GROUP 22

MANUAL TRANSMISSION

CONTENTS

MANUAL TRANSMISSION

GENERAL INFORMATION

M2220000100354

The OUTLANDER uses the F5M42, W5M42 and W5M51 manual transmissions.

In terms of basic structure, these transmissions are the same as the F5M42 and W5M42 transmissions used in the SPACE RUNNER and SPACE WAGON. In addition, W5M51 transmission is basically the same as W5M51 transmission <Vehicle with VCU> adopted for LANCER EVOLUTION-VII.

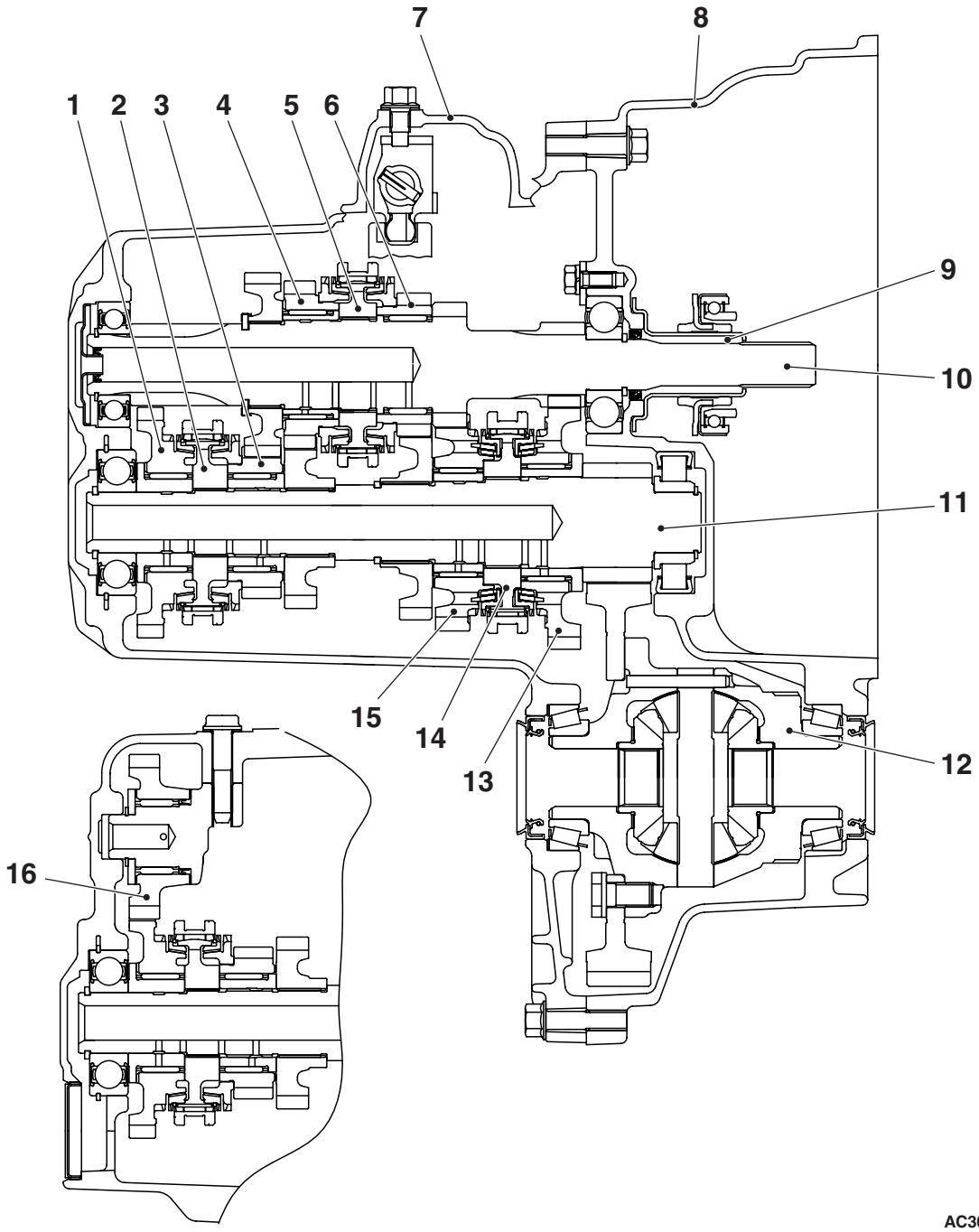
SPECIFICATIONS

Item		Specification			
Transmission model		F5M42 (2WD)	W5M42 (4WD)		W5M51 (4WD)
Engine model		4G63		4G69	4G63-T/C
Transmission type		5-speed forward, 1-speed reverse constant mesh			
Transmission gear ratio	1st	3.583			3.333
	2nd	1.947			2.105
	3rd	1.379			1.407
	4th	1.030			1.031
	5th	0.820			0.720
	Reverse	3.363			3.416
Final reduction ration (Differential gear ratio)		4.625	4.687	4.352	4.529
Speedometer gear ratio		27/36			
Transmission oil	Specified lubricants	DiaQueen NEW MULTI GEAR OIL API classification GL-3, SAE 75W-80 or Gear oil API classification GL-4, SAE 75W-85W / 75W-90			
	Quantity L	2.2	2.3		2.8
Transfer oil	Specified lubricants	–	Hypoid gear oil API classification GL-5 SAE90		
	Quantity L	–	0.55		

SECTIONAL VIEW

M2220000500051

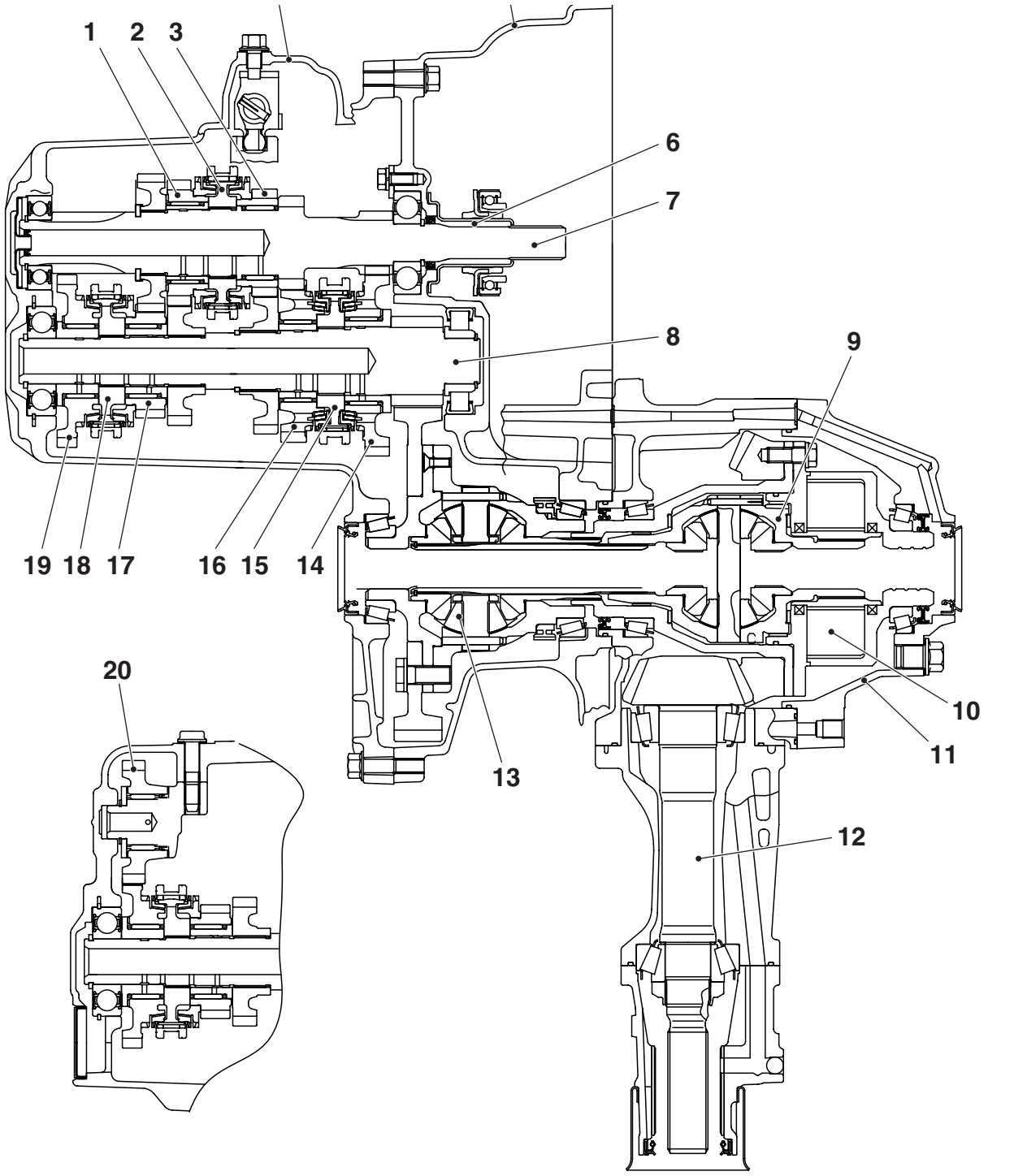
<F5M42>



AC309179AB

1. Reverse gear
2. 5th/Reverse synchronizer
3. 5th gear
4. 4th gear
5. 3rd/4th synchronizer
6. 3rd gear
7. Transmission case
8. Clutch housing
9. Reverse bearing retainer
10. Input shaft
11. Output shaft
12. Differential
13. 1st gear
14. 1st/2nd synchronizer
15. 2nd gear
16. Reverse idler gear

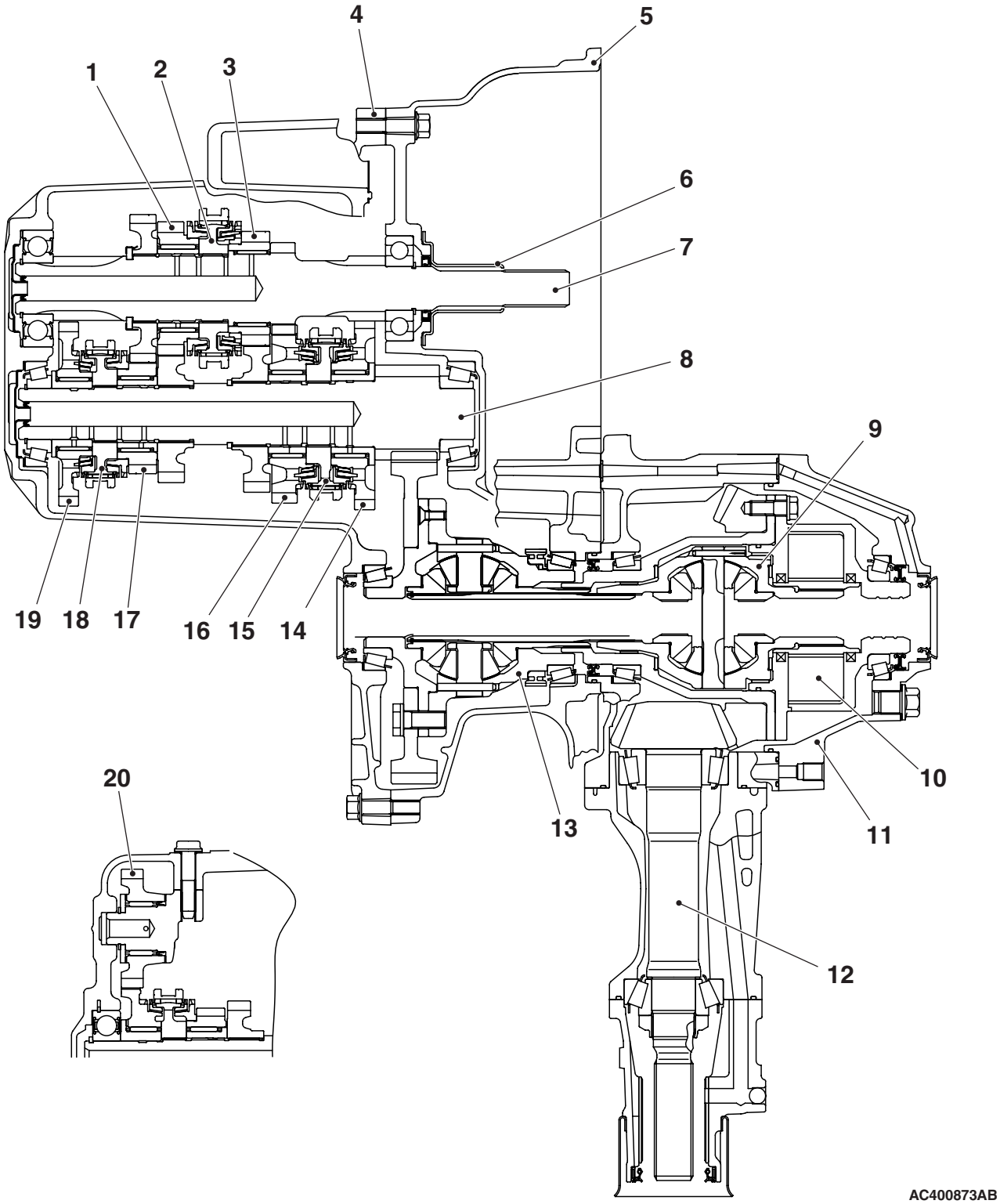
<W5M42>



AC309180AB

1. 4th gear
2. 3rd/4th synchronizer
3. 3rd gear
4. Transmission case
5. Clutch housing
6. Reverse bearing retainer
7. Input shaft
8. Output shaft
9. Front differential
10. Viscous coupling unit (VCU)
11. Transfer case
12. Hypoid pinion
13. Centre differential
14. 1st gear
15. 1st/2nd synchronizer
16. 2nd gear
17. 5th gear
18. 5th/Reverse synchronizer
19. Reverse gear
20. Reverse idler gear

<W5M51>

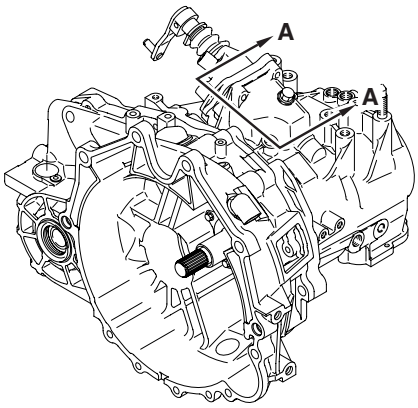


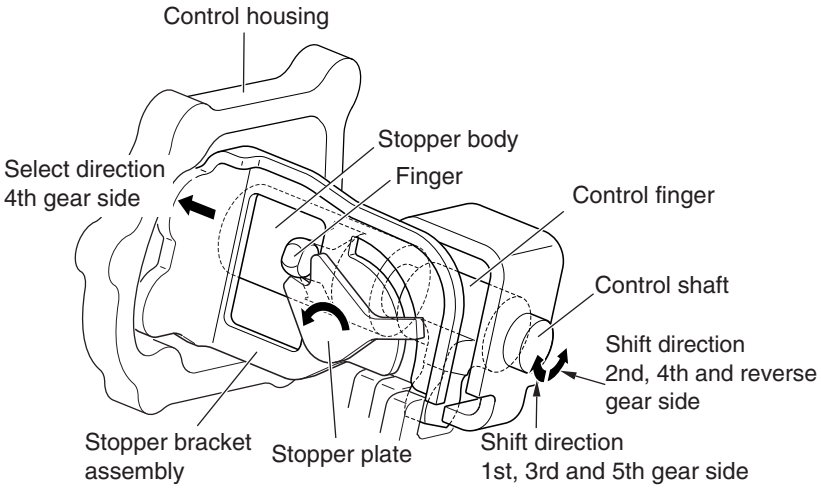
1. 4th gear
2. 3rd/4th synchronizer
3. 3rd gear
4. Transmission case
5. Clutch housing
6. Clutch release bearing retainer
7. Input shaft
8. Output shaft
9. Front differential
10. Viscous coupling unit (VCU)
11. Transfer case
12. Hypoid pinion
13. Centre differential
14. 1st gear
15. 1st/2nd synchronizer
16. 2nd gear
17. 5th gear
18. 5th/Reverse synchronizer

19. Reverse gear
20. Reverse idler gear

REVERSE GEAR MISOPERATION PREVENTION MECHANISM

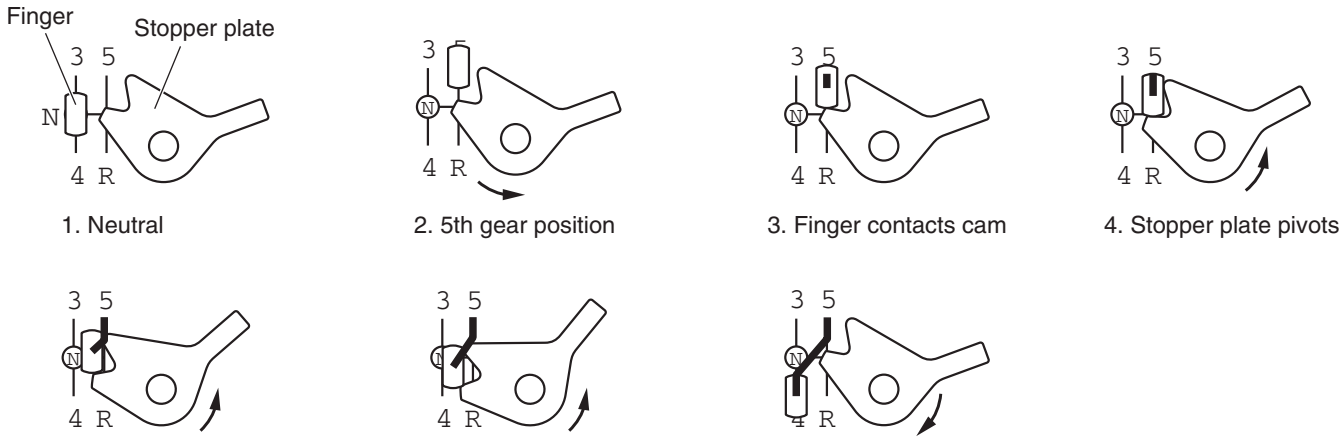
M2220000700022





Section A-A

AC101441AB



1. Neutral
2. 5th gear position
3. Finger contacts cam
4. Stopper plate pivots
5. Finger being pushed out
6. Pushing-out completes
7. 4th gear shifting completes

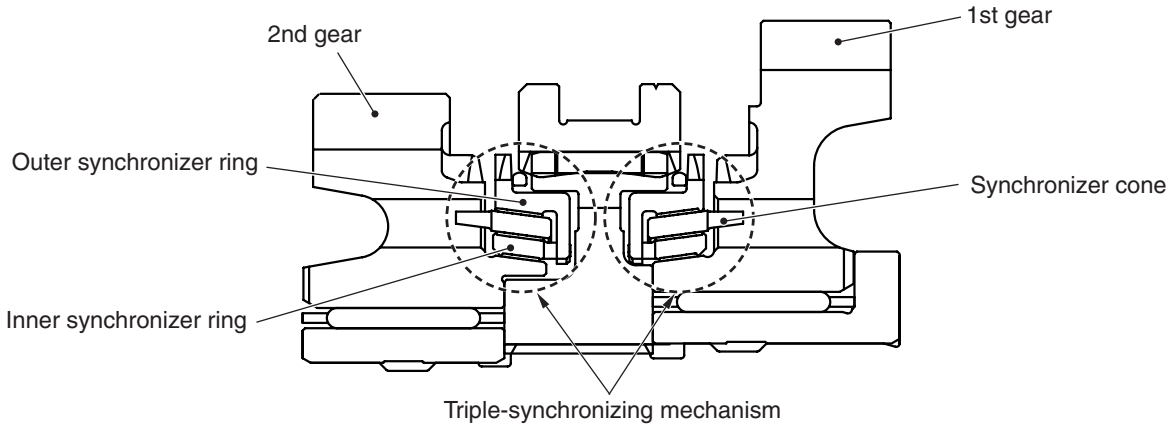
AC101244AB

In order to facilitate 5th to 4th speed shifting operation, the previous reverse gear mis operation prevention mechanism has been modified as follows:

- When the transmission is shifted from 5th gear to reverse, the control finger and the stopper body pivot around the control shaft, and the finger will contact the stopper plate, which is secured on the stopper assembly. Because of this, the stopper plate pivots to push out the finger end surface to the 4th-speed side, thus preventing the transmission from being engaged in reverse position, and guiding it into 4th position.

SYNCHRONIZER

M2220006000043

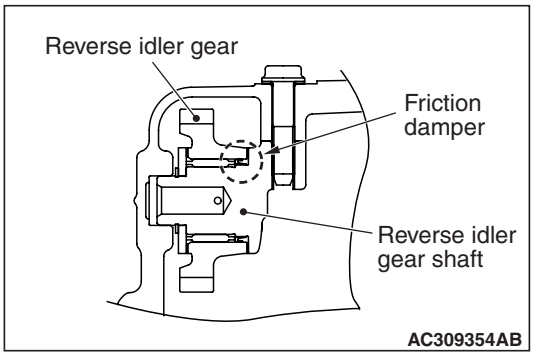


AC309185 AB

For the second and third gears, a triple - synchronizing mechanism has been adopted.
With the triple - synchronizing mechanism, synchronizing action is achieved by one side of the outer synchronizer ring and both sides of the inner synchronizer ring. By providing significantly increased synchronization capacity, the triple - synchronizing mechanism reduces the effort required to perform gear shift.

FRICTION DAMPER

M2220000800018

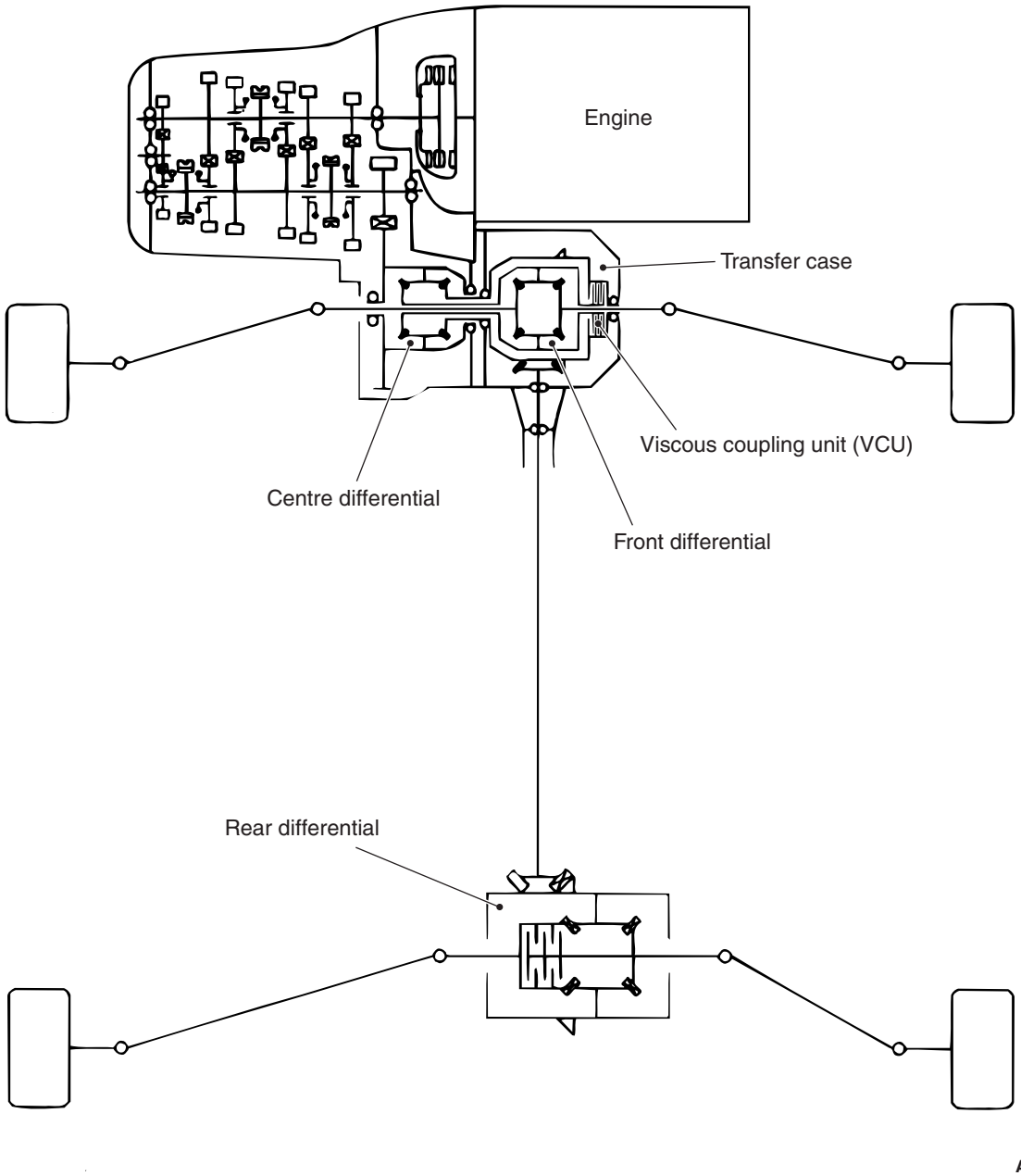


The friction damper has been installed to the reverse idler shaft. The friction between the friction damper and reverse idler gear reduces the rattling due to idle speed variation, thus improving the quietness while the engine is idling.

4WD SYSTEM

GENERAL INFORMATION

M2220000100138

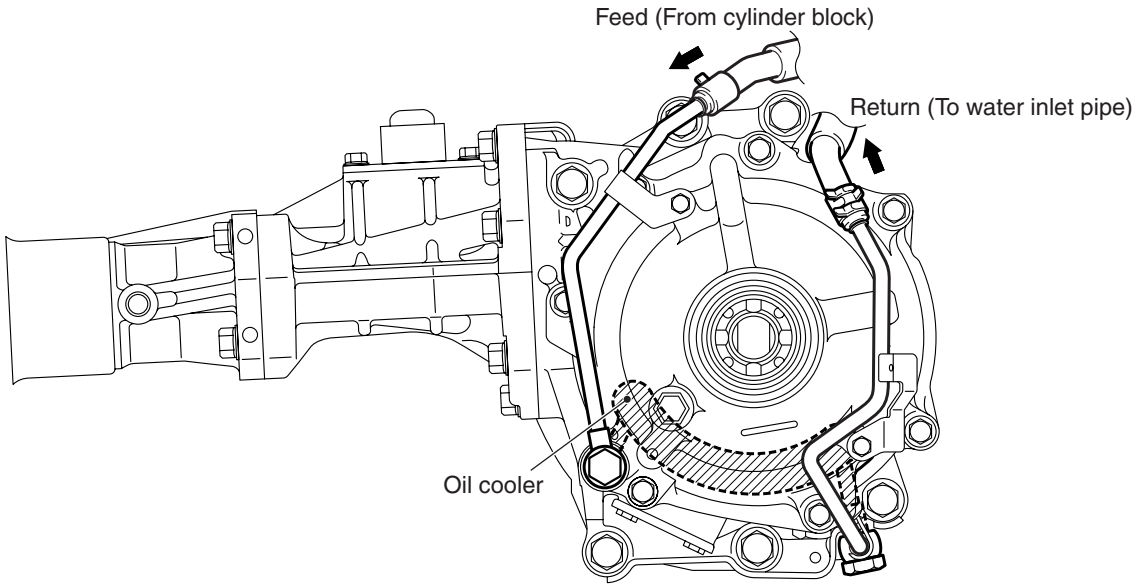


AC309321AB

- The 4WD system uses the centre differential with limited slip device.
- The front differential is housed in the transfer (4WD). The centre differential is housed in the transmission in the place of the front differential for 2WD.
- A viscous coupling unit (VCU) is used for the centre differential limited slip device, and is located in the rear of the front differential.

TRANSFER

M2220000400021



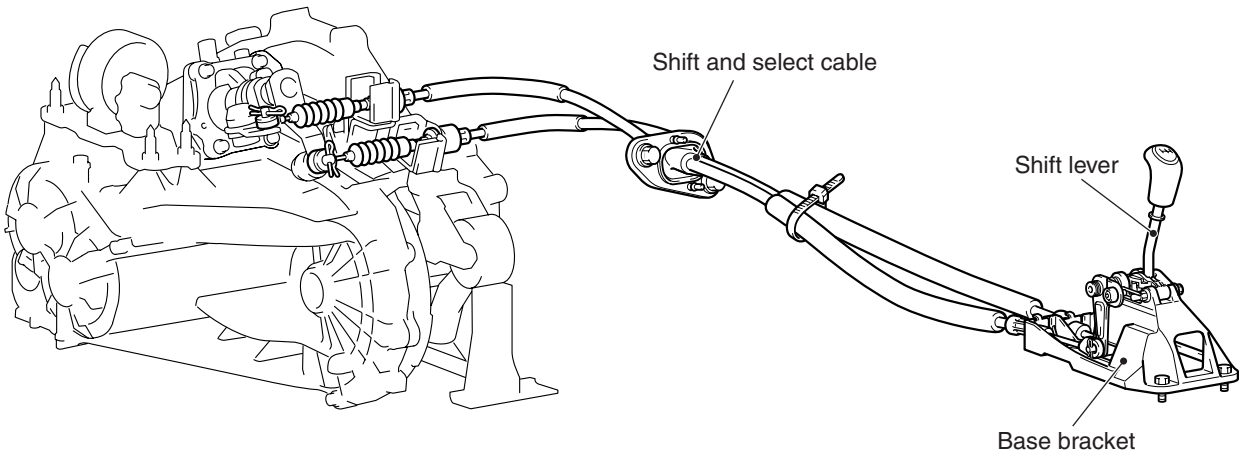
AC301423AB

- For better towing and climbing performance, a water-cooled oil cooler, which is incorporated in the transfer case, is used.

TRANSMISSION CONTROL

GENERAL INFORMATION

M2222000100037



AC212558 AB

- The shift lever is the spherical rotary shaft fulcrum type.
- The base bracket is made of synthetic resin for the weight reduction.
- The shift and select cable securing portions have been elastically supported to reduce noise and vibration.
- A mass is incorporated into a shift knob to provide better shift operation feeling.