



Nomad

Heavy Duty Valve Body

Suitable for:



**Ford Ranger and Everest 10
Speed 10R80
Automatic Transmission**

Please read through all of the instructions carefully before proceeding. If any of the information does not appear correct or the diagrams don't match your vehicle, please contact Wholesale Automatic Transmissions on +61 3 9762 8004.

1. Parts List

10R80 Nomad Heavy
Duty Valve Body



Pan Gasket



Filter



2. Tools List

- 8mm Hex Socket
- E12 E-Torx Low/Shallow Chamfer Socket
- T30 Torx Hand Tool
- 19mm Crows Foot Socket
- Torque wrench
- Oil drain pan
- Rubber Mallet
- Right Angle Pick
- Suitable Fluid Pump

Expected Installation Time: 2-3 Hours

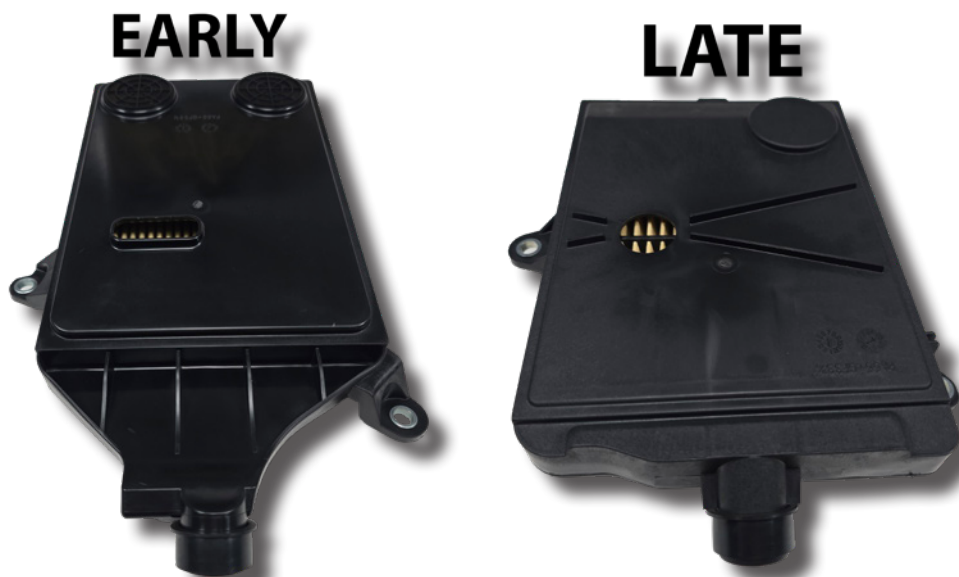
3. IMPORTANT Notes:

- 3.1. The valve body may use all 8mm Hex bolts, or it may use a combination of 8mm Hex and E12 E-Torx bolts. We have found earlier models tend to be all 8mm Hex bolts and later models to be a combination of both, but we can not provide a specific year or model distinction between the versions. Please allow for both options prior to removing the pan.

For the models that use the E-Torx bolts, they have used a low profile head version of the E-Torx bolt. You must NOT use a standard E12 E-Torx socket as this WILL strip the bolt heads. Either locate a Low/Shallow Chamfer E12 socket or modify a standard E12 socket by finishing down the chamfer.



- 3.2. There are two types of Filters present in the 10R80 transmission. We classify them as Early and Late. The filter we supply is the Late version which will fit both Early and Late vehicles.



4. Safety First

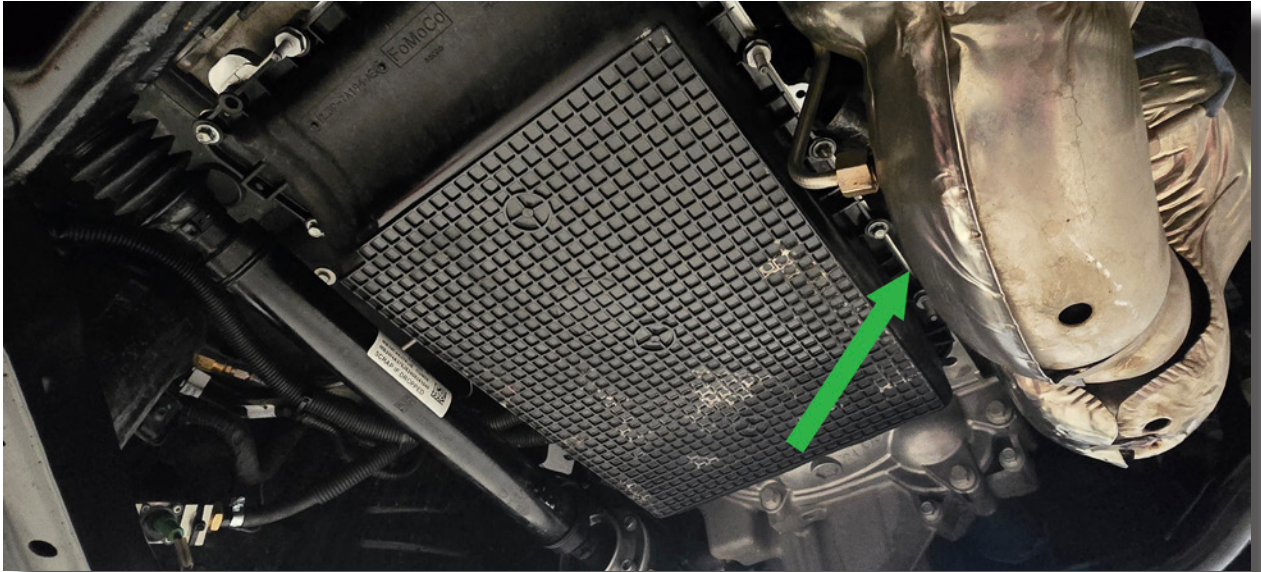
Hot engines and hot transmissions can cause serious injury. Before removing parts from the vehicle, allow sufficient time for engine and auto to cool.

5. Installation Instructions

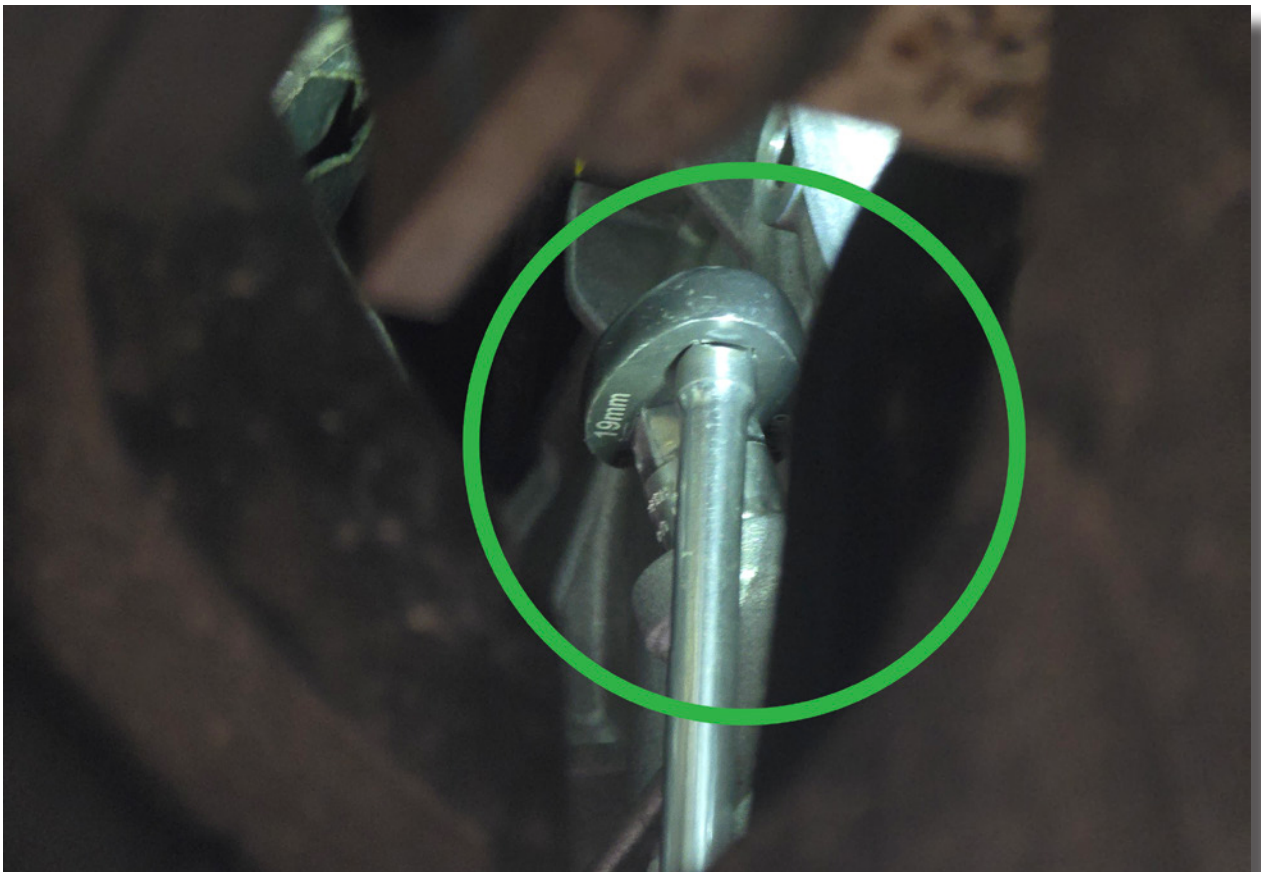
Before commencing work, please ensure that you have sufficient transmission fluid to re-fill the transmission at the end of the job. This transmission requires 10L Full synthetic transmission oil meeting Mercon ULV™ specification

- 5.1. Road test the vehicle. Ensure the computer is clear of any fault codes and free of any warning lights. Pay close attention to the shift feel.
- 5.2. Safely position the vehicle on a hoist or jack stands in park with the handbrake on and the engine off.

- 5.3. Locate the transmission dip stick cover. This is located on the drivers side of the transmission towards the front of the vehicle.



- 5.4. Remove the dipstick cap and dipstick. The dipstick cap has a 19mm hex bolt head on the top. Space around this is very limited; we recommend using a 19mm crows foot wrench in order to remove the cap. Once the cap is removed, slide the dipstick out of its slot.

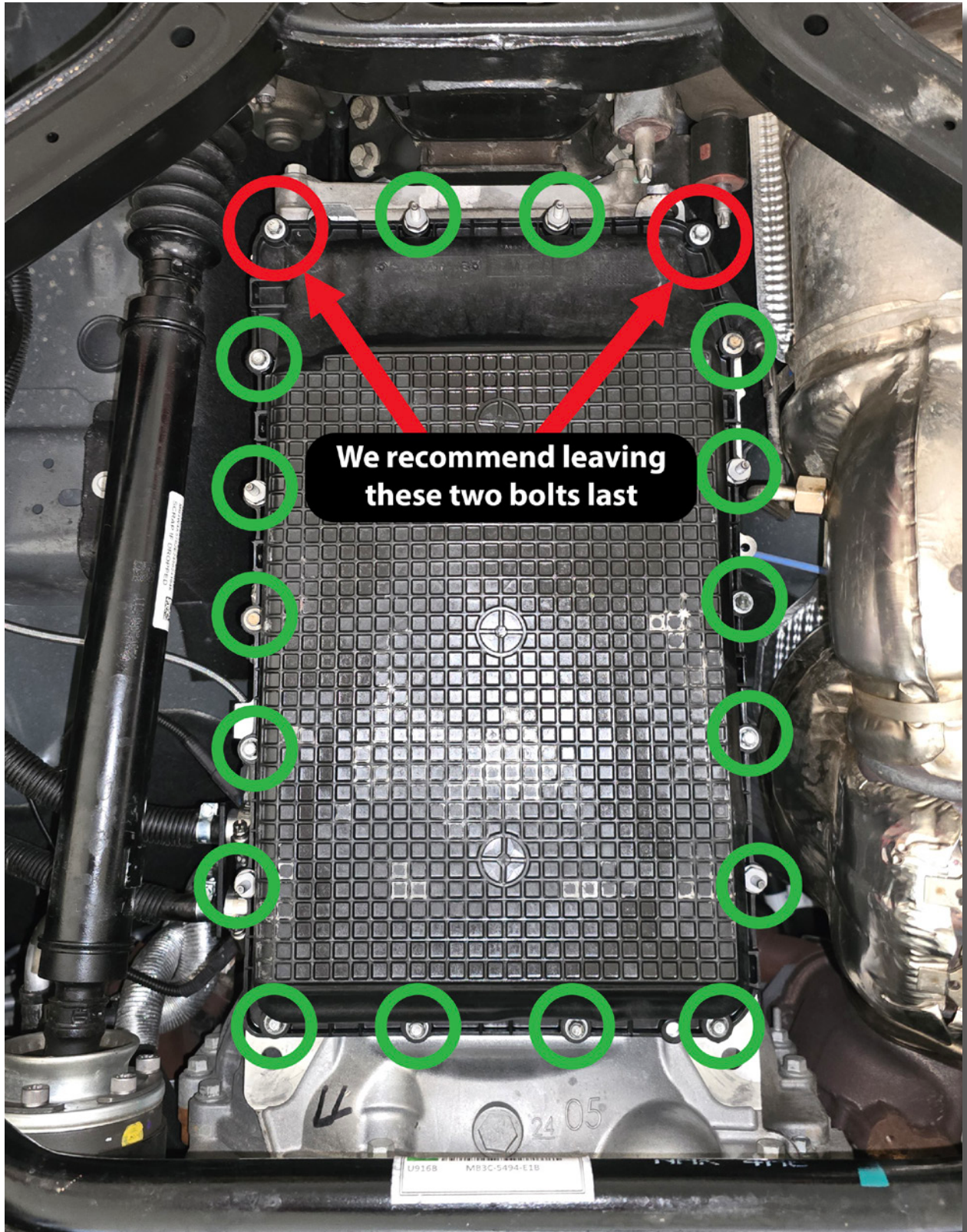


- 5.5. The 10R80 transmission does not feature a fluid drain port. We recommend using a compatible fluid pump to pump out as much transmission fluid as possible through the dipstick hole before removing the pan.

If you don't have access to a transmission fluid pump proceed to the next step. Make sure you have drop cloths and plenty of rags handy as removing the pan without draining the transmission is likely to create a mess!



- 5.6. Even after pumping out the transmission there will be a significant amount of transmission fluid left in the pan. There is the potential here for a large mess to be made; please be prepared for this. Leave the two rear bolts in each corner to be removed last. Remove all the other transmission pan bolts first.

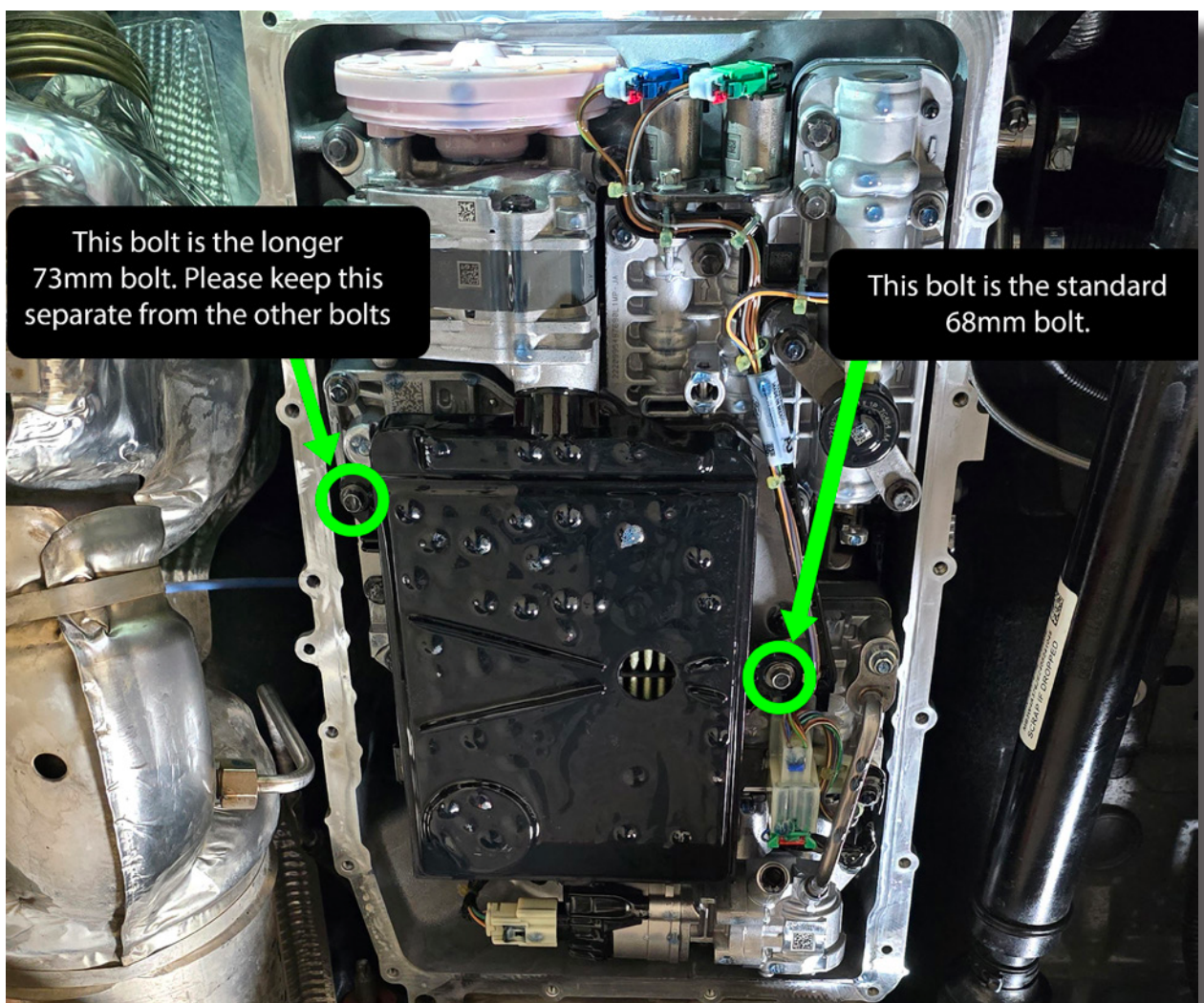


- 5.7. Have a large mouth bucket or tub ready to catch the spilling oil. Start loosening those last two bolts until the front of the pan hangs down and the fluid starts draining out.

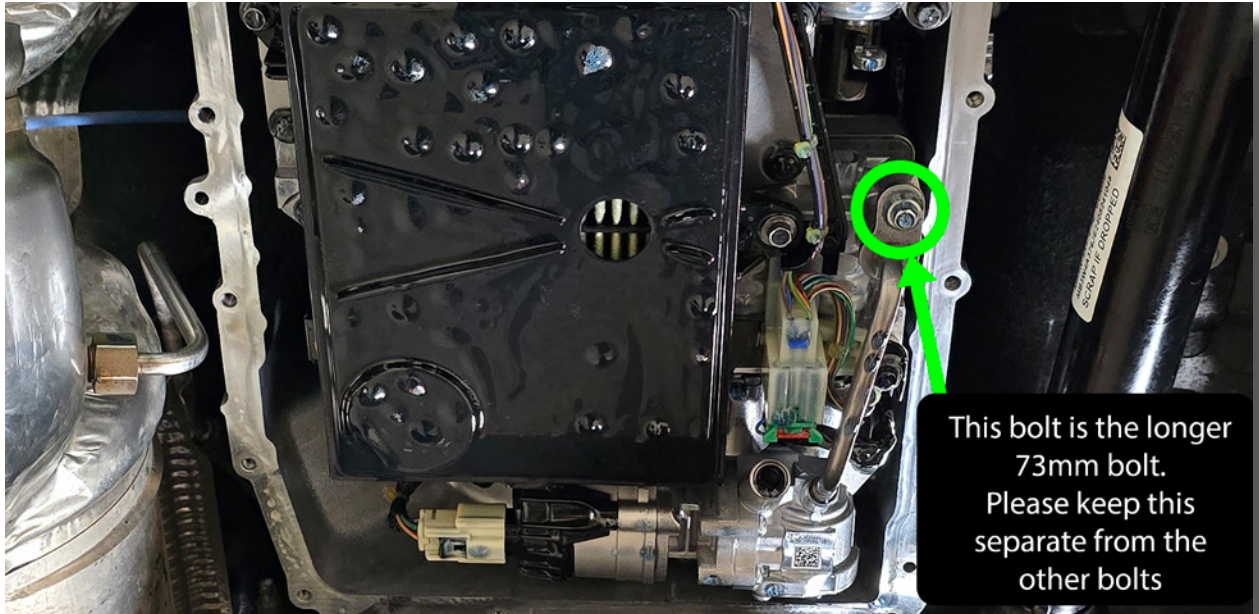
If those two bolts are loose enough but pan does not want to drop, finger tighter those bolts and then use a rubber mallet to gently tap the pan until the seal releases. Once the seal is loose, loosen the two bolts again to allow the pan to hang down and allow the fluid to drain.

Once the fluid is drained completely, remove the final two bolts and the transmission pan. Note that there will be fluid still trapped in the transmission that will continue to drip out.

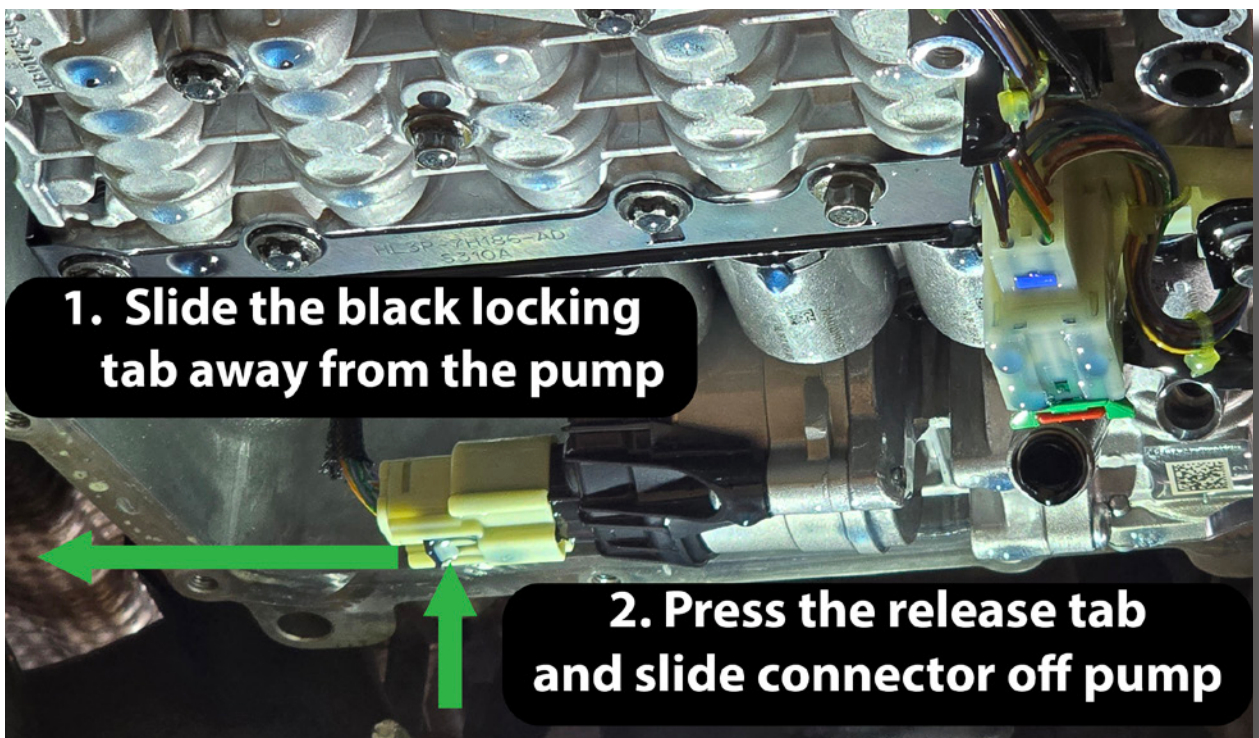
- 5.8. Remove the two 8mm bolts securing the transmission filter. Note the longer bolt on the passenger side is one of two longer bolts in the valve body. It is VERY important that the longer bolts go back to their same locations. If not, it will result in damaging the valve body and transmission. The longer bolts are 73mm long compared to the rest of the bolts at 68mm long.



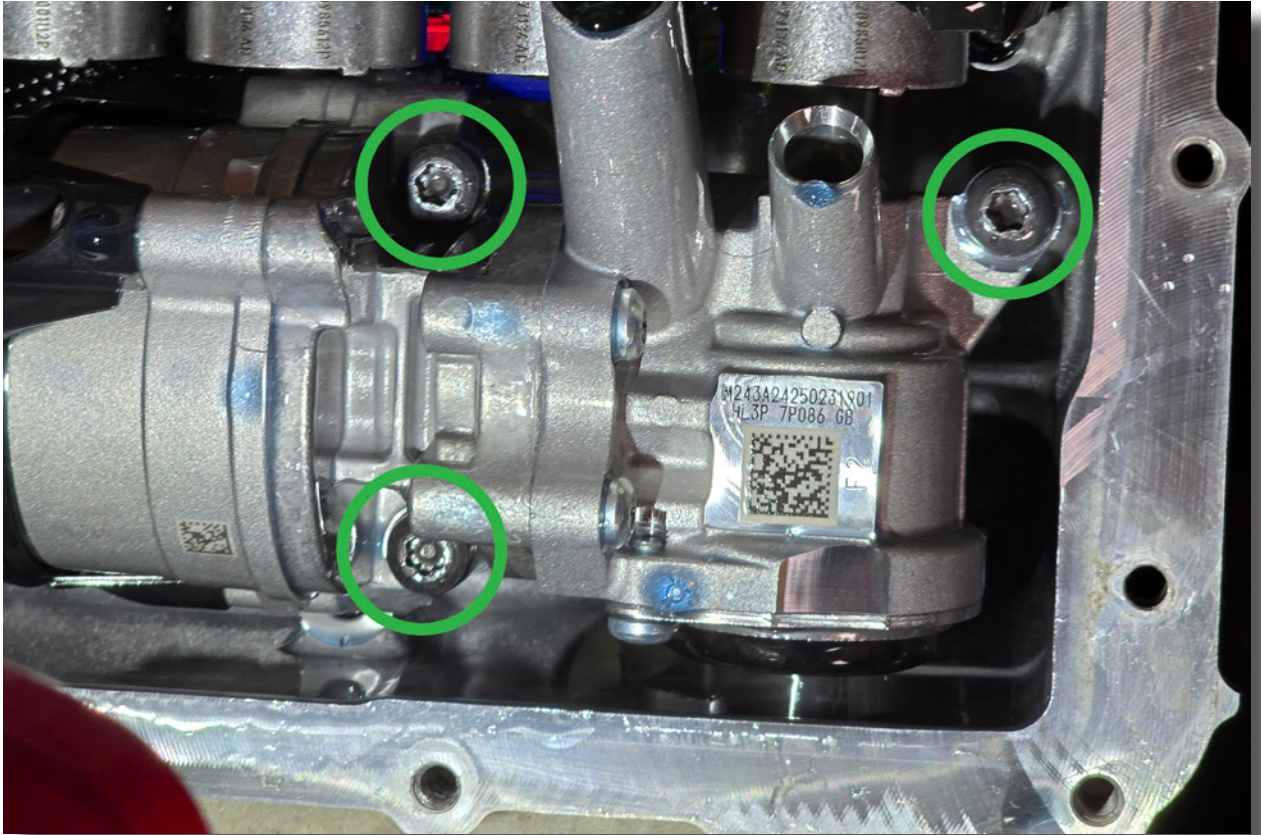
- 5.9. Remove the 8mm bolt securing the stop-start pump pressure feed pipe to the valve body. Remove the pipe by first gently prying the mounting plate away from the valve body, then gently pull the pipe out of the stop-start pump. Leave the bolt in mount to avoid mixing up with similar sized bolts in other locations. Also be aware of the O-Rings on both ends of the pressure feed pipe.



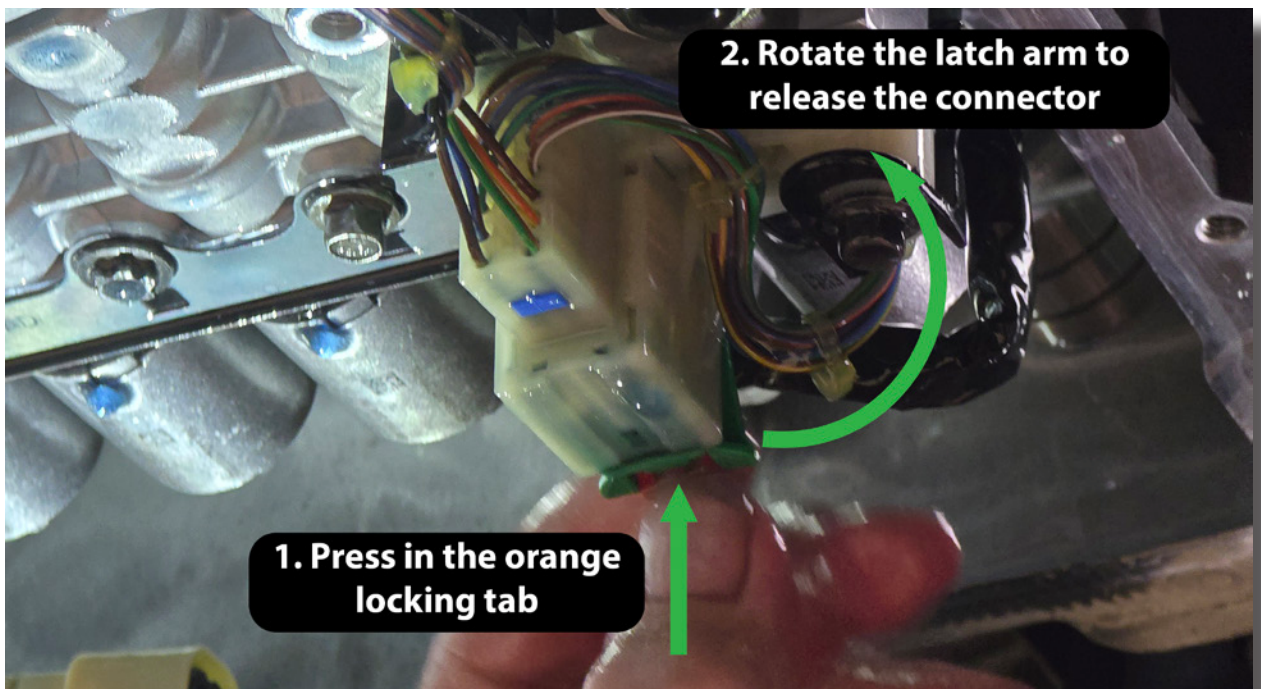
- 5.10. Unplug the electrical connector from the back of the start-stop pump. You need to slide the black locking tab away from the pump before you can press down on the connector release tab and slide the connector off the pump.



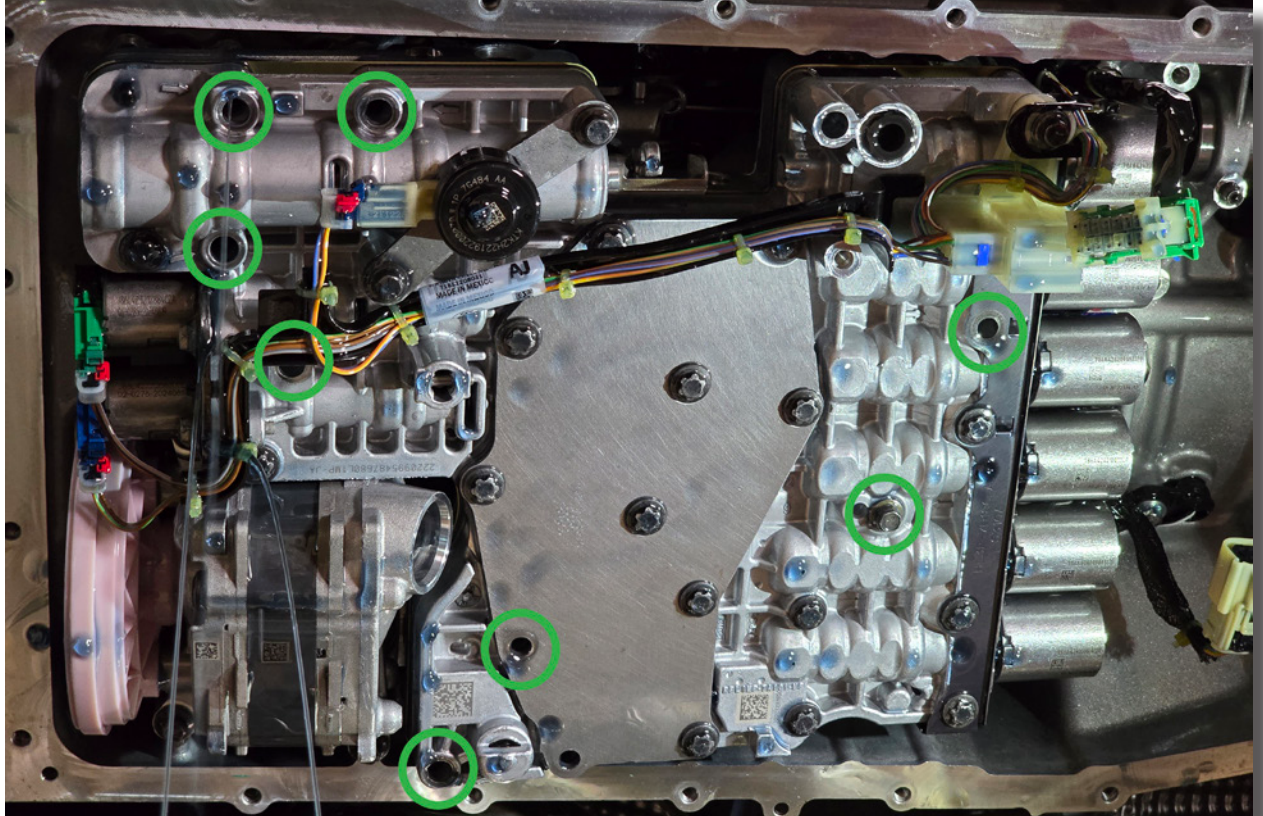
- 5.11. Remove the 3x T30 bolts securing the start-stop pump. We highly recommend NOT using power tools on these bolts.



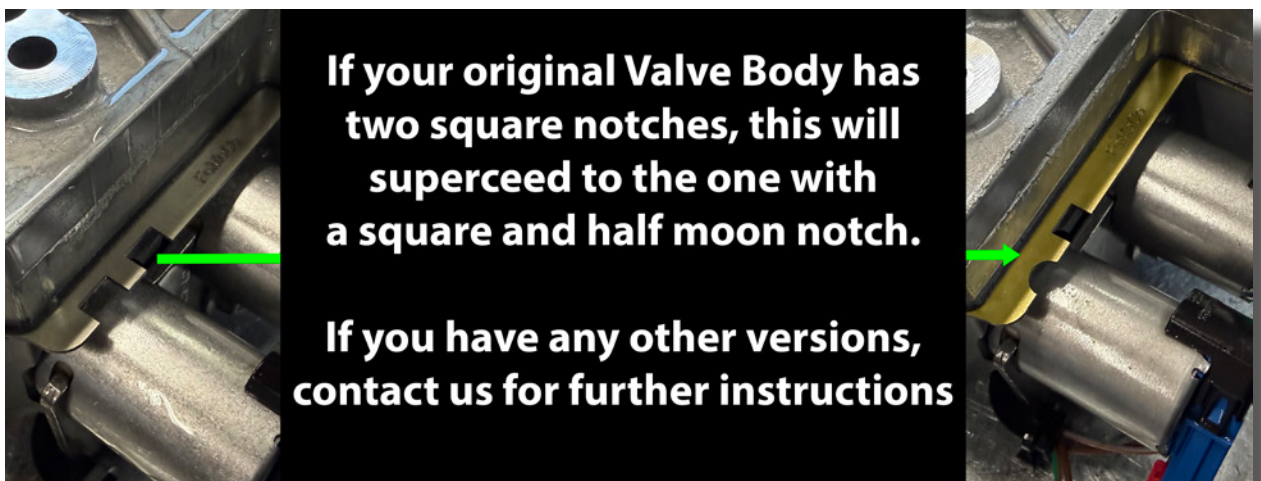
- 5.12. Unplug the main internal harness connector by pressing in the orange locking tab, then rotate the green latch arm to release the connector.



- 5.13. Removing the 8x bolts indicated in the photo below. They will also be indicated on the Valve Body with arrows. We recommend removing all but one bolt first. You can then support the valve body with one hand and remove the last bolt with your other hand.

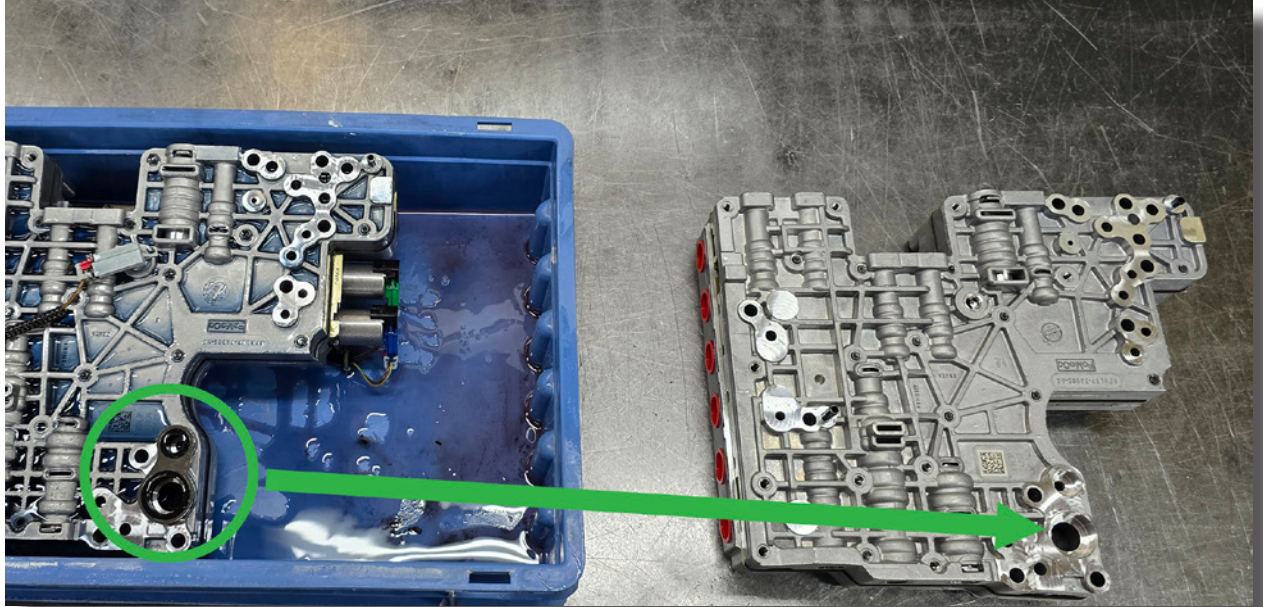


- 5.14. Lay your original valve body next to your new Nomad valve body. We need you to compare the sandwich plate near the group of two solenoids to ensure they are the same by comparing the notches. EXCEPT for the superceeded versions shown below, if the notches are not the same between your original valve body and the supplied Nomad Valve Body, DO NOT PROCEED. Contact us for further instructions.

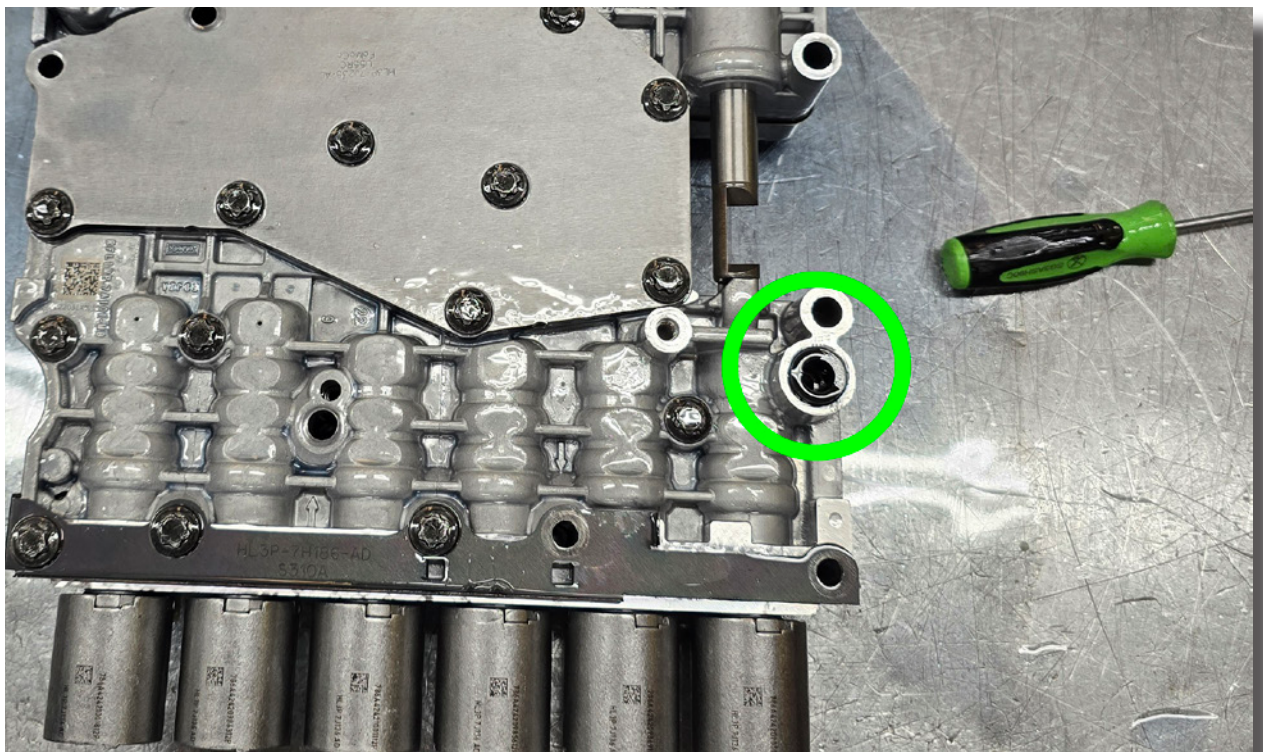


- 5.15. We are first going to transfer the valve body pressure seal. Gently pry this out of the original valve body, being careful to not pry on the rubber sealing surfaces.

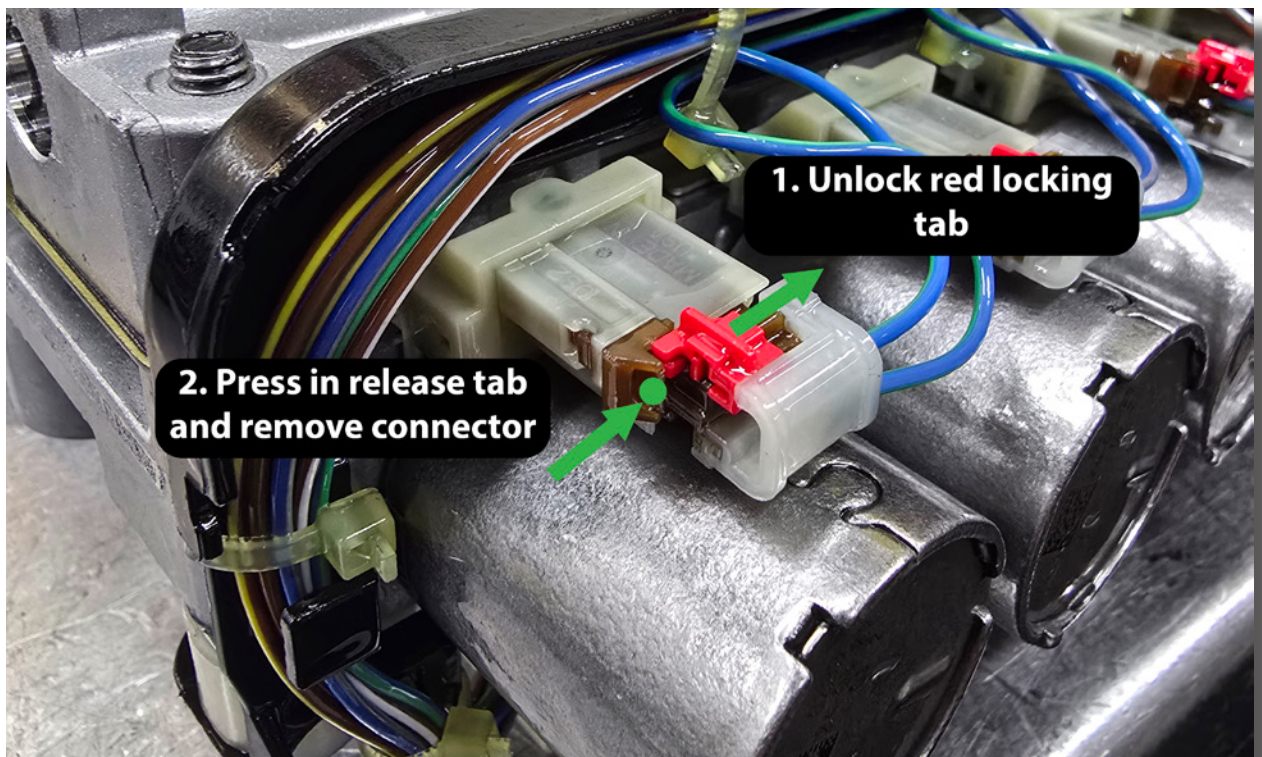
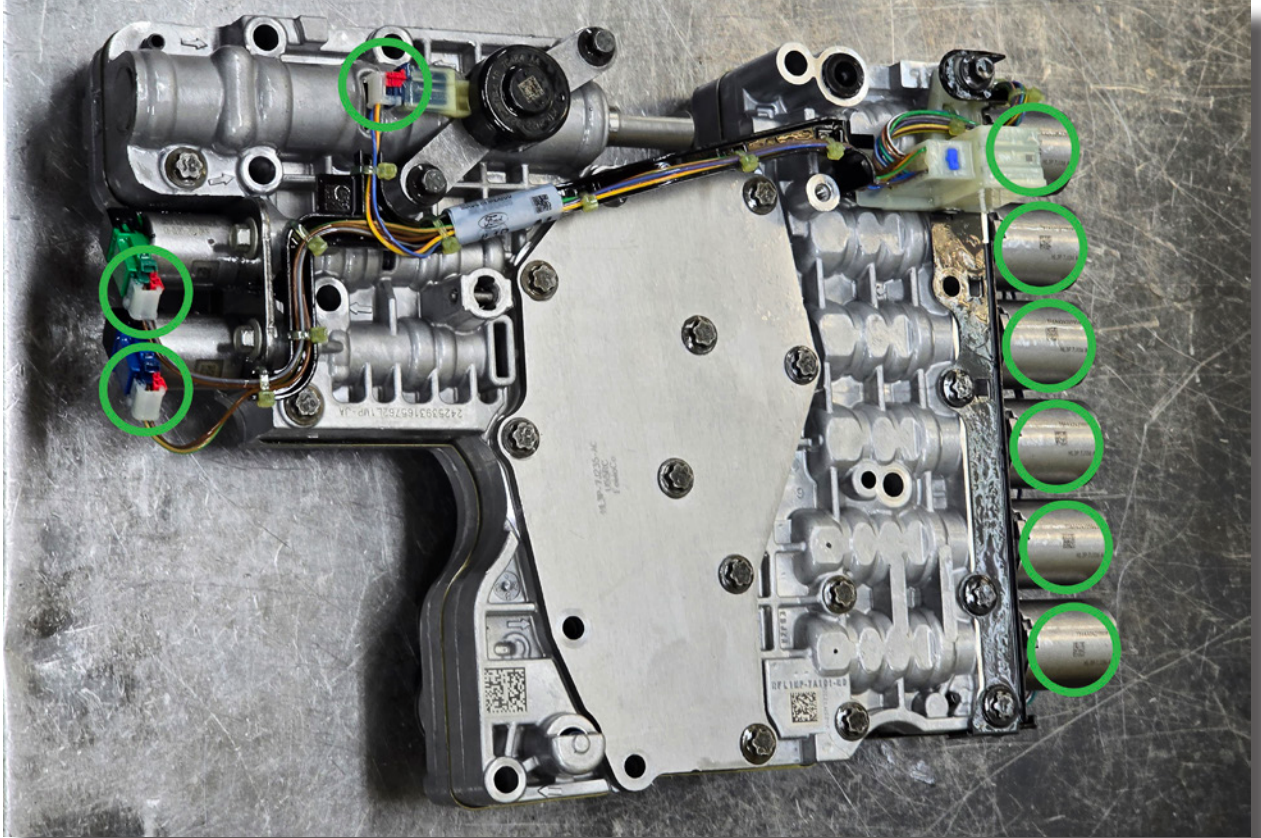
Apply some transmission fluid to the sealing surfaces and then gently press this into the Nomad valve body.



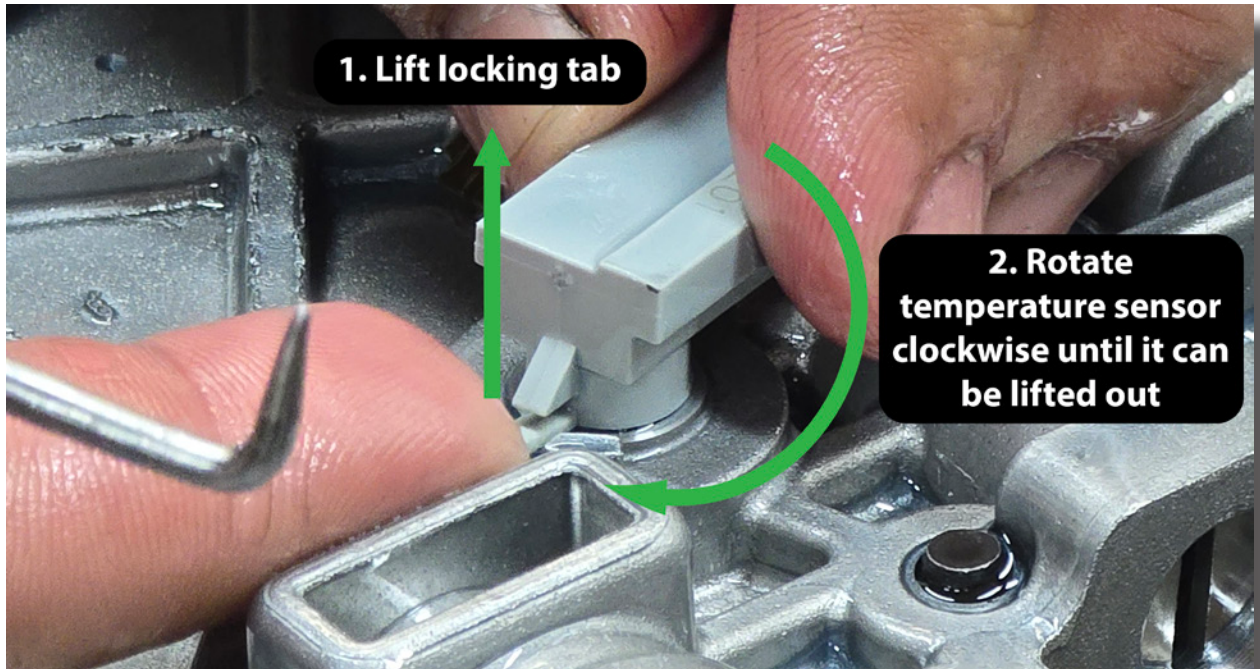
- 5.16. Flip valve body over so that the large flat plate is facing up. Swap over the Stop/Start Oil pump grommet from the original valve body to the Nomad.



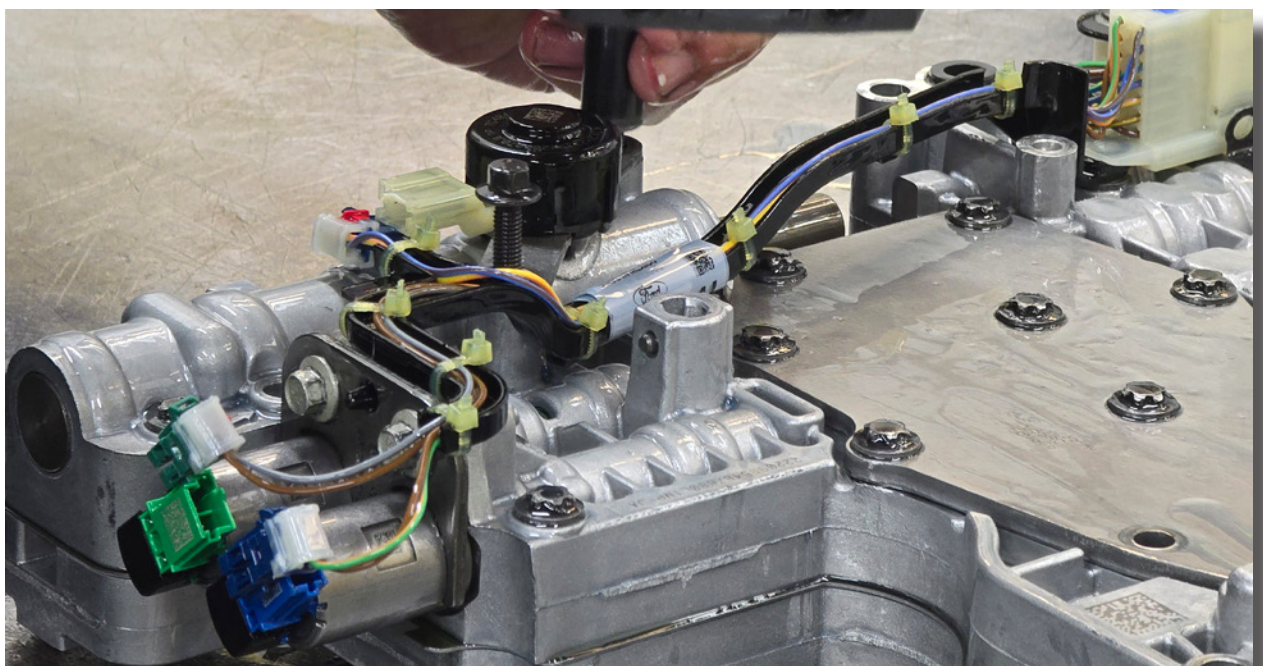
- 5.17. Remove all the transmission solenoid connectors. Slide the red locking tab towards the wires into the unlocked position, then use a blunt pick to press in the release tab and slide the connector out of the solenoid. Repeat this for all 9 solenoids.



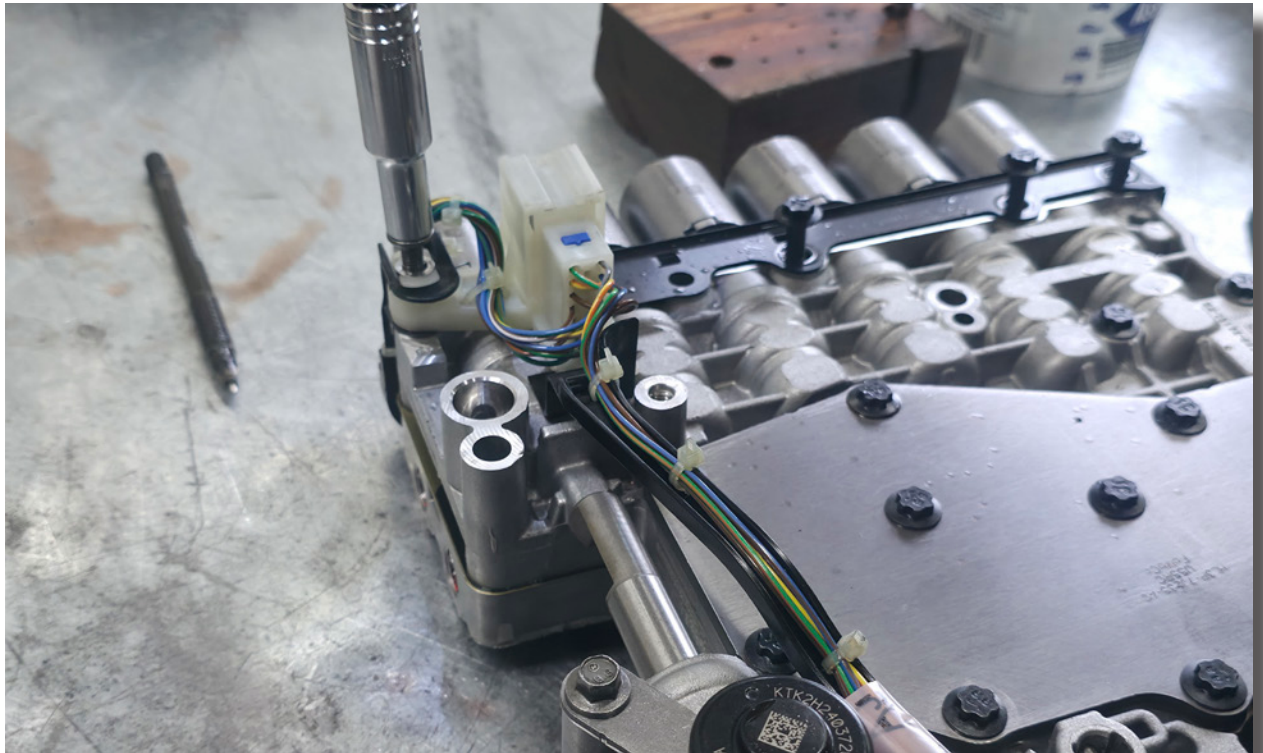
- 5.18. The temperature sensor is located on the side of the valve body that is bolted to the transmission. Unplug the temperature sensor using the same method as the solenoid connector. Once it is unplugged, remove the temp sensor from the Original valve body by lifting the locking tab and rotating the sensor clockwise until the key-way aligns and then it can be removed.



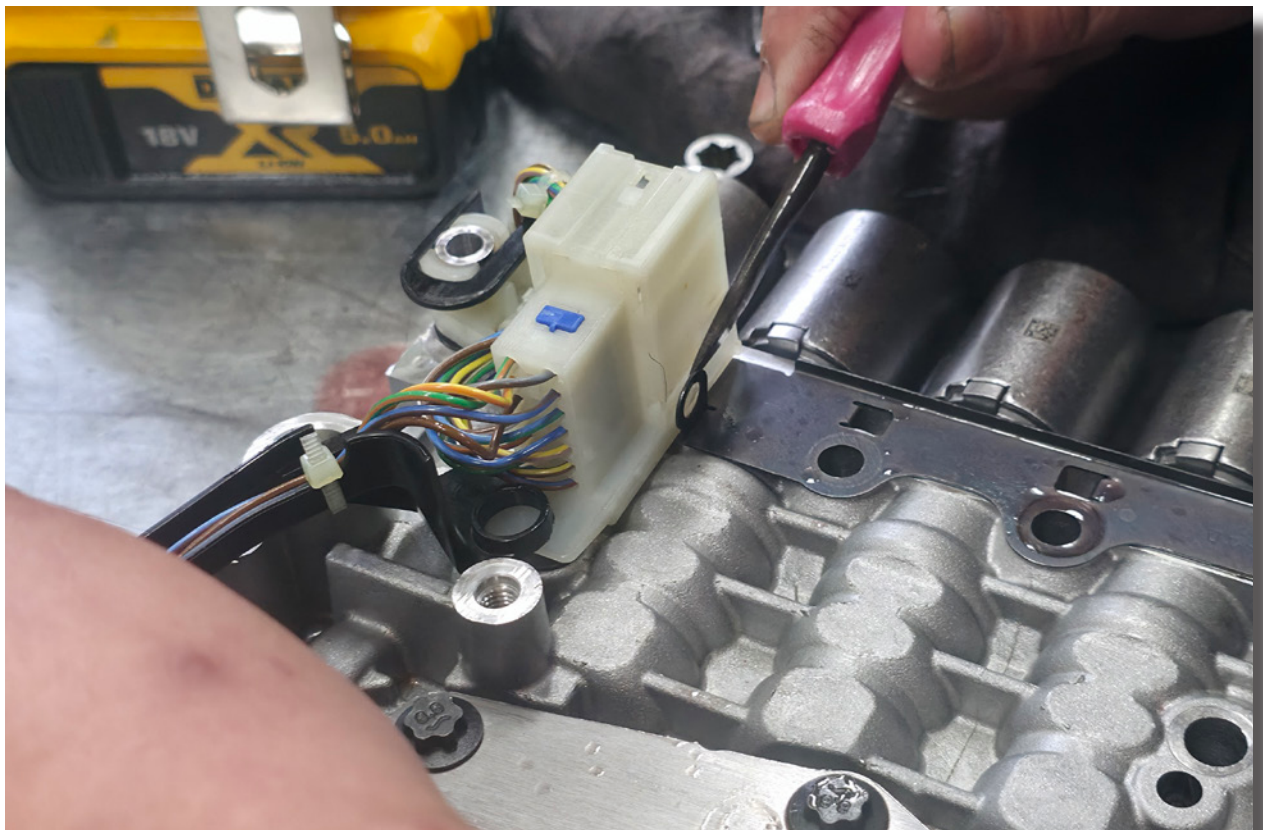
- 5.19. ****If fitted to your valve body**** Remove the two 8mm bolts holding the park pawl magnetic release solenoid. Remove solenoid as it will be transferred to Nomad Valve Body. If your Valve Body does not have the park pawl, it will still have the two 8mm bolts. These need to be transferred also.



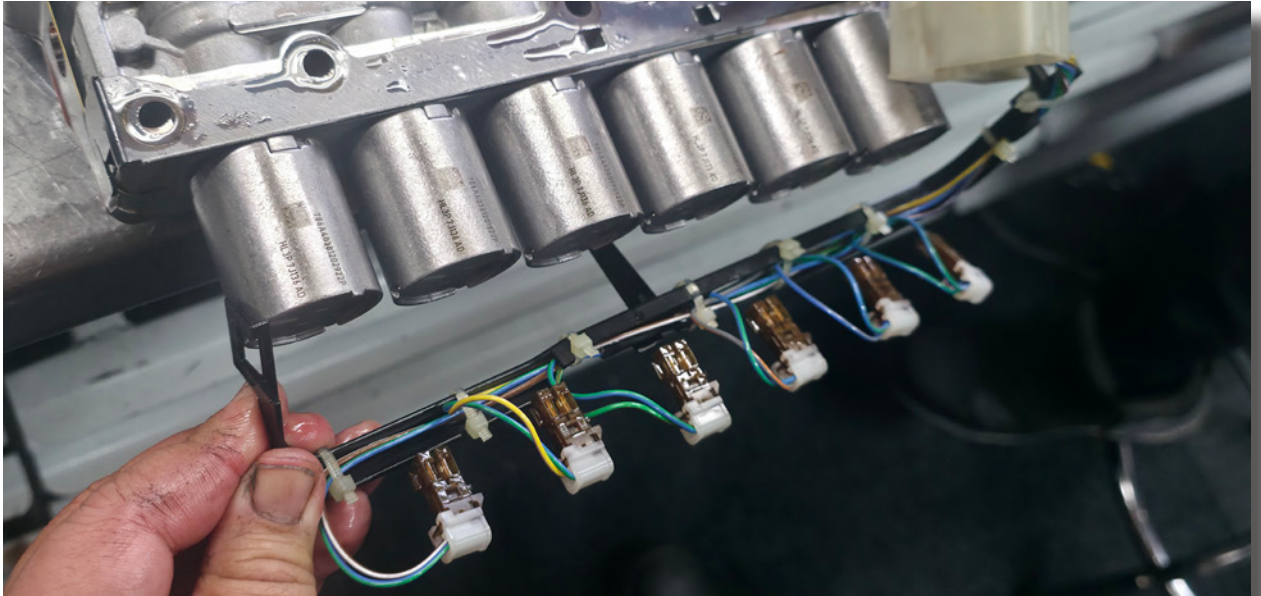
- 5.20. Remove the 1x 8mm bolts and 3x 8mm bolts holding internal main connector to the valve body and the solenoid retaining plate.



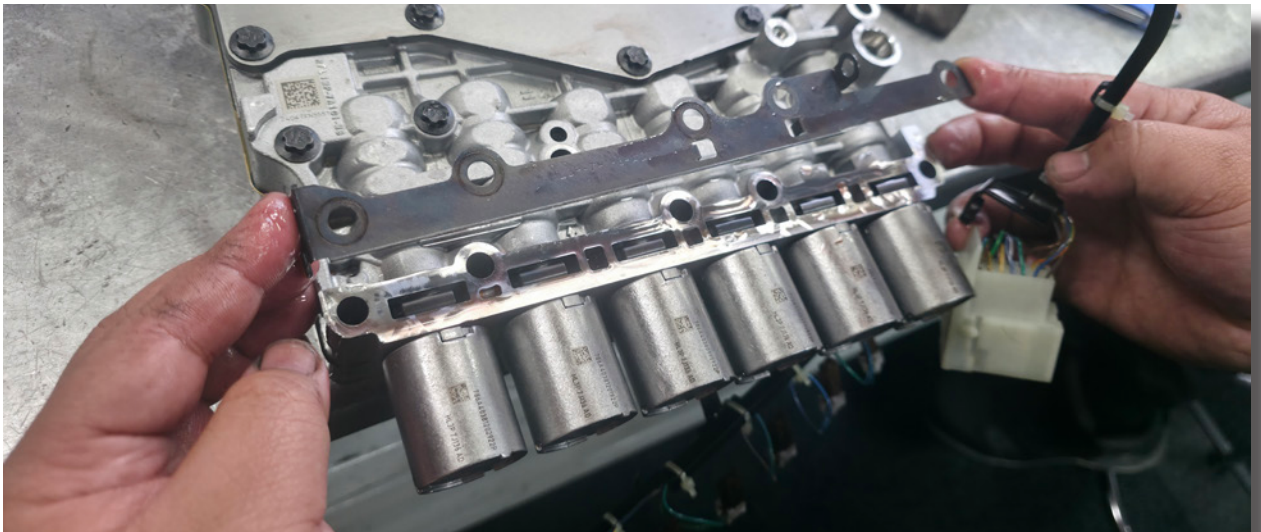
- 5.21. Using a pick, release the internal main connector from the retaining plate.



- 5.22. Slide internal harness frame away from the pair of solenoids, then slide the wiring for the group of 7 solenoids off the solenoid bodies.

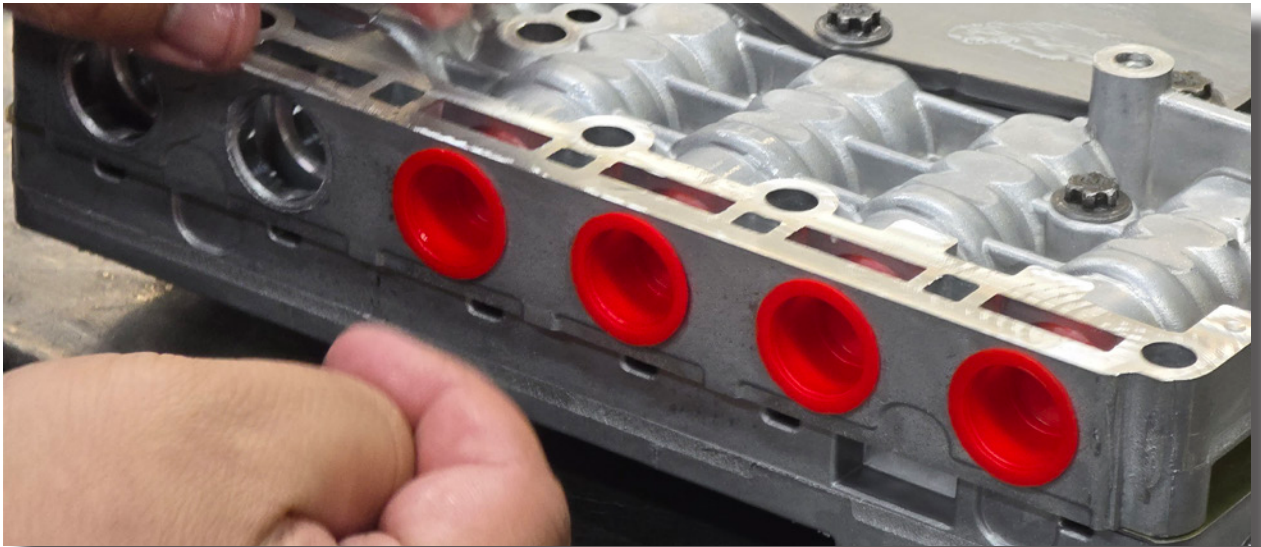


- 5.23. Remove the retaining plate covering the solenoid clips.

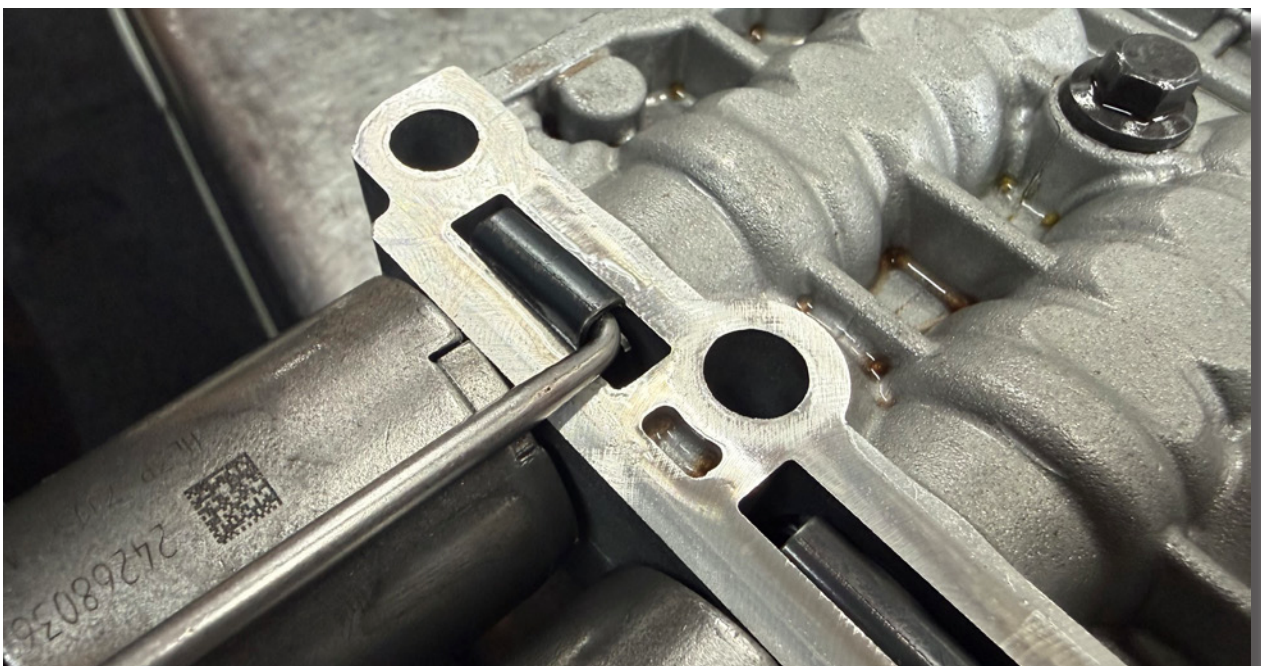


- 5.24. Before removing the solenoids, please read the next few pages about transferring the solenoids BEFORE proceeding. It may just save your day from turning to.....
- 5.25. You need to have the Nomad Valve body sitting beside the original valve body so that you can transfer each solenoid ONE AT A TIME to the exact same location in the Nomad Valve Body. This is a CRITICAL step and must be done one at a time. The solenoids are mapped in the transmission software and moving their position will result in poor shift quality, potentially leading to transmission failure.

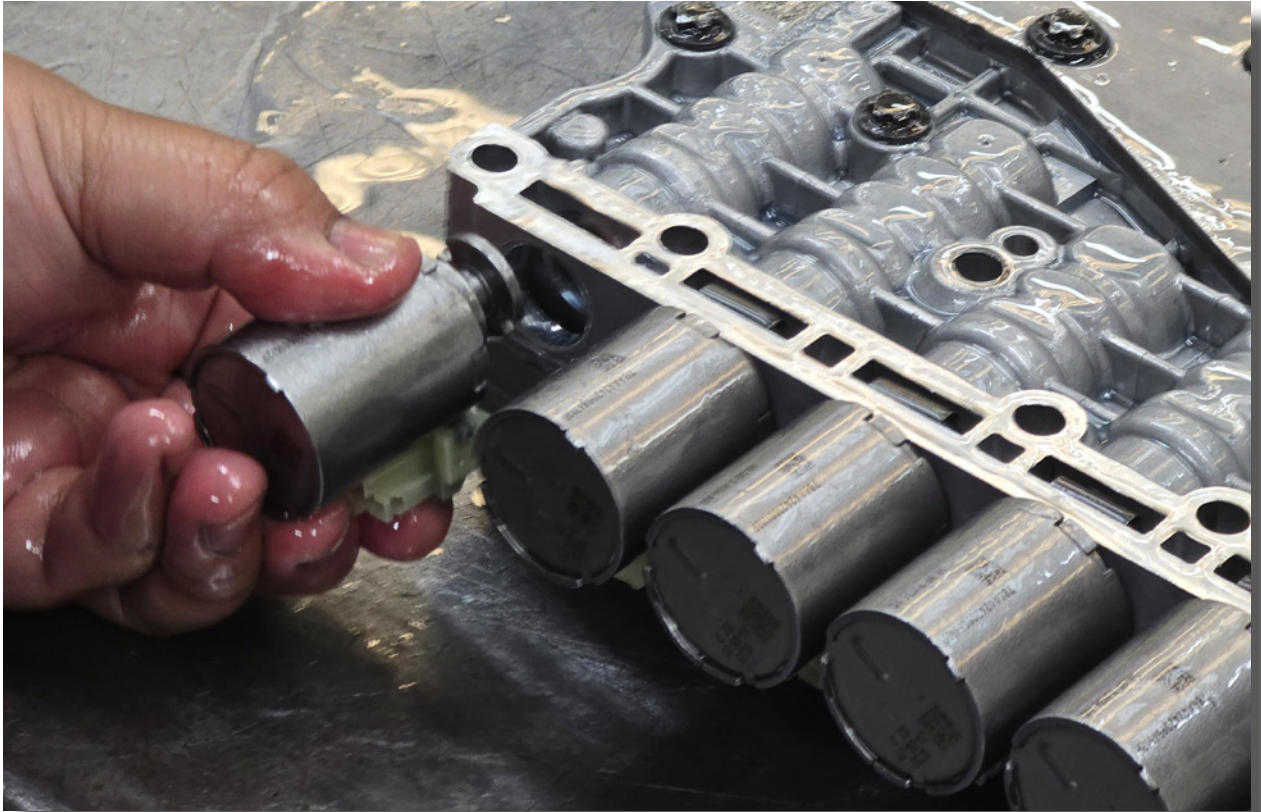
- 5.26. The Nomad Valve Body will come with transport plugs. This is to prevent the valves that are inside the valve body from falling out. These plugs **MUST** be transferred to your original valve body to ensure the valves do not fall out after removing the solenoids.
- DO NOT LIFT OR MOVE EITHER OF THE VALVE BODY'S** once you start removing the plugs and solenoids as it will likely ruin your day. Loss of valves may also result in loss of exchange deposit. **Ye Be Warned!!**
- 5.27. Carefully remove one transport plug at a time. Start with the first solenoid you will transfer, then work along the line.



- 5.28. Remove the retaining clip for the first solenoid using a right angle pick. Lift straight up and have your hand ready to catch it.



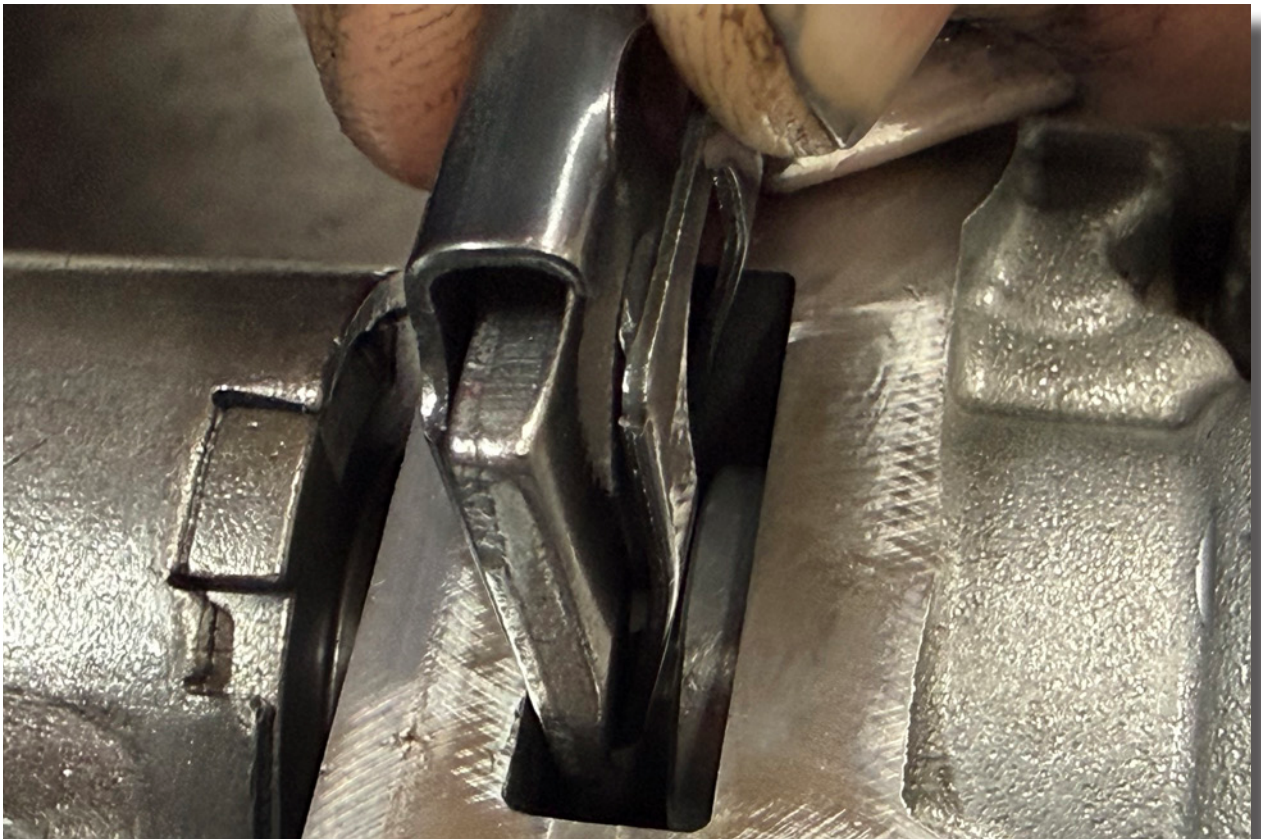
- 5.29. Remove solenoid out of it's position and insert into the Nomad valve body into the same location until fully seated.



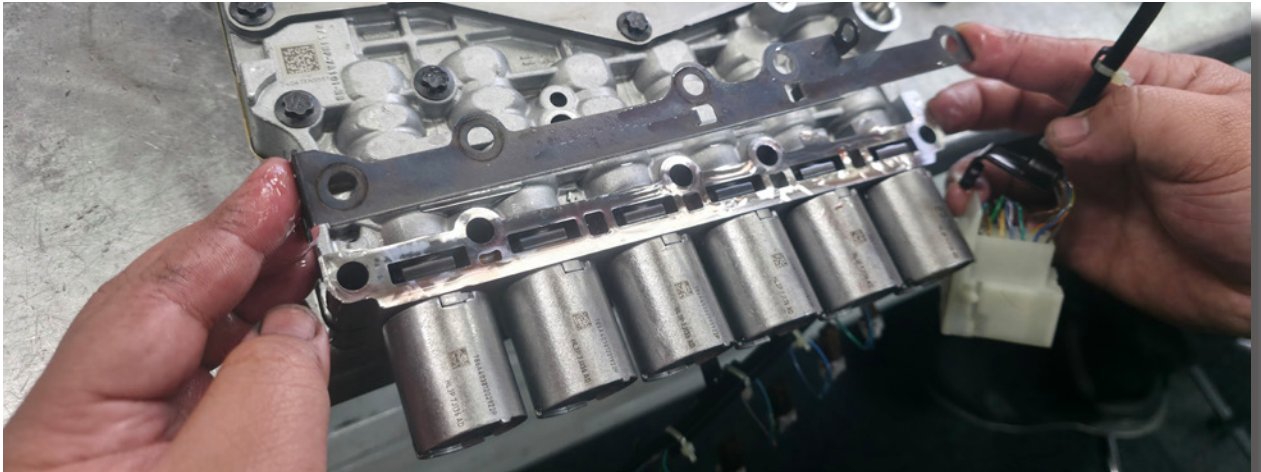
- 5.30. Grab the retaining clip reinforcement and add to the retaining clip as shown.



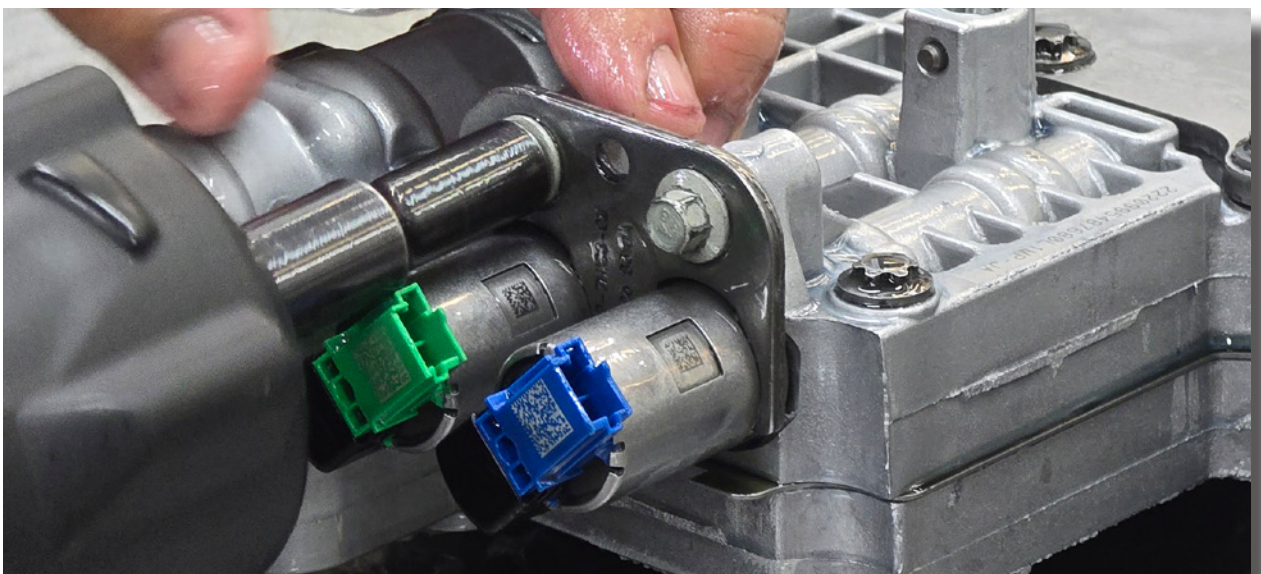
- 5.31. Insert retaining clip with the reinforcement into the Nomad Valve body while ensuring the solenoid is fully inserted.



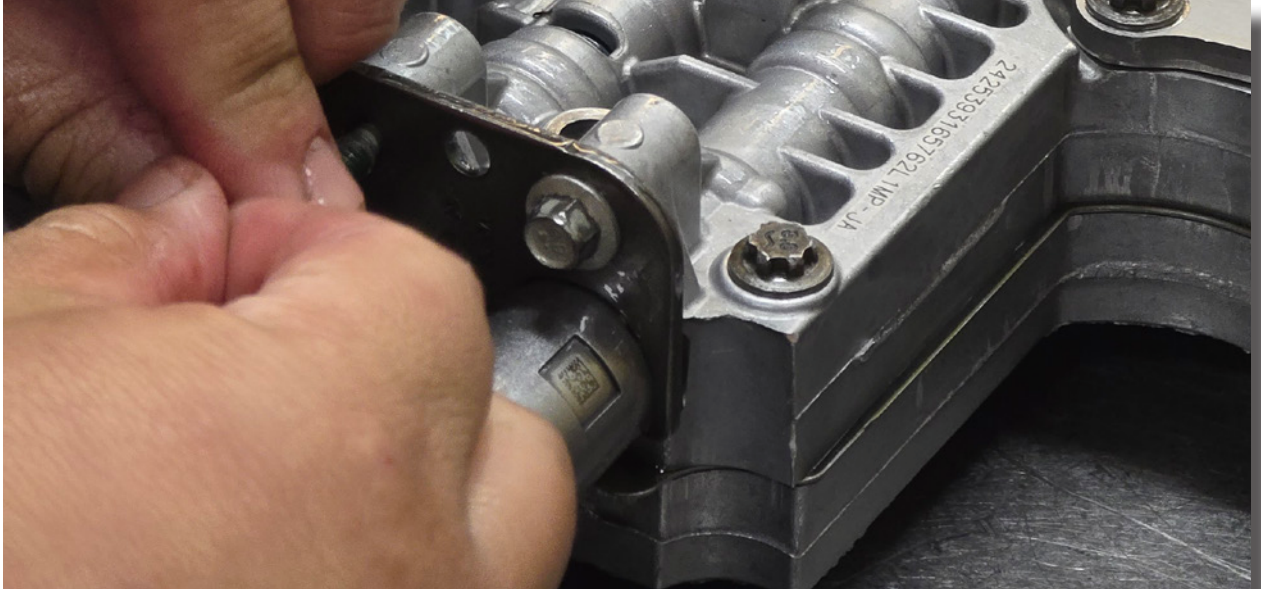
- 5.32. Insert the transport plug into the hole left by the solenoid you just removed in the original valve body.
- 5.33. Continue to transfer the group of 7 solenoids (One at a time) from the original valve body to the Nomad Valve Body, along with the retaining clip reinforcement.
- 5.34. Install all of the transport plugs into the original valve body as you go. **Sending a valve body back for exchange WITHOUT these transport plugs installed may result in loss of core deposit.**
- 5.35. Re-install the solenoid retaining plate previously removed to keep the solenoids in place. Use three 8mm bolts (finger-tight) on the left end of the bracket to position the retaining plate.



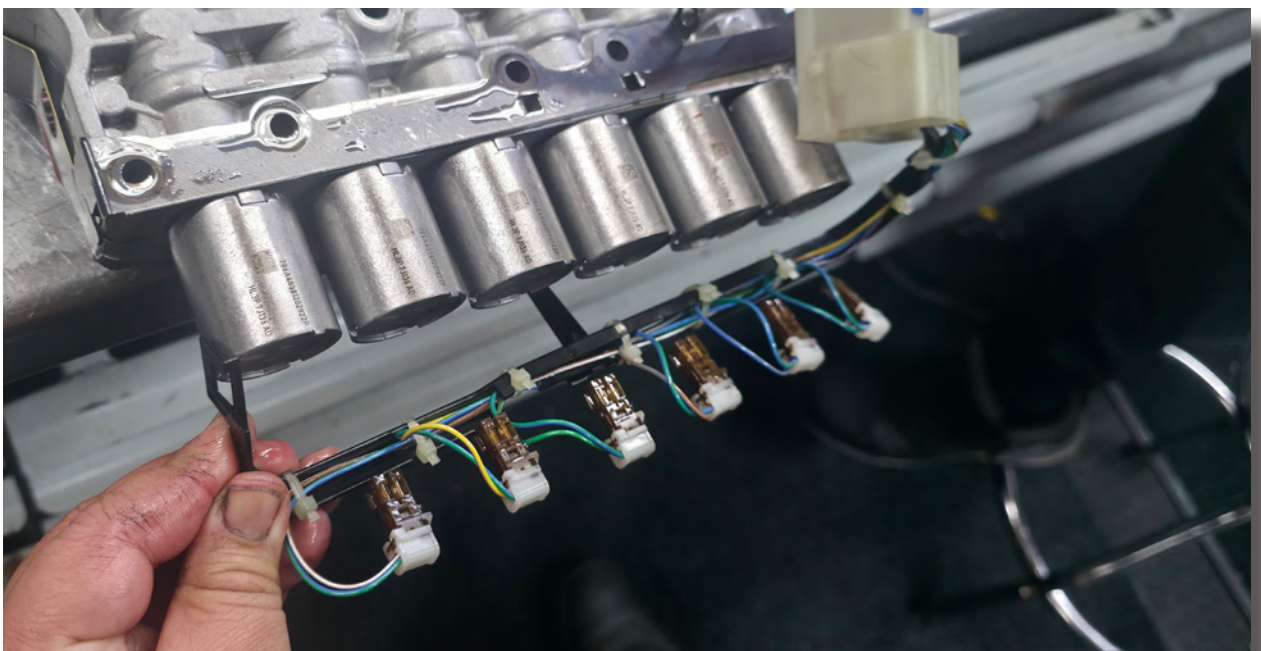
- 5.36. Turn the original valve body around to access the two solenoids that are separate. Remove the two 8mm bolts holding the solenoid retaining plate and remove the retaining plate while ensuring the solenoids don't fall out.



- 5.37. Remove one of the solenoids at a time and transfer to the Nomad Valve Body into the same location then install the retaining plate to the Nomad Valve Body to secure the group of two solenoids in place using the two 8mm bolts removed from the original valve body. Add a dab of mid strength Locktite to both bolts. Don't forget to transfer the transport plugs into the original valve body.



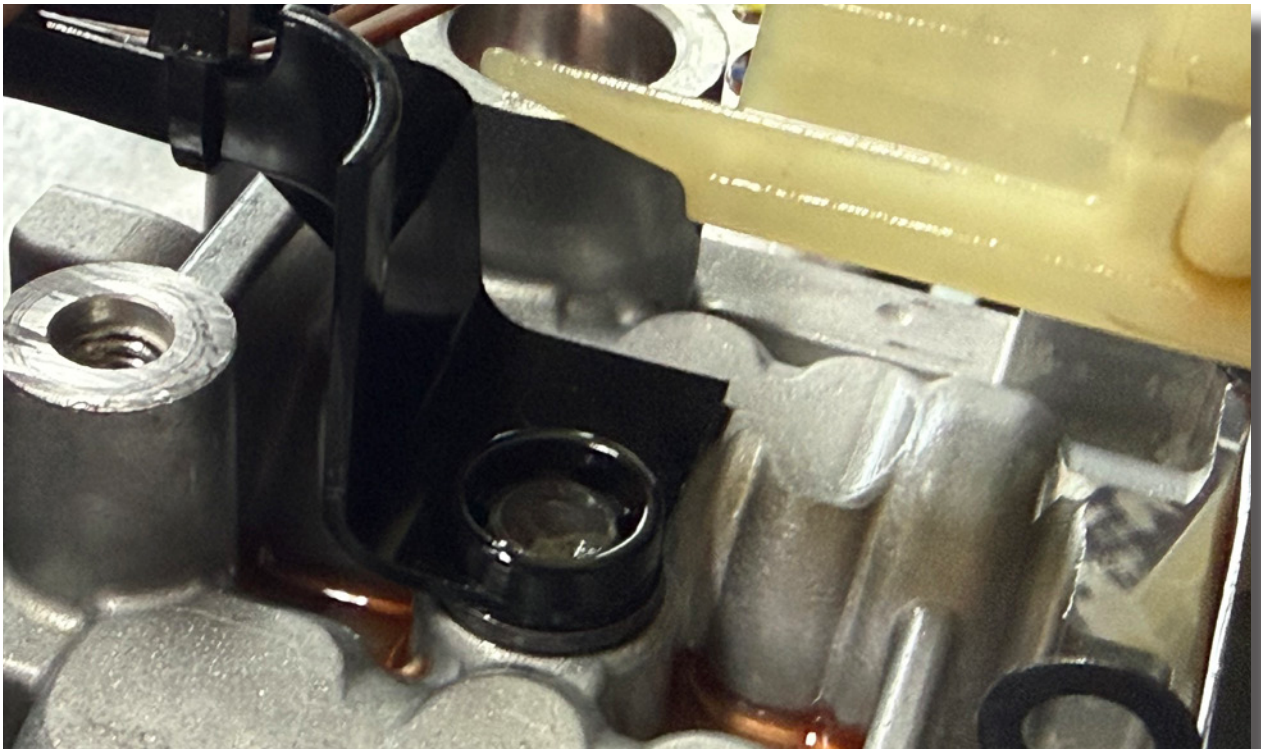
- 5.38. Next is to install all of the items that were removed from the original valve body, onto the Nomad Valve Body in reverse order, starting with the solenoid wiring harness. Slide the wiring harness over the group of 7 solenoids with the white connector positioned on the right. Clip the harness on to the retaining bracket at the opposite end of the white connector. Take care of the temp sensor wiring which will go under the valve body in this orientation.



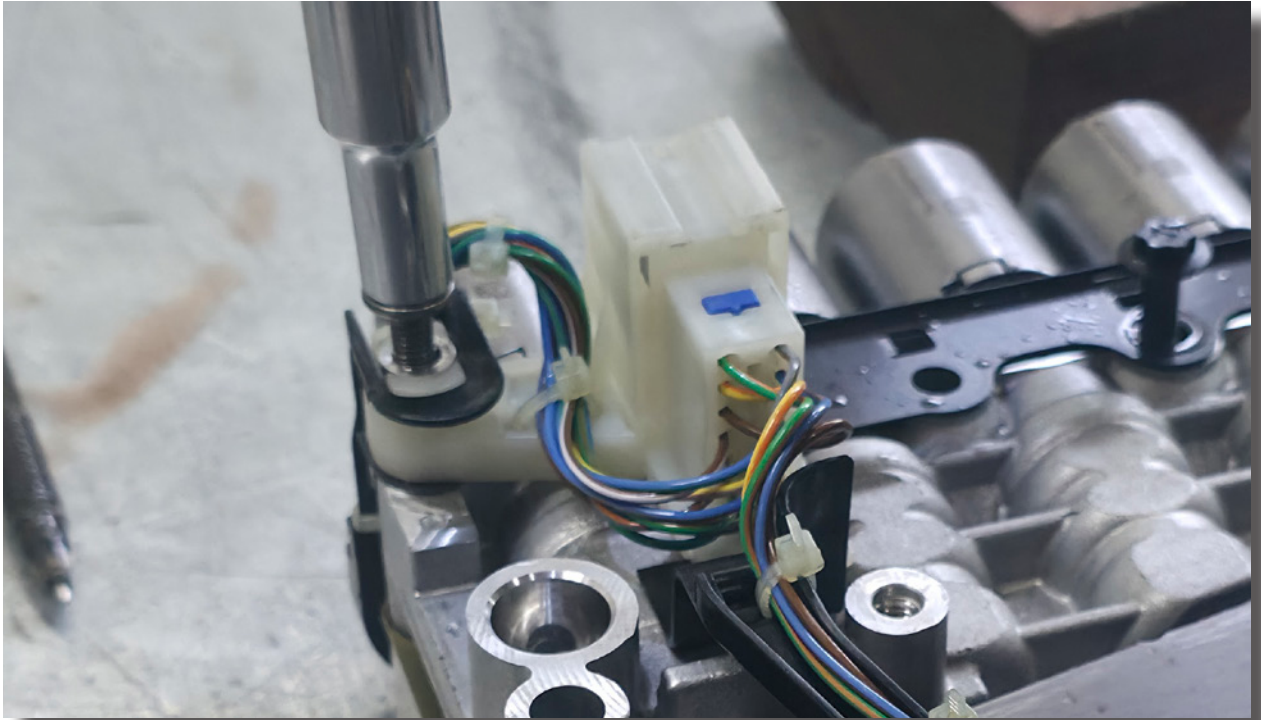
- 5.39. Install the top part of the wiring loom by inserting the locating pin into the solenoid retaining plate for the group of two solenoids, then align the other end with the bolt that is located under the white connector.



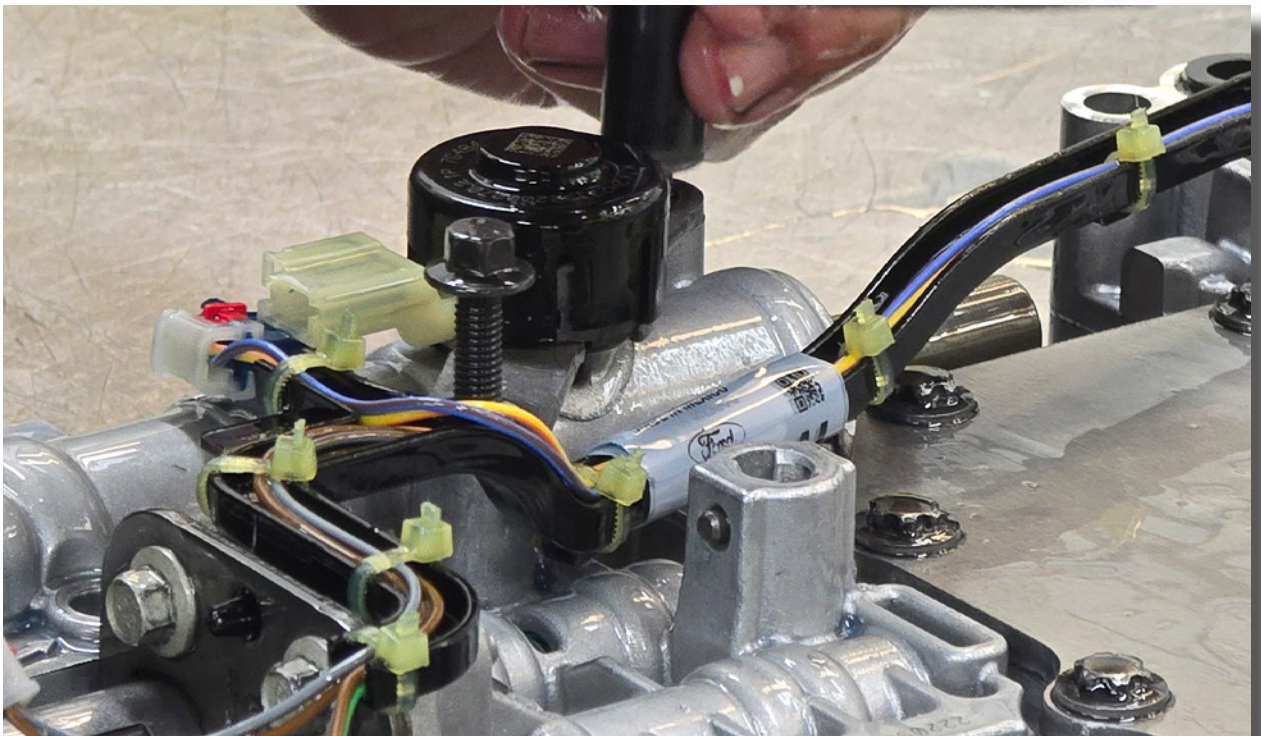
- 5.40. Slide the white connector under the screw tab on the wiring harness and clip the white connector into the retaining bracket while keeping the bolt holes aligned with the holes in the valve body. Make sure the wiring loom support is located over the bolt, but under the white connector.



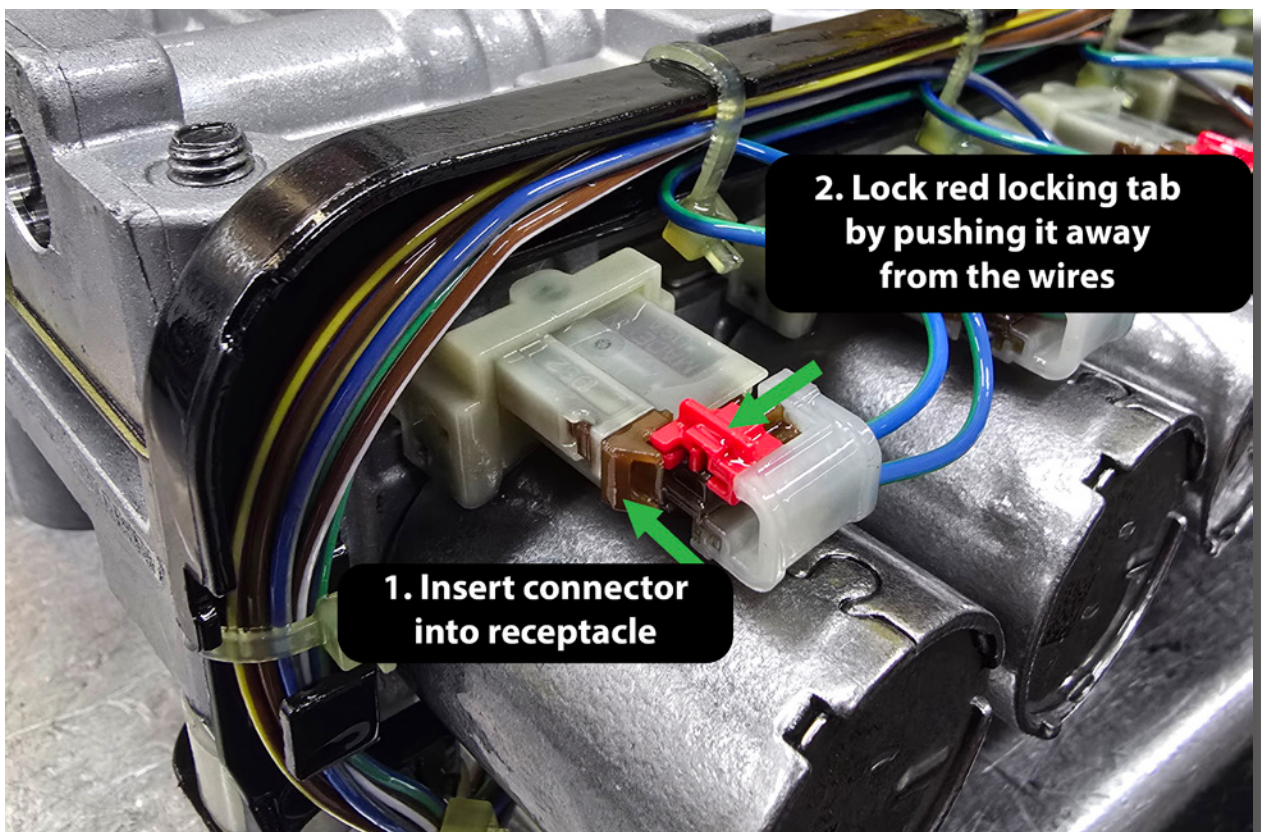
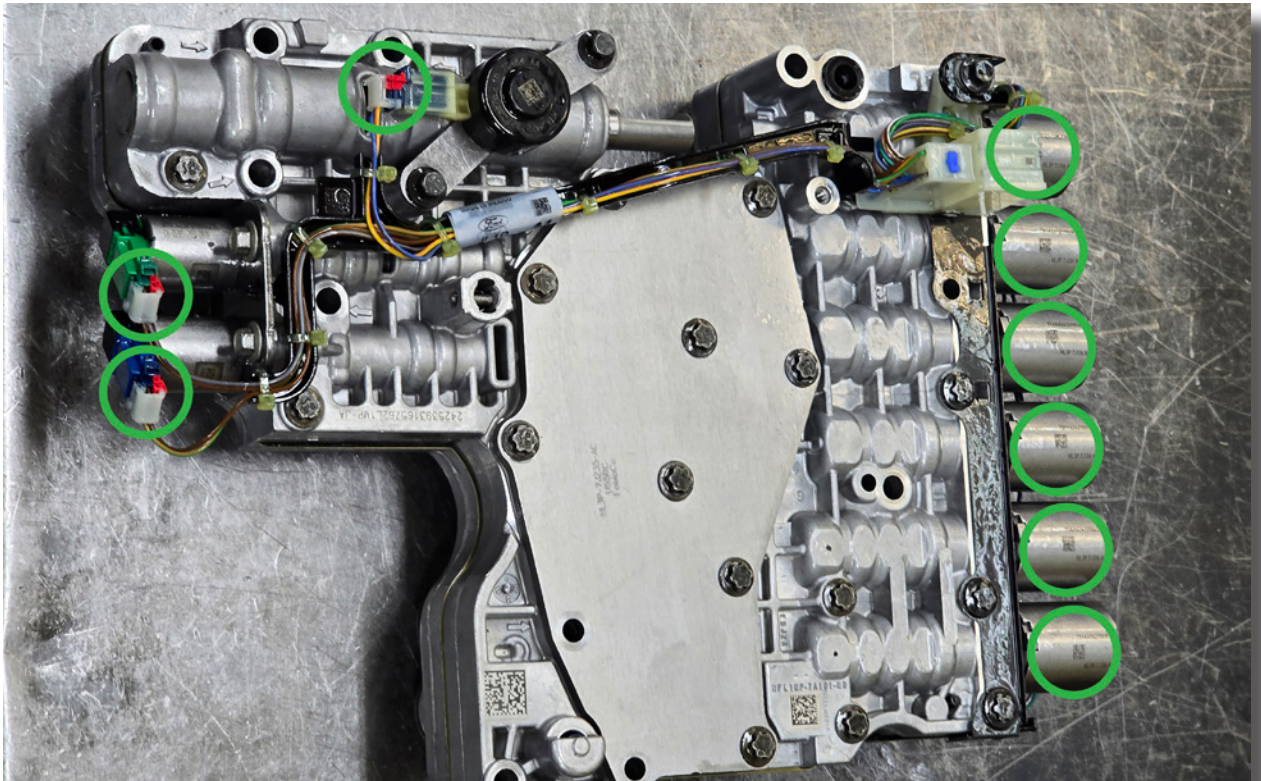
- 5.41. Insert bolts into the raised tab to secure wiring connector in place. Tighten the connector bolt and the 3 retaining bracket bolts to 12Nm.



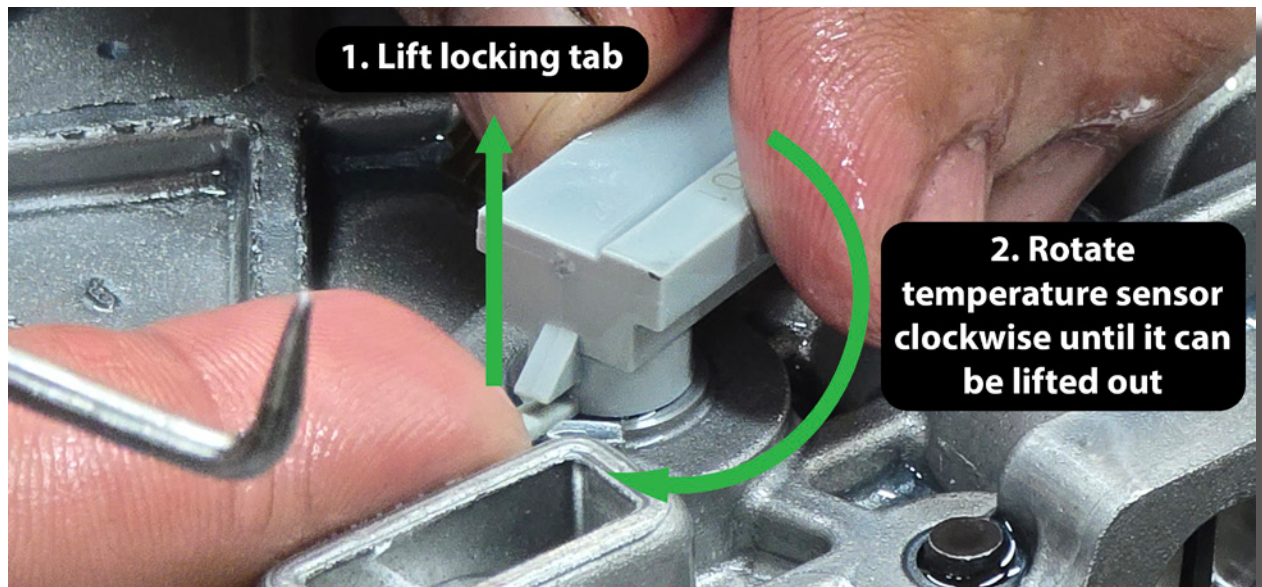
- 5.42. ****If fitted to your original valve body****
Install the park pawl magnetic release solenoid to the Nomad Valve Body and connect the internal wiring harness to the park pawl. Use two 8mm bolts to secure park pawl in place. Tighten to 12Nm.



- 5.43. Connect all the transmission solenoid connectors. Slide the connector into the solenoid and lock into place by pushing the red tab away from the wires. Repeat this for all 9 solenoids.

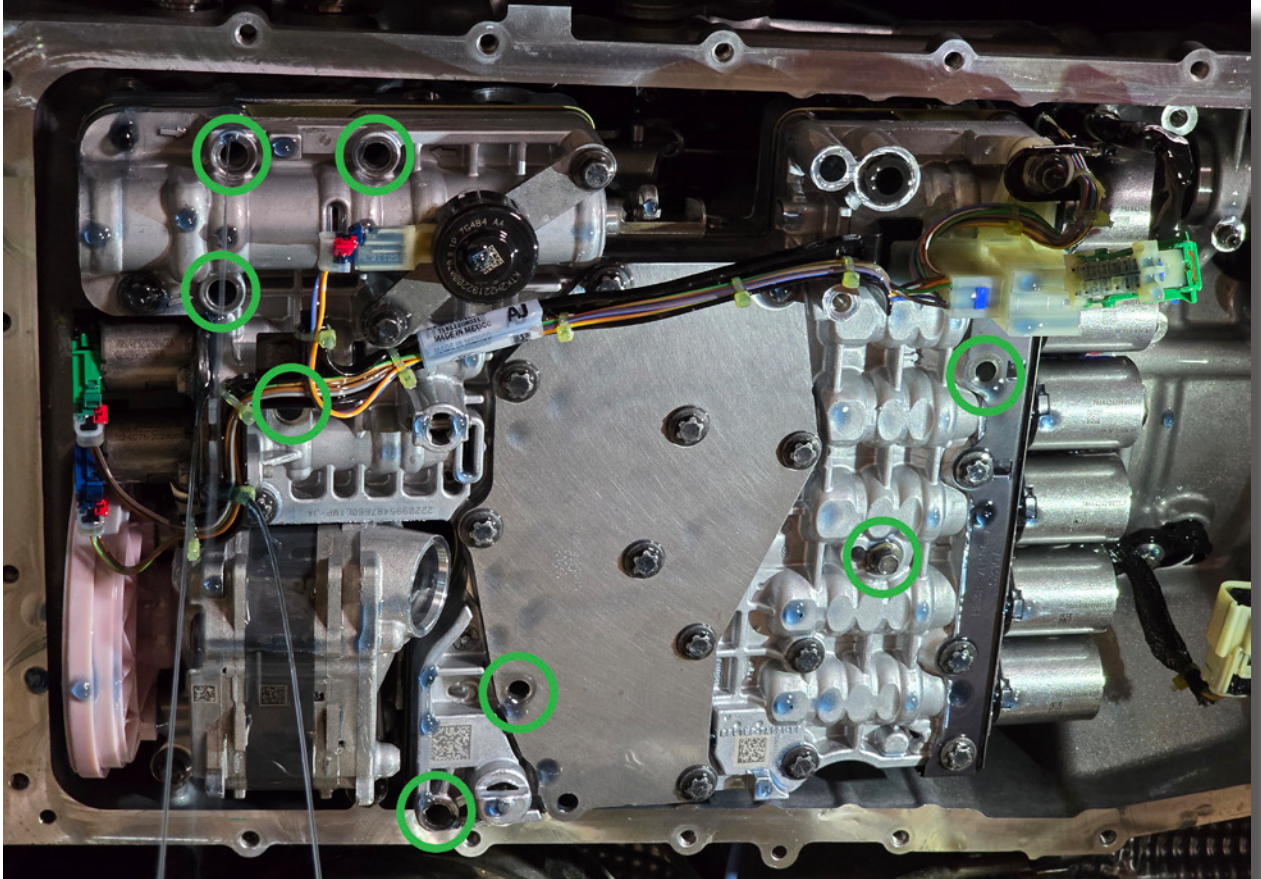


- 5.44. Turn the Nomad Valve Body over and install the temperature sensor by aligning the key way on the sensor with the opening in the valve body, then rotating anti-clockwise until it locks in place.

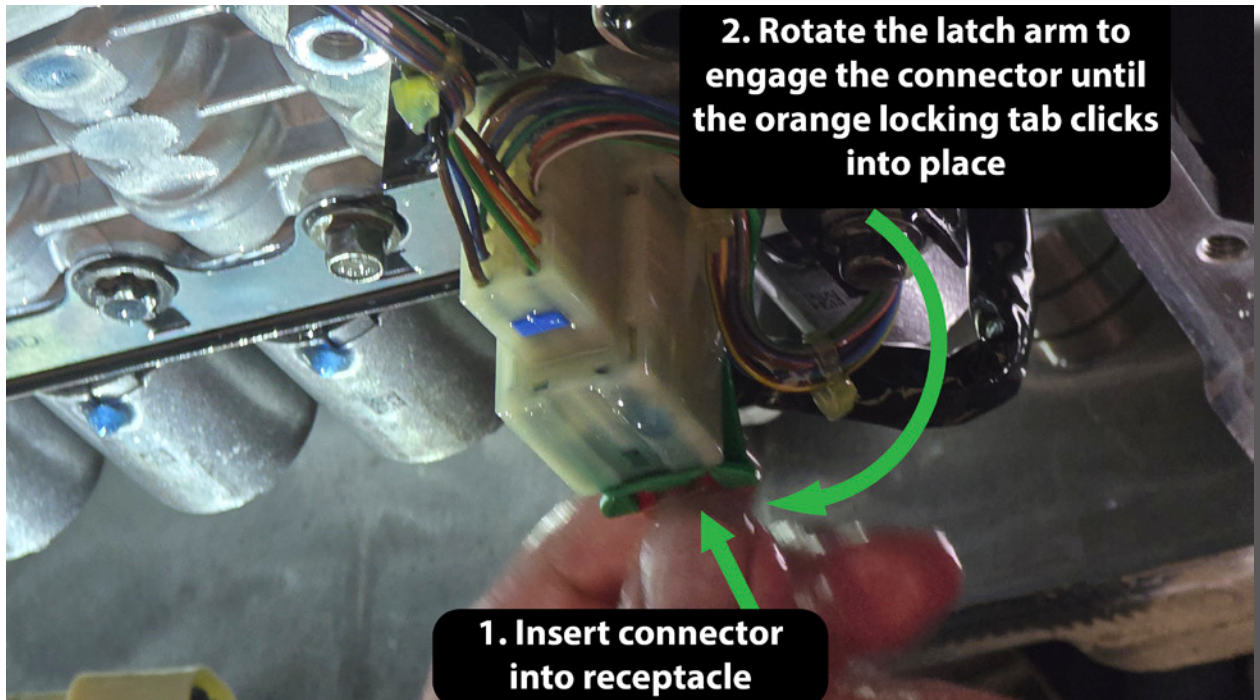


- 5.45. The temperature sensor connector installs the same as the solenoid connectors - insert connector, then push red locking tab away from the wire.
- 5.46. This completes the transfer of parts to the Nomad Valve Body. As the valve body is an exchange unit, please drain all of the transmission fluid before packing into original packaging for return to Wholesale Automatics.
- 5.47. Ensure the transport plugs are firmly inserted prior to transport. Loss of valves may result in loss of exchange deposit

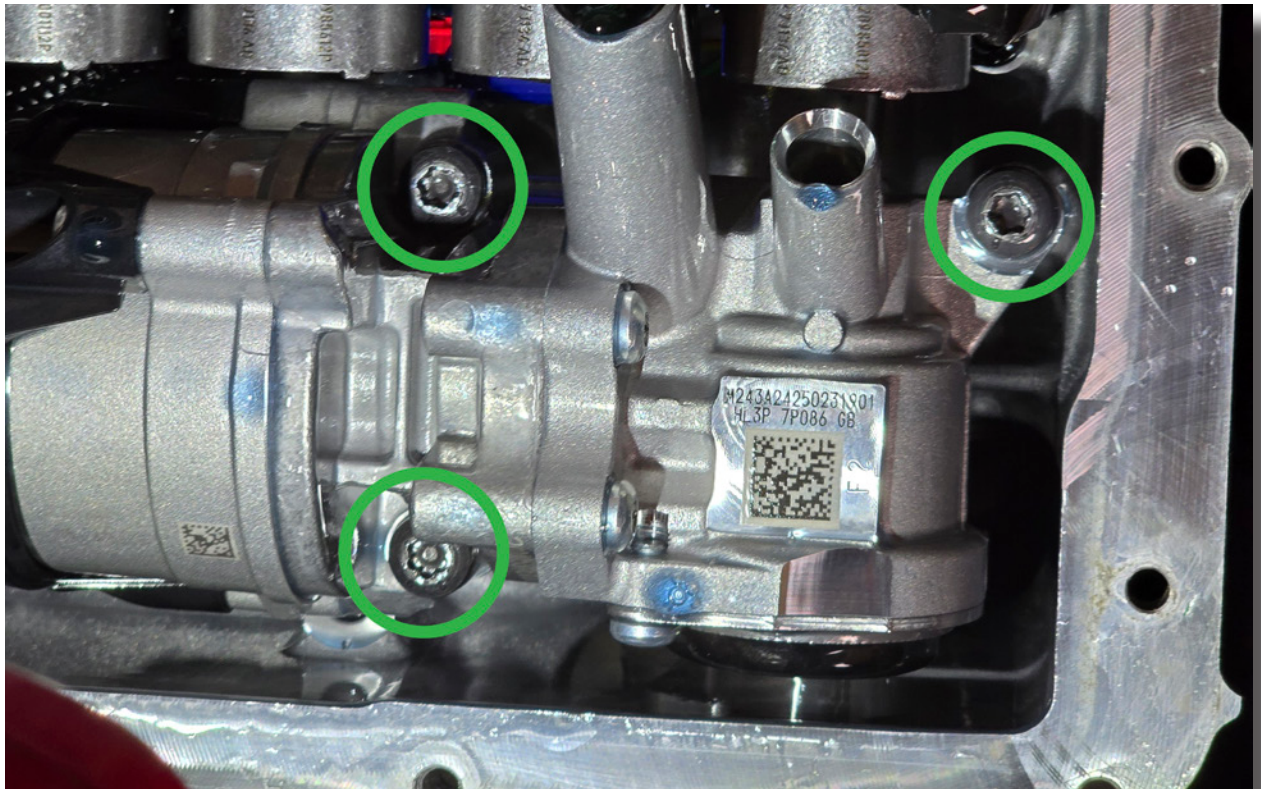
- 5.48. Back at the transmission, lift the completed Nomad Valve body up to the transmission using one bolt to hold in place.
- 5.49. Install the remaining bolts indicated in the photo below. There should be a total of 8x bolts. They will also be indicated on the Valve Body with arrows. Once all bolts are installed and finger tight, use a torque wrench to tighten to 9Nm.



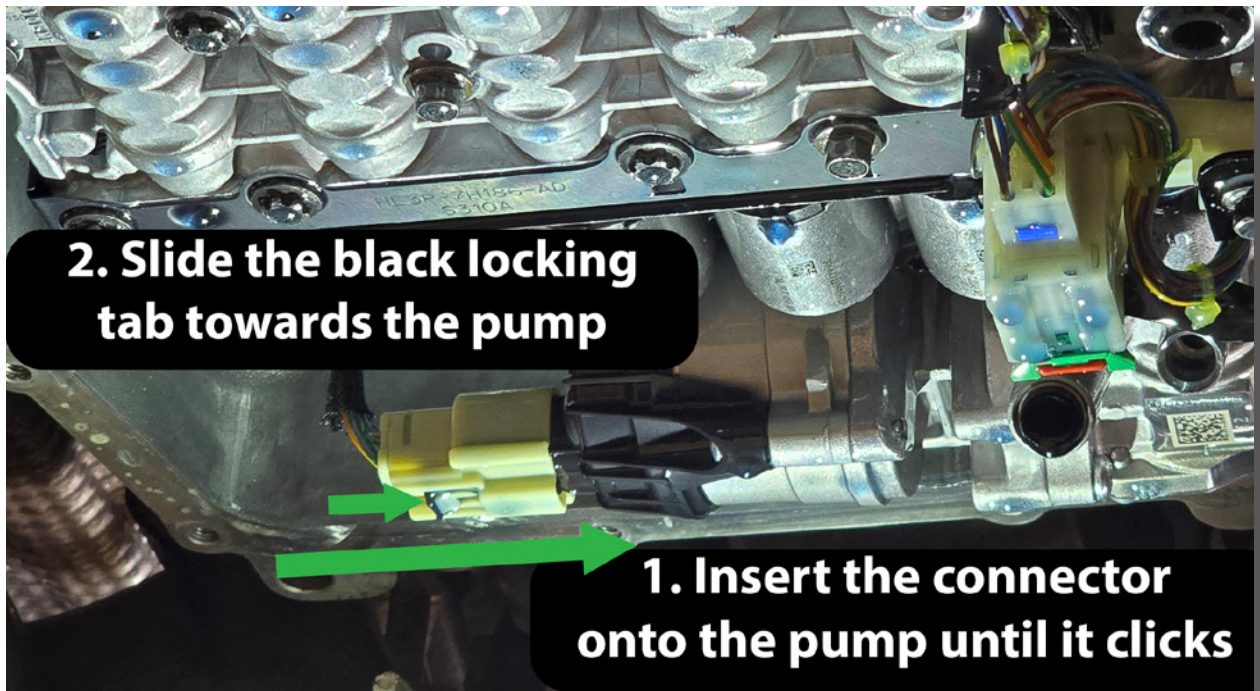
- 5.50. Plug in the main internal harness connector by inserting the connector into the receptacle then rotating the green latch arm to engage until the orange locking tab clicks into place.



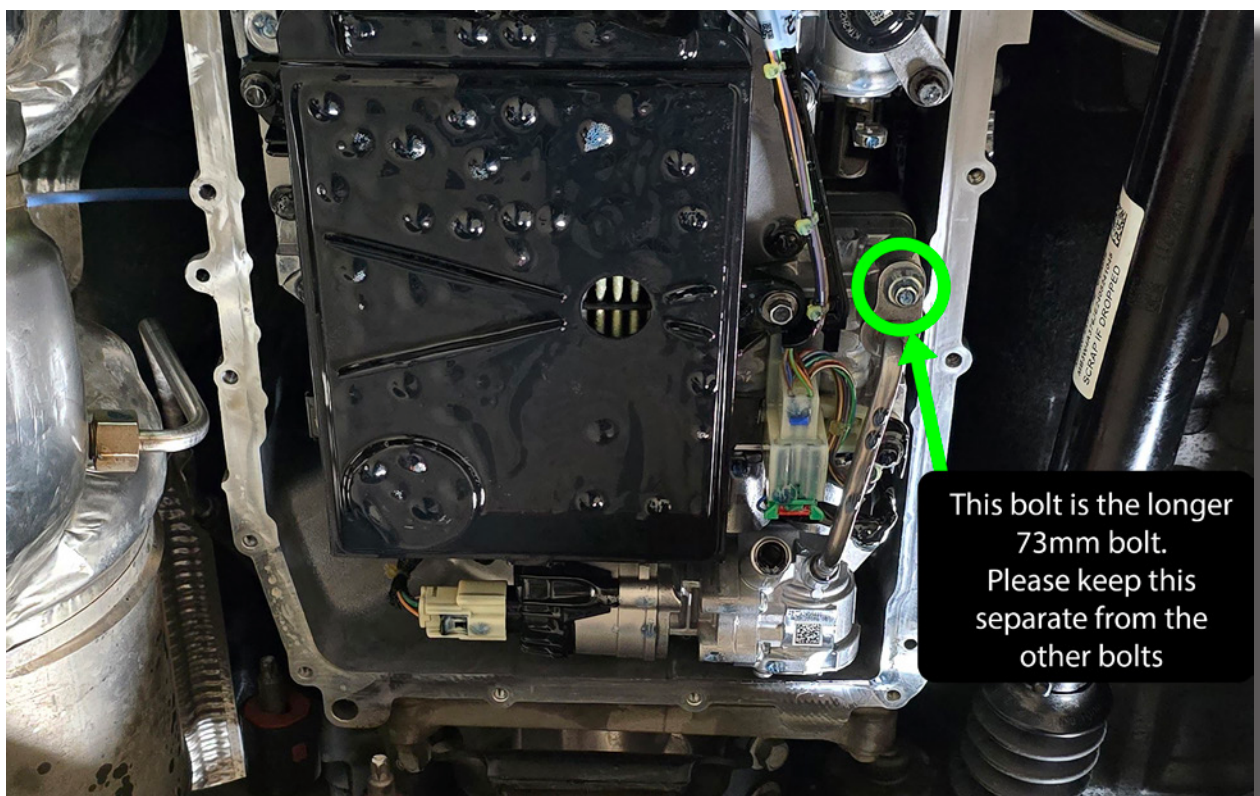
- 5.51. Install the Start/Stop pump using 3x T30 bolts. We highly recommend NOT using power tools on these bolts.



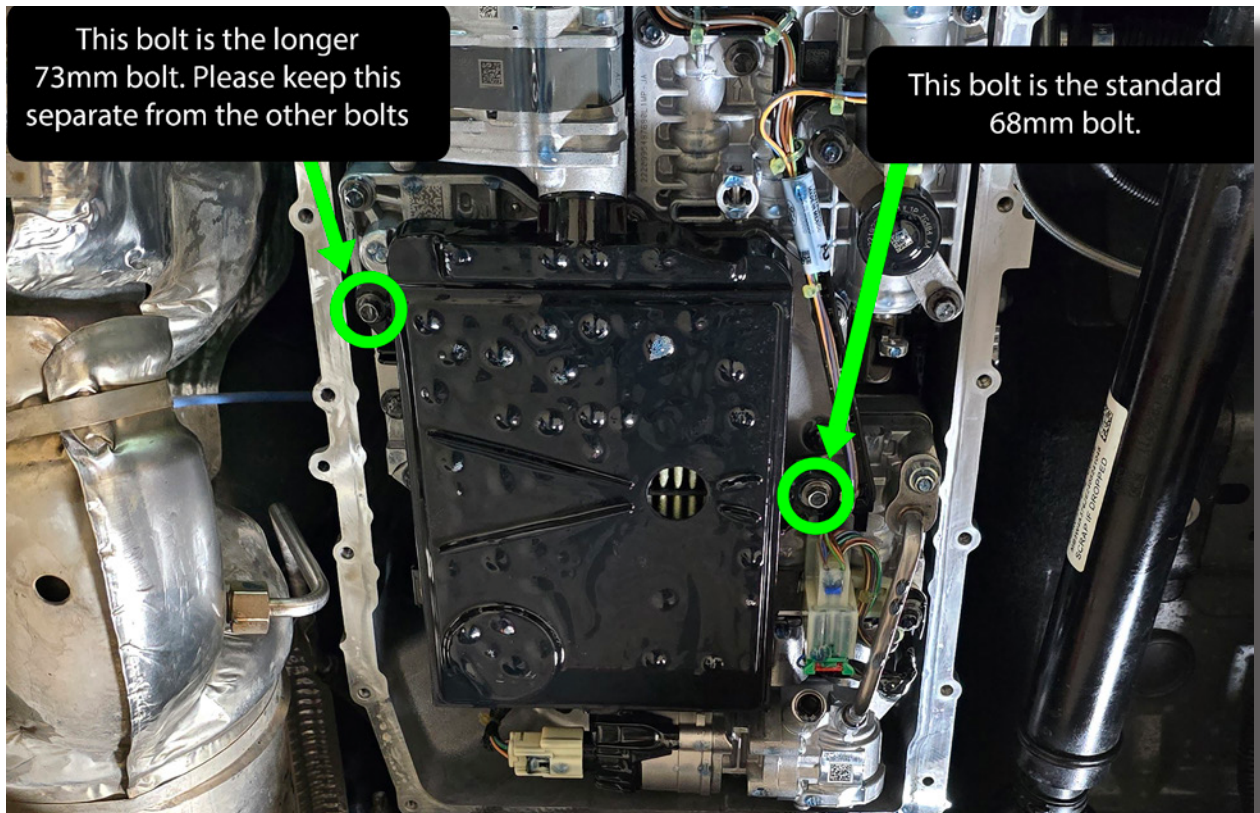
- 5.52. Install the connector for the start/stop pump, and lock TPA by sliding towards the pump.



- 5.53. Before installing the stop-start pump pressure feed pipe, check the original O-Rings are still present on both ends. Start by inserting the pipe into the start-stop pump first, then to the valve body. Secure with the longer 73mm bolt.



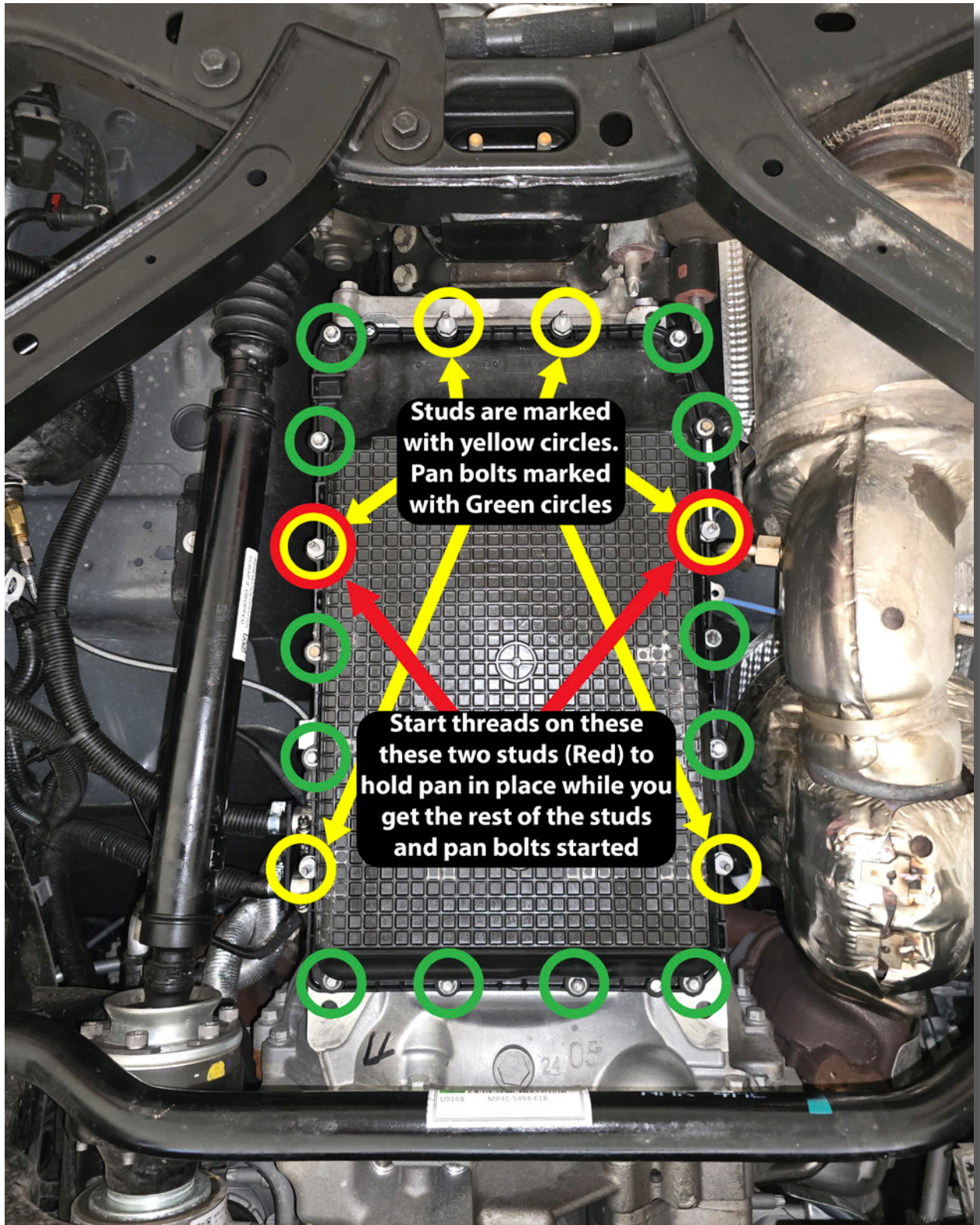
- 5.54. Install the supplied replacement filter and secure with the two bolts. Remember that they are different length bolts.



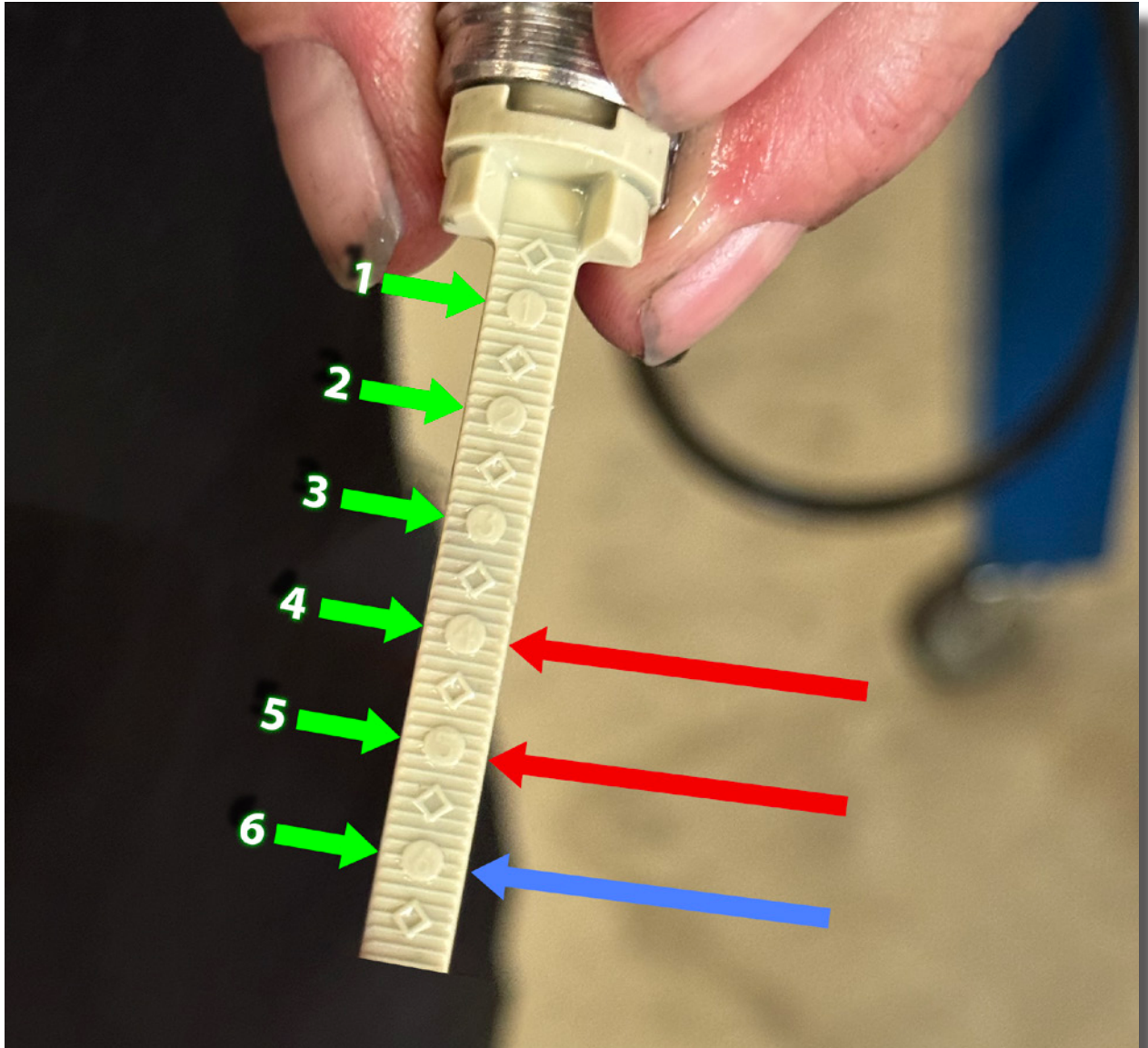
- 5.55. Lay the supplied pan gasket over the pan and align with the bolt holes and locating dowels.



- 5.56. Install the pan with the supplied pan gasket. Use two of the stud bolts to begin with by just getting a few turns on the threads to hold in place. Then install all of the remaining bolts but don't tighten any until you have all bolts started and are interface through the pan gasket correctly. Tighten all stud bolts to 12Nm. Tighten the remaining pan bolts to 10Nm



- 5.57. Using your fluid pump, refill the transmission with approx 5 litres of Mercon ULV transmission fluid into the dipstick port.
- 5.58. With transmission in Park and park brake on, start engine.
- 5.59. Continue to fill the transmission to fluid level **6** on the dipstick as per photo below.



- 5.60. Test drive vehicle to get the transmission up to operating temperature. Recheck fluid level after test drive. You are aiming for the fluid level to be between 4 and 5 on the dipstick.
- 5.61. Top up or drain fluid as necessary to obtain the correct level.

This completes the installation of the
Nomad Heavy Duty Valve Body to suit:
Ford 10R80 10 Speed Automatic Transmission.

Please remember ALL automatic transmissions
have a service interval of 2 years or 40,000km to
improve the longevity of the transmission.

Please Provide us with Feedback

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Using your smart phone or device's camera app, point at the QR code below to take you straight to our feedback page for you to choose the most appropriate feedback method.

