



STEERING POWER

CONTENTS

COMPONENT SERVICE	15	CHECKING STEERING WHEEL FREE PLAY	10
POWER STEERING GEAR BOX	21	OIL PUMP PRESSURE TEST	12
POWER STEERING OIL PUMP	29	STEERING WHEEL CENTERING	13
STEERING COLUMN AND SHAFT	15	SPECIAL TOOLS	5
STEERING HOSES	35	SPECIFICATIONS	2
STEERING LINKAGE	36	GENERAL SPECIFICATIONS	2
SERVICE ADJUSTMENT PROCEDURES	10	LUBRICANTS	4
BLEEDING	11	SERVICE SPECIFICATIONS	2
CHECKING FLUID LEVEL	11	TORQUE SPECIFICATIONS	3
CHECKING POWER STEERING BELT TENSION	10	TROUBLESHOOTING	6
CHECKING STATIONARY STEERING EFFORT	10		
CHECKING STEERING ANGLE	12		



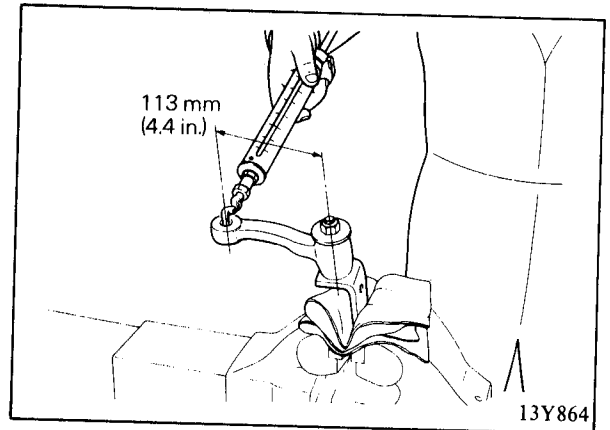
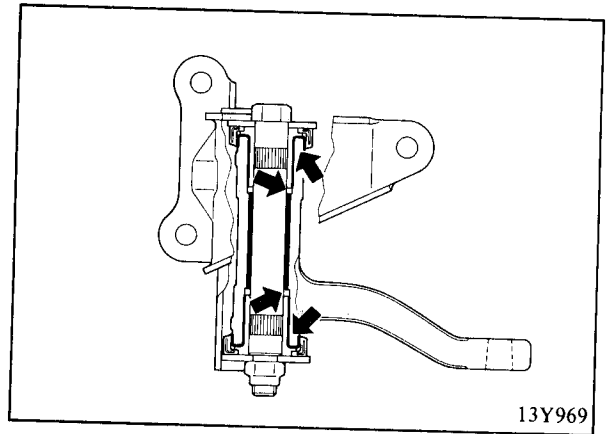
VEHICLES WITH AN INTERCOOLER

1. Apply a thin coat of specified multipurpose grease to the inner surfaces of the idler arm, outer surfaces of the bearings and lips of oil seals.

Specified grease
MOPAR Multi-Mileage Lubricant
Part Number 2525035 or equivalent

2. Install the bearings and oil seals to the idler arm.
3. Install the idler arm assembly to the idler arm support.
4. Measure the starting torque of the idler arm with a spring scale.

Idler arm starting torque [Standard value]
300 – 900 Ncm (26 – 78 in.lbs.)
Tangential force (when measured with a spring scale)
26 – 78 N (6 – 18 lbs.)



SPECIFICATIONS



TORQUE SPECIFICATIONS

Nm (ft.lbs.)

Steering column and shaft	
Steering wheel lock nut	35–45 (26–32)
Column tube clamp	5–8 (3.5–6)
Tilt bolt (before welding)	6–8 (4–6)
Steering shaft clamp	20–25 (15–18)
Power steering gear box	
Side cover	45–55 (33–40)
Adjusting bolt lock nut	30–45 (22–33)
Breather plug	3–4 (2–3)
Pitman arm installation	130–150 (94–108)
Gear box installation	55–65 (40–47)
Circulators installation	3.5–4.5 (2–3)
Valve housing	45–55 (33–40)
Lock nut*	180–230 (130–166)*
Oil pump	
Connector	40–60 (29–43)
Reservoir	8–12 (6–9)
Oil pump bracket	14–21 (10–15) 27–41 (20–30)
Oil pump brace bolt	25–33 (18–24)
Oil pump cover	18–22 (13–16)
Steering hoses	
Pressure hose	30–40 (22–29)
Return hose	40–50 (29–36)
Clamp A	3.2–4.8 (2.3–3.5)
Steering linkage	
Tie rod end	35–45 (26–32)
Tie rod socket and relay rod	35–45 (26–32)
Relay rod to pitman arm	35–45 (26–32)
Relay rod to idler arm	35–45 (26–32)
Idler arm and bracket	40–60 (29–43)
Tie rod end stud	50–55 (37–39)
Idler arm bracket and frame	35–40 (26–28)
Stopper bolt lock nut for adjustment of steering angle	20 (14)

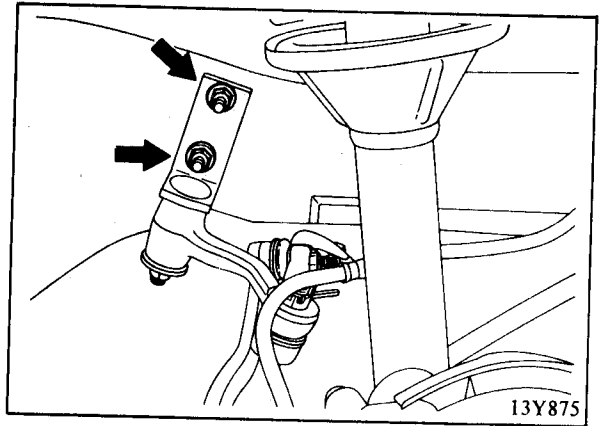
NOTE

* If the special tool is used to measure the tightening torque, the measurement is 135–175 Nm (98–127 ft.lbs.).



Idler Arm Assembly

1. Detach the relay rod from the idler arm by using the special tool (MB990635).
2. Remove the idler arm assembly. (13Y875)
3. Disassemble the idler arm assembly.

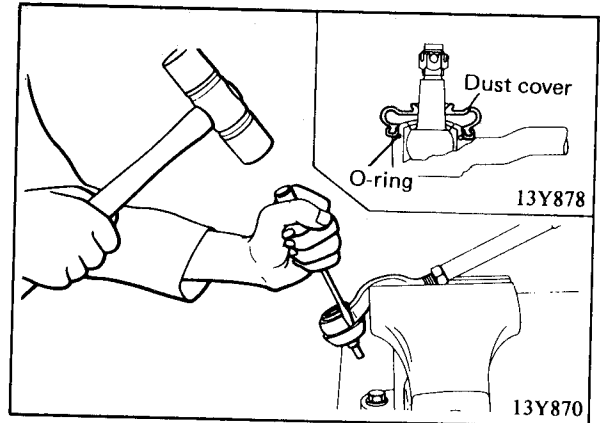


Ball Joint Dust Cover

Remove the dust cover and O-ring from the ball joint. (13Y870)

INSPECTION

1. Check idler arm support for damage or deformation.
2. Check idler arm for damage or deformation.
3. Check idler arm bushings for wear or deterioration.
4. Check dust covers and O-rings for damage or deterioration.
5. Check tie rods for damage or deformation.
6. Check relay rod for bends or damage.



INSTALLATION

Ball Joint Dust Cover

1. When installing the dust cover, fill the cover lip and the interior with the specified multipurpose grease.

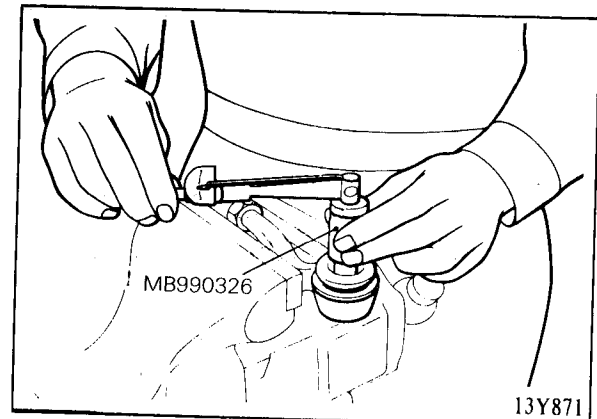
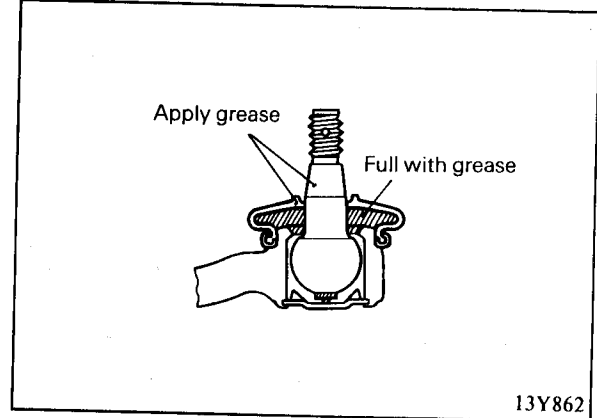
Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

2. Secure the relay rod and the tie rod in a vice.
3. Mount the nut to the ball joint, and then measure the ball joint starting torque. (13Y871)

Ball joint starting torque [Standard value]
 Tie rod and relay rod (for pitman arm)
 50 – 250 Ncm (4 – 22 in.lbs.)
 Relay rod (for idler arm)
 50 – 150 Ncm (4 – 13 in.lbs.)

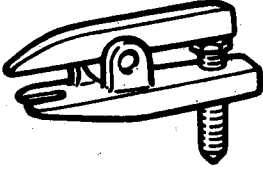
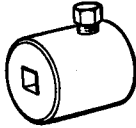





NOTE

If the ball joint starting torque exceeds the upper limit of the standard value range, replace the ball joint. Even if the ball joint starting torque is below the lower limit of the standard value range, the ball may be reused unless it is dusty or too loose.



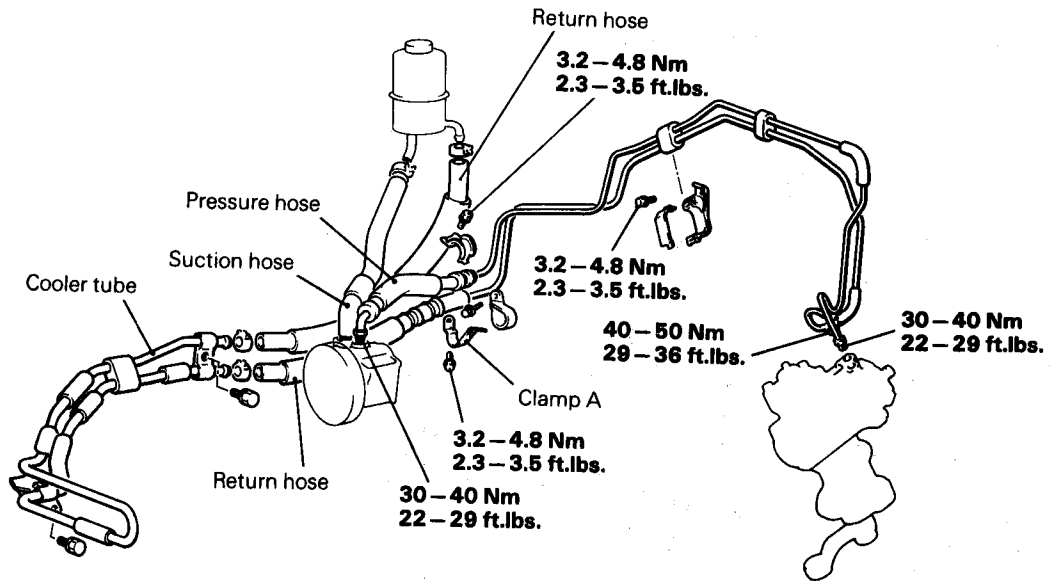
SPECIAL TOOLS



Tool (Number and name)	Use	Tool (Number and name)	Use
<p>MB990635 Steering linkage puller</p> 	<p>Disconnection of the relay rod</p>	<p>CT-1108 Preload socket</p> 	<p>Measurement of the mainshaft starting torque</p>
<p>C3894-A Pitman arm puller</p> 	<p>Removal of the pitman arm</p>	<p>MB990852 Housing locking nut special spanner</p> 	<p>Removal and installation of the housing locking nut</p>
<p>C-3309-E Oil pressure gauge</p>  <p>C-4535 Hose set — Pump pressure checking</p> 	<p>Measurement of the oil pump pressure</p>	<p>MB990853 Top cover remover</p> 	<p>Removal and installation of the top cover</p>



COMPONENTS



13Y963

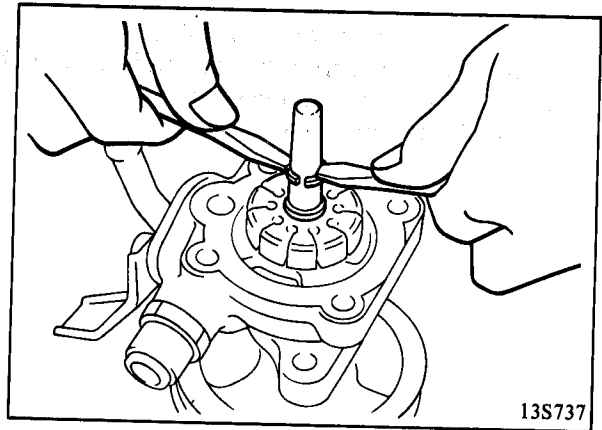
TROUBLESHOOTING



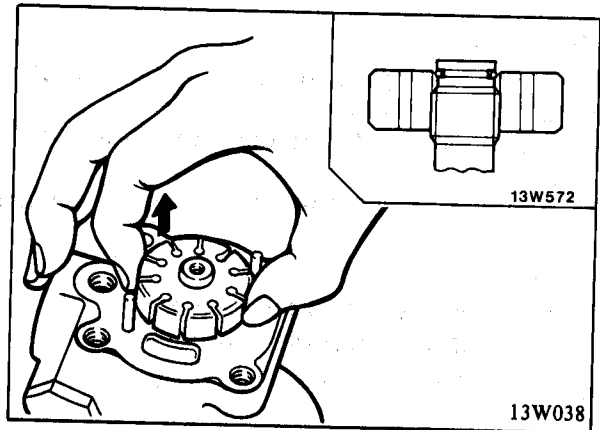
Symptom	Probable cause	Remedy
Steering wheel pulls to one side (continued)	Malfunction of shock absorber	Replace
	Uneven wheel base (between right side and left side)	Adjust the body alignment (Refer to GROUP 13)
Steering wheel vibrates	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Unevenly worn or deformed tire(s)	Rotate the wheels or replace the tire(s) (Refer to GROUP 22)
	Loose hub nut	Retighten (Refer to GROUP 2)
	Excessive runout, or unbalance of tire and wheel	Adjust the wheel balance or replace (Refer to GROUP 22)
	Poor wheel alignment	Adjust the wheel alignment (Refer to GROUP 2)
	Damaged wheel bearing	Replace
	Deformed or loose lower arm	Retighten or replace (Refer to GROUP 2)
	Deformed linkage	Repair or replace
	Loose linkage joints	Retighten
	Malfunction ball joints (Too small ball joint starting torque)	Replace
	Malfunction of front suspension	Check and adjust; replace the parts if necessary (Refer to GROUP 2)
	Incorrect installation or internal damage in gear box	Correct or replace
Road shock is felt in steering wheel	Malfunction of shock absorber	Replace
	Insufficient steering wheel play	Adjust the steering wheel play
	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Unevenly worn or deformed tire(s)	Rotate the wheels or replace the tire(s)
Poor recovery of steering wheel to straight ahead position	Malfunction of shock absorber	Replace
	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Excessive mainshaft preload	Adjust the preload
	Stuck or damaged ball joint	Replace
	Improper wheel alignment angles	Adjust the wheel alignment (Refer to GROUP 2)



3. Install the snap ring.



4. Raise the rotor to make sure that the snap ring fits in the countersunk portion.

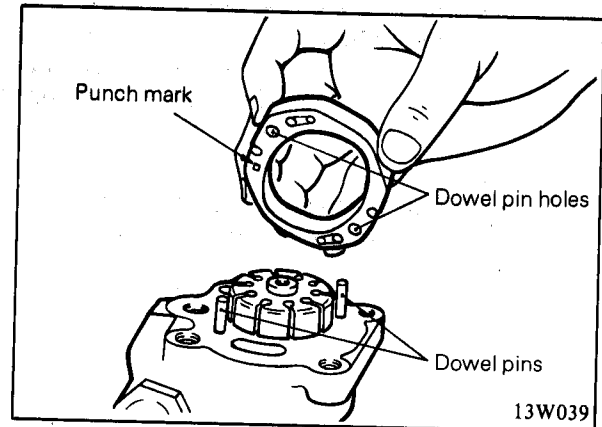


5. Install the cam ring with the dowel pins of pump body aligned with the dowel pin holes in the cam ring and also with the punch mark on the cam ring located on the pump body side.

6. Apply automatic transmission fluid to the O-rings.

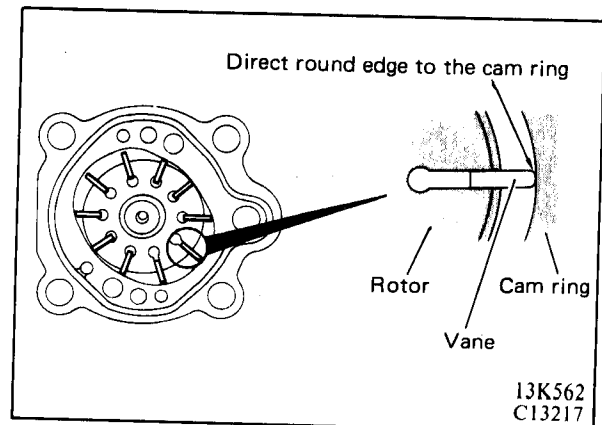
Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent

7. Install O-rings to the cam case and install the cam case.



8. Apply automatic transmission fluid to the vanes and install the vanes on the rotor, paying close attention to the installation direction. (C13217)

Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent



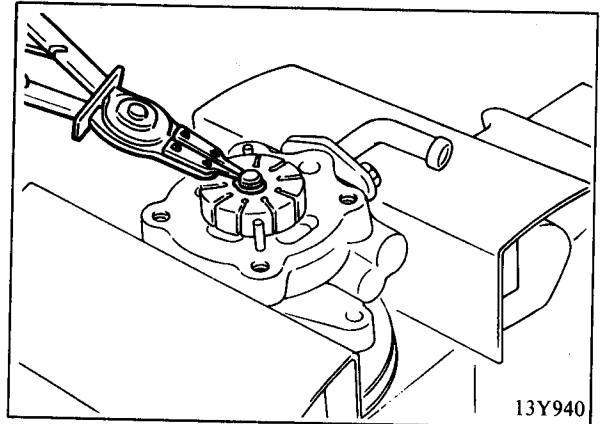
TROUBLESHOOTING



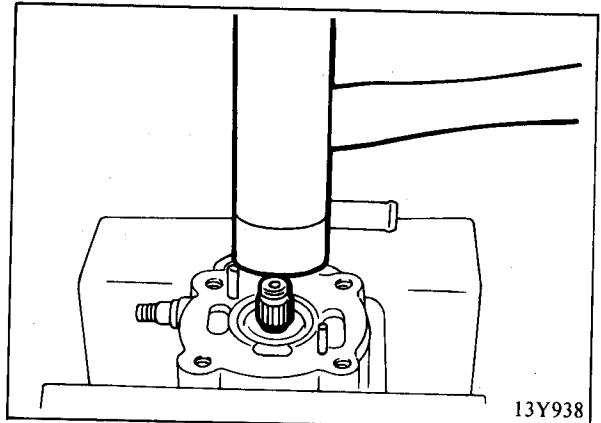
Symptom	Probable cause	Remedy
Oil leakage from hose connection	Improperly tightened flare nut Incorrectly inserted hose Improperly clamped hose	Check, repair or replace
Oil leakage from hose assembly	Damaged or clogged hose Hose connector malfunction	Replace
Oil leakage from oil reservoir	Leaking reservoir Improperly welded pipe	Replace
	Overflow	Bleed the system or adjust the oil level
Oil leakage from oil pump	Malfunction of oil pump housing	Replace the oil pump
	Malfunction of O-ring and/or oil seal	Replace the O-ring and oil seal
Oil leakage from gear box	Malfunction of gear box housing (including leakage from air hole)	Replace the gear box
	Malfunction of O-ring and/or oil seal	Replace the O-ring and oil seal



5. Remove the snap ring of the shaft with snap ring pliers, and separate the rotor from the shaft.

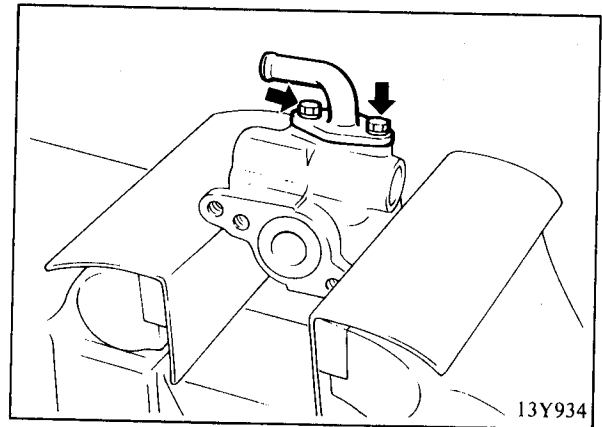


6. Tap the rotor side of the shaft lightly with a plastic hammer, and take out the pulley assembly.

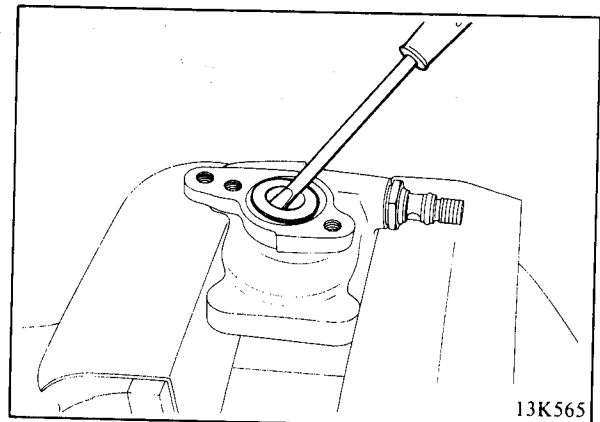


7. Remove the suction connector from the oil pump body. (13Y934)

8. Remove the O-ring from suction connector.



9. Remove the oil seal from the oil pump body.





CHECKING FLUID LEVEL

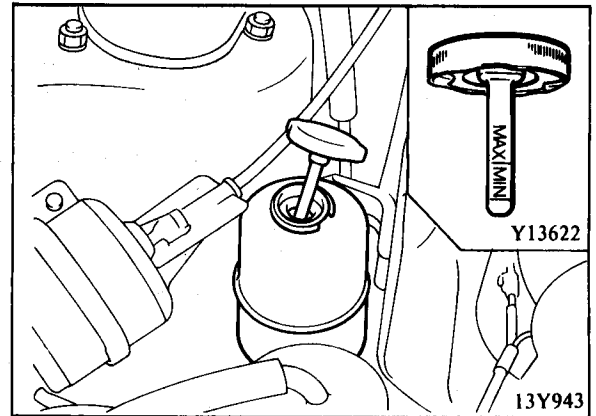
1. Start the engine on a level surface, and turn the steering wheel several times fully to the right and left while the engine is idling.
2. Check the fluid for contamination.

NOTE

Replace the fluid if it has bubbles or is whitish.

3. Fill the reservoir with specified automatic transmission fluid to the MAX level. (13Y943)

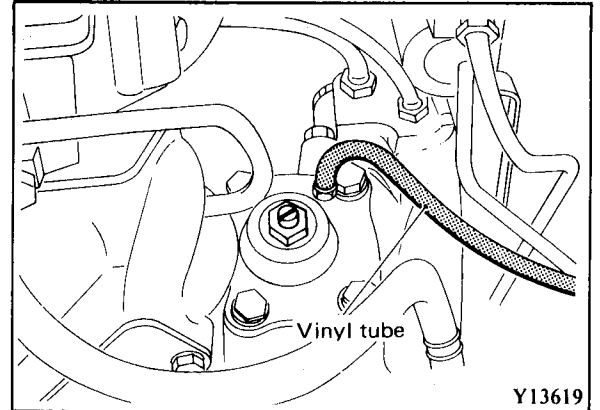
Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent



BLEEDING

Check the stationary steering effort. If it is not within the range of the standard value, it is possible that air is in the system. Bleed the air from the system.

1. Make certain the reservoir is filled up.
2. Jack up the front wheels.
3. Disconnect and ground the coil high tension cable.
4. While turning the steering wheel completely to the right and left, turn the engine over by using the starting motor. Repeat this several times.
5. Lower the front wheels.
6. Connect one end of a vinyl clear hose to the breather plug on the gear box, and place the other end in a container. Start the engine and idle it.



7. Loosen the breather plug, and then turn the steering wheel completely to the right and left continuously until air bubbles no longer appear in the fluid coming out of the tube. (Y13620)

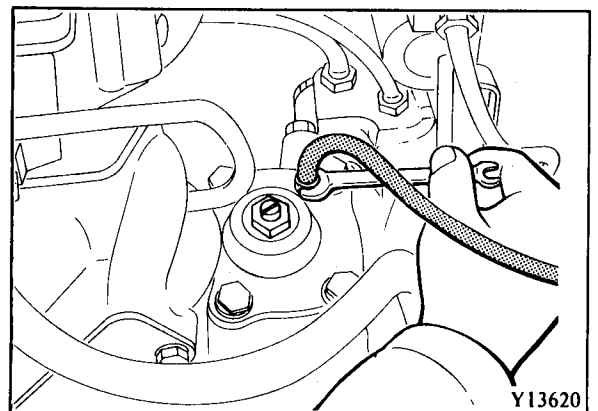
NOTE

Do not allow the power steering reservoir to run dry.

8. After bleeding, tighten the breather plug and remove the tube.
9. Check the fluid level, and refill as necessary.

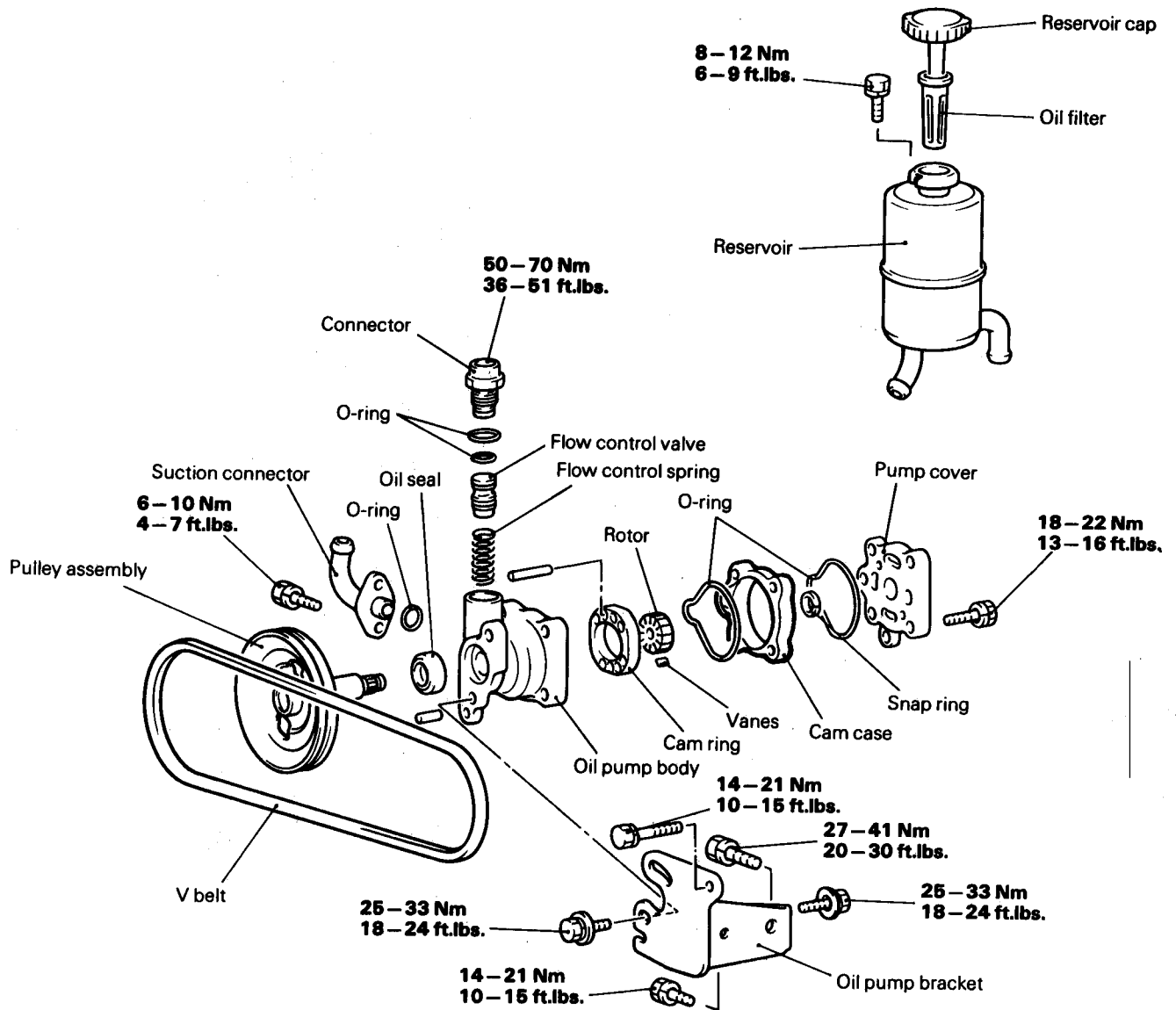
NOTE

When turning the steering wheel completely to the right and left, check that the fluid level variation is less than 4 mm (.16 in.) at a constant temperature.





COMPONENTS



13Y945

REMOVAL

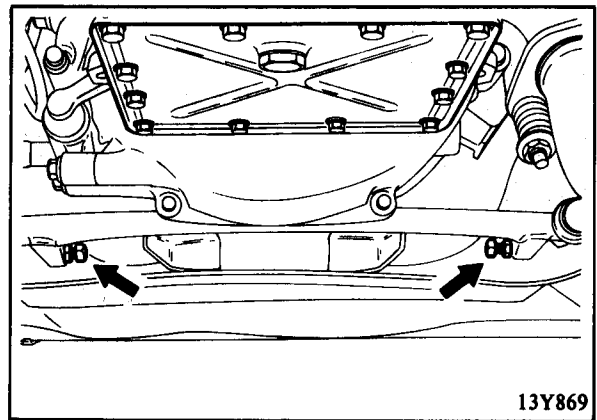
1. Remove the reservoir cap and disconnect the return hose from the reservoir to drain the fluid.
2. Jack up the front wheels and support with floor stands.
3. Disconnect the high tension cable and turn the engine over several times to drain the fluid from the power steering system.
4. Loosen the brace bolts and lock bolt, and remove the V belt.



- Adjust the steering angle of each wheel by turning the stop bolt of the relay rod.

Caution

Be sure that toe-in is properly adjusted before adjusting steering angle.



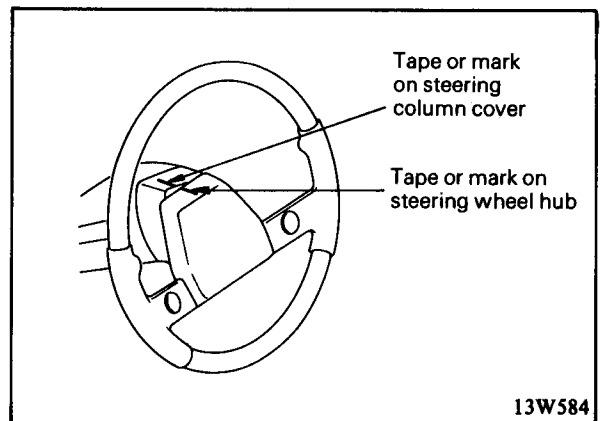
13Y869

STEERING WHEEL CENTERING

Simplified Steering Wheel Centering

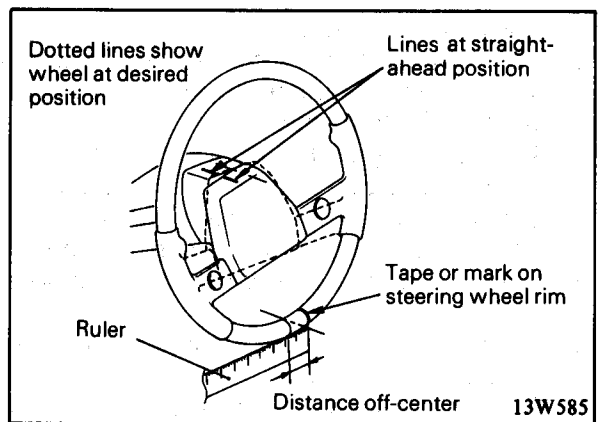
DETERMINING STEERING WHEEL'S OFF CENTER

- For the road test, take along chalk or tape and a ruler.
- Drive straight ahead on an uncambered level surface.
- When the vehicle's wheels are pointing straight ahead, mark the steering wheel hub and column cover with a chalk or tape line. (13W584)
- Stop the vehicle and line up the marks on the hub and column cover.



13W584

- Place a tape strip or mark on the steering wheel rim. (13W585)
- Hold a ruler next to the rim as shown in the illustration, and then steer the steering wheel until it is in the desired centered position. (13W585)
- Record the distance the strip or mark on the rim has moved. This is how far the steering wheel is off center. If it is more than 16 mm (5/8 in.) off center, it can be centered by indexing it ten degrees towards the center.

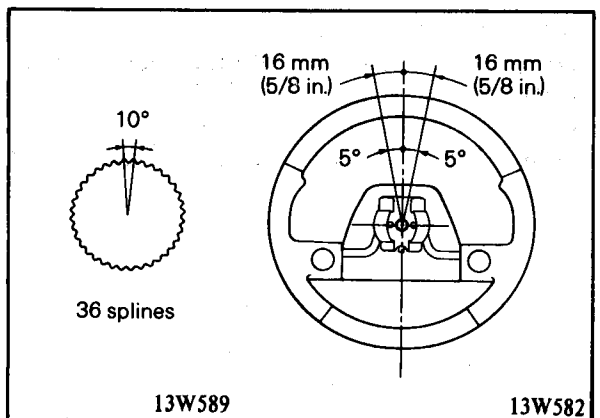


13W585

INDEXING STEERING WHEEL TO CENTER IT

The steering wheel shaft has 36 splines, allowing the steering wheel to be indexed in ten-degree increments. (13W589)

- Remove the steering wheel.
- Without disturbing the position of the steering wheel shaft, re-install the wheel as near on-center as possible.



13W589

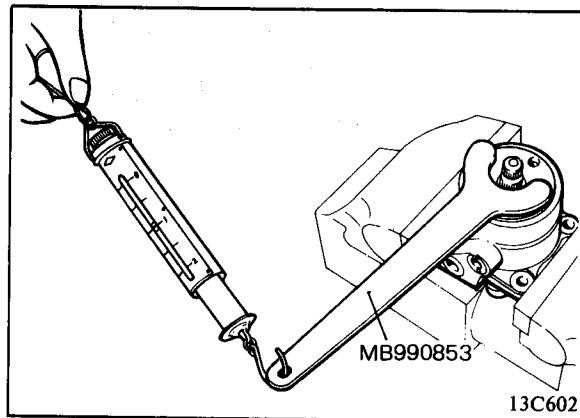
13W582



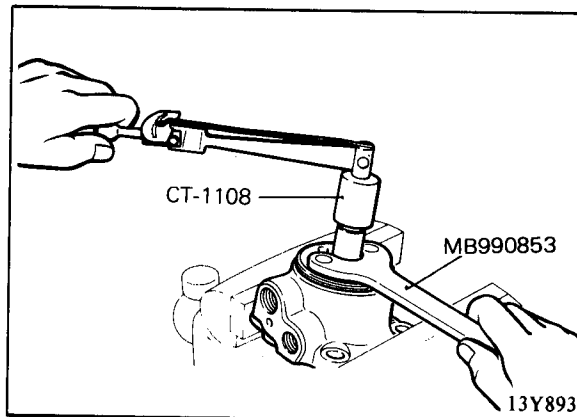
11. In order to fit in the assembly parts, use the special tool and a spring scale, and tighten the top cover until the force becomes 62–83 N (14–19 lbs.). Then turn the top cover lock nut until the force becomes 0 N (0 lbs.).

Caution

After tightening the top cover lock nut, rotate the mainshaft to confirm that there is no binding or abnormal noise.



12. Measure the mainshaft starting torque with the special tools as illustrated. (13Y893)
 13. Tighten the top cover until the mainshaft starting torque is 20–30 Ncm (1.8–2.7 in.lbs.) greater than the measured value.



NOTE

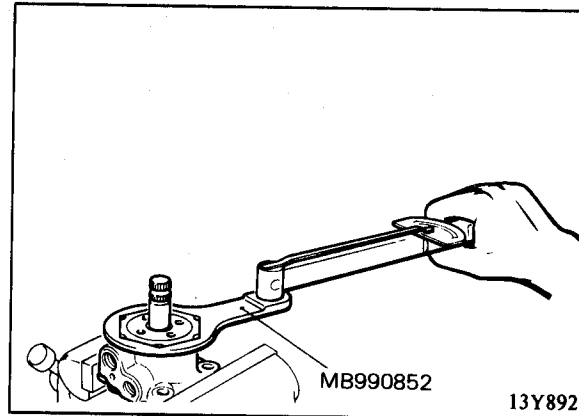
Tighten the top cover gradually while measuring the starting torque.

14. Tighten the valve housing lock nut to the specified torque with the special tool as illustrated.

Lock nut tightening torque	180–230 Nm (130–166 ft.lbs.)
With special tool attached	135–175 Nm (98–127 ft.lbs.)

Caution

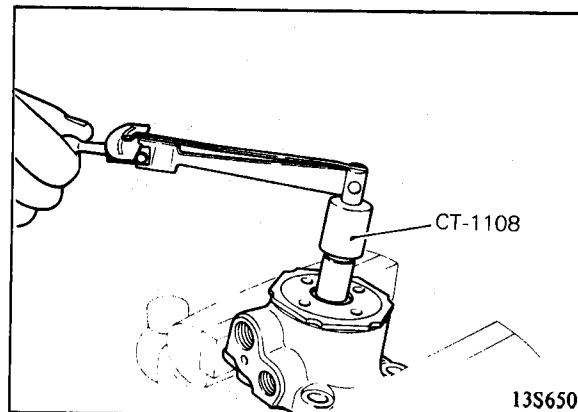
Be sure that the top cover does not turn with the lock nut.



15. Measure the mainshaft starting torque by using the special tool as illustrated.

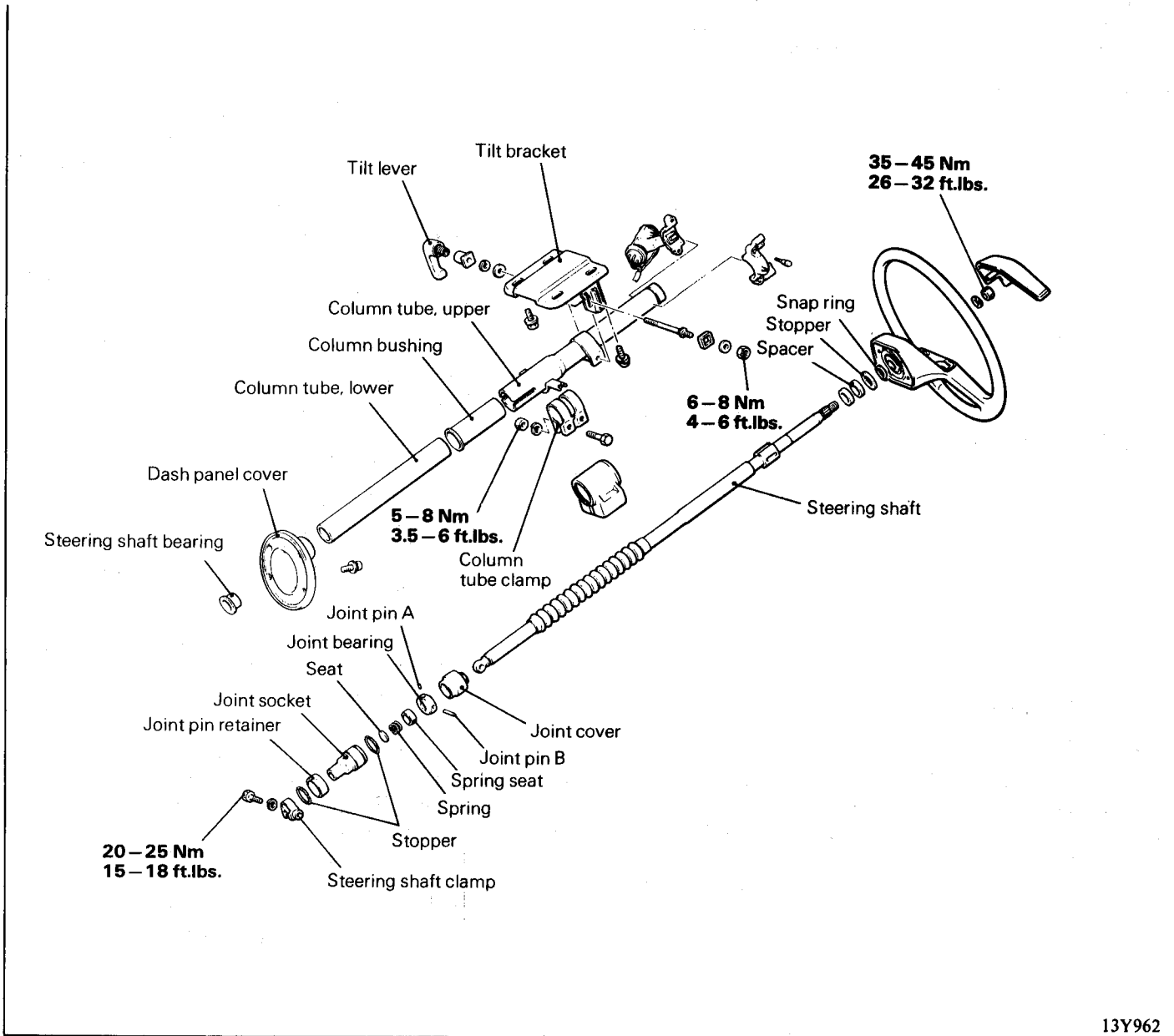
If the measured mainshaft starting torque does not comply with the standard value, remove the valve housing lock nut and adjust the tightening of the top cover.

Mainshaft starting torque [Standard value]	25–65 Ncm (2–6 in.lbs.)
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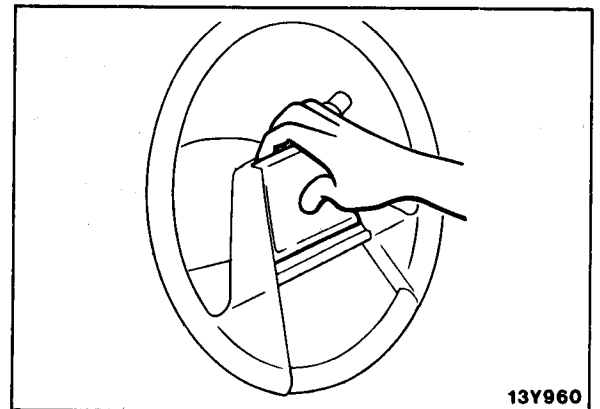
COMPONENTS



13Y962

REMOVAL

1. Remove the horn pad and disconnect the horn cable connector.



13Y960



18. While turning the adjusting bolt, measure the mainshaft total starting torque by using the special tool. (Y13631)

Mainshaft total starting torque [Standard value]
50–90 Ncm (4–8 in.lbs.)

NOTE

Position the mainshaft in the center position during measurement.

19. Tighten the adjusting bolt lock nut to the specified torque.

Lock nut tightening torque
30–45 Nm (22–33 ft.lbs.)

Valve Housing and Top Cover

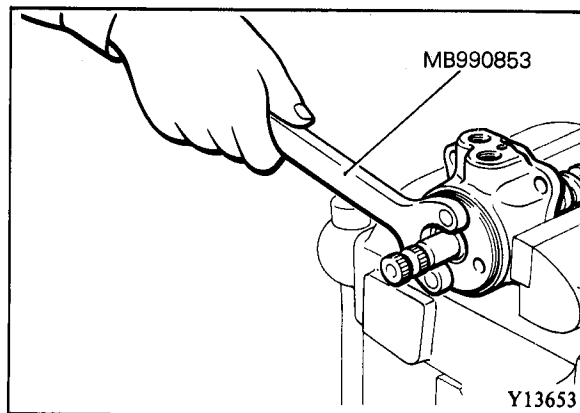
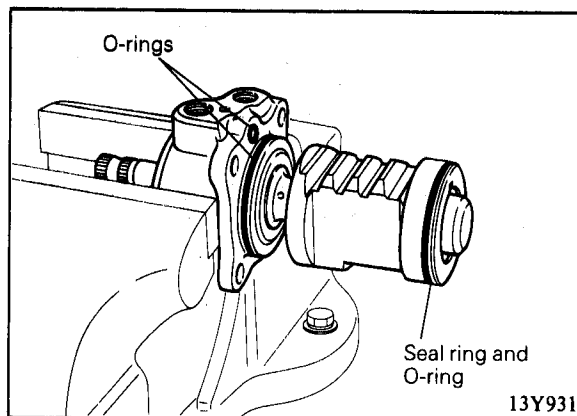
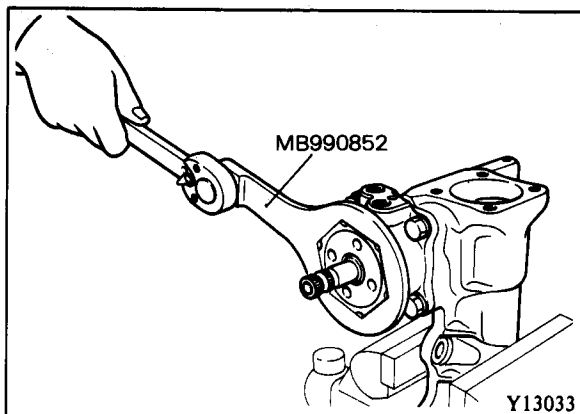
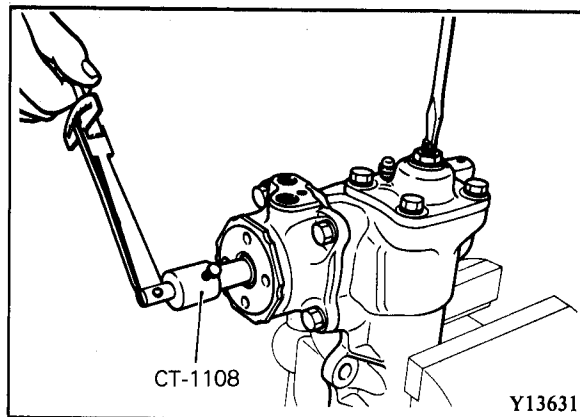
1. Remove the cross-shaft assembly. (Refer to P. 19-23.)
2. Remove the valve housing lock nut with the special tool as illustrated. (Y13033)
3. Remove the valve housing bolts and remove the valve housing and rack piston while holding the rack piston by hand to avoid rotation.

Caution

Do not hold housing with rack piston facing downward, otherwise the rack piston will fall off, scattering the steel balls.

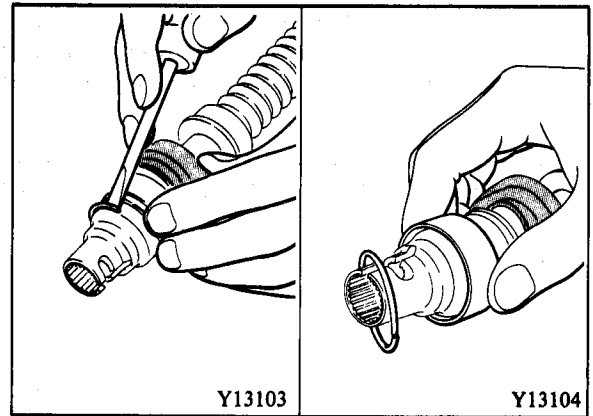
4. Remove the O-ring and seal ring from the rack piston and remove O-rings from the valve housing.

5. Remove the top cover from the valve housing with the special tool.





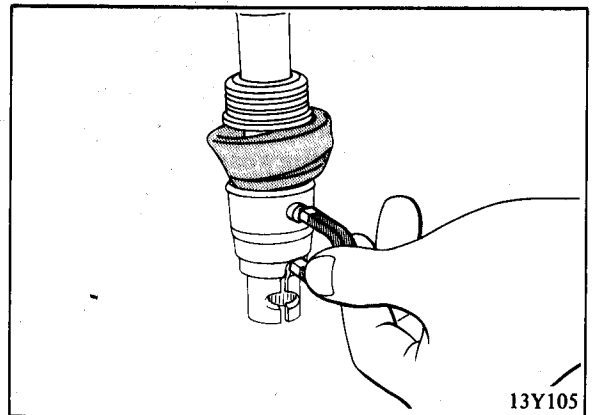
4. Slide off the joint cover from the socket assembly.
5. Remove the stoppers, and pull out the joint pin retainer. (Y13103, Y13104)



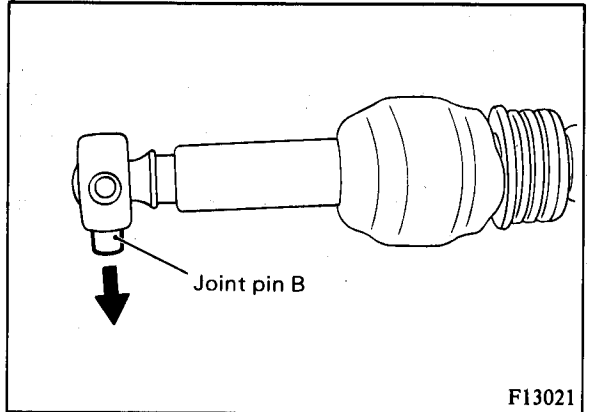
6. With the steering shaft set upright, pull out joint pins A on both sides of the socket, using a magnet, while holding the shaft downward. (13Y105)
7. Remove the joint socket.

Caution

Do not use a hammer to remove joint pins A.

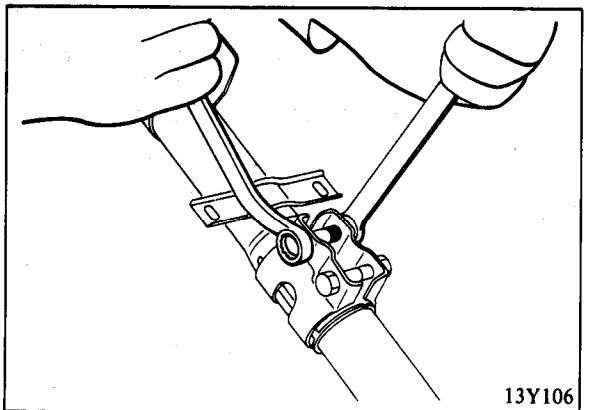


8. If necessary, press out joint pin B from the steering shaft and take out the joint bearing. (F13021)
9. Take out the joint cover and steering shaft bearing.



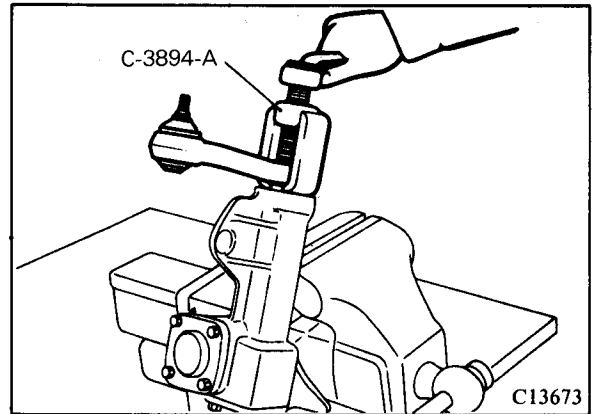
Steering Column

1. Separate the column tube sections.





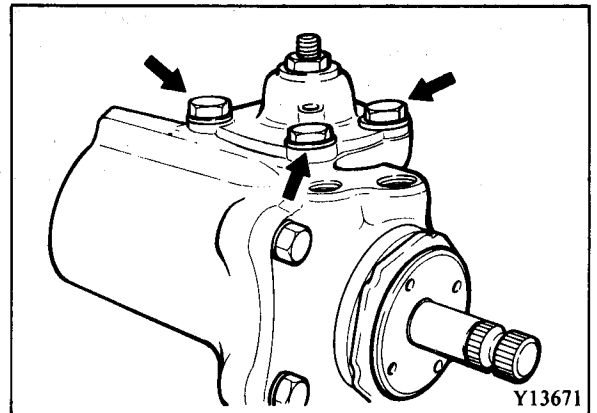
- Remove the pitman arm from the gear box assembly with the special tool illustrated.



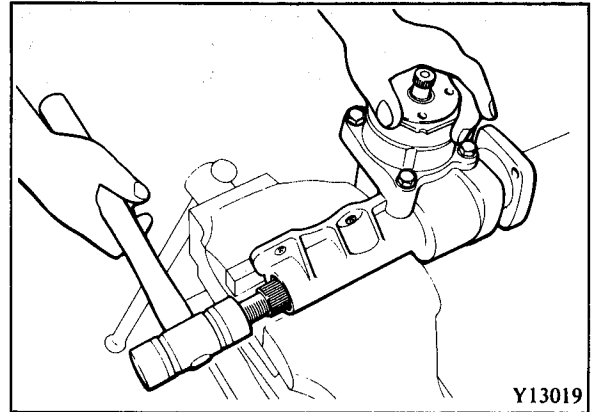
SEALS REPLACEMENT

Side Cover and Gear Box Housing

- Place the mainshaft and cross-shaft in the straight-ahead position.
- Remove the breather plug, and drain off the steering gear oil.
- Remove the side cover attaching bolts. (Y13671)
- Remove the lock nut of the adjusting bolt, and screw in the adjusting bolt so that the side cover rises slightly.

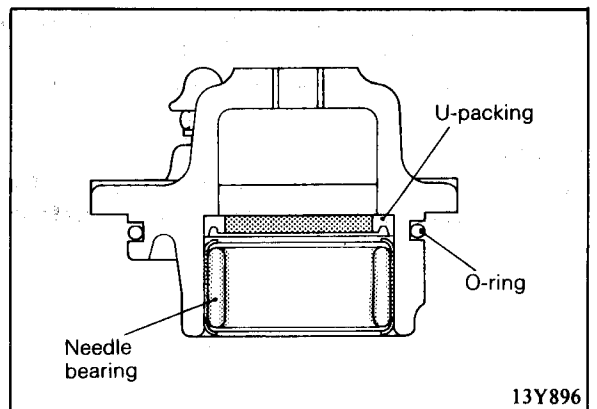


- Tap the bottom of the cross-shaft with a plastic hammer to remove the cross-shaft and the side cover. (Y13019)
- Remove the side cover from the cross-shaft by turning the adjusting bolt.



Caution
Do not lose the needle bearing rollers.

- Remove the needle rollers from the side cover. (13Y896)
- Remove the O-ring and U-packing from the side cover.





Steering Shaft

1. Apply the specified multipurpose grease to the inside of the steering shaft bearing, and then insert the steering shaft into the bearing.

Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

2. Apply the specified adhesive to the surface where the steering shaft bearing and the column tube contact.
3. Apply the specified multipurpose grease to the inside of the upper bearing.
4. Install the steering shaft with the steering shaft bearing in the column tube.
5. Install the joint bearing (with the flanged surface facing upward) on the steering shaft lower end.
6. With the bearing rotated 90°, press in greased joint pin B. (F13524)

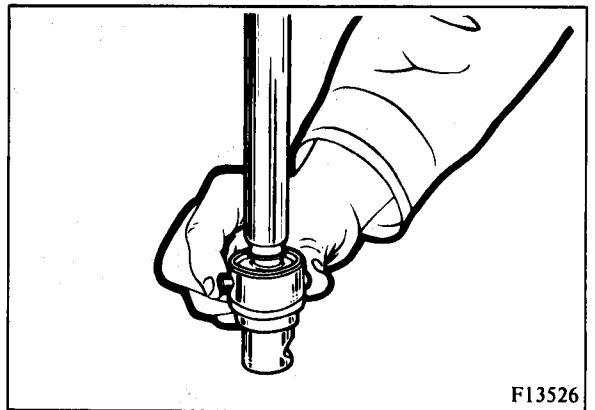
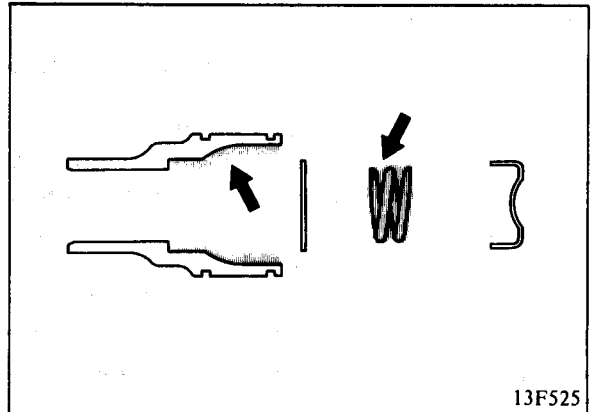
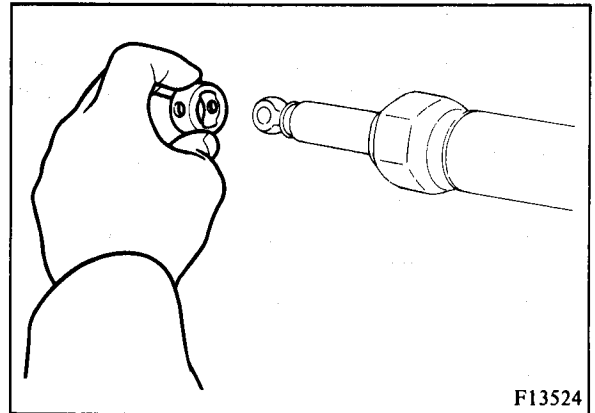
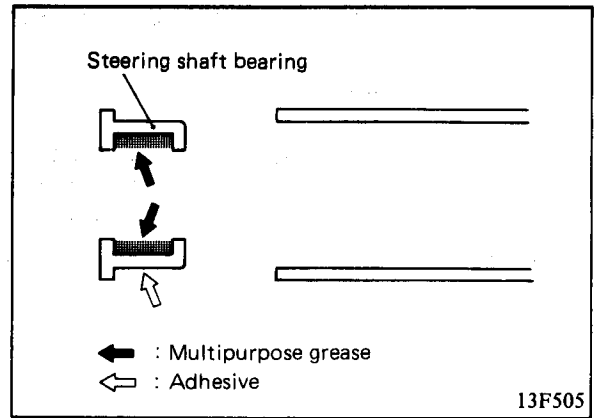
Caution

Be careful that the pin does not project over the bearing surface.

7. Fill the socket with the specified multipurpose grease, and then insert the seat, spring and spring seat into it.

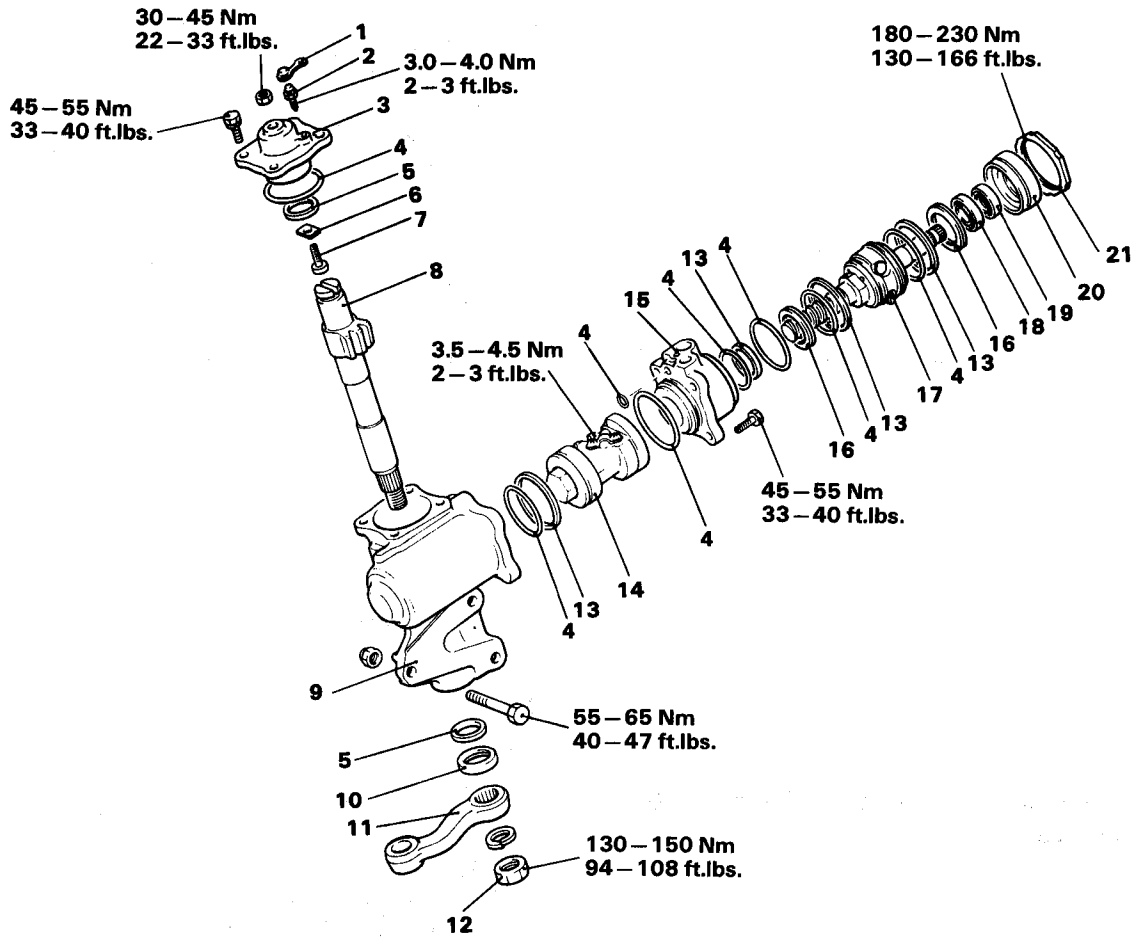
Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

8. Insert the steering shaft lower end into the socket, and, while holding the shaft downward, insert greased joint pins A by hand.





COMPONENTS

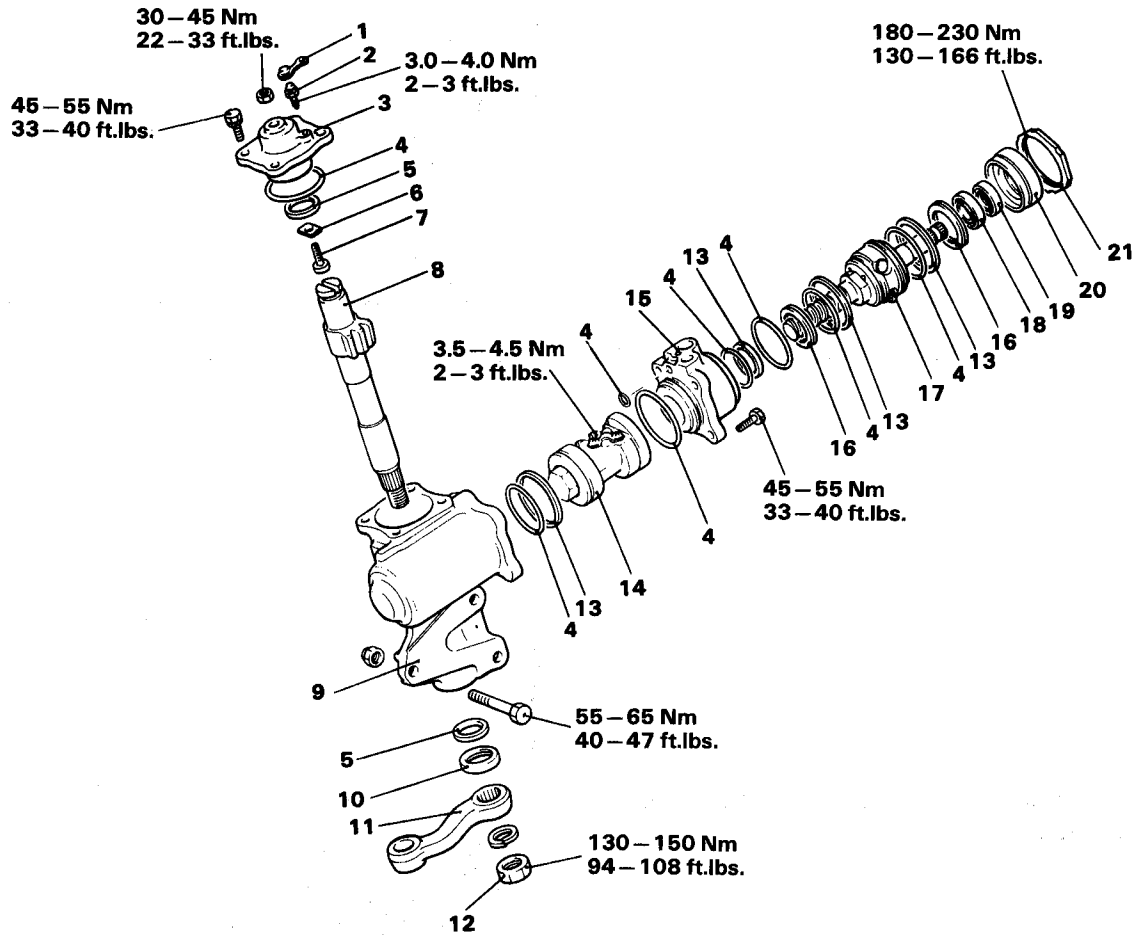


- | | |
|-----------------------|----------------------------|
| 1. Breather plug cap | 12. Nut |
| 2. Breather plug | 13. Seal ring |
| 3. Side cover | 14. Rack piston |
| 4. O-ring | 15. Valve housing |
| 5. U-packing | 16. Thrust needle bearing |
| 6. Adjusting plate | 17. Mainshaft |
| 7. Adjusting bolt | 18. Ball bearing |
| 8. Cross-shaft | 19. Oil seal |
| 9. Gear box housing | 20. Top cover |
| 10. Oil seal assembly | 21. Valve housing lock nut |
| 11. Pitman arm | |

13Y907



COMPONENTS



- | | |
|-----------------------|----------------------------|
| 1. Breather plug cap | 12. Nut |
| 2. Breather plug | 13. Seal ring |
| 3. Side cover | 14. Rack piston |
| 4. O-ring | 15. Valve housing |
| 5. U-packing | 16. Thrust needle bearing |
| 6. Adjusting plate | 17. Mainshaft |
| 7. Adjusting bolt | 18. Ball bearing |
| 8. Cross-shaft | 19. Oil seal |
| 9. Gear box housing | 20. Top cover |
| 10. Oil seal assembly | 21. Valve housing lock nut |
| 11. Pitman arm | |



Steering Shaft

1. Apply the specified multipurpose grease to the inside of the steering shaft bearing, and then insert the steering shaft into the bearing.

Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

2. Apply the specified adhesive to the surface where the steering shaft bearing and the column tube contact.
3. Apply the specified multipurpose grease to the inside of the upper bearing.
4. Install the steering shaft with the steering shaft bearing in the column tube.
5. Install the joint bearing (with the flanged surface facing upward) on the steering shaft lower end.
6. With the bearing rotated 90°, press in greased joint pin B. (F13524)

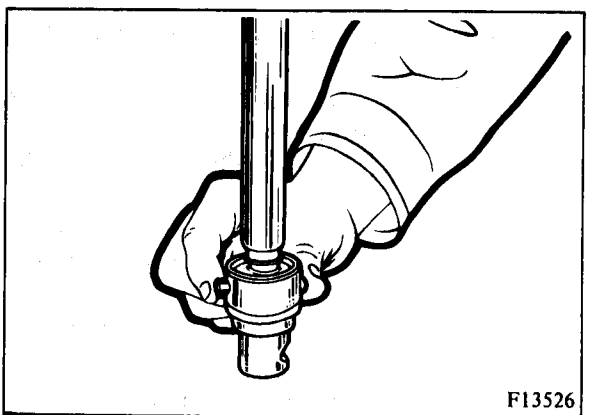
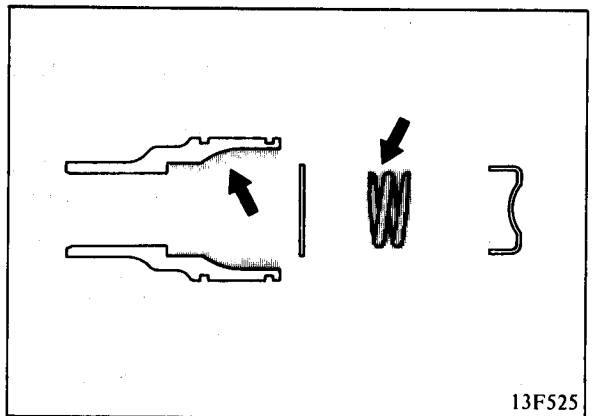
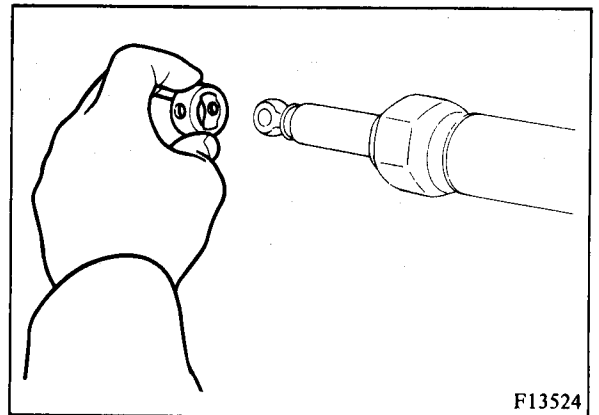
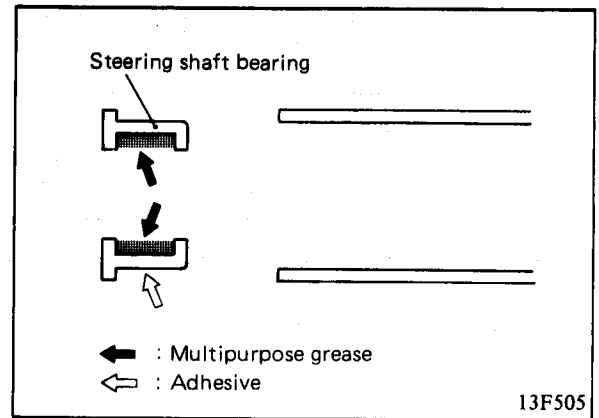
Caution

Be careful that the pin does not project over the bearing surface.

7. Fill the socket with the specified multipurpose grease, and then insert the seat, spring and spring seat into it.

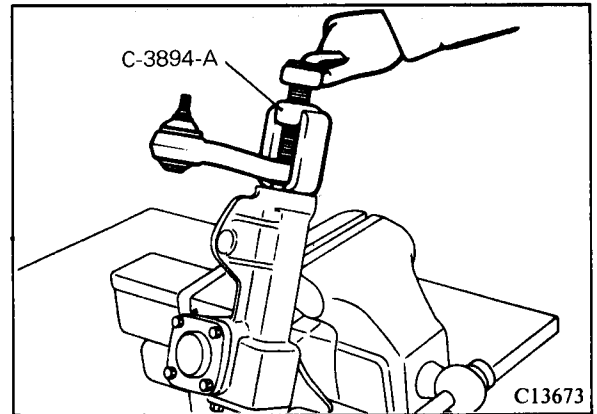
Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

8. Insert the steering shaft lower end into the socket, and, while holding the shaft downward, insert greased joint pins A by hand.





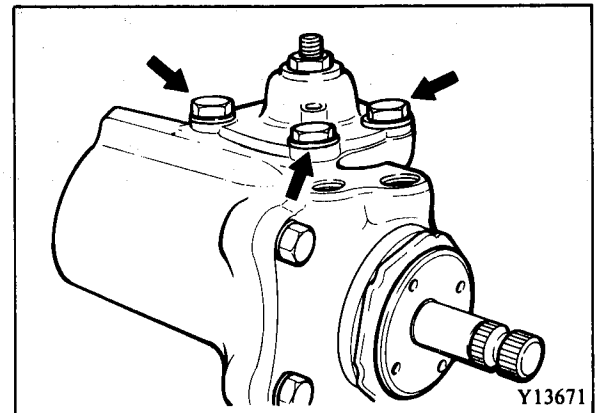
- Remove the pitman arm from the gear box assembly with the special tool illustrated.



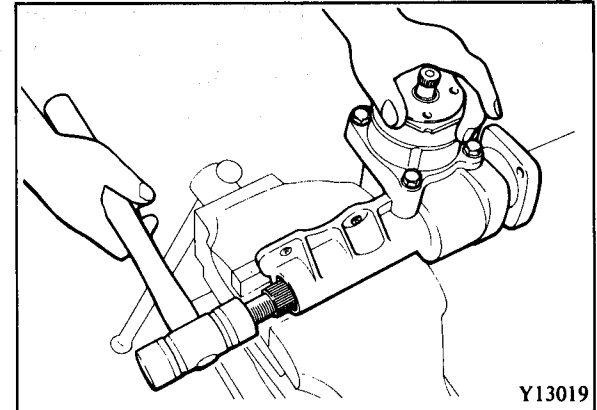
SEALS REPLACEMENT

Side Cover and Gear Box Housing

- Place the mainshaft and cross-shaft in the straight-ahead position.
- Remove the breather plug, and drain off the steering gear oil.
- Remove the side cover attaching bolts. (Y13671)
- Remove the lock nut of the adjusting bolt, and screw in the adjusting bolt so that the side cover rises slightly.



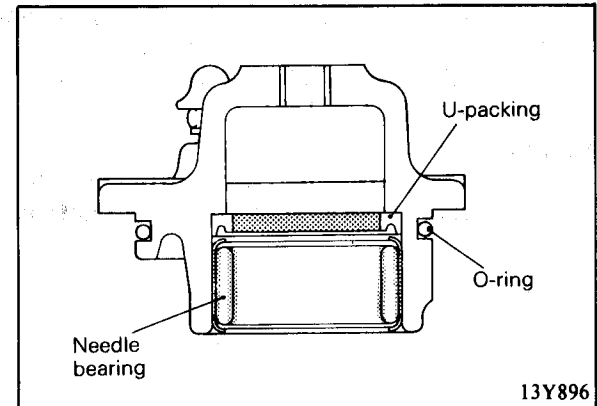
- Tap the bottom of the cross-shaft with a plastic hammer to remove the cross-shaft and the side cover. (Y13019)
- Remove the side cover from the cross-shaft by turning the adjusting bolt.



Caution

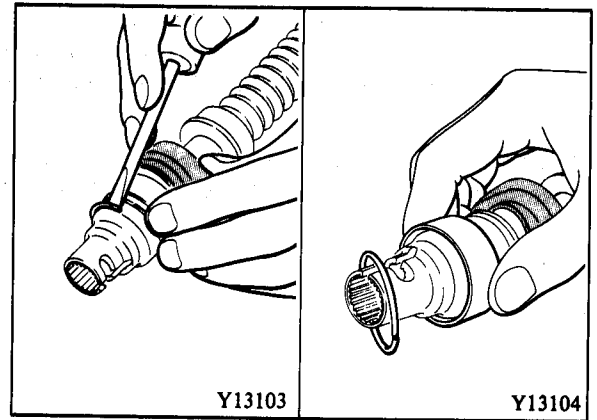
Do not lose the needle bearing rollers.

- Remove the needle rollers from the side cover. (13Y896)
- Remove the O-ring and U-packing from the side cover.





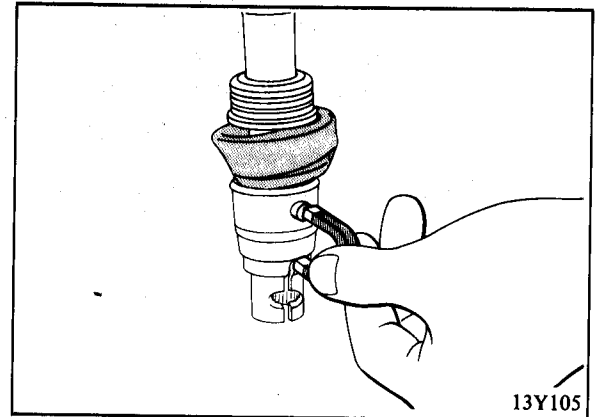
4. Slide off the joint cover from the socket assembly.
5. Remove the stoppers, and pull out the joint pin retainer. (Y13103, Y13104)



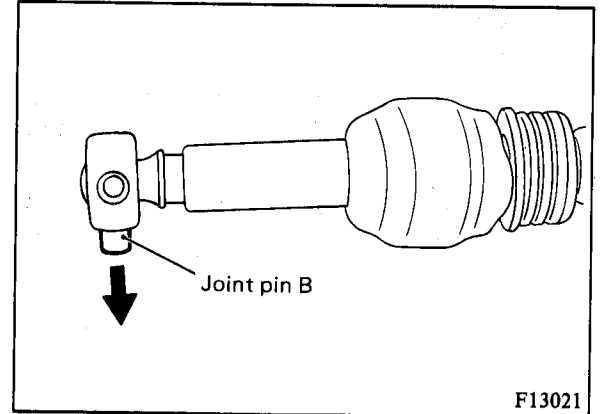
6. With the steering shaft set upright, pull out joint pins A on both sides of the socket, using a magnet, while holding the shaft downward. (13Y105)
7. Remove the joint socket.

Caution

Do not use a hammer to remove joint pins A.

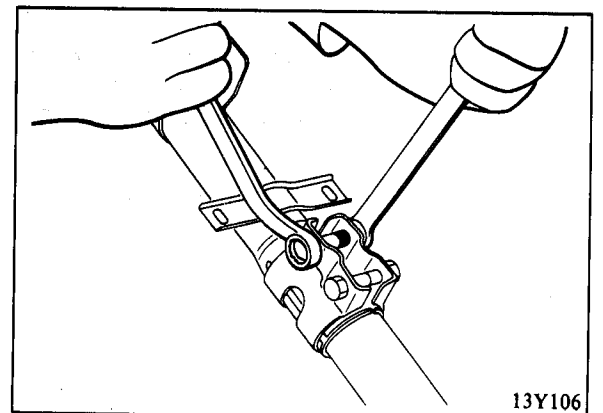


8. If necessary, press out joint pin B from the steering shaft and take out the joint bearing. (F13021)
9. Take out the joint cover and steering shaft bearing.



Steering Column

1. Separate the column tube sections.





18. While turning the adjusting bolt, measure the mainshaft total starting torque by using the special tool. (Y13631)

Mainshaft total starting torque [Standard value]
50–90 Ncm (4–8 in.lbs.)

NOTE

Position the mainshaft in the center position during measurement.

19. Tighten the adjusting bolt lock nut to the specified torque.

Lock nut tightening torque
30–45 Nm (22–33 ft.lbs.)

Valve Housing and Top Cover

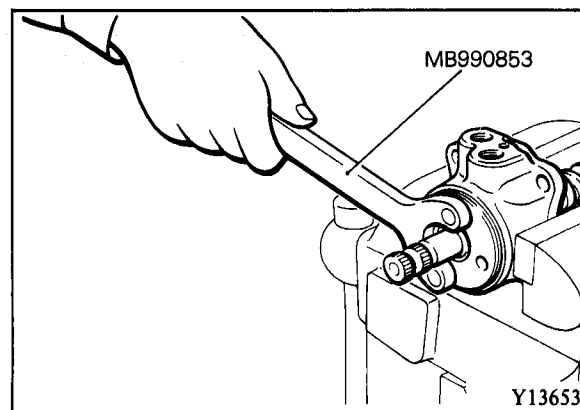
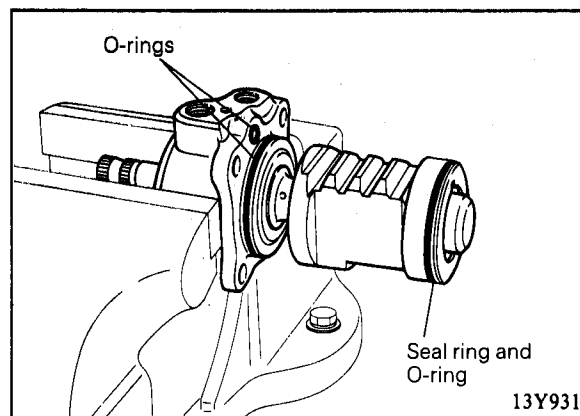
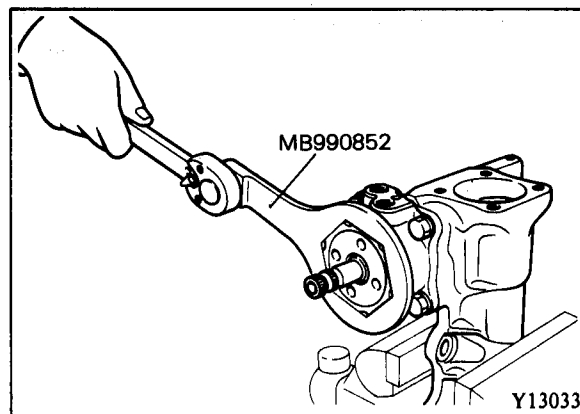
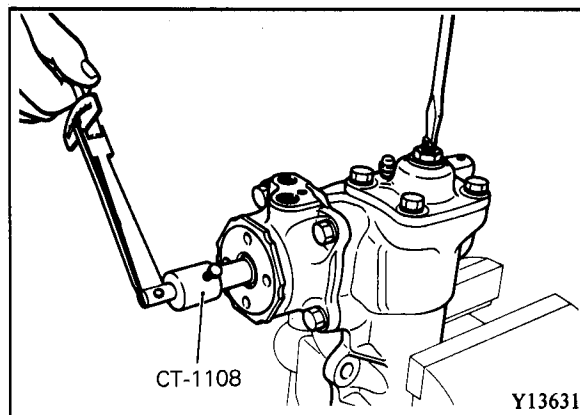
1. Remove the cross-shaft assembly. (Refer to P. 19-23.)
2. Remove the valve housing lock nut with the special tool as illustrated. (Y13033)
3. Remove the valve housing bolts and remove the valve housing and rack piston while holding the rack piston by hand to avoid rotation.

Caution

Do not hold housing with rack piston facing downward, otherwise the rack piston will fall off, scattering the steel balls.

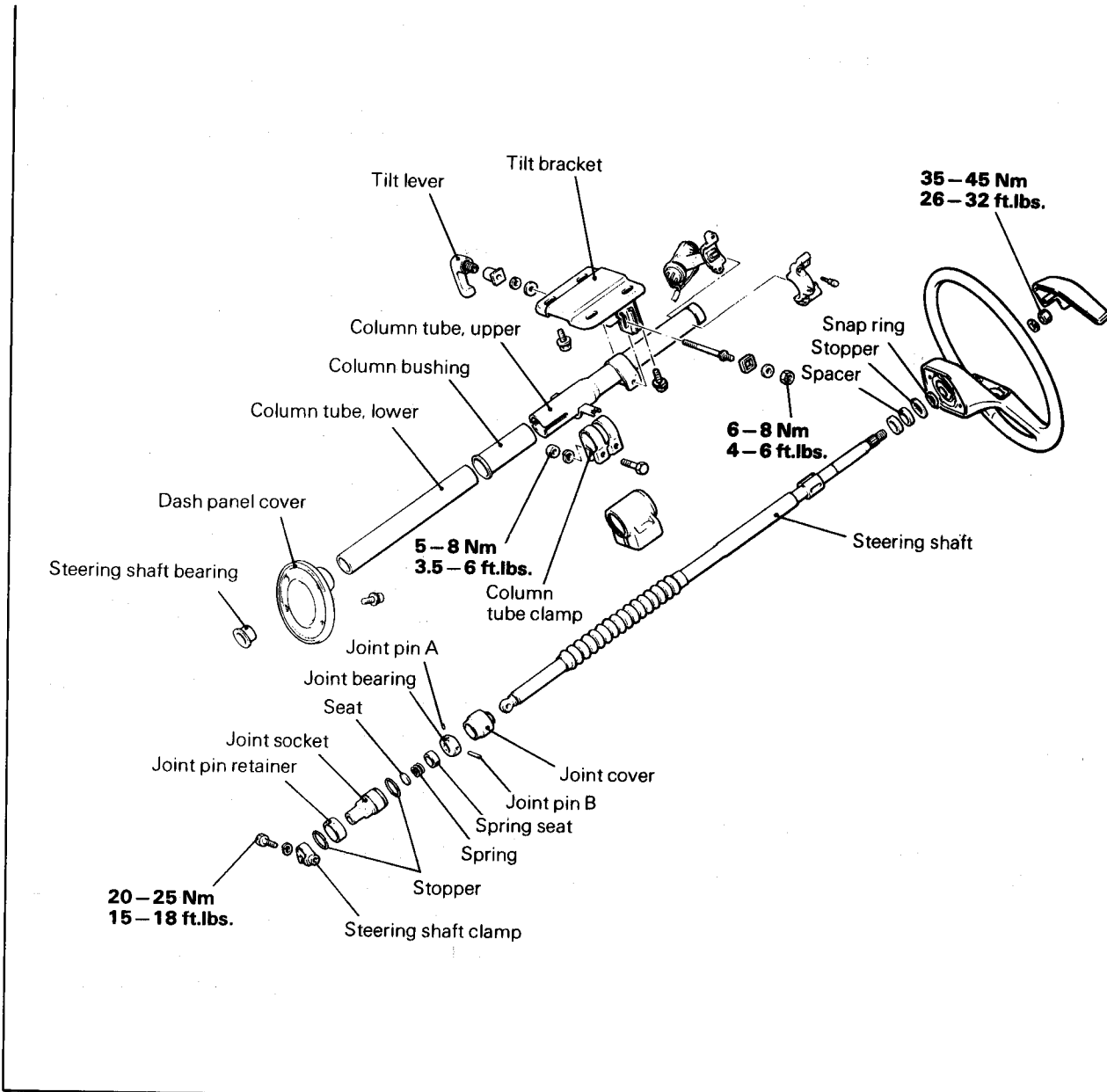
4. Remove the O-ring and seal ring from the rack piston and remove O-rings from the valve housing.

5. Remove the top cover from the valve housing with the special tool.





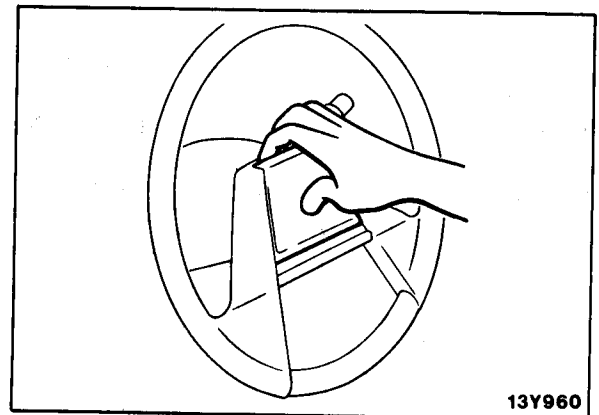
COMPONENTS



13Y962

REMOVAL

1. Remove the horn pad and disconnect the horn cable connector.



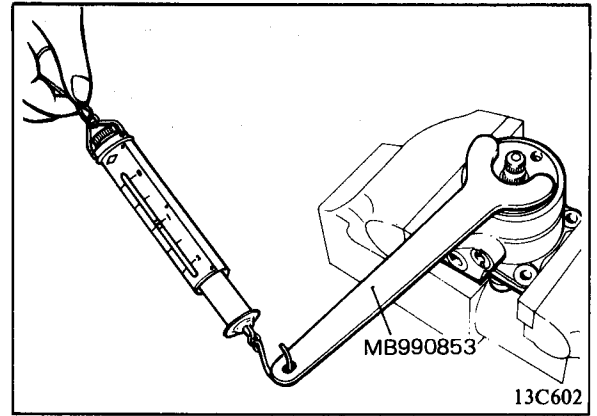
13Y960



- In order to fit in the assembly parts, use the special tool and a spring scale, and tighten the top cover until the force becomes 62–83 N (14–19 lbs.). Then turn the top cover lock nut until the force becomes 0 N (0 lbs.).

Caution

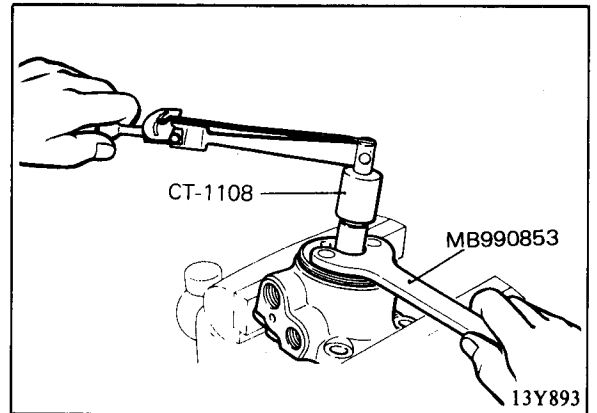
After tightening the top cover lock nut, rotate the mainshaft to confirm that there is no binding or abnormal noise.



- Measure the mainshaft starting torque with the special tools as illustrated. (13Y893)
- Tighten the top cover until the mainshaft starting torque is 20–30 Ncm (1.8–2.7 in.lbs.) greater than the measured value.

NOTE

Tighten the top cover gradually while measuring the starting torque.

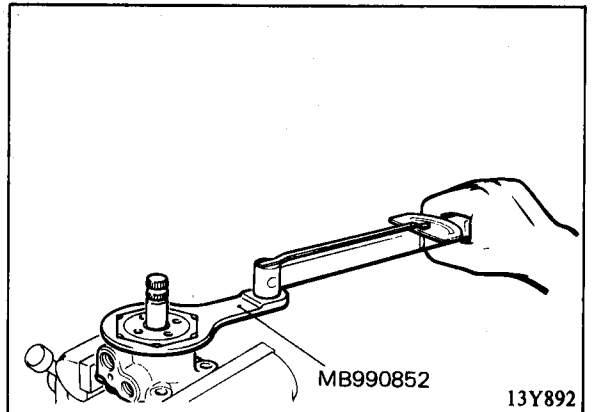


- Tighten the valve housing lock nut to the specified torque with the special tool as illustrated.

Lock nut tightening torque	180–230 Nm (130–166 ft.lbs.)
With special tool attached	135–175 Nm (98–127 ft.lbs.)

Caution

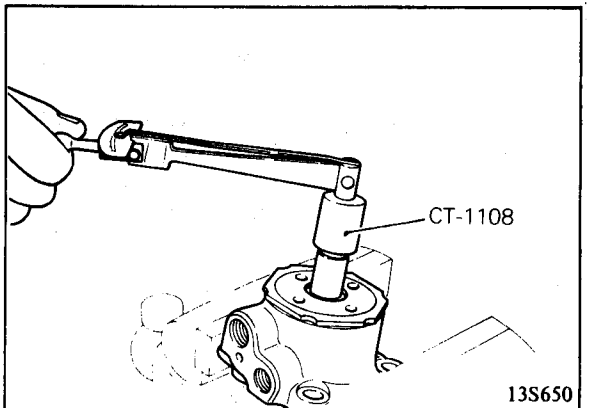
Be sure that the top cover does not turn with the lock nut.



- Measure the mainshaft starting torque by using the special tool as illustrated.

If the measured mainshaft starting torque does not comply with the standard value, remove the valve housing lock nut and adjust the tightening of the top cover.

Mainshaft starting torque [Standard value]	25–65 Ncm (2–6 in.lbs.)
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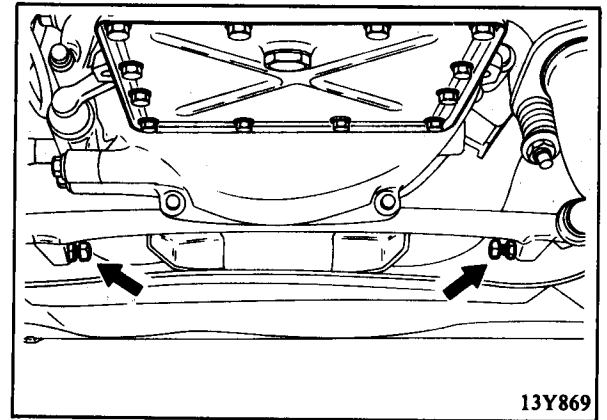




- Adjust the steering angle of each wheel by turning the stop bolt of the relay rod.

Caution

Be sure that toe-in is properly adjusted before adjusting steering angle.

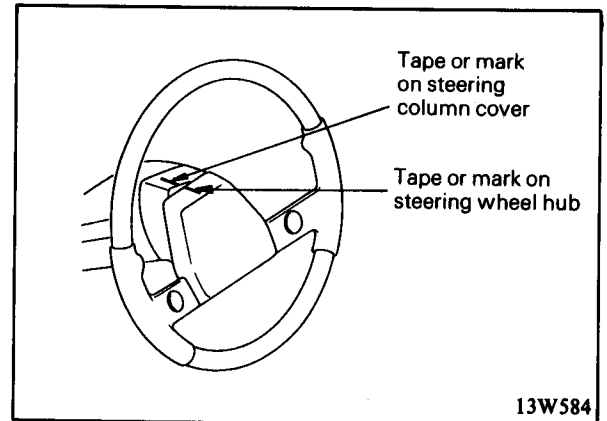


STEERING WHEEL CENTERING

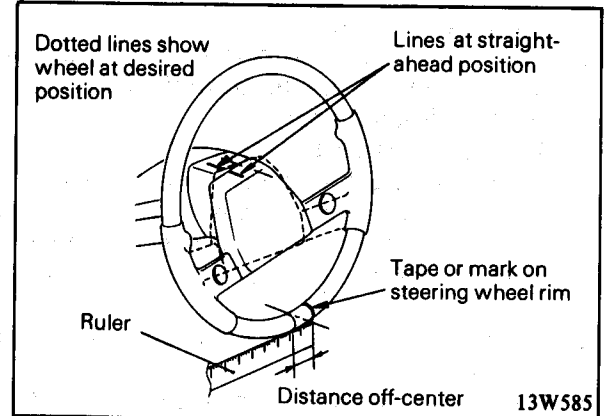
Simplified Steering Wheel Centering

DETERMINING STEERING WHEEL'S OFF CENTER

- For the road test, take along chalk or tape and a ruler.
- Drive straight ahead on an uncambered level surface.
- When the vehicle's wheels are pointing straight ahead, mark the steering wheel hub and column cover with a chalk or tape line. (13W584)
- Stop the vehicle and line up the marks on the hub and column cover.



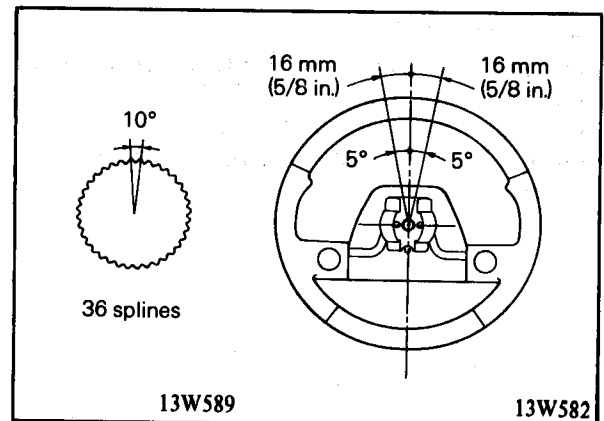
- Place a tape strip or mark on the steering wheel rim. (13W585)
- Hold a ruler next to the rim as shown in the illustration, and then steer the steering wheel until it is in the desired centered position. (13W585)
- Record the distance the strip or mark on the rim has moved. This is how far the steering wheel is off center. If it is more than 16 mm (5/8 in.) off center, it can be centered by indexing it ten degrees towards the center.



INDEXING STEERING WHEEL TO CENTER IT

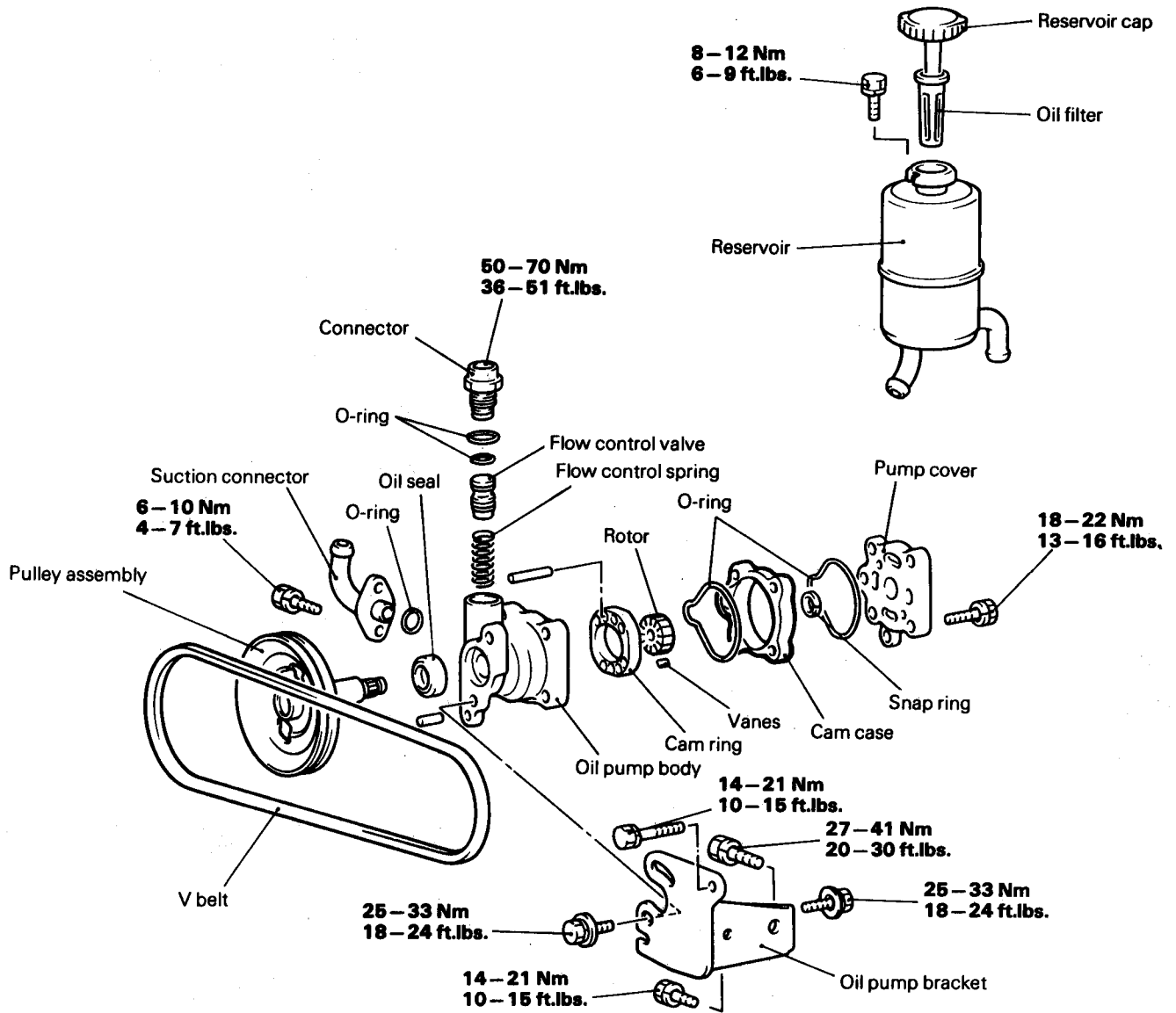
The steering wheel shaft has 36 splines, allowing the steering wheel to be indexed in ten-degree increments. (13W589)

- Remove the steering wheel.
- Without disturbing the position of the steering wheel shaft, re-install the wheel as near on-center as possible.





COMPONENTS



13Y945

REMOVAL

1. Remove the reservoir cap and disconnect the return hose from the reservoir to drain the fluid.
2. Jack up the front wheels and support with floor stands.
3. Disconnect the high tension cable and turn the engine over several times to drain the fluid from the power steering system.
4. Loosen the brace bolts and lock bolt, and remove the V belt.



CHECKING FLUID LEVEL

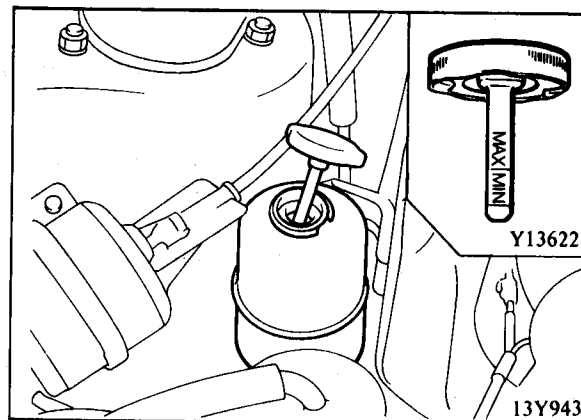
1. Start the engine on a level surface, and turn the steering wheel several times fully to the right and left while the engine is idling.
2. Check the fluid for contamination.

NOTE

Replace the fluid if it has bubbles or is whitish.

3. Fill the reservoir with specified automatic transmission fluid to the MAX level. (13Y943)

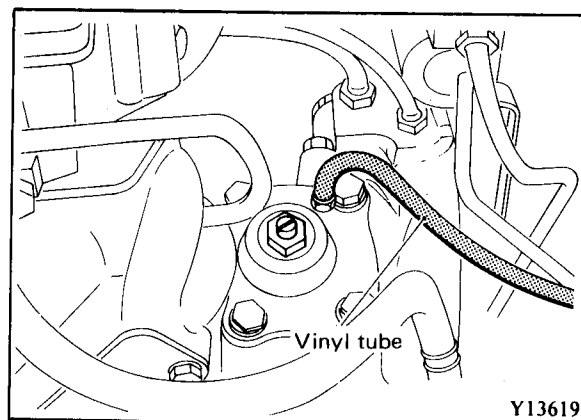
Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent



BLEEDING

Check the stationary steering effort. If it is not within the range of the standard value, it is possible that air is in the system. Bleed the air from the system.

1. Make certain the reservoir is filled up.
2. Jack up the front wheels.
3. Disconnect and ground the coil high tension cable.
4. While turning the steering wheel completely to the right and left, turn the engine over by using the starting motor. Repeat this several times.
5. Lower the front wheels.
6. Connect one end of a vinyl clear hose to the breather plug on the gear box, and place the other end in a container. Start the engine and idle it.



7. Loosen the breather plug, and then turn the steering wheel completely to the right and left continuously until air bubbles no longer appear in the fluid coming out of the tube. (Y13620)

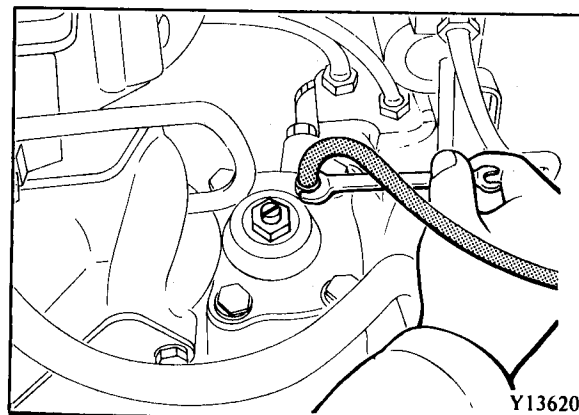
NOTE

Do not allow the power steering reservoir to run dry.

8. After bleeding, tighten the breather plug and remove the tube.
9. Check the fluid level, and refill as necessary.

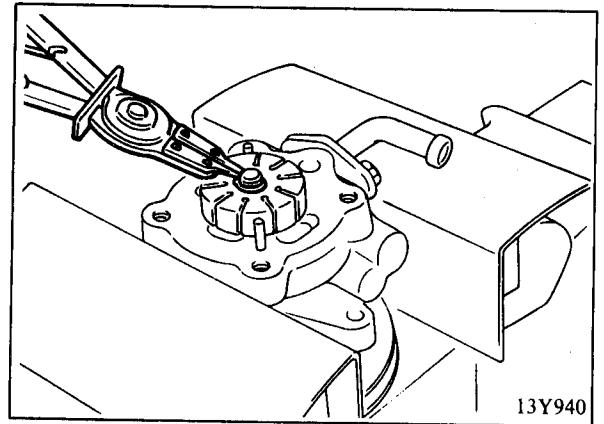
NOTE

When turning the steering wheel completely to the right and left, check that the fluid level variation is less than 4 mm (.16 in.) at a constant temperature.

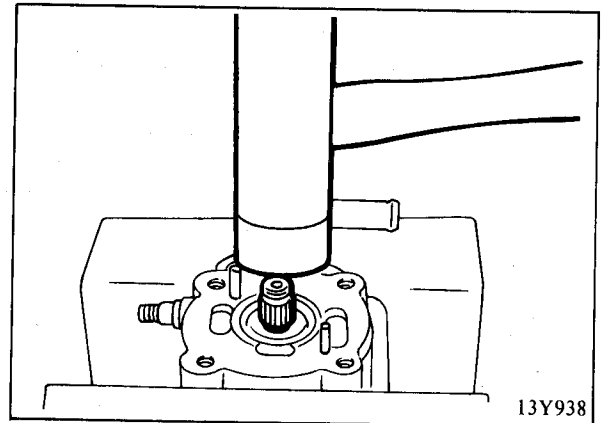




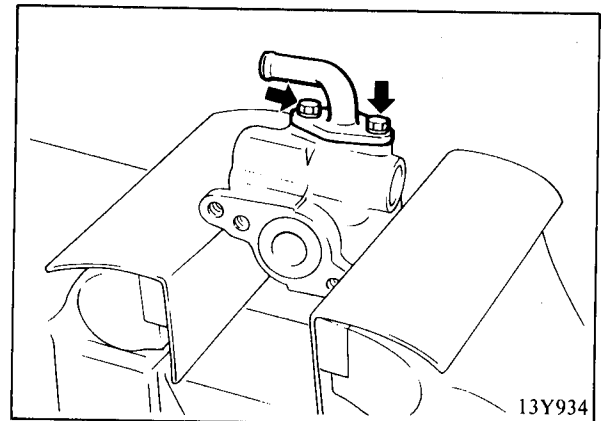
5. Remove the snap ring of the shaft with snap ring pliers, and separate the rotor from the shaft.



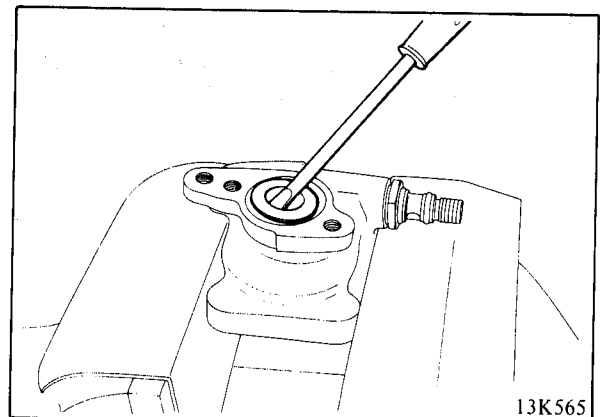
6. Tap the rotor side of the shaft lightly with a plastic hammer, and take out the pulley assembly.



7. Remove the suction connector from the oil pump body. (13Y934)
8. Remove the O-ring from suction connector.



9. Remove the oil seal from the oil pump body.



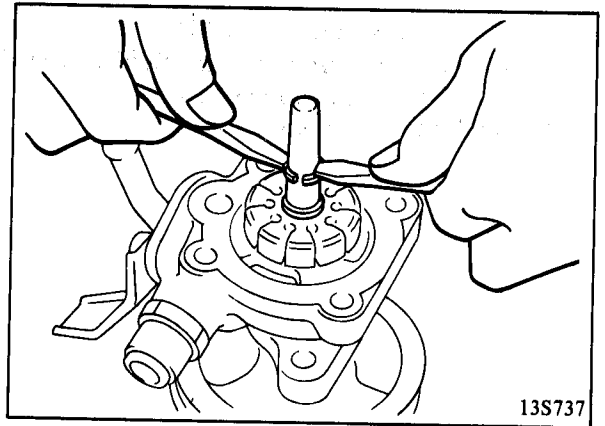
TROUBLESHOOTING



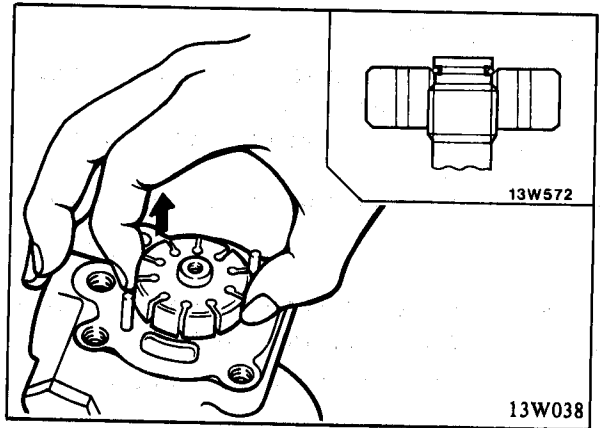
Symptom	Probable cause	Remedy
Oil leakage from hose connection	Improperly tightened flare nut Incorrectly inserted hose Improperly clamped hose	Check, repair or replace
Oil leakage from hose assembly	Damaged or clogged hose Hose connector malfunction	Replace
Oil leakage from oil reservoir	Leaking reservoir Improperly welded pipe	Replace
	Overflow	Bleed the system or adjust the oil level
Oil leakage from oil pump	Malfunction of oil pump housing	Replace the oil pump
	Malfunction of O-ring and/or oil seal	Replace the O-ring and oil seal
Oil leakage from gear box	Malfunction of gear box housing (including leakage from air hole)	Replace the gear box
	Malfunction of O-ring and/or oil seal	Replace the O-ring and oil seal



3. Install the snap ring.



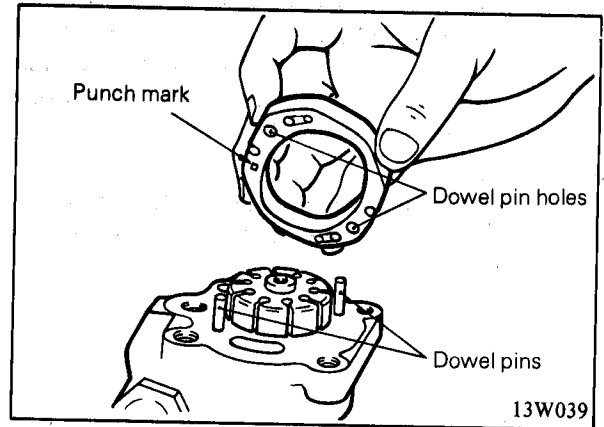
4. Raise the rotor to make sure that the snap ring fits in the countersunk portion.



5. Install the cam ring with the dowel pins of pump body aligned with the dowel pin holes in the cam ring and also with the punch mark on the cam ring located on the pump body side.

6. Apply automatic transmission fluid to the O-rings.

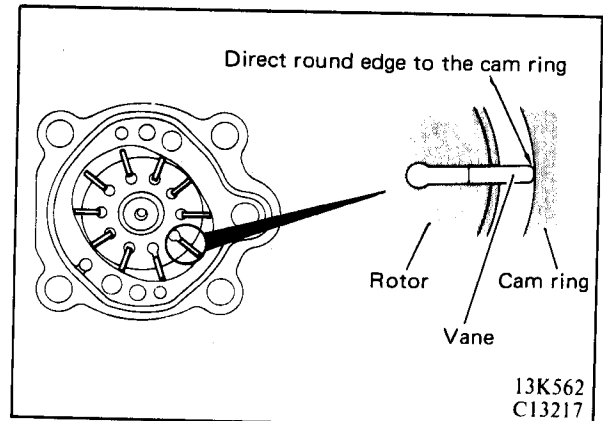
Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent



7. Install O-rings to the cam case and install the cam case.

8. Apply automatic transmission fluid to the vanes and install the vanes on the rotor, paying close attention to the installation direction. (C13217)

Recommended fluid MOPAR DEXRON II Type
Automatic Transmission Fluid
Part Number 4131509 or equivalent



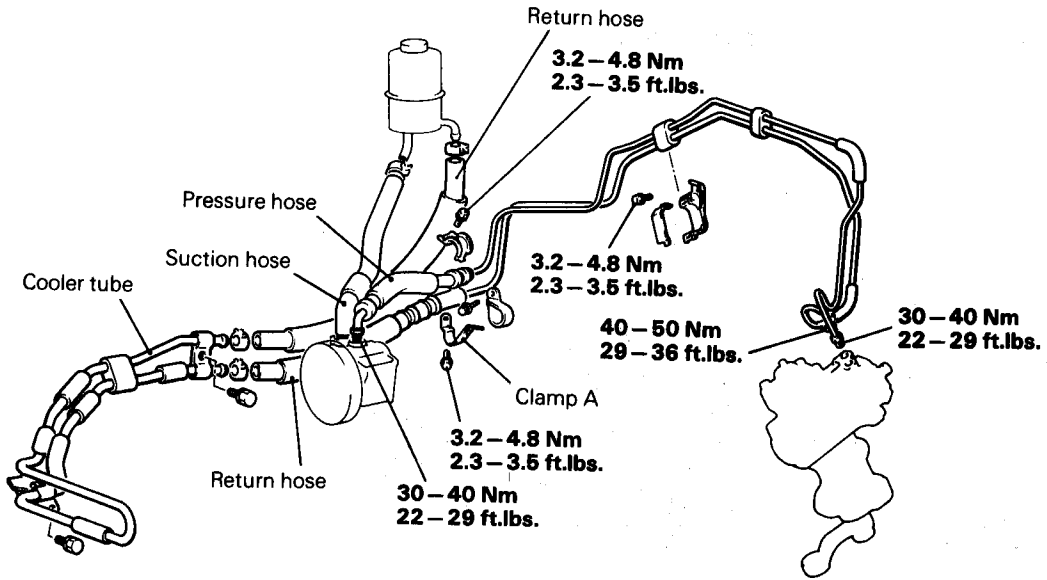
TROUBLESHOOTING



Symptom	Probable cause	Remedy
Steering wheel pulls to one side (continued)	Malfunction of shock absorber	Replace
	Uneven wheel base (between right side and left side)	Adjust the body alignment (Refer to GROUP 13)
Steering wheel vibrates	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Unevenly worn or deformed tire(s)	Rotate the wheels or replace the tire(s) (Refer to GROUP 22)
	Loose hub nut	Retighten (Refer to GROUP 2)
	Excessive runout, or unbalance of tire and wheel	Adjust the wheel balance or replace (Refer to GROUP 22)
	Poor wheel alignment	Adjust the wheel alignment (Refer to GROUP 2)
	Damaged wheel bearing	Replace
	Deformed or loose lower arm	Retighten or replace (Refer to GROUP 2)
	Deformed linkage	Repair or replace
	Loose linkage joints	Retighten
	Malfunction ball joints (Too small ball joint starting torque)	Replace
	Malfunction of front suspension	Check and adjust; replace the parts if necessary (Refer to GROUP 2)
	Incorrect installation or internal damage in gear box	Correct or replace
	Malfunction of shock absorber	Replace
Road shock is felt in steering wheel	Insufficient steering wheel play	Adjust the steering wheel play
	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Unevenly worn or deformed tire(s)	Rotate the wheels or replace the tire(s)
	Malfunction of shock absorber	Replace
Poor recovery of steering wheel to straight ahead position	Insufficient tire inflation pressure	Adjust the tire pressure (Refer to GROUP 22)
	Excessive mainshaft preload	Adjust the preload
	Stuck or damaged ball joint	Replace
	Improper wheel alignment angles	Adjust the wheel alignment (Refer to GROUP 2)



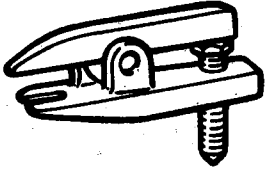
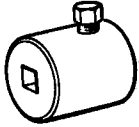





COMPONENTS



13Y963

SPECIAL TOOLS

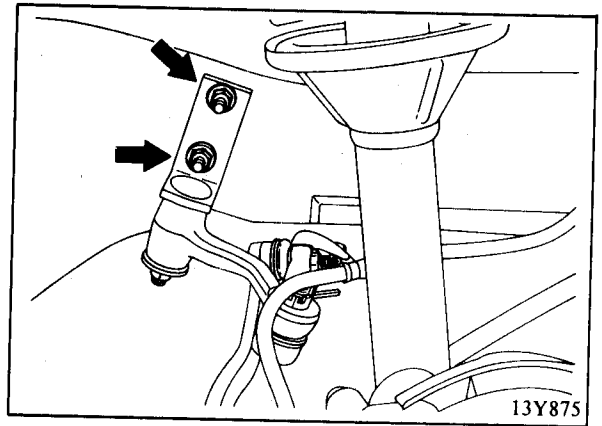


Tool (Number and name)	Use	Tool (Number and name)	Use
<p>MB990635 Steering linkage puller</p> 	<p>Disconnection of the relay rod</p>	<p>CT-1108 Preload socket</p> 	<p>Measurement of the mainshaft starting torque</p>
<p>C3894-A Pitman arm puller</p> 	<p>Removal of the pitman arm</p>	<p>MB990852 Housing locking nut special spanner</p> 	<p>Removal and installation of the housing locking nut</p>
<p>C-3309-E Oil pressure gauge</p>  <p>C-4535 Hose set – Pump pressure checking</p> 	<p>Measurement of the oil pump pressure</p>	<p>MB990853 Top cover remover</p> 	<p>Removal and installation of the top cover</p>



Idler Arm Assembly

1. Detach the relay rod from the idler arm by using the special tool (MB990635).
2. Remove the idler arm assembly. (13Y875)
3. Disassemble the idler arm assembly.



Ball Joint Dust Cover

Remove the dust cover and O-ring from the ball joint. (13Y870)

INSPECTION

1. Check idler arm support for damage or deformation.
2. Check idler arm for damage or deformation.
3. Check idler arm bushings for wear or deterioration.
4. Check dust covers and O-rings for damage or deterioration.
5. Check tie rods for damage or deformation.
6. Check relay rod for bends or damage.

INSTALLATION

Ball Joint Dust Cover

1. When installing the dust cover, fill the cover lip and the interior with the specified multipurpose grease.

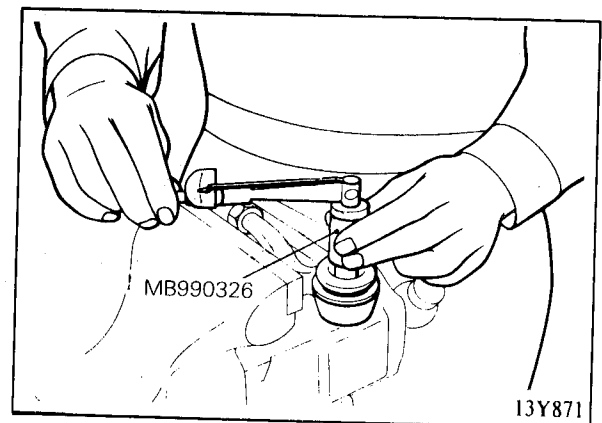
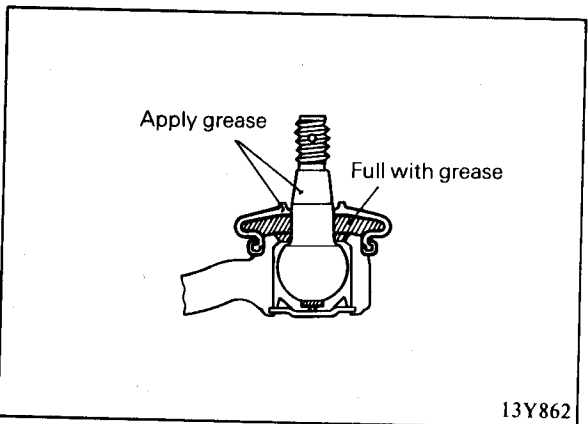
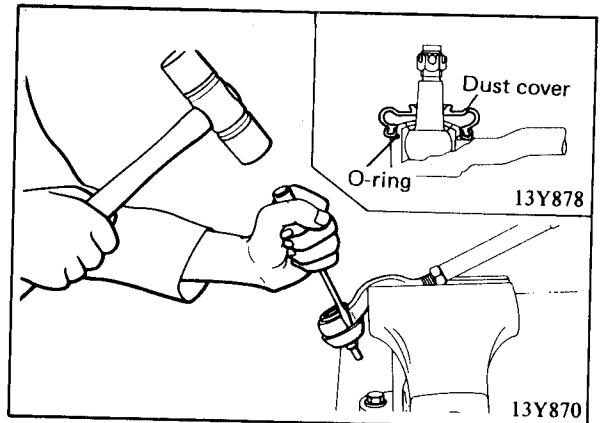
Specified grease
 MOPAR Multi-Mileage Lubricant
 Part Number 2525035 or equivalent

2. Secure the relay rod and the tie rod in a vice.
3. Mount the nut to the ball joint, and then measure the ball joint starting torque. (13Y871)

Ball joint starting torque [Standard value]
 Tie rod and relay rod (for pitman arm)
 50–250 Ncm (4–22 in.lbs.)
 Relay rod (for idler arm)
 50–150 Ncm (4–13 in.lbs.)

NOTE

If the ball joint starting torque exceeds the upper limit of the standard value range, replace the ball joint. Even if the ball joint starting torque is below the lower limit of the standard value range, the ball may be reused unless it is dusty or too loose.



SPECIFICATIONS



TORQUE SPECIFICATIONS

Nm (ft.lbs.)

Steering column and shaft	
Steering wheel lock nut	35–45 (26–32)
Column tube clamp	5–8 (3.5–6)
Tilt bolt (before welding)	6–8 (4–6)
Steering shaft clamp	20–25 (15–18)
Power steering gear box	
Side cover	45–55 (33–40)
Adjusting bolt lock nut	30–45 (22–33)
Breather plug	3–4 (2–3)
Pitman arm installation	130–150 (94–108)
Gear box installation	55–65 (40–47)
Circulators installation	3.5–4.5 (2–3)
Valve housing	45–55 (33–40)
Lock nut*	180–230 (130–166)*
Oil pump	
Connector	40–60 (29–43)
Reservoir	8–12 (6–9)
Oil pump bracket	14–21 (10–15) 27–41 (20–30)
Oil pump brace bolt	25–33 (18–24)
Oil pump cover	18–22 (13–16)
Steering hoses	
Pressure hose	30–40 (22–29)
Return hose	40–50 (29–36)
Clamp A	3.2–4.8 (2.3–3.5)
Steering linkage	
Tie rod end	35–45 (26–32)
Tie rod socket and relay rod	35–45 (26–32)
Relay rod to pitman arm	35–45 (26–32)
Relay rod to idler arm	35–45 (26–32)
Idler arm and bracket	40–60 (29–43)
Tie rod end stud	50–55 (37–39)
Idler arm bracket and frame	35–40 (26–28)
Stopper bolt lock nut for adjustment of steering angle	20 (14)

NOTE

* If the special tool is used to measure the tightening torque, the measurement is 135–175 Nm (98–127 ft.lbs.).



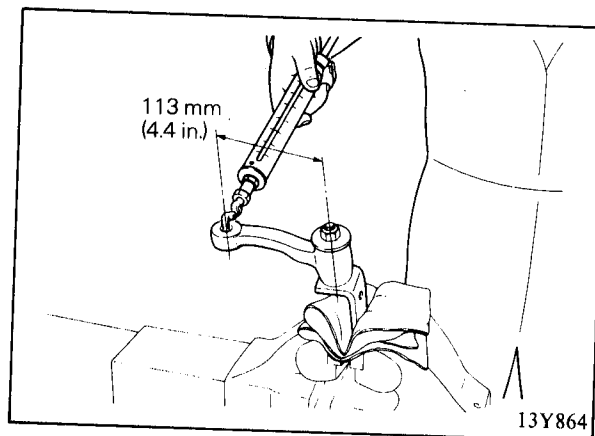
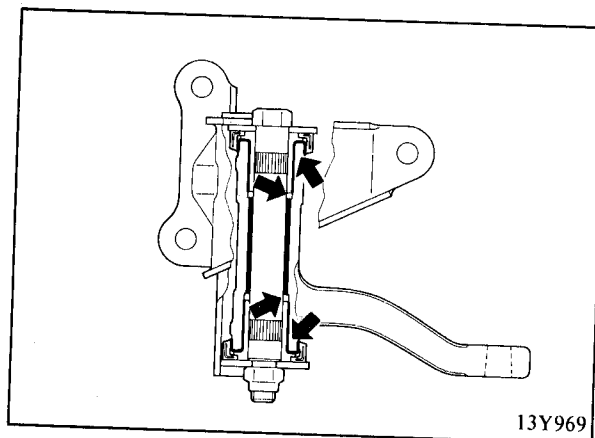
VEHICLES WITH AN INTERCOOLER

1. Apply a thin coat of specified multipurpose grease to the inner surfaces of the idler arm, outer surfaces of the bearings and lips of oil seals.

Specified grease
MOPAR Multi-Mileage Lubricant
Part Number 2525035 or equivalent

2. Install the bearings and oil seals to the idler arm.
3. Install the idler arm assembly to the idler arm support.
4. Measure the starting torque of the idler arm with a spring scale.

Idler arm starting torque [Standard value]
300—900 Ncm (26—78 in.lbs.)
Tangential force (when measured with a spring scale)
26—78 N (6—18 lbs.)





STEERING POWER

CONTENTS

COMPONENT SERVICE	15	CHECKING STEERING WHEEL FREE PLAY	10
POWER STEERING GEAR BOX	21	OIL PUMP PRESSURE TEST	12
POWER STEERING OIL PUMP	29	STEERING WHEEL CENTERING	13
STEERING COLUMN AND SHAFT	15	SPECIAL TOOLS	5
STEERING HOSES	35	SPECIFICATIONS	2
STEERING LINKAGE	36	GENERAL SPECIFICATIONS	2
SERVICE ADJUSTMENT PROCEDURES	10	LUBRICANTS	4
BLEEDING	11	SERVICE SPECIFICATIONS	2
CHECKING FLUID LEVEL	11	TORQUE SPECIFICATIONS	3
CHECKING POWER STEERING BELT TENSION	10	TROUBLESHOOTING	6
CHECKING STATIONARY STEERING EFFORT	10		
CHECKING STEERING ANGLE	12		