



## Tube Straightening Machine Model UTC 1-14 User Manual



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## 1. General Specifications:

- 1.1 The machine is designed and built for straightening bare and jacketed Stainless Steel & Copper coil tubes.
- 1.2 The tubes for straightening are supplied on reels (long continues length)
- 1.3 Bare tube OD range: 6mm -12.7mm (1/4" – 1/2")
- 1.4 Bare tube wall thickness: 0.035", 0.049", 0.065"
- 1.5 Jacket materials: PVC, TPU
- 1.6 Nominal jacket wall thickness: 1.3mm
- 1.7 The machine is combined of:
  - 1) The main frame support trolley, on four (4) heavy duty swivel casters with brakes. (Must be locked when operating the machine)
  - 2) Reel arm and shaft assembly (to be dismantle for transportation)
  - 3) Top straightening machine includes:
    - Entry tube adjustable-guide-roller
    - Vertical straightener (5 adjustable pulleys)
    - Horizontal straightener (5 adjustable pulleys)
    - Dual Belt tube Puller (caterpillar) with gear-motor drive – manually adjusted to suit the tubes OD range.
    - Electromechanical length counter
    - Exit tube adjustable-guide-roller
  - 4) Electrical and Control Cabinet
- 1.8 The machine is powered by AC Motor & Gear drive set 1.1KW , with adjustable speed frequency controlled driver.
- 1.9 Main Electrical connection: 220VAC 1-ph, 50Hz.

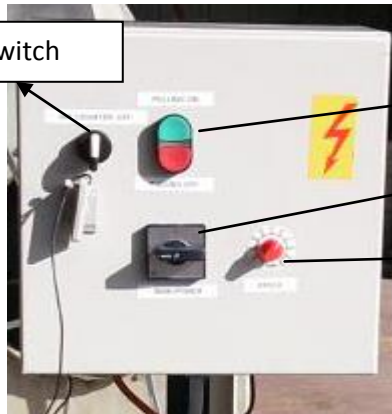
The drive motor is 400VAC+/-10%, 3-ph, 50Hz
- 1.10 Line speed: adjustable 5 -14m/min.

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1.11 Electrical and control cabinet includes:

- 1) Main power switch
- 2) Press-buttons (green & red) – Pulling ON/OFF
- 3) Length counter switch ON/OFF
- 4) Speed control Potentiometer



Length Counter Switch

Pulling ON/OFF Buttons

Main Power Switch

Speed Control

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## 2. Safety:

2.1 Read carefully the Machine Manual.

2.2 Operation of the machine by qualified operator only

2.3 Use safety glasses, working gloves and wear an helmet.



2.4 Before starting the machine make sure it is disconnected from electrical supply (the socket is out).

2.5 For loading/unloading of the machine use the four (4) eye-bolts, which are mounted on the main straightening base plate (at its corners)



Eye Bolt

2.6 There are threaded holes on the base frame which suit as well for the eye-bolts. You could use it for tying the machine for transportation.

2.7 When transporting the machine, please dismantle the reel arm. Keep the reel-arm screws and spacers on the machine.



Reel Arm

2.8 When locating the machine at the job-site lock the machine casters (all machines four wheels) to prevent from un controlled movement.



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## 3. Operating:

3.1 Attach the reel arm to the machine frame using the four (4) screws and spacers.

3.2 The Reel shaft is attached to the reel arm by one (1) screw and two disks (washers)



3.3 Load a reel with the tube on the shaft using the two Plastic bushes

3.4 Lock the reel to the shaft by the metallic clamp ring with one (1) screw

3.5 Install the suitable straightening rollers set (total of 10) it should suit the tube OD. (bare & Jacketed).



3.6 The rollers sets:

- 1) 1 set of straightening rollers with PETP sleeve 8.6mm diameter "U" groove.
- 2) 1 set of straightening rollers with PETP sleeve 12.1mm diameter "U" groove.
- 3) 1 set of straightening rollers with PETP sleeve 15.3mm diameter "U" groove.

3.7 Assembling/dismantling of the straightening rollers is done by the quick release mechanism located on each of the rollers shaft.

Press the top part against its spring with one hand, and extract the rollers while pressing.

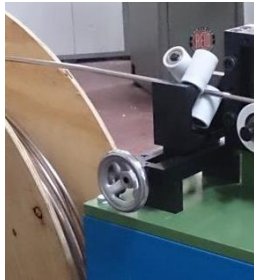
For assembly procedure is the same – press the top part against the spring and insert carefully the new roller.

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3.8 Release the clearance between the rollers of the tube guides (entry and exit) by rotating the adjusting wheel.



3.9 Release the clearance between the straightening rollers of the two straighteners sets (vertical and horizontal).



3.10 Open the clearance between the belts of the caterpillar by rotating the Upper wheel.



3.11 Make sure the wheel of the counter meter is up (to prevent damage from the inserted tube).



Counter Wheel

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- 3.12 Release carefully the outer end of the tube (from the reel) and make sure the both inner side of the reel flanges are free from sharp pieces (screw, nails wood cheeps etc).
- 3.13 If the tube end is deformed cut it with tube orbital cutter.
- 3.14 Insert the tube throughout the machine when the tube end reaches the exit guide rollers, close the gap of the caterpillar belt. Apply the minimum force required to prevent from slippage of the tube related to the belts.
- 3.15 adjust the straightening rollers. Make sure that the tube is straight from the entry to the exit. Make sure that there is no level change between the two straightening blocks vertically and horizontally.
- 3.16 straightening rollers adjusting steps:
  - 1) At a straight level (vertical & horizontal) of the tube, bring the rollers to contact with the tube.
  - 2) Make a straightening test by pulling two (2) meters of tube.
  - 3) Readjust according to the results.
  - 4) Repeat the test.
  - 5) Always, apply as minimum as possible deformation on the tube to achieve the satisfied results.
- 3.17 Set the length counter mater and locate the counter wheel on the tube.
- 3.18 Switch "ON" the main power switch of the machine.
- 3.19 Select counter "ON"
- 3.20 Speed Potentiometer at low speed
- 3.21 set the required length on the digital length counter.
- 3.22 Press the green button "pulling on"
- 3.23 Increase operating speed by the potentiometer.
- 3.24 The machine will stop automatically upon reaching the preset length.
- 3.25 Check the length deviation before cutting, and adjust accordingly



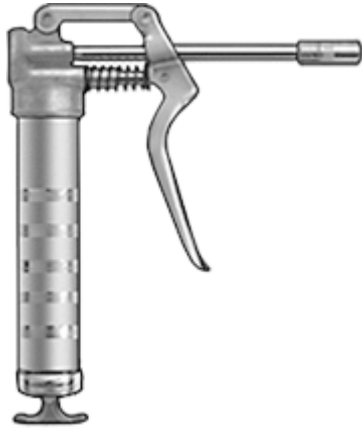
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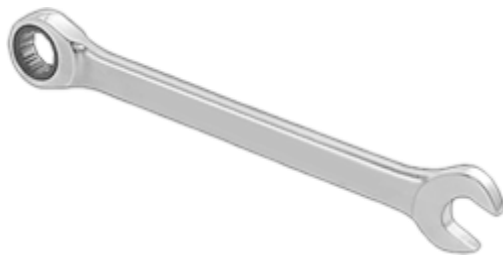
## 4. Maintenance:

### 4.1 Required tools:

- 1) Compact grease-gun (x1)



- 2) Wrenches: Ratcheting combination wrench 30mm  
For the straightener rollers adjustments



- 3) Hex Key set 2-8mm



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- 4) Double open end wrenches: 10x11, 12x13, 14x15, 16x17, 18x19, 20x22



- 5) Tube cutter:



- 6) Tape ruler:



### 4.2 Safety equipment:

- 1) Safety glasses
- 2) Hard hat (safety helmet)
- 3) Safety gloves.

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## 4.3 Periodically machine cleaning:

- 1) Before starting a new job - please clean the machine with dry cotton cloth.
- 2) When cleaning check the straightener rollers visually and make sure they are not harmed.
- 3) When find some broken roller coating please replace with a spare roller.
- 4) Every two (2) weeks (of continues work) feed grease to the grease points located on the caterpillar drive side body.

Clean the excess grease with clean and dry cotton cloth.

## 4.4 For any further customer support please do not hesitate to contact:

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