Product Name: Automatic Tube Bending Fixture Bender

Features/Benefits:
- 400 Tube Capacity
- Automatic Load / Automatic Unload

Product Description:
Machine automatically loads cut-to-length tubing. Individual tubes are loaded into the bend station. The part is bent in 2 locations. A robot is then used to grip the part, rotate it 180° and bend the opposite end in 2 locations. After the part is bent, the robot automatically unloads the finish work piece.

Overall Part Dimensions:
5/8 diameter tube with 4 bends

Operational Cycle Times:
Part to Part: 8 Seconds

Bending Tolerances:
± 1.5mm

Machine Controls:
- Operator interface: Push button control - 9 devices
- PLC: Allen Bradley
- Pneumatic Valves: SMC
- MotoMan robot controller

Engineering & Fabrication Processes Applied:
Primary:
- Engineering
- Fabrication
- CNC Milling
- Welding
- Grinding

Secondary:
- Priming
- Painting
- Assembly
- Hardening

Equipment Used to Manufacture Bending Fixture:
- CNC Mill
- Manual Mills
- Manual Drills
- Manual Grinders
- Automatic Grinders
- Manual Lathe
- Hand Tools
- Gage Pins
- Gage Blocks
- Height Gages
- Micrometers
- Dial Caliper

Material Used:
Machine Base
- Square Tubing
- 3" x 3" x 1/4 wall

Sub-Assemblies
- 1018 Low Carbon Steel
- A2 steel
- D2 Tool steel
- S7 Tool steel

Hot Rolled Steel Base Plate
- Thickness: 5/8'

Guarding
- Sheet Metal: 16 GA
- Outside Panels: 16 GA Expanded Metal framed with C-Channel

Material Finish:
- Machine Base: Primed and Painted
- Guarding: Painted Black & Bright Safety Yellow

Inspections / In Process testing:
- Dimensional Inspection, Functionality Tests

Standards Met:
- Customer Specifications, CAD Drawing

Industries for Use:
- Automotive Industry
- Aerospace Industry
- Appliance Industry
- Medical Industry
- Agricultural Industry

Delivery Location:
Ft. Recovery, OH