CDX Tasksheet Number: MHT1B009

Student/Intern Information

Name _____ Date _____ Class _____

Vehicle, Customer, and Service Information

Vehicle used for this activity:

Year _____ Make _____ Model _____

Odometer _____ VIN _____

Materials Required

- Vehicle with possible engine concern
- Engine manufacturer's workshop materials
- Manufacturer-specific tools depending on the concern/procedure(s)
- Vehicle/component lifting equipment, if applicable

Task-Specific Safety Considerations

- Activities may require test-driving the vehicle on the school grounds or on a hoist, both of which carry severe risks. Attempt this task only with full permission from your supervisor/instructor, and follow all the guidelines exactly.
- Lifting equipment and machines such as vehicle jacks and stands, vehicle hoists, and engine hoists are important tools that increase productivity and make the job easier. However, they can also cause severe injury or death if used improperly. Make sure you follow the manufacturer's operation procedures. Also make sure you have your supervisor's/instructor's permission to use any particular type of lifting equipment.
- Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with federal, state, and local regulations.
- Always wear the correct protective eyewear and clothing and use the appropriate safety equipment, as well as wheel chocks, fender covers, seat protectors, and floor mat protectors.
- Make sure you understand and observe all legislative and personal safety procedures when carrying out practical assignments. If you are unsure of what these are, ask your supervisor/instructor.

▶ TASK Reassemble cylinder head.

MTST ***I.B.9; P3***

Time off_____

Time on_____

Total time_____

Student Instructions: Read through the entire procedure prior to starting. Prepare your workspace and any tools or parts that may be needed to complete the task. When directed by your supervisor/instructor, begin the procedure to complete the task and check the box as each step is finished.

Note: This tasksheet will require the student to check the condition of miscellaneous vehicle fluids, some of which may be flammable and could damage the environment or cause health problems if not handled properly. Observe all safety precautions and follow local regulations for the proper disposal of fluids.

Procedure:	Step Completed
1. Ensure that all cylinder-head parts and associated parts have been cleaned and dried.	☐
2. Secure the cylinder head to the bench to ensure it does not fall and is safe to work on.	☐
3. Have the valves been ground in accordance with the manufacturer's specifications? Yes: ☐ No: ☐	☐
a. If No, discuss with your supervisor/instructor if this action is to be undertaken.	☐
b. If Yes, list the steps involved in servicing the valves:	☐
4. Have the valve seats been ground in accordance with the manufacturer's specifications? Yes: ☐ No: ☐	☐
a. If No, discuss with your supervisor/instructor if this action is to be undertaken.	☐
b. If Yes, list the steps involved in servicing the valve seats:	☐

5. Have the valves been lapped into the valve seats in accordance with the manufacturer's specifications? Yes: ☐ No: ☐	☐
a. If No, discuss with your supervisor/instructor if this action is to be undertaken.	☐
b. If Yes, list the steps involved in lapping the valve faces onto the valve seats:	☐
6. Referencing the manufacturer's workshop materials, list the procedure and all safety precautions that must be observed when reassembling the cylinder head.	
a. List the steps involved in reassembling the cylinder head:	☐
b. Determine what safety precautions must be observed when reassembling the cylinder head:	☐
7. Discuss these procedures and safety precautions with your supervisor/instructor.	☐
8. If directed by your supervisor/instructor, source all the special tooling and necessary spare parts/repair kits and commence reassembling the cylinder head.	☐
9. Following the procedures listed previously, and while referencing the manufacturer's workshop materials, reassemble the cylinder head.	☐

10. While referencing the appropriate manufacturer's workshop materials, measure valve head height relative to the deck and valve face-to-seat contact using the recommended special tools. Record your findings below:	
a. Cylinder #1 intake valve(s):	☐
b. Cylinder #1 exhaust valve(s):	☐
c. Cylinder #2 intake valve(s):	☐
d. Cylinder #2 exhaust valve(s):	☐
e. Cylinder #3 intake valve(s):	☐
f. Cylinder #3 exhaust valve(s):	☐
g. Cylinder #4 intake valve(s):	☐
h. Cylinder #4 exhaust valve(s):	☐

i. Cylinder #5 intake valve(s):	☐
j. Cylinder #5 exhaust valve(s):	☐
k. Cylinder #6 intake valve(s):	☐
l. Cylinder #6 exhaust valve(s):	☐
11. Meets the manufacturer's specifications: Yes: ☐ No: ☐	☐
a. If No, list the recommended corrective action:	☐
12. Following the procedures outlined in the manufacturer's workshop materials, reassemble the injector sleeves and injectors into the cylinder head.	☐
13. While referencing the appropriate manufacturer's workshop materials and using the recommended special tools, measure the injector tip or nozzle protrusion. Record your findings below:	
a. Cylinder #1:	☐
b. Cylinder #2:	☐

c. Cylinder #3:	☐
d. Cylinder #4:	☐
e. Cylinder #5:	☐
f. Cylinder #6:	☐
14. Meets the manufacturer's specifications: Yes: ☐ No: ☐	☐
a. If No, list the recommended corrective action:	☐
15. If the correct tooling is available, conduct either a pressure or vacuum test of the newly installed valves for correct sealing under operating pressures. Refer to your supervisor/instructor for directions and assistance to carry out this operation, if applicable.	☐
16. Have your supervisor/instructor inspect your assembled cylinder head to this point and discuss the findings.	☐

Non-Task-Specific Evaluations:	Step Completed
1. Tools and equipment were used as directed and returned in good working order.	☐
2. Complied with all general and task-specific safety standards, including proper use of any personal protection equipment.	☐
3. Completed the task in an appropriate time frame (recommendation: 1.5 or 2 times the flat rate).	☐
4. Left the workspace clean and orderly.	☐
5. Cared for customer property and returned it undamaged.	☐

Student signature _____ Date _____

Comments:

Have your supervisor/instructor verify satisfactory completion of this procedure, any observations found, and any necessary action(s) recommended.

Evaluation Instructions: The scoring box below is intended to act as a guide for both student and supervisor/instructor. Each criterion listed will help students to understand what is expected of them and help supervisors/instructors articulate the level of success at a particular task. The scoring is set up to allow a second attempt at each task (see the Test and Retest columns). Scoring is also designed to award students points only for task criteria that were completed correctly. Points are lost for failure to complete the employability requirements (see Non-Task–Specific Evaluation criteria). When all criteria are evaluated, tally the points for a total at the bottom of each column.

Tasksheet Scoring

	Test		Retest	
Evaluation Items	**Pass**	**Fail**	**Pass**	**Fail**
Task-Specific Evaluation	**(1 pt)**	**(0 pts)**	**(1 pt)**	**(0 pts)**
Student cleaned and dried all cylinder-head parts and associated parts before assembly.				
Student assembled cylinder head(s), following the manufacturer's directions and using the proper tooling.				
Student took post-assembly valve and injector protrusion measurements.				
Student performed pressure and/or vacuum testing on each valve.				
Non-Task-Specific Evaluation	**(0 pts)**	**(−1 pt)**	**(0 pts)**	**(−1 pt)**
Student successfully completed at least three of the non-task–specific steps.				
Student successfully completed all five of the non-task–specific steps.				
Total Score: <total # of points/4 = %>				

Supervisor/Instructor:

Supervisor/instructor signature _____ Date _____

Comments:

Retest supervisor/instructor signature _____ Date _____

Comments: