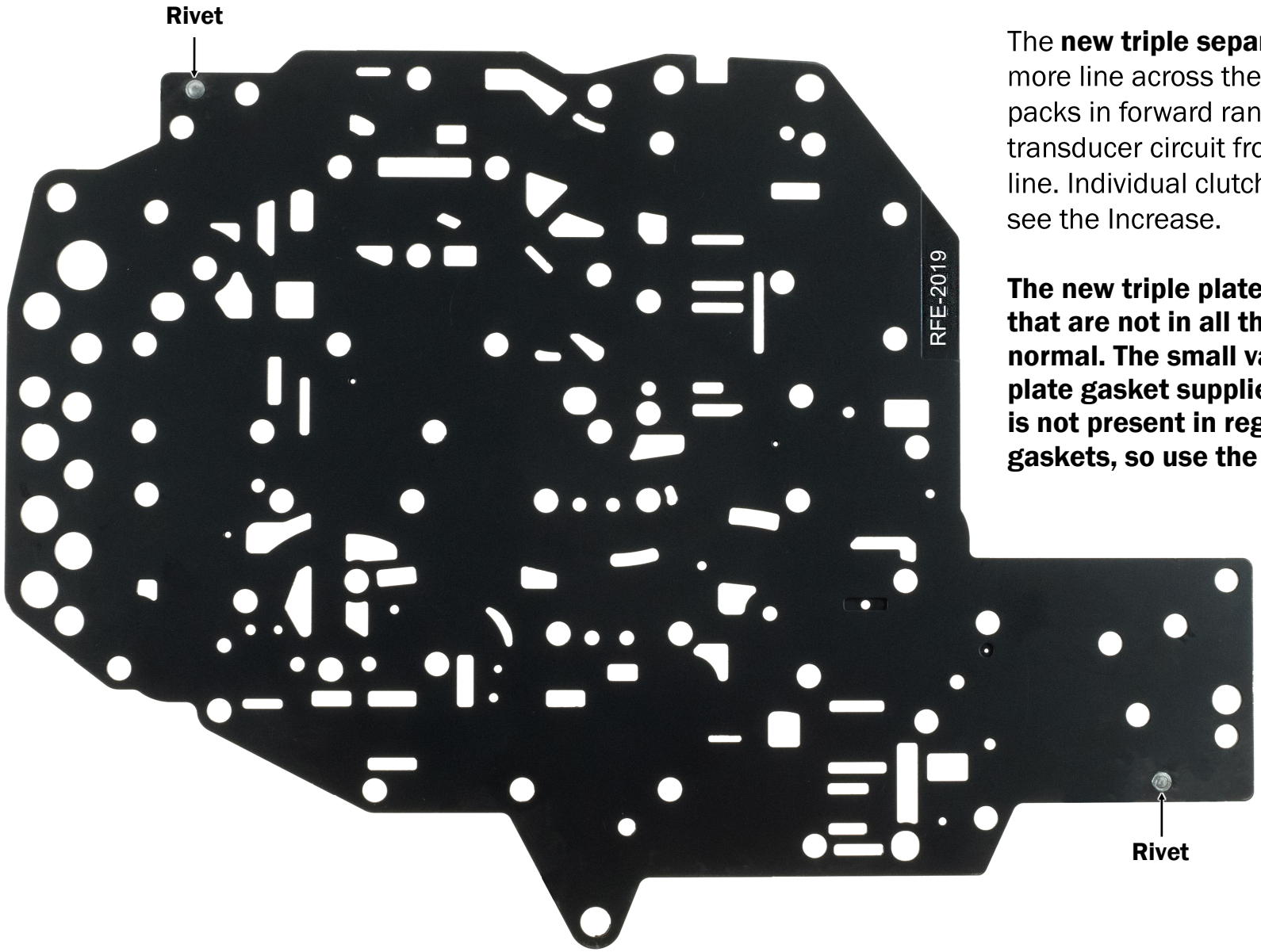


2007-2018

Listen up!

The solenoid pack gasket and filter plate is different in the area shown above for the 2019-on applications and the solenoid pack has a blue plastic connector. Techs in the field report that many rebuilding kits come with the previous design gasket. If the early style gasket is used on a 2019-on application the unit will bind in forward and reverse. Check this area carefully to make sure it is the correct one.

Hold it! The supplied plate in this kit can only be used on 2019-on.



The **new triple separator plate** adds 36% more line across the entire curve to all clutch packs in forward ranges and keeps the transducer circuit from seeing the increased line. Individual clutch ports is the only place to see the Increase.

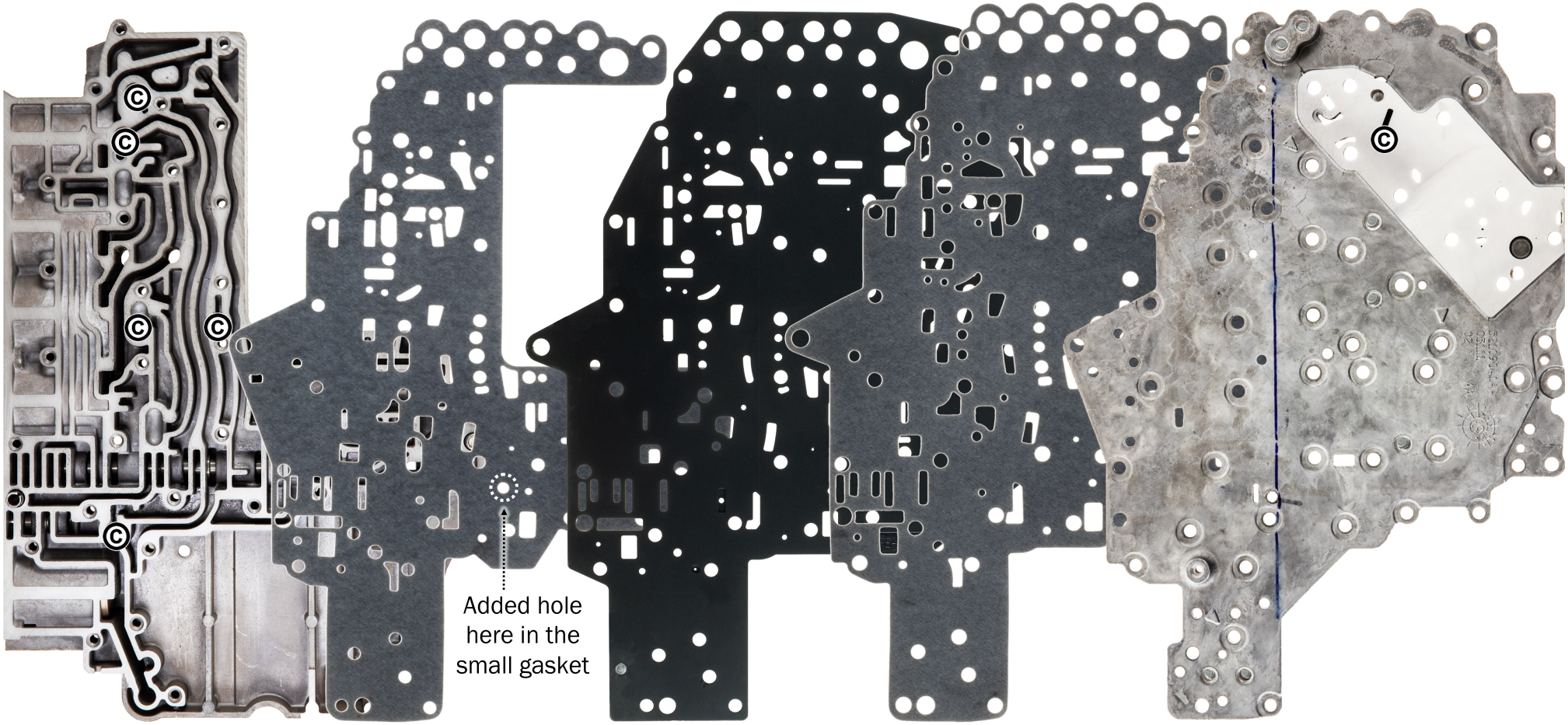
The new triple plate provided has some holes that are not in all three plates, this is ok and normal. The small valve body to separator plate gasket supplied has an extra hole that is not present in regular aftermarket gaskets, so use the supplied gaskets only.

Clutch tips: OE OD friction plates and good oil minimize the chance of a *squawk* on the shift. Clutch thickness's may vary with different manufacturers and can effect clearances especially on single sided clutches due to number of plates!

10.

- First install 5 plastic 1/4” checkballs in the valve body as shown ©
- Next install the **new smaller gasket** first against the valve body
- Then the **new triple separator plate**
- Then the **new larger gasket** on top of triple plate
- Then channel the casting and 1 plastic 1/4” checkball as shown ©
- Finally install the lock-up valve body assembly

Lock-up valve body



Valve body with 5 checkballs / **New small gasket** / **New triple plate** / **New large gasket** / Channel casting with 1 checkball

11.

9 

New long bolts and washer torque to 70 lb·in

7 

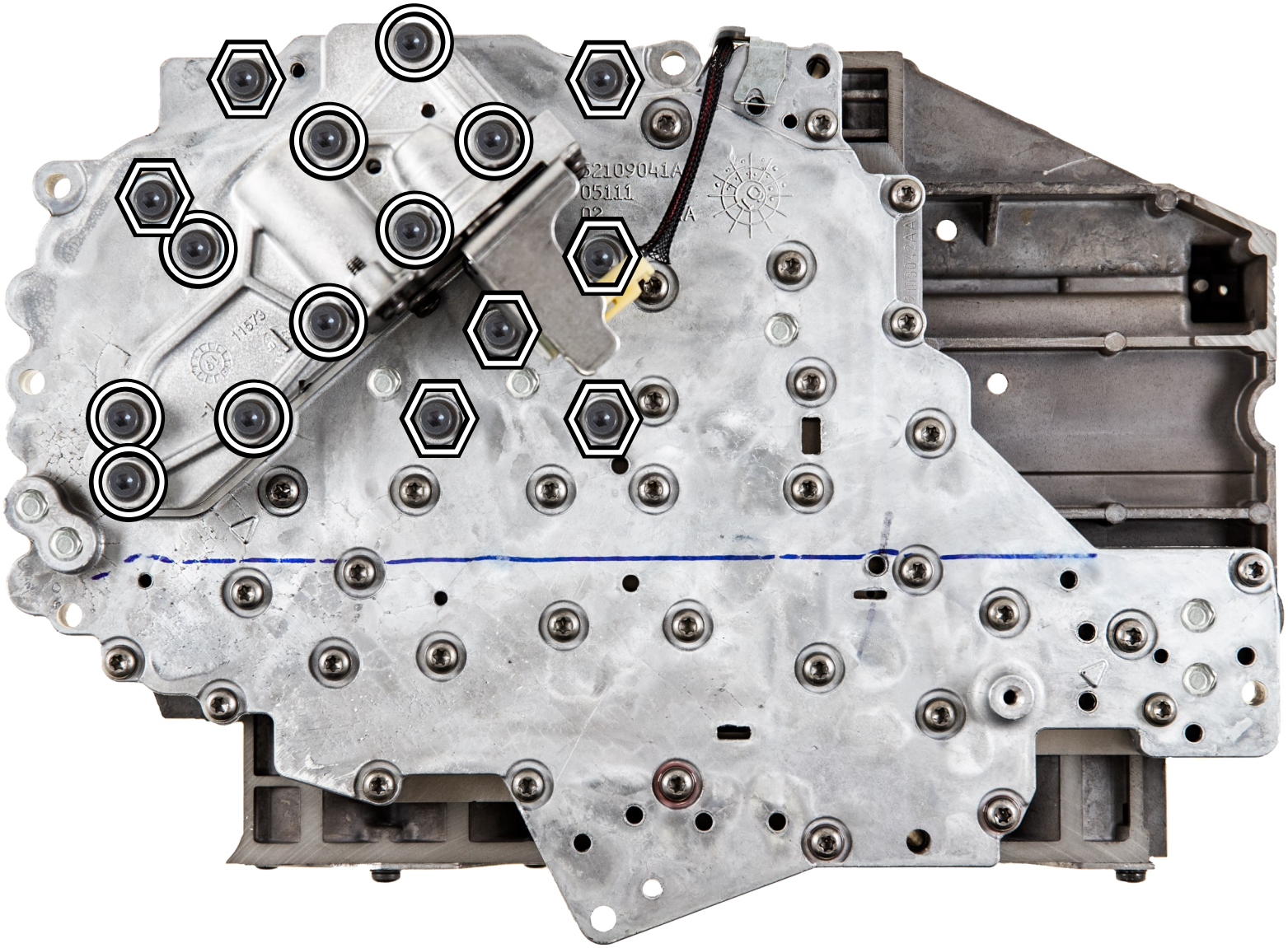
New medium length bolts and washer torque to 60 lb·in

34 

OEM bolts torque to 60 lb·in

Listen up!

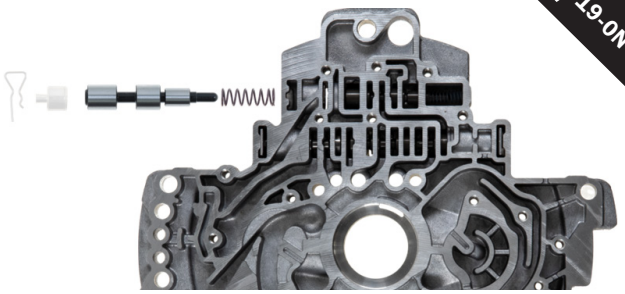
Go around all bolts two or three times, with at least 1/2 hour between torquing's. This gives the gaskets some time to compress.



Other **REPAIR SOLUTIONS** from TRANSGO®

Oversize Converter Regulator Valve

NEW 19-ON



Fits 68RFE 2019-on

#RFE-TCCREG-OS19

Corrects/Prevents/Reduces:

- TCC slip codes on high mileage vehicles

Requires: RFE-TCCREG-TK19 Tool Kit

TRANS REMOVAL REQUIRED · REAMING REQUIRED · TOOL REQUIRED

MADE IN USA

Tool Kit for Oversize Converter Regulator Valve

NEW

#RFE-TCCREG-TK19

Features:

- No holding fixture required
- Reusable high quality USA-made steel reamer

MADE IN USA

Billet Accumulator Piston Kit

NEW

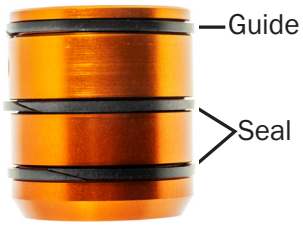
Easy-to-install drop-in dual-sealing accumulator pistons—no tools required!

Fits A604, A606, 40TE, 41TE, 42LE, 62TE, 42RLE, 45RFE, 545RFE, 65RFE, 66RFE, 68RFE

#RFE-ACMPST-KIT

Features:

- Two sealing rings double the sealing capacity over OE
- Our new additional center ring seals in a previously unused area of the bore allowing reuse of the valve body or case even when damaged by side-loading of the OE design accumulator piston
- The third ring, combined with a shallower groove in the piston, acts as a guide preventing damage from side loading the OE piston
- Billet aluminum pistons to avoid cracking



TRANS REMOVAL NOT REQUIRED

MADE IN USA

Solenoid Switch Valve Kits

The solution to repeated OD clutch failure and/or code P0871!

Fits A604, A606, 40TE, 41TE, 42LE, 62TE, 42RLE, 45RFE, 545RFE, 65RFE, 66RFE, 68RFE

For .453" valve diameter (2019-on 68RFE measures.453)

#RFE-SV453-WT With tools
#RFE-SV453-NT No tools

For .420" valve diameter

#RFE-SV420-WT With tools
#RFE-SV420-NT No tools

Features:

- Installs in under 5 minutes
- No need to buy valve bodies
- Save and reuse tools for refill kits
- No holding fixture required or expensive tooling

Corrects/Prevents/Reduces:

- Repeat OD clutch failure
- Code P0871
- Solenoid switch valve latched in L/R
- Solenoid switch valve latched in TCC
- O/D clutch failure
- Kills engine at a stop
- TCC slip
- TCC control stuck off or on

TRANS REMOVAL NOT REQUIRED · REAMING REQUIRED · TOOL REQUIRED

MADE IN USA

ENGINEERED FOR PERFORMANCE.
DESIGNED FOR DURABILITY.

Read First

Important information regarding Computer Tuning before starting.

The TransGo Tuneless RFE kits are designed to be a standalone transmission modification used **ONLY WITH OEM-TCM** transmission tuning. If the truck has the DPF, EGR or CAT deletes, re-flashing the PCM back to stock is no easy task as the deleted components-systems must be reinstalled before the truck will run on a factory engine tune. Some tuners may require the program to be uninstalled & reinstalled choosing **NO** transmission modifications.

Verify stock line pressure commands are installed.
Line pressure values are listed below & can be used to verify the line pressure programming is at OE calibration.
Grab a scan tool and monitor desired line pressure. In the drive range make sure the actual pressure is the same or within a few pounds of desired. If the DESIRED line pressure values are higher than listed below, the ECM/TCM does not have stock trans tuning, consult the tuner for stock transmission program files! If the desired maximum pressure is 170-250 PSI the software has been altered.

Checking line pressure: In drive idling, at a stop. **Desired = 60 PSI.** Briefly power brake above 1/2 throttle. **Desired = 160 PSI**
Driving in 5th or 6th at 50% or more throttle **Desired 160PSI.** Even if pressures are the same as listed this does not prove that the correct year calibration is installed. With this kit installed with the correct year and factory trans files there will be no clunks or bangs just clean short shifts that hold the power with nothing else to say.
If the truck has any aftermarket electronic transmission pressure enhancing devices **REMOVE THEM.**

Anytime an engine tune is flashed on a 2010 and later RAM Truck with a 68RFE, the transmission program is automatically overwritten with whatever trans program the tuner has provided, even if it was sold as an engine only tuner. The program files from almost any year Ram will install, but there can be negative side effects if a different year file is used. As of 11/2018 we have seen at least 6 distinct versions of PCM/TCM calibration, 2007-2009, 2010, 2011-2012, 2013-2016, 2017, 2018 & there maybe more.

We strongly recommend running the correct year program file for the vehicle and ONLY with unmodified transmission tables when installing this kit. Running the incorrect year program file, or poorly modified engine programs with the TransGo tuneless calibration can result in harsh shifting rough lock-up apply, shift timing and or lock-up timing issues, along with shuttle shifting & unexpected downshift complaints. The newer the truck is, the more critical this becomes. We have found no universal program file that fits all years and works correctly. If you are having trouble with one and need help with your Program Identification it can be found on the main menu of your scan tool under miscellaneous functions and PCM information. Once you have located it on your scan tool give us a call. Please note: We can only identify what year and model the file came from. We will not be able to identify what has or has not been modified.

If the aftermarket program is running “code setting suppression or limp-in mode delete”, any troubles at highway speed can lead to unwanted downshifts to 2nd or 1st gear at abnormally high speed causing tire skid or parts breakage. One great function of limp-in mode is to put the trans in neutral above 35 or 40 MPH if a problem is detected and keep it there until the truck slows down to a safe enough speed. Letting a truck leave with loss of communication codes or with code suppression is risky business.

Oversize tires without compensating axle ratio changes creates real headaches. Add a hot engine tune and you are now playing with fire.
For example, With taller tires a light throttle 5-6 shift with TCC on at 50 MPH can leave the engine lugging at 1020 RPM's. The Hot tune has the load/torque tables jacked up for line pressure command only and not the shift speed. The PCM/TCM commands 160 PSI plus with the engine at 1020 RPM and the pump cannot produce 160 PSI at that RPM. The check valve in the pump now opens and you now have 2 pumps working and line PSI spikes up and the flapper closes, then line drops again because one pump still can not make 160 at 1020 RPM's. This 50 to 60 psi spike or oscillation will continue until the engine RPM is somewhere above 1300 RPM's. This can kill converter or OD clutches & flex/crack alum VB parts.

We have been involved with 100's of 68RFE trucks running around with the pump check valve removed since December of 2018.
This has proven to be a big help with delivering extra volume at lower RPM's with no known side affects reported as of 7/13/2019.
With the check valve removed both sides of the pump feed the trans all the time. Removing the check valve has also helped with Hot operation-Converter Clutch dragging coming to a stop.

Overheating Concerns

We have had numerous complaints on 68RFE transmissions with overheating issues. One of the causes may be a stuck cooler bypass valve. 2011-on trucks have an in-line cooler bypass to allow the fluid to bypass the cooler when the vehicle is cold. This function warms up the transmission quickly in cold weather. When the fluid temperature warms up sufficiently, the thermal valve closes the bypass and routes fluid thru the transmission cooler. The overheating problem is a result of the valve in the thermal bypass sticking in "bypass" position and fails to route fluid thru the transmission cooler. Replacement is the best solution. Aftermarket cooler bypass delete assemblies are also available if you live in warm climate.

Remember! When flushing these units the valve does not open up until the fluid gets hot.

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