

CDX Tasksheet Number: MHT2D001

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 driveshaft and universal joint concerns
- 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** Inspect, service, and/or replace driveshafts, slip joints, yokes, drive flanges, support bearings, universal joints, boots, seals, and retaining/mounting hardware; check phasing of all shafts.

MTST
II.D.1; P1

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 appropriate manufacturer's repair information.	<input type="checkbox"/>
2. Inspect and service the driveshaft, slip joints, yokes, and drive flanges.	<input type="checkbox"/>
a. Check the tubes for damage, dents, or missing balance weights.	<input type="checkbox"/>
b. Look for any unusual rust streaking or rust patterns at or near the universal joints, the end yoke attaching bolts or nuts, and the center-bearing hanger bolts.	<input type="checkbox"/>
c. Grasp each of the end yokes where they enter the transmission and the drive axle pinion(s) and rotate them back and forth and up and down to check for looseness.	<input type="checkbox"/>
i. There should be no perceptible free play at these components.	<input type="checkbox"/>
d. Grasp the slip yoke and move it up, down, and radially to check splines for looseness and radial play.	<input type="checkbox"/>
e. Measurable play exceeding 0.004" to 0.006" (0.10 to 0.15 mm) should be investigated and corrected.	<input type="checkbox"/>
3. Inspect and service the support bearings and universal joints.	<input type="checkbox"/>
a. Check the center-bearing rubber support.	<input type="checkbox"/>
i. Rubber dust here is an indicator of excessive movement either from wear or vibration.	<input type="checkbox"/>
b. Check all the universal joints for wear.	<input type="checkbox"/>
i. Grasp both sides of each joint and try to rotate them in opposite directions from each other, checking for radial play.	<input type="checkbox"/>
ii. There should be no perceptible movement between the trunnions and the caps.	<input type="checkbox"/>
iii. Grasp the shaft side of the joint and move it vertically and horizontally to check for end play between the joint-bearing caps and the ends of the trunnions.	<input type="checkbox"/>
iv. This end play cannot exceed 0.006" (0.15 mm).	<input type="checkbox"/>
4. Inspect and service the driveshaft boots, seals, and retaining hardware.	<input type="checkbox"/>
a. Check for torn or missing driveshaft boots.	<input type="checkbox"/>
i. Any tears in the boot will allow dirt into the joint; torn boots should be replaced.	<input type="checkbox"/>
b. Check for oil leaking from flange and yoke oil seals.	<input type="checkbox"/>

5. Check the phasing of all shafts.	<input type="checkbox"/>
a. The inboard yoke ears of the driven shaft must line up.	<input type="checkbox"/>
b. An out-of-phase driveshaft causes the accelerations and decelerations of the joints on either end of the shafts to be out of sync with each other. Failure to correctly phase the universal joints will cause a vibration.	<input type="checkbox"/>
6. Return the vehicle to its beginning condition, and return any tools you used to their proper locations.	<input type="checkbox"/>
7. Discuss your findings with your supervisor/instructor.	<input type="checkbox"/>

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

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

	Test		Retest	
Evaluation Items	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 measurements 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: