



# 305MM 3-IN-1 SHEET METAL MACHINE

MODEL NO: TIO305

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instructions



Wear eye protection



Wear protective gloves



Danger Moving machinery risk of crushed hands



Danger Moving Machinery risk of trapped hand/fingers



WARNING; Hand crushing between press brake tool



WARNING; Hand crushing between press brake and material

## 1. SAFETY

- ✓ Wear approved safety goggles, gloves, and footwear, when operating the folder. Your local Sealey stockist offers a complete range of safety equipment.
- ✓ Use the tool only for its intended purpose.
- ✓ Regularly check all parts of the folder for damaged parts. **DO NOT** use if any of its components are broken, worn or damaged.
- ✓ Use original Sealey spare parts and accessories. Use of non-recommended spare parts may be dangerous and will invalidate warranty.
- ✓ Ensure good footing, wear non slip footwear.
- ✗ **DO NOT** operate this tool while under the influence of drugs, alcohol or other impairing medication.
- ✗ **DO NOT** Allow unqualified persons to operate the metal folder. Keep children away from the tool.
- ✓ Be aware of sharp edges or sharp shreds of metal that may be created. Use heavy duty gloves when handling the workpiece.

## 2. INTRODUCTION

12" 3-in-1 light sheet metal working machine. Can shear, bend and roll a variety of metals including mild steel, aluminium and copper. The rollers have grooves with diameters of 4mm, 5mm and 6mm for bending rods. Adjust the distance and angle of the rollers to create the desired curvature for curves, cylinders or cones. Shear sheets of metal up to 305mm wide. Make pans with a maximum lip of 1" and bend (brake) sheets up to an angle of 90°.

## 3. SPECIFICATION

Model No:.....TIO305  
 Die Sizes:..... 25mm/1", 50mm/2" x 2, 76mm/3" and 102mm/4"  
 Minimum Roller Diameter:.....39mm/1-1/2"  
 Tube Rolling Diameter: ..... 4mm, 5mm and 6mm  
 Workpiece Maximum Thickness Mild Steel: ..... 1mm/20 Gauge  
 Workpiece Aluminium and copper:..... 1mm/20 Gauge  
 Workpiece Maximum Width:.....305mm/12"

## 4. SET UP

### 4.1. REMOVAL AND ADJUSTMENT OF HANDLE

4.1.1. The Handle (18#) may be adjusted or moved by removing one of the Handle Knobs (26#) and loosening the Clamp Bolt (60#) that holds the handle in place. It may then be slid out of the handle socket, moved to the opposite side of the tool, and tightened in the most convenient position.

### 4.2. REMOVAL AND ADJUSTMENT OF FINGERS

4.2.1. The Fingers (12#) is segmented and can be used for varying sizes of box and pan forming. When forming a smaller box or pan, choose the desired size finger, centre it and remove the others. See below for adjustment instructions.

4.2.2. The Shear Brake Roll can be used to bend sheet metal up to 20 Gauge. The space between the Fingers (12#) and the Moving Cutter Plate (11#) is adjustable.

4.2.2.1. To adjust the spacing, perform the following steps: Place a flat straight piece of wood between the Fingers (12#) and Moving Cutter Plate (11#) and raise the Moving Cutter Plate (11#) so that the material just touches the Fingers (12#) as shown in Fig.1.

4.2.2.2. Loosen the Screws (52#) holding the Fingers (12#) in place. It is not necessary to remove them.

4.2.2.3. Remove any unneeded Fingers (12#).

4.2.2.4. Raise and lower the Moving Cutter Plate (11#) and use the block of wood to adjust the alignment of the Fingers (12#). Tighten the Screws (52#).

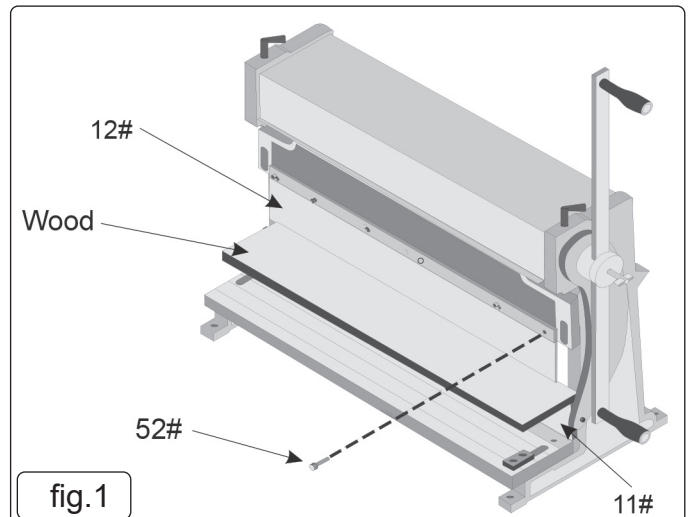


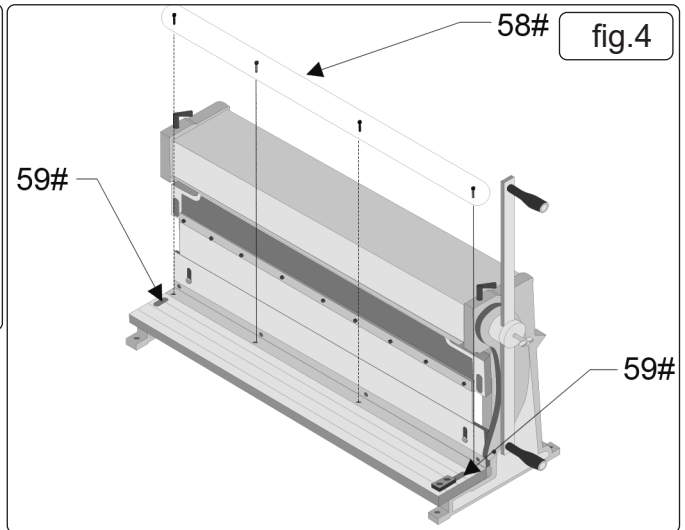
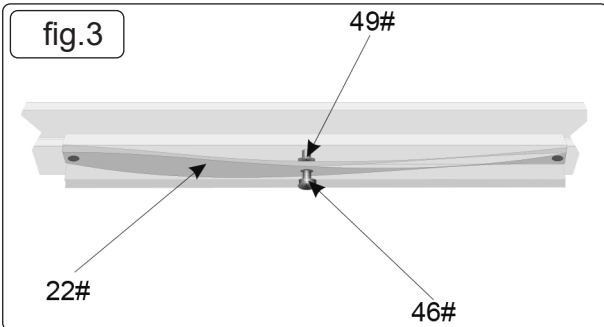
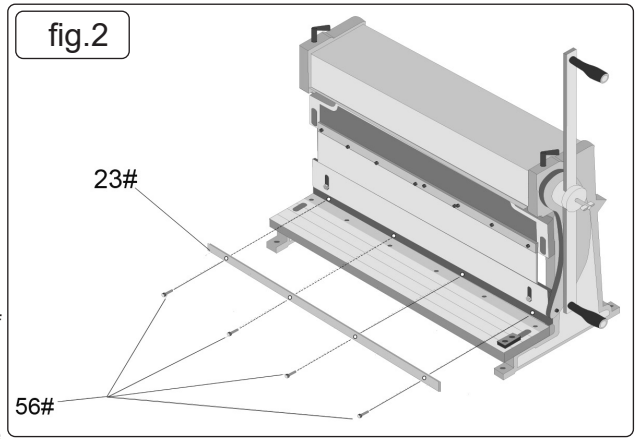
fig.1

### 4.3. REMOVAL AND INSTALLATION OF UPPER CUTTING BLADE

- 4.3.1. Remove the Screws (56#) from the upper cutting Blade (23#) as shown in Fig.2.
- 4.3.2. Remove the upper cutting Blade (23#).
- 4.3.3. Align upper cutting Blade (23#) Moving Cutter Plate (11#) and secure with its Screws.

### 4.4. ADJUSTMENT OF UPPER BLADE

- 4.4.1. Place a 12" piece of thin cardboard or paper between the upper and lower Blades (23#).
- 4.4.2. Rotate the Handle (18#) and cut the material.
- 4.4.3. Use a straight edge to determine the straightness of the cut and if the Blade is in need of adjustment.
- 4.4.4. If the upper cutting Blade (23#) is bowed out, away from the front of the tool, turn the adjustment Nut (49#) counter-clockwise as shown in Fig.3. This will tighten the Supporting Plate (22#) and push the middle of the upper cutting Blade (23#) out while pulling its ends in.
- 4.4.5. If the upper cutting Blade (23#) is bowed in, towards the back of the tool, turn the adjustment Nut (49#) clockwise as shown in Fig.3. This will loosen the Supporting Plate (22#) and pull the middle of the upper cutting Blade (23#) in while pushing its ends out.



### 4.5. REMOVAL AND INSTALLATION OF LOWER BLADE

- 4.5.1. Remove the Screws (58#) from the lower cutting Blade (23#) as shown in Fig.4.
- 4.5.2. Remove the lower cutting Blade (23#).
- 4.5.3. Replace the lower cutting Blade (23#) and secure using its Hex Screws.

### 4.6. ADJUSTMENT OF LOWER CUTTING BLADE

- 4.6.1. Lower the upper Blade (23#) to its lowest position.
- 4.6.2. Loosen the two Screws (59#) located on top of the Work Bench(2#) as shown in Fig.4.
- 4.6.3. Adjust the lower cutting Blade (23#) by turning Screws (17#) as shown in the Parts Diagram. The distance between the lower cutting Blade (23#) and the Upper Cutting Blade(23#) should be 5 to 8 percent of the thickness of the workpiece.
- 4.6.4. Tighten the two Screws (59#) located on top of the Work Bench (2#).

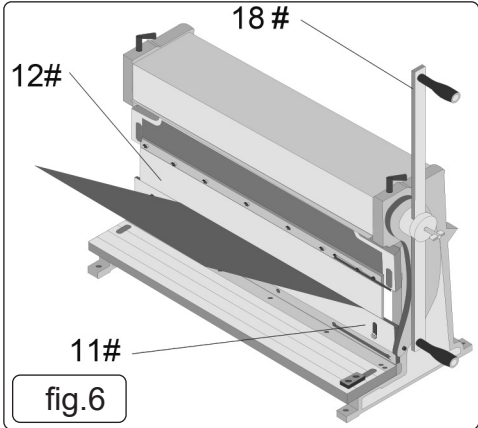
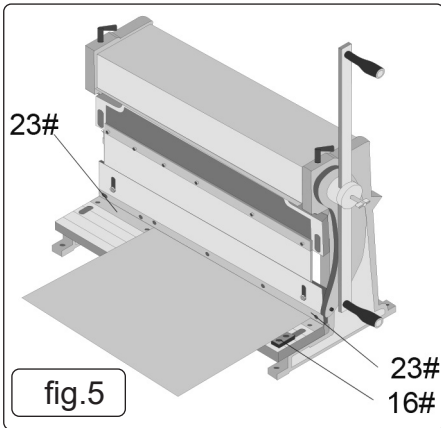
## 5. OPERATION

### 5.1. SHEARING

- 5.1.1. Scribe the cutting mark on the material.
- 5.1.2. Slide the material between the Upper Blade (23#) and the Lower Blade (23#) so that the Upper Blade is positioned directly above the mark and the right hand side of the material rests against the Guide (16#), as shown in Fig.5.

**NOTE:** Guide must be on this side of tool as shown in Fig.5.

- 5.1.3. While holding the material steady, rotate the Handle until the material has been cut.



### 5.2. ANGLE BENDING

- 5.2.1. Mark the workpiece where you want to bend the material.
- 5.2.2. Place material above the Moving Cutter Plate (11#) as shown in Fig.6.
- 5.2.3. Align the bending mark with the front edge of the Fingers (12#).
- 5.2.4. Rotate the Handle (18#) until the desired angle has been formed. Use a protractor or other measuring tool to ensure accuracy.

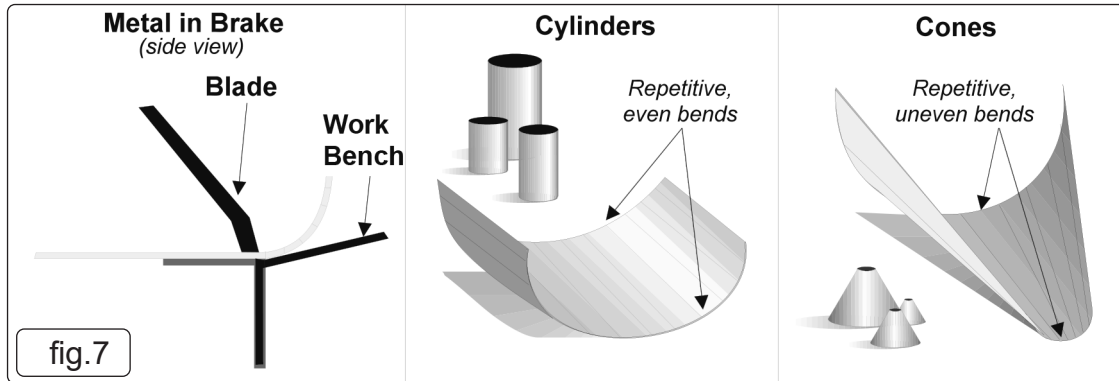
### 5.3. RADIUS BENDING

5.3.1. Radius bending is most commonly used to make cylinders and cones, as shown in Fig.7.

5.3.2. Both shapes are formed by making a series of small, closely spaced bends in the workpiece.

5.3.3. For cylinders, the bends are evenly spaced, i.e. every bend is identical.

5.3.4. For Cones, simply move one side of your stock out further than the other every time you make a bend.



### 5.4. PAN FORMING

**NOTE:** The Hand Brake Roll can be used to make various sizes of pans. The maximum lip (side) height supported by this tool is 1".

5.4.1. Pre-measure and cut your material before bending. Notch the corners according to the desired lip height as shown in Fig.8.

5.4.2. Insert material between the Fingers (12#) and the Moving Cutter Plate(11#). Bend the material until as 90° degree angle has been formed.

5.4.3. Rotate the material 90° counterclockwise. Allow the completed side to extend just beyond the tooling. Bend the second side.

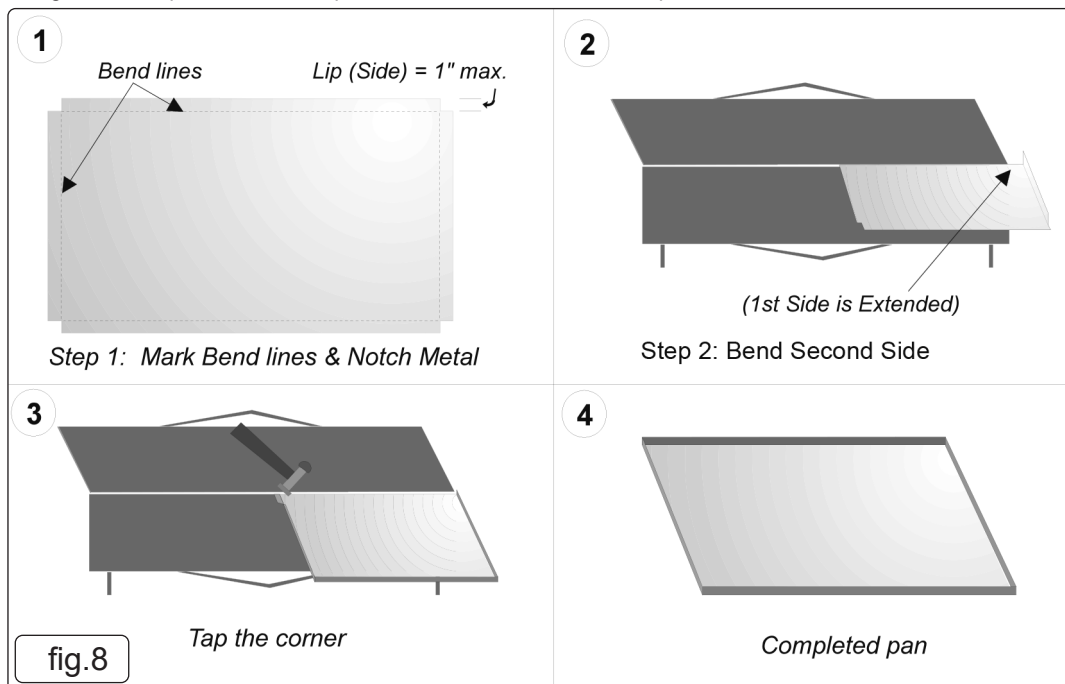
5.4.4. Repeat 5.4.3 for the third side.

5.4.5. Rotate to the final side, and insert workpiece between the tooling. Your formed sides will be on the outside of the tooling.

5.4.6. Before bending, tap one corner nearer to the middle of the machine. This will allow the material to clear the Fingers (12#) when raised.

5.4.7. Bend the fourth side.

5.4.8. Using a block or piece of wood, tap the corner of material back into place.



### 5.5. ROLLING

5.5.1. Move the Cover (33#) back and out of the way.

5.5.2. Drop the Back Pressing Roll (24#) by loosening the Roller Adjustment with Knob (25#).

5.5.3. Insert just the leading edge of your workpiece between the Upper Pressing Roll (32#) and Lower Pressing Roll (31#), and tighten the roll bar gap Adjustable Screw (27#) until the Roll Bars are barely snug against the workpiece.

5.5.4. Advance the Roller Adjustment With Knob (25#) as much as desired depending upon the tightness of the roll to be accomplish. (The tighter the roll, the more the knobs must be advanced.)

5.5.5. Crank the Handle Assembly (18# and 26#) until the proper roll has been achieved. The material should feed itself through the rollers as you crank the Handle Assembly.

### 5.6. WIRE ROLLING

5.6.1. Use the proper groove in the Upper Pressing Roll (32#) depending upon the Gauge of the wire being rolled.

5.6.2. Follow the procedures as listed above in "Rolling".

### 5.7. PRESSING

5.7.1. Slide the Press Plate Brackets (8#) of the Press Plate Assembly into the receiver holes of the Moving Cutter Plate (11#). Note that the Pressing Plate (10#) should be facing down.

5.7.2. Place the workpiece so that it is centred under the Pressing Plate (10#).

5.7.3. Rotate the Handle (18#) to press the workpiece.

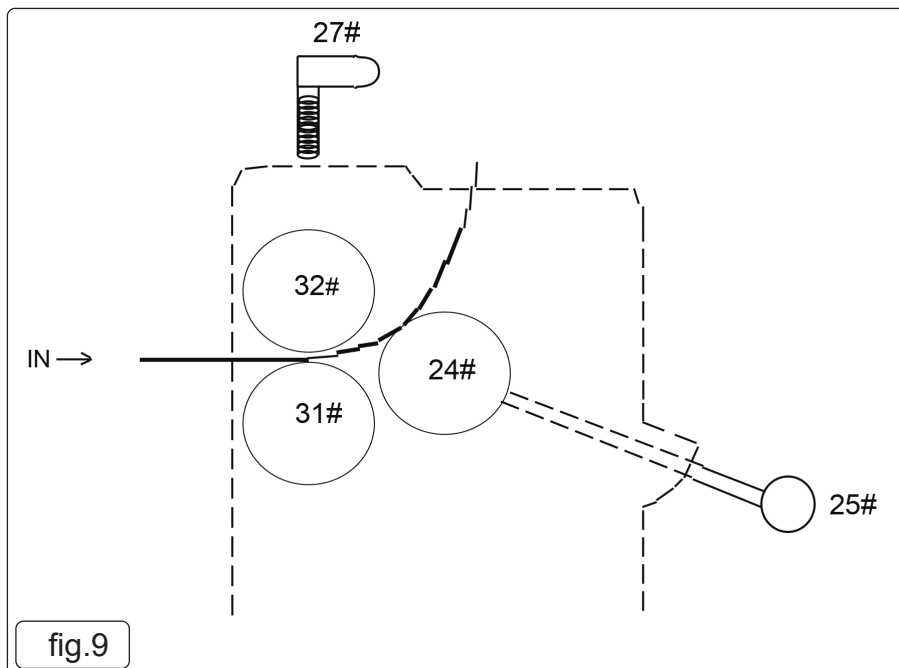


fig.9

## 5.8. SHEET METAL & WIRE FORMING

- 5.8.1. Remove the Cover (33#) from the machine. The roller Gears (30#) should have a coating of general purpose grease for smooth operation. Clean any dirt or excess grease from the rolls.
- 5.8.2. The following steps apply to both wire and sheet metal bending.
- 5.8.3. Adjust Screws (27#) to the thickness of the stock. It should feed between rollers (31#) and (32#) without slipping or binding when the handle (18#) is turned. The material is fed into the rollers from the front of the machine.
- 5.8.4. Back Pressing Roll (24#) forms the radius in the material. The closer it is to the feed rollers, the smaller the radius will be. Roller Adjustment With Knob (25#) adjusts the spacing of the back roller.
- 5.8.5. Metals will have different bending characteristics. Some are very pliable, while others have considerable spring or memory. Practice before beginning an important project.

## 6. MAINTENANCE

- 6.1. Lubricate the rotating Parts of the machine every day. This can lengthen the machine life.



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

**Note:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**Important:** No Liability is accepted for incorrect use of this product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.

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