

Medium Heavy Vehicle–Drive Train

Student/intern information:

Name _____ Date _____ Class _____

Vehicle used for this activity:

Year _____ Make _____ Model _____

Odometer _____ VIN _____

Learning Objective / Task (Drive Train: (B) Transmission)	2007 NATEF Reference Number	2007 NATEF Priority Level
<ul style="list-style-type: none"> Inspect, adjust, and replace transmission shift lever, cover, rails, forks, levers, bushings, sleeves, detents, interlocks, springs, and lock bolts/safety wires. 	B1-6	P-2
<ul style="list-style-type: none"> Remove and reinstall transmission. 	B1-7	P-1
<ul style="list-style-type: none"> Inspect input shaft, gear, spacers, bearings, retainers, and slingers; determine needed action. 	B1-8	P-3
<ul style="list-style-type: none"> Inspect transmission oil filters and coolers; replace as needed. 	B1-9	P-2
<ul style="list-style-type: none"> Inspect speedometer components; determine needed action. 	B1-10	P-2

Time off _____

Time on _____

Total time _____

Recommended Resource Materials

- CDX Automotive program
- CDX eTextbook
- Technical service bulletins, shop manuals, and any other information applicable to the specific vehicle or components you are working on
- Class notes

Materials Required

- Vehicle with possible transmission concern
- Vehicle manufacturer’s workshop manual
- Manufacturer-specific tools depending on the concern
- Vehicle lifting equipment if applicable

For every task in Drive Train, the following safety task must be strictly enforced:

Comply with personal and environmental safety practices associated with clothing; eye protection; hand protection; proper lifting practices; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of fuels/chemicals/materials in accordance with federal, state, and local regulations.

Some Safety Issues to Consider

- Diagnosis of this fault 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.
- Caution: If you are working in an area where there could be “brake dust” present (may contain asbestos, which has been determined to cause cancer when inhaled or ingested), ensure you wear and use all OSHA-approved asbestos protective/removal equipment.
- Lifting equipment 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/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 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.

Performance Standard

- 0–No exposure:** No information or practice provided during the program; complete training required
- 1–Exposure only:** General information provided with no practice time; close supervision needed; additional training required
- 2–Limited practice:** Has practiced job during training program; additional training required to develop skill
- 3–Moderately skilled:** Has performed job independently during training program; limited additional training may be required
- 4–Skilled:** Can perform job independently with no additional training

▶ TASK Inspect, adjust, and replace transmission shift lever, cover, rails, forks, levers, bushings, sleeves, detents, interlocks, springs, and lock bolts/safety wires. **B1-6**

- Reference the manufacturer’s workshop manual and/or component manufacturer’s manuals to inspect, adjust, and replace the transmission shift lever, cover, rails, forks, levers, bushings, sleeves, detents, interlocks, springs, and lock bolts/safety wires.
 - List all the procedures:

 - Determine what action will be required to rectify pulsations and vibrations:

- Reference the appropriate workshop manual.
 - Inspect and adjust the transmission shift lever.
 - Meets the manufacturer’s specifications: Yes: ____ No: ____
 - If no, list your recommendations for any rectifications:

 - List other alternative causes:
 - Meets the manufacturer’s specifications: Yes: ____ No: ____
 - If no, list your recommendations for any rectifications:

Time off _____

Time on _____

Total time _____

- c. Inspect and adjust the lock bolts/safety wires.
 - i. Meets the manufacturer's specifications: Yes: ____ No: ____
 - ii. If no, list your recommendations for any rectifications:

3. Discuss the findings with your instructor.

Performance Rating

2007 NATEF Reference Number: B1-6

0

1

2

3

4

Supervisor/instructor signature _____ Date _____

▶ TASK Remove and reinstall transmission.

B1-7

1. Reference the manufacturer's workshop manual to list the steps involved in removing and replacing the vehicle's transmission.

a. List the steps involved in removal:

b. List the steps involved in reinstallation:

2. If directed by your instructor, remove the transmission in accordance with the specifications listed in the workshop manual.

a. Use all the recommended lifting and supporting devices and follow all safety procedures in the removal process.

3. If directed by your instructor, reinstall the transmission in accordance with the specifications listed in the workshop manual.

a. Use all the recommended lifting and supporting devices and follow all safety procedures in the reinstallation process.

Time off _____

Time on _____

Total time _____

4. Discuss the findings with your instructor.

Performance Rating

2007 NATEF Reference Number: B1-7

0

1

2

3

4

Supervisor/instructor signature _____ Date _____

▶ TASK Inspect input shaft, gear, spacers, bearings, retainers, and slingers; determine needed action.

B1-8

Time off _____

Time on _____

Total time _____

1. Reference the manufacturer's workshop manual to inspect the input shaft, gear, spacers, bearings, retainers, and slingers.

a. List the steps involved:

2. Reference the appropriate workshop manual.

a. Inspect the input shaft, gear, spacers, bearings, retainers, and slingers as outlined above.

i. Meets the manufacturer's specifications: Yes: ____ No: ____

ii. If no, list your recommendations for any rectifications:

3. Discuss the findings with your instructor.

Performance Rating

2007 NATEF Reference Number: B1-8

0

1

2

3

4

Supervisor/instructor signature _____ Date _____

▶ TASK Inspect transmission oil filters and coolers; replace as needed.

B1-9

Time off _____

Time on _____

Total time _____

1. Reference the appropriate workshop manual.

a. Inspect the transmission oil filters.

i. Meets the manufacturer's specifications: Yes: ____ No: ____

ii. If no, list your recommendations for any rectifications:

