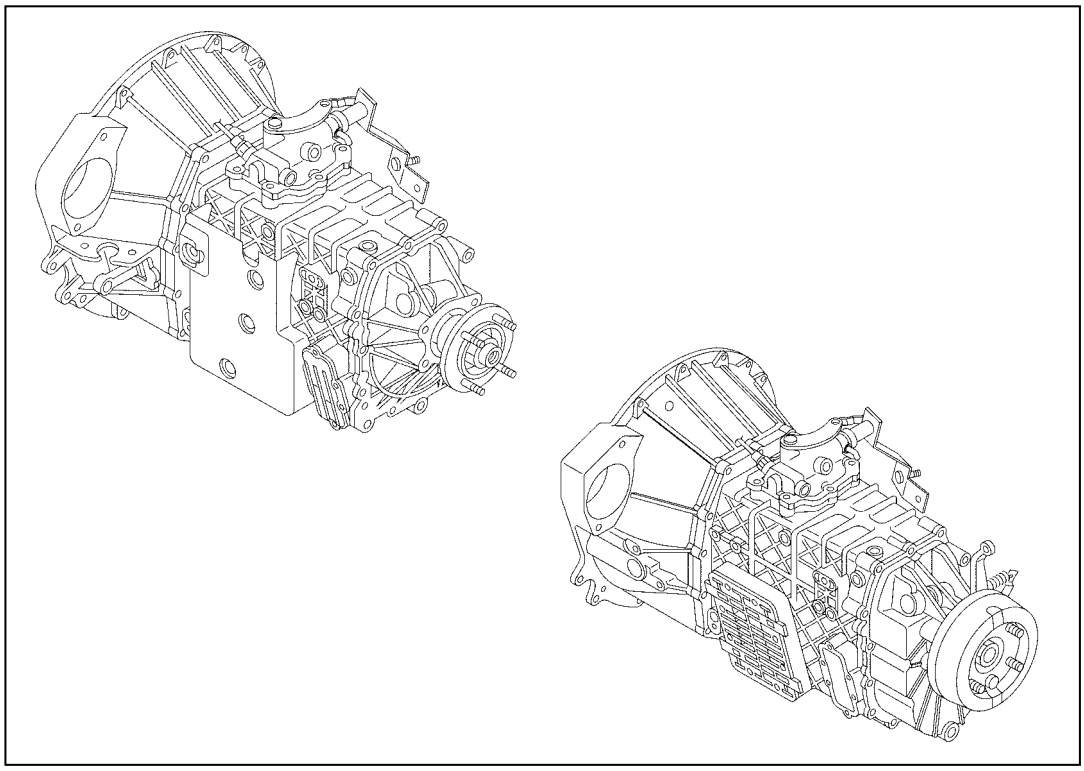
FOR SERVICE TRAINING

MYY & MZZ TYPE TRANSMISSION



Applicable Model

Model Year	*Vehicle Model*	*Destination*
2003	*N*R*	*All*

ISUZU MOTORS LIMITED

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INTRODUCTION

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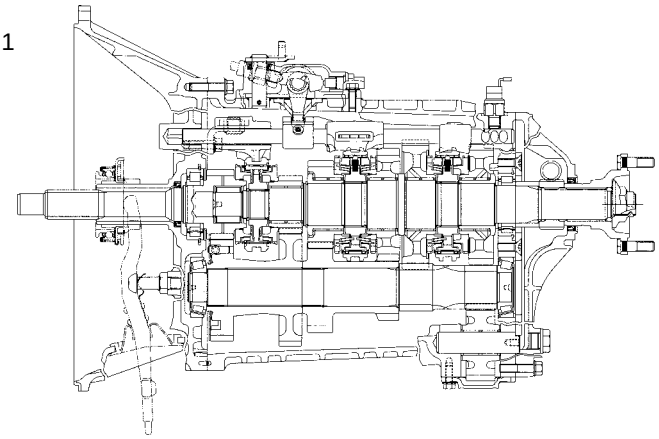

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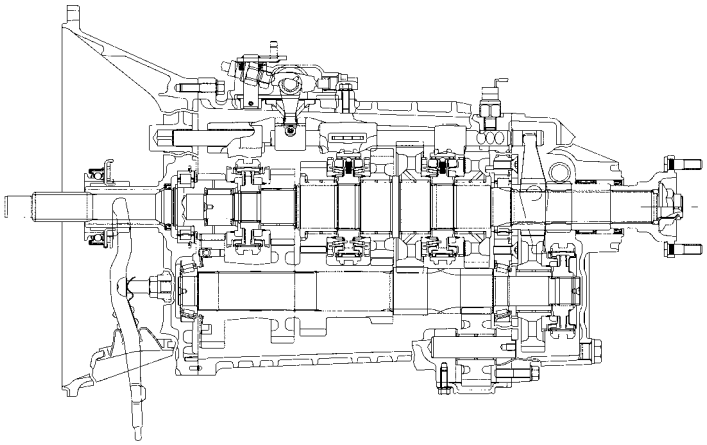

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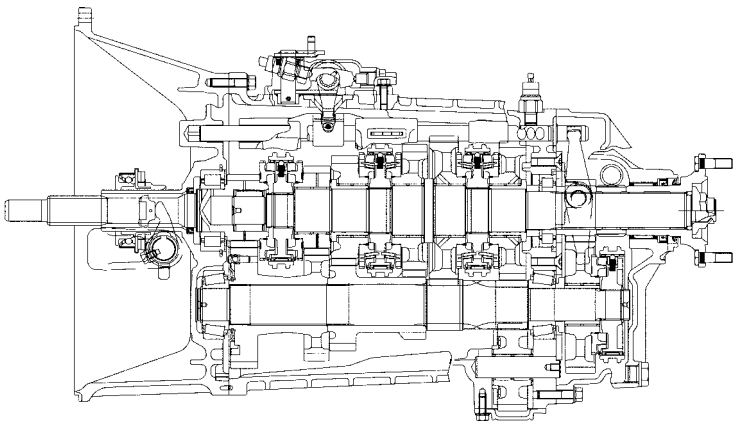
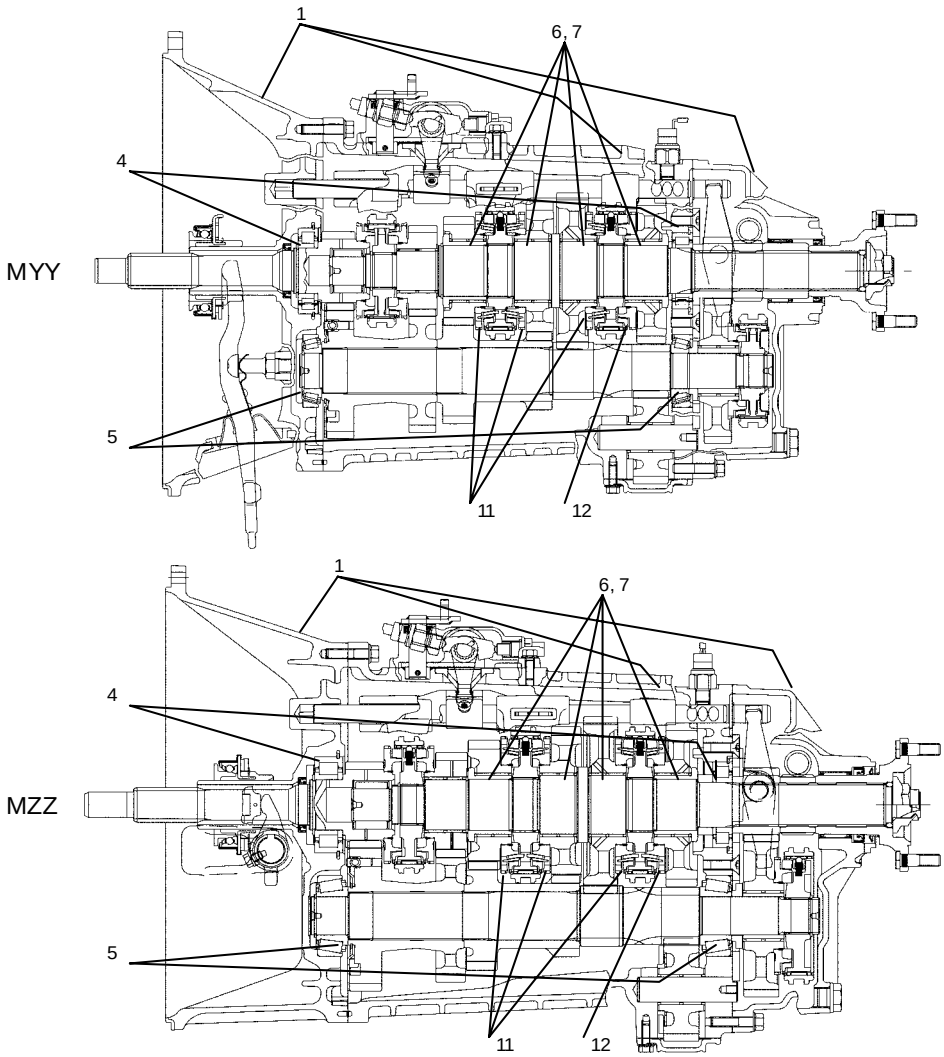


1. MYY 5 Speed
2. MYY 6 Speed
3. MZZ 6 Speed

The 2003 model year vehicle with manual transmission model, MYY & MZZ type transmission has newly adopted instead of MXA & MBP type.
By reason of construction change, transmission weight is reduced and allowable maximum input torque is upped.
The MYY type has mainly employed to 4J series engine which is mounted NHR, NKR or some NPR tracks. And, it has also employed to 4H series engine with low output which is mounted NKR or NPR trucks.
The MZZ type has mainly employed to 4H series engine with high output which is mounted NPR or NQR tracks.
Both type of transmission has very similar features, and construction & operation are nearly same. So that, the service procedures such as overhaul repair will be understood by disassembly either MYY or MZZ .

MAIN FEATURES OF MYY & MZZ



Transmission Case:

1. Tube type three pieces transmission case made by cast aluminum alloy.

2. Fine pitch fixing bolts are applied for transmission case fixing.

3. Liquid type gasket is applied for sealing.

Gear, Bearing & Synchronizer:

4. Roller bearings are adopted to support the both ends of the main-shaft.

5. Tapered roller bearings are adopted to support the both ends of the counter-shaft.

6. Common boss size at 1st, 2nd, 3rd and reverse main gear.

7. Common needle bearings are adopted at 1st, 2nd, 3rd and reverse main gear.

8. Sintered clutch hubs are adopted for all gears.

9. Common sleeves & hubs are adopted at 1st-reverse and 2nd-3rd.

10. Common sleeves are adopted at 4th-5th and 6th.

11. Index-ball type triple cone synchronizer is adopted at 1st and 2nd-3rd.

12. Index-ball type single cone synchronizer is adopted at reverse.

Shift Control:

13. Twin-rod type shift control is adopted.

14. Cast aluminum alloy shift arms are adopted at 1st-reverse, 2nd-3rd and 4th-5th.

GEAR RATIO

Type	MYY5A	MYY5D	MYY5R	MYY5T	MYY6P
Primary	(45/28)	(47/26)	(45/28)	(45/28)	(47/26)
1st	5.315 (43/13)	5.979 (43/13)	5.315 (43/13)	5.315 (43/13)	5.979 (43/13)
2nd	2.908 (38/21)	3.434 (38/20)	2.908 (38/21)	3.053 (38/20)	3.434 (38/20)
3rd	1.558 (32/33)	1.862 (34/33)	1.655 (34/33)	1.655 (34/33)	1.862 (34/33)
4th	1.000 (Direct)	1.297 (28/39)	1.000 (Direct)	1.000 (Direct)	1.297 (28/39)
5th	0.721 (22/49)	1.000 (Direct)	0.721 (22/49)	0.721 (22/49)	1.000 (Direct)
6th	-	-	-	-	0.774 (21/49)
Reverse	5.068 (41/25/13)	5.701 (41/25/13)	5.701 (41/25/13)	5.068 (41/25/13)	5.701 (41/25/13)

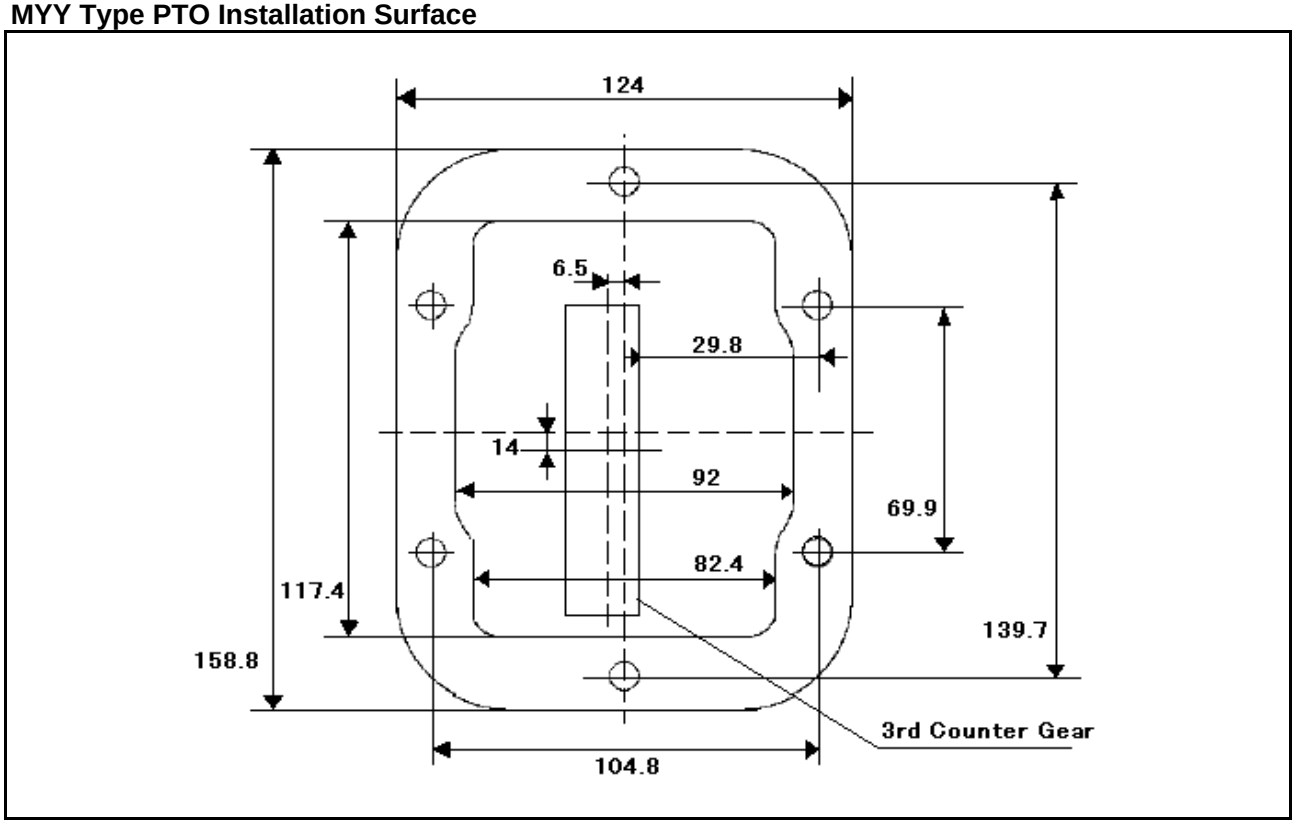
Type	MZZ6F	MZZ6R	MZZ6S	MZZ6U
Primary	(46/25)	(46/25)	(46/25)	(46/25)
1st	6.369 (45/13)	6.369 (45/13)	6.369 (45/13)	6.369 (45/13)
2nd	3.767 (43/21)	3.767 (43/21)	3.767 (43/21)	3.767 (43/21)
3rd	1.966 (31/29)	2.234 (34/28)	2.385 (35/27)	2.234 (34/28)
4th	1.355 (28/38)	1.355 (28/38)	1.355 (28/38)	1.442 (29/37)
5th	1.000 (Direct)	1.000 (Direct)	1.000 (Direct)	1.000 (Direct)
6th	0.728 (20/47)	0.743 (19/47)	0.782 (20/47)	0.782 (20/47)
Reverse	6.369 (45/26/13)	6.369 (45/26/13)	6.369 (45/26/13)	6.369 (45/26/13)

PTO (POWER TAKE OFF)

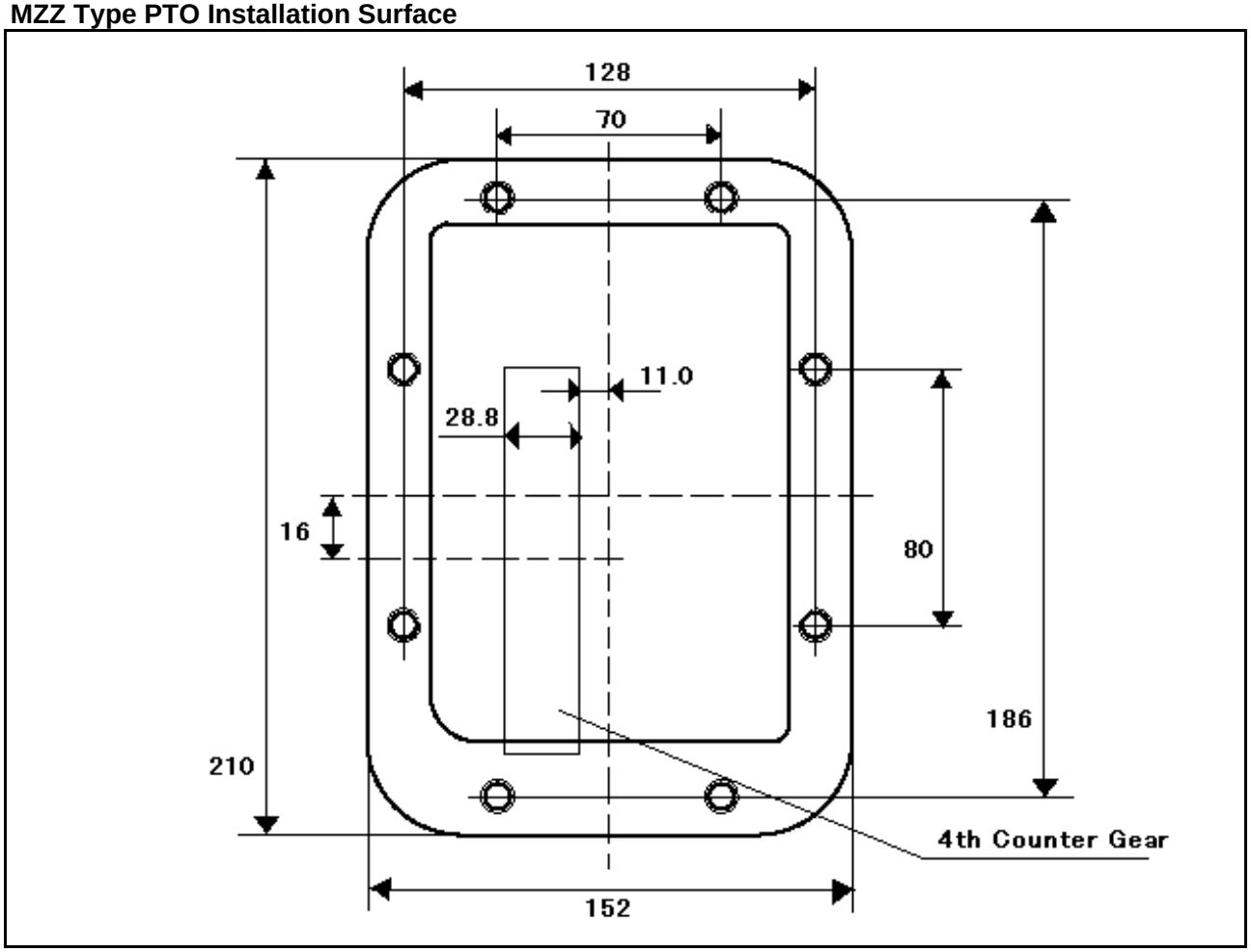
Counter Gear Specification

Transmission Type	MYY5A	MYY5T/5D/5R/5T/6P	MZZ6F/6R/6S	MZZ6U
PTO Output Gear	3rd Counter Gear	3rd Counter Gear	4th Counter Gear	4th Counter Gear
Module	2.85	2.77	3.00	3.00
Pressure Angle	20 degree	20 degree	20 degree	20 degree
Number of Teeth	33	33	38	37
Addendum Modification Coefficient	+0.039	+0.072	+0.074	+0.073
Tooth Depth	7.9225	7.828	8.3715	8.375
Diameter	107.9 + - 0.1	105 + - 0.1	134.4	131.1
Helix Angle	20 degree	20 degree	25 degree	25 degree
Direction	Right-hand	Right-hand	Right-hand	Right-hand

MYY Type PTO Installation Surface

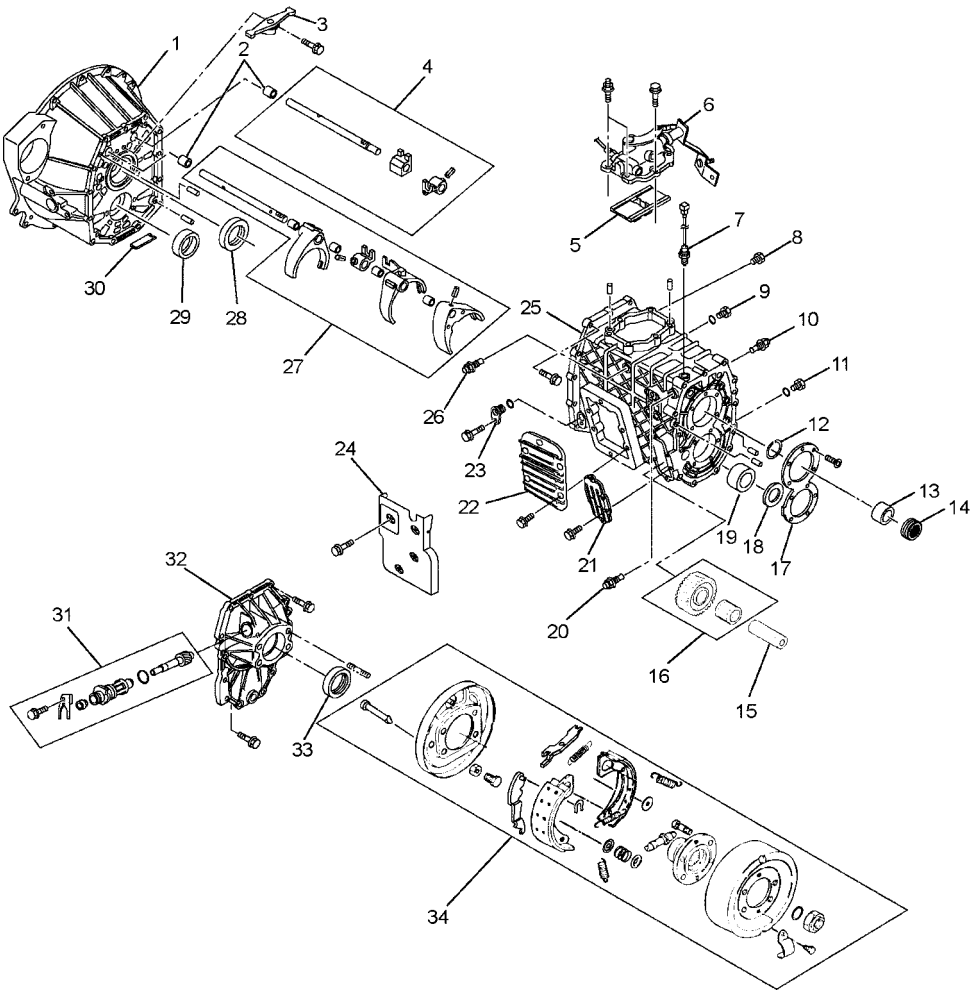


MZZ Type PTO Installation Surface



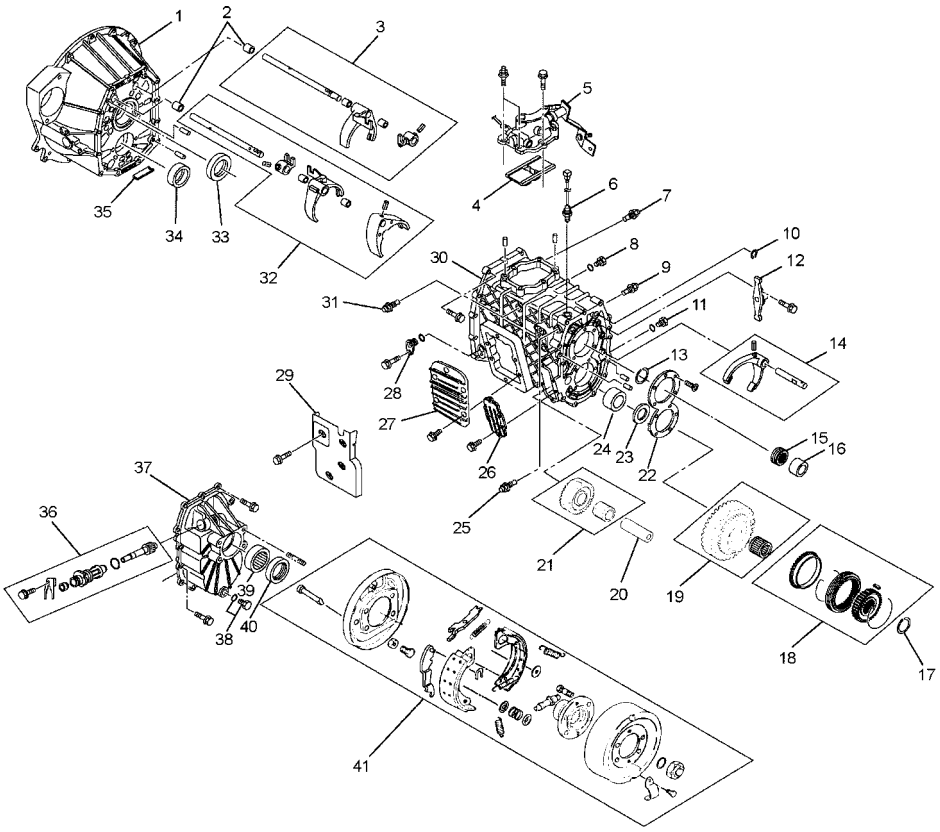
CONSTRUCTION PARTS

TRANSMISSION CASE (MYY 5 SPEED)



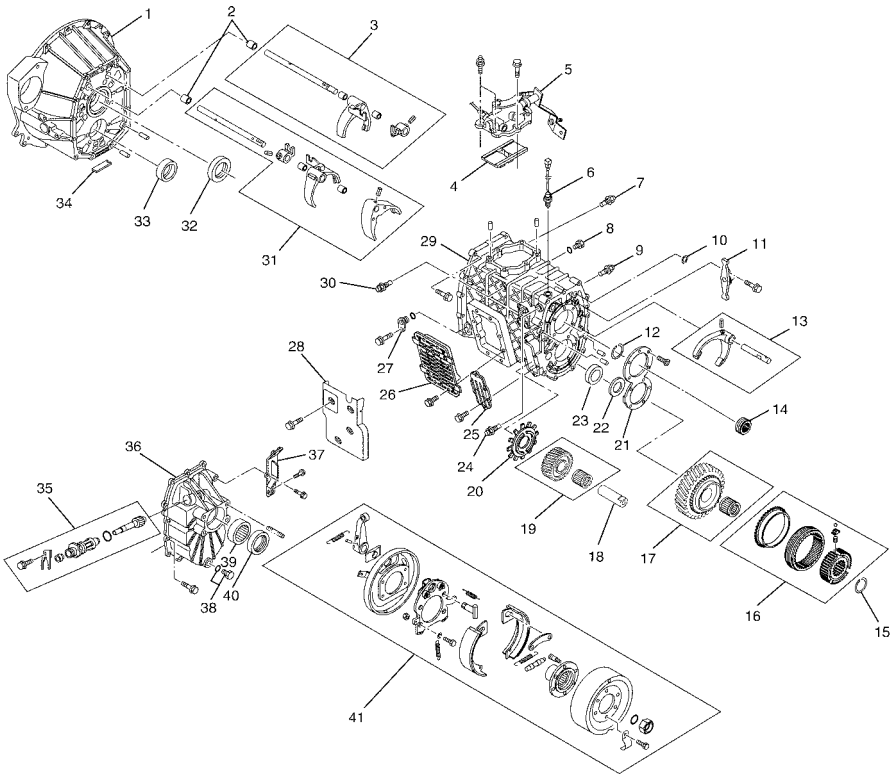
1. Clutch Housing
2. Clutch Housing Bush
3. 5th Relay Lever
4. 4th-5th Shift Block
5. Interlock Plate
6. Control Box
7. Reverse Switch
8. Detent Assembly
9. Oil Filler Plug
10. Detent Assembly
11. Oil Drain Plug
12. Snap Ring
13. Collar
14. Speed Meter Gear
15. Reverse Idle Shaft
16. Reverse Idle Gear & Needle Bearing
17. Retainer
18. Counter-Shaft Shim
19. Counter-Shaft Rear Bearing
20. Detent Assembly
21. Reverse Idle Cover
22. PTO Side Cover
23. Dummy Plug
24. Noise Cover
25. Transmission case
26. Detent Assembly
27. 1st-Reverse, 2nd-3rd & 4th-5th Shift Arm
28. Front Oil Seal
29. Bearing Outer Race
30. Magnet
31. Speed Meter Driven Gear
32. Rear Cover
33. Rear oil seal
34. Parking Brake Assembly

TRANSMISSION CASE (MYY 6 SPEED)



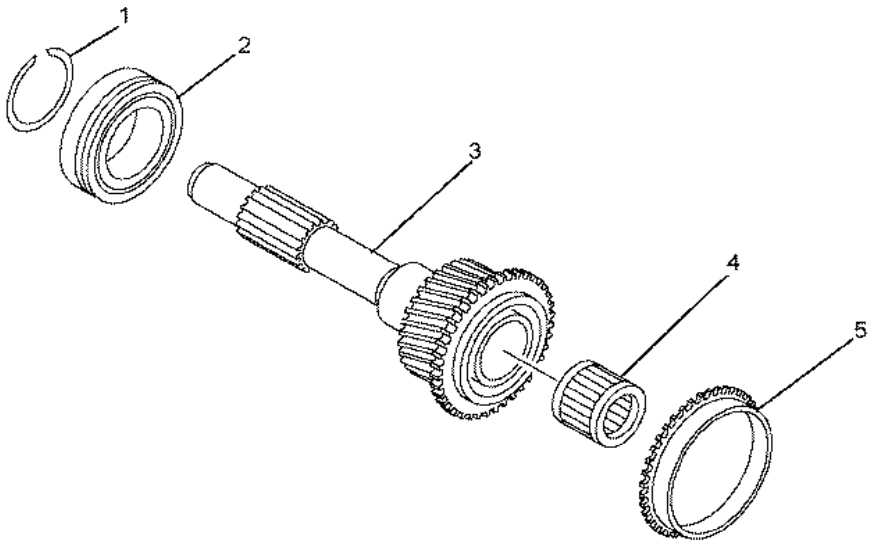
1. Clutch Housing
2. Clutch Housing Bush
3. 4th-5th & 6th Shift Arm
4. Interlock Plate
5. Control Box
6. Reverse Switch
7. Detent Assembly
8. Oil Filler Plug
9. Detent Assembly
10. Snap Ring
11. Oil Drain Plug
12. 6th Relay Lever
13. Snap Ring
14. 6th Shift Arm & Shift Rod
15. Speed Meter Gear
16. Collar
17. Snap Ring
18. 6th Clutch Hub Assembly & Sleeve
19. 6th Gear & Needle Bearing
20. Reverse Idle Shaft
21. Reverse Idle Gear & Needle Bearing
22. Retainer
23. Counter-Shaft Shim
24. Counter-Shaft Rear Bearing
25. Detent Assembly
26. Reverse Idle Cover
27. PTO Cover
28. Dummy Plug
29. Noise Cover
30. Transmission Case
31. Detent Assembly
32. 1st-Reverse & 2nd-3rd Shift Arm
33. Front Oil Seal
34. Bearing Outer Race
35. Magnet
36. Speed Meter Driven Gear
37. Rear Cover
38. Drain Plug
39. Main-Shaft End Needle Bearing
40. Rear Oil Seal
41. Parking Brake Assembly

TRANSMISSION CASE (MZZ)



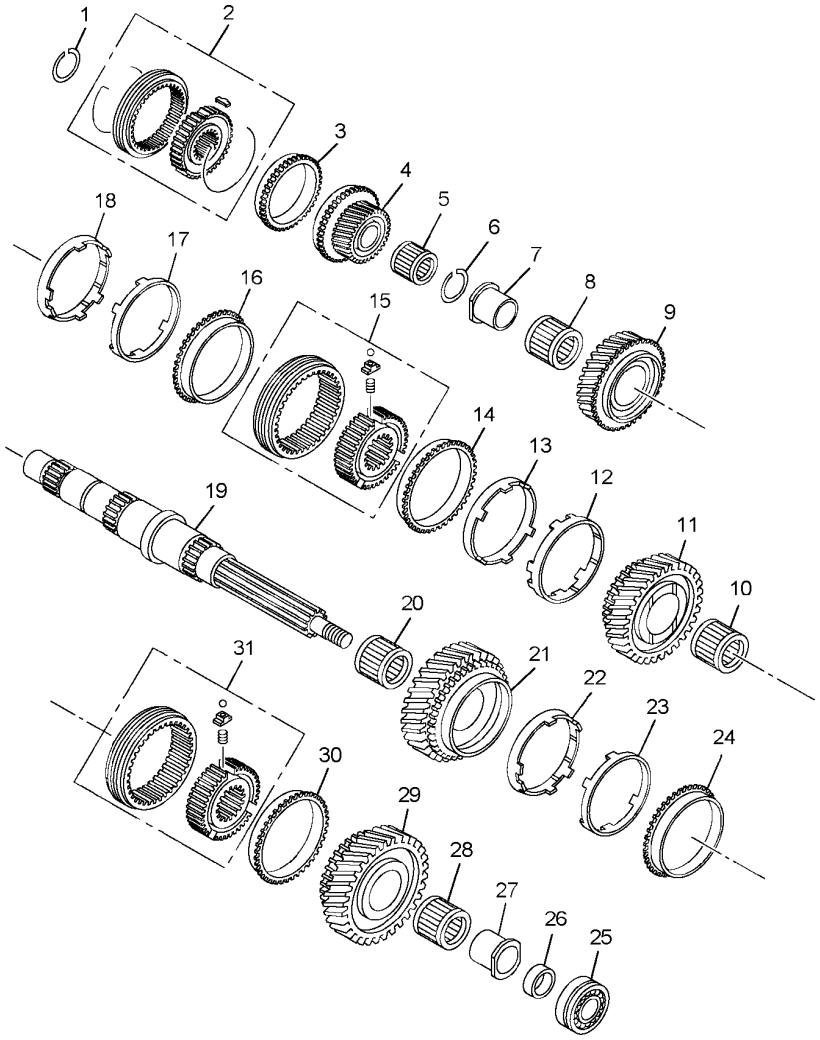
1. Clutch Housing
2. Clutch Housing Bush
3. 4th-5th & 6th Shift Arm
4. Interlock Plate
5. Control Box
6. Reverse Switch
7. Detent Assembly
8. Oil Filler Plug
9. Detent Assembly
10. Snap Ring
11. 6th Relay Lever
12. Snap Ring
13. 6th Shift Arm & Shift Rod
14. Speed Meter Gear
15. Snap Ring
16. 6th Clutch Hub Assembly & Sleeve
17. 6th Gear & Needle Bearing
18. Reverse Idle Shaft
19. Reverse Idle Gear & Needle Bearing
20. Oil Slinger
21. Retainer
22. Counter-Shaft Shim
23. Counter-Shaft Rear Bearing
24. Detent Assembly
25. Reverse Idle Cover
26. PTO Cover
27. Dummy Plug
28. Noise Cover
29. Transmission Case
30. Detent Assembly
31. 1st-Reverse & 2nd-3rd Shift Arm
32. Front Oil Seal
33. Bearing Outer Race
34. Magnet
35. Speed Meter Driven Gear
36. Rear Cover
37. Parking Brake Cable Bracket
38. Drain Plug
39. Main-Shaft End Needle Bearing
40. Rear Oil Seal
41. Parking Brake Assembly

TOP GEAR SHAFT (MYY & MZZ)



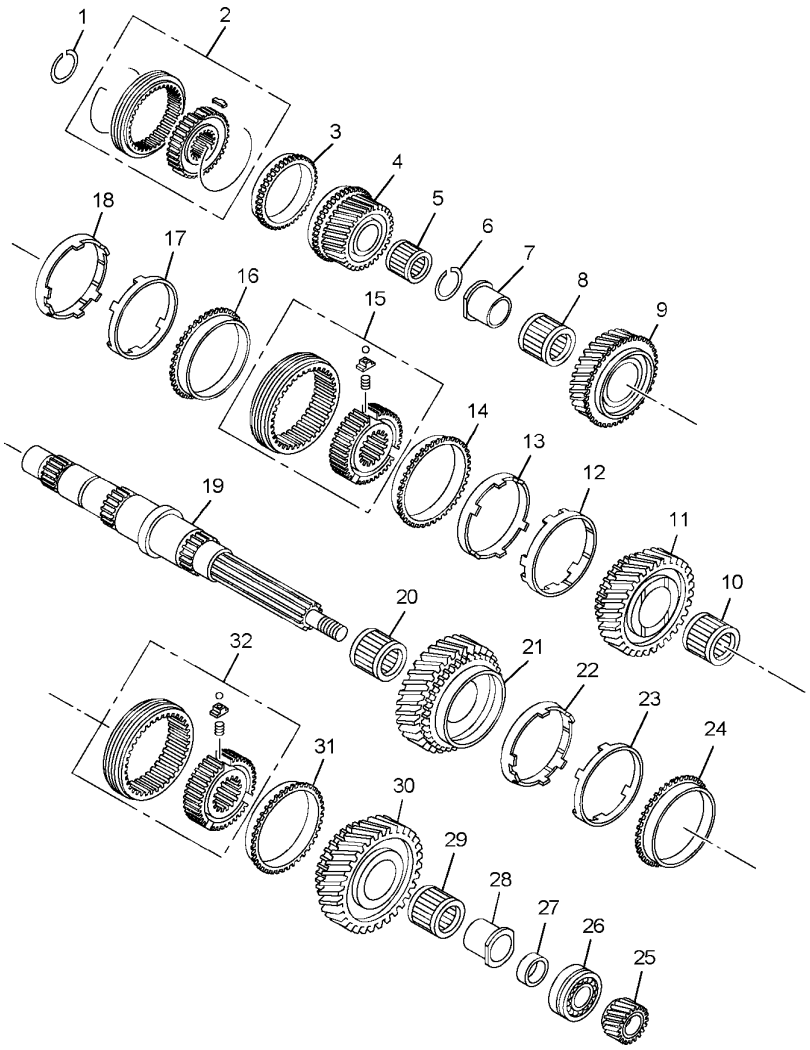
1. Snap Ring
2. Bearing
3. Top Gear Shaft
4. Needle Bearing
5. Block Ring

MAIN-SHAFT (MYY 5 SPEED)



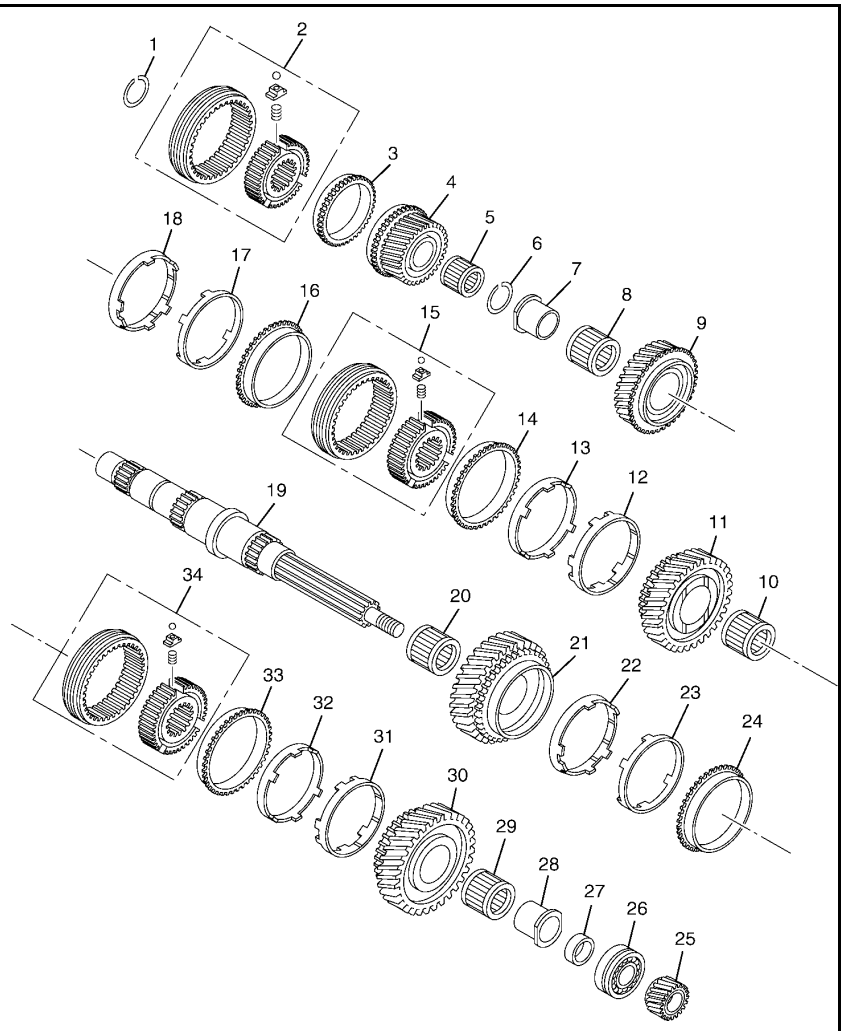
1. Snap Ring
2. 4th-5th Clutch Hub Assembly & Sleeve
3. 5th Block Ring
4. 5th Gear
5. Needle Bearing
6. Snap Ring
7. Collar
8. Needle Bearing
9. 3rd Gear
10. Needle Bearing
11. 2nd Gear
12. 2nd Inside Ring
13. 2nd Outside Ring
14. 2nd Block Ring
15. 2nd-3rd Clutch Hub Assembly & Sleeve
16. 3rd Block Ring
17. 3rd Outside Ring
18. 3rd Inside Ring
19. Main Shaft
20. Needle Bearing
21. 1st Gear
22. 1st Inside Ring
23. 1st Outside Ring
24. 1st Block Ring
25. Bearing
26. Spacer
27. Collar
28. Needle Bearing
29. Reverse Gear
30. Reverse Block Ring
31. 1st-Reverse Clutch Hub Assembly & Sleeve

MAIN-SHAFT (MYY 6 SPEED)



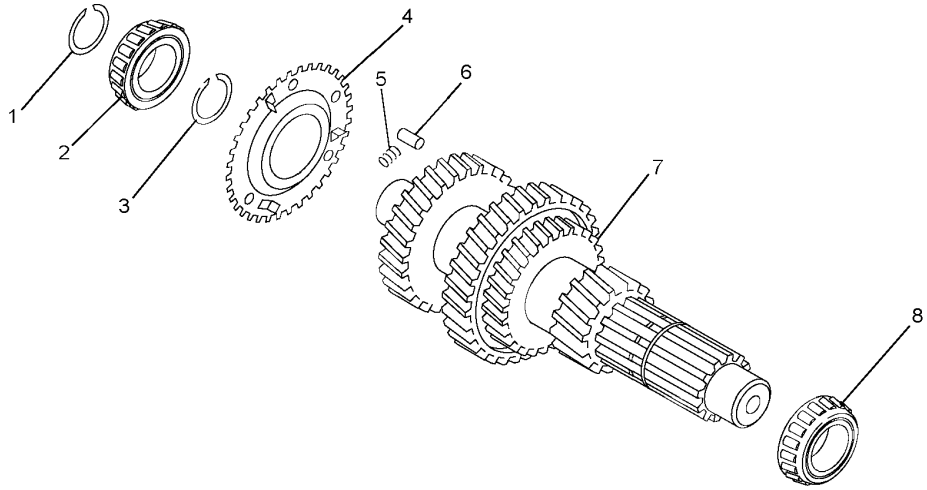
1. Snap Ring
2. 4th-5th Clutch Hub Assembly & Sleeve
3. 4th Block Ring
4. 4th Gear
5. Needle Bearing
6. Snap Ring
7. Collar
8. Needle Bearing
9. 3rd Gear
10. Needle Bearing
11. 2nd Gear
12. 2nd Inside Ring
13. 2nd Outside Ring
14. 2nd Block Ring
15. 2nd-3rd Clutch Hub Assembly & Sleeve
16. 3rd Block Ring
17. 3rd Outside Ring
18. 3rd Inside Ring
19. Main Shaft
20. Needle Bearing
21. 1st Gear
22. 1st Inside Ring
23. 1st Outside Ring
24. 1st Block Ring
25. 6th Gear
26. Bearing
27. Spacer
28. Collar
29. Needle Bearing
30. Reverse Gear
31. Reverse Block Ring
32. 1st-Reverse Clutch Hub Assembly & Sleeve

MAIN-SHAFT (MZZ)



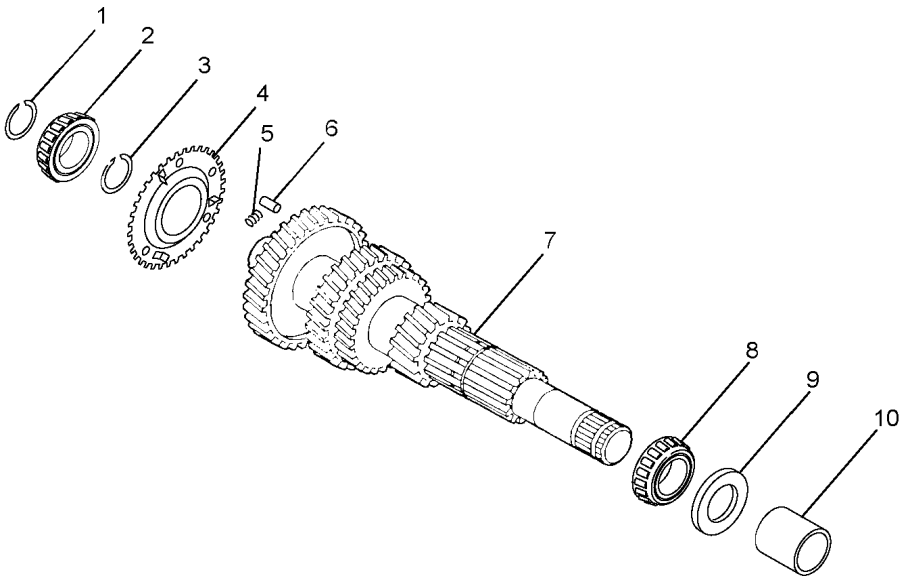
1. Snap Ring
2. 4th-5th Clutch Hub Assembly & Sleeve
3. 4th Block Ring
4. 4th Gear
5. Needle Bearing
6. Snap Ring
7. Collar
8. Needle Bearing
9. 3rd Gear
10. Needle Bearing
11. 2nd Gear
12. 2nd Inside Ring
13. 2nd Outside Ring
14. 2nd Block Ring
15. 2nd-3rd Clutch Hub Assembly & Sleeve
16. 3rd Block Ring
17. 3rd Outside Ring
18. 3rd Inside Ring
19. Main-Shaft
20. Needle Bearing
21. 1st Gear
22. 1st Inside Ring
23. 1st Outside Ring
24. 1st Block Ring
25. 6th Gear
26. Bearing
27. Spacer
28. Collar
29. Needle Bearing
30. Reverse Gear
31. Reverse Gear Inside Ring
32. Reverse Gear Outside Ring
33. Reverse Gear Block Ring
34. 1st-Reverse Clutch Hub Assembly & Sleeve

COUNTER-SHAFT (MYY 5 SPEED)



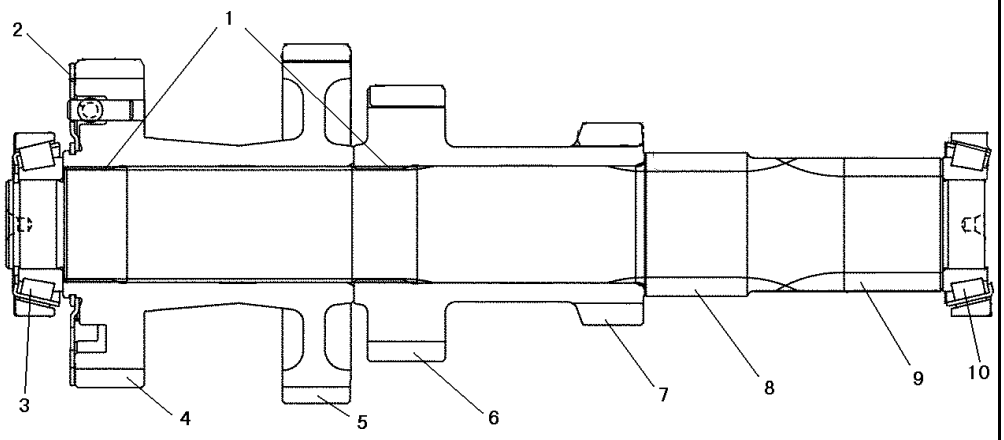
1. Snap Ring
2. Counter-Shaft Front Bearing
3. Snap Ring
4. Anti-Lash Plate
5. Coil Spring
6. Straight Pin
7. Counter-Shaft Assembly
8. Counter-Shaft Rear Bearing

COUNTER-SHAFT (MYY 6 SPEED & MZZ)



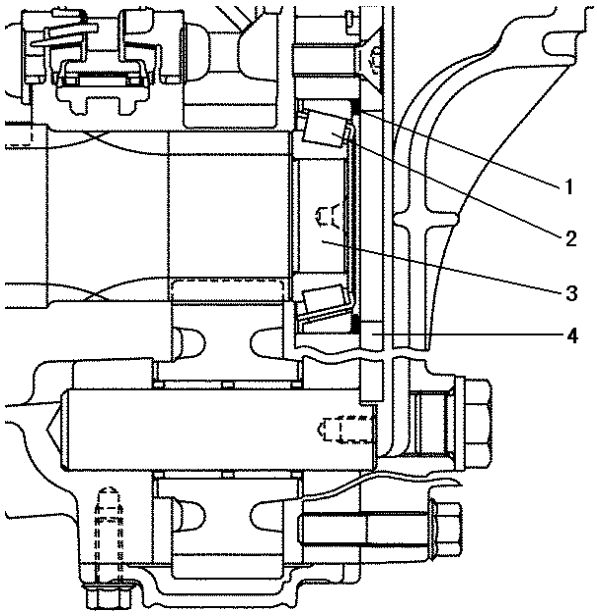
1. Snap Ring
2. Counter-Shaft Front Bearing
3. Snap Ring
4. Anti-Lash Plate
5. Coil Spring
6. Straight Pin
7. Counter-Shaft Assembly
8. Counter-Shaft Rear Bearing
9. Thrust Washer
10. Collar

1. Press Fitted to Spline
2. Anti-lash Plate
3. Tapered Bearing
4. Primary Gear
5. 5th Gear
6. 3rd Gear
7. 2nd Gear
8. 1st Gear
9. Reverse Gear
10. Tapered Bearing



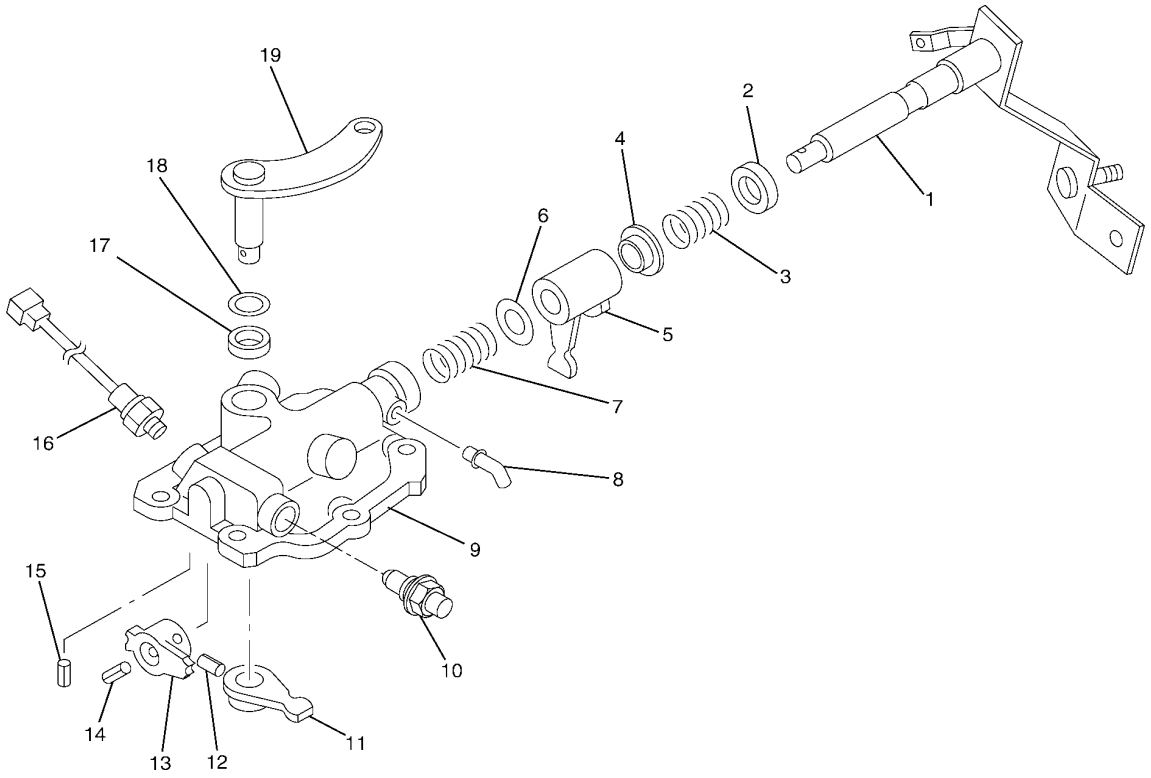
Primary-5th gear and 2nd-3rd gear are press fitted to spline.
Anti-lash plate is attached to the front part of primary gear.
The counter shaft is supported in the transmission case and flywheel housing by tapered bearings at both ends.

1. Shim
2. Tapered Bearing
3. Counter-Shaft
4. Retainer



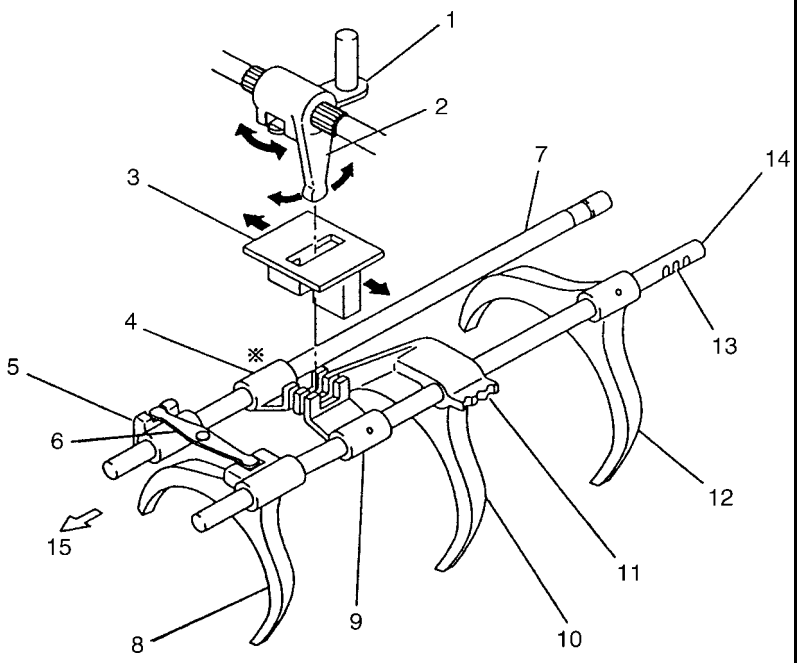
According to adoption of tapered roller bearing, the play of thrust direction is adjusted by shim selection method.
The shim adjusts clearance between bearing outer race and retainer.
For the MYY type, nineteen (19) kind of adjusting shims are available from 2.26mm to 3.40mm at interval 0.06mm.
For the MZZ type, fourteen (14) kind of adjusting shims are available from 1.35mm to 2.19mm at interval 0.06mm.
Clearance: 0.18± 0.03mm

CONTROL BOX



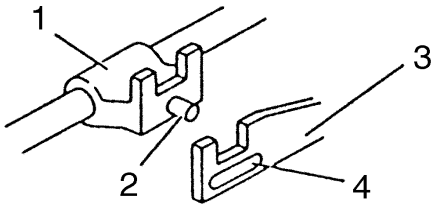
1. Shift Lever Shaft
2. Shift Lever Shaft Oil Seal
3. Spring
4. Washer
5. Shift Internal Lever
6. Spring Seat
7. Spring
8. Pipe
9. Control Box
10. Detent
11. Select Internal Lever
12. Select Internal Lever Spring Pin
13. Stopper Ring
14. Stopper Ring Spring Pin
15. Shift Lever Shaft Spring Pin
16. Neutral Switch
17. Select Lever Shaft Oil Seal
18. Washer
19. Select External Lever

GEAR SELECT & SHIFT CONTROL



1. Select Lever
2. Shift Lever
3. Interlock Plate (Move to Select Direction)
4. 4th-5th Main Shift Block (Fixed to Rod)
5. 4th-5th Sub Shift Block (Fixed to Rod)
6. 4th-5th Relay Lever
7. 4th-5th Shift Rod
8. 4th-5th Shift Arm (Move on The Rod)
9. 1st-Reverse Shift Block (Fixed to Rod)
10. 2nd-3rd Shift Arm (Move on The Rod)
11. 2nd-3rd Detent Groove
12. 1st-Reverse Shift Arm (Fixed to Rod)
13. 1st-Reverse Detent Groove
14. 1st-Reverse & 2nd-3rd Shift Rod

*Assembly Condition 2nd-3rd Shift Arm & 4th-5th Shift Block at * Mark*



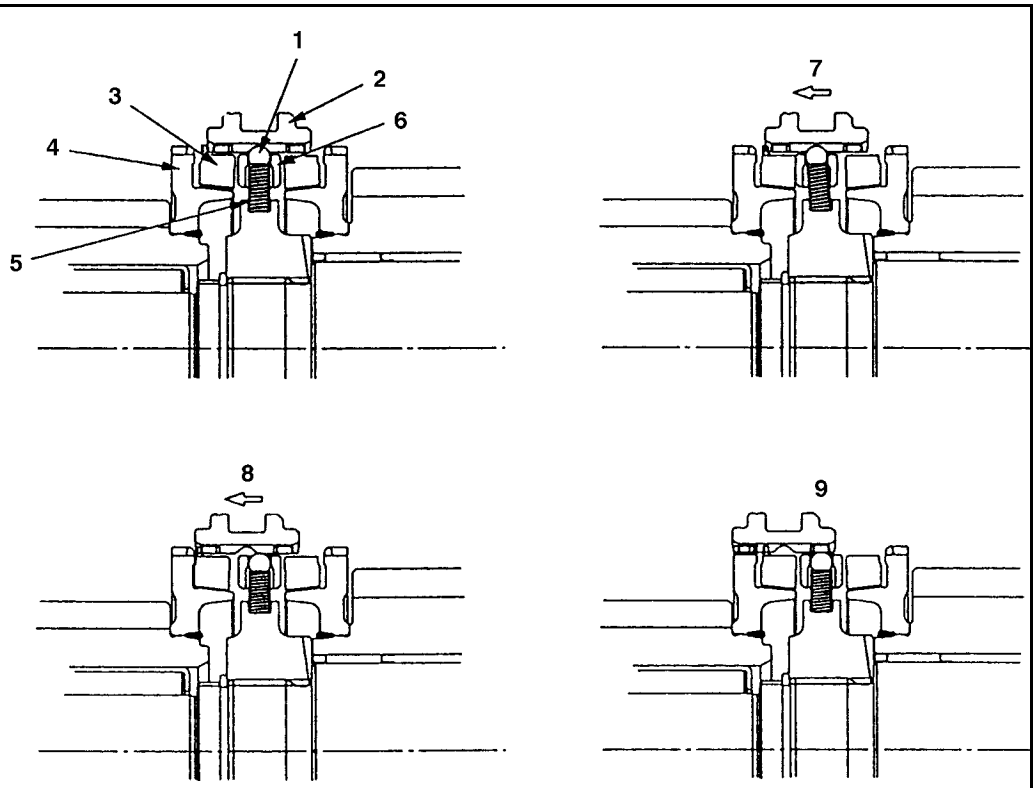
1. 4th-5th Main Shift Block
2. Turn Protection Pin
3. 2nd-3rd Shift Arm
4. 4th-5th Shift Block Turn Protection Pin Slot

Twin-rod shift control type is adopted for gear shift control.
According to adoption of twin-rod shift control type, interlock plate has attached to prevent "double engagement".
The section view of interlock plate is "T" shaped type. The lower projection fits to shift block. According to select lever operation, it moves in hollow of the shift block and prevents shift block movement other than selected gear.

-4th-5th main shift block and 4th-5th sub block are fixed at 4th-5th shift rod. When shifting to 4th or 5th, both shift blocks are moved and then 4th-5th shift arm is moved by meaning of 4th-5th relay lever movement.
-1st-reverse shift block and 1st-reverse shift arm are fixed at 1st-reverse & 2nd-3rd shift rod. When shifting to 1st or reverse, moved at the same time.
-2nd-3rd shift arm is one with shift block. When shifting to 2nd or 3rd, it moves on the 1st-reverse & 2nd-3rd shift rod.

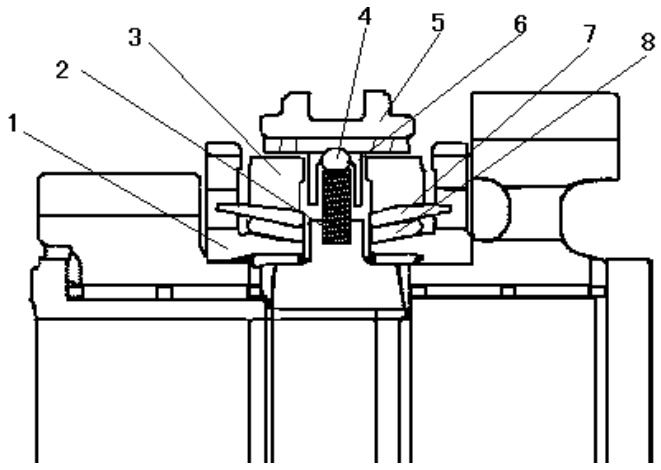
INDEX-BALL TYPE SYNCHRONIZER

Operation



1. Index-Ball
2. Sleeve
3. Block Ring
4. Synchronizer Cone
5. Index-Spring
6. Index-Block
7. Index
8 Synchronization
9. Gear Selected

Triple Cone Type

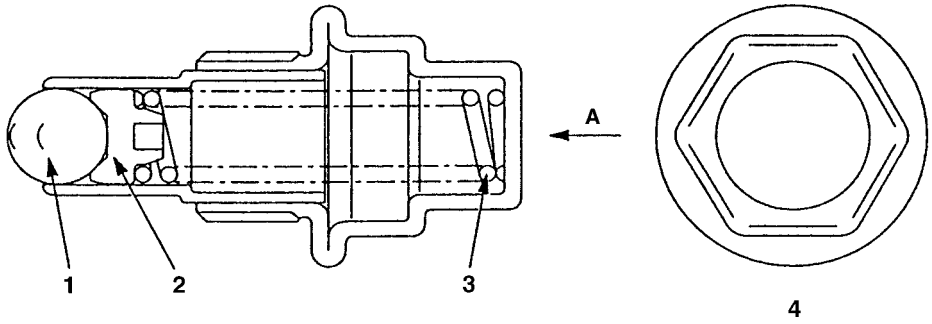


1. Synchronizer Cone
2. Index-Spring
3. Block Ring
4. Index-Ball
5. Sleeve
6. Index-Block
7. Outside Ring
8. Inside Ring

Index-ball type synchronizer is adopted at 1st, 2nd, 3rd (triple cone) and reverse (single cone).
In comparison with insert key type, gear select controllability is improved due to low resistance during sleeve is moving (gear is selecting). (Insert key type generates moving resistance between side of insert and block ring.)

DETENT ASSEMBLY

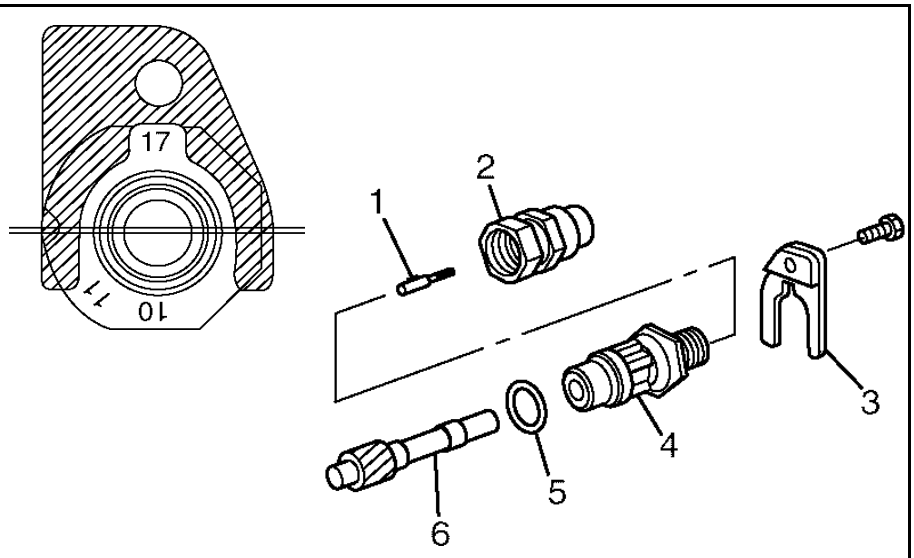
1. Ball
2. Ball Seat
3. Spring
4. View A



In order to improve serviceability, detent spring and ball are assembled as one parts.

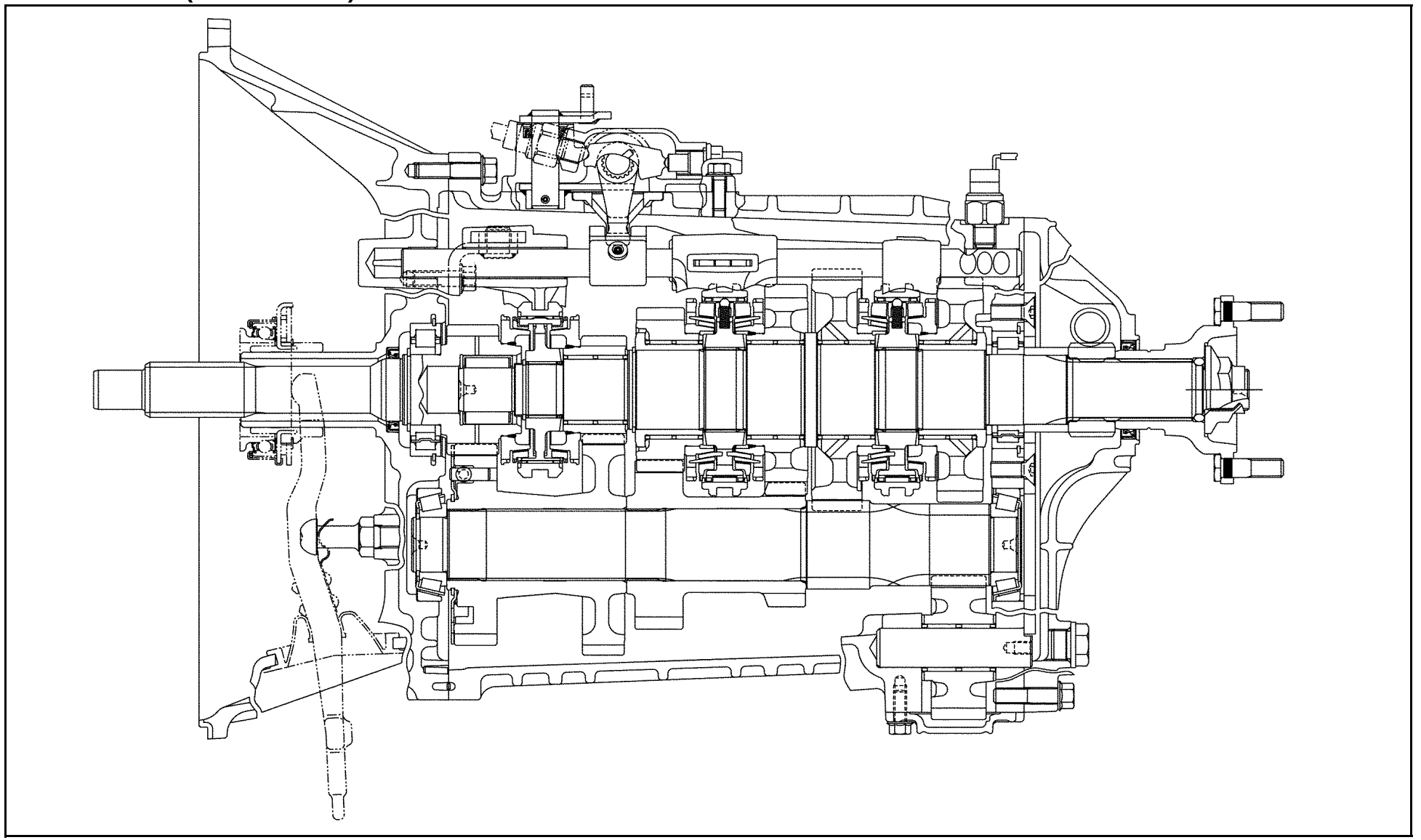
SPEED METER GEAR

1. Vehicle Speed Sensor Insert
2. Vehicle Speed Sensor
3. Retainer Plate
4. Bush
5. O-Ring
6. Speed Meter Driven Gear

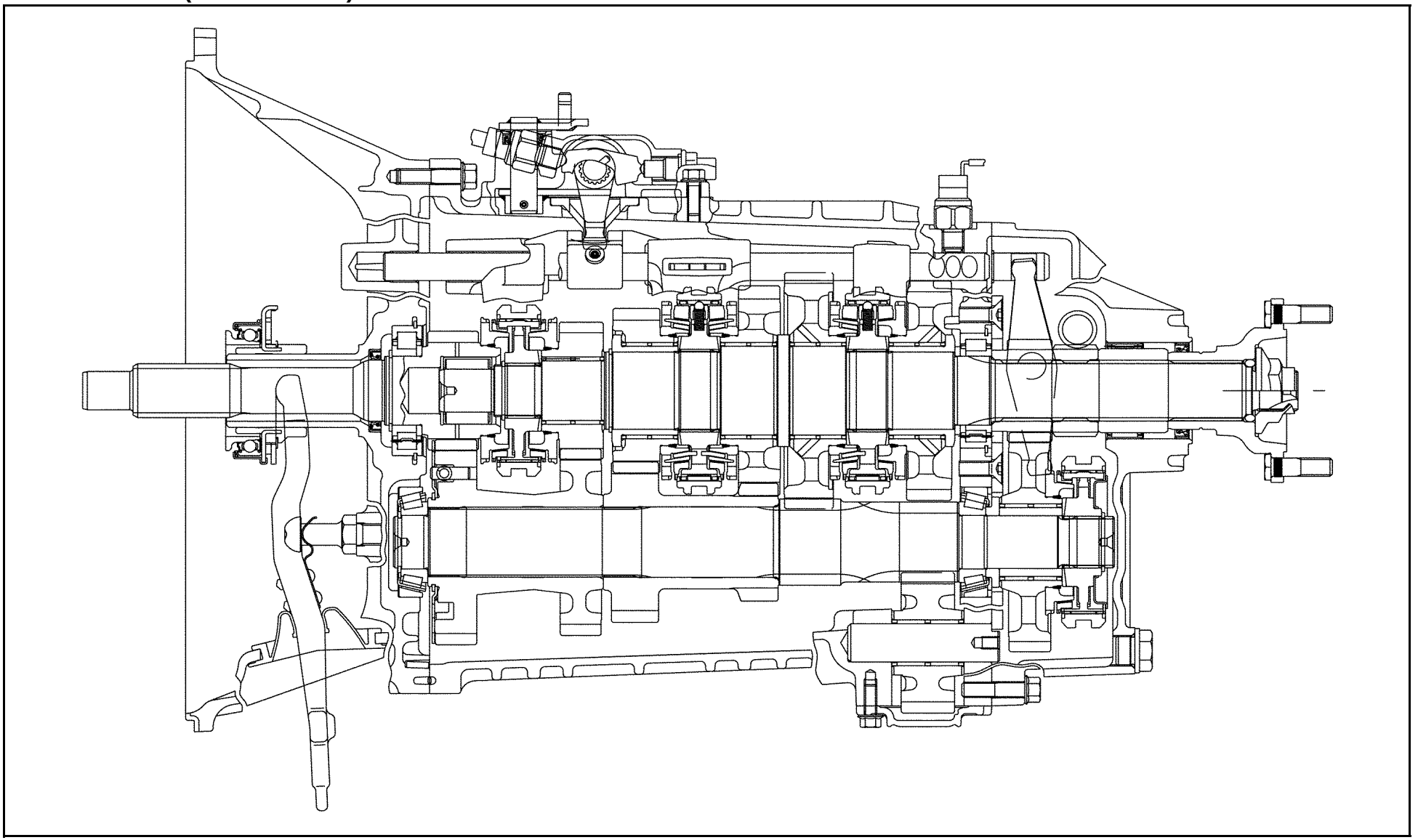


When assemble the speed meter gear, apply engine oil to the driven gear and the O-ring at first.
Next, align the gear tooth marked "17" on the bush and notch of the retainer plate. And then, insert the bush to the transmission case. Finally, fix the retainer plate by a bolt.
Note that the aligned gear tooth mark must be coincided with actual number of the driven gear teeth. Above figure shows "17" number of driven gear teeth.

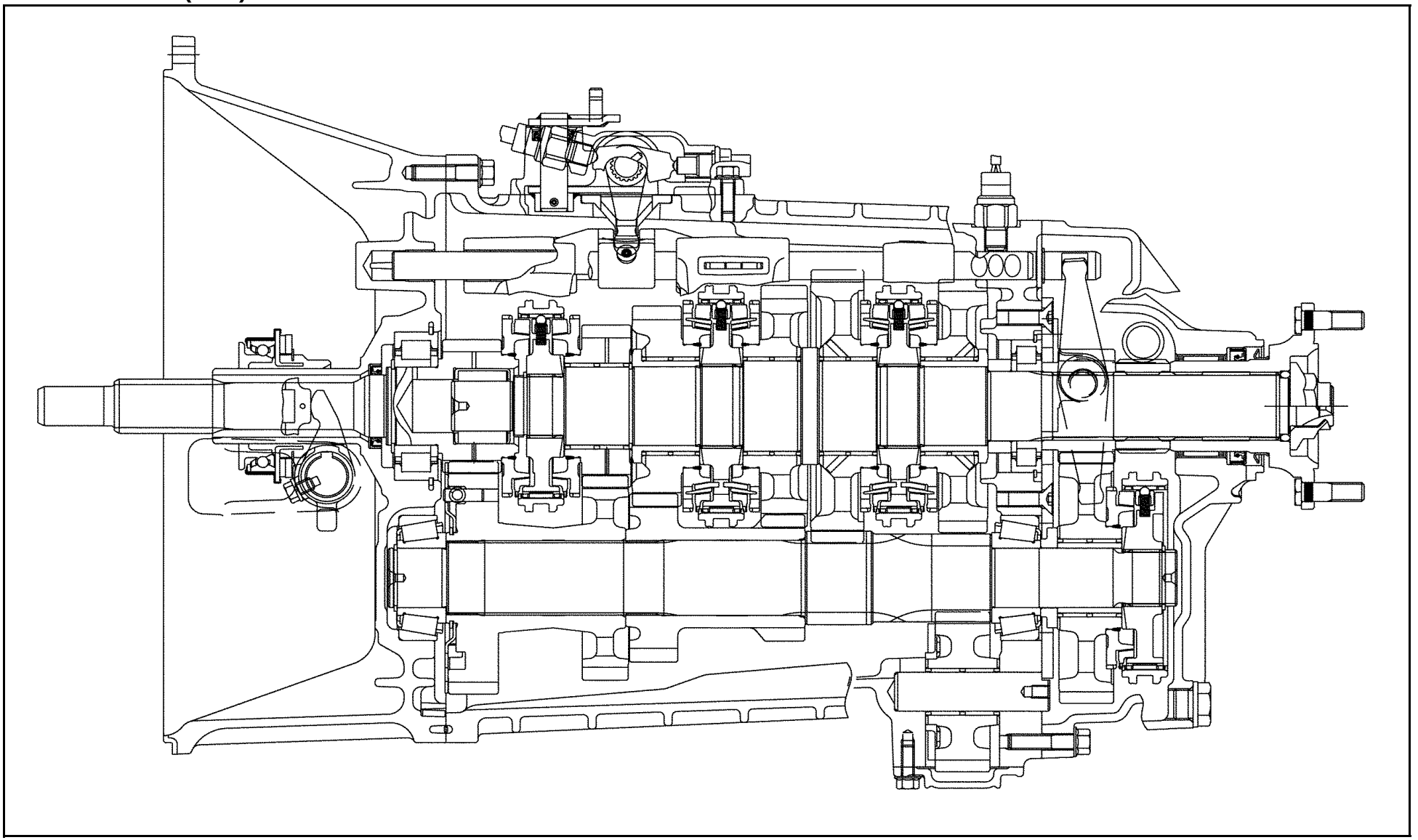
SECTION VIEW (MYY 5 SPEED)



SECTION VIEW (MYY 6 SPEED)



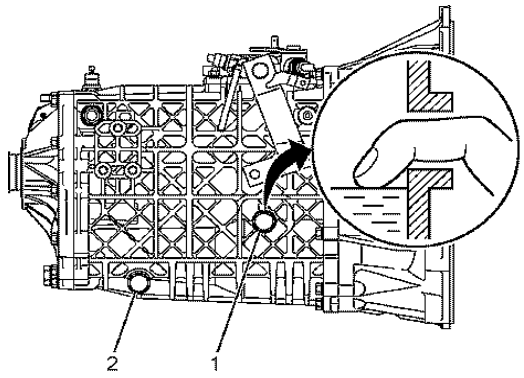
SECTION VIEW (MZZ)



SERVICING

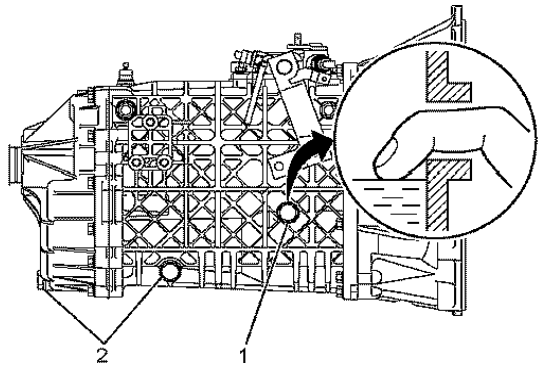
OIL LEVEL CHECK

MYY 5 Speed



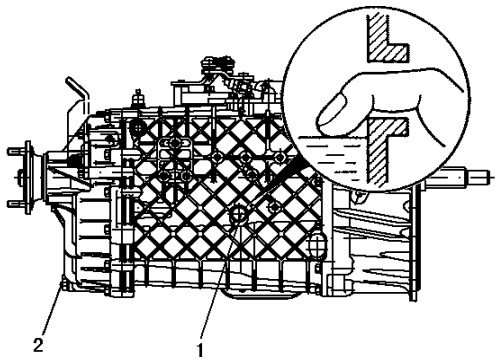
1. Oil Filler Plug
2. Oil Drain Plug
Oil Capacity: Approximately 2.8L
Approximately 3.5L (4WD)

MYY 6 Speed



1. Oil Filler Plug
2. Oil Drain Plug
Oil Capacity: Approximately 3.5L

MZZ



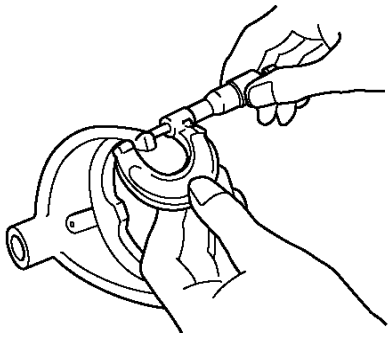
1. Oil Filler Plug
2. Oil Drain Plug
Oil Capacity: Approximately 4.4L

PROBLEM & INSPECTION

PROBLEM	POSSIBLE CAUSE	CORRECTION
Abnormal Noise	1. Flywheel pilot bearing wear.	1. Replace the bearing.
	2. Main shaft or countershaft bearing wear or other damage.	2. Replace the bearing(s).
	3. Main shaft gear, counter-shaft gear, and/or reverse idle gear wear or other damage.	3. Replace the gear(s).
	4. Main shaft spline and/or synchronizer hub spline wear.	4. Replace the spline(s).
	5. Gear or bearing thrust surface scoring.	5. Replace the gear(s)and/or bearing(s).
	6. Insufficient backlash between mating gears.	6. Replace the gears.
Difficult shifting	1. Insufficient clutch pedal play.	1. Adjust the play.
	2. Change lever contact surface wear.	2. Repair or replace the change lever and apply grease.
	3. Shift block, shift rod, and/or control box contact surface wear.	3. Replace the worn components.
	4. Shift arm and/or synchronizer sleeve wear.	4. Replace the worn parts.
	5. Thrust washer and collar and/or gear thrust surface wear (Main shaft and counter-shaft thrust play).	5. Replace the worn parts.
	6. Synchronizer wear.	6. Replace the synchronizer.
Gear slippage	1. Detent ball wear.	1. Replace the détente ball.
	2. Shift rod and/or control box contact surface wear.	2. Replace the worn components.
	3. Shift arm and/or synchronizer sleeve wear.	3. Replace the worn parts.
	4. Thrust washer and collar and/or gear thrust surface wear (Main shaft and counter-shaft thrust play).	4. Replace the worn parts.
	5. Bearing wear or other damage	5. Replace the worn or damaged bearings.
	6. Main shaft spline and synchronizer hub spline wear.	6. Replace the worn parts.
	7. Synchronizer spring weak or broken.	7. Replace the spring.
Oil leakage	1. Drain plug and/or filler plug loose.	1. Tighten the plug(s)
	2. Broken gasket.	2. Replace the gasket.
	3. Oil seal wear or damage.	3. Replace the oil seal.

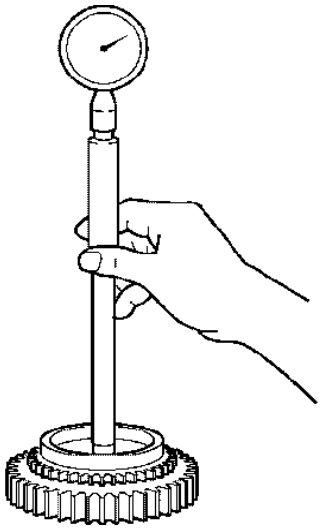
MEASUREMENT ITEM

Shift Arm Thickness



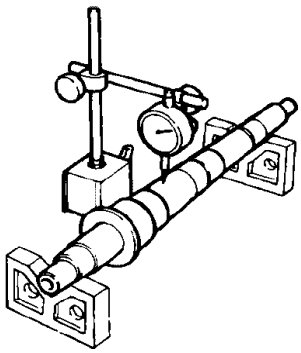
Required Tool: Micrometer
Service Standard: 9.60 - 9.85mm
Service Limit: 9.0mm (1st-Rev. / 2nd-3rd / 4th-5th)
9.3mm (6th)

Gear Internal Diameter



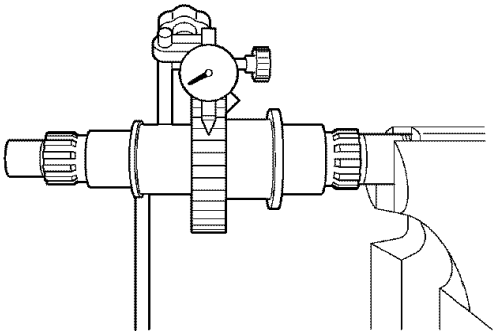
Required Tool: Inside Dial Gauge
Service Standard: MYY
63.010 - 63.029mm (1st, 2nd, 3rd & Reverse)
44.009 - 44.025mm (4th & 5th)
50.009 - 50.025mm (6th)
MZZ
63.010 - 63.029mm (1st, 2nd, 3rd & Reverse)
55.010 - 55.029mm (4th)
48.009 - 48.025mm (5th)
50.009 - 50.025mm (6th)
Service Limit: MYY
63.069mm (1st, 2nd, 3rd & Reverse)
44.065mm (4th & 5th)
55.065mm (6th)
MZZ
63.069mm (1st, 2nd, 3rd & Reverse)
55.069mm (4th)
48.065mm (5th)
50.065mm (6th)

Main-Shaft Deflection



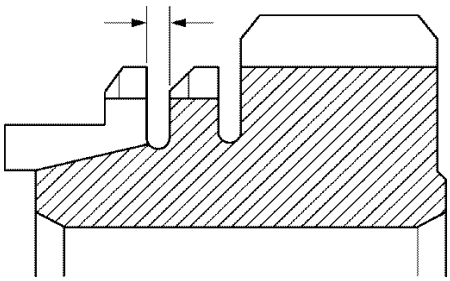
Required Tool: Dial Gauge, V-Block
Service Standard: 0.015mm
Service Limit: 0.1mm

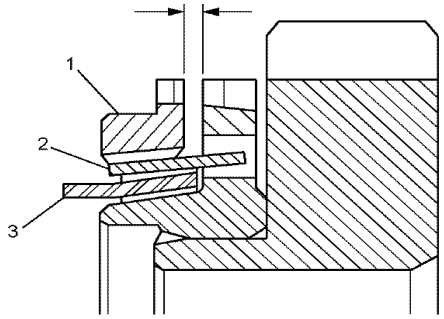
Spline & Clutch Hub Free Play



Required Tool: Dial Gauge
Service Standard: 0 - 0.05mm
Service Limit: 0.3mm

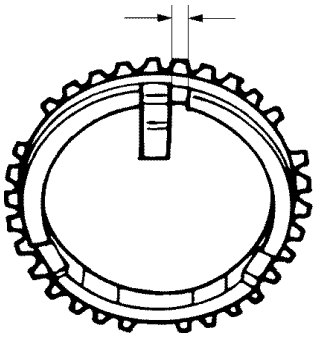
Block Ring & Dog Gear Clearance





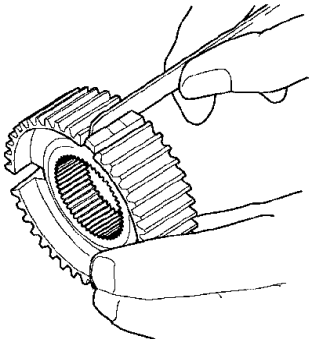
Required Tool: Feeler Gauge
Service Standard: 1.00 - 2.50mm (1st)
1.00 - 2.50mm (2nd & 3rd)
1.30 -2.60mm (4th, 5th, 6th & Reverse)
Service Limit: 0.5mm

Insert & Block Ring Groove Clearance



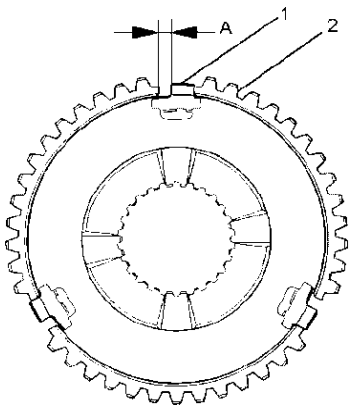
Required Tool: Vernier Caliper
Service Standard: 3.46 - 3.76mm (4th, 5th & 6th)

Insert & Clutch Hub Clearance



Required Tool: Feeler Gauge
Service Standard: 0.01 - 0.21mm (4th, 5th & 6th)

Block Ring & Clutch Hub



Required Tool: Feeler Gauge
Service Standard: MYY
4.30 - 4.70mm (1st, 2nd, 3rd & Reverse)
MZZ
3.30 - 3.70mm (1st, 2nd, 3rd & Reverse)
4.30 - 4.70mm (4th, 5th & 6th)

6th Clutch Hub Snap Ring Selection

Select the thickest one of the three thickness.
Thickness (Identification Color)
1.7mm (MYY: White / MZZ: Light Blue)
1.8mm (MYY: Colorless / MZZ: Orange)
1.9mm (MYY: Blue / MZZ: Purple)

Counter-Shaft Bearing Snap Ring Selection

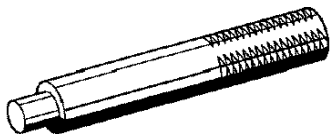
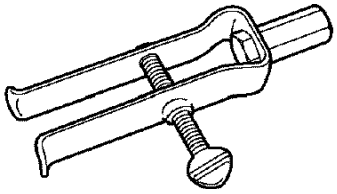
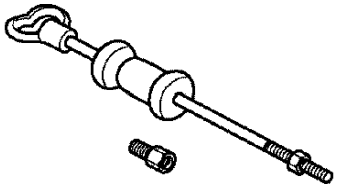
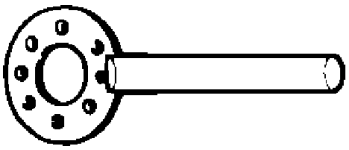
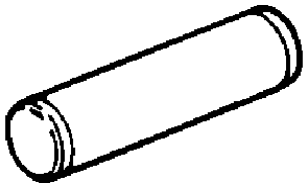
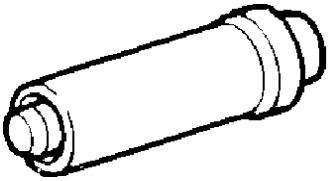
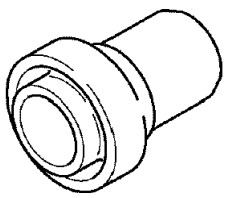
Select the thickest one of the three thickness.
Thickness (Identification Color)
1.9mm (MYY: Blue / MZZ: Colorless)
2.1mm (MYY: Yellow / MZZ: Yellow)
2.3mm (MYY: Pink / MZZ: Pink)

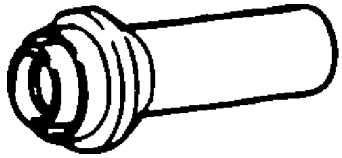
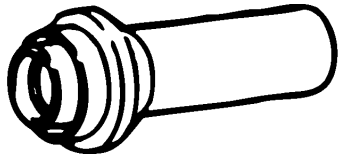
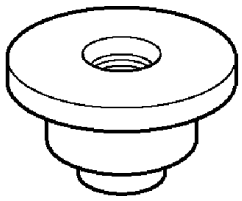
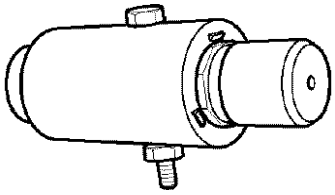
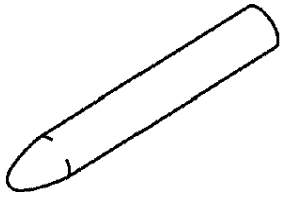
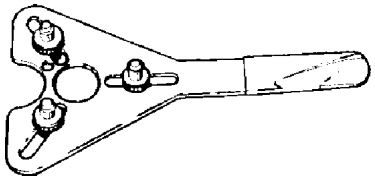
Counter-Shaft Shim Selection

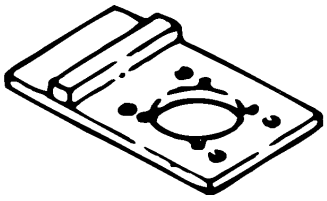
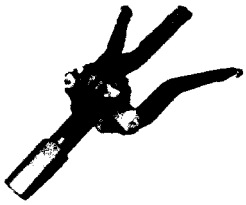
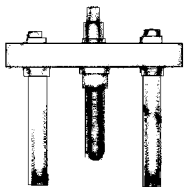
Measure the depth between the rearmost surface of the transmission housing and the outer wheel surface of the counter-shaft bearing. Take three measurements at 120 degree intervals, and calculate the average.

MYY Measured Value (Applicable Shim)	*MZZ Measured Value (Applicable Shim)*
3.34 - 3.40mm (3.19mm)	*2.13 - 2.19mm (1.98mm)*
3.28 - 3.34mm (3.13mm)	*2.07 - 2.13mm (1.92mm)*
3.22 - 3.28mm (3.07mm)	*2.01 - 2.07mm (1.86mm)*
3.16 - 3.22mm (3.01mm)	*1.95 - 2.01mm (1.80mm)*
3.10 - 3.16mm (2.95mm)	*1.89 - 1.95mm (1.74mm)*
3.04 - 3.10mm (2.89mm)	*1.83 - 1.89mm (1.68mm)*
2.98 - 3.04mm (2.83mm)	*1.77 - 1.83mm (1.62mm)*
2.92 - 2,98mm (2.77mm)	*1.71 - 1.77mm (1.56mm)*
2.86 - 2.92mm (2.71mm)	*1.65 - 1.71mm (1.50mm)*
2.80 - 2.86mm (2.65mm)	*1.59 - 1.65mm (1.44mm)*
2.74 - 2.80mm (2.59mm)	*1.53 - 1.59mm (1.38mm)*
2.68 - 2.74mm (2.53mm)	*1.47 - 1.53mm (1.32mm)*
2.62 - 2.68mm (2.47mm)	*1.41 - 1.47mm (1.26mm)*
2.56 - 2.62mm (2.41mm)	*1.35 - 1.41mm (1.20mm)*
2.50 - 2.56mm (2.35mm)	
2.44 - 2.50mm (2.29mm)	
2.38 - 2.44mm (2.23mm)	
2.32 - 2.38mm (2.17mm)	
2.26 - 2.32mm (2.11mm)	

SPECIAL TOOLS

		MYY	MZZ	Priority
	5-8840-0007-0 Grip	○	○	B
	5-8840-0027-0 Bearing Remover	○	○	B
	5-8840-0084-0 Sliding Hammer	○	○	B
	5-8840-2043-0 Flange Holder	○	-	B
	5-8840-2244-0 Bearing Installer	○	○	B
	5-8840-2245-0 Control Box Oil Seal Installer	○	○	B
	5-8840-2345-0 Clutch Hub & Collar Installer	○	○	B
	5-8840-2558-0 Oil Seal Installer	○	○	B

		MYY	MZZ	Priority
	5-8840-2587-0 Bearing Remover	○	○	B
	5-8840-2750-0 Oil Seal Installer	○	-	B
	5-8840-27551-0 Oil Seal Installer	-	○	B
	5-8840-2752-0 Bearing Installer	○	-	B
	5-8840-2753-0 Bearing Installer	-	○	B
	5-8840-2755-0 Bush Remover & Installer	○	○	A
	5-8840-2793-0 Oil Seal Protector	○	○	A
	5-8840-4056-0 Flange Holder	○	○	B

		MYY	MZZ	Priority
	9-8529-2101-0 Flange Holder	-	◯	B
	5-8840-2757-0 Counter-shaft Bearing Outer Race Remover	◯	◯	A
	5-8840-2802-0 Counter-shaft Bearing Outer Race Remover	◯	◯	A

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