

KAKA Industrial®

Unpacking

The METAL BENDER is shipped from the manufacturer in a carefully packed Carton box. Thoroughly inspect the product upon opening the package.

After unpacking the unit, carefully inspect for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claims must be filed with the carrier and are the responsibility of the user.

Specifications

The KAKA 4" METAL BENDER is a high quality, industrial style tool capable of generating a powerful 2-1/2 tons of pressing force to create 90° or lesser repeatable bends in mild steel and aluminum up to 4" wide.

- For cold forming of steel and metals including setup plate for table clamping.
- Stamp a stencil for round roll bending available.



Stock No.	173204
Model.....	FB-4
Maximum Jaw Travel.....	2-1/2"
Minimum Bend Radius.....	1/4"
Maximum Bend Angle.....	90°
Average Maximum Expected Material Bending	
Mild steel:	
	0.75"x0.67"(19x17 mm),
	1.97"x0.43"(50x11 mm),
	3.98"x0.31"(101x8 mm).
Packing size.....	17"x8"x7" (44x21x18 cm)
N.W./G.W.	18/22 lbs (8.5/10 kg)

NOTE: Material thicknesses shown are for mild steel only. High carbon steel and stainless steel thickness will be less while aluminum thickness will be higher.

- 3/4" wide, max. = 3/8" thick
- 2" wide, max. = 1/4" thick
- 4" wide, max. = 3/16" thick

Important

- This tool has leveraged rotating components that generate greatly amplified crushing and bending forces which can quickly cause severe injury!
- Keep fingers and hands away from moving parts when operating.
- Handling sharp metal can cause serious cuts. Wear thick, well fitting work gloves to prevent cuts from handling sharp metal.

▲ WARNING

Tremendous external torque loads are placed on this Metal Bender during operation. This tool cannot be operated without adequate support or severe personal injury or property damage can occur if it should suddenly become dislodged or moves while in use. Before beginning ANY work with this tool, it is absolutely necessary that it be securely bolted to a heavy, sturdy, anchored workbench.

SAVE THESE INSTRUCTIONS

Thank you for purchasing our FB-4 METAL BENDER. Before attempting to operate your new tool please read these instructions thoroughly. You will need these instructions for the safety warnings, precautions, assembly, operation, maintenance procedures, parts list and diagrams. Keep your invoice number with these instructions. Write the invoice number on the inside of front cover. Keep the instructions and invoice in a safe, dry place for future reference.

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General Safety Information

▲ CAUTION

Always follow proper operating procedures as defined in this manual even if you are familiar with use of this or similar tools.

Remember that being careless for even a fraction of a second can result in severe personal injury.

▲ WARNING

For your own safety, read all of the instructions and precautions before operating tool.

children. Inspect the tools prior to storage and before reuse.

12. Maintain product labels and nameplates. These carry important safety information.

▲ WARNING

The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be used by the operator.

SAFETY RULES

1. Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts of machine.
2. Wear protective hair covering to contain long hair.
3. Wear safety shoes with non-slip soles.
4. Wear safety glasses complying with United States ANSI Z87.1. Everyday glasses have only impact resistant lenses. They are NOT safety glasses.
5. Be alert and think clearly. Never operate tools when tired, intoxicated or when taking medications that cause drowsiness.
6. Keep work area clean. Cluttered work areas invite accidents.
7. Work area should be properly lit.
8. Keep visitors at a safe distance from work area.
9. Keep children out of workplace. Make workshop childproof. Use padlocks to prevent any unintentional use of tools.
10. Assemble only according to these instructions. Improper assembly can create hazards.
11. When tools are not in use, store them in a dry, secure place out of the reach of

KNOW HOW TO USE TOOL

1. Use right tool for job. Do not force tool or attachment to do a job for which it was not designed.
2. Keep hands out of path of bending dies and clear from dies.
3. Exceeding capacity may be dangerous to operator and damage may occur to machine.
4. Be sure there is sufficient working room around the tool to allow for safe handling of various lengths of metal.
5. Bolt machine to sturdy stand that is bolted to floor to prevent sliding or tipping of machine.
6. Strenuous physical force may need to be applied to the Metal Bender 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.

▲ CAUTION

Pieces of mill scale, rust and other debris may be ejected from the workpiece during operation. Wear approved eye and skin protection at all times while operating.

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NOTE

Excessive resistance while operating could indicate a defect with the workpiece material or broken or damaged Metal Bender 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 Metal Bender components for looseness or damage.

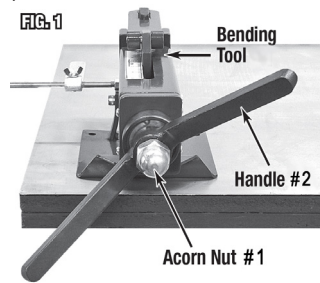
NOTE: A minimum thickness of 3/16”(4.76mm) steel or 1/2”(12.7mm) of a wood-based surface is strongly recommended.

- Use (4) 5/16” (8mm) bolts (Not Included) washers and nuts to secure baseplate to work surface.
- Attach Handle #2 to Drive Stem (FIG 1).
- Thread Acorn Nut #1 onto Drive Stem and tighten securely with a 30mm wrench (FIG 1).

Assembly

CAUTION

PINCH HAZARD!
The KAKA Metal Bender consists of moderately heavy metal components which can present a hand/finger pinch hazard and cause potentially serious injuries if dropped on feet. Avoid pinching hands while handling parts during assembly and wear thick, wellfitting work gloves to prevent cuts from handling sharp metal. The use of safety shoes is strongly recommended.



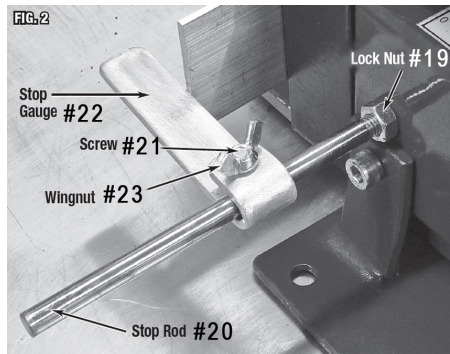
- Set the Metal Bender on a clean, level work surface.

WARNING

INJURY HAZARD!
Tremendous external torque loads are placed on this Metal Bender during operation. This tool cannot be operated without adequate support or severe personal injury or property damage can occur if it should suddenly be become dislodged or moves while in use. Before beginning ANY work with this tool, it is absolutely necessary that it be securely bolted to a heavy, sturdy, anchored workbench.

- Thread the Stop Rod Locknut #19 onto the Stop Rod #20.
- Thread the Stop Rod #20 with Locknut #19 into threaded hole in left side of the Metal bender (FIG 2).
- Tighten Locknut #19.
- Slip Workpiece Stop #23 over Stop Rod #20, place Stop Clamping Screw #21 through hole then thread on Stop Clamping Wingnut #22.

The KAKA Metal Bender is now ready to use.



- With the (4) 5/16” (8mm) holes in the baseplate as a guide, Mark the locations and centers with a pencil.
- Drill 5/16” (8mm) mounting holes in work surface.

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Operation

⚠ WARNING

Tremendous external torque loads are placed on this KAKA Metal Bender during operation. This tool cannot be operated without adequate support or severe personal injury or property damage can occur if it should suddenly be become dislodged or moves while in use. Before beginning ANY work with this tool, it is absolutely necessary that it be securely bolted to a properly anchored heavy, sturdy, anchored workbench.

⚠ CAUTION

The KAKA Metal Bender exerts tremendous bending and crushing forces in operation which can present a hand/finger pinch hazard and cause potentially serious injuries. Avoid moving parts while operating and wear thick, well-fitting work gloves to prevent cuts from handling sharp metal. The use of safety shoes is strongly recommended.

⚠ CAUTION

The KAKA Metal Bender was specifically designed to be operated by one person only. Never have one person operate the Handle while one handles the material workpiece or serious injury could occur.

⚠ NOTICE

Workpiece material should be clean of any rust, burrs, nicks, welds or coatings before attempting to bend or interference and binding may occur.

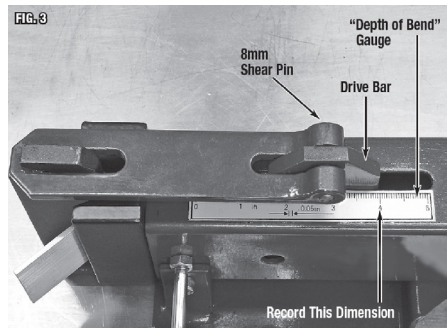
⚠ NOTICE

Apply a minimal amount of a light lubricant to material and die surfaces to ease bending process. Do not over lubricate.

1. Position the workpiece between the jaws then rotate the Handle #2 in a Clockwise direction while holding the workpiece in place with the opposite hand. As the moving Jaw begins to exert pressure on the workpiece, remove your hand from the workpiece and continue to rotate Handle #2 bending the workpiece as you go.

NOTE: The 8mm Shear Pin in the joint of the Drive Bar and Upper link is designed to fail under excess pressure. If replacing, use a softer material 8mm pin or mild steel bolt (FIG 3).

2. As the desired bend is achieved, stop Clockwise rotation and reverse rotational direction of the Handle to release the completed workpiece.



FOR PRODUCING REPEATABLE BENDS

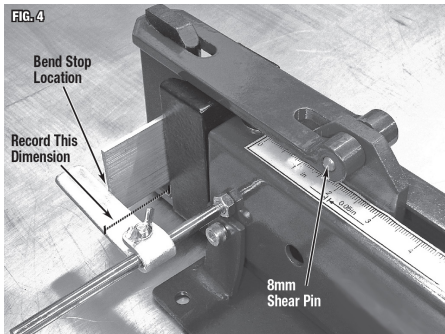
1. To record the depth and angle of bend: Using the gauge located along the slot on top of the tool body, record the dimension aligned at the rear edge of the Drive Bar (FIG 3).

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⚠ NOTICE

There will be a certain amount of "springback" meaning that you must rotate past your gauge target then allow it to "spring back" to the final desired bend angle. This varies widely according to the particular material and thickness being worked. Chromoly and high carbon steel will generally have more "springback" than milder steels and aluminum. This is one reason that some "trial and error" must be performed to explore the properties of the material before working on a final project piece.

2. To record the location of bend: Set the position of the Workpiece Stop Gauge #22 so that the point where the bend is to occur on the workpiece is determined by where the edge of the workpiece contacts the Stop Gauge (FIG 4).



Maintenance

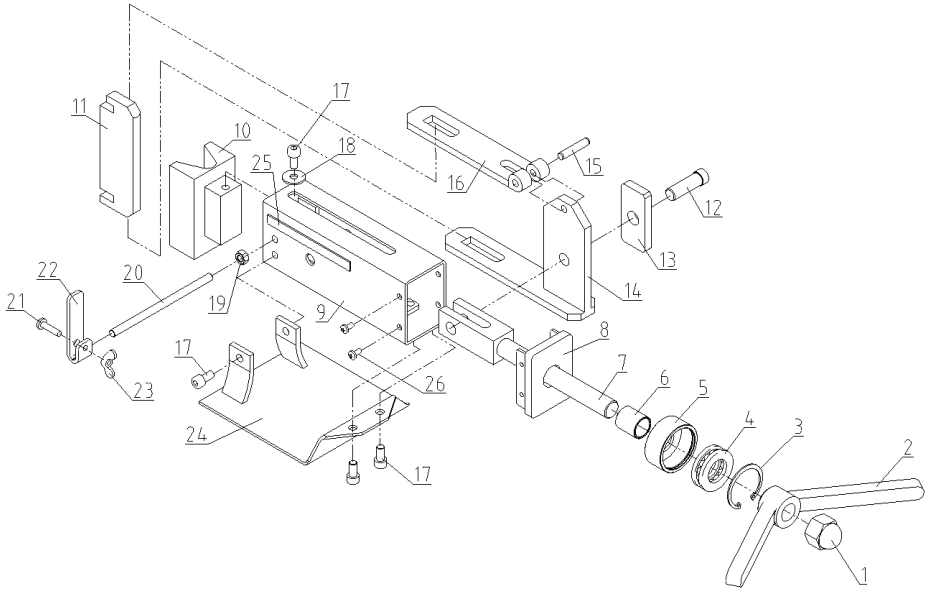
NOTE: Maintenance should be performed before each use.

1. Clean dirt and debris from threaded drive screw.
2. Check tightness of all hardware.
3. Check operation for binding. Lubricate moving parts and drive screw periodically with medium bodied chassis grease.
4. Apply a thin film of light oil or rust-preventive to all bare steel areas.
5. Store in a clean, dust-free, dry, dampness free area preferably covered with plastic sheeting.

NOTE: The 8mm Shear Pin in the joint of the Drive Bar and Upper link is designed to fail under excess pressure. If replacing, use a softer material 8mm pin or mild steel bolt (FIG 4).

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Drawing



Parts List

Ref.No.	Description	QTY.
1	Capping Nut	1
2	Handle	1
3	Snap Ring	1
4	Bearing	1
5	Outer Bushing	1
6	Inner Bushing	1
7	Lead Screw Assembly	1
8	End Cover	1
9	Body	1
10	Bending Die	1
11	Pressing Die	1
12	Shaft Pin	1
13	Spacer	1

Ref.No.	Description	QTY.
14	Lower Plate	1
15	Pin	1
16	Upper Plate	1
17	Screw M8x16mm	5
18	Washer	1
19	Nut M8	1
20	Rod	1
21	Screw M6x25mm	1
22	Piece Part Stop	1
23	Knob	1
24	Base	1
25	Scale	1
26	Screw M5x10mm	4

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If you have any questions about the use of this product, please contact the nearest one to you as below:

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