ATMW-2130: SHAFT ALIGNMENT II

Cuyahoga Community College

Viewing: ATMW-2130 : Shaft Alignment II

Board of Trustees:
2012-06-28

Academic Term:
Spring 2019

Subject Code
ATMW - Appld Ind Tech - Millwrighting

Course Number:
2130

Title:
Shaft Alignment II

Catalog Description:
Review of rim and face alignment procedures. Covers reverse dial indicating. Application of mathematical formulas used to solve alignment problems and graphing techniques will be covered. Laser alignment systems and all of their functions will also be included.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
Departmental approval: admission to any Applied Industrial Technology Program.

Outcomes

Course Outcome(s):
1. Apply mathematical formulas and graphing techniques to solve alignment problems.

Objective(s):
1. 1. Perform mathematical calculations to adjust vertical alignments.
2. 2. Calculate thermal growth of mechanical components.
3. 3. Graph equations to solve alignment problems.

Course Outcome(s):
2. Interpret the readings taken from the indicators and solve the alignment problems mathematically or with a graph.

Objective(s):
1. 1. Discuss settings for offset and zee-bars dial indicators.
2. 2. Set up dial indicators to take rim and face readings or reverse dial readings.

Course Outcome(s):
3. Operate a laser alignment system proficiently and all of its functions.

Objective(s):
1. 1. Perform set up of laser alignment system including attachment of brackets laser and transducer, measuring and entering job dimensions, and rotation of couplings.
2. 2. Retrieve and interpret readings of laser alignment system.
3. 3. Verify settings and make corrections.

Methods of Evaluation:

1. Quizzes
2. Tests
3. Class participation in field exercises

Course Content Outline:

1. Setting up the dial indicators
   a. Offset
      i. Angularity
      ii. Reverse dial indicating
   b. Zee- bars
2. Mathematical formulas
   a. Rim and face
      i. Gap over coupling diameter
      ii. Ratio
   b. Reverse dial indicating
   c. Graphing the equations
3. Laser alignment systems
   a. Attaching brackets laser and transducer
   b. Measuring and entering dimensions
   c. Rotation of couplings
   d. Retrieval and interpretation of readings
   e. Making corrections
   f. Soft foot check
4. Vertical alignments
   a. Bolt pattern layout
   b. Mathematical calculations to correct angularity
5. Calculate thermal growth in mechanical components

Resources

A. International Petroleum Institute. *A. International Petroleum Institute, Industrial Trades Handbook.* current. IPT Publishing and Training, 1989, Las Vegas, Nevada, 1989.

Carpenters International Training Fund. *Machinery Alignment.* current. Carpenters International Training Fund, Las Vegas Nevada, 2011.

Pruftechnik. *C. Optalign Plus Training Handbook.* current. Pruftechnik, Ismaning, Germany, 2007.

Starrett. *D. Tools Rules.* current. Abe Parkers books, Sarasota, Fla, 1998.

James Gerhart. *E. Mastering Math for the Building Trades.* McGraw Hill New York, New York, 2000.

Resources Other

www.yesyen.com/Product_Rotating_YESYEN.htm
www.mobiusinstitute.com/**training**details.aspx?id=1846

Top of page
Key: 523