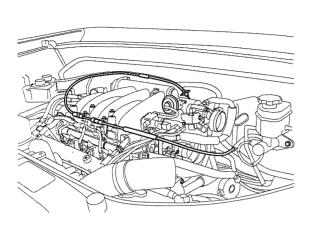
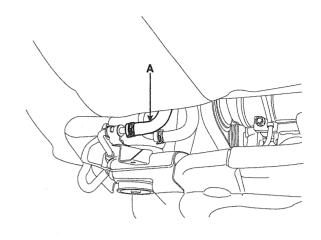
14. Remove the accelerator cable by loosening the locknut, then slip the cable end out of the throttle linkage.

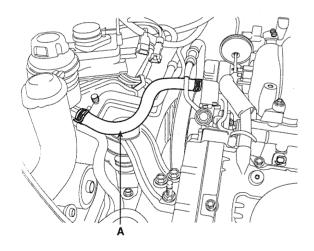




EDQF021A

EDQF029A

15. Remove the power steering pump hose(A).



EDQF024A

Engine (G6BA)



GENERAL	
SPECIFICATION	EM - 2
TROUBLE SHOOTING	EM - 8
SPECIAL TOOLS	
TIMING SYSTEM	
COMPONENTS	EM -12
REMOVAL	
INSPECTION	
INSTALLATION	
INSTALLATION	= IVI - I /
CYLINDER HEAD ASSEMBLY	
	EM 04
COMPONENTS	
REMOVAL	
DISASSEMBLY	
INSPECTION	EM -30
REPLACEMENT	EM -34
REASSEMBLY	EM -35
INSTALLATION	
ENGINE AND TRANSAXLE ASSE	MBLY
REMOVAL	EM -44
	EM 52

ENGINE BLOCK COMPONENTS DISASSEMBLY INSPECTION REASSEMBLY	EM -56 EM -59
COOLING SYSTEM COMPONENTS ENGINE COOLANT REFILLING AND BLEE	DING
REMOVAL INSPECTION INSTALLATION	EM -79 EM -80
LUBRICATION SYSTEM COMPONENTS	EM -83 EM -85 EM -86 EM -86 EM -87
INTAKE AND EXHAUST SYSTEM COMPONENTS	EM -93

GENERAL

SPECIFICATIONS E97CEC21

Description	Specifications	Limit
General Type Number of cylinder Bore Stroke Total displacement Compression ratio Firing order Valve timing Intake valve Opens (BTDC) Closes (ABDC)	V-type, DOHC 6 86.7mm (3.4133in.) 75mm (2.9528in.) 2,656cc 10 : 1 1-2-3-4-5-6	
Exhaust valve Opens (BBDC) Closes (ATDC)	44° 8	
Camshaft Drive mechanism Cam height Intake Exhaust Journal diameter Bearing oil clearance End play	Cogged type belt 43.95 ~ 44.15mm (1.7303 ~ 1.7382in.) 43.95 ~ 44.15mm (1.7303 ~ 1.7382in.) 25.964 ~ 25.980mm (1.0222 ~ 1.0228in.) 0.02 ~ 0.061mm (0.0007 ~ 0.0024in.) 0.1 ~ 0.15mm (0.0039 ~ 0.0059in.)	43.45mrh (1.7106in.) 43.45mm (1.7106in.) 25.914mm (1.0202in.) 0.1mm (0.0039in.)
Cylinder head Flatness of cylinder head surface Flatness of manifold mounting surface Intake Exhaust Valve guides hole diameter 0.05 (0.002) O.S. 0.25 (0.010) O.S. 0.50 (0.020) O.S. Intake valve seat ring hole diameter 0.3 (0.012) O.S. Exhaust valve seat ring hole diameter 0.3 (0.012) O.S.	Max. 0.03mm (0.0012in.) Max. 0.15mm (0.0059in.) Max. 0.15mm (0.0059in.) 11.05 ~ 11.068mm (0.435 ~ 0.436in.) 11.25 ~ 11.268mm (0.443 ~ 0.444in.) 11.50 ~ 11.518mm (0.453 ~ 0.453in.) 33.300 ~ 33.325mm (1.311 ~ 1.312in.) 28.600 ~ 28.621mm (1.126 ~ 1.127in.)	0.05mm (0.0020in.) 0.15mm (0.0059in.) 0.15mm (0.0059in.)
Valve Overall length Intake Exhaust Stem diameter Intake Exhaust Face angle Margin Intake Exhaust Clearance (Stem-to-guide) Intake Exhaust	96.1mm (3.783in.) 97.15mm (3.825in.) 5.965 ~ 5.98mm (0.235 ~ 0.2354in.) 5.95 ~ 5.965mm (0.234 ~ 0.235in.) 45° ~ 45.5° 1.0mm (0.0394in.) 1.3mm (0.0512in.) 0.02 ~ 0.05mm (0.008 ~ 0.0020in.) 0.030 ~ 0.065mm (0.0012 ~ 0.0026in.)	0.5mm (0.0197in.) 0.8mm (0.0315in.) 0.10mm (0.0039in.) 0.13mm (0.0051in.)

Description	Specifications	Limit
Valve spring Free length Load	42.5mm (1.6732in.) 21kg/35mm (48.4lb/1.3780in.) Max. 1.5°	41.5mm (1.6339in.) 21.9kg/34mm (48.4lb/1.3386in.) Max. 3°
Out of squareness	iviax. 1.5	IVIAX. 3
Piston Diameter (Standard) Clearance (Piston-to-cylinder) Ring groove width No.1 No.2 Oil Piston for service	86.68 ~ 86.71mm (3.413 ~ 3.414in.) 0.01 ~ 0.03mm (0.0004 ~ 0.0012in.) 1.230 ~ 1.250mm (0.0484 ~ 0.0492in.) 1.220 ~ 1.250mm (0.0480 ~ 0.0488in.) 2.515 ~ 2.535mm (0.0990 ~ 0.0998in.) 0.25mm (0.010in.), 0.50mm (0.020in.)	
Piston ring Number of rings per piston Compression ring Oil ring Compression ring type No.1 No.2 Oil ring type	3 2 1 Inner bevel type Under cut type 3-piece type	
Ring end gap No.1 No.2 Oil ring side rail Ring side clearance No.1 No.2 Rings for service	0.20 ~ 0.35mm (0.0079 ~ 0.0138in.) 0.37 ~ 0.52mm (0.0146 ~ 0.0205in.) 0.2 ~ 0.7mm (0.0079 ~ 0.0276in.) 0.04 ~ 0.08mm (0.0016 ~ 0.0031in.) 0.03 ~ 0.07mm (0.0012 ~ 0.0028in.) 0.25mm (0.010in.), 0.50mm (0.020in.)	0.8mm (0.031in.) 0.8mm (0.031in.) 1.0mm (0.039in.) 0.1mm (0.004in.) 0.1mm (0.004in.)
Connecting rod Piston pin installation force Side clearance (big end) Bend Bearing oil clearance	2,450 ~ 12,225N (250 ~ 1,250kg, 551 ~ 2,755lb) 0.10 ~ 0.25mm (0.0039 ~ 0.0098in.) 0.05mm or less/100mm (0.0020in. or less/3.937in.) 0.018 ~ 0.036mm (0.0007 ~ 0.0014in.)	0.4mm (0.016in.) 0.1mm (0.004in.)
Crankshaft Journal O.D. Pin O.D. Out-of-round, taper of journal and pin Taper of journal and pin End play Main bearing clearance	61.982 ~ 62.000mm (2.4402 ~ 2.4409in.) 47.982 ~ 48.000mm (1.8891 ~ 1.8898in.) Max. 0.003mm (0.0012in.) Max. 0.005mm (0.00020in.) 0.070 ~ 0.250mm (0.0028 ~ 0.0098in.) 0.004 ~ 0.022mm (0.0002 ~ 0.0009in.)	0.4mm (0.016in.) 0.1mm (0.004in.)
Cylinder block Cylinder bore Flatness of gasket surface Out-of-round of cylinder bore	86.7mm (3.4134in.) Max. 0.03mm (0.0012in.) Max. 0.02mm (0.0008in.)	0.05mm (0.002in.)
Oil pump Body clearance Side clearance	0.100 ~ 0.181mm (0.0039 ~ 0.0071in.) 0.040 ~ 0.095mm (0.0016 ~ 0.0037in.)	
Relief spring Free height Load	43.8mm (1.724in.) 4.6kg/39.3mm (10lb/1.548in.)	

Description	Specifications	Limit
Oil filter		
Туре	Cartridge, full flow	
Engine oil pressure	50kPa (7.3psi) or more	
	[Conditions : Oil temperature is 75 to	
O Para sure I	90°C (167 to 194°F)]	
Cooling method	Engine coolant cooling, forced circulation	
Cooling system quantity	with electric fan	
	7.0lit (7.4U.S.qts., 6.1lmp.qts)	
Theromstat		
Type	Wax pellet type with jiggle valve	
Normal opening temperature Opening temperature range	82 ± 2.0°C (179.6 ± 3.6°F) 80 ~ 84°C (176 ~ 183.2°F)	
Wide open temperature	95°C (203°F)	
	33 0 (2001)	
Radiator cap	107.0 + 14.7kDa /1.1 + 0.15km/am2	
Main valve opening pressure	107.9 ± 14.7kPa (1.1 ± 0.15kg/cm², 15.65 ± 2.13psi)	
Main valve closing pressure	83.4kPa (0.85kg/cm², 12.1psi)	
Vacuum valve opening pressure	-6.86kPa (-0.07kg/cm², -1.00psi)	
Air cleaner		
Type	Dry	
Element	Paper type	
Exhaust pipe	1 7	
Muffler	Expansion reaonance type	됗
Suspend system	Rubber hangers	9 _.

SERVICE STANDRDS

Standard value	
Coolant concentration	
Tropical areas	40%
Other areas	50%

COOLANT

Engine coolant	Ethlylen glycol base for aluminum radiator

SEALANT

Engine coolant temperature sensor	LOCTITE 262 or equivalent, Three bond No.1324 or equivalent.
Oil pressure switch	3M ATD No.8660 or Three bond No.1141E
PCV valve	LOCTITE 242 or equivalent

TIGHTENING TORQUE

ltem	Nm	kgf.cm	lbf.ft
Camshaft sprocket bolt	90 ~ 110	900 ~ 1,100	65 ~ 85
Cylinder head cover bolt	8 ~ 10	80 ~ 100	5.8 ~ 7.2
Main bearing cap bolt M10 M8	27~33 + (90°~94°) 13~19 + (90°~94°)	270~300 + (90°~94°) 130~190 + (90°~94°)	19.5~24 + (90°~94°) 10~14 + (90°~94°)
Connecting rod bolt	16~20 + (90°~94°)	160~200 + (90°~94°)	12~15 + (90°~94°)
Cylinder head bolt(Cold engine)	25 + (58°~62°) + (43°~47°)	250 + (58°~62°) + (43°~47°)	18 + (58°~62°) + (43°~47°)
Oil pan drain plug	35 ~ 45	350 ~ 450	25 ~ 33
Lower oil pan bolt	10 ~ 12	100 ~ 120	7 ~ 9
Upper oil pan bolt [10 × 38mm (0.937 × 1.4961in.)] [8 × 22mm (0.3150 × 0.8661in.)] [161.5mm (6.3582in.)] [152.5mm (6.0039in.)]	30 ~ 42 19 ~ 28 5 ~ 7 5 ~ 7	300 ~ 420 190 ~ 280 50 ~ 70 50 ~ 70	22 ~ 30 14 ~ 20 4 ~ 5 4 ~ 5
Oil screen bolt	15 ~ 22	150 ~ 220	11 ~ 16
Oil pump case bolt	12 ~ 15	120 ~ 150	9 ~ 11
Oil relief valve plug	40 ~ 50	400 ~ 500	* 29 ~ 36
Oil pressure switch	15 ~ 22	150 ~ 220	11 ~ 16
Oil pressure cover screw	8 ~ 12	80 ~ 120	6 ~ 9
Oil filter	12 ~ 16	120 ~ 160	9 ~ 12
Drive plate and adapte	73 ~ 77	730 ~ 770	53 ~ 56
Air cleaner body installation bolt	8 ~ 12	80 ~ 120	6 ~ 9
Surge tank stay	15 ~ 20	150 ~ 200	11 ~ 14
Air intake surge tank to intake manifold(bolt)	15 ~ 20	150 ~ 200	11 ~ 14
Air intake surge tank to intake manifold(nut)	15 ~ 20	150 ~ 200	11 ~ 14
Intake manifold to cylinder head	19 ~ 21	190 ~ 210	14 ~ 15
Heat protector exhaust manifold	12 ~ 15	120 ~ 150	9 ~ 11
Exhaust manifold to cylinder head (Self-locking nut)	30 ~ 35	300 ~ 350	22 ~ 26
Oil level gauge guide to engine	12 ~ 15	120 ~ 150	9 ~ 11
Water outlet fitting bolt	17 ~ 20	170 ~ 200	12 ~ 14
Power steering oil pump bracket to cylinder head	17 ~ 26	170 ~ 260	12 ~ 19
Crank position sensor wheel screw	5 ~ 6	50 ~ 60	3.6 ~ 4.3
Engine mounting insulator bolt	50 ~ 65	500 ~ 650	36 ~ 47
Engine mounting bracket nut	60 ~ 80	600 ~ 800	43 ~ 58
Engine mounting bracket bolt	60 ~ 80	600 ~ 800	43 ~ 58
Engine support bracket bolt	60 ~ 70	600 ~ 700	43 ~ 51
Front roll stopper bracket sub frame bolt	50 ~ 65	500 ~ 650	36 ~ 47

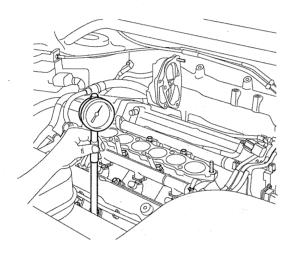
Item	Nm	kgf.cm	lbf.ft
Front roll stopper insulator bolt and nut	50 ~ 65	500 ~ 650	36 ~ 47
Rear roll stopper bracket to sub frame	50 ~ 65	500 ~ 650	36 ~ 47
Rear roll stopper insulator bolt and nut	50 ~ 65	500 ~ 650	36 ~ 47
Transaxle mounting bracket bolt	50 ~ 65	500 ~ 650	36 ~ 47
Transaxle mounting insulator bolt	90 ~ 110	900 ~ 1,100	65 ~ 80
Fuel hose clamp to rear cylinder head assembly	12 ~ 15	120 ~ 150	9 ~ 11
Transaxle mounting plate	10 ~ 12	100 ~ 120	7 ~ 9
Rear plate	10 ~ 12	100 ~ 120	7 ~ 9
Oil seal case	10 ~ 12	100 ~ 120	7 ~ 9
Crankshaft pulley bolt	180 ~ 190	1,800 ~ 1,900	130 ~ 138
Timing belt cover bolt	10 ~ 12	100 ~ 12	7 ~ 9
Engine hanger bracket to engine	20 ~ 27	200 ~ 270	14 ~ 20
Alternator mounting bracket to engine	20 ~ 30	200 ~ 300	14 ~ 22
Alternator mounting nut (Engine front case side)	20 ~ 30	200 ~ 300	14 ~ 22
Alternator mounting bolt (Alternator mounting bracket side)	20 ~ 30	200 ~ 300	14 ~ 22
Starter to transmission(nut)	20 ~ 30	200 ~ 300	14 ~ 22
Starter to transmission(bolt)	27 ~ 34	270 ~ 340	20 ~ 25
Drive belt pulley bolt	35 ~ 55	350 ~ 550	25 ~ 40
Drive belt tensioner bolt	20 ~ 27	200 ~ 270	14 ~ 20
Engine coolant pump to cylinder block bolt (Head mark "7" mark)	15 ~ 22	150 ~ 200	11 ~ 16
Engine coolant temperature sensor	20 ~ 40	200 ~ 400	14 ~ 29
Engine coolant inlet fitting attaching bolt	17 ~ 20	170 ~ 200	12 ~ 14
Throttle body to surge tank bolt	15 ~ 20	150 ~ 200	11 ~ 14
Oxygen sensor to exhaust manifold	40 ~ 50	400 ~ 500	29 ~ 36
Front exhaust pipe to exhaust manifold nut	30 ~ 40	300 ~ 400	22 ~ 29
Front exhaust pipe to catalytic converter bolt	40 ~ 60	400 ~ 600	29 ~ 43
Catalytic converter to center exhaust pipe nut	40 ~ 60	400 ~ 600	29 ~ 43
Center exhaust pipe to main muffler nut	40 ~ 60	400 ~ 600	29 ~ 43
Main muffler hanger support bracket bolt	10 ~ 15	100 ~ 150	7 ~ 11
Delivery pipe installation bolt	10 ~ 15	100 ~ 150	7 ~ 11
Timing belt tensioner pulley bolt	43 ~ 55	430 ~ 550	31 ~ 40
Timing belt idler puley bolt	50 ~ 60	500 ~ 600	36 ~ 43
Timing blelt tensioner arm fixed bolt	35 ~ 55	350 ~ 550	25 ~ 40
Auto tensioner fixed bolt	20 ~ 27	200 ~ 270	14 ~ 20
Accelerator cable bracket	4 ~ 6	40 ~ 60	3 ~ 4
Spark plug	20 ~ 30	200 ~ 300	14 ~ 22

COMPRESSION



If the there is lack of power, excessive oil consumption or poor fuel economy, measure the compression pressure.

- Warm up and stop engine
 Allow the engine to warm up to normal operating temperature.
- Remove ignition coils. (See EE group ignition)
- 3. Remove spark plugs.
 Using a 16mm plug wrench, remove the 6 spark plugs.
- 4. Check cylinder compression pressure
 - a. Insert a compression gauge into the spark plug hole.



EDOF165A

While cranking the engine, measure the compression pressure.

M NOTE

Always use a fully charged battery to obtain engine speed of 250 rpm or more.

c. Repeat steps (a) through (b) for each cylinder.



This measurement must be done in as short a time as possible.

Compression pressure:

1,420kPa (14.5kgf/cm², 206psi)

Minimum pressure:

1,270kPa (13kgf/cm², 184psi)

Difference between each cylinder:

100kPa (1.0kgf/cm², 15psi) or less

- d. If the cylinder compression in 1 or more cylinders is low, pour a small amount of engine oil into the cylinder through the spark plug hole and repeat steps (a) through (b) for cylinders with low compression.
 - If adding oil helps the compression, it is likely that the piston rings and/or cylinder bore are worn or damaged.
 - If pressure stays low, a valve may be sticking or seating is improper, or there may be leakage past the gasket.
- 5. Reinstall spark plugs. (See EE group ignition)
- 6. Install ignition coils. (See EE group ignition)

TROUBLESHOOTING EAE1F8CD

Symption	Suspect area	Remedy (See page)
Engine misfire with	Loose or improperly installed engine flywheel.	Repair or replace the flywheel as required.
abnormal internal lower engine noises.	Worn piston rings (Oil cousumption may or may not cause the engine to misfire.)	Inspect the cylinder for a loss of compression. Repair or replace as required.
	Worn crankshaft thrust bearings	Replace the crankshaft and bearings as required
Engine misfire with abnormal valve	Stuck valves. (Carbon buidup on the valve stem)	Repair or replace as required
train noise.	Excessive worn or mis-aligned timing chain	Replace the timing chain and sprocket as required.
	Worn camshaft lobes.	Replace the camshaft and valve lifters.
Engine misfire with coolant consumption	 Faulty cylinder head gasket and/or cranking or other damage to the cylinder head and engine block cooling system. Coolant consumption may or may not cause the engine to overheat. 	 Inspect the cylinder head and engine block for damage to the coolant passages and/or a faulty head gasket. Repair or replace as required.
Engine misfire with excessive oil	Worn valves, guides and/or valve stem oil seals.	Repair or replace as required.
consumption	Worn piston rings. (Oil consumption may or may not cause the engine to misfire)	 Inspect the cylinder for a loss of compression. Repair or replace as required.
Engine noise on start-up, but only	Incorrect oil viscosity	Drain the oil. Install the correct viscosity oil.
lasting a few seconds.	Worn crankshaft thrust bearing.	Inspect the thrust bearing and crankshaft.Repair or replace as required.
Upper engine noise,	Low oil pressure	Repair or replace as required.
regardless of engine	Broken valve spring.	Replace the valve spring.
speed.	Worn or dirty valve lifters.	Replace the valve lifters.
	Stetched or broken timing chain and/or damaged sprocket teeth.	Replace the timing chain and sprockets.
	Worn timing chain tensioner, if applicable.	Replace the timing chain tensioner as required.
	Worn camshaft lobes.	 Inspect the camshaft lobes. Replace the timing camshaft and valve lifters as required.
	Worn valve guides or valve stems.	Inspect the valves and valve guides, then repair as required.
	Stuck valves. (Carbon on the valve stem or valve seat may cause the valve to stay open.	Inspect the valves and valve guides, then repair as required.

Symption	Suspect area	Remedy (See page)
Lower engine noise,	Low oil pressure.	Repair or required.
regardless of engine speed	Loose or damaged flywheel.	Repair or replace the flywheel.
эреси	Damaged oil pan, contacting the oil pump screen.	Inspect the oil pan.Inspect the oil pump screen.Repair or replace as required.
	Oil pump screen loose, damaged or restircted.	Inspect the oil pump screen.Repair or replace as required.
	Excessive piston-to-cylinder bore clearance.	Inspect the piston, piston pin and cylinder bore.Repair as required.
	Excessive piston pin-to-clearance	 Inspect the piston, piston pin and the connecting rod. Repair or replace as required.
	Excessive connecting rod bearing rod clearance	Inspect the following components and repair as required. The connecting rod bearings. The connecting rods. The crankshaft. The crankshaft journal.
	Excessive crankshaft bearing clearance	Inspect the following components, and repair as required. The crankshaft bearing. The crankshaft journals.
	Incorrect piston, piston pin and connecting rod installation	 Verify the piston pins and connecting rods are installed correctly. Repair as required.
Engine noise under	Low oil pressure	Repair or replace as required.
load	Excessive connecting rod bearing clearance	Inspect the following components and repair as required: The connecting rod bearings. The connecting rods. The crankshaft
	Excessive crankshaft bearing clearance	Inspect the following components, and repair as required. The crankshaft bearings. The crankshaft journals. The cylinder block crankshaft

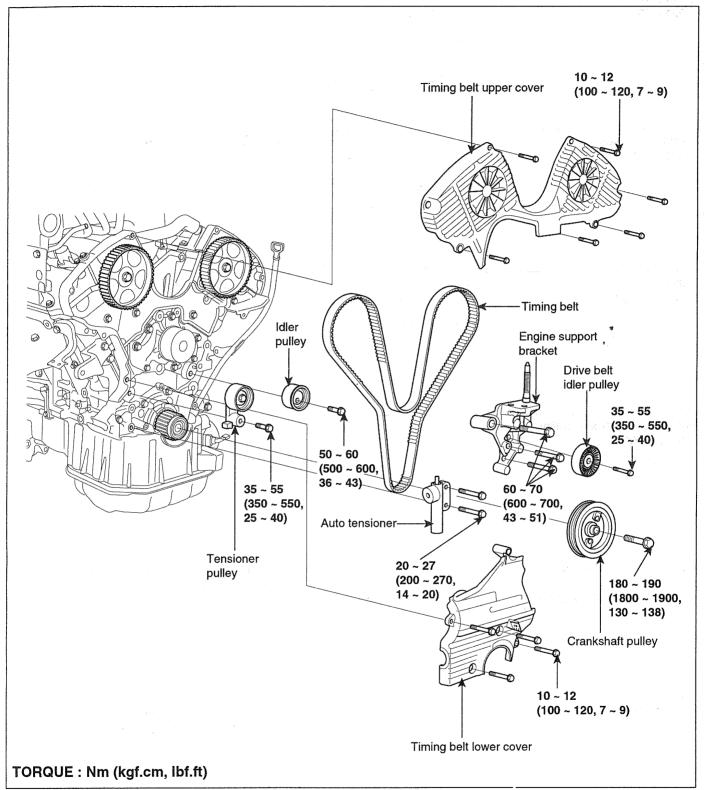
Symption	Suspect area	Remedy (See page)
Engine will not crank-crankshaft will not rotate	Hydraulically cylinder Coolant/antifreeze in cylinder. Oil in cylinder. Fuel in cylinder	 Remove spark plugs and check for fluid. Inspect for broken head gasket. Inspect for cracked engine block or cylinder head. Inspect for a sticking fuel injector and/or leaking fuel regulator.
	Broken timing chain and/or timing chain gears.	 Inspect timing chain and gears. Repair as required.
	Material cylinder Broken valve Piston material Foreign material	 Inspect cylinder for damaged components and/or foreign materials. Repair or replace as required.
	Seized crankshaft or connecting rod bearings.	 Inspect crankshaft and connecting rod bearing. Repair as required.
	Bend or broken connecting rod.	 Inspect connecing rods. Repair as required.
	Broken crankshaft	 Inspect crankshaft. Repair as required.

SPECIAL TOOLS E4E4BACD

Tool (Number and name)	Illustration	Use
Crankshaft front oil seal installer (09214-33000)	EDKA010A	Installation of the front oil seal
Camshaft oil seal installer (09214-21000)	EDRAUTUA .	Installation of the camshaft oil seal
Valve guide installer (09221-3F100 A/B)	ECKA010B	Remove and installation of the valve guide
Valve stem oil seal installer (09222-22001)	ECKA010A	Installation of the valve stem oil seal
Valve spring compressor & adaptor (09222-28000, 09222-28100)	EDDA005C	Removal and installation of the intake or exhaust valve
Crankshaft rear oil seal installer (09231-33000)	EDDA005F	 Installation of the engine rear oil seal Installation of the crankshaft rear oil seal

TIMING SYSTEM

COMPONENT EB323873

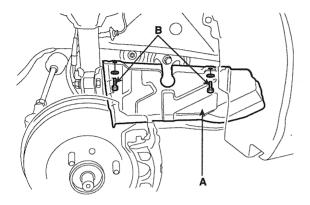


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REMOVAL EF2F0D8C

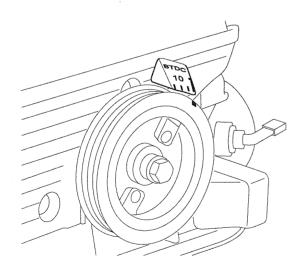
Engine removal is not required for this procedure.

- 1. Remove the engine cover.
- 2. Remove RH front wheel.
- 3. Remove 2bolts(B) and RH side cover(A).



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4. Turn the crankshaft pulley, and align its groove with timing mark "T" of the timing belt cover.

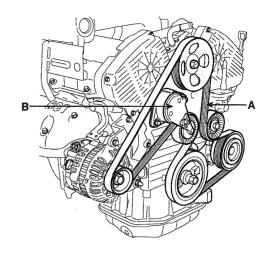


EDQF102A

NOTE

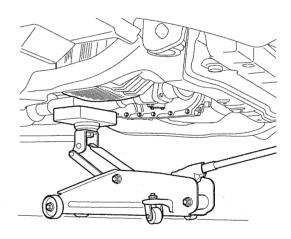
Always turn the crankshaft clockwise.

5. Remove drive belt(A) and belt tensioner(B).



EDQF100A

- 6. Remove the engine mount bracket.
 - 1) Set the jack to the engine oil pan.

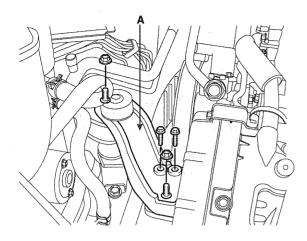


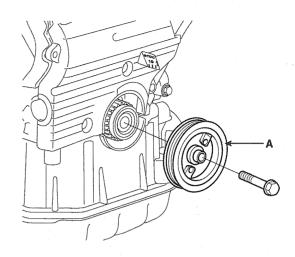
ECKD102A

NOTE

Place wooden block between the jack and engine oil pan.

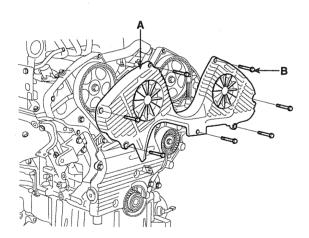
- 2) Remove the 2bolts, 2nuts and engine mount bracket(A).
- 9. Remove the crankshaft pulley bolt and crankshaft pulley(A).



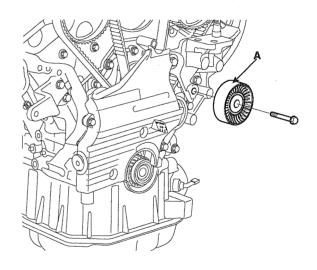


EDQF017A

- 7. Remove the power steering pump. (See ST group power steering pump)
- 8. Remove the 7bolts(B) and timing belt upper cover(A).



10. Remove the drive belt idler pulley(A).



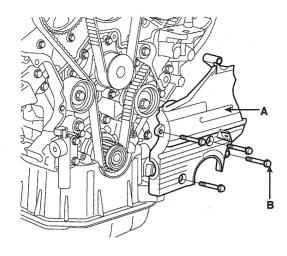
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EDQF104A

EDQF103A

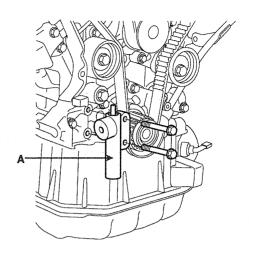
TIMING SYSTEM EM -15

11. Remove the 4bolts(B) and timing belt lower cover(A).



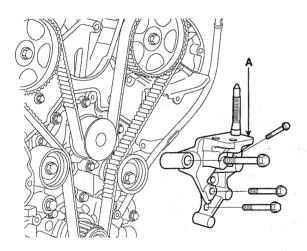
EDQF105B

Remove timing belt tensioner.
 Alternately loosen the 2bolts, and remove the tensioner(A).



EDQF107A

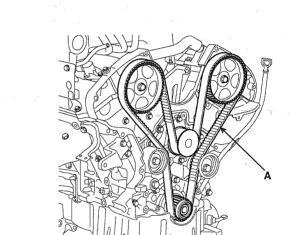
12. Remove the engine support bracket(A).



EDQF106A

13. Check that timing marks of the camshaft timing pulleys and cylinder head covers are aligned.

If not, turn the crankshaft 1revolution(360°).

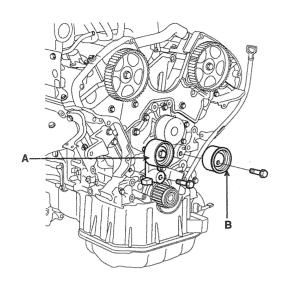


15. Remove the timing belt(A).

EDQF108A

NOTE

If the timing belt is reused, make an arrow indicating the turning direction to make sure that the belt is reinstalled in the same direction as before. 16. Remove the tensioner pulley(A) and timing belt idler pulley(B).



EDOF110A

- 17. Remove the crankshaft sprocket.
- 18. Remove camshaft sprockets. Hold the hexagonal head wrench portion of the camshaft with a wrench and remove the bolt and camshaft sprocket.



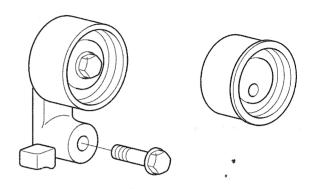
/! CAUTION

Be careful not to damage the cylinder head and valve lifter with the wrench.

INSPECTION EDAFCA96

SPOCKETS, TENSIONER, IDLER

- Check the camshaft sproket, crankshaft sprocket, tensioner pulley, and idler pulley for abnormal wear, cracks, or damage. Replace as necessary.
- Inspect the tensioner pulley and the idler pulley for easy and smooth rotation and check for play or noise. Replace as necessary.



EDQF111A

Replace the pulley if there is a grease leak from its bearing.

TIMING BELT

- Check the belt for oil or dust deposits. Replace, if necessary. Small deposits should be wiped away with a dry cloth or paper. Do not clean with solvent.
- When the engine is overhauled or belt tension adjusted, check the belt carefully. If any of the following flaws are evident, replace the belt.

M NOTE

- Do not bend, twist or turn the timing belt inside
- · Do not allow the timing belt to come into contact with oil, water and steam.

INSTALLATION E1ED1397

- Install the crankshaft sprocket.
 Align the pulley set key with the key groove the crankshaft sprocket and slide on the crankshaft sprocket.
- 2. Install the camshaft sprockets and tighten the bolts to the specified torque.
 - 1) Temporarily install the camshaft sprocket bolts.
 - Hold the hexagonal head wrench portion of the camshaft with a wrench, and tighten the camshaft sprocket bolts.

Tightening torque

Camshaft sprocket bolt 90 ~ 110Nm (900 ~ 1100kgf.cm, 65 ~ 80lbf.ft)

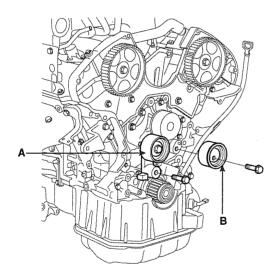
3. Install the idler pulley(B) and the tensioner pulley(A).

Tightening torque

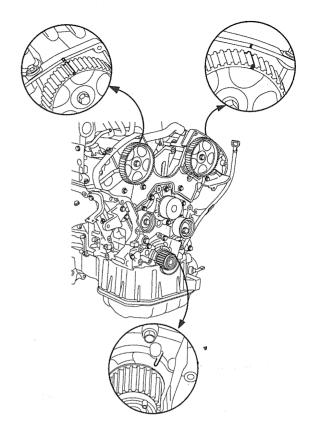
Idler pulley bolt 50 ~ 60Nm (500 ~ 600kgf.cm, 36 ~ 43lbf.ft) Tensioner arm fixed bolt 35 ~ 55Nm (350 ~ 550kgf.cm, 25 ~ 40lbf.ft)

M NOTE

Insert and install the idler pulley to the roll pin that is pressed in the water pump boss.



4. Align the timing marks of the camshaft sprocket and crankshaft sprocket with the No.1 piston placed at top dead center and its compression stroke.



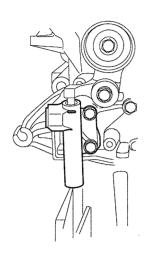
EDQF109A

- 5. Set timing belt tensioner.
 - 1) Using a press, slowly press in the push rod.
 - 2) Align the holes of the push rod and housing pass a set pin through the holes to keep the setting position of the push rod.
 - 3) Release the press.
- 6. Install the timin belt tensioner.
 - 1) Temporarily install the tensioner with the 2bolts.

2) Alternately tighten the 2bolts.

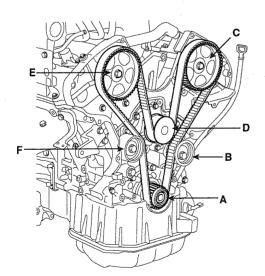
Tightening torque

20 ~ 27Nm (200 ~ 270kgf.cm, 14 ~ 20lbf.ft)

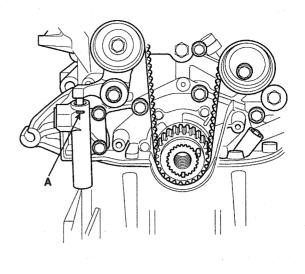


EDQF161A

- 7. Install the timing belt.
 - Remove any oil or water on the sprockets, and keep them clean.
 - 2) Install the tming belt in this order. Crankshaft sprocket(A) → Idler pulley(B) → Camshaft sprocket LH side(C) → Water pump pulley(D) → Camshaft sprocket RH side(E) → Tensioner pulley(F).

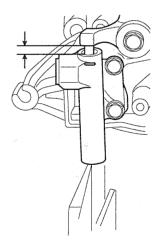


8. Remove the set pin(A) from the tensioner.



EDQF162A

- 9. Timing belt tensioner checking.
 - 1) Rotate the crankshaft 2turns clockwise and measure the projected length of the auto tensioner at TDC(#1 compression stroke) after 5 minutes.
 - 2) The projected length should be 7 ~ 9mm (0.27 ~ 0.31in.)



EDQF163A

EDQF108B

10. Install the engine support bracket(A).

Tightening torque

B: 60 ~ 70Nm (600 ~ 700kgf.cm, 43 ~ 51lbf.ft)

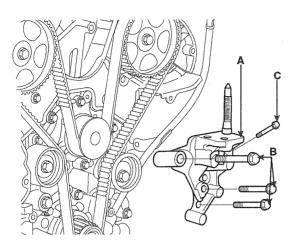
C: 15 ~ 22Nm (150 ~ 220kgf.cm, 11 ~ 16lbf.ft)

12. Install the drive belt idler pulley(A).

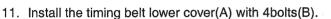
Tightening torque

Idler pulley bolt

35 ~ 55Nm (350 ~ 550kgf.cm, 25 ~ 40lgf.ft)



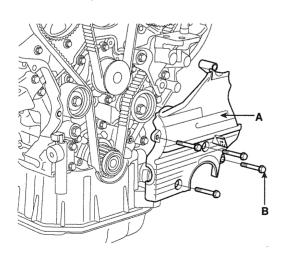
EDQF106B



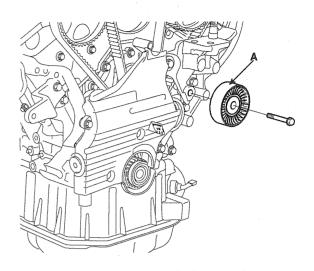
Tightening torque

Timing belt cover bolt

10 ~ 12Nm (100 ~120kgf.cm, 7 ~ 9lbf.ft)



EDQF105B



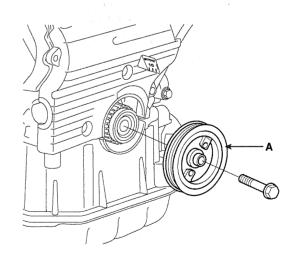
EDQF105A

 Install the crankshaft pulley(A).
 Make sure that crankshaft sprocket pin fits the small hole in the pulley.

Tightening torque

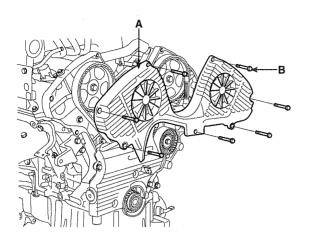
Crankshaft pulley bolt

180 ~ 190Nm (1800 ~ 1900kgf.cm, 130 ~ 138lbf.ft)



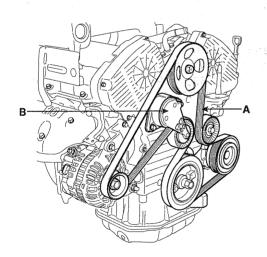
EDQF104A

14. Install the timing belt upper cover(A) with 7bolts(B).



EDQF103A

- 15. Install the power steering pump. (See ST group power steering pump)
- 16. Install the drive belt tensioner(B) and drive belt(A).

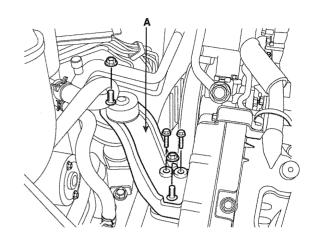


EDQF100A

17. Install the engine mount bracket.
Install engine mount bracket with 2nuts and 2bolt.

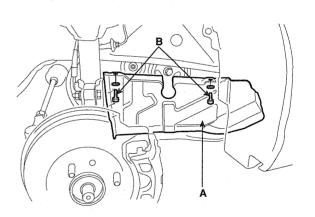
Tightening torque

60 ~ 80Nm (600 ~ 800kgf.cm, 44 ~ 59lbf.ft)



EDQF017A

18. Install RH side cover(A) with 2bolts(B).

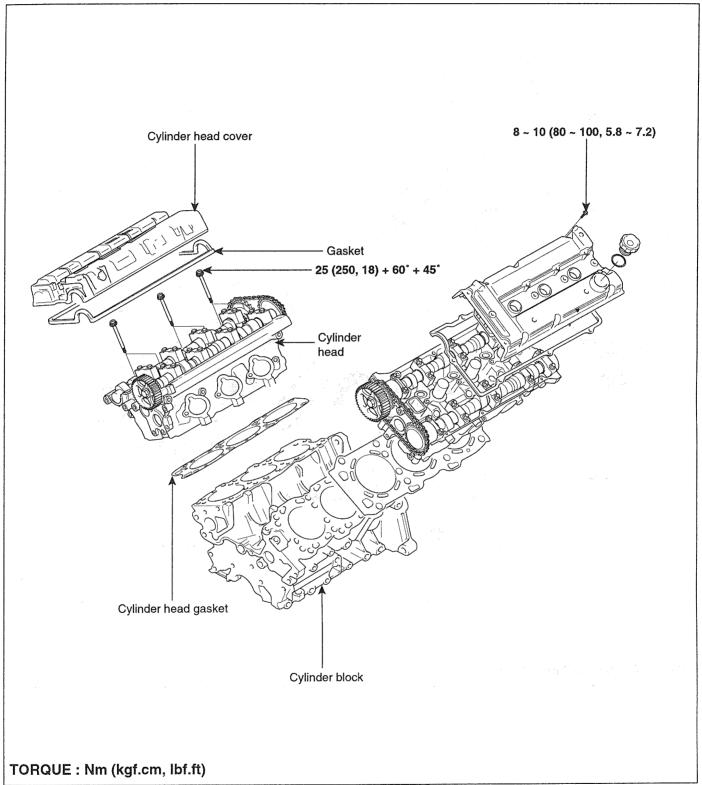


KXDSE16A

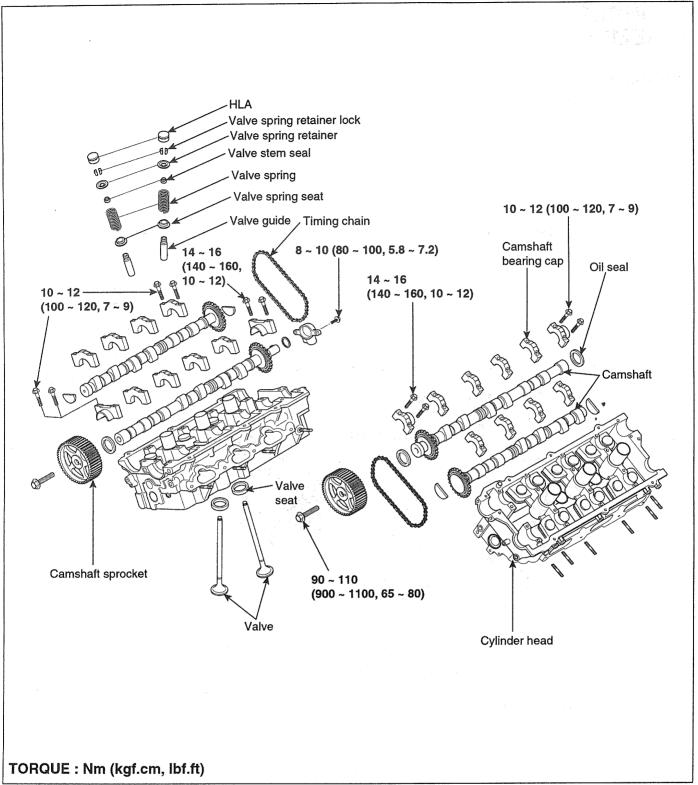
- 19. Install RH front wheel.
- 20. Install engine cover.

CYLINDER HEAD

COMPONENTS EAAAFFA1



EDQF201A



EDQF202A

REMOVAL EDATEDAA

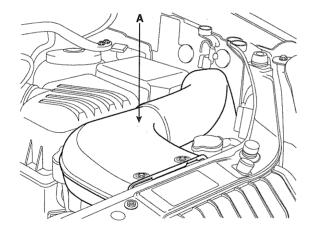
Engine removal is not required for this procedure.

A CAUTION

- Use fender covers to avoid damaging painted surfaces.
- To avoid damaging the cylinder head, wait until the engine coolant temperature drops below normal temperature before removing it.
- When handling a metal gasket, take care not to fold the gasket or damage the contact surface of the gasket.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.

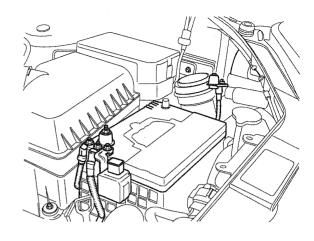
M NOTE

- Mark all wiring and hoses to avoid misconnection.
- Inspect the timing belt before removing the cylinder head.
- Turn the crankshaft pulley so that the No. 1 piston is at top dead center. (See page EM 13).
- 1. Remove the air duct(A).



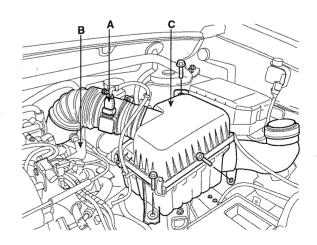
EDQF041A

2. Disconnect the negative terminal from the battery.



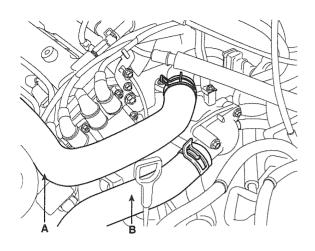
EDQF040A

- 3. Drain the engine coolant. (See page EM 77) Remove the radiator cap to speed draining.
- 4. Remove the engine cover.
- 5. Remove the intake air hose and air cleaner assembly.
 - 1) Disconnect the AFS connector(A).
 - Disconnect the breather hose(B) from air cleaner hose.
 - 3) Remove the intake air hose and air cleaner assembly(C).



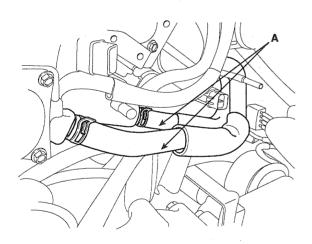
EDQF039A

6. Remove the upper radiator hose(A) and lower radiator hose(B).



EDQF037A

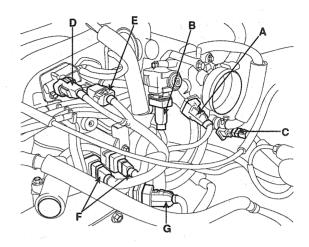
7. Remove the heater hoses(A).



EDQF019A

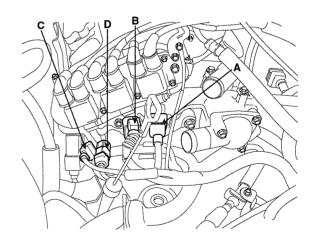
- 8. Remove the engine wire harness connectors and wire harness clamps from the cylinder head and the intake manifold.
 - 1) TPS(Throttle Position Sensor) connector(A).
 - 2) ISA(Idle Speed Actuator) connector(B).
 - 3) PCSV(Purge Control Solenoid Valve) connector(C).
 - 4) VIS actuator connector(D).

- 5) Injector connector(E).
- 6) Knock sensor connectors(F).
- 7) CMP(Camshaft Position Sensor) connector(G).



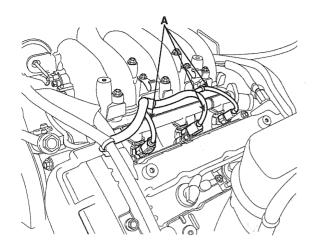
EDQF032A

- ECT(Engine Coolant Temperature) sensor connector(A).
- 9) Ignition coil connector(B).
- 10) Crankshaft position sensor connector(C).
- 11) Oxygen sensor connector(D).



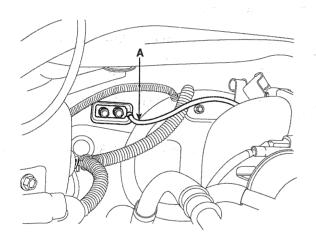
EDQF033A

12) Three fuel injector connectors(A).



EDQF028A

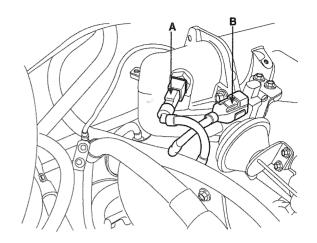
13) Disconnect ground cable(A) from the cowl panel.



EDQF027A

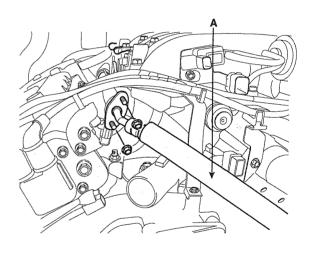
14) IAT(Intake Air Temperature) sensor connector(A).

15) VIS actuator connector(B).



EDQF026A

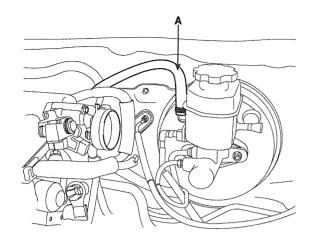
9. Remove the fuel inlet hose(A) from delivery pipe.



EDQF025A

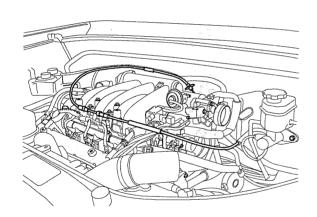
10. Remove the PCSV hose.

11. Remove the brake booster vacuum hose(A).



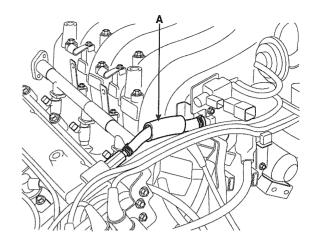
EDQF020A

12. Remove the accelerator cable by loosening the locknut, then slip the cable end out of the throttle linkage.



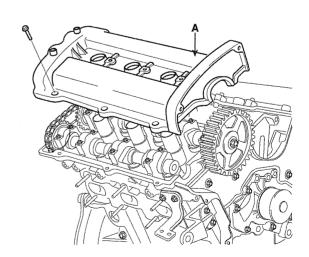
EDQF029A

13. Remove the PCV hose(A).



EDQF014A

- 14. Remove the intake manifold. (See page EM 93)
- 15. Remove the power steering pump. (See ST group power steering pump).
- 16. Remove the exhaust manifold. (See page EM 95)
- 17. Remove the timing belt. (See page EM 13)
- 18. Remove the spark plug cable. (See EE group ignition)
- 19. Remove the cylinder head covers(A).

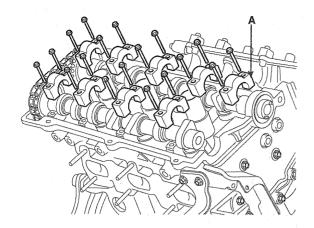


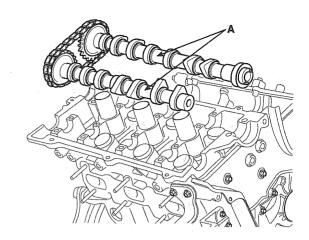
EDQF050A

20. Remove the camshaft sprocket.

21. Remove the camshaft bearing caps(A).

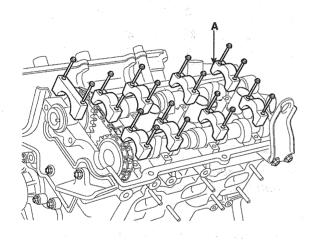
22. Remove the camshafts(A).

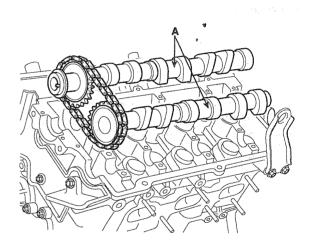




EDQF053A

EDQF054A

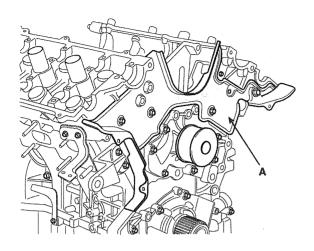




EDQF055A

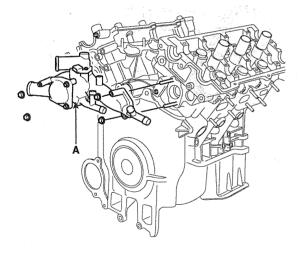
EDQF056A

23. Remove the timing belt rear cover(A).



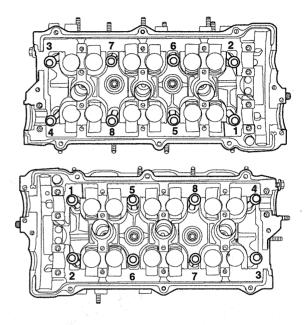
EDQF057A

24. Remove the water temperature control assembly(A) and water pipe.



EDQF058A

- 25. Remove the cylinder head bolts, then remove the cylinder heads.
 - Uniformly loosen and remove the 8 cylinder head bolts on each cylinder head in several passes and in the sequence shown, then repeat for the other side, as shown. Remove the 16 cylinder head bolts and plate washer.



EDQF166A

CAUTION

Head warpage or cracking could result from removing bolts in an incorrect order.

2) Lift the cylinder head from the dowels on the cylinder block and place the cylinder head on wooden blocks on a bench.

(CAUTION

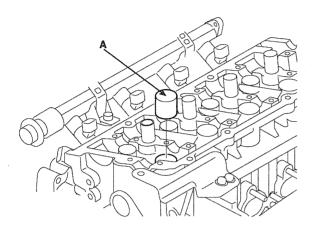
Be careful not to damage the contact surfaces of the cylinder head and cylinder block. E60D4118

DISASSEMBLY

NOTE

Identify HLA(Hydraulic Lash Adjuster), valves, valve springs as they are removed so that each item can be reinstalled in its original position.

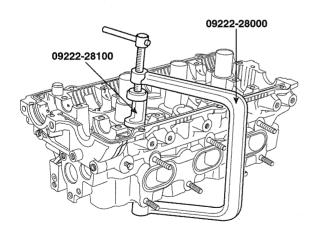
1. Remove HLAs(A).



ECKD217A

2. Remove valves.

1) Using SST(09222-28000, 09222-28100), compress the valve spring and remove retainer lock.



EDQF169A

- 2) Remove the spring retainer.
- 3) Remove the valve spring.

- 4) Remove the valve.
- 5) Using needle-nose pliers, remove the oil seal.
- 6) Using a magnetic finger, remove the spring seat.

INSPECTION E29C1FBF

CLENING

- Clean top surfaces of pistons and cylinder block.
 - Turn the crankshaft, and bring each piston to top dead center(TDC). Using a gasket scraper, remove all the carbon from the piston top surface.
 - Using a gasket scraper, remove all the gasket material from the cylinder block surface.
 - Using compressed air, blow carbon and oil from the bolt holes.
- Remove gasket material.

Using a gsket scraper, remove all the gasket material from the cylinder block contact surface.

CAUTION

Be careful not to scratch the cylinder block contact surface.

Clean combustion cambers. Using a wire brush, remove all the carbon from the combustion cambers.

/! CAUTION

Be careful not to scratch the cylinder block contact surface.

- Clean cylinder heads. Using a soft brush and solvent. throrghly clean the cylinder head.
- Clean valves.
 - Using a gasket scraper, chip off any carbon from the valve head.
 - 2) Using a wire brush throroghly clean the valve.

CYLINDER HEAD

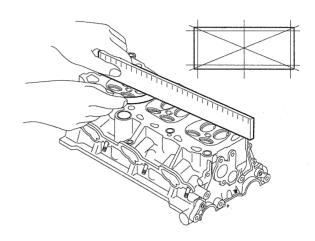
Inspect for flatness.

Using a precision straight edge and feeler gauge, measure the surface the contacting the cylinder block for warpage.

Flatness of cylinder head gasket surface

Standard: Less than 0.03mm(0.0012 in.)

Limit: 0.06 mm (0.0024 in.)



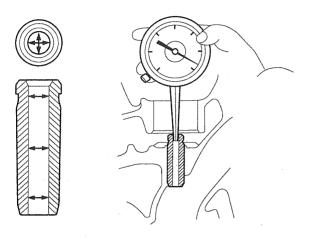
EDOF160A

Inspect for cracks.

Check the combustion chamber, intake ports, exhaust ports and cylinder block surface for cracks. If cracked, replace the cylinder head.

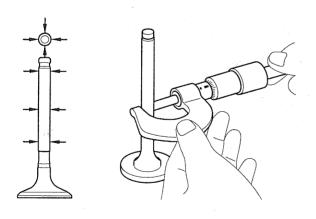
VALVE AND VALVE SPRING

- 1. Inspect valve stems and valve guides.
 - Using a caliper gauge, measure the inside diameter or the valve guide.
 Valve guide inside.



ECKD219A

2) Using a micrometer, measure the diameter of the valve stem.



ECKD220A

 Subtract the valve stem diameter measurement from the valve guide inside diameter measurement.

Valve stem-to-guide clearance

[Standard]

Intake: 0.02 ~ 0.05mm (0.0008 ~ 0.0020in.) Exhaust: 0.030 ~ 0.065mm (0.0012 ~ 0.0026in.)

[Limit]

Intake: 0.1mm (0.0040in.) Exhaust: 0.13mm (0.0051in.)

> If the clearance is greater than maximum, replace the valve and valve guide.

- 2. Inspect valves.
 - 1) Check the valve is ground to the correct valve face angle.
 - 2) Check that the surface of the valve for wear. If the valve face is worn, replace the valve.
 - Check the valve head margin thickness.
 If the margin thickness is less than minimum, replace the valve.

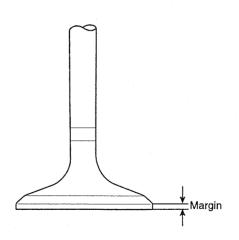
Margin

[Standard]

Intake: 1.0mm (0.0394in.) Exhaust: 1.3mm (0.0512in.)

[Limit]

Intake: 0.5mm (0.0197in.) Exhaust: 0.8mm (0.0315in.)



4) Check the surface of the valve stem tip for wear. If the valve stem tip is worn, replace the valve.

3. Inspect valve seats

Check the valve seat for evidence of overheating and improper contact with the valve face.

Replace the seat if necessary.

Before reconditioning the seat, check the valve guide for wear. If the valve guide is worn, replace it, then recondition the seat. Recondition the valve seat with a valve seat grinder or cutter. The valve seat contact width should be within specifications and centered on the valve face.

- 4. Inspect valve springs.
 - Using a steel square, measure the out-of-square of the valve spring.
 - Using a vernier calipers, measure the free length of the valve spring.

Valve spring

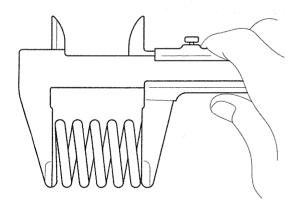
[Standard]

Free height: 42.5mm (1.6732in.) Load: 21kg/35mm (48.4kg/1.378mm)

[Limit]

Free height: -1.0mm (-0.0394 in.)

Out-of-square: 3°



ECKD222A

If the free length is not as specified, replace the valve spring.

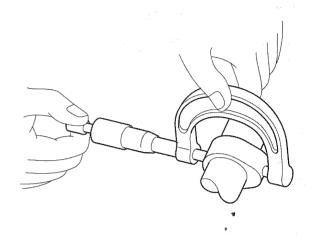
CAMSHAFT

Inspect cam lobes.
 Using a micrometer, measure the cam lobe height.

Cam height

[Standard value]

Intake: 43.95 ~44.15mm (1.7303 ~ 1.7382in.) Exhaust: 43.95 ~ 44.15mm (1.7303 ~ 1.7382in.)



ECKD223A

If the cam lobe height is less than minimum, replace the camshaft.

Inspect cam journals.
 Using a micrometer, measure the journal diameter.

Journal diameter

Standard value

25.964 ~ 25.980mm (1.0222 ~ 1.0228in.)

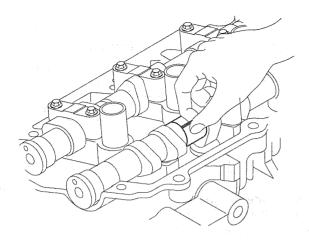
If the journal diameter is not as specified, check the oil clearance.

3. Inspect camshaft bearings.

Check that bearing for flaking and scoring. If the bearings are damaged, replace the bearing caps and cylinder head as a set.

- 4. Inspect camshaft journal oil clearance.
 - Clean the bearing caps and camshaft journals.
 - 2) Place the camshafts on the cylinder head.

3) Lay a strip of plastigage across each of the camshaft journal.



If the oil clearance is greater than maximum, replace the camshaft. If necessary, replace the bearing caps and cylinder head as a set.

- 7) Completely remove the plastigage.
- 8) Remove the camshafts.
- 5. Inspect camshaft end play.
 - 1) Install the camshafts. (See page EM 38)
 - 2) Using a dial indicator, measure the end play while moving the camshaft back and forth.

Camshaft end play

Standard value: 0.1 ~ 0.15mm (0.004 ~ 0.0059in.)

ECKD224A

4) Install the bearing caps. (See page EM - 38)

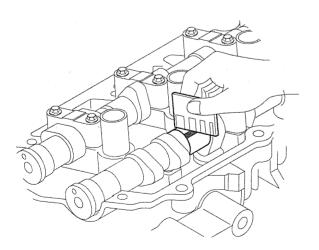
/ CAUTION

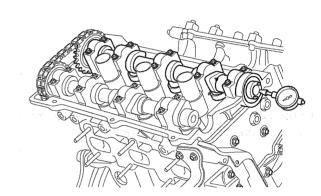
Do not turn the camshaft.

- 5) Remove the bearing caps.
- 6) Measure the plastigage at its widest point.

Bearing oil clearance

Standard value: 0.02 ~ 0.061mm (0.0008 ~ 0.0024in.) Limit: 0.1mm (0.0039in.)





EDQF053B

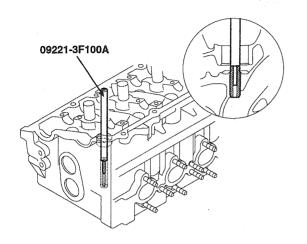
If the end play is greater than maximum, replace the camshaft. If necessary, replace the bearing caps and cylinder head as a set.

3) Remove the camshafts.

REPLACEMENT EED266F4

VALVE GUIDE

1. Using the SST(09221-3F100A), withdraw the old valve guide toward the bottom of cylinder head.



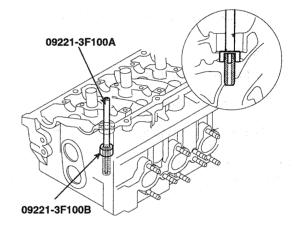
EDKD900A

Recondition the valve guide hole so that it can match the newly press-fitted oversize valve guide. Using the SST(09221-3F100A/B), press-fit the valve guide. The valve guide must be press-fitted from the upper side of the cylinder head. Keep in mind that the intake and exhaust valve guides are different in length.

Over size mm(in.)	Size mark	Oversize valve guide hole size mm(in.)
0.05 (0.002)	5	11.05 ~ 11.068 (0.4350 ~ 0.4357)
0.25 (0.010)	25	11.25 ~ 11.268 (0.4429 ~ 0.4436)
0.50 (0.020)	50	11.50 ~ 11.518 (0.4528 ~ 0.4535)

Valve guide length

Intake: 39mm (1.535in.) Exhaust: 43mm (1.693in.)



EDKD900B

- 4. After the valve guide is press-fitted, insert a new valve and check for proper stem -to-guide clearance.
- 5. After the valve guide is replaced, check that the valve is seated properly. Recondition the valve seats as necessary.

REASSEMBLY

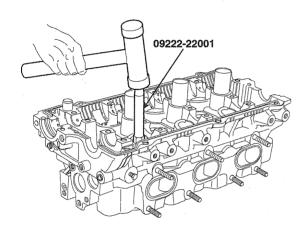
NOTE

Thoroughly clean all parts to be assembled. Before installing the parts, apply fresh engine oil to all sliding and rotating surfaces. Replace oil seals with new ones.

- Install valves.
 - 1) Install the spring seats.
 - 2) Using SST(09222-22001), push in a new oil seal.

W NOTE

Do not reuse old valve stem seals. Incorrect installation of the seal could result in oil leakage past the valve guides.

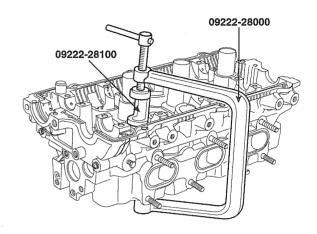


EDQF167A

3) Install the valve, valve spring and spring retainer.

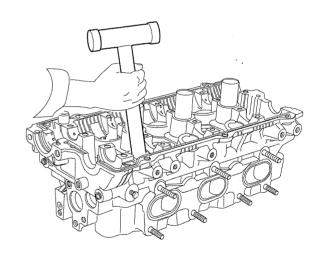
NOTE

Place valve springs so that the side coated with enamel faces toward the valve spring retainer and then installs the retainer. 4) Using the SST(09222-28000, 09222-28100), compress the spring and install the retainer locks. After installing the valves, ensure that the retainer locks are correctly in place before releasing the valve spring compressor.



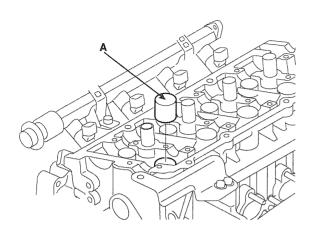
EDQF169A

5) Lightly tap the end of each valve stem two or three times with the wooden handle of a hammer to ensure proper seating of the valve and retainer lock.



EDQF168A

2. Instail HLAs.
Check that the HLA rotates smoothly by hand.

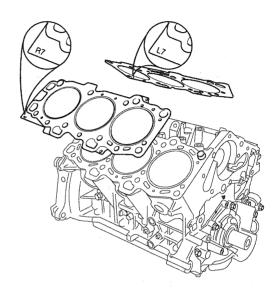


ECKD217A

INSTALLATION E1F59CAC

NOTE

- · Thoroughly clean all parts to be assembled.
- · Always use a new head and manifold gasket.
- The cylinder head gasket is a metal gasket. Take care not to bend it.
- Rotate the crankshaft, set the No.1 piston at TDC. (See page EM - 13).
- 1. Install the cylinder head gaskets on the cylinder block.



EDQF170A

NOTE

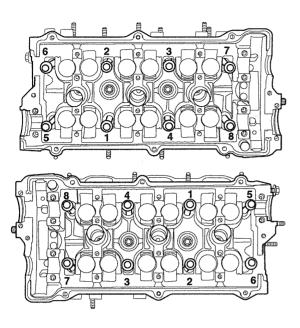
Be careful of the installation direction.

- 2. Place the cylinder head quietly in order not to damage the gasket with the bottom part of the end.
- 3. Install cylinder head bolts.

Tightening torque 25Nm (250kgf.cm, 18lbf.ft) + 60° + 45°

- 1) Apply a light coat if engine oil on the threads and under the heads of the cylinder head bolts.
- 2) Install the plate washer to the cylinder head bolt.

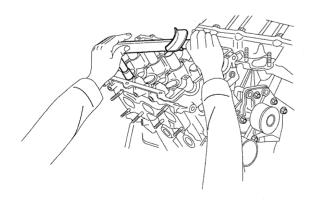
3) Install the uniformly tighten the cylinder head bolts on each cylinder head in servral passes and in the sequence shown, then repeat for the other side, as shown.



EDQF166B

If only of the cylinder head bolts dose not meet the torque specification, repeat the cylinder head bolt.

Torque: 25Nm (250kgf.cm, 18lbf.ft)



EDQF156A

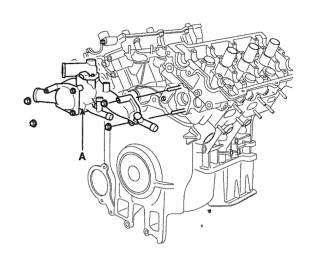
 Retighten the cylinder head bolts by 60° in the numerical order shown.

- Retighten the cylinder head bolts by 45° in the numerical order shown.
- 4. Install the water pipe and water temperature control assembly(A).

Tightening torque

Water temperature control

15 ~ 20Nm (150 ~ 200kgf.cm, 11 ~ 14lbf.ft)



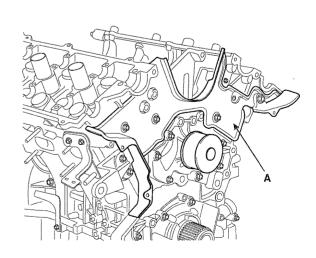
EDQF058A

5. Install the timing belt rear cover(A).

Tightening torque

Timing belt rear cover

10 ~ 12Nm (100 ~ 120kgf.cm, 7 ~ 9lbf.ft)



EDQF057A

2)

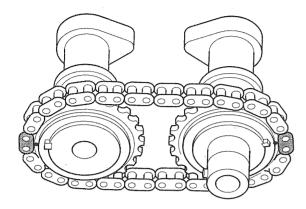
- Install the camshafts.
 - 1) Align the camshaft timing chain with the intake timing chain sprocket and exhaust timing chain sprocket as shown.

3) Install the camshaft bearing caps(A).

Tightening torque

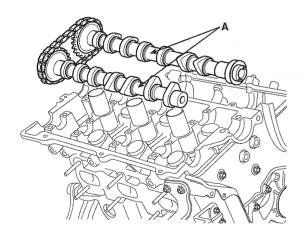
10 ~ 12Nm (100 ~ 120kgf.cm, 7 ~ 9lbf.ft)

14 ~ 16Nm (140 ~ 160kgf.cm, 10 ~ 12lbf.ft)

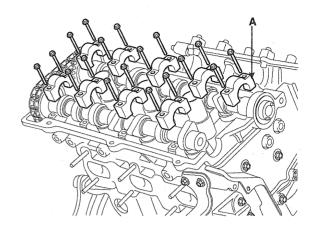


EDQF155A

Install the camshaft(A).



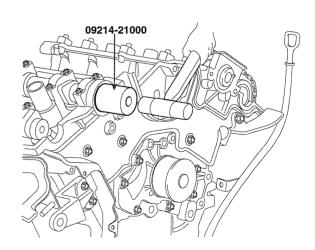
EDQF054A



EDQF053A

M NOTE

- Apply new engine oil to the thrust portion and journal of the camshafts.
- Apply a light coat of engine oil on the threads and under the heads of the bearing cap bolts.
- 7. Using the SST (09214-21000), install the camshaft bearing oil seal.



EDQF052A

8. Install the camshaft sprocket.

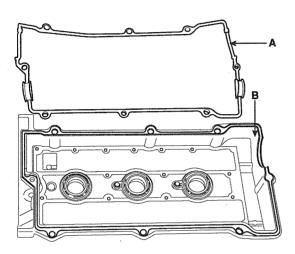
- 1) Temporarily install the camshaft sprocket bolts.
- 2) Hold the hexagonal head wrench portion of the camshaft with a wrench, and tighten the camshaft sprocket bolts.

Tightening torque

Camshaft sprocket bolt

90 ~ 110Nm (900 ~ 1100kgf.cm, 65 ~80lbf.ft)

- 9. Install semi-circular packing.
- 10. Install the cylinder head cover.
 - Install the cylinder head cover gasket(A) in the groove of the cylinder head cover(B).



EDOF171A

M NOTE

- Before installing the head cover gasket, thoroughly clean the head cover gasket and the groove.
- When installing, make sure the head cover gasket is seated securely in the corners of the recesses with no gap.
- 2) Apply liquid gasket to the head cover gasket at the corners of the recess.

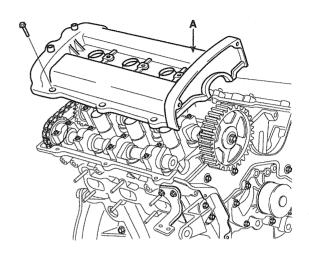
[NOTE

- Use liquid gasket, loctite No.5699.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- After assembly, wait at least 30 minutes before filling the engine with oil.

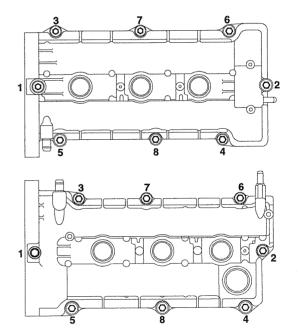
3) Install the cylinder head covers(A) with the 16bolts. Uniformly tighten the bolts in several passes.

Tightening torque

8 ~ 10Nm (80 ~ 100kgf.cm, 6 ~ 7.4lbf.ft)



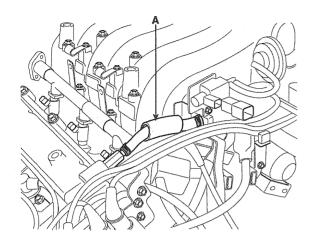
EDQF050A



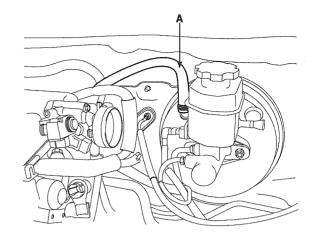
EDQF172A

- 11. Install the spark plug cable. (See EE group ignition)
- 12. Install the timing belt. (See page EM 17).
- 13. Install the exhaust manifold. (See page EM 98)

- 14. Install the power steering pump. (See ST group power steering pump)
- 15. Install the intake manifold. (See page EM 97)
- 16. Install the PCV hose(A).



18. Install the brake booster vacuum hose(A).

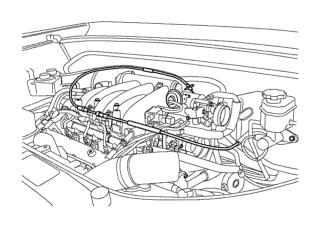


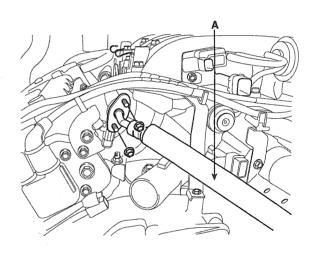
EDQF020A

- 19. Install the PCSV hose.
- 20. Install the fuel inlet hose(A).

EDQF014A

17. Install the accelerator cable.

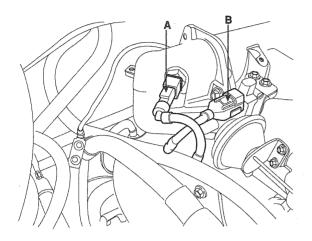




EDQF025A

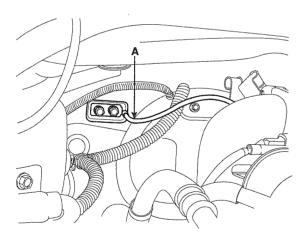
EDQF029A

- Install the engine wire harness connectors and wire harness clamps to the cylinder head and the intake manifold.
 - 1) VIS actuator connector(B).
 - IAT(Intake Air Temperature) sensor connector(A).



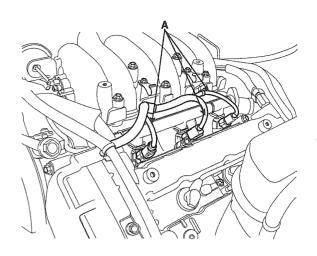
EDQF026A

3) Connect the ground cable(A) to the cowl panel.



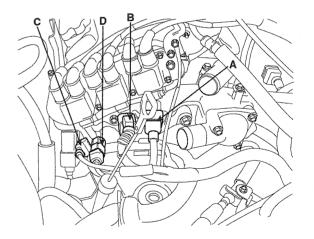
EDQF027A

4) Three fuel injector connectors(A).



EDQF028A

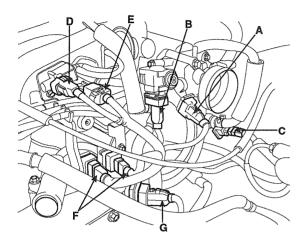
- 5) Oxygen sensor connector(D).
- 6) Crankshaft position sensor connector(C).
- 7) Ignition coil connector(B).
- 8) ECT sensor connector(A).



EDQF033A

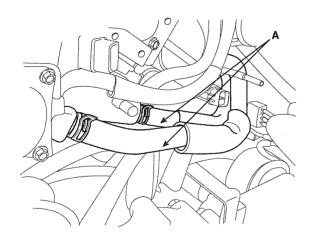
- 9) CMP(Camshaft position sensor) connector(G).
- 10) Knock sensor connector(F).
- 11) Injector connector(E).
- 12) VIS actuator connector(D).

- 13) PCSV(Purge Control Solenoid Valve) connector(C).
- 14) ISA connector(B).
- 15) TPS connector(A).



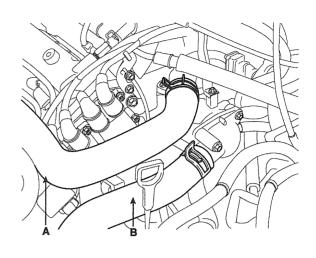
EDQF032A

22. Install the heater hoses(A).



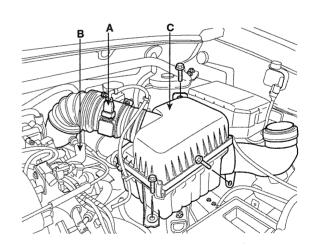
EDQF019A

23. Install the upper radiator hose(A) and lower radiator hose(B).



EDQF037A

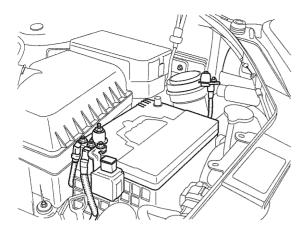
- 24. Install the intake air hose and air cleaner assembly.
 - 1) Install the intake air hose and air cleaner assembly(C).
 - 2) Connect the breather hose(B) from air cleaner hose.
 - 3) Connect the AFS connector(A).



EDQF039A

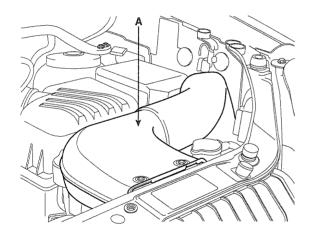
25. Install the engine cover.

26. Connect the negative terminal to the battery.



EDQF040A

27. Install the air duct(A).



EDQF041A

- 28. Fill with engine coolant.
- 29. Start the engine and check for leaks.
- 30. Recheck engine coolant level and oil level.

ENGINE AND TRANSAXLE ASSEMBLY

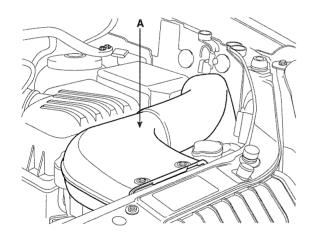
REMOVAL E4AD264D

/!\ CAUTION

- Use fender covers to avoid damaging painted surfaces.
- · To avoid damage, unplug the wiring connectors carefully while holding the connector portion.

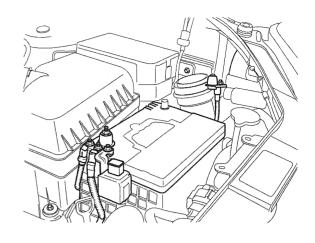
NOTE

- · Mark all wiring and hoses to avoid misconnec-
- · Inspection the timing belt before removing the cylinder head.
- Turn the crankshaft pulley so that the No. 1 piston is at top dead center. (See page EM - 13)
- Remove the air duct(A).



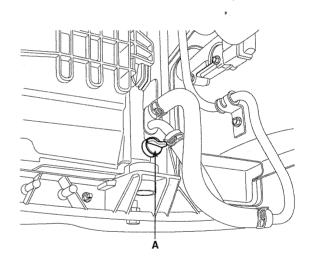
EDQF041A

Disconnect the neagative terminal from the battery.



EDOF040A

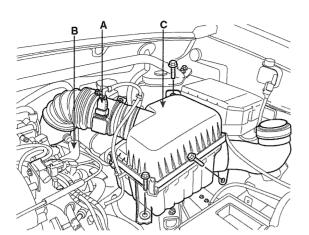
Drain the engine coolant. Remove the radiator cap to speed draining.



EDQF002A

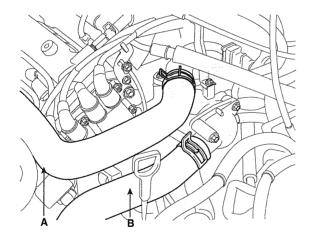
- Remove the engine cover.
- Remove the intake air hose and air cleaner assembly.
 - Disconnect the AFS connector(A).
 - Disconnect the breather hose(B) from air cleaner hose.

3) Remove the intake air hose and air cleaner assembly(C).



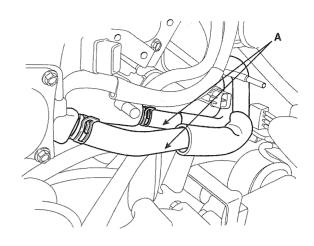
EDQF039A

6. Remove the upper radiator hose(A) and lower radiator hose(B).



EDQF037A

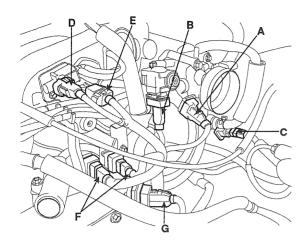
7. Remove the heater hoses(A).



EDQF019A

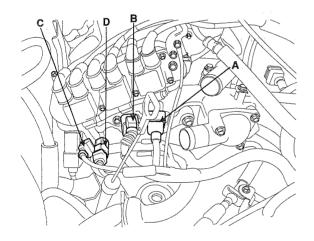
- 8. Remove the engine wire harness connectors and wire harness clamps from the cylinder head and the intake manifold.
 - 1) TPS(Throttle Position Sensor) connector(A).
 - 2) ISA(Idle Speed Actuator) connector(B).
 - 3) PCSV(Purge Control Solenoid Valve) connector(C).
 - 4) VIS actuator connector(D).
 - 5) Injector connector(E).
 - 6) Knock sensor connector(F).

7) CMP(Camshaft Position Sensor) connector(G).

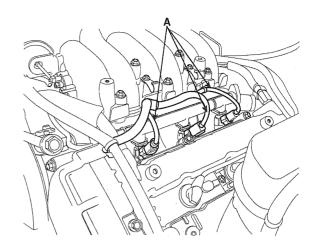


EDQF032A

- 8) ECT(Engine Coolant Temperature) sensor(A) connector.
- 9) Ignition coil connector(B).
- 10) Crankshaft position sensor connector(C).
- 11) Rear oxygen sensor connector(D).

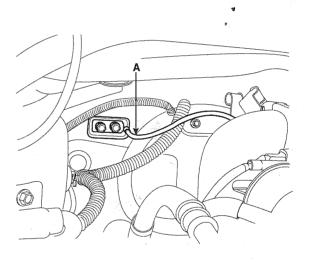


12) Three fuel injector connectors(A).



EDQF028A

13) Disconnect ground cable(A) from the cowl panel.

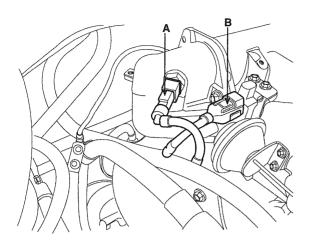


EDQF027A

14) Intake air temperature sensor connector(A).

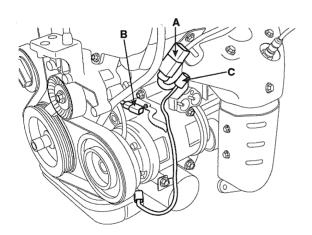
EDQF033A

15) VIS actuator connector(B).



EDQF026A

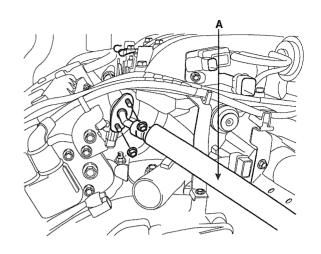
Disconnect front heated oxygen sensor(LH) connector(A), air compressure switch connector(B) and oil pressure sensor connector(C).



EDQF009A

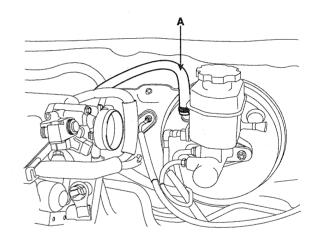
10. Disconnect rear heated oxygen sensor(RH) connector.

11. Remove the fuel inlet from delivery pipe(A).



EDQF025A

- 12. Remove the PCSV hose.
- 13. Remove the brake booster vacuum hose(A).



EDQF020A