

Eastwood[®]

DO THE JOB RIGHT.[®]

Item #68512

24" ELECTRO-BRAKE INSTRUCTIONS

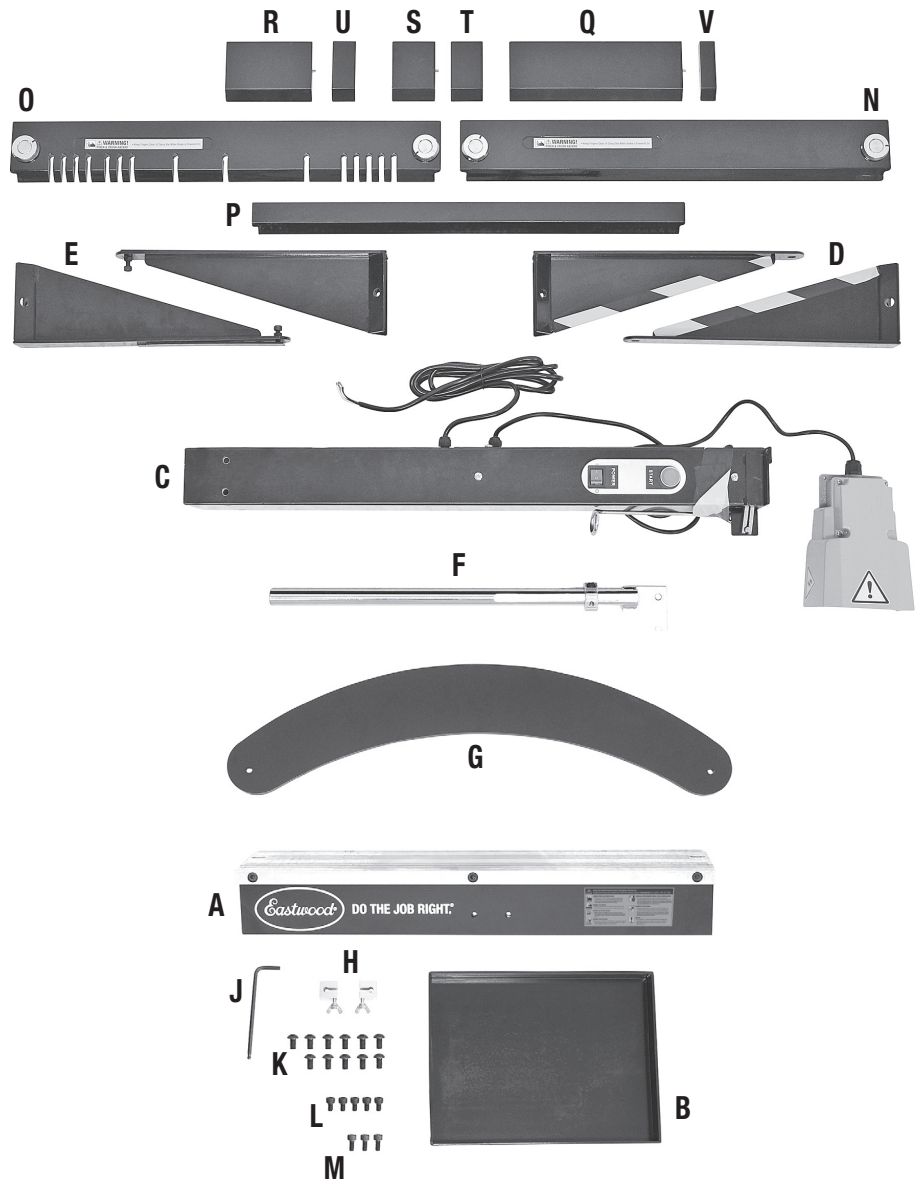


The **EASTWOOD 24" ELECTRO-BRAKE** is designed to form bends from simple angles to intricate, compound bends, hems, crimps, boxes and trays. A powerful 3 tons of electromagnetic clamping force allows a high degree of accuracy and precision. A built in angle gauge and material stop collar allows for ease of repeatability.

CONTENTS

COMPONENTS

- (1) 24" Electro-Brake Assembly [A]
- (1) Tray [B]
- (1) Support Column with Angle Indicator, Foot Pedal, Power Cord [C]
- (2) Leg, Front (with striped tape) [D]
- (2) Leg, Rear [E]
- (1) Handle w/ Scale, Stop Collar [F]
- (1) Foot Plate [G]
- (2) Backstop Clamp with Wing Screw [H]
- (1) 6mm Hex Key [J]
- (11) M10x16 Rounded Socket Head Screw [K]
- (5) M8x12 Socket Head Screw [L]
- (3) M8x16 Socket Head Screw [M]
- (1) 24" x 4" Solid Adjustable Clamp Bar [N]
- (1) 24" x 4" Slotted Adjustable Clamp Bar [O]
- (1) 24" x 2" Solid Clamp Bar [P]
- (1) 11" x 4" Clamp Bar [Q]
- (1) 5.5" x 4" Clamp Bar [R]
- (1) 2.75" x 4" Clamp Bar [S]
- (1) 2" x 4" Clamp Bar [T]
- (1) 1.5" x 4" Clamp Bar [U]
- (1) 1" Clamp Bar [V]



SPECIFICATIONS

Power Requirements:	120±10% VAC, 1Ph, 50/60 Hz, 8A
Maximum Material Width:	24" [610mm]
Maximum Material Thickness:	16 gauge mild steel, aluminum 20 gauge stainless steel
Overall Assembled Dimensions (W x D x H):	18.5" x 27.2" x 35.4" [740 x 690 x 900mm]
Assembled Weight:	159 lbs. [72 kg]

SAFETY INFORMATION

The following explanations are displayed in this manual, on the labeling, and on all other information provided with this product:

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠ NOTICE

NOTICE is used to address practices not related to personal injury.

READ INSTRUCTIONS!

- Thoroughly read and understand these product instructions before using.
- Keep these product instructions for future reference.

1) WORK AREA SAFETY

- a) Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- b) Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite dust or fumes.
- c) Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

2) ELECTRICAL SAFETY

- a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.
Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electrical shock if your body is earthed or grounded.
- c) Do not expose power tools to rain or wet conditions. Water entering a power tool will increase risk of electrical shock.
- d) Do not abuse the power cord. Never use the power cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- e) When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.

3) PERSONAL SAFETY

- a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- b) Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c) Avoid accidental starting. Ensure the switch is in the **OFF** position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.
- d) Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- f) Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.
- g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust-related hazards.

4) POWER TOOL USE AND CARE

- a) Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.
- b) Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.
- e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f) Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.



⚠ WARNING HEAVYWEIGHT COMPONENTS!

- The Eastwood Electro-Brake has a total weight of 159 lbs. [72kg]. During assembly, the Eastwood Electro-Brake **MUST** be lifted with the use of a mechanical lifting device capable of lifting 175 lbs. [79kg] such as an Engine Hoist, Overhead Crane or other suitable method only! To avoid serious injury, **DO NOT** attempt to lift the Electro-Brake by hand or with multiple persons.
- Use only lifting straps, chains or hooks rated for 175lbs [79kg] or greater.



⚠ WARNING ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!

- The electromagnetic field that is generated while operating this equipment may interfere with various electrical and electronic devices such as cardiac pacemakers. Anyone using such devices should consult with their physician prior to use. Exposure to electromagnetic fields may have other health effects which are not known.



⚠ WARNING CRUSH HAZARD!

- Keep hands, feet and other body parts away from under the Electro-Brake during assembly. Keep children, pets and unauthorized persons away from the work area during assembly.



⚠ WARNING PINCH AND CRUSH HAZARD!

- The Eastwood Electro-Brake consists of moving metal components which can present a hand/finger pinch hazard. Avoid pinching hands while handling and keep fingers and hands away from moving parts when operating.



⚠ WARNING CUT HAZARD!

- Handling sharp metal can cause serious cuts. Wear thick, well-fitting work gloves to prevent cuts from handling sharp metal



⚠ WARNING EYE INJURY HAZARD!

- Metal particles can be ejected from the metal surface when forming. Sheet metal edges and corners are sharp and can injure eyes. Always wear ANSI approved eye protection when operating this tool.



⚠ WARNING INJURY HAZARD!

- Strenuous physical force may need to be applied to the Eastwood Electro-Brake during use. Failure to ensure proper footing can quickly result in a fall which could inflict serious personal injury or property damage. Always work in a clean, uncluttered environment.
- Be sure there is sufficient working room around the tool to allow for safe handling of various sizes of metal.
- Before beginning ANY work with this tool, it is absolutely necessary that it be securely bolted to the floor or the included Foot Plate be installed. Failure to do so may result in sudden tipping causing serious personal injury.



⚠ CAUTION INJURY HAZARD!

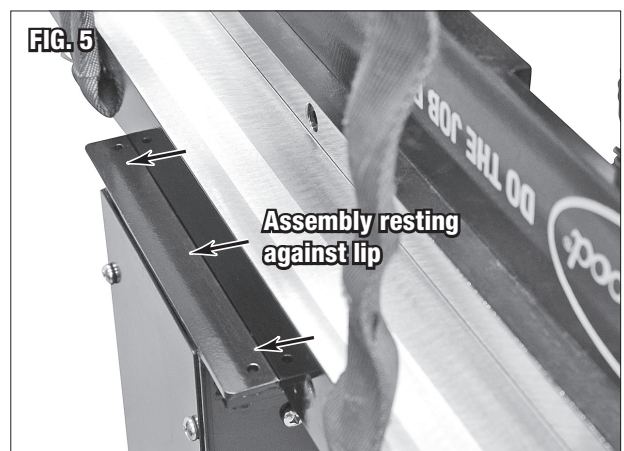
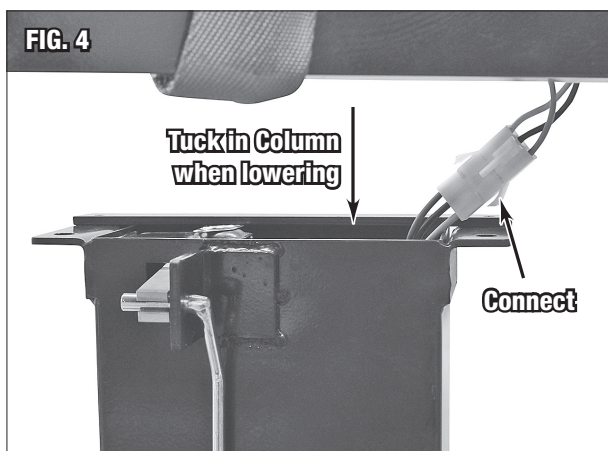
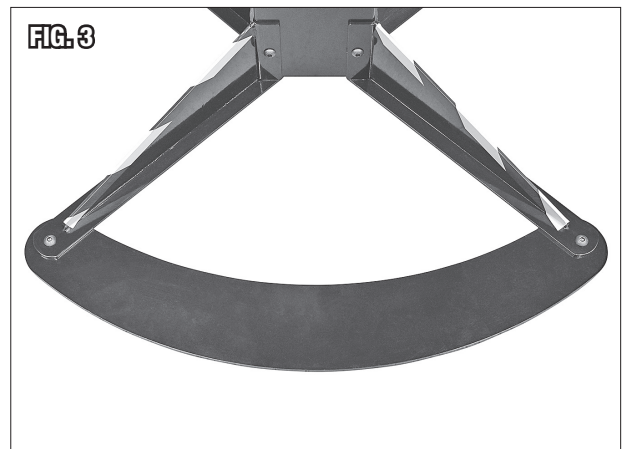
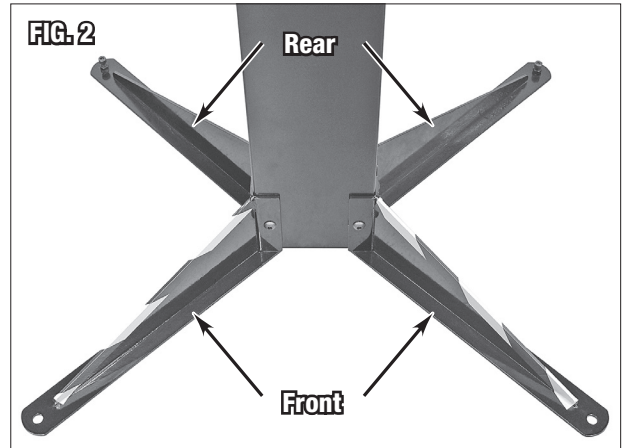
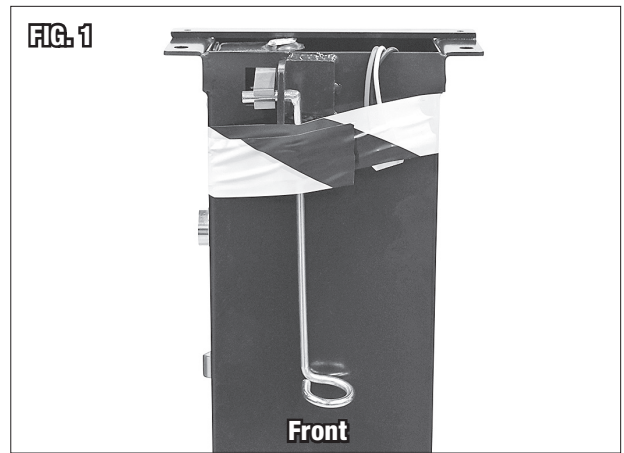
- The Electro-Brake consists of numerous large, heavy components. Be careful handling Clamp Bars and wear closed toe shoes when operating. The use of safety toe shoes is recommended.
- The Eastwood Electro-Brake was specifically designed to be operated by one person only. Never have one person operate the Bender while another handles the workpiece or serious injury could occur.

⚠ NOTICE

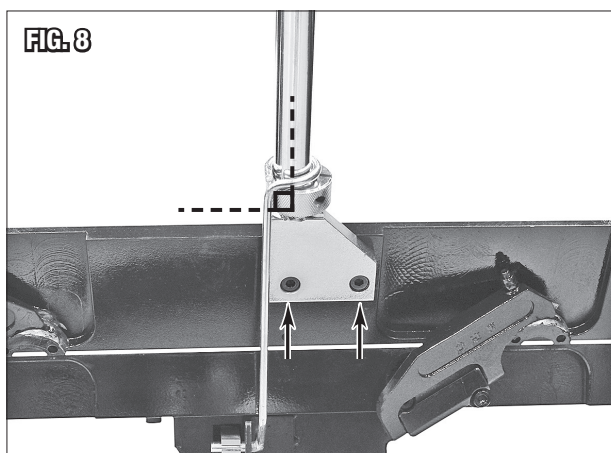
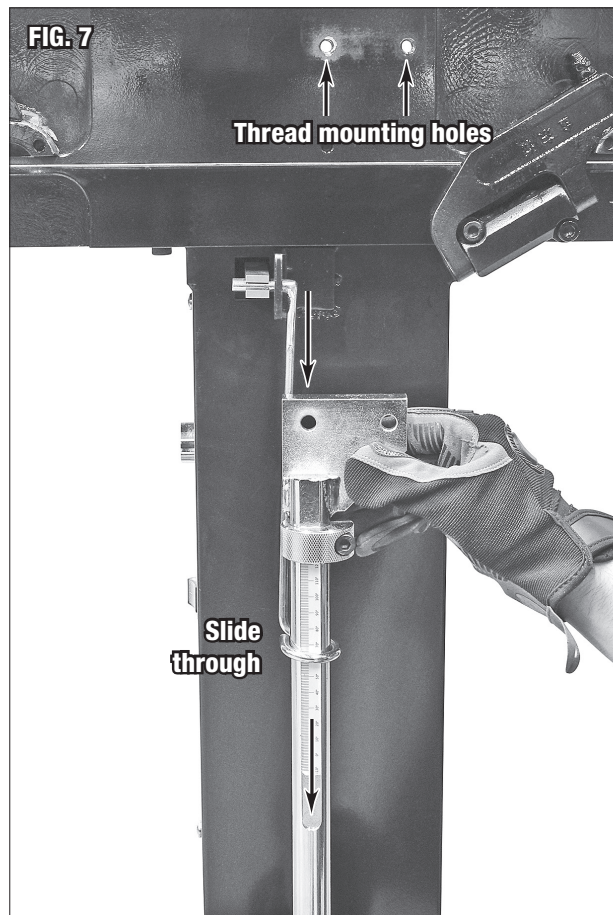
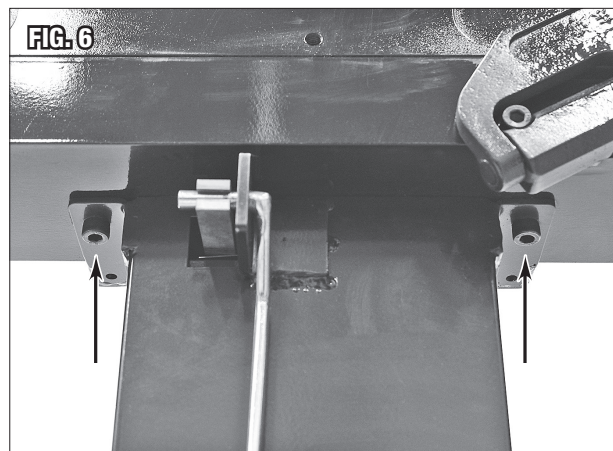
- Excessive resistance while operating could indicate a defect with the workpiece material or broken or damaged Electro-Brake components. To avoid injury, stop work immediately and inspect workpiece material for nicks, dents, welds, excessive scale or remaining coatings. Clean or repair as necessary or discard and begin with a new piece. Also inspect the Electro-Brake components for looseness or damage.

ASSEMBLY

- Install a Leg, Front (with striped tape) [D] at each side of the Support Column with Angle Indicator, Foot Pedal, Power Cord [C]. The front of the Support Column is the side the Angle Indicator taped down (FIG 1). Fasten the Legs tight with the included M10x16 Rounded Socket Head Screw [K] hardware and 6mm Hex Key [J] (FIG 2).
- Repeat these steps for each Leg, Rear [E] at the opposite side of the Support Column (FIG 2).
- If anchoring the Front Legs to the floor, you may skip this step and stow the Foot Plate [G] for possible future use. For unanchored use, install the Foot Plate [G] by tipping the Front Legs up and sliding the Foot Plate under them. The two threaded holes in the Foot Plate will align with the holes in the Legs and you can fasten the Foot Plate with the included M10x16 Rounded Socket Head Screw [K] hardware (FIG 3).
- Flip the Bending Beam of the 24" Electro-Brake Assembly [A] 180° to the vertical position for better access to the bottom side and to expose the Handle mounting holes.
- With a suitable lifting device, lift the Electro-Brake Assembly by the included lifting straps. Position the assembly just above the Support Column.
- Remove the tape around the Angle Indicator and electromagnet power connector. Carefully connect the plug to the connector on the Electro-Brake Assembly (FIG 4).
- Align the rear of the Electro-Brake Assembly with the lip on the Support Column (FIG 5) and lower it to lightly rest against the lip. Avoid pinching the power connector or wires.



- Slide the Electro-Brake Assembly until it is centered on the Column and the bolt holes on the bottom side are aligned with the threaded holes on the Assembly (**FIG 6**).
- Install one M8x12 Socket Head Screw [**L**] at both sides of the Support Column to secure the Electro Brake Assembly (**FIG 6**). Lower the Electro-Brake Assembly fully, remove the lifting straps, and tighten the hardware securely.
- Adjust the Stop Collar on the Handle w/ Scale, Stop Collar [**F**] inward against the mounting tab. Then lower the Handle through the Angle Indicator with the inset Angle Gauge facing outward (**FIG 7**).
- Rotate the Angle Indicator and Handle up and adjust the position of the Bending Beam to mate the two. Align the holes in the Handle with the threaded holes in the Bending Beam (**FIG 7**) then fasten the Handle with two M8x16 Socket Head Screw [**M**] (**FIG 8**). Adjust the Handle square with the Bending Beam before final tightening.
- Install the Tray [**B**] to the rear of the Electro-Brake with two M8x12 Socket Head Screw [**L**]. You may install the Backstop Clamp with Wing Screw [**H**] to the Tray if desired (**FIG 9**).

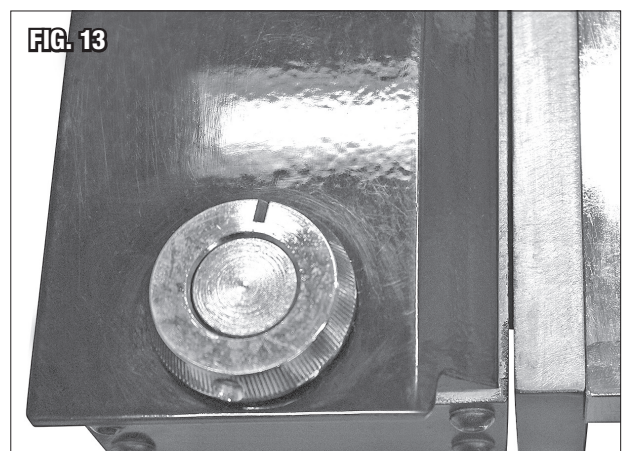
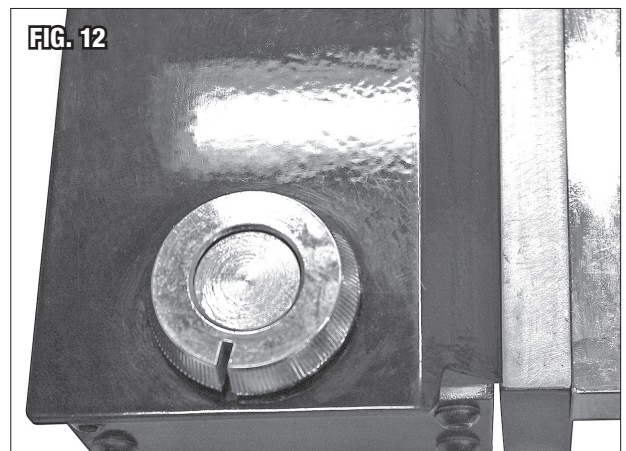
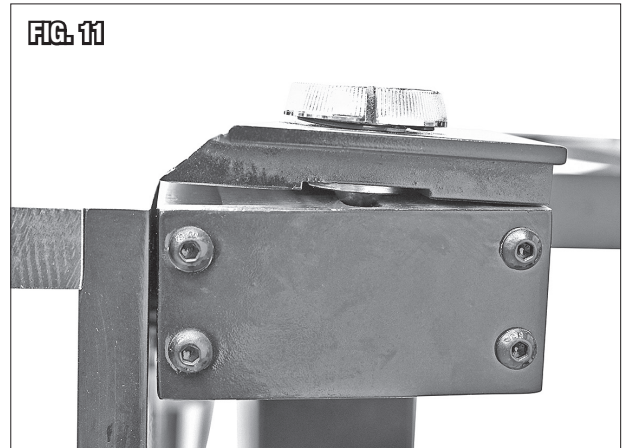
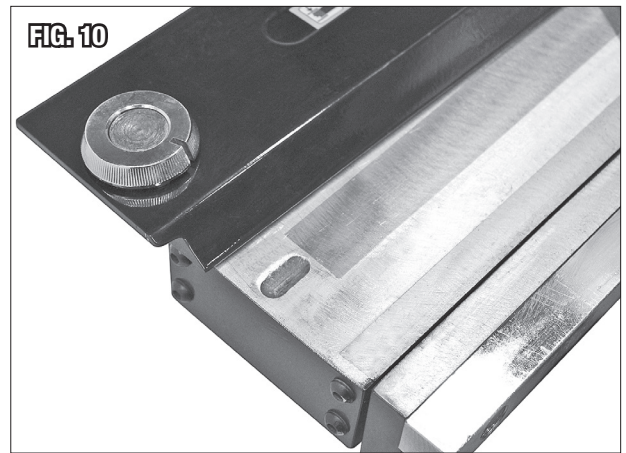


SET-UP

CLAMPING BARS

The Eastwood Electro-Brake has several different Clamping Bar configurations to accommodate many projects from simple angle bending to rolling, crimping and box forming.

- 24" x 2" Solid Clamp Bar **[P]**
 - May be used for simple angle bends.
 - The narrow, 2" profile is used in creating secondary and reverse bends.
 - Useful for use in making "U" or channel shapes 2" or more in width.
 - Can be stood on straight edge for narrower "U" or channel shapes.
- 24" x 4" Solid Adjustable Clamp Bar **[N]**
 - May be used for simple angle bends.
 - The Adjusting Knobs on the outer ends of the Clamp Bar feature eccentrics based on locating balls on the underside of the Clamp Bar that are nested into depressions on the top of the Base Deck (**FIGS 10 & 11**). The Knobs are rotated to move the Bar closer and further from the Bending Beam to accommodate different metal thicknesses and bend radii (**FIGS 12 & 13**). A proper adjustment can be achieved by adding the thickness of the selected metal to the allowable bend radius for that metal as found in a Machinery's Handbook. Use that figure to set the distance from the edge of the Base Deck to the front edge of the Clamp Bar.
 - Normally used with the angled edge outward to provide up to a 120° bend.
 - May be reversed on the Base Deck with the straight edge facing outward and combined with a section of solid round bar stock (not included) to provide a rolled bend.
- 24" x 4" Slotted Adjustable Clamp Bar **[O]**
 - Used identically as described in the 24" x 4" Solid Adjustable Clamp Bar except that the 15, 2" deep x 3/8" wide slots cut into the leading edge are designed to be used in conjunction with the collection of 6, different length Short Bars. **[Q], [R], [S], [T], [U] & [V]**.
- Short Clamp Bars **[Q], [R], [S], [T], [U] & [V]**
 - May be used alone for inside box and tray work or in combination with the 24" x 4" Slotted Adjustable Clamp Bar **[O]**.



BENDING ANGLE GAUGE

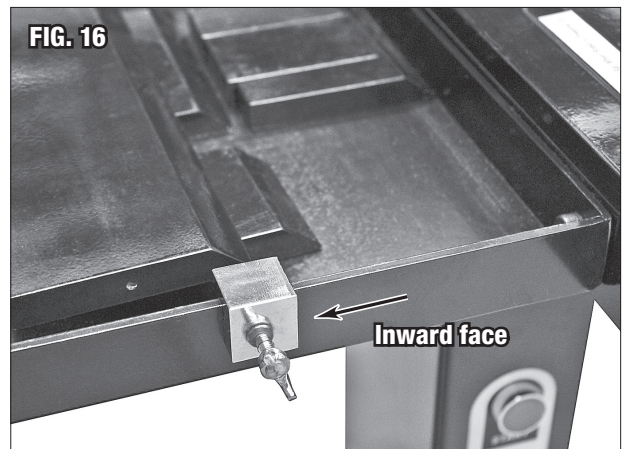
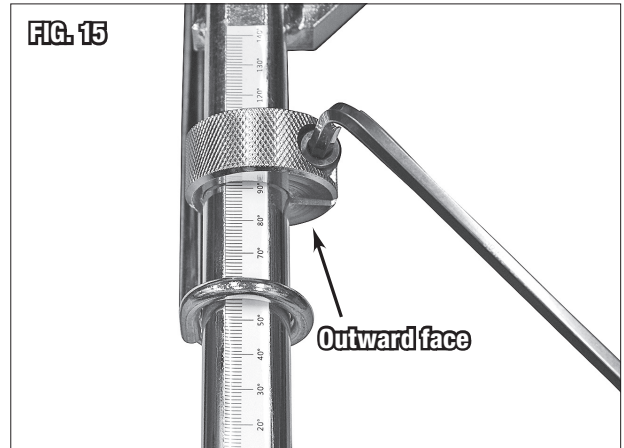
The Bending Angle Gauge is designed into the Handle with a Degree Scale in a flat recess of the upper face of the Handle (**FIG 14**). A maximum 140° is possible. To set:

- Using the Included 6mm Hex Key, loosen the clamping screw of the Stop Collar (**FIG 15**).
- Slide the Stop Collar along the Gauge until the Outward Face of the Stop Collar is aligned with the desired angle marking on the Gauge (**FIG 15**). This will cause the plate on the Gauge to limit the travel of the Handle controlling the final bend angle of the workpiece.

TRAY BACKSTOP CLAMP

The Tray can be used with the adjustable Backstop Clamps to act as a measured Stop Guide for repeated bends in material. A maximum 12.5" is possible. To Set:

- Loosen the Wing Screw of the Backstop Clamps (**FIG 16**).
- Slide the Backstop Clamps along the Tray until the Inward Face of the Backstop Clamps are aligned with the desired stop dimension.

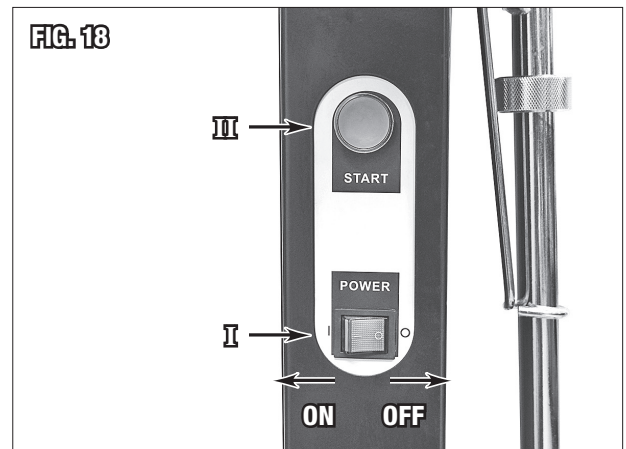
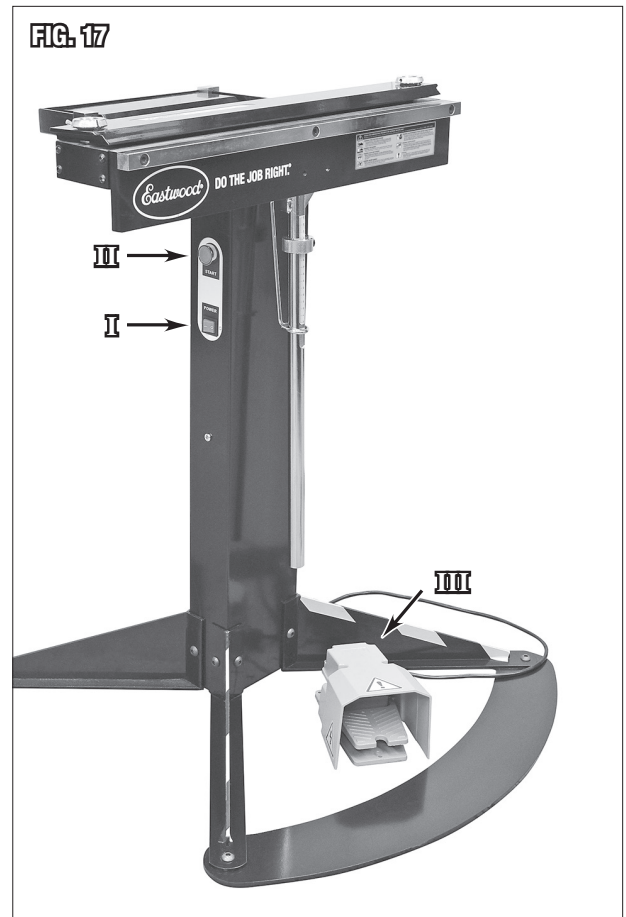


CONTROL PANEL (FIG 17 and FIG 18)

- (I) Power Switch: Switches on power to unit. Illuminates GREEN when **ON**.
- (II) Start Button: Green Push Button, when depressed will energize light clamping force until the Handle is moved.
- (III) Foot Pedal: Serves the same function as the Green Push Buttons. Depress to energize light clamping force until the Handle is moved.

CONNECTING THE 24" ELECTRO-BRAKE TO A POWER SOURCE

The Eastwood 24" Electro-Brake requires a dedicated 120 VAC, 15 AMP, circuit breaker protected outlet. The plug installed is a NEMA 5-15P and should be used with a NEMA 5-15R receptacle. If unsure about your electrical setup contact a licensed electrician.



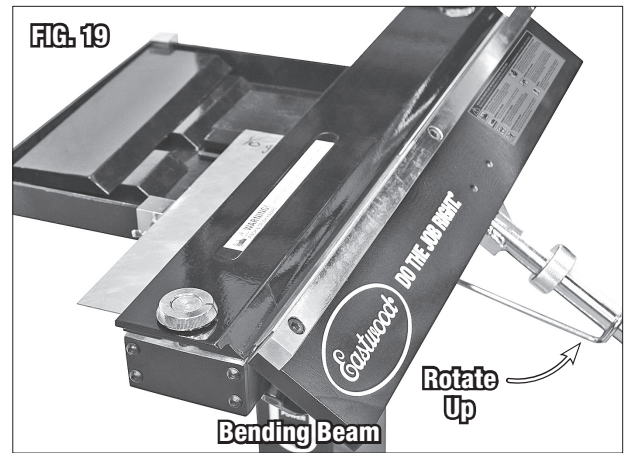
OPERATION

GENERAL USAGE

- Arrange the workpiece panel to be bent between the Base Deck of the Bender and the selected Clamping Bar.
- Once the Clamping Bar and panel are aligned, Switch **ON** the (**I**), Power Switch then either press the (**II**) Start Button or the (**III**) Foot Pedal. This imparts a light clamping force to hold the workpiece in place.
- Grip the Handle and rotate it upward to begin the bending process (**FIG 19**). If using the Foot Plate, step on it to counteract your applied force at the Handle which will want to tip the Electro-Brake.
NOTE: As soon as the upward motion of the Handles is begun, a switch in the Handle mechanism activates the full 3 ton clamping pressure. The Start Button or Foot Pedal may then be released, and clamping will continue automatically.
- Once the desired bend angle has been achieved, gently rotate the Handle backward to the neutral position.
- Moving the Handle backward more than 15° automatically releases all clamping pressure.
- Check the results of the bend.
- The workpiece may be reinserted, and the process repeated if necessary.

NORMAL, STRAIGHT BENDS (**FIG 19**)

- Turn the Bender Power Switch to the **ON (I)** position.
- Set the Clamp Bar onto the Base Deck with the steel Detent Balls on the outer ends of the underside, nested into the locating recesses in the Base Deck.
- Adjust bend radii for workpiece thickness by rotating the Eccentric Adjuster Knobs at the ends of the Clamping Bar.
- Rotate the Bending Beam up to the 90° position and check that it is parallel to the leading edge of the Clamp Bar.
- Add the dimension of the material thickness to the allowable bend radius for the material. The final figure will be the distance from the leading edge of the Clamping Bar to the face of the Bending Beam @ 90°.
- Readjust the Eccentrics if needed.
- Insert the workpiece between the Clamping Bar and the Base Deck.
- Press and hold the Green Start Button or the Foot Pedal to apply a light, pre-clamping pressure.
- Slowly pull up on the Handle. This will automatically engage full clamping pressure. The Start Button or Foot Pedal may be released. Full clamping pressure will continue.
- Continue to full planned bend.
- Moving the Handle backward beyond 15° will release all clamping pressure.
- Remove workpiece.



CREATING A HEMMED/CRIMPED EDGE ON A PANEL (FIGS 20 & 21)

- Operate Bender as described in **NORMAL, STRAIGHT BENDS** except continue bend to 135°-140°.
- Remove the Clamp Bar and move the workpiece back from the edge of the Base Deck approx. an additional 0.38" [10mm] depending on metal thickness.
- Without the Clamp Bar in place, rotate the Clamp Bar back up to 180° to flatten the angled bend into a crimp.

FORMING A RADIUSED/ROLLED EDGE ON A PANEL (FIGS 22 & 23)

- The Bender is operated as it is with **NORMAL, STRAIGHT BENDS** however rolled edges are formed by wrapping the workpiece around a steel bar or piece of thick-walled pipe.
- Reverse the orientation of the Clamp Bar so that the vertical edge is facing outward, toward the Bending Beam.
- Move the Clamp Bar back from the front edge of the Base Deck distance of the pipe or bar diameter.
- **NOTE:** DO NOT exceed 3/4" diameter of bar or pipe to avoid placing it too far into the magnetic field which would diminish the effectiveness.
- Place the steel bar or pipe on the Base Deck with the outer circumference flush with the front edge of the Base Deck and against the vertical edge of the Clamp Bar.
- This will allow a 90° radius. To curve the material more than 90°, move the workpiece inward so that the curved material is between the bar or pipe and the vertical edge of the Clamp Bar.

FIG. 20



FIG. 21

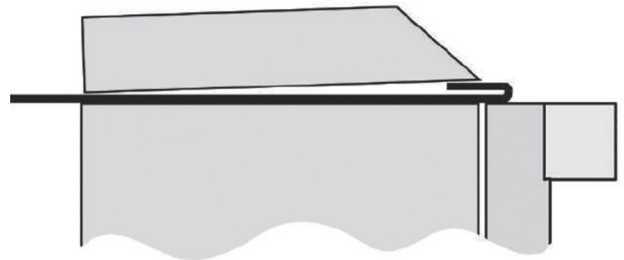


FIG. 22

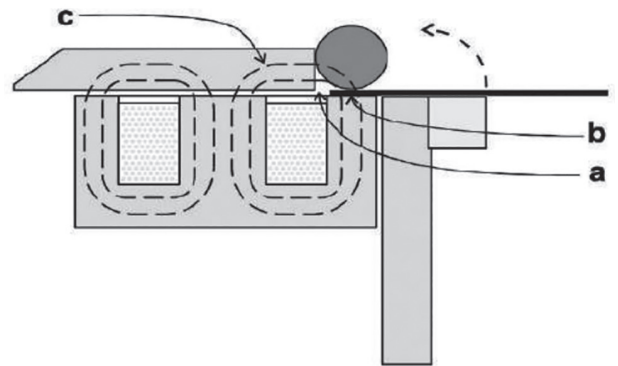
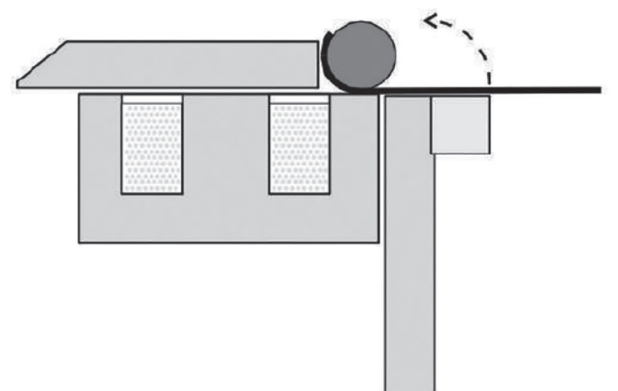


FIG. 23



CREATING BOXES (UTILIZING SHORT CLAMP BARS) (FIG 24)

The Bender is operated as it is with **NORMAL, STRAIGHT BENDS** however the appropriate width Short Clamp or Clamps are used for the secondary sides of a box in place of one of the 24" Clamp Bars.

- Operate Bender normally for the 1st two opposite ends of the box.
- Determine the width of the Short Clamp Bars for the bends needed to make up the secondary width of the planned box.
- Place the partially formed box workpiece on the Base Deck.
- Set the Short Clamps over the inside of the box workpiece.
- Operate Bender normally with the Short Clamp Bars for the box sides.

As experience is gained in forming boxes, more complex details can be added such as tabs, flaps and flanges to the box sides.

FORMING TRAYS (UTILIZING THE SLOTTED CLAMP BAR) (FIG 25)

As details such as tabs, flaps and flanges are added to box sides, clearance provided by the slots in the Slotted Clamp Bar is needed. The Slotted Clamp Bar is used in combination with the Short Clamp Bars.

- Operate Bender as described in **NORMAL, STRAIGHT BENDS** for the initial bends of the tray sides.
- The Slotted Clamp Bar is set up the same as the Solid Clamp Bar however the open slots will allow the tray sides and flaps to pass through the slots as the project becomes more complex.

FIG. 24

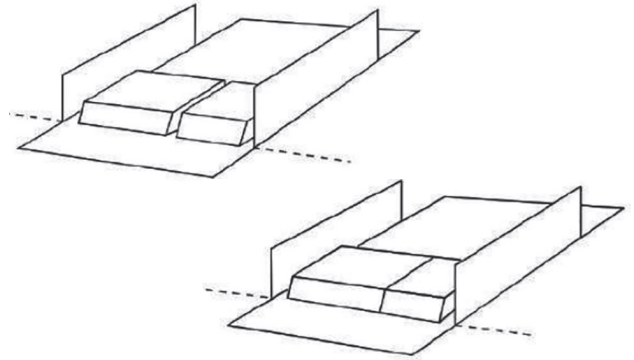
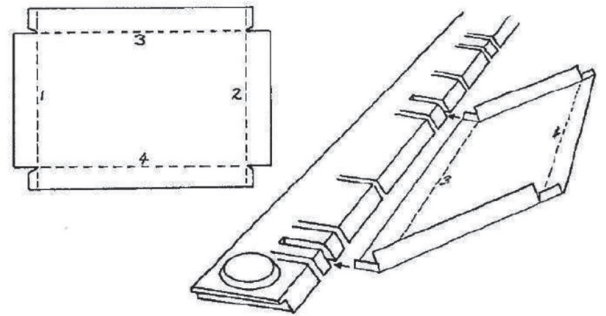


FIG. 25



MAINTENANCE

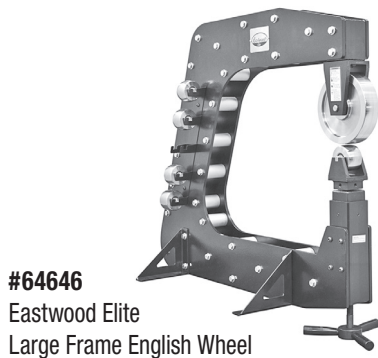
- Use a liberal amount of a good quality, heavy bodied chassis grease on the slide surfaces of the two hinges.
- Apply a thin motor or suitable lubricating oil to the pivoting portion of the hinges.
- Always keep the magnetic Base Deck of the Bender clean and free of any dirt accumulation or metal chips.
- Keep the surfaces of the Clamping Bars free of dirt and metal chips.
- Always keep the Eastwood Electro-Brake in a dry location and store with a suitable cover in place.
- Keep all bare metal areas including the Base Deck lightly oiled to prevent rust formation when not in use.

TROUBLESHOOTING

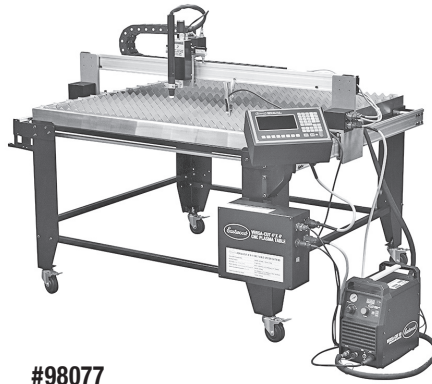
PROBLEM	CAUSE	CORRECTION
Does Not Operate When Switch is Turned ON	No power to Electro-Brake	Check 120 VAC power connection.
		Check for tripped circuit breaker. The Electro-Brake operates on a 15 Amp Minimum circuit.
Magnetic Clamping Power is Weak	Excessive voltage drop due to under-sized and/or too long of electrical supply wiring.	Have electrical supply wiring checked by licensed electrician.
	Continued use will generate heat in coils which weakens the magnetic field	Allow unit to cool to room temperature before resuming work.
	Material to be formed is too thick or too hard	Limit material thickness to 0.63" [1.6mm] for mild steel.
Excessive Effort Required to Lift Handles While Bending	Workpiece too thick or too hard	Limit material thickness to 0.63" [1.6mm] for mild steel.

ADDITIONAL ITEMS

R&D MUST-HAVE ACCESSORIES



#64646
Eastwood Elite
Large Frame English Wheel



#98077
Eastwood Versa Cut 4X4 CNC Plasma Table
With CNC Cut 40 and Machine Torch



#67510
Eastwood 5"
Throatless Shear

OPTIONAL ITEMS

- #28038** Eastwood Sheet Metal Gauge
- #55072 / 55073** Eastwood Work Gloves (M / L)
- #13475** Eastwood Electric Metal Cutting Shears
- #51088** Eastwood Shrinker/Stretcher Set
- #21327** Eastwood Elite 27" Bead Roller
- #21489** Eastwood Elite Deep Jaw Shrinker Stretcher
- #20254** Eastwood 24" Slip Roll

Visit eastwood.com for complete info and pricing.

If you have any questions about the use of this product, please contact

The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: tech@eastwood.com

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