SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	General

Return to Main Menu(s): Mechanical Manual Electrical Manual

SPECIFICATIONS

Shaft and joint type	Collapsible, crossjoint with tilt column
Steering gear type	Rack and pinion
Rack stroke	128 ± 1 mm

Oil pump type displacement (Vane type)

N.P.S.	9.6 cm3/rev. Max. (0.59 in3/rev. Max)
E.P.S.	7Lit./min. const

Solenoid valve

Rated voltage	DC 12V
Rated current	1.0 (A)
Resistance	6.7 ± 1 (W)

Angular velocity sensor

Type	Photo interrupter
Output pulse	18 Pulse/Rev.
Current consumption	50mA or less

SERVICE STANDARD

Steering wheel free play: 0-30 mm (0-1.1 in)

Steering angle

inner wheel	35°37'± 1°30'
Outer wheel	30°76

Tie rod end ball joint starting torque: 0.05-0.25 kg.m

Stationary steering effort

N.P.S.	34N (3.5 kg, 7.7lbs)
E.P.S.	Min. 26N (2.7 kg, 5.9 lbs) Max. 39.2N (4.0 kg, 8.82 lbs)

Belt deflection [under 98N (10kg, 22lbs) force]: 6-9 mm

Oil pump relief pressure: 62-67 kg/cm2 (6.1-6.6 MPa, 882-953 psi)

Total pinion pre-load

NPS (at 00-60°)	13-18 kg.m (127-176 Nm, 93.9-130 lb.ft)
NPS (at 60°-80°)	7-12 kg.m (68.6-117.7 Nm, 86.8-98.8 lb.ft)
EPS	7-16 kg.m (68.6-156.9 Nm, 86.8-115.7 lb.ft)

Resistance of tie-rod joint oscillating: 0.8-2.0 kg (7.8-19.6 N, 1.75-4.41 lb)

Oscillating torque of tie-rod: 0.2-0.5 kg.m (1.96-4.9 Nm, 1.4-3.6 lb.ft.)

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	General

Return to Main Menu(s): Mechanical Manual Electrical Manual

TIGHTENING TORQUE

	Nm	kg.cm	lb.ft
Steering wheel and shaft (with Airbag)	35-45	350-450	26-33
Steering wheel and shaft (without Airbag)	40-50	400-500	29.5-36.9
Steering column and shaft assembly mounting bracket	13-18	130-180	9.6-13.3
Steering shaft and joint	15-20	150-200	11-15
Joint to gear box	15-20	150-200	11-15
Dust cover mounting bolt	4-6	40-60	3-4
Gear box to body	60-80	600-800	44-59
Tie rod end lock nut	50-55	500-550	36.9-40.6
Tie rod end ball joint slotted nut	24-34	240-340	17.7-25
Yoke plug lock nut	50-70	500-700	37-52
Tie rod to rack	80-100	800-1000	59-74
Valve body housing to rack housing assembly	20-30	200-300	14.8-30.7
Pressure and return tube to gear box	12-18	120-180	9-13
Pinion and valve assembly to self-locking nut	20-30	200-300	15-22
End plug	50-70	500-700	37-52
Feed tube	12-18	120-180	9-13
Oil pump to mounting bracket	35-50	350-500	25.8-36.9
Oil pump bracket to engine	35-50	350-500	25.8-36.9
Pressure hose to oil pump	55-65	550-650	40.6-47.9
Oil reservoir mounting bolt	4-6	40-60	3.0-4.4
Solenoid valve	16-22	163-224	11.8-16.2

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	General

Return to Main Menu(s): Mechanical Manual Electrical Manual

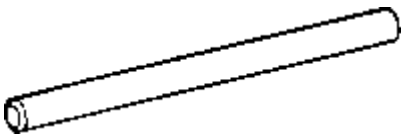
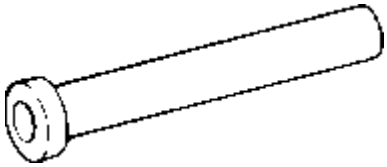
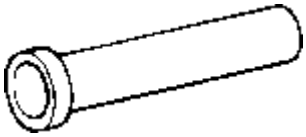
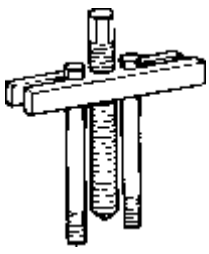
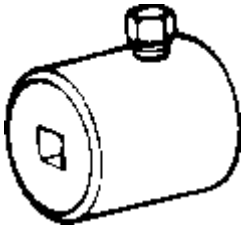
LUBRICANTS

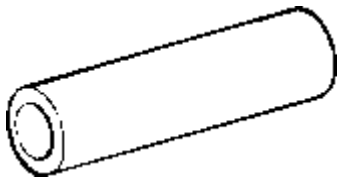
Items	Specified lubricant	Quantity
Horn contact ring of steering wheel	LONG TIME PD2 (OPTIMOL, GERMAN)	As required
Bearing of steering shaft	ALVANIA #2 OR #3 (KEUK DONG SHELL, KOREA)	As required
Ball joint of tie rod end	POLYLUB GLY801K (KUBER, KOREA)	As required
Steering gear housing	ONE-LUBER RP (KYODOYUSHI, JAPAN)	As required
Inner ball joint of gear box	LONG TIME PD2 (OPIMOL, GERMAN)	As required
Contact area of gear box bellows & tie rod	SILICON GREASE (SPEC NO: MS511-41)	As required
Power steering fluid	ATF DEXRONII type (KEUKDONG SHELL, KOREA) or, TEXAMATIC FLUID EXRONII type(HONAM CALTEX, KOREA)	0.9 liter (0.95 qts.)

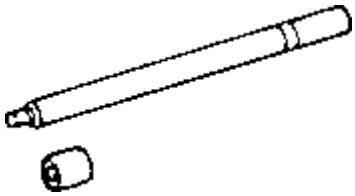
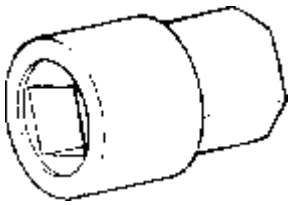
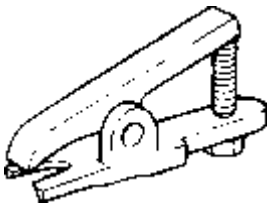
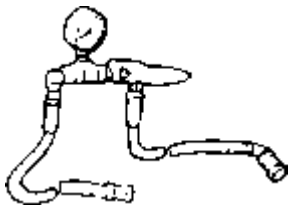
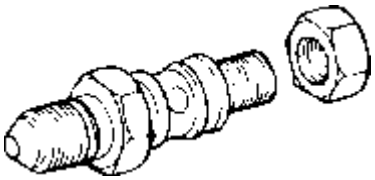
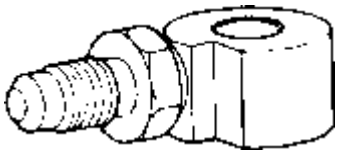
SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	General

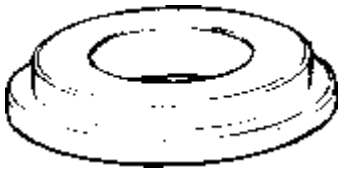
Return to Main Menu(s): Mechanical Manual Electrical Manual

SPECIAL TOOLS

Tool (Number and Name)	Illustration	Use
09517-21400 Drift		Removal of pinion gear bearing.
09222-21100 Valve stem oil seal installer		Installation of the pinion gear bearing.
09432-21600 Bearing installer		Installation of the pinion gear bearing.
09434-14200 Counter shaft bearing installer		Installation of the gear box oil seal.
09561-11002 Steering wheel puller		Removal of the steering wheel.
09565-11100 Pre-load socket		Measurement of the mainshaft pre-load.

09565-21000 Pinion bearing remover and installer		Removal & installation of pinion gear bearing.

Tool (Number and Name)	Illustration	Use
09555-21000 Bar		Removal & installation of the oil seal.
09565-21100 Yoke plug torque wrench socket		Removal, installation and adjustment of steering gear yoke plug.
09568-34000 Ball joint		Measurement of the oil pressure. (use with 09572-22000, 09572-22100)
09572-21000 Oil pressure gauge		Measurement of the oil pressure. (use with 09572-22000, 09572-22100)
09572-22000 Oil pressure gauge adapter		Measurement of the oil pressure. (use with 09572-21000, 09572-22000)
09572-22100 Oil pressure gauge adapter		Measurement of the oil pressure. (use with 09572-21000, 09572-22000)
		Installation of the back-up

09573-21000 Oil seal installer gauge		washer and oil seal. (use with 09573-21100, 09573-21200, 0951711000, 09555-21000)
09573-21100 Oil seal installer		Installation of the back-up washer and oil seal. (use with 09573-21000, 09573-21200, 09555-21000)
09573-21200 Oil seal guide		1. Removal of gear box oil seal and back washer (use with 09555-21000) 2. Installation of gear box oil seal and back washer (use with 09555-21000, 09573-21000)

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	General

Return to Main Menu(s): Mechanical Manual Electrical Manual

TROUBLESHOOTING

Symptom	Probable cause	Remedy
Excessive play of steering wheel	Loose rack support cover	Retighten
	Loose steering gear mounting bolts	Retighten
	Loose or worn tie-rod end	Retighten or replace as necessary
Steering wheel operation is heavy (Insufficient power assist)	V-belt slippage	Check
	Damaged V-belt	Replace
	Low fluid level	Replenish
	Air in the fluid	Bleed air
	Twisted or damaged hoses	Correct the routing or replace
	Insufficient oil pump pressure	Repair or replace the oil pump
	Sticky flow control valve	Replace
	Excessive internal oil pump leakage	Replace damaged parts
	Excessive oil leaks from rack and pinion in gear box	Replace damaged parts
	Distorted or damaged gear box or valve body seal ring	Replace
The steering wheel does not return properly	Excessive turning resistance of tie-rod end	Replace
	Excessively tightened rack support cover	Adjust
	Rough turning or inner tie-rod and/or ball joint	Replace
	Loose mounting of gear box to gear box mounting bracket	Retighten
	Worn steering shaft joint and/or body grommet	Correct or replace
	Distorted rack	Replace
	Damaged pinion bearing	Replace
	Twisted or damaged hoses	Reroute or replace
	Damaged oil pressure control valve	Replace

	Damaged oil pump input shaft bearing	Replace
Noise	**Hissing Noise in Steering Gear** There is some noise in all power steering systems. One of the most common is a hissing sound when the steering wheel is turned and the car is not moving. This noise will be most evident when turning the wheel while the brakes are applied. There is no relationship between this noise and steering performance. Do not replace the valve unless the "hissing" noise is extremely objectionable. A replacement valve will also have a slight noise, and is not always a cure for the condition.	
Rattling or chucking noise in rack and pinion	Interference with hoses from vehicle body	Reroute
	Loose gear box bracket	Retighten
	Loose tie-rod end and/or ball joint	Retighten
	Worn tie-rod end and/or ball joint	Replace
Noise in the oil pump	Low fluid level	Replenish
	Air in the fluid	Bleed air
	Loose pump mounting bolts	Retighten

NOTE

A slight "grinding noise" may be heard immediately after the engine is started in extremely cold whether condition (below -20°C): This is due to power steering fluid characteristics in extreme cold conditions and is not a malfunction.

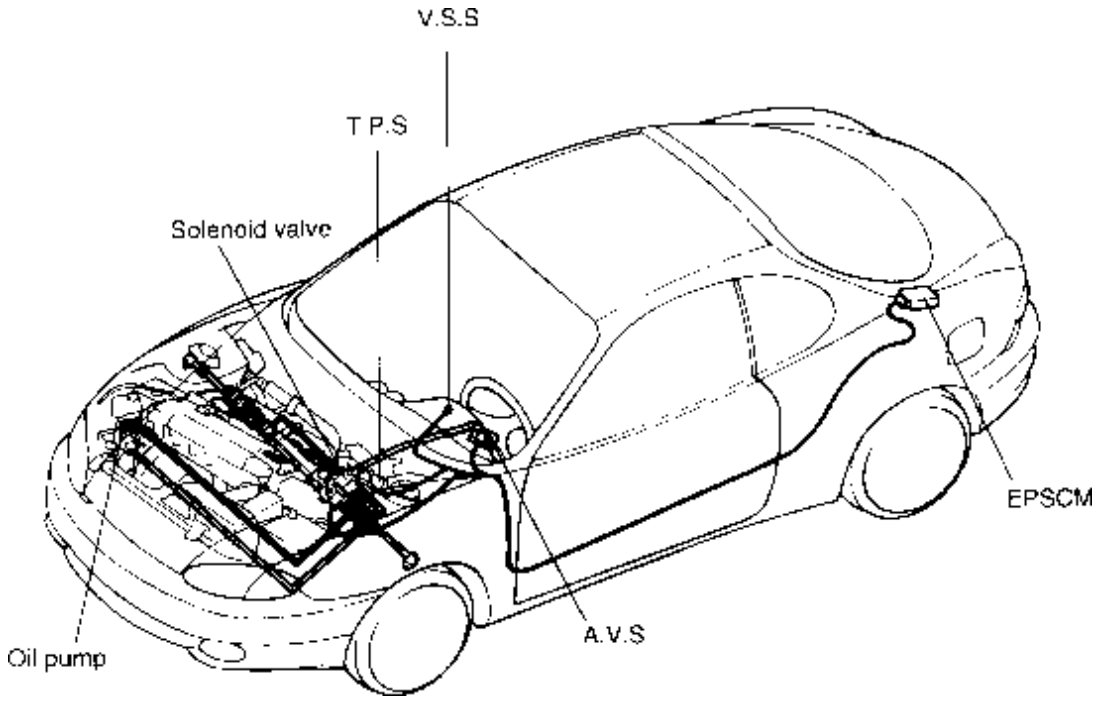
SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	Electronic Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

GENERAL

The electronic power steering (EPS) system uses the same components as that of conventional power steering system. In addition, it has a angular velocity sensor located in steering column, a solenoid valve on power steering gear box, and a control unit inside the LH rear trunk.

To control the oil flow of steering gear box, a solenoid is provided and it functions by the current from control module which receives signal from VSS, TPS, and angular velocity sensor.

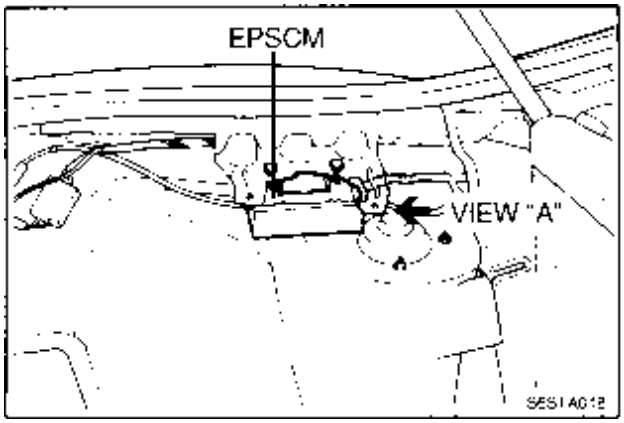


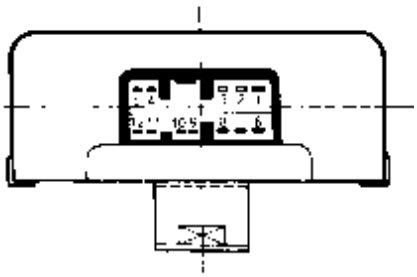
EPS performs the conventional power steering function in case a fail has occurred in the system.

EPS electronically controls the current to the solenoid of by-pass valve by input sensor's signal to control the hydraulic amount in cylinder chamber thereby varying the steering effort versus the hydraulic pressure according to vehicle speed.

ELECTRONIC POWER STEERING CONTROL MODULE

The EPSCM is installed in LH side trunk.



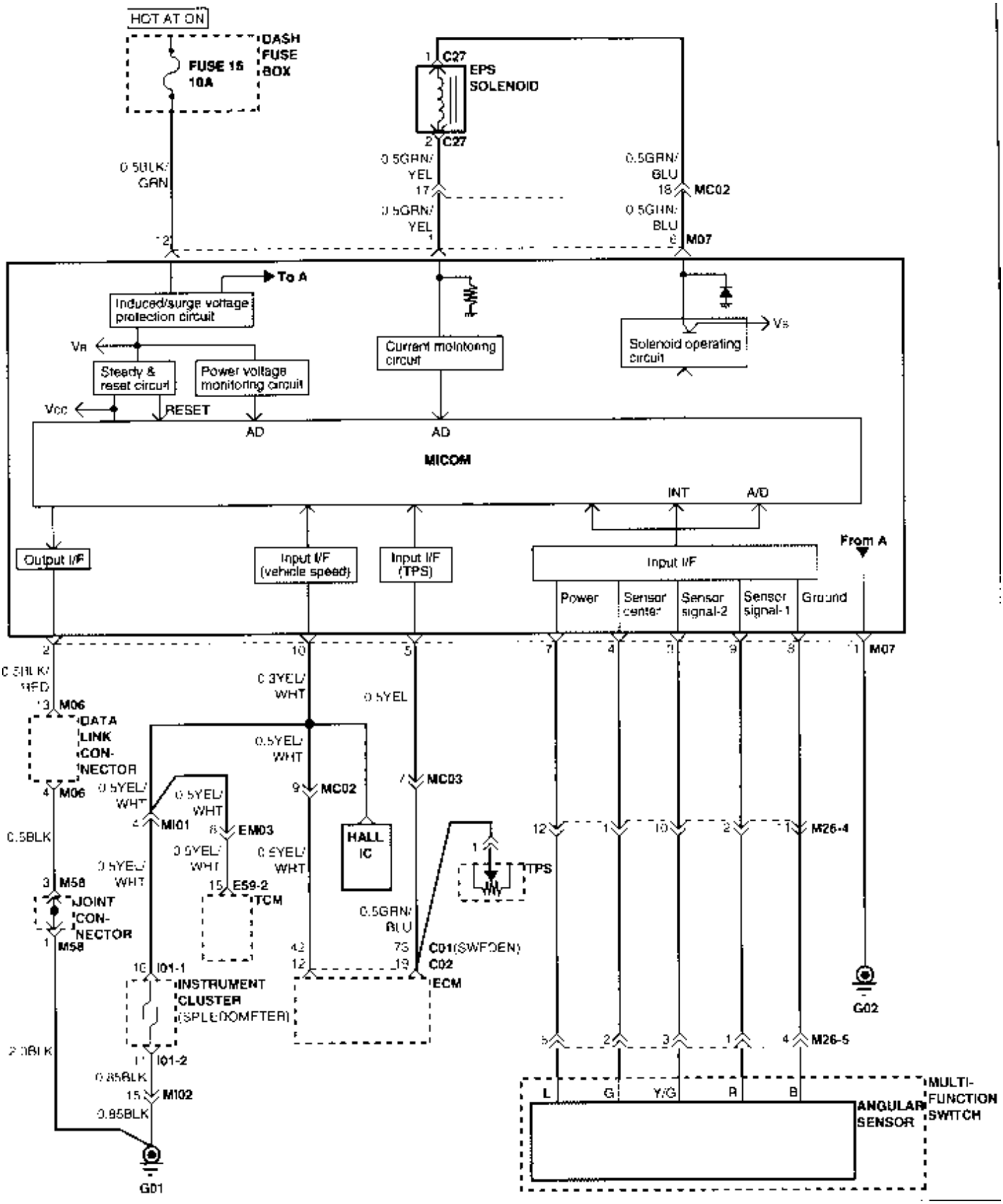


<VIEW "A">

PIN LAYOUT

PIN NO.	DESCRIPTION
1	Solenoid current monitoring circuit
2	Data Link Connector
3	Angular velocity sensor
4	Steering wheel central position detection
5	Sensor signal from TPS
6	Solenoid valve operating circuit
7	Angular velocity sensor power input
8	Angular velocity sensor ground
9	Angular velocity sensor 2
10	Sensor signal from vehicle speed sensor
11	GROUND
12	Battery voltage

EPS CONTROL MODULE CIRCUIT



SOLENOID VALVE

A solenoid valve is provided in the gear box to control the flow of power steering oil. The solenoid valve is composed of a plunger, a releasing spring, a piston and a plunger.

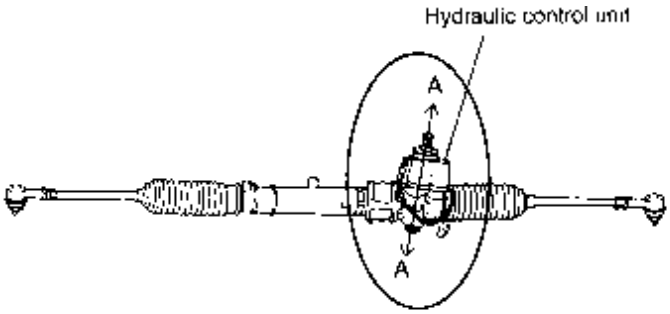
The input current is varying from 0A to 1A according to the vehicle speed and steering wheel rotation speed and is controlled by EPS control module.

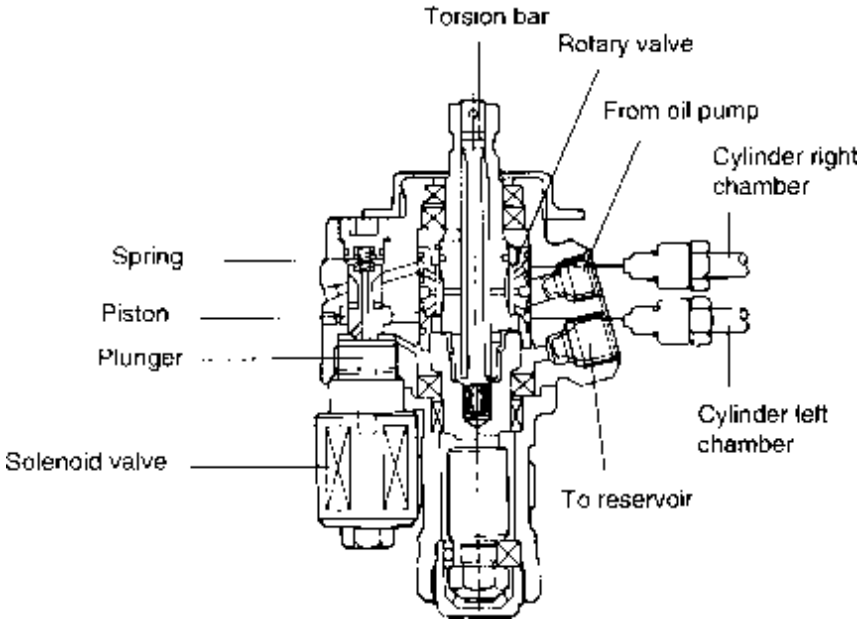
When the ignition switch is turned on, current is sent to the solenoid valve to push up the plunger and accordingly the

piston contacting the plunger is pushed up while overcoming the spring force.

As the vehicle speed increasing the current flow to the solenoid decreased pulling down the piston bottom by the releasing spring force.

When the piston is pushed up, it closes the oil passing hole, therefore the power steering oil pressure is delivered into the cylinder without any interruption. But when the hole is opened as the piston is pulling down, some of the oil coming from the rotary valve is drained into reservoir via the hole inside the rotary valve.





NOTE

When it is necessary to remove the EPS gear box, be sure to disconnect the connector to avoid damage.

ANGULAR VELOCITY SENSOR

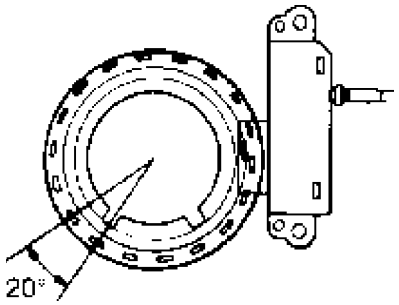
EPS equipped vehicle has a AVS in multifunction switch.

AVS is composed of a set of photo interrupters (light emitting diode, photo TR and slitted disc).

The slitted disc has 18 outer slits for detecting the steering wheel rotating direction and angular speed. And a inner slit is provided for checking whether the wheel position is within neutral ornot.

2 sets of LED and photo TR check the rotation of steering wheel calculating the degrees per time through on, off photo TR, and a set of LED and photo TR is used to sense he wheel location.

With the signal from the sensors, the EPS control module miscellaneously decides the current flow to solenoid valve from 0A to 1A compensating steering wheel effort.



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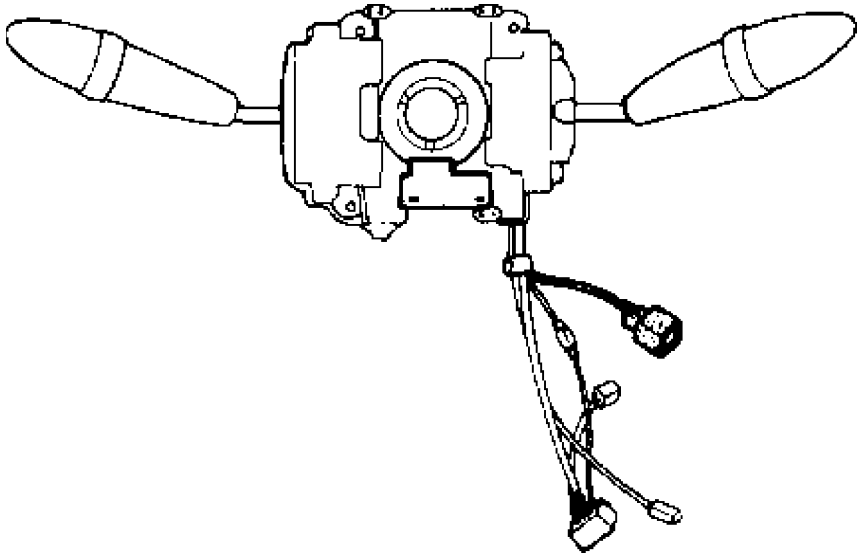
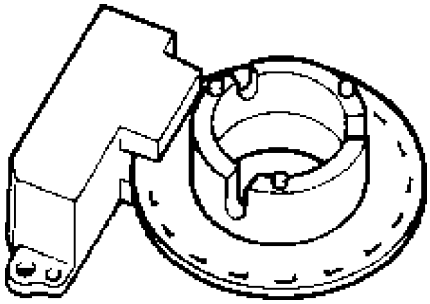
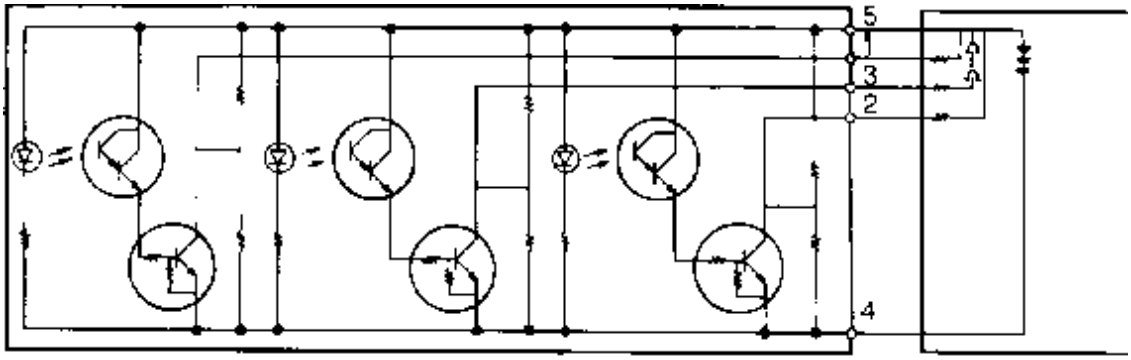


MULTI-FIN S/W



AV$



AVS CIRCUIT

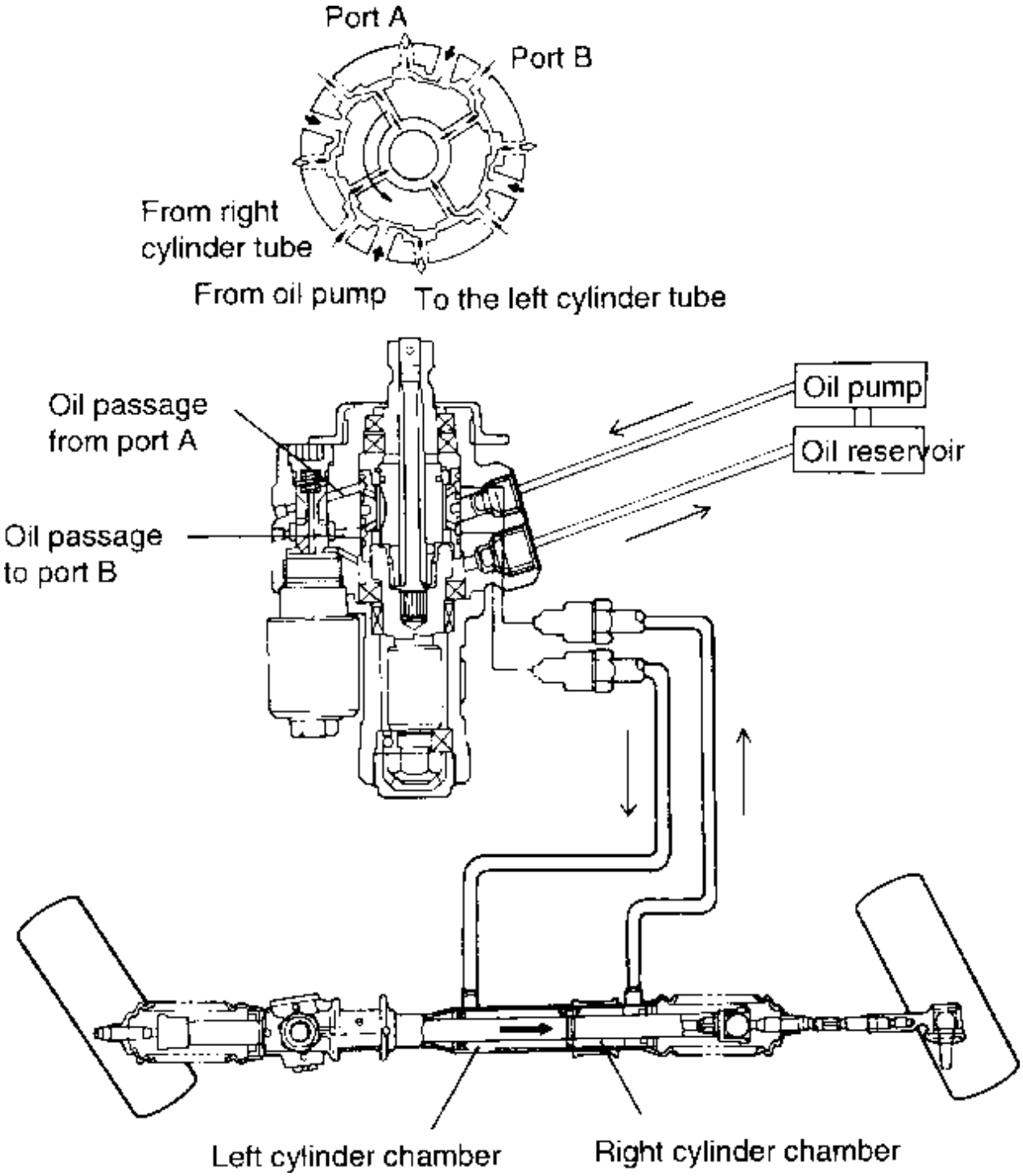
OPERATION

* LEFT TURN (COUNTERCLOCKWISE)

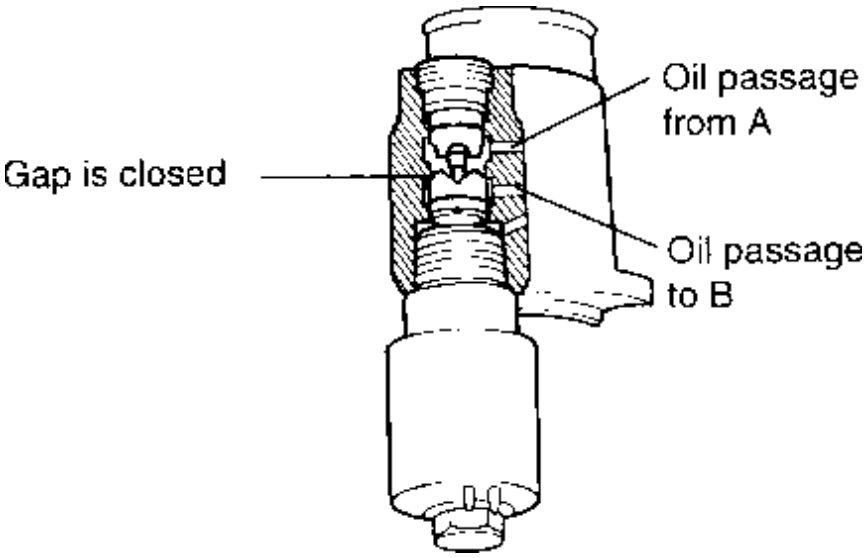
The power steering oil pump generates the oil pressure and the oil enters into the rotary valve. And the torsion bar is twisted by the force between the steering wheel rotation and the resistance of the tire to the ground.

At a high speed of vehicle, the oil passing the rotary valve comes into the solenoid valve through the lower hole and goes out through the upper hole flowing the connecting space of piston. At this time the piston is back away due to the spring force overcoming the solenoid plunger. The oil flows through the space between the piston and side wall.

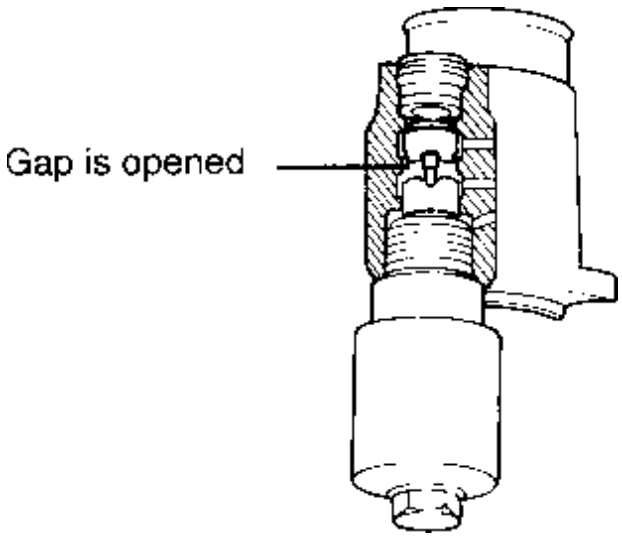
And then the oil flows again into the rotary valve and finally drained to reservoir through the drain hole between the rotary valve and the torsion bar. Therefore the oil pump pressure does not affect to the steering effort.


Port A
Port B
From right cylinder tube
From oil pump
To the left cylinder tube
Oil passage from port A
Oil passage to port B
Oil pump
Oil reservoir
Left cylinder chamber
Right cylinder chamber

"AT LOW SPEED"



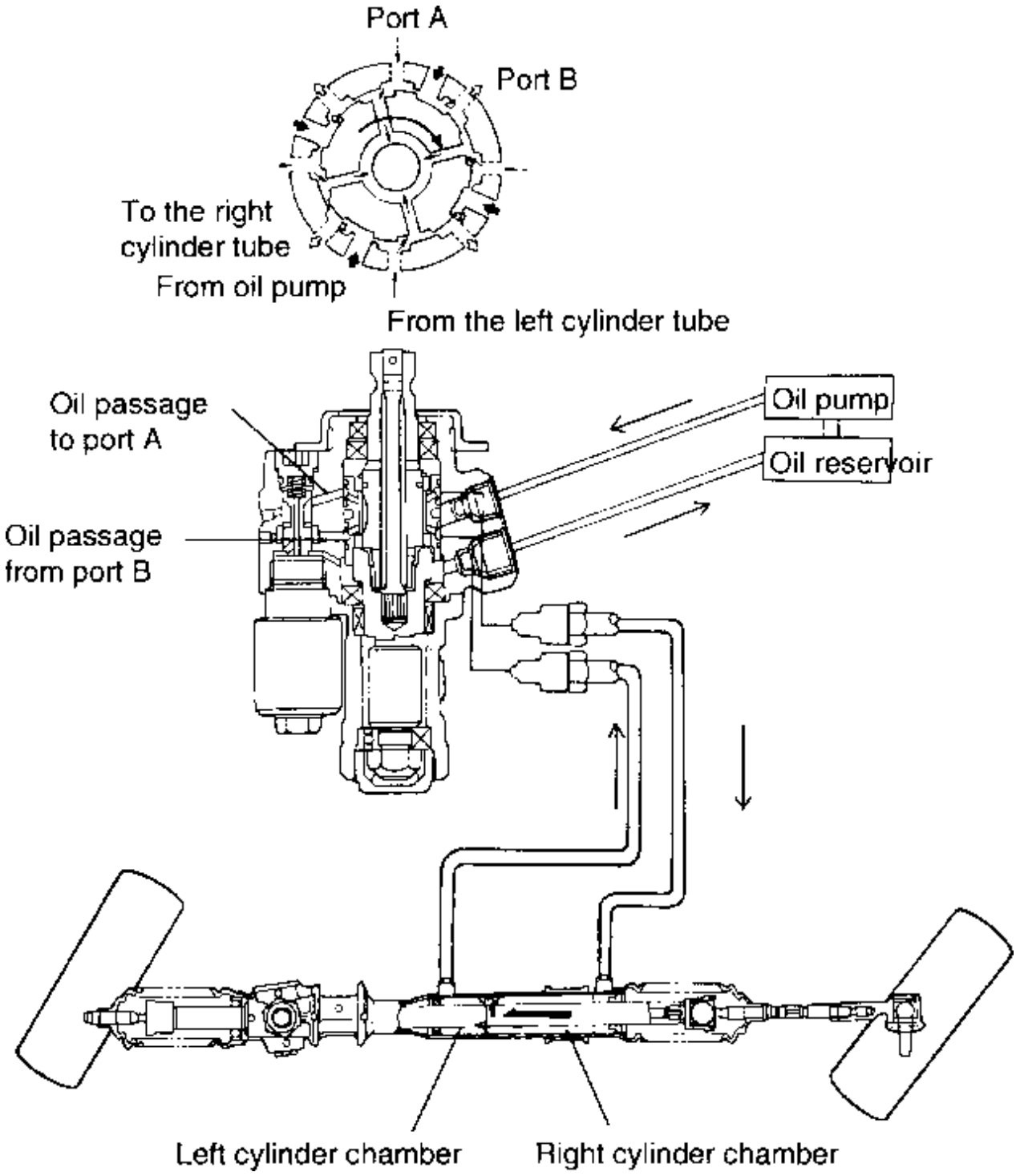
"AT HIGH SPEED"



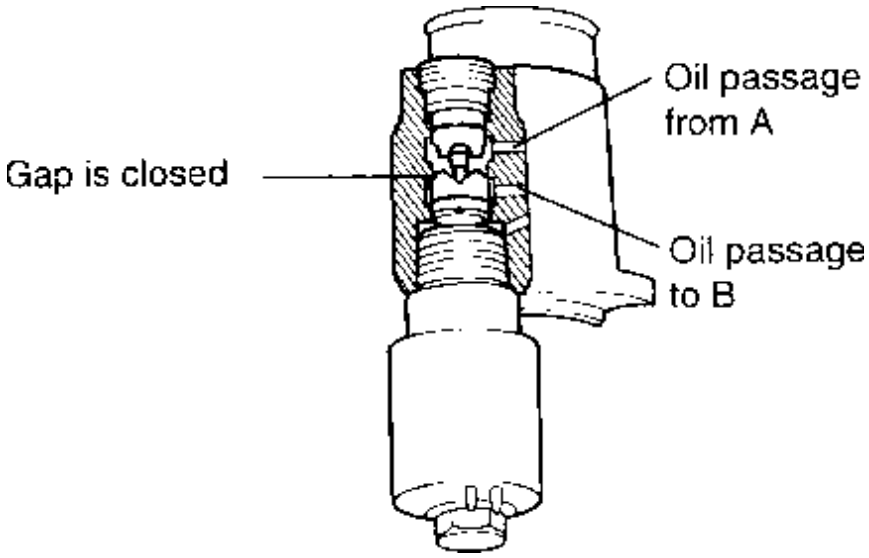
As the vehicle speed decreasing the hole of piston connecting the left chamber and right chamber is gradually closed as the oil pressure produced by oil pump is delivered to the left chamber. Therefore, the steering effort is reduced.

RIGHT TURN (CLOCKWISE)

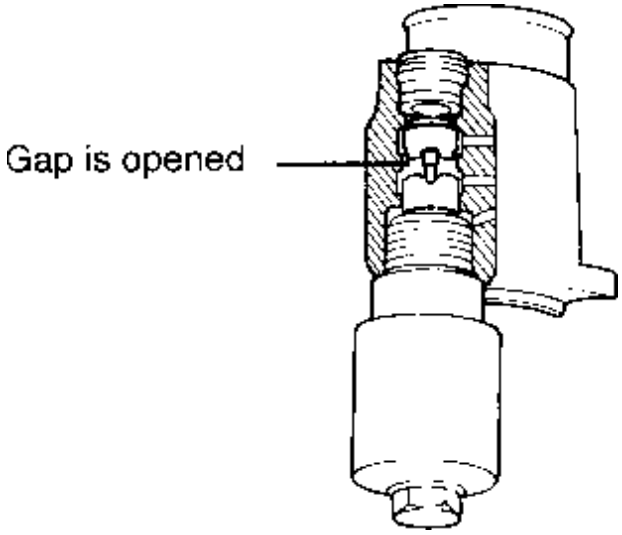
The operation procedure of right turn is the reverse sequence of left turn.


Port A
Port B
To the right
cylinder tube
From oil pump
From the left cylinder tube
Oil passage
to port A
Oil passage
from port B
Oil pump
Oil reservoir
Left cylinder chamber
Right cylinder chamber

"AT LOW SPEED"



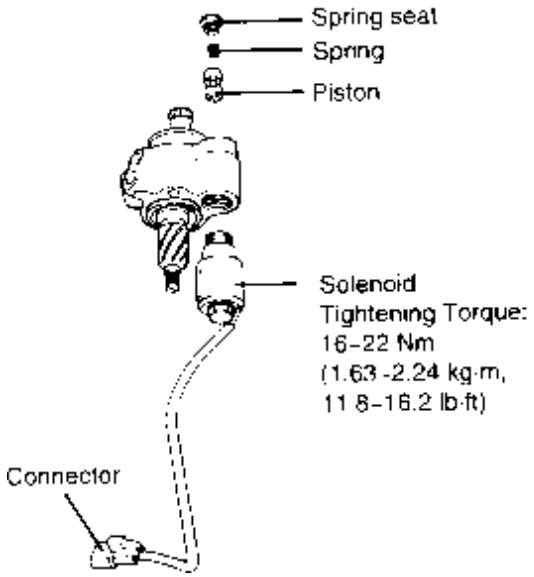
"AT HIGH SPEED"

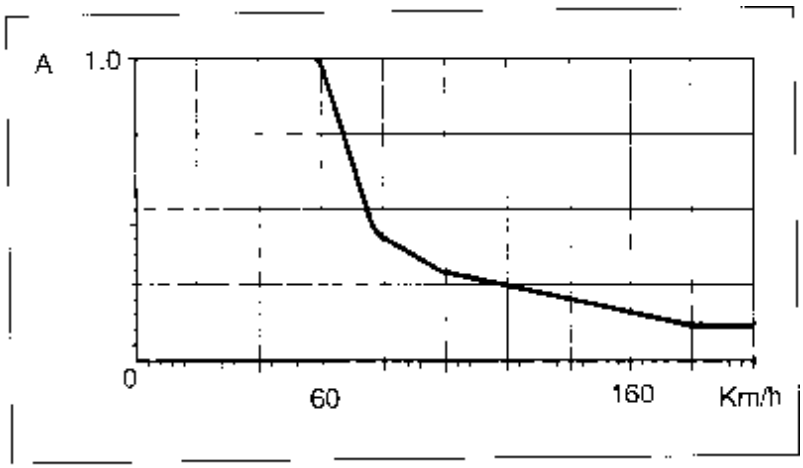


REMOVAL AND INSTALLATION

The removal and installation procedure is the same as that of conventional power steering system except the solenoid components and EPS control module.

The AVS is supplied as an multi-function switch assembly only.





Solenoid performance characteristic

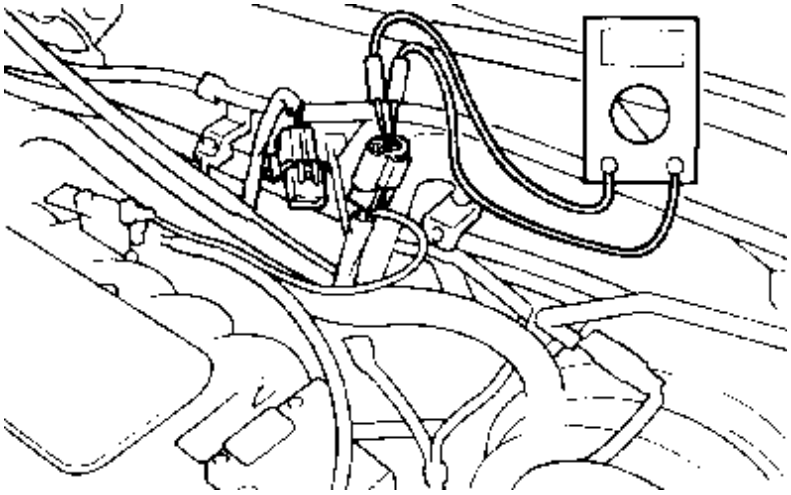
NOTE

1. **The O-ring should not be re-used if removed.**
2. **The spring seat is caulked not to be released. Do not attempt to remove the spring seat.**

E.P.S. SOLENOID CHECK

SOLENOID CONTINUITY CHECK

Check for continuity, by using an ohmmeter, between the solenoid valve terminal and the disconnection of the solenoid valve connection.

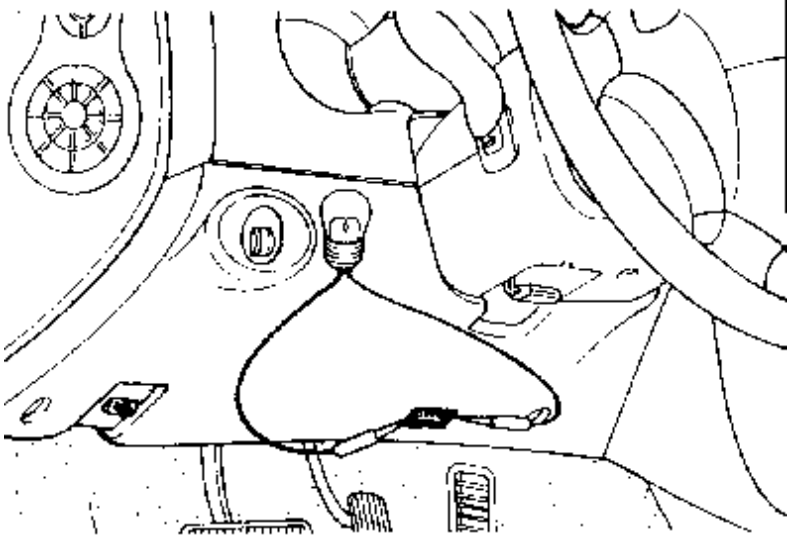


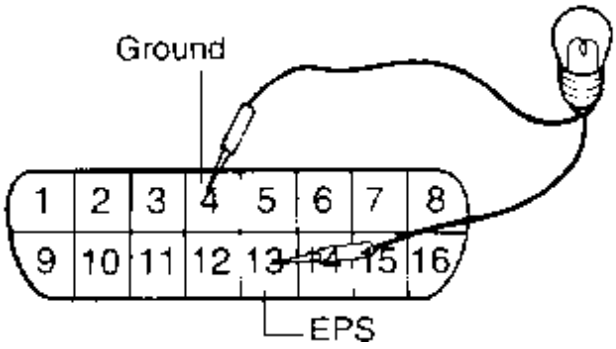
FAIL SAFE FUNCTION

EPSCM performs the self-diagnosis within of the system to detect fault and sends fault code if found and it provides 4 fault codes. The flash code from EPSCM can be checked using test lamp or scan tool.

Turn OFF the ignition switch and connect a pin of test lamp to the pin No. 13 of DLC and ground another pin. In case of using Scan tool, connect the DCL connector and cigar jack socket.

with test lamp

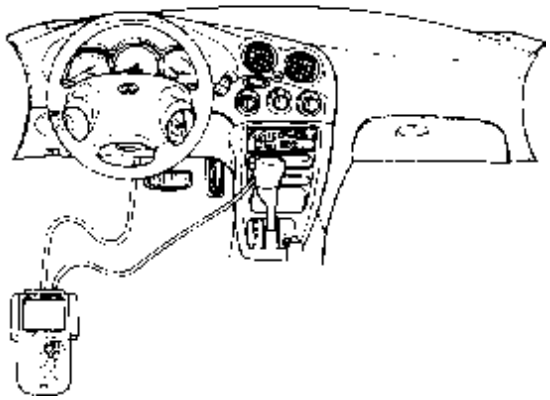




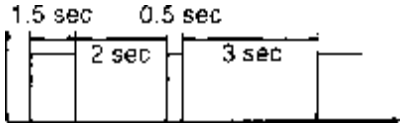
Turn ON the ignition key and read the flash code of the test lamp or screen of Scan tool.

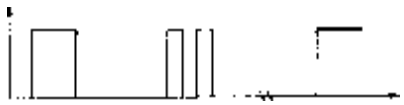
If you check with Scan tool, be sure to press Enter key according to the specific vehicle configuration.

with Scan tool



THE CONTENTS OF FAIL SAFE CODE ARE AS FOLLOWING TABLE

SCAN TOOL DISPLAY	FLASH CODE	ITEMS	DESCRIPTION	FAIL-SAFE
11		Battery voltage	Flashes when the input battery voltage is less than 8V or more than 17V	Solenoid current cut off
		Vehicle	Flashes when the TPS voltage is 1.2V or	Off setting speed

12		speed sensor	more and receives no signal from VSS	signal 80km/h
13		Monitoring current	Flashes when the monitoring current is more than 1.28A for 1 sec.	Solenoid current cut off
			Flashes when the solenoid wiring and circuit are open	
14		Steering speed sensor	Flashes when the angular velocity sensor wiring is open	Controlled only by vehicle speed

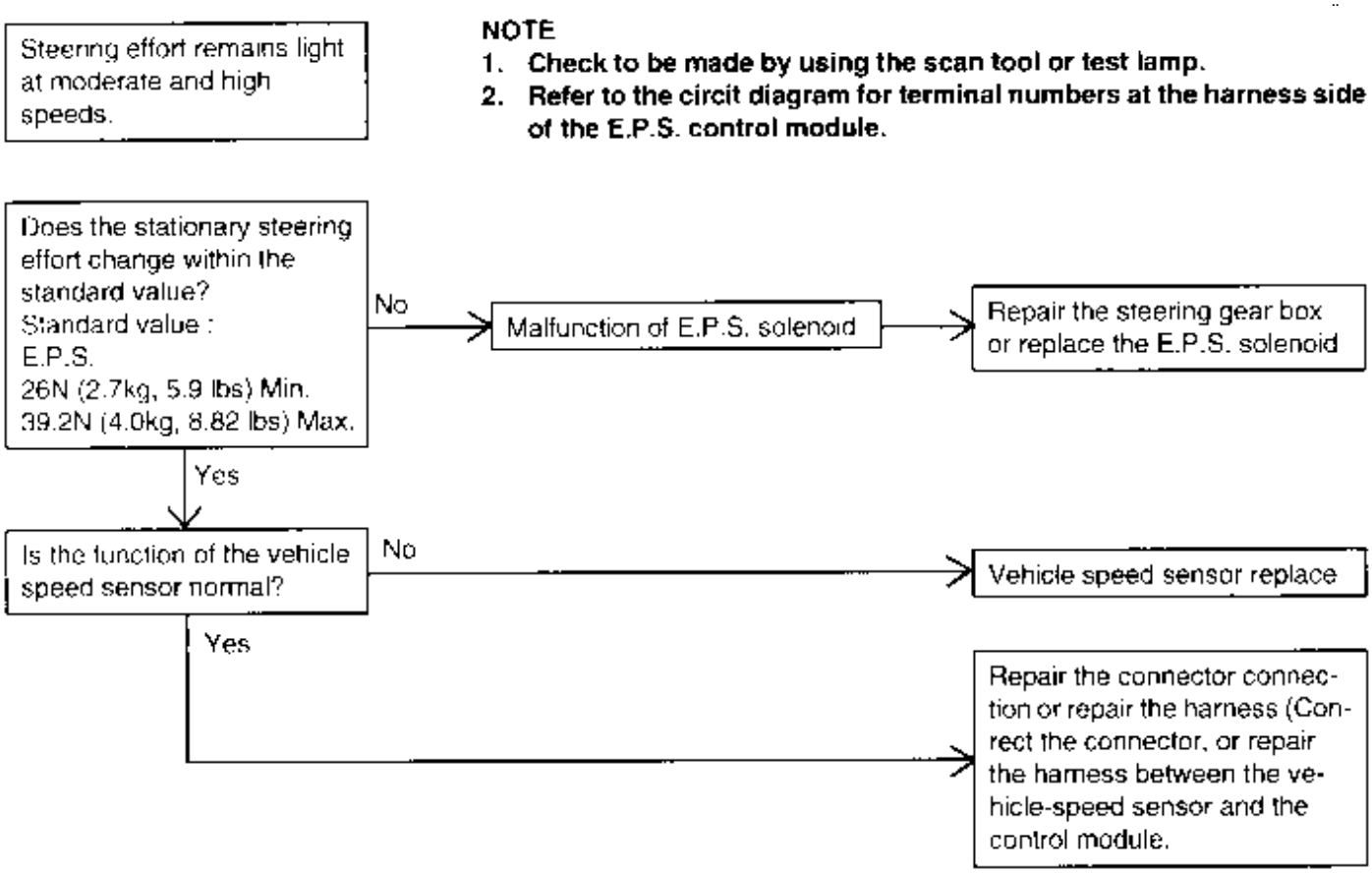
TOUBLESHOOTING

Trouble symptom	Trouble area	Inspection item
Steering wheel movement is heavy (When ignition key is turned to ON, no current flows through the solenoid)	Steering gear and linkage	Solenoid valve continuity
		By-pass valve
	Harness or fuse	Blown fuse
		Remove the control unit connector and check the continuity in the solenoid harness (between terminals No.1 and No.6)
	Control module	Turn the ignition key momentarily to ACC or LOCK and check if the fail-safe function is operating.
		Check for continuity in each harness and for abnormalities in the control module power circuit.
While driving at medium or high speed, steering remains light	Control module	Use a tester to check the stationary steering effort.
		Check the solenoid current in relation to changes in vehicle speed.
	Steering gear and linkage	Solenoid by-pass valve operation.

NOTE

For checking procedures for each problem, refer to the flow-chart type of troubleshooting guide on the following page.

TROUBLE SYMPTOM 1



TROUBLE SYMPTOM 2

No flow of solenoid current (large steering eftort required to turn steering wheel fully} when the ignition switch is at the ON position_

NOTE

1. **Before making the check described below, r.:h eek to be sure that th-e failsafe system has not been activated by racing the engine.**
2. **Refer to the circuit diagram for terminal numbers at the hamess side of the E.P.S. control module.**

Is fuse (No.15) **fol"** control modLJle power supply OK 7

No → Harness short-circuit (t1arness damage, etc-) → Repair the harness or rep1ace the fuse.

Yes

Disconnect the connector oi the contml module; check with the ignition switch at the ON position.

Is voltage of appro:,:imately 12V measured between earth nd control module hame$s sidecorinB"C1or!erminalNo.12?

No → Oamaged or disconnected wiring of harness between tuse No.15 and r..ontrol module terminal No.12_ → Repair the tlarness.

Yes

Disconnect the batlery negative 1:-) terminal <'.lmi check.

Is them continuity between control module harness side co11nec10r No. 1 and No.6?

No → isconnect t'7 e corine-ctor tor the E.P.S- solenoid valve within the engine compartment and che,ck,

Yes

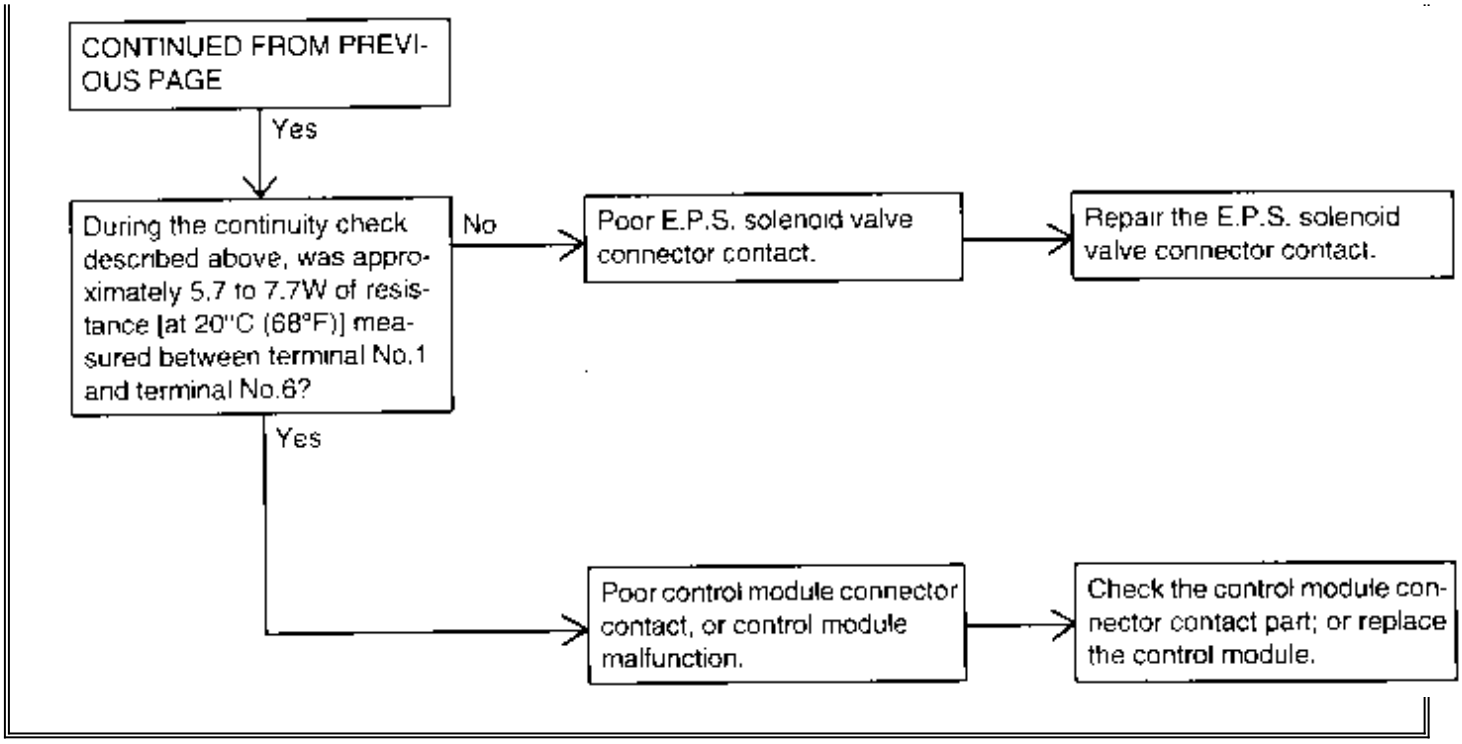
Is there continuity betwe-on the two terrnir,a1 01 the connector at the steering wheel?

No → Damaged or diconnected wiriiq o! E.P.$. soleno,d valve coli_ → Replace lhe solenoid valve or repair the conner:tor connect1on.

Yes

Damaged or disconnected **wir-**1ng of harness between control modu!e and E.P.S. solenrnd valve conner.tor. → Repair ttie harness or corinector connection.

SEE NEXT PAGE


CONTINUED FROM PREVIOUS PAGE
Yes
During the continuity check described above, was approximately 5.7 to 7.7W of resistance [at 20°C (68°F)] measured between terminal No.1 and terminal No.6?
No
Poor E.P.S. solenoid valve connector contact.
Repair the E.P.S. solenoid valve connector contact.
Yes
Poor control module connector contact, or control module malfunction.
Check the control module connector contact part; or replace the control module.

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	Mechanical Power Steering System

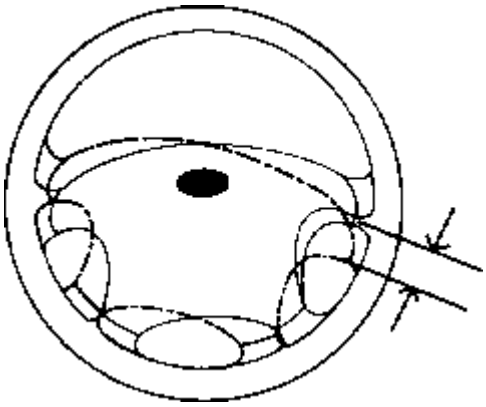
Return to Main Menu(s): Mechanical Manual Electrical Manual

SERVICE ADJUSTMENT PROCEDURE

CHECKING STEERING WHEEL FREE PLAY

Start the engine with the steering wheel in the straight ahead position, apply a force of 5 N (1.1 lb) to the steering wheel in the peripheral direction.

Measure the play at the circumference of the steering wheel.

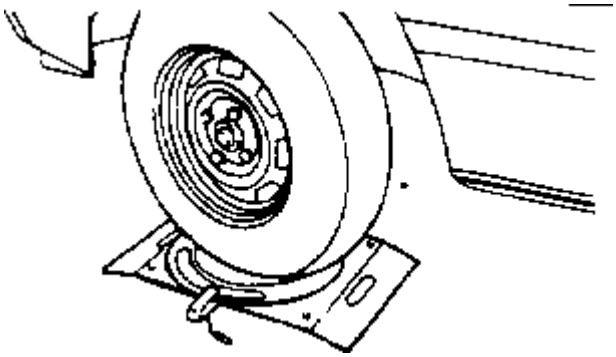


MEASUREMENT SPECIFICATION	
Steering wheel free play	0-30 mm (0-1.1 in)

If the play exceeds the standard value, inspect the contact of the steering shaft and tie rod ends.

CHECKING STEERING ANGLE

Place the front wheel on a turning radius gauge and measure the steering angle.



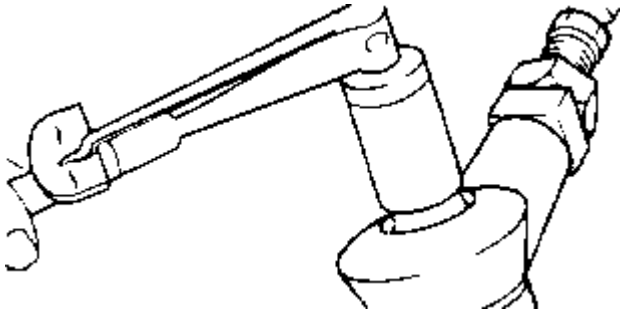
Wheel angle [Standard value]:

Inner wheel	35°37, ± 1°30'
Outer wheel	30°76'

If the measured value is not within the standard value, adjust the linkage.

CHECKING TIE ROD END BALL JOINT STARTING TORQUE

Mount two nuts on the ball joint, and then measure the starting torque.



SPECIFICATION	
Tie rod end ball joint starting torque.....	0.5-2.5 Nm (5-25 kg.cm, 4-22 lb.ft)

If the starting torque exceeds the upper limit of standard value, replace the tie rod end.

> **NOTE**
>
> **Even if the starting torque is below the lower limit of the standard value, the ball joint may be reused unless it has drag and excessive play.**

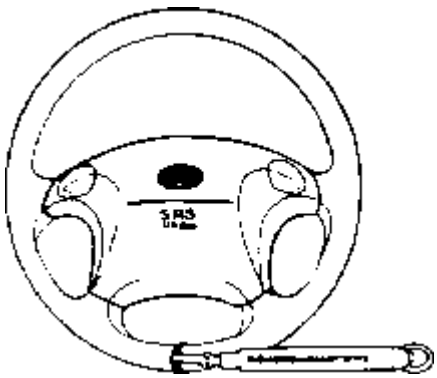
CHECKING STATIONARY STEERING EFFORT

Place the vehicle on a level surface and place the steering wheel in the straight ahead position.

Increase the engine speed to 1000 ± 100 rpm.

> **NOTE**
>
> **After checking, reset the engine speed to the standard value (idling speed).**

Measure the turning force with a spring scale by turning the steering wheel clockwise and counterclockwise one and a quarter turns.



SPECIFICATION	
Stationary steering effort [Standard value].....	33.3 N (3.4 kg,15.1 lbs) or less

Check that there is no excessive force change while turning the steering wheel.

If the stationary steering effort is excessive, check and adjust the following points.

Damage or cracks of the dust covers of the lower arm ball joint and tie rod end.
Pinion preload of the steering gear box and turning starting torque of the tie rod end ball joint.
Turning starting torque of the lower arm ball joint.

CHECKING STEERING CHARACTERISTICS

Drive the vehicle at 0-80 km/h and check the following items.

Turn the steering wheel at 0-80 km/h and hold for 1-2 seconds then release it.

Steering wheel should be free from abnormal vibration.

Steering system should be free from squealing or hissing noise from gear box, pump or drive belt.

Steering operation should be smooth and free from catch.

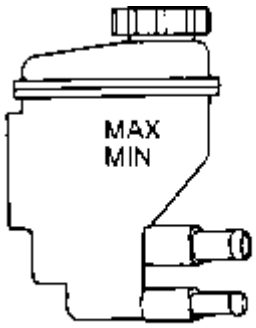
CHECKING POWER STEERING FLUID LEVEL

Position the vehicle on a level surface.

Start the engine. With the vehicle kept stationary, turn the steering wheel several times continuously to raise the fluid temperature from 50 to 60°C (122 to 140°F).

With the engine at idle, turn the steering wheel fully clockwise and counterclockwise several times.

Make sure there is no foaming or cloudiness in the reservoir fluid.



Power sleeering fluid reservoir

Stop the engine to check for a difference in fluid level between a stationary and a running engine.

NOTE

1. **If the fluid level varies 5 mm (0.2 in.) or more, bleed the system again.**
2. **If the fluid level suddenly rises after stopping the engine, insufficient bleeding is indicated.**
3. **Incomplete bleeding will produce a chattering sound in the pump and a noise in the flow control valve, decreasing durability of the pump.**

REPLACING POWER STEERING FLUID

Jack up the front of the car and support with rigid racks.

Disconnect the return hose from the oil reservoir and plug the oil reservoir.

Connect a hose to the disconnected return hose, and drain the oil into a container.

Disconnect the high-tension cable at the ignition coil side.

While operating the starter motor intermittently, turn the steering wheel all the way to the left and then to the right several times to drain the fluid.

Connect the return hoses, then fill the oil reservoir up to the "MAX" level with the specified fluid.

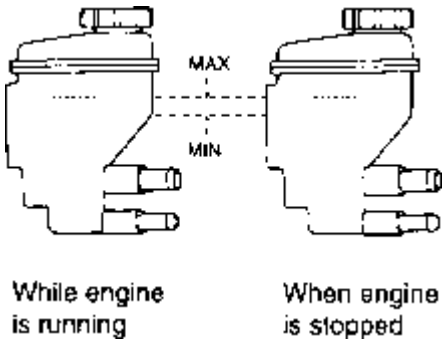
Power steering fluid: AFT DEXRONII type or TEXAMATIC DEXRONII

Total quantity: Approx. 0.9 liter (0.95 qts)

Bleed the system.

AIR BLEEDING

Fill the power steering fluid reservoir up to the "MAX" position with specified fluid.



Jack up the front wheels.

Disconnect the ignition coil high tension cable, and then, while operating the starter motor intermittently (for 15 to 20 seconds), turn the steering wheel all the way to the left and then to the right five or six times.

NOTE

1. **During air bleeding, replenish the fluid supply so that the level does not fall below the lower position of the filter.**
2. **If air bleeding is done while the vehicle is idling, the air will be broken up and absorbed into the fluid. Be sure to do the bleeding only while cranking.**

Connect the high tension cable, and then start the engine (idling).

Turn the steering wheel to the left and then to the right, until there are no air bubbles in the oil reservoir.

NOTE

Do not hold the steering wheel turned all the way to either stop for longer than ten seconds.

Confirm that the fluid is not milky, and that the level is up between "MAX" and "MIN" marks on the reservoir.

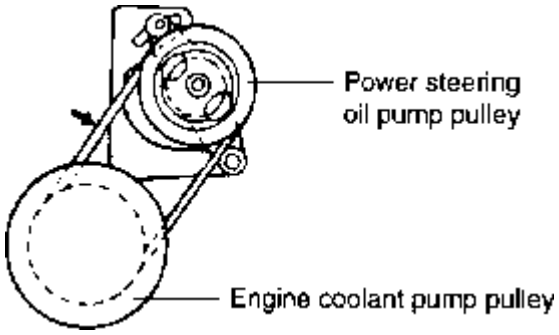
Check that there is little change in the fluid level when the steering wheel is turned left and right.

NOTE

1. **If fluid level changes up and down considerably when the steering wheel is turned or fluid overflows from the reservoir and the engine is stopped, air bleeding is not enough. Air bleeding should be done gain.**
2. **If air bleeding is not enough, moan noise from the pump becomes more strident and air in the system will shorten the life of the pump and other parts.**

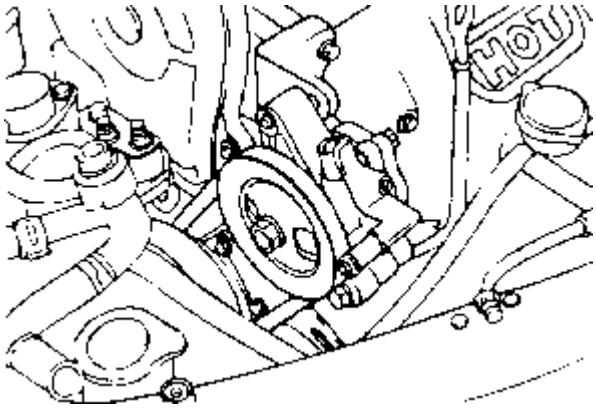
CHECKING POWER STEERING BELT TENSION

Depress the V-belt by applying a pressure of 98 N (10 kgf, 22 lb) at the specified point, and measure the deflection to confirm that it is within the standard value.



SPECIFICATION	
V-belt deflection.....	6-9 mm (0.24-0.35 in)

To adjust the belt tension, loosen the oil pump mounting bolts, move the oil pump, and then retighten the bolts.



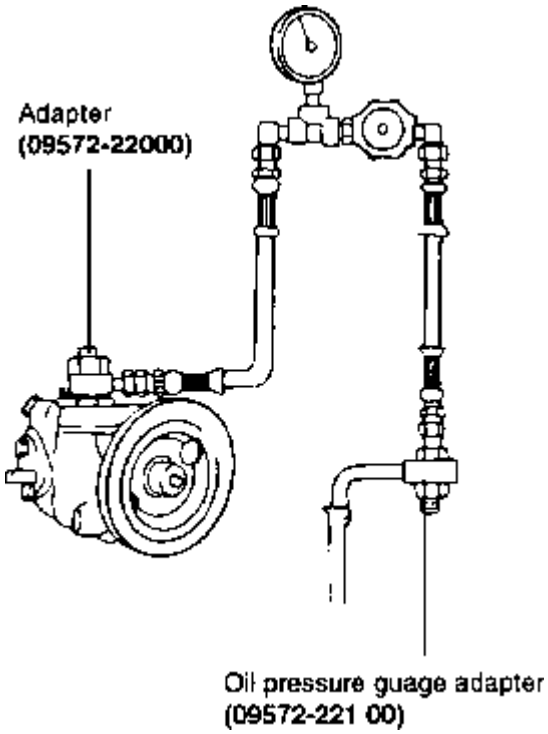
OIL PUMP PRESSURE TEST

Disconnect the pressure hose from the oil pump. Connect the special tool between the oil pump and pressure hose as illustrated.

Bleed the air, and then star the engine and turn the steering wheel several times so that the fluid temperature rises to approximately 50°C (122°F).

Increase the engine speed to 1,000 rpm.

Close the shut-off valve of the special tool and measure the fluid pressure to confirm that it is within the standard value range.



Oil pump relief pressure [Standard value]..... 6.1-6.6 MPa (62-67 kg/cm2, 882-953 psi)

> **CAUTION**
>
> **Do not keep the shut-off valve on the pressure gauge closed for no more than ten seconds.**

Remove the special tools, and tighten the pressure hose to the specified torque.

SPECIFICATION	
Pressure hose.....	55-65 Nm (550-650 kg.cm, 40.6-47.9 lb.ft)

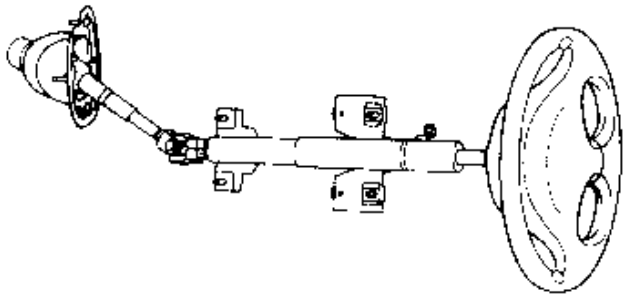
SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

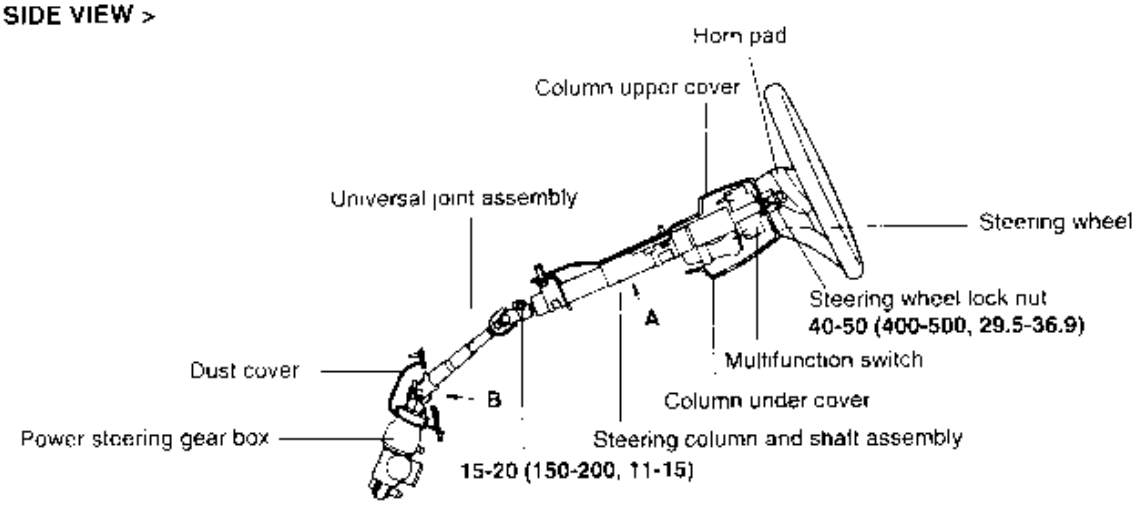
NON-TILT TYPE

< TOP VIEW >



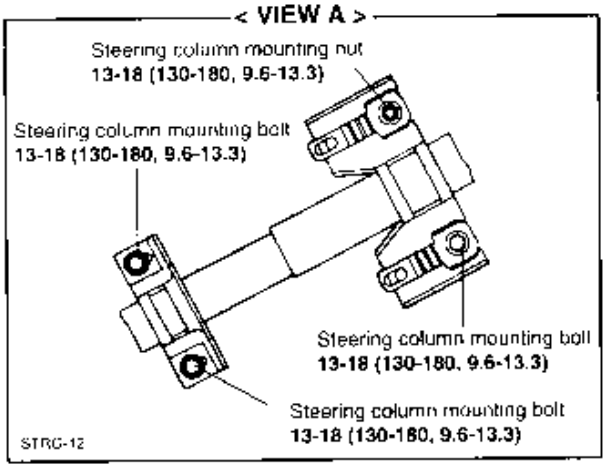
STRG-2

< SIDE VIEW >



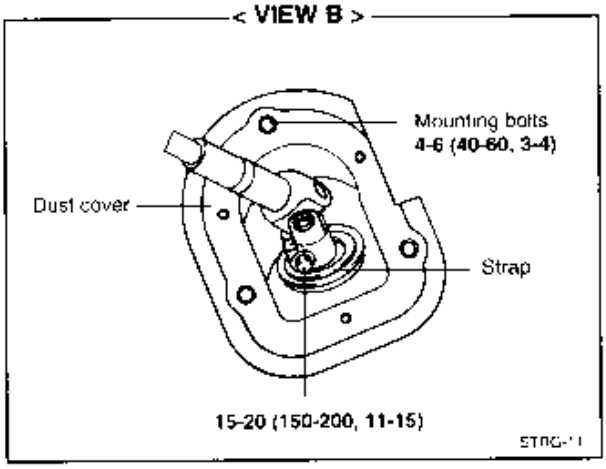
STRG-3

< VIEW A >



STRG-12

< VIEW B >



STRG-11

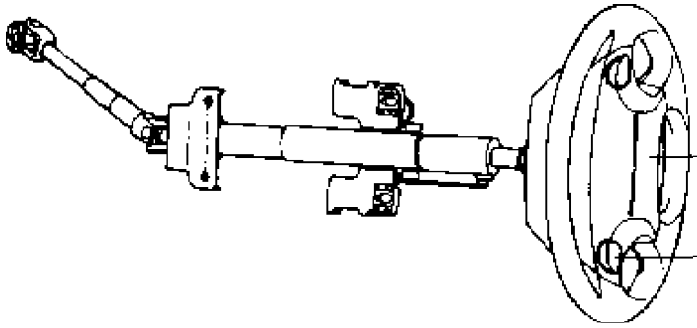
TORQUE : Nm (kg·cm, lb·ft)

Return to Main Menu(s): Mechanical Manual Electrical Manual

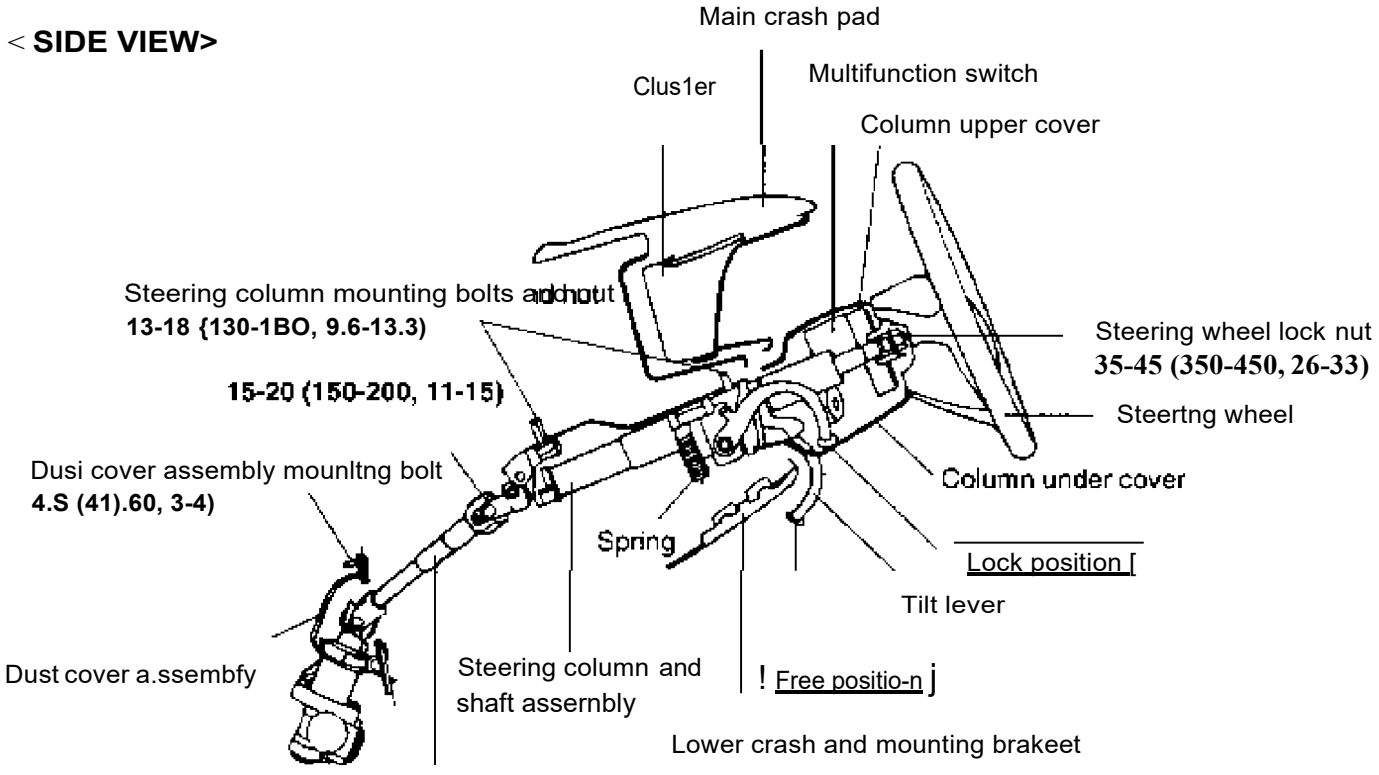
COMPONENTS

TILT TYPE (WITH SRS AIRBAG)

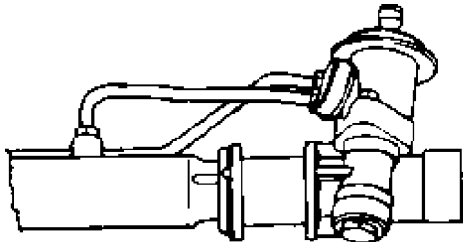
< TOP VIEW>



< SIDE VIEW>



<VIEW C >

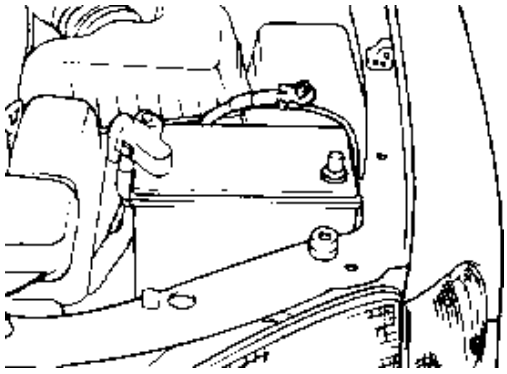


PoY'ller steering box assembly

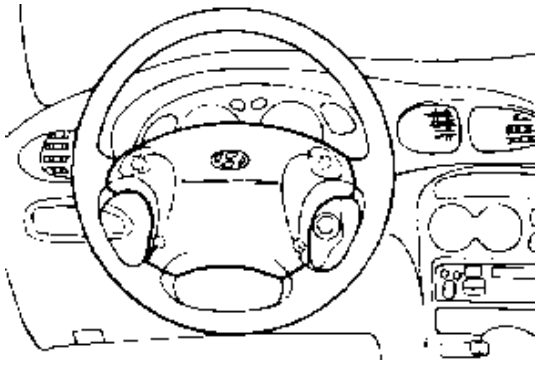
TORQUE: Nm (kg•cm, lb-ft)

REMOVAL AND INSTALLATION

Disconnect the negative terminal from the battery.



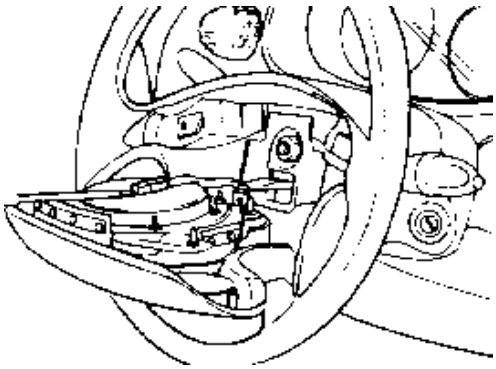
Remove the driver's airbag module.



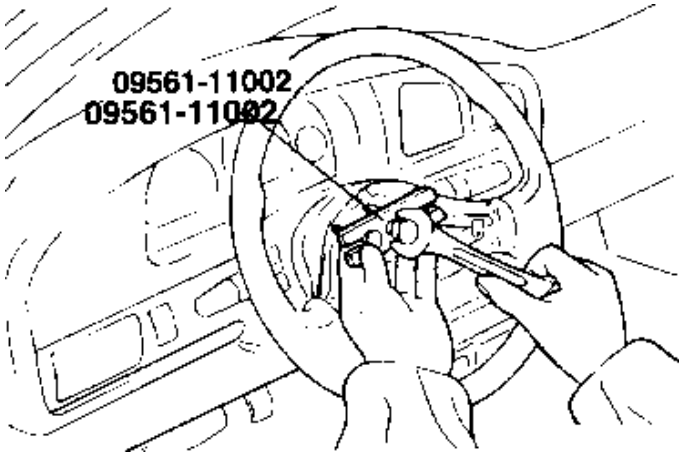
NOTE

For the vehicles not equipped with SRS airbag, remove the horn cover assembly.

Remove the steering wheel lock nut.



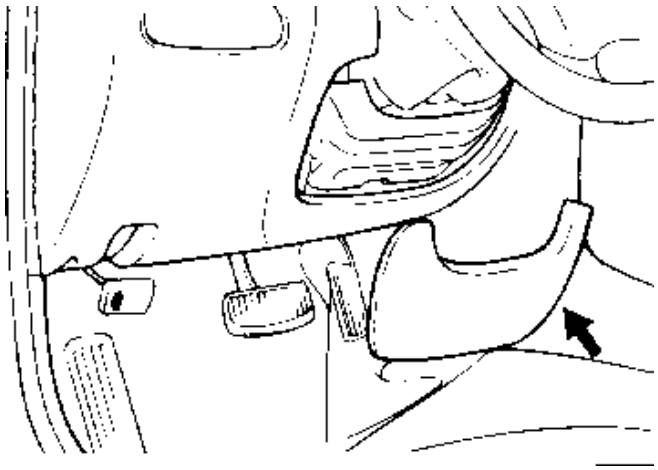
After making alignment marks on the steering shaft and wheel remove the steering wheel, using the special tool.



NOTE

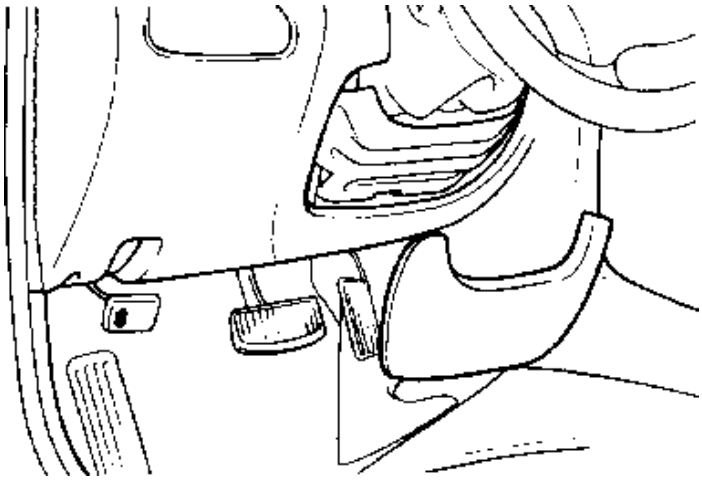
Do not hammer on the steering wheel to remove it: doing so may damage the steering column.

Remove the lower crash pad by using a flat tip screw driver.

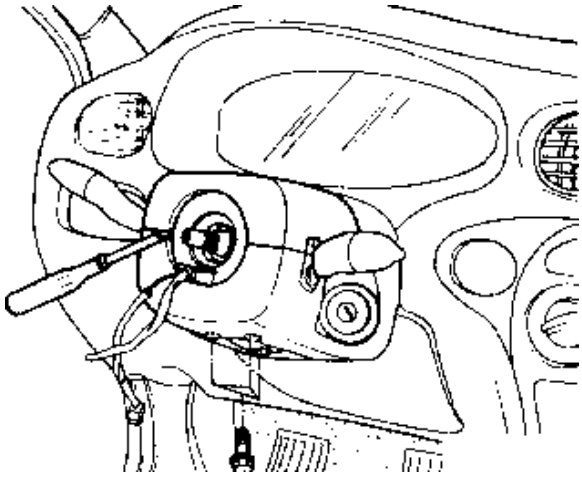


Remove the lower crash pad mounting bracket.

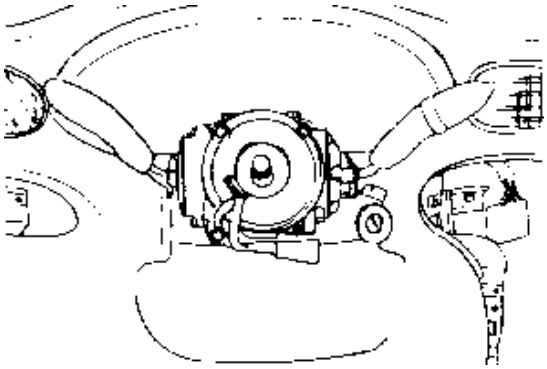
Disconnect connectors attached to the multifunction switch assembly and untie welding clips.



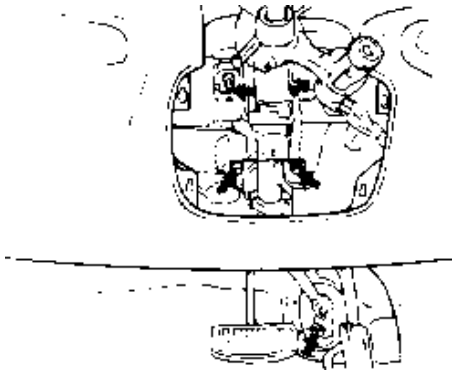
Remove the column upper and lower covers.



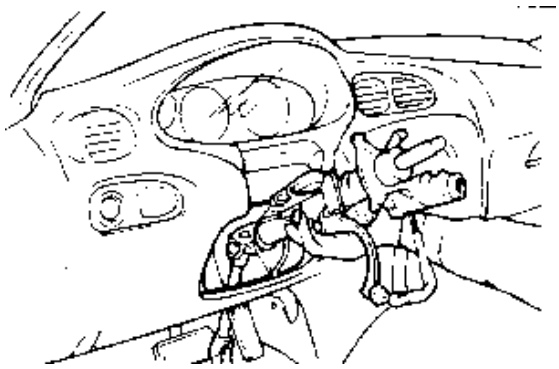
Remove the multifunction switch assembly.



Remove the bolt which is coupling universal joint to the pinion of the steering gear box.



After removing mounting bolts and nut, remove the steering column and shaft assembly.



Installation is the reverse order of removal.

NOTE

1. **When installing, be careful not to distort the steering column.**
2. **When the steering is installed, make sure that the alignment marks are aligned and the steering wheel is in the straight ahead position.**

Return to Main Menu(s): Mechanical Manual Electrical Manual

INSPECTION

Check the steering column and shaft for damage and distortion.

Check the joints for play, damage or rough movement.

Check the tilt bracket and spring for cracks and damage.

Check that the steering lock mechanism operates properly.

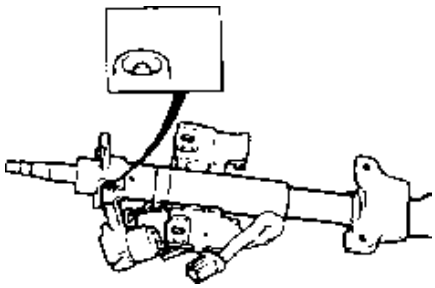
Check the dust cover for cracks or damage. If necessary, replace it.

Return to Main Menu(s): Mechanical Manual Electrical Manual

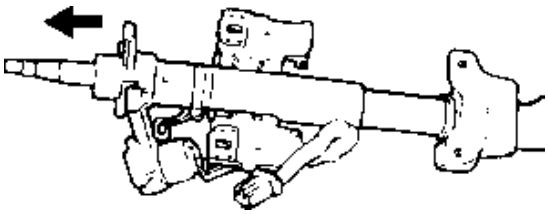
DISASSEMBLY AND REASSEMBLY

KEY LOCK ASSEMBLY

If it is necessary to remove the key lock assembly, use a punch to make a groove on the head of the special bolt, and then use a screwdriver to remove the key lock assembly mounting bracket.



Disassemble the key lock assembly from the steering column and shaft assembly.

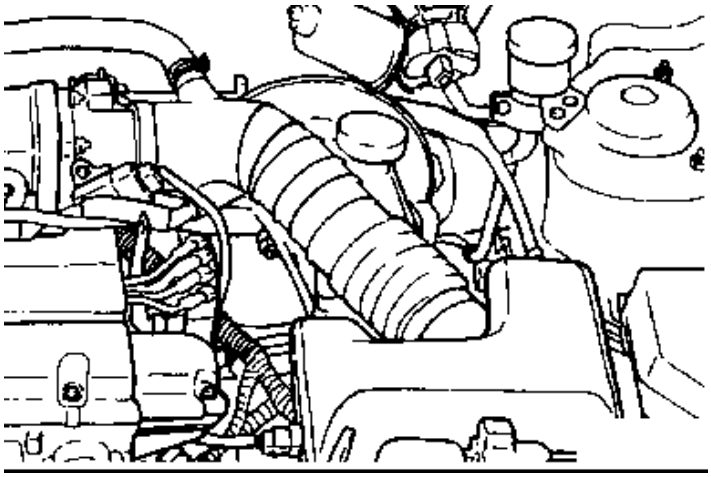


Reassembly is the reverse order of disassembly Universal Joint Assembly.

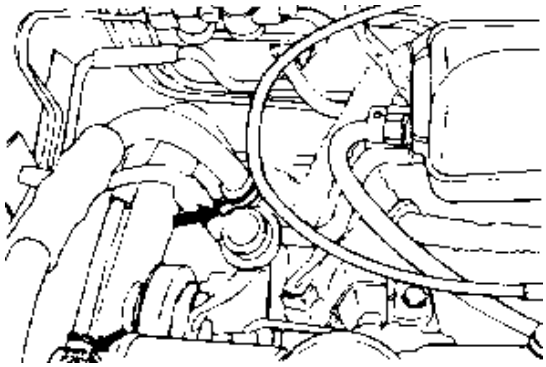
Return to Main Menu(s): Mechanical Manual Electrical Manual

REMOVAL

Remove the air intake hose assembly.

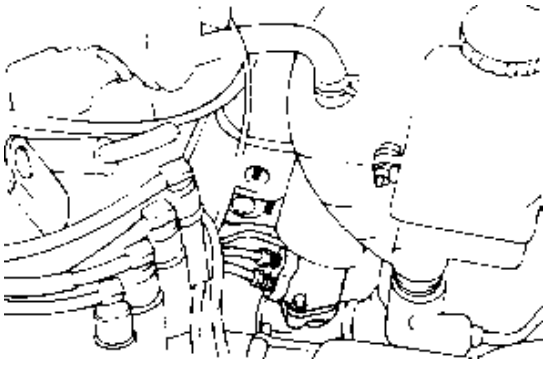


Detach the power steering pressure hose mounting clamp and the return tube mounting clamp.

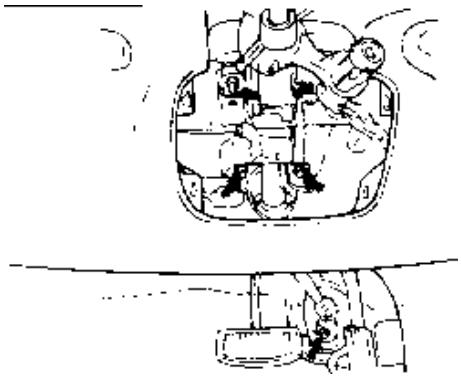


Drain power steering fluid.

Disconnect the pressure tube and the return tube fittings from the gear box.



Disconnect the shaft assembly from the gear box inside the driver's seat compartment.

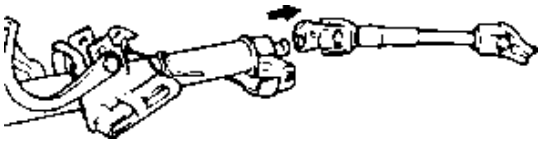


Remove the strap and push out the dust cover and remove the dust cover mounting plate.

UNIVERSAL JOINT ASSEMBLY

Remove the bolt holding the universal joint assembly and the steering column and shaft assembly.

Disassemble the universal joint assembly from the steering column and shaft assembly.



Reassembly is the reverse order of disassembly.

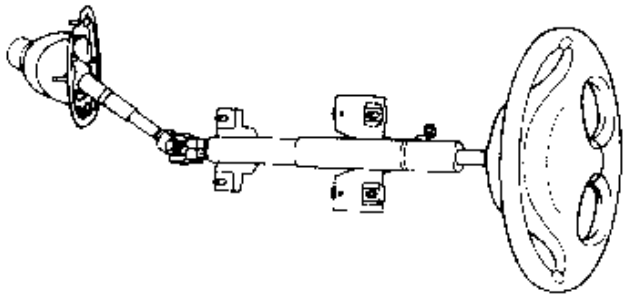
SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

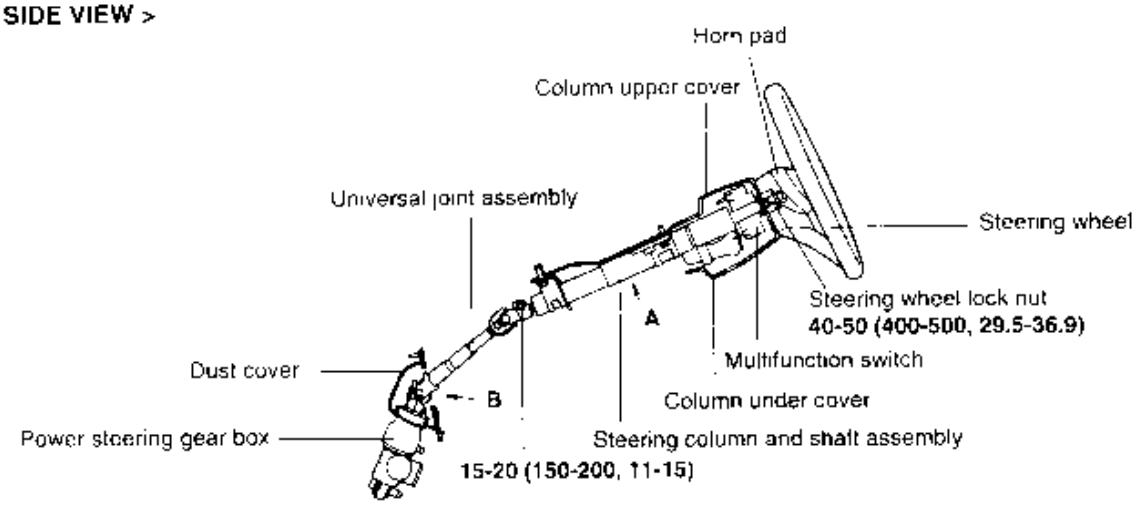
NON-TILT TYPE

< TOP VIEW >



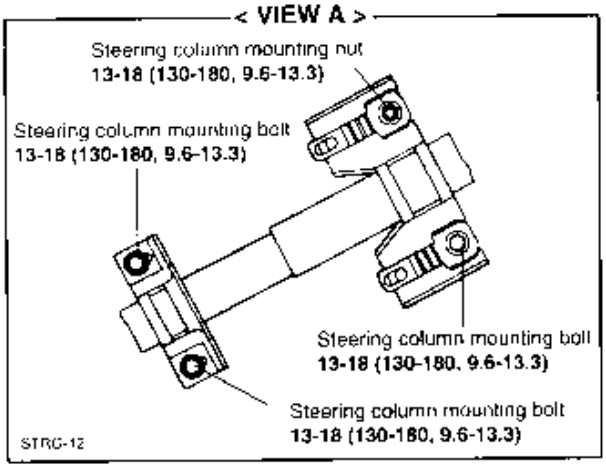
STRG-2

< SIDE VIEW >



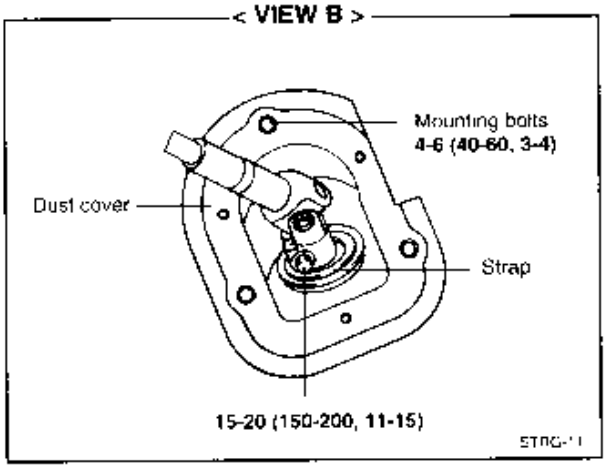
STRG-3

< VIEW A >



STRG-12

< VIEW B >



STRG-11

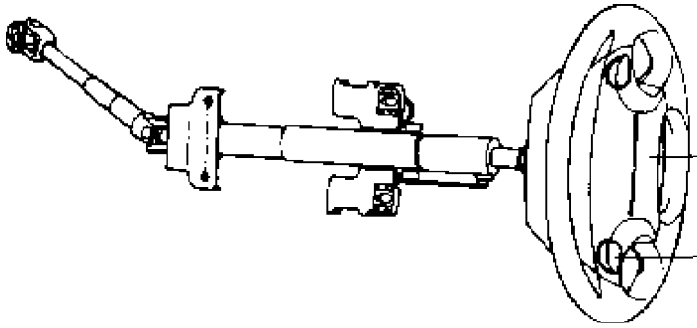
TORQUE : Nm (kg·cm, lb·ft)

Return to Main Menu(s): Mechanical Manual Electrical Manual

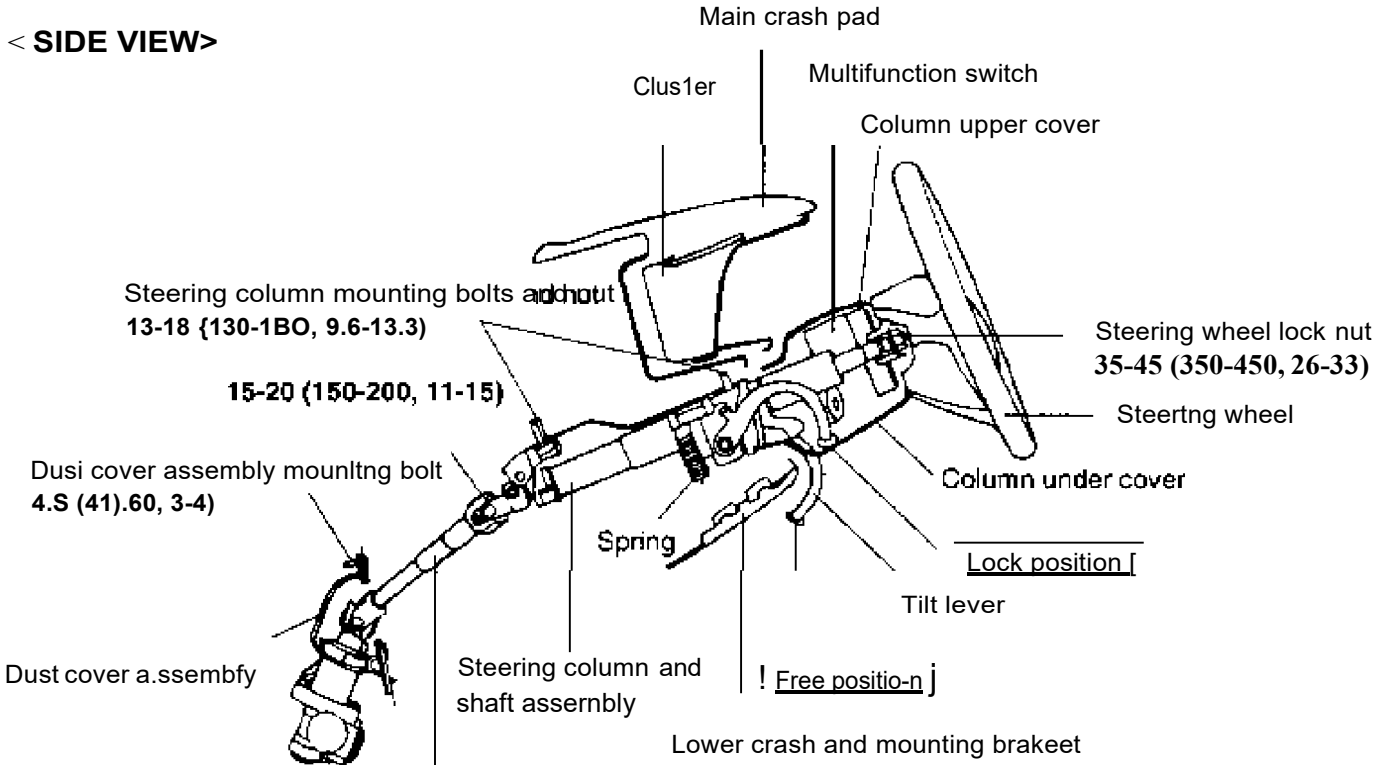
COMPONENTS

TILT TYPE (WITH SRS AIRBAG)

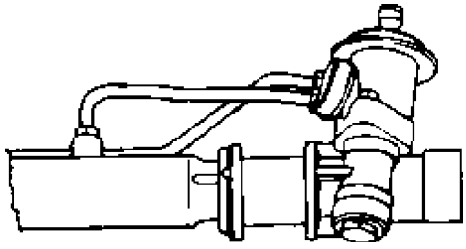
< TOP VIEW>



< SIDE VIEW>



<VIEW C >

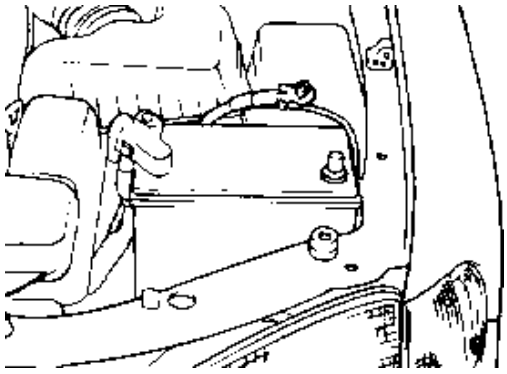


PoY'ller steering box assembly

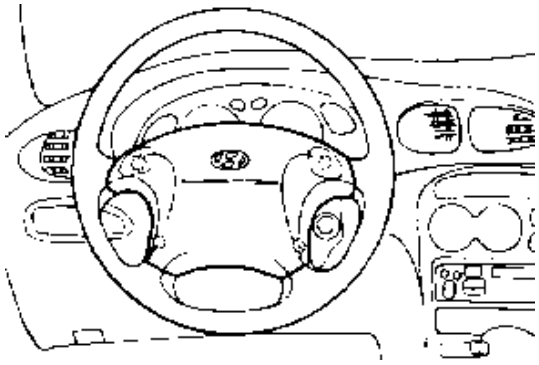
TORQUE: Nm (kg•cm, lb-ft)

REMOVAL AND INSTALLATION

Disconnect the negative terminal from the battery.



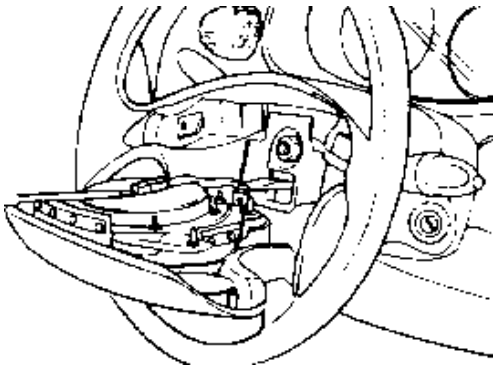
Remove the driver's airbag module.



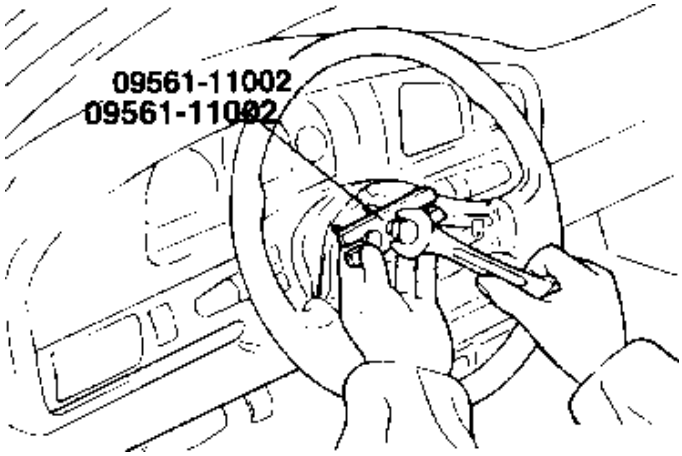
NOTE

For the vehicles not equipped with SRS airbag, remove the horn cover assembly.

Remove the steering wheel lock nut.



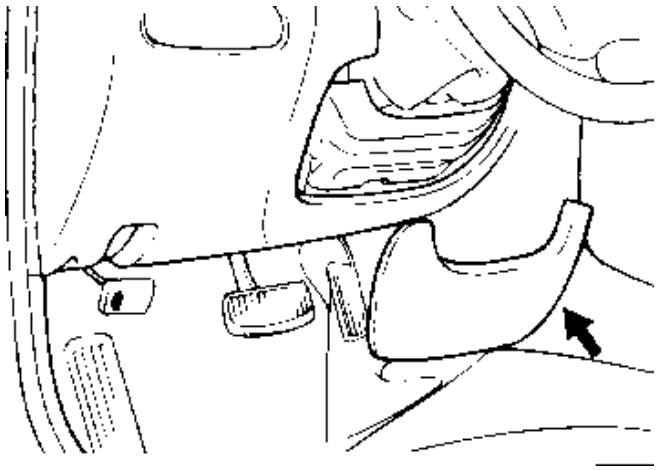
After making alignment marks on the steering shaft and wheel remove the steering wheel, using the special tool.



NOTE

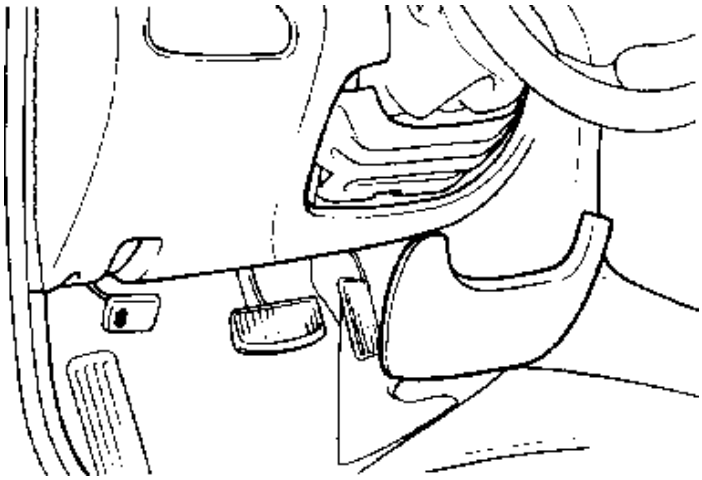
Do not hammer on the steering wheel to remove it: doing so may damage the steering column.

Remove the lower crash pad by using a flat tip screw driver.

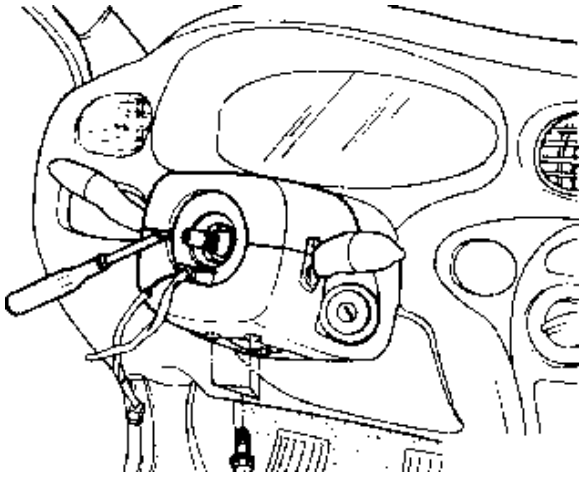


Remove the lower crash pad mounting bracket.

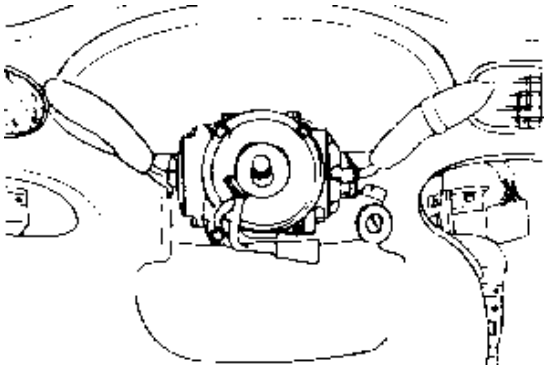
Disconnect connectors attached to the multifunction switch assembly and untie welding clips.



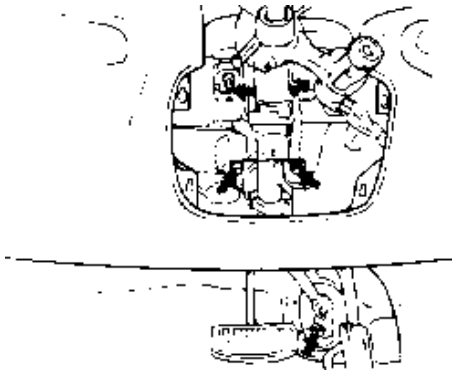
Remove the column upper and lower covers.



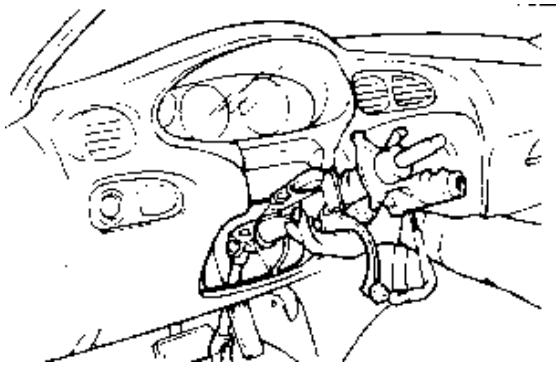
Remove the multifunction switch assembly.



Remove the bolt which is coupling universal joint to the pinion of the steering gear box.



After removing mounting bolts and nut, remove the steering column and shaft assembly.



Installation is the reverse order of removal.

NOTE

1. **When installing, be careful not to distort the steering column.**
2. **When the steering is installed, make sure that the alignment marks are aligned and the steering wheel is in the straight ahead position.**

Return to Main Menu(s): Mechanical Manual Electrical Manual

INSPECTION

Check the steering column and shaft for damage and distortion.

Check the joints for play, damage or rough movement.

Check the tilt bracket and spring for cracks and damage.

Check that the steering lock mechanism operates properly.

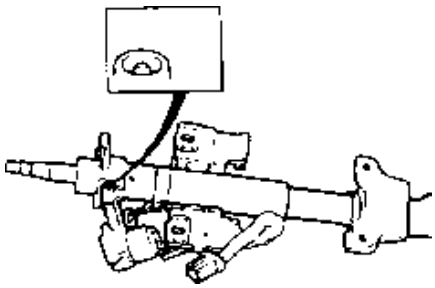
Check the dust cover for cracks or damage. If necessary, replace it.

Return to Main Menu(s): Mechanical Manual Electrical Manual

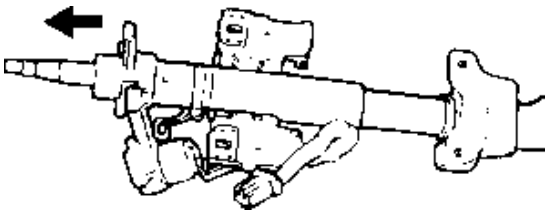
DISASSEMBLY AND REASSEMBLY

KEY LOCK ASSEMBLY

If it is necessary to remove the key lock assembly, use a punch to make a groove on the head of the special bolt, and then use a screwdriver to remove the key lock assembly mounting bracket.



Disassemble the key lock assembly from the steering column and shaft assembly.

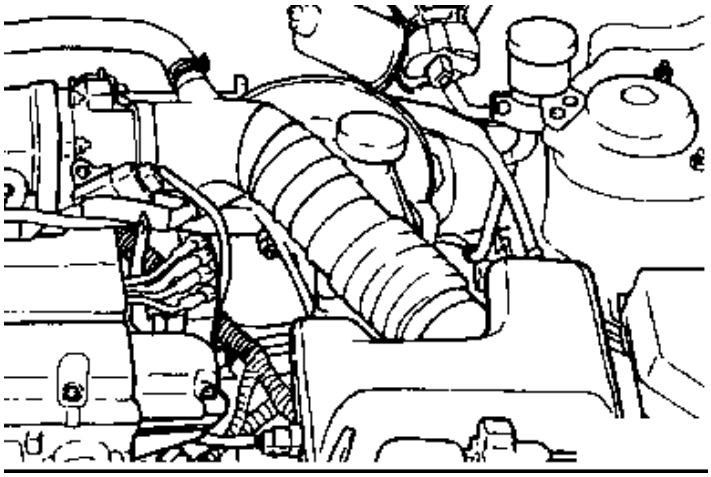


Reassembly is the reverse order of disassembly Universal Joint Assembly.

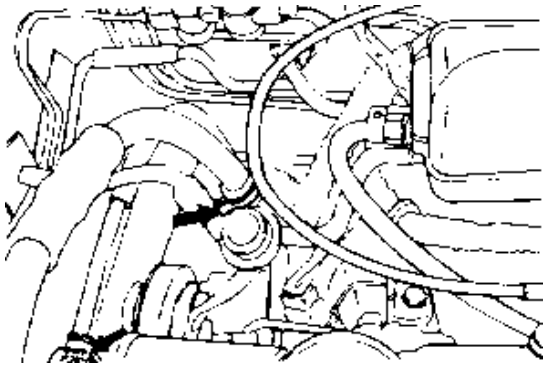
Return to Main Menu(s): Mechanical Manual Electrical Manual

REMOVAL

Remove the air intake hose assembly.

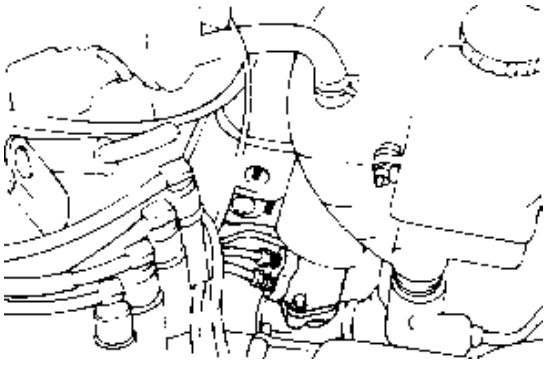


Detach the power steering pressure hose mounting clamp and the return tube mounting clamp.

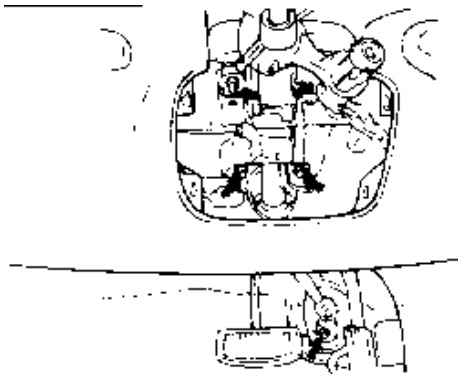


Drain power steering fluid.

Disconnect the pressure tube and the return tube fittings from the gear box.



Disconnect the shaft assembly from the gear box inside the driver's seat compartment.

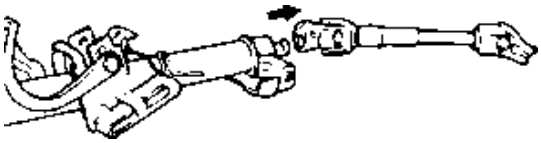


Remove the strap and push out the dust cover and remove the dust cover mounting plate.

UNIVERSAL JOINT ASSEMBLY

Remove the bolt holding the universal joint assembly and the steering column and shaft assembly.

Disassemble the universal joint assembly from the steering column and shaft assembly.



Reassembly is the reverse order of disassembly.

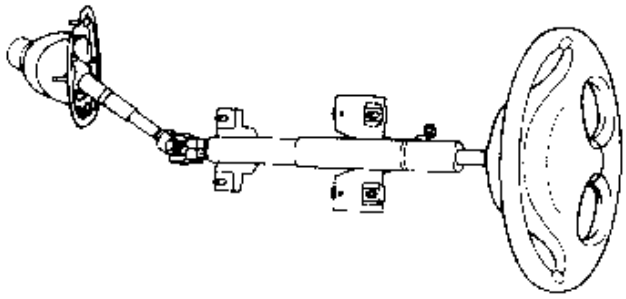
SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

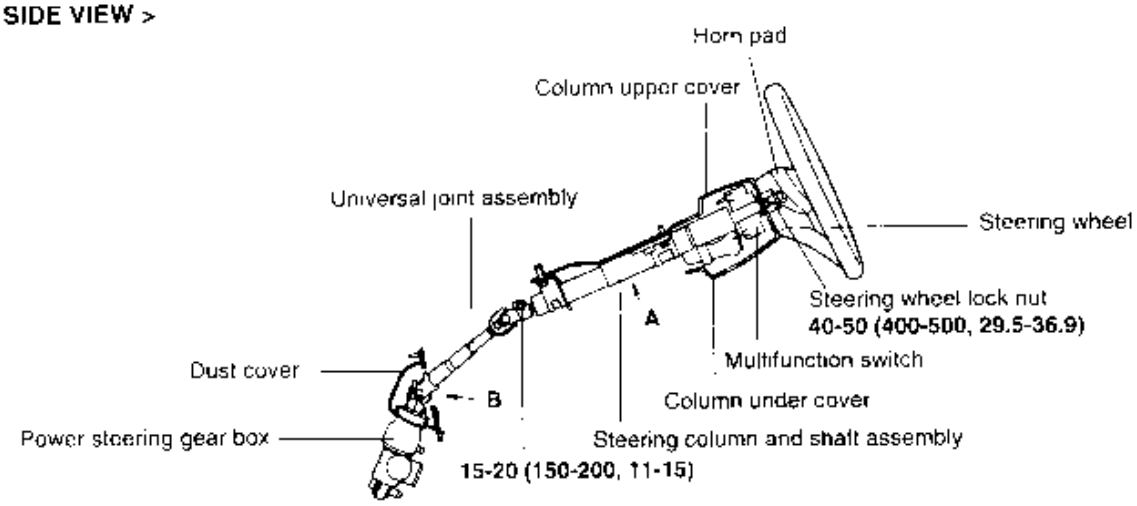
NON-TILT TYPE

< TOP VIEW >



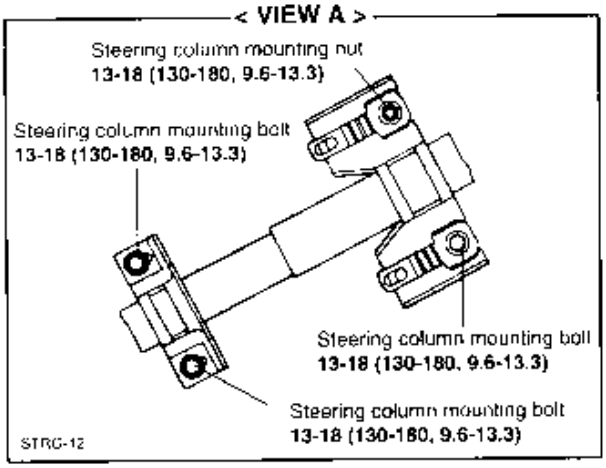
STRG-2

< SIDE VIEW >



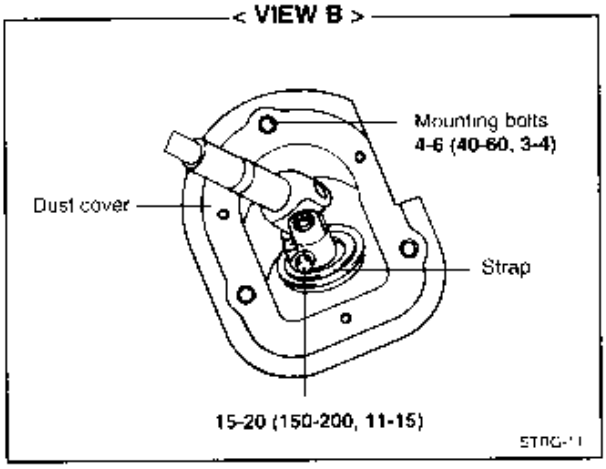
STRG-3

< VIEW A >



STRG-12

< VIEW B >



STRG-11

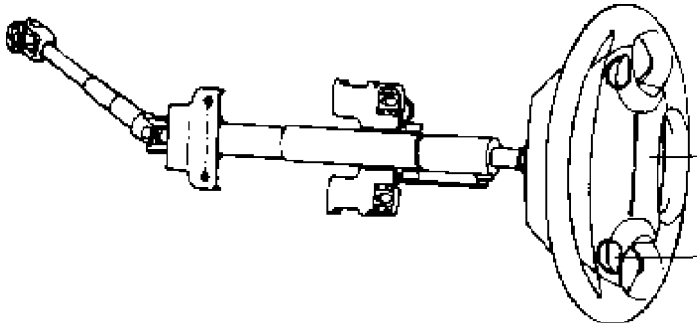
TORQUE : Nm (kg·cm, lb·ft)

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

TILT TYPE (WITH SRS AIRBAG)

< TOP VIEW>



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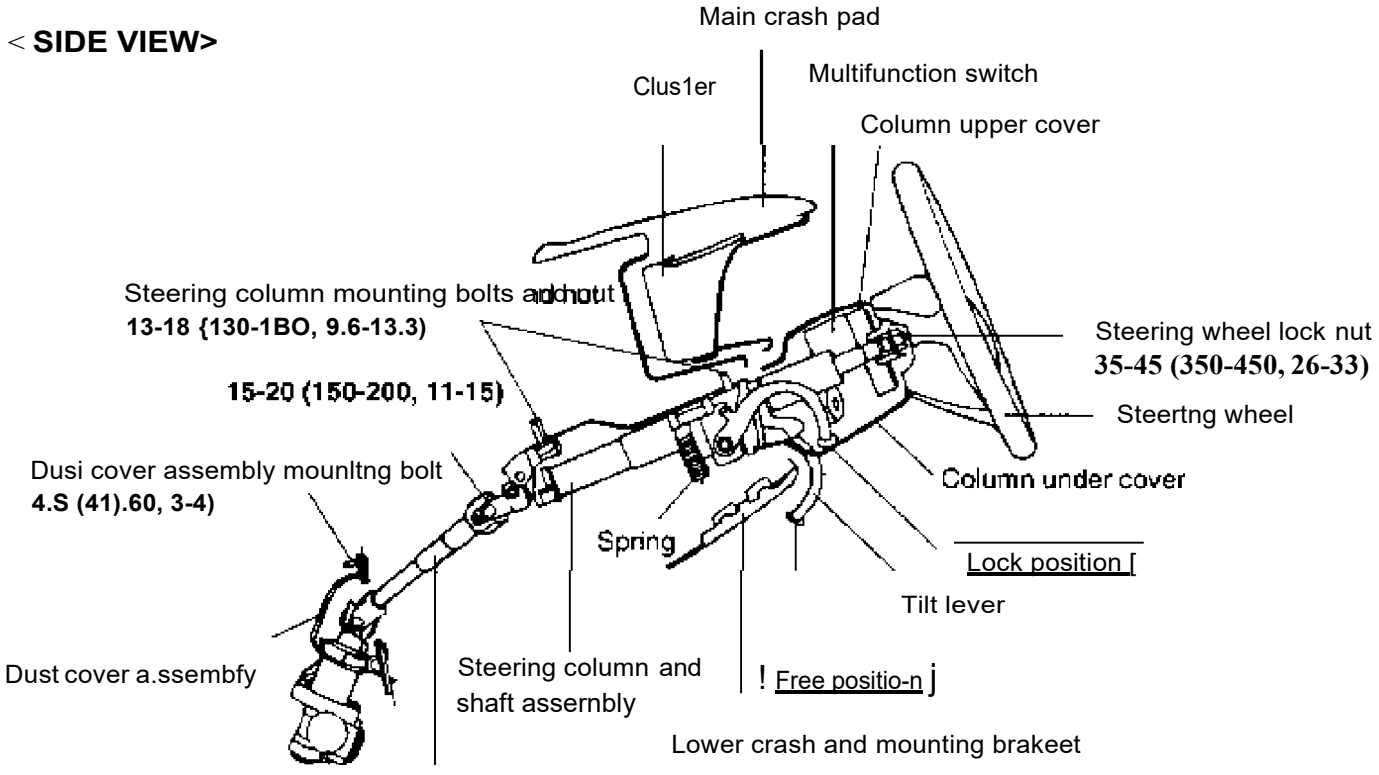

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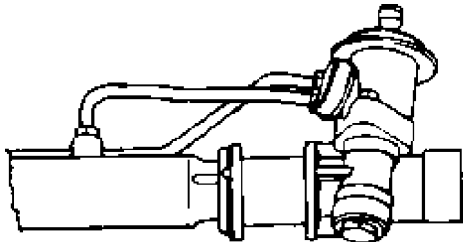
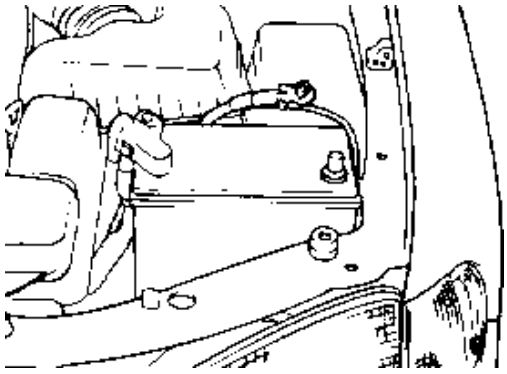


PoY'ller steering box assembly

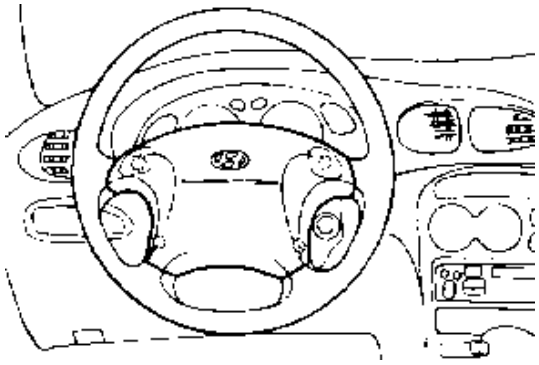
TORQUE: Nm (kg•cm, lb-ft)

REMOVAL AND INSTALLATION

Disconnect the negative terminal from the battery.



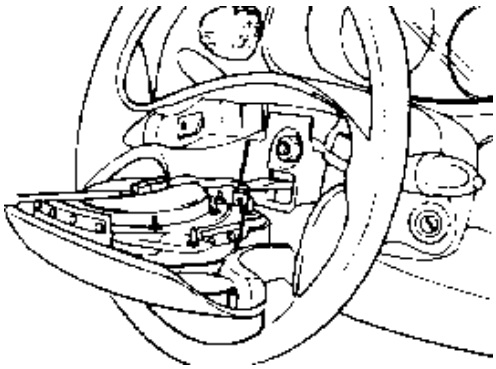
Remove the driver's airbag module.



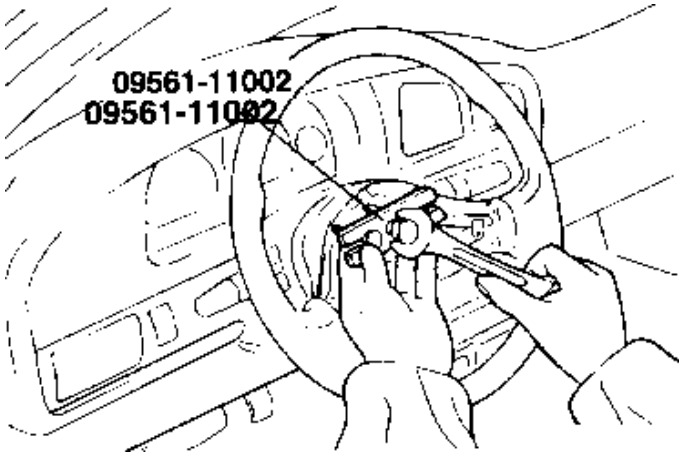
NOTE

For the vehicles not equipped with SRS airbag, remove the horn cover assembly.

Remove the steering wheel lock nut.



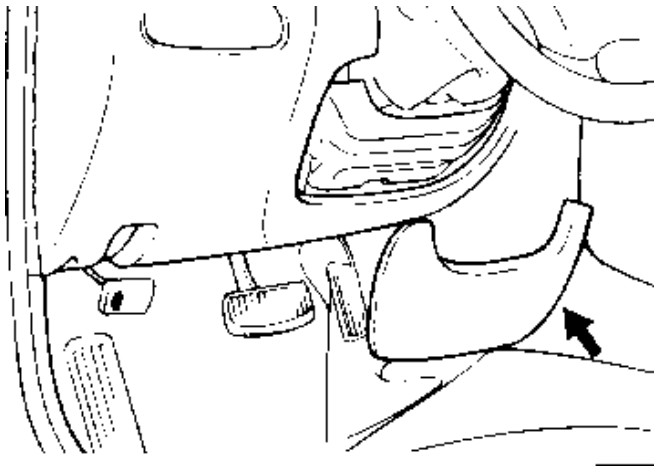
After making alignment marks on the steering shaft and wheel remove the steering wheel, using the special tool.



NOTE

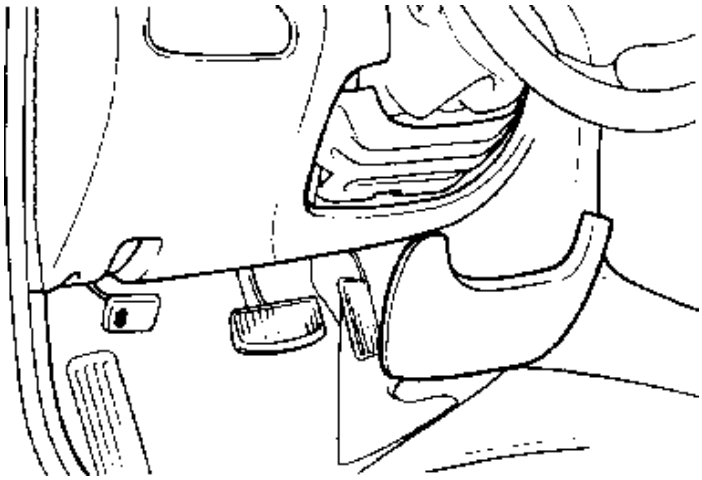
Do not hammer on the steering wheel to remove it: doing so may damage the steering column.

Remove the lower crash pad by using a flat tip screw driver.

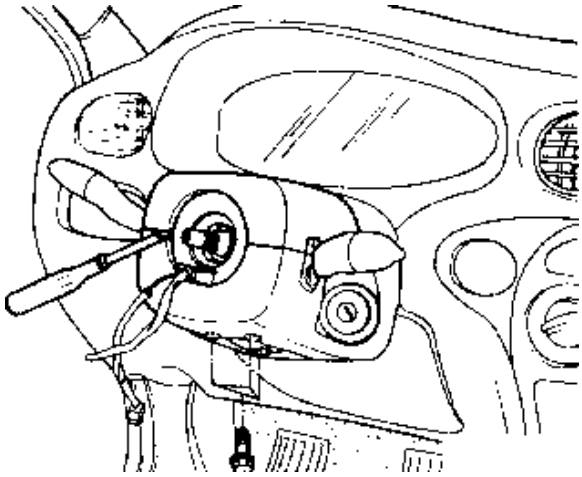


Remove the lower crash pad mounting bracket.

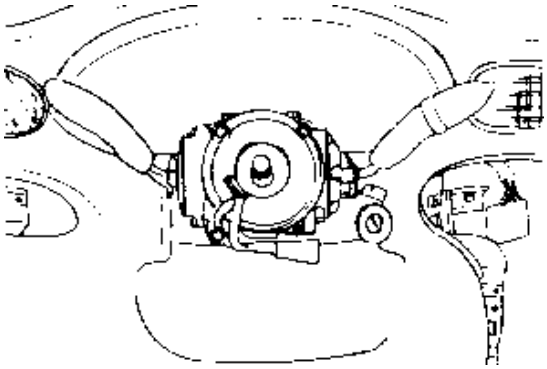
Disconnect connectors attached to the multifunction switch assembly and untie welding clips.



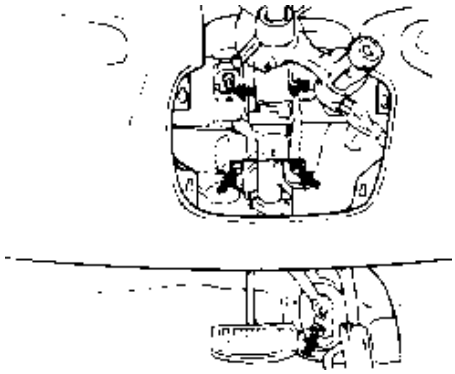
Remove the column upper and lower covers.



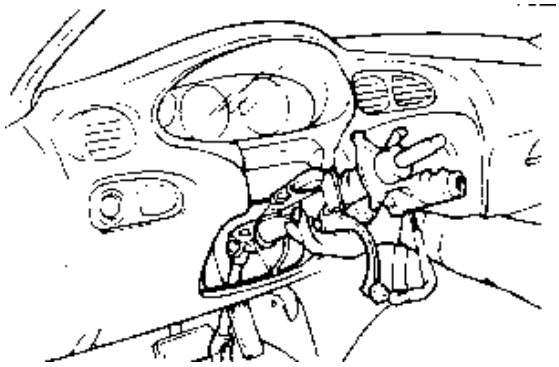
Remove the multifunction switch assembly.



Remove the bolt which is coupling universal joint to the pinion of the steering gear box.



After removing mounting bolts and nut, remove the steering column and shaft assembly.



Installation is the reverse order of removal.

NOTE

1. **When installing, be careful not to distort the steering column.**
2. **When the steering is installed, make sure that the alignment marks are aligned and the steering wheel is in the straight ahead position.**

Return to Main Menu(s): Mechanical Manual Electrical Manual

INSPECTION

Check the steering column and shaft for damage and distortion.

Check the joints for play, damage or rough movement.

Check the tilt bracket and spring for cracks and damage.

Check that the steering lock mechanism operates properly.

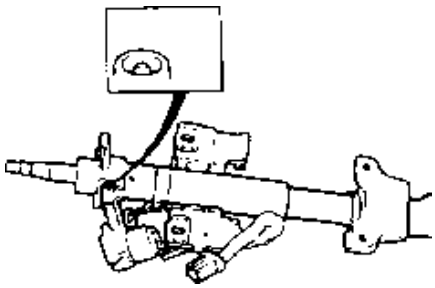
Check the dust cover for cracks or damage. If necessary, replace it.

Return to Main Menu(s): Mechanical Manual Electrical Manual

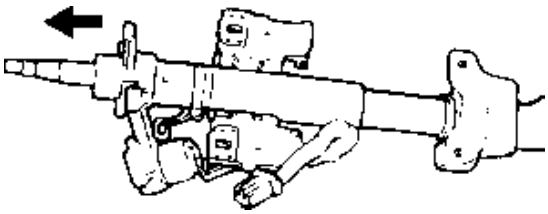
DISASSEMBLY AND REASSEMBLY

KEY LOCK ASSEMBLY

If it is necessary to remove the key lock assembly, use a punch to make a groove on the head of the special bolt, and then use a screwdriver to remove the key lock assembly mounting bracket.



Disassemble the key lock assembly from the steering column and shaft assembly.

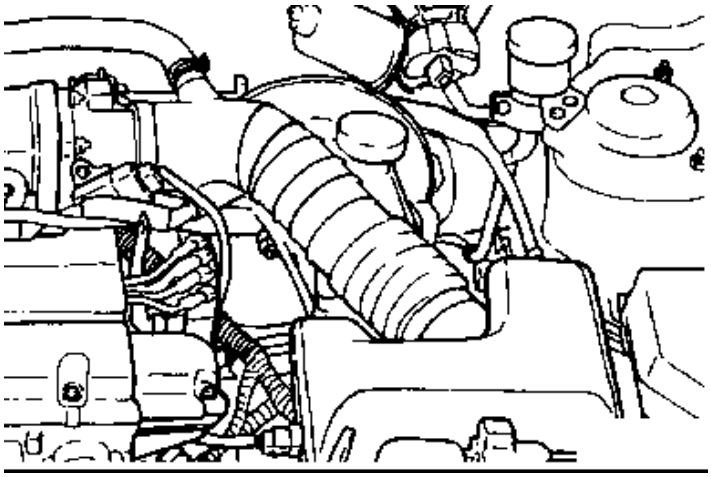


Reassembly is the reverse order of disassembly Universal Joint Assembly.

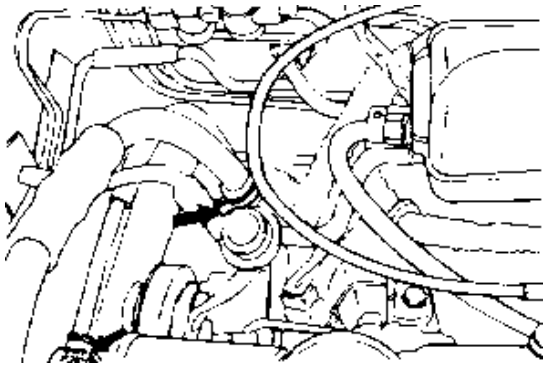
Return to Main Menu(s): Mechanical Manual Electrical Manual

REMOVAL

Remove the air intake hose assembly.

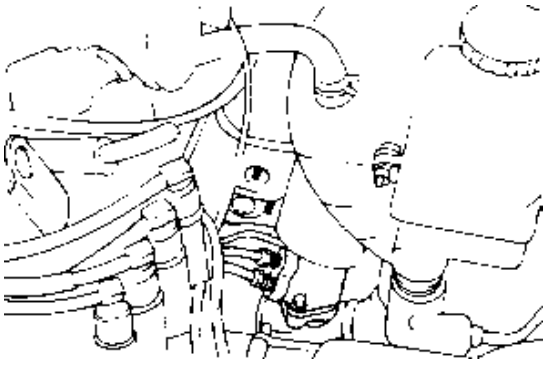


Detach the power steering pressure hose mounting clamp and the return tube mounting clamp.

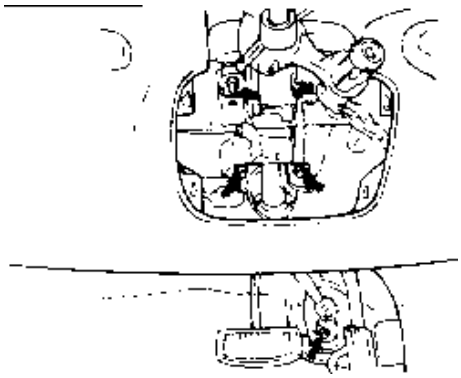


Drain power steering fluid.

Disconnect the pressure tube and the return tube fittings from the gear box.



Disconnect the shaft assembly from the gear box inside the driver's seat compartment.

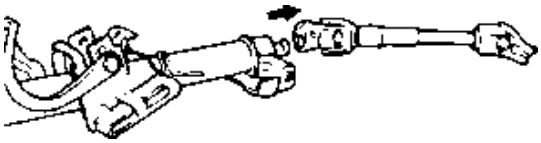


Remove the strap and push out the dust cover and remove the dust cover mounting plate.

UNIVERSAL JOINT ASSEMBLY

Remove the bolt holding the universal joint assembly and the steering column and shaft assembly.

Disassemble the universal joint assembly from the steering column and shaft assembly.



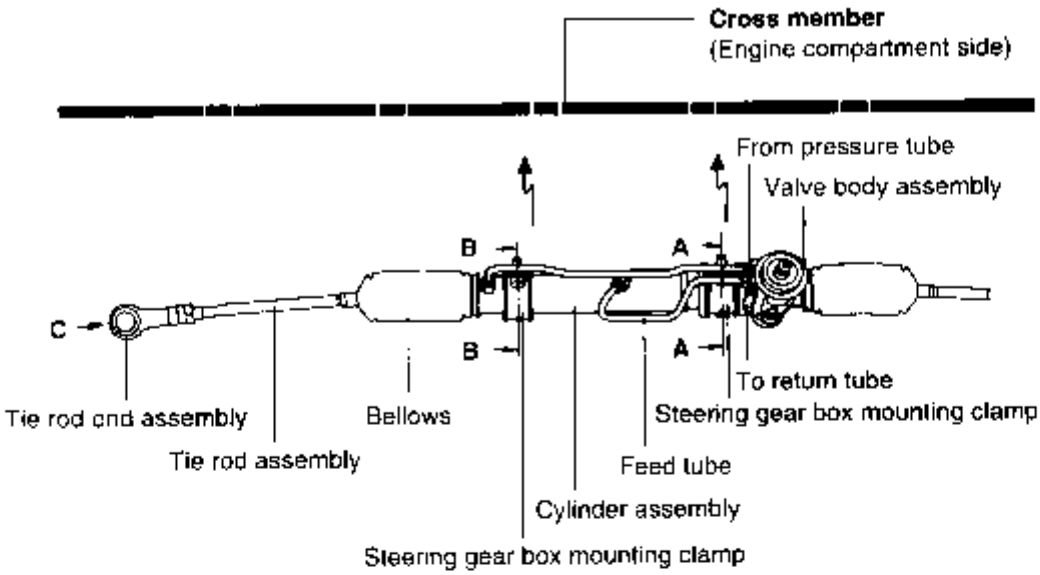
Reassembly is the reverse order of disassembly.

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2000	
GROUP	
Steering System	Mechanical Power Steering System

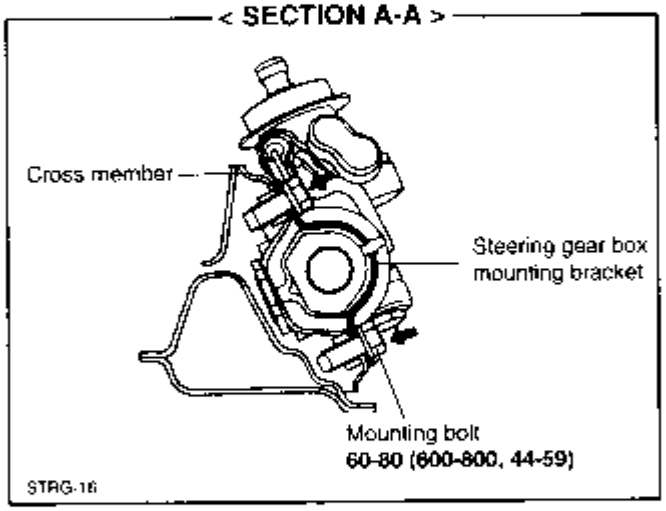
Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

< TOP VIEW >



< SECTION A-A >



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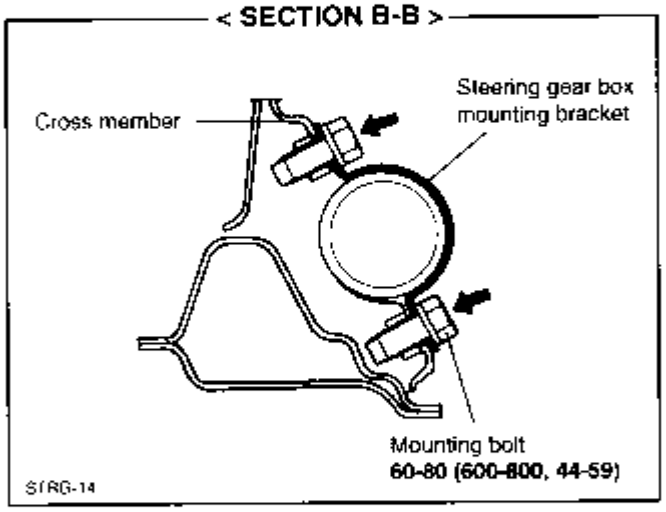
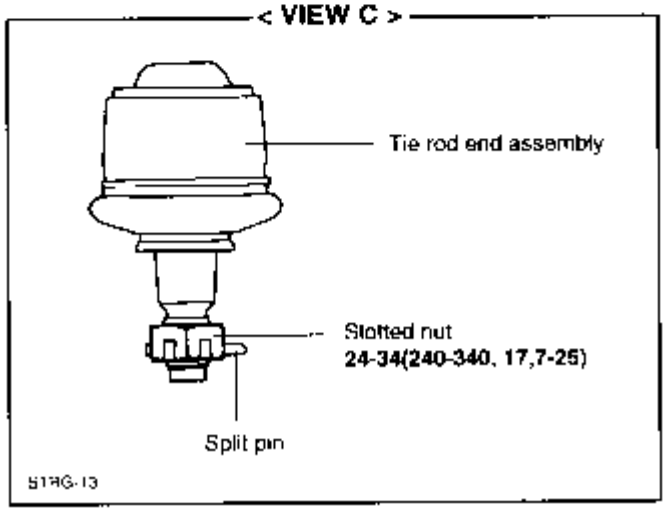


< VIEW C >

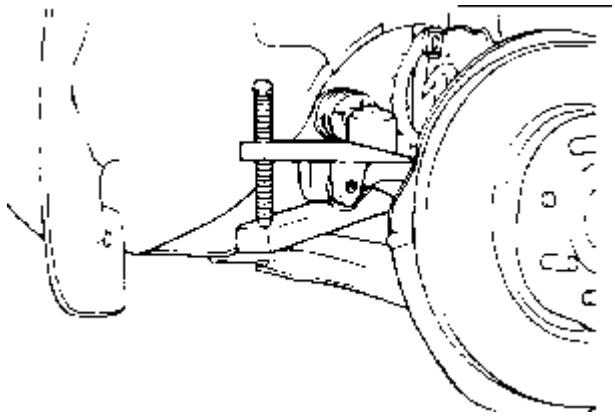


TORQUE : Nm (kg·cm, lb·ft)

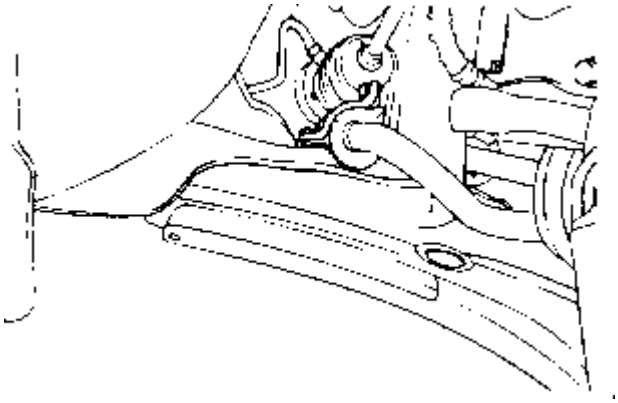
Lift up the vehicle.

Remove front tires (RH/LH).

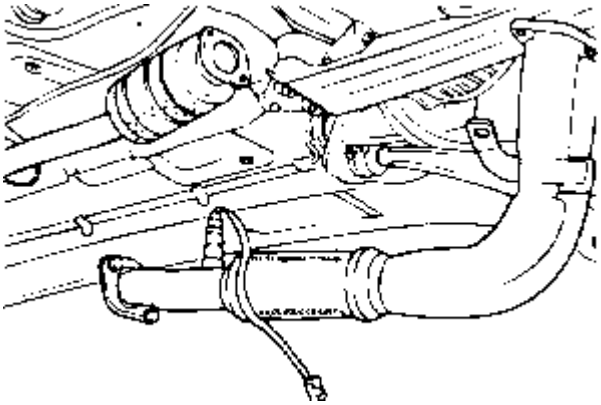
After removing split pin, disconnect the tie rod from the knuckle by using the special tool (09568-31000).



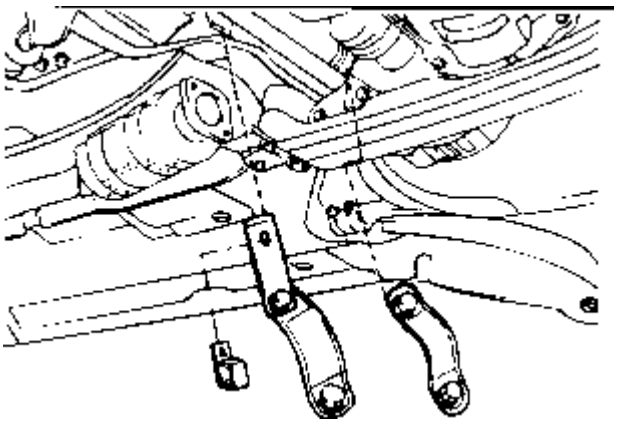
Remove the stabilizer bar (RH side) mounting bracket.



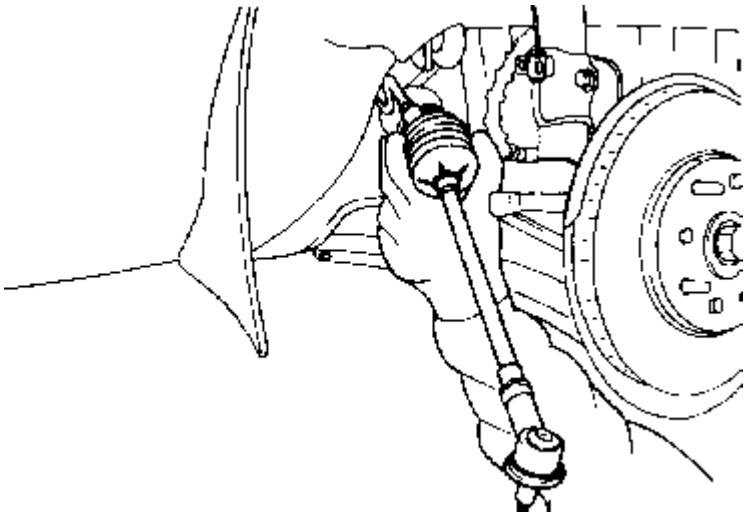
Remove the front muffler assembly.



Remove the power steering gear box mounting clamps and the clamp holding both of the pressure tube and the return tube.



Pull the power steering gear box assembly toward the right side of the vehicle.



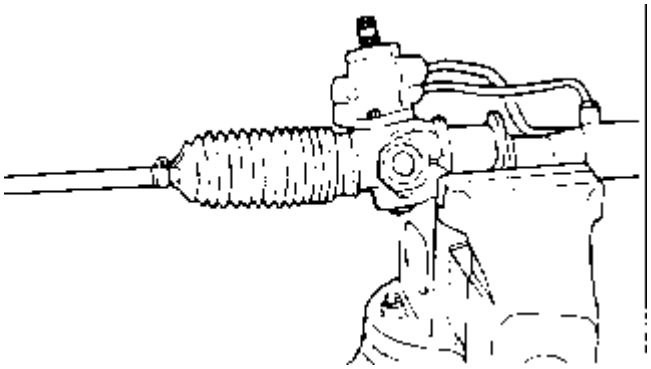
NOTE

When removing the gear box, pull it out carefully and slowly so as not to cause damage to the boots.

Return to Main Menu(s): Mechanical Manual Electrical Manual

INSPECTION AND ADJUSTMENT PRIOR TO DISASSEMBLY

Mount the gear box in a soft jawed vise.

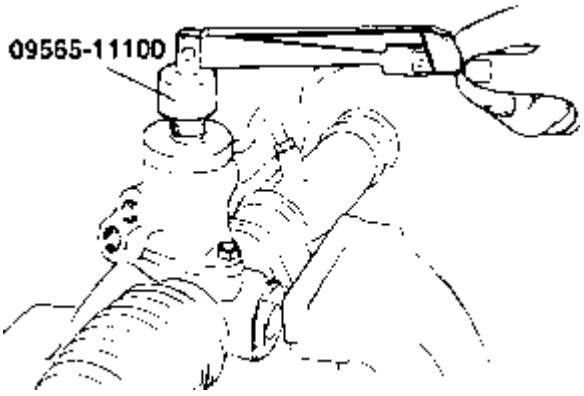


NOTE

Do not tighten the vise on the gear housing, use the mounting section of the rack to secure it in the vise.

TOTAL PINION PRELOAD

Rotate the pinion gear for approximately 4 to 6 seconds for one rotation to confirm the total pinion preload.



TORQUE SPECIFICATION	
Total pinion preload [Standard value]	0.6-1.3 Nm (6-13 kg·cm, 5.2-11.3 lb·ft)

NOTE

Measure the pinion preload through the entire stroke of the rack.

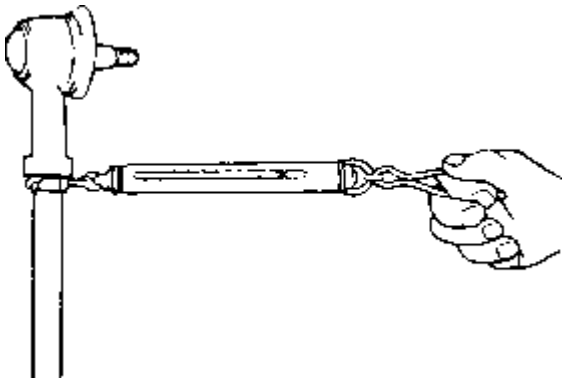
If the measured value is out of specifications, first adjust the yoke plug, then re-check the total pinion preload.

If the yoke plug adjustment does not obtain the total pinion preload, check or replace the yoke plug components.

TIE ROD SWING RESISTANCE

Give 10 hard swings to the tie rod.

Measure the tie rod swing resistance with a spring scale.



Tie rod swing resistance [Standard value] 8-22 N (1.9-4.6 lb) [2-5 Nm (20-50-kg.cm, 17-43 lb-in.)]

If the measured value exceeds the standard value, replace the tie rod assembly.

NOTE

Even if the measured value is below the standard value, a tie rod that swings smoothly without excessive play may be used. If the measured value is below 4.3 N (0.9 lb)[100 Ncm (8.7 lb.in.)], replace the tie rod.

BELLOWS INSPECTION

Inspect the bellows for damage or deterioration.

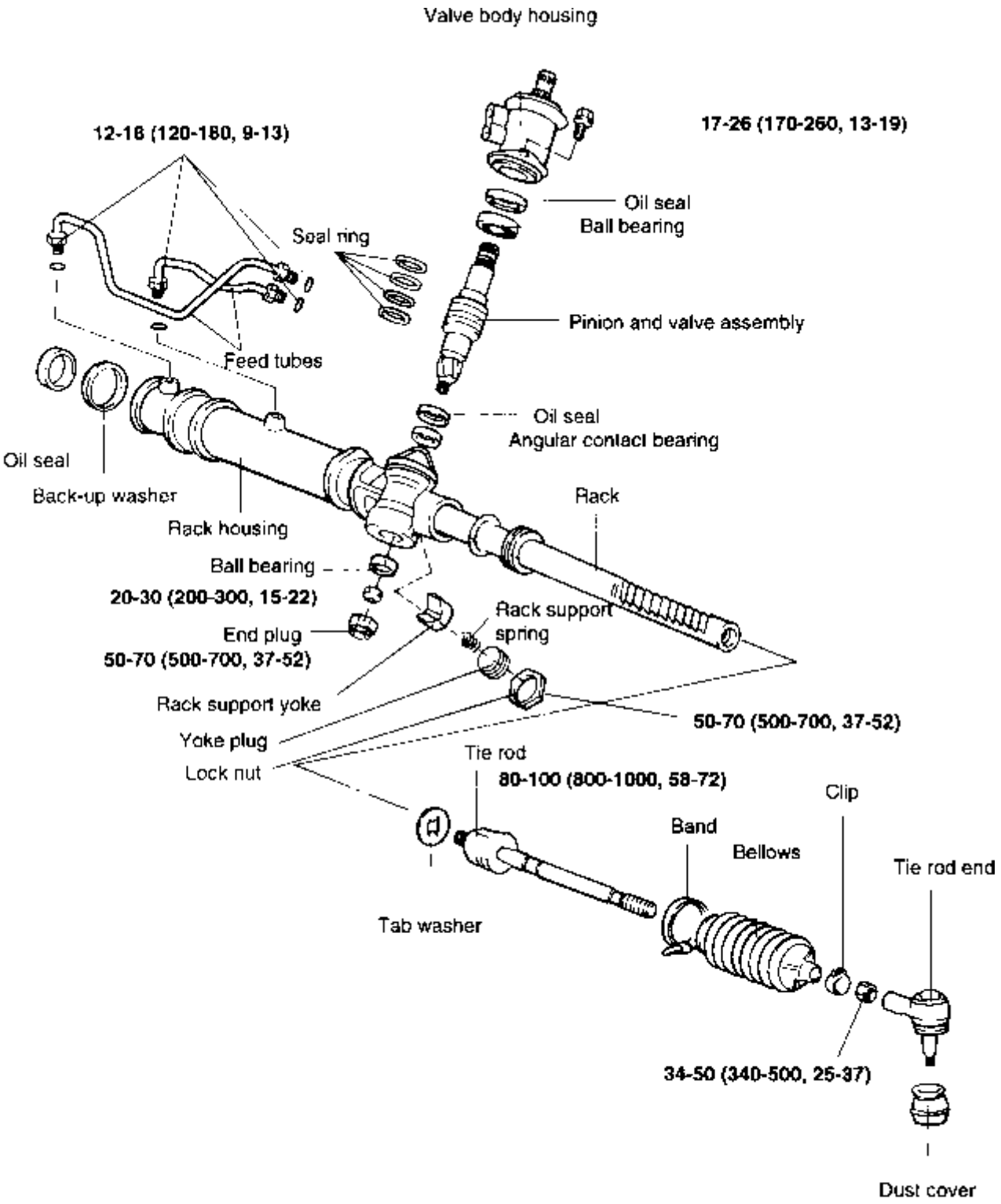
Make sure the bellows are secured in the correct position.

If the bellows are defective, replace them.

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS

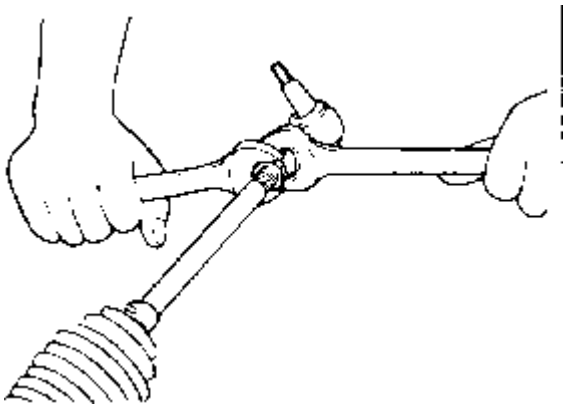


TORQUE : Nm (kg·cm, lb·ft)

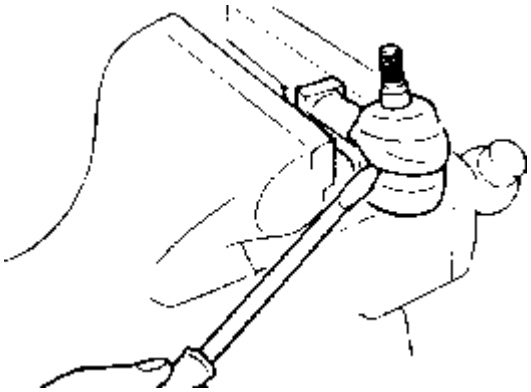
Return to Main Menu(s): Mechanical Manual Electrical Manual

DISASSEMBLY

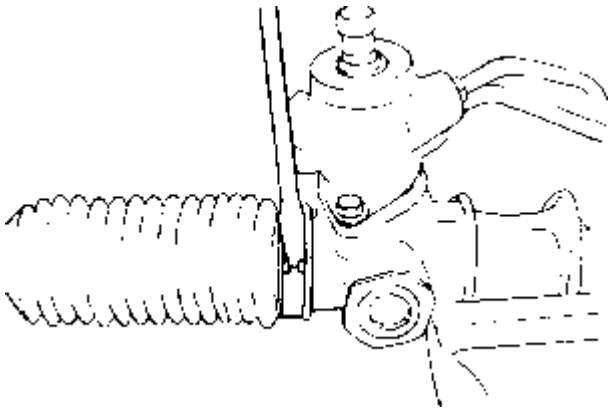
Remove the tie rod end from the tie rod.



Remove the dust cover from the ball joint.



Remove the bellows band.

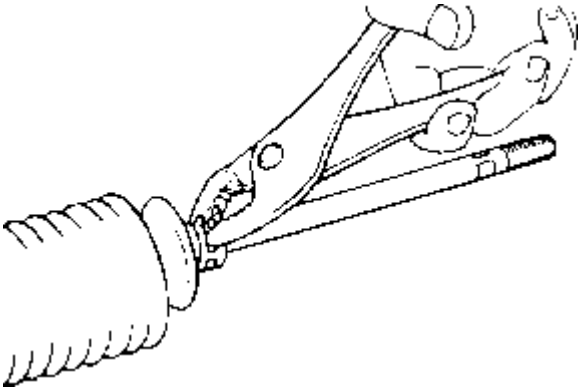


Remove the bellows clip.

Pull the bellows out toward the tie rod.

> **NOTE**
>
> **Check for rust on the rack when the bellows are replaced.**

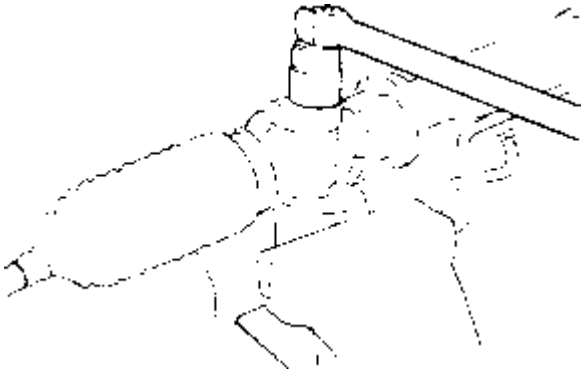
Remove the feed tube from the gear housing.



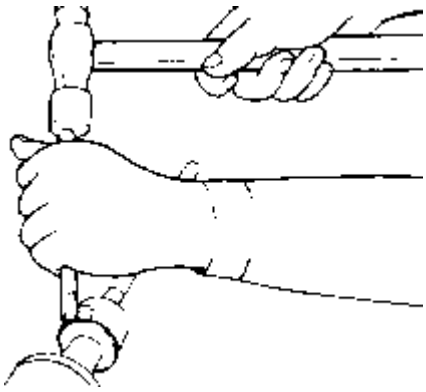
While moving the rack slowly, drain the fluid from the gear housing.

Remove the end plug.

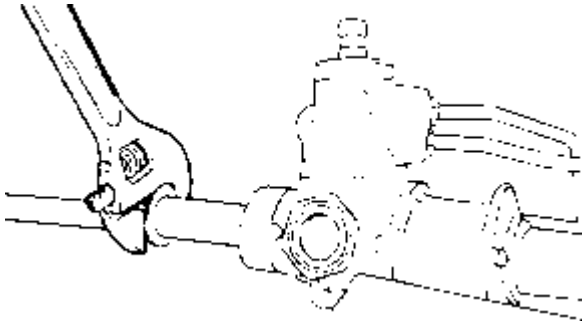
With the pinion turned clockwise until the rack is locked, remove the self-locking nut.



Unstake the tab washer between the tie rod and rack with a chisel.



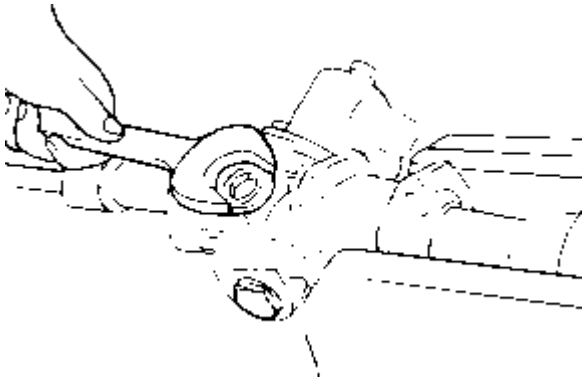
Remove the tie rod from the rack.



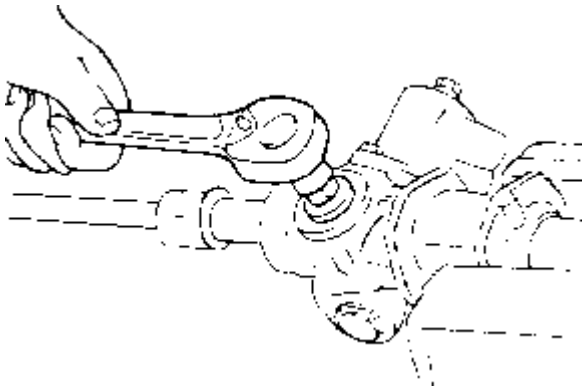
NOTE

Remove the tie rod from the rack, taking care not to twist the rack.

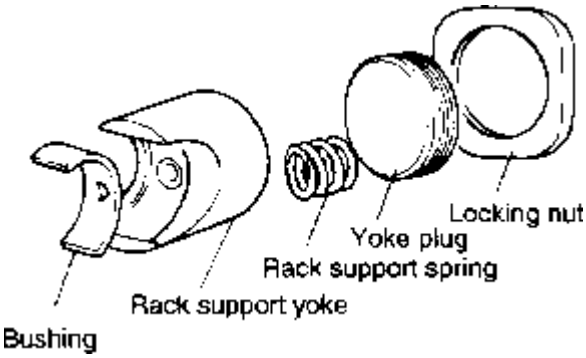
Remove the yoke plug locking nut.



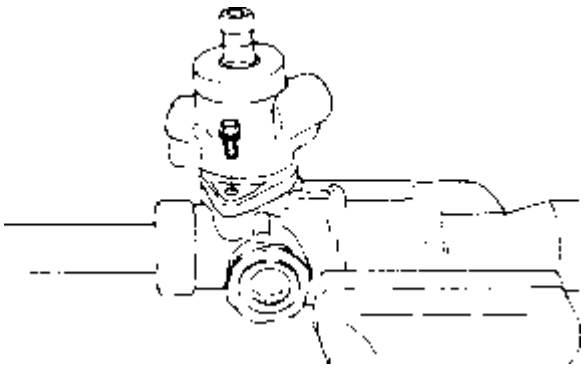
Using special tool, remove the yoke plug.



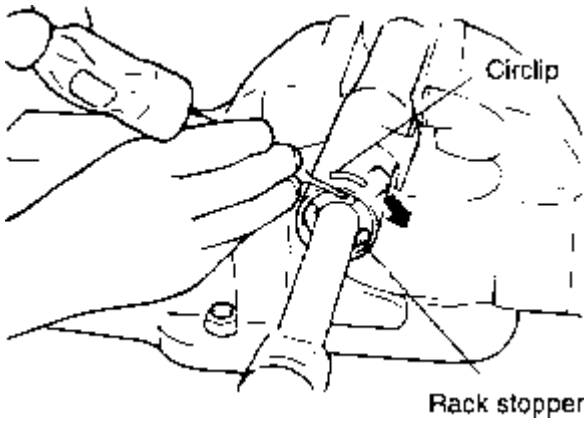
Remove the rack support spring, rack support yoke and bushing from the gear box.



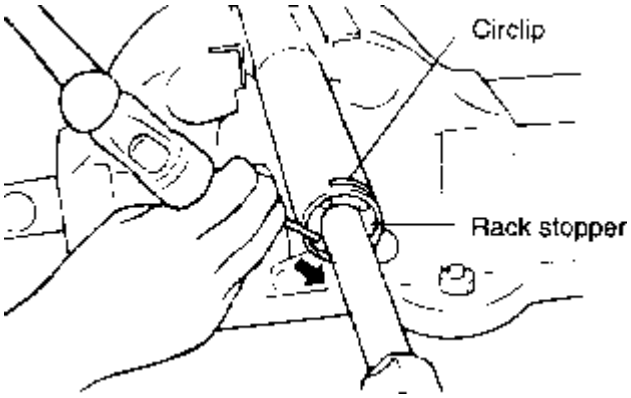
Remove the valve body housing by loosening the two bolts.



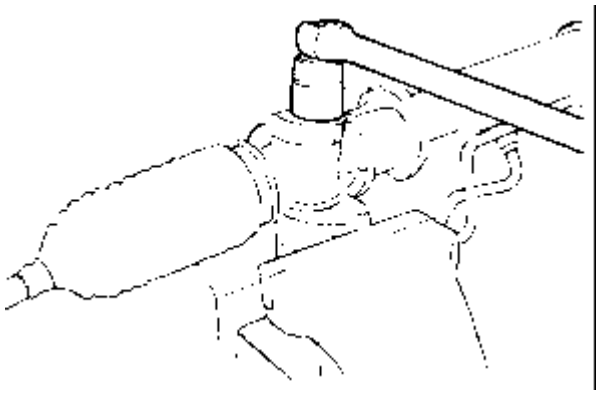
Turn the rack stopper clockwise until the end of the circlip comes out of the slot in the gear housing.



When the end of the circlip comes out from the notched hole of the housing rack cylinder, turn the rack stopper counterclockwise and remove the circlip.



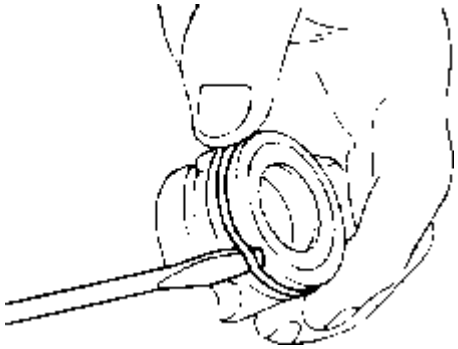
Remove the rack stopper, rack bushing and rack from the gear housing by moving it toward the pinion side.



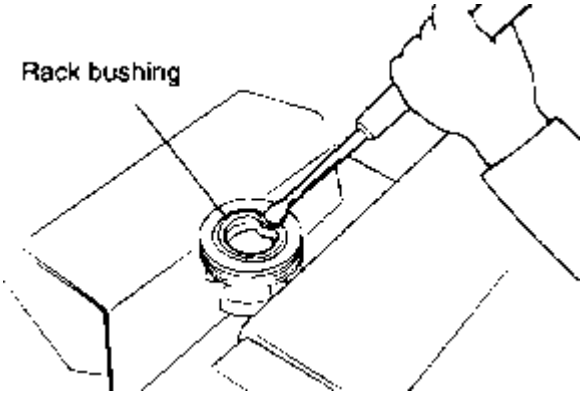
NOTE

When the rack has been removed, be sure to replace the housing side oil seal.

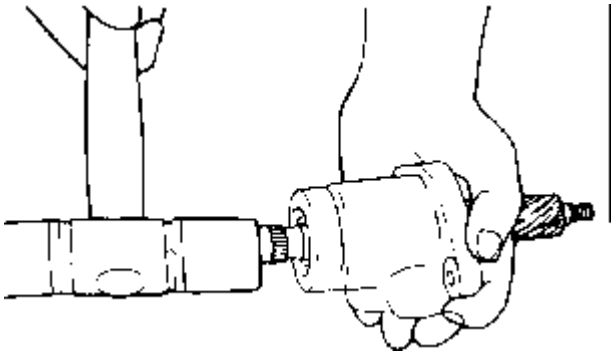
Remove the O-ring from the rack bushing.



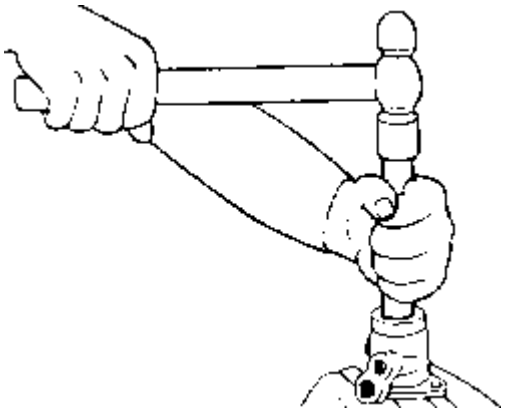
Remove the oil seal from the rack bushing.



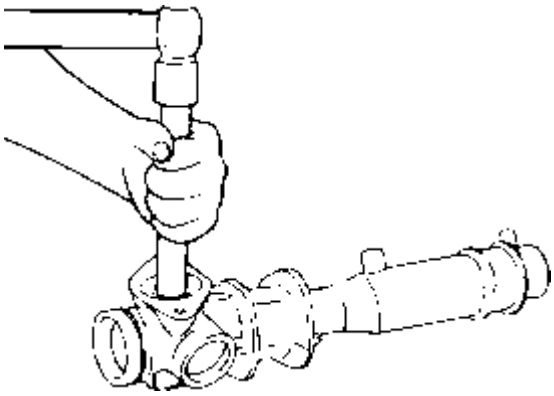
Remove the valve body from valve body housing with a soft hammer.



Use the special tool to remove the oil seal and ball bearing from the valve body housing.



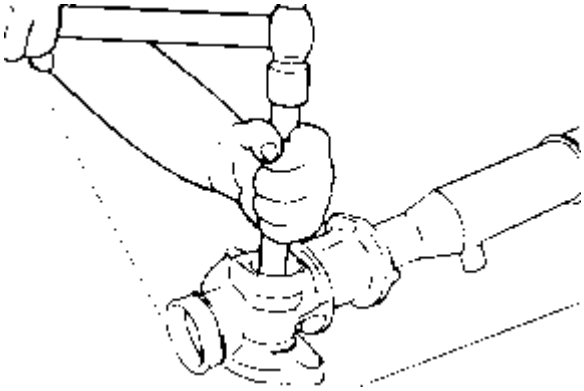
Use the special tool to remove the ball bearing from the gear housing.



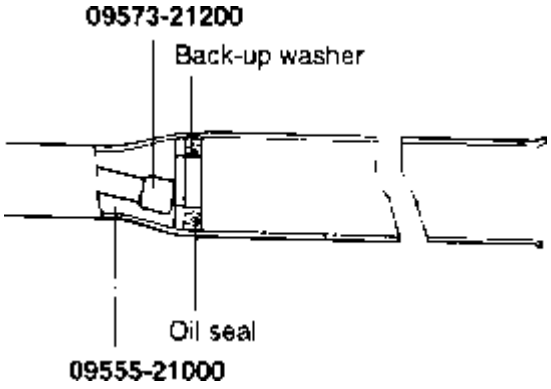
NOTE

Be careful not to damage the pinion valve cylinder inside of the gear housing.

Use the special tool (09517-21400) to remove the needle bearing from the gear housing.



Use the special tools to remove the back-up washer and oil seal from the gear housing.



NOTE

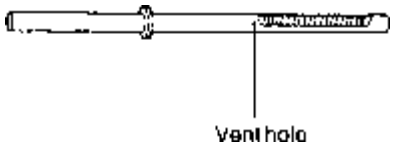
Be careful not to damage the rack cylinder inside of the gear housing.

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

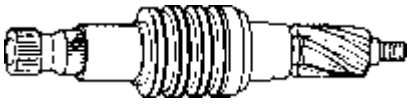
INSPECTION

Rack



Rack tooth face damage or wear
Oil seal contact surface damage
Bending or twisting
Oil seal ring damage or wear
Oil seal damage or wear

Pinion valve



Pinion gear tooth face damage or wear
Oil seal contact surface damage
Seal ring damage or wear
Oil seal damage or wear

Bearing

Seizure or abnormal noise during bearing rotation
Excessive play
Missing needle bearing rollers

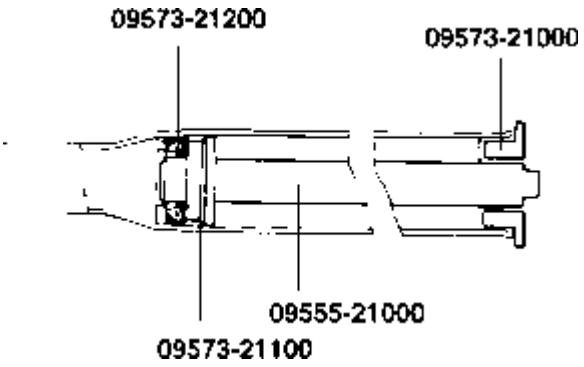
Others

Damage of the gear housing cylinder bore
Boot damage, cracking or aging

Return to Main Menu(s): Mechanical Manual Electrical Manual

REASSEMBLY

Apply the specified oil to the entire surface of the rack oil seal.



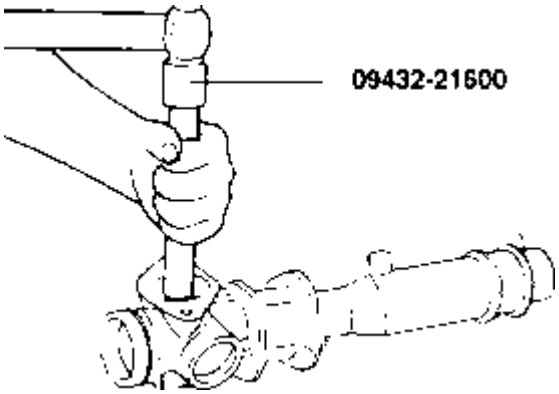
Recommended fluid: ATF DEXRONII type

Install the backup washer and oil seal to the specified position in the gear housing.

Apply the specified grease to the entire surface of the needle bearing.

Recommended grease: Multipurpose grease SAE J310, NLGI No. 2

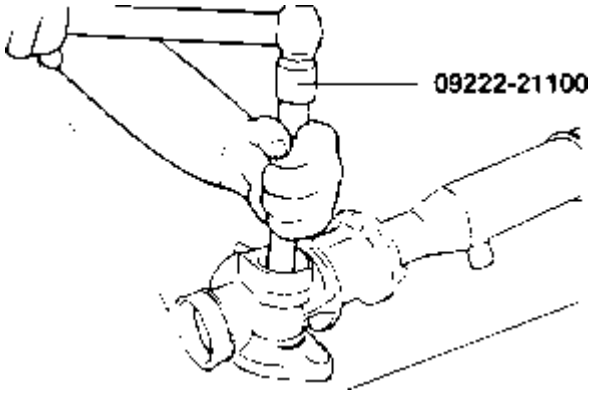
Set the scribed side of the needle bearing in the special tool and install it into the gear housing (until the special tool contacts the gear housing).



NOTE

Note the direction of the needle bearing.

Apply the specified grease to the ball bearing and install using the special tool.



Recommended grease: Multipurpose grease SAE J310, NLGI No. 2

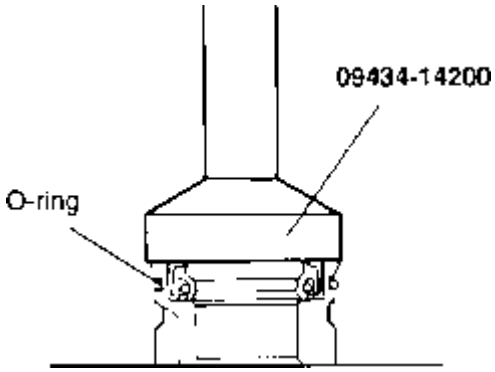
NOTE

Always use a new bearing.

Apply the specified oil to the entire surface of the rack bushing oil seal.

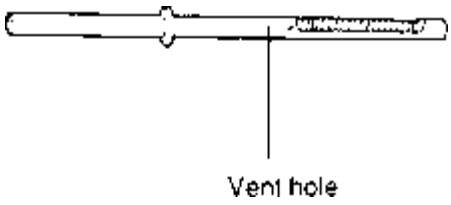
Recommended fluid ATF DEXRONII type

Install the oil seal in the rack bushing.



Apply the specified oil to the entire surface of the O-ring and install it in the rack bushing.

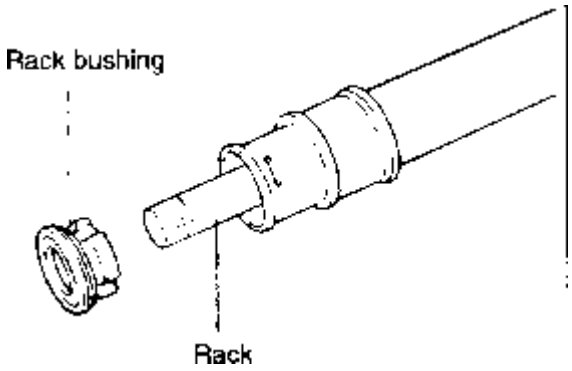
Apply the specified grease to the rack teeth.



Recommended grease: Multipurpose grease SAE J310, NLGI No. 2

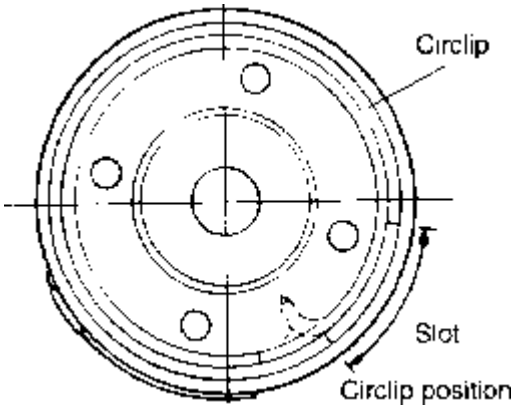
> **NOTE**
>
> **Do not plug the vent hole in the rack with grease.**

Wrap the rack end with vinyl tape, apply a coating of the specified fluid, and then install the rack bushing and rack stopper.



> **NOTE**
>
> **Do not allow oil seal retainer spring to slip out.**

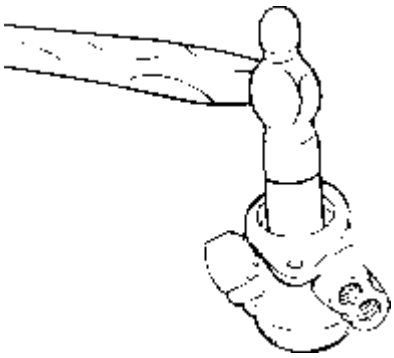
Push in the rack stopper until the circlip groove of the rack stopper is aligned with the notched hole of the rack housing. Install the circlip while turning the rack stopper.



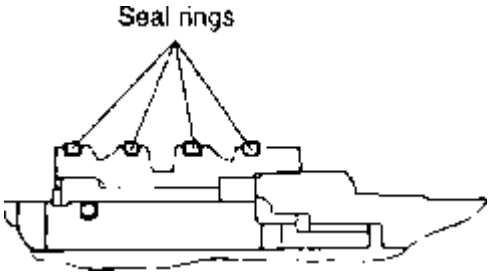
NOTE

The circlip end should not be visible through the notched hole of the rack housing.

Using special tool, install the oil seal and the ball bearing in the valve body.



When installing seal rings, press firmly into valve groove. Apply specified fluid.

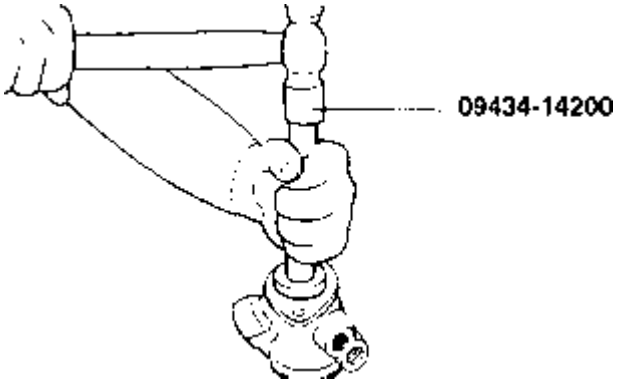


Apply the specified oil and grease to the pinion valve assembly and install in the gear housing assembly.

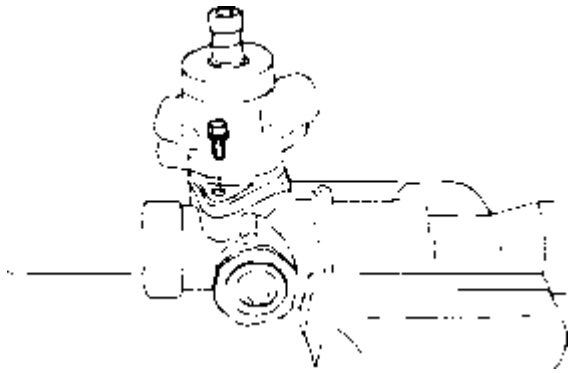
Recommended fluid: ATF DEXRONII type

Recommended grease: Multipurpose grease SAE J310, NLGI No. 2

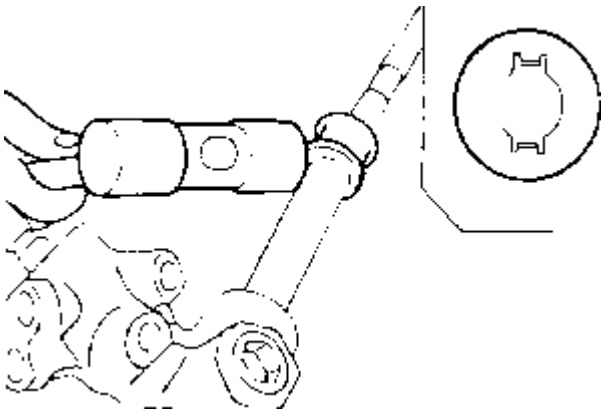
Apply the specified oil and then use the special tool to install the seal in the valve body housing.



Install the valve body assembly with the seal ring to the gear box.



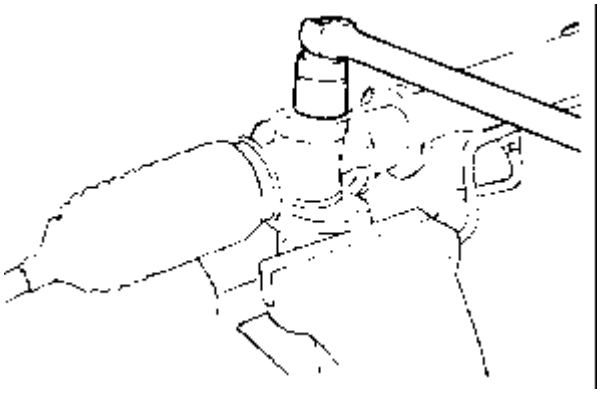
Install the tab washer and the tie rod and stake the tab washer end at two points over the tie rod.



NOTE

1. **Align the tab washer pawIs with the rack grooves.**
2. **Always use a new tab washer.**

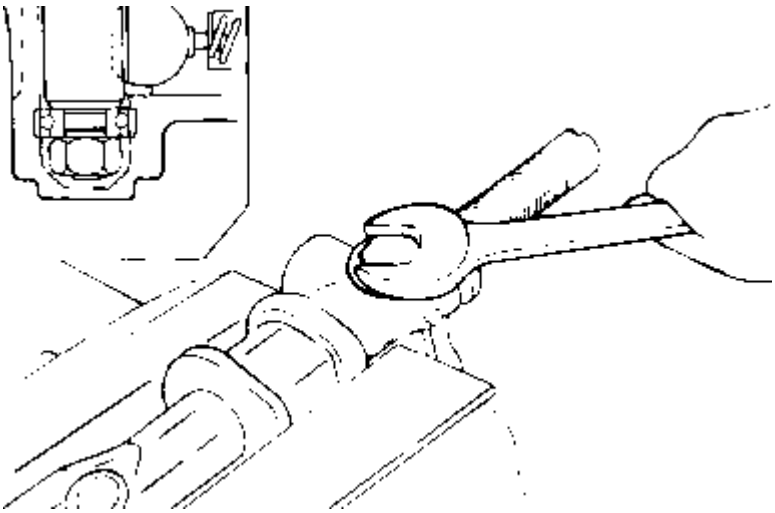
With the pinion turned all the way clockwise, tighten the selflocking nut.



CAUTION

Always use a new nut.

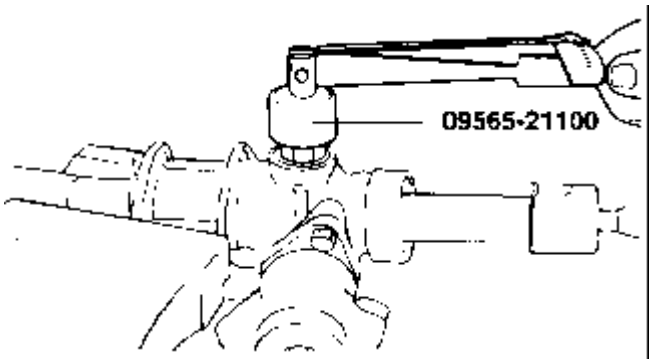
Apply semi-drying sealant to the threaded section of the end plug and tighten to the specified torque.



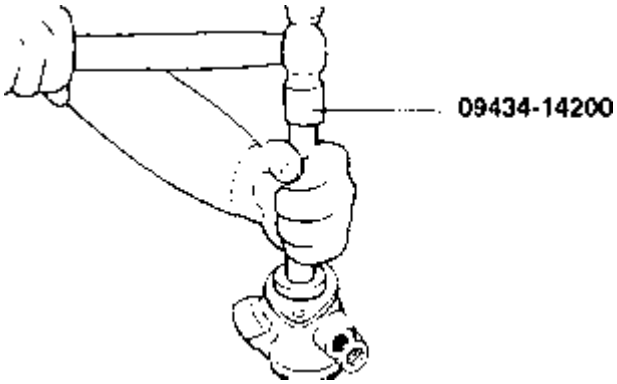
TORQUE SPECIFICATION	
End plug	50-70 Nm (500-700 kg·cm, 37-52 lb·ft)

Stake the end plug at two points on its circumference with a punch.

Install the bushing, rack support yoke, rack support spring and yoke plug in the order shown. Apply semi-drying sealant to the threaded section of the yoke plug before installation.



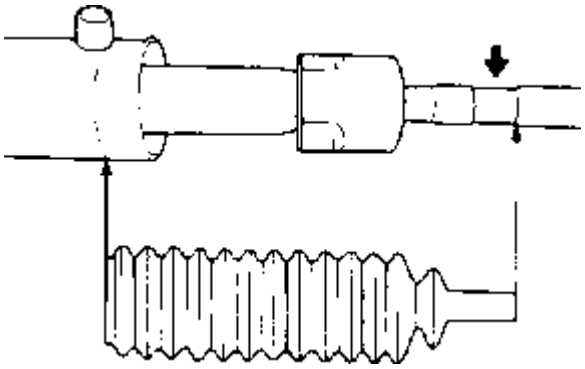
With the rack placed in the center position, attach the yoke plug to the gear housing. Tighten the yoke plug to 15 Nm (150 kg.cm, 11 lb.ft), using the special tool. Loosen the yoke plug approximately 30 to 60°, and tighten the locking nut to the specified torque.



TORQUE SPECIFICATION	
	50-70 Nm (500-700

	kg·cm, 37-52 lb·ft)

Tighten the feed tube to the specified torque and install the mounting rubber using adhesive.



Apply the specified grease to the bellows mounting position (fitting groove) of the tie rod.

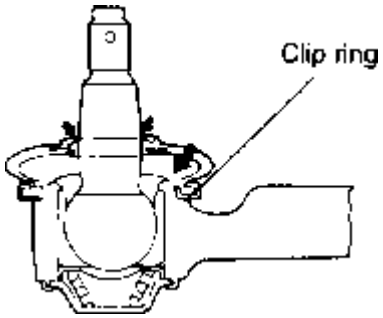
Recommended grease: Silicone grease

Install the attaching band to the bellows.

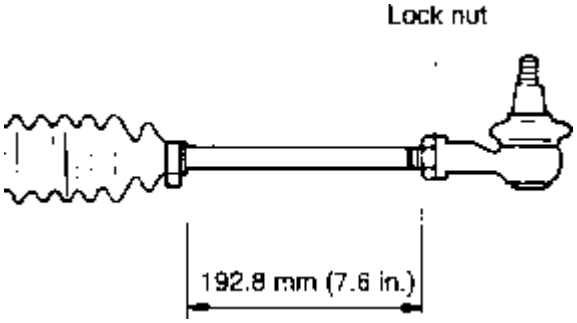
> **NOTE**
>
> **When the bellows are installed, a new band must be used.**

Install the bellows in position, taking care not to twist it.

Fill the dust cover inner side and lip with the specified multipurpose grease, and place the dust cover in position with the clip ring attached in the groove of the tie rod end.

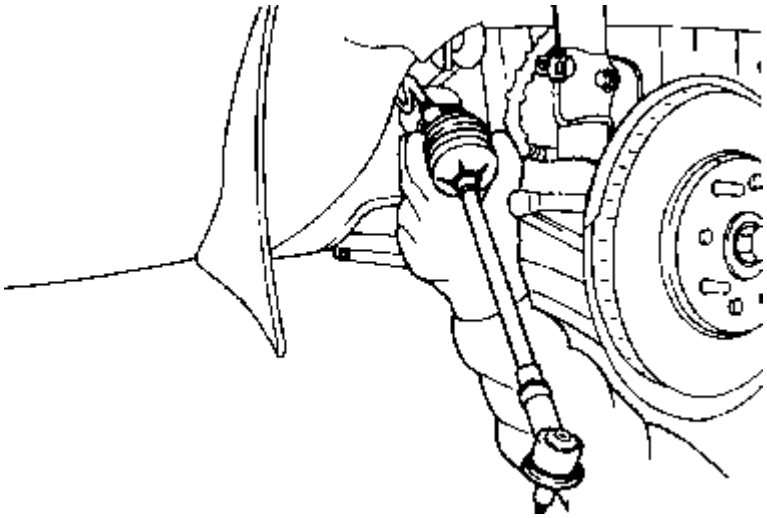


Screw in tie rod end to have its right and left length as illustrated.

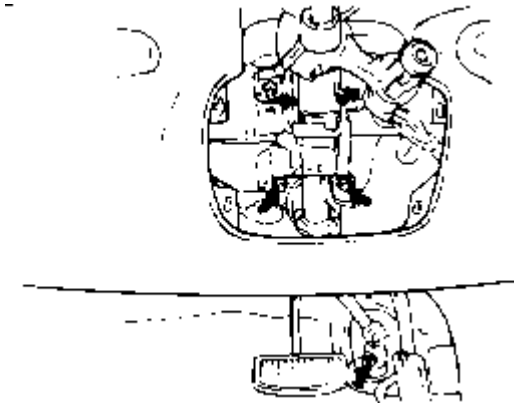


Lock with lock nut.

Push in the power steering gear box assembly from the right side of the vehicle.



Install the dust cover mounting plate.



Connect the dust cover to its mounting plate with a new strap.

Connect the steering gear box assembly to the steering column and shaft assembly.

> **NOTE**
>
> **This work should be done by two persons. While one is pushing the gear box assembly toward the steering column and shaft assembly from underside of the vehicle, the other one is connecting the gear box to the steering column and shaft.**

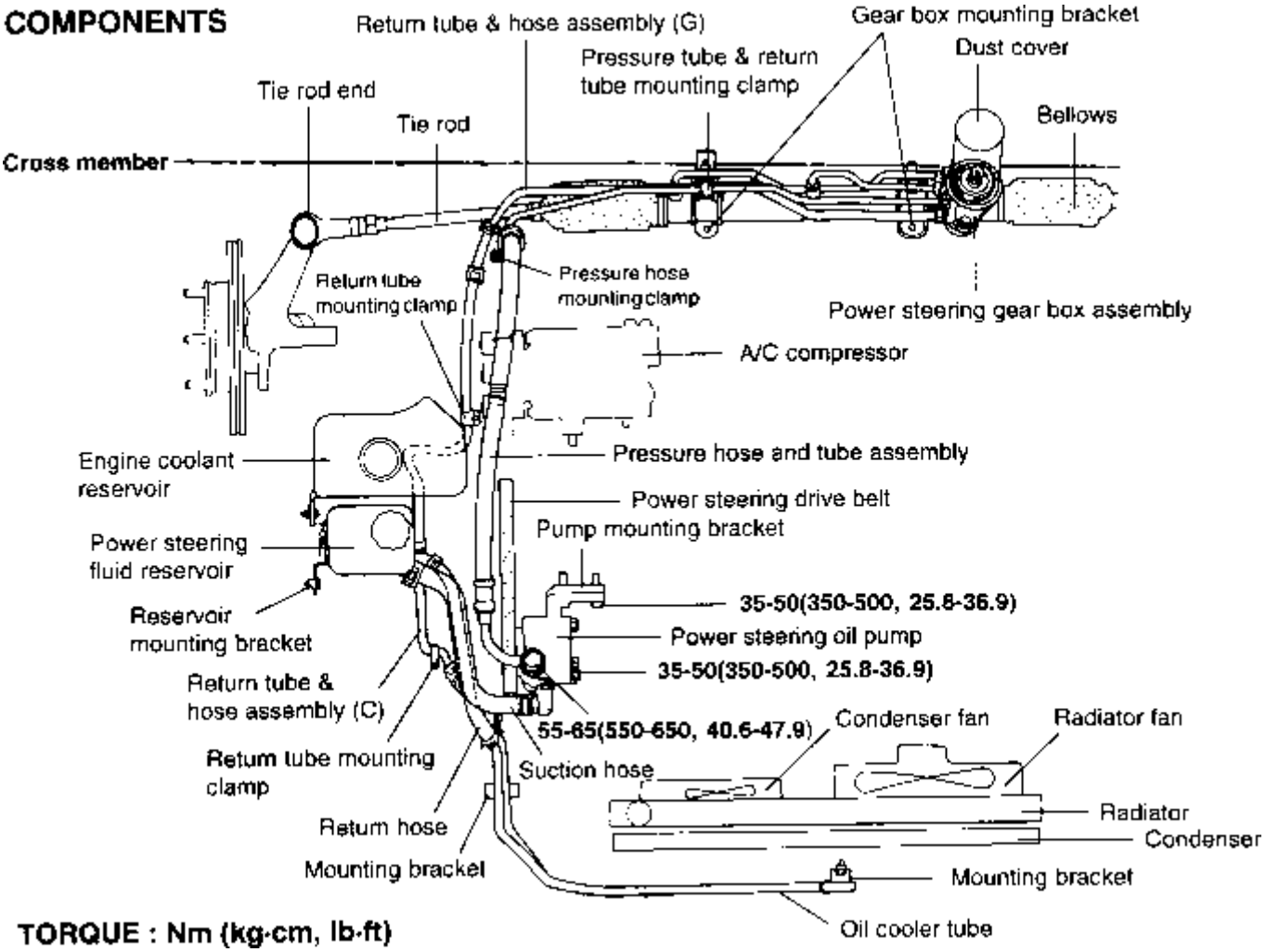
Remaining installation procedure is the reverse order of removal.

After installation, bleed the system.

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

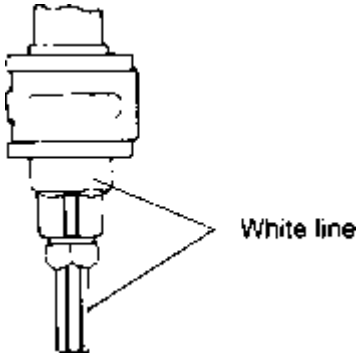
COMPONENTS



Return to Main Menu(s): Mechanical Manual Electrical Manual

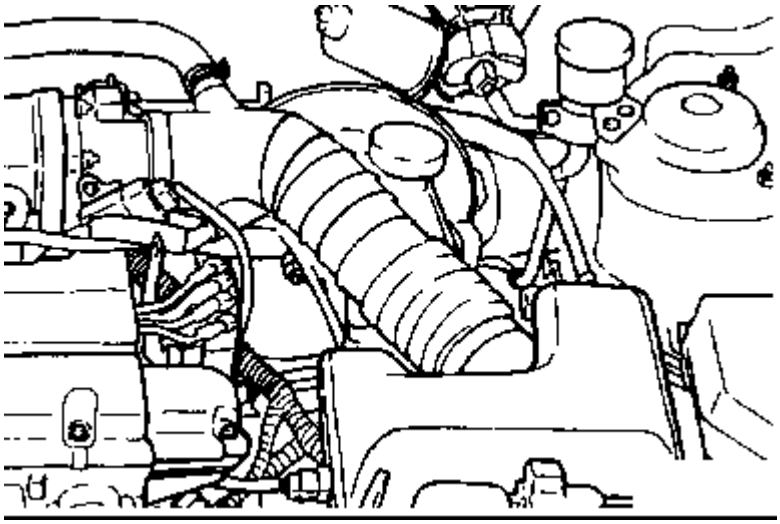
REMOVAL AND INSTALLATION

While installing the tube and hose assembly, be sure to align white marks on each fitting.

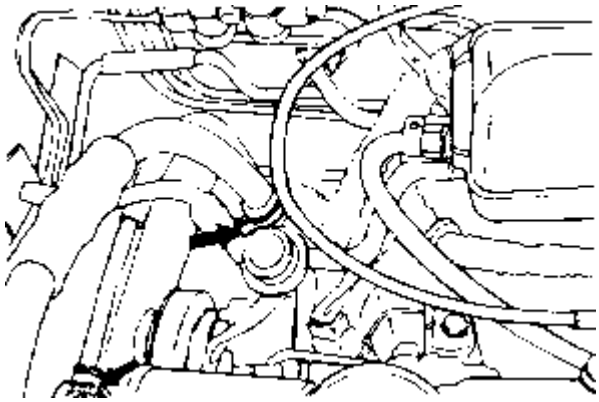


PRESSURE HOSE AND TUBE

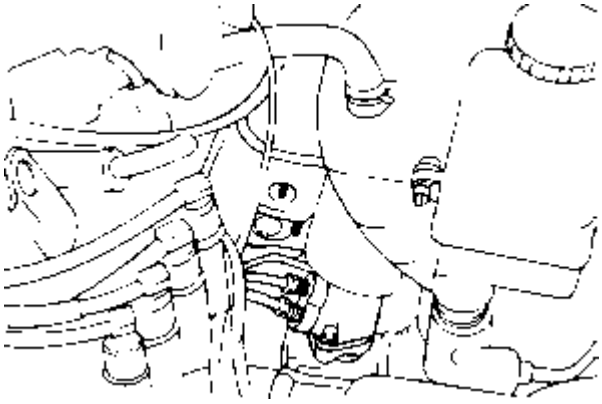
Remove the air intake hose assembly.



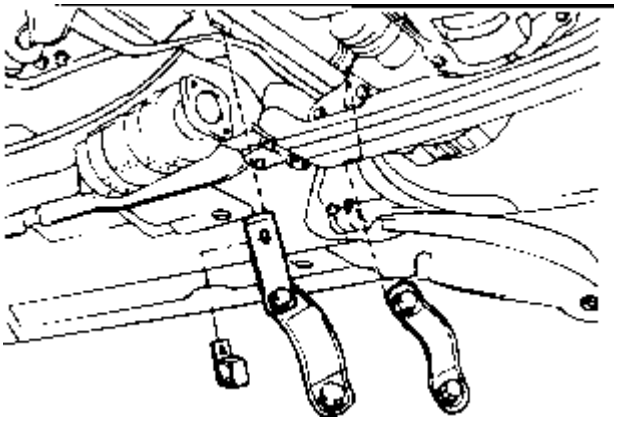
Detach the pressure hose mounting clamp.



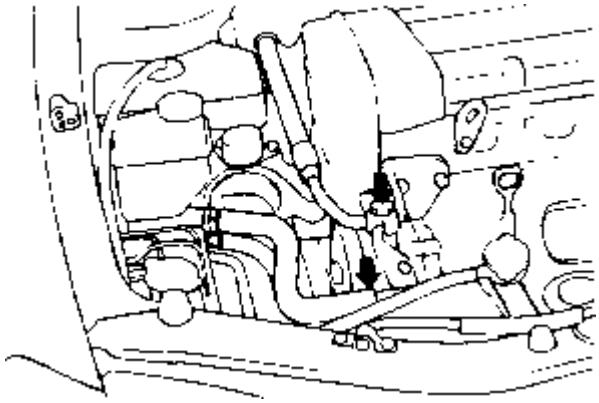
Disconnect the pressure tube fitting at the gear box side.



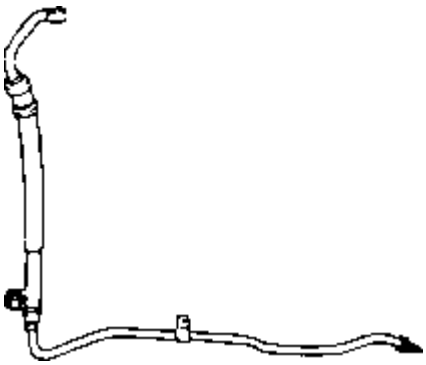
Lift up the vehicle and detach the mounting clamp which is holding both of the pressure tube and the return tube.



Lift down the vehicle and remove the connector (24mm).



Remove the pressure hose and tube assembly.



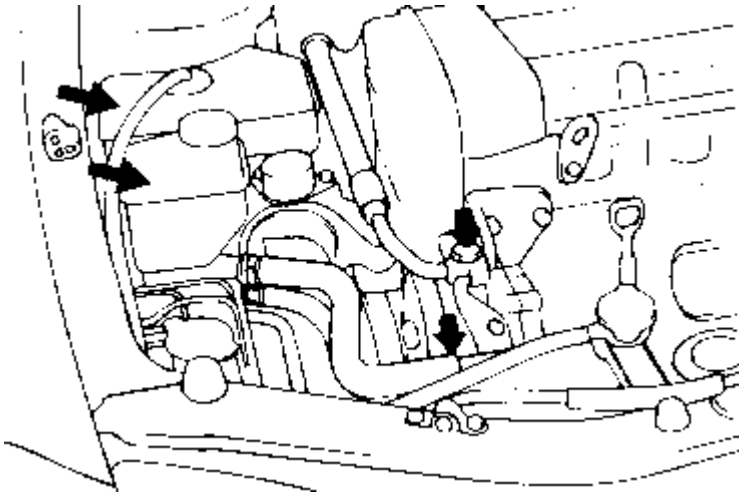
Installation is the reverse order of removal.

NOTE

1. **Install the pressure hose and tube so that they are not twisted and they do not come in contact with any other pads.**
2. **After installation, bleed the system.**

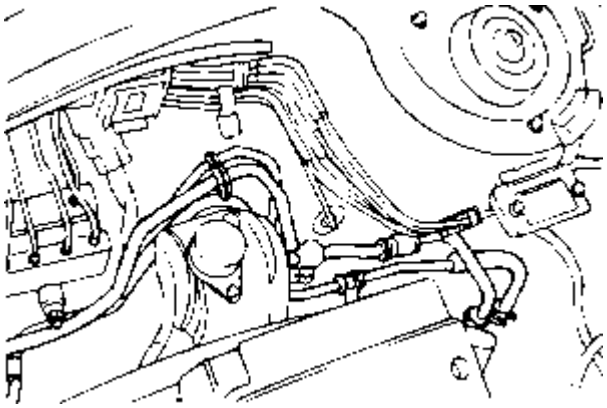
RETURN TUBE AND HOSE

Detach the power steering fluid reservoir from its mounting bracket.

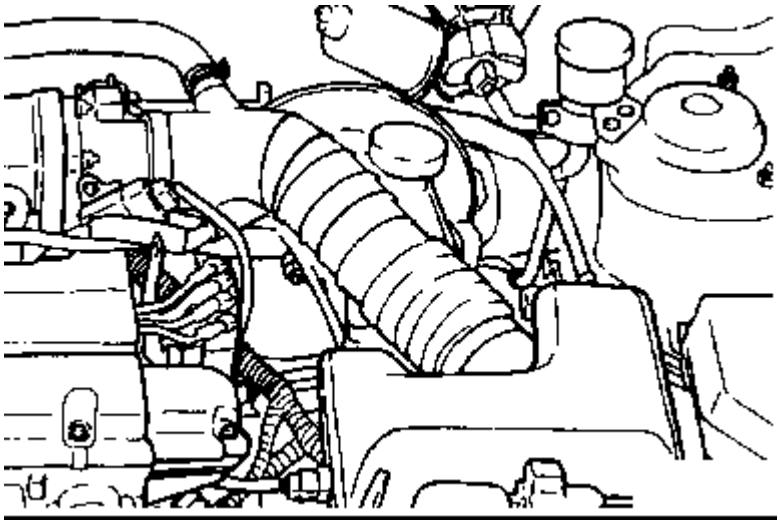


Remove the engine coolant reservoir.

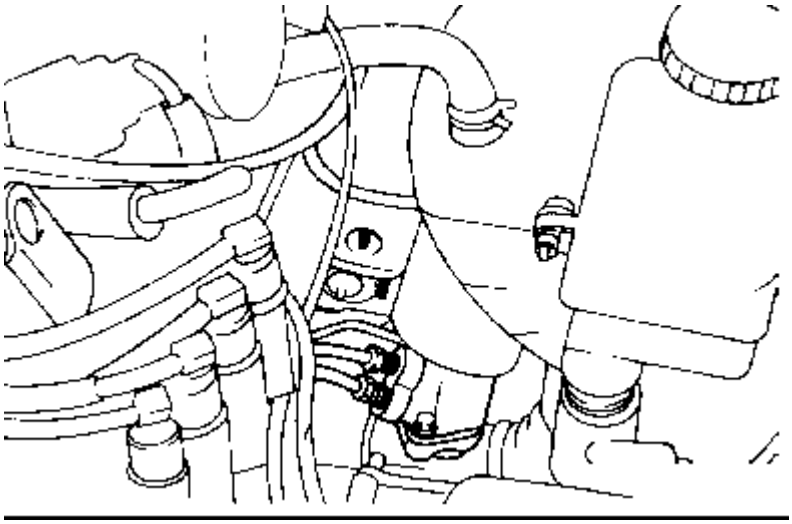
Detach the return tube and hose assembly mounting clamps.



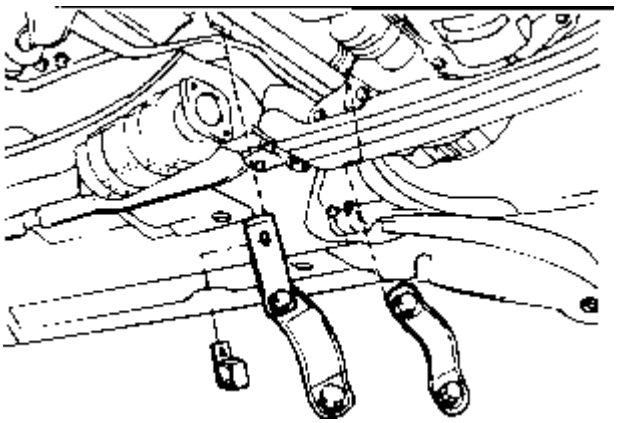
Remove the air intake hose assembly.



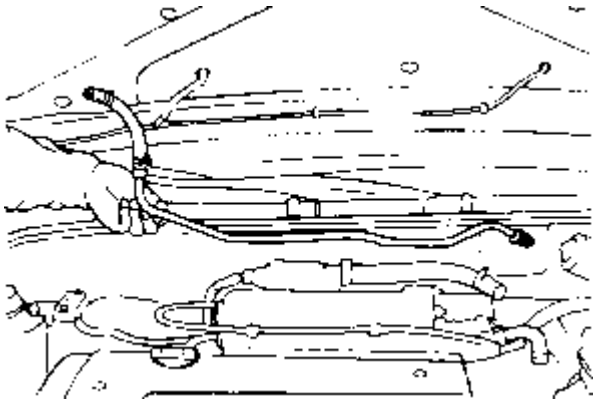
Disconnect the pressure tube and the return tube fittings at the gear box side.



Lift up the vehicle and detach the mounting clamp which is holding both of the pressure tube and the return tube.

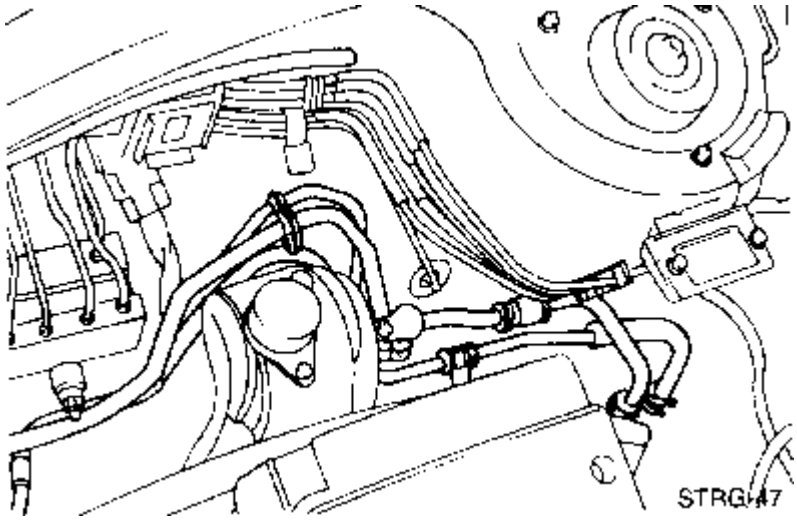


Lift down the vehicle and disconnect the clamp holding the return tube & hose assembly (G) and (C).

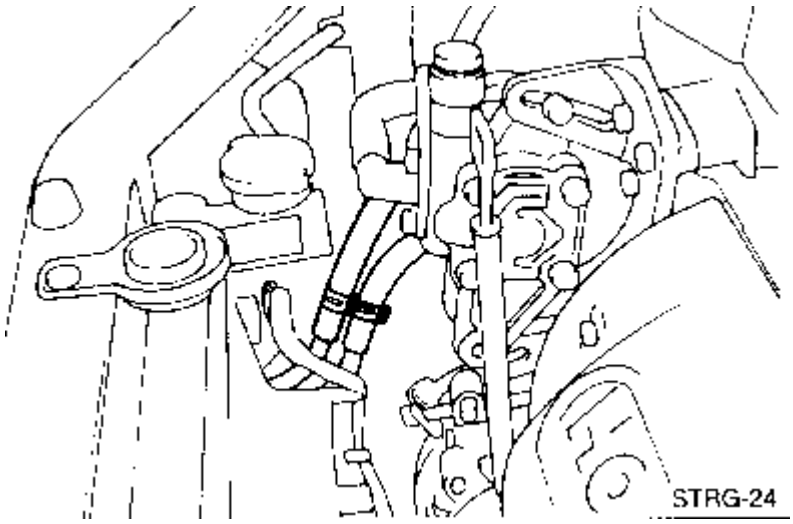


Remove the return tube & hose assembly (G).

Detach the air conditioning discharge hose mounting clamp.



Disconnect the clamp holding the return tube & hose assembly (C) and the oil cooler tube.



Remove the return tube & hose assembly (C).

Installation is the reverse order of removal.

NOTE

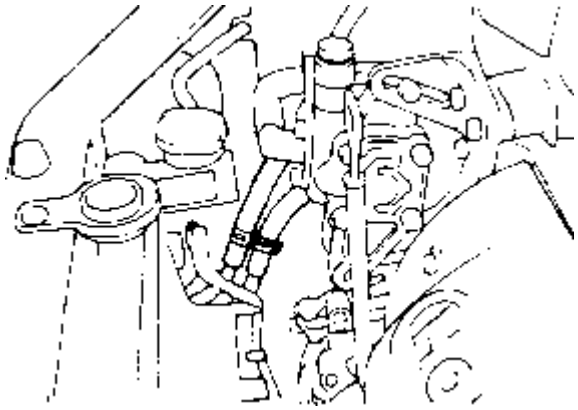
1. **Install the return tube and hose assembly so that it is not twisted and it does not come in contact with any other parts.**
2. **After installation, bleed the system.**

OIL COOLER TUBE

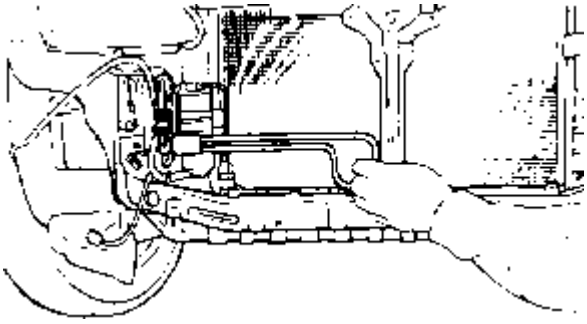
Remove the front bumper and rail assembly. (Refer to the "BODY" section)

Disconnect the connection of the oil cooler tube to the return tube.

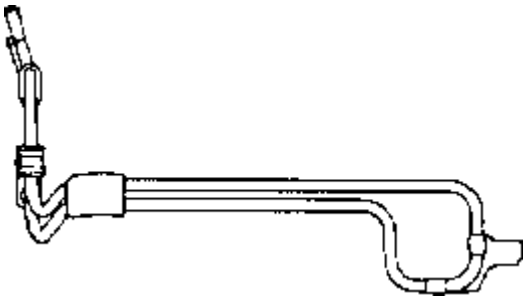
Disconnect the connection of the coil cooler tube to the return hose of the fluid reservoir.



Remove the oil cooler tube mounting bracket.



Remove the oil cooler tube and bracket.



Installation is the reverse order or removal.

NOTE

1. **Install the oil cooler tube so that it is not twisted and it does not come in contact with any other parts.**
2. **After installation, bleed the system.**

SERVICE MANUAL	
Applies to: **Hyundai Coupe/Tiburon** 1998-2001	
GROUP	
Steering System	Mechanical Power Steering System

Return to Main Menu(s): Mechanical Manual Electrical Manual

INSPECTION

Clean all disassembled parts with a suitable cleaning solvent.

If any inside parts of the oil pump have been damaged, replace the pump as an assembly.

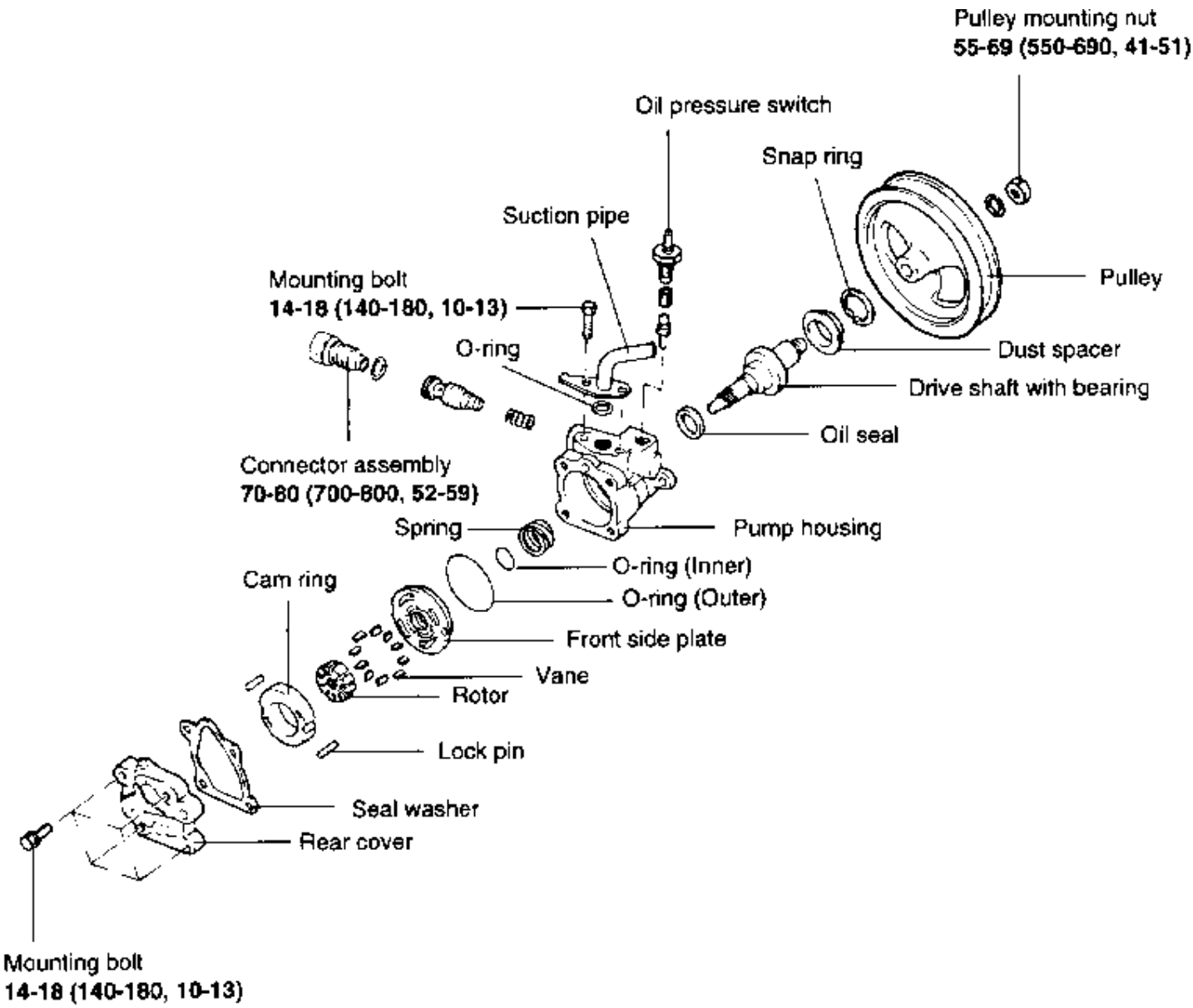
If the pulley is cracked or deformed, replace it.

If oil leaks around the pulley shaft oil seal, replace the oil seal.

If the serrations of the pulley or pulley shaft are deformed or worn, replace them.

Return to Main Menu(s): Mechanical Manual Electrical Manual

COMPONENTS



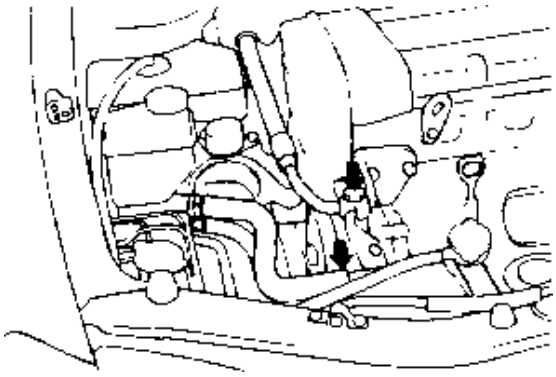
TORQUE : Nm (kg·cm, lb·ft)

Return to Main Menu(s): Mechanical Manual Electrical Manual

REMOVAL

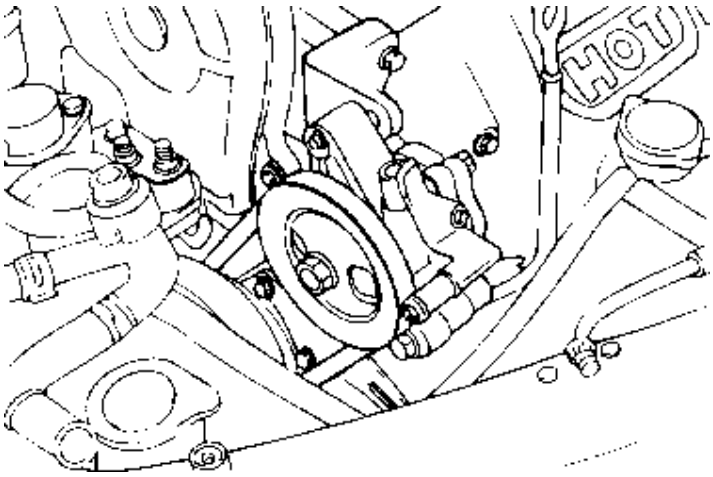
Remove the pressure hose from the oil pump.

Disconnect the suction hose from the suction connector and drain the fluid into a container.

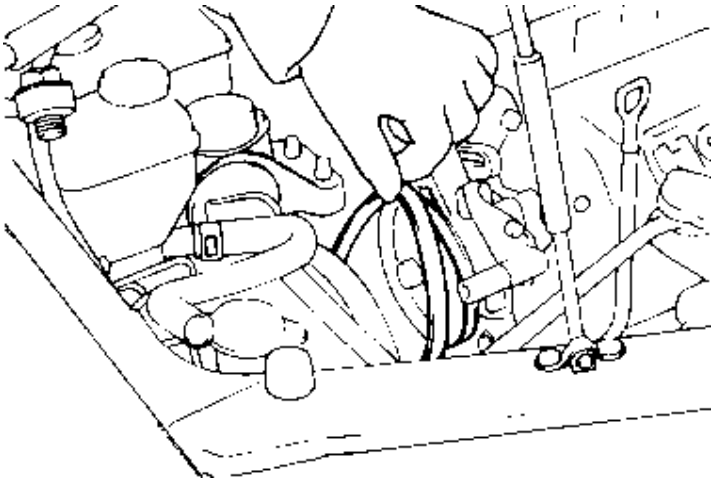


Loosen the oil pump mounting bolts to remove the V-belt.

Loosen the tension adjusting bolt.

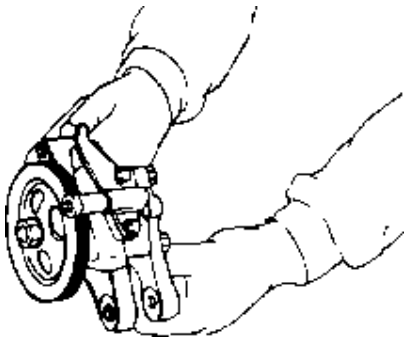


Remove the power steering drive belt from the power steering oil pump pulley.



Remove the power steering oil pump mounting bolts and the tension adjusting bolt.

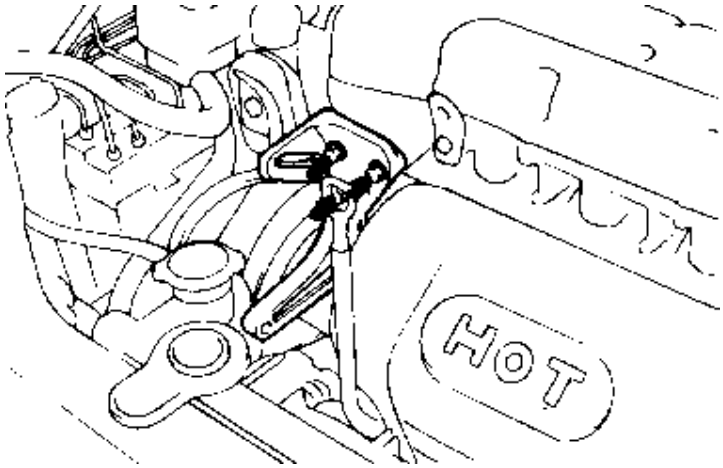
Remove the power steering oil pump assembly.



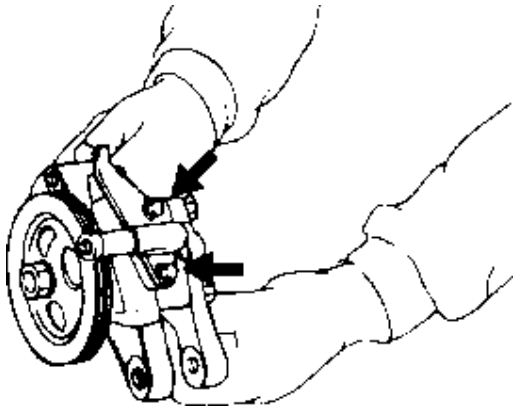
NOTE

Be careful not to drip off fluid from the power steering oil pump.

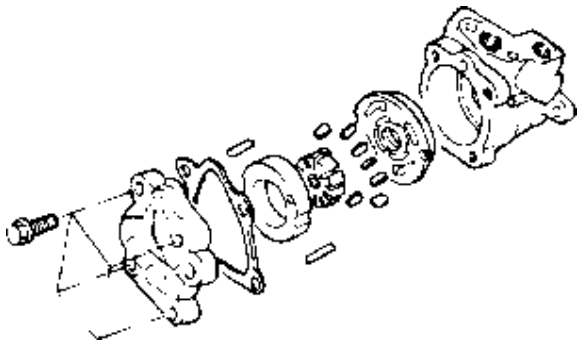
Remove the power steering oil pump mounting bracket.



Remove the suction pipe and the O-ring from the oil pump.



Remove the rear cover with the gasket and pins.



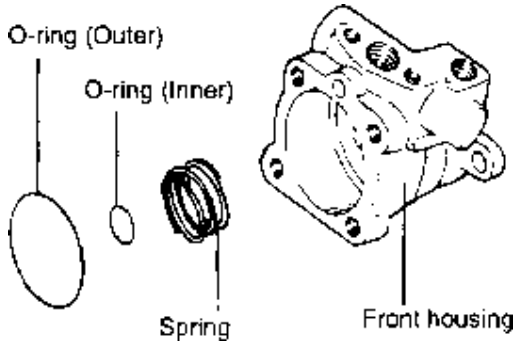
Remove the cam ring.

Remove the rotor and vanes.

Remove the front side plate.

Remove the inner and outer O-ring.

Remove the spring.

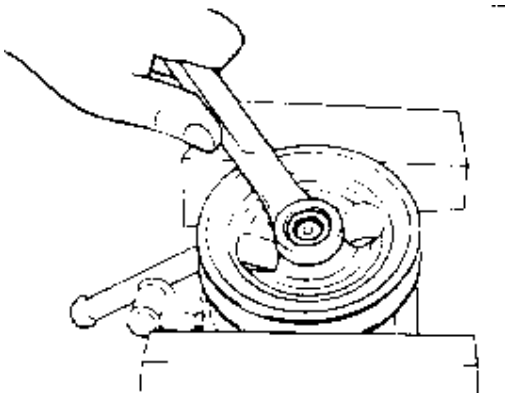


NOTE

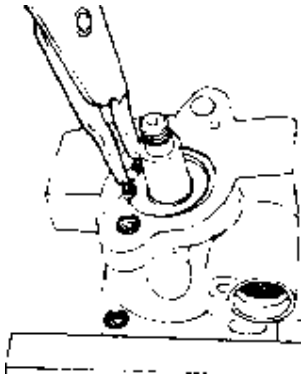
When assembling, use a new gasket and O-ring.

Remove the pulley nut with the spring washer.

Pull off the pulley and the woodruff key.



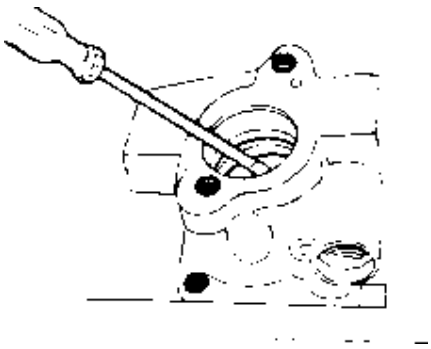
Remove the snap ring using snap ring pliers.



Drive out the pulley shaft with the bearing.

If necessary, use plastic hammer.

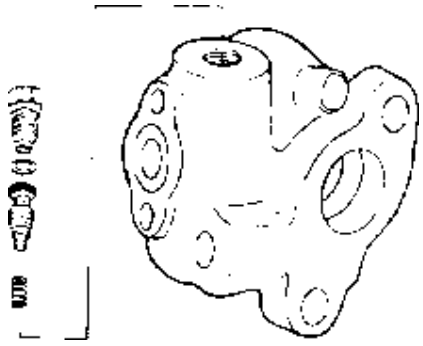
Remove the oil seal from the oil pump body.



NOTE

When assembling, use a new oil seal.

Remove the guide bracket and nut.



Remove the connector from the oil pump body, and take out the flow control valve and the flow control spring.

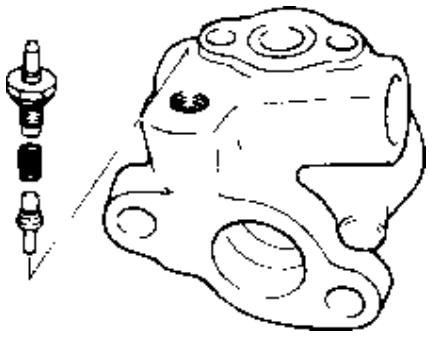
Remove the O-ring from the connector.

> **CAUTION**
>
> **Do not disassemble the flow control valve.**

Remove the oil pump switch.

Take out the spring and the spool.

Remove the O-ring from the oil pump switch.

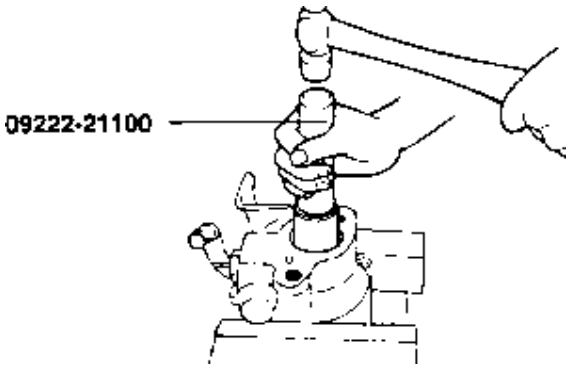


Return to Main Menu(s): Mechanical Manual Electrical Manual

REASSEMBLY

Install the oil pump switch.

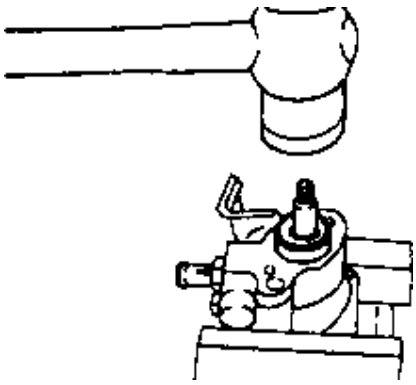
Install the flow control valve spring, valve and connector in the pump body.



> **NOTE**
>
> **Apply a thin coat of specified ATF DEXRONII type fluid to all the replaced parts including the oil seal and the O-ring.**

Install the guide bracket and nut.

Using special tool, install the oil seal into the pump body.

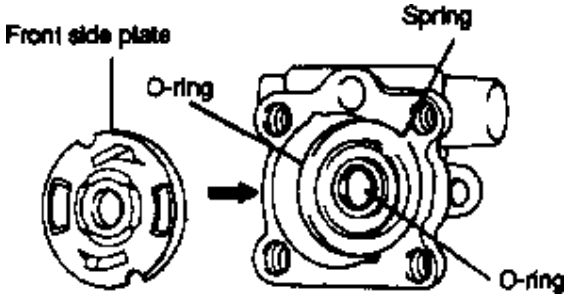


Gently insert the shaft assembly and install the snap ring.

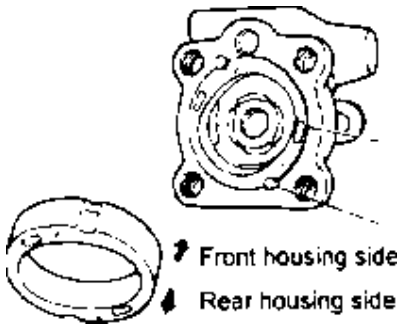
Install the pump pulley with woodruff key in place.

Install the spring and the inner and outer O-rings.

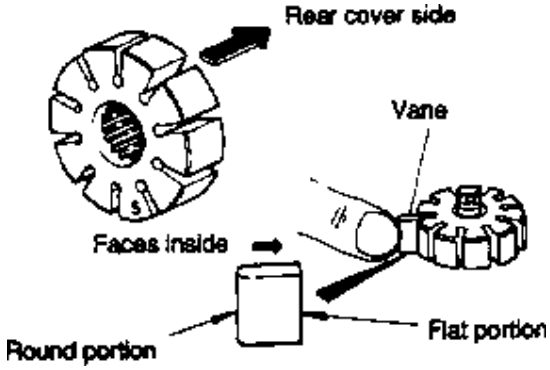
Install the front side plate.



Insert the pins into the pin grooves of front housing, then install the cam ring, paying attention to its direction.



Install the rotor with its punch marked side facing towards the front side plate.



Install the vane plates with the round end facing outward.

Install the gasket and the rear cover.

Tighten the suction connector.

Installation is the reverse order of removal.

NOTE

1. **Install the hoses so that they are not twisted and they do not come in contact with any other parts.**
2. **Install parts by reference to the torque specification.**
3. **Replenish the fluid.**

SPECIFICATION	
Recommended fluid:	Specified ATF DEXRONII type

4. **Bleed the system.**
5. **Check the oil pump pressure.**