

REF SMTS  
L0173-4214

## Technical Specifications

- Must be portable for desktop/work bench/vise use
- Must have a natural aluminum finish (Not painted)
- Must accomplish bending operations by mechanical advantage means of cranking handle operating through a minimum 60:1 ration worm gear
- Must have a minimum torque rating of 2700in/lbs
- Steel constructed worm screw drive shaft must have trust type ball bearings and be completely enclosed for safety and protection from external damage
- Total Tube bending machine weight must be under 20lbs
- Tube bending machine must operate on mechanical power (removable hand crank)
- Tube bending machine must not be intended for hand held use must be secured to a work surface
- Must have an a removable "slide in dove tail" square base which will allow the base to be bolted to a work surface or secured in a bench vise allowing the bending machine to easily attach or detach from a secured base.
- Capable of bending  $\frac{1}{2}$ " outside diameter tubing and smaller under fully annealed steel and stainless steel tubing with no limit on wall thickness
- Capable of bending up to  $\frac{3}{4}$ " outside diameter soft aluminum and copper tubing with no limit on wall thickness
- Must be capable to bend carbon steel and stainless steel tube bending
- Tube bending machine carbon steel and stainless steel required maximum wall thickness capacity  
 $\frac{3}{4}$ " outside diameter Carbon Steel Tubing: Wall thickness of 0.065in  
 $\frac{3}{4}$ " outside diameter Stainless Steel Tubing: Wall thickness of 0.049in
- Able to make precision bends on tubing of up to 180 degrees in one continuous motion without stopping
- Bending operation must have a slide block travel feature that travels with the tube and bears lightly against the radius block to form a true round die enclosing the tube to provide a smooth full cross-sectional bend minimizing distortion in the bending process
- Manual clamping of tube into radius blocks
- Bending machine frame will be constructed from cast aluminum to include frame and base for light weight construction and ease of transportation
- Must have carrying case/box to accommodate all equipment included in bending machine tooling kit
- Bending machine must be capable out of the box to performing bending operations of up to 180degree bends on the following tubing sizes  $\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and include the necessary radius blocks, slide blocks and associated tooling to function without the need to purchase additional tooling
- All radius blocks will be marked in 15degree increments ranging from 0-180 degrees and be constructed out of cast aluminum with a maximum bend radius of 3"
- Repair/replacement parts must be available for future purchase

## Technical Specifications

- Machine must be portable for desktop/work bench use and does not require a power supply
- Must accomplish flaring operations by means of hydraulic fluid power
- Total Machine weight must be under 70lbs
- Machine must operate on mechanical power (Hand powered hydraulic pump)
- All hydraulic lines/connections must be metal tubing and steel connections "No hoses"
- Hydraulic pump must have manual bleed to relieve pressure
- Hydraulic system must have a pressure gauge to verify correct operating pressure to achieve complete flaring process
- Required pressure chart to achieve proper flaring on various tube sizes will be located on machine
- Compatible for carbon and stainless steel tubing
- Able to perform 37degree flares on tubing ends in compliance with ISO 8434-2/SAE J514
- Acceptable tubing diameter ranges (6mm-38mm),( ¼"-1 1/2")
- Maximum tube capacity for steel/stainless steel 38mm OD X 4mm wall thickness, 1-1/2" OD X 0.120in wall thickness
- Must have capability of using multiple sized flaring dies to accommodate tube diameter ranges
- Manual clamping of tube into dies
- Must have carrying handles on machine capable of supporting the entire weight of the machine while being carried
- Must have wheels and telescoping handle for trolley transportation
- Flaring operations must be achieved by means of manual hydraulic power
- No die adjustments necessary to achieve proper tubing flare finishes
- Must have built in folding cover for point of operation protection while not in use
- Must have durable metal exterior finish "Not painted"
- All components must be secured/bolted to base as well as ergonomically located for ease of operation
- Machine must have raised footing on the underside to prevent machine from slipping on/off surfaces
- Delivered fully assembled and ready for use

## Technical Specifications

- Machine must be portable for desktop/work bench use
- Must accomplish flaring and flanging operations by means of hydraulic fluid power driven by electricity
- Able to perform 37degree flares on tubing ends in compliance with ISO 8434-2/SAE J514
- Able to perform O-ring face seal flares on tubing ends in compliance with ISO 8434-3/SAE J1453
- Total Machine weight must be under 190lbs
- Machine must operate on 115volt 60Hz power via cord and plug
- Compatible for fully annealed seamless cold drawn or welded precision tube in carbon or stainless steel
- Able to perform 180 degree flanges or 37degree flares in one operation
- Tubing Outside diameter acceptable ranges (6mm-25mm),( ¼"-1")
- Tube flanging 180 degree for O-ring surface seal carbon steel and stainless steel required maximum wall thickness capacity or greater

1" outside diameter Carbon Steel Tubing: Wall thickness of 0.134in

25mm outside diameter Carbon Steel Tubing: Wall thickness of 4mm

1" outside diameter stainless Steel Tubing: Wall thickness of 0.095in

25mm outside diameter Carbon Steel Tubing: Wall thickness of 2.mm

- Tube flaring 37 degree carbon steel and stainless steel required maximum wall thickness capacity or greater

1" outside diameter carbon and stainless steel tubing: Wall thickness of 0.120in

25mm outside diameter carbon and stainless steel tubing: Wall thickness of 3mm

- Minimum U-bend 140mm on tubing or less
- Manual clamping of tube into dies by means of mechanical eccentric lever action
- Single push button for flaring /flanging process activation "Green Cycle start button"
- Must have push buttons for both cycle activation, deactivations
- Single push button for flaring /flanging process deactivation "Red Cycle stop button"
- Complete cycle time to complete flaring/flanging process must be less than 25 seconds
- Must have carrying handles on both sides of machine capable of supporting the entire weight of the machine while being carried
- Flanging & flaring operations Must be achieved by means of hydraulic power exerted onto a rotating pin that forms the flange/flare surface onto tubing that is held in a fixed die
- Non programmable controls simple two button controls
- Automatic process lubrication delivery system
- No die adjustments necessary to achieve proper tubing flare/flange finishes
- Must accommodate rapid tool change between various dies/pins without the need of hand tools to accomplish this task
- Must have built in slide cover for point of operation protection while not in use
- Must have durable metal exterior that is painted
- Operating noise level must be 82Db or less

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- Machine must have raised footing on the underside to prevent machine from slipping on surfaces
- Delivered fully assembled and ready for use by plug into 115volt 60Hz outlet

