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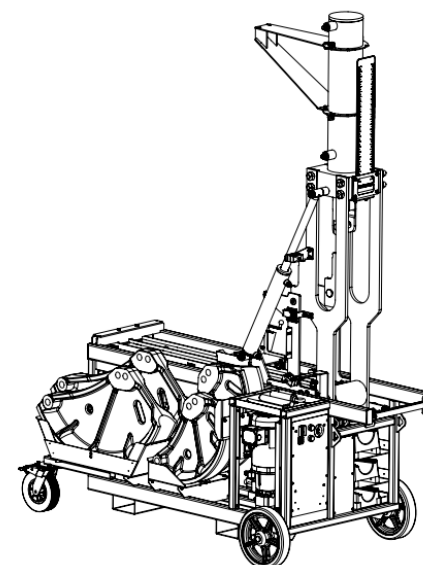
08/21 (MHB-4000)



OPERATING and MAINTENANCE INSTRUCTIONS

Maxis(TM) Hydraulic Bending Machine

2.5-4 Inch conduit bender (MHB4000)



**READ AND UNDERSTAND ALL THE
INSTRUCTIONS AND SAFETY INFORMATION IN
THIS MANUAL BEFORE OPERATING OR
SERVICING THIS TOOL**



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DESCRIPTION

The Southwire™ Maxis™ Hydraulic Bending Machine is intended to bend 2.5" to 4" conduit and pipe. This bender has the capability to accommodate the following types of conduit and pipe:

- Galvanized Electrical Metallic Tubing
- Galvanized Intermediate Metallic Conduit
- Galvanized Rigid Conduit

SAFETY

Safety is essential in the use and maintenance of Southwire Tools and Equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all the safety information provided.

WARNING - Read and understand all instructions and safety information in this manual before operating or servicing this tool.

PURPOSE OF THIS MANUAL

This manual is intended to familiarize all personnel with the safe operation of the Southwire™ Maxis™ Hydraulic Bending Machine. Keep this manual available to all personnel. Replacement manuals are available at no charge at www.southwiretools.com.

All specifications are nominal and may change as design improvements occur. Southwire Company, LLC shall not be liable for damages resulting from misapplication or misuse of its products.

IMPORTANT SAFETY INFORMATION

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.




DANGER - Immediate hazards which, if not avoided, WILL result in severe injury or death.



WARNING - Hazards which, if not avoided, COULD result in severe injury or death.



CAUTION - Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.

 **WARNING:** Electric Shock Hazard



- Inspect the power cord before use. Repair or replace the cord if damaged.
- Connect the power cord to a 120 volt, 20 amp receptacle on a ground fault protected circuit only. Refer to "Grounding Instructions".
- Do not modify the power cord or plug.
- Disconnect the unit from power before servicing.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

IMPORTANT SAFETY INFORMATION



WARNING

- Read and understand all instructions and safety information in this manual before operating or servicing this tool.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

 **WARNING**



- Do not use in dangerous environment. Do not use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
- Do not immerse the pendant switch in water or any other liquid.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

 **DANGER**



- Do not use this tool in a hazardous environment. Hazards include flammable liquids, gases, or other materials. Using this tool in a hazardous environment can result in a fire or explosion.

FAILURE TO OBSERVE THESE WARNINGS WILL RESULT IN SEVERE INJURY OR DEATH.

IMPORTANT SAFETY INFORMATION

⚠ WARNING



- Always use safety glasses. Everyday glasses only have impact resistant lenses; they are NOT safety glasses. When using in dusty environment, use face or dust mask.

FAILURE TO WEAR EYE PROTECTION COULD RESULT IN SERIOUS EYE INJURY FROM FLYING DEBRIS.

⚠ WARNING

- For continued protection against risk or fire and electric shock, replace ONLY with same manufacturer, type, and rating of fuse. Refer to the “Maintenance” section of this manual.

FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ WARNING

- Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.
- Never leave tool running unattended. Turn power off. Do not leave tool until it comes to a complete stop.
- Disconnect tools before servicing and when changing accessories such as shoes, rollers, and the like. Accidental start-up could result in serious injury.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

IMPORTANT SAFETY INFORMATION

⚠ WARNING



- Keep guards in place and in working order.
- Remove any tools from bender before operating. Form habit of checking to see that all tools are removed from bender before turning it on.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ WARNING

- Never stand on tool. Serious injury could occur if the tool is tipped.
- Do not overreach. Keep proper footing and balance at all times.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ WARNING: Pinch Points



- Keep hands away from bending shoe, sleds, and conduit when bender is in use.
- Support conduit when unloading. Conduit can become loose and fall if not properly supported.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

IMPORTANT SAFETY INFORMATION

⚠ WARNING: Extension Cords



- Use only three-wire, 10 AWG extension cords that have three-prong grounding-type plugs and three-hole receptacles that accept the tool's plug.
- Do not use extension cords that are longer than 15m(50').
- Repair or replace damaged extension cords.

FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ CAUTION

- Select the appropriate shoe groove and support roller for the type and size of conduit before bending.
- Do not bend conduit over 96 degrees. Overbending could result in the other shoe hook colliding with the conduit.

FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ WARNING

- Adjust fork spacing to match fork tubes on bender. Ensure front wheel brakes are engaged before inserting forks into fork tubes.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

⚠ CAUTION

- Inspect the bender before use. Replace worn, damaged, or missing parts with Southwire replacement parts. A damaged or improperly assembled component could break and strike nearby personnel.

IMPORTANT SAFETY INFORMATION

- Maintain tools with care. Keep tool clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

FAILURE TO OBSERVE THESE PRECAUTIONS MAY RESULT IN INJURY OR PROPERTY DAMAGE.

⚠ CAUTION

- Conduit moves rapidly as it is bent. The path of the conduit must be clear of obstructions. Be sure clearance is adequate before starting the bend.
- Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
- Do not force rollers or alter tool. It will do the job better and safer at the rate for which it was designed.
- Use the right tool. Do not force tool or attachment to do a job for which it was not designed.
- Use this tool for the manufacturer's intended purpose only. Use other than that which is instructed in this manual can result in injury or property damage.

FAILURE TO OBSERVE THESE PRECAUTIONS MAY RESULT IN INJURY OR PROPERTY DAMAGE.

GROUNDING INSTRUCTIONS

⚠ WARNING: Electric Shock Hazard

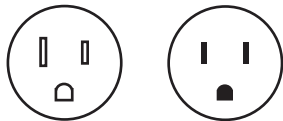


- Do not modify the plug provided with the tool.
- Connect this tool to a grounded receptacle on a 20 amp ground fault protected circuit.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

This tool must be grounded. In the event of a malfunction or breakdown, an electrical ground provides a path of least resistance for the electric current. This path of least resistance is intended to reduce the risk of electric shock.

This tool's electric cord has a grounding conductor and a grounding plug as shown. Do not modify the plug. Connect the plug to a corresponding receptacle that is properly installed and grounded in accordance with all national and local codes and ordinances. Do not use an adapter.

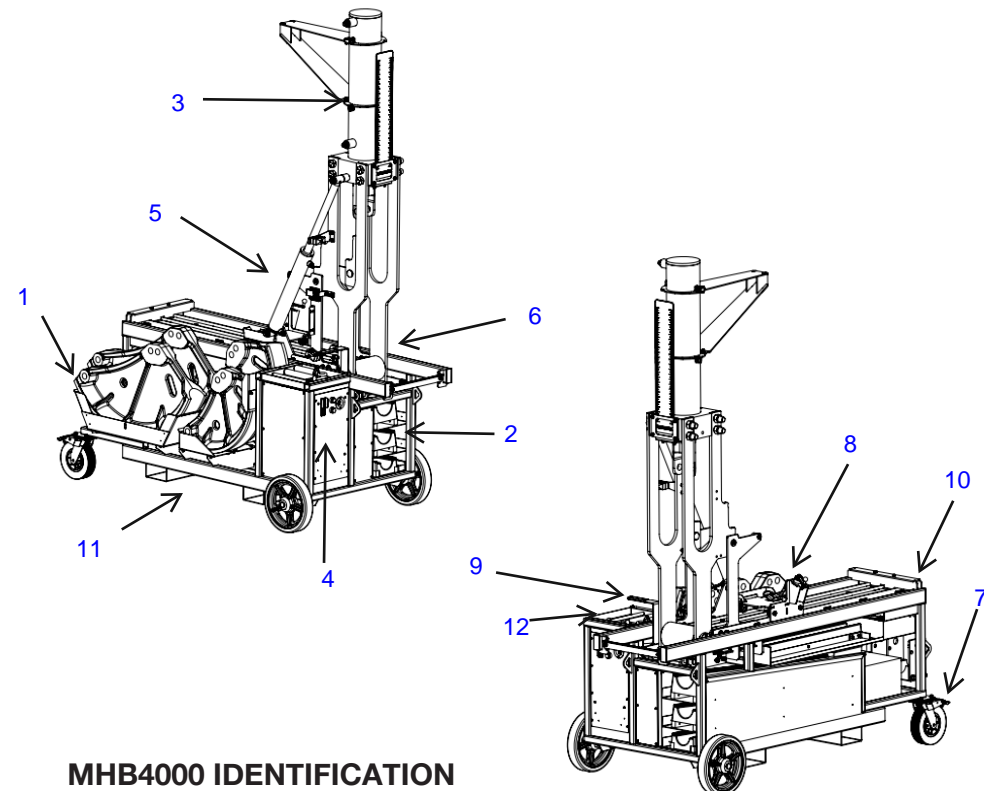


Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

IDENTIFICATION

MHB4000 IDENTIFICATION-FRONT

MHB4000 IDENTIFICATION-BACK



MHB4000 IDENTIFICATION

1. 2.5"-4" EMT,IMC/GRC bending shoe
2. Bending Sleds
3. Main Bending Cylinder
4. Main Control Panel
5. Mast Elevation Cylinder
6. Bending Yoke
7. Front Casters
8. Bending Vise
9. Elevation Mast Lock
10. Bending Collars
11. Fork Tubes
12. Tool Tray

FEATURES

- Bending of 2.5" to 4" Galvanized EMT, Galvanized IMC and Galvanized Rigid Conduit.
- Pump driven elevation control for bending mast.
- Long Travel Ram for easy setup and Use.
- Front locking casters to securely keep bender in place during use.
- Hand pendant and front button controls for multiple bending applications.

TRANSPORTING OF BENDER

Refer to the "Identification" section of this manual.

To transport the Maxis™ Hydraulic Bending Machine

1. Unlock caster brakes (7) and lower the main Mast (3) to maneuver bender to desired location.
2. Lock caster brakes (7) by pushing down with foot once transport is complete.

To transport the Maxis™ Hydraulic Bending Machine by Forklift

1. Ensure Caster Brakes (7) are locked by pressing down with foot.
2. Insert the forks into the fork tubes (11) at bottom of bender.
3. Lift bender level and move to desired location.

⚠ WARNING

- Adjust fork spacing to match fork tubes on bender. Ensure front wheel brakes are engaged before inserting forks into fork rings.
- Ensure forks go under front and back support bars and through fork rings to prevent bender from moving once lifted by forklift.

FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE INJURY OR DEATH.

SET UP

⚠ WARNING



- Always use safety glasses. Everyday glasses only have impact resistant lenses; they are NOT safety glasses. When using in dusty environment, use face or dust mask.

FAILURE TO WEAR EYE PROTECTION COULD RESULT IN SERIOUS EYE INJURY FROM FLYING DEBRIS.

Refer to the "Identification" section of this manual.

1. Position the bender so there is room to load conduit and engage the front Caster Brakes (7).
2. Plug approved 10 AWG extension cord into the Power Receptacle (4) from grounded 20-amp outlet.

⚠ WARNING: Extension Cords



- Use only three-wire, 10 AWG extension cords that have three-prong grounding-type plugs and three-hole receptacles that accept the tool's plug.
- Do not use extension cords that are longer than 15m (50').
- Repair or replace damaged extension cords.

FAILURE TO OBSERVE THIS WARNING COULD RESULT IN SEVERE INJURY OR DEATH.

3. Plug the Pendant Control Cable on the main control panel (4). Bender will operate by either Hand Pendant or manually pressing the Manual Bending Buttons.

OPERATION

DANGER



- Do not use this tool in a hazardous environment. Hazards include flammable liquids, gases, or other materials. Using this tool in a hazardous environment can result in a fire or explosion.

FAILURE TO OBSERVE THESE WARNINGS WILL RESULT IN SEVERE INJURY OR DEATH.

WARNING: Pinch Points



- Keep hands away from bending shoe, sleds, and conduit when bender is in use.
- Support conduit when unloading. Conduit can become loose and fall if not properly supported.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

DANGER: Electric Shock Hazard



- Inspect the power cord before use. Repair or replace the cord if damaged.
- Connect the power cord to a 120 volt, 20 amp receptacle on a ground fault protected circuit only. Refer to "Grounding Instructions".
- Do not modify the power cord or plug.
- Disconnect the unit from power before servicing.

FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN SEVERE INJURY OR DEATH.

OPERATION

Setting up the Bender

Refer to the "Identification" section of this manual

1. Turn bender "ON" by flipping the Power Switch (4)
2. Engage the mast lock handle (9) and Using the Manual Control Buttons located on the main control panel (4) Raise the main mast
3. Release the Mast lock handle (9) ensure it fully engages the Mast
4. Select the appropriate sized bending Shoe, Sled and collar for the conduit to be bent.
5. Insert the Sled through the front of the mast.
6. Rest the shoe on the sled with the collar pin hole out Apply a light coat of pressure grease to the yoke pin and ensure correct alignment of pin for conduit to be bent. Insert the yoke Pin fully ensuring the head of the pin is against the yoke.
7. Insert the Collar pin through the collar and shoe with the assist pin hole out (Fig 1)

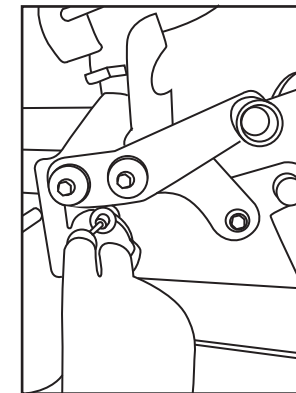


Fig 1

NOTE: Failure to engage/disengage the mast fully may result in unit not functioning.

NOTE: Test bend should be performed to ensure proper squeeze is set. Minor adjustments may be required.

BENDING

Refer to the "Identification" section of this manual

1. Verify the Bending Shoe and Sled are clean, free of debris, and sized appropriately for the conduit.

BENDING

2. Use the Hand Pendant Buttons to extend the main bending cylinder until the shoe hovers just above the main bending sled
3. Insert the conduit into the conduit bender aligning your bend marks with the front of the bending collar
4. Use the Hand Pendant Buttons to extend the main bending cylinder until the Conduit is seated in the bending shoe and sled. Ensure that the collar is contacting the sled, and the bend mark is aligned with the front of the bending collar.
5. Position the bender vise(8) as far away from the bending shoe as possible and secure the conduit down.
6. Using a magnetic protractor or Degree indicator and zero the conduit in-front of the bending collar and verify at the back of the bender
7. Bend the Conduit to the desired degree of Bend. Verifying bend accuracy multiple times.
8. Use the Hand Pendant Buttons to retract the bending shoe and relieve pressure on the Bend Sled and collar

NOTE: Do Not fully retract the main bending cylinder care should be taken to stop as soon as pressure on the shoe and collar has been released

9. Push the sled back into the start position
10. Remove the bending collar and bend collar pin placing them in the tool tray (12)
11. Use the Hand Pendant Buttons to retract the main bending cylinder fully.
12. Ensure that the conduit is secure and release the bender vise (8)
13. The Bend is Complete

BENDING

DEDUCT CALCULATIONS

DEDUCT		
Conduit	EMT	RIGID/IMC
2.5"	21-1/2"	21-1/2"
3"	24"	24-1/4"
3.5"	27-3/4"	28-1/4"
4"	32-1/4"	32-1/2"

SPECIFICATIONS

ADDITIONAL ITEMS

- A. Personal protective equipment
- B. Portable band saw or another conduit cutting device
- C. Appropriate reamer or filing tool
- D. Tape measure
- E. Black marker
- F. Magnetic level (Southwire MCB Level)
- G. Galvanized EMT, Galvanized IMC or Galvanized Rigid Conduit

SPECIFICATIONS

- Model# MHB4000
- Stock# 66-97-83-40
- Name- Maxis Hydraulic Bending Machine 2.5"-4"
- Length- 60"
- Width- 39.5"
- Height- 65"
- Weight- 1350 lb. (213kg)

TROUBLESHOOTING

	PROBLEM	CAUSE	DIAGNOSIS	CURE
1	Bender will not operate	Power source	Check for voltage at power source	If power is on, go to (#3)
2	No power at bender	Defective extension power cord	Ohm extension cord for broken wire	Replace extension cord
3	Power to bender will not operate	Power switch in the off position	Check power switch is lite green when in the "ON" position	Replace switch
		GFI Tripping	iVerify Frame ground	Replace Extension Cord
		Motor defective	Check for power at motor	Replace motor
4	Motor runs but will not bend	No Hydraulic Fluid	Remove shoes and use sightglass on hydraulic tank	Refill with additional hydraulic fluid
		Defective Diverter valve	Motor running but no output through Cylinder	Replace Diverter valve
		Broken Hose o poor hose connection	Inspect hoses and visually check for broken parts	Replace broken parts
		Seals no longer holding pressure	Remove bad cylinder	Return cylinder for rebuild
5	Bender operates in only one direction	Defective Bend/Return switch	Ohm switch for open contact or shorted contacts	Replace pendant
		Defective pendant cord	Ohm for broken wire	Replace pendant cord

WARRANTY ON SOUTHWIRE CONTRACTOR EQUIPMENT

What Does This Warranty Cover?

Five-Year Limited Warranty on Contractor Equipment

Under Southwire's Contractor Equipment 5-Year Limited Warranty, Southwire Company, LLC warrants that all Southwire Contractor Equipment will be free from manufacturer defects for a period of five (5) years from the date of the original end user's purchase. However, electrical components and consumable parts such as ropes, blades, dies, draw studs, grips, are excluded from this 5-Year Limited Warranty and are subject to the One -Year warranty terms. Under this 5-Year Limited Warranty, the following are also excluded and Southwire Company, LLC will have no liability for any of the following: normal wear and tear resulting from product use and damage arising out of misuse, abuse, modification, and improper product maintenance. This warranty also does not cover Southwire Contractor Equipment products that have been modified by any party other than Southwire Company, LLC or its authorized third party designee. This 5-Year Limited Warranty is not transferrable to or enforceable by any person other than the product's original end user.

One-Year Limited Warranty on Electrical Components and Consumable Parts (with 5-Year warranty)

Under Southwire's 1-Year Limited Warranty, Southwire Company, LLC warrants that all electrical components and consumable parts such as ropes, blades, dies, draw studs, grips will be free from manufacturer defects for a period of one-year from the date of the original end user's purchase. Under this 1-Year Limited Warranty, Southwire Company, LLC will have no liability for any of the following: normal wear and tear resulting from product use and damage arising out of misuse, abuse, modification, and improper product maintenance. This warranty also does not cover Southwire electrical components and consumable parts that have been modified by any party other than Southwire Company, LLC or its authorized third party designee. This 1-Year Limited Warranty is not transferrable to or enforceable by any person other than the product's original end user.

Exclusion of Incidental, Consequential, Indirect, Special and Punitive Damages

SOUTHWIRE MAKES NO WARRANTY THAT SOUTHWIRE CONTRACTOR EQUIPMENT PRODUCTS WILL BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. SOUTHWIRE MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, OTHER THAN THE RELEVANT WARRANTY SPECIFICALLY SET FORTH IN THIS WARRANTY SECTION. SOUTHWIRE WILL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES FOR ANY BREACH OF THIS LIMITED LIFETIME WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Warranty Claim Information/How Do You Get Service?

For all warranty, customer service, and product return authorizations and inquiries, please contact Southwire's Tools & Assembled Products at:

Southwire Tools & Assembled Products
840 Old Bremen Road
Carrollton, GA, 30117
Phone Number: 1.855.SW.Tools

1. All warranty claims must be approved by Southwire's Tools & Assembled Products Warranty Department prior to return of product. If Southwire determines that a product is defective, Southwire will, at its option, repair or replace defective products or defective product components, free of charge.
2. Upon approval, Southwire will issue a Product Return Authorization Form which will include instructions on how and where to return the product. **The product serial number and the original date of delivery must be set forth on the Product Return Authorization Form.**
3. Southwire will cover standard freight charges (Ground Courier Rate) incurred in connection with products that Southwire ultimately determines to be defective.
4. All defective components and defective products that Southwire replaces under these Warranties will become Southwire's property and will be retained by Southwire.

Repair Your Product When it is Out of Warranty

Southwire is happy to provide information about where a purchaser can send a product for repair at consumers' own expense, please contact 1.855.SW.tools or visit www.southwiretools.com/tools/home.do for more information about servicing for Southwire Products.