

CAMBRIAN COLLEGE
SCHOOL OF SKILLS TRAINING/SKY TECH
COURSE OUTLINE

Course Name: Hydraulic Systems Upgrading and Schematic Interpretation
Course No. DIE 1060
Credit Value: N/A
Semester:

Program Standards Developed: Yes No : Implemented: Yes : No :

Program Name: Hydraulic Circuit and Schematics Interpretation

Course Description:

This course will introduce technicians to basic hydraulic system schematics used in the heavy equipment. The course includes theory on basic circuit construction, identifying symbols, and circuit identification. The technicians will be able to identify the advantages, disadvantages, types of circuits, and basic construction of hydraulic circuits. The technicians will learn to interpret service manual procedures as prescribed by the manufacturers for diagnosing hydraulic system problems. This course will cover equipment specific schematics found in off road equipment.

Date: Fall 2006

Prepared by: Bob Huzij

Approved by: _____
Dean

Prerequisites: Heavy Equipment or Truck And Coach Technician

Equivalencies: N/A

Resources Required:

WebCT Material and student handout

General Learning Outcome:

The technician is able to identify basic hydraulic systems following manufacturers' schematics.

The technician is able to identify and explain the operation of basic hydraulic components and circuits following manufacturers' technical documentation.

The technician is able to diagnose hydraulic system problems following manufacturer's hydraulic schematics and recommend repairs.

Learning Outcomes:

Upon successful completion, the technician is able to:

Define the fundamentals of hydraulic systems.

Identify basic hydraulic components and related graphic symbols.

Describe the basic construction features and applications of schematics for hydraulic systems.

Define the purpose and fundamentals of basic hydraulic components.

Describe the construction features of basic hydraulic components.

Explain the principles of operation of basic hydraulic components.

Locate hydraulic components on equipment system schematics.

Identify hydraulic system problems using manufacturers schematics and recommend repairs.

Course Outline:

Define the fundamental of hydraulic systems.

- basic laws and their applications

Describe hydraulic terms and applications.

- basic terms
- basic applications of hydraulics

Identify components and graphic symbols on schematics

- basic components

Describe the function, construction features, composition, types, and application of schematics for hydraulic systems.

- hydraulic schematics and graphic symbols

Define the purpose of hydraulic components and identify them on hydraulic schematics

- pumps
- valves
- actuators
- reservoirs

Describe the construction features, types, and styles of hydraulic components.

- pumps
- valves
- actuators
- reservoirs

Explain the basic principles of operation of hydraulic components.

- pumps
- valves
- actuators
- reservoirs

Locate hydraulic components on equipment hydraulic schematics

- locate hydraulic components using equipment schematics

Identify hydraulic circuit flow on equipment hydraulic schematics

- Trace hydraulic flows using equipment schematics

Describe the fundamentals of trouble shooting using equipment hydraulic schematics

- Identify hydraulic system problem
- Trace the circuit flow on a hydraulic schematic
- Identify diagnostic procedures using schematics
- Recommend repairs following manufacturers recommendations.

Delivery Mode: 50 % Theory / 50% Lab

PLA/Transfer Credit: N/A

General Education Designation: N/A

Evaluation Methods:

1 written test demonstrating the ability to interpret hydraulic symbols and schematics and perform basic system adjustments and repairs following manufacturers' recommendations.

Grading Scheme:

A	80-100%
B	70-79%
C	60-69%
F (Below 60%)	Failure