Course Title: Fluid Line Connectors
Prefix and Course Number: FLPT 133

Course Learning Outcomes:
By the end of this course, a student should be able to:

- select proper fluid line for each application required on machine installation
- properly apply schedule 40 and 80 pipe, suction hose,(1 wire, 2 wire, and 4 spiral) pressure hose, and steel tubing based on wall thickness and type of fittings used
- calculate maximum oil velocity for each fluid line application based on either nominal ID

Course Outline

I. Fluid Line Selection
   A. Location in System
   B. Flow Requirements
   C. Pressure Requirements
   D. Type Oil Used and Compatibility
   E. Machine or Application Requirements
      1. Rigid lines
      2. Flexible lines

II. Fluid Line Installation
   A. Component Location
   B. Oil Reservoir Location
   C. Leak Proof Assembly
   D. Easily Installed
   E. Requires Periodic Removal
   F. Required Structural Supports
      1. Solid clamp
      2. Flexible clamp
   G. Fittings Used
      1. Bill of Material
   H. Installation Instructions
      1. Sketches
      2. Drawings

III. Factors to Consider
   A. Leak Proof System
      1. Fittings
         a. type used
         b. minimize number used
         c. thread sealant used (if required)
      2. Fluid Line Considerations
         a. machine vibration
         b. movement of machine parts
         c. ambient temperature
   B. Correct Application
      1. Knowledge of each type of fluid line and its limitations
      2. Interfacing between different types of fluid lines
      3. Fitting selection
      4. Avoid undersizing
C. Fluid Line Routing (usually no shop drawing)
   1. Shop mechanic performs
      a. layout of fluid lines on machine
      b. select type of fluid lines used
      c. develop bill of materials required

D. Cost and Labor for Fluid Line Installation
   1. 25% total system cost
   2. Underestimated

E. Systems Judged On
   1. Fluid line installation
      a. problems
      b. oil leaks (hard to eliminate)
      c. total cost
   2. Appearance