Project Kick-Off

Tube Bender Upgrade

By

Julio Bravo

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Project Overview

- The Tube Bender Machine Upgrade Project will upgrade an existing tube bender machine to an automated CNC tube bender to keep up with production demand.
- The upgraded machine will be able to produce 60% more than a regular tube bender machine. It will take less time to setup for every different type of part, reducing the time the operator spends on set up. This means the operator can get to bending parts about 2 times faster than on a regular machine.

Customer, Sponsor, and Stakeholders

- The customer and stakeholder, Tube Bending Company, is a major aircraft exhaust and air duct supplier located in Los Alamitos, CA. Due to a large contract that has just been awarded to the Tube Bending Company, they are unable to meet production demand with their current tube bender machines.

The Project Team

- **The Project Management – Project Upgrade Bravo Team**
  - Project Manager - Julio Bravo
  - Onsite representative – Mike Hunt
- **Designer and Engineer**
  - CNC To Be – Owen Adams
  - Tube Bending Company – Ethan Burns
- **Purchasing**
  - CNC To Be – Scott Olsen
  - Teledyne Pines – Jim Lozano
- **Quality**
  - Tube Bending Company – Harry Young
  - CNC To Be – Tom Woods
  - Project Upgrade Bravo Team – Mike Hunt
- **Operations**
  - CNC To Be – Owen Adams
  - Tube Bending Company – Ethan Burns
  - Tube Bending Company – Rigoberto Moreno

Project Scope

- The goal of this project is to upgrade a tube bender machine into a CNC tube bender machine in order to increase productivity.
- The machine upgrade will include a new control panel, a carriage, and a collet. These items will provide the machine with the ability to run in an automated fashion.
- This upgrade will be conducted onsite at plant 1 of The Tube Bending Company.
- The machine will be dismantled to a certain point in order to incorporate these upgrades to the machine. Once the machine is operational, there will be training and an implementation of a new system to increase the production process.
- CNC To Be will be the company to perform the upgrade of the machine. The Tube Bending Company will modify necessary equipment from the machine to make it work with the upgrade.
- Once the machine is upgraded to an automated CNC tube bender, it will be able to bend up to twice as fast as a normal machine. It will also take an operator less time to set up a CNC machine compared to a regular tube bender. Since the CNC can produce more quantity, a new production standard will streamline the process.

Timeline

•Project is to be completed by end of August, 2018 with the following top-level milestones.

•Project planning complete by 2/2/18

•Project implementation started by 2/5/18

•Complete upgrade by 8/3/18

•Complete all testing by 8/17/18

•Complete customer acceptance by 8/24/18

•“Go Live” by 8/31/18

Budget

- A budget of $100,000 USD is allocated to this project.
- Funding is provided directly from the customer. Initial funds of $30,000 USD is approved and allocated.
- Additional funding will be approved and allocated by specified milestones.

Make –or- Buy

- Make
  - The Tube Bending Company will modify the mandrel bar, making it shorter to work with the machine upgrades.
  - The Tube Bending Company will make an enclosure for the machine to ensure that the operator is the only one who can enter the area when the machine is operating.
- Buy
  - The new upgrade parts will be purchased from Teledyne Pines Machinery. This will include the control panel, the carriage, and the collet.
  - The programming software for the new control panel will also be purchased from Teledyne Pines Machinery.

Test and Validation

- Provide top level test and validation
  - Form
  - Fit
  - Function
- Test equipment
  - The equipment will be tested by CNC To Be to ensure proper function.
- Test software
  - The Software will be tested by CNC To Be to ensure proper function and compatibility with the new upgrades.
- Test plan
  - The test plan will include operating the machine for 4 hours non stop to provide continuous, trouble free operation.
- Test acceptance criteria
  - The Tube Bending Company will determine if the tests conform to the specifications set.

Customer Acceptance Criteria

- Tube Bending Company Acceptance Criteria
  - The tube bender must be upgraded to a CNC tube bender.
  - The machine must operate in an automated for.
  - The upgrades must comply with our specifications.
  - The Project must be completed by 8/31/18.

Assumptions and Constraints

- Assumptions
  - The tube bender machine is in good condition and can be upgraded.
  - The machine is compatible with the upgrades.
  - Current department space, power supply, machine location, and machine tooling will not need to be altered or modified.
  - Training will need to be given to each new machine operator.
- Constraints
  - Due to the need for immediate implementation, the traditional project develop schedule will be accelerated with associated risk assumed.
  - To minimize interruption to daily business operations, the implementation team will conduct project activity during off hours.

Challenges

- Internal challenges
  - The machine shop within the company has a lot of work so the modification of the mandrel bar for the machine upgrade will interfere with their work or they may put it off until there is time.
- External challenges
  - Since the new parts are coming from Wickliffe, OH, the parts may not arrive on time.
  - There could be problems with the programming software which would mean sending it back to have it fixed and delaying the project.

Rules of Engagement

- Communication
  - The project manager will receive daily updates from the onsite representative.
  - Status reports will be sent weekly to the project manager and the customer
- Meetings
  - Meetings will be held every month between the project manger and the customer
  - The project manager will hold a meeting with both the customer and the contractor should a problem arise
- Workflow
  - Daily activities will be registered by the onsite representative
  - Weekly activities will be registered within the status reports
  - Monthly activities will be presented in the monthly meetings with the customer

Assignments of Duties and Responsibilities

- The Project manager is responsible for planning, implementing, controlling, and closing the project.
- The Tube Bending Company is responsible communicating and working together with CNC To Be and Project Upgrade Bravo Team to figure out the design and specifications of the new machine upgrades.
- CNC To Be will be responsible for upgrading the machine to the required specifications agreed upon by the customer.