



FOX IV Print and Apply Tube Labeling with Robotic Integration

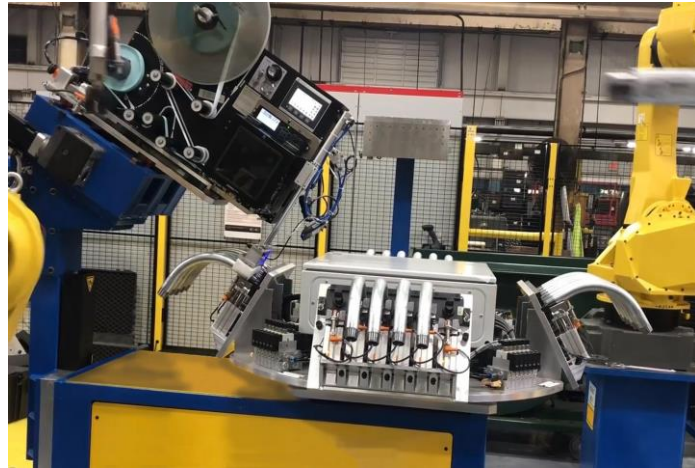
Features and Benefits

- Automatically labels tubes in indexing station
- Custom label application head
- Integrated with robotics system for faster throughput
- Specialty labels to adhere through manufacturing residue
- Large capacity for extended production

Industry Group:



FOX IV's engineering and label converting capabilities enabled the customer's vision to automatically label various diameters of cylindrical pipe to be fulfilled.



FOX IV's 6954R2 labels a series of metal tubes as part of an integrated, robotic labeling/packing system.

METAL TUBE/PIPE LABELING

BACKGROUND:

An international systems integrator contacted FOX IV about providing a made-to-order labeling system to print and apply labels to steel and aluminum elbow pipes. The FOX IV unit would be shipped overseas for integration into a larger tube packing system prior to being installed back in the United States.

APPLICATION:

Customer needed to print and apply 1" x 2.5" labels to various bent steel and aluminum tubes and pipes. Up to 6 pipes would be placed into one side of a four sided indexing table. At the initial station, the pipes would be placed into the indexing table/pipe cradle via industrial robot. At the second station, the pipes would be waiting to be labeled. The labeling station would be the third position of the index table where each pipe would receive a label. The print and apply unit would apply a label then shift to the position of the next pipe and repeat the process until all pipes received a label. The indexing table then would shift to the fourth station where industrial robots would pick and pack the pipes.

Pipe diameters would range from 7/8" diameter to 2 1/4" diameter.

The entire labeling station, including integration of robotics, indexing table, and label print and apply, would be designed by a third party integrator.

ENVIRONMENT/SPECIAL CONDITIONS:

Temperature controlled factory environment. Pipes had a manufacturing residue that made it difficult to adhere labels to the pipe.

SOLUTION:

FOX IV designed a Zebra based print and apply labeling system with Allen Bradley PLC, Robotic Control Interface, and a specially designed label applicator for the various diameter cylindrical pipes and tubes. It also features a redundant application assembly to ensure firm label adhesion.

The print and apply was successfully mounted to the indexing table where it applies labels in series to the pipes. The entire print and apply unit is shifted according to the pipe position to be labeled. Movement of the print and apply along with the rotation of the pipe indexing table is controlled by the third party integrator's PLC.

After all labels are applied, the indexing table rotates to present the print and apply with a new batch of pipe to label.

The third party integrator, with assistance from FOX IV's software engineering team, successfully timed all aspects of the labeling and packing operation including the robotics, indexing table, and print and apply signals.

In addition to the equipment, FOX IV sourced and converted labels to meet adhesion requirements of the application. Since the pipes presented have a residue post-manufacturing, standard label adhesives would not hold the label to the pipe. The labels provided by FOX IV paired a special adhesive with a polypropylene face stock to create a label that would not only adhere to the pipe, but provide a durable label for post-manufacturing conditions.



Range of pipe sizes and configurations to be labeled.

EQUIPMENT PROVIDED

1 x 6954R2 Print and Apply Systems with

- 16" OD label roll capacity for extended operation
- Zebra print module - 4" print width
- 8" length applicator arm
- Random stroke sensing
- Tube label application assembly
- Robotics integration package
- Ethernet connectivity

1" x 2.5" Specialty labels to adhere through manufacturing residue

1 Year extended warranty

SERVICES PROVIDED:

Design to application
Sourcing specialty label stock
Software/integration support



FOX IV TECHNOLOGIES, INC
6011 Enterprise Drive, Export, PA 15632
724-387-3500
sales@foxiv.com
www.foxiv.com

VIDEO URL:

<https://youtu.be/oUDho2oMWZQ>