

Eastwood[®]

DO THE JOB RIGHT.[®]

Item #20649

PAN AND BOX BRAKE

INSTRUCTIONS



The **EASTWOOD 12" & 24" PAN AND BOX BRAKES** are precision engineered metal working tools designed to produce accurate, variable length bends in angles up to 135° in mild, 20 gauge sheet steel and 18 gauge aluminum in widths up to 12" for the 20664 and 24" for 20665". Create complex shapes such as floor reinforcement channels and ribs, sections of corrugated pickup bed floors; truck bedside panels, inner fender structures and much more, all with one convenient bench-mounted tool.

TOOLS REQUIRED

- 6mm Hex Key
- 2.5mm Hex Key
- 16mm Wrench
- 17mm Wrench
- Small/Medium Phillips Screwdriver
- Feeler Gauge Set
- Angle Gauge or Protractor

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

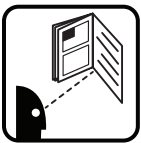
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION used with the safety alert symbol, 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 this manual before using this machine.
- Save for future reference.



WARNING PINCH AND CRUSH HAZARD!

- The Eastwood Pan and Box Brake consists of heavy metal components which can present a hand/finger pinch hazard and cause potentially serious injuries if dropped. Avoid pinching hands while handling. The use of safety shoes is strongly recommended. 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 bending. Sheet metal edges and corners are sharp and can injure eyes. Always wear ANSI approved eye protection when operating this tool.





⚠ WARNING

- Before beginning ANY work with this tool, it is absolutely necessary that it be securely bolted to a sturdy workbench anchored to the floor or wall.

⚠ WARNING

- Strenuous physical force may need to be applied to the Pan and Box 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.

⚠ CAUTION

- The Eastwood Pan and Box Brake was specifically designed to be operated by one person only. Never have one person operate the Bending Bar while another handles the workpiece or serious injury could occur.

⚠ NOTICE

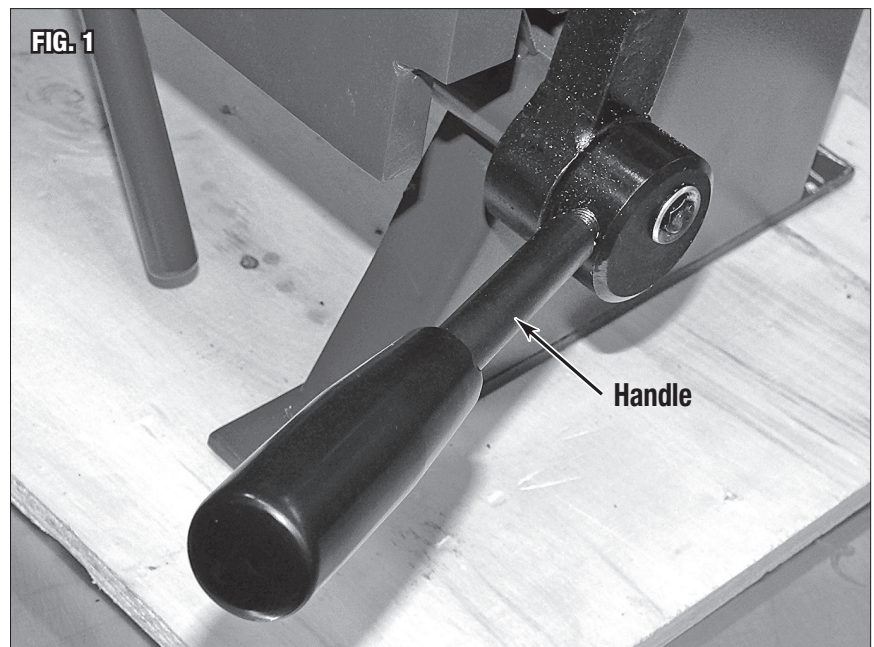
- Excessive resistance while operating could indicate a defect with the workpiece material or broken or damaged Pan and Box Brake components. To avoid injury, stop work immediately and inspect workpiece material for nicks, dents, welds, excessive scale or remaining coatings. Clean or repair as necessary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

SET-UP

- The Eastwood Pan & Box Brake must be **securely** mounted on a heavy, solid workbench, stand, floor, etc, capable of holding the static weight of the unit plus the stresses from operation. The use of 5/16" through bolts & nuts or longer lag screws with substantial washers, and attachment to a structural member is absolutely necessary.
- Place the Pan & Box Brake over the chosen location, then mark mounting hole locations by tracing holes in the feet.

ASSEMBLY

- Thread the Handle into the right side Cam (**FIG 1**).



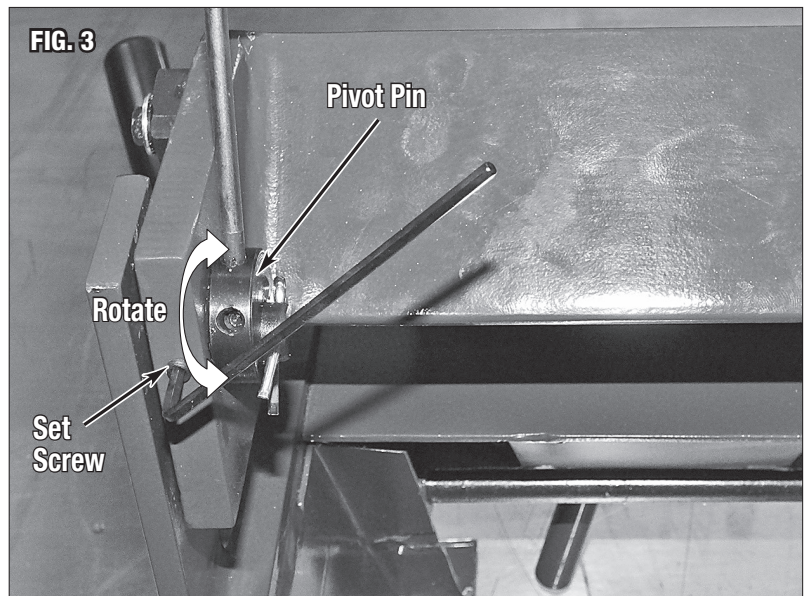
OPERATION

- Select the Finger width or combination of Fingers required to bend the desired width of Sheetmetal.
- Add or delete Fingers as required by loosening the 6mm Socket Head Cap Screws to remove Fingers (**FIG 2**).
- To add Fingers to achieve desired width, set in place and secure with a Socket Head Cap Screw and securely tighten with 6mm Hex Key (not Included).

NOTE: Several adjustments must be made prior to bending metal.

- Adjust Finger Alignment – The Fingers need to be aligned squarely with one another, the lower machined Platen Surface, and the upper cam driven Pressure Bar.
 - To adjust, loosen the socket head cap screws retaining the Fingers with a 6mm Hex Key (Not Included).
 - Move Fingers so the top edges are square to the Pressure Bar and the sides are square to adjoining Fingers (**FIG 2**).
- Adjust Pivot-Cams for Bend Radius – The Pivot-Cams adjust the Knife-Edge of the Fingers in or out to provide the correct bend radius for the thickness and composition of the material being bent.
 - To adjust, use a 2.5mm Hex Key (not Included) to loosen the Set-Screws at the upper rear of the Frame (**FIG 3**).
 - Insert a smaller Philips screw driver into one of the several holes around the circumference of the Cam and rotate it forward or back as required to move the Knife-edge of the Fingers toward or away from the edge of the machined Platen surface (**FIG 3**).

NOTICE: Do not allow the Knife-edge of the fingers to protrude beyond the edge of the machined Platen or permanent damage to the Fingers and Bending Bar will occur.



A word about Bend Radius: Every gauge and type of sheetmetal has a minimum Bend Radius. If an attempt is made to bend that metal sharper than the allowable Bend Radius, it will fatigue and crack. It is best to consult an online table or a Machinery's Handbook for the proper Bend Radius. A good "rule-of-thumb" to employ is never set the distance of the Knife-edge of the Fingers any less than 1-1/2 X the thickness of the metal being bent.

- Adjust Pressure Bar for Metal Thickness – The Pressure Bar needs to raise or lower the attached Fingers as needed to accommodate the thickness of the selected sheetmetal.
 - To adjust, loosen the Locknut on the Cam Arm with a 16mm wrench (not Included) (FIG 4).
 - Using a 17mm wrench (not Included) rotate the Hex Rod Counter-Clockwise to raise the Pressure Bar (for thicker material) or rotate it Clockwise to lower it (for thinner material) (FIG 4).

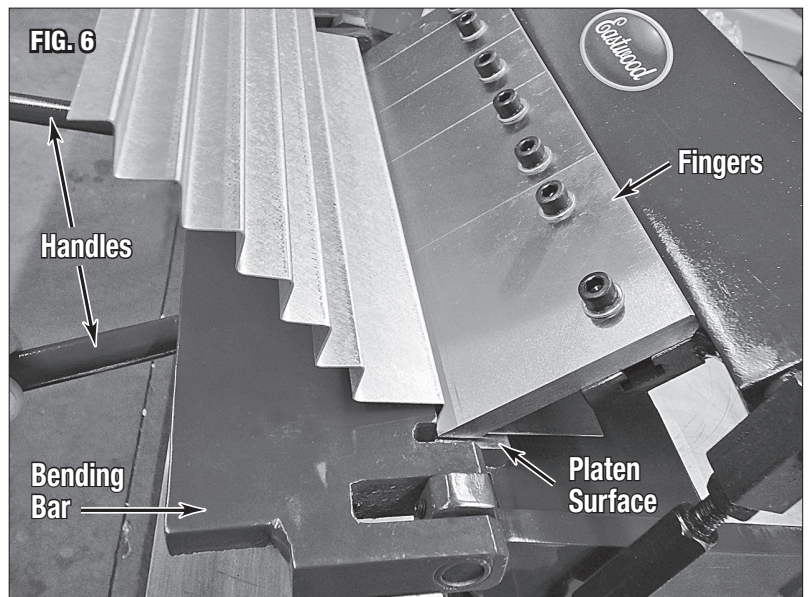
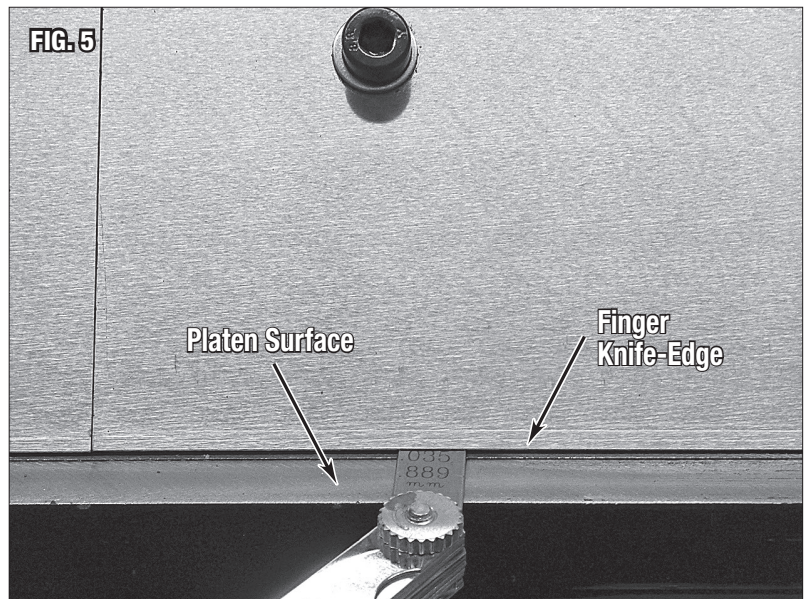
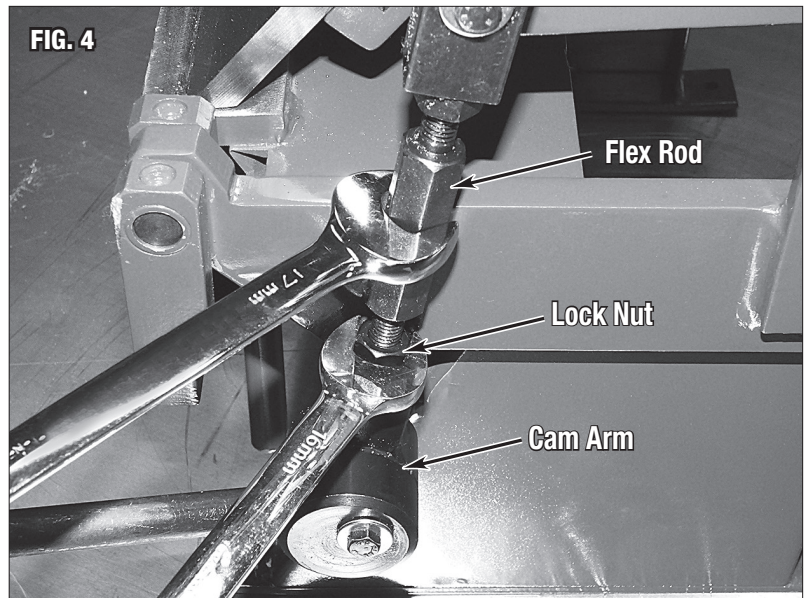
NOTE: Be sure to count the required turns to shorten/lengthen the Hex Rod an equal amount on the opposite side.

- When done, use a feeler gauge (not included) at several locations between the knife-edge of the Fingers and the Platen Surface to verify metal gauge adjustments (FIG 5).

NOTE: The proper gap will clamp the Sheetmetal just tight enough to prevent movement when bending, yet not so tight as to generate excess effort in the Clamping Handle.

With all the Fingers in place, bends up to 135° can be made in 20 gauge mild steel panels up to 12" wide (#20664) or 24" wide (#20665). To do so;

- Measure and mark the desired bend line on your sheetmetal panel.
 - Raise the Fingers by rotating the Cam Handle Upward.
 - Slide panel under the Fingers lining up your pre-marked bend line with the lower, beveled edge of the Fingers. Note: the edge of the Fingers are set back slightly from the edge of the machined Platen Surface of the main body to allow for a sufficient bend radius of the metal and the most accurate bends (FIG 6).
 - Rotate the Cam Handle downward to clamp the Fingers against the sheetmetal panel.
 - Grasping both handles of the moveable Bending Bar, lift upward, bending your panel until the desired bend angle is achieved (FIG 6).
- NOTE:** The use of an angle gauge or protractor (not Included) is recommended.
- Depending on the particular alloy being bent, it may be necessary to rotate the Bending Bar slightly beyond the desired angle to allow for "springback". Some trial and error is suggested, in scrap material, before making final bends.



MAINTENANCE

- Provide several drops of oil to pivot points periodically to prevent binding.
- Keep all areas of the tool clean, particularly those surfaces that contact sheetmetal workpieces. Dirt and metal chips can cause uneven clamping and inaccurate bends.
- Store in a clean & dry environment when not in use. Coat all machined surfaces with a light film of oil or suitable protectant to prevent rust formation.

ADDITIONAL ITEMS

- #28038 Sheet Metal Gauge
- #13475 Electric Metal Cutting Shears
- #28187 Bead Roller Kit
- #51088 Shrinker/Stretch Set

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

The Eastwood Technical Assistance Service Department: 800.544.5118 >> email: techelp@eastwood.com
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