

# Operation Manual For LEFON ET and EV series Beveling Machine



April, 2009    Version 2.1

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## **Section 1: Introduction to LEFON ET/EV Beveling Machine**

LEFON ET/EV Beveling Machines are a portable beveling machine for quick and accurate weld preparation on pipe and tube. Variety of models can meet the requirement to bevel from  $\frac{3}{4}$ " ID to 23  $\frac{3}{4}$ " ID pipe. Please check with specification section for model selection. Depending on the models, the beveling machine can bevel pipe or tube with wall thickness from 15mm (9/16") to 70mm (2  $\frac{3}{4}$ ").

The machines are all ID mounted by three Clamp Extension Leg mandrel design for square, rigid installation. Different sized clamp legs are used to cover the machine's entire range of pipe diameters. The ET/EV series are driven by reliable and powerful electric motor, such as the world renowned motor supplier, METABO

The key features are

1. Quick Setup
  - Take less than 5 minutes to setup
  - Adjust the Feed Handle can quickly clamp the beveler inside pipe/tube
  - Accurately centered inside pipe
  - Take seconds to install and adjust bevel Bit
2. Easy to use
  - Switch on and off by motor switch
  - Fine tune to micro feed the bevel by Scale Wheel
  - Compact design allows it to work in small space
3. Unique Design
  - Aluminum body to reduce weight
  - Rotating Mandrel equipped with two bevel Bit, can work on pipe simultaneously
  - Ball Bearing and self lubrication design to dramatically extend beveler life
  - High strength shaft, and large Clamp Extension Leg contact area to maximize the rigid of machine
  - Special surface treatment to resist wear and erosion
  - Exceptional heat treatment for disk and gear inside allow it to work on any material

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### ***ET series Beveling Machine Overview***

Figure 1-1 and Figure1-2 illustrate the main components of the ET, which can **bevel up to 20mm wall thickness pipe**.



Figure 1-1, ET Beveler



Figure 1-2, ET Beveler

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## ***EV series Beveling Machine Overview***

Figure 2-1 and Figure 2-2 illustrate the main components of the ET, which can **bevel up to 70mm wall thickness pipe**



Figure 2-1, EV Beveler



Figure 2-2, EV Beveler

## **Section 2: Operation Safety**

The portable Pipe Cutting and Beveling machine – Lite4 / Lite6 are designed to handle carry easily for field use. Please use it properly based upon the procedure in this manual. Using it for purpose other than those described in this manual may cause injury to the user or to others. It may also cause damage to the machine or other equipment.

Therefore:

- Always ensure the machine is in good working condition and comply with these notes on safety
  - Keep complete documents nearby the machine
  - General valid regulations for the prevention of accidents must be observed.
  - Only use the machine for cutting and beveling of pipes
  - Damage caused by not following the manual is user's responsibility
  - Only use the dimensions and material specified in these instructions. Consult LEFON for cutting material that is not covered in the manual.
- Inspect the machine daily of visible sign of wear or damage.
  - Repair any damage or defect immediately
  - Only qualified electrician can work on the electrical equipment
  - Only operate the machine if the Electrical Restart Inhibitor is working properly
  - Unplug the power input before carrying out any maintenance or repair work on the machine.

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### Keep Safety in Mind

- Report any unusual response from the machine to the person in charge of this machine
  - Keep Safety in mind all the time
  - Wear protective goggles, safety gloves and ear protection when working with the machine
  - Keep hands off the machine during processing
- Pay attention to the surroundings. Don't use any electric tools in humid area. Make sure to have excellent lighting. Do not working near combustible liquids or gases.



### **Danger of death by electric shock**

If the main cable is damaged, live parts may cause death when touching directly.

- Keep the main cable of the machine motor away from the saw blade or beveling cutter
- Secure the falling pipe piece
- Don't let the cut-off piece of pipe drop in an uncontrolled way
- Don't run the machine unattended
- While cutting the pipe, always pay attention to the positions of the main cable.

### **Danger of injury by sharp cutting edges**

- Keep hands away from the machine during cutting or beveling
- Wear safety gloves



**DANGER**



**WARNING**

### **Disposal**

- Recycle discarded electric tools and accessories containing valuable materials
- Dispose of chips and used gear oil according to regulation requirement



## Section 3: Specification

Model	Pipe ID (inch)	Pipe ID (mm)	Pipe OD (inch)	Pipe OD (mm)	Max Wall Thickness (mm)	RPM	Drive Motor	Input Power	Weight (kg)
<b>ET1</b>	¾"-1"	18-25	7/8"-1 1/8"	21-28	15	58	Metabo,110/220v	1020w	5
<b>ET3</b>	1 1/8"-3"	28-76	1 ¼"-3 1/8"	32-80	15	55	Metabo,110/220v	1020w	7
<b>ET6</b>	2 ½"-6 ¼"	65-159	2 7/8"-7 1/8"	72-182	20	35	Metabo,110/220v	1020w	16
<b>ET10</b>	3 1/8"-9 ½"	80-240	3 ½"-10 ¾"	90-272	20	16	Metabo,110/220v	1020w	37
<b>EV10</b>	3 1/8"-9 ½"	80-240	3 ½"-10 ¾"	90-272	70	16	Metabo,110/220v	1020w	40
<b>ET14</b>	5 7/8"- 13"	150-330	6 3/8"-13 7/8"	162-352	20	14	Metabo,110/220v	1020w	45
<b>EV14</b>	5 7/8"- 13"	150-330	6 3/8"-13 7/8"	162-352	70	14	Metabo,110/220v	1020w	48
<b>ET24</b>	11 ¾"-23 5/8"	300-600	12 5/8"- 24 ¾"	320-630	20	10	Metabo,110/220v	1020w	54
<b>EV24</b>	11 ¾"-23 5/8"	300-600	12 5/8"- 24 ¾"	320-630	70	10	Metabo,110/220v	1020w	58

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## **Section 4: Package**

### ***Deliver Package Item List***

One set of ET/EV Beveling Machine should include the following item. Please inform the manufacturer or forwarder of any missing parts or transportation damage immediately.



Each package will include the following items:

- 1、 4 pieces of blades
- 2、 two pieces of Socket Skt wrenchs
- 3、 one piece of slot screw driver
- 4、 one set of Beveling machine
- 5、 one specification
- 6、 5 pieces of calipers

## Clamp Extension Leg Chart

Extension Leg	ET1	ET3	ET6	ET10	ET14	ET24
<b>No extension leg</b>		28-36mm ID	65-87mm ID	80-100mm ID	150-180mm ID	300-330mm ID
<b>Ext1</b>	18mm ID	36-44mm ID	87-105mm ID	100-120mm ID	180-210mm ID	330-360mm ID
<b>Ext2</b>	19mm ID	44-52mm ID	105-123mm ID	120-140mm ID	210-240mm ID	360-390mm ID
<b>Ext3</b>	20mm ID	52-60mm ID	123-141mm ID	140-160mm ID	240-270mm ID	390-420mm ID
<b>Ext4</b>	21.5mm ID	60-68mm ID	141-159mm ID	160-180mm ID	270-300mm ID	420-450mm ID
<b>Ext5</b>	23mm ID	68-76mm ID		180-200mm ID	300-330mm ID	450-480mm ID
<b>Ext6</b>	24.5mm ID			200-220mm ID		480-510mm ID
<b>Ext7</b>	26mm ID			220-240mm ID		510-540mm ID
<b>Ext8</b>	27mm ID					540-570mm ID
<b>Ext9</b>						570-600mm ID

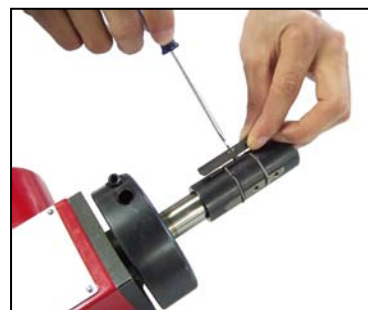


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## **Section 5: Installation**

### ***Installation Instruction***

Step 1: Based on the ID of pipe, select the right Clamp Extension Leg, installed and secured on Shaft.



Step 2: Based on Bevel Bit chart, select the right type of Bevel Bit to install on Rotating Mandrel. Note: every Bevel Bit cutting edge need rotate towards clockwise direction and maintain no contact with Shaft.



Step 3: Adjust backward the Scale Wheel to ensure there are some distance between Bit and Pipe face, also about 20mm distance between Rotating Mandrel and the face of pipe.



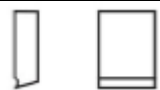
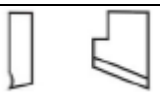

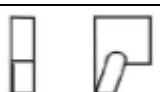
Step 4: Run the machine and use the handwheel to finish beveling pipes



## ***Beveling Instruction***

- Use lubricant or other coolant to extend the life of Bevel Bit
- Evenly feed during beveling process. Once finished beveling, need to quickly counterclockwise rotate feeding Scale Wheel to let Bit stay way from the beveling face
- Sharpen Bevel Bit whenever needed.
- To bevel wall thickness exceeding 20mm, highly recommended to take two steps, bevel outside face first and then inner face.
- For small ID pipe, secure pipe first before start beveling

## **Section 6: Bevel Bit List**

Drawing	Description	Part Number	Comment
	Flat Bevel Bit	3721-01	Bevel angle 0°
	Bevel Bit	3721-02	Bevel angle 30°
	Bevel Bit	3721-03	Bevel angle 37°
	Inside Bevel Bit	3721-04	Bevel angle 15°



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The standard LEFON Bevel Bits are High Speed Steel, which has high hardness (above HRC60) and a high abrasion resistance, can withstand higher temperatures without losing its hardness. This property allows the Bit to cut faster than high carbon steel.

If customer need bevel alloy steel, stainless steel, or cast iron material pipe, please contact us for other more suitable Bevel Bit.

## **Section 7: Troubling Shooting**

Symptom	Possible Cause	Correction
Beveler doesn't start	Cable is not connected or switch is off	Check cable connection and switch
Pipe rotate while beveling	Wrong Clamp Extension leg choice, or extension leg is not secured	Check the clamp nut tightness, or change to another size extension leg
Beveled pipe face quality not good	Bevel Bit is dull, or damaged	Sharpen Bit, or change Bit