Steering System

Andreas
 Andreas

GENERAL

SPECIFICATIONS EPLB0010

POWER STEERING

Items	Specifications		
Steering gear type	Rack and pinion		
Rack stroke	152 mm		
Power steering pump type	Vane type		
Power steering pump displacement	9.6 cm ³ /rev.MAX. (0.59 in ³ /rev.MAX.)		

SERVICE STANDARD

POWER STEERING

Items	Specifications		
Steering wheel free play	0-30 mm (0-1.1 in.)		
Steering angle			
Inner wheel	40°20′		
Outer wheel	35°23′		
Stationary steering effort	36N (3.7kg, 8.14lbs) or less		
Belt deflection [under 98N (10kg, 22lb) force]	8-10 mm		
Oil pump relief pressure	7.84 MPa (78.4kg/cm ² , 1115 psi)		
Total pinion preload	0.7-1.4 Nm (7-14 kg.cm, 6.2-12.4 lb.in.)		
Tie rod end ball joint starting torque	0.5-2.5 Nm (5-25 kg.cm, 4.4-22.1 lb.ft)		

TIGHTENING TORQUE EPLB0050

Item	Nm	kg∙cm	lb∙ft
Steering column and shaft			
Airbag module mounting bolt	4-6	40-60	2.9-4.3
Steering column shaft mounting bolt	13-18	130-180	9.4-13.0
Dust cover locking bolt and nut	10-15	100-150	7.2-11
Steering wheel lock nut	40-50	400-500	28.9-36.1
Joint assembly to steering gear box	22-27	220-270	15.9-19.5
Steering gear box			
Pressure tube to gear box mounting nut	12-18	120-180	8.7-13.0
Return tube to gear box mounting nut	12-18	120-180	8.7-13.0
Tie rod end lock nut	50-55	500-550	36.1-39.8
Pinion and valve assembly self locking nut	20-30	200-300	14.5-22
Yoke plug self locking nut	50-70	500-700	36.1-50.6
Feed tube to steering gear box	12-18	120-180	8.7-13.0
Tie rod end ball joint to knuckle arm	35-45	350-450	25.3-33
Front suspension member and steering gear box	90-110	900-1100	65-79.6
Oil pump			
Pressure hose to oil pump	55-65	550-650	39.8-47.9
Oil pump mounting bolt	20-27	200-270	14.5-19.5
Oil pump stay bracket mounting bolt	17-26	170-260	12.3-18.8
Oil pump bracket mounting bolt	35-45	350-450	25.3-33
Steering hoses and oil reservoir			
Oil reservoir bracket mounting bolt	8-12	80-120	0.6-8.7
Cooler tube clamp and bracket mounting bolt	8-12	80-120	0.6-8.7
Tube clamp and tube bracket mounting bolt	8-12	80-120	0.6-8.7
Pressure hose end pressure tube mounting nut	3-4	30-40	0.2-3.0

LUBRICANTS EPLB0100

Items	Recommended lubricant	Quantity
Steering gear box bellows to tie rod contact surface	SILICON GREASE	0.5g
Horn contact ring of steering wheel	SWG-1	1g
Steering gear housing	ONE-LUBER RP OR EQUIVALENT	-
Tie rod end ball joint	SUNLIGHT MB2	6.6g
	POLYLUB 802K	0.6g
Tie rod end dust cover inner side and lip	3M ATO PART NO. 8661 OR EQUIVALENT	-
Steering column and shaft bearing	ALVANIA #3	3.5g
Steering gear box inner ball joint	VARIANT R-2	2g
Power steering oil	PSF-3	0.91
Oil pump	PSF-3	-
Steering column and shaft dust cover inner side and lip	ALVANIA #3	0.5g

Tool (Number and Name)	Illustration		Use
09572-22100 Power steering oil pressure			Measurement of the oil pressure
gauge adepter (On pump side)	ODDE		
		E7222100	
09572-21200			Measurement of the oil pressure
Power steering oil pressure gauge adepter (On hose side)	CIDIPIDE OD		
		E7221200	
09572-21000			Measurement of the oil pressure
Oil pressure gauge	Contraction of the second seco		
		E7221000	
09561-11002	M		Removal of the steering wheel
Steering wheel puller			
		E6111002	
09565-11100 Preload socket		i.	Measurement of the pinion shaft preload
			$\frac{1}{2} = \frac{1}{2} \left[\frac{1}{2} \left[$
	an a	E6511100	and an
09565-31300 Torque wrench socket			Adjustment and removal of the rack support yoke
		je st	
		E6531300	
09568-31000 Fie rod end puller			Separation of the tie rod end ball joint
		E6831000	

TROUBLESHOOTING EPLB0200

Symptom	Probable cause	Remedy
Excessive play in steering wheel	Loose universal joint Loose steering gear mounting bolts Loose or worn ball stud of the tie rod end	Retighten Retighten Retighten or replace as necessary
Steering wheel operation is not smooth (Insufficient power assist)	V-belt slippage Damaged V-belt Low fluid level Air in the fluid Twisted or damaged hoses Insufficient oil pump pressure Sticky flow control valve Oil leakage in the oil pump Excessive oil leaks from the rack and pinion in the gear box Deteriorated or damaged gear box or valve body seals	Readjust Replace Replenish Bleed air Correct the routing or replace Repair or replace the oil pump Replace Replace the damaged parts Replace the damaged parts Replace
Steering wheel does not return properly	Excessive turning resistance of tierod end ball joint Universal joint excessively tight Inner tie rod and/or ball joint cannot turn smoothly Loose mounting of the gear box to the front suspension member Worn steering shaft joint and/or body grommet Distorted rack Damaged pinion bearing Twisted or damaged hoses Damaged oil pressure control valve Damaged oil pump input shaft bearing	Replace Adjust Replace Retighten Correct or replace Replace Replace Reposition or replace Replace Replace Replace
Noise	Hissing Noise in Steering Gear There is some noise with all power steering system One of the most common is a hissing sound when is turned and the car is not moving. This noise will be most evident when turning the w brakes are being applied. There is no relationship between this noise and stee Do not replace the valve unless the "hissing" noise b A replaced valve will also make a slight noise, and a solution for the condition.	the steering wheel wheel while the ering performance. becomes extreme.
Rattling or chucking noise in the rack and pinion	Interference with hoses from vehicle body Loose gear box bracket Loose tie rod end and/or ball joint Worn tie rod and/or ball joint	Reposition Retighten Retighten Replace
Noise in the oil pump	Low fluid level Air in the fluid Loose pump mounting bolts	Replenish Bleed air Retighten

NOTE

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

SERVICE ADJUSTMENT

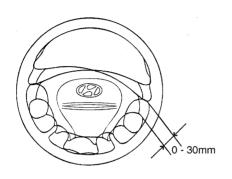
PROCEDURE EPLB0250

CHECKING STEERING WHEEL FREE PLAY

- 1. Start the engine with the steering wheel in the straight ahead position.
- 2. Measure the play while turning the steering wheel to the left and right.

Standard value

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



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3. If the play exceeds the standard value, inspect the connection between the steering shaft and steering linkage.

CHECKING STEERING ANGLE

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

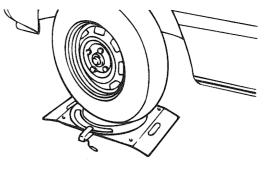
Standard value]

Wheel angle Inner wheel : 40°20' Outer wheel : 35°23'

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The standard value of toe-in is 0±3mm and when adjusting the toe-in, use the tie-rod.

If the length difference between the left and right tie rods so above 5mm, change the tie rod length so that it is below 5mm.



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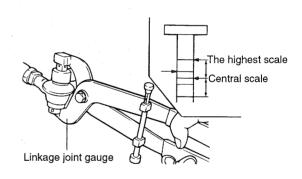
2. If the measured value is not within the standard value, adjust the toe and inspect again.

CHECKING THE TIE ROD END BALL JOINT VARIATION

- 1. Wipe away the grease in the tie rod end.
- 2. Fix the linkage joint gauge to the ball joint.
- 3. Measuring variation.

Position the linkage joint gauge in the scale and measure variation by compressing the ball stud. This variation must be between the highest scale and central scale.

Limit value : 1.5 mm



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 Replacement of the tie rod end. If the varication exceeds the limit value, replace the tie rod end.

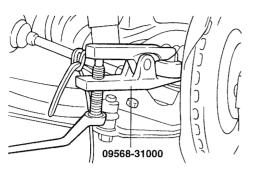


If the varication is within the limit value, check for the ball joint starting torque.

Standard value

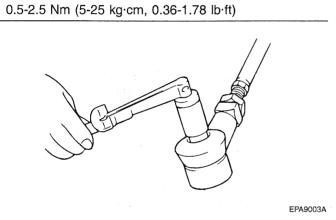
CHECKING THE TIE ROD END BALL JOINT STARTING TORQUE

1. Disconnect the tie rod and knuckle by using the special tool.



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- 2. Shake the ball joint stud several times to check for looseness.
- 3. Mount the nuts on the ball joint, and then measure the ball joint starting torque.

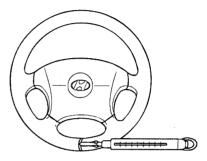


- 4. If the starting torque exceeds the upper limit of the standard value, replace the tie rod end.
- 5. Even if the starting torque is below the lower limit of the standard value, check the play of the ball joint and replace if necessary.

CHECKING STATIONARY STEERING EFFORT

- 1. Place the vehicle on a level surface and turn the steering wheel to the straight ahead position.
- 2. Bring the engine speed to 1000±100rpm.
- 3. Attach a spring scale to the outer circumference of the steering wheel and measure the effort required to turn the wheel, both left and right of center.

Standard value Stationary steering effort : 36 N (3.7 kg, 8.14lbs) or less



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- 4. Steering effort should be uniform at all times.
- 5. If the steering effort is excessive, verify the following:
 - 1) Damage or cracks on the dust covers of the ball joint and tie rod ends.
 - 2) Steering pinion preload.
 - 3) Starting torque of the tie rod ball joints and suspension ball joints.

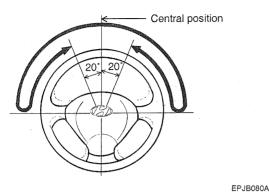
CHECKING STEERING WHEEL RETURN

Check the steering wheel return and confirm the following points:

- 1. The force required to turn the steering wheel and then return should be the same for both left and right in case of moderate or sharp turns.
- When the steering wheel is turned 90° and held for a couple of seconds while the vehicle is being driven at 0-80Kph (0-50 mph), the steering wheel should return to within 20° from the neutral position when it is released, and maximum vehicle speed is 35Kph at that time.

🗊 NOTE

If the steering wheel is turned very quickly, steering may be momentarily difficult. This is not a malfunction because the oil pump output will be somewhat decreased.



CHECKING POWER STEERING BELT **TENSION**

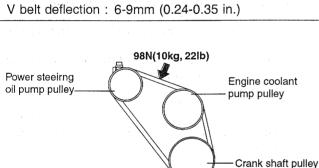
EPLB0350

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

standard value

2.

bolt.



To adjust the belt tension, loosen the belt tension adjusting bolt move the oil pump, and then readjust the

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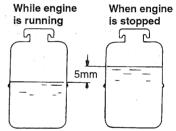
CHECKING POWER STEERING FLUID

LEVEL EPLB0400

- Position the vehicle on a level surface. 1.
- Start the engine. With the vehicle kept stationary, turn 2. the steering wheel several times continuously to raise the fluid temperature to 50 - 60°C (122 to 140°F).
- 3. 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 4. reservoir fluid.
- Stop the engine to check for any difference in fluid 5. level between a stationary and a running engine.

NOTE

- If the fluid level varies 5 mm (0.2 in.) or more, 1. bleed the system again.
- If the fluid level suddenly rises after stopping the 2. engine, further bleeding is required.
- Incomplete bleeding will produce a chattering З. sound in the pump and noise in the flow control valve, and lead to decreased durability of the pump.



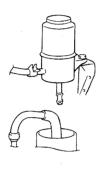
Difference in fluid levels : within 5mm

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REPLACING POWER STEERING

FLUID EPLB0450

- 1. Jack up the front wheels and support them with jackstands.
- 2. Disconnect the return hose from the oil reservoir and plug the oil reservoir.
- 3. Connect a hose to the disconnected return hose, and drain the oil into a container.
- 4. Disconnect the high-tension cables and ignition coils. 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.



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- 5. Connect the return hose and fix it with a clip.
- 6. Fill the power steering fluid reservoir with the specified fluid.

PSF-3 : 0.9 lit.

- 7. Start the engine. Check for fluid leaks from the hose, then stop the engine.
- 8. Pour the fluid into the bottom of the oil filter in the power steering fluid reservoir.
- 9. Bleed the air.

AIR BLEEDING EPLB0500

- 1. Fill the power steering fluid reservoir up to the "MAX" position with specified fluid.
- 2. Jack up the front wheels.
- 3. 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.

- 1. When bleeding fluid, replenish with the fluid so that the level does not fall below the bottom 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.
- 4. Connect the high tension cable, and then start the engine (idling).
- 5. Turn the steering wheel to the left and then to the right, until there are no air bubbles in the oil reservoir.

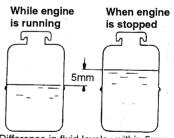
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Do not hold the steering wheel turned all the way to either side for more than ten seconds.

- 6. Confirm that the fluid is not milky and that the level is between "MAX" and "MIN" mark on the reservoir.
- 7. Check that there is a little change in the fluid level when the steering wheel is turned left and right.

🛈 ΝΟΤΕ

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



Difference in fluid levels : within 5mm

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OIL PUMP PRESSURE TEST EPLB0550

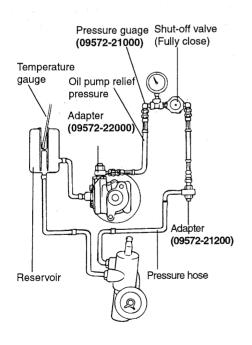
CHECKING THE OIL PUMP RELIEF PRESSURE

- 1. Disconnect the pressure hose from the oil pump, and then connect the special tools.
- 2. Bleed the air, and then turn the steering wheel several times while the vehicle is not moving so that the temperature of the fluid rises to approximately 50-60°C.
- 3. Start the engine and idle it to 1000±100rpm.
- 4. Fully close the shut-off valve of the pressure gauge and measure the oil pump relief pressure to confirm that it is within the standard value range.

Standard value : 75-82 kg/cm²

Pressure gauge shut off valve must not remain closed for more than 10 seconds.

- 5. If it is not within the standard value, overhaul the oil pump.
- 6. Remove the special tools, and then tighten the pressure hose to the specified torque.
- 7. Bleed the system.

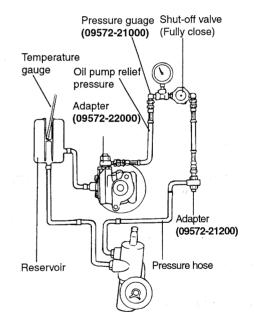


CHECKING THE PRESSURE UNDER NO-LOAD CONDITIONS

- 1. Disconnect the pressure hose from the oil pump, and then connect the special tools.
- 2. Bleed the air, and then turn the steering wheel several times while the vehicle is not moving so that the temperature of the fluid rises to approximately 50-60°C.
- 3. Start the engine and idle to 1000±100rpm.
- Check whether or not the hydraulic pressure is within the standard value when no-load conditions are created by fully opening the shut-off valve of the pressure gauge.
 Standard value : 8-10 kg/cm²

5. If it is within the standard value, the probable cause is a malfunction of the oil line or steering gear box, so check these parts and repair if necessary.

- 6. Remove the special tools, and then tighten the pressure hose to the specified torque.
- 7. Bleed the system.



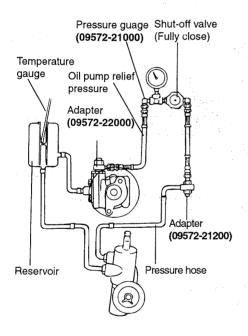
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GENERAL

CHECKING THE STEERING GEAR RETENTION HYDRAULIC PRESSURE

- 1. Disconnect the pressure hose from the oil pump, and then connect the special tools.
- 2. Bleed the air, and then turn the steering wheel several times while the vehicle is not moving so that the temperature of the fluid rises to approximately 50-60°C.
- 3. Start the engine and idle to 1000±100r/min.
- 4. Fully close the shut-off valve of the pressure gauge.
- Turn the steering wheel all the way to the left or right; then check whether or not the retention hydraulic pressure is within the standard value.
 Standard value : 75-82 kg/cm²
- 6. When it is not within the standard value, overhaul the steering gear box and remeasure fluid pressure.
- 7. Removal the special tools, and then tighten the pressure hose to the special torque.
- 8. Bleed the system.

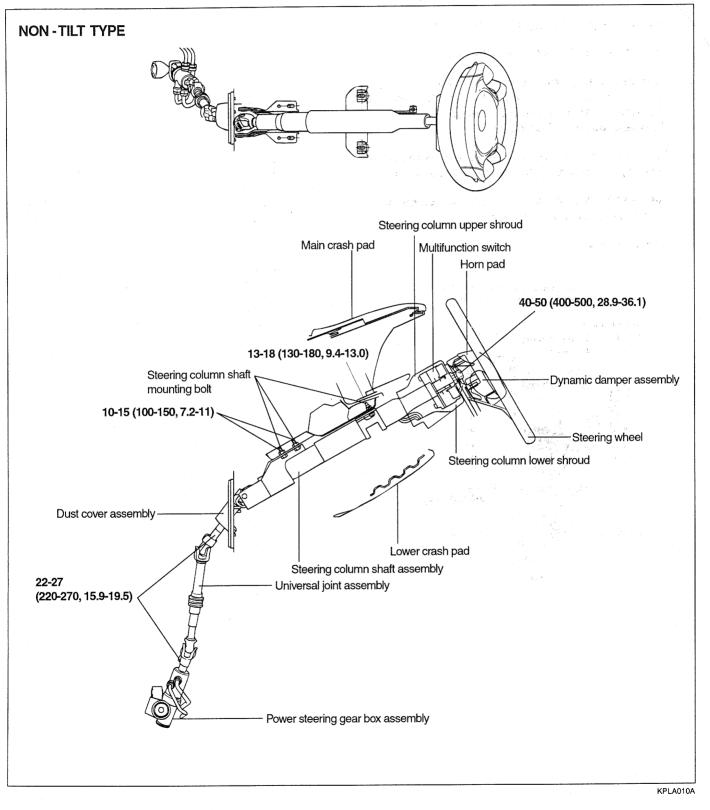


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MECHANICAL POWER STEERING SYSTEM

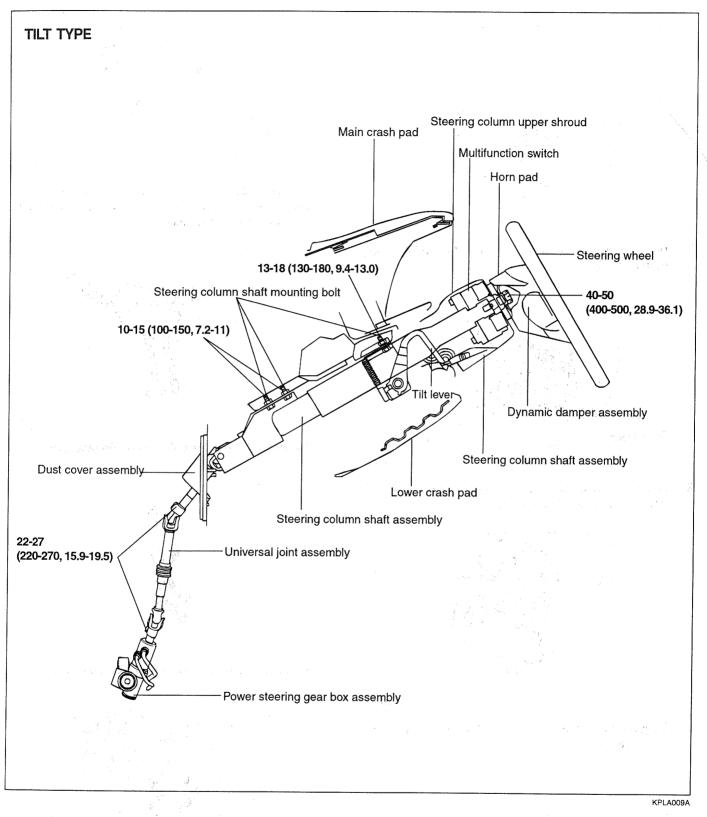
STEERING COLUMN/SHAFT

COMPONENTS EPLB0600



MECHANICAL POWER STEERING SYSTEM

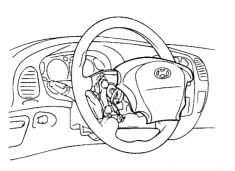
COMPONENTS EPLB0650



ST -13

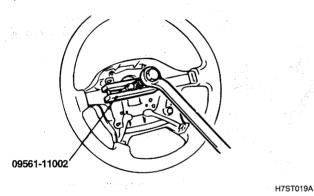


1. Remove the driver's airbag module.

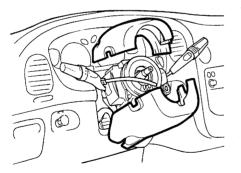


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2. Remove the steering wheel with the special tool (09561-11002).

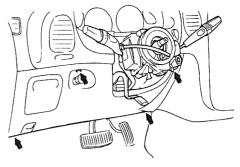


3. Loosen three screws and remove the steering column upper shroud and lower shroud.



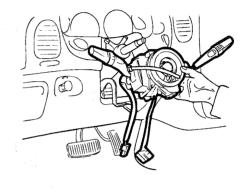
KPLA012A

4. Loosen four mounting bolts and remove the lower crash pad.



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5. Loosen three screws in the multifunction switch assembly and detach connectors. Remove the multifunction switch assembly.



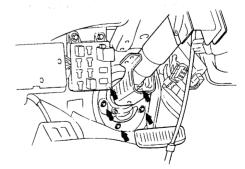
KPLA014A

6. Separate the universal joint from the gear box.



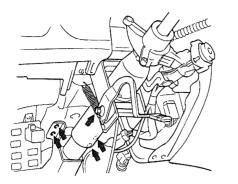
KPLA015A

7. Remove four bolts and a nut in the dust cover.



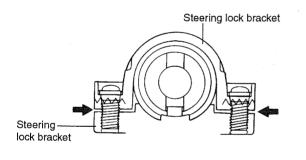
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8. Remove four bolts of the steering lower mounting bracket and two bolts of the steering column upper mounting bracket.



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- 9. Remove the connector in the steering column shaft key lock assembly and then remove the steering column shaft.
- 10. Separate the steering column shaft from the universal joint.
- 11. When removing the key lock assembly from the steering column shaft, cut the special bolts of the steering lock bracket with a hack saw to remove the steering lock cylinder.



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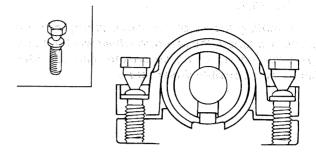
INSTALLATION EPLB0750

INSTALLATION IS THE REVERSE OF REMOVAL.

- 1. Installation of the steering lock cylinder, lock bracket and special bolt.
 - 1) When installing the steering lock cylinder and steering lock bracket are installed well and tighten the special bolt.
 - Check that the steering lock cylinder and steering lock bracket are installed well and tighten the special bolt.

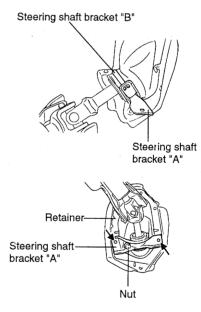
CAUTION

When installing the steering lock cylinder, replace the steering lock bracket and bolt with a new one.



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- 2. Installation of the steering shaft bracket A, B
 - 1) Insert the hook of the shaft bracket "b" into the hole in the steering shaft bracket "A".
 - 2) Position the steering shaft bracket "A" so that the holes indicated by the arrows are aligned with the holes in the retainer and tighten a nut to the specified torque.



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ST -16

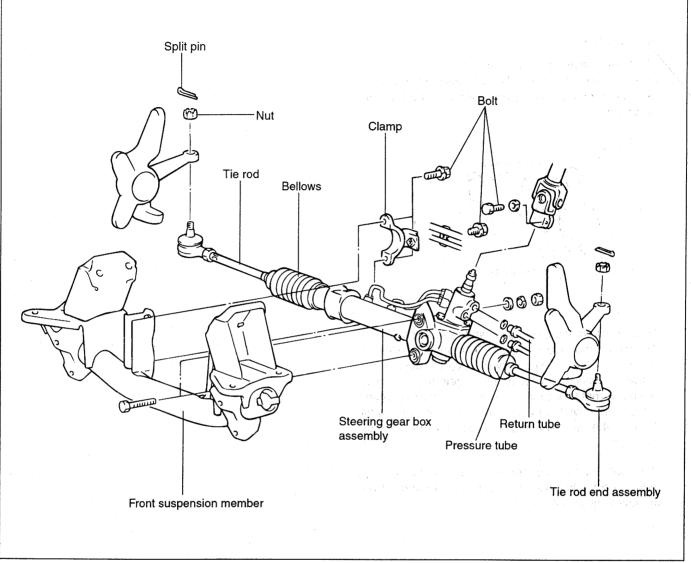
3. Installation of the steering wheel. Align the marks on the clock spring its neutral position before installing the steering wheel.

If the mating marks of the clock spring are not properly aligned, the steering wheel will bind and the clock spring could be broken, causing SRS failure and possible driver injury.

1. 18 A 17 1 1 18

POWER STEERING GEAR BOX

COMPONENTS EPLB0800



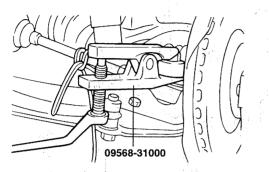
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ST -18

REMOVAL EPLB0850

1. Removal of the tie rod ends. Raise the vehicle with a hoist and remove its wheels. Remove the tie rod end from the knuckle using the special tool (09568-31000 or 09568-34000).

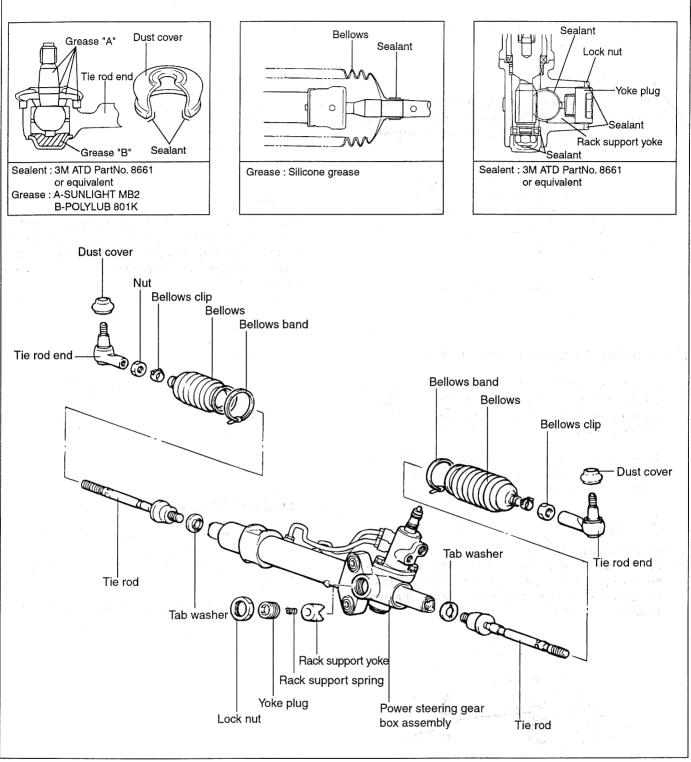
Tie some string to the special tool so it is not dropped when the tie rod end brackets free. Don't remove the nut at first ; just loosen it until the joint is loosened.



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- 2. Disconnection of the pressure and return hose. First, disconnect the return hose and drain the oil into a container. Then, temporarily remove the connectors to the fuel injectors to keep the engine from starting. Drain the remaining oil by turning the steering wheel left and right while cranking the motor intermittently. After all the oil is drained, reattach the fuel injector connectors.
- 3. Removal of the power steering gear box. Loosen the gear box mounting bolt and remove the gear box from the suspension member.

DISASSEMBLY AND ASSEMBLY



EPLB085A

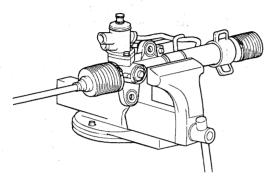
小锦枪 网络小白色 化二氯基苯酚二氟 网络小白白色 人名法布尔德

INSPECTION AND ADJUSTMENT BEFORE DISASSEMBLY EPLB0900

Fix a brass plate or aluminum plate for protection to the jaws of a vise and mount the gear box in a vise.

AUTION

When mounting the gear box in a vise, let the installation section of it be fixed to the jaws. If other section is fixed the gear box may be damaged.



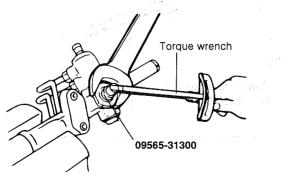
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ADJUSTMENT OF TOTAL PINION TORQUE

- 1. Locate the center of the rack so the yoke plug can be installed. After installing the yoke plug in the rack housing, fighten it with the special tool (09565-31300).
- Rotate the pinion shaft from its center point for approximately 4 to 6seconds using the special tool (09565-31300). Then, turn the yoke plug 30°-60° and torque.

CAUTION

When adjusting the steering, strive for the highest standard value. Be sure that the rack works smoothly. If the steering cannot be adjusted within specification, check or replace the yoke plug components.



EPLB090A

3. After adjustment, fix the yoke plug with the lock nut.

TIE ROD SWING RESISTANCE

- 1. Rotate the tie rod severely ten times.
- 2. Measure the tie rod swing resistance with a spring scale.

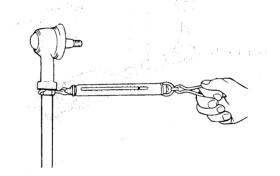
Standard value

Total rod swing resistance 2-5 Nm (20-50 kg.cm, 17-43 lb.in)

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

CAUTION

Even if the measured value is below the standard value, the 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.



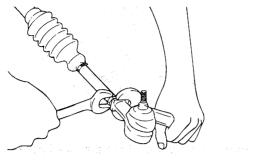
EPKB200A

BELLOWS INSPECTION

- 1. Inspect the bellows for damage or deterioration.
- 2. Make sure the bellows are secured in the correct position.
- 3. If the bellows are defective, replace them with new ones.

DISASSEMBLY EPLB0950

1. Remove the tie rod end from the tie rod.

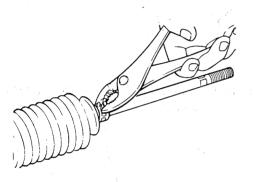


F6ZR0730

2. Remove the bellows clip and band, and pull the bellows out toward the tie rod.

NOTE

When replacing the bellows, check for rust in the rock.

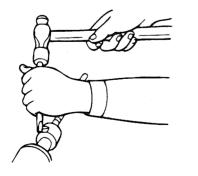


F6ZR0760

- 3. Remove the feed tube from the gear housing and drain the fluid from it moving the rock slowly.
- 4. Unstake the tab washer which fixes the tie rod and rack with a chisel and remove the tie rod.

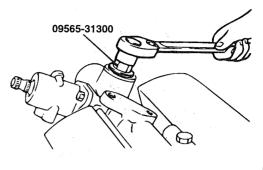
NOTE

When removing the tie rod from the rack, be careful so that the rack isn't twisted.

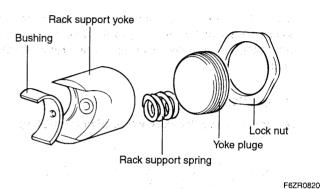


H7ST031A

5. Remove the lock nut, yoke plug, rack support spring and rack support yoke.

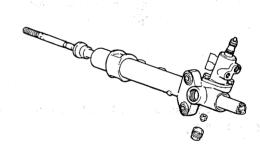


H7ST032A



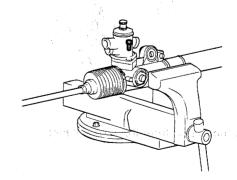
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6. Remove the end plug self-locking nut.



KPLA028A

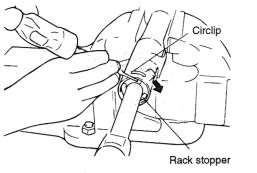
7. Loosen two bolts and remove the valve body housing.



KPLA029A

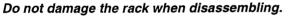
STEERING SYSTEM

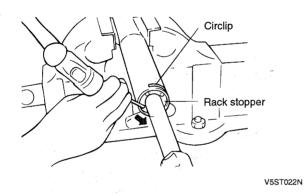
8. Turn the rack stopper clockwise until the end of the circlip comes out of the slot in the gear housing.



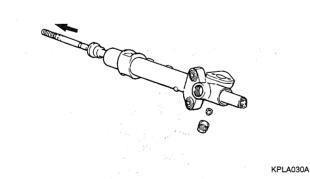
V5ST022M

9. When the end of the circlip comes out from the notched hole of the housing rack cylinder, turn the rack stopper counter-clockwise and remove the circlip.





10. Remove the yoke stopper, rack bushing and rack from the gear housing.

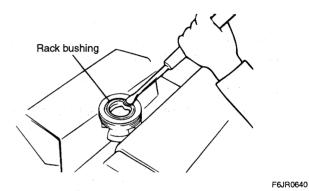


11. Remove the O-ring from the rack bushing.

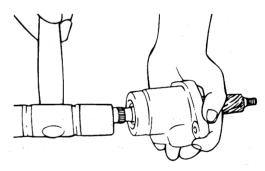


F6YR0480

12. Remove the oil seal from the rack bushing.



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



F6JR0650

ST -22

MECHANICAL POWER STEERING SYSTEM

INSPECTION EPLB1000

1. Rack

2.

2. 3.

4.

- 1. Check for rack tooth face damage or wear
- 2. Check for oil seal contact surface damage
- 3. Check for rack bending or twisting
- 4. Check for oil seal ring damage or wear
- 5. Check for oil seal damage or wear

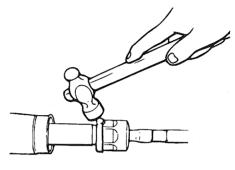


ASSEMBLY

- 1. Installation of rack and pinion assembly.
- Position the center of the rack at the hole that the yoke plug is installed and install the valve housing and plug. Place the rack support yoke, spring and yoke plug in the gear housing, adjust total pinion torque and tighten the yoke plug with the self-locking nut.

Yoke plug self-locking nut : 5.0-7.0 kg·m

 Installation of the tie rod. Install the tie rod to the rock and stake the tab washer end at two points over the tie rod.



H7ST035A

- 3. Installation of the dust cover.
 - 1) Fill the dust cover inner side and lip with the specified grease.

Recommended grease

- A : SUNLIGHT MB2
- B : POLYLUB 801K
- EPA9013Z

EPA9013Y

3. Bearing

- 1. Check for seizure or abnormal noise while rotating a bearing
- 2. Check for excessive play

Pinion valve assembly

3. Check for missing needle bearing rollers

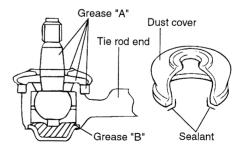
4. Others

- 1. Check for damage of the rack housing cylinder bore
- 2. Check for boot damage, cracking or aging

2) Apply the specified sealant to the dust cover.

Recommended sealant

3M PART NO.8661, 8663 or equivalent



KPLA019B

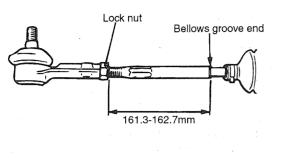


Check for seal ring damage or wear

Check for oil seal damage or wear

Check for pinion gear tooth face damage or wear
 Check for oil seal contact surface damage

4. Installation of the tie rod end. Adjust left and right of the tie rod end and fix the tie rod end with a lock nut.

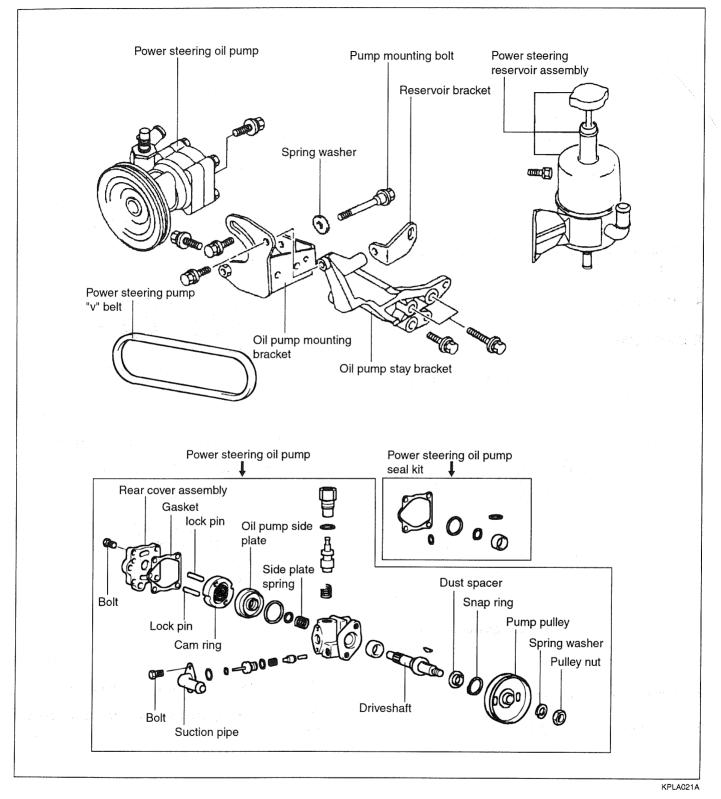


H7ST037A

² Hereig
² Hereig
³ Hereig
⁴ Here

POWER STEERING OIL PUMP

COMPONENTS EPLB1050

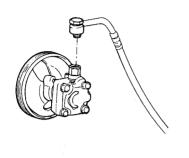


ST -26

STEERING SYSTEM

REMOVAL EPLB1100

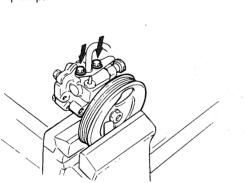
- 1. Remove the pressure hose from the oil pump.
- 2. Disconnect the suction hose from the suction connector and drain the fluid into a container.



- 3. To remove the drive belt, loosen the belt tension adjusting bolt.
- 4. Remove the oil pump mounting bolts.

DISASSEMBLY EPLB1150

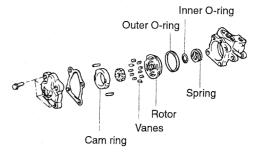
1. Remove the suction connector and the O-ring from the oil pump.



KPLA023A

EPA9016A

- 2. Remove the rear cover with its gasket and pin.
- 3. Remove the cam ring.
- 4. Remove the rotor and vanes
- 5. Remove the front side plate.

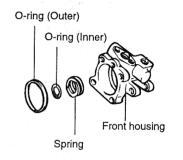


EPA9017B

- 6. Remove the inner and outer O-ring.
- 7. Remove the spring.

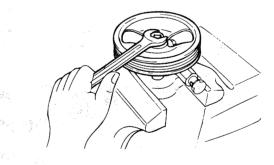
🗊 ΝΟΤΕ

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



EPA9017C

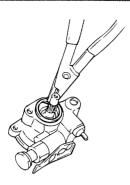
- 8. Remove the pulley nut and the spring washer.
- 9. Pull off the pulley and the woodruff key.



EPA9017D

- 10. Remove the snap ring using snap ring pliers.
- 11. Remove the pulley shaft and bearing using a plastic hammer.

MECHANICAL POWER STEERING SYSTEM

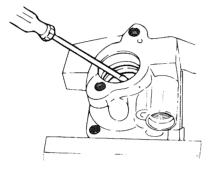


KPLA024A

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

NOTE

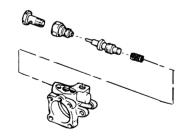
When assembling, use a new oil seal.



KPLA025A

- 13. Remove the guide bracket and nut.
- 14. Remove the connector from the oil pump body, and then remove the flow control valve and flow control spring.
- 15. Remove the O-ring from the connector.

Do not disassemble the flow control valve.



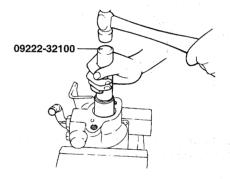
EPA9017G

INSPECTION EPLB1200

- 1. Clean all disassembled parts with a suitable cleaning solvent.
- 2. If any inside parts of the oil pump have been damaged, replace the pump as an assembly.
- 3. If the pulley is cracked or deformed, replace it.
- 4. If oil leaks around the driveshaft oil seal, replace the oil seal.
- 5. If the serrations of the pulley or driveshaft are deformed or worn out, replace them.

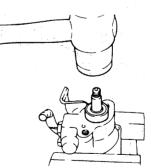
ASSEMBLY

- 1. Install the guide bracket and nut.
- 2. Using the special tool (09222-32100), install the oil seal into the pump body.



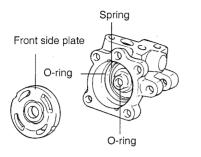
EPDA044A

- 3. Gently insert the shaft assembly and install the snap ring.
- 4. Install the pump pulley with the Woodruff key in position.



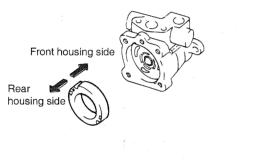
HCT56-98

- 5. Install the spring and the inner and outer O-rings.
- 6. Install the front side plate.



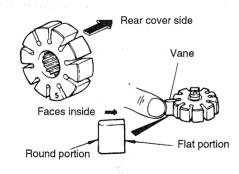
EPA9018C

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



EPA9018D

- 8. Install the rotor with its punch-marked side facing towards the front side plate.
- 9. Install the vane plates with the round end facing outward.



EPA9018E

- 10. Install the gasket and rear cover.
- 11. Tighten the suction connector.

INSTALLATION EPLB1250

- 1. Install the oil pump to the oil pump bracket.
- 2. Install the suction hose.
- 3. Install the ribbed V-belt and adjust its tension.
- 4. Connect the pressure hose to the oil pump.

🛈 ΝΟΤΕ

Install the hoses so that they are not twisted and they do not come in contact with any other parts.

5. Replenish the reservoir.

Recommended fluid : Power steering fluid (PSF-3)

- 6. Bleed the system.
- 7. Check the oil pump pressure.
- 8. Install parts by referring to the torque specification.