

MODULE MEC3070: ENGINE RECONDITIONING 2**Level:** Advanced**Theme:** Propulsion Systems**Prerequisite:** MEC3050 Engine Replacement**Module Description:** Students determine the need for service, and perform service, on a cylinder block assembly and related components of an engine.**Module Parameters:** Access to engine measuring tools, cylinder block reconditioning tools/equipment and related resources.**Supporting Modules:** MEC3030 Engine Diagnosis
MEC3040 Engine Tune-up
MEC3060 Engine Reconditioning 1**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 procedures while reconditioning a cylinder block 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observed performance in: <ul style="list-style-type: none"> following established shop/lab routines safely using engine reconditioning tools/equipment. <p><i>Assessment Tool</i> <i>Assessment Checklist: Health and Safety, MECH&S</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	10
	<ul style="list-style-type: none"> determine the condition of a cylinder block before and after disassembly <ul style="list-style-type: none"> the ability to determine: <ul style="list-style-type: none"> the need for work through inspection of cylinder block, pistons, rods, crankshaft, camshaft, bearings and other related components cost of repair. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Cylinder Block Reconditioning, Part 1, MEC3070-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	25

MODULE MEC3070: ENGINE RECONDITIONING 2 (continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> recondition a cylinder block and its related components reassemble a cylinder block assembly demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observed performance in reconditioning: <ul style="list-style-type: none"> cylinder block connecting rods pistons. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Cylinder Block Reconditioning, Part 2, MEC3070-1</i> <i>Illustrative Example: Cylinder Block Reconditioning, MEC3070-2,</i> <i>Illustrative Example: Piston and Cylinder Measurement, MEC3070-3, Crankshaft and Main Bearing Measurement, MEC3070-4</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	40
	<ul style="list-style-type: none"> observed performance in disassembly and assembly a cylinder block assembly. <p><i>Assessment Tool</i> <i>Task Assessment Checklist: Cylinder Block Reconditioning, Part 3, MEC3070-1</i></p> <p><i>Standard</i> <i>Performance rating of 3 on each criteria</i></p>	25
	<ul style="list-style-type: none"> observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	Integrated throughout

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 safety practices related to reconditioning cylinder blocks. 	Personal, property and environment.

MODULE MEC3070: ENGINE RECONDITIONING 2 (continued)

Concept	Specific Learner Expectations	Notes
Identify/Analyze	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • list possible engine problems based on information provided • describe blue-printing procedures for cylinder blocks • estimate costs. 	Refer to customer complaints and service bulletins.
Inspect/Service	<ul style="list-style-type: none"> • clean all engine block components • inspect the following components for serviceability: <ul style="list-style-type: none"> – block alignment, warpage and cracks – cylinder(s) size, taper, roundness and general condition – crankshaft bends, cracks, journal size, tapes, roundness and general condition – camshaft(s) bends, lobe/lift wear and journal size – piston(s) size, taper, clearance and condition of pin(s) and grooves – connecting rod(s) big/small end size and straightness – lifters base wear, rate of leak down – bearings size and wear – chains, sprockets, pulleys, belts – other • identify what servicing is required • machine/service components as required • assemble engine block observing proper tolerances. 	Deglaze, bore, hone, resize, replace. Combine with MEC3040 Engine Tune-ups, MEC3050 Engine Replacement, for installation and running.
Careers	<ul style="list-style-type: none"> • identify the demand for skills related to engine reconditioning. 	