

Automotive Service Technician Program Competency Profile - Engine Repair-A1

Student Information

Last Name
First Name
Telephone

Directions: Evaluate the student according to the rating scale to indicate the degree of competency. The rating for each competency should indicate employability readiness, rather than the grades given in class.

2012 NATEF Standards for Automotive Service Technology

Student Rating Scale:

- 1 = NO EXPOSURE - no experience or knowledge in this area
- 2 = KNOWLEDGE - can recall, explain, or has been exposed to this information
- 3 = LIMITED SKILLED - requires instruction and close supervision
- 4 = MODERATELY SKILLED - can perform job completely with limited supervision
- 5 = SKILLED - can work independently with no supervision

Score	<i>A. General: Engine Diagnosis; Removal and Reinstallation (R & R)</i>	Date Completed
	1. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. P1	
	2. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. P1	
	3. Verify operation of the instrument panel engine warning indicators. P1	
	4. Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. P1	
	5. Install engine covers using gaskets, seals, and sealers as required. P1	
	6. Remove and replace timing belt; verify correct camshaft timing. P1	
	7. Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert. P1	
	8. Inspect, remove and replace engine mounts. P2	
	9. Identify hybrid vehicle internal combustion engine service precautions. P3	

B. Cylinder Head and Valve Train Diagnosis and Repair

	1. Remove cylinder head; inspect gasket condition; install cylinder head and gasket; tighten according to manufacturer's specifications and procedures. P1	
	2. Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition. P1	
	3. Inspect pushrods, rocker arms, rocker arm pivots and shafts for wear, bending, cracks, looseness, and blocked oil passages (orifices); determine necessary action. P2	
	4. Adjust valves (mechanical or hydraulic lifters). P1	
	5. Inspect and replace camshaft and drive belt/chain; includes checking drive gear wear and backlash, end play, sprocket and chain wear, overhead cam drive sprocket(s), drive belt(s), belt tension, tensioners, camshaft reluctor ring/tone-wheel, and valve timing components; verify correct camshaft timing. P1	
	6. Establish camshaft position sensor indexing. P1 cracks, bulging or wear; tighten loose fittings and supports; determine necessary action. P-1 Job 5 or 6	

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C. Engine Block Assembly Diagnosis and Repair

1. Remove, inspect, or replace crankshaft vibration damper (harmonic balancer). P1	
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D. Lubrication and Cooling Systems Diagnosis and Repair

1. Perform cooling system pressure and dye tests to identify leaks; check coolant condition and level; inspect and test radiator, pressure cap, coolant recovery tank, and heater core; determine necessary action. P1	
2. Identify causes of engine overheating. P1	
3. Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment. P1	
4. Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required. P1	
5. Inspect, remove, and replace water pump. P2	
6. Remove and replace radiator. P2	
7. Remove, inspect, and replace thermostat and gasket/seal. P1	
8. Inspect and test fan(s) (electrical or mechanical), fan clutch, fan shroud, and air dams. P1	
9. Perform oil pressure tests; determine necessary action. P1	
10. Perform engine oil and filter change. P1	
11. Inspect auxiliary coolers; determine necessary action. P3	
12. Inspect, test, and replace oil temperature and pressure switches and sensors. P2	