

AXLE SHAFTS - FRONT

1998 Mitsubishi Galant

1997-98 DRIVE AXLES
Mitsubishi FWD Axle Shafts

Diamante, Eclipse, Galant, Mirage, 3000GT

DESCRIPTION & OPERATION

NOTE: The following are possible types of Constant Velocity (CV) joints used on axle shaft: Birfield Joint (BJ), Double Offset Joint (DOJ), Rzeppa Joint (RJ) and Tripod Joint (TJ). Determine type of CV joint used prior to disassembly. See AXLE SHAFT SPECIFICATIONS table.

Power from transaxle is transferred to drive wheels by 2 axle shafts. Both axle shafts use Constant Velocity (CV) joints at inner and outer ends. CV joints are enclosed in CV boots, and connected by an intermediate shaft. Intermediate shaft is splined on both ends.

Retaining rings retain intermediate shaft in both inner and outer CV joints. A retaining ring retains inner CV joint stub in differential side gear. Outer CV joint stub is splined into wheel hub, and secured by a spindle nut. On some models, one or both axles have a dynamic damper to reduce vibration.

AXLE SHAFT SPECIFICATIONS

Application (1)	(2) Inner Joint	(2) Outer Joint	Shaft Length In. (mm)
Diamante	TJ	BJ	(3)
Eclipse	TJ	TJ	(3)
Galant	TJ	BJ	(3)
Mirage	TJ	RJ	(3)
3000GT	TJ	BJ	(3)

(1) - Right indicates passenger's side, and left indicates driver's side.

(2) - Type of CV joint used are identified by letters as follows:
BJ - Birfield Joint, DOJ - Double Offset Joint, RJ - Rzeppa Joint, and TJ - Tripod Joint.

(3) - Information is not available from manufacturer.

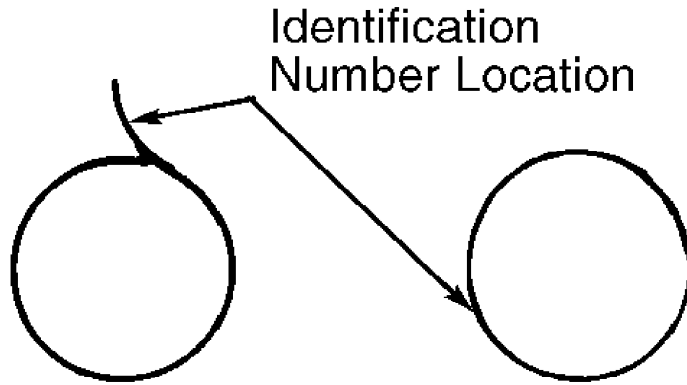
TROUBLE SHOOTING

NOTE: See TROUBLE SHOOTING - BASIC PROCEDURES article in the GENERAL TROUBLE SHOOTING section.

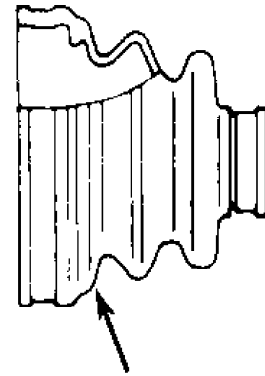
BAND & BOOT IDENTIFICATION

NOTE: Determine type of CV joint used prior to disassembly. See AXLE SHAFT SPECIFICATIONS table. Note type of boot and location prior to removal. See BAND & BOOT APPLICATION table. Install a NEW retaining ring each time axle shaft is removed from transaxle.

Band identification numbers are stamped on inside edge of band. See Fig. 1. Boot identification numbers are stamped on largest ridge of boot. See BAND & BOOT APPLICATION table.



BAND IDENTIFICATION



BOOT IDENTIFICATION

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Fig. 1: Locating Band & Boot Identification Numbers
 Courtesy of Mitsubishi Motor Sales of America.

BAND & BOOT APPLICATION

Application	Large Band	Small Band	Boot
Diamante	(1)	(1)	(1)
Eclipse	(1)	(1)	(1)
Galant	(1)	(1)	(1)
Mirage	33	31.3	(1)
3000GT			
BJ	(1)	(1)	(1)
TJ			
Except FWD (SOHC) ..	20-131	20-72	(1)
FWD (SOHC)	20-75	20-76	(1)

(1) - Boots and bands are packaged as a kit. Kits are broken down by type of joint. Identification numbers are not available from manufacturer.

REMOVAL, DISASSEMBLY, REASSEMBLY & INSTALLATION

AXLE SHAFT

CAUTION: DO NOT place vehicle weight on hub assembly with axle shaft removed.

Removal

1) Note type and location of CV joint prior to removal. See AXLE SHAFT SPECIFICATIONS table. Remove cotter pin, and loosen axle shaft nut with brakes applied. Raise and support vehicle. Remove front wheels. Remove axle shaft nut and washer. Remove brake caliper assembly, and wire aside. Support control arm.

2) Remove speed sensor and/or height sensor (if equipped). Remove ball joint stud nut, and separate ball joint from control arm.

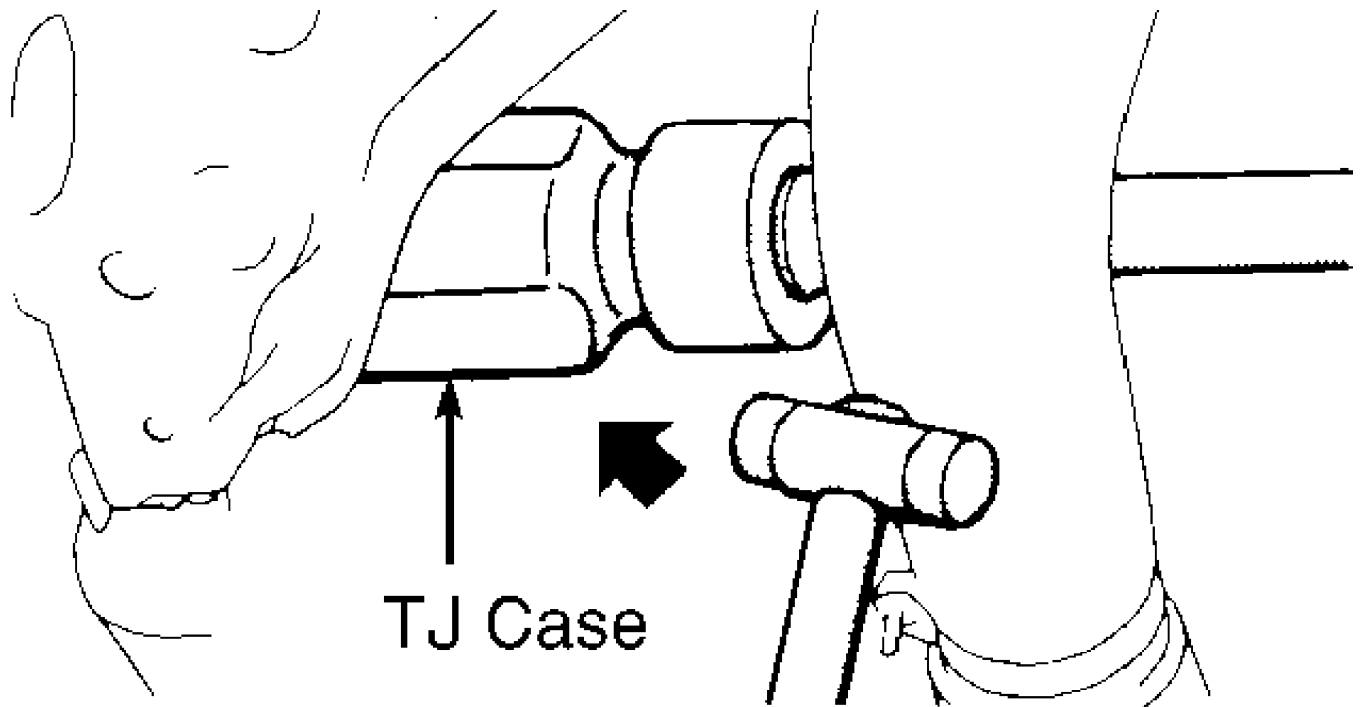
Disconnect tie rod end from steering knuckle. Disconnect stabilizer bar and strut bar from control arm (if equipped).

CAUTION: DO NOT pull on axle shafts during removal, or damage to shaft assembly will result.

3) Attach puller to hub and press axle shaft off hub. Swing hub and steering knuckle assembly aside. On left axles without intermediate shaft, pry axle shafts from transaxle using pry bar. DO NOT damage oil seals.

4) On left axles with intermediate shaft, place screwdriver between center bearing and axle shaft. Pry axle shaft from center bearing. Remove center bearing bolts. Place pry bar between transaxle case and intermediate shaft. Pry intermediate shaft from transaxle.

5) On AWD models, remove center bearing bolts from left axle with intermediate shaft. Using soft-faced hammer, tap lightly on Tripod Joint (TJ) case, and remove axle shaft from transaxle. See Fig. 2.

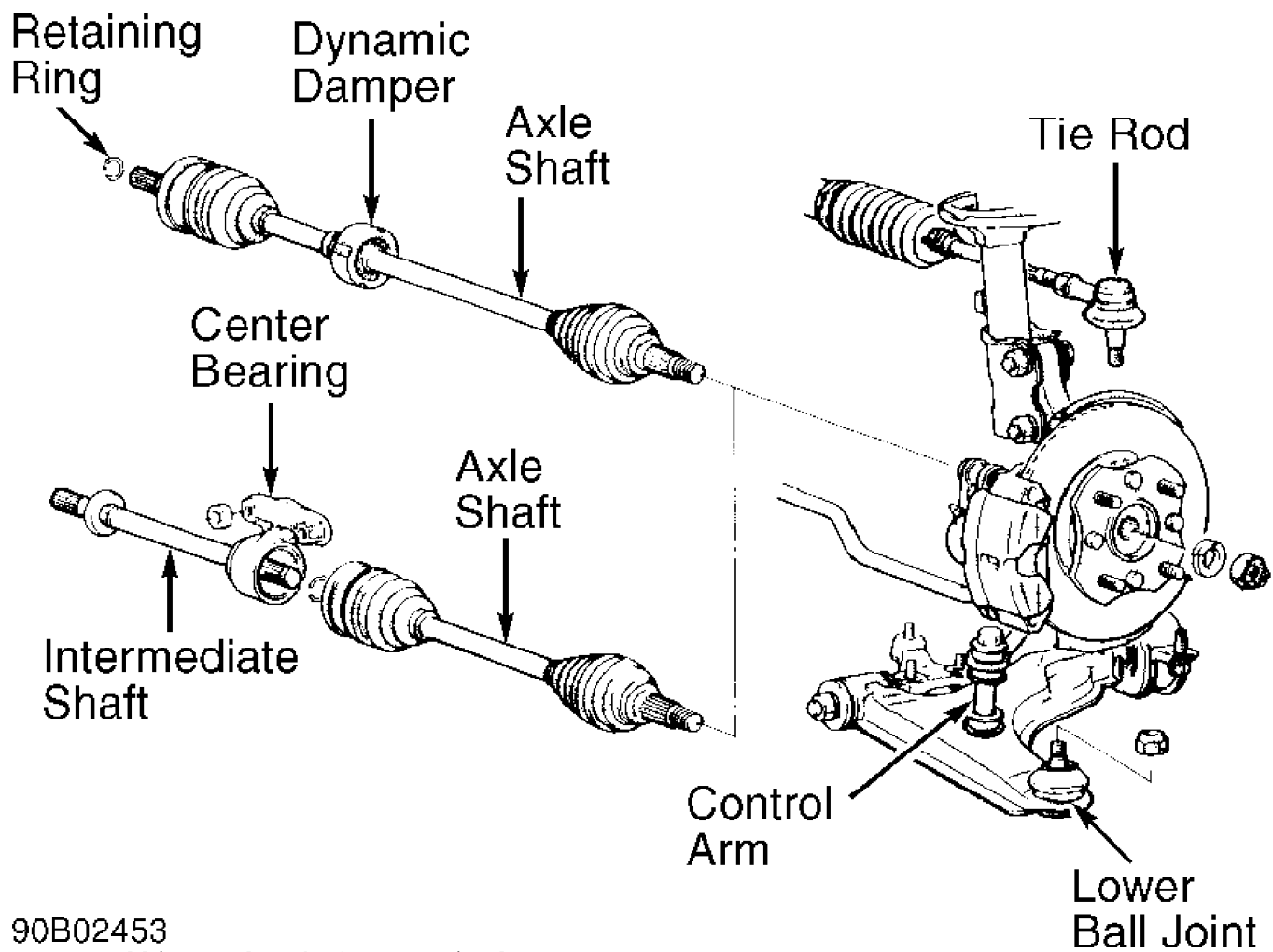


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Fig. 2: Removing Left Axle Shaft (AWD Models)
Courtesy of Mitsubishi Motor Sales of America.

Installation

Position dynamic damper properly on axle shaft (if equipped). See DYNAMIC DAMPER. To complete installation, reverse removal procedure. See Fig. 3. On all models, when installing axle shaft nut, washer must be installed with chamfered edge (raised side) toward axle shaft nut. Tighten axle shaft nut to specification. See TORQUE SPECIFICATIONS.



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Fig. 3: Installing Axle Shafts (Typical)
 Courtesy of Mitsubishi Motor Sales of America.

DYNAMIC DAMPER

Dynamic damper must be properly positioned on axle shaft. Position damper so proper distance exists between damper and end of boot with axle shaft in a straight/level position. See Fig. 4. Distance must be within specification. See DYNAMIC DAMPER INSTALLATION SPECIFICATIONS table.

DYNAMIC DAMPER INSTALLATION SPECIFICATIONS

Application	(1) Damper-To-Boot End Distance In. (mm)
Eclipse (FWD)	
2.0L Non-Turbo	
A/T	
Left	N/A
Right (2)	14.60-14.84 (371-377)
M/T	
Left (2)	7.52-7.76 (191-197)
Right (2)	14.60-14.84 (371-377)
2.0L Turbo	
Left (2)	14.60-14.72 (371-377)

Right	.....	N/A
2.4L		
Left (2)	.....	14.25-14.49 (362-368)
Right (2)	.....	8.58-8.82 (218-224)
Galant		
Left (3)	.....	14.25-14.49 (362-368)
Right (3)	.....	8.58-8.82 (218-224)
Mirage		
1.5L (3)	.....	17.24-17.48
1.8L (3)	.....	14.88-15.12 (378-384)

- (1) - Ensure axle shaft is in straight position.
(2) - Measure at width "A".
(3) - Measure at width "B".

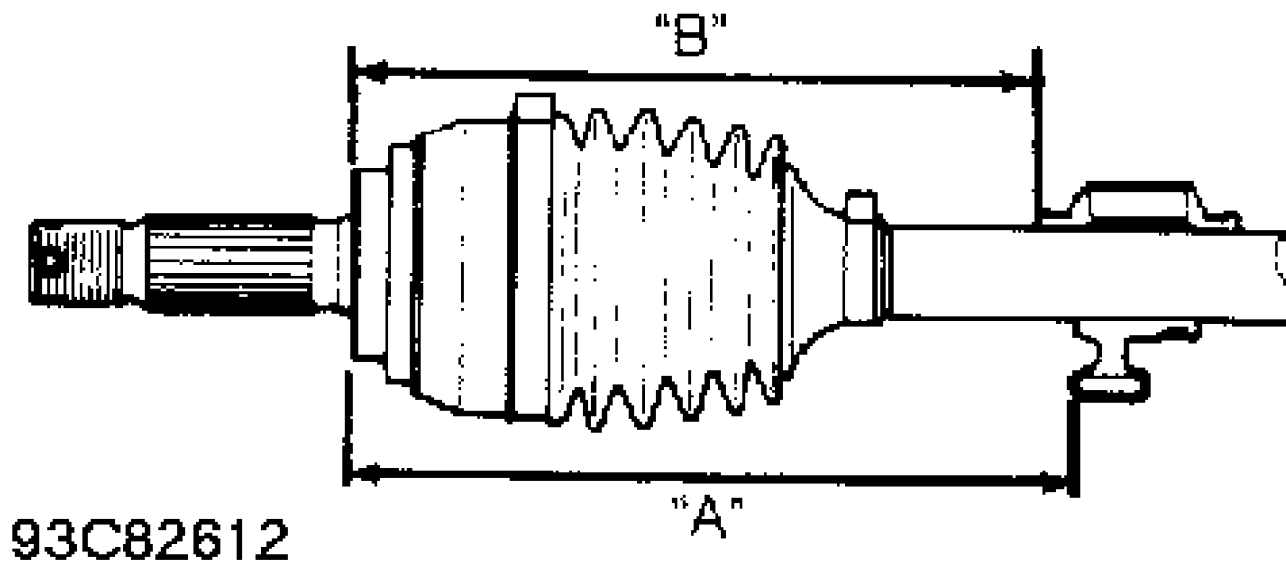
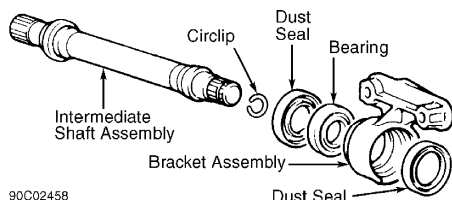


Fig. 4: Installing Dynamic Damper
Courtesy of Mitsubishi Motor Sales of America.

INTERMEDIATE SHAFT

Disassembly

Press intermediate shaft and bearing assembly (if equipped) from TJ case with Intermediate Shaft Remover (MB991248 or MD998801). Press out intermediate shaft from center bearing assembly with Bearing Puller (MB990810-01). Remove center bearing from bracket with appropriate bearing remover. See Fig. 5.



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Fig. 5: Assembling Intermediate Shaft (Typical)
Courtesy of Mitsubishi Motor Sales of America.

Reassembly

Grease center bearing and inside center bearing bracket.

Press bearing into bearing bracket assembly with appropriate bearing installer. Press dust seals into bearing with handle and installer. Lubricate assembly with grease. Press intermediate shaft into center bearing assembly.

BIRFIELD JOINT (BJ) & RZEPPA JOINT (RJ) ASSEMBLY

CAUTION: DO NOT disassemble BJ or RJ type assemblies.

Disassembly

Note type of boot and location prior to removal. See BAND & BOOT IDENTIFICATION. DO NOT disassemble BJ or RJ type assemblies. Only CV boot may be replaced. To remove boot, wrap splined area of axle shaft with tape. Remove band and boot.

Reassembly

Ensure proper boot is installed. See BAND & BOOT APPLICATION table. Apply proper amount of grease to joint and inside of boot. See AXLE SHAFT LUBRICATION SPECIFICATIONS table. Tighten bands on boots with axle shaft in straight position.

AXLE SHAFT LUBRICATION SPECIFICATIONS

Application	Ozs. (g)
Diamante	
Inner Boot	5.1 (145)
Outer Boot	5.6 (160)
Eclipse	
Inner Boot	
2.0L Non-Turbo	3.7 (105)
2.0L Turbo & 2.4L	3.4 (95)
Outer Boot	
AWD	3.4 (95)
FWD	
2.0L Non-Turbo	3.9 (110)
2.0L Turbo & 2.4L	4.6 (130)
Galant	
Inner Boot	4.2 (120)
Outer Boot	
1997	4.6 (130)
1998	(1)
Mirage	
Inner Boot	
RJ Type Axle	4.4 (125)
BJ Type Axle	3.4 (95)
Outer Boot	3.5-4.2 (100-120)
3000GT	
Inner Boot	
AWD & FWD (DOHC)	5.6 (160)
FWD (SOHC)	5.3 (151)
Outer Boot	(1)

(1) - Bands, boots and grease are packaged as a kit. Specifications are not available from manufacturer. Apply 1/2 of the amount of grease supplied to joint, the other half to inside of boot.

DOUBLE OFFSET JOINT (DOJ) ASSEMBLY

Disassembly

1) Note type of boot and location prior to removal. Remove bands and boot from DOJ housing. See Fig. 6. Remove circlip and remove

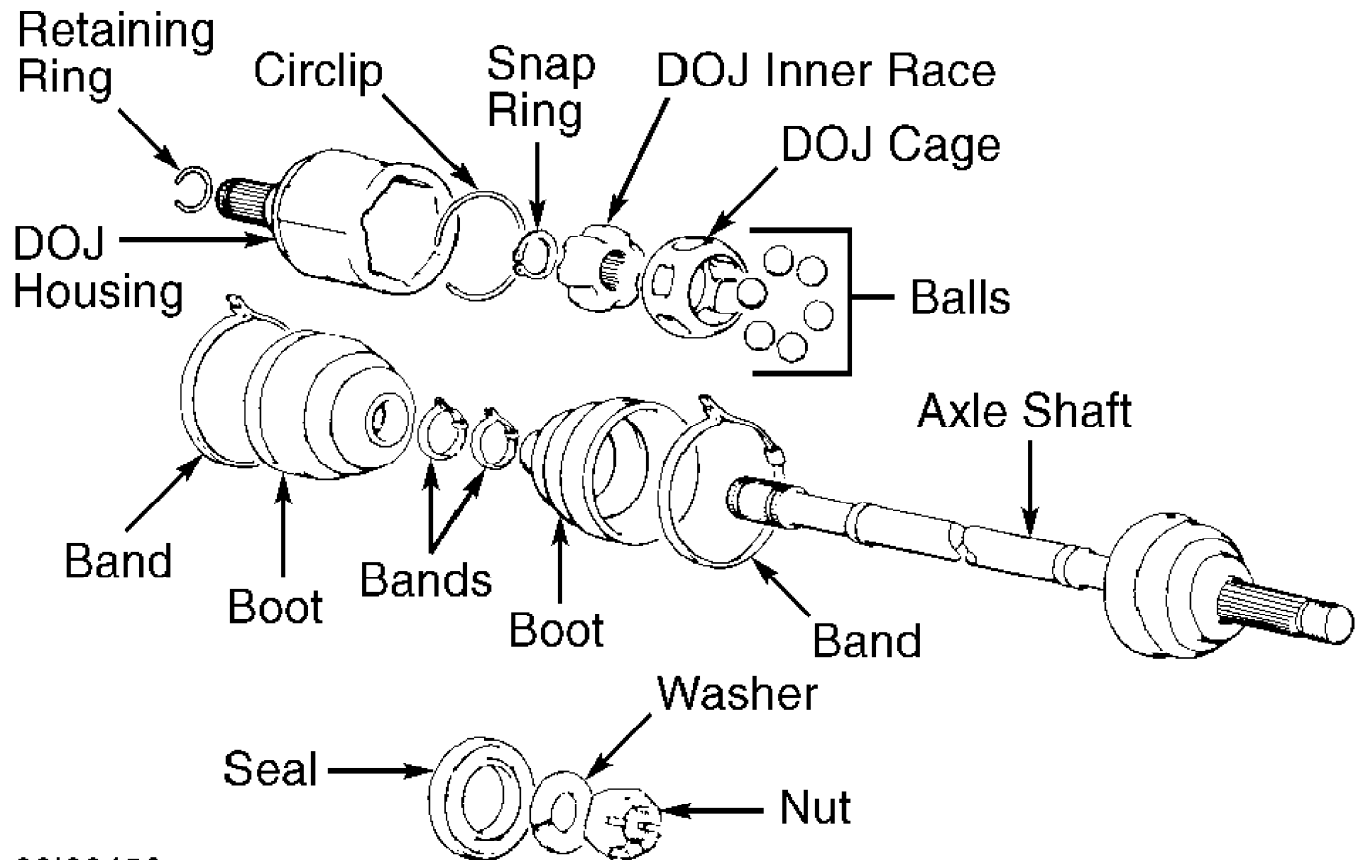
DOJ housing.

2) Place reference marks on axle shaft, DOJ inner race and DOJ outer race for reassembly reference. Remove snap ring. Remove DOJ cage, balls and DOJ inner race. Wrap splined area of axle shaft with tape, and remove boot.

Reassembly

1) To reassemble, reverse disassembly procedure. Ensure reference marks are aligned on DOJ inner race and axle shaft. Apply one half of proper lubricant amount in balls and inner race, and other half in DOJ boot. See AXLE SHAFT LUBRICATION SPECIFICATIONS table.

2) Install boot and bands. Position boots so bands are positioned 3.42-3.66" (87.0-93.0 mm) from each other. Tighten bands with axle shaft in straight/level position.



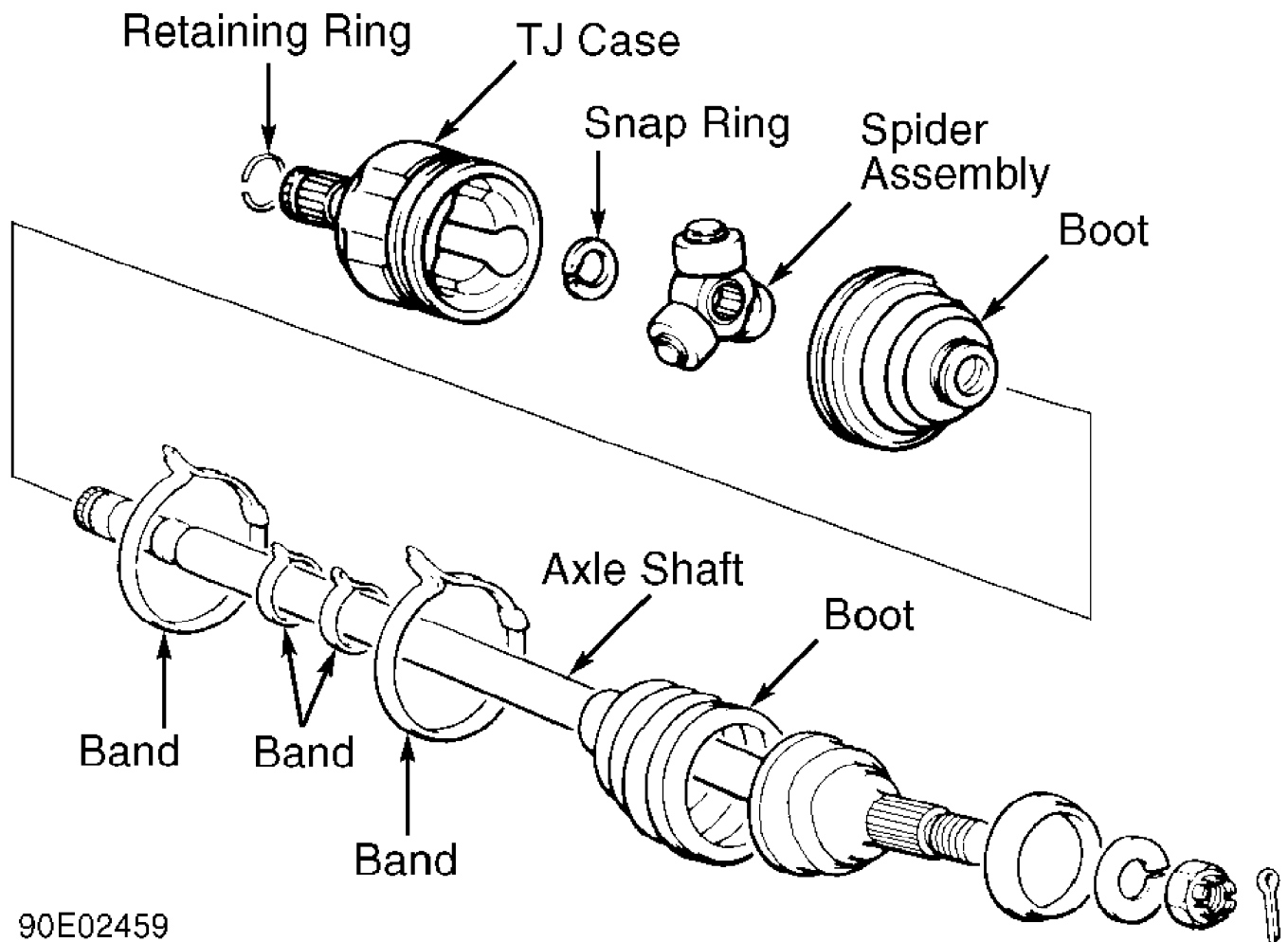
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Fig. 6: Exploded View Of DOJ Assembly
Courtesy of Mitsubishi Motor Sales of America.

TRIPOD JOINT (TJ) ASSEMBLY

Disassembly

1) Note type of boot and location prior to removal. See BAND & BOOT APPLICATION table. Remove bands and boot from TJ case. See Fig. 7. Place reference mark on TJ case and spider assembly. Pull axle shaft and spider assembly from TJ case.



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Fig. 7: Exploded View Of TJ Assembly
 Courtesy of Mitsubishi Motor Sales of America.

2) Remove snap ring and pull spider assembly from axle shaft. Clean, but DO NOT disassemble spider assembly. Wrap splined area of axle shaft with tape, and remove boot. Dynamic damper (if equipped) and outer boots can be serviced at this time.

Reassembly

1) To reassemble, reverse disassembly procedure. Use NEW snap ring to retain spider assembly. Ensure reference marks are aligned on spider assembly and TJ case. Using proper lubricant, apply one half of grease in TJ case and other half TJ boot. See AXLE SHAFT LUBRICATION SPECIFICATIONS table.

2) Install boot and bands. Tighten bands on boots with axle shaft in straight position. Position boots so bands are positioned at specified distance and secure. See TJ BAND INSTALLATION SPECIFICATIONS table.

TJ BAND INSTALLATION SPECIFICATIONS

Application	Distance Between Bands In. (mm)
Diamante	2.83-3.07 (72.0-78.0)
Eclipse	3.03-3.27 (77.0-83.0)
Galant	3.03-3.27 (77.0-83.0)

Mirage	3.23-3.47	(82.0-88.0)
3000GT	3.23-3.47	(82.0-88.0)

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)	
Axle Shaft Nut		
Mirage (1997)	130-203	(176-275)
3000GT	66-188	(225-255)
All Other Models	145-188	(197-255)
Ball Joint-To-Steering Knuckle Nut		
Galant (Upper)	21	(28)
All Other Models	43-53	(58-71)
Center Bearing Bracket Bolt		
Diamante & 3000GT	33	(45)
Eclipse (AWD)	30	(41)
Strut Fork-To-Lower Control Arm Nut		
Eclipse & Galant	65	(88)
Strut-To-Steering Knuckle Nut		
Diamante & 3000GT	65-76	(88-103)
Mirage	80-94	(108-127)
Tie Rod Nut		
Galant	17-25	(23-34)
Mirage	11-25	(15-34)
3000GT (AWD)	36	(49)
All Other Models	21	(28)
Wheel Lug Nut		
3000GT	87-101	(118-137)
All Others	65-80	(88-108)
