



TUBE BENDER

UB 60 and UB 76 Tube Bender

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Introduction

This Instruction Manual is for your safety. It is also essential to ensure the machine operates to its maximum efficiency during a long life and returns the highest production profitability.

The BB Type Tube Benders are 'easy to use' machines providing quality bending solutions. A comprehensive tooling range ensures high bend quality on both models according to the capacity required. All formers can be specified with either counter formers or guide rollers depending on material and wall thickness..

It is important that the bender is used only for the purpose for which it is manufactured and is not adapted or modified in any way. Modifications or other uses thereof will invalidate any standard warranties.

The machine is covered by manufacturer's warranty for a period of 12 months from the date of purchase against manufacturer defects. The warranty period does not exceed 18 months from the date of delivery from the manufacturer's factory.

Warranty covers only defective manufactured parts and/or components that are confirmed as defective by the manufacturer.

The manufacturer is responsible for the warranty supply only of free-of-charge spares but will not be responsible for loss of work or consequential damage. Shipping and customs fees for the spare parts must be paid by the end-user. A Warranty claim does not relieve the Customer from payment obligations.

Non-genuine parts or modifications to the controls or the purpose of use of this machine is dangerous, and will nullify any claims.

Note: All warranty claims must be made stating the Model, Serial Number and the Manufacture Year of the machine.

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Technical Data

Maximum Values		UB60	UB76
Tube \varnothing and wall thickness	\varnothing mm and mm	60 x 4	76 x 4
Box section capacity	mm x mm	40 x 40	60 x 60
Maximum solid bar diameter	\varnothing mm	345	45
Bending radius	mm	450	500
Angle	deg	180	180
Bending speed	rpm	3	3
Motor			
Torque	Nm	8800	12000
Power	kW	1.5	4.0
Voltage	v	380/400	380/400
Connection	phase	3+N+E	3+N+E
Weight	kg	400	500
Dimensions			
Length	mm	1200	1300
Width	mm	600	700
Height	mm	1200	1300

Transporting

During storage and transporting, this machine should be kept covered and dry from inclement weather conditions. In particular the electrical control panel must be kept dry. When strapping to road transport, ensure straps are not damaging cables and vulnerable components.

Use a fork truck to move this machine. Check the balance as the centre of gravity may not be where it appears. Retain the wooded transport skids on the machine until final positioning.

Dispose of packaging safely and in consideration of local environmental expectations. Report any defects or damage immediately to _____, or the supplying distributor. Failure to notify prior to connection to any power supply will render subsequent claims invalid. Clean anti-rust protection film from steel surfaces and working parts.

Positioning

Locate the machine where it is safe to use in consideration to other personnel in the vicinity and where materials can safely arrive and depart. It is advisable to be guided by the Provision and Use of Work Equipment (PUWER) Regulations, including satisfactory lighting levels.

Site the bender on a level concrete or solid floor in a clean and dry environment, with a minimum of 1.5 metres personnel access all round.

Electrical Connection

ONLY A COMPETENT ELECTRICIAN SHOULD WIRE THIS MACHINE.

This machine requires three phases, neutral and earth. Ensure correct power supply is available, with a lockable isolator within physical and visual proximity of the operator. If trailing leads are to be used, ensure they are suitably protected.

Plug in the foot pedal console.

Check motor rotation and if in reverse to the motor arrow, change two phases.



Residual Risks

There remains some residual risk which should be taken account of before and during the use of this machine. The operation of the machine results in materials protruding and moving in an arc beyond the machine boundary during the bend process.

The residual hazardous events are crushing, trapping or knocking into persons in the arc danger zone.

The tooling can be changed for different materials to be bent. These are manually handled. The hazardous events are foot injury from dropped tooling, finger trapping and heavy lifting injury.



Other general hazards are:



Electric Shock



General Danger



Hand Pinch



Body Pinch



Hazard Earthing Point

Operator Safety

BEFORE ATTEMPTING TO OPERATE THE MACHINE BECOME FAMILIAR WITH THE CONTROLS AND THESE OPERATING INSTRUCTIONS.

It is a requirement of the *Provision and Use of Work Equipment Regulations (PUWER)* that suitable training is conducted for control familiarisation. This must include associated health and safety awareness, and good housekeeping practice.

ONLY SUITABLY COMPETENT PERSONS SHOULD OPERATE THIS tube bender.

Consider and use the necessary personal protective equipment, which should as a minimum include protective footwear, eye protection, and heavy duty gloves when handling material and replacing mandrel tools. Do not allow clothing, apparel or hair near moving parts.

Never operate the machine unless all guards and cover supplied are placed and closed. Do not load the machine or adjust the mandrel whilst the machine is bending.

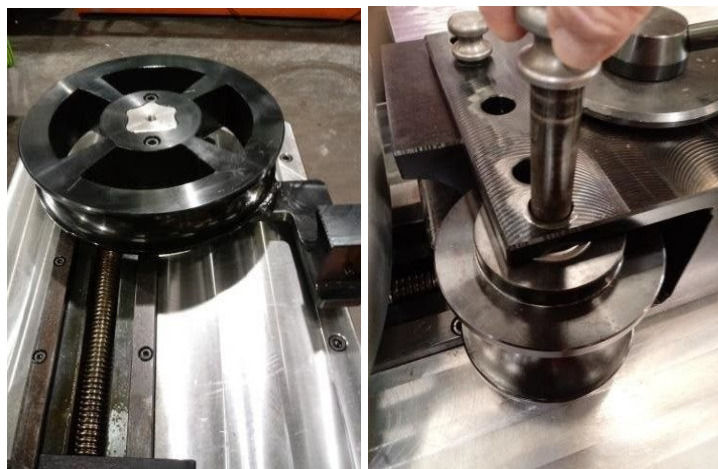
Always disconnect the power at source when performing maintenance work or making adjustments other than those necessary for the normal operation of the machine.

Accumulation of scale from tubes, and grease can create potentially dangerous situations. Regularly clean between operations, ensuring also tools or other objects on the bed or surfaces are correctly stowed away. Keeping the machine clean and tidy will increase efficiency and productivity, avoid injury, and reduce the possibility of a breakdown.

If any unusual noise or machine behaviour becomes apparent, switch off, isolate, and seek assistance.

Bending Procedure

- Add tooling and secure to the bed.
- Secure the material between the former and the counter-former



Set the Angles



Actual angle of the tooling

Back point . This function does not apply to this machine

Required setting angle.

This button does not require activating



Setting the required angle.

- Press PROG to find Set-2
- Use up/down buttons to select the required angle. Value will display in the Set-2 window.
- Press PROG to secure value.
- To bend, press and hold the right pedal. The former will stop at the required angle.
- Release the pedal and the former will stay. Press and release the left pedal and the former will return to its back point.

Calibration



To check and/or reset for zero at machine start-up:

- Press the RESET button once and this screen will show a value.
- Press and hold the left foot pedal to ensure the former is at zero location.
- Use the up/down buttons to read 1 in Set-2 window.
- Press PROG to secure.
- The values in both windows will read 0.
- Your calibration is complete.

Parameter Settings



- Press and scroll PROG to display S.:F2
- Use up/down buttons to read 1 at Set-2 window.
- Press PROG to secure. 1 will transfer to Set-1 window
- This accesses the Parameter menu.
- Pressing PROG key will now move through parameter settings

Parameter settings contd.



- Press and scroll PROG to display bol (Divider)
- The reading must be 556
- Use up/down buttons if reading 4 at Set-2 window
- Press PROG to secure. 556 will show in both windows



- Press and scroll PROG to display CarP (Multiplier)
- The reading must be 985
- Use up/down buttons if reading 4 at Set-2 window
- Press PROG to secure. 985 will show in both windows



- Press and scroll PROG to display dur (Forward hysteresis)
- This is used to set the overbending for spring back. Based on trial and experience according to the material being bent:
- Use up/down buttons to provide overbent angle Press PROG to secure



- Press and scroll PROG to display dur9 (Backward hysteresis)
- This feature is not used on bending machines
- Use up/down buttons to read 1 if different
- Press PROG to secure

Set the Bend Speed

The higher the value, the slower the forward bend speed.

Note that the cycle returns at a constant set speed.



Making the Bend



Press and hold the right pedal for bending. At the required angle the former will stop.

Press and hold the left foot pedal to return the folder.

Releasing the foot pedal at any time will stop the former. Repeating the foot pedal part way through a bend process will resume the process.

If the foot pedal has been released because of an emergency, press the Stop and check that dangers have been eliminated before pressing the foot pedal to resume

Maintenance

Maintenance works should only be carried out by sufficiently qualified or competent personnel. Wear suitable ppe (personal protective equipment). Use correct tools that are in good condition. Clean regularly.

UNDERSTAND THE MANUAL AND MACHINE BEFORE CARRYING OUT MAINTENANCE.

If components have been removed for maintenance, ensure these are correctly reinstated before allowing an operator to start the machine. Remove any residual oil and debris from the working zone left from previous operations. Never allow operators to use the machine after maintenance without checking.

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Maintenance Schedule

Low use frequency

At each use

Six monthly

High usage frequency

Daily

Weekly

Monthly

Annually

Never add oil or grease to mandrels and formers. This will cause the material to slip and the bend to be inaccurate.

Clean away any metal scale, grease and tools left by previous operations

✓

Check cable to the machine and foot pedal console are free from damage

✓

Operate the machine, press the Estop to check

✓

Lightly oil the tooling shaft and spindles

✓

Check wearable parts, pins, hinges bolts

✓

Check all electrical connections

✓

Check holding down bolts.

✓

Wiring

Wiring diagrams are available on application. Checking, repairing or amending control wiring is a specialist task.

Disposal

Current environmental legislation requires owners of machines to consider the environment when disposing of machinery. This also applies to waste material resulting from the normal operation. All cut waste material, components, replacement parts, cleaning detritus, and final machine disposal should be conducted in accordance with accepted environmental policies and established waste and recycling chains in place. Particular attention should be made to oil disposal after maintenance or final machine breaking.