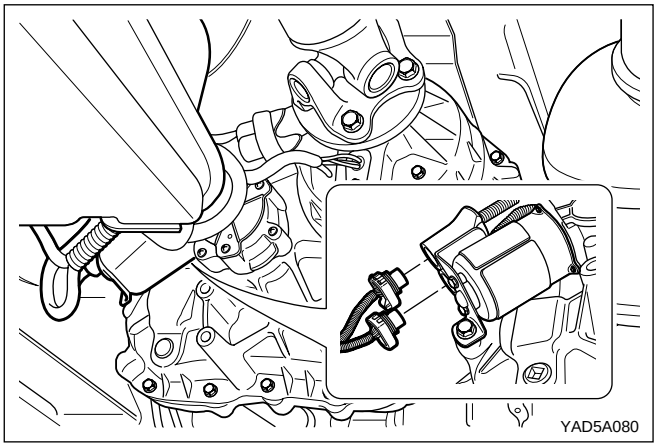
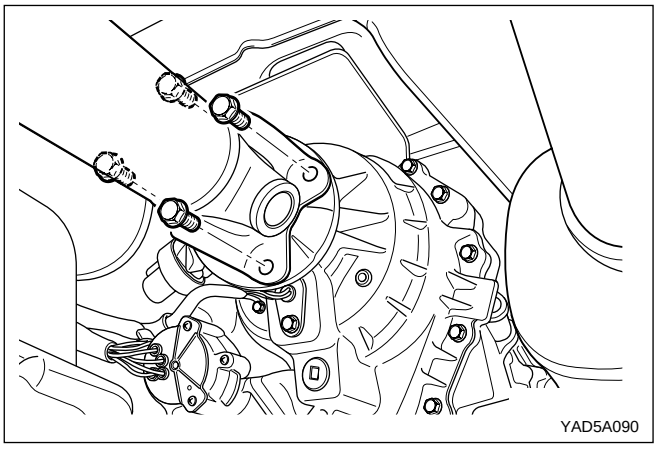
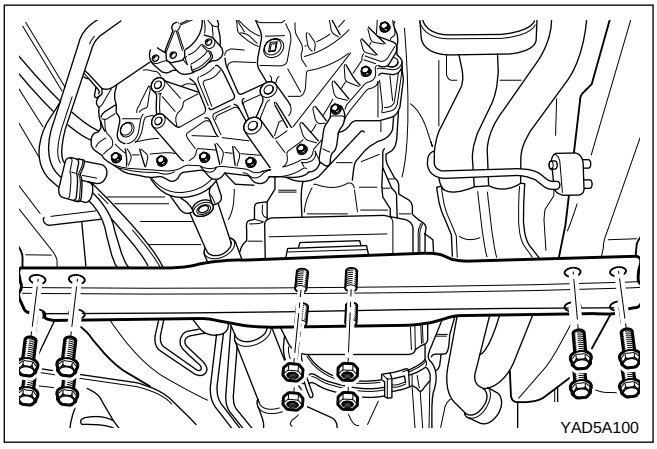
REPAIR INSTRUCTIONS







ON-VEHICLE SERVICE

TRANSMISSION

Removal and Installation Procedure

1. Disconnect the negative battery cable.
2. Disconnect the connectors from transfer case.
3. Disconnect the speedometer connector from transfer case.
4. Disconnect the inhibitor connector, gear position sensor connector and transmission case connector.
5. Remove the rear propeller shaft bolts.

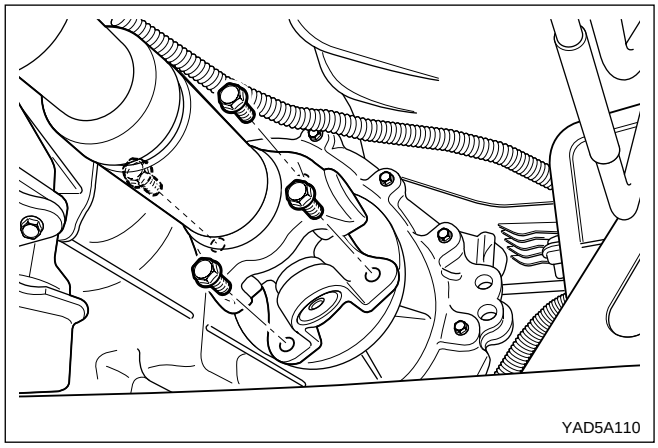
Installation Notice

Tightening Torque	70-80 N•m (52-59 lb-ft)

6. Remove the cross member bolts and nuts.

Installation Notice

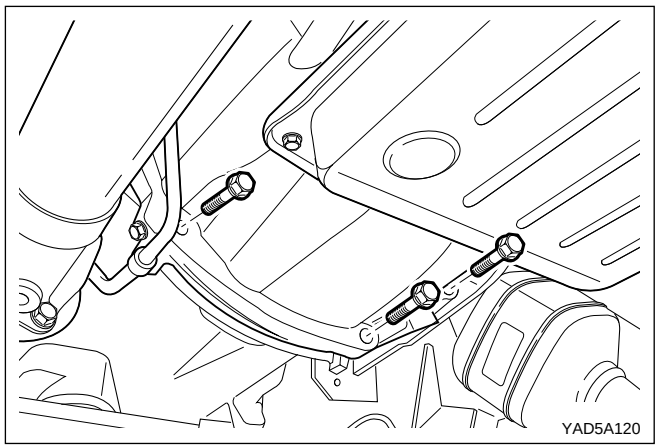
Tightening Torque	70-80 N•m (52-59 lb-ft)



7. Remove the front propeller shaft bolts from transfer case.

Installation Notice

Tightening Torque	70-80 N•m (52-59 lb-ft)

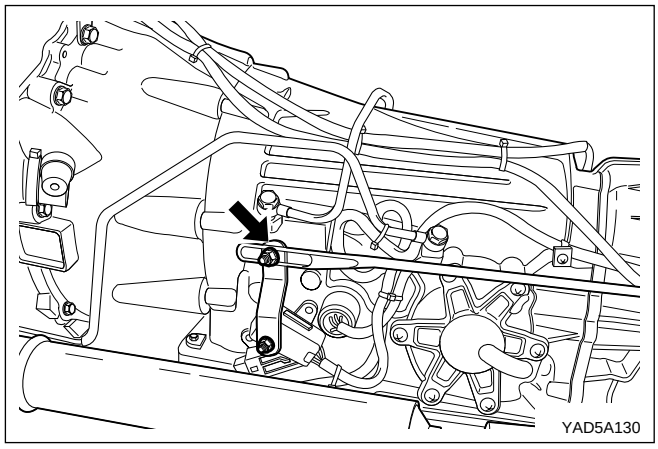


8. Remove the transfer case-to-transmission housing bolts and remove the transfer case.

Installation Notice

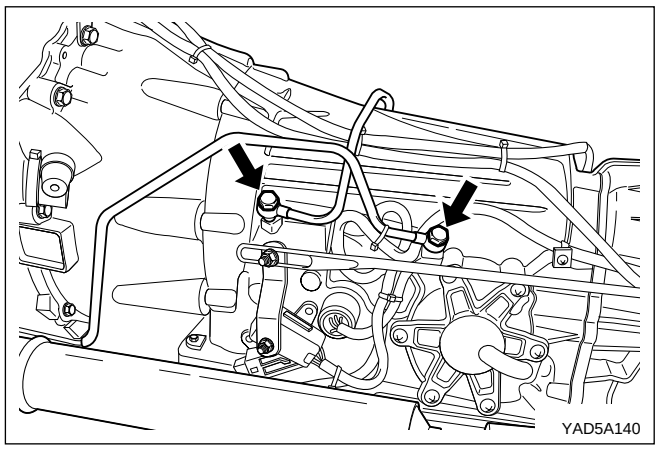
Tightening Torque	44 N•m (33 lb-ft)

9. Disconnect the 10-Pins Plug connector from transmission.



10. Separate the locking clip on shift lever and remove the shift rod.

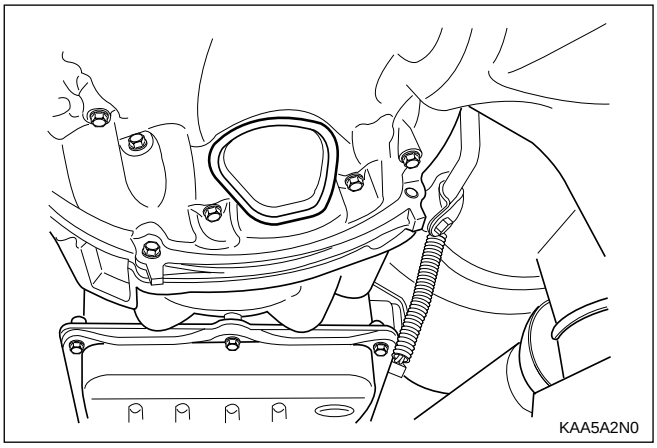
Notice: Removal and installation performed when the shift procedure should be lever is in 'D' range.



11. Remove the oil cooler pipes.

Installation Notice

Tightening Torque	25-35 N•m (18-26 lb-ft)

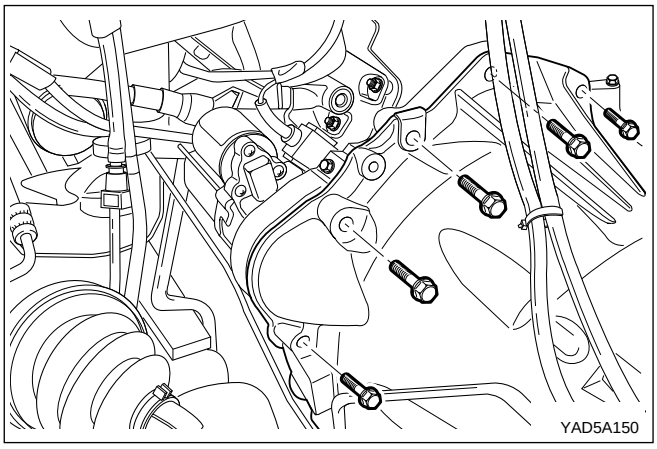


12. Remove the service hole cover in the engine block.
13. Put the alignment mark for installation, and remove the six mounting bolts for torque converter from drive plate through the service hole by rotating the engine and remove the torque converter.

    Installation Notice

Tightening Torque	42 N•m (31 lb-ft)

    - Screw the six bolts mounting the torque converter through the service hole by using a mirror and rotating the engine.
14. Remover the starter. Refer to Section *1E, Engine Electrical*.



15. Remove the extension housing to case bolts and remove the transmission assembly.

    Installation Notice

Tightening Torque	55-65 N•m (41-48 lb-ft)

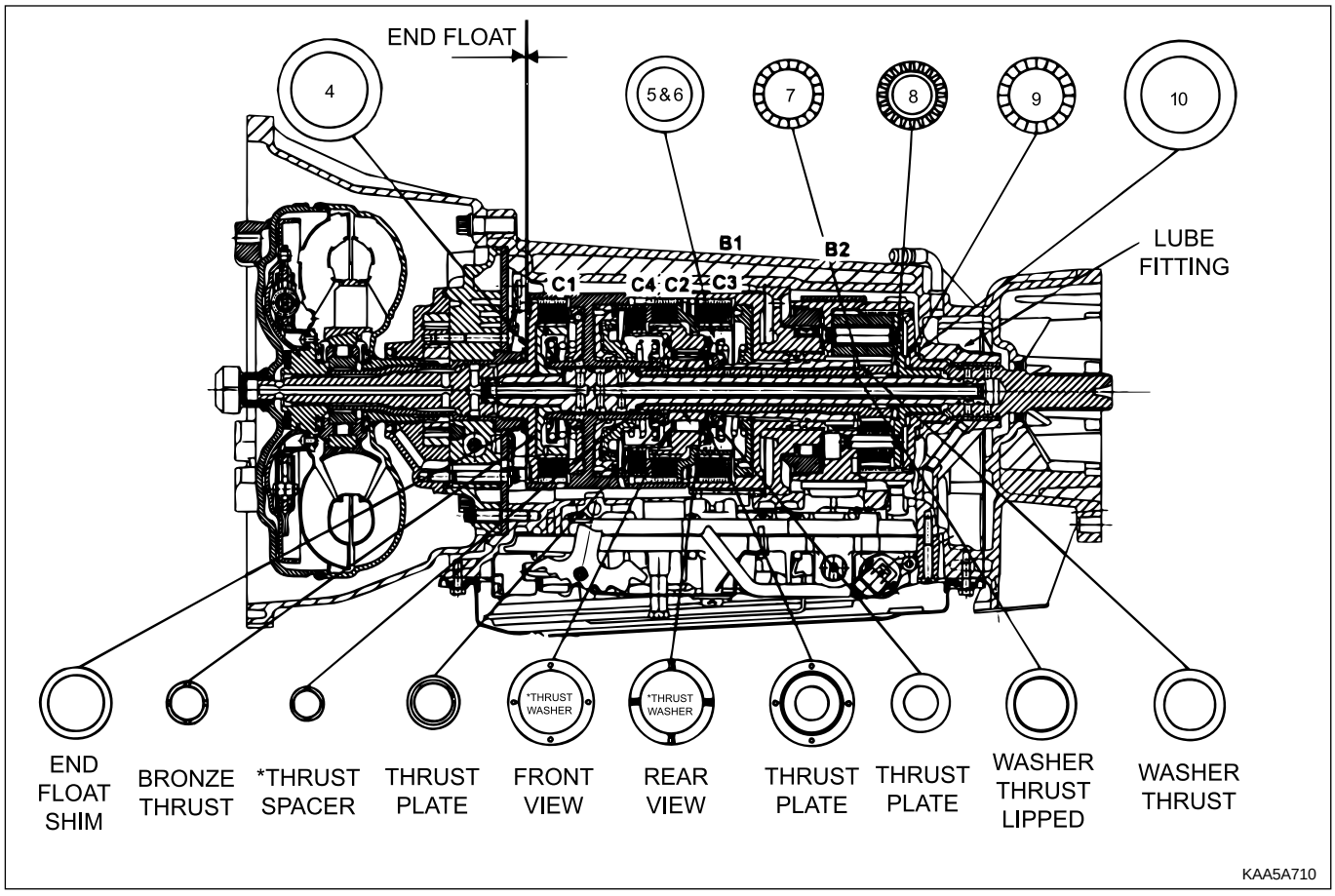
    - Be careful not to drop the torque converter while removing the transmission.
16. Installation should follow the removal procedure in the reverse order.

UNIT REPAIR

REBUILD WARNINGS

Prior to rebuilding a transmission system, the following warnings are to be noted.

- Ensure that, before replacing a transmission the cooler lines are flushed out to remove any debris. This can be done by applying compressed air to the rear cooler line forcing oil and any contaminants out of the front cooler line.
- The cooler flow should be checked after the transmission has been fitted. With the front cooler line connected and the rear line run into a suitable container, measure the flow over 15 seconds with the vehicle idling in park.
- The flow rate should exceed 1 liter in 15 seconds.
- Be wary of any situation where water enters the transmission. This may result in fluid foaming and leaking through the breather.
- Ensure that both earth straps (one at the battery terminal and one on the vehicle body) are connected in the vehicle before connecting the positive side of the battery.
- Follow the throttle position calibration procedure in this manual if the engine control module/ transmission control module (ECM/TCM) is swapped.



DISASSEMBLY PROCEDURE

Transmission

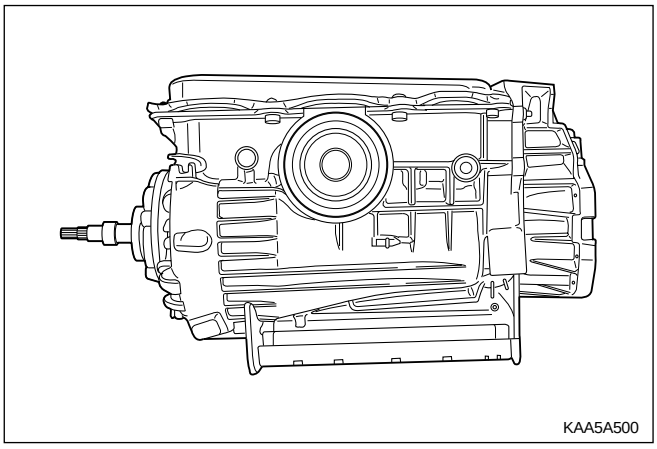
Tools Required

0555-336256 Transmission Bench Cradle

0555-336257 Pump Puller

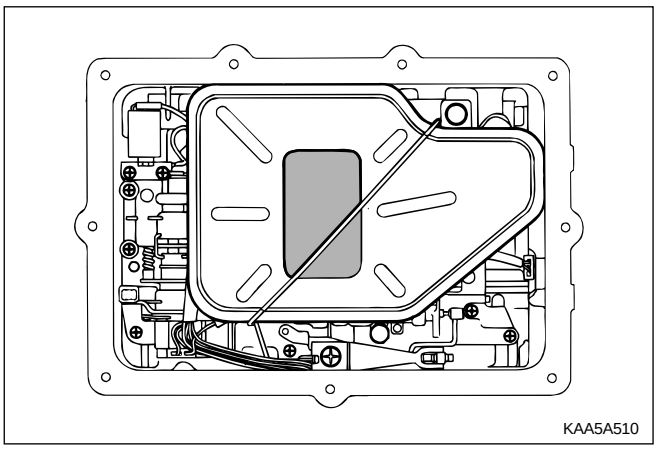
Notice:

- Remove the inhibitor switch before washing the transmission in solvent or hot wash.
- It is assumed that the transmission fluid has been drained when the transmission was removed from the vehicle and that the 'special tools' quoted are available.
- The transmission is dismantled in a modular fashion, and the details of disassembly for each module are given under the appropriate subject. Refer to Special Tools Table in this chapter for details of all special tools required when performing disassembly procedures.
- Technicians overhauling these transmissions will also require a selection of good quality Torx bit sockets, in particular numbers 30, 40 and 50, and an 8mm, 10mm and 12 mm double hex socket.



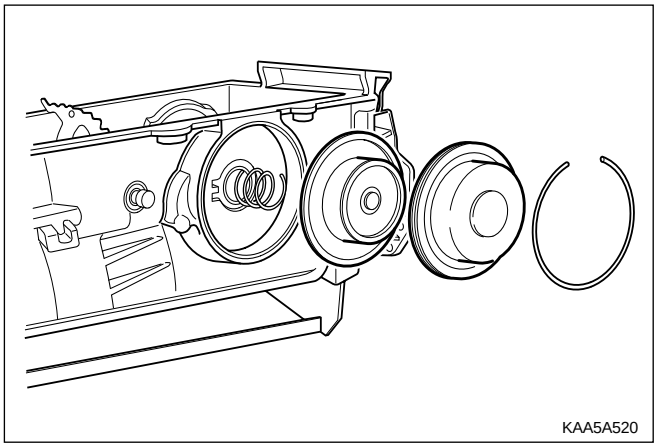
KAA5A500

1. Remove the converter and the converter housing.
2. Mount the transmission on the transmission bench cradle 0555-336256.
3. Remove the oil pan and the oil pan seal.



KAA5A510

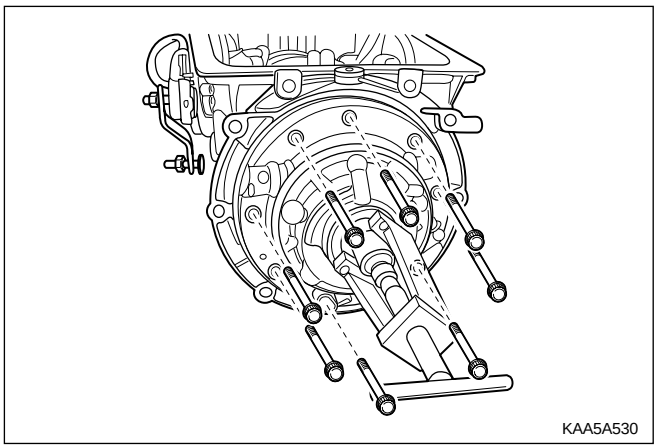
4. Remove each end of the filter retaining clip from the valve body and remove the filter.
5. Disconnect the wires from each solenoid and ground and lay the wiring to one side.
6. Remove the valve body securing screws and remove the valve body from the case.


KAA5A520

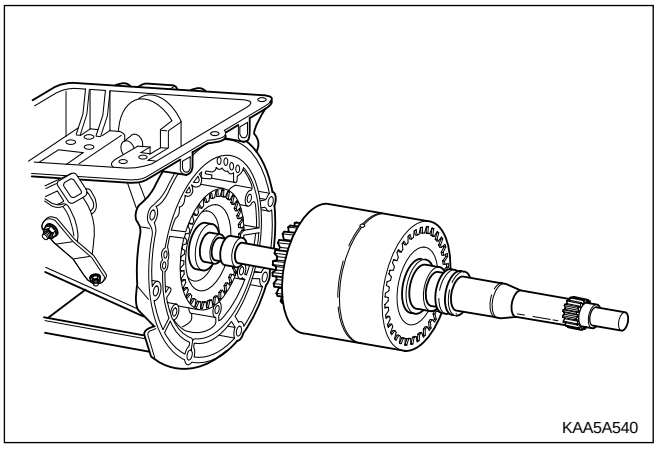
7. Remove the front servo cover circlip.
8. Remove the front servo cover, piston and spring.

   Notice: The plastic servo block is retained by the piston return spring only.

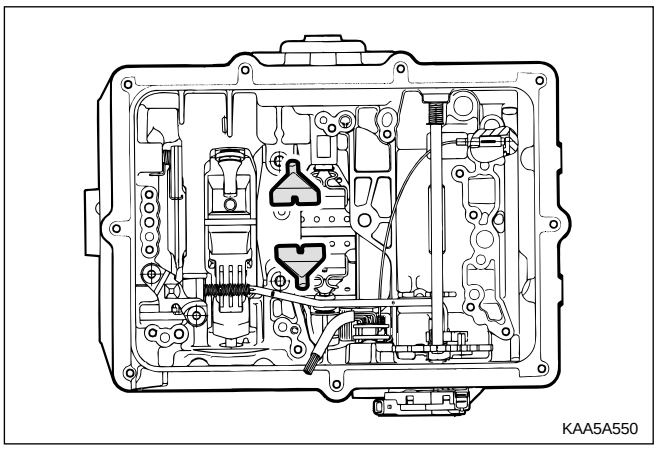
9. Remove the adaptor housing bolts and adaptor housing.


KAA5A530

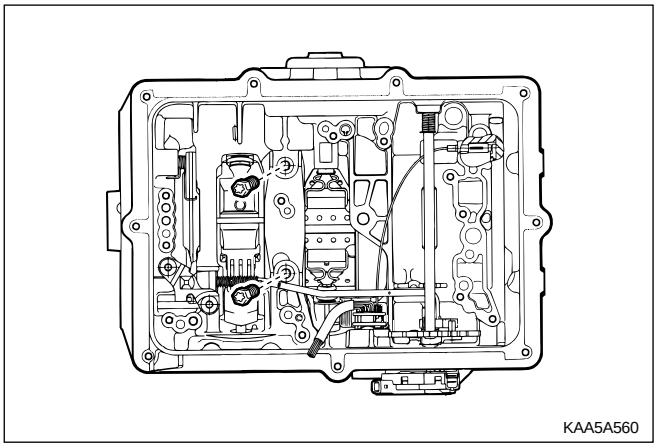
10. Remove the pump to case bolts using a multi-hex 8 mm spanner.
11. Using the pump puller 0555-336257, remove the pump and pump cover.


KAA5A540

12. Remove the input shaft, forward clutch cylinder, and the overdrive shaft as an assembly, withdrawing them through the front of the case.
13. Remove the C3 clutch cylinder and sun gears.


KAA5A550

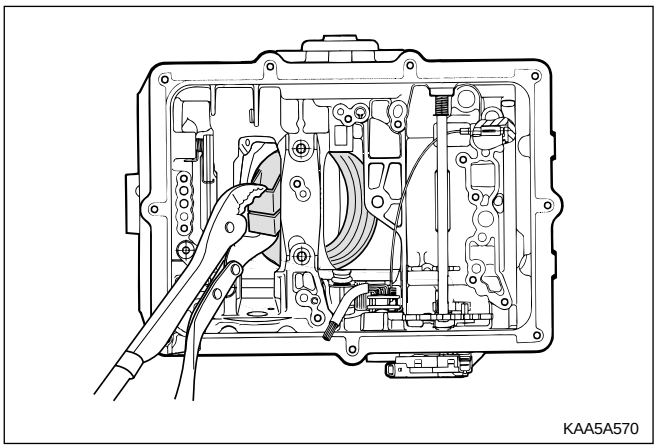
14. Remove the front band struts. Remove the front band.


KAA5A560

15. Remove the two centre support retaining bolts using a T50 Torx bit.
16. Remove the centre support retaining circlip.

    Notice: Do not hammer the output shaft to remove the centre support as this will cause permanent damage to the thrust bearing surfaces.

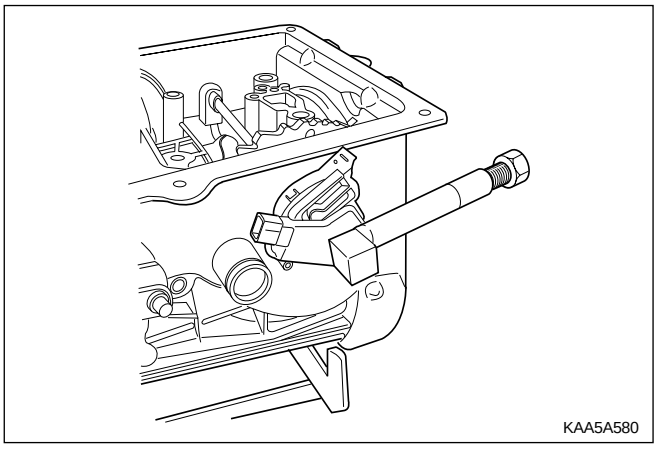
17. Remove the centre support, 1-2 one way clutch, and planetary gear set as an assembly.
18. Remove the parking rod cam plate using a T40 Torx bit.


KAA5A570

19. Remove the rear band struts and remove the band.

    Notice: Vise the both end of rear band using the plier and lean forward about 15 degrees

20. Remove the output shaft assembly.


KAA5A580

Transmission Case

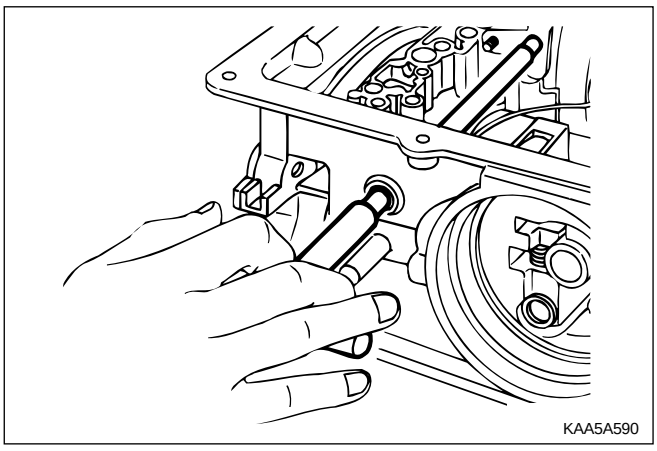
Tools Required

0555-336258 Cross Shaft Pin Remover/Installer (Detent Lever)

0555-336261 Cross Shaft Seal Remover

0555-336265 Cross Shaft Pin Remover/Installer (Inhibitor Switch)

1. Remove the pin from the side of cross shaft inhibitor switch using cross shaft pin remover/ installer (inhibitor switch) 0555-336265.
2. Remove the inhibitor switch bolts and inhibitor switch from the case.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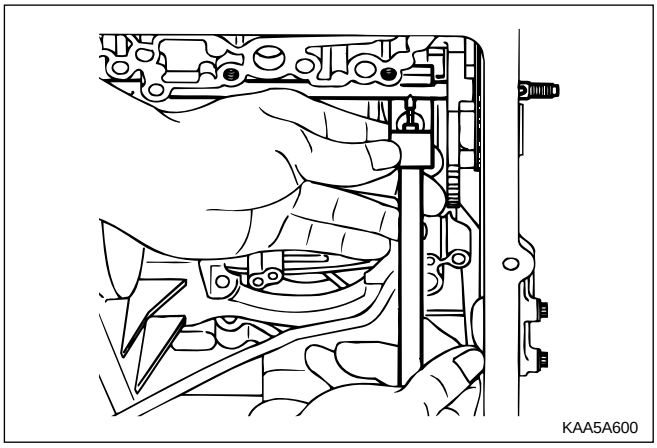
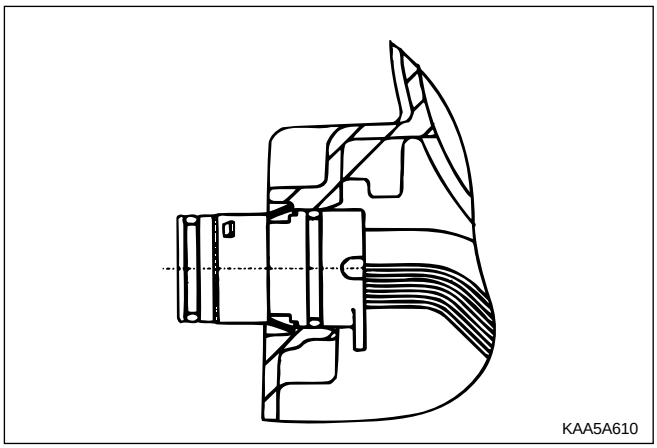
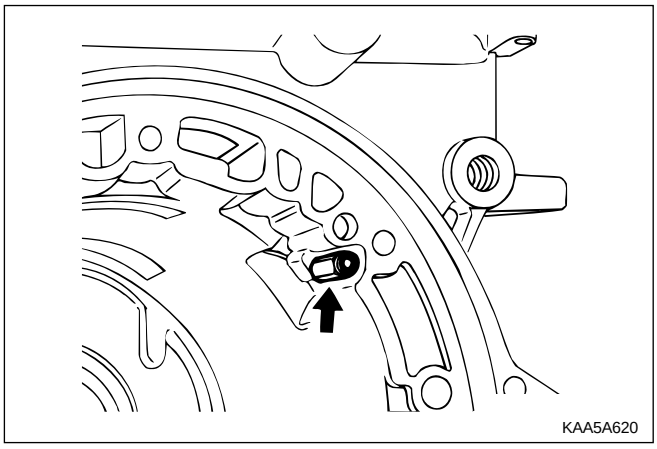
3. Remove the cross shaft seals with cross shaft seal remover 0555-336261.
4. Remove the circlip from the cross shaft. Pull the shaft to release the drive pin from the selector quadrant.


KAA5A600

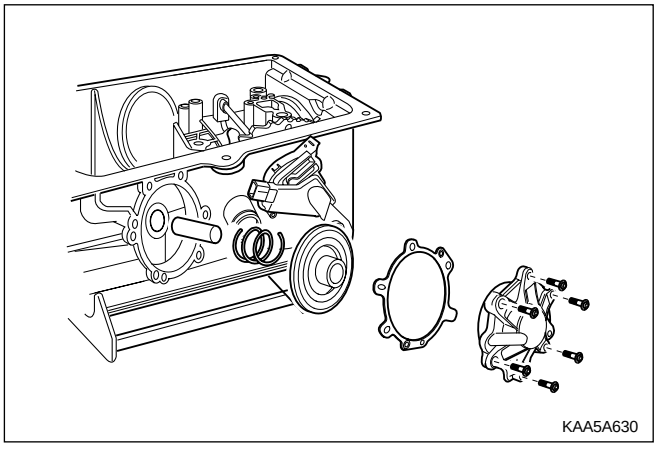
5. Using cross shaft pin remover/installer (detent lever) 0555-336258, press the pin from the cross shaft and withdraw the shaft from the case.
6. Remove the cross shaft pin and spring.
7. Remove the manual valve lever and the park rod.


KAA5A610

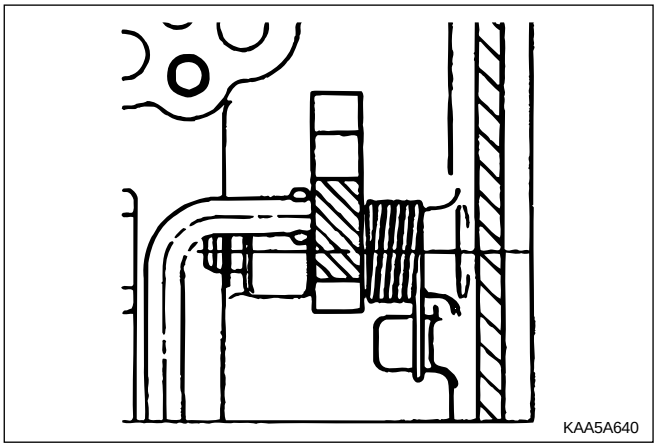
8. Depress the tangs and withdraw the 10 pin connector into the case. Remove the wiring loom assembly.


KAA5A620

9. Detach the No.7 solenoid wire from the front of the case.
10. Remove the parking pawl pivot pin and the pawl and spring from the case.
11. Remove the shaft and the rear servo lever.

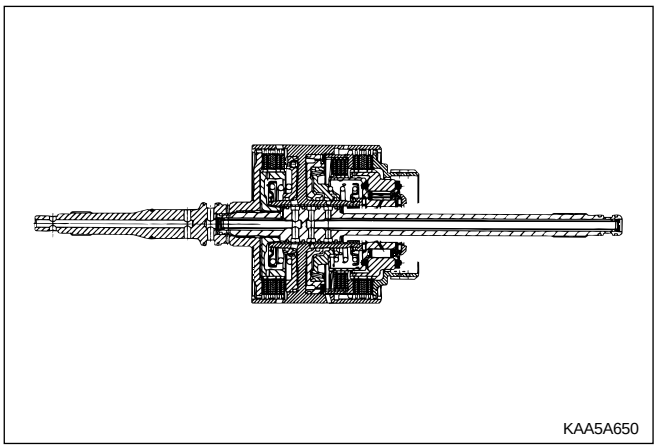

KAA5A630

12. Remove the rear servo cover and piston assembly.
13. Remove the B1R circlip, valve and spring.
14. Remove both band adjustment shims.
15. Inspect the output shaft bushing in the case and replace if necessary.
16. Inspect cooler line fittings and replace as necessary.
17. Inspect the case for damage.


KAA5A640

18. To remove the park rod lever: Remove the circlip from the inner end of the pivot shaft and tap the outer end of the shaft until it moves free from the case, then using a wide shallow tapered drift as a wedge, drive the pin out from the inside of the case and remove the lever and spring.

    Notice: Do not remove the park rod lever unless absolutely necessary.

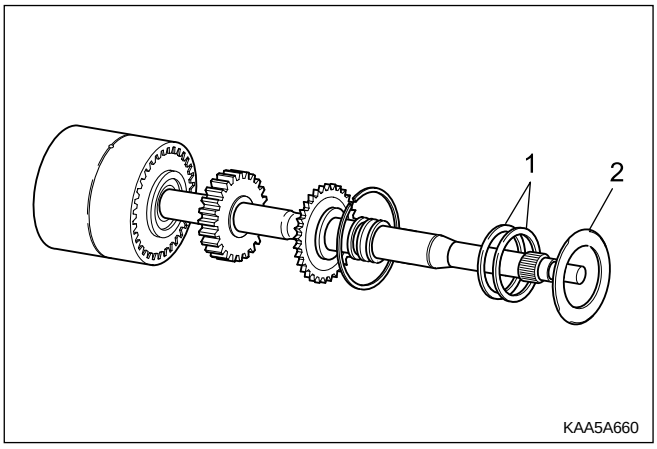

KAA5A650

Forward Clutch Cylinder

Tools Required

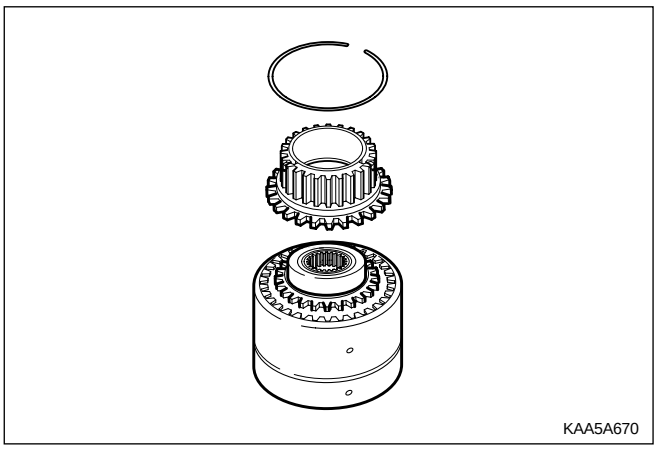
0555-336259 Clutch Spring Compressor

1. Place the assembly in a horizontal position.

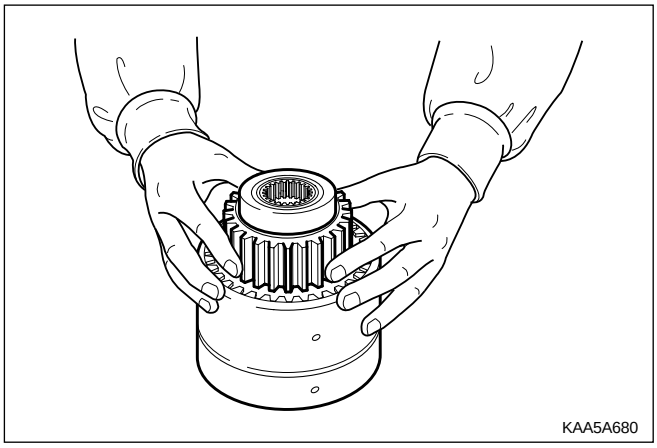


KAA5A660

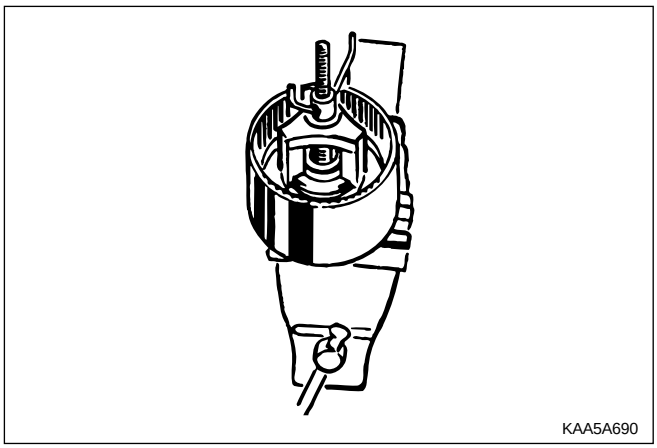
2. Remove the No. 4 needle bearing (2) and adjustment shims (1) from the input shaft.
3. Remove the circlip from the front of the clutch cylinder and remove the input shaft.
4. Remove the overdrive shaft and the C1 clutch hub assembly from the clutch cylinder.
5. Remove the C1 clutch plates from the cylinder.


KAA5A670

6. Remove the circlip retaining the C3 clutch hub in the rear of the clutch cylinder and remove the hub.
7. Remove the C2/C4 clutch hub assembly and remove the No. 5 needle bearing from the C4 hub.
8. Removethe C2 clutch plates.


KAA5A680

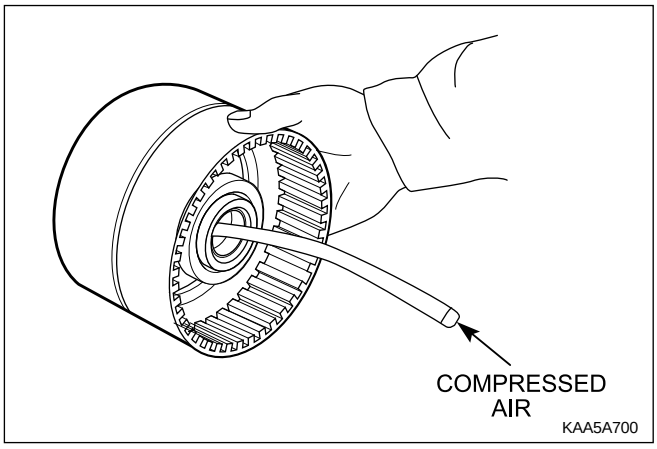
9. Invert the clutch cylinder and remove the C4 clutch sleeve, clutch plates and the two wave washers. The 3-4 one way clutch is located between the C2 and C4 clutch hubs, and the hubs may be separated by rotating one hub clockwise and withdrawing it from the other.
10. Remove the thrust block from the C4 clutch cylinder hub.


KAA5A690

11. Mount the clutch cylinder on clutch spring compressor 0555-336259 with the C2/C4 end uppermost and compress the piston return spring. Remove the spring retaining circlip. Release the tool and remove the circlip, keeper and spring.

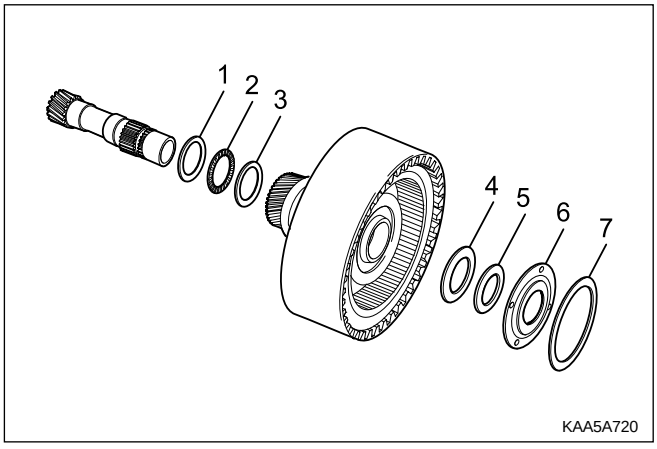
    Notice: Make sure that the spring keeper is not caught in the circlip groove, and that all the spring pressure is released, before removing the tool.

12. Invert the clutch cylinder on the compressor tool and removethe C1 clutch piston return spring in asimilar manner.



KAA5A700

13. To remove the clutch pistons from the clutch cylinder, apply air pressure to the apply ports in the bore of the cylinder.



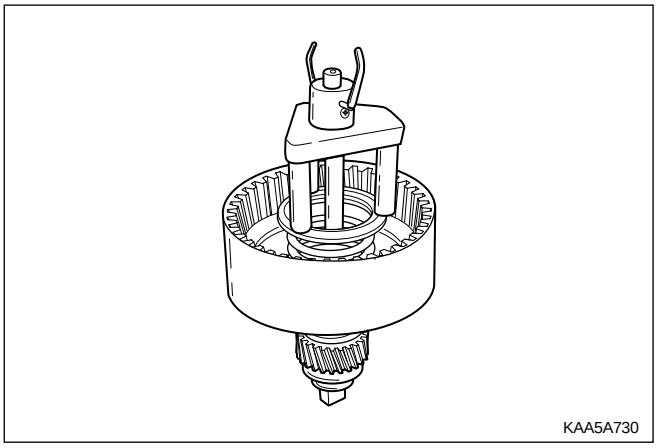
KAA5A720

C3 Clutch Cylinder

Tools Required

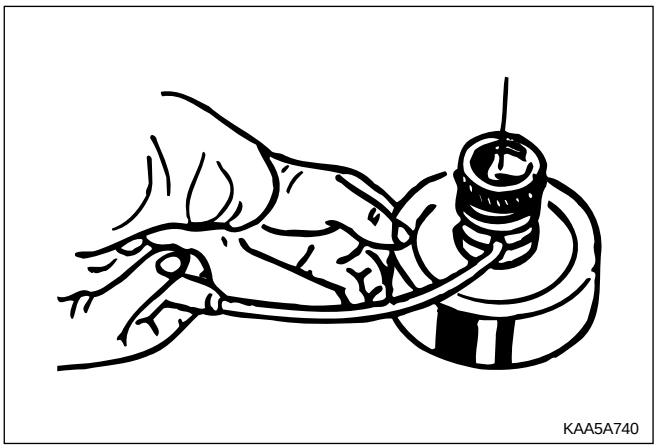
0555-336259 Clutch Spring Compressor

1. Remove the forward sun gear, No.7 needle bearing (2) thrust washer (1) and lipped thrust washer (3) from the C3 clutch cylinder.
2. Remove the thrust plate (4), No.6 needle bearing (5), thrust plate (6) and nylon thrust plate (7) from the clutch cylinder hub.
3. Remove the clutch plate retaining circlip and remove the clutch plates.

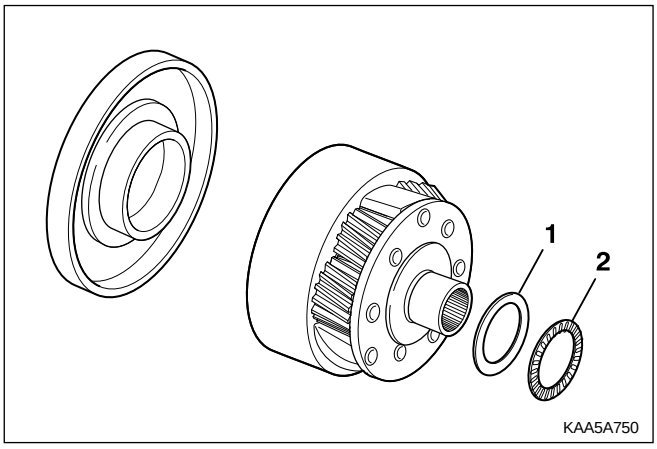

KAA5A730

4. Mount the clutch assembly on clutch spring compressor 0555-336259 and compress the piston return spring.
5. Remove the circlip and release the spring.
6. Remove the tool, circlip, keeper and spring.

   Notice: Make sure that the spring keeper has not been caught in the circlip groove, and that all spring pressure has been released, before removing the tool.


KAA5A740

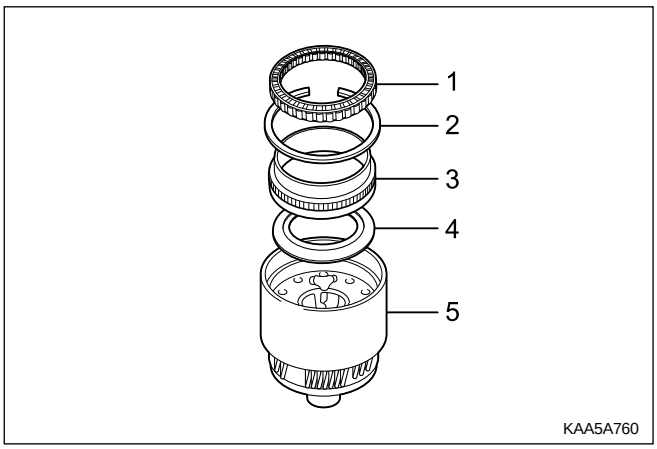
7. Remove the sealing rings from the C3 clutch cylinder.
8. To remove the clutch piston from the clutch cylinder, apply air pressure to the port between the iron sealing rings on the bearing journals of the cylinder.
9. Remove the reverse sun gear and C3 washer from the cylinder.



KAA5A750

Planet Carrier Assembly and Centre Support

1. Remove the No. 9 (2) needle bearing and washer (1) from the output shaft and the planet carrier.
2. Separate the centre support from the planet carrier by rotating it anti-clockwise.



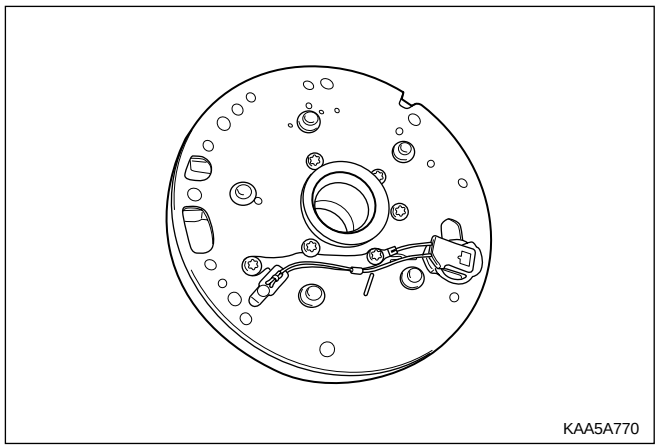
KAA5A760

3. Lift the one way clutch (1) from the planet carrier (5).
4. Remove the circlip (2) retaining the one way clutch outer race (3) in the planet carrier and remove the race.
5. Remove the one way clutch retainer (4) from the planet carrier.

Pump

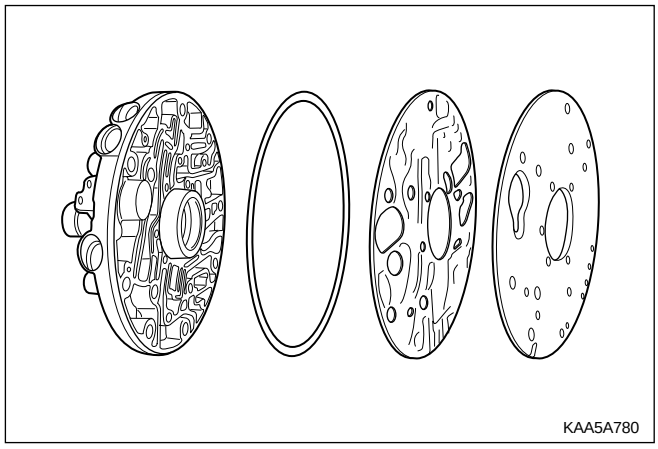
Notice: The following valves are housed in the pump cover:

- Solenoid 7
- Converter clutch control valve
- Converter clutch regulator valve
- Primary regulator valve

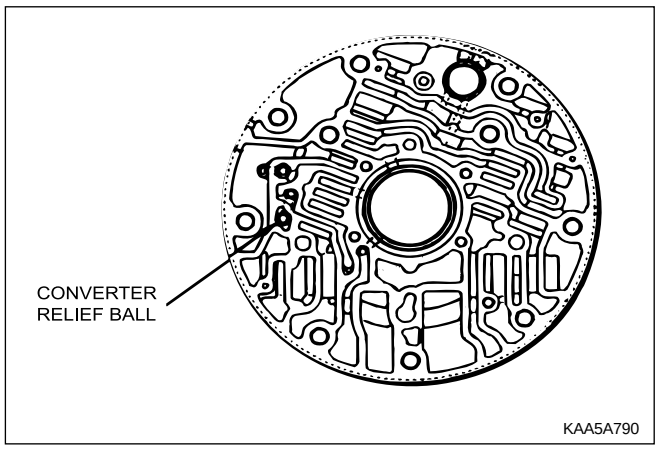

KAA5A770

1. Remove the wiring loom retainer plate and remove solenoid 7 with a T30 Torx bit.
2. Remove the five washer head bolts from the cover plate using a multi-point 8 mm socket.
3. Remove the five Torx head screws from the cover plate with T30 Torx bit. Note that the long screw holds the pump body to the pump body cover.

   Notice: Do not strike the converter support tube to loosen the pump body.

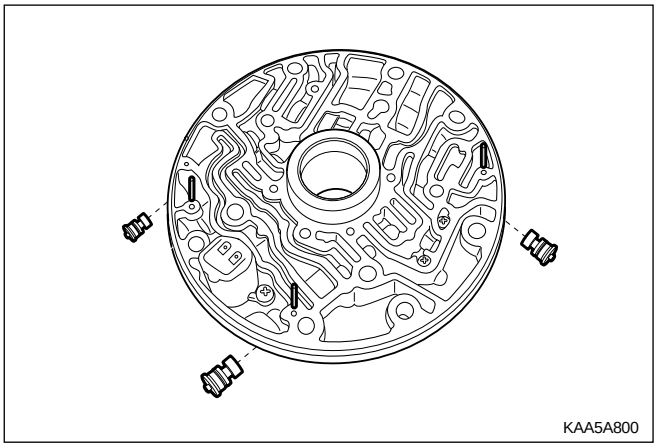

KAA5A780

4. Separate the pump body from the pump cover.
5. Remove the cover plate, gasket and seal from the cover.



KAA5A790

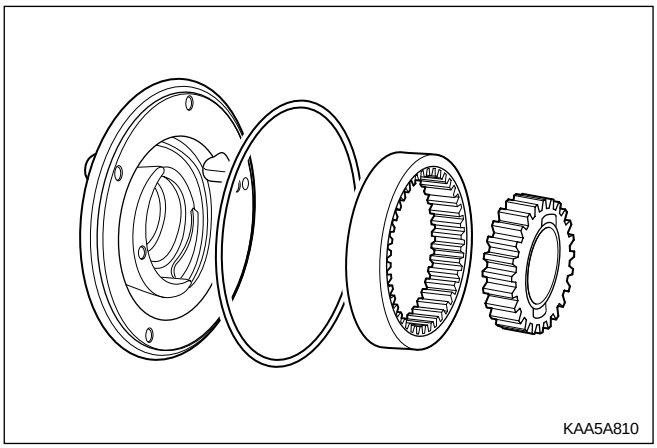
6. Remove the ball check valve and one spring from the pump cover.


KAA5A800

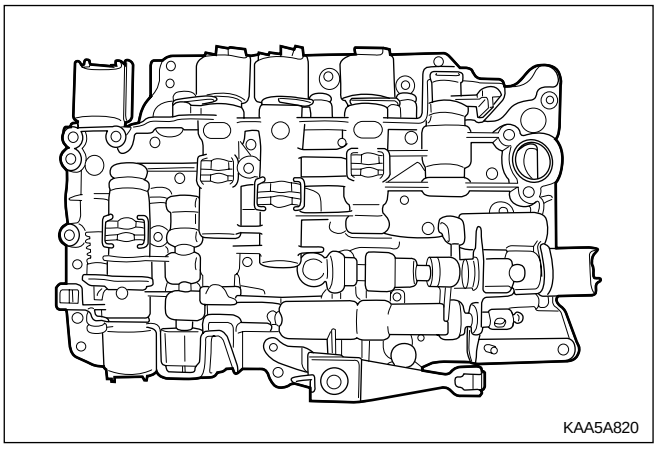
7. Depress the plug inward and remove the retaining pin for each of the three valves.

   Notice: Some of the valves and plugs are preloaded by springs and may unexpectedly fall out of the cover when the pins are removed.

8. Remove the four valves, plugs and springs.


KAA5A810

9. Remove the pump gears from the pump body.
10. Remove the lip seal from the front of the pump body.


KAA5A820

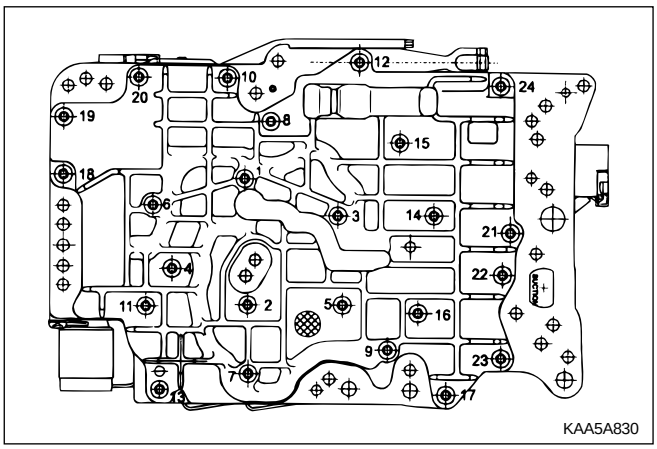
Valve Body

1. Remove the manual valve detent spring and retainer plate using a T40 Torx bit.
2. Slide the manual valve out of the lower valve body.

   Notice: Be aware that the manual valve will fall out of the valve body.

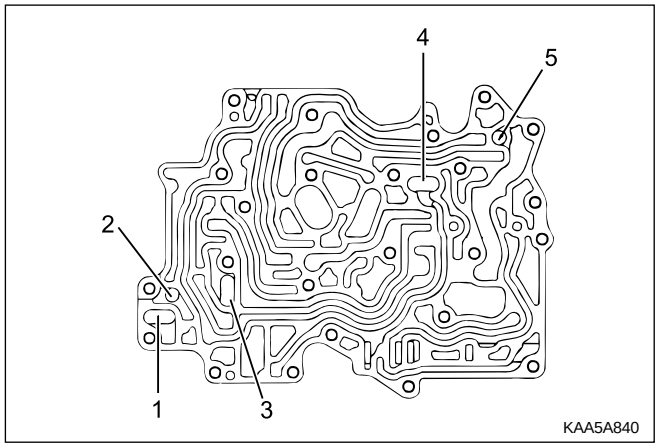
3. Take note of the angular relationship of the solenoid terminals to the valve body and remove the solenoids 1, 2, 3, 4, 5, 6 and valve assemblies.

   Notice: Take care that the bracket is not separated from the solenoid.

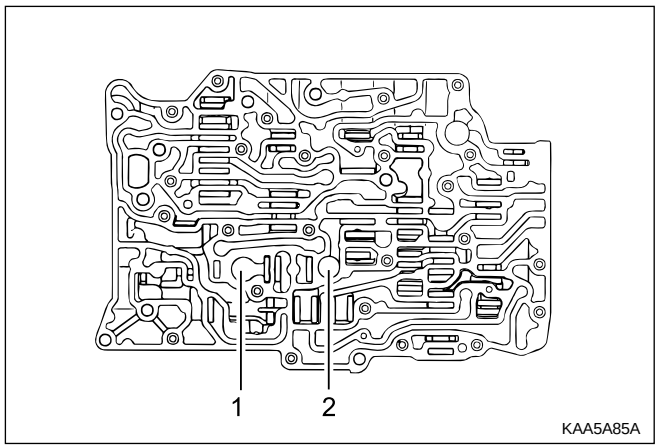


KAA5A830

4. Place the valve body assembly on the bench with the upper body uppermost.
5. Remove the 24 clamping screws with a No. 30 Torx bit. Separate the upper and lower valve bodies by lifting the upper body and the separator plate togeth-er.
6. Turn the upper body over and place it on the bench with the separator plate uppermost.



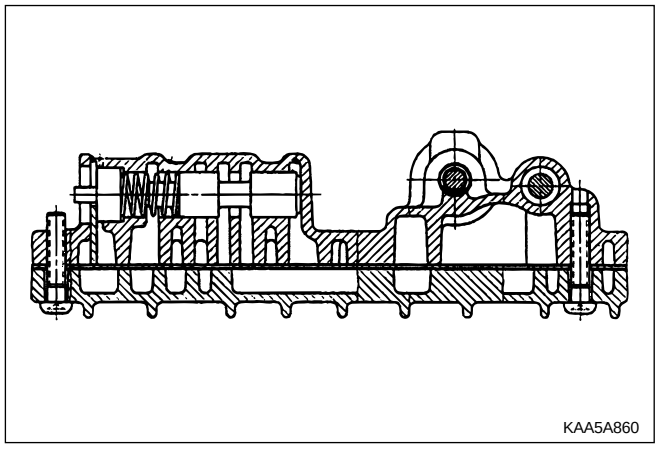
7. Lift the separator plate and gaskets from the upper valve body.
8. Remove the five nylon check balls exposed in the valve body.
9. Remove the retaining plate, plug, spring and reverse lockout valve.



10. Remove the filter (1) and the large nylon check ball (2) from the lower valve body.
11. Remove the retaining plates and pins from the 1-2, 2-3, 3-4, BAR and CAR valves. The pins can be removed with a magnet.

    Notice: Once the pins are removed, the plates are loose in the valve body and will drop out when the valve body is turned over.

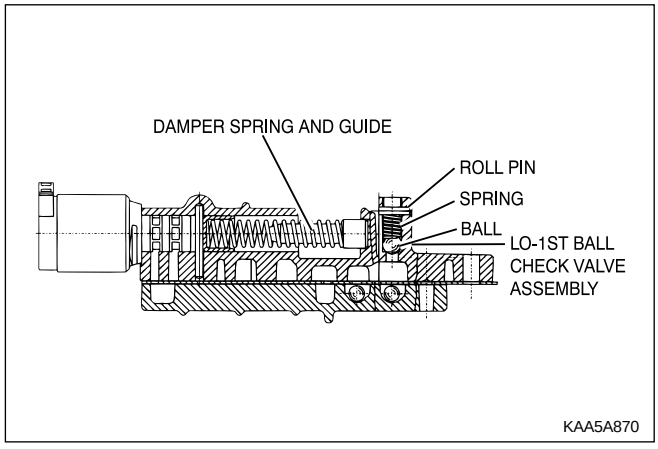
12. Remove the 1-2, 2-3 and 3-4 shift valves.



13. Depress the 4-3 sequence valve plug and remove the retaining plate.

    Notice: The plug is preloaded by the spring and may unexpectedly fall out of the valve body.

14. Remove the plug, spring and valve



15. Depress the solenoid 5 valve. Remove the retaining in and remove the valve, damper guide and spring.

    Notice: The valve is preloaded by the spring and may unexpectedly fall out of the valve body.

16. Depress the line pressure release valve, remove the retaining pin, disc (if fitted), spring and valve.
17. Drive out the retaining pin and remove the spring and ball check valve adjacent to the BAR valve.

ASSEMBLY PROCEDURE

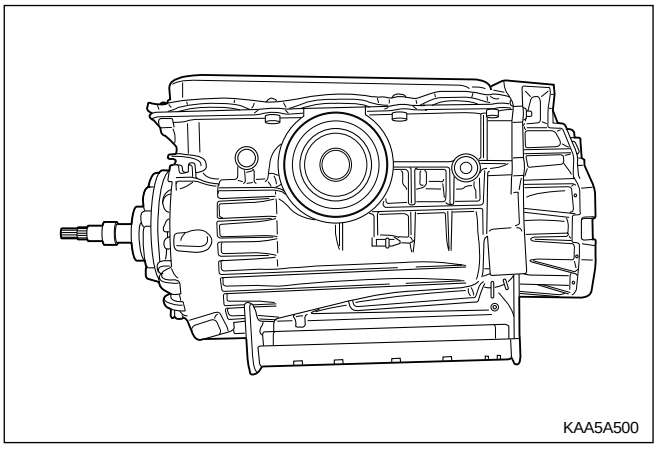
Transmission

Tools Required

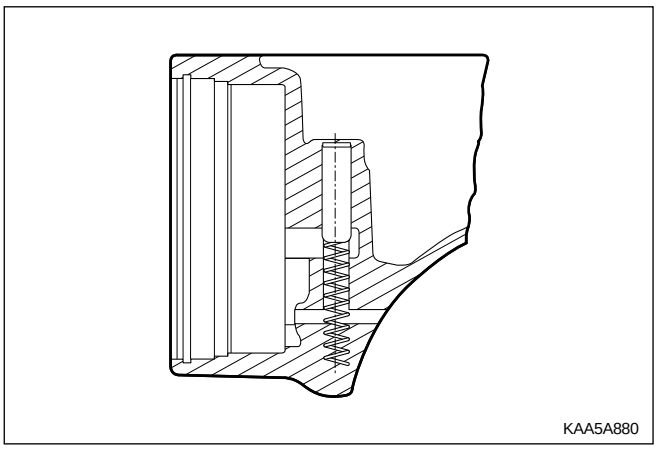
0555-336256	Transmission Bench Cradle
0555-336258	Cross Shaft Pin Remover/Installer (Detent Lever)
0555-336262	Cross Shaft Seal Installer
0555-336263	Cross Shaft bullet
0555-336265	Cross Shaft Pin Remover/Installer (Inhibitor Switch)

Notice:

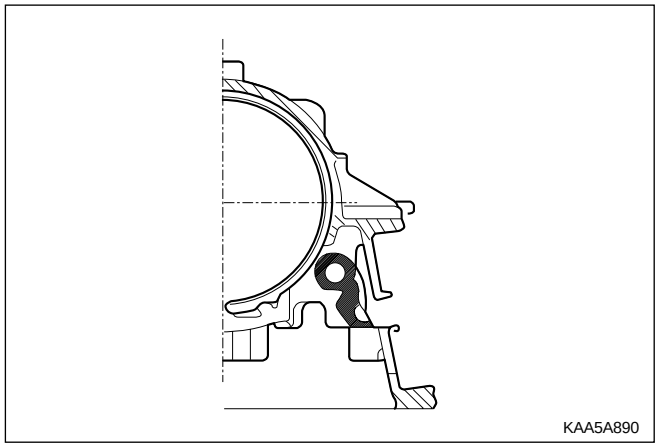
- The transmission is assembled in modular fashion and details of assembly for each module are given under the appropriate subject.
- Technicians overhauling these transmissions will also require a selection of good quality Torx bit sockets, in particular numbers 30, 40 and 50, and an 8 mm, 10 mm and 12 mm double hex socket.
- Ensure that the B1R circlip is fitted to the case. (If this is not fitted, the valve will peen its way into and through the separator plate)
- Ensure that the 'E'clip is fitted to the cross shaft.
- Ensure that all aspects of the parking mechanism are working.


KAA5A500

1. Turn the transmission case upside down on the bench and mount it to the transmission bench cradle 0555-336256.
2. Install all fittings, plugs and the breather, applying a sealant where applicable, Tighten the fittings to specifications. Ensurethatthebreatheris clear, andcheckthat the lube fitting in the rear of the case is fittedand clear of obstruction.

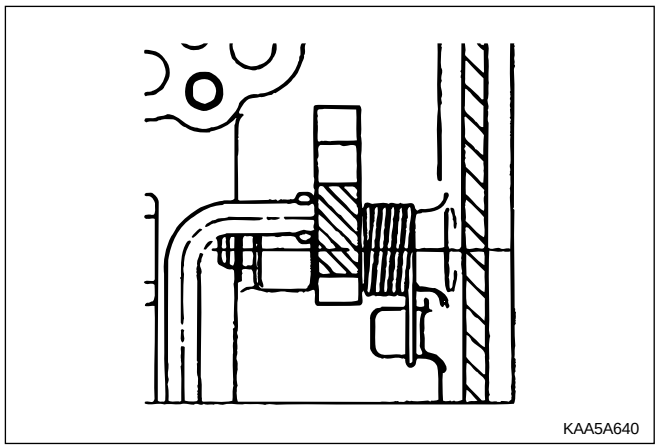

KAA5A880

3. Assemble the B1R valve and spring, and secure with the circlip. Ensure that the circlip is completely seated in its groove.


KAA5A890

4. Install the rear servo lever and pivot pin.

   Notice: The lever must pivot freely on its pin.

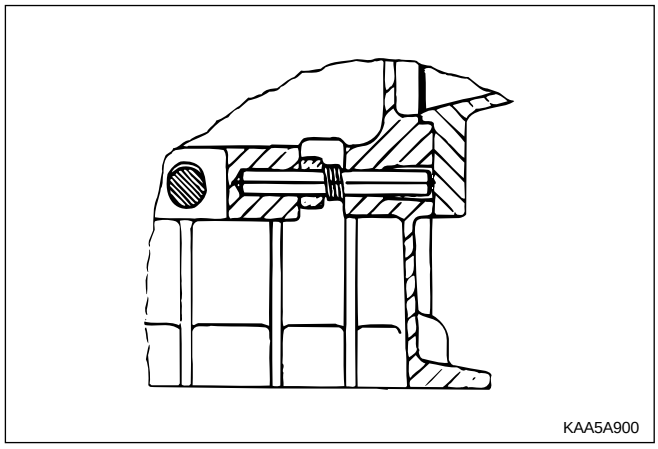

KAA5A640

5. Assemble the park rod lever, complete with the return spring and pivot pin, applying a small amount of sealant to the outer end of the pivot pin.

   Notice: Care must be taken when applying sealant to ensure that it is not applied between the pin and the lever.

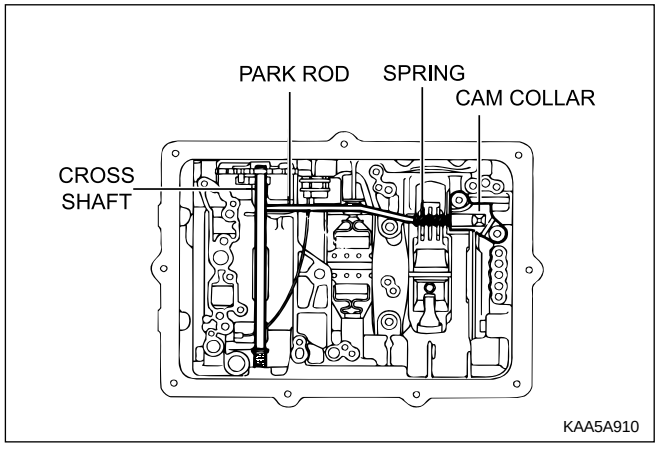
6. Secure the pivot pin with the circlip.

   Notice: The lever must pivot freely on its pin and the spring must return the park rod lever to its correct location.


KAA5A900

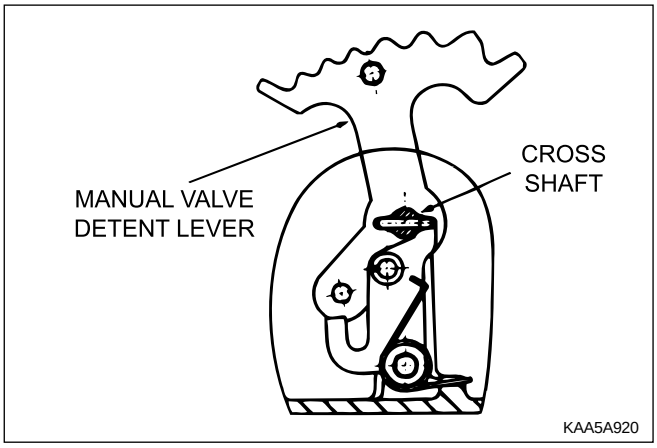
7. Install the parking pawl pivot pin and spring.

   Notice: The pawl must pivot freely on its pin.

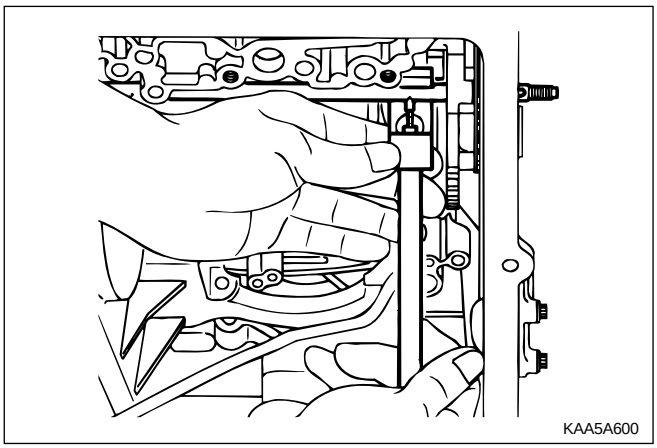


KAA5A910

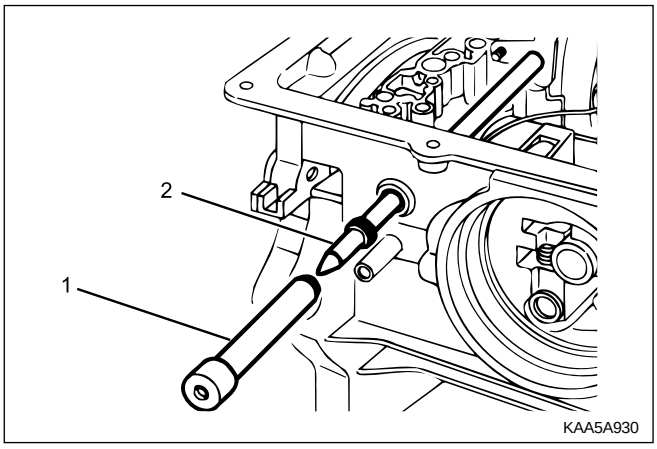
8. Connect the park rod to the manual valve detent lever. Ensure the spring and cam collar is firmly installed on the rod.
9. Check that the cam collar slides freely on the rod.
10. Insert the cross shaft into the case, from the side opposite to the inhibitor switch, then install the antirattle spring on the shaft.



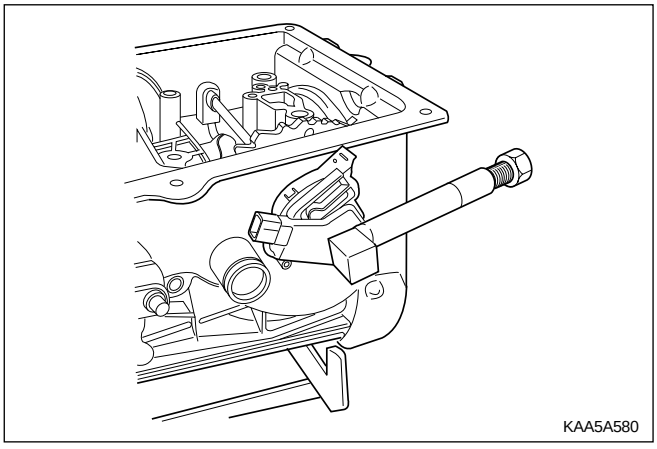
11. Poition the manual valve detent lever, aligning it with the cross-shaft bore in the case.
12. Push the shaft through the detent lever until it starts in the detent lever side of the case.



13. Install the detent lever drive pin in the shaft using cross shaft pin remover/installer (detent lever) 0555-336258 with the adaptor over the pin.
14. Press the pin into the shaft until the tool bottoms.
15. Remove the tool and fit the spring retaining circlip to the shaft.



16. Install the new cross shaft seals using cross shaft seal installer 0555-336262 (1) and cross shaft bullet 0555-336263 (2).

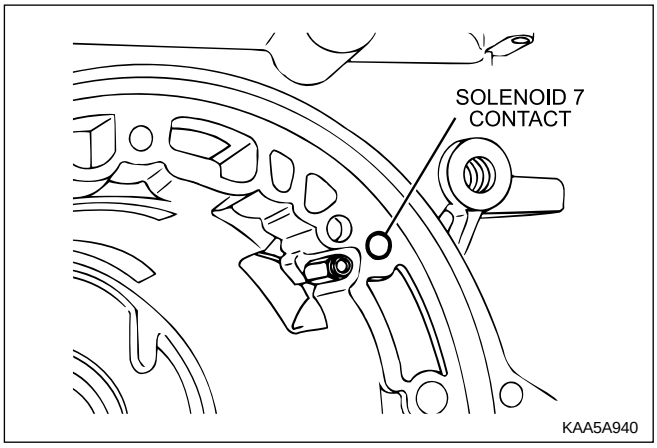


17. Install the inhibitor switch on the case. Torque the bolts as per specifications. Press the pin into the shaft until the tool bottoms using cross shaft pin installer/ remover (inhibitor switch) 0555-336265.

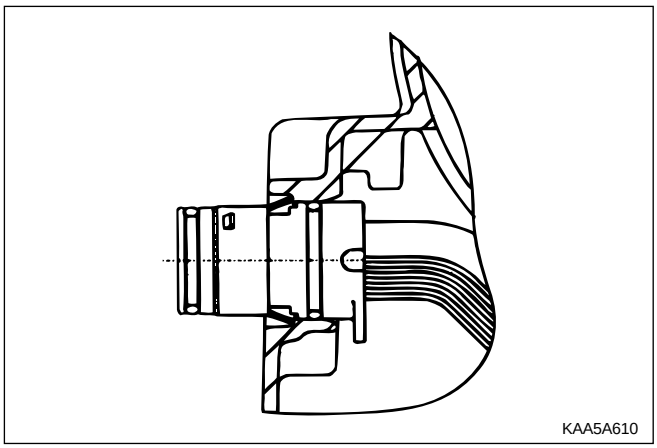
Installation Notice

Tightening Torque	4-6 N•m (35-53 lb-in)

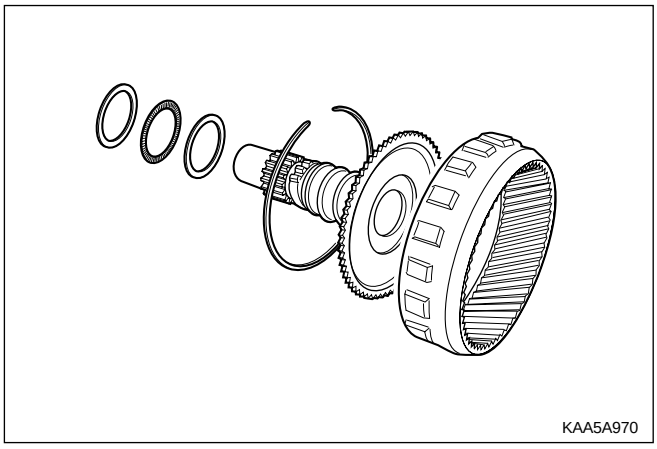
18. Thoroughly check the terminal wiring loom for condition and continuity.



19. Position the wiring loom and locate the solenoid 7 contact and terminal in the pump mounting flange at the front of the case. The solenoid 7 wire is routed under the park rod and cross shaft in the case.

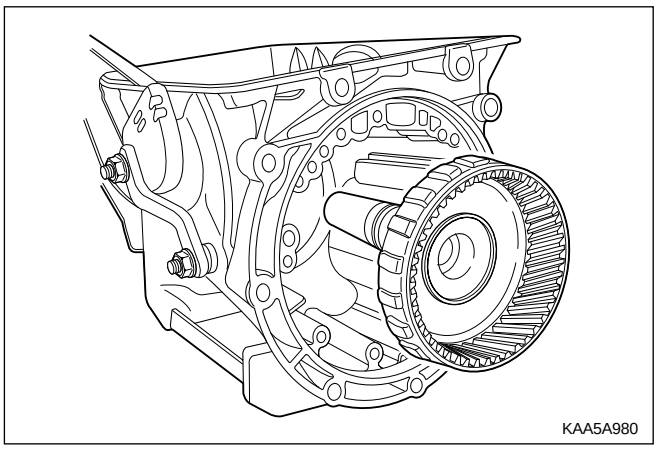


20. Install the 10 pin connector in the case engaging the tangs on the connector in the notches in case.

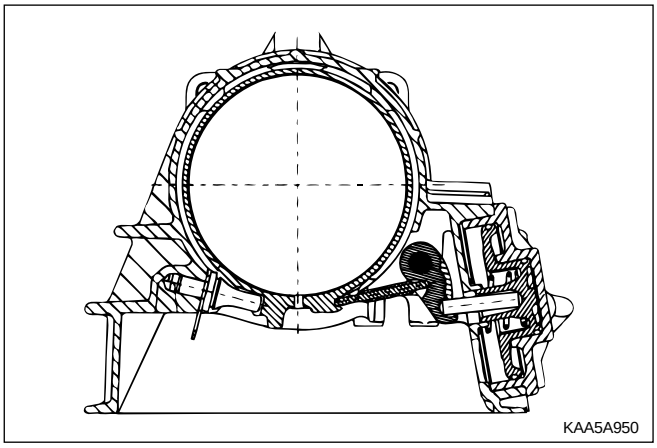


Output Shaft and Gear Assembly

1. Check that the output shaft bush is not worn or damaged. Replace if necessary.
2. Check for damage to parking pawl teeth on the ring gear. Replace if necessary.
3. Check that the sealing ring grooves have not been damaged.
4. Lubricate the sealing rings with automatic transmission fluid.
5. Assemble the sealing rings to the output shaft with the scarf cut uppermost.



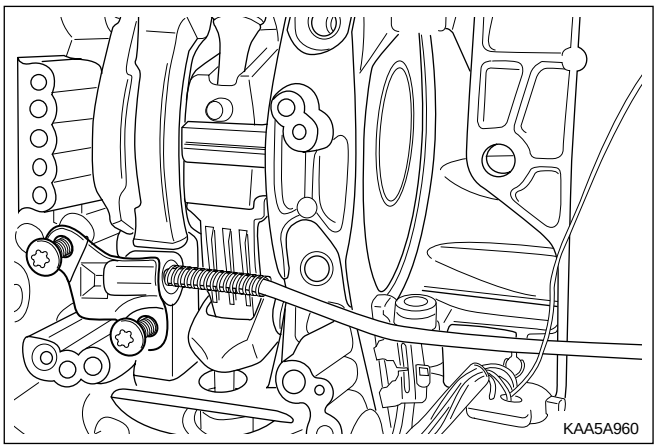
6. If previously dismantled, assemble the ring gear to the output shaft and secure with circlip. Ensure that the circlip is firmly seated in its groove.
7. Install the No. 10 needle bearing assembly onto the output shaft using petroleum jelly.
8. Carefully install the output shaft assembly in the case to prevent damage to the sealing rings.



Rear Band Assembly

1. Check the rear band for any cracks or damage along the lining and metal backing.
2. Install the reaction anchor strut into the main case, without shims.
3. Carefully install the rear band into the transmission case and ensure that it is properly fitted in the case.

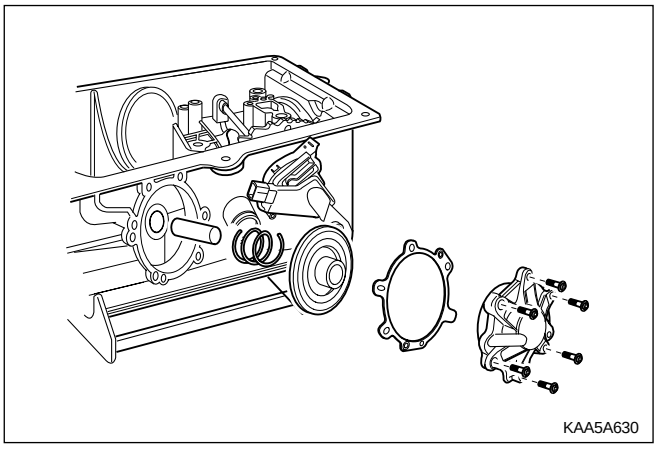
   Notice: If fitting a new band, soak the new band in automatic transmission fluid for a minimum of five minutes prior to assembly.



4. Position the apply strut on the rear band then engage the apply strut in the servo lever.
5. Install the cam plate and tighten the screws to specification.

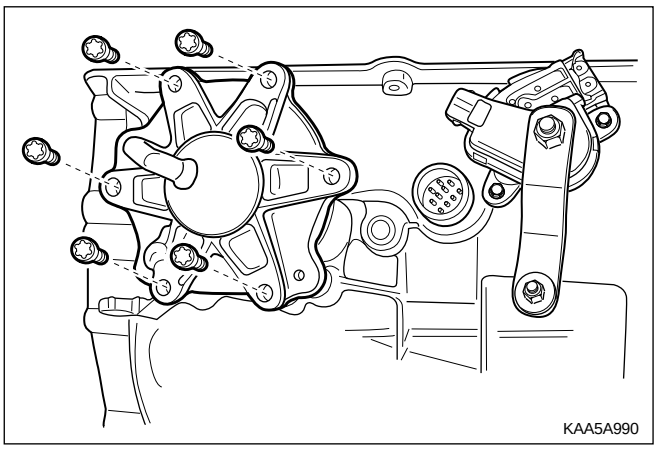
   Installation Notice

Tightening Torque	16-22 N•m (12-16 lb-ft)



Rear Servo Assembly

1. Check the servo piston ‘O’ rings and gasket for any damage.
2. Lubricate the servo piston ‘O’ rings with automatic transmission fluid, and fit the ‘O’ rings to the piston grooves.
3. Assemble the piston to the cover, ensuring that ‘O’ ring compression is adequate but not excessive.
4. Align the spring on the piston spigot, then position the rear servo rod into the spigot.



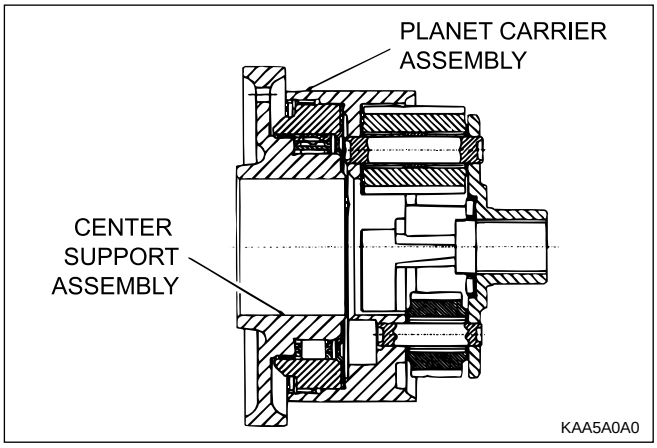
5. Assemble the gasket to the cover and fit the assembly to the case.

   Notice: Do not use petroleum jelly on the gasket.

6. Apply additional Loctite 202 or equivalent as required to the rear servo to case bolts. Install the bolts and tighten to specification.

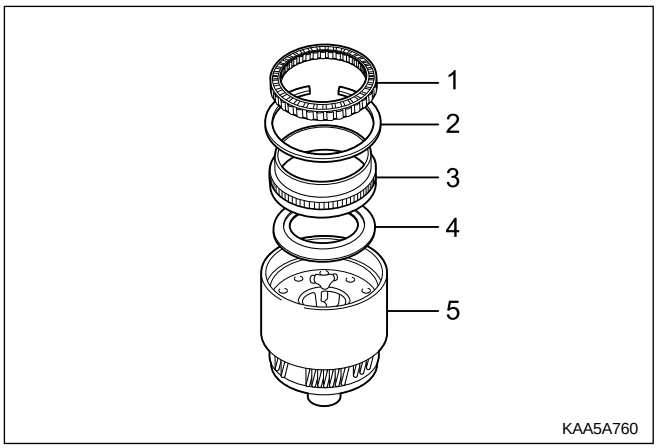
   Installation Notice

Tightening Torque	30-35 N•m (22-26 lb-ft)

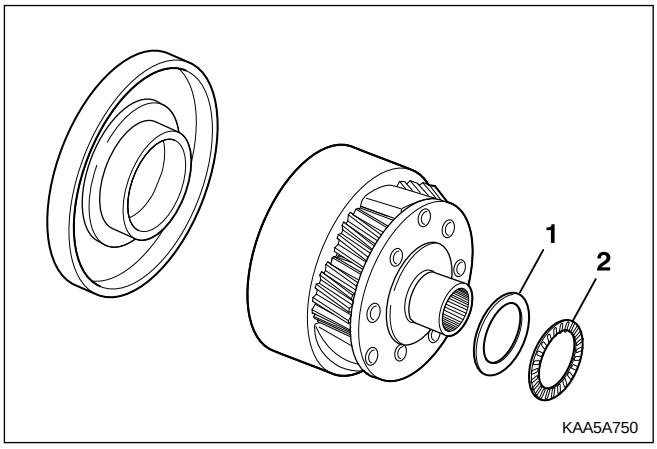


Planet Carrier Assembly and Centre Support

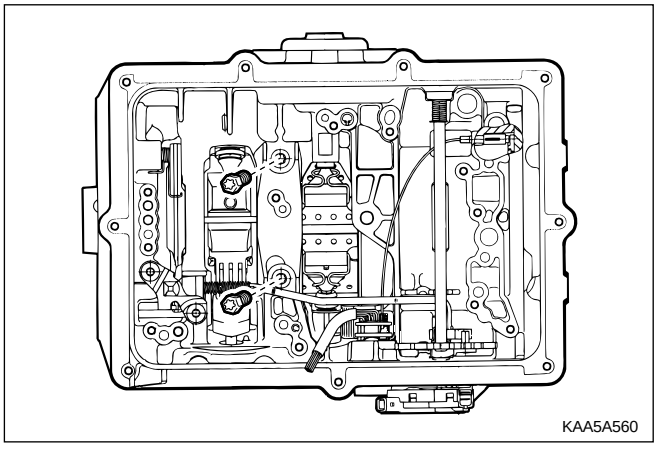
1. Check the carrier and planet assembly for any damage or irregularity and ensure that all pinions rotate freely and that the pinion end float is within 0.10 mm - 0.50 mm.



2. Install the One Way Clutch (OWC) retainer (1) to the planet carrier with the inner edge pointing downwards. Inspect the OWC race and the sprag assemblies for wear or damage. Replace if necessary.
3. Install the outer (3) race in the drum. Press the race to the bottom of the drum and install the retaining circlip (2). Ensure the circlip is firmly seated in its groove.
4. Install the OWC (1) into the outer race with the lip edge uppermost. Lubricate the sprags with automatic transmission fluid.



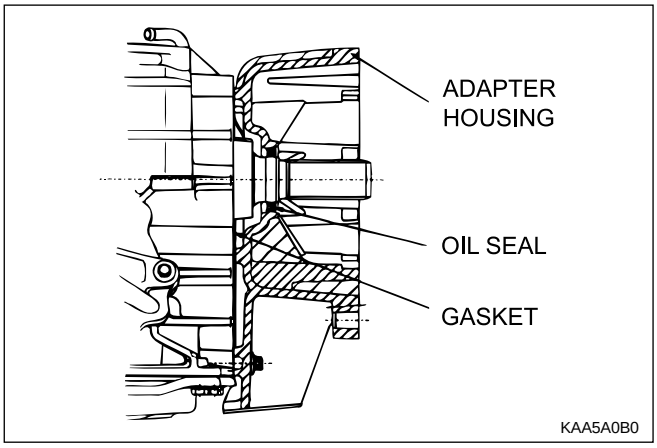
5. Check that the plugs are fitted to the centre support, then assemble the centre support into the OWC, ensuring that the support will rotate in an anti-clock-wise direction only.
6. Lubricate the No. 9 needle bearing and washer with petroleum jelly and fit them to the rear face of the planet carrier.



7. Install the planet assembly and the centre support into the case, and align the centre support mounting bolt holes.
8. Install the centre support bolts finger tight.
9. Install the circlip retainer ensuring that the circlip is completely seated in the groove of the case.
10. Remove the centre support bolts and apply Loctite 222 or equivalent to the threads. Install the bolts and torque to specifications.

Installation Notice

Tightening Torque	20-27 N•m (15-20 lb-ft)



Adaptor Housing Assembly

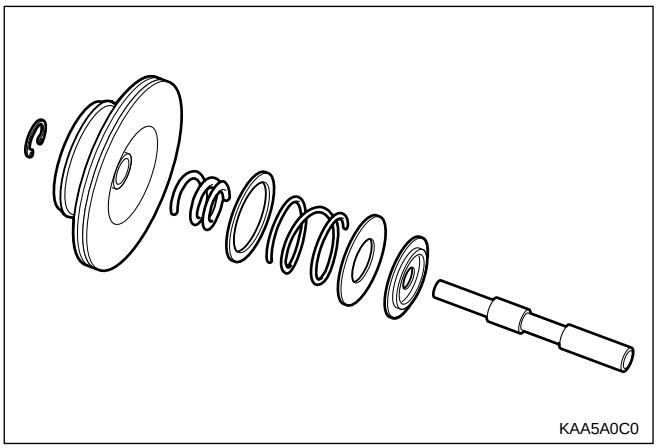
1. Install a new seal to the adaptor housing.
2. Position a new gasket onto the adaptor housing.

   Notice: Do not use petroleum jelly to hold the gasket in position.

3. Apply additional Loctite 202 or equivalent as required to the adapter housing bolts. Install the adaptor housing and torque the bolts to specification.

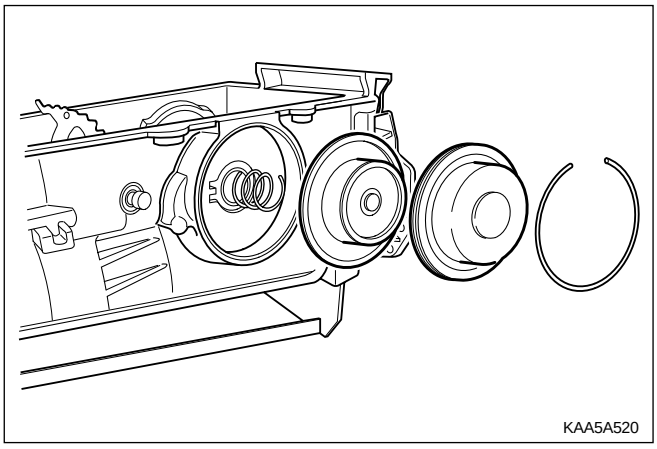
   Installation Notice

Tightening Torque	30-35 N•m (22-26 lb-ft)

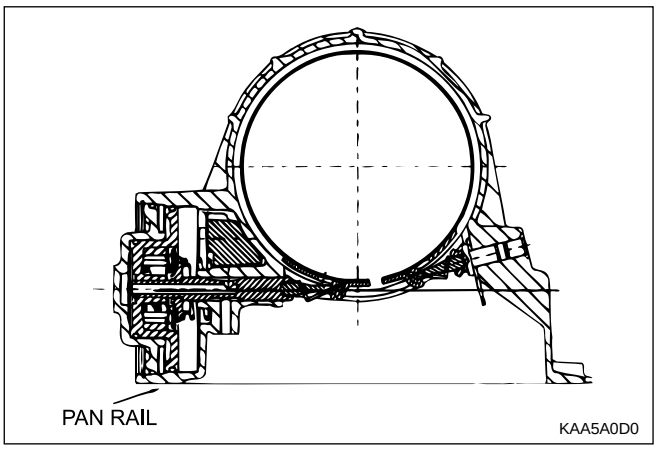


Front Servo Assembly

1. Lubricate the cover 'O' ring with automatic transmission fluid and fit to the cover.
2. Lubricatethepiston'O' rings with automatic transmission fluid and fit to the piston.
3. Assemble the piston, push rod, spring, belleville washer, seat and retaining ring.
4. Fit the piston push rod assembly into the front servo cover.

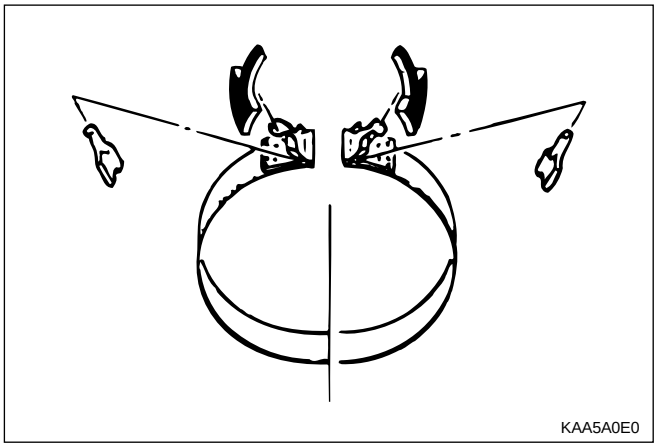


5. Install the front servo block and spring into the case.
6. Install the front servo assembly into the case.



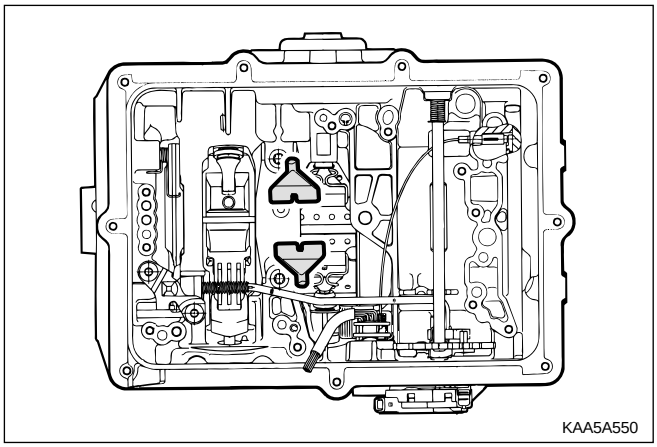
7. Compress the servo cover and fit the servo cover retaining circlip, aligning the gap with the pan rail, and ensuring that it is completely seated in its groove.

   Notice: Ensure that the front servo snap ring is installed correctly. Orient the circlip with the gap at the bottom, near the pan rail.


KAA5A0E0

Front Band Assembly

1. Install the reaction anchor strut to the case.
2. Check the band for all cracks or damage along its lining and metal backing.
3. Position the strut retainers on the band.


KAA5A550

4. Install the front band into the transmission case, ensuring that it is properly seated in place.

   Notice: If fitting a new band, soak the band in automatic transmission fluid for a minimum of 5 minutes prior to assembly.

5. Position the reaction strut in its retaining clip and engage it with the band and anchor strut.
6. Position the apply strut in its retaining clip and engage it with the band and the servo piston rod.

C2/C4 Clutch Assembly

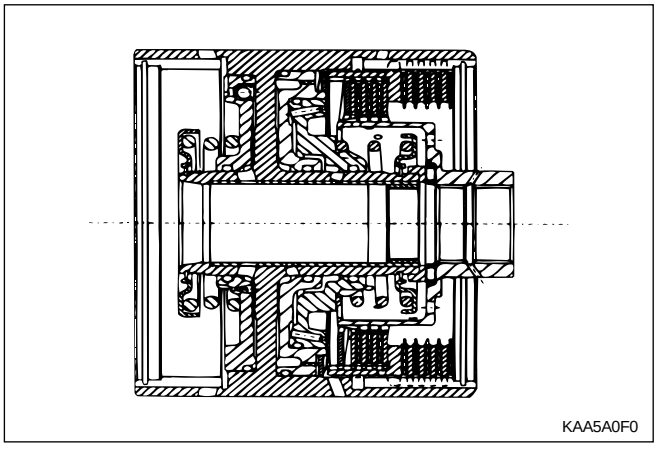
Tools Required

0555-336259 Clutch Spring Compressor

0555-336260 Clutch Pack Clearance Kit

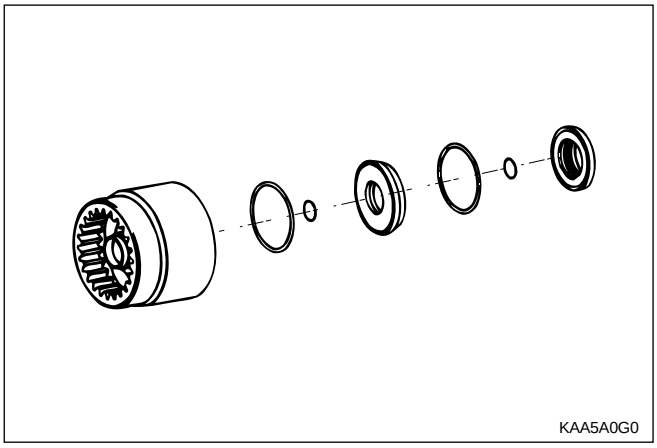
Notice:

- Check pistons for cracks.
- Do not mix the clutch piston return springs.
- Ensure that the snap rings are fitted correctly.

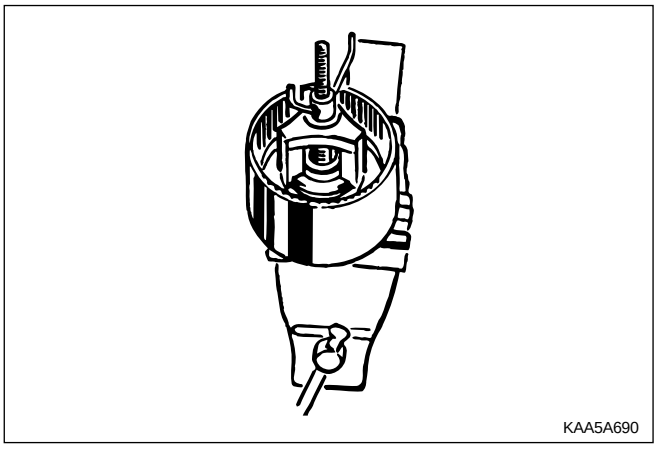

KAA5A0F0

1. Check the feed orifices in the cylinder bore are clear of obstructions.
2. Check the C2 piston bleed orifices are clear of obstructions.
3. Lubricate the ‘O’ rings with Automatic Transmission Fluid (ATF)
4. Fit the small ‘O’ ring onto the inner groove, and the large ‘O’ ring onto the outer groove of the piston.

   Notice: ‘O’ rings must not be twisted in the grooves.


KAA5A0G0

5. Check the C4 piston bleed orifices are clear of obstructions.
6. Lubricate the ‘O’ rings with ATF.
7. Fit the small ‘O’ rings onto the inner groove and the large ‘O’ rings onto the outer groove of the piston.
8. Position the clutch cylinder with the C2/C4 cavity facing upwards.
9. Fit the C4 piston into the C2 piston with the bleed orifices in alignment.
10. Install the C2/C4 piston assembly into the cylinder, with the piston bleed orifices aligned with the holes on the outside of the cylinder, until the outer diameter of the C2 piston enters the inner diameter of the cylinder.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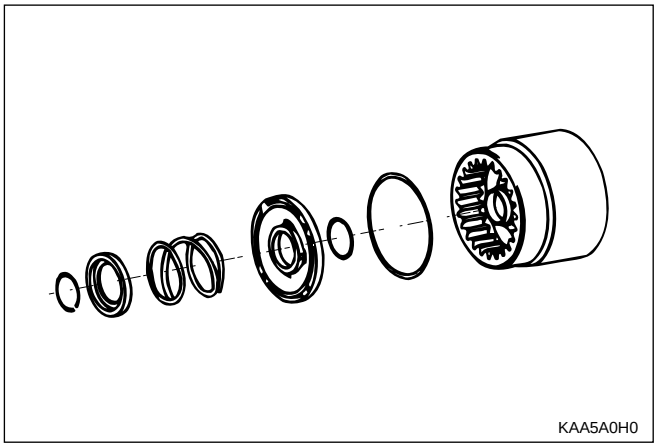
11. Assemble the piston return spring to the piston, and fit the spring retainer over the spring.
12. Using 0555-336259 clutch spring compressor, compress the spring sufficiently to enable the installation of the retaining circlip ensuring that the circlip is firmly seated in its groove, then remove the tool.

    Notice: The wire diameter of this spring is 4.3 mm.

13. Check the C1 piston check valves are not damaged and are free to move, and that the cylinder feed orifices are clear of obstructions.
14. Lubricate the ‘O’ rings with ATF and fit them to their respective grooves.

    Notice: ‘O’ rings must not be twisted in the grooves.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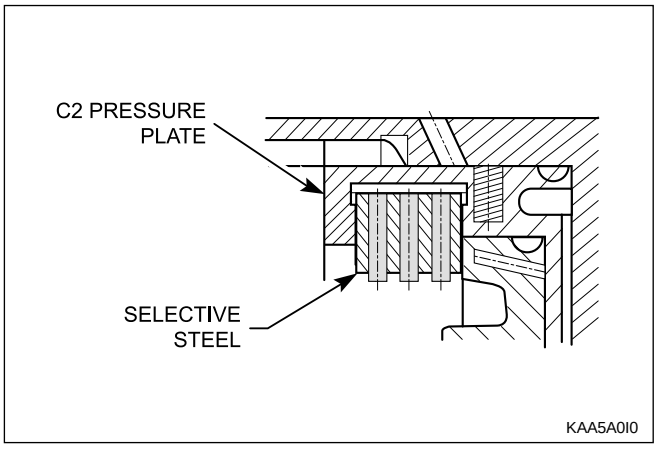
15. Position the cylinder with the C1 cavity upwards. Install the piston into the cylinder until the outer diameter of the piston enters the inner diameter of the cylinder.
16. Install the spring and spring retainer onto the piston.
17. Using 0555-336259 clutch spring compressor, compress the spring sufficiently to enable the installation of the retaining circlip ensuring that the circlip is firmly seated in its groove, then remove the tool.

    Notice: The wire diameter of this spring is 5.26 mm.
18. Install the C2 wave washer into the cylinder with the crest of one wave covering one of the bleed orifices inthe C2 piston.



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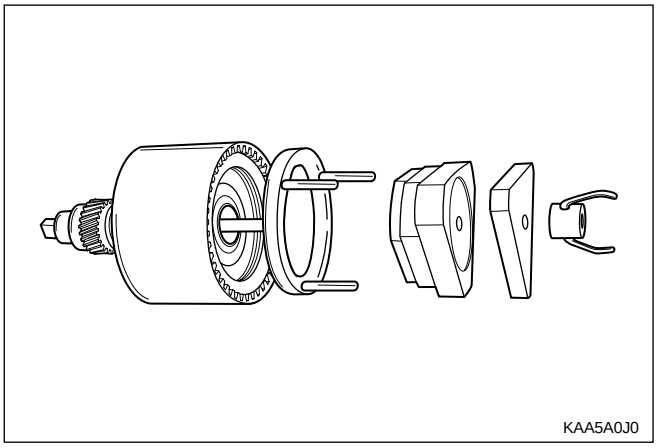
19. Measure and record the thickness of the flange of the C2 sleeve.
20. Install the C4 clutch plates and wave washer into the C2 actuating sleeve, with the rounded edge of the steel plates down, in the following sequence:
    - Steel plate (selective)
    - Friction disc
    - Steel plate
    - Friction disc
    - Steel plate
    - Friction disc
    - Steel plate
    - Wave washer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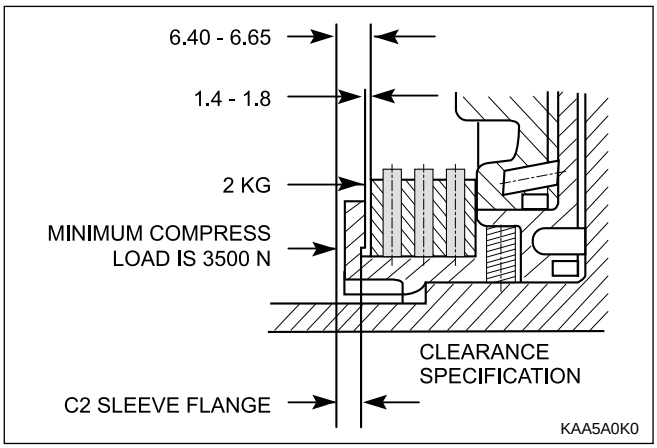
21. Holding the cylinder horizontal, install the sleeve and clutch plate assembly into the cylinder, with the crest of one wave of the washer in line with one of the holes in the outside of the cylinder, until the sleeve contacts the C2 wave washer.
22. Check the C4 clutch pack clearance using 0555-336260 clutch pack clearance kit.



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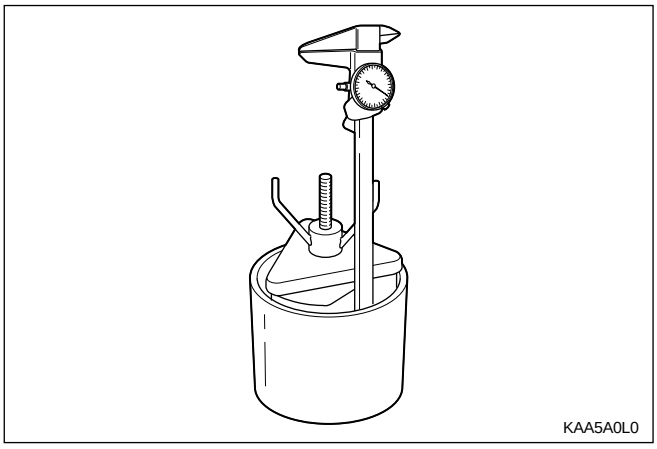
Notice: With the C2 wave spring compressed, and the clutch Pack supporting a 2 kg weight, the dimension from the underside of the C2 pressure plate to the selective steel is to be between 1.4 - 1.8 mm. If the clutch is to be gauged from the top of the pressure plate, then the dimension is to be the actual thickness of the pressure plate plus 1.4 - 1.8 mm.

23. Use selective plates to achieve the correct specification. If new friction plates are being fitted, remove the clutch pack and soak the friction plates in ATF for a minimum of 5 minutes prior to reassembly.

    Notice: The clutch pack clearance must be taken before the elements are soaked in ATF.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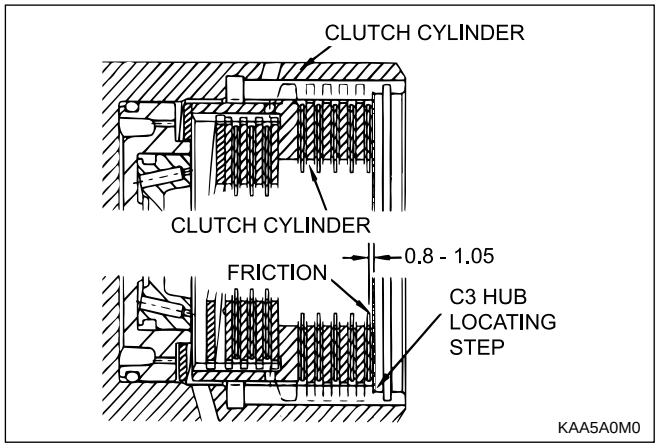
24. Reassemble the sleeve and clutch pack into the cylinder. Observe the alignment of the wave washer to the hole in the cylinder.
25. Install the C2 clutch plates in the cylinder in the following sequence:
    - Friction disc
    - Steel plate
    - Friction disc
    - Steel plate
    - Steel plate (0574-000013, `014, `015, `016, `019, `022), or Friction disc (0574-000012 & `017)
    - Steel plate (selective)
    - Friction disc
    - Steel plate (selective)
    - Friction disc



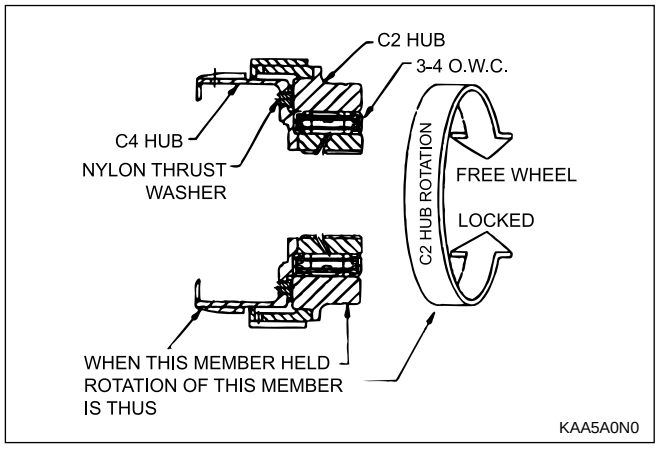
26. Check the clutch pack clearance using only the weight from 0555-336260 clutch pack clearance kit.

    Notice: With the clutch pack supporting a 2 kgweight, the dimension from the C3 clutch hub locating step to the friction plate is to be between 0.80 - 1.05 mm.

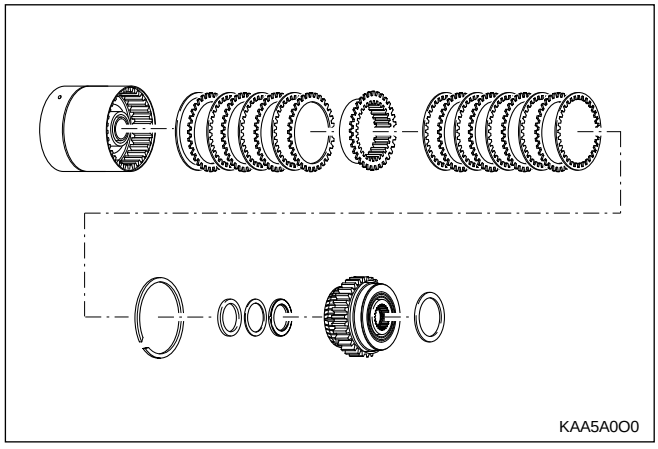
27. Use selective plates to achieve the correct specifica-tion. If new friction plates are being fitted, remove the clutch pack and soak the friction plates in ATF for a minimum of 5 minutes prior to reassembly.

    Notice: The clutch pack clearance must be taken before the elements are soaked in ATF.

28. Lubricate and fit the 3-4 OWC and end caps to the C2 hub.



29. Align the tangs and fit the nylon thrust washer onto the C4 hub.
30. Align and fit the C4 hub to the C2 clutch and the OWC assembly.
31. Check the rotation of the C2 hub. While holding the C4 hub, the C2 hub should rotate in the clockwise direction and lockup in the anti-clockwise direction when viewed from the C2 hub.



32. Apply petroleum jelly to the No. 5 needle bearing and fit it to the C4 hub.
33. Remove the C2 clutch plates from the clutch cylin-der.
34. Fit the thrust plate over the cylinder inner hub.
35. Engage the C2/C4 clutch hub assembly in the C4 clutch plates.
36. Install the C2 clutch plates.
37. Install the C3 hub and secure it with the circlip, ensuring that the circlip is firmly seated in its groove.

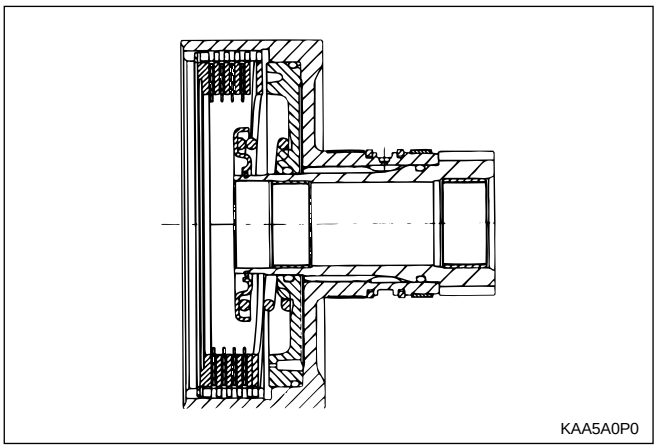
C3 Clutch and Reverse Sun Gear Assembly

Tools Required

0555-336259 Clutch Spring Compressor

0555-336260 Clutch Pack Clearance Kit

1. Check the orifices in the cylinder are clear of obstructions.
2. Check the C3 cylinder bush outside diameter and the centre support inside diameter are in good condition and not damaged. Coat the sealing rings with automatic transmission fluid and fit into the C3 cylinder grooves.



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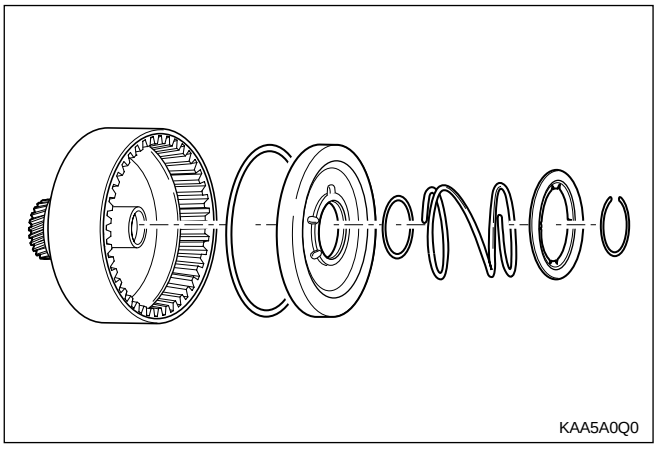
3. Check the reverse sun gear splines, grooves and thrust face for condition. Coat the 'O' ring with automatic transmission fluid and fit it to the groove of the reverse sun gear.
4. Lubricate the C3 washer with petroleum jelly and fit to the inner face of the reverse sun gear.
5. Install the reverse sun gear in the C3 cylinder, ensuring that the 'O' ring compression is adequate but not excessive.

   Notice: 'O' rings must not be twisted in the grooves.



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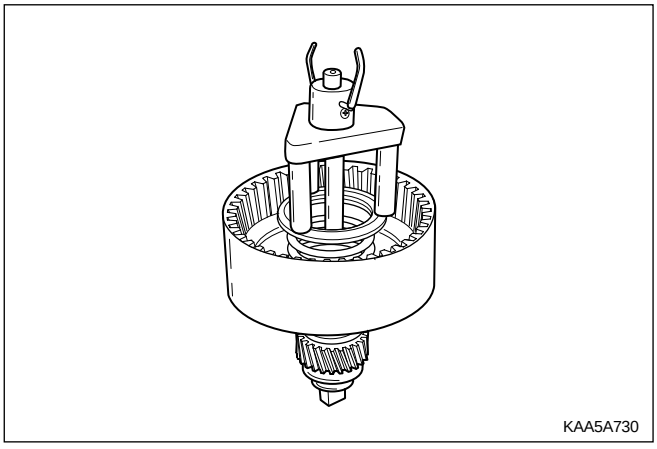
6. Coat the C3 piston 'O' rings with automatic transmission fluid and fit the small 'O' ring onto the inner ring and the large 'O' ring onto the outer ring of the C3 piston.
7. Check that the bleed orifices of the piston are clean and clear of obstructions.
8. Install the C3 piston in the cylinder until the outside diameter of the piston enters the inside diameter of the cylinder.

   Notice: Take care not to cut the 'O' ring.



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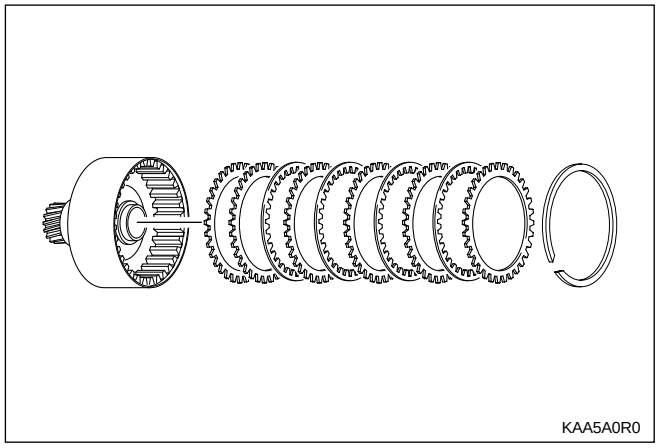
9. Assemble the spring and spring retainer on the piston. Using 0555-336259 clutch spring compressor compress the spring sufficiently to enable the installation of the retaining circlip, ensuring that the circlip is firmly seated in the groove, and remove the tool.
10. Fit the C3 wave plate to the C3 piston face, ensuring that one crest of the wave plate of the C3 piston face is aligned over one of the piston orifices.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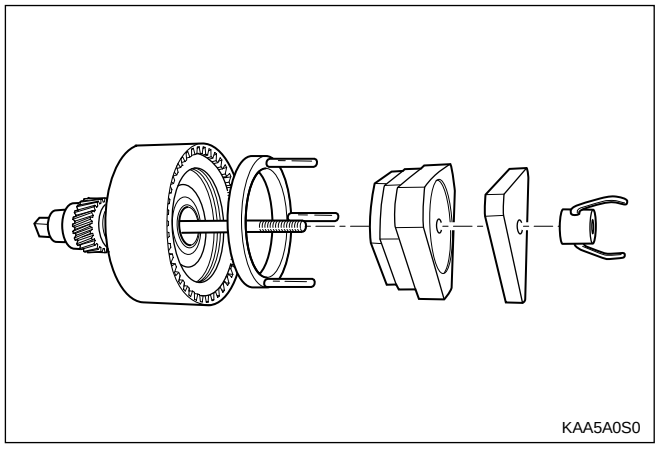
11. Assemble the clutch plates and discs into the cylinder in the following sequence :
    - Steel plate
    - Friction disc
    - Steel plate
    - Steel plate (0574-000013, `014, `015, `016, `019, `022), or Friction disc (0574-000012, `017)
    - Steel plate (selective)
    - Friction disc
    - Steel plate (selective)
    - Friction disc
12. Align and fit the pressure plate with the counterbore facing away from the clutch plates.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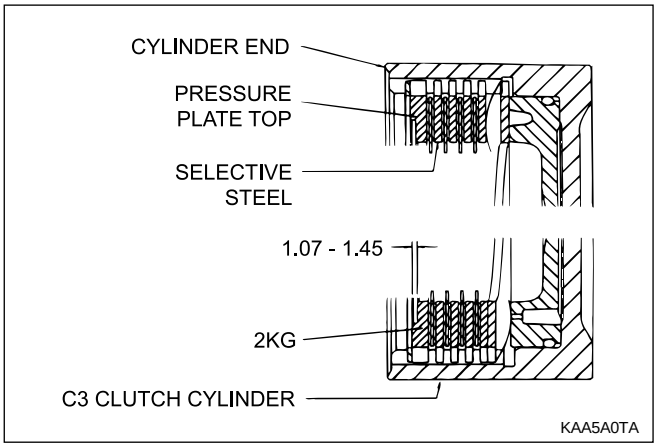
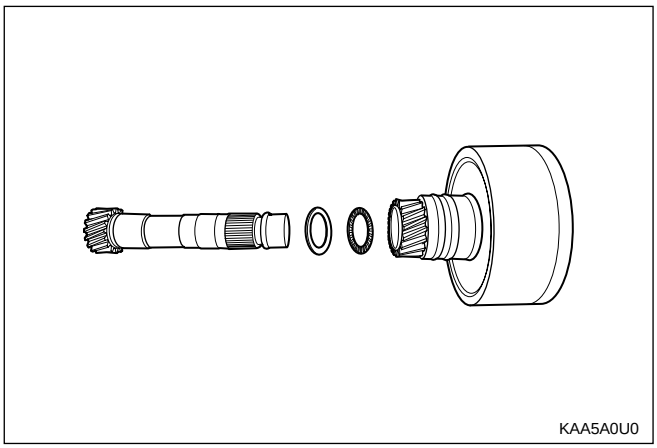
13. Install the circlip.
14. Check the C3 clutch clearance using 0555-336260 clutch pack clearance kit in the following manner (weight only).
    a. Place the weight on the pressure plate and measure the distance from the end of the cylinder to the top of the pressure plate.
    b. Record this figure.
    c. Remove the weight.
    d. Lift the pressure plate up against the circlip and measure the distance from the end of the cylinder to the top of the pressure plate.
    e. Record this figure.
    f. Subtract the second reading from the first reading to obtain the clutch pack clearance.



Notice: With the clutch pack supporting a weight of 2kg, the clearance between the snap ring and the top of the pressure plate is to be between 1.07 - 1.45 mm.

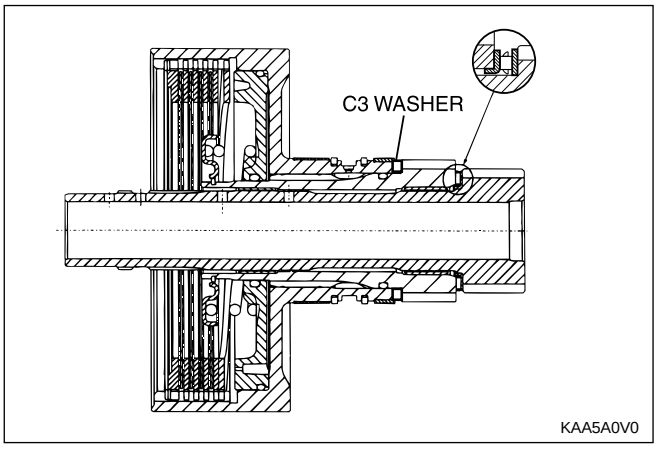
15. If new friction plates are being fitted, remove the clutch pack and soak the friction elements in automatic transmission fluid for a minimum of five minutes prior to reassembly.

    Notice: The clutch pack clearance must be taken before the elements are soaked in automatic transmission fluid.

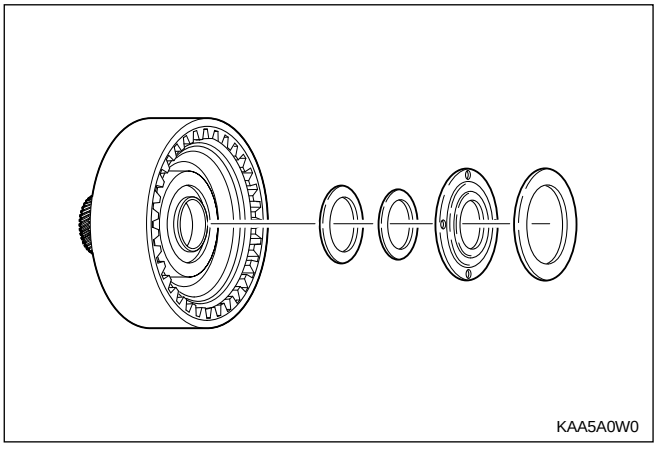


Forward Sun Gear and C3 Clutch Pack Assembly

1. Fit the No.7 needle bearing assembly over the forward sun gear, ensuring that the thrust washer is between the bearing and the sun gear.
2. Lubricate the lipped thrust plate with petroleum jelly and fit the thrust plate onto the reverse sun gear.



3. Align and fit the C3 clutch assembly over the forward sun gear.



4. Lubricate the No.6 needle bearing with petroleum jelly and fit it to the thrust plate. Ensure the lugs on the outside diameter of the bearing fit in the thrust plate counterbore.
5. Align and fit the plastic thrust washer to the thrust plate with petroleum jelly.
6. Install the assembly over the forward sun gear shaft against the No. 6 needle bearing.
7. Place the assembly to one side.

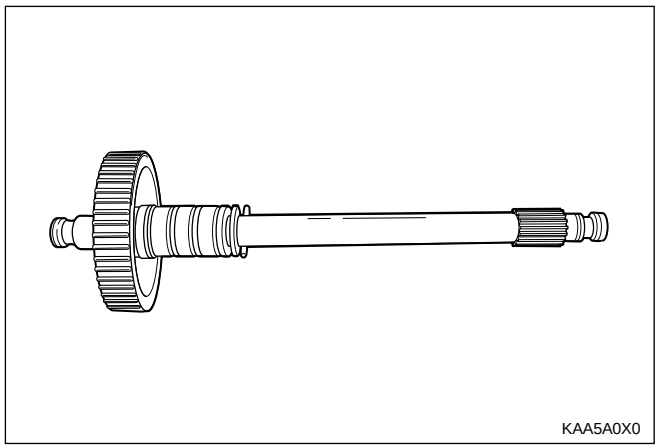
C1 Clutch Overdrive Shaft and Input Shaft Assembly

Tools Required

0555-336260 Clutch Pack Clearance Kit

Notice:

- Ensure that the snap rings are fitted correctly.
- Check pistons for cracks, especially the C1 piston.
- Do not mix clutch piston return springs.
- If the C1/C2 clutch packs separate from the C3 clutch pack, make sure the No. 6 bearing doesn't drop out of the bearing retainer.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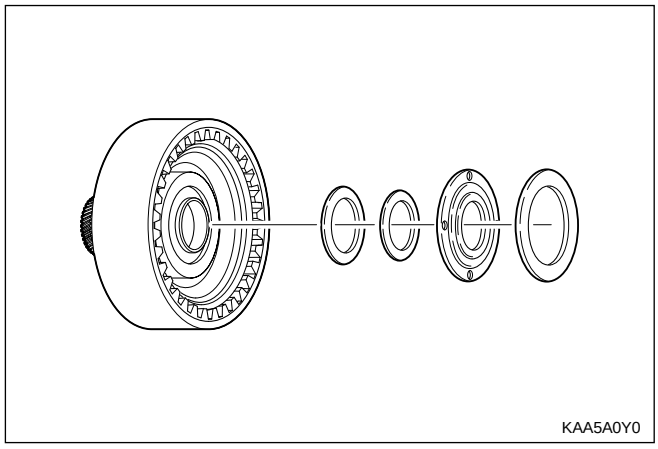
1. Check the overdrive shaft grooves for any defect.
2. Coat the sealing rings, large and small, with petroleum jelly and fit them to the overdrive shaft. The sealing rings may be held in place with a small amount of petroleum jelly.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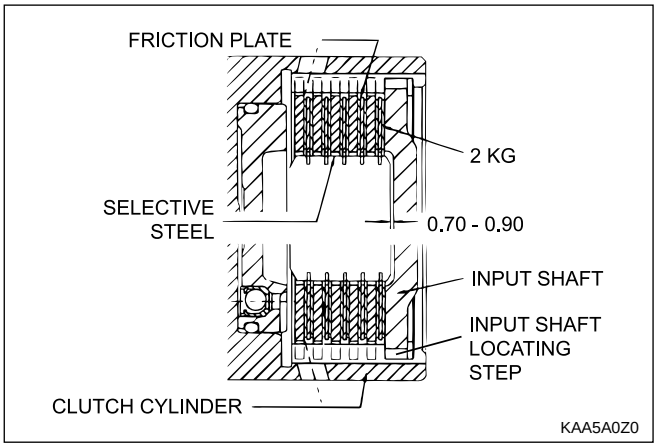
3. Assemble the clutch plate and disc into the cylinder in the following sequence:
   - Steel plate
   - Friction disc
   - Steel plate
   - Friction disc
   - Steel plate
   - Steel plate (0574-000013, `014, `015, `016, `019, `022), or friction disc (0574-000012 & `017)
   - Steel plate (selective)
   - Friction disc
   - Steel plate (selective)
   - Friction disc

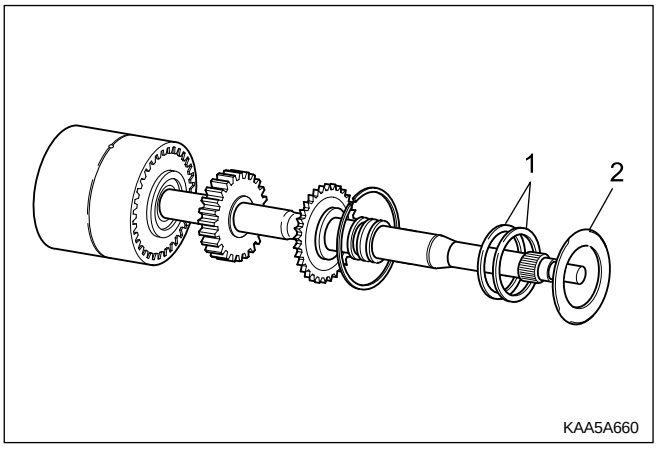


4. Check the clutch pack clearance using 0555-336260 clutch pack clearance kit.
5. Use selective plates to achieve the correct specification.

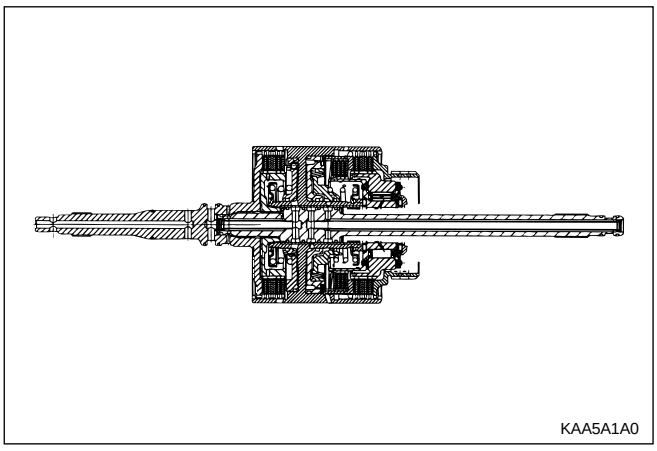
   Notice: With the clutch pack supporting a 2 kg weight, the dimension from the input shaft locating stop to the friction disc must be 0.70 - 0.90 mm.

6. If new friction plates are being fitted, remove the clutch pack and soak the friction elements in automatic transmission fluid for a minimum of five minutes prior to assembly.

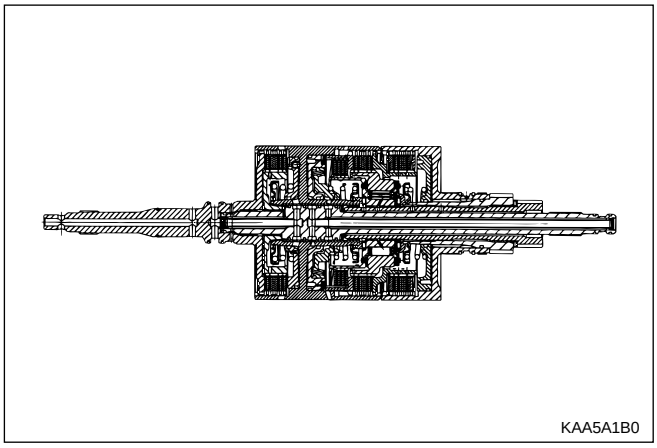
   Notice: The clutch pack clearance must be taken before elements are soaked in automatic transmission fluid.



7. Check the fit of the C1 clutch hub on the overdrive shaft. If it is loose, the hub and shaft assembly must be replaced.
8. Coat the small nylon thrust spacer with petroleum jelly and install it over the overdrive shaft.
9. Carefully fit the overdrive shaft into the C1 cylinder so as not to damage the sealing ring.
10. Fit the small bronze C1 hub thrust washer in place with petroleum jelly.
11. Check the input shaft for any defect. Fit the input shaft into the cylinder and secure it with the circlip, ensuring that the circlip is completely seated in the groove.



12. Coat the sealing rings with petroleum jelly and fit onto the input shaft.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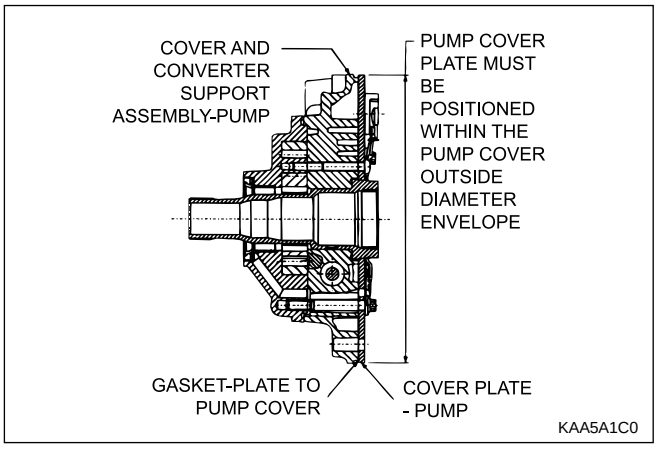
13. Assemble the C1/C2/C4 clutch assembly to the C3 clutch and sun gear assembly.
14. Install this assembly in the transmission case.

Pump Cover and Converter Support

Notice:

- Do not wash the nose of solenoids in solvent.
- Ensure that the correct ‘O’ ring is fitted for the application.
- Be careful not to damage the needle bearings on the assembly. Avoid any axial impact loads during assembly.
- Check the transmission end float. This will help to detect any missing parts or incorrect assembly.



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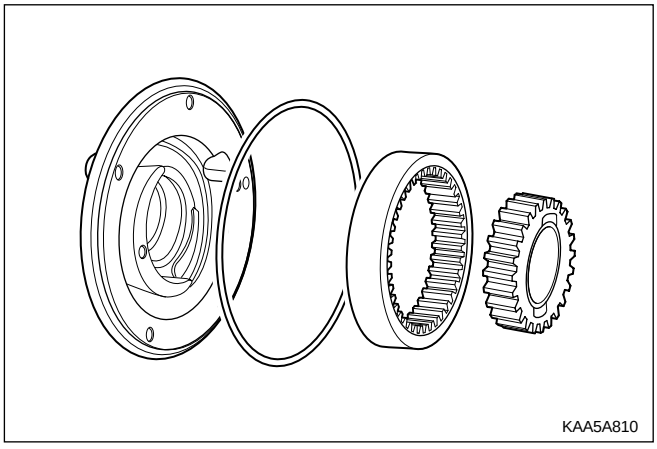
1. Check the pump body for any damage, chips or irregularity. Check that the bush is firmly staked in the drive gear.
2. Install the seal flush with the front face of the pump body.
3. Lubricate the pump bush, and the drive and driven gears, with automatic transmission fluid.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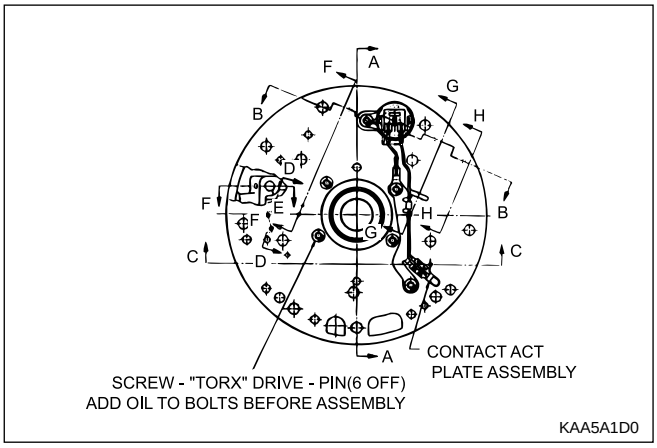
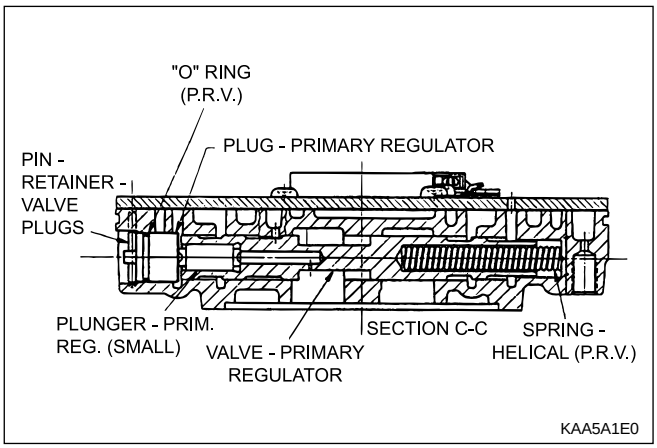
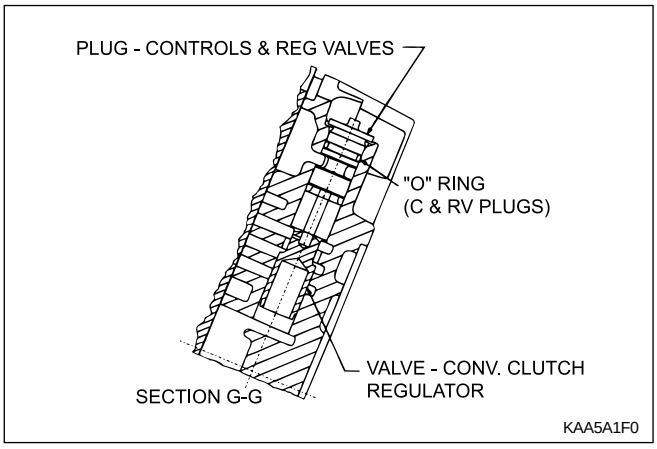
4. Install the pump driven gear and the pump drive gear into the pump body.
5. Using a straight edge and thickness gauge, check that the clearance between pump face and gears is 0.04 - 0.018 mm.
6. Lubricate the pump body ‘O’ ring with automatic transmission fluid and fit it to the pump body. Put the pump body to one side.



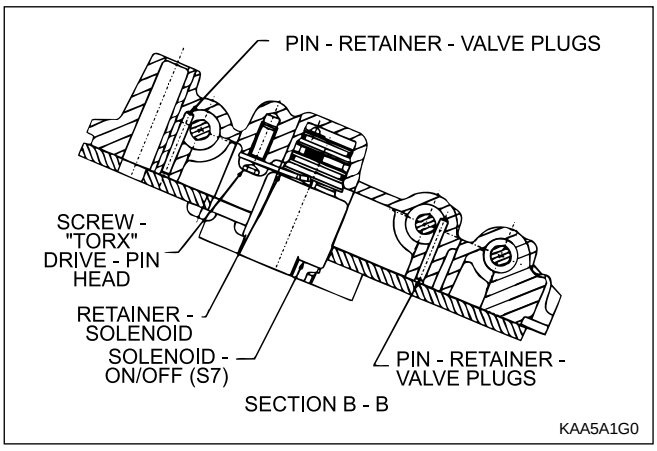
7. Ensure that the pump cover cavities, ports and holes are clean and free of any obstruction.
8. Lubricate all loose parts with automatic transmission fluid prior to assembly.



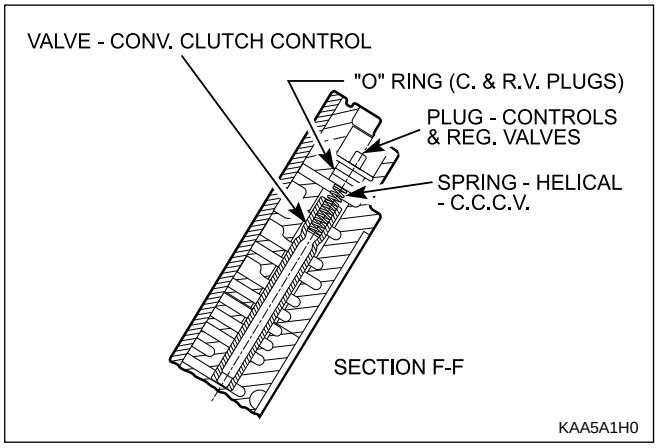
9. Assemble the primary regulator valve, spring and plunger to the pump cover, ensuring that the regulator valve slides freely, then fit the regulator valve plug and ‘O’ ring.
10. Install the retaining pin.



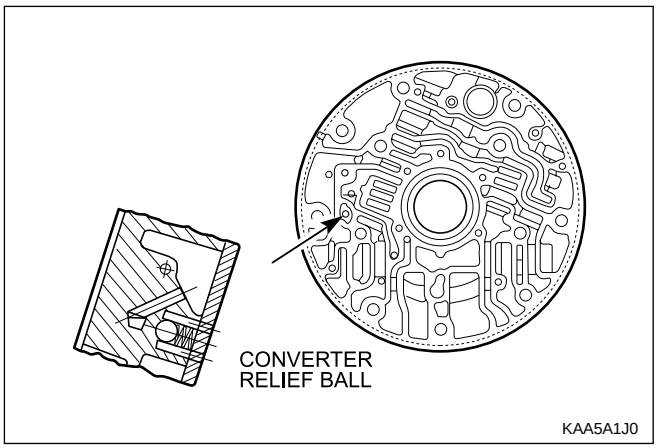
11. Install the converter clutch regulator valve, plug, spring and ‘O’ ring.



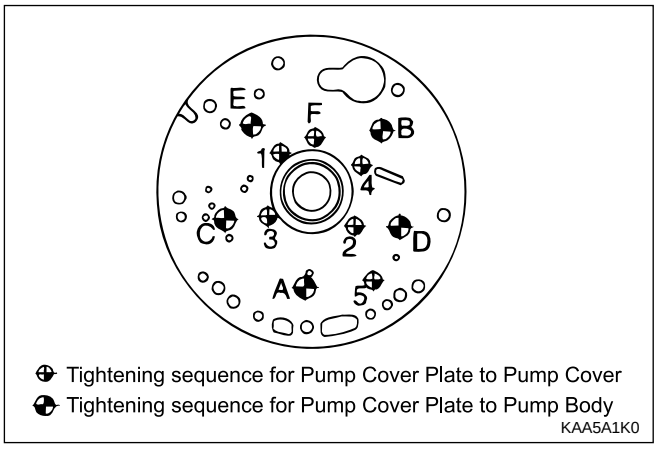
12. Install the retaining pin.



13. Install the converter clutch control valve, spring, plug, and 'O' ring.
14. Install the retaining pin.



15. Install the converter release check ball and spring.
16. Install the gasket on the pump cover.



17. Install the cover plate, solenoid 7 with the retainer and the solenoid wiring retainer to the pump cover, ensuring that the periphery of the cover plate is flush with the periphery of the pump cover.
18. Tighten the screws to specification in the order. (1-5)

Installation Notice

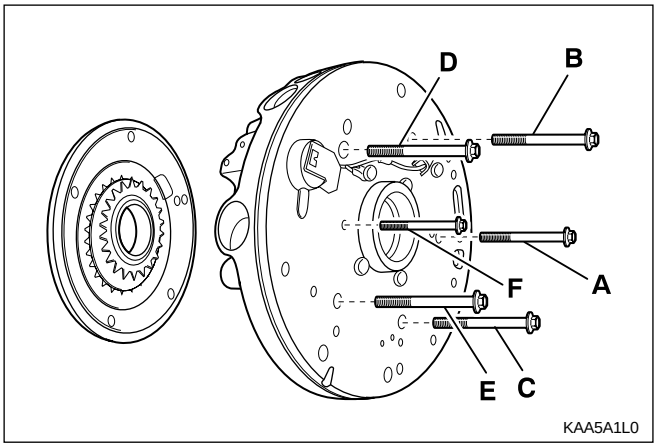
Tightening Torque	13-16 N•m (10-12 lb-ft)

19. Tighten the solenoid 7 screw.

Installation Notice

Tightening Torque	13-16 N•m (10-12 lb-ft)

- Check that neither the wiring nor the connector protrudes excessively, in order that at assembly neither the wiring and the connector contacts or rubs on the input shaft or the C1/C2 clutch cylinder.

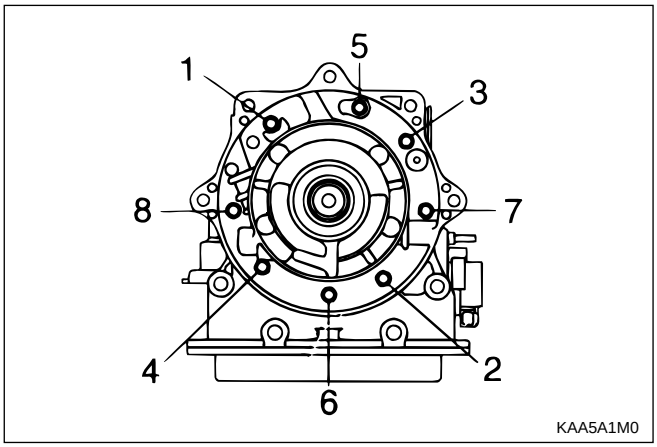


20. Assemble the pump to the pump cover.
21. Tighten all bolts and the crescent screw finger tight, ensuring that the pump is flush against the pump cover. Tighten the bolts and the screw to specification in the order. (A-F)

Installation Notice

Tightening Torque	Bolt (A-E) : 24-27 N•m (18-20 lb-ft)
	Screw (F) : 13-16 N•m (10-12 lb-ft)

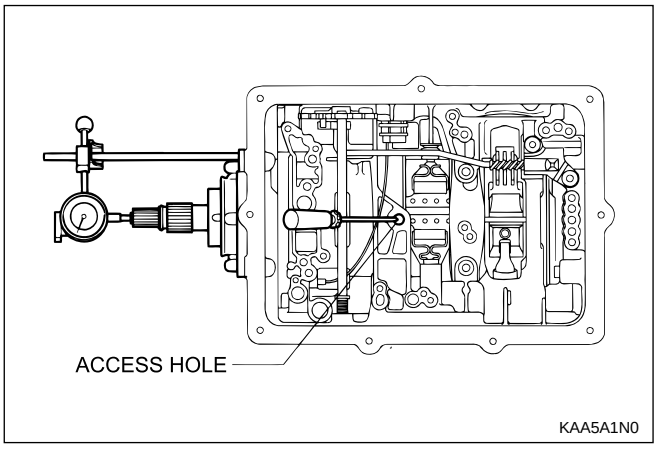
22. Install the pump to transmission case gasket onto the case.
23. Fit the 'O' ring to the pump cover outer diameter.



24. Install the pump and cover assembly over the input shaft being careful not to damage the sealing rings. Apply additional Loctite 202 or equivalent as required to the pump cover to case bolts. Install and tighten bolts to specification.

Installation Notice

Tightening Torque	24-34 N•m (18-25 lb-ft)

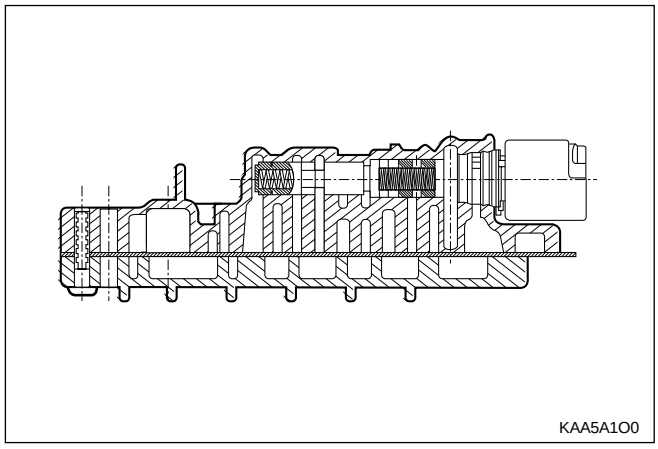


25. Check that the transmission end float is 0.50 - 0.65 mm. If the unshimmed end float clearance is greater than specification, shims are to be placed between the No. 4 bearing and the input shaft bearing surface. If the end float clearance is less than 0.5 mm then the transmission has been assembled incorrectly or the parts are out of specification.
26. Perform the following steps to check the end float :
    a. Attach a dial indicator to the front of the transmission case with the stylus resting on the end of the input shaft.
    b. Apply a force of approximately 250 N or 25 kg to the input shaft.
    c. Zero the dial indicator.
    d. Place a small lever behind the forward clutch cylinder and lever the cylinder forward.
    e. The measurement recorded on the dial indicator is the transmission end float or clearance between the No.4 bearing and the converter support tube.
27. On completion of this procedure, adjust the front and rear bands to specifications. Refer to "Front and Rear Band Adjustment" in this section.

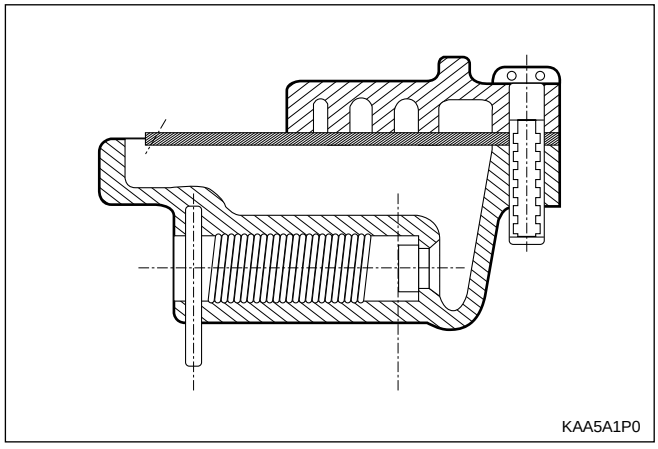
Valve Body

Notice:

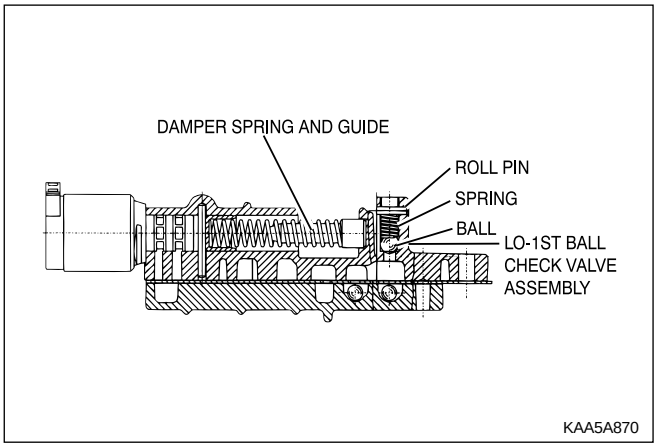
- Do not wash the nose of solenoids in solvent.
- Be aware of ball positions in the upper valve body.
- Be aware of 1-2 and 3-4 shift valve positions, they can be swapped.
- Check the 4-3 sequence valve and spring orientation.
- Check that the 12 mm ball is in the lower body.
- Check the line pressure relief valve for swarf, and be aware of replacing the shims.
- When servicing the transmission, ensure that the solenoid 5 damper spring is not broken.
- Locate the detent spring central to the detent lever.
- Wash the upper and lower valve bodies thoroughly with cleansing solvent and blow dry.
- Check the valve body cavities, ports and holes for damage or obstructions.
- The orifices in the valve body are for stability and safeguard. Do not drill them larger.
- Thoroughly wash all loose components.
- Check that all valves slide freely in their location.


KAA5A1O0

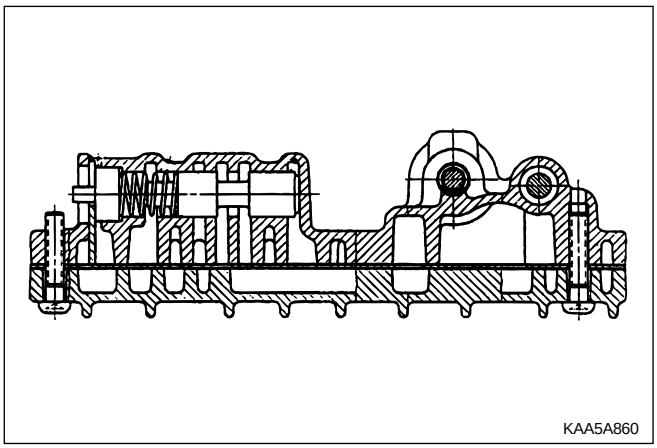
1. Install the detent lever locating pin
2. Install the Band Apply Regulator (BAR) valve, springs, plunger and retaining pin.


KAA5A1P0

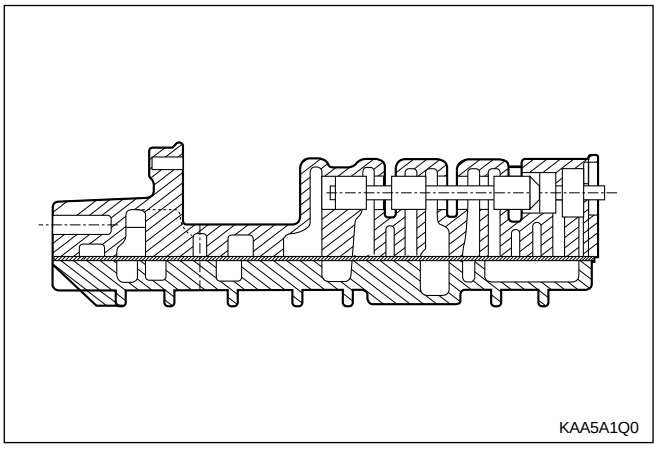
3. Install the line pressure relief valve, tapered end first, spring and disc. Secure with the retaining pin.



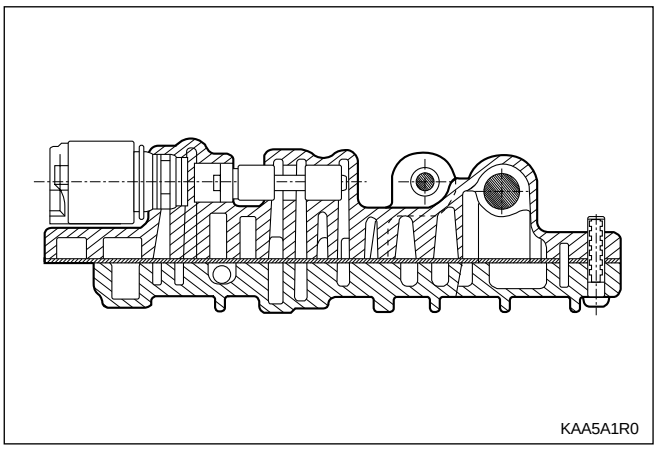
4. Install the solenoid 5 damper guide and spring, piston and retaining pin.



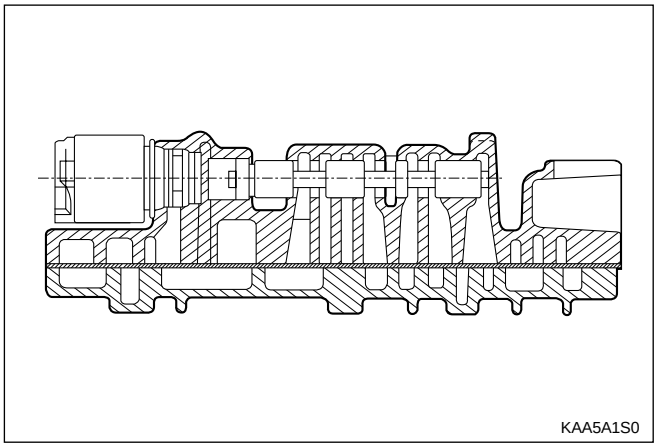
5. Install the 4-3 sequence valve, spring, plug and retaining plate.



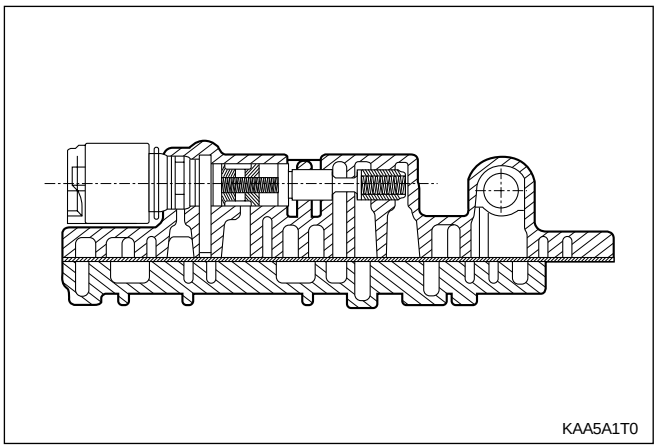
6. Install the 1-2 shift valve, plug and retaining pin.



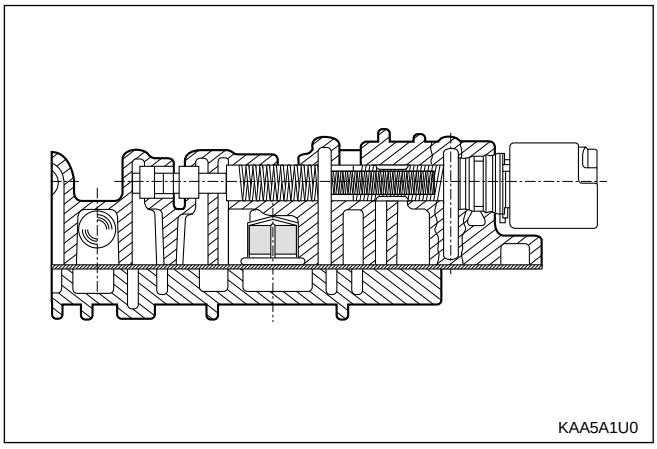
7. Install the 2-3 shift valve and retaining pin.


KAA5A1S0

8. Install the 3-4 shift valve and retaining pin.


KAA5A1T0

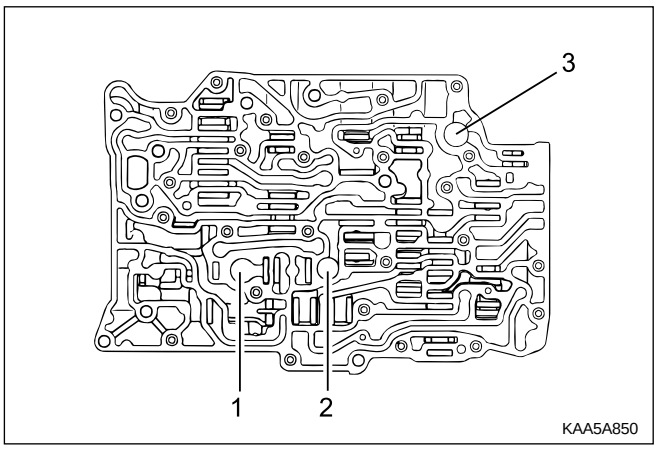
9. Install the Clutch Apply Regulator (CAR) valve, springs, plunger and retaining pin.


KAA5A1U0

10. Install the solenoid supply valve, spring and retaining plate.

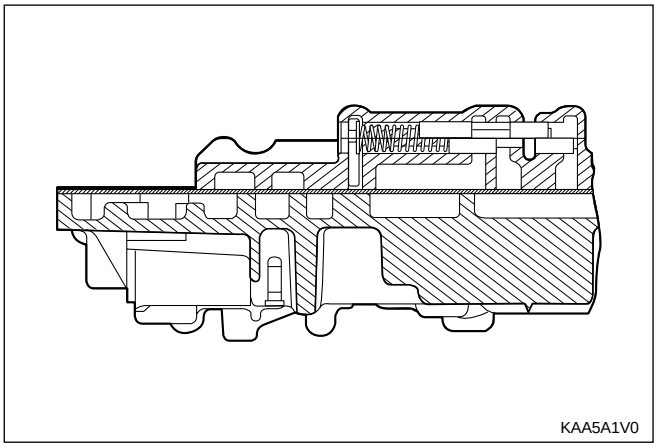
    Notice: This aluminum valve is easily damaged.

11. Install solenoid 6 plunger, spring and retaining pin.

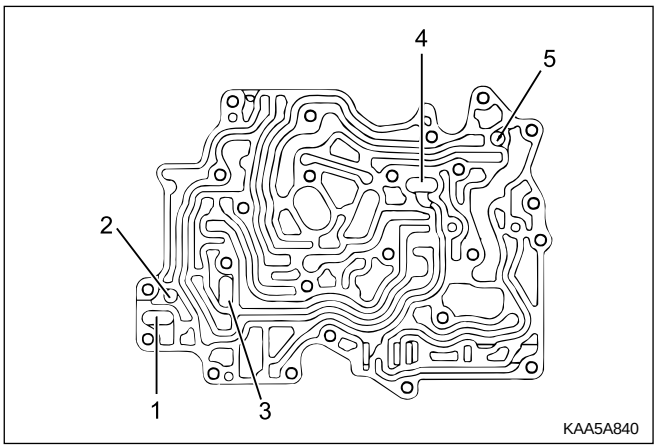


KAA5A850

12. Position the third feed ball (large nylon) in the valve body and install the solenoid 6 filter.
13. Check the separator plate for burrs and damage. Repair or replace the separator plate as necessary.
14. Check the upper and lower valve body gaskets for damage. Replace the gaskets as necessary.
15. Install the lower valve body gasket on the lower valve body.

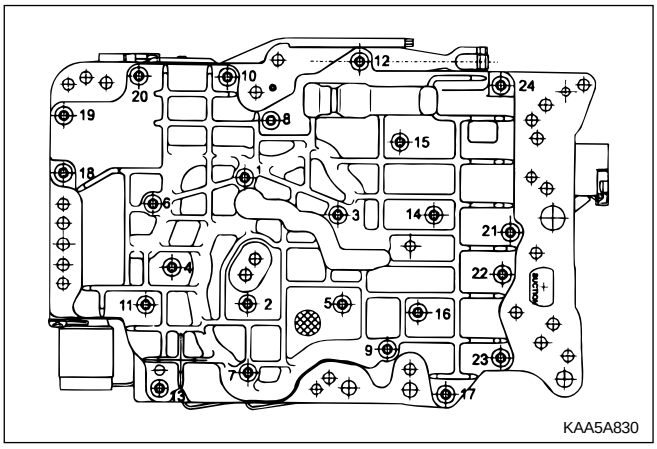

KAA5A1V0

16. Install the reverse lockout valve, spring, plug and retaining plate. Ensure that the valve is correctly oriented.



KAA5A840

17. Position the five nylon ball checks in the upper valve body.
18. Fit the upper valve body gasket. Install the separator plate over the upper valve body.



KAA5A830

19. Holding the separator plate to the upper valve body to prevent the check balls from falling out, install the upper valve body on the lower valve body. Install all screws finger tight then tighten the screws to specification in the prescribed sequence.

Installation Notice

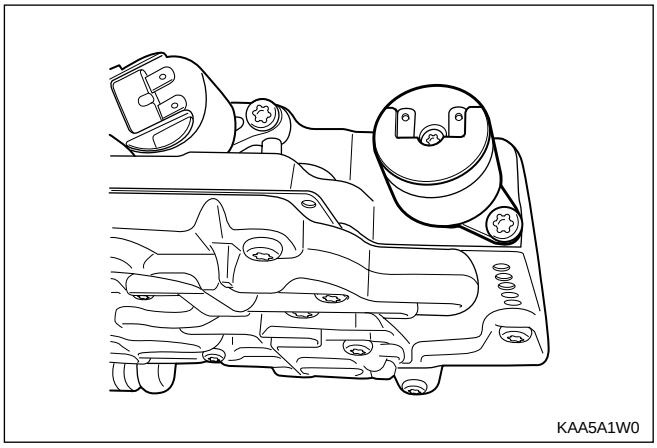
Tightening Torque	11-16 N•m (8-12 lb-ft)

20. Install solenoids 1, 2, 3, 4 and 6. Ensure the solenoid is firmly secured by the retainer and that the screw is tightened to specification.

Installation Notice

Tightening Torque	8-12 N•m (71-106 lb-in)

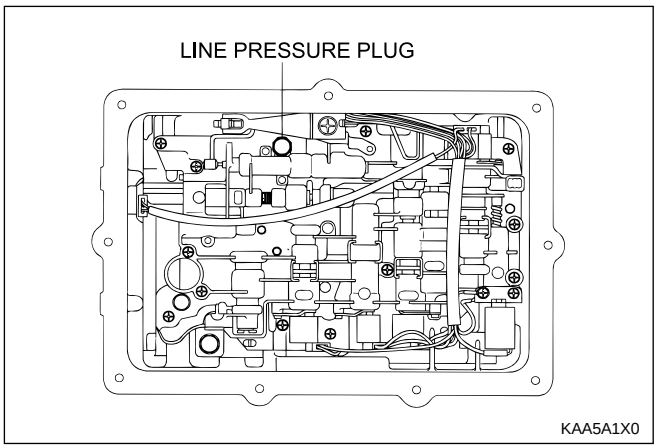
- The wiring loom ground wire eyelet terminal is secured beneath the solenoid 1 retainer.


KAA5A1W0

21. Install solenoid 5. Ensure that the solenoid is pushed firmly into the valve body by the retainer and that the screw is tightened to specification.

Installation Notice

Tightening Torque	8-12 N•m (71-106 lb-in)

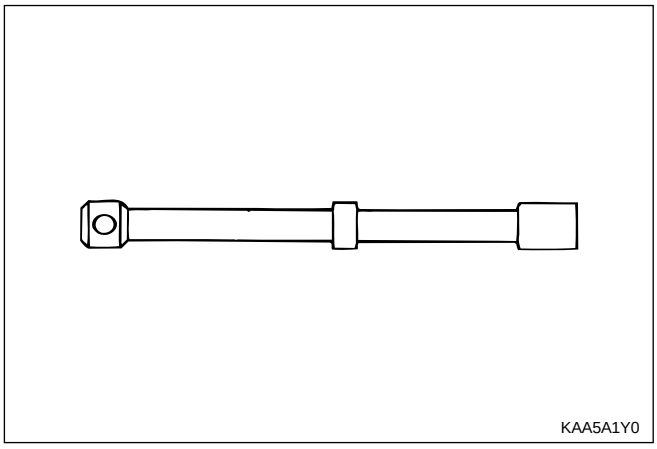


KAA5A1X0

22. Install the detent spring assembly (spring, support plate and screw), ensuring that the screw is tightened to specification. Check the spring for wear or damage.

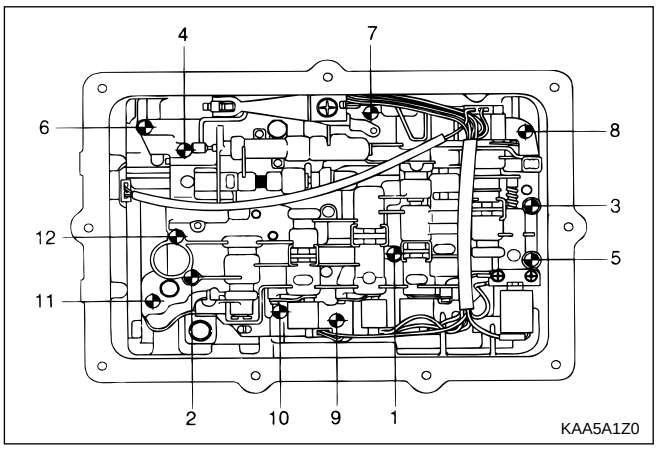
Installation Notice

Tightening Torque	20-22 N•m (15-16 lb-ft)


KAA5A1Y0

23. Install the manual shift valve.

Notice: Be aware that the manual valve will fall out of the valve body.

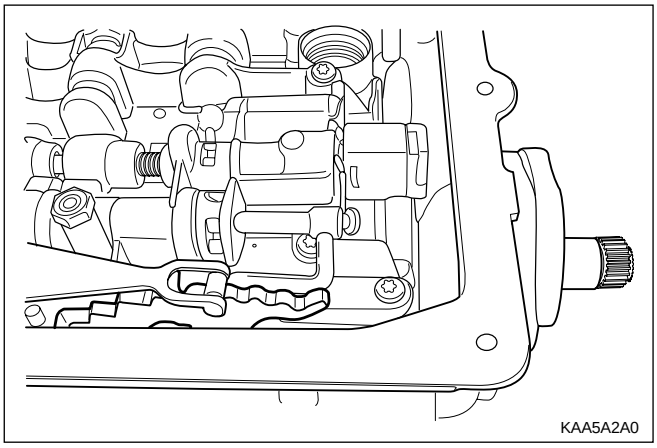


KAA5A1Z0

24. Align the valve body assembly on the transmission case and install the manual valve lever to manual valve link. Fit the long end of the link to the manual valve first. Install the securing bolts and tighten to specification in the specified sequence.

Installation Notice

Tightening Torque	8-13 N•m (71-115 lb-in)


KAA5A2A0

25. Check the alignment of the detent roller and the manual lever quadrant.
26. Connect the solenoid wiring as detailed below:

    Solenoid 1 - red

    Solenoid 2 - blue

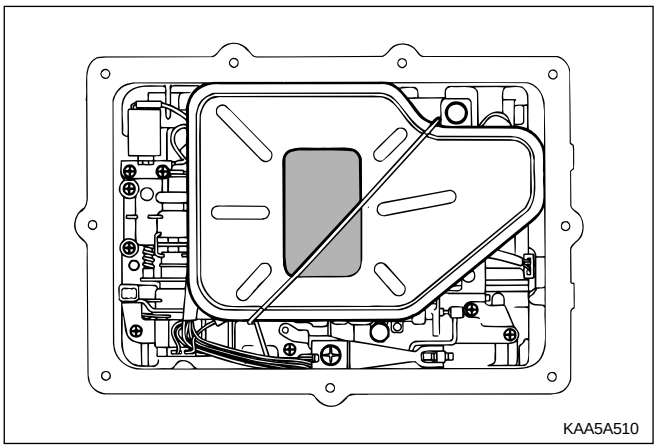
    Solenoid 3 - yellow

    Solenoid 4 - orange

    Solenoid 5 - green

    Solenoid 6 - violet

    Notice: All hardware must be correctly installed and torqued to specification.

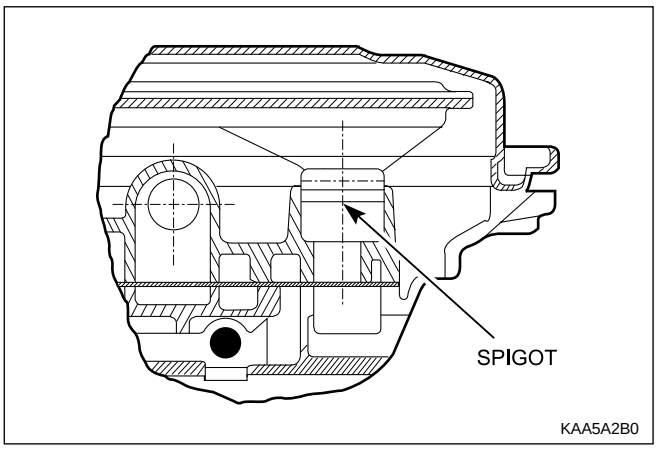

KAA5A510

Oil Filter and Pan Assembly

Notice:

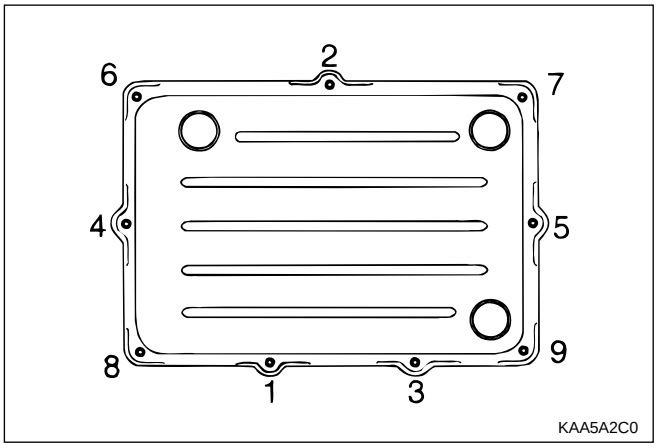
- Replace the filter whenever rebuilding a transmission where a significant amount of mechanical damage has occurred.
- To aid the assembly of the pan gasket, use a small amount of Vaseline at the pan/gasket interface. This ensures that the gasket remains on the pan ridge. Do not over torque pan bolts as this may distort the pan and cause leaks.
- Ensure that the internal line pressure plus in the valve body is fitted.

1. Lubricate the oil filter sealing ring with automatic transmission fluid.



KAA5A2B0

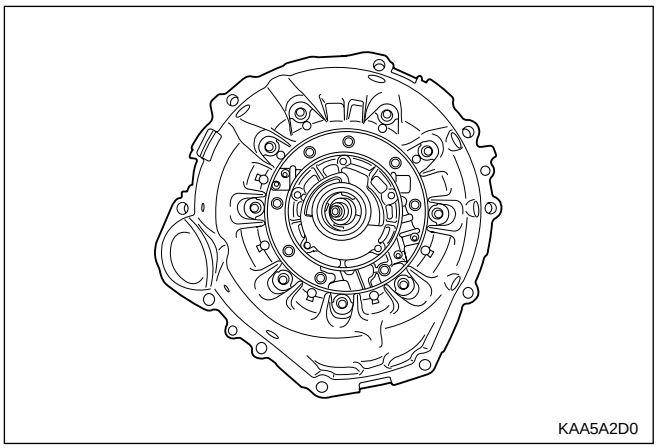
2. Carefully assemble the oil filter to the valve body. The spigot must not lean on one side while being fitted.
3. Secure the oil filter assembly with the retainer.
4. Check that the magnet is located in the dimple in the corner of the oil pan.
5. Assemble the gasket on the pan lip. The gasket must be free of any distortion when installed.



6. Fit the oil pan assembly to the transmission case and tighten the securing bolts to specification and sequence Do not over torque.

Installation Notice

Tightening Torque	4-6 N•m (35-53 lb-in)



Torque Converter and Housing Assembly

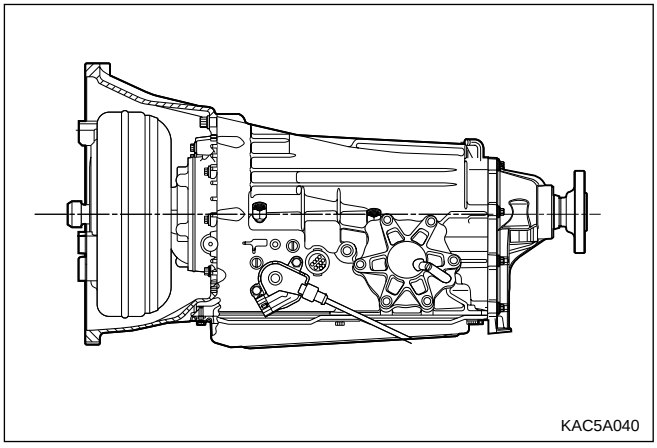
1. Locate the torque converter housing on the transmission main case.
2. Apply additional Loctite 202 or equivalent as required to the converter housing to case bolts. Install and tighten bolts to specification.

Installation Notice

Tightening Torque	54-68 N•m (40-50 lb-ft)

- All the hardware must be correctly installed and torqued to specification.

3. Fit the converter ensuring that the tangs are engaged in the pump gear. Ensure that the tangs do not contact the pump seal.



Output Flange Assembly (2WD Mode)

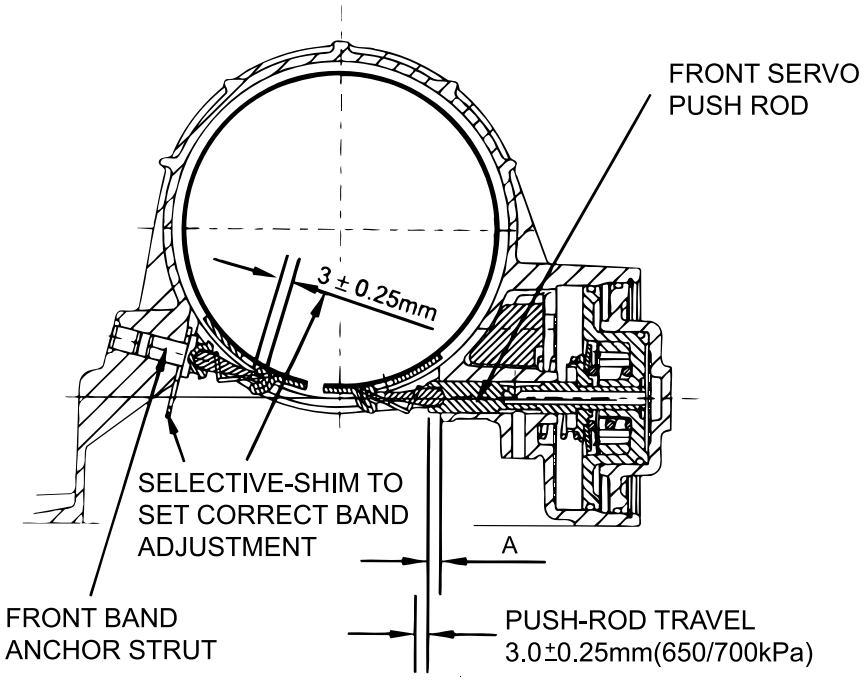
1. Position the transmission detent lever into the park position and lock the output shaft.
2. Clear the threads on the output shaft and apply Loctite 243 or equivalent as required to threads.
3. Install the flange, ‘O’ ring and torque the nut to specification.

Installation Notice

Tightening Torque	35 N•m (26 lb-ft)

FRONT AND REAR BAND ADJUSTMENT

Front Band Setting Procedure



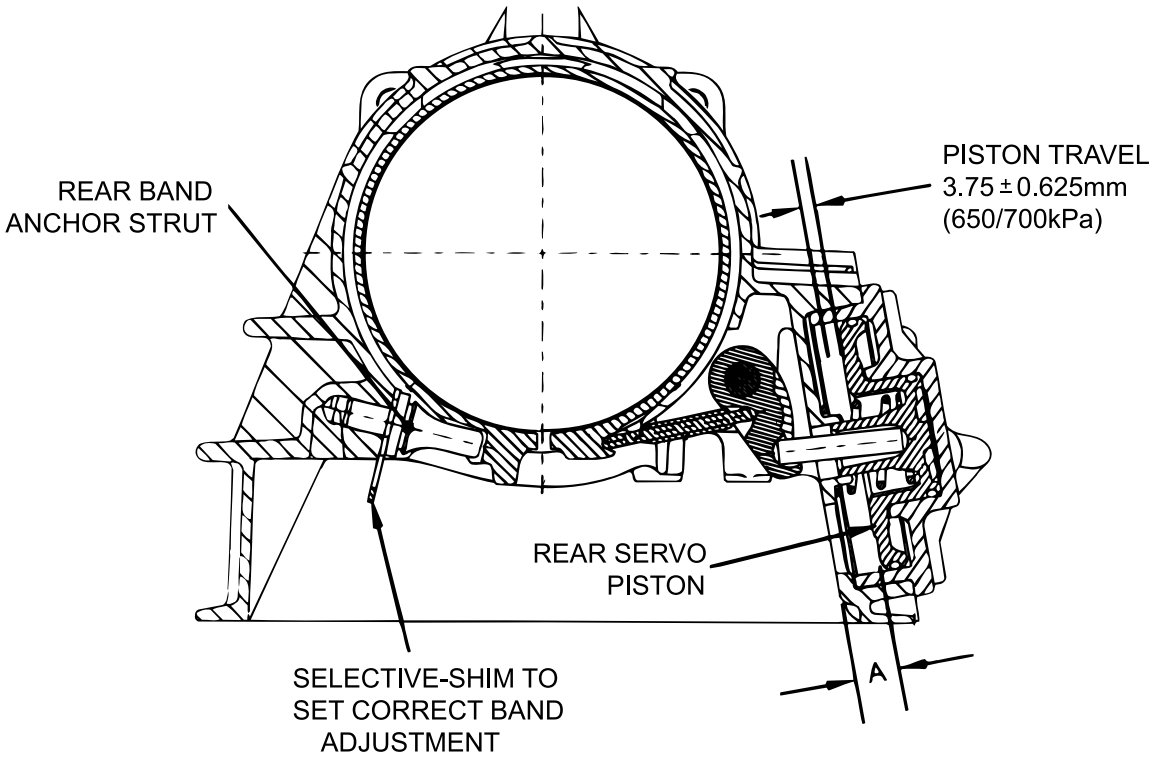
1. Measure the projection of the front servo push rod from the transmission case dimension 'A'.
   a. Apply air at 650/700 kPa to the front servo apply area (B1 outer)
   b. Measure the travel of the push rod and subtract 3 mm to find the shim size required.
   c. Release the air.

   Notice: A minimum of one shim is required at all times - minimum shim size is 1 mm. The thickness of available shims are listed in the table below.

Thickness(mm)	Part Number
0.95/1.05	0574-037017
1.15/1.25	0574-037018
1.44/1.56	0574-037019
1.73/1.87	0574-037020
1.93/2.07	0574-037021
2.12/2.28	0574-037022
2.42/2.58	0574-037023
2.61/2.79	0574-037024

2. Fit the selected shim(s) to the shank of the anchor strut as follows:
   a. Inspect the shim(s) for damage, wear or corrosion. Replace as necessary.
   b. The shim(s) are to be installed between the case abutment face and the anchor strut flange.
   c. The shim(s) are to be fitted by hand and under no circumstances to be hammered or forced.
   d. Shim(s) are to be pressed on by hand until an audible click is heard. The click indicates that the shim is clipped home correctly.
3. Re-check that the push rod travel. (3mm ±0.25mm)

Rear Band Setting Procedure

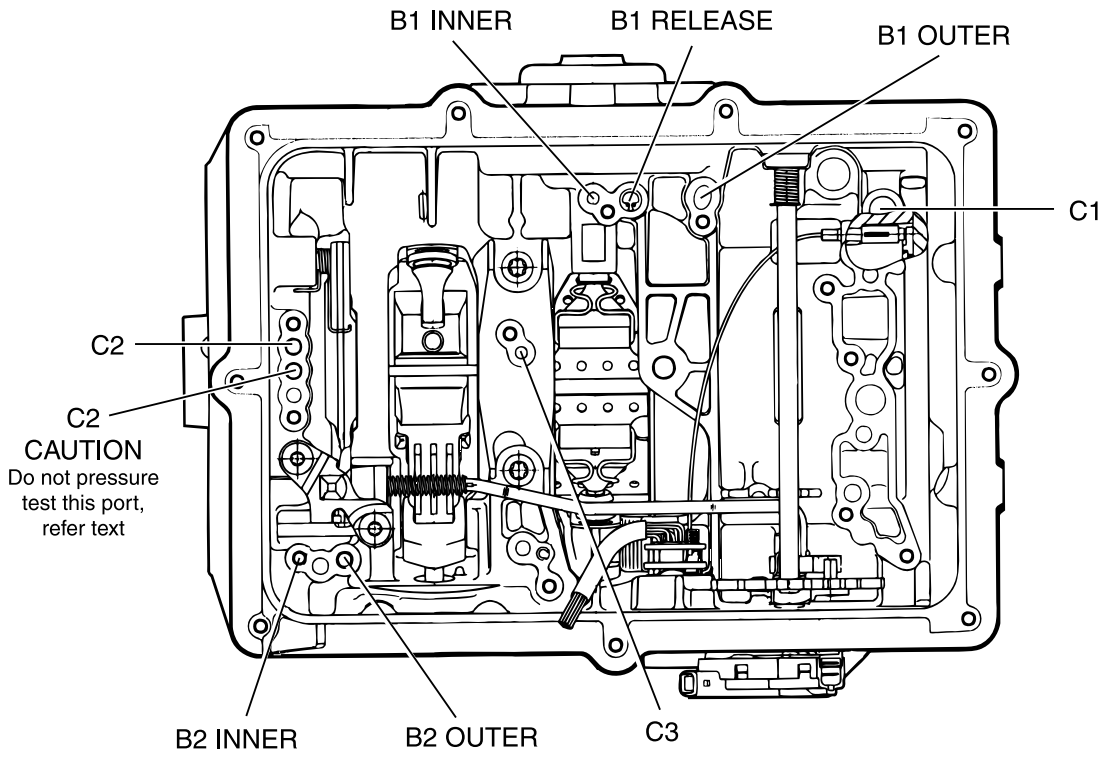


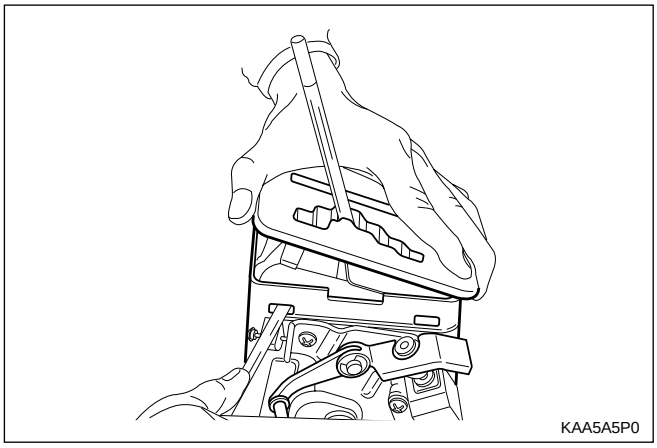
1. Measure distance'A' from the rear servo piston to the inner face of the transmission case using vernier calipers.
   a. Apply air at 650/700 kPa to the rear servo apply area (B2 outer)
   b. Measure the travel of the piston, subtract 3.75 mm and divide the remainder by 2.5 to find shim size.
   c. Release the air.

   Notice: A minimum of one shim is required at all times - minimum shim size is 1 mm. The thickness of available shims are listed in the table below.

Thickness(mm)	Part Number
0.0.95/1.05	0574-037017
1.15/1.25	0574-037018
1.44/1.56	0574-037019
1.73/1.87	0574-037020
1.93/2.07	0574-037021
2.12/2.28	0574-037022
2.42/2.58	0574-037023
2.61/2.79	0574-037024

2. Fit the selected shim(s) to the shank of the anchor strut as follows.
   a. Inspect the shim(s) for damage, wear or corrosion and replace as necessary. The shim(s) are to be installed between the case abutment face and the anchor strut flange.
   b. The shim(s) are to be fitted by hand and under no circumstances to be hammered or forced
   c. The shim(s) are to be pressed on by hand until an audible click is heard. The click indicates that the shim is clipped home correctly.
3. Re-check that the piston travel.
   (3.75 mm ± 0.625 mm)

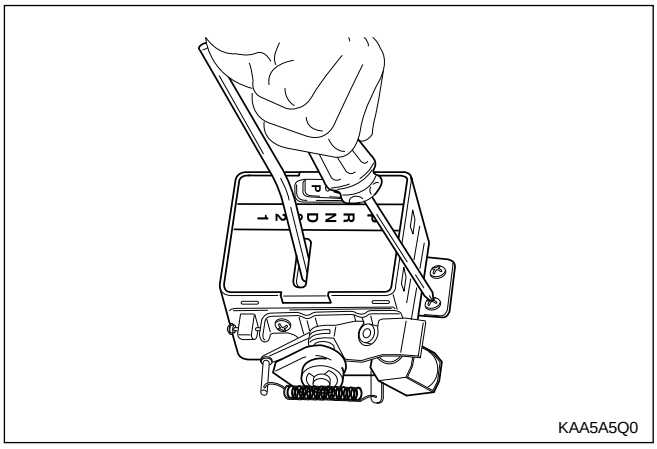

B1 INNER
B1 RELEASE
B1 OUTER
C1
C2
C2
CAUTION
Do not pressure test this port, refer text
B2 INNER
B2 OUTER
C3
KAA5A2G0


KAA5A5P0

GEAR SHIFT CONTROL LEVER

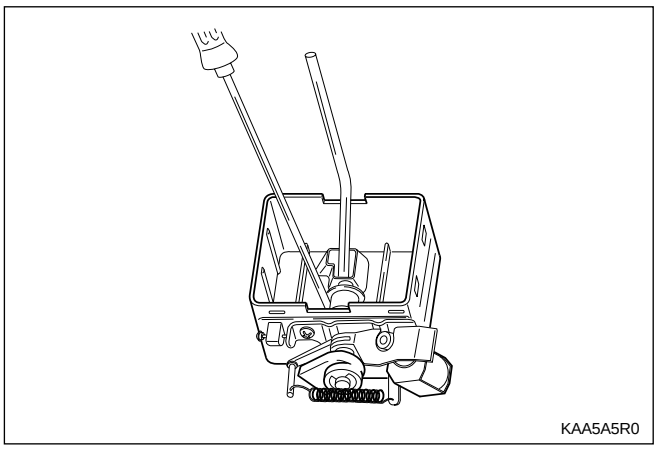
Disassembly and Assembly Procedure

1. Disconnect the negative battery cable.
2. Remove the gear shift control lever assembly. Refer to *Section 9G, interior Trim.*
3. Remove the gear shift control lever knob.
4. Separate the upper and middle housing from the gear shift control lever assembly by unlocking the lock.
5. Remove the upper housing.
6. Disconnect the P position lamp by turning it from the middle housing.

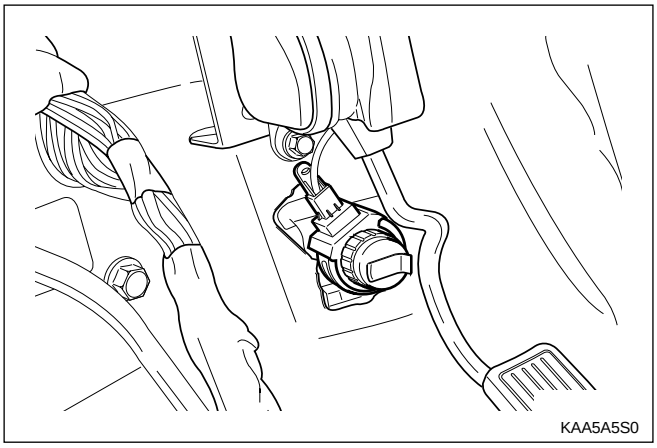

KAA5A5Q0

7. Remove the P position switches assembly bolts.
8. Remove the middle housing with the mode selector switch wiring harness from the gear shift control lever assembly.
9. Separate the P position switches assembly with the P position lamp wiring harness from the gear shift control lever assembly.

   Notice: Adjust the brake transmission shift interlock ease the operation well.

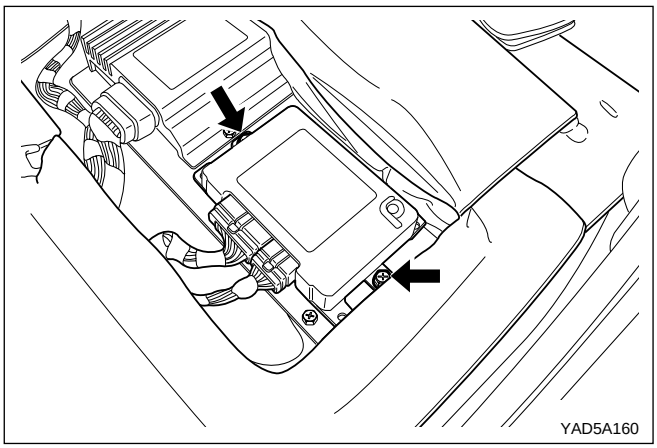

KAA5A5R0

10. Remove the clips supporting the springs and bushes from the pin of the pin of the gear shift control lever.
11. Remover the spring and bushes from the pin of the gear shift control lever.
12. Remove the gear shift control lever by pushing the pin.
13. Installation should follow the removal procedure in the reverse order.


KAA5A5S0

KICKDOWN SWITCH

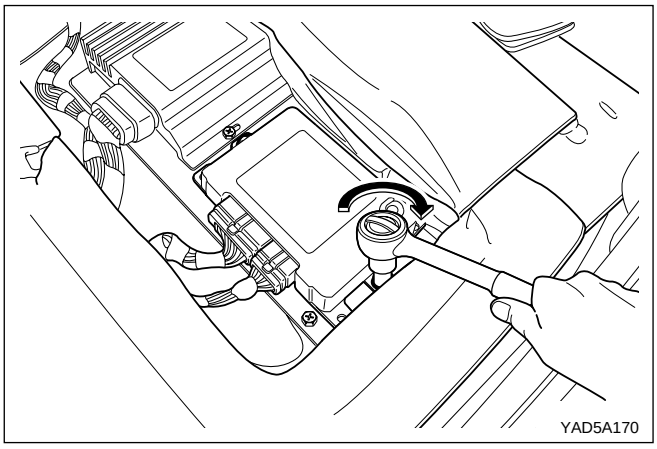
1. Separate the Kickdown Switch from the Kickdown Switch bracket by pushing the lock.
2. Disconnect the Kickdown Switch connector.
3. Installation should follow the removal procedure in the reverse order.


YAD5A160

TRANSMISSION CONTROL MODULE

Removal and Installation Procedure

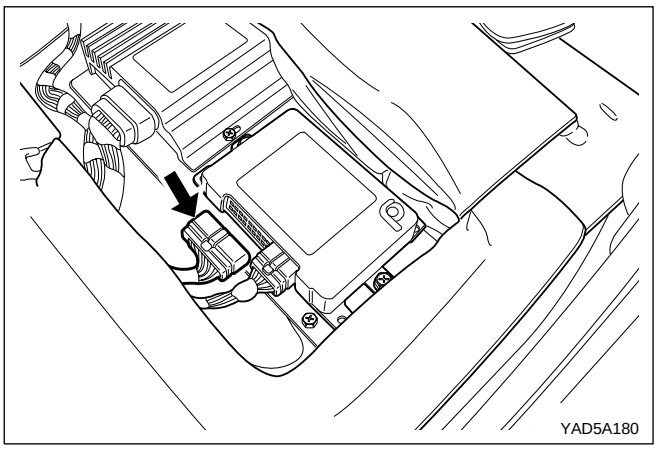
1. Disconnect the negative battery cable.
2. Push the driver's seat and disconnect the transmission control module connector.


YAD5A170

3. Removal the TCM mounting bolts and TCM.

Installation Notice

Tightening Torque	10 N•m (89 lb-ft)


YAD5A180

4. Installation should follow the removal procedure in the reverse order.

SPECIFICATIONS

GENERAL SPECIFICATION

Model Part Numbers And Applications

SYMC P/NO	Transmission	Engine Version	Torque Converter
36100-05442	0574-000013	E23	179K
36100-05432	0574-000012	E32	150K
36100-05412	0574-000014	662LA	150K

Model Specifications

Application	Descriprtion
Torque Converter	
Mean Diameter of Fluid Circuit Description	260 mm (10.2 in.)
Maximum Torque Multiplication	2.0 : 1
Gear Ratios	
First	2.741 : 1
Second	1.508 : 1
Third	1.000 : 1
Fourth	0.708 : 1
Reverse	2.429 : 1
Lubricant	
Type	Castrol TQ95
Capacity	
Dry System	9.0 Liters (approx.)
Service Refill	4.5 Liters (approx.)
Gear Train End Float	0.50 - 0.65 mm (0.020 - 0.026 in.)
Gear Set Pinion End Float	0.10 - 0.50 mm (0.004 - 0.020 in.)

Clutch Pack Details

	0574-000012	0574-000013 (14)
C1		
Composition	5	4
Steel	5	6
C2		
Composition	5	4
Steel	4	5
C3		
Composition	4	3
Steel	4	5
C4		
Composition	3	3
Steel	4	4

Model Part Numbers and Applications

E23 Gasoline Engine

MODE	THROTTLE OPENING	SHIFT (km/h)									
		1/2	2/3	3/4	4/3	3/2	2/1	UNL3	LCK3	UNL4	LCK4
NORMAL MODE	0 %	10.1	19.3	36.4	20.8	8.9	9.2	50.7	79.1	71.7	79.1
	16 %	10.1	19.3	36.4	20.8	8.9	9.2	50.7	79.1	71.7	79.1
	31 %	13.9	30.9	47.0	28.4	12.4	9.2	50.7	79.1	71.7	79.1
	49 %	22.3	46.1	70.5	41.8	18.9	9.3	50.7	90.3	74.2	90.3
	50 %	22.8	46.4	71.7	42	19.2	9.3	50.7	58.1	75.4	91.5
	58 %	27.2	53.2	89.0	52.7	24.7	10.9	59.4	66.8	81.6	100.2
	64 %	30.9	59.4	94.0	60	28.4	12.1	66.8	74.2	86.6	106.4
	71 %	34.1	66.5	103.3	69.3	32.6	18.6	71.7	76.7	95.8	115.0
	100 % (WOT)	47.4	91.9	147.2	98.9	45.5	34.6	81.6	95.1	134.3	147.2
	Kidkdowm	47.9	94.0	149.6	139.7	86.9	45.4	90.7	95.5	147.2	149.6
POWER MODE	0 %	11.9	22.8	42.0	20.8	8.9	9.2	73.0	75.4	73.0	75.4
	16 %	11.9	22.8	42.0	20.8	8.9	9.2	73.0	75.4	73.0	75.4
	31 %	22.5	42.0	70.0	33.4	17.3	9.2	73.0	79.1	73.0	79.1
	49 %	27.2	56.9	87.2	42.0	24.7	9.2	73.6	94.0	73.6	94.0
	50 %	30.7	64.3	96.5	49.5	29.7	10.4	76.2	103.9	76.2	103.9
	58 %	35.1	73.2	110.8	60.6	37.8	15.1	81.6	110.8	81.6	110.8
	64 %	37.6	77.4	116.3	68	42.5	18.1	86.6	116.3	87.8	116.3
	71 %	40.1	81.1	121.2	77.7	47.7	20.8	86.6	121.2	97.7	121.2
	100 % (WOT)	47.4	91.9	147.2	115.0	66.7	33.0	86.6	136.0	142.2	147.2
	Kickdown	47.9	94.0	149.6	139.7	86.9	45.4	90.7	95.5	147.2	149.6

E32 Gasoline Engine

MODE	THROTTLE OPENING	SHIFT (km/h)									
		1/2	2/3	3/4	4/3	3/2	2/1	UNL3	LCK3	UNL4	LCK4
NORMAL MODE	0 %	11.7	20.2	39.5	24.6	10.2	10.5	37.4	81.9	73.1	81.9
	15 %	11.7	22.8	39.5	24.6	10.2	10.5	37.4	81.9	73.1	81.9
	25 %	13.3	30.4	67.3	32.2	14.6	10.5	37.4	81.9	73.1	81.9
	32%	16.8	36.6	76.0	38.0	19.7	11.0	39.5	83.4	73.1	83.4
	35 %	18.6	40.1	80.4	40.9	21.9	11.7	40.9	62.9	74.6	86.3
	45 %	24.0	49.7	93.6	52.6	27.8	13.9	46.8	70.2	81.9	93.6
	55 %	31.9	66.1	114.1	70.2	32.2	17.3	54.1	79.0	102.4	114.1
	70 %	42.1	85.4	146.2	90.7	39.5	21.9	64.3	93.6	128.7	146.2
	100 % (WOT)	56.7	110.0	170.4	119.9	46.8	26	93.6	114.1	152.1	170.4
	Kidkdowm	57.0	110.6	175.5	163.8	104.7	50.3	116.4	119.3	166.7	175.5
POWER MODE	0 %	12.3	24.6	40.9	24.6	10.2	10.5	76.0	81.9	76.0	81.9
	15 %	14.0	27.8	43.9	29.2	10.2	10.5	76.0	81.9	76.0	81.9
	25 %	23.4	43.9	65.8	39.5	17.5	11.0	76.0	81.9	76.0	81.9
	32 %	24.6	49.1	76.6	46.1	24.9	11.6	81.9	90.7	81.9	90.7
	35 %	26.3	52.6	81.9	51.2	27.8	12.0	84.8	96.5	84.8	96.5
	45 %	32.2	65.8	105.3	67.3	37.3	15.4	102.4	117.0	102.4	117.0
	55 %	38.6	76.9	125.8	87.7	51.2	21.4	111.1	125.8	114.1	125.8
	70 %	46.7	90.8	146.2	113.3	66.5	28.7	111.1	146.2	128.7	146.2
	100 % (WOT)	56.7	110.0	170.4	148.4	89.9	42.4	111.1	170.4	152.1	170.4
	Kickdown	57.0	110.6	175.5	163.8	104.7	50.3	116.4	119.3	166.7	175.5

662LA Diesel Engine

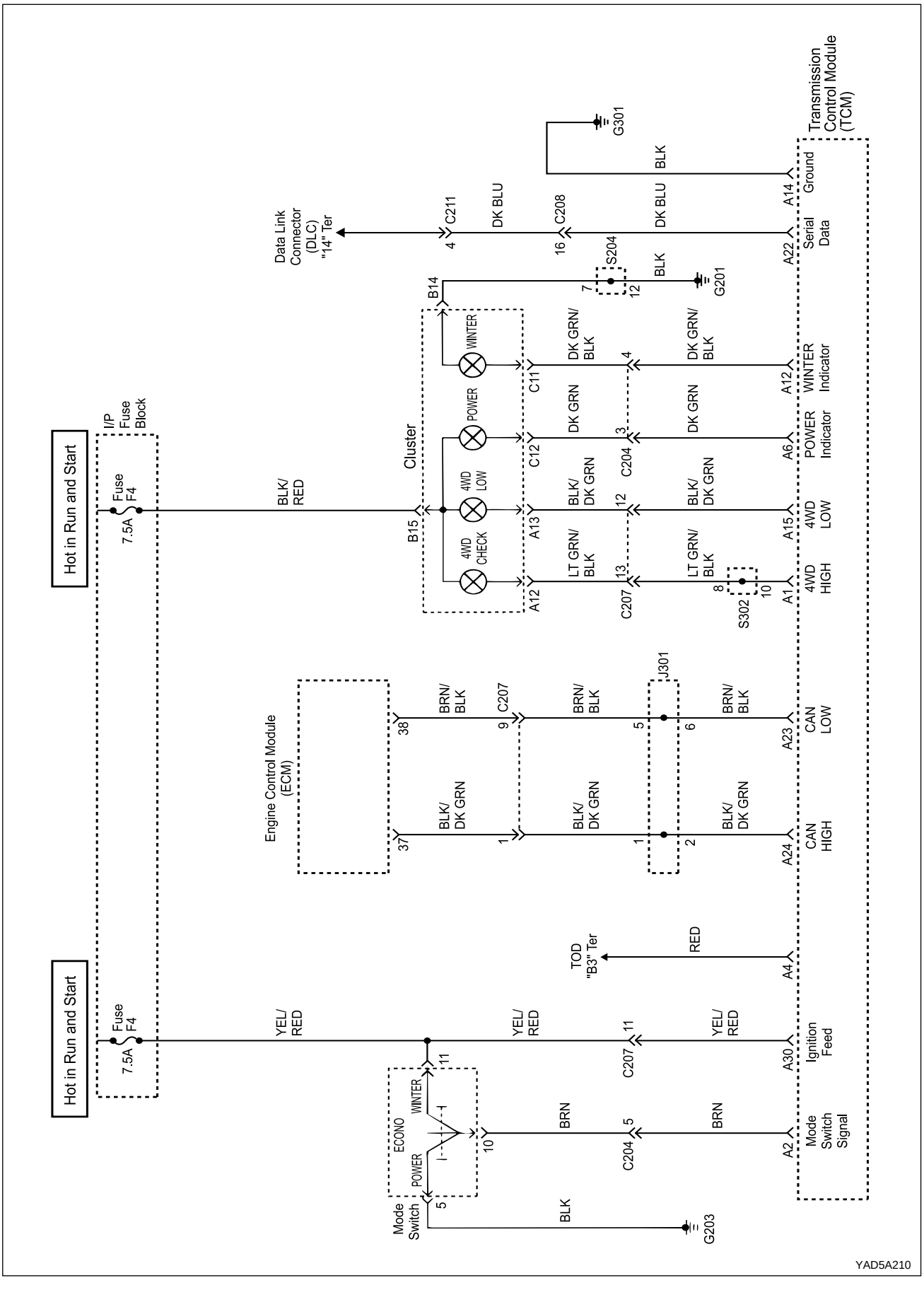
MODE	THROTTLE OPENING	SHIFT (km/h)									
		1/2	2/3	3/4	4/3	3/2	2/1	UNL3	LCK3	UNL4	LCK4
NORMAL MODE	0 %	11.4	20.4	35.4	26.7	9.3	9.5	47.6	76.2	72.1	76.2
	25 %	11.4	20.4	35.4	27.2	9.3	9.5	47.6	76.2	72.1	76.2
	40 %	12.2	25.4	40.8	29.9	13.6	9.5	47.6	76.2	72.1	76.2
	60 %	14.7	36.5	61.8	38.1	21.8	9.5	47.6	76.2	72.1	76.2
	61 %	14.7	36.7	62.0	38.4	22.0	9.5	47.6	50.3	72.1	76.2
	70 %	16.6	40.0	70.7	43.5	25.9	12.2	47.6	51.7	72.1	77.0
	75 %	18.2	43.3	76.2	49.0	28.6	13.6	47.6	54.4	72.1	81.6
	80 %	21.8	51.7	84.4	54.4	31.3	15.0	49.0	57.7	75.1	89.0
	100 % (WOT)	28.6	62.6	104.5	69.4	38.1	19.6	57.1	62.6	92.5	104.5
	Kidkdowm	34.8	68.0	110.2	100.7	63.9	31.3	61.2	68.0	100.7	110.2
POWER MODE	0 %	11.7	21.8	38.1	26.7	9.3	9.5	61.2	76.2	72.1	76.2
	25 %	11.7	21.8	38.1	31.3	9.3	9.5	61.2	76.2	72.1	76.2
	40 %	14.1	27.5	43.5	32.7	16.3	10.2	61.2	76.2	72.1	76.2
	60 %	21.8	44.6	69.4	47.6	27.2	12.8	61.2	76.2	72.1	76.2
	61 %	28.0	57.1	88.7	54.4	35.4	14.4	61.2	88.7	72.1	88.7
	70 %	29.9	59.9	93.9	61.2	40.8	15.8	61.2	93.9	72.1	93.9
	75 %	31.3	61.8	96.6	65.3	46.3	17.4	61.2	96.6	75.1	96.6
	80 %	32.7	64.8	100.4	70.7	50.3	20.4	61.2	100.4	81.6	100.4
	100 % (WOT)	34.0	67.8	105.3	83.0	54.4	23.1	61.2	105.3	92.5	105.3
	Kickdown	34.8	68.0	110.2	100.7	63.9	31.3	61.2	68.0	100.7	110.2

FASTENER TIGHTENING SPECIFICATIONS

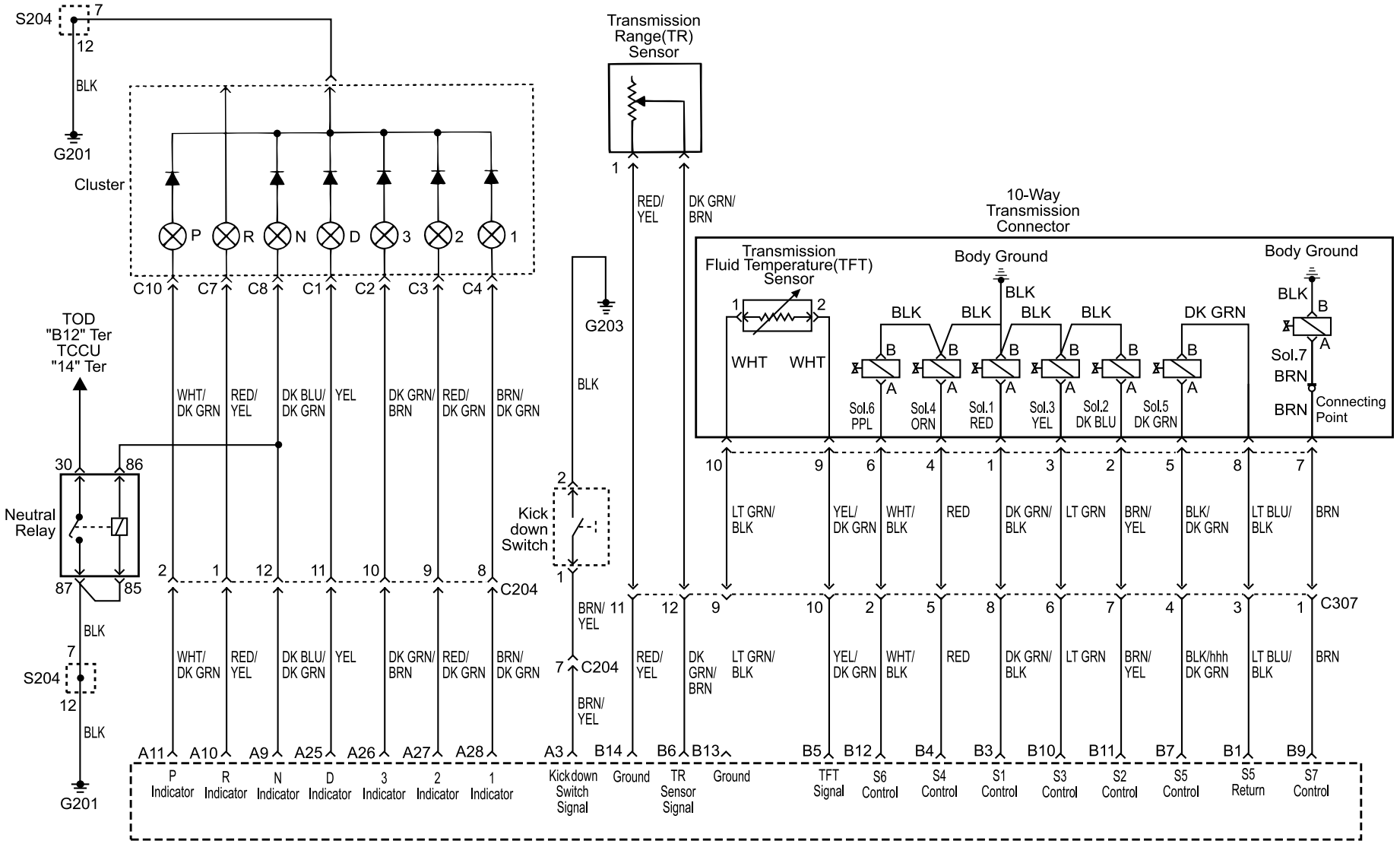
Application	N•m	Lb-Ft	Lb-Ft
Adaptor Housing to Case Bolts	30 - 35	22 - 26	
Cam Plate to Case (Parking Pawl) Screws	16 - 22	12 - 16	
Centre Support to Case Bolts	20 - 27	15 - 20	
Detent Spring Screw	20 - 22	15 - 16	
Extension Housing to Case Bolts	54 - 68	40 - 50	
Front Propeller Shaft Bolts	70 - 80	52 - 59	
Inhibitor Switch to Case Bolts	4 - 6	-	
Oil Cooler Pipes	40 - 45	29 - 33	
Oil Pan to Case Bolts	4 - 6	-	
On/Off Solenoid Retainer Screws	8 - 12	-	
Output Flange Nuts	35	26	
Pump Cover Plate to Crescent Screw	13 - 16	10 - 12	
Pump Cover Plate to Pump Cover Screws	13 - 16	10 - 12	
Pump Cover to Case Bolts	24 - 34	18 - 25	
Pump to Pump Cover Bolts	24 - 27	18 - 20	
Rear Propeller Shaft Bolts	70 - 80	52 - 59	
Rear Servo Cover to Case Bolts	30 - 35	22 - 26	
TCM Mounting Bolt	10	-	
Torque Converter Housing to Case Bolts	54 - 68	40 - 50	
Torque Converter Mounting Bolts	42	31	
Transfer Case to Transmission Housing Bolts	35 - 60	26 - 44	
Transmission Filler Plug	30 - 35	22 - 26	
Upper Valve Body to Lower Valve Body Screws	11 - 16	8 - 12	
Valve Body To Case Bolts	8 - 13	-	
Variable Pressure Solenoid (S5) Retainer Screw	8 - 12	-	

SCHEMATIC AND ROUTING DIAGRAMS

TCM WIRING DIAGRAM (GASOLINE ENGINE-1 OF 2)

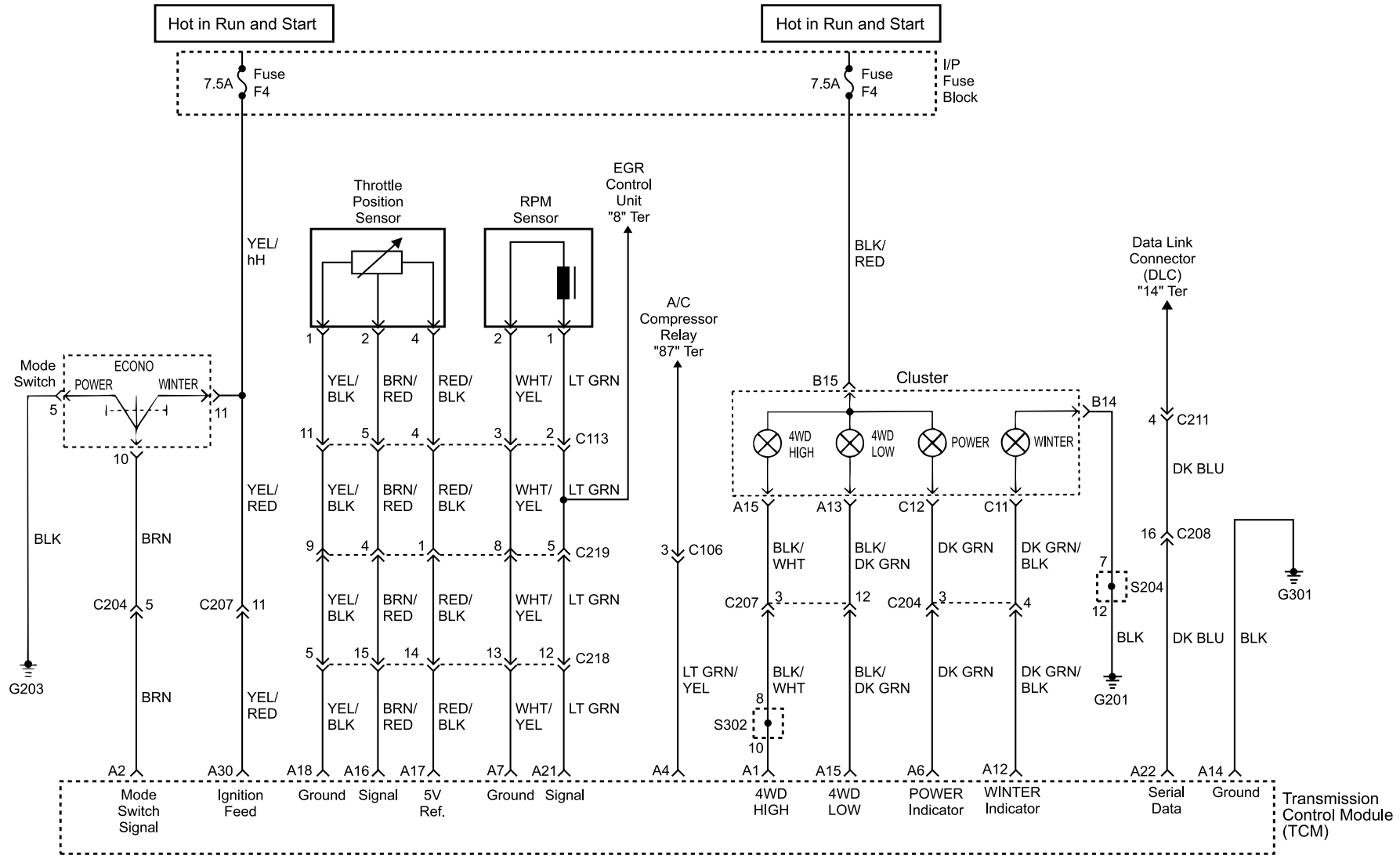


TCM WIRING DIAGRAM (GASOLINE ENGINE-2 OF 2)



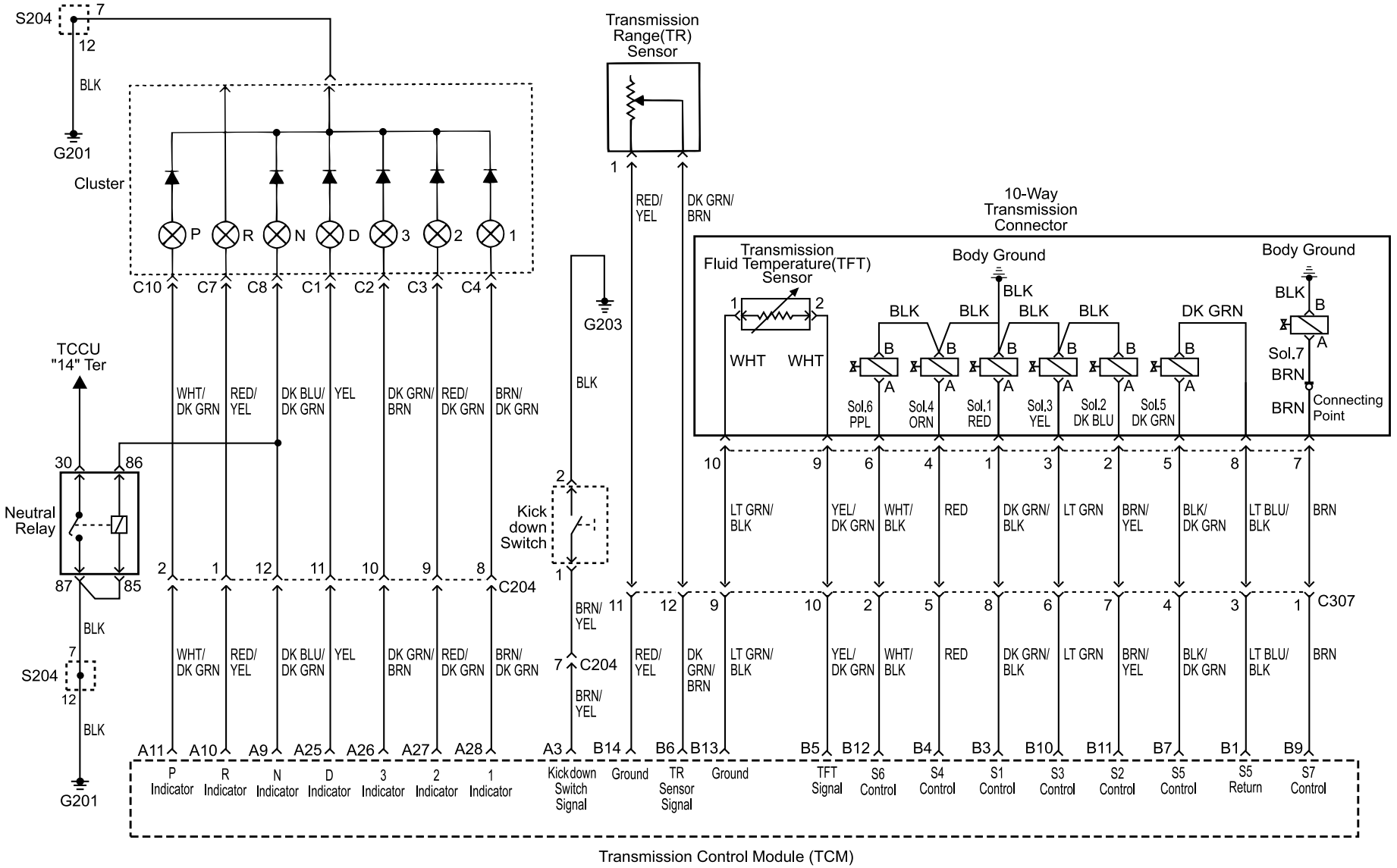
YAD5A220

TCM WIRING DIAGRAM (DIESEL ENGINE-1 OF 2)



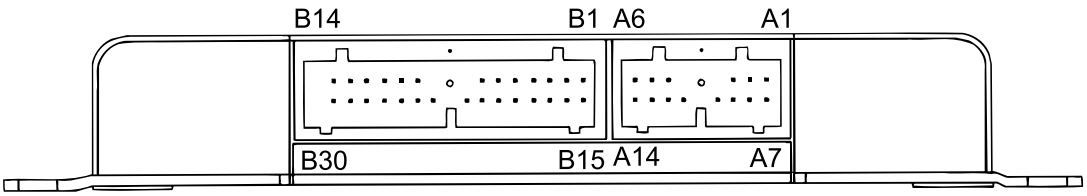
YAD5A230

TCM WIRING DIAGRAM (DIESEL ENGINE-2 OF 2)

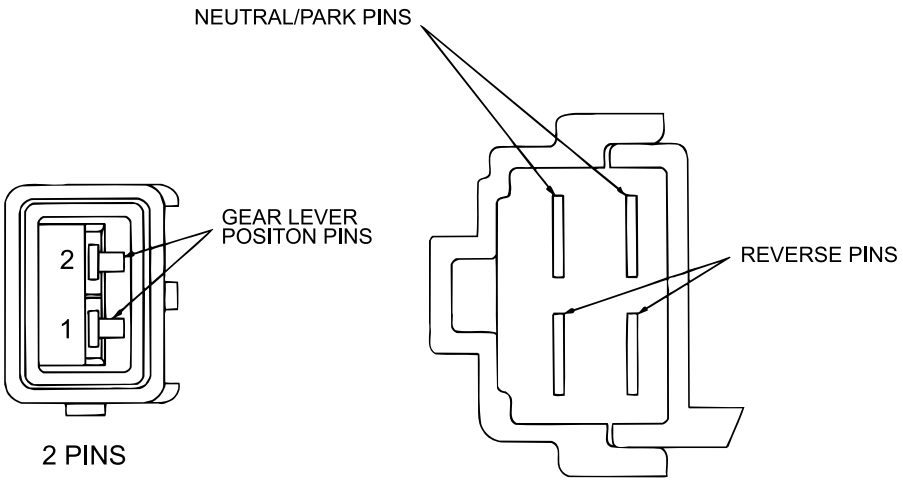


YAD5A240

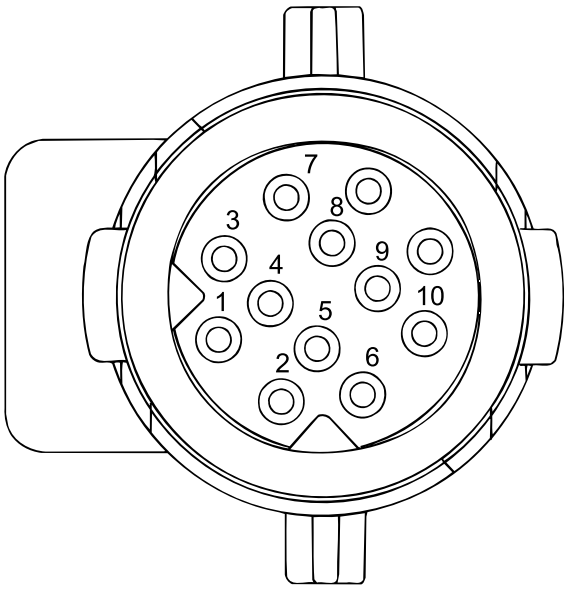
CONNECTOR END VIEW



Transmission Control Module (TCM) Pin Numbers



Inhibitor Switch Pins

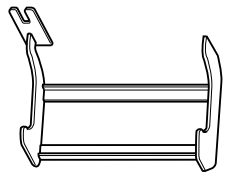
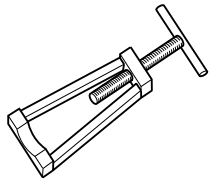
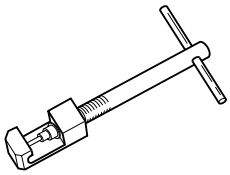
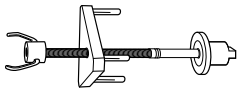
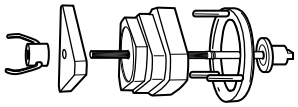
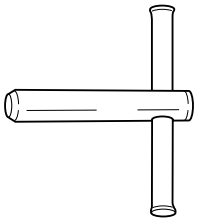
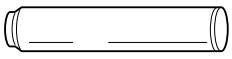
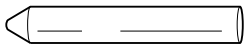


10-Way Transmission Connector

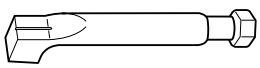
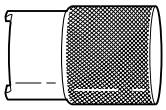
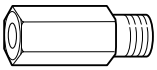
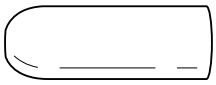
KAA5A5O0

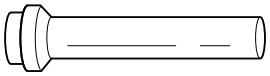
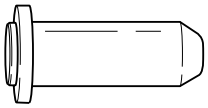
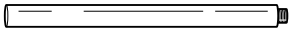
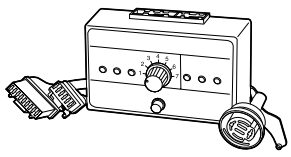
SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS TABLE

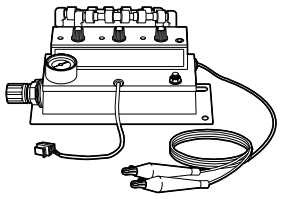
 KAA5A2P0	**0555 - 336256 Transmission Bench Cradle**	 KAA5A2Q0	**0555 - 336257 Pump Puller**
 KAA5A2R0		 KAA5A2S0	**0555 - 336259 Clutch Spring Compressor**
 KAA5A2T0	**0555 - 336260 Clutch Pack Clearance Kit**	 KAA5A2U0	**0555 - 336261 Cross Shaft Seal Remover**
 KAA5A2V0	**0555 - 336262 Cross Shaft Seal Installer**	 KAA5A2W0	**0555 - 336263 Cross Shaft Bullet**

SPECIAL TOOLS TABLE (Cont'd)

 KAA5A2X0	**0555 - 336265 Cross Shaft Pin Remover / Installer (Inhibitor Switch)**
 KAA5A2Z0	**0555 - 336267 Pump Alignment Tool**
 KAA5A3B0	**0555 - 336269 End Float Measuring Adaptor**
 KAA5A3D0	**0555 - 336302 Output Shaft Bullet**

 KAA5A2Y0	**0555 - 336266 Adaptor Housing Seal Installer**
 KAA5A3A0	**0555 - 336268 Pump Seal Installer**
 KAA5A3C0	**0555 - 336270 End Float Measuring Shaft**
 KAC5A050	**0555 - 336045 Solenoid Bench Tester**

SPECIAL TOOLS TABLE (Cont'd)

 KAC5A060	**0555 - 332083** **Solenoid /Thermistor** **Electronic Tester**