



# OPERATOR'S MANUAL

**Metal Working**



## COMBINATION SHEAR/BRAKE MODEL: SB-8

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## THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial Holdings LLC. We hope that you find it productive and useful to you for a long time to come.

**Inspection & Acceptance.** Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any goods to Seller. Goods returned without an RGA will be refused. Seller will not be responsible for any freight costs, damages to goods, or any other costs or liabilities pertaining to goods returned without a RGA. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsalable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special-order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

**Specifications.** Seller may, at its option, make changes in the designs, specifications or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

**Limited Warranty.** Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain a RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without a RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 10 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (e) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

**EXCLUSION OF OTHER WARRANTIES.** THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

**Limitation of Liability.** IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.



**Force Majeure.** Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightening, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

**Installation.** If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

**Work By Others; Safety Devices.** Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation or provision of Goods. Buyer is solely responsible for furnishing and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

**Remedies.** Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.

**Attorney's Fees.** In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorney fees and costs.

**Governing Law/Venue.** This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. Each party waives to the fullest extent permitted by applicable law the right to a trial by jury.

**Summary of Return Policy.**

- 10 Day acceptance period from date of delivery. Damage claims and order discrepancies will not be accepted after this time.
- You must obtain a Baileigh issued RGA number PRIOR to returning any materials.
- Returned materials must be received at Baileigh in new condition and in original packaging.
- Altered items are not eligible for return.
- Buyer is responsible for all shipping charges.
- A 30% re-stocking fee applies to all returns.

Baileigh Industrial Holdings LLC makes every effort to ensure that our posted specifications, images, pricing and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial Holdings LLC reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

**For Customer Service & Technical Support:**

Please contact one of our knowledgeable Sales and Service team members at:  
(920) 684-4990 or e-mail us at [sales@baileigh.com](mailto:sales@baileigh.com)



## **INTRODUCTION**

*The quality and reliability of the components assembled on a Baileigh Industrial Holdings LLC machine guarantee near perfect functioning, free from problems, even under the most demanding working conditions. However, if a situation arises, refer to the manual first. If a solution cannot be found, contact the distributor where you purchased our product. Make sure you have the serial number and production year of the machine (stamped on the nameplate). For replacement parts refer to the assembly numbers on the parts list drawings.*

*Our technical staff will do their best to help you get your machine back in working order.*

### **In this manual you will find: (when applicable)**

- Safety procedures
- Correct installation guidelines
- Description of the functional parts of the machine
- Capacity charts
- Setup and start-up instructions
- Machine operation
- Scheduled maintenance
- Parts lists

## **GENERAL NOTES**

After receiving your equipment remove the protective container. Do a complete visual inspection, and if damage is noted, **photograph it for insurance claims** and contact your carrier at once, requesting inspection. Also contact Baileigh Industrial Holdings LLC and inform them of the unexpected occurrence. Temporarily suspend installation.

Take necessary precautions while loading / unloading or moving the machine to avoid any injuries.

Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any modifications.



**Note:** *This symbol refers to useful information throughout the manual.*



## IMPORTANT

### PLEASE READ THIS OPERATORS MANUAL CAREFULLY

It contains important safety information, instructions, and necessary operating procedures. The continual observance of these procedures will help increase your production and extend the life of the equipment.



## SAFETY INSTRUCTIONS

### LEARN TO RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**



Follow recommended precautions and safe operating practices.

### UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** – is used with the safety alert symbol. **NOTICE**, which is not related to personal injury, is used without a symbol.

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

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

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

**NOTICE:** Indicates a situation which, if not avoided, could result in property damage.

**DANGER**

**WARNING**

**CAUTION**

**NOTICE**

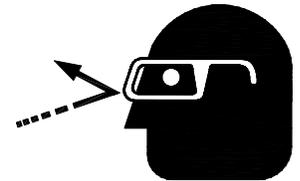


**SAVE THESE INSTRUCTIONS.**  
**Refer to them often and use them to instruct others.**



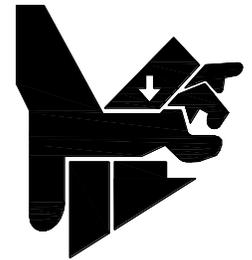
**PROTECT EYES**

Wear safety glasses or suitable eye protection when working on or around machinery.



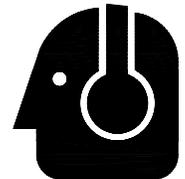
**BEWARE OF CRUSH HAZARD**

Closing upper beam and brake bed will result in loss of fingers or limbs if placed in machine. **NEVER** place your hand or any part of your body in this machine.



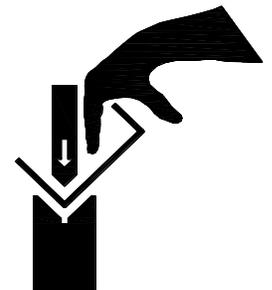
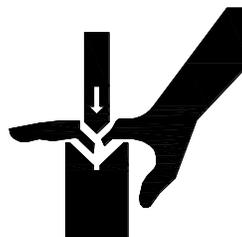
**PROTECT AGAINST NOISE**

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.



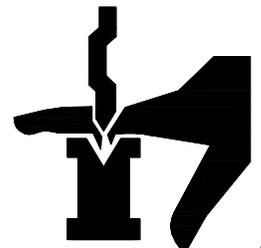
**BEWARE OF CRUSH HAZARD**

**NEVER** place your hands, fingers, or any part of your body in the die area of this machine.



**BEWARE OF SHEAR AND NIP POINTS**

Keep hands and fingers away from the shear blades and bending tooling when operating the machine.





### **CALIFORNIA PROPOSITION 65**

WARNING: Cancer and Reproductive Harm.  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



### **SAFETY PRECAUTIONS**



Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard will not make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.

**REMEMBER: Your personal safety is your responsibility.**



**WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY**

### **Dear Valued Customer:**

- All Baileigh machines should be used only for their intended use.
- Baileigh does not recommend or endorse making any modifications or alterations to a Baileigh machine. Modifications or alterations to a machine may pose a substantial risk of injury to the operator or others and may do substantial damage to the machine.
- Any modifications or alterations to a Baileigh machine will invalidate the machine's warranty.

**PLEASE ENJOY YOUR BAILEIGH MACHINE! ....PLEASE ENJOY IT SAFELY!**

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**
3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Keep work area clean.** Cluttered areas invite injuries.



5. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
6. **Overloading machine.** By overloading the machine, you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
7. **Dressing material edges.** Always chamfer and deburr all sharp edges.
8. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machine's rated capacity.
9. **Use the right tool for the job. DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
10. **Dress appropriately. DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
11. **Use eye protection.** Always wear ISO approved protective eye wear when operating machinery. Wear a full-face shield if you are producing metal filings. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specification. Use of eye wear which does not comply with ANSI Z87.1 specification could result in severe injury from breakage of eye protection.
12. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
13. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
14. **Check for damaged parts.** Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
15. **Observe work area conditions. DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
16. **Blade adjustments and maintenance.** Always keep blades sharp and properly adjusted for optimum performance.
17. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
18. Keep visitors a safe distance from the work area.
19. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
20. **DO NOT operate machine if under the influence of alcohol or drugs.** Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.



## TECHNICAL SPECIFICATIONS

Shear and Bending Capacity	
Mild Steel	20ga. 0359" (0.912mm)
Aluminum	0.047" (1.19mm)
Copper	0.039" (1mm)
Circuit Board	0.059" (1.5mm)
Tinplate	0.039" (1mm)
Brass	0.039" (1mm)
Bed Width	8" (203mm)
Max. Bend Angle	90°
Base Footprint	5.75" x 9.25" (146 x 235mm)
Power	Manual
Shipping Weight	30 lbs. (14kgs)
Shipping Dimensions	21" x 13" x 8" (533 x 330 x 203mm)

## TECHNICAL SUPPORT

Our technical support department can be reached at 920.684.4990 and asking for the support desk for purchased machines. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs: (other than die sets and blades).

For specific application needs or future machine purchases contact the Sales Department at: [sales@baileigh.com](mailto:sales@baileigh.com), Phone: 920.684.4990, or Fax: 920.684.3944.



**Note:** *The photos and illustrations used in this manual are representative only and may not depict the actual color, labeling or accessories and may be intended to illustrate technique only.*



**Note:** *The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*



## UNPACKING AND CHECKING CONTENTS

Your Baileigh machine is shipped complete. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.

**⚠ WARNING: SUFFOCATION HAZARD!** Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.  
If any parts are missing, **DO NOT** place the machine into service until the missing parts are obtained and installed correctly.

### Cleaning

**⚠ WARNING: DO NOT USE** gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

**⚠ CAUTION:** When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.

Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.



**Important:** This waxy coating is **NOT** a lubricant and will cause the machine to stick and lose performance as the coating continues to dry.

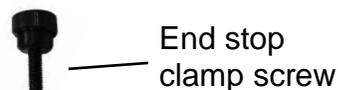




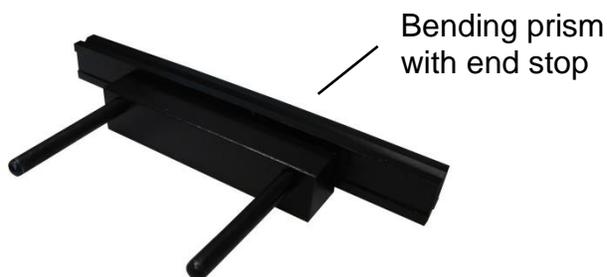
The Baileigh Model SB-8 Combination Shear/Brake requires some assembly. After opening the box, carefully take out all the pieces shown below and do a visual inventory / inspection. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.



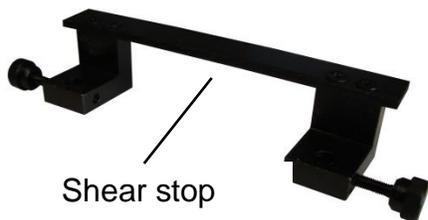
Shear/Brake



End stop clamp screw



Bending prism with end stop



Shear stop



Handle



Allen Wrenches

Bag of Parts



Bag of Hardware





## ASSEMBLY AND SET UP

### Handle Assembly

1. Loosen the knob located at the handle pivot on the right side of the Shear/Brake.
2. Insert the hand lever (#23) into the handle pivot, grooved end first. When the groove in the hand lever is centered in the handle pivot, tighten the knob to hold the handle securely.

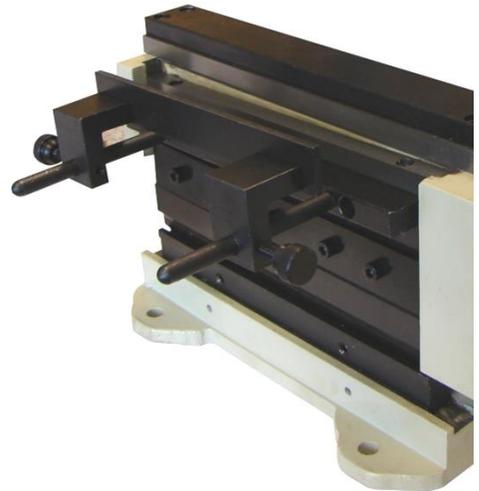


### Shear Stop Assembly

The SB-8 comes with an adjustable shear stop.

3. Screw the two threaded studs into the holes on the front of the machine.
4. Loosen both threaded knobs and slide the stop onto the studs. Once located at a set dimension, tighten the knobs to hold the position.

The shear stop works great for shearing duplicate pieces.





## **INSTALLATION**

### **IMPORTANT:**

Consider the following when looking for a suitable location to place the machine:

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.
- **LEVELING:** The machine should be sited on a level, concrete floor. Provisions for securing it should be in position prior to placing the machine. The accuracy of any machine depends on the precise placement of it to the mounting surface.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.

### **Mounting to a Workbench**

Your Shear/Brake can be mounted to either a wooden or steel workbench. Locate it so that the handle has full motion necessary to complete the shear and brake cycles.

1. Measure the thickness of the workbench. It is suggested to place a reinforcing member beneath the table top to provide for a more stable mount of the machine.
2. Bolts, washers, and nuts are provided for mounting. The bolt length should be adequate for most installations.
3. Use the machine base as a template to locate the holes.
4. After drilling the holes, mount the machine, and tighten the nuts and bolts securely.



## BENDING TOOL ADJUSTMENT AND REMOVAL

The bending tooling (**#15, 16, 17, 18, & 19**) comes in various widths and can be used for varying sizes of box and pan forming. When forming a smaller box or pan, choose the desired size bending tool finger, center it, and remove the others.

1. Loosen the hex head screws (**#14**) holding the bending tool fingers in place.
2. Remove any unneeded bending tool fingers by sliding them out the left side of the shear as shown in fig. 2.

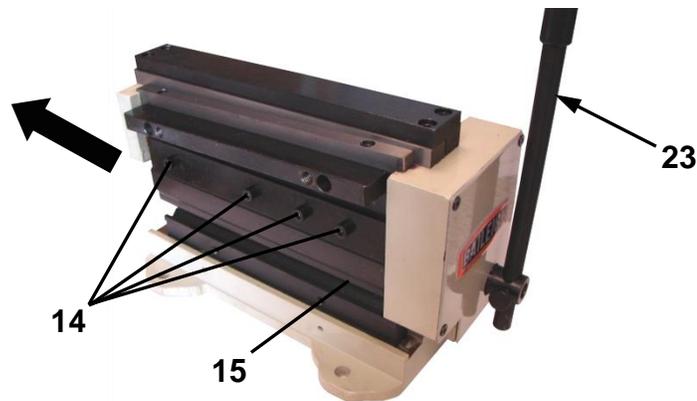


figure 2

3. Insert any needed bending tools, appropriate for the job you will be doing, behind the press plate.
4. Pull the hand lever (**#23**) towards you, counterclockwise (**ccw**) to lower the installed bending tools. This will adjust the alignment of the tooling.
5. Tighten the socket capscrews (**#14**).



## BENDING PRISM ADJUSTMENT

You can adjust the radius of the bend you will make by changing the bending prism (#20) as follows. (fig. 23).

1. Loosen the clamp screw (#21) located on the backside of the Shear/Brake and remove the end stop (#22).

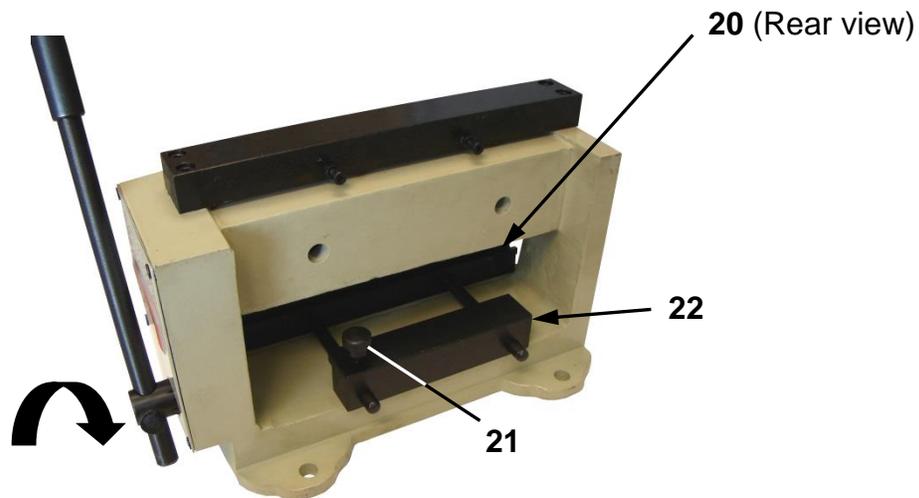


figure 3

2. Turn the hand lever clockwise (cw) to raise the bending assembly.
3. Lift the bending prism out of the groove in the base. Pull the bending prism forward and out of the end stop (#22).
4. Rotate the bending prism 180° to use the optional radius as shown in fig. 4. Fit the bending prism back into the groove.

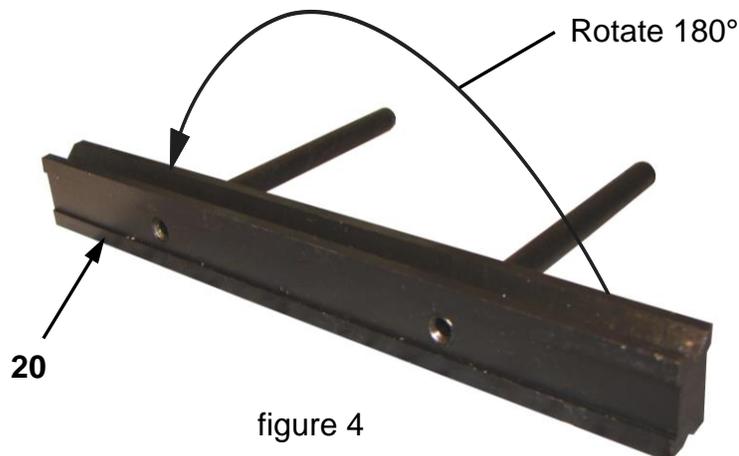
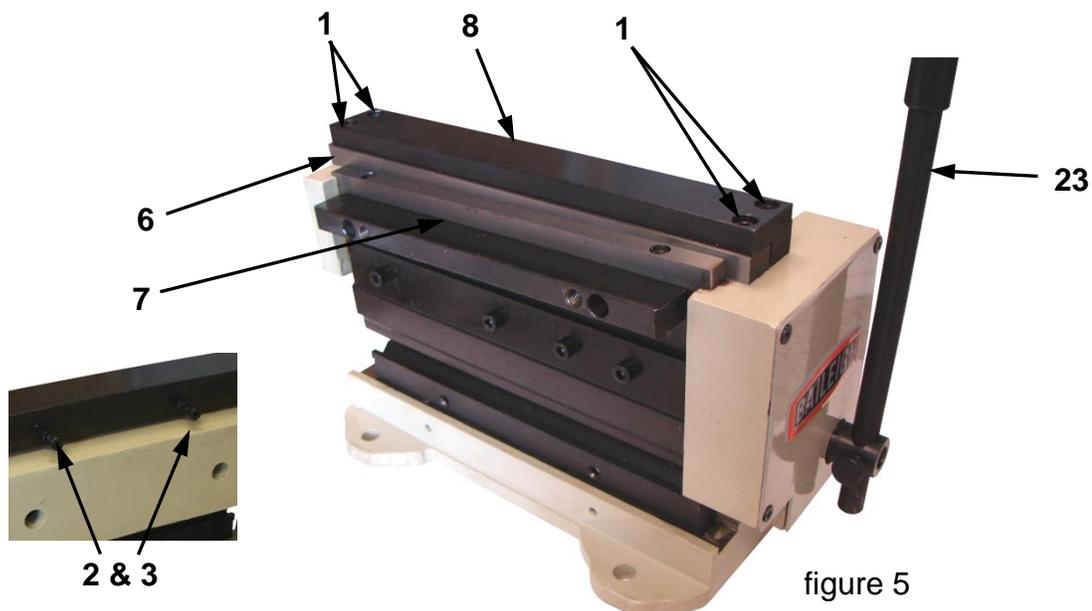


figure 4

5. Slide the end stop (#22) back onto the bending prism (#20). Tighten the clamp screw (#21).



## UPPER CUTTER REMOVAL AND INSTALLATION



1. Rotate the hand lever (**#23**) counterclockwise (**ccw**) to lower the bottom cutter (**#7**).
2. Loosen the four mounting screws (**#1**) from the upper cutter holder (**#8**).
3. Completely remove the two mounting screws (**#1**) holding the upper cutter (**#6**) in place.
4. Remove the upper cutter. There are four cutting edges available on the upper cutter. If you have not already used all four cutting edges, you can rotate the upper cutter to expose a sharp edge and reinstall without purchasing a replacement upper cutter.



**IMPORTANT:** Be careful not to drop the cutters. Not only could this be dangerous, it WILL damage the cutters.

5. Align the upper cutter (**#6**) so that it is flush with the lower cutter (**#7**) and secure with the mounting screws (**#1**).
6. Use the cutter adjustment screws (**#2**) and locknuts (**#3**) to fine tune the cutting action of the upper cutter to the lower cutter (when necessary).



**Note:** The screws that hold the upper cutter (**#6**) must be tightened before tightening the cutter holder screws, otherwise the cutter will jam.



## LOWER CUTTER REMOVAL AND INSTALLATION

1. Rotate the hand lever (#23) clockwise (cw) to raise the lower cutter (#7).
2. Loosen and remove the two mounting screws (#10) for the lower cutter as shown in (fig. 6).

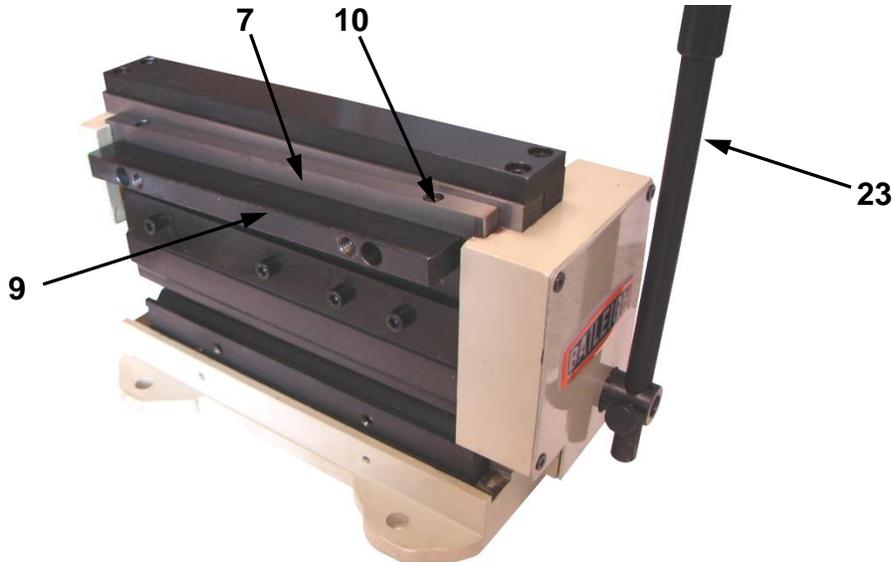


figure 6

3. With your thumb, press the front face of the lower cutter against the upper cutter and turn the hand lever (#23) counterclockwise (ccw). This will separate the lower cutter from the lower cutter holder (#9).
4. Remove and replace the lower cutter.
5. Press the new lower cutter down against the cutter holder.
6. Turn the hand lever clockwise (cw), then insert and tighten the two mounting screws (#10).



## OPERATION

**⚠ CAUTION:** Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

**⚠ CAUTION:** Keep hands and fingers clear of the clamping beam. Stand off to the side of the machine to avoid getting hit with the bending apron as it comes up to bend.

### Shearing

1. Always make sure the material you will be shearing is within the rated capacity of the machine.
2. Scribe a cutting line on the material as a guide.
3. Slide the material between the upper cutter (#6) and the lower cutter (#7) so that the scribe line is positioned directly beneath the upper cutter.
4. While holding the material steady, rotate the handle (#23) clockwise (cw) until the material has been cut.

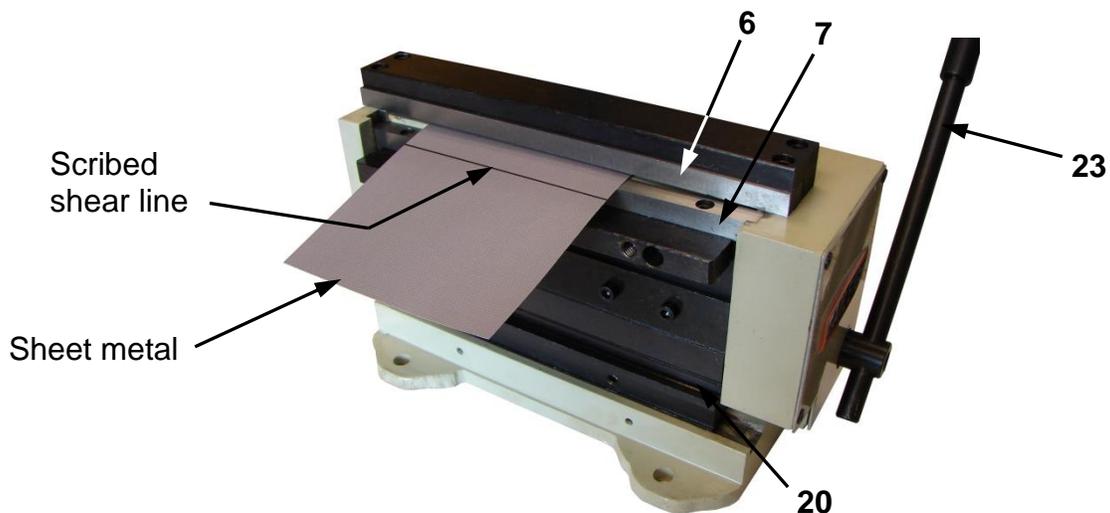


figure 7



## Angle Bending

1. Make sure the material being bent is within the rated capacity of the machine.
2. Use the appropriate bending tooling and bending prism radius for your needs. Refer to the assembly steps for adjustment.
3. Mark the piece part where you want to bend the material.
4. Place the piece part above the bending prism (#20).
5. Align the scribe line with the front edge of the bending tool.
6. Rotate the hand lever (#23) counterclockwise (ccw) until the desired angle has been reached. Check the angle with a protractor or against a template of the finished piece.

## Radius Bending

Radius bending is most commonly used to make cylinders and cones as shown in (fig. 8). Both shapes are formed by making a series of small, closely spaced bends in the piece part. For cylinders the bends are evenly spaced and identical. For cones, simply move one side of the material out further than the other every time that you make a bend.

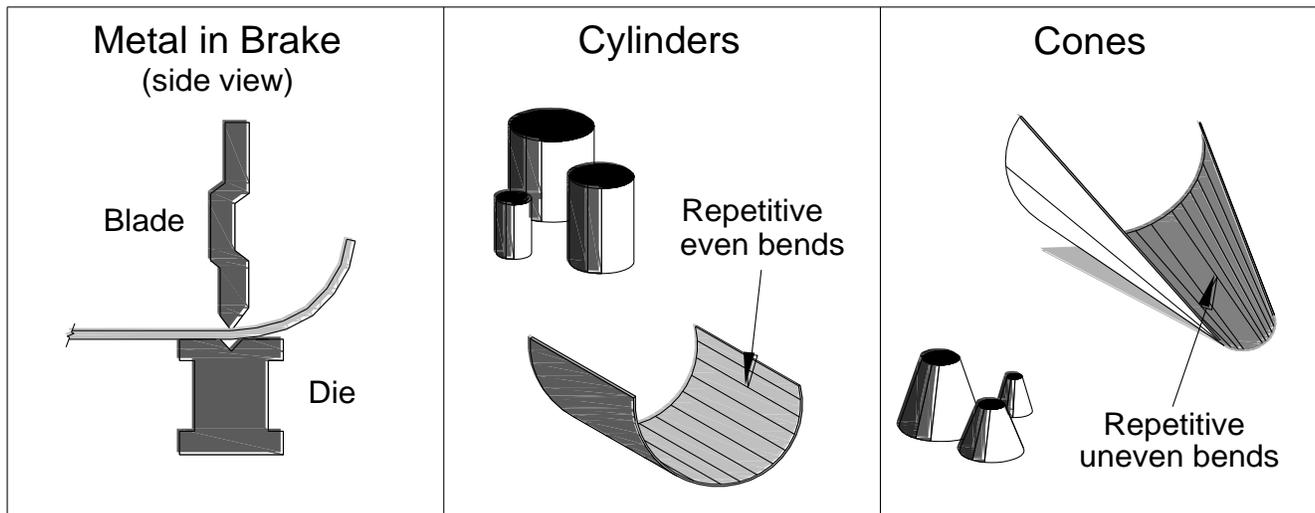


figure 8



## Pan Forming

1. Pre-measure and cut your material before bending. Notch the corners to the desired lip height (fig. 9-1).
2. Insert material between the bending tool(s) and bending prism. Bend the material until a 90° angle has been formed.
3. Rotate the material 90° counterclockwise (ccw). Allow the completed side to extend just beyond the dies. Bend the second side.
4. Repeat step 3 for the third side.
5. Rotate to the final side, and insert the piece part between the dies. Your formed sides will be on the outside of the dies.
6. Before bending, tap one corner nearer to the middle of the machine as shown in (fig. 9-3). This will allow the material to clear the upper die when raised.
7. Bend the fourth side.
8. Using a block or piece of wood, tap the corner of material back into place.

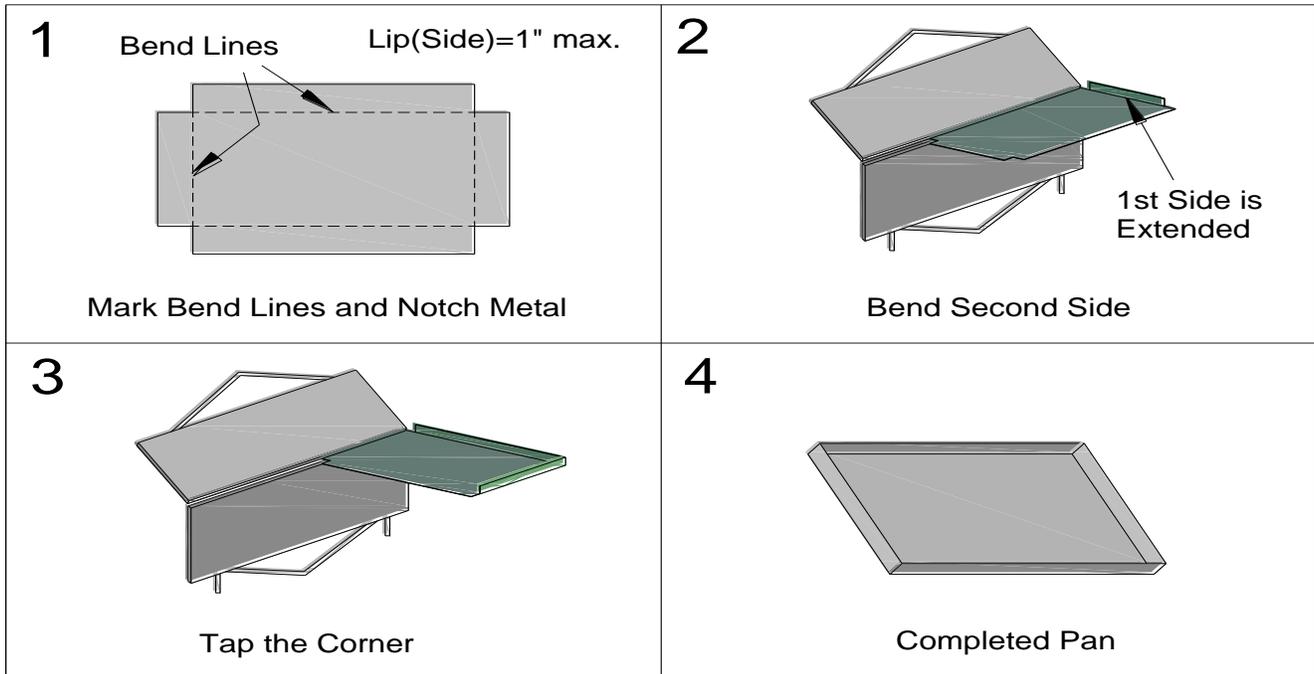


figure 9



## **BENDING ALLOWANCE**

In order to bend sheet metal accurately, you will need to consider the total length of each bend. This is referred to as bend allowance. Subtract the bend allowance from the sum of the outside dimensions of the piece part to obtain the actual overall length or width of the piece. Because of differences in sheet metal hardness, and whether the bend is made with the grain or against it, exact allowances must sometimes be made by trial and error. However bend allowances for general use can be obtained from metal working books or from the Internet.

## **UNDERSTANDING SPRINGBACK**

Springback, also known as elastic recovery, is the result of the metal wanting to return to its original shape after undergoing compression and stretch. After the bending leaf is removed from the metal and the load is released, the piece part relaxes, forcing the bent portion of the metal to return slightly to its original shape. The key to obtaining the correct bend angle is to over bend the metal a little and allow it to spring back to the desired angle. All metals exhibit a certain amount of spring back.

## **MATERIAL SELECTION**

 **CAUTION:** It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

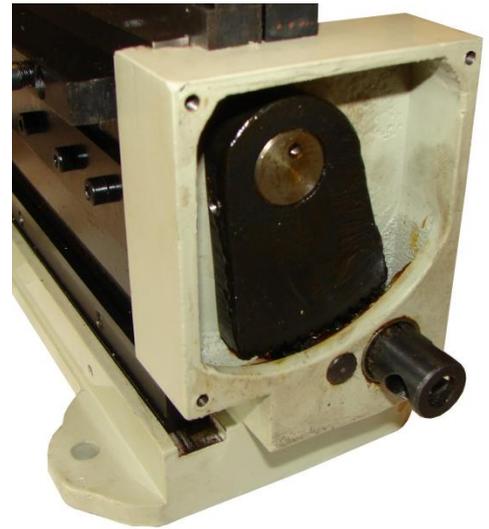
- Material must be clean and dry. (without oil)
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.



## LUBRICATION AND MAINTENANCE

**⚠ WARNING:** Maintenance should be performed on a regular basis by qualified personnel.  
Always follow proper safety precautions when working on or around any machinery.

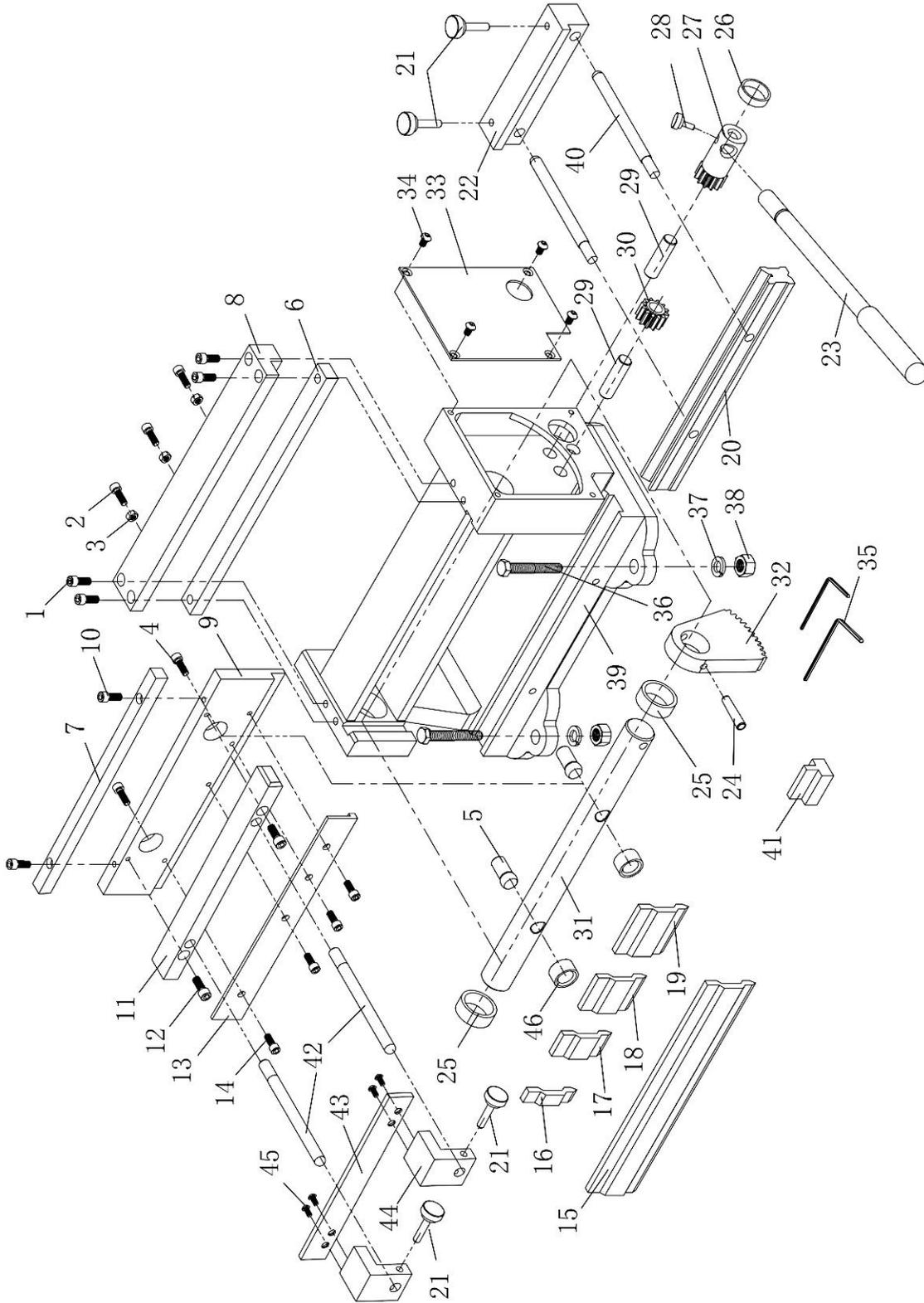
- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Regularly inspect, clean, and lubricate the moving parts of the machine. Threaded shafts, and slides should be oiled daily with good quality machine oil.
- Remove the gear cover and apply grease to the gears monthly if needed.



**Note:** *Proper maintenance can increase the life expectancy of your machine.*



## PARTS IDENTIFICATION DRAWING





**Parts Identification List**

Item	Part No.	Description	Qty.
1	SB8-1	Hex Cap Screw M5 x 23mm	4
2	SB8-2	Hex Cap Screw M4 x 25mm	3
3	SB8-3	Hex Nut M4	3
4	SB8-4	Hex Cap Screw M5 x 14mm	2
5	SB8-5	Pin	2
6	SB8-6	Upper Cutter	1
7	SB8-7	Lower Cutter	1
8	SB8-8	Upper Cutter Holder	1
9	SB8-9	Lower Cutter Holder	1
10	SB8-10	Hex Cap Screw M4 x 10mm	2
11	SB8-11	Position Plate	1
12	SB8-12	Hex Cap Screw M5 x 14mm	2
13	SB8-13	Press Plate	1
14	SB8-14	Hex Cap Screw M5 x 10mm	4
15	SB8-15	Bending Tool	1
16	SB8-16	Bending Tool	1
17	SB8-17	Bending Tool	1
18	SB8-18	Bending Tool	1
19	SB8-19	Bending Tool	1
20	SB8-20	Bending Prism	1
21	SB8-21	Clamp Screw	1
22	SB8-22	End Stop	1
23	SB8-23	Hand Lever	1
24	SB8-24	Pin	1
25	SB8-25	Sleeve	1
26	SB8-26	Sleeve	1
27	SB8-27	Gear	1
28	SB8-28	Screw	1
29	SB8-29	Shaft	2
30	SB8-30	Gear	1
31	SB8-31	Shaft	1
32	SB8-32	Gear Holder	1
33	SB8-33	Gear Cover	1



Item	Part No.	Description	Qty.
34	SB8-34	Flat Head Screw M4 x 8mm	4
35	SB8-35	Allen Wrench Set	1
36	SB8-36	Hex Bolt M10 x 75mm	4
37	SB8-37	Washer M10	4
38	SB8-38	Hex Nut M10	4
39	SB8-39	Frame	1
40	SB8-40	Shaft	2
41	SB8-41	T-Block	1
	SB8-42	Upper Back Gauge Rod	2
	SB8-43	Upper Back Gauge Stop Plate	1
	SB8-44	Upper Back Gauge Support	2
	SB8-45	Bolt	4
	SB8-46	Bushing	2



NOTES



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