



# OPERATOR'S MANUAL

Metal Working



## TUBE AND PIPE NOTCHER MODEL: TN-400

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Rev. 12/2018

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## THANK YOU & WARRANTY

Thank you for your purchase of a machine from Baileigh Industrial. 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 a 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 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 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 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 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**

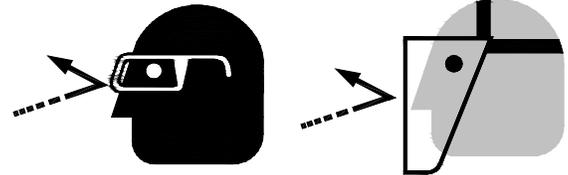


**SAVE THESE INSTRUCTIONS.**  
**Refer to them often and use them to instruct others.**



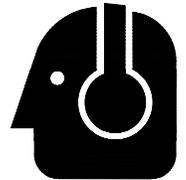
**PROTECT EYES**

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



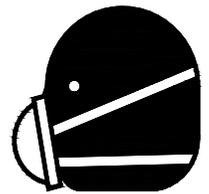
**PROTECT AGAINST NOISE**

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.



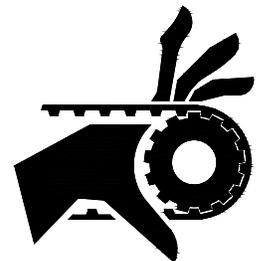
**DUST HAZARD**

Wear appropriate dust mask. Dust created while using machinery can cause cancer, birth defects, and long term respiratory damage. Be aware of the dust hazards associated with all types of materials.



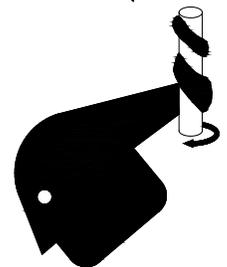
**BEWARE OF PINCH POINTS**

Keep hands and fingers away from the slide plate and pivot points when operating on and around this machine. Keep guard in place at all times while the machine is running.



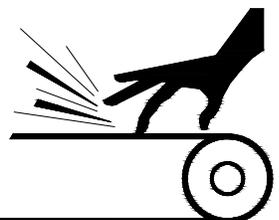
**ENTANGLEMENT HAZARD – ROTATING SPINDLE**

Contain long hair, **DO NOT** wear jewelry or loose fitting clothing.



**MOVING BELT ABRASIONS**

**DO NOT** place hands or fingers near, or in contact with sanding belt during operation.





## **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. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
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 and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
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. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
17. Keep visitors a safe distance from the work area.
18. **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.
19. **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.
20. **Turn off** power before checking, cleaning, or replacing any parts.
21. Be sure **all** equipment is properly installed and grounded according to national, state, and local codes.
22. Keep **all** cords dry, free from grease and oil, and protected from sparks and hot metal.
23. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!** **DO NOT** touch live electrical components or parts.
24. **DO NOT** bypass or defeat any safety interlock systems.



## **TECHNICAL SPECIFICATIONS**

Notching Capacity (OD)	.75" - 2" (19 – 51mm)
Angle Adjustment	0 – 60°
Belt Size	4" x 79" (101 x 2007mm)
Belt Speed	5420fpm (1652mpm)
Power	220V / 1ph / 60hz / 20A
Motor	3hp (2.25kw)
Shipping Weight	450lbs. (205kgs)
Shipping Dimensions	60" x 44" x 60" (1524 x 1118 x 1524mm)

## **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.



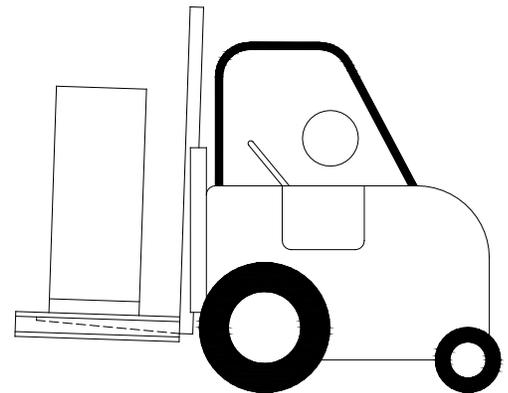


## **TRANSPORTING AND LIFTING**

**NOTICE:** *Lifting and carrying operations should be carried out by skilled workers, such as a truck operator, crane operator, etc. If a crane is used to lift the machine, attach the lifting chain carefully, making sure the machine is well balanced.*

### **Follow these guidelines when lifting with truck or trolley:**

- The lift truck must be able to lift at least 1.5 – 2 times the machines gross weight.
- Make sure the machine is balanced. While transporting, avoid rough or jerky motion, and maintain a safe clearance zone around the transport area.
- Use a fork lift with sufficient lifting capacity and forks that are long enough to reach the complete width of the machine.
- Remove the securing bolts that attach the machine to the pallet.
- Approaching the machine from the side, lift the machine on the frame taking care that there are no cables or pipes in the area of the forks.
- Move the machine to the required position and lower gently to the floor.
- Level the machine so that all the supporting feet are taking the weight of the machine and no rocking is taking place.





## 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.
- **FLOOR:** This machine distributes a large amount of weight over a small area. Make certain that the floor is capable of supporting the weight of the machine, work stock, and the operator. The floor should also be a level surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **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.
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.



## ASSEMBLY AND SET UP

 **WARNING:** For your own safety, **DO NOT** connect the machine to the power source until the machine is completely assembled and you read and understand the entire instruction manual.

1. Remove the machine from the skid it was shipped on and install the casters.
2. Check the oil level and top off if necessary.
3. Read through the remainder of the manual and become familiar with the tool installation and settings as well as normal operation.
4. Position the machine as desired following the installation guidelines.
5. Follow the electrical guidelines to connect the machine to a power supply.



## ELECTRICAL

 **CAUTION:** HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN!  
Check if the available power supply is the same as listed on the machine nameplate.

 **WARNING:** Make sure the grounding wire (green) is properly connected to avoid electric shock. DO NOT switch the position of the green grounding wire if any electrical plug wires are switched during hookup.

### Power Specifications

Your machine is wired for 220 volts, 60hz alternating current. Before connecting the machine to the power source, make sure the power source is OFF.

Before switching on the power, you must check the voltage and frequency of the power to see if they meet with the requirement, the allowed range for the voltage is  $\pm 5\%$ , and for the frequency is  $\pm 1\%$ .

### Considerations

- Observe local electrical codes when connecting the machine.
- The circuit should be protected with a time delay fuse or circuit breaker with an amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your machines. Before connecting the motor to the power line, make sure the switch is in the "OFF" position and be sure that the electric current is of the same characteristics as indicated on the machine.
- All line connections should make good contact. Running on low voltage will damage the motor.
- In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

 **WARNING:** In all cases, make certain the receptacle in question is properly grounded. If you are not sure, have a qualified electrician check the receptacle.



- Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.
- Repair or replace damaged or worn cord immediately.

### **Extension Cord Safety**

Extension cord should be in good condition and meet the minimum wire gauge requirements listed below:

AMP RATING	LENGTH		
	25ft	50ft	100ft
1-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No
WIRE GAUGE			

An undersized cord decreases line voltage, causing loss of power and overheating. All cords should use a ground wire and plug pin. Replace any damaged cords immediately.

### **Power cord connection:**

1. Turn the main disconnect switch on the control panel to the OFF position.
2. Unwrap the power cord and route the cord away from the machine toward the power supply.
  - a. Route the power cord so that it will NOT become entangled in the machine in any way.
  - b. Route the cord to the power supply in a way that does NOT create a trip hazard.
3. Have an electrician install the correct power supply for the application.
4. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
5. When the machine is clear of any obstruction. The main power switch may be turn ON to test the operation. Turn the switch OFF when the machine is not in operation.



## OPERATION

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

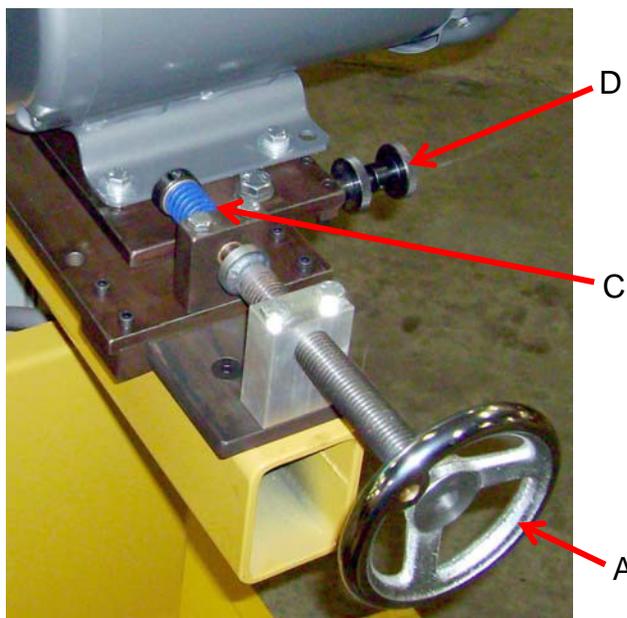
**⚠ WARNING:** BEFORE THE MAIN LEXAN GUARD IS OPENED, THE POWER CORD MUST BE UNPLUGGED FROM ITS SOURCE.

### Mandrel / Belt Selection and Installation

1. Before any notching can take place, the proper mandrel must be chosen. The material size is stamped or marked on each mandrel's end.
2. To install a Mandrel, first unplug the power cord and open the main Lexan guard.
3. Loosen the belt tension handwheel (A) until the belt is loose.
4. Grab the mandrel and lift it out of the bearing saddles.
5. Find the desired mandrel and reinstall it the same way, making sure the bearings are fully seated in their respective saddles (B).



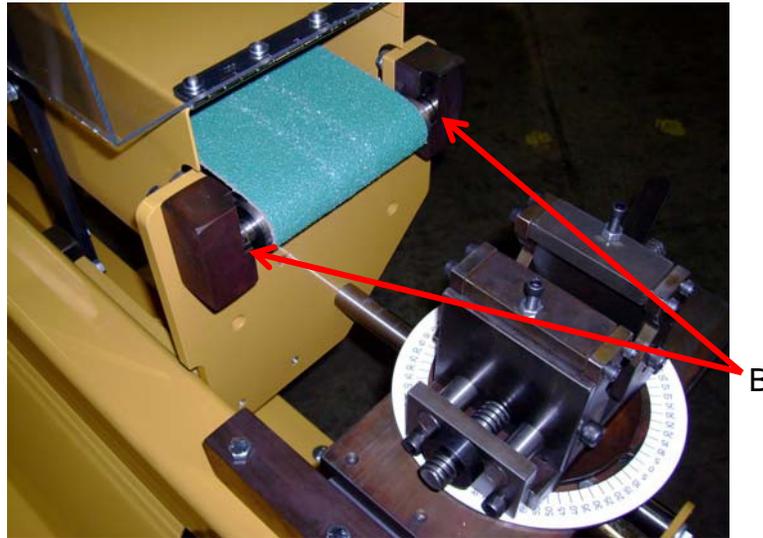
**Note:** It may be necessary to clean any grinding debris from the saddles to ensure an unobstructed fit for the bearings.



6. Retighten the belt tension hand wheel until the belt tension spring (C) is compressed to 1.25" (31.75mm). This is the proper tension for all belts.
7. Plug the machine in and start momentarily to check the tracking of the belt.
  - a. The belt should track right down the center of the mandrel. If the tracking is off, the tracking screw (D) is located slightly behind and below the motor.
  - b. Adjust by loosening the lock nut and turning the adjuster until the correct tracking is achieved. Care should be taken when tracking so the belt does not track off the mandrel. Always know where the off switch is.



8. The stock 36 grit belts that the machine comes with works best for most notching application, although other grits are available.



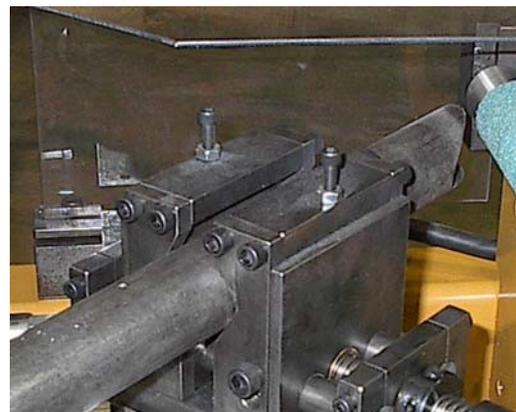
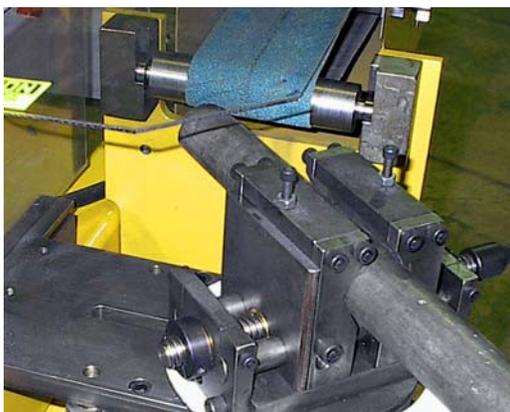
### Material Insertion

1. Once the proper mandrel and belt are installed, the material to be notched can be inserted into the vise.
2. Open the vise and insert the material so that the end toward the mandrel extends past the vise jaw approximately 2-3" (51-76mm) re-tighten the vise.



**Note:** Angled notches may require more material extending from the vise.

3. If an angle notch is required, loosen vise assembly by opening the locking lever and rotate and position the vise assembly to the desired angle and retighten the lock lever, not to exceed 60 degrees.

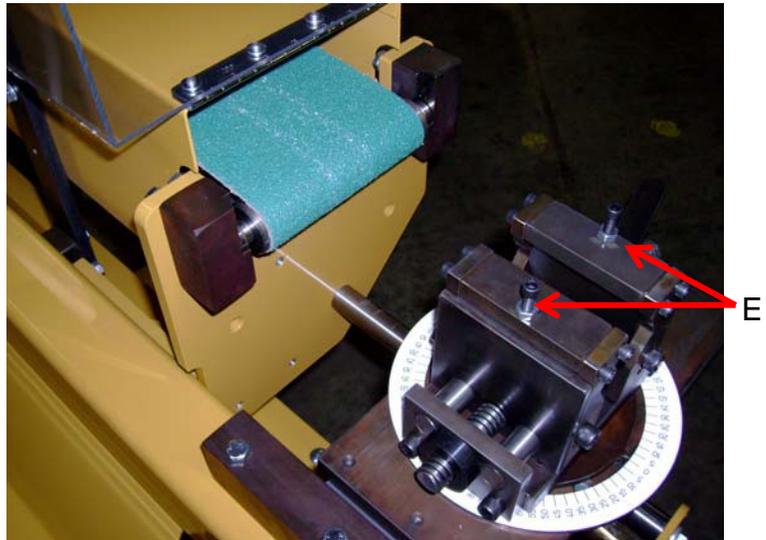




4. Position the material so the notch will end up being centered on the belt.
5. The depth of the notch is limited by the stop screw; this can be adjusted as needed, always check for interferences before actually notching.

Off-center notches can be accomplished by raising the “V” jaw of the vise to the desired offset.

6. To raise the “V” Jaws, loosen the (4) bolts, (2) on either side of each jaw.
7. Turn the top jack screws (E) until the desired offset is reached on each of the jaw assembly's.
8. Retighten the lock bolts.



### **Notching**

1. With the motor running and the material clamped tightly in the vise, grab the main feed lever and slowly pull the material into the spinning grinding belt.
2. Continue to feed until the desired notch depth is achieved. Don't feed too fast, this will cause the belt to wear prematurely and may push the belt off the mandrel. Thinner wall material can be notched faster than thick wall.
3. After the desired notch depth is reached, activate the stop switch.
4. Make sure the spindle has stopped completely before removing and installing material.



## 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.

## STANDARD PIPE SIZES AND SCHEDULES TABLE

PIPE SIZES	O.D.	Pipe Schedules and Wall Thickness					
		5	10	40	80	160	XX STRONG
1/8	0.405	0.400	0.050	0.068	0.095		
1/4	0.540	0.500	0.070	0.088	0.119		
3/8	0.675	0.500	0.070	0.091	0.126		
1/2	0.840	0.700	0.080	0.109	0.147	0.188	0.294
3/4	1.050	0.700	0.080	0.113	0.154	0.219	0.308
1	1.315	0.700	0.110	0.133	0.179	0.250	0.358
1-1/4	1.660	0.700	0.110	0.140	0.191	0.250	0.382
1-1/2	1.900	0.700	0.110	0.145	0.200	0.281	0.400
2	2.375	0.700	0.110	0.154	0.218	0.344	0.436
2-1/2	2.875	0.800	0.120	0.203	0.276	0.375	0.552

All sizes are in inches





## LUBRICATION AND MAINTENANCE



**WARNING:** Make sure the electrical disconnect is OFF before working on the machine.

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.
- Remove the grinding debris as often as practical with a vacuum or light air blast.
- Check bearings periodically for smooth operation, a rough rolling bearing will wear out quickly and should be replaced immediately
- Keep slide surfaces clean from grinding debris
- Be sure always to use good belts, old belts can break easily and will decrease the performance of the machine and may be unsafe.
- Periodically check the power cord for cuts or bare wire and replace if damaged.

### Oil Disposal

Used oil products must be disposed of in a proper manner following your local regulations.

### Storing Machine for Extended Period of Time

If the Vertical Milling Machine is to be inactive for a long period of time, prepare the machine as follows:

- Disconnect the electrical supply from the power panel.
- Empty and clean the coolant reservoir.
- Clean and grease the machine.
- Cover the machine.

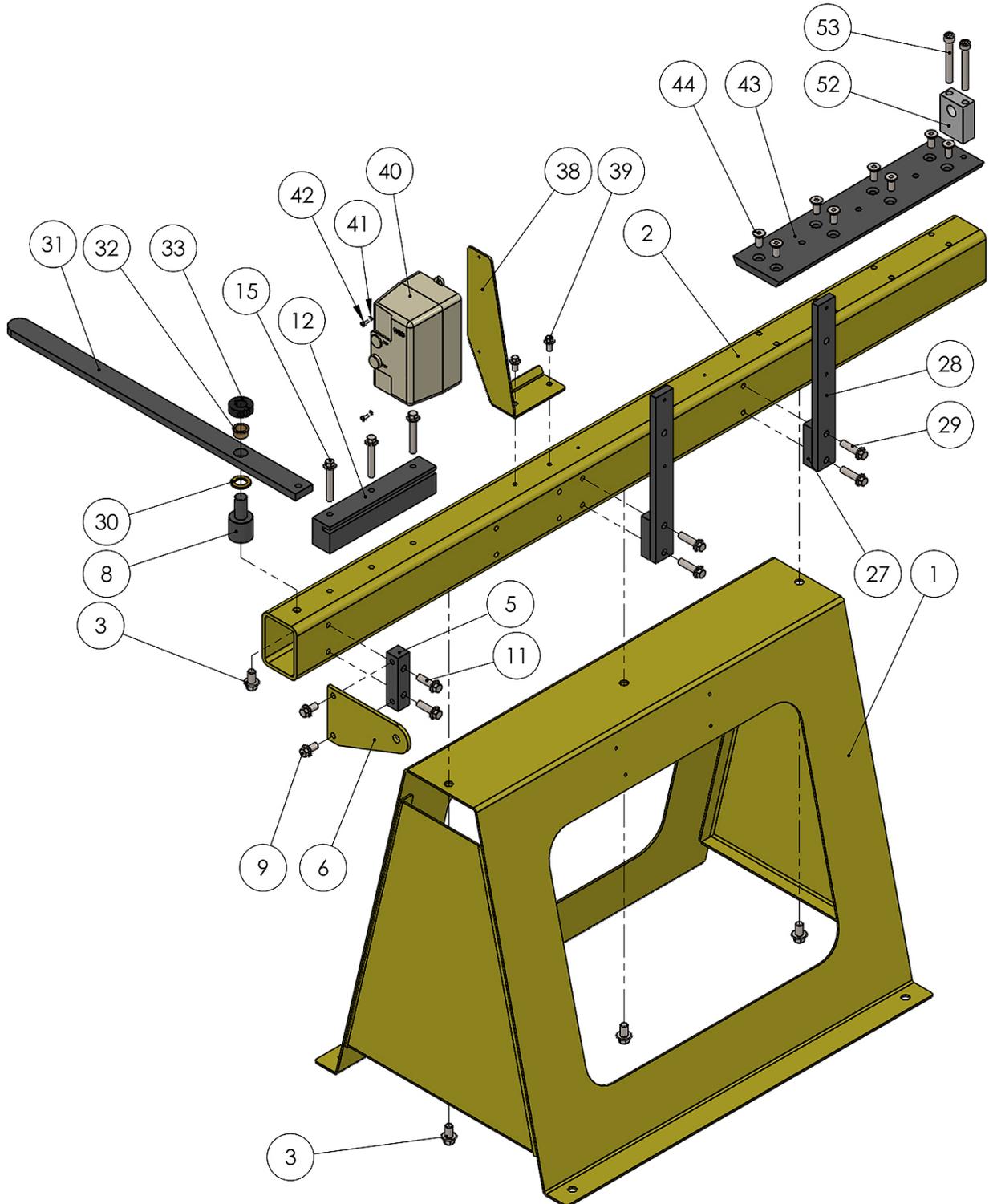


**Note:** Proper maintenance can increase the life expectancy of your machine.



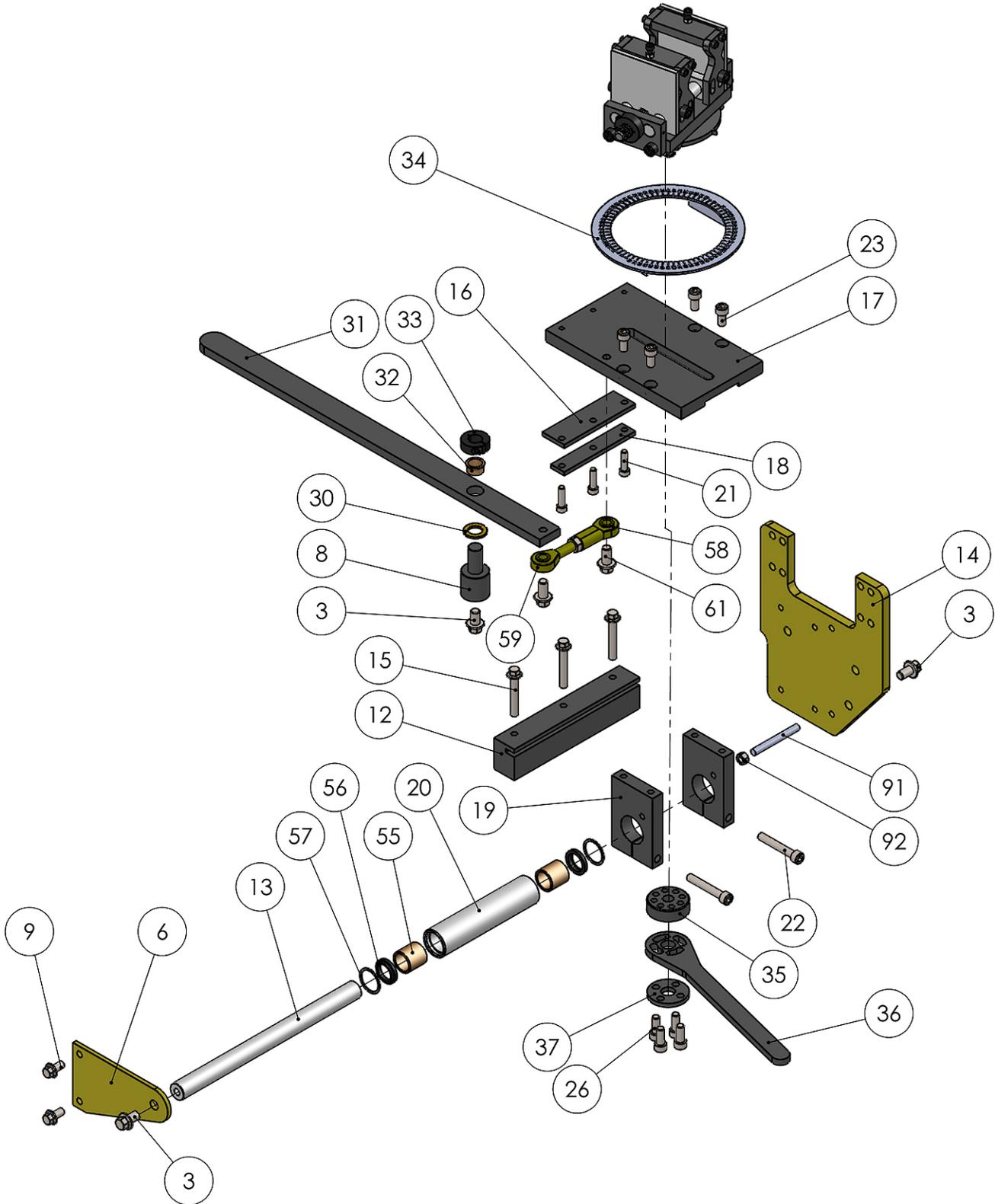
# PARTS DIAGRAM

## Main Tube Assembly



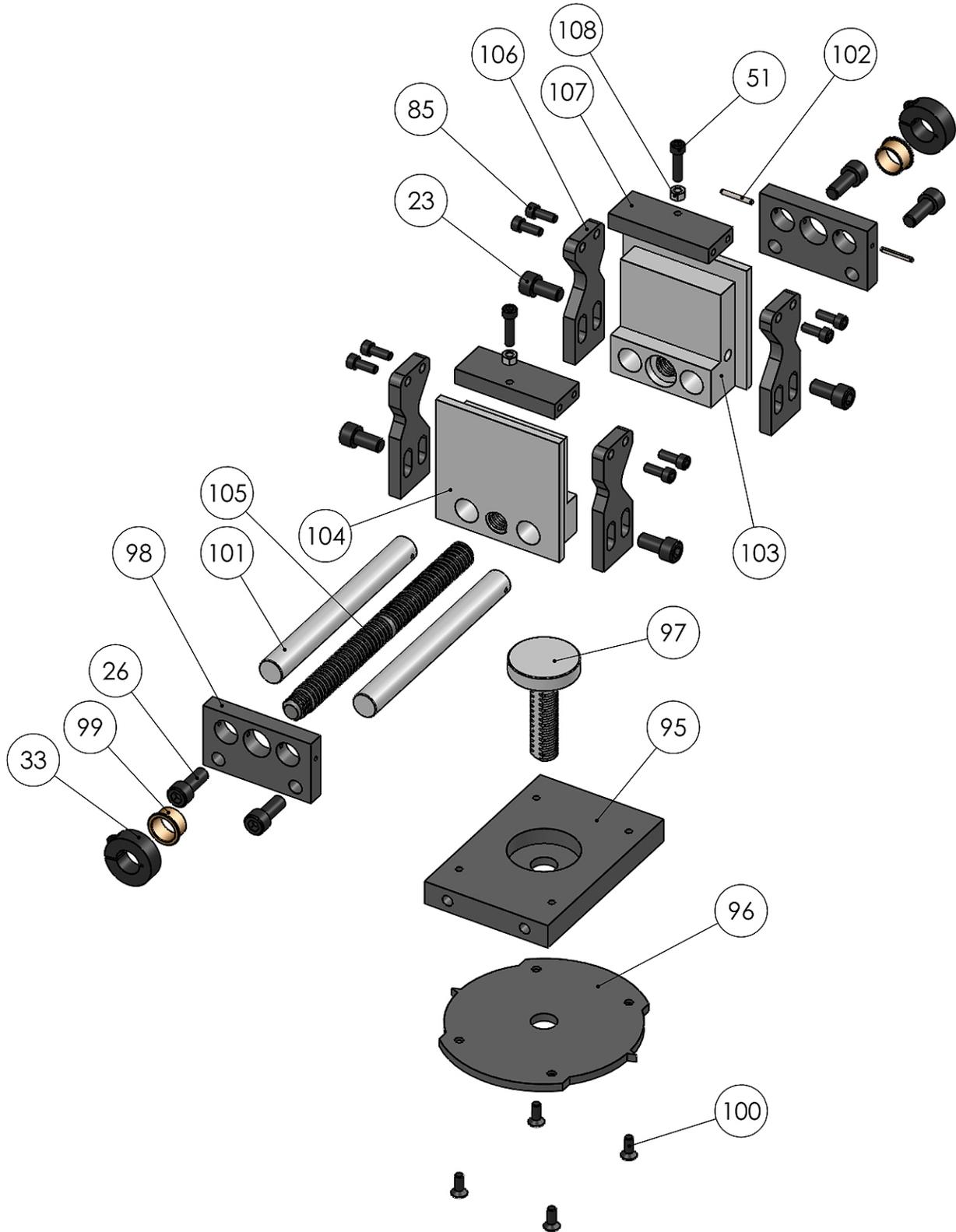


### Slide Assembly



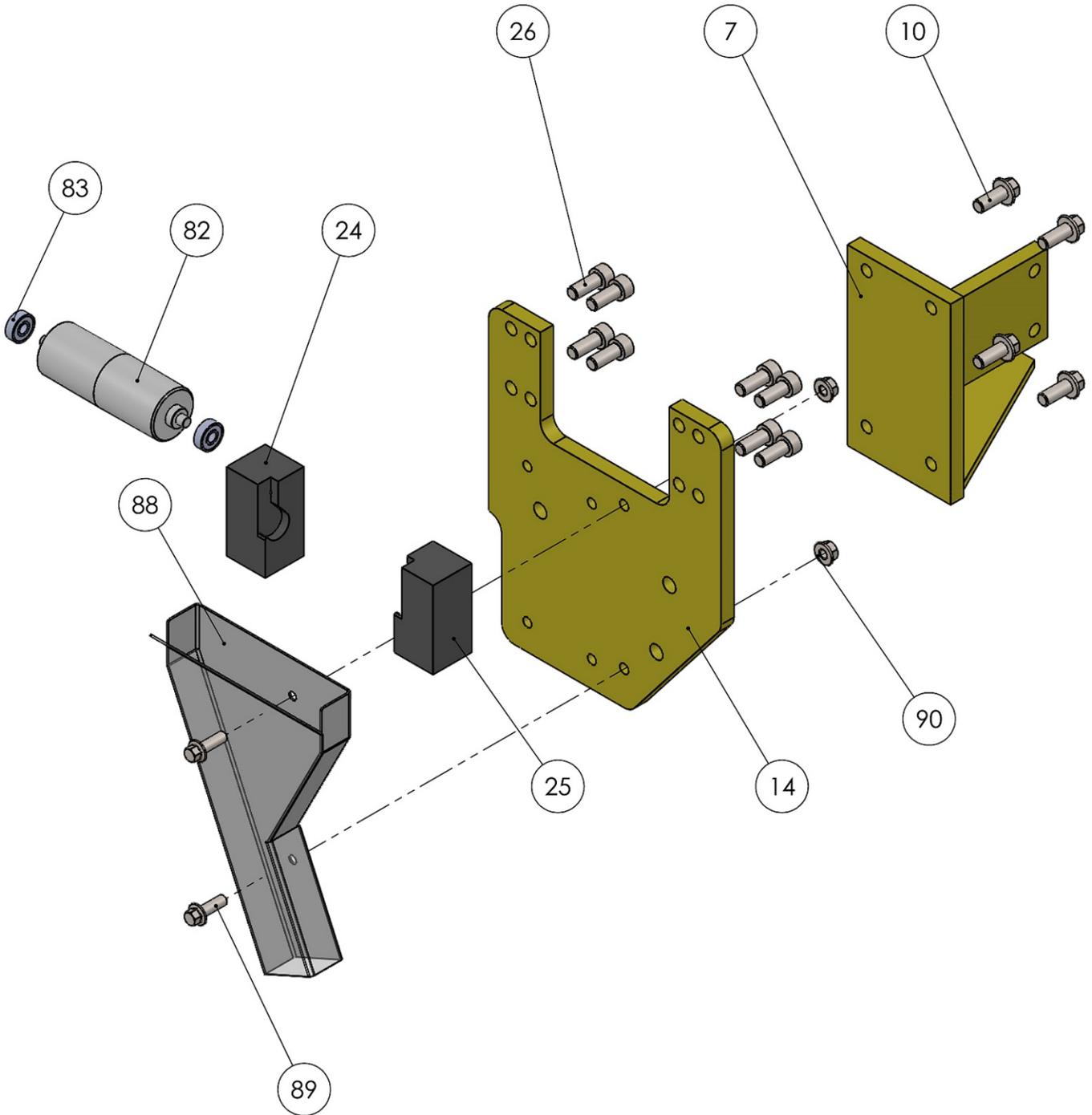


Vise Assembly



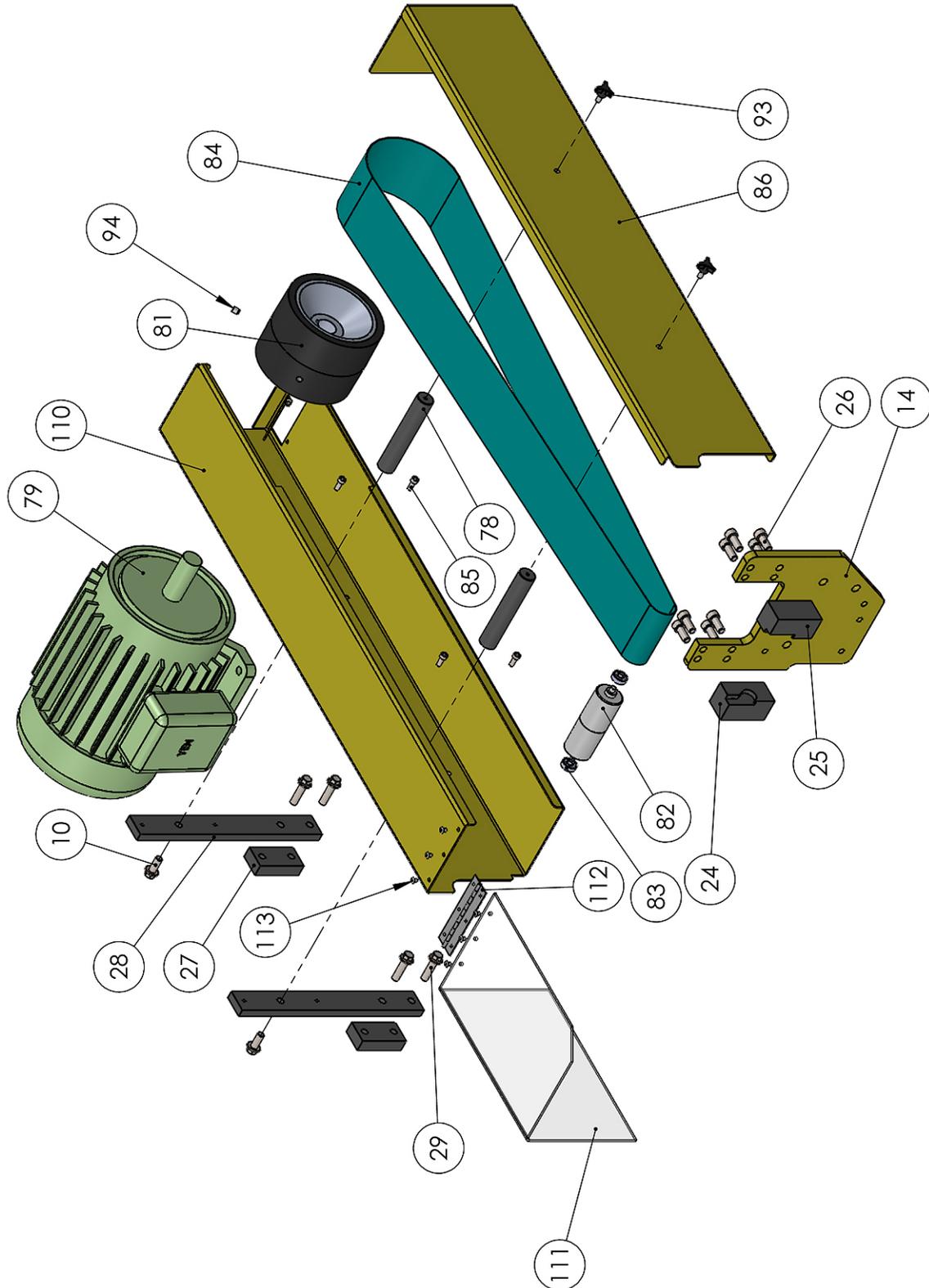


### Mandrel Holder Assembly



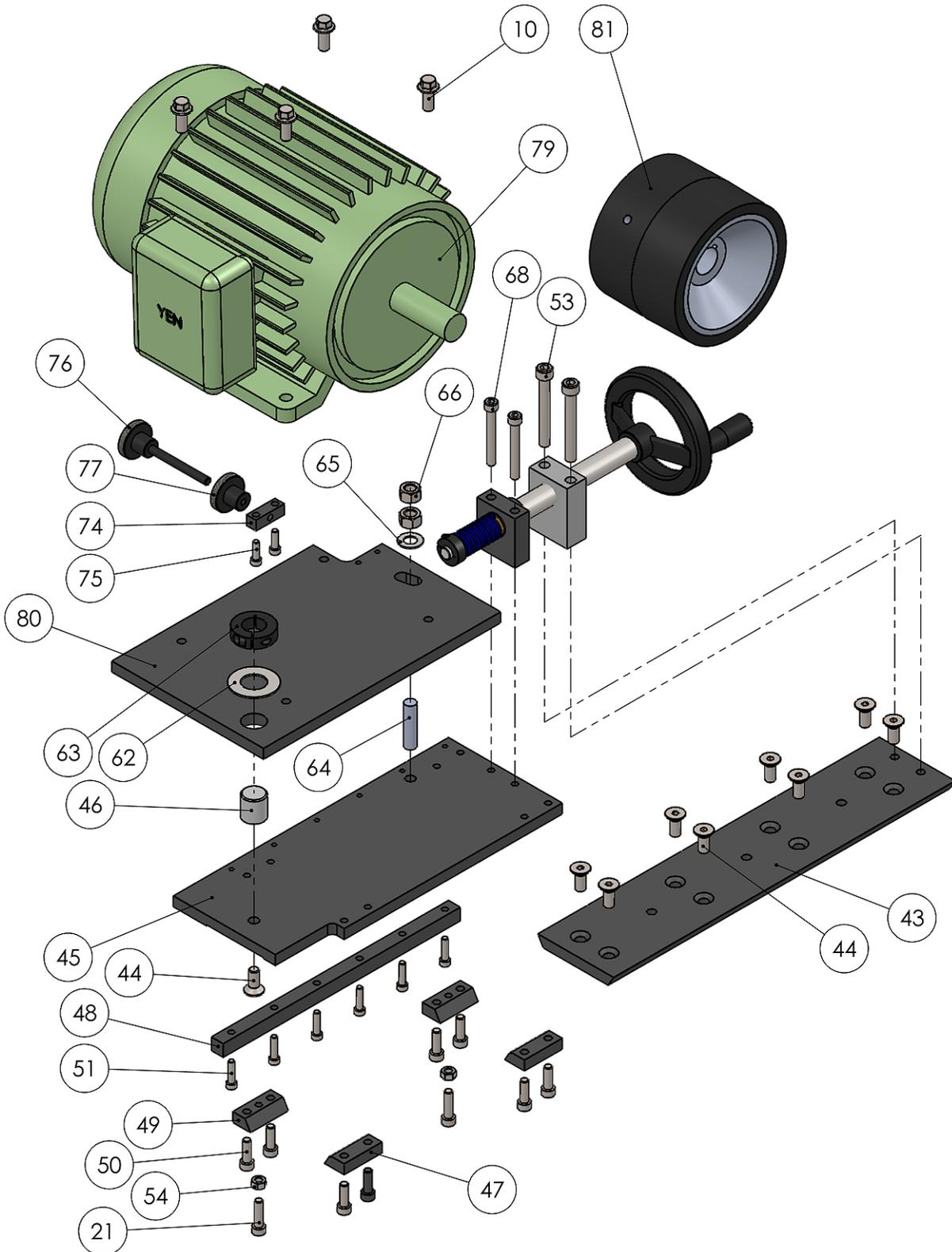


**Guard Assembly**



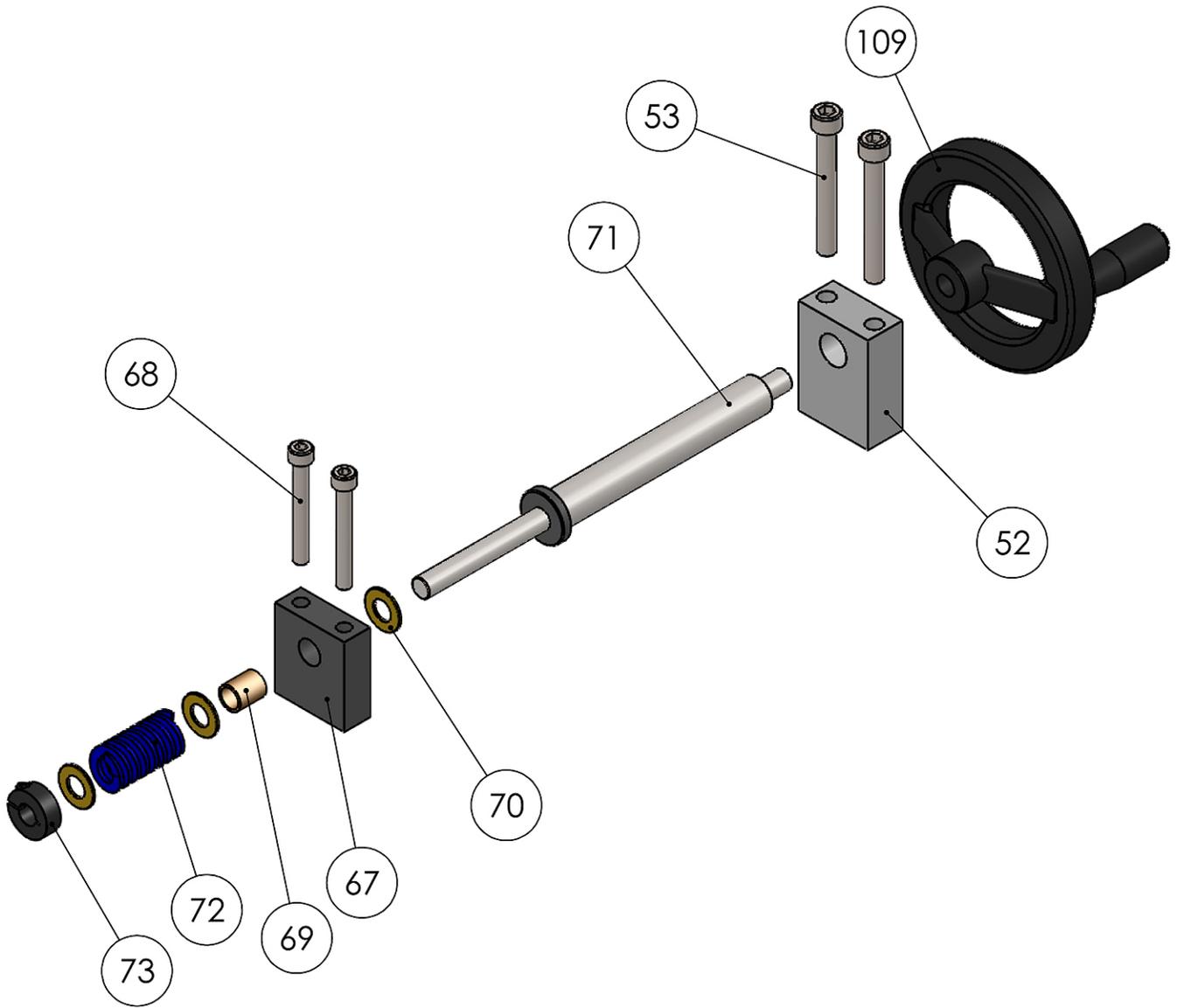


### Motor Assembly





Tension Adjustment Assembly





## Parts List

Item	Part Number	Description	Qty.
1	M700-6A008	Side, Front	1
2	ME-M900-6A001	Main Frame Tube	1
3	M12 X 1.75 X 20	Hex Flange	6
5	ME-M900-6A029	Mtg. Block	1
6	M900-6A044	Shaft Support V2	1
7	M900-5A004	Angle Plate Assembly	1
8	ME-M900-7A009	Lever Pivot Pin	1
9	M10 X 1.5 X 20	Hex Flange	2
10	M10 X 1.5 X 25	Hex Flange	14
11	M10 X 1.5 X 35	Hex Flange	2
12	ME-M900-6A006	Slide Track	1
13	ME-M900-7A002	Slide Shaft	1
14	ME-M700-6A003	Roller Mtg. Plate (4")	1
15	M10 X 1.5 X 65	Hex Flange	3
16	M900-6A022	Plastic Slide	1
17	ME-M700-6A005	Slide Plate	1
18	M900-6A013	Plastic Slide Cap	1
19	ME-M900-6A046	Tube Clamp	2
20	M900-7A001	Bearing Tube	1
21	M8 X 1.25 X 30	SHCS	5
22	M10 X 1.5 X 65	SHCS	2
23	M10 X 1.5 X 20	SHCS	8
24	ME-M900-6A038	Bearing Block (Left)	1
25	ME-M900-6A039	Bearing Block (Right)	1
26	M10 X 1.5 X 25	SHCS	16
27	M900-6A034	Guard Spacer Block	2
28	ME-M900-6A030	Guard Mtg. Bar	2
29	M10 X 1.5 X 40	Hex Flange	4
30	PP-0322	0.75 ID X 1.25 OD X .125 THK	1
31	ME-M900-6A021	Drive Lever	1
32	PP-0659	0.75 ID X 0.875 OD X 0.5 LG	1
33	PP-0090	3/4" Split Collar	3
34	M900-5A005	Degree Disc	1



Item	Part Number	Description	Qty.
35	ME-M900-6A042	Vise Lock Nut	1
36	M900-6A040	Lock Lever	1
37	M900-6A041	Lock Cap	1
38	M700-6A007	Switch Mount	1
39	M8 X 1.25 X 16	Hex Flange	2
40	PP-1298	On/Off Switch	1
41	STD.	Star Washer	2
42	STD.	M4 X 0.7 X 10 Cross Machine Screw	2
43	ME-M900-6A070	Slide Mount	1
44	M10 X 1.5 X 25	FHCS	9
45	ME-M900-6A071	Slide Plate	1
46	ME-M900-7A013	Threaded Pivot Stud	1
47	M900-6A072	Fixed Slide Gib	2
48	M900-6A073	Gib Support	1
49	ME-M900-6A074	Adjustable Slide Gib	2
50	M8 X 1.25 X 25	SHCS	8
51	M6 X 1.0 X 25	SHCS	8
52	M900-6A018	Motor Adjusting Block	1
53	M10 X 1.5 X 80	SHCS	2
54	STD.	M8 X 1.25 Hex Nut	2
55	PP-0143	1.25 OD X 1.0 ID X 1.25 LG	2
56	PP-0544	Seal	2
57	PP-1407	Spiral Retaining Ring	2
58	PP-0268	1/2" Female Rod End	1
59	PP-0107	1/2" Male Rod End	1
60	STD.	1/2-20 Jam Nut	1
61	M12 X 1.75 X 25	Hex Flange	2
62	PP-0483	Spring Washer	1
63	PP-0388	1"-14 UNF Clamp Collar	1
64	STD.	1/2-13 X 2 Threaded Rod	1
65	PP-0481	Spring Washer	1
66	STD.	1/2-13 Hex Nut	2
67	ME-M900-6A019	Thrust Block	1
68	M8 X 1.25 X 65	SHCS	2
69	PP-0051	0.5 ID X 0.625 OD X 0.75 LG	1



Item	Part Number	Description	Qty.
70	PP-0055	0.5 ID X 1.0 OD X .0625 THK	3
71	M900-7A006	Adjustment Shaft	1
72	PP-0501	Spring	1
73	PP-0037	1/2" Clamp Collar	1
74	M900-6A032	Screw Block	1
75	M6 X 1.0 X 20	SHCS	2
76	PP-0532	Threaded Hand Nut	1
77	PP-0533	Knurled Locknut	1
78	ME-M700-7A001	Guard Spacer	2
79	PP-1077	3 Hp 1 Phase Motor	1
80	ME-M700-6A012	Motor Plate (Yen Motors)	1
81	ME-M700-7A016	Drive Pulley	1
82	BM-1750T-4	1.75 BRG Mandrel 4.0	1
83	PP-0558	Bearing	2
84	PP-0517	4.0" Belt	1
85	M6 X 1.0 X 14	SHCS	12
86	M700-6A006	Guard Cover	1
88	M700-6A010	Exhaust Chute Main Body	1
89	M8 X 1.25 X 25	Hex Flange	2
90	STD.	M8 X 1.25 Hex Flange Nut	2
91	STD.	3/8-16 X 3.25 Threaded Rod	1
92	STD.	3/8-16 Hex Nut	1
93	PP-1533	Knob	2
94	M8 X 1.25 X 10	Set Screw	2
95	ME-M900-6A047	Vise Base	1
96	ME-M900-6A052	Pointer Disc	1
97	M900-7A011	Vise Lock Stud	1
98	ME-M900-6A048	Vise Shaft Support	2
99	FF-838-1	Flanged Sleeve Bushing	2
100	M6 X 1.0 X 16	FHCS	4
101	M900-7A014	Vise Slide Shaft	2
102	STD.	1/8 X 1 Slotted Spring Pin	2
103	ME-M900-6A049	Vise Slide Block (R.H.)	1
104	ME-M900-6A055	Vise Slide Block (L.H.)	1
105	M900-7A012	Double Vise Screw	1



Item	Part Number	Description	Qty.
106	M900-6A050	Vise Jaw	4
107	ME-M900-6A051	Vise Cross Bar	2
108	STD.	M6 X 1.0 Hex Nut	2
109	PP-1032	5.0 Hand Wheel	1
110	M700-6A004-V2	Belt Guard	1
111	M700-6A013	M700 Guard	1
112	PP-0489	5" Hinge	1
113	PP-0487	M800 Guard Rivets	6



NOTES



NOTES



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