

MODULE MEC2110: BRAKING SYSTEMS

Level: Intermediate

Theme: Guidance and Control Systems

Prerequisite: MEC1110 Pneumatics & Hydraulics

Module Description: Students develop the necessary knowledge, skills and attitudes to diagnose, service and maintain a braking system according to accepted trade practices.

Module Parameters: Access to specialized brake tools and related resources.

Note: Customer work must be supervised by certified technician.

Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none">demonstrate safe work practices when working on brakes	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none">observed performance related to:<ul style="list-style-type: none">appropriate selection and use of protective supplies and equipment for personal safetyfollowing established safety procedures while working on vehicle brakessafe practices when cleaning and repairing asbestos parts. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Braking Systems, Part 1, MEC2110-1</i></p> <p><i>Standard</i> <i>Performance rating of 2 on each criteria</i></p>	10
<ul style="list-style-type: none">identify brake design and components, and emergency brake systems	<ul style="list-style-type: none">performance measured by:<ul style="list-style-type: none">identification and description of brake componentsidentification of primary braking and emergency systems. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Braking Systems, Part 2, MEC2110-1</i></p> <p><i>Standard</i> <i>Performance rating of 2 on each criteria</i></p>	15

MODULE MEC2110: BRAKING SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Health/Safety Hazards	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • demonstrate knowledge of and follow lab safety procedures. 	<p>Be aware of asbestos hazards and effects of brake fluid on painted surfaces.</p>
Identification/Function	<ul style="list-style-type: none"> • identify the parts of a hydraulic brake drum system • compare the operating principles of duo-servo and non-servo brake systems • identify the parts of a disc brake system • compare the operating principles of a fixed, floating and sliding caliper braking system • describe operation of a combined disc and drum system • identify the parts of an emergency brake system • compare the operating principles of an emergency brake system on disc and drum brake applications. 	<p>Consider valves involved.</p>
Inspect/Service	<ul style="list-style-type: none"> • show how to: <ul style="list-style-type: none"> – prepare a work order, using appropriate questioning to determine brake problem – check a master cylinder fluid level – inspect drum and disc brake linings for wear – inspect drum and rotor for service – adjust an emergency brake cable. 	
Inspect/Repair	<ul style="list-style-type: none"> • demonstrate how to: <ul style="list-style-type: none"> – machine a brake drum and rotor according to the manufacturer’s specifications – remove and replace disc and drum brake shoes – remove/replace and overhaul master cylinder, wheel cylinder and caliper – replace a flexible brake hose – bleed and flush a brake system. 	<p>Be familiar with internal components and rebuilding procedures.</p> <p>On road-licenced vehicle must have final inspection done by certified personnel.</p>

MODULE MEC2110: BRAKING SYSTEMS (continued)

Concept	Specific Learner Expectations	Notes
Careers	<i>The student should:</i> <ul style="list-style-type: none">• identify further education, working conditions and career opportunities.	