

1993 Ford Festiva GL

ENGINE OVERHAUL 1993 FORD MOTOR CO. ENGINES 1.3L & 1.6L 4-Cylinder

ENGINE OVERHAUL

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ENGINE IDENTIFICATION

NOTE: For engine repair procedures not covered in this article, see **ENGINE OVERHAUL PROCEDURES - GENERAL INFORMATION** article in the **GENERAL INFORMATION** section.

Engine can be identified by Vehicle Identification Number (VIN) on metal tab attached to instrument panel. Tab is close to windshield on driver's side and is visible through windshield. VIN has 17 characters. The 8th character identifies engine.

ENGINE IDENTIFICATION CODES

Application	VIN Code
Capri	
1.6L DOHC PFI	Z
1.6L DOHC PFI Turbo	6
Festiva	
1.3L SOHC PFI	H

ADJUSTMENTS

VALVE ARRANGEMENT

Intake Manifold Side - Intake valves.

Exhaust Manifold Side - Exhaust valves.

VALVE CLEARANCE ADJUSTMENT

Hydraulic lifters are used. Adjustment is NOT possible or necessary.

REMOVAL & INSTALLATION

NOTE: For reassembly reference, label all electrical connectors, vacuum hoses and fuel lines before removal. Also place mating marks on engine hood and other major assemblies before removal.

FUEL PRESSURE RELEASE

Remove rear seat. Remove fuel pump access panel. Disconnect fuel pump electrical connector. Start engine and allow to idle until engine dies. Turn ignition off.

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ENGINE

NOTE: When removing engine mounts, mark and note location and position to ensure proper installation. Engine and transaxle are removed as an assembly.

Removal (1.3L)

1. Remove battery and battery tray. Index hood to hinge and remove hood. Drain coolant. Drain engine oil and transaxle fluid. Disconnect vane airflow meter connector, vane airflow meter and hose. Discharge A/C system using approved refrigerant recovery/recycling equipment.
2. Remove oil dipstick, cooling fan and radiator assembly. Disconnect accelerator cable from mounting bracket and throttle lever. Disconnect speedometer cable at transaxle. Mark and disconnect fuel lines. Plug fuel lines. Remove heater hoses. Remove brake booster vacuum hose. Disconnect transaxle vacuum hose.
3. Disconnect all engine harness connectors and grounds. Disconnect A/C lines at compressor and electrical connector. Remove and plug power steering lines. Disconnect distributor lead at ignition coil.
4. On A/T models, remove shift lever-to-manual shaft assembly nut. Remove shift cable from transaxle. On M/T models, disconnect clutch control cable. On all models, loosen front wheel bolts. Raise vehicle and remove front wheels.
5. Remove stabilizer mounting nuts and brackets. Remove lower arm clamp bolts and nuts. Pull lower arms downward, separating lower arms from knuckles. Separate half-shafts and install Differential Plugs (T87C-7025-C) between differential side gears. See FWD AXLE SHAFTS article in DRIVE AXLES.
6. On M/T models, disconnect shift control rod. Remove stabilizer bar from transaxle. On all models, remove catalytic converter inlet pipe. Support engine assembly with hoist. Remove front and rear engine mount-to-crossmember bolts. Remove front and rear engine mount nuts and remove crossmember.
7. Lower vehicle and remove side engine mount nuts and bolts. Remove engine/transaxle assembly. Remove gusset plates. Remove starter and flywheel cover. Remove torque converter bolts on automatic transaxle. Remove engine-to-transaxle bolts. Separate transaxle from engine.

Installation (1.3L)

1. Install transaxle to engine in reverse order of removal. Attach hoist to engine/transaxle assembly and position in vehicle. Support engine in chassis and install engine mount bolts. Raise vehicle and install front engine mount nut. Tighten nuts to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article.
2. Position crossmember onto mounts and chassis. Tighten rear nut. Install mount-to-crossmember nuts and tighten. Remove differential plugs and install half-shafts. To complete installation, reinstall hoses and electrical connectors. Tighten all bolts/nuts to specifications. See **TORQUE SPECIFICATIONS TABLE** at the end of this article. Refill engine, transaxle and power steering fluids to proper levels. Charge A/C system. Start engine and check for leaks and proper fluid levels.

Removal (1.6L)

1. Relieve fuel pressure. See **FUEL PRESSURE RELEASE** under REMOVAL & INSTALLATION. Discharge A/C system using approved refrigerant recovery/recycling equipment. Disconnect and remove

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battery, battery tray and battery tray support bracket.

2. Release wiring harness retaining straps from battery support tray. Disconnect windshield washer supply hose between fluid reservoir and hood. Mark hinge locations and remove hood.
3. Disconnect intake air tube and wiring to ignition coil and vane airflow meter. Remove air cleaner/vane airflow meter assembly. Remove air cleaner assembly support brackets. Disconnect intercooler hoses from turbocharger (if equipped).
4. Drain engine coolant and remove radiator. Disconnect accelerator cable, and remove retaining bracket from cam cover. Position cable to one side.
5. Disconnect and plug fuel lines at fuel filter and pressure regulator. Disconnect power brake booster manifold vacuum hose from manifold. Disconnect heater hoses at heater core tubes. Label and remove vacuum hoses located at throttle body.
6. On turbocharged models, disconnect clutch cable and remove support bracket and cable from transmission. On non-turbo models, disconnect clutch slave hydraulic line. On A/T models, remove transaxle cooler lines.
7. On all models, disconnect starter wiring at starter. Remove harness from locating strap on bracket. Disconnect alternator wiring. Disconnect wiring from engine coolant sensors located on rear of engine block. Remove ground connection at bracket on thermostat cover. Disconnect oxygen sensor wire, main wiring harness connector, TPS connector (turbocharged only), knock sensor connector, distributor wiring and transaxle wiring. Disconnect ground wire and strap at front of engine, and reinstall lifting eye.
8. Remove engine oil dipstick and retaining clip. Remove power steering pump from mounting bracket. Remove power steering pump mounting bracket. With hoses attached, position pump aside. Remove upper A/C compressor bolts (if equipped).
9. Raise vehicle on hoist. Drain engine oil and cooling system. On vehicles with air conditioning, remove lower A/C compressor mounting bolts, and position compressor out of way.

CAUTION: DO NOT allow A/C compressor to hang by hoses. Tie up A/C compressor with mechanic's wire.

10. Remove front wheels and tires. Remove front ball joints-to-steering knuckle retaining bolts. Remove splash guards. Drain transmission oil and remove half-shafts from differential. Remove front exhaust pipe bracket located on lower side of engine. Disconnect front exhaust pipe from exhaust manifold, or turbocharger (if equipped).
11. Remove frame support bar-to-engine support bolt. Loosen right control arm bolt, and pivot support bar downward. Disengage rubber exhaust hangers located directly behind catalytic converter. Allow exhaust system to hang down 6 inches, and support system with mechanic's wire. Unbolt shift linkage and stabilizer bar at transaxle. Remove nuts from front and rear engine mounts, and lower vehicle.
12. Attach hoist to lift eyes located on cylinder head, and support engine with hoist. Remove right engine mount through-bolt. Raise engine off mounts and slightly pivot engine/transaxle assembly. Disconnect oil pressure sensor and remove starter/alternator wiring harness from engine. Carefully lift engine/transaxle assembly, turning assembly while raising to clear brake master cylinder, shift linkage universal joint, radiator support and A/C lines (if equipped).
13. Remove intake manifold support bracket. Remove gusset plate(s) (if equipped). Remove starter. Remove transaxle-to-engine retaining bolts. Identify bolts to ensure correct installation. Separate transaxle from engine. On manual transaxle, remove pressure plate, clutch disc and flywheel. On automatic transaxle,

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remove flexplate.

Installation (1.6L)

1. Install transaxle to engine in reverse order of removal. Attach hoist to engine/transaxle assembly and position assembly in vehicle. Before engine contacts mounts, route starter, alternator and oil pressure sensor wiring, and connect oil pressure sensor. Lower engine until front mount seats on crossmember. Install right engine mount through-bolt. **DO NOT** tighten through-bolt at this time.
2. Remove hoist. Raise vehicle and support with jackstands. Align rear engine mount to crossmember, and install retaining nuts to front and rear engine mounts. Tighten nuts to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article.
3. On manual transaxles, connect shift coupling and stabilizer. On automatic transaxles, connect shift linkage and oil cooler lines. Tighten linkage retaining bolt, shift cable pivot and oil cooler hose clamps to specification. On all models, connect front exhaust pipe to manifold (or turbocharger). Install exhaust pipe to support bracket. Tighten bolts and manifold (or turbocharger) to specification. Attach rubber exhaust hangers. Position cross brace. Tighten retaining nut and bolt and right control arm front bolt.
4. Install drive axles. Install ball joint retaining bolts and tighten to specification. Mount A/C compressor to engine (if equipped). Tighten lower retaining bolts to specification. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**. Install splash guards. Install tire and wheel assemblies. Tighten retaining nuts to specification.
5. Lower vehicle. Install upper A/C compressor bolts (if equipped). Tighten bolts to specification. Tighten right engine mount through-bolt to specification. Connect alternator wiring.
6. Position power steering pump bracket on stud. Lower pump into engine compartment. Install power steering pump bracket retaining bolts and nut. Install power steering pump and belt. Tighten adjustment nut and pivot bolt to specification. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**.
7. Install engine oil dipstick and retaining clip. Install ground strap and ground wire to cylinder head. Install clutch cable (if equipped). Connect clutch slave cylinder hydraulic line (if equipped). Connect transmission electrical connectors. Connect fuel lines to fuel filter and pressure regulator. Install intake air tube to throttle body.
8. Install intercooler hoses on turbocharged models. Install air cleaner assembly brackets. Install air cleaner assembly with airflow meter attached. Install intake air tube. Install coil and airflow meter connectors. Connect coolant crankcase and air by-pass hoses. Install vacuum hoses as noted in disassembly.
9. Connect accelerator cable. Install retaining bracket. Install power brake booster hose. Remove speedometer cable from transaxle. Fill transaxle to specification. See **CAPACITIES** in **SERVICE & ADJUSTMENT SPECIFICATIONS** article in **ENGINE PERFORMANCE**. Install speedometer cable. Connect speedometer cable connector. Fill engine oil to capacity.
10. Install radiator/fan assembly. Tighten bracket retaining bolts to specification. Connect coolant hoses and fan electrical connector. Fill coolant to specification.
11. Install hood and connect washer hose. Install battery tray support, battery tray, battery and battery hold-down. Connect negative battery cable. Evacuate and charge air conditioning system (if equipped). Road test vehicle and inspect for leaks.

INTAKE MANIFOLD

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Removal (1.3L)

Disconnect negative battery cable. Drain cooling system. Remove air cleaner. Remove intake manifold bracket. Disconnect throttle cable. Mark and disconnect vacuum hoses, fuel hoses and wiring. Remove intake manifold bolts. Remove intake manifold and gasket.

Installation (1.3L)

Clean all gasket mating surfaces. Ensure surface is free of burrs, scratches and cracks. Replace all gaskets. Position gasket and manifold to cylinder head. Install bolts and tighten to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article. Reinstall marked hoses and wires. Connect accelerator cable and battery cable. Refill cooling system.

Removal (1.6L)

1. Disconnect negative battery cable. Relieve fuel pressure. See **FUEL PRESSURE RELEASE** under REMOVAL & INSTALLATION. Drain cooling system. Disconnect intercooler tube and/or air intake tube. Disconnect air by-pass hoses. Disconnect main engine harness and TPS connectors. Disconnect vacuum hoses from throttle body.
2. Disconnect fuel lines from fuel filter and pressure regulator. Disconnect throttle cable. Disconnect hoses from By-Pass Air Control (BAC) valve. Remove BAC valve retaining nut and bolt. Remove intake manifold retaining nuts and bolts from support bracket and cylinder head. Remove intake manifold and throttle body assembly.

Installation (1.6L)

1. Install new intake manifold gasket, ensuring coolant passage openings align with openings in cylinder head and manifold. Install intake manifold. Tighten retaining nut and bolts and support bracket bolts to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article.
2. Install BAC valve and connect air hoses. Connect throttle cable. Connect fuel lines to fuel filters and pressure regulator. Connect main engine harness connector and TPS connector. Connect vacuum lines to throttle body. Install intake air tube. Connect intercooler tube and/or intake air tube. Connect air by-pass hoses. Fill cooling system. Connect negative battery cable. Start engine and check for fluid leaks and correct operation.

EXHAUST MANIFOLD

Removal (1.3L)

1. Raise vehicle. Remove catalytic converter inlet pipe at exhaust manifold. Remove pulse air tube nuts at inlet pipe. Remove inlet pipe support bracket bolts. Lower vehicle. Remove air intake duct. Remove exhaust manifold heat shroud bolts and remove shroud.
2. Disconnect oxygen sensor connector. Remove exhaust manifold nuts and remove exhaust manifold. Remove gasket from inlet pipe and cylinder head.

Installation (1.3L)

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Position new gasket on cylinder head and inlet pipe. Install exhaust manifold and nuts. To complete installation, reverse removal procedure. Tighten all bolts and nuts to specification. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**.

Removal (1.6L Non-Turbo)

Remove intake air tube. Remove front exhaust pipe-to-exhaust manifold retaining nuts. Remove exhaust support bracket (if equipped). Remove heat shield. Disconnect O2 sensor electrical connector. Remove exhaust manifold.

Installation (1.6L Non-Turbo)

Install exhaust manifold gaskets. Install heavier gasket first. Install exhaust manifold and tighten retaining nuts to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article. Connect O2 sensor electrical connector. Install manifold heat shield. Install intake air tube. Connect front exhaust pipe to intake manifold and tighten retaining nuts to specification. Install exhaust support bracket, if removed, and tighten engine mount bolt to specification. Start engine and check for leaks.

Removal (1.6L Turbo)

1. Disconnect negative battery cable. Drain cooling system. Remove throttle body air intake tube. Disconnect intercooler hose from turbocharger assembly, and position both intercooler hoses aside. Remove O2 sensor connector from its retaining clip, and disconnect O2 sensor. Remove lower heat shield and then upper heat shield. Remove turbocharger side heat shield.

NOTE: Feed O2 sensor wire and guide through upper heat shield.

2. Remove power steering pump (leave hoses attached) and lay aside. Disconnect lower radiator hose from water pump. Position power steering pump to access mounting bracket retaining bolts and nut. Remove both bolts and one nut, and remove power steering pump bracket from engine. Remove 2 screws retaining air cleaner duct tube, loosen clamp at turbocharger and position duct tube aside. Disconnect coolant return hose at turbocharger. Remove bolt and brass sealing washers from oil supply line at engine block.
3. Raise vehicle. Remove retaining nuts and washers from exhaust pipe flange. Remove 2 bolts retaining exhaust hangers to engine block. Slide off 2 rubber exhaust hangers at catalytic converter. Pull exhaust pipe downward and to left side of vehicle. Disconnect oil return hose at turbocharger. Disconnect coolant return hose at turbocharger. Remove 2 retaining bolts from turbocharger support bracket. Remove 2 bolts retaining coolant by-pass tube outlet to water pump. Lower vehicle.
4. Loosen retaining clamp bolt on coolant by-pass tube at rear of cylinder head. Remove 11 retaining nuts from exhaust manifold. Pull coolant by-pass tube bracket from exhaust stud, and position tube out of way. Grasp manifold, pull off studs and move assembly slightly to right side of engine compartment to clear cooling fan. Remove assembly from vehicle.
5. Working on bench, remove 4 nuts retaining turbocharger to exhaust manifold, separate assembly and discard gasket.

NOTE: When reinstalling turbocharger, thoroughly remove all gaskets and sealant. Use new gaskets. Add .85 oz. (25 cc) of engine oil in oil passage of turbocharger.

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Turbocharger-to-exhaust manifold mounting nuts are of special quality. Ensure correct nuts are used.

Installation (1.6L Turbo)

1. Position new gasket on exhaust manifold, and install turbocharger onto studs. Install 4 retaining nuts and tighten to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article.
2. Remove oil supply line from turbocharger. Position new (2-piece) exhaust gasket on cylinder head with heavy gasket installed first. Carefully position turbocharger assembly in engine compartment and slide exhaust manifold on studs. Position heater tube bracket onto exhaust stud. Install 11 retaining nuts onto exhaust manifold and tighten to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article. Tighten heater tube clamp bolt securely.
3. Raise vehicle. Position new gasket and install 2 retaining bolts on heater tube outlet. Install 2 retaining bolts into turbocharger support bracket and tighten bolts to specification.
4. Connect coolant return hose. Connect oil return hose and secure with clamp. Position exhaust pipe onto turbocharger, and start nuts and washers. Install 2 retaining bolts on exhaust hanger at engine. Slide on 2 rubber exhaust hangers at catalytic converter. Tighten exhaust pipe retaining nuts to specification. Lower vehicle.
5. Install retaining bolt and brass washers on oil supply line, carefully position oil line into vehicle and hand-start bolt into engine block. Connect and finger tighten oil line to turbocharger. Tighten oil line bolt and oil supply line on turbocharger to specification.

NOTE: Ensure one brass washer is positioned on each side of oil line fitting.

6. Connect coolant supply hose. Position air cleaner duct tube on turbocharger and tighten clamp. Install 2 screws retaining air cleaner duct tube. Position power steering pump bracket on engine, and install 2 retaining bolts and one retaining nut. Tighten to specification. Position power steering pump on mounting bracket, and install though bolt and adjuster. Connect lower radiator hose. Install power steering belt. Position upper heat shield and install 2 retaining bolts finger tight.

NOTE: Feed O2 sensor wire through upper heat shield. Install wire retainer under left bolt.

7. Position lower heat shield and install 3 retaining bolts finger tight. Tighten all heat shield bolts to specification. Connect O2 sensor and install connector into its retaining clip. Position intercooler hose on turbocharger and secure with clamp. Install throttle body air intake tube. Connect negative battery cable. Refill cooling system.

NOTE: If turbocharger was replaced, disconnect ignition coil and crank engine for 20 seconds. Connect ignition coil, start and run engine at idle for 30 seconds, and check for leaks.

CYLINDER HEAD

Removal (1.3L)

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1. Disconnect battery ground cable. Mark and disconnect fuel lines at fuel pump. Remove accessory belts, water pump pulley, crankshaft pulley, timing belt covers, timing belt tensioner, timing belt, valve cover and exhaust and intake manifolds. Drain cooling system.

NOTE: If original timing belt is being reused, mark direction of rotation for installation reference.

2. Mark and remove electrical connectors and vacuum hoses. Remove spark plug wires from spark plugs, and remove spark plugs. Remove distributor cap. Disconnect vacuum hoses and distributor wiring.
3. Note rotor position and index mark distributor-to-engine position. Remove hold-down bolt and distributor assembly. Remove engine ground strap. Remove front and rear engine lifting hooks. Remove upper radiator hose, by-pass hose and bracket.
4. Remove bolts retaining rocker arm shaft. Remove rocker arm assemblies. Remove cylinder head bolts. Remove head and gasket.

Inspection (1.3L)

1. Thoroughly clean and check gasket mating surface of cylinder head and block. Check cylinder head for cracks, nicks, burrs or damage. Using a straightedge and feeler gauge, check warpage over entire gasket area. Ensure cylinder head and/or block warpage does not exceed .006" (.15 mm).
2. If warpage exceeds .006" (.15 mm), machine cylinder head and/or block gasket surface. Maximum machining allowed is .008" (.20 mm). If more machining is required, replace block and/or cylinder head.

Installation (1.3L)

1. Place new head gasket properly on block. Carefully place cylinder head in position on block. Install head bolts. Tighten bolts in sequence and in 2 steps. See **Fig. 1**. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**.
2. While tightening rocker arm shaft, slide shaft springs away from retaining bolt to prevent pinching springs. Tighten rocker arm shaft bolts in sequence and to specification. See **Fig. 5**. Install top radiator and by-pass hoses and bracket. Install wire harness connectors and both engine lift hangers. Install engine ground wire and distributor. Tighten all bolts/nuts to specification. Fill all fluids to proper levels.

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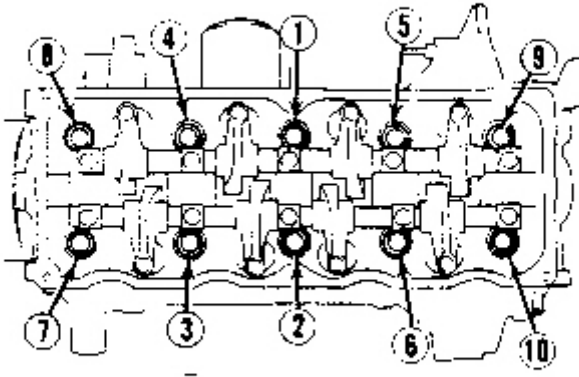


Fig. 1: Installing Cylinder Head Bolts (1.3L)
Courtesy of FORD MOTOR CO.

Removal (1.6L)

1. Release fuel pressure. Drain cooling system. Disconnect negative battery cable. Remove intake air tube from throttle body. Disconnect air by-pass hoses. Remove spark plug wires and retainers. Remove intake air tube from air cleaner assembly. Disconnect coolant hose from thermostat cover. Disconnect vacuum hoses and coolant hoses from throttle body and intake manifold.
2. Disconnect throttle cable and remove retaining brackets and cable. Disconnect fuel lines at fuel filter and pressure regulator. Disconnect main harness connector. Disconnect O2 sensor connector and remove ground connection retaining screw at bracket. Disconnect intercooler tubes from turbocharger (if equipped). Remove ground wire and strap retaining bolts at front sides of cylinder head.
3. Remove timing belt covers and timing belt. On turbocharged models, remove exhaust manifold and turbocharger as an assembly. On non-turbo models, disconnect front exhaust pipe from exhaust manifold. Remove intake manifold support upper retaining bolts.
4. On all models, remove cylinder head cover. Remove cylinder head and intake manifold as an assembly. Separate intake manifold from cylinder head (if required).

Installation (1.6L)

1. Position new (2-piece) exhaust gasket on cylinder head with heavy gasket installed first. Install exhaust manifold to head. Install intake manifold to head using new gasket. Tighten all manifold nuts to specification. See [TORQUE SPECIFICATIONS TABLE](#) at the end of this article.

NOTE: Ensure coolant passage openings in gasket align with manifold and cylinder head.

2. Ensure gasket surfaces of head and block are clean of old gasket and sealant. Place new head gasket on cylinder block. Carefully place cylinder head on block. Tighten cylinder head in sequence and in two stages to correct specification. See **Fig. 2**.

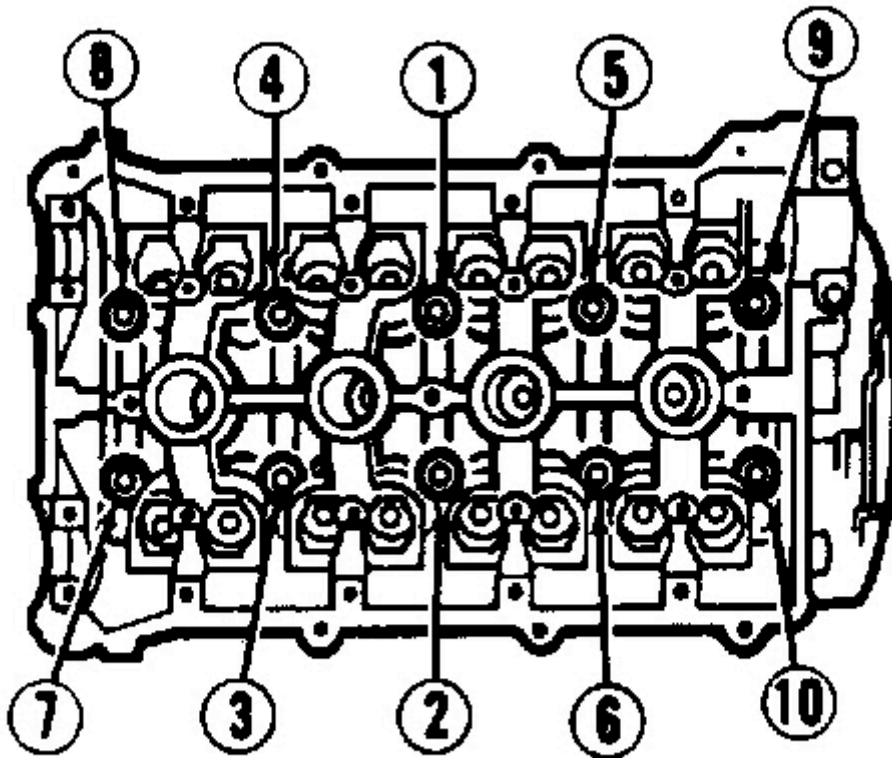


Fig. 2: Installing Cylinder Head Bolts (1.6L)
Courtesy of FORD MOTOR CO.

3. Install intake manifold support upper retaining bolts and tighten to specification. See **TORQUE SPECIFICATIONS TABLE** at the end of this article. Install timing belt and covers. Install cam cover. On non-turbo engines, connect front exhaust pipe to exhaust manifold. Tighten nuts to specification.
4. On turbocharged engines, install exhaust manifold and turbocharger assembly. On all models, install ground wire and strap to cylinder head with retaining bolts. Connect intercooler tubes (if equipped). Connect O₂ sensor connector, and install ground wires to bracket on cylinder head with retaining screw. Connect main engine harness connector. Connect fuel lines to fuel filter and pressure regulator. Install throttle cable and retaining brackets.
5. Install coolant hoses and vacuum lines to intake manifold and throttle body. Install coolant hose to thermostat cover. Install intake air tube to air cleaner. Install spark plug wires and retainers. Install intake

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air tube to throttle body, and connect by-pass hoses. Fill cooling system. Connect negative battery cable. Start engine, check for leaks and system operation.

FRONT COVER & OIL SEAL

Removal & Installation

Front cover is the housing for the oil pump. See **OIL PUMP** under ENGINE OILING.

TIMING BELT COVER

Removal & Installation (1.3L)

Remove accessory belts. Remove water pump pulley. Remove crankshaft damper. Remove bolts retaining upper and lower cover halves to engine front. Remove both covers. To install, reverse removal procedure. Tighten nuts and drive belts to specification. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**.

Removal & Installation (1.6L)

Raise vehicle on hoist. Remove RF tire and wheel assembly. Remove right front splash guard. Lower vehicle. Remove spark plugs and set No. 1 cylinder to TDC of compression stroke. Remove accessory drive belts. Remove oil dipstick. Remove water pump pulley. Remove crankshaft pulley, damper and baffle plate. Remove upper timing belt cover. Remove center and lower timing belt covers. To install, reverse removal procedure. Tighten nuts and bolts to specification. See, at the end of this article, **TORQUE SPECIFICATIONS TABLE**.

TIMING BELT

NOTE: Always rotate engine in direction of normal operation. Rotating crankshaft backwards may cause belt to jump timing.

Removal (1.3L)

Remove accessory belts, water pump pulley, crankshaft damper and upper and lower timing belt covers. Mark timing belt direction of rotation for installation reference. Remove timing belt tensioner pulley bolt. Remove tensioner pulley, spring and spring cover. Remove timing belt.

CAUTION: Never twist, turn inside out, or bend timing belt. Keep belt away from grease and oil.

Installation (1.3L)

1. Ensure timing belt and sprockets are clean and not worn or damaged. Align crankshaft and camshaft timing marks. See **Fig. 3**. Ensure No. 1 cylinder is at TDC of compression stroke.
2. Position belt on camshaft sprocket. Install timing belt tensioner spring, spring cover and pulley. Tighten tensioner pulley bolt to specification. To complete installation, reverse removal procedure. Tighten all