

CDX Tasksheet Number: MHT2E009

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 drive-axle concern
- Vehicle manufacturer's repair information
- Manufacturer-specific tools depending on the concern/procedure(s)

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.
- 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 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.
- While working on the vehicle, wheel chocks must be placed on both sides of one set of tires or as directed by your supervisor/instructor.
- Exhaust evacuation hoses must be placed over exhaust outlets while the engine is used in the confined shop space.

► **TASK** Remove and replace the differential carrier assembly.

MTST
11.E.9; P2

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.

Time off _____

Time on _____

Total time _____

Procedure:	Step Completed
1. Reference the manufacturer's repair information and/or component manufacturer's manuals for procedures.	☐
2. Support the vehicle on stands at a sufficient level that allows enough room to work beneath it and remove the differential carrier without interference from the frame and/or suspension.	☐
3. Remove the driveshaft from the drive axle and ensure it is sufficiently out of the way to allow differential carrier removal.	☐
4. Drain the axle fluid into a suitable container. The fluid can be an important indicator of the axle's condition.	☐
a. Watch for evidence of metal contamination, indicating extreme wear, or sludge, usually caused by overheating or a lack of lubricant.	☐
5. Loosen the nuts holding the axles in place at the wheel hub until they are held by one or two threads. Leave them in place to stop the axle stud locating wedges from flying off.	☐
6. Using a large brass drift and a hammer, strike the axle flanges to loosen the tapered locating wedges in the axles. These steel wedges center the axle shaft as it is bolted to the wheel hub.	☐
7. Remove the nuts, wedges, and axles and mark the axles as either right or left.	☐

8. Support the differential carrier with a suitable floor jack and platform designed for the purpose.	☐
a. Restrain the front of the differential carrier to the jack. The rear side of the carrier is much heavier than the front and will try to roll off as it is removed.	☐
b. Before removing the differential carrier attaching bolts, ensure the carrier is securely supported.	☐
9. Remove the differential carrier retaining cap screws or stud nuts, leaving the top two loose to hold the weight while the carrier mounting flange is loosened.	☐
10. Loosen the differential carrier-to-housing mounting flange by using a pry bar in the pry slots on the flange or by moving the front of the housing back and forth.	☐
11. Remove the top two retainers, pull the differential carrier forward, and lower it to the floor.	☐
12. Mount the differential carrier in a suitable stand for overhaul.	☐
13. When reinstalling, clean the axle housing interior with rags and a mild solvent to remove any metal particles. Clean the flange mounting surface of all old gasket material.	☐

14. Run a new bead of silicone gasket compound or install a new gasket. Install the differential carrier by reversing the removal process.	☐
15. Install both axle shafts with a new gasket—installing the locating wedges and nuts. Torque the nuts to the correct specification.	☐
16. Connect all air lines. Fill the axle with the correct lubricant until it is level with the fill hole. Lift the right side of the vehicle six inches or more for one minute. Then lower the right side and lift the left side for the same amount of time. Lower the left side and let the vehicle sit for one minute. Recheck and top off the lubricant as necessary. This procedure ensures that the wheel hubs have a sufficient level of lubricant and that the level in the drive axle housing is correct.	☐
17. Return the vehicle to its beginning condition, and return any tools you used to their proper locations.	☐
18. Discuss your findings with your supervisor/instructor.	☐

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 (PPE).	☐
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 made, 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 to 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 only to award students points 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

Evaluation Items	Test		Retest	
	Pass	Fail	Pass	Fail
Task-Specific Evaluation	(1 pt)	(0 pts)	(1 pt)	(0 pts)
Student detailed the 3 Cs on the submitted repair order.				
Student used manufacturer's repair information.				
Student performed diagnostic observations properly and made appropriate conclusions.				
Student completed repairs as directed by the supervisor/instructor.				
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: