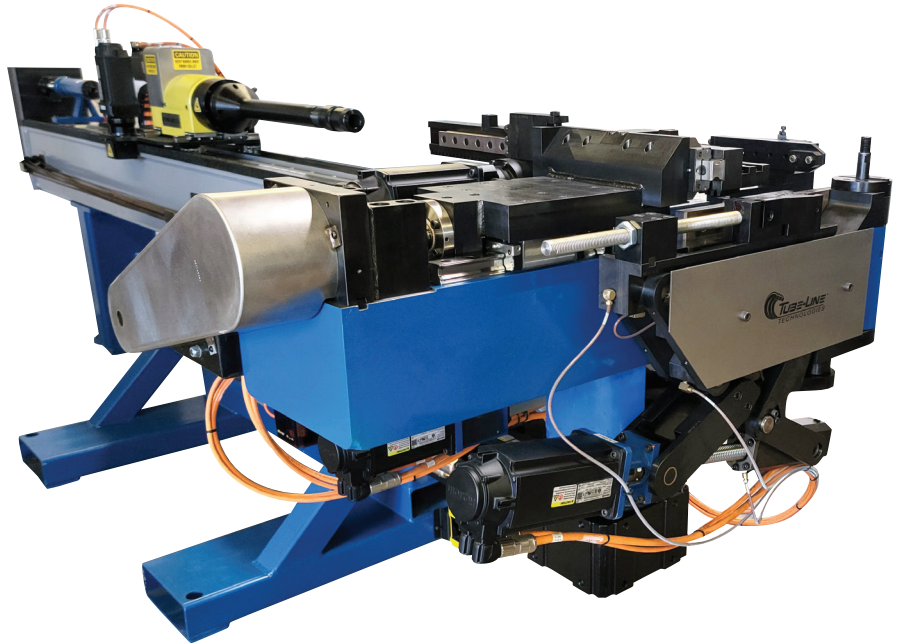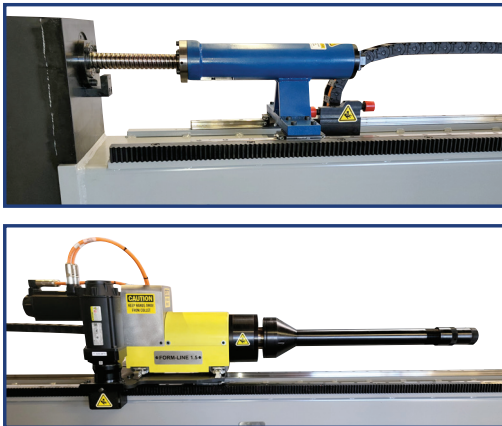# Form-Line 1.5

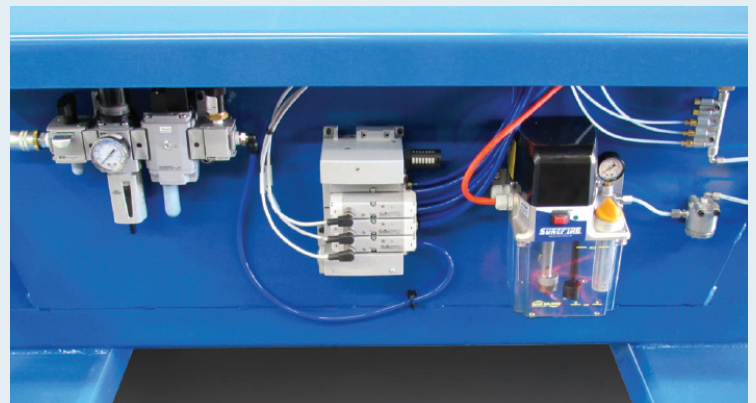## 1.5″ BENDER FROM TUBE-LINE TECHNOLOGIES

The Form-Line 1.5 is a fully-electric tube bender that implements an offset bend head to maximize part shape clearance. It is made in America and utilizes the reliable BendPro G2 control. The Form-Line 1.5 is an all-electric CNC tube bender that allows precision programming of all axes to control the rotary draw bending process. It comes standard with a programmable drop-away clamp that allows for easy and repeatable tooling set-up. The Form-Line Series utilizes a blue and grey color scheme to not only highlight its elegant design, but also to stand up to harsh production environments.

BOSCH-REXROTH MS2N MOTORS WITH INVERTER DRIVES ARE USED.

The linear guideways are also Bosch-Rexroth. The I/O is Beckhoff as it is using the BendPro software.

The bender has 30,000 in-lbs of torque at 45RPM (ie. a 1.500 OD x .065 WT (mild steel) on a 1.5" CLR requires 29,600 in-lbs of torque; a 1.500 OD x .049 WT (304 sstl) on a 1.5" CLR requires 26,000 in-lbs of torque.)

Form-Line 1.5

1.5″ BENDER FROM TUBE-LINE TECHNOLOGIES

STANDARD SPECIFICATIONS AND FEATURES:

- Tube outside diameter: 1.5″ max
- Tooling stack: Single-level 2″ high tooling
- Rotation: Right-hand
- Tube over mandrel: 8′
- Bend radius: 1/2″ < CLR < 8″
- Safety: Proximity laser scanner
- CNC control: BendPro G2
- Voltage: 460V, 60Hz, 3-Phase
- Weight: 8,500 lbs.
- Approximate dimensions (L x W x H): 250″ x 60″ x 70″
- Full warranty period: 1-year from date of installation
- Assembly prints and manual: 1 hard copy and 1 electronic copy on USB
- On-site installation support and training: 3 days in the U.S.A. (Does not include unloading, positioning, lagging, and connection hook-ups to the machine)

ADDITIONAL OPTIONS:

- 4′ bed extension (Tube over mandrel 12′ max.)
- Servo mandrel bending package w/ auto-tangent adjust; Includes wiper die holder
- Remote start footswitch
- Tube-in-collet switch
- B-axis indexing switch
- Machine mounts
- Side-mounted proximity laser scanners (2 additional scanners)
- Electrical cabinet air conditioner
- Robot interface

BendPro G2

ADDITIONAL STANDARD FEATURES:

- Program parts while bending
- Multi-part sequencing
- Resume after E-stop and safety zone violation without scrapping the part
- Start bending at any bend number
- Open and closed collet bending support
- Hitch feeding
- Recapture the tube in the pressure die zone using Teach
- Programmable unload sequences using Teach
- Profiling of pressures and speeds
- Feed rate override (0-100% of programmed speeds)
- Electronic gearing of bend arm, carriage, PDA, etc.
- Springback and elongation compensation options
- 24 user-definable alarms

AVAILABLE OPTIONS:

- CAD interface for importing STEP, IGES, and ShipConstructor files
- CMM interface (Measuring machines including Romer, AICON, FARO, Eaton Leonard Vector, etc.)
- Desktop programming software
- Simulation software (at bender and desktop)
- Push bending (large and/or multiple-radii)