

AUTOMOTIVE SPECIALIZATION (Brakes)

STUDENT GRADE RECORD

Career & Technical Education

WINDHAM SCHOOL DISTRICT

Student Name _____

TDCJ # _____

Instructor Name _____

Unit _____

| | |
|--|---------------|
| WSD Certificate | Y / N |
| If I were hiring for this position, I would: (check one) <input type="checkbox"/> 0-No recommendation at this time. (Cannot be used for Completers.) <input type="checkbox"/> 1-Hire this person and look no further. <input type="checkbox"/> 2-Interview this person along with other applicants <input type="checkbox"/> 3-Not hire this person. | |
| Complete only if student attempted industry certification. | |
| Name of Industry Certificate | Code P/F |
| ASE- Brakes – A5 | 0215 |

I attest that all of the information reported on this form is true.

Instructor Signature

Date

| Course Outline Modules | Windham Module Test | Module Competency Rating |
|--|---------------------|--------------------------|
| 1. CTE Orientation | | |
| 2. Introduction to Brake Systems | | |
| 3. Shop Safety and Environmental Protection | | |
| 4. Brake Tools, Shop Equipment, and Service Information | | |
| 5. Hydraulic System Fundamentals | | |
| 6. Master Cylinders, Calipers, and Wheel Cylinders | | |
| 7. Master Cylinder, Caliper, and Wheel Cylinder Service | | |
| 8. Power Assist Units | | |
| 9. Power Assist Unit Service | | |
| 10. Hydraulic Valves, Switches, Lines, and Hoses | | |
| 11. Hydraulic Valve, Switch, Line, and Hose Service | | |
| 12. Friction Brake Theory | | |
| 13. Disc Brake System Components and Operation | | |
| 14. Disc Brake Service | | |
| 15. Drum Brake System Components and Operation | | |
| 16. Drum Brake Service | | |
| 17. Wheel Bearings and Oil Seals | | |
| 18. Wheel Bearing and Oil Seal Service | | |
| 19. Parking Brakes | | |
| 20. Parking Brake Service | | |
| 21. Brake System Electrical and Electronic Components | | |
| 22. Anti-Lock Brake and Traction Control System Components and Operation | | |
| 23. Anti-Lock Brake and Traction Control System Service | | |
| 24. Troubleshooting Brake Systems | | |
| 25. ASE Certification | | |
| 26. Career Preparation | | |

| | | | |
|-------------------------------|--------|---|-----------|
| Windham Module Test Average | x . 75 | a | Completer |
| Windham End of Course Exam | x . 25 | b | |
| Windham Module Score (a + b=) | | | 70+ |
| % Competencies Completed | | | 70+ |
| Module Competency Rating | | | 2.7+ |

AUTOMOTIVE SPECIALIZATION (Brakes)

STUDENT PROGRESS RECORD

RECORDING DIRECTIONS

SKILL RATING: Post the student's competency rating for each skill performed.

MODULE TEST SCORE: Enter the student's test score for the module.

MODULE RATING: Use the following scale to determine module rating:

[4] **Skilled**- Can perform competencies independently with no supervision.

[3] **Moderately Skilled**- Can perform competencies with limited supervision.

[2] **Limited Skill**- Requires instruction and close supervision to perform competencies.

[1] **Unskilled**- Exposed to concept, but no hands-on experience.

Note: When evaluating a student's module rating, skill performance should be given priority.

1. CTE Orientation

Teacher Student

Initial Initial

- ____ | ____ 1. Identify employment opportunities related to the course.
- ____ | ____ 2. Identify the number of classroom hours a student must attend to be considered as a completer.
- ____ | ____ 3. Identify the industry-recognized certification.
- ____ | ____ 4. Identify course expectations including:
- Working conditions
 - Attendance expectations
 - Instructor's expectations

2. Introduction to Brake Systems

Chapter 1

Module Test Score _____

Module Rating (4, 3, 2, 1)

- ____ 1. Define the purpose of anti-lock brakes and traction control systems.

3. Shop Safety and Environmental Protection

Chapter 2

Module Test Score _____

Minimum 100% Required

Module Rating (4, 3, 2, 1)

- ____ 1. Identify the major causes of accidents.
- ____ 2. Identify brake dust hazards.
- ____ 3. List ways to maintain a safe workplace.
- ____ 4. List safe work procedures .
- ____ 5. Identify types of environmental damage caused by improper auto shop practices.
- ____ 6. Identify ways to prevent environmental damage.

4. Brake Tools, Shop Equipment, and Service Information

Chapter 3

Module Test Score _____

Minimum 100% Required

Module Rating (4, 3, 2, 1)

- ____ 1. Identify common specialty brake tools and explain their use.
- ____ 2. Identify brake system measuring tools and explain their use.
- ____ 3. Identify power tools and equipment used in brake service and explain their use.

5. Hydraulic System Fundamentals

Chapter 4

Module Test Score _____

Module Rating (4, 3, 2, 1)

- ____ 1. Identify the components of a simple brake hydraulic system.
- ____ 2. Identify the qualities of brake fluid and fluid classifications.

6. Master Cylinders, Calipers, and Wheel Cylinders

Chapter 5

Module Test Score _____

Module Rating (4, 3, 2, 1)

- ____ 1. Identify the kinds of calipers.

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7. Master Cylinder, Calipers, and Wheel Cylinder Service

Chapter 6

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Check master cylinder condition.
- _____ 2. Remove, overhaul, and install master cylinders.
- _____ 3. Check disc brake caliper condition.
- _____ 4. Remove, overhaul, and install disc brake calipers.
- _____ 5. Check wheel cylinder condition.
- _____ 6. Remove, overhaul, and replace wheel cylinders.
- _____ 7. Bleed air from the hydraulic system.

8. Power Assist Units

Chapter 7

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Identify vacuum and hydraulic power assist units..
- _____ 2. Identify the components of vacuum power assist units.
- _____ 3. Identify the power sources and safety provisions of vacuum power assist units.
- _____ 4. Explain how hydraulic power assist units operate .
- _____ 5. Identify the components of hydraulic power assist units .
- _____ 6. Identify the power sources and safety provisions of hydraulic power assist units.

9. Power Assist Unit Service

Chapter 8

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Check and adjust brake pedal free travel.
- _____ 2. Check vacuum power assist unit for leaks.
- _____ 3. Inspect vacuum hoses and check valves.
- _____ 4. Check electrical and mechanical vacuum pumps.
- _____ 5. Remove and replace a vacuum assist unit.
- _____ 6. Overhaul a vacuum assist unit.
- _____ 7. Flush and bleed a Hydro-boost unit and related components.
- _____ 8. Replace a Powermaster unit.

10. Hydraulic Valves, Switches, Lines, and Hoses

Chapter 9

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Identify types of brake line flares.
- _____ 2. Identify various types of brake fittings and explain their function.

11. Hydraulic Valve, Switch, Line, and Hose Service

Chapter 10

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Test the operation of hydraulic system valves.
- _____ 2. Test the operation of low brake fluid switches.
- _____ 3. Test the operation of brake light switches.
- _____ 4. Remove and replace valves and switches.
- _____ 5. Bend, cut, and flare replacement steel hydraulic lines.
- _____ 6. Replace flexible hoses.
- _____ 7. Replace brake fittings.

12. Friction Brake Theory

Chapter 11

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Explain the relationship of friction to heat development..

13. Disc Brake System Components and Operation

Chapter 12

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Identify the components of a disc brake.
- _____ 2. Identify the two main types of rotors.
- _____ 3. Identify the three types of front caliper piston arrangements.
- _____ 4. Identify and explain the operation of fixed and floating calipers.
- _____ 5. Identify floating caliper mounting methods.
- _____ 6. Identify and explain the operation of rear calipers.
- _____ 7. Identify brake pad materials and construction.

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14. Disc Brake Service

Chapter 13

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Remove and replace front disc brake calipers.
- _____ 2. Remove and replace rear disc brake calipers.
- _____ 3. Remove and replace disc brake pads.
- _____ 4. Refinish disc brake rotors.

15. Drum Brake System Components and Operation

Chapter 14

Module Test Score _____

_____ Module Rating (4,3,2,1)

- _____ 1. Identify major drum brake components.
- _____ 2. Identify types of brake drums.
- _____ 3. Identify servo and non-servo brakes and explain their operation.

16. Drum Brake Service

Chapter 15

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Remove and replace brake drums.
- _____ 2. Check brake shoe condition.
- _____ 3. Check brake springs for damage.
- _____ 4. Check condition of brake shoe adjuster mechanisms.
- _____ 5. Check drum diameter and compare with maximum wear limits.
- _____ 6. Remove and replace brake shoes.
- _____ 7. Refinish brake drums.
- _____ 8. Adjust drum brake clearance.

17. Wheel Bearings and Oil Seals

Chapter 16

Module Test Score _____

_____ Module Rating (4,3,2,1)

- _____ 1. Identify types of wheel hubs and axle flanges.
- _____ 2. Identify types of wheel bearings.
- _____ 3. Identify common locations and usage of each wheel bearing type.
- _____ 4. Identify brake related locations using gaskets or O-rings.

18. Wheel Bearing and Oil Seal Service

Chapter 17

Module Test Score _____

_____ Module Rating (4,3,2,1)

- _____ 1. Remove and clean tapered wheel bearings.
- _____ 2. Inspect tapered roller wheel bearings and identify defects.
- _____ 3. Remove and replace pressed in wheel bearing races.
- _____ 4. Lubricate, install, and adjust tapered roller wheel bearings.
- _____ 5. Remove and replace oil seals.
- _____ 6. Remove and replace gaskets and O-rings.
- _____ 7. Remove and replace wheel studs.

19. Parking Brakes

Chapter 18

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Identify the components and explain the operation of driver applied parking brake levers.
- _____ 2. Identify the components and operation of parking brake warning lights .
- _____ 3. Identify the components of parking brake linkage.

20. Parking Brake Service

Chapter 19

Module Test Score _____

_____ Module Rating (4, 3, 2, 1)

- _____ 1. Adjust parking brakes.
- _____ 2. Service parking brake cables and related parts.
- _____ 3. Service automatic vacuum brake release mechanisms.
- _____ 4. Service warning lights.
- _____ 5. Adjust drum parking brake wheel assemblies.
- _____ 6. Adjust disc parking brake wheel assemblies.

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21. Brake System Electrical and Electronic Components

Chapter 20

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Identify basic electrical measurements.
- _____ 2. Identify basic vehicle electrical circuits.
- _____ 3. Identify the major parts of vehicle computers.

22. Anti-Lock Brake and Traction Control System Components and Operation

Chapter 21

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Identify and explain the purpose of anti-lock brake system components.
- _____ 2. Identify and explain the purpose of traction control system components.
- _____ 3. Identify common components of anti-lock brake systems and traction control systems.
- _____ 4. Identify major manufacturers of anti-lock brake systems and traction control systems.

23. Anti-Lock Brake and Traction Control System Service

Chapter 22

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Perform anti-lock brake system maintenance.
- _____ 2. Use scan tools to retrieve trouble codes from an anti-lock brake or traction control system.
- _____ 3. Use scan tools to diagnose problems in an anti-lock brake or traction control system.
- _____ 4. Check electrical and electronic components of ABS/TCS systems.
- _____ 5. Make pressure checks of ABS/TCS hydraulic components.
- _____ 6. Adjust ABS/TCS wheel sensors and brake travel switches .
- _____ 7. Replace defective anti-lock brake system components.
- _____ 8. Replace defective traction control system components.

24. Troubleshooting Brake Systems

Chapter 23

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Use the seven-step procedure to troubleshoot brake problems.
- _____ 2. Inspect brake components for wear and damage related to the complaint

25. ASE Certification

Chapter 24

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Explain why certification is beneficial to the technician, shop owners, and the driving public.

26. Career Preparation

Chapter 25

Module Test Score _____

Module Rating (4, 3, 2, 1)

- _____ 1. Identify three classifications of automotive technicians.
- _____ 2. Identify the major sources of employment in the automotive industry.
- _____ 3. Identify advancement possibilities for automotive technicians.

_____ Number of Skills Completed ÷

107 Number of Skills on SPR =

_____ % of Skills Completed

Conference

Date: _____ Hours in class: _____

Comments:

_____ Teacher initial: _____ Student initial: _____

Student Name: _____

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