

		<b>Normal maintenance schedule / 6-2</b> <b>Maintenance under severe usage conditions / 6-8</b> <b>Lubrication / 6-9</b> <b>Rubbers &amp; switches / 6-16</b> <b>Air cleaner / 6-17</b> <b>Oil and oil filter / 6-19</b> <b>T-R oil cleaner / 6-21</b> <b>Air bleeding of fuel system / 6-21</b> <b>Inspection of fuel filter and replacement of element / 6-23</b> <b>Fuel injection pump instructions / 6-23</b> <b>Brake pedal freeplay / 6-23</b> <b>Checking clutch pedal freeplay / 6-24</b> <b>Clutch fluid / 6-24</b> <b>Engine coolant / 6-25</b>
		<b>Preventive maintenance</b>
		<b>6</b>
		<b>Checking radiator / 6-28</b> <b>Power steering fluid / 6-28</b> <b>Battery / 6-29</b> <b>Water separator / 6-32</b> <b>Checking the steering wheel freeplay / 6-32</b> <b>Air tank / 6-32</b> <b>Air pressure rise condition / 6-33</b> <b>Wiper blades / 6-33</b> <b>Climate control air filter / 6-35</b> <b>Auto grease lubrication system / 6-36</b> <b>Preheater maintenance / 6-40</b>

## Preventive maintenance

### NORMAL MAINTENANCE SCHEDULE

The following maintenance services must be performed to assure good vehicle control and performance. Keep receipts for all vehicle services to protect your warranty. Where both kilometers and time are shown, the frequency of service is determined by whichever occurs first.

R : Replace      I : Inspect and after inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)		1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
	Interval (Miles X 1000)		0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
No.	Item																							
1	Air, fuel and oil coolant for leakage				I		I		I		I		I		I		I		I		I		I	
2	Engine oil filter	D6AB, D6AV, D6AC	R	Replace every 16,000 km (every 8,000 km in severe driving condition).																				
		D6CA, D6CB	R	Replace every 16,000 km (every 8,000 km in severe driving condition).																				
3	Engine oil	Without oil cleaner		R	Replace every 16,000 km (every 8,000 km in severe driving condition).																			
		With oil cleaner	D6AB, D6AC, D6AV	R	Replace every 8,000 km (every 5,000 km in severe driving condition).																			
			D6CA		Replace every 16,000 km (every 8,000 km in severe driving condition).																			
			D6CB		Replace every 40,000 km (every 20,000 km in severe driving condition).																			
4	Oil cleaner		Replace every 5,000 km.																					
5	Air cleaner element	D6AB, D6AV, D6AC				I		I		I		I		I		I		I		I		I		
		D6CA, D6CB		Replace every 120,000 km (As required).																				
6	V-belt tension and damage		Inspect every 5,000 km or before driving.																					
7	V-ribbed belt		Inspect every 100,000 km or before driving.																					
8	Coolant pressure cap		Inspect before driving.																					
9	Injector tightening						I				I				I				I				I	
10	Injection pressure and injection condition of the nozzle						I				I				I				I				I	

## Preventive maintenance

R : Replace      I : Inspect and after Inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	Interval (Miles X 1000)	0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
No.	Item																					
11	Injection timing									I								I				I
12	Fuel feed pump, filter			I		I		I		I		I		I		I		I		I		I
13	Fuel filter	Every 50,000 km (D6AV, D6AB, D6AC) and 40,000 km (D6CA, D6CB) replace.																				
14	Air compressor									I								I				
15	Removal of foreign matter in the fuel tank									R								R				
16	Drain water from the water separator	As required																				
17	Valve clearance/EUI prestroke		I							I								I				
18	Engine operation condition (Starting, Idling speed, Max. speed, Acceleration)			I		I		I		I		I		I		I		I		I		I
19	Exhaust gas									I		I		I		I		I		I		I
20	Anti-freeze fluid	Every 2 years replace.																				
21	Air intake heater assembly											I										I
22	Cooling system	As required.																				
23	Thermostat	As required.																				
24	Engine coolant	Replenish it whenever necessary.																				
25	Exhaust system and mounting		I	I		I		I		I		I		I		I		I		I		I
26	Removal of oil in the intercooler	Every 100,000 km.																				

## Preventive maintenance

R : Replace      I : Inspect and after inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100		
	Interval (Miles X 1000)	0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60		
No.	Item																							
Power line																								
1	Transmission oil	I	R	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R		
2	Clutch/brake pedal free play and operation condition		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I		
3	Transmission lever for looseness			I		I		I		I		I		I		I		I		I		I		
4	Clutch oil	Inspect every 10,000 km (every month). Replace every 240,000 km (every 2 years).																						
Driving system																								
1	Rear axle oil	Replace initial 5,000 km and every 1 year or 24,000 km.																						
2	Propeller center bearing shaft coupling			I		I		I		I		I		I		I		I		I		I		
3	Front axle & rear axle condition		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I		
4	Front, rear wheel hub bearing			I		I		I		I		I		I		I		I		I		I		
5	Wheel stud bolts and nuts	I	Inspect every 5,000 km. Retighten after driving 50-100 km from replacing a tire.																					
6	Tire pressure and damage	Inspect before driving.																						
7	Tire rotation	Every 8,000 km.																						
Steering system																								
1	Power steering gear oil		R	I	I	I	I	I	I	I	I	R	I	I	I	I	I	I	I	I	I	R		
2	Wheel alignment									I								I						
3	Steering system oil leakage		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I		
4	Overall axle alignment (side slip)									I								I						

## Preventive maintenance

R : Replace      I : Inspect and after inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
	Interval (Miles X 1000)	0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
No.	Item																						
Steering system																							
5	Steer angle and stopper bolt										I							I					
6	Steering free play & linkage for looseness (in driving the engine)		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
Service brakes																							
1	Brake system for fluid leakage		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Brake lining clearance	Inspect every 5,000 km or if necessary (A vehicle for business: every 2,000 km).																					
3	Brake lining for wear			I		I		I		I		I		I		I		I		I		I	
4	Brake drum for wear			I		I		I		I		I		I		I		I		I		I	
5	Brake system assembly for looseness and damage		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
6	Brake pedal free play			I		I		I		I		I		I		I		I		I		I	
7	Removal of condensed matter of the air tank	Inspect every 5,000 km in winter, every 10,000 km in summer.																					
8	Air dryer	Inspect every 3 month or after and before driving. Replace every 1 year or 50,000 km.																					
9	Air dryer heater plug	Replace every 2 year or 100,000 km.																					
10	APU cartridge (D6CB)			I		I		I		I		I		I		I		I		I		I	
11	Surge tank			I		I		I		I		I		I		I		I		I		I	
Parking brake																							
1	Parking brake function		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Parking brake lever travel & free play			I		I		I		I		I		I		I		I		I		I	

## Preventive maintenance

R : Replace      I : Inspect and after inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	Interval (Miles X 1000)	0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
No.	Item																					
Parking brake																						
3	Drum and lining for wear			I		I		I		I		I		I		I		I		I		I
Suspension																						
1	Suspension for damage or looseness		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
2	U-bolt *	Retighten initial 5,000 km after that every 20,000 km.																				
3	Leaf spring for damage or looseness		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
4	Shock absorbers for oil leakage or damage		I	I		I		I		I		I		I		I		I		I		I
5	Height of air spring bellows (with height gauge)	I		I		I		I		I		I		I		I		I		I		I
Chassis																						
1	Exhaust pipe muffler for damage & looseness		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
2	Bolts and nuts on chassis and body	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
3	Bolts on rear body	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Electric system																						
1	Battery fluid specific gravity		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
2	Starter motor function									I								I				
3	Alternator (with tester)					I				I				I				I				I

\* Retighten initial 1,000 km after replacing a spring and the U-bolt of the suspension.

R : Replace      I : Inspect and after Inspection, clean, adjust, repair or replace if necessary

	Interval (Kilometers X 1000)	1	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
	Interval (Miles X 1000)	0.6	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
No.	Item																						
Electric system																							
4	Electric harness and connection for damage and looseness																						
5	Lamps	Every time before driving.																					
6	Gauges, warning and indicator lamps	Every time before driving.																					
7	Air conditioner refrigerant level	As required.																					

## Preventive maintenance

### MAINTENANCE UNDER SEVERE USAGE CONDITIONS

The following items must be serviced more frequently on vehicles normally used under severe driving conditions. Refer to the chart below for the appropriate maintenance intervals.

R: Replace      I : Inspect, correct or replace if necessary

MAINTENANCE ITEM		MAINTENANCE OPERATION	MAINTENANCE INTERVALS	DRIVING CONDITION
ENGINE OIL	WITH OIL CLEANER	R	RETIGHTEN INITIAL 1,000 KM AFTER THAT EVERY 20,000 KM	A, B, C, F, H
	WITHOUT OIL CLEANER	R	RETIGHTEN INITIAL 1,000 KM AFTER THAT EVERY 20,000 KM	A, B, C, F, H
OIL FILTER		R	RETIGHTEN INITIAL 1,000 KM AFTER THAT EVERY 8,000 KM	A, B, C, F, H
OIL CLEANER		R	REPLACE EVERY 5,000 KM	A, B, C, F, H
BRAKE LINING		I	MORE FREQUENTLY	C, D, G, H
BRAKE DRUMS		I	MORE FREQUENTLY	C, D, G, H
STEERING GEAR RACK, LINKAGE & BOOTS		I	MORE FREQUENTLY	C, D, E, F

### SEVERE DRIVING CONDITIONS

A - Repeated short distance driving

B - Extensive idling

C - Driving in dusty conditions

D - Driving in areas using salt or other corrosive materials or in very cold weather

E - Driving in sandy areas

F - More than 50% driving in heavy city traffic during hot weather above 90°F (32°C)

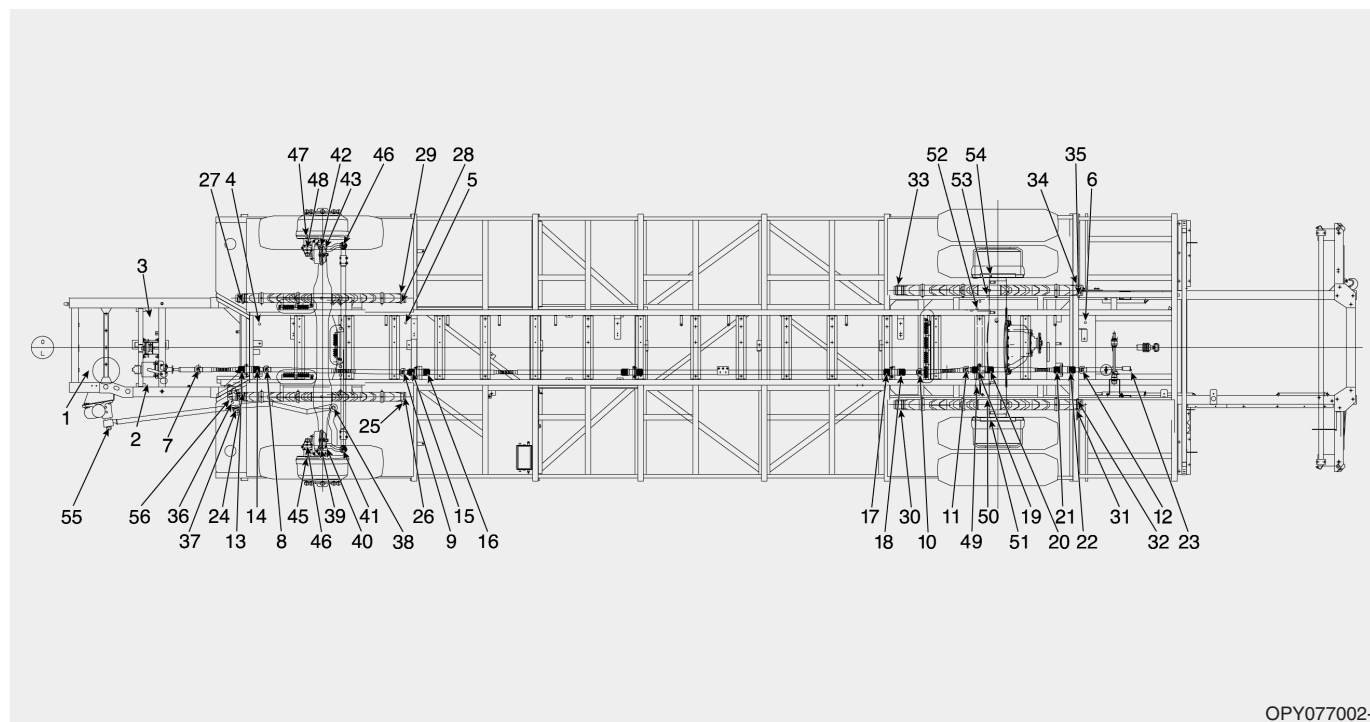
G - Driving in mountainous areas

H - Commercial type operation



## LUBRICATION

### Leaf spring suspension



## Preventive maintenance

Q: D6AB, D6AC, D6AV engine, L: D6CA, D6CB engine

NO	PART NAME	GREASE SPEC.	INTERVAL	Transmission control type				
				Cable type		Rod type		
				L	Q	L	Q	
1	Accel relay lever assembly	Liquid grease (NLGI #00 or #000)  or  hard grease (NLGI #2)	Every 10,000km		O		O	O
2	Accel relay lever assembly		Every 10,000km		O		O	O
3	Accel relay lever assembly		Every 10,000km		O		O	O
4	Accel relay lever assembly		Every 10,000km		O		O	O
5	Accel relay lever assembly		Every 10,000km		O		O	O
6	T.G.S bar assembly		Every 10,000km		O		O	O
7	T.G.S bar assembly		Every 10,000km			O	O	O
8	T.G.S bar assembly		Every 10,000km			O	O	O
9	T.G.S bar assembly		Every 10,000km			O	O	O
10	T.G.S bar assembly		Every 10,000km			O	O	O
11	T.G.S bar assembly		Every 10,000km			O	O	O
12	T.G.S bar assembly		Every 10,000km			O	O	O
13	T.G.S control bar roller assembly		Every 10,000km			O	O	O
14	T.G.S control bar roller assembly		Every 10,000km			O	O	O
15	T.G.S control bar roller assembly		Every 10,000km			O	O	O
16	T.G.S control bar roller assembly		Every 10,000km			O	O	O
17	T.G.S control bar roller assembly		Every 10,000km			O	O	O
18	T.G.S control bar roller assembly		Every 10,000km			O	O	O
19	T.G.S control bar roller assembly		Every 10,000km			O	O	O
20	T.G.S control bar roller assembly		Every 10,000km			O	O	O

## Preventive maintenance

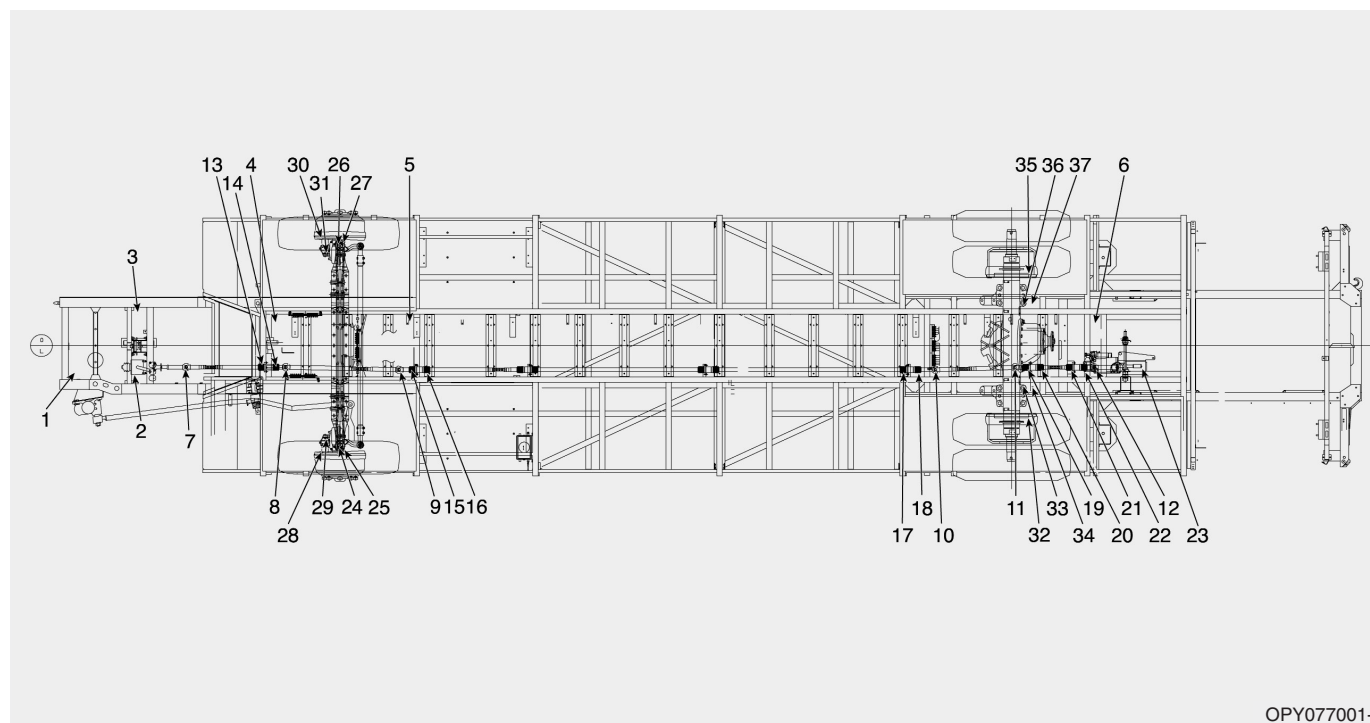
NO	PART NAME	GREASE SPEC.	INTERVAL	Transmission control type				
				Cable type		Rod type		
				L	Q	L	Q	
21	T.G.S control bar roller assembly	Liquid grease (NLGI #00 or #000)  or  hard grease (NLGI #2)	Every 10,000km			O	O	O
22	T.G.S control bar roller assembly		Every 10,000km			O	O	O
23	T.G.S control bar roller assembly		Every 10,000km					O
24	Leaf spring front front(LH)		Every 10,000km	O	O	O	O	O
25	Leaf spring front rear(LH)		Every 10,000km	O	O	O	O	O
26	Shackle pin front(LH)		Every 10,000km	O	O	O	O	O
27	Leaf spring front front(RH)		Every 10,000km	O	O	O	O	O
28	Leaf spring front rear(RH)		Every 10,000km	O	O	O	O	O
29	Shackle pin front(RH)		Every 10,000km	O	O	O	O	O
30	Leaf spring rear front(LH)		Every 10,000km	O	O	O	O	O
31	Leaf spring rear rear(LH)		Every 10,000km	O	O	O	O	O
32	Shackle pin rear(LH)		Every 10,000km	O	O	O	O	O
33	Leaf spring rear front(RH)		Every 10,000km	O	O	O	O	O
34	Leaf spring rear rear(RH)		Every 10,000km	O	O	O	O	O
35	Shackle pin rear(RH)		Every 10,000km	O	O	O	O	O
36	Drag link slave lever arm		Every 10,000km	O	O	O	O	O
37	Steering drag link second front		Every 10,000km	O	O	O	O	O
38	Steering drag link second rear		Every 10,000km	O	O	O	O	O
39	King pin top LH		Every 10,000km	O	O	O	O	O
40	King pin bottom LH		Every 10,000km	O	O	O	O	O

## Preventive maintenance

NO	PART NAME	GREASE SPEC.	INTERVAL	Transmission control type				
				Cable type		Rod type		
				L	Q	L	Q	
41	Steering tie rod LH	Liquid grease (NLGI #00 or #000)  or  hard grease (NLGI #2)	Every 10,000km	O	O	O	O	O
42	King pin top RH		Every 10,000km	O	O	O	O	O
43	King pin bottom RH		Every 10,000km	O	O	O	O	O
44	Steering tie rod RH		Every 10,000km	O	O	O	O	O
45	Brake auto adjusting front LH		Every 10,000km	O	O	O	O	O
46	Brake assembly front LH		Every 10,000km	O	O	O	O	O
47	Brake auto adjusting front RH		Every 10,000km	O	O	O	O	O
48	Brake assembly front RH		Every 10,000km	O	O	O	O	O
49	Brake assembly rear LH		Every 10,000km	O	O	O	O	O
50	Brake cam shaft bracket LH		Every 10,000km	O	O	O	O	O
51	Brake auto adjusting rear LH		Every 10,000km	O	O	O	O	O
52	Brake assembly rear RH		Every 10,000km	O	O	O	O	O
53	Brake cam shaft bracket RH		Every 10,000km	O	O	O	O	O
54	Brake auto adjusting rear RH		Every 10,000km	O	O	O	O	O
55	Steering drag link first front		Every 10,000km	O	O	O	O	O
56	Steering drag link first rear		Every 10,000km	O	O	O	O	O

\* Grease nipple may be not mounted depending on vehicle models.

## Air suspension



OPY077001-1

## Preventive maintenance

Q: D6AB, D6AC, D6AV engine, L: D6CA, D6CB engine

NO	PART NAME	GREASE SPEC.	INTERVAL	Cable type					Rod type			
				Transmission control								
				Cable type		Rod type			Cable type		Rod type	
				L	Q	L	Q		L	Q	L	Q
1	Accel relay lever assembly	Liquid grease (NLGI #00 or #000)	Every 10,000km		O		O	O		O		O
2	Accel relay lever assembly		Every 10,000km		O		O	O		O		O
3	Accel relay lever assembly		Every 10,000km		O		O	O		O		O
4	Accel relay lever assembly		Every 10,000km		O		O	O		O		O
5	Accel relay lever assembly		Every 10,000km		O		O	O		O		O
6	Accel relay lever assembly		Every 10,000km		O		O	O		O		O
7	T.G.S bar assembly	or  hard grease (NLGI #2)	Every 10,000km			O	O	O			O	O
8	T.G.S bar assembly		Every 10,000km			O	O	O			O	O
9	T.G.S bar assembly		Every 10,000km			O	O	O			O	O
10	T.G.S bar assembly		Every 10,000km			O	O	O			O	O
11	T.G.S bar assembly		Every 10,000km			O	O	O			O	O
12	T.G.S bar assembly		Every 10,000km			O	O	O			O	O
13	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
14	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
15	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
16	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
17	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
18	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
19	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O

## Preventive maintenance

NO	PART NAME	GREASE SPEC.	INTERVAL	Cable type					Rod type			
				Transmission control								
				Cable type		Rod type			Cable type		Rod type	
				L	Q	L	Q		L	Q	L	Q
20	T.G.S control bar roller assembly	Liquid grease (NLGI #00 or #000)	Every 10,000km			O	O	O			O	O
21	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
22	T.G.S control bar roller assembly		Every 10,000km			O	O	O			O	O
23	T.G.S control bar roller assembly		Every 10,000km					O				
24	King pin top LH		Every 10,000km	O	O	O	O	O	O	O	O	O
25	King pin bottom LH	or  hard grease (NLGI #2)	Every 10,000km	O	O	O	O	O	O	O	O	O
26	King pin top RH		Every 10,000km	O	O	O	O	O	O	O	O	O
27	King pin bottom RH		Every 10,000km	O	O	O	O	O	O	O	O	O
28	Brake auto adjusting front LH		Every 10,000km	O	O	O	O	O				
29	Brake assembly front LH		Every 10,000km	O	O	O	O	O				
30	Brake auto adjusting front RH		Every 10,000km	O	O	O	O	O				
31	Brake assembly front RH		Every 10,000km	O	O	O	O	O				
32	Brake assembly rear LH		Every 10,000km	O	O	O	O	O				
33	Brake cam shaft bracket LH		Every 10,000km	O	O	O	O	O				
34	Brake auto adjusting rear RH		Every 10,000km	O	O	O	O	O				
35	Brake assembly rear RH		Every 10,000km	O	O	O	O	O				
36	Brake cam shaft bracket RH		Every 10,000km	O	O	O	O	O				
37	Brake auto adjusting rear RH		Every 10,000km	O	O	O	O	O				

\* Grease nipple may be not mounted depending on vehicle models.

## Preventive maintenance

### RUBBERS & SWITCHES

Parts	Every 1 year	Every 2 year	Every 3 year	Remarks
Brake valve packing & rubber parts	•			Except full air brake vehicle
Air master(hydro master) cup & other rubber parts	•			Except full air brake vehicle
Wheel cylinder piston cup & dust seal	•			
Valve packing & rubber parts	•			
Pressure governor diaphragm & rubber parts	•			
Brake hose	•			
Load sensing valve cup & other rubber parts	•			
Brake system (Brake chamber relay valve, quick release valve etc.) rubber parts	•			Except full air brake vehicle
Heater hose	•			
Vacuum hose		•		
Air spring diaphragm		•		Vacuum sub hydraulic brake vehicle
Power steering system rubber parts & hose		•		
Fuel hose		•		
Air compressor & Pressure gauge hose		•		
Air master & power cylinder packing (Except full air brake vehicle)		•		
Air conditioner hose		•		
Brake lamp switch		•		
Brake fluid reservoir tank tube			•	Vacuum sub hydraulic brake vehicle



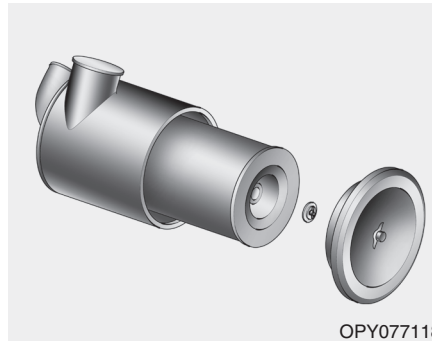
## AIR CLEANER

### Paper filter type air cleaner maintenance

The dust indicator indicates the time to clean the air cleaner element. Check the dust indicator once a week. If the lamp on the instrument panel turns to 'ON' clean the air cleaner element irrespective of the specified cleaning intervals.

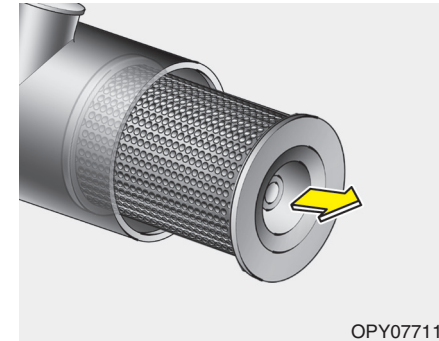
#### \* NOTICE

When the vehicle is used in dusty conditions, more frequent maintenance is required.



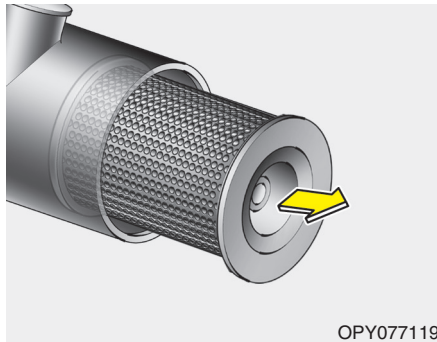
#### *Replacement of element*

1. Loosen the wing nut of cover.
2. Loosen the wing nut of element.
3. Separate the element from the air cleaner body.



#### \* NOTICE

- When separating the element from the air cleaner body, be careful not to hit it against the air cleaner body.
- When the element is to be replaced, use a Hyundai genuine air cleaner element.
- Before the element is installed, clean the inside of the case and the cover, insert the element slowly straight, and tighten with the wing nut.



OPY077119

Removal and installation of element



**CAUTION**

- *Operating your vehicle without a proper air cleaner filter in place can result in excessive engine wear.*
- *When removing the air cleaner filter, be careful that dust or dirt does not enter the air intake. This may result in damage to the air cleaner filter.*
- *Make sure that the element and cover are securely installed because otherwise entry of dust could cause malfunctions.*

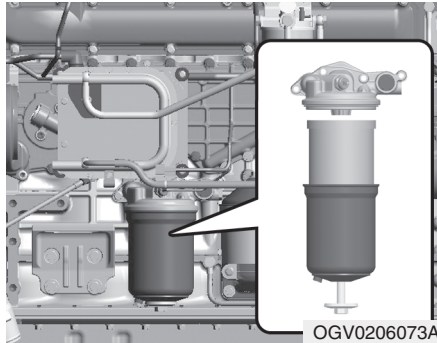


AJCWOM116

**\* NOTICE**

Do not clean the element with the excessive compressed air when cleaning the element. And do not strike the filter hard or hit it badly against other object. These may result in cooling efficiency decreases.

## OIL AND OIL FILTER



- The engine oil and filter should be changed at those intervals specified in the maintenance schedule. If the vehicle is being driven in severe conditions, more frequent oil and filter changes are required.
- If the filter is blocked the warning light is on and if the oil pressure is low the buzzer sounds at the same time. Replace it independent of the mileage.
- An element assembly cannot be reused.

1. Put an empty container below the oil filter drain hose. Remove the air bleeding plug and drain the engine oil out.
2. Disassemble the case by pulling the center bolt on the oil filter out and remove the element.
3. Use the genuine parts when you assemble. Replace the element and rub packing of the case simultaneous. Apply engine oil on the rub packing before assembling. Tighten the center bolt with specified torque 6~7kg.m.
4. When you replace only the oil filter replenish the engine oil.
5. Crank the engine and check the oil leakage and the oil level later.



### CAUTION

***Be very careful when draining the engine oil as it may be hot enough to burn you. Dropped oil may cause a fire. Wipe and clean each part in the engine room.***

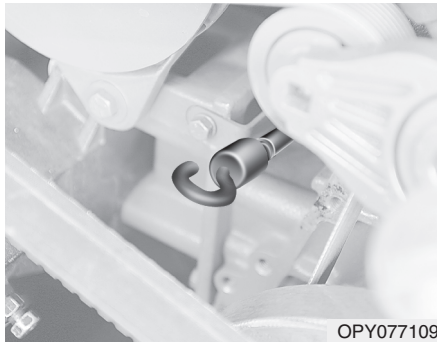
### \* NOTICE

Always dispose of used engine oil in an environmentally acceptable manner. It is suggested that it be placed in a sealed container and taken to a service station for reclamation. Do not pour the oil on the ground or put it into the household trash.



### WARNING

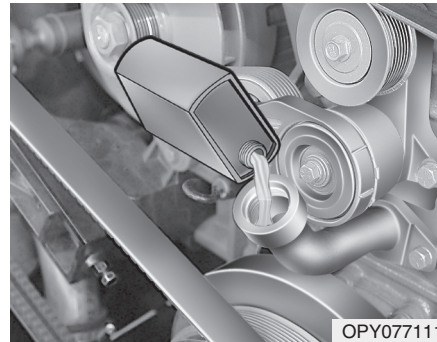
**Used motor oil may cause irritation or cancer of the skin if left in contact with the skin for prolonged periods of time. Although this will probably not be a concern unless you handle used oil on a regular basis, you should wash your hands with soap and warm water as soon as possible after handling used oil.**



### **To check the oil level**

Before checking the oil, warm up the engine to normal operating temperature and be sure it is parked on level ground. Turn the engine off.

Wait a minute, then remove the dipstick, wipe it off, fully reinsert the dipstick and withdraw it again. Then note the highest level the oil has reached on the dipstick. It should be between the upper "FULL" and the marking range.

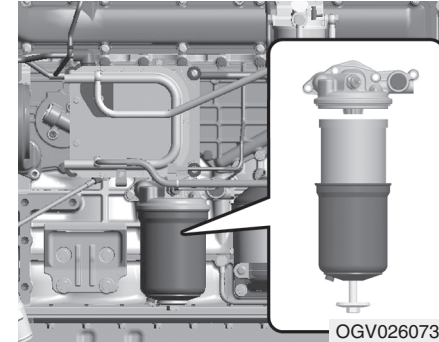


### **Adding oil**

If the oil level is close to or below the marking range, add oil until it reaches the "FULL" mark.

#### **To add oil:**

1. Remove the oil filler cap by turning it counterclockwise.
2. Add oil, then check the level again. Do not overfill.
3. Replace the cap by turning it clockwise.



### **Replacement of oil filter element**

Replace the oil filter element when the engine oil is replaced.

### **\* NOTICE**

If the oil filter pilot lamp is on, replace the element regardless of the specified replacement intervals.

Wipe off the oil around oil filter cleanly using clothes after replacing.

The element cannot be cleaned and reused. When the element need to be changed, ask your nearest service shop to do job.

**T-R OIL CLEANER (IF EQUIPPED)**

OPY077135L

1. Turn the T bolt of T-R oil cleaner counterclockwise to open it.
2. Remove the cap of T bolt and lift up the element after taking the element band.
3. Replace it with a new element.
4. Tighten the T bolt to the 0.5 kg/cm<sup>2</sup>.
5. Add the oil 2.5 liter.
6. Start the engine and check for oil leaks.

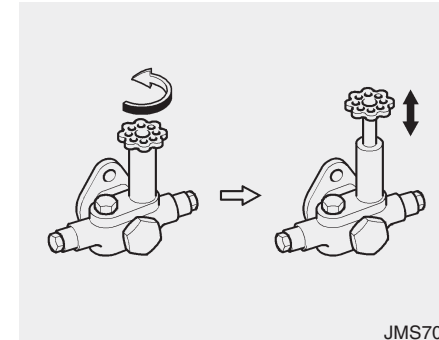
**\* NOTICE**

Do not reuse the element. Refer to the label for maintenance interval.

**AIR BLEEDING OF FUEL SYSTEM****D6AB, D6AV, D6AC**

If there is air in the fuel system, unsmooth operation or hard starting will result. If all fuel has been used up or if fuel filter has been cleaned, bleed the fuel system.

1. Turn the priming pump of the fuel injection pump counterclockwise, and the pump will automatically float up.
2. After the air plug of the fuel filter has been loosened, send fuel by moving the priming pump up and down. If there are no more air bubbles in the fuel that flows out, tighten the air plug.
3. After the priming pump has been moved up and down several times, secure the pump by turning clockwise, while holding it down.
4. Wipe away the split fuel from fuel filter, injection pump and their vicinity before starting the engine.



5. Check all parts for fuel leaks.

**CAUTION**

***Fuel leaks could cause a fire. When fuel leaks were discovered, take prompt actions to correct the leaks.***

### D6CA, D6CB

In case the engine stops by itself as the vehicle runs out of fuel, cleaning fuel system or replacing filter element is performed, the engine may not start after fuel is refilled. In this case, as there may be the air coming into the fuel system, bleed air as follows:

1. Loosen slightly the air vent cock on the top of fuel filter head.
2. Turn the priming pump counterclockwise till the handle of the pump piston floats up by the spring.
3. Operate the priming pump piston several times until there are no more air bubbles in the fuel line and the fuel without bubble flows out.
4. Tighten the air vent cock, then secure the pump by turning it clockwise while holding the pump piston down.
5. Start the engine and make sure that the fuel leaks or not.



#### CAUTION

***Be careful not to spill fuel on the floor for environment protection. And wipe off fuel well if spilled.***

6. There may be remaining air in the injector after removing air of the fuel line thoroughly. Thus to remove remaining air, it is necessary to do enough the cranking after the bleeding. It is necessary to do the cranking several times (about 3~5 times) for enough time (10~15 sec.) till the engine is running.

#### \* NOTICE

**As it causes the starter motor to overstrain to do cranking for a long time, do not exceed 15 seconds in the sequence cranking.**

**Notice that there is a surplus time about 30 seconds from cranking to cranking in order not to overheat the starter motor.**

7. After running the engine, wait for the engine to be stable by keeping the revolution of the engine about 1,000 rpm. In replacing the fuel filter, if you install the fuel filter with the fuel filled up, you can shorten the pumping time. It is not necessary to do the bleeding of the cylinder head. And if you do pumping till the fuel from the air vent cock flows out, it is possible to run the engine by one time of cranking.

#### \* NOTICE

**If the air bleeding is performed normally, it is no problem to start the engine with enough cranking.**



#### WARNING

**If you do spill fuel on the engine, immediately wipe it away from the engine not to fire.**

### INSPECTION OF FUEL FILTER AND REPLACEMENT OF ELEMENT



To eliminate the dirt and gas oil, remove the air plug and drain plug of the fuel.

### \* NOTICE

After cleaning and replacement of the filter, bleed the system according to the section on "Bleeding of fuel system".

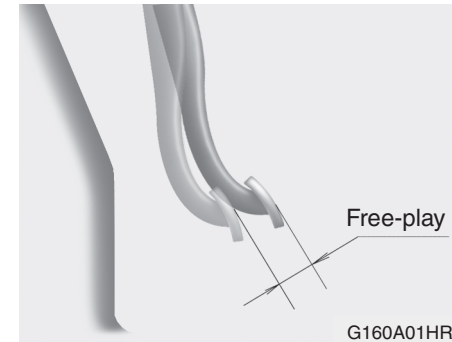
If you do spill gas oil on the engine, immediately wipe away it from the engine not to fire.

### FUEL INJECTION PUMP INSTRUCTIONS

The fuel injection pump and injection nozzle are adjusted to the best condition at Hyundai Motor Company. Be sure not to tamper with the sealed bolts and nuts.

1. Occasionally check the seals. If a broken seal has been found, take your vehicle to your nearest service shop for inspection and adjustment.
2. If you attempt adjustment or break the seals, you are not only denied the privilege of the warranty, but also increase black smoke and harmful components of exhaust gases by inadequate adjustment.

### BRAKE PEDAL FREEPLAY



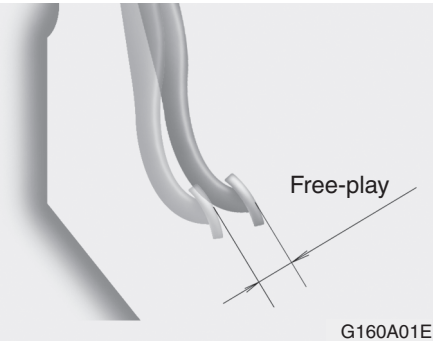
Check the pedal play by depressing the pedal with finger.

The pedal play is the stroke made by the pedal moves until you feel a change in resistance. This is the brake pedal play. The play should be 6.5~15.3 mm.

When press the pedal, if the pilot lamp is on or the warning buzzer sounds, you should stop your vehicle immediately.

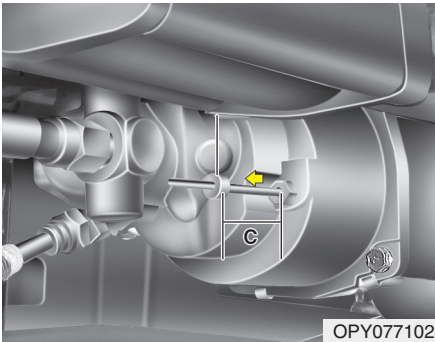
And check the brake pipe is leak or brake-shoe is excessive wear.

CHECKING CLUTCH PEDAL  
FREE-PLAY



With the engine off, press lightly on the clutch pedal until you feel a change in resistance. This is the clutch pedal free-play. The play should be 3~5 mm. If it is not, have it inspected by your Hyundai dealer and adjusted or repaired if necessary.

**⚠ CAUTION**  
*A special care must be taken because the vehicle can be started suddenly if the clearance is too small.*



**How to inspect when clutch disc and cover are replaced**  
Air piston and wear indicator move to the arrow direction if clutch disc is worn. If the wear indicator indicates replacement position, have the system replaced by Hyundai dealer.

Trans- mission	H8S5, M10S5	M12S5		ZF	
		STD	OPT	STD	OPT
"C"	27.5	24	7.5	26	8

CLUTCH FLUID



1. First lift up cup holder cover.
2. Open reservoir tank cap and check that the level on the reservoir is between MAX and MIN.
3. Add clutch fluid if necessary.



**ENGINE COOLANT****⚠ CAUTION**

- *Do not add clutch fluid to bring it up to the upper position (MAX position).*
- *Be careful that dust etc. does not get into the reservoir tank when adding.*
- *Do not pour the clutch fluid around when adding. If the clutch fluid is poured around, it may cause damage to other parts. Wipe it off thoroughly with dry and clean cloth.*
- *Have the clutch system checked by Hyundai dealer for clutch fluid leaks if the level of clutch fluid is excessively low.*
- *Observe proper safety regulation when handling clutch fluid as clutch fluid is harmful to human body.*

**⚠ WARNING**

**Do not remove the surge tank cap when the engine is hot. When the engine is hot, the coolant is under pressure and may erupt through the opening if the cap is removed. You could be seriously burned if you do not observe this precaution.**

**Handling of cooling system**

Engine overheating is caused by the low coolant level or rust and scale accumulations in the cooling system. If the radiator clogs very badly or coolant is very dirty, perform cleaning and coolant replacement as described below. If the coolant level is low, add coolant as necessary.

**Recommended coolant**

Use a high quality ethylene-glycol coolant in a 50/50 mix with water. The coolant should be compatible with aluminum engine parts. No additional corrosion inhibitors or additives should be used. The cooling system must be maintained with the correct concentration and type of coolant to prevent freezing and corrosion.

NEVER allow the concentration of antifreeze to exceed the 60% level or go below the 35% level or else damage to the coolant system may result. For proper concentration when adding or replacing the coolant, refer to the following table.

Ambient temperature °C	Coolant concentration	
	Antifreeze solution	Soft water
-15	35%	65%
-20	40%	60%
-25	45%	55%
-30	50%	50%

### To Change the coolant

The coolant should be changed every year.

#### \* NOTICE

**Coolant can damage the finish of your vehicle. If you spill coolant on the vehicle, wash it off thoroughly with clear water.**

1. Park the vehicle on a level ground, where the coolant can drain into a suitable disposal container.
2. Remove the surge tank cap. Do not remove the cap if the engine is hot.
3. Remove the two drain plugs - the surge tank drain plug and the engine drain plug.  
If the engine is warm, use care to avoid burning yourself with the hot water.
4. Drain the coolant and flush the system with water.

5. Close the two drain plugs and fill the system with a High silicate ethylene glycol antifreeze. Use the proper mixture of antifreeze coolant corresponding to the lowest temperature anticipated.
6. Run the engine for a few minutes until all air in the cooling system is purged. Add coolant as necessary and fill the tap water up to the "LEVEL" marker. Do not overfill.
7. Install the surge tank cap and check that the drain plugs are not leaking.
8. If frequent additions of coolant are necessary, see your Hyundai dealer for a cooling system inspection.



#### CAUTION

***Use extreme caution when working near the blades of the cooling fan.***

### Addition of coolant

If the warning lamp lights when the starter switch is set to "ON", the coolant level is low. Note that the procedure for adding coolant varies according to the type of the engine cooling system on vehicles.

Use tap water as coolant and add anti-rust or anti-freeze to have a specified concentration for prevention of engine or cooling system corrosion.

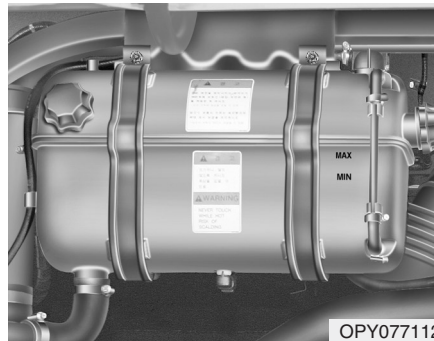
Do not use hard water from well, river etc.

#### \* NOTICE

**If the warning lamp lights during vehicle operation due to shortage of coolant, open the cap installed at the upper part of the surge tank. Then add coolant up to the "LEVEL" line on the surge tank.**

**⚠ CAUTION**

- *Be sure to add the coolant containing anti-rust or anti-freeze of the same concentration as the coolant in the cooling system.*
- *Do not check the coolant level after the engine has been stopped. Be sure to check the level when the coolant temperature is low.*



OPY077112

**Engine coolant level**

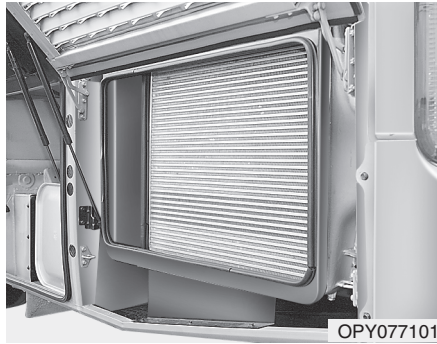
Check that the fluid level of coolant surge tank is proper. Open the cover in the rear of vehicle. Open cap of the surge tank and add coolant to bring it up to the level "MAX".

\* Be sure to install cap securely.

**⚠ WARNING**

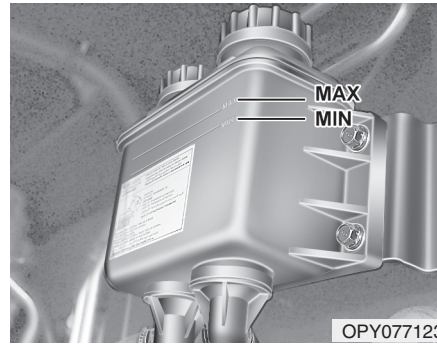
Do not remove the surge tank cap when the engine is hot. The cooling system is pressurized and the escaping steam could cause serious personal injury. Turn off the engine and allow it to cool before removing the radiator cap. Always cover the surge tank cap with a rag before turning it slowly to the first stop. After all pressure has escaped from the system, press down on the cap and turn it to remove it.

## CHECKING RADIATOR



Check the radiator and the radiator hose etc. for leaks. Check if there are coolant leaks around parking place. Have the cooling system inspected by Hyundai dealer if there leaks.

## POWER STEERING FLUID



The power steering fluid level should be checked regularly. To check the power steering fluid level, be sure to the ignition is OFF, then check to make certain that the power steering fluid level is between the "MAX" and "MIN" level markings on the fluid reservoir.



### CAUTION

***Do not start the engine when the power steering oil reservoir is empty.***

## Power steering air bleeding

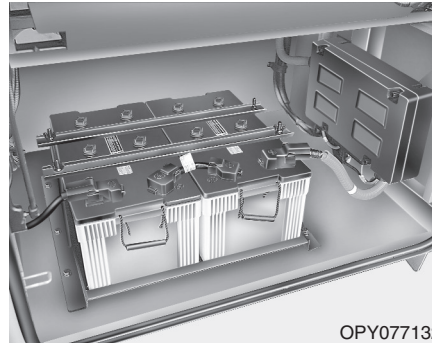
Perform air bleeding when replacing power steering fluid or overhauling as follows:

### *For Classic model*

1. Fill fluid reservoir tank with hydraulic power steering fluid upto the "MAX" level.
2. Raise the front wheel with a jack and turn the steering wheel right or left at engine idle state. Check fluid for level and add it if lack of fluid.
3. Increase the engine rpm after fluid level returns to normal. And turn the steering wheel until air bubble disappears.
4. Check fluid for leak and level after bleeding air.

**BATTERY*****For Luxury, Noble model***

1. Refill fluid reservoir tank with hydraulic power steering fluid to middle between MAX and MIN at engine idle state. And maintain as it is for 30~60 seconds. At this time, don't move the steering wheel.
2. Raise the front axle with a jack with the reservoir tank cap opened. Repeat work below several times.  
Loosen the steering wheel about 180° after lightly turning the steering wheel left to the end. Again loosen the steering wheel about 180° after lightly turning the steering wheel right to the end.
3. Turn off the engine and perform work procedure 2 above with same method. And repeat to turn the steering wheel right or left about 90° fast several times from the neutral position of steering wheel.
4. Fill hydraulic power steering fluid to middle between MAX and MIN as necessary.
5. Repeat work procedure 2 and 3 above. Check the steering wheel for hitting or noise(fluid sound) when operating it.



Two 12V batteries are connected in series to adopt a 24V negative ground system. To extend the life of the batteries, check the battery fluid level and specific gravity every 5,000 km or every month.

**Battery care**

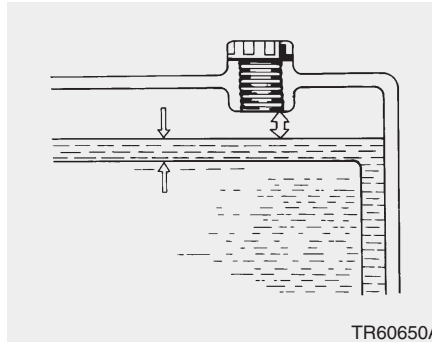
The lower the atmospheric temperature, the lower the battery capacity. The battery should always be kept fully charged. When the battery is not to be used in very cold weather, it should be removed and stored indoors.

When battery fluid was added or when the specific gravity is very low, there is a danger of freezing. The battery should be charged.

### Cleaning of battery terminals

Keep the battery top clean and dry. If white corrosion powder gathers on the terminals, clean the terminals with hot water.

- Keep the vent caps tightly closed to prevent any foreign substances from getting into the battery.
- The negative ( - ) cable must always be re-moved first and installed last when disconnecting and reconnecting the battery.



### Fluid quantity

The fluid level should be between the "UPPER" and "LOWER" level lines. If the level is low, add distilled water up to the "UPPER" line.

### \* NOTICE

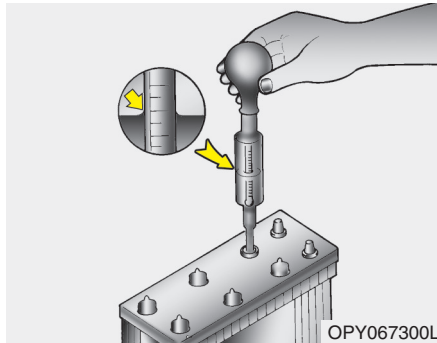
If your battery has only one level line, the line indicates the "LOWER" level (lowest).

If your battery has no level line, the fluid level should be between 10 and 15 mm above the plates.

If the level is low, add distilled water until it is 15 mm above the plates.

### \* NOTICE

After addition of water, be sure to charge the battery (by operating the vehicle), because otherwise the fluid could be frozen in winter.



OPY067300L

### Specific gravity

Measure the specific gravity. If it is less than 1.220 (at a fluid temperature of 20°C), recharge the battery.

### \* NOTICE

The standard specific gravity of battery are General area : 1.280 (at 25°C)  
Tropical area : 1.260 (at 25°C)

### ⚠ WARNING - Battery dangers



Always read the following instructions carefully when handling a battery.



Keep lighted cigarettes and all other flames or sparks away from the battery.



Hydrogen, which is a highly combustible gas, is always present in battery cells and may explode if ignited.



If any electrolyte gets into your eyes, flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If possible, continue to apply water with a sponge or cloth until medical attention is received. If electrolyte gets on your skin, thoroughly wash the contacted area. If you feel a pain or a burning sensation, get medical attention immediately.

(Continued)

### (Continued)



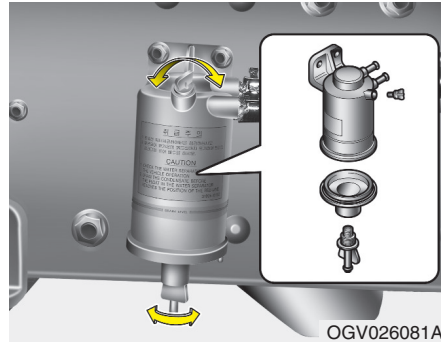
Keep batteries out of the reach of children because batteries contain highly corrosive SULFURIC ACID. Do not allow battery acid to contact your skin, eyes, clothing or paint finish.



Wear eye protection when charging or working near a battery. Always provide ventilation when working in an enclosed space.

- When lifting a plastic-cased battery, excessive pressure on the case may cause battery acid to leak, resulting in personal injury. Lift with a battery carrier or with your hands on opposite corners.
- Never attempt to charge the battery when the battery cables are connected.
- The electrical ignition system works with high voltage. Never touch these components with the engine running or the ignition switched on.

## WATER SEPARATOR



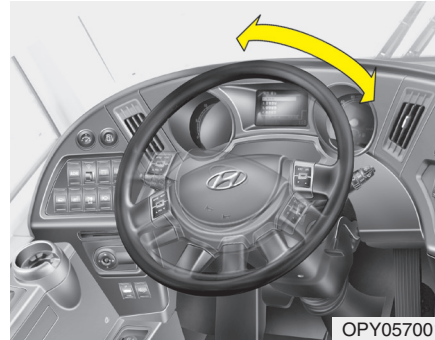
1. Put an empty container below water separator.
2. Loosen the water separator plug and drain plug to discharge the condensation.



### CAUTION

- **Be careful to assemble the gasket when installing the water separator.**
- **Drain the condensation before the float reaches the red line.**
- **Wipe the water separator and surrounding parts clean.**
- **Check for fuel leaks to protect the environment.**

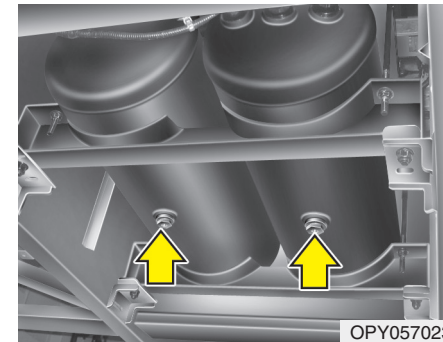
## CHECKING THE STEERING WHEEL FREEPLAY



- To check the steering wheel freeplay, stop the vehicle with the wheels pointed straight ahead. Use very light finger pressure and be sensitive to changes in resistance that mark the limits of the freeplay.  
If greater than specified, have it inspected by your Hyundai dealer and adjusted or replaced if necessary.
- To check looseness of the steering wheel, move the wheel up and down, before and after and right and left.
- Tighten the telescopic and tilt handle lever.

STANDARD PLAY..... Max. 24 mm

## AIR TANK



Check if there remains water in the tank after opening the drain cock. Press the pin of drain cock and drain water in the tank with the compressed air.



**AIR PRESSURE RISE CONDITION**

OPY077150

**Checking air pressure**

Start the engine and check if the air pressure rise is delayed or not. Check the time at idle until the air pressure reaches 0~7kg/cm<sup>2</sup>. Have the air pressure system checked by Hyundai if the pressure rise is delayed.

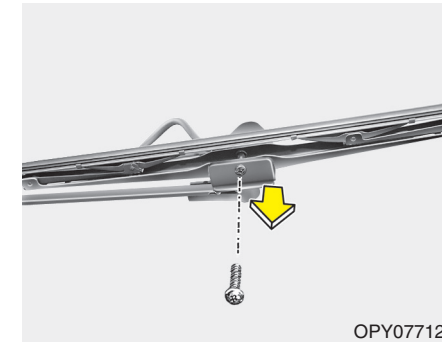
Rising time : MAX. RPM 3 min. or less



OPY047032

**Air pressure check**

Have the air pressure system inspected by Hyundai dealer if air pressure gauge is not out of red range.

**WIPER BLADES**

OPY077126

**Blade inspection****\* NOTICE**

Commercial hot waxes applied by automatic car washes have been known to make the windshield difficult to clean.

## Preventive maintenance

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Contamination of either the windshield or the wiper blades with foreign matter can reduce the effectiveness of the windshield wipers. Common sources of contamination are insects, tree sap, and hot wax treatments used by some commercial car washes. If the blades are not wiping properly, clean both the window and the blades with a good cleaner or mild detergent, and rinse thoroughly with clean water.



### CAUTION

*To prevent damage to the wiper blades, do not use gasoline, kerosene, paint thinner, or other solvents on or near them.*

### Blade replacement

When the wipers no longer clean adequately, the blades may be worn or cracked, and require replacement.



### CAUTION

*To prevent damage to the wiper arms or other components, do not attempt to move the wipers manually.*



### CAUTION

*The use of a non-specified wiper blade could result in wiper malfunction and failure.*

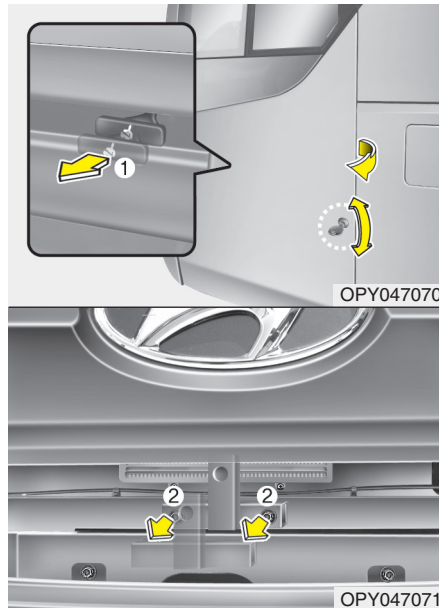
1. Raise the wiper arm completely from the windshield.
2. Using screw driver pull the wiper blade out of wiper arm after loosening screw.
3. Install the blade assembly in the reverse order of removal.



### CAUTION

*Do not allow the wiper arm to fall against the windshield, since it may chip or crack the windshield.*

## CLIMATE CONTROL AIR FILTER (IF EQUIPPED)



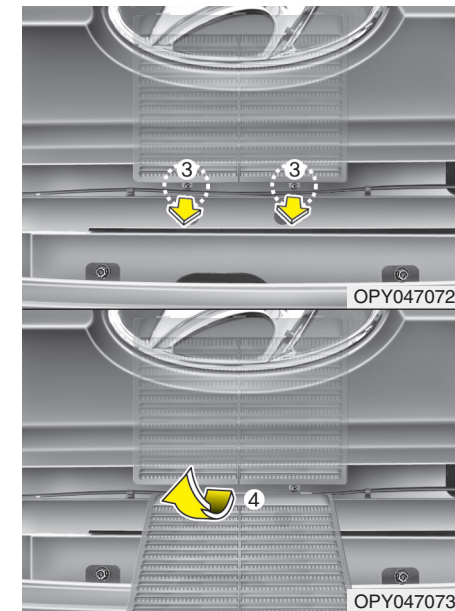
### Filter inspection

The climate control air filter should be replaced every 35,000km (22,000miles) or a year.

If the vehicle is operated in the severely air-polluted cities or on dusty rough roads for a long period, it should be inspected more frequently and replaced earlier. When you try to replace the climate control air filter by owner maintenance, replace it performing the following procedure, and in this case, be careful to avoid damaging other components.

### Filter replacement

1. Open the service door in front panel.
2. Remove bracket (2).



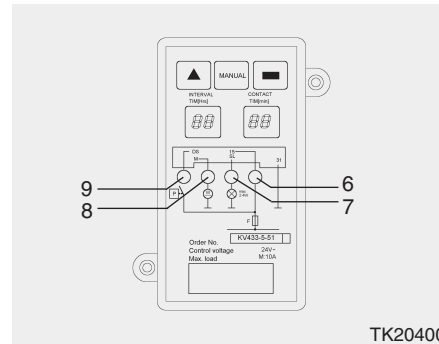
3. Remove two mounting screws (3) for climate control air filter.
4. Remove the climate control air filter downward with care.
5. Installation is in the reverse of removal.

## AUTO GREASE LUBRICATION SYSTEM (IF EQUIPPED)

### Kumho

#### Liquid grease

Proper lubrication is automatically provided by the electric gear pump and control unit of the piston fractionator. If lubrication quantity is small or excessive, check time of the control unit and adjust as required.



- ▲ Lubrication time adjustment switch
- MANUAL Manual motor switch
- Motor operation time adjustment switch
- ## Lubrication time indication lamp
- ## Motor revolution indication lamp
- 6 Power supply confirmation lamp (turned off in case of low voltage (DC 15V and less))
- 7 LS indicator lamp
- 8 Illuminated while motor is operating.
- 9 Pressure sensing lamp

#### ▲ Adjusting lubrication time

(Maintain the established value when a vehicle is delivered)

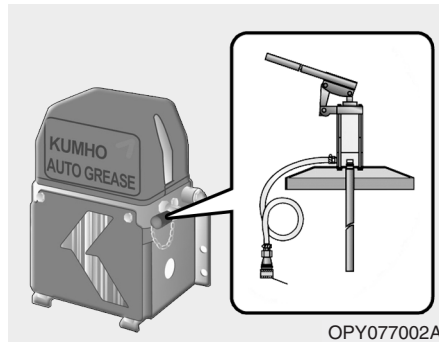
- Adjust time of pouring grease
- Lubrication time : 0.5-1.0-1.5 ~ 9.0-9.5-10 ~ 24 (In case of 10 or less, it consists of 34 sections by 30 minutes)
- When pressing down the lubrication time adjustment method switch ▲ once, ## 4 lamp shows lubrication time and ## 5 lamp shows motor operation. Whenever pressing down, ## 4 lamp shows the established period in ascending powers. (When pressing down in succession, it shows three times per a second automatically in ascending powers.)

#### ■ Motor operation time is established 2.5 minutes when a vehicle is delivered.

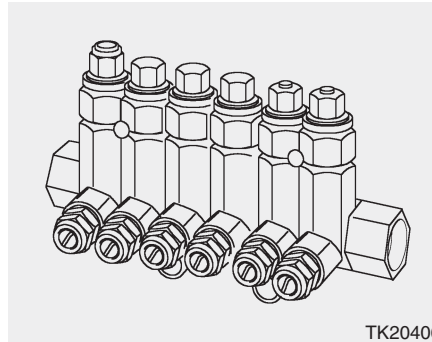
(None can control except the manufacturer.)

#### MANUAL Manual function:

When pressing down this switch, lubrication occurs. (When the motor stops, accumulated time returns to first. After it works, motor operation time is accumulated.)

**Replenishing grease & bleeding air**

- Pour grease to the "MAX" position of the storage container using a specified tool.
- When bleeding air, perform following procedures.
  1. After replenishing grease, turn on the main switch.
  2. Press down the manual control switch and operate the pump
  3. Open the plug of the fractionator end part and bleed air from the main pipe until the grease is flowed.
  4. Turn the main switch off and then lock plug of it.

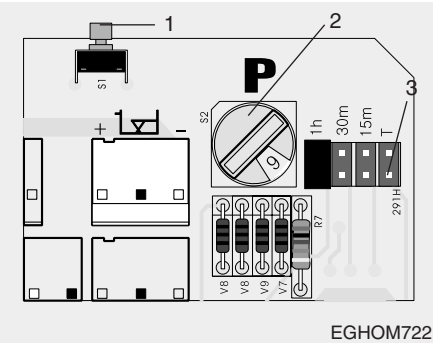
**CAUTION**

- **Check the grease container often and maintain the grease quantity not to be under the "MIN" position of it.**
- **When pouring the grease, be careful water, dust, foreign material and soon not to enter the container and pump.**
- **Check that there is the grease lubricated at a necessary part around the refueling hole and leaking grease at connecting part of the lubricator and fractionator, periodically.**

*(Continued)**(Continued)*

- **Wash the grease container with benzene or mineral oil. Never use trichloroethylene or equivalent solvent.**
- **When raining or after washing, lubricate manually as required.**
- **If any problem occurs in the system of a lamp and instrument lamp, they are illuminated continuously. In this case, check or ask the designated agency.**

AUTO GREASE LUBRICATION SYSTEM (IF EQUIPPED)



Lincoln

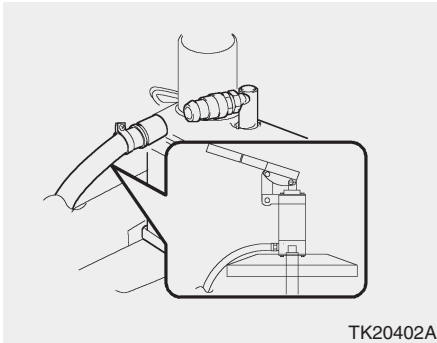
Liquid grease

- Proper lubrication is automatically provided by the electric gear pump and control unit of the piston fractionator. If lubrication quantity is short or excessive, check time of the control unit and adjust it as required.

- 1. Manual switch
- 2. Rotary switch
- 3. Jumper switch

- Lubrication period is optionally adjusted from thirty minutes to eleven hours according to selection of the control timer in the pump.  
Adjusting time : 15 minutes ~ 3 hours  
45 minutes (15 steps) 30 minutes~7 hours (15 steps)/hour ~ 15 hours (15 steps) optional adjustment.
- If you want to know position of the built-in control unit, disconnect the cover and protection cap of the unit.
- When the location of jumper is "1h" the lubrication period of timer is set 6 hour.

15m	hour	-	-	-	1	1	1	1	2	2	2	2	3	3	3	3
	minute	15	30	45	-	15	30	45	-	15	30	45	-	15	30	45
30m	hour	-	-	1	2	2	3	3	4	4	5	5	6	6	7	7
	minute	30	-	30	-	30	-	30	-	30	-	30	-	30	-	30
1h	hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

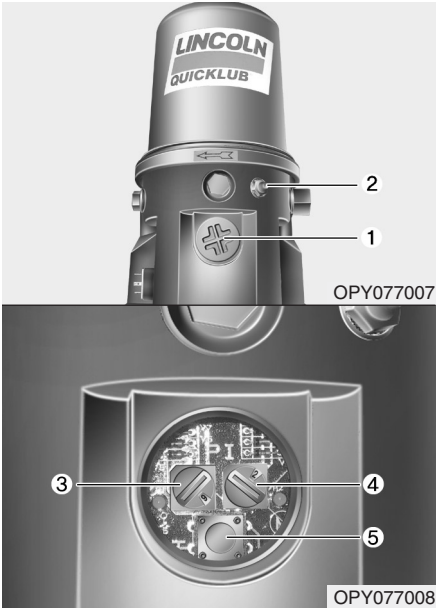


Replenishing grease & bleeding air

- Pour grease to the "MAX" position of the storage container using a specified tool.
  1. After replenishing grease, turn on the main switch.
  2. Press down the manual control switch and operate the pump
  3. Open the plug of the fractionator end part and bleed air from the main pipe until the grease is flowed.
  4. Turn the main switch off and then lock plug of it.
- Lubrication period is optionally adjusted according to selection of the control timer in the pump. When adjusting, open the cap of the grease container and then you will find the device.

**Hard grease**

Automatic lubrication system is grease filling system which supplies all lubrication points of vehicle by using digital controller(Time) depending on adjusted time & suitable quantity of grease. You can adjust lubrication time depending on vehicle model, even if it is adjusted as factory default.



- How to operate the pump**
- 1. Control PCB cap
  - 2. Grease refill nipple
  - 3. Pause timer
  - 4. Operation timer + B22
  - 5. Manual switch

**Factory default pause time :** Blue switch (66 hours) : See above illustrations (3)  
**Operation time :** Red switch (24 minutes) : See above illustrations (4)

Pause time is adjusted as 15 steps upon blue rotation timer

Switch location	1	2	3	4	5	6	7	8	9
Time	1	2	3	4	5	6	7	8	9
Switch location	A	B	C	D	F				
Time	10	11	12	13	14				

Operation time is adjusted as 15 steps upon red rotation timer

Switch location	1	2	3	4	5	6	7	8	9
Minute	2	4	6	8	10	12	14	16	18
Switch location	A	B	C	D	F				
Minute	20	22	24	26	28				

It can be adjusted from 1 hour to 14 hours upon input timer of lubrication pump.

## Preventive maintenance

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### Owner's setting

Pause time (Blue timer) = 6 Operation time (Red switch) = 2

→ Grease pump operates for 4 min. every 6 hours.

### Manual refill

While the main switch of vehicle is on, by pushing manual switch on pump then pump is operated and grease is filled through all grease points. (But operation time is based on minutes set by red timer.)

### Grease refill

Fill the grease before grease indicates MIN line of grease pump. When filling the grease, fill the grease by the MAX line.

### \* NOTICE

Use NLGI 1,2 grade grease which can be used under -25°C.

## PREHEATER MAINTENANCE



### CAUTION

- *Carbon deposit on preheater body inside should be cleaned periodically (every month on operation season).*
- *To prevent the clog of pipe end, preheater exhaust pipe should be inspected and cleaned frequently, especially after driving on snow or muddy road.*
- *Do not push the preheater switch more than 3 times continuously even though BURN indicator light is not "ON" at your first attempt of switch 'ON'.*