Fall 2017- Night Engine Overhaul Class; 131

Diesel Engine Lab/ Task Sheet: #1.
Engine Identification, Component ID, and Specs.

Name: Course DT-**131**

Student Evaluation

Overall Skill Demonstrated by this student	5	4	2	1	0		Overall Time to perform this task
Engine skill demonstrated by this student							How many hours did it take to perform this Task?
Shop Lab/ Task sheet grade							
Shop Safety Performance							
Shop Clothing							

Lab Sheet # 1

Engine Identification:

Manufacturer: Model: Serial Number: Shop Number:

Displacement: Cubic Inches: Liters: Horsepower: Kw. Rating: Engine Torque:

Idle RPM: High Idle: Full load Rpm:

Engine Hours: Vehicle Miles: ECM Hours: Engine Rotation:

Engine Specifications:

Bore: Stroke: Valves per Cylinder: Oil Pump Drive Method:

Water Pump Drive Method: Quantity of Thermostats:

Engine Oil Capacity: Qts.

Crankshaft Specifications:

Main Bearings:

Main Bearing Journal Diameter: New Main Bearing Thickness: Main Bearing Bore Diameter:

Minimum Main Bearing Oil Clearance: Maximum Main Bearing Oil Clearance:

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Rod Bearings:

Rod Bearing Journal Diameter: New Rod Bearing Thickness: Connecting Rod Bearing Bore Diameter:

Minimum Rod Bearing Oil Clearance: Maximum Rod Bearing Oil Clearance:

Engine Block Specifications:

Crankshaft Endplay: Cylinder Liner Protrusion: Cylinder Block Warpage:

Engine Reassembly Specifications:

Intake valve Clearance: Exhaust Valve Clearance: Injector Setting Procedure:

Flywheel Fastener Torque: Rocker Cover Bolt Torque: Injector Hold down Torque:

Rod Bearing Torque: Additional Rod Bearing Torque Procedure Steps:

Main Bearing Torque: Additional Main Bearing Torque Procedure Steps:

Cylinder Head Bolt Torque:

Section I:

The engine your group has been assigned has come into the shop: Using the information given use your text book/ internet or other non-student resource and attempt to identify the cause, and correction.

Given:

Engine has 450,000 miles on it.

The complaint is: My Truck has low power and the engine burns engine oil; it consumes 1 gallon of oil every week!
Identify the following:

Cause:

_____

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What should be done to correct this problem?

Correction:

Section II:

The names of various engine components are listed below. On your lab engine identify the component listed by writing the components name and applying the tape to that component. Then in the space provided give a brief description of the component and its function.

1. Cylinder block:

2. Starter motor:

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3. Cylinder Head:

_____

_____

4. Valve rocker arms:

_____

_____

5. ECM:

_____

_____

6. Exhaust valves:

_____

7. Coil over Plugs:

_____

_____

8. ICM:

_____

_____

9. Oil Pump:

_____

_____

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10. Oil filter:

_____

_____

11. Turbo oil pressure line:

_____

_____

12: Fuel Pressure regulator:

_____

_____

13. Exhaust manifold:

_____

_____

14. Fuel delivery plumbing/ pump:

_____

_____

15. Flywheel Housing:

_____

_____

16. Accessory Drive Pulley:

_____

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_____

17. Crankshaft pulley/ damper:

_____

_____

18. Intake valves: _____

---

19. Air Compressor: _____

_____

20. Water pump:

_____

_____

21. Thermostat housing: _____

---

22. Oil cooler: _____

_____

23. Turbocharger: _____

_____

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24. Turbocharger drain line:

_____

_____

25. Intake manifold: _____

_____

26. Engine Speed sensor:

_____

_____

27. Coolant by-pass hose:

_____

_____

28. Harmonic Balancer:

_____

_____

29. Oil Pressure Sensor:

_____

_____

30. Intake manifold: _____

_____

Section III:

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In this section; write a brief description of your groups lab activities.

- **First enter the date.**
- **Next, in the notes section describe what your lab activities were for that day.**
- **In the notes section; use correct spelling and complete sentences.**

Week # 1: Weekly lab notes:

In this section enter: The date and to the right, enter the tasks that your group performed during this section of the lab. Be specific, correct spelling and sentence structure are important.

Note: The box will expand as you type.

Date (mm/dd/yr)	Notes

Week # 2: Weekly lab notes:

In this section enter: The date and to the right, enter the tasks that your group performed during this section of the lab. Be specific, correct spelling and sentence structure are important.

Note: The box will expand as you type.

Date (mm/dd/yr)	Notes

Section IV:

Special Instructions:

Enter the special instructions your group received while performing this lab sheet. Note: The box will expand as you type.

##	Special Instructions
1	_
2	_
3	_

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4	_
5	_
6	_
7	_
8	_
9	_
10	_

Section V:

Special Tools:

Enter the tools your group used to perform engine disassembly. These are tools that did not come out of your student tool box. Identify description, manufacturer, & part number. Tool Description, Manufacturer, Part Number, and the times your group used it. Note: The box will expand as you type.

##	Part Description	Manufacturer	Part Number	Times Used
EX	3 –4 inch outside micrometer	Starrett	50155218	1
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				

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NATEF DOCS:

Our Rubric:

NATEF; Shop task performance levels:

(5) -- Can perform this skill without supervision and with initiative and adaptability to problem situations.

(4) -- Can perform this skill satisfactorily without assistance or supervision.

(2) -- Can perform this skill satisfactorily, but requires some assistance and/or supervision.

(1) -- Can perform parts of this skill satisfactorily, but requires considerable assistance and/or supervision.

(0) -- Cannot perform this skill.

Shop Lab/ Task sheet grade:

(5) – An excellent note book, all sections filled in, all information is accurate; complete with tool, terms, and special instructions.

(4) – Satisfactorily completed note book.

(2) – Sections of notebook are satisfactory.

(1) – Incomplete notebook.

(0) – Did not turn in notebook.

NATEF; Shop Safety performance levels:

(5) – Student always wears the correct PPE & performs shop tasks in a safe manner; at all times without supervision.

(4) – Student wears the correct PPE & performs shop tasks in a safe manner; with little supervision.

(2) -- Student wears the correct PPE & performs shop tasks in a safe manner; but needs reminding occasionally.

(1) -- Student wears the correct PPE & performs shop tasks in a safe manner; but needs constant reminding.

(0) – Student disregards any and all safety guidelines, never has the correct PPE; or we have to supply student with clear safety glasses.

NATEF; Shop Clothing performance levels:

(5) -- Student always wears the correct shop clothing; at all times without supervision.

(4) – Student wears the correct shop clothing but occasionally needs reminding to dress in shop clothing.

(1) -- Student frequently enters the lab with inappropriate shop clothing.

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(0) – The faculty has had to lend the student the appropriate shop clothing once.

NATEF Tasks associated with this Lab Sheet:

Students will demonstrate aspects of the Medium/Heavy Duty Truck supplemental tasks.