

Service Manual

MANUAL TRANSMISSION

1992 - 1993

GROUP INDEX

Manual Transaxle

Introduction

Clutch

F4M2, F5M2,
F5M3, W5M3

W5MG1,
W6MG1

R5M21

V5MT1

F5MC1

FOREWORD

The information contained in this service manual has been prepared for the professional automotive technician involved in daily repair operations. Information in this manual is divided into groups by transaxle or transmission models. Each group is further divided to address individual components within the group.


These groups contain general information, specification, removal and installation, disassembly and reassembly procedures for the components. The first page of each group contains an alphabetical index to assist in finding the location of the component. The information, descriptions and specifications were in effect at the time this manual was released.



Mitsubishi Motors Corporation reserves the right to make changes in design or to make additions to or improvements in its products without imposing any obligations upon itself to install them on its products previously manufactured.

EXPLANATION OF MANUAL CONTENTS

Maintenance and Servicing Procedures

- 1) A diagram of the component pads is provided near the front of each section in order to give the reader a better understanding of the installed condition of component parts.
- 2) The numbers provided within the diagram indicate the sequence for maintenance and servicing procedures; the symbol  indicates a non-reusable part; the tightening torque is provided where applicable.

- Removal steps:
The part designation number corresponds to the number in the illustration to indicate removal steps.
- Disassembly steps:
The part designation number corresponds to the number in the illustration to indicate disassembly steps.
- Installation steps:
Specified in case installation is impossible in reverse order of removal steps. Omitted if installation is possible in reverse order of removal steps.
- Reassembly steps:
Specified in case reassembly is impossible in reverse order of disassembly steps. Omitted if reassembly is possible in reverse order of disassembly steps.

Classifications of Major Maintenance/Service Points


When there are major points relative to maintenance and servicing procedures (such as essential maintenance and service points, maintenance and service standard values, information regarding the use of special tools, etc.), these are arranged together as major maintenance and service points and explained in detail.


◀A▶ : Indicates that there are essential points for removal or disassembly.


▶A◀ : Indicates that there are essential points for installation or reassembly.

Symbols for Lubrication, Sealants and Adhesives

Information concerning the locations for lubrication and for application of sealants and adhesives is provided, by using symbols, in the diagram of component parts or on the page following the component parts page, and explained.

 Grease
(multipurpose grease unless there is a brand or type specified)

 Sealant or adhesive

 Brake fluid, automatic transmission fluid

 . Gear oil

Indicates the group number.

Indicates the page number.

Indicates the group title.

Indicates the section title.

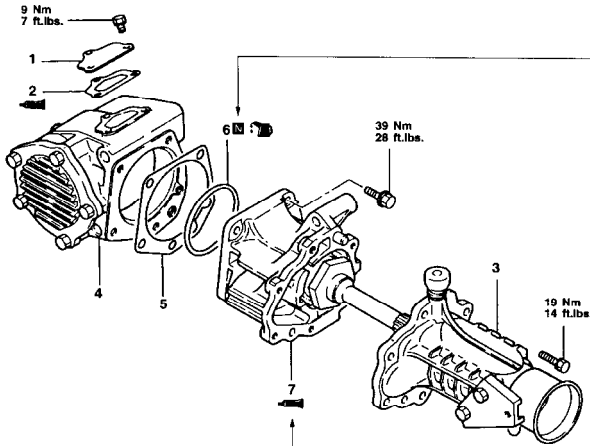
22A-104 F4M2, F5M2, F5M3, W5M3 – Transfer <AWD>

TRANSFER <AWD>

DISASSEMBLY AND REASSEMBLY

Denotes tightening torque.

Denotes non-reusable part.



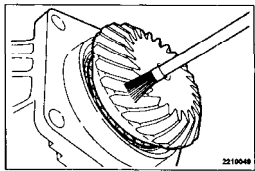
Disassembly steps

1. Cover
2. Cover gasket
3. Extension housing assembly
4. Transfer case sub-assembly
5. Spacer
6. O-ring
7. Transfer case adapter sub-assembly

Lubricate all internal parts with gear oil during reassembly.

Z2210130

This number corresponds to the number appearing in "Removal steps", "Disassembly steps", "Installation steps" or "Reassembly steps".



REASSEMBLY SERVICE POINTS
INSTALLATION OF TRANSFER CASE ADAPTER SUB ASSEMBLY

- (1) Apply a light and uniform coat of machine blue or red lead to the driven bevel gear teeth (both sides) using a brush.

Operating procedures, cautions, etc. on removal, installation, disassembly and reassembly are described.

TRANSAXLE/TRANSMISSION MODEL TABLE MODEL 1992

Model Code	Type	Diff.	Center Diff.	VCU	Center Diff. Lock	Vehicle Model
F4M21	FWD, 4-speed	X	—	—	—	Mirage
F5M21	FWD, 5-speed	X	—	—	—	Mirage
F5M22	FWD, 5-speed	X	—	—	—	Mirage, Expo-LRV Galant, Eclipse
F5M31	FWD, 5-speed	X	—	—	—	Expo, Galant
F5M33	FWD, 5-speed	X	—	—	—	Eclipse, 3000GT
W5M31	Full time AWD, 5-speed	X	X	X	—	Expo-LRV, Galant
W5M33	Full time AWD, 5-speed	X	X	X	—	Expo, Galant, Eclipse
W5MG1	Full time AWD, 5-speed	X	X	X	—	3000GT
R5M21	RWD, 5-speed	—	—	—	—	Truck
V5MT1	Part time AWD, 5-speed	—	X	X	X	Truck, Montero

Diff : Differential

VCU : Viscous coupling

FWD : Front wheel drive

RWD : Rear wheel drive

AWD : All wheel drive

TRANSAXLE/TRANSMISSION MODEL TABLE MODEL 1993

Model Code	Type	Diff.	Center Diff.	VCU	Center Diff. Lock	Vehicle Model
F5M21	FWD, 5-speed	X	—	—	—	Mirage
F5M22	FWD, 5-speed	X	—	—	—	Mirage, Expo-LRV Galant, Eclipse
F5M31	FWD, 5-speed	X	—	—	—	Expo, Galant
F5M33	FWD, 5-speed	X	—	—	—	Eclipse, 3000GT
W5M31	Full time AWD, 5-speed	X	X	X	—	Expo-LRV
W5M33	Full time AWD, 5-speed	X	X	X	—	Expo, Eclipse
W5MG1	Full time AWD, 5-speed	X	X	X	—	3000GT
R5M21	RWD, 5-speed	—	—	—	—	Truck
V5MT1	Part time AWD, 5-speed	—	X	X	X	Truck, Montero

Diff : Differential

VCU : Viscous coupling

FWD : Front wheel drive

RWD : Rear wheel drive

AWD : All wheel drive

TRANSAXLE/TRANSMISSION MODEL TABLE MODEL 1996

Model Code	Type	Diff.	Center Diff.	VCU	Center Diff. Lock	Vehicle Model
F5M21	FWD, 5-speed	X	—	—	—	Mirage
F5M22	FWD, 5-speed	X	—	—	—	Mirage, Expo-LRV
F5M31	FWD, 5-speed	X	—	—	—	Expo, Expo-LRV, Galant, Eclipse
F5M33	FWD, 5-speed	X	—	—	—	Eclipse, 3000GT
F5MC1	FWD, 5-speed	X	—	—	—	Eclipse
W5M33	Full time AWD, 5-speed	X	X	X	—	Expo, Expo-LRV, Eclipse
W6MG1	Full time AWD, 6-speed	X	X	X	—	3000GT
R5M21	RWD, 5-speed	—	—	—	—	Truck
V5MT1	Part time AWD, 5-speed	—	X	X	X	Montero

Diff. : Differential
VCU : Viscous coupling
FWD : Front wheel drive
RWD : Rear wheel drive
AWD : All wheel drive

TRANSAXLE/TRANSMISSION MODEL TABLE MODEL 1994

Model Code	Type	Diff.	Center Diff.	VCU	Center Diff. Lock	Vehicle Model
F5M21	FWD, 5-speed	X	—	—	—	Mirage
F5M22	FWD, 5-speed	X	—	—	—	Mirage, Expo-LRV, Eclipse
F5M31	FWD, 5-speed	X	—	—	—	Expo, Expo-LRV, Galant
F5M33	FWD, 5-speed	X	—	—	—	Eclipse, 3000GT
W5M33	Full time AWD, 5-speed	X	X	X	—	Expo, Eclipse
W5MG1	Full time AWD, 5-speed	X	X	X	—	3000GT
W6MG1	Full time AWD, 6-speed	X	X	X	—	3000GT
R5M21	RWD, 5-speed	—	—	—	—	Truck
V5MT1	Part time AWD, 5-speed	—	X	X	X	Truck, Montero

Diff : Differential
VCU : Viscous coupling
FWD : Front wheel drive
RWD : Rear wheel drive
AWD : All wheel drive

TRANSAXLE/TRANSMISSION MODEL TABLE MODEL 1995

Model Code	Type	Diff.	Center Diff.	VCU	Center Diff. Lock	Vehicle Model
F5M21	FWD, 5-speed	X	—	—	—	Mirage
F5M22	FWD, 5-speed	X	—	—	—	Mirage, Expo-LRV
F5M31	FWD, 5-speed	X	—	—	—	Expo, Expo-LRV, Galant
F5M33	FWD, 5-speed	X	—	—	—	Eclipse, 3000GT
F5MC1	FWD, 5-speed	X	—	—	—	Eclipse, Galant
W5M33	Full time AWD, 5-speed	X	X	X	—	Expo, Eclipse
W6MG1	Full time AWD, 6-speed	X	X	X	—	3000GT
R5M21	RWD, 5-speed	—	—	—	—	Truck
V5MT1	Part time AWD, 5-speed	—	X	X	X	Truck, Montero

Diff : Differential
VCU : Viscous coupling
FWD : Front wheel drive
RWD : Rear wheel drive
AWD : All wheel drive

NOTES

SPECIAL TOOL NOTE

Please refer to the special tool cross reference chart which is located in the service manual at the beginning of each group, for a cross reference from the MMC special tool number to the special tool number that is available in your market.

TORQUE REFERENCES

General tightening torque is as shown in the following table.

The specific part tightening torque is shown at the beginning of each group.

Thread size		Bolt with spring washer			Flange bolt	
Bolt nominal diameter (mm)	Pitch (mm)	Head mark 4 Nm (ftlbs.)	Head mark 7 Nm (ftlbs.)	Head mark 10 Nm (ftlbs.)	Head mark 4 Nm (ftlbs.)	Head mark 7 Nm (ftlbs.)
M5	0.8	—	5 (4)	—	—	6 (4)
M6	1.0	—	9 (7)	13 (9)	—	11 (8)
M8	1.25	11 (8)	18 (13)	30 (22)	14 (10)	24 (17)
M10	1.25	20 (14)	34 (25)	60 (43)	30 (22)	50 (36)
M12	1.25	36 (26)	62 (45)	108 (78)	55 (40)	90 (65)
M14	1.5	55 (40)	92 (67)	175 (127)	—	—

FORM-IN-PLACE GASKET

The transaxle and transmission has several areas where the form-in-place gasket (FIPG) is in use. To ensure that the gasket fully serves its purpose, it is necessary to observe some precautions when applying the gasket. Bead size, continuity and location are of paramount importance. Too thin a bead could cause leaks. Too thick a bead, on the other hand, could be squeezed out of location, causing blocking or narrowing of the fluid feed line. To eliminate the possibility of leaks from a joint, therefore, it is absolutely necessary to apply the gasket evenly without a break, while observing the correct bead size.

The FIPG used in the transaxle and transmission is a room temperature vulcanization (RTV) type and is supplied in a 120-gram tube (Part No. MD997740). Since the RTV hardens as it reacts with the moisture in the atmospheric air, it is normally used in the metallic flange areas.

Disassembly

The parts assembled with the FIPG can be easily disassembled without use of a special method. In some cases, however, the sealant between the joined surfaces may have to be broken by lightly striking with a mallet or similar tool. A flat gasket scraper may be lightly hammered in between the joined surfaces. In this case, however, care must be taken to prevent damage to the joined surfaces.

Surface Preparation

Thoroughly remove all substances deposited on the gasket application surfaces, using a gasket scraper or wire brush. Check to ensure that the surfaces to which the FIPG is to be applied is flat. Make sure that there are no oils, greases and foreign substances deposited on the application surfaces. Do not forget to remove the old sealant remained in the bolt holes.

Form-In-Place Gasket Application

When assembling parts with the FIPG, you must observe some precautions, but the procedure is very simple as in the case of a conventional precut gasket.

Applied FIPG bead should be of the specified size and without breaks. Also be sure to encircle the bolt hole circumference with a completely continuous bead. The FIPG can be wiped away unless it is hardened. While the FIPG is still moist (in less than 15 minutes), mount the parts in position. When the parts are mounted, make sure that the gasket are applied to the required area only.

The FIPG application procedure may vary on different areas. Observe the procedure described in the text when applying the FIPG.

SPECIFICATIONS**SERVICE SPECIFICATIONS**

Items	Specifications (Limit)
Facing rivet sink mm (in.)	0.3 (.012)
Diaphragm spring end height difference mm (in.)	0.5 (.020)

TORQUE SPECIFICATIONS

Items	Nm	ft.lbs.
Clutch cover bolt	19	14
Release cylinder mounting bolt	19	14
Weight mounting bolt	19	14
Release cylinder union bolt	23	17
Release cylinder bleeder plug	11	8.0
Release fork fulcrum	36	24
Clutch chamber bracket mounting bolt	19	14
Clutch damper mounting bolt	9	6.5
Clutch damper bracket mounting bolt	19	14
Clutch line tube flare nut	15	11
Clutch damper bleeder plug	9	6.5
Clutch oil line bracket mounting bolt	19	14
3 way type connector mounting nut	19	14


LUBRICANTS

Items	Specified lubricants	Quantity
Clutch release cylinder inner surface	SAE J1703 (DOT 3)	As required
Piston and cup of surface		
Release fork fulcrum (except V5MT1)	Mitsubishi genuine grease Part No.0101011 or equivalent	As required
Clevis pin		
Clutch release fork shaft		
Clutch release bearing inside (except V5MTI and AWD)		
Clutch disc spline (except V5MTI)		
Clutch release bearing to release fork contact surface		
Clutch release bearing inside (V5MT1 only)	MOLYKOTE BR-2 PLUS	As required
Clutch disc spline (V5MTI only)		
Release fork fulcrum (V5MTI only)		

CLUTCH

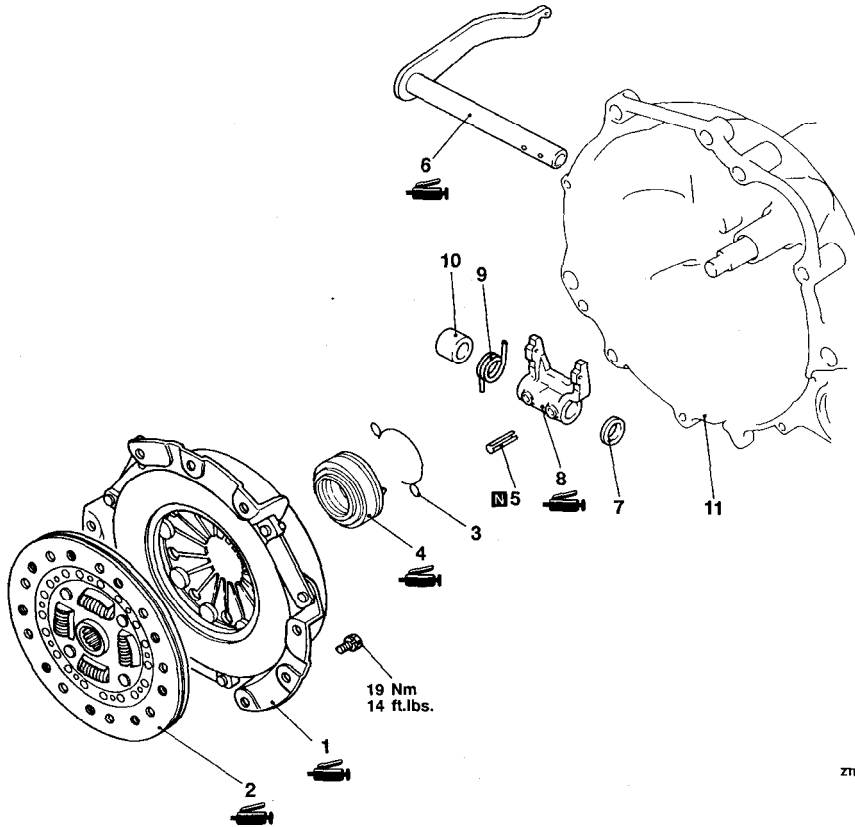
CONTENTS

CLUTCH	21- 4
CLUTCH DAMPER	21-20
CLUTCH RELEASE CYLINDER	21-16
SPECIALTOOL	21- 3
SPECIFICATIONS	21- 2
Lubricants	21- 2
Service Specifications	21- 2
Torque Specifications	21- 2



CLUTCH

FRONT WHEEL DRIVE - CABLE CONTROL TYPE

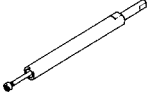


ZTFM0360

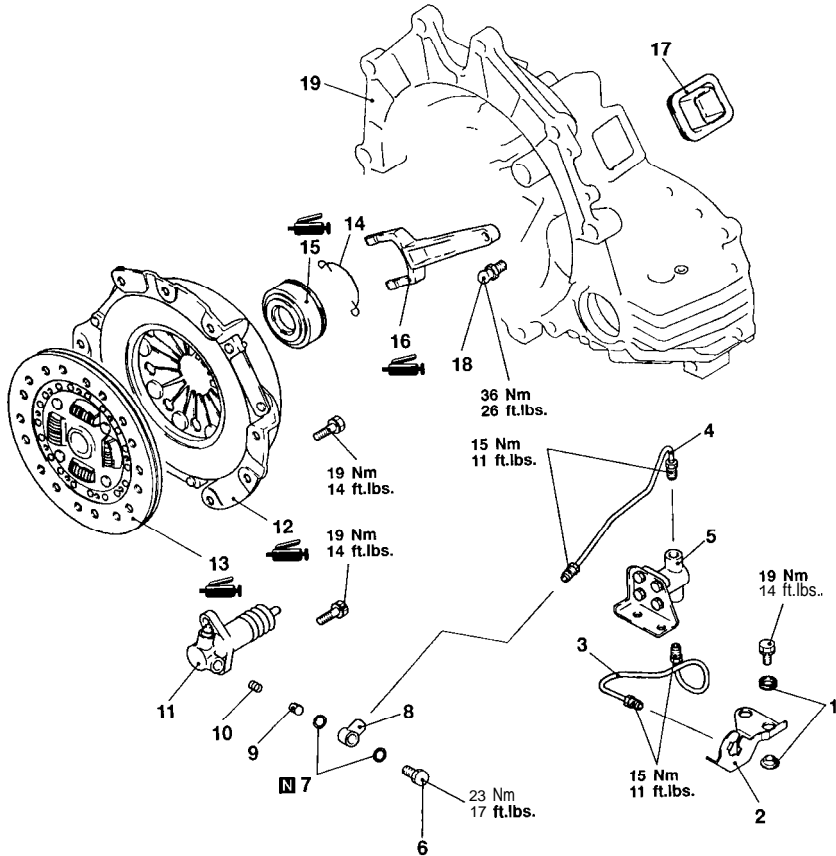
Removal steps

- ▶G▶ 1. Clutch cover
- ▶G▶ 2. Clutch disc
- ▶ 3. Return clip
- ▶F▶ 4. Clutch release bearing
- ▶E▶ 5. Spring pin
- ▶A▶ 6. Release fork shaft
- ▶ 7. Packing
- ▶C▶ 8. Release fork
- ▶ 9. Return spring
- ▶ 10. Packing
- ▶ 11. Transaxle

SPECIAL TOOL

Tool	Tool number and name	Supersession	Application
	MD998807 Lock pin remover	MD998807	Removal of spring pin

FRONT WHEEL DRIVE - HYDRAULIC CONTROL TYPE



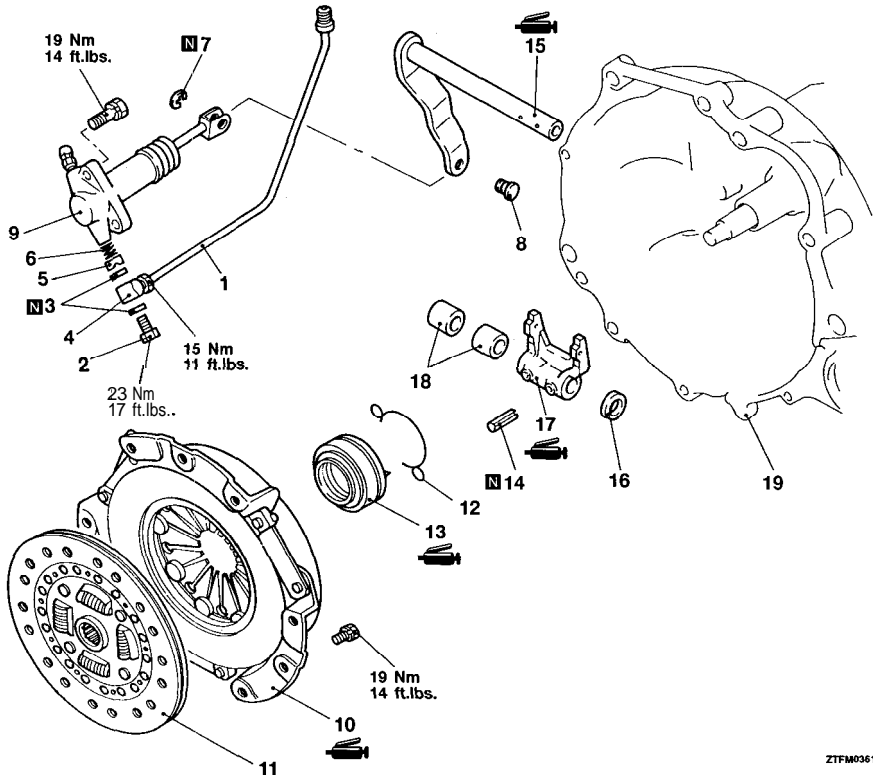
ZTFM0365

Disassembly Steps

1. Insulator
2. Clutch oil line bracket
3. Clutch oil tube (A)
4. Clutch oil tube
5. Clutch damper
6. Union bolt
7. Gasket
8. Union
9. Valve plate
10. Valve plate spring

11. Clutch release cylinder
12. Clutch cover
13. Clutch disc
14. Return clip
15. Clutch release bearing
16. Release fork
17. Release fork boot
18. Fulcrum
19. Transaxle

FRONT WHEEL DRIVE – HYDRAULIC CONTROL TYPE

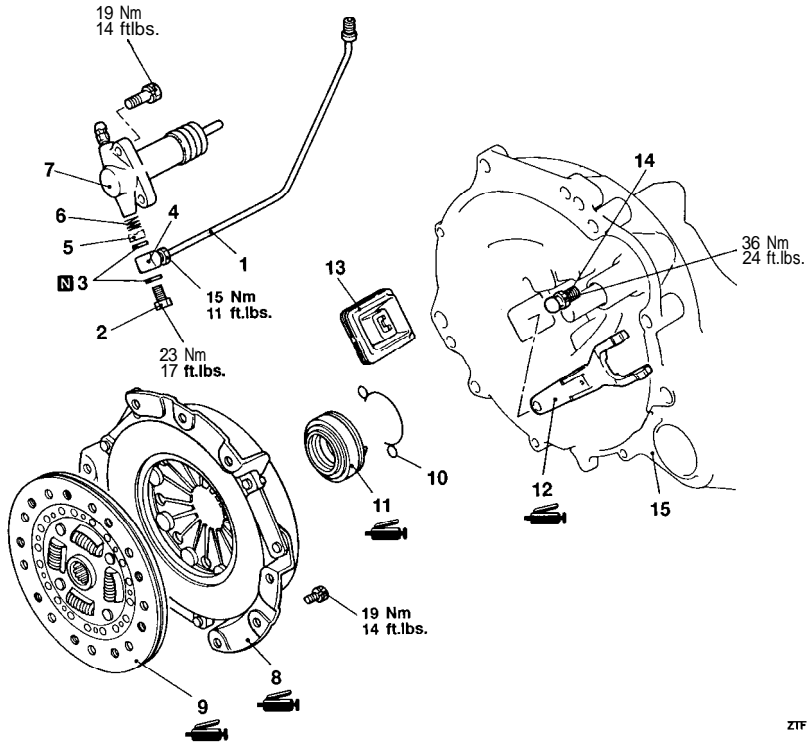


ZTFM0361

Removal steps

- 1. Clutch oil tube
- 2. Union bolt
- 3. Gasket
- 4. Union
- 5. Valve plate
- 6. Valve plate spring
- 7. Snap ring
- 8. Clevis pin
- 9. Clutch release cylinder
- ▶G◀ 10. Clutch cover
- ▶G◀ 11. Clutch disc
- ▶F◀ 12. Return clo
- ◀A▶ ▶E▶ 13. Clutch release bearing
- ▶A▶ ▶E▶ 14. Spring pin
- ▶C▶ 15. Release fork shaft
- ▶C▶ 16. Packing
- ▶C▶ 17. Release fork
- ▶C▶ 18. Packing
- ▶C▶ 19. Transaxle

FRONT WHEEL DRIVE - HYDRAULIC CONTROL TYPE



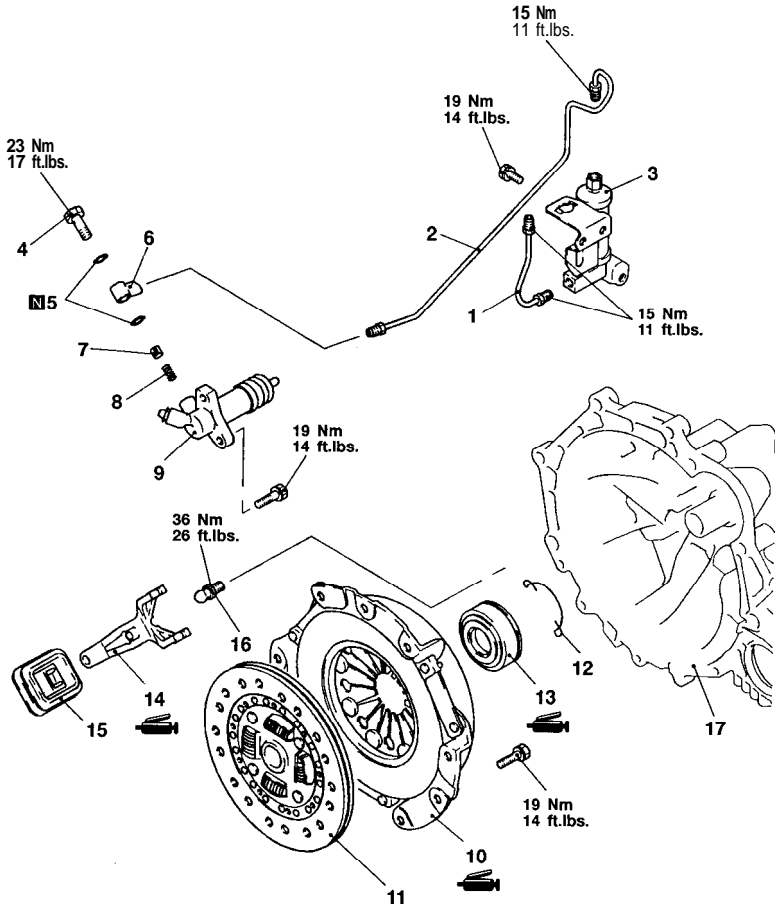
ZTFM0362

Removal steps

1. Clutch oil tube
 2. Union bolt
 3. Gasket
 4. Union
 5. Valve plate
 6. Valve plate Spring
 7. Clutch release cylinder
- ▶G▶ 6. Clutch cover

- ▶G▶ 9. Clutch disc
 10 Return clip
 ▶F▶ 11. Clutch release bearing
 ◀B▶▶D▶ 12. Release fork
 13. Release fork boot
 14. Fulcrum
 15. Transaxle

FRONT WHEEL DRIVE - HYDRAULIC CONTROL TYPE



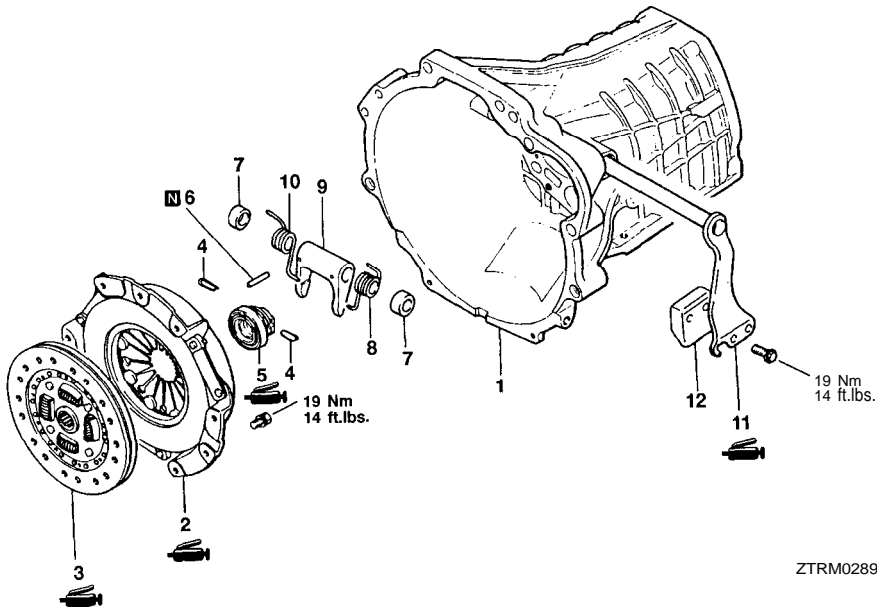
Disassembly steps

1. Clutch oil tube (A)
2. Clutch oil tube
3. Clutch oil fluid chamber
4. Union bolt
5. Gasket
6. Union
7. Valve plate
6. Valve plate spring
9. Clutch release cylinder

- ▶G▶ 10. Clutch cover
- ▶G▶ 11. Clutch disc
- ▶ 12. Return clip
- ▶F▶ 13. Clutch release bearing
- ◀B▶▶D▶ 14. Release fork
- ▶ 15. Release fork boot
- ▶ 16. Fulcrum
- ▶ 17. Transaxle

ZTFM0359

REAR WHEEL DRIVE - CABLE CONTROL TYPE

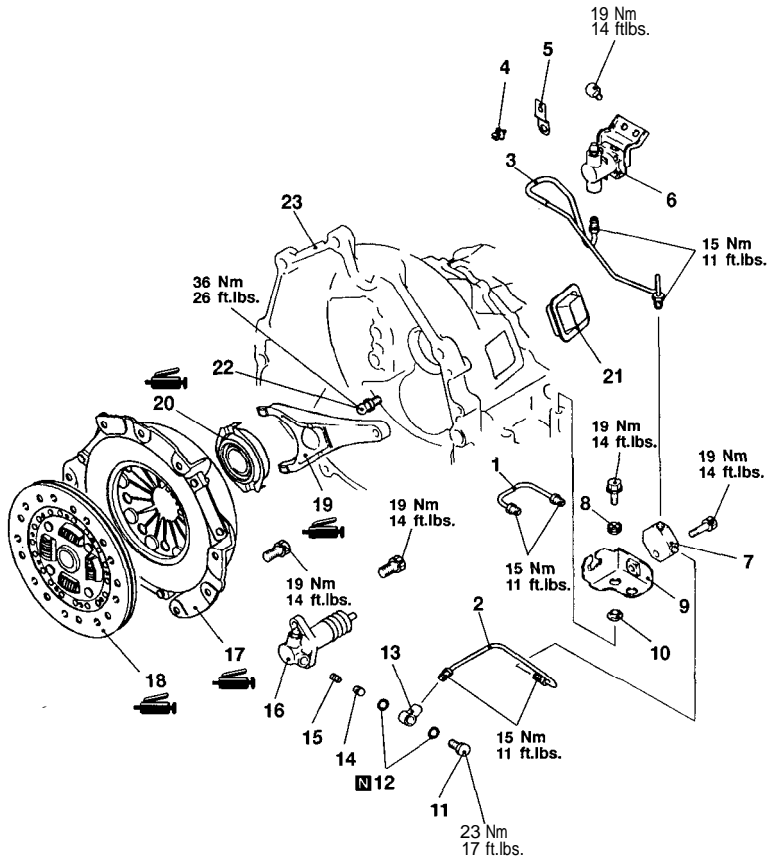


ZTRM0289

Removal steps

1. Transmission
- ▶ G ◀ 2. Clutch cover
- ▶ G ◀ 3. Clutch disc
- ▶ F ◀ 4. Return clip
- ▶ F ◀ 5. clutch release bearing
- ▶ F ◀ 6. Spring pin
- ▶ F ◀ 7. Packing
- ▶ F ◀ 8. Return Spring left
- ▶ F ◀ 9. Release fork
- ▶ F ◀ 10. Return spring right
- ▶ B ◀ 11. Release fork shaft
- ▶ B ◀ 12. Weight

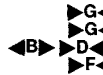
FRONT WHEEL DRIVE - HYDRAULIC CONTROL TYPE

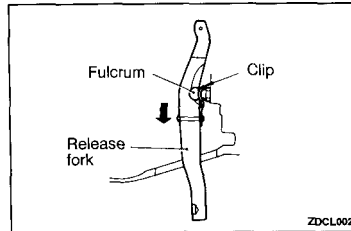
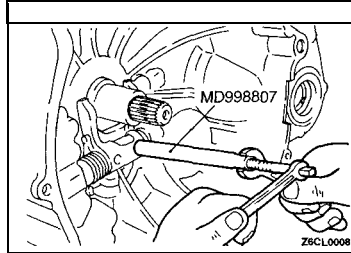
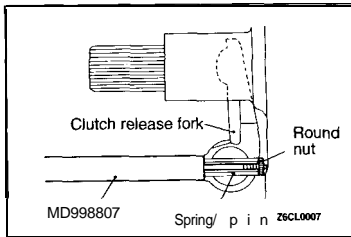


ZTFM0367

Disassembly steps

- | | |
|----------------------------|-----------------------------|
| 1. Clutch oil tube (A) | 13. Union |
| 2. Clutch oil tube | 14. Valve plate |
| 3. Clutch damper oil tube | 15. Valve plate spring |
| 4. Clip | 16. Clutch release cylinder |
| 5. Bracket | 17. Clutch cover |
| 6. Clutch damper | 18. Clutch disc |
| 7. 3 way type connector | 19. Release fork |
| 8. Insulator | 20. Clutch release bearing |
| 9. Clutch oil line bracket | 21. Release fork boot |
| 10. Washer | 22. Fulcrum |
| 11. Union bolt | 23. Transaxle |
| 12. Gasket | |





REMOVAL SERVICE POINTS

◀A▶ SPRING PIN REMOVAL

(1) Insert the special tool in the spring pin, and attach the round nut to the end of the tool.

(2) While holding the shaft of the special tool, rotate the sleeve to force out the spring pin.

◀B▶ RELEASE FORK REMOVAL

Slide release fork in direction of arrow and disengage fulcrum from clip to remove release fork. Be careful not to cause damage to clip by pushing release fork in the direction other than that of arrow and removing it with force.

INSPECTION

CLUTCH COVER ASSEMBLY

• Check the diaphragm spring end for wear and uneven height.
Replace if wear is evident or height difference exceeds the limit.

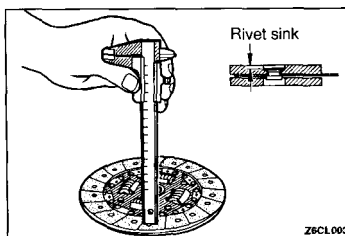
Limit: 0.5 mm (.020 in.)

- Check the pressure plate surface for wear, cracks and seizure.
- Check the strap plate rivets for looseness and replace the clutch cover assembly if loose.

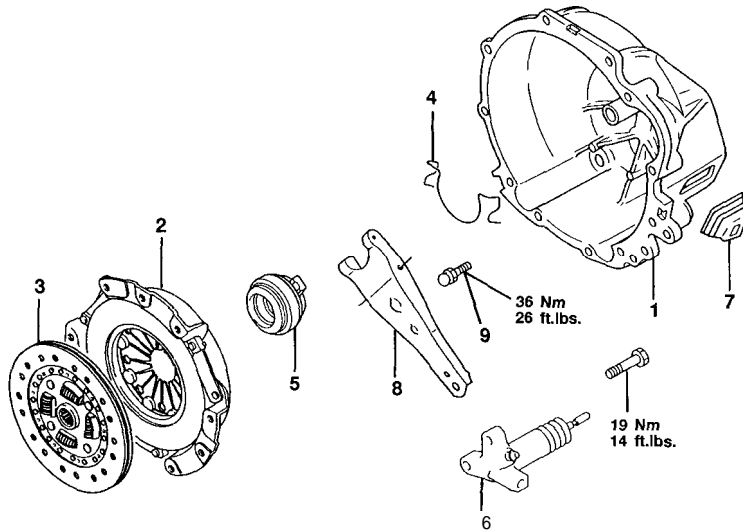
CLUTCH DISC

- Check the facing for loose rivets, uneven contact, deterioration due to seizure, adhesion of oil or grease, and replace the clutch disc if defective.
- Measure the rivet sink and replace the clutch disc if it is out of specification.

Limit: 0.3 mm (.012 in.)



REAR WHEEL DRIVE - HYDRAULIC CONTROL TYPE



ATRM0659

Removal steps

1. Transmission
- ▶G▶G 2. Clutch cover
- ▶G▶G 3. Clutch disc
- ▶F 4. Return spring
- ▶F 5. Clutch release bearing
- ▶F 6. Release cylinder
- ▶F 7. Boot
- ◀B▶▶D 8. Release fork
- ▶D 9. Fulcrum