

Component Procedures: Timing Cover

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Component Procedures: Timing Cover

Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Front Cover	12643744	17 - Front Cover	447.36	

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Camshaft & Timing > Front Cover, R&R	B	5.9	4.2
Remove & Replace	Crankshaft & Bearings > Front Crank Seal, R&R	B	1.3	0.0
Remove & Replace	Crankshaft & Bearings > Front Crank Seal, R&R?		0.3	
Replace	Front Cover	B	7.5	0.0

Engine Front Cover Replacement (Article 12171)

Special Tools

EN 46109 - Engine Front Cover Installation Guide Pins

For equivalent regional tools, refer to Special Tools .

Removal Procedure

- Remove the engine cover . Intake Manifold Cover Replacement - Rear .
- Remove the intake manifold . Refer to Intake Manifold Replacement .
- Remove the camshaft cover s. Refer to Camshaft Cover Replacement - Left Side and Camshaft Cover Replacement - Right Side .
- Drain the engine coolant. Refer to Cooling System Draining and Filling .
- Disconnect the purge vent hose from the water outlet .
- Remove the water outlet with the radiator hose and reposition aside. Refer to Radiator Outlet Hose

Replacement

- Remove the accessory drive belts. Refer to Drive Belt Replacement
- Remove the A/C compressor and power steering belt tensioner . Refer to Drive Belt Tensioner Replacement
- Remove the generator bracket with the generator and the belt tensioner. Refer to Generator Bracket Replacement .
- Remove the power steering fluid reservoir and reposition the power steering fluid reservoir in order to provide access. Refer to Power Steering Fluid Reservoir Bracket Replacement
- Remove the power steering pump upper front bolt and loosen the remaining two bolts.
- Remove the starter. Refer to Starter Replacement .
- Remove the crankshaft balancer . Refer to Crankshaft Balancer Removal .
- Remove the camshaft position sensors. Refer to Camshaft Position Sensor Replacement - Bank 2 (Left Side) Exhaust , Camshaft Position Sensor Replacement - Bank 2 (Left Side) Intake , Camshaft Position Sensor Replacement - Bank 1 (Right Side) Exhaust and Camshaft Position Sensor Replacement - Bank 1 (Right Side) Intake .
- Remove the camshaft position actuator solenoid valves from the front cover. Refer to Camshaft Position Actuator Valve Solenoid Replacement - Bank 1 (Right Side) Intake , Camshaft Position Actuator Valve Solenoid Replacement - Bank 1 (Right Side) Exhaust , Camshaft Position Actuator Valve Solenoid Replacement - Bank 2 (Left Side) Intake , and Camshaft Position Actuator Valve Solenoid Replacement - Bank 2 (Left Side) Exhaust .
- Remove the engine front cover with the water pump . Refer to Engine Front Cover Removal . Click for full-size image
- Disassemble the engine front cover. Refer to Engine Front Cover Disassemble .
- Carefully clean the engine front cover sealing surfaces. Refer to Engine Front Cover Cleaning and Inspection .
- Carefully clean the engine front cover sealing surfaces. Refer to Engine Front Cover Cleaning and Inspection .

- Use compressed air in order to remove any engine coolant from the engine cooling passages and from the top of the oil pan scraper (windage tray).

Installation Procedure

- Assemble the engine front cover. Refer to Engine Front Cover Assemble .
- Use the EN 46109 - engine front cover installation guide pins in order to install the engine front cover. Refer to Engine Front Cover Installation . Click for full-size image

- Install the camshaft position actuator solenoid valves to the front cover. Refer to Camshaft Position Actuator Valve Solenoid Replacement - Bank 1 (Right Side) Intake , Camshaft Position Actuator Valve Solenoid Replacement - Bank 1 (Right Side) Exhaust , Camshaft Position Actuator Valve Solenoid Replacement - Bank 2 (Left Side) Intake , and Camshaft Position Actuator Valve Solenoid Replacement - Bank 2 (Left Side) Exhaust .
- Install the camshaft position sensors. Refer to Camshaft Position Sensor Replacement - Bank 2 (Left Side) Exhaust , Camshaft Position Sensor Replacement - Bank 2 (Left Side) Intake , Camshaft Position Sensor Replacement - Bank 1 (Right Side) Exhaust and Camshaft Position Sensor Replacement - Bank 1 (Right Side) Intake .
- Install the crankshaft balancer. Refer to Crankshaft Balancer Installation .
- Install the starter. Refer to Starter Replacement .
- Install the power steering pump.
- Install the power steering pump pulley.
- Install the power steering fluid reservoir. Refer to Power Steering Fluid Reservoir Replacement .
- Install the generator bracket with the generator and the belt tensioner. Refer to Generator Bracket Replacement .
- Install the A/C compressor and power steering belt tensioner.
- Install the accessory drive belt s.
- Install the water outlet.
- Install the purge vent hose to the water outlet.
- Fill the cooling system . Refer to Cooling System Draining and Filling .
- Install the camshaft covers. Refer to Camshaft Cover Replacement - Left Side and Camshaft Cover Replacement - Right Side .
- Install the intake manifold. Refer to Intake Manifold Replacement .
- Install the engine cover. Refer to Intake Manifold Cover Replacement - Rear .
- Fill the cooling system. Refer to Cooling System Draining and Filling .