



10 TON TUBE | PIPE BENDER

INSTALLATION MANUAL



INSTALLATION MANUAL TABLE OF CONTENTS

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OPERATOR AND SUPERVISOR INFORMATION

This is one of four manuals supplied with your machine.

- Installation Manual
- Safety Instructions Manual
- Operations Manual
- Maintenance Manual

READ ALL MANUALS BEFORE OPERATING MACHINERY. Operating machinery before reading and understanding the contents of all four manuals greatly increases the risk of injury.

Each of the four machine manuals describe 'best practices' in handling, installing, operating and maintaining your machine. The contents of each manual is subject to change without notice due to improvements in the machinery or changes in National or International standards.

All rights reserved. Reproduction of this manual in any form, in whole or in part, is not permitted without the written consent of Edwards Manufacturing Company.

Keep all manuals close to the machine to allow for easy reference when necessary.

Provide operators with sufficient training and education in the basic functions of the machine prior to machine operation.

Do not allow for operation of the machine by unqualified personnel. Edwards Manufacturing Company is not liable for accidents arising from unskilled, untrained operation.

Do not modify or change the machine without written authorization from Edwards Manufacturing Company. Unauthorized modification to a machine may result in serious operator injury, machine damage and will void your machine warranty.

Never leave a powered machine unattended. Turn machinery **OFF** before walking away.

This machine is manufactured for use by able bodied and able minded operators only. Never operate machinery when tired or under the influence of drugs or alcohol.

Do not resell, relocate or export to a destination other than to the original point of sale. Edwards has designed this machine to meet the standards of the original receiving country and is not liable for meeting any governing body or performance standards beyond those of the original receiving country.

SIGNAL WORD DEFINITION



Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in mild or moderate injury.



Indicates information considered important, but not hazard related.

SIGNAL WORD PANEL ON MACHINE



Critical machine safety information is identified on signal word labels. Labels are attached adjacent to the potentially hazardous locations of the machine. Reference the Safety Instruction Manual for additional information regarding the potentially hazardous condition identified on the label.

Review ALL labels on the machinery, reference the operational precautions and safe operations sections within this manual before any operation activity is initiated.

Failure to read and understand the signal word labels affixed to the machinery may result in operator death or injury.

INSTALLING THE BENDER

This manual provides installation requirements for the Edwards 10 Ton Tube/Pipe Bender.

ALL EDWARDS HYDRAULIC ACCESSORY TOOLS ARE POWERED BY AN EDWARDS IRONWORKER OR EDWARDS PORTA-POWER, PORTABLE HYDRAULIC POWER-PLANT.

REFER TO SAFETY, INSTALLATION, OPERATIONS AND MAINTENANCE MANUALS FOR THE EDWARDS POWER-PLANT YOU ARE USING TO OPERATE YOUR EDWARDS HYDRAULIC ACCESSORY TOOL.

Environmental Requirements at Work Station

NOTICE

The work station environment for your Edwards 10 Ton Tube/Pipe Bender must meet the following minimum requirements:

- **Ambient temperature:** 7.2°C - 43.3°C [45°F - 110°F]
- **Relative humidity:** No greater than 90% relative humidity.
- **Floor area:** Assure that the machinery work area provides for a stable, adequately sized and load rated floor area for material movement to and from the machinery work stations.
- **Shelter:** Protect your machinery from water, salts and corrosive elements.
- **Lighting:** 500LUX (50 footcandles) minimum.

Receiving the Bender

WARNING

Edwards Hydraulic Accessory Tools are fully assembled and are shipped either by palletized custom wooden crate or by shrink-wrapped wooden pallet for ease of transport and receiving.

Inspect the packaging for damage and follow shipping/receiving instructions as listed on the packaging prior to receiving the tool into your facility.

When receiving your Hydraulic Accessory Tool, be prepared to safely move your machinery with a fork-lift rated for the following equipment weights:

Minimum Machinery Weights

10 Ton Tube/Pipe Bender	226.79kg/500lb
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Utilize best practices for fork-lift operation. Handle material as close to the drive surface as possible with the widest spread and deepest penetration of forks effective to service the pallet. Forks should be adjusted and locked into the safety detent closest to the maximum available fork spread.

Unpacking/Moving the Bender

Your Edwards 10 Ton Tube/Pipe Bender includes surface and remotely mounted electrical cabling and hydraulic lines. Exercise caution when removing the factory supplied packaging. Do not cut electrical wires or hydraulic hoses.

1. Carefully remove the wooden blocking from under the three wheeled base and carefully roll the tool off of the shipping pallet.
2. Engage the third wheel by pushing the kickstand mechanism down with your foot. Carefully roll the tool to the workstation.
3. Locate your bender directly adjacent to the Edwards Ironworker or Porta Power. **Ensure that power controls of the Ironworker or Porta Power are within arms-reach of the bender tool.**

Hydraulic Power



Your Edwards Tube/Pipe Bender is factory assembled and tested for optimum performance when powered by Edwards Manufacturing Company rated hydraulic power supplies.

The Bender is powered by either an Edwards Ironworker with the factory installed Hydraulic Accessory Control Package or an Edwards Porta-Power, 5hp, 3000psi, portable power unit.

ALTERNATE POWER SOURCES ARE NOT RECOMMENDED AND MAY COMPROMISE MACHINE OPERATION, MACHINE HYDRAULIC WARRANTY AND OPERATOR SAFETY.

Follow electrical connection installation instructions for power supply as set forth within the Installation Manual of the Edwards Ironworker or Porta-Power.

Powering with an Edwards Ironworker

Power selection controls are located adjacent to the starter on the feed side of the machine. Hydraulic quick connections and accessory controls are located on the drop-off side or end cap of the machine.

With the Ironworker power off, install Bender hoses, power and control:

- Install the Bender male and female accessory hydraulic hoses to the ironworker male and female quick-connect hydraulic fittings. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Bender hand control male mil. spec. control cable to the female mil. spec. accessory control port at your Ironworkers Hydraulic Accessory package. Attach the yellow limit switch cable to the limit switch port of the ironworker.

With all Ironworker and Bender stations clear of hands, tools, tooling, material or debris, power up the Ironworker by depressing the green button on the starter box.

With the power on, your Ironworker machine will return to a neutral position.

Turn the 3-position switch on the front of the machine case to the Accessory position. This operation disables the Ironworker and switches control to the accessory hand control.

Test the Bender operation by depressing the OUT control button. Once depressed, the cylinder will extend. Releasing pressure on the OUT control button will stop the cylinder. Test the Bender operation by depressing the IN control button. Once depressed, the cylinder will be retracted back into the cylinder enclosure. Releasing pressure on the IN control button will stop the cylinder.

Test the limit switch by extending the cylinder until the auto stop meets its positive stop.

Depress the red e-stop button to kill power at the Ironworker. To reset power, twist the e-stop button and push start button at the Ironworker.

When disconnecting your Bender, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Ironworker.**

Powering with an Edwards Porta-Power

Your Edwards Porta-Power 5hp / 3000psi / Portable Power Unit will power all your Edwards Hydraulic Accessories.

Follow electrical connection installation instructions as set forth within these sections of the Installation Manual:

With the Edwards Porta-Power off, install accessory hoses, power and control:

- Install the male and female Bender hydraulic hoses to the Porta-Power male and female quick connect hydraulic fittings adjacent to the starterbox. Both fittings have a detent ball setting that must be aligned to couple and uncouple hoses.
- Remove the safety cap at the push button port. Attach the Bender hand control, male mil. spec. control cable to the female mil. spec. accessory push button port on the Porta-Power case. Attach the yellow limit switch cable to the limit switch port of the ironworker. Attach the Bender hand control, male mil. spec. control cable to the female mil. spec. accessory push button port on the Porta-Power case.

With all Ironworker and Bender stations clear of hands, tools, tooling, material or debris, power up the Porta-Power by depressing the green button on the starter box.

With the power on, your Bender is in a neutral position.

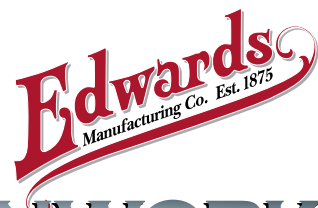
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Test the limit switch by extending the cylinder until the auto stop meets its positive stop.

If the machine fails to cycle, power down the Porta-Power by depressing the red button on the starterbox, consult the trouble shooting section of the Operations Manual.

Depress the red e-stop button on the hand control to kill power at the Porta Power. To reset power, twist the e-stop button and push start button at Porta Power.

When disconnecting your Bender, simply reverse procedure. **Replace the safety cap at the push button port to restore power to your Porta Power.**



IRONWORKERS

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10 TON TUBE | PIPE BENDER

MAINTENANCE MANUAL



MAINTENANCE MANUAL TABLE OF CONTENTS

1 GENERAL

- Operator and Supervisor Information
- Signal Word Definition
- Signal Word Panel
- Maintenance Precautions

3 MAINTENANCE SCHEDULE

- Daily/Shift Change Visual Observation
- General Maintenance - Daily
- General Maintenance -Weekly

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MAINTENANCE PRECAUTIONS



Reasonable, common sense safety precautions should be observed when maintaining the Ironworker or Hydraulic Accessory Tool. The following precautions are described in order of their hazard.

Electrical Hazard

Dangerous high voltages are present inside the electrical enclosure of this product. Only qualified, authorized, maintenance or service personnel should gain access to the electrical panel.

Lockout Power

Danger, circuits are live. Lockout / tagout upstream power source before any maintenance activity is performed.

Shear / Crush Hazard

Moving parts can cut and crush. Keep hands clear when servicing and maintaining the Ironworker.

Hydraulic Fluid Hazard

Hydraulic hoses are under pressure. Pressurized fluid can pierce skin and cause severe injury. To avoid physical hazard, always wear personal protective equipment when servicing / maintaining the Ironworker.

Do Not Operate With Guard Removed

Physical barriers and guards have been designed and installed to protect maintenance personnel from moving parts that can pinch, cut and crush. If it is necessary to remove guarding when servicing the Ironworker, immediately replace guards after service and prior to power being restored to the machinery.

Refer to Manuals

For safe installation, operation and maintenance of the machine, read:

- Installation Manual
- Safety Instructions Manual
- Operations Manual
- Maintenance Manual

Wear Personal Protective Equipment

To avoid physical hazard wear protective eyewear, clothing, gloves, footwear, head-gear and hearing protection.

MAINTENANCE SCHEDULE

CAUTION

Your Edwards Tube/Pipe Bender will benefit from reasonable care and periodic maintenance. Reasonable care includes daily visual observation, as well as general maintenance procedures at daily and weekly intervals by operator/maintenance personnel. Perform inspections and maintenance of the electrical, hydraulic, and mechanical systems of the Edwards 10 Ton Tube/Pipe Bender and its connection to the Ironworker or Porta-Power as follows:

Daily/Shift Change Visual Observation

CAUTION

Electrical System

Visually inspect controls and power cording to the Ironworker or Porta-Power for signs of damage. Cut, abraded or crushed electrical cords may present an electrical hazard to the Operator and/or damage the machinery.

Hydraulic System

Visually inspect exposed or surface mounted hydraulic hoses and fittings for signs of damage. Cut, abraded or crushed hydraulic hoses or leaking fittings may present a hydraulic fluid hazard to the Operator and/or damage the machinery.

Mechanical System

Visually moving parts, guards and material hold-downs must remain on the machine for safe operation. Clear any material obstructions at the work station prior to visually inspecting moving parts of the machine. Cycle the machine. Machine should operate smoothly in hydraulic extend and retract mode.

Failure of any element of the daily/shift change visual observation will require maintenance of the affected accessory component. Please refer to the following maintenance procedures.

General Maintenance - Daily

WARNING

Disconnect unit from power source.

Check bolted connections and secure as necessary.

Check bearing surface quality.

Visually inspect pipe and tube dies and their respective wiper assemblies for chips or galling in the bearing surface.

Verify wiper blades are secure in their mounting block. The wiper blades of your Tube/Pipe Bender are crafted from hardened aluma-bronze. Pipe and tube dies are manufactured from billet steel for enhanced strength and durability. These are wearing parts that will fail over time and will require replacement. Order additional die sets through your Edwards distributor or through Edwards Manufacturing Company. Install replacement parts according to the Operations Manual.

Clean your Tube/Pipe Bender daily. Disconnect the unit from its power source first. Do not use liquid cleaners, aerosols, abrasive pads, scouring powders or solvents such as benzene or alcohol. Clean your machine with a compressed air nozzle and soft cloth lightly moistened with a mild, water-based detergent solution. Remove filings, dirt, dust and grime from working surfaces. Ensure the surfaces are fully dry before reconnecting power.

General Maintenance - Weekly

WARNING

Disconnect unit from power source.

Check wiring harness for loose connections or damaged control wiring. Check hydraulic fittings and hoses for wear or damage.

