South Central College

AGME 1923 Gas/Diesel Repair II

Common Course Outline

Course Information

Description This course is designed to assist the students in building their understanding and application of materials and procedures learned in Gas/Diesel Engine Repair I, Power Trains, Electrical systems and other mechanical courses. The students will repair customer units. The primary repair work will involve engine overhaul (gas and diesel),clutch, brake and electrical repairs. Customer units must be completed by the end of the course. Students must be enrolled in the Agribusiness Service Technician program.
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Total Credits 4

Total Hours 128

Types of Instruction

Instruction Type	Credits/Hours
Lab	

Pre/Corequisites

Enrolled in the Agribusiness Service Technician Program

Course Outcomes

1. Identify shop safety procedures

Learning Objectives

always use safety glasses in the shop
identify flammable liquid storage cabinet
practice safe lifting techniques
identify fire triangle
identify fire extingusher locations
identify eye wash stations
identify first aid stations
identify MSDS safety sheet location
identify proper tractor splitting procedure
obtain forklift certification

2. Perform engine removal

Learning Objectives
identify proper splitting stand installation
identify proper lift points
identify proper engine stand mounting
identify teardown procedure

3. Disassemble engine

Learning Objectives
identify componenet parts to be removed
inspect componenets to aid in engine diagnosis
keep injectors, lines and pump openings sealed to prevent dirt from entering
identify main bearing and connecting rod caps by stamping numbers on them
identify proper piston pin removal

4. Identify proper head repair procedure

Learning Objectives
demonstrate cylinder head disassembly
perform cylinder head cleaning
perform warpage and crack detection on head
perform valve guide knurling or replacement
perform valve seat checking and reconditioning
perform valve cleaning and refacing
perform valve spring testing
perform valve rotator check
check for proper valve seating
reassemble head

5. Identify procedure used in inspection, overhaul, and testing of a cylinder block

Learning Objectives
perform check of cylinder block top surface
perform check of main bearing size for diameter and out of round
check or recondition cylinder sleeve bores
perform cam bearing removal and installation
identify removal and replacement of galley plugs expansion plugs, cover plates and oil pressure relief valve

6. Identify procedure used in inspection of crankshaft

Learning Objectives
perform measurement for out of roundness on main and rod journals
perform measurement for taper on main and rod journals
check crankshaft thrust surfaces
explain procedure for crack detection
perform main bearing and crankshaft installation
perform rear main seal installation
perform damper and flywheel inspection and reassembly

7. Identify procedure used in inspection of connecting rods, pistons and piston rings

Learning Objectives
perform piston inspection to determine if piston can be used again
perform ring groove cleaning and groove measurement
perform connecting rod inspection

8. Identify procedure used in inspection of camshaft and related parts

Learning Objectives
demonstrate correct procedure for measuring camshaft lobe
identify lifter and cam lobe follower inspection
identify timing gear inspection

9. Reassemble engine

Learning Objectives
check all bearings to see that they align to all oil gallies
check to see that all bearing caps are installed correctly
check to see that all rods and pistons are installed correctly
check to see if engine is timed correctly
check to see that head gasket and head is installed correctly
perform all torqueing specifications
perform valve lash setting
pressurize oil system
perform static timing

10. Identify flywheel sevicing

Learning Objectives
perform flywheel removal
check flywheel for excessive wear
recondition flywheel
reattach flywheel to crankshaft

11. identify procedure used in clutch inspection and related parts

Learning Objectives
disassemble pressure plate assembly
check pressure plate assembly for excessive wear
check the clutch disc, pilot bearing and throw out bearig assembly
reassemble clutch and related parts

12. Identify procedure used in brake inspection, adjustment and repair

Learning Objectives
perform brake inspection is pedal travel the same distance for both brakes
perform adjustments to brakes if possible
perform brake repair if adjustment does not solve the problem

13. Identify procedure used in electrical troubleshooting

Learning Objectives
perform electrical system check
isolate problem
repair electrical problem

14. Identify start-up/break in procedure

Learning Objectives
check immediately for oil pressure
run engine till operating temperture is achieved and retorque head and recheck valve lash
perform dynometer testing
check for leaks
wash tractor and do final inspection

SCC Accessibility Statement

Disability Services provides accommodations and other supports to students with permanent and temporary disabilities that affect their SCC experience. Disabilities may include mental health (anxiety, depression, PTSD), ADHD, learning disabilities, chronic health conditions (migraine, fibromyalgia), sensory disabilities, and temporary disabilities (broken arm, surgery). Common accommodations are extended test time, private room for testing, audiobooks, and sign language interpreter.

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