

**AUTOMOTIVE ENGINE  
PERFORMANCE, 4<sup>TH</sup> EDITION**

**James D. Halderman**

**STUDENT TASK CHECK OFF SHEETS**

Name \_\_\_\_\_ Course \_\_\_\_\_ Section \_\_\_\_\_

Task Sheet Name	Task Sheet Page	Date Completed	Instructor OK
<b>Chapter 1 - Service Information, Tools, and Safety</b>			
Fire Extinguisher (None Specified)	1		
Vehicle Hoisting (None Specified)	2		
Safety Check (None Specified)	3		
VIN Code (A8-A-4)	4		
Vehicle Safety Certification Label (A8-A-4)	5		
Vehicle Service Information (A8-A-3)	6		
Vehicle Service History (A8-A-3)	7		
Technical Service Bulletins (A8-A-3)	8		
Work Order (A8-A-1)	9		
Hybrid High-Voltage Disconnect (A6-A-21)	10		
<b>Chapter 2 - Environmental and Hazardous Materials</b>			
Material Safety Data Sheet (None Specified)	11		
<b>Chapter 3 – Gasoline Engine Operation, Parts, and Specifications</b>			
Gasoline Engine Identification (A8-A-4)	12		
<b>Chapter 4 – Diesel Engine Operation and Diagnosis</b>			
Diesel Engine Identification (A8-A-4)	13		
<b>Chapter 5 – Gasoline</b>			
Gasoline (None Specified)	14		
Vehicle Fuel Specification (A8-A-3)	15		
Alcohol Content in Gasoline (A8-D-2)	16		
Fuel Composition Tester (A8-D-2)	17		
Gasoline Reid Vapor Pressure (A8-D-2)	18		
Fuel-Related Scan Data (A8-B-7)	19		
<b>Chapter 6 – Alternative Fuels</b>			
Alternative Fuel (None Specified)	20		
<b>Chapter 7 – Diesel and Biodiesel Fuels</b>			
Diesel Fuel (None Specified)	21		
Biodiesel (None Specified)	22		
<b>Chapter 8 – Cooling System Operation and Diagnosis</b>			
Engine Cooling System Identification (A8-A-3)	23		
Cooling System Tests (A8-A-5)	24		
Accessory Drive Belt Replacement (A1-D-4)	25		
Engine Operating Temperature (A8-A-14)	26		
Engine Cooling System Inspection (A8-A-15)	27		
Cooling System Pressure Test (A8-A-15)	28		

<b>Task Sheet Name</b>	<b>Task Sheet Page</b>	<b>Date Completed</b>	<b>Instructor OK</b>
Test and Replace Coolant (A1-D-7)	29		
Remove and Replace Thermostat (A8-F-3)	30		
Engine Fan Inspection and Testing (A8-F-4)	31		
<b>Chapter 9 – Lubrication System Operation and Diagnosis</b>			
Engine Lubrication Specifications (A1-A-2)	32		
Auxiliary Oil Coolers (A1-D-11)	33		
Engine Oil Dipstick Test (None Specified)	34		
Oil Change (A8-F-6)	35		
<b>Chapter 10 – Intake and Exhaust Systems</b>			
Exhaust Manifold Inspection (A8-D-8)	36		
Exhaust System Inspection (A8-D-8)	37		
<b>Chapter 11 – Variable Valve Timing Systems</b>			
Variable Valve Timing Identification (A8-A-3)	38		
Variable Valve Timing System Diagnosis (A8-B-2)	39		
<b>Chapter 12 – Turbocharging and Supercharging</b>			
Turbo/Supercharger Component ID (A8-A-3)	40		
Turbo/Supercharger Diagnosis (A8-D-10)	41		
<b>Chapter 13 – Engine Condition Diagnosis</b>			
Fluids Check (A8-A-5)	42		
Fluid Leak Diagnosis (A8-A-5)	43		
Oil Leak Diagnosis (A8-A-5)	44		
Oil Pressure Measurement (A8-A-12)	45		
Head Gasket Diagnosis (A8-A-5)	46		
Engine Noise Diagnosis (A8-A-6)	47		
Abnormal Exhaust Color, Odor or Sound (A8-A-7)	48		
Accessory Drive Belt Inspection (A8-A-6)	49		
Paper Test (A8-A-7)	50		
Vacuum Testing (A8-A-8)	51		
Power Balance – Manual Method (A8-A-9)	52		
Power Balance – Scan Tool Method (A8-A-9)	53		
Compression Testing (A8-A-10)	54		
Running Compression Test (A8-A-10)	55		
Relative Compression (A8-A-10)	56		
Cylinder Leakage Test (A8-A-11)	57		
Engine Oil Dipstick Test (A8-A-12)	58		
Engine Diagnostic Equipment Diagnosis (A8-A-12)	59		
Timing Chain Diagnosis (A8-A-12)	60		
Verify Engine Operating Temperature (A8-A-14)	61		
Diagnosis of Driveability-Related Concerns (A8-B-2)	62		
No-Code Diagnosis of Driveability Concerns (A8-B-3)	63		

<b>Task Sheet Name</b>	<b>Task Sheet Page</b>	<b>Date Completed</b>	<b>Instructor OK</b>
Fastener and Thread Repair (A8-F-5)	64		
Oxy-acetylene Torch Usage (None Specified)	65		
<b>Chapter 14 – In-Vehicle Engine Service</b>			
Thermostat Testing and Replacement (A1-D-6)	66		
Water Pump Diagnosis and Replacement (A1-D-8)	67		
Intake Manifold Gasket Diagnosis and Replacement (A8-D-5)	68		
Camshaft Timing (A8-A-16)	69		
Remove and Replace Timing Belt (A8-F-2)	70		
Valve Adjustment (A8-F-1)	71		
Hybrid Engine Service Precautions (A8-F-7)	72		
<b>Chapter 15 – Starting and Charging Systems Diagnosis</b>			
Battery Load Test (A6-B-2)	73		
Battery Electrical Drain Test (A6-A-14)	74		
Cranking Circuit Voltage-Drop Test (A6-C-2)	75		
Starter Amperage Test (A6-C-1)	76		
Starting and Charging Tests (A6-A-7)	77		
AC Voltage from the Generator (Alternator) (A6-D-2)	78		
Charging System Voltage Drop (A6-D-5)	79		
Charging System Output Test (A6-D-1)	80		
<b>Chapter 16 – Ignition System Components and Operation</b>			
Ignition System Identification (A8-A-3)	81		
Spark Plug Specifications (A8-A-3)	82		
<b>Chapter 17 – Ignition System Diagnosis and Service</b>			
Electronic Ignition diagnosis (A8-C-1)	83		
Scan Tool Testing of the Ignition System (A8-C-1)	84		
Optical Distributor Scope Test (A8-C-2)	85		
Magnetic Sensor Scope Test (A8-C-2)	86		
Hall-Effect Sensor Scope Test (A8-C-2)	87		
Ignition Scope Analysis (A8-C-1)	88		
Distributor Ignition Diagnosis (A8-C-2)	89		
Distributor Ignition Scope (A8-C-2)	90		
Ignition Primary Wiring and Components (A8-C-2)	91		
Ignition Control Module/PCM Inspection (A8-C-4)	92		
Spark Plug Wire Inspection and Testing (A8-C-1)	93		
Spark Plugs Inspection (A8-C-1)	94		
Waste Spark Ignition Inspection and Testing (A8-C-1)	95		
Coil-On-Plug Inspection and Testing (A8-C-1)	96		
Ignition Coil Testing (A8-C-2)	97		

Task Sheet Name	Task Sheet Page	Date Completed	Instructor OK
Primary Ignition Inspection and Testing (A8-C-3)	98		
<b>Chapter 18 – Computer and Network Fundamentals</b>			
Module Communication (A8-B-4)	99		
Module Identification and Status (A8-A-4)	100		
<b>Chapter 19 – OBD-II</b>			
OBD II Connector Identification (A8-A-4)	101		
Retrieving OBD II Diagnostic Trouble Codes (A8-B-2)	102		
Set Opposite Code (A8-B-2)	103		
Freeze Frame and MIL Activity (A8-B-2)	104		
I/M Monitors Status (A8-A-3)	105		
Misfire Monitor Activity (A8-B-7)	106		
Drive Trace Pre-Conditioning (A8-A-2)	107		
<b>Chapter 20 – Temperature Sensors</b>			
Temperature Sensor Visual Inspection (A8-B-5)	108		
ECT Sensor DMM Testing (A8-B-5)	109		
Temperature Sensors (A8-B-5)	110		
ETC Graph (A8-B-5)	111		
Temperature Sensor Scan Tool Diagnosis (A8-B-5)	112		
<b>Chapter 21 – Electronic Stability Control System</b>			
Throttle Position Sensor Visual Inspection (A8-B-5)	113		
Throttle Position Sensor DMM Testing (A8-B-5)	114		
Throttle Position Sensor Scope Test (A8-B-5)	115		
TP Sensor Voltmeter Test (A8-B-5)	116		
TP Graph Test (A8-B-5)	117		
Throttle Position Sensor Scan Tool Diagnosis (A8-B-5)	118		
<b>Chapter 22 – MAP/BARO Sensors</b>			
MAP Sensor Visual Inspection (A8-B-5)	119		
MAP Sensor DMM Testing (A8-B-5)	120		
MAP Sensor Waveform Test (A8-B-5)	121		
MAP Sensor Diagnosis (A8-B-5)	122		
MAP Sensor Output Chart (A8-B-5)	123		
<b>Chapter 23 – Mass Air Flow Sensors</b>			
MAF Sensor Visual Inspection (A8-B-5)	124		
Air Vane Sensor DMM Testing (A8-B-5)	125		
Air Vane Sensor Waveform Testing (A8-B-5)	126		
MAF Sensor Diagnosis (A8-B-5)	127		
MAF Sensor Scope (A8-B-5)	128		
<b>Chapter 24 – Oxygen Sensors</b>			
Oxygen Sensor Visual Inspection (A8-B-5)	129		

<b>Task Sheet Name</b>	<b>Task Sheet Page</b>	<b>Date Completed</b>	<b>Instructor OK</b>
Oxygen Sensor DMM Testing (A8-B-5)	130		
Wide-Band Oxygen Sensor (A8-B-5)	131		
Oxygen Sensor Waveform Testing (A8-B-5)	132		
Oxygen Sensor Voltmeter Diagnosis (A8-B-5)	133		
Oxygen Sensor Scan Tool Diagnosis (A8-B-5)	134		
Oxygen Sensor Scope Diagnosis (A8-B-5)	135		
Downstream Oxygen Sensor Diagnosis (A8-B-5)	136		
<b>Chapter 25 – Wide Band Oxygen Sensors</b>			
Lambda Activity (A8-B-5)	137		
Wide Band Oxygen Sensor Identification (None Specified)	138		
<b>Chapter 26 – Fuel Pumps, Lines, and Filters</b>			
Fuel Pump Testing (A8-D-3)	139		
Fuel Pump Current Draw Test (A8-D-3)	140		
Fuel Pump Volume (A8-D-3)	141		
Fuel Pump Current Ramping (A8-D-3)	142		
Clamp-On Meter Fuel Pump Current Draw Test (A8-D-3)	143		
Fuel Filter Replacement (A8-D-4)	144		
<b>Chapter 27- Fuel-Injection Components and Operations</b>			
Modes of Fuel Injection Operation (A8-A-3)	145		
Idle Air Control (A8-B-7)	146		
Idle Air Control DMM Testing (A8-B-5)	147		
Inspect Air Induction System for Leaks (A8-D-5)	148		
Air Intake Inspection (A8-D-5)	149		
<b>Chapter 28 – Gasoline Direct Injection Systems</b>			
Gasoline Direct Injection Identification (A8-A-3)	150		
<b>Chapter 29 – Electronic Throttle Control Systems</b>			
Electronic Throttle Control System Identification (A8-A-3)	151		
<b>Chapter 30 – Fuel-Injection systems Diagnosis and Service</b>			
Position Sensor Visual Inspection (A8-B-6)	152		
Position Sensor Diagnosis (A8-B-6)	153		
Position Sensor Waveform Testing (A8-B-6)	154		
Crankshaft/Camshaft Sensor Scan Tool Diagnosis (A8-B-6)	155		
IAC Scan Tool Diagnosis (A8-B-8)	156		
Scan Tool Diagnosis (A8-B-7)	157		
Fuel Trim Diagnosis (A8-B-7)	158		
Port Fuel-Injection System Diagnosis (A8-D-1)	159		
Fuel Injection Stethoscope Test (A8-D-1)	160		

<b>Task Sheet Name</b>	<b>Task Sheet Page</b>	<b>Date Completed</b>	<b>Instructor OK</b>
Injector Balance Testing (A8-D-1)	161		
Fuel Injection System Diagnosis (A8-D-1)	162		
Injector Pressure Drop Testing (A8-D-6)	163		
Fuel Injector Balance Test (A8-D-6)	164		
Injector Available Voltage (A8-D-6)	165		
Injector Voltage Waveform Test (A8-D-6)	166		
Injector Current Ramping (A8-D-6)	167		
Single Line Fuel Injector Cleaning (A8-D-6)	168		
Dual Line Fuel Injector Cleaning (A8-D-6)	169		
Minimum Air Adjustment (A8-D-7)	170		
Idle Air Control DMM Testing (A8-B-5)	171		
Inspect Air Induction System for Leaks (A8-D-5)	172		
<b>Chapter 31 – Vehicle Emission Standards and Testing</b>			
Vehicle Emission Rating (A8-A-3)	173		
Exhaust Gas Analysis (A8-A-13)	174		
Diagnosis of Emission-Related Concerns (A8-B-3)	175		
<b>Chapter 32 – Emission Control Devices Operation And Diagnosis</b>			
EGR System Diagnosis (A8-E-3)	176		
EGR System Scan Tool Diagnosis (A8-E-4)	177		
Ford Pressure Feedback EGR (PFE) (A8-E-4)	178		
Service EGR System (A8-E-4)	179		
EGR Electrical Sensors (A8-E-5)	180		
Ford EVP Voltage Check (A8-E-5)	181		
PCV System Diagnosis (A8-E-1)	182		
PCV System Inspection (A8-E-2)	183		
PCV System Test (A8-E-2)	184		
Secondary Air Injection Diagnosis (A8-E-6)	185		
AIR Pump Component Inspection (A8-E-7)	186		
AIR Pump Electrical Component Inspection (A8-E-8)	187		
Catalytic Converter Test (A8-E-9)	188		
Catalytic Converter Rattle Test (A8-E-9)	189		
Catalytic Converter Performance Test (A8-E-9)	190		
Exhaust System Backpressure Test (A8-D-9)	191		
Evaporative Emission Controls Diagnosis (A8-E-10)	192		
EVAP System Scan Tool Testing (A8-E-10)	193		
Canister Purge Flow Rate Test (A8-E-10)	194		
EVAP System Component Inspection (A8-E-11)	195		
Smoke Test of the EVAP System (A8-E-11)	196		
Evaporative Emission DTC Diagnosis (A8-E-12)	197		

<b>Task Sheet Name</b>	<b>Task Sheet Page</b>	<b>Date Completed</b>	<b>Instructor OK</b>
<b>Chapter 33 – Scan Tools and Engine Performance Diagnosis</b>			
Engine Performance Diagnosis (A8-A-2)	198		
Evidence of Previous Repairs (A8-A-2)	199		
Identify and Interpret Engine Performance Concerns (A8-A-2)	200		
OBD-II Connector Identification (A8-A-2)	201		
Retrieving OBD II Diagnostic Trouble Codes (A8-B-1)	202		
Set Opposite Code (A8-B-2)	203		
Freeze Frame and MIL Activity (A8-B-2)	204		
I/M Monitors Status (A8-B-9)	205		
Misfire Monitor Activity (A8-B-3)	206		
Service Information Diagnosis (A8-B-6)	207		
Driveability and Emission Problem Diagnosis (A8-B-9)	208		
Scan Tool Active Test (A8-B-8)	209		
Drive Trace Pre-Conditioning (A8-B-7)	210		