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KAKA INDUSTRIAL 171000

KAKA INDUSTRIAL 3-in-1 Combination Shear Brake Roll Machine User Manual

Model: 171000 (8-inch, 20-Gauge)

1. Introduction

This manual provides comprehensive instructions for the safe and effective operation, setup, and maintenance of the KAKA INDUSTRIAL 8-inch, 20-gauge 3-in-1 Combination Shear Brake Roll Machine, Model 171000. This versatile machine is designed for shearing, braking, and rolling various metal sheets, offering a compact solution for metal fabrication tasks.



Figure 1.1: KAKA INDUSTRIAL 3-in-1 Combination Shear Brake Roll Machine, Model 171000.

2. Safety Instructions

WARNING: Failure to follow these warnings may result in serious personal injury.

- Read and understand all instructions before operating the machine.
- Do not operate the machine beyond its intended purpose or specified capacity.
- Do not wear loose clothing, neckties, or jewelry when operating the machine. Wear protective hair covering to contain long hair. Wear non-slip footwear.
- Mount the machine securely to a workbench or floor before use.
- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Keep hands and fingers clear of all moving parts, especially during operation.
- Ensure the work area is clean, well-lit, and free from obstructions.
- Do not remove or obscure any warning labels on the machine.



Figure 2.1: Close-up of the shearing mechanism and warning label.

3. Product Overview

3.1 Key Features

- **3-in-1 Functionality:** Combines shearing, braking, and rolling capabilities for versatile metalworking.
- **Material Capacity:** Shears 20-gauge mild steel with burr-free cuts, bends up to 90 degrees, and rolls materials to a minimum diameter of 1.14 inches.
- **Durable Construction:** Features a heavy-duty HT200 cast iron frame for rigidity and reinforced T10 shear blades and 45# steel rollers for durability.
- **Precision System:** Equipped with pre-drilled shimming points and squared guide rails for calibration, and removable male/female dies for bend angle customization.
- **Ergonomic Design:** Dual-position handles reduce operator fatigue, and forming grooves on rollers ensure smooth material feeding.
- **Compact Size:** Processes steel, aluminum, brass, and copper up to 8 inches in width, suitable for space-

constrained workshops.

3.2 Components

Familiarize yourself with the main components of the machine:



Figure 3.1: Labeled diagram of the 3-in-1 Combination Shear Brake Roll Machine.

- **Knob Bolt:** Secures various adjustable parts.
- **Slip Roller Cover:** Protects the rolling mechanism.
- **Holddown Bar:** Secures material during shearing and braking.
- **Hand Crank:** Used to operate the shearing, braking, and rolling functions.
- **Working Table:** The primary surface for material placement.
- **Guide Block:** Assists in guiding material for accurate cuts and bends.
- **Back-Gauge:** Adjustable stop for consistent material positioning.

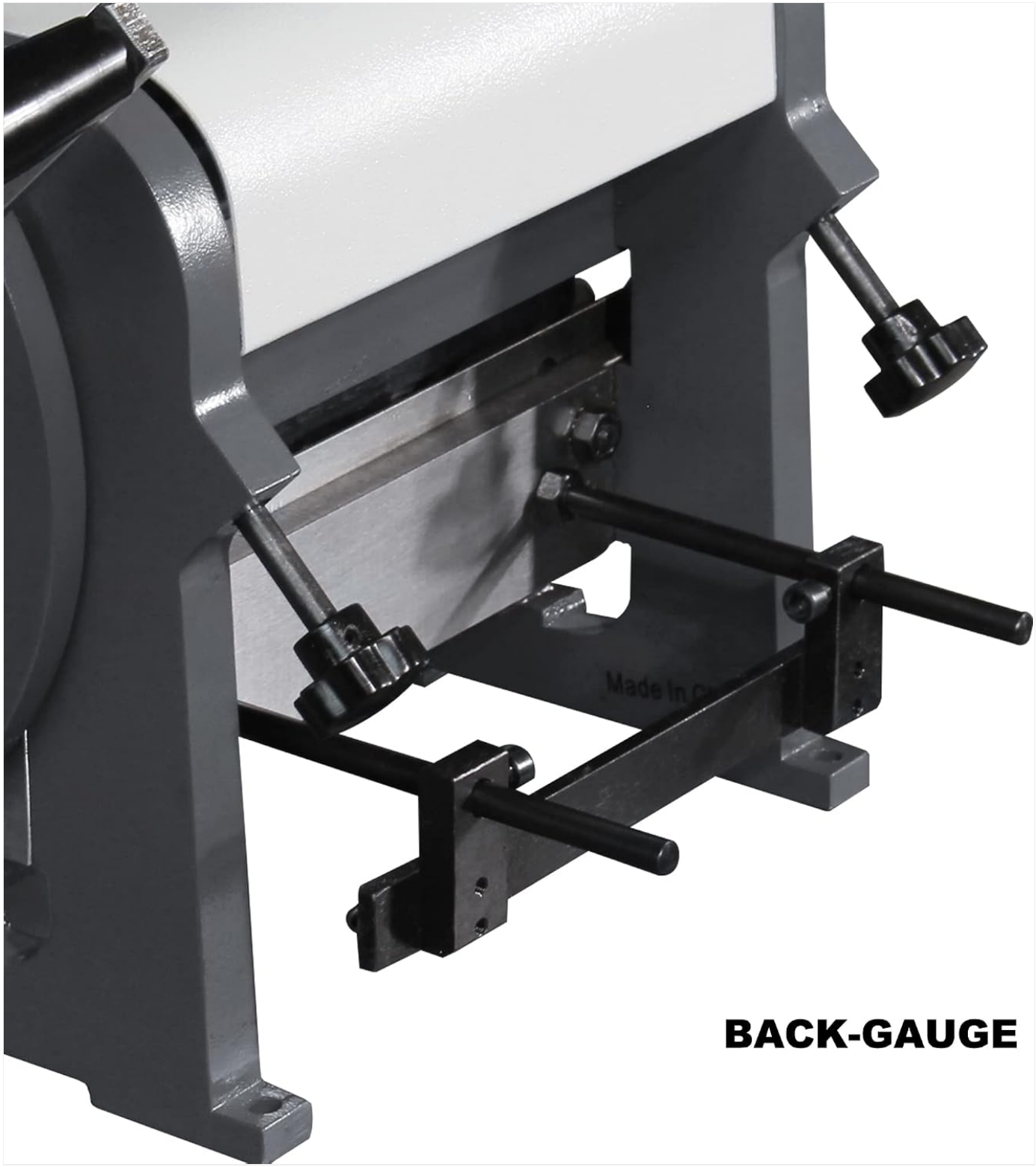


Figure 3.2: Detail of the adjustable back-gauge.

4. Setup

4.1 Unpacking and Initial Inspection

- Carefully remove the machine from its packaging. The unit is heavy; use proper lifting techniques or assistance.
- Inspect the machine for any shipping damage. Report any damage to the carrier and supplier immediately.
- Clean off any anti-corrosion grease or protective oils from the metal surfaces before use.

4.2 Mounting the Machine

The machine must be securely mounted to a sturdy workbench or stand to ensure stable and safe operation. Use

appropriate bolts or clamps.

- Position the machine on your workbench.
- Align the mounting holes on the machine base with pre-drilled holes on your workbench, or mark new holes.
- Secure the machine using bolts from below with securing nuts on top, or insert threaded rods secured with top nuts and additional nuts from below the mounting surface.
- Ensure all mounting points are tightened securely before operation.

4.3 Handle Attachment

Attach the hand crank handle to the designated shaft. The handle can typically be secured to either side of the shear for user convenience.

5. Operating Instructions

This 3-in-1 machine allows for shearing, braking, and rolling operations. Always ensure the machine is properly set up and calibrated for the specific task.

5.1 Shearing Operation

The shearing function is used to cut sheet metal up to 8 inches in length and 20-gauge thickness.

1. Adjust the back-gauge to the desired cutting length.
2. Place the metal sheet under the holddown bar and against the back-gauge.
3. Ensure the material is flat and securely held.
4. Operate the hand crank to lower the shear blade and cut the material.
5. Raise the shear blade and remove the cut material.



Figure 5.1: Shearing a metal sheet with the machine.

5.2 Braking Operation

The braking function allows for bending metal sheets up to a 90-degree angle, suitable for creating boxes and pans using segmented dies.

1. Select and arrange the appropriate segmented dies for the desired bend width and shape.
2. Adjust the holddown bar to firmly clamp the material.
3. Position the metal sheet under the bending leaf, ensuring the bend line is correctly aligned.
4. Operate the hand crank to raise the bending leaf, forming the bend.
5. Lower the bending leaf and release the material.



Figure 5.2: Bending a metal sheet using the braking function.

5.3 Rolling Operation

The rolling function is used to form curves and cylinders from sheet metal, with a minimum rolling diameter of 1.14 inches.

1. Adjust the top and bottom rollers to achieve the desired bend radius. Start with a wider gap and gradually decrease for tighter rolls.
2. Feed the leading edge of the metal sheet between the rollers.
3. Operate the hand crank to feed the material through the rollers, forming the curve.
4. Repeat passes, adjusting the rollers as needed, until the desired curvature is achieved.



Figure 5.3: Rolling a metal sheet to create a curve.

5.4 Calibration

For optimal precision, the machine may require calibration. This involves adjusting blade gaps and squaring guide rails. A blade gap of 0.006 inches is recommended for shearing. Consult a skilled user or professional if you are unfamiliar with precision machine calibration.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your machine.

- **Cleaning:** After each use, clean the machine to remove metal shavings and debris. Wipe down surfaces to prevent rust.
- **Lubrication:** The main roller is equipped with Zerk fittings for lubrication. Apply appropriate grease periodically to ensure smooth operation.
- **Bolt Inspection:** Regularly check all bolts and fasteners for tightness. Vibration during operation can cause bolts to loosen. Tighten as necessary.
- **Blade and Roller Inspection:** Periodically inspect shear blades for sharpness and damage. Check rollers for any

signs of wear or deformation.

7. Troubleshooting

If you encounter issues with your machine, refer to the following common troubleshooting tips:

- **Difficulty Shearing/Poor Cut Quality:** Ensure the blade gap is correctly set (0.006" recommended). Check if the blades are sharp and free from damage. Verify the material thickness is within the machine's capacity.
- **Inconsistent Bends:** Check the alignment of the segmented dies. Ensure the material is clamped securely and the back-gauge is set correctly.
- **Uneven Rolling:** Adjust the pressure on the rollers evenly. Ensure the material is fed smoothly and consistently.
- **Stiff Operation:** Lubricate moving parts, especially the main roller via the Zerk fittings. Check for any obstructions or loose components.
- **Machine Instability:** Re-check all mounting bolts to ensure the machine is securely fastened to the workbench.

For issues not resolved by these steps, please contact KAKA INDUSTRIAL customer support.

8. Specifications

Attribute	Detail
Brand	KAKA INDUSTRIAL
Model Number	171000
Size	8 inch 20Ga.
Material	Metal, Steel
Color	Grey
Blade Material	High Carbon Steel
Blade Length	8 Inches
Max Shearing Thickness	20 Gauge Mild Steel
Max Bending Angle	90°
Min Rolling Diameter	1.14 Inches (approx. 1-1/8")
Product Dimensions (L x W)	11"L x 9"W
Item Weight	Approximately 1 Pound (Note: This weight appears to be incorrect based on typical machine weight for this type of equipment. Please refer to product packaging for actual weight.)
Power Source	Hand-powered
UPC	745369240918



Figure 8.1: Machine dimensions (11"L x 9"W).

9. Warranty and Support

For warranty information, technical support, or to order replacement parts, please contact KAKA INDUSTRIAL customer service directly. Refer to your purchase documentation for specific warranty terms and contact details.

Manufacturer: KAKA INDUSTRIAL LLC

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