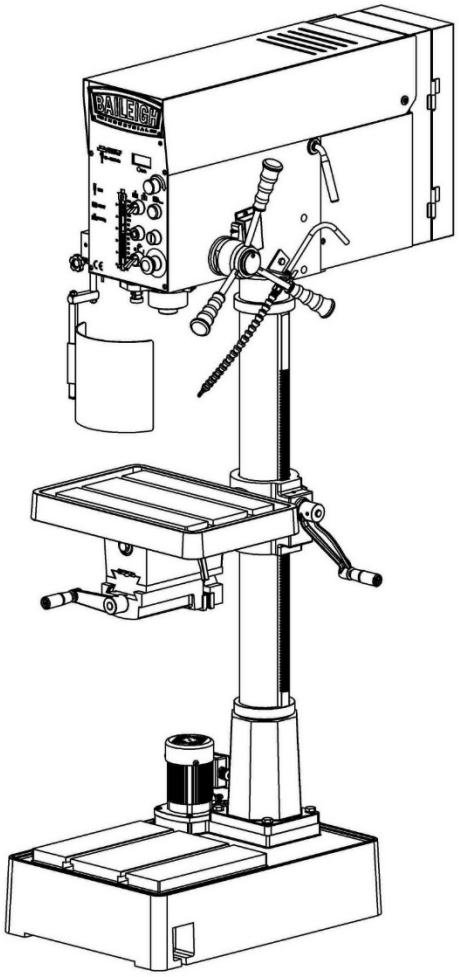
OPERATOR'S MANUAL

Metal Working



VARIABLE SPEED DRILL PRESS

MODEL: DP-1400VS

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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 30 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, (f) 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 INCIDENTIAL, 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 Majuere. 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

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.

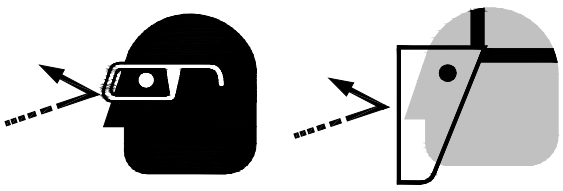
CAUTION: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

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

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.

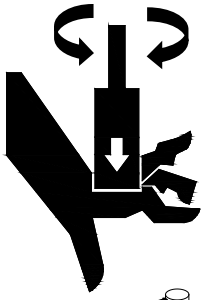


PROTECT AGAINST NOISE

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.

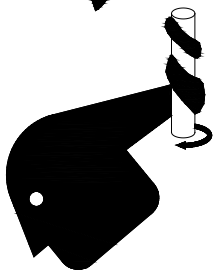
BEWARE OF PIERCING POINTS AND CUTTING HAZARD

NEVER place hands, fingers, or any part of your body on or near rotating tooling. This tooling can be extremely dangerous if you do not follow proper safety procedures. **Keep hand at least 6 inches (150mm) from the tooling while operating.**



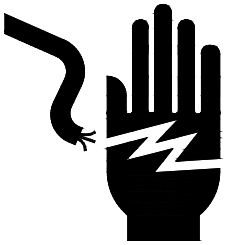
ENTANGLEMENT HAZARD – ROTATING SPINDLE

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



HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS. DO NOT assume the power to be off.
FOLLOW PROPER LOCKOUT PROCEDURES.



EMERGENCY STOP BUTTON

In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the **E-STOP** button. Twist the emergency stop button clockwise (cw) to reset. Note: Resetting the E-Stop will not start the machine.

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 won't 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. **Only trained and qualified personnel can operate this machine.**
2. **Make sure guards are in place and in proper working order before operating machinery.**
3. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.

4. **Keep work area clean.** Cluttered areas invite injuries.
5. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
6. **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 machines rated capacity.
7. **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.
8. **Dress appropriate. 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.
9. **Use eye and ear protection**. Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
10. **Do not overreach**. Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
11. **Stay alert**. Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
12. **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.
13. **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.
14. **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.
15. **DO NOT** touch live electrical components or parts.
16. Be sure all equipment is properly installed and grounded according to national, state, and local codes.
17. Keep all cords dry and free from grease and oil.
18. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
19. Keep visitors a safe distance from the work area.
20. **Keep children away**. Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
21. **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.

22. Turn off power before checking, cleaning, or replacing drill bits, or making adjustments or servicing the machine.
23. Turn off main power to the machine and wait for the drill bit to stop turning before removing debris, removing or securing the piece part, or changing the position of the work table.
24. Never expose your hands or limbs to the cutting area while the machine is operating.
25. Make sure it is possible to move freely around the machine and associated equipment. The floor should be kept clean and dry, and the surrounding area well illuminated, so that work can be performed safely.
26. **Properly** lock the drill bit in the chuck before operating the machine.
27. **Hold** the piece part firmly against the table. **DO NOT** attempt to drill a piece part that does not have a flat surface against the table, or that is not secured by a vise. Prevent the piece part from rotating by clamping it to the table or by securing it against the drill press column.
28. Never leave the machine running while unattended. Turn the power OFF. Do not leave the machine until the spindle comes to a complete stop. **When the machine** is **NOT** in use, the drill bit should **NOT** be rotating.
29. Remove adjusting keys and wrenches before turning drill press on. Never start the machine before clearing the table of all objects (tools, scrap pieces, etc.)
30. **DO NOT** bypass or defeat any safety interlock systems. Never use the drill press without the swing-away safety guard. Use the safety guard. The safety guard prevents chips from flying out and causing cuts or burns.
31. Make sure the actuator of the limit switch is seated in the detent or the machine will not run.

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@baileighindustrial.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.*

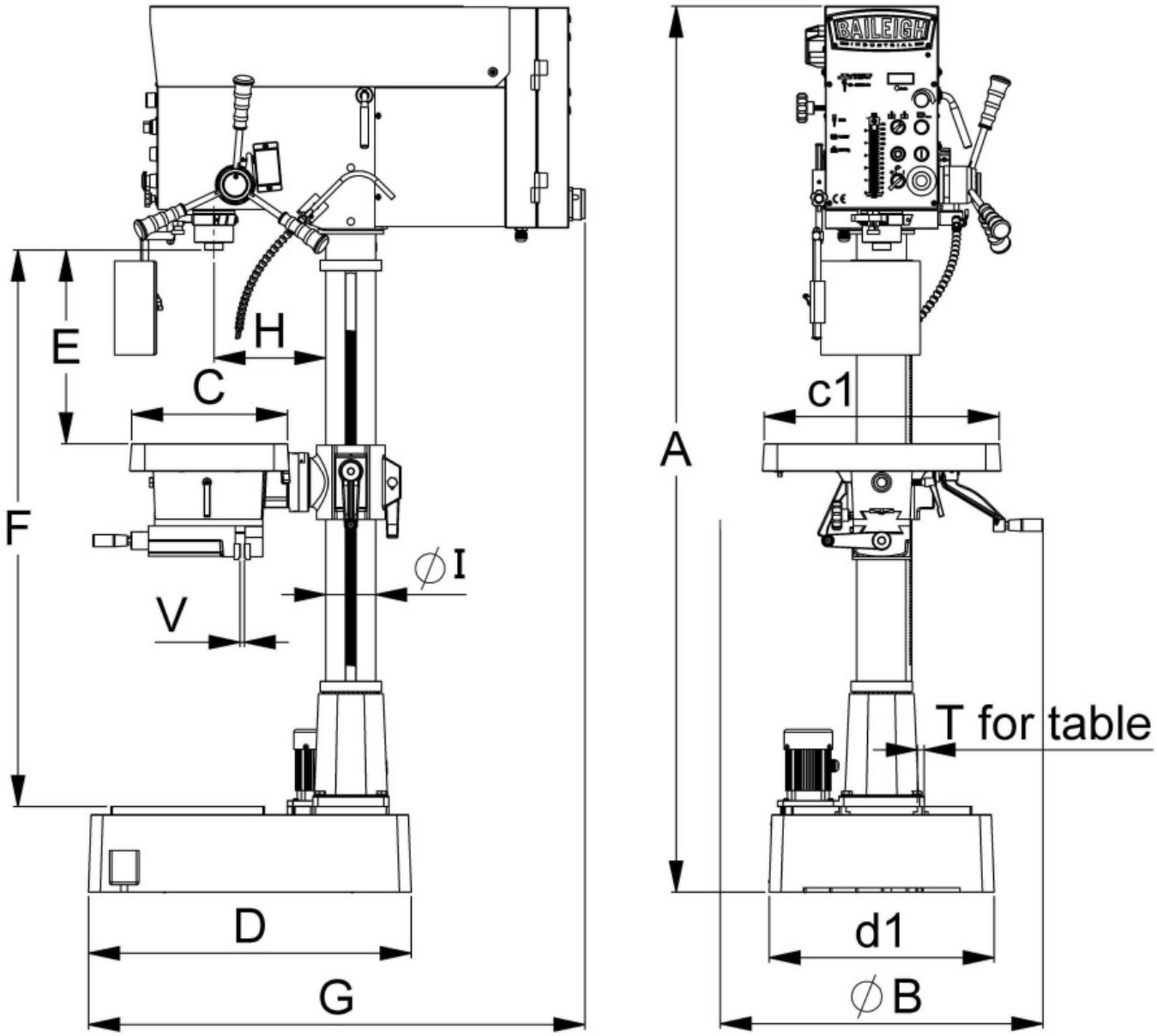
***Note:** The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*

TECHNICAL SPECIFICATIONS

Maximum Drill Capacity	1.25” (32mm)
Maximum Tapping Capacity	0.625” (16mm)
Quill Diameter	2.44” (62mm)
Spindle Taper	MT3
Chuck Size	0 – .51” (0 – 13mm), JT6
Spindle Travel	5.5” (140mm)
Spindle Speeds	Low = 80 - 1000RPM, High = 230 - 2500RPM
Table Travel	25” (635mm)
Table Rotation	360°
T-Slot Width	2@ 0.551” (14mm)
Base Table Size (W x D)	14.375” x 12.5” (365 x 317mm)
Power Requirements	220V, 1Ph, 60hz
Drill Motor	2hp (1.5kw) 220V, 1Ph, 60hz, 6A
Coolant Pump	1/8hp (.1kw) 220V, 1Ph, 60hz, .5A
Coolant Tank Capacity	2.2gal (8L)
Shipping Dimensions (L x W x H)	60” x 44” x 84” (1524 x 1118 x 2134mm)
Net Weight	628lbs. (285kgs.)
Shipping Weight	750lbs. (340kgs.)
Based on a material tensile strength of *60000 PSI – mild steel	

Dimensions

A	71.3” (1810mm)
B	26” (660mm)
C	C = 13” × c1 = 18.9” (C = 320 × c1 = 480mm)
D	D = 26” × d1 = 18.3” (D = 660 × d1 = 465mm)
E	.5” (12mm) Minimum / 28.34” (720mm) Maximum
F	44.48” (1130mm)
G	39.37” (1000mm)
H	9.05” (230mm)
I	∅4” (∅102mm)
T	.551” (14mm)
V	4” (101mm) Maximum


E
H
C
F
∅I
V
D
G
A
c1
T for table
d1
∅B

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.

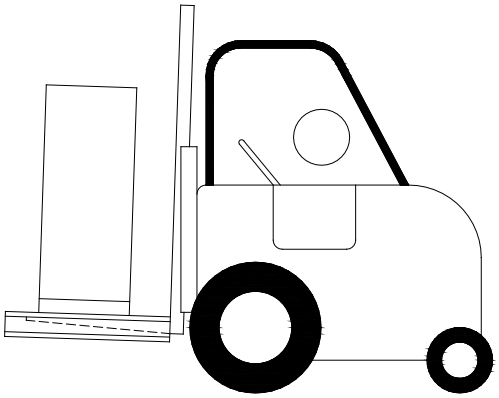
Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. 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

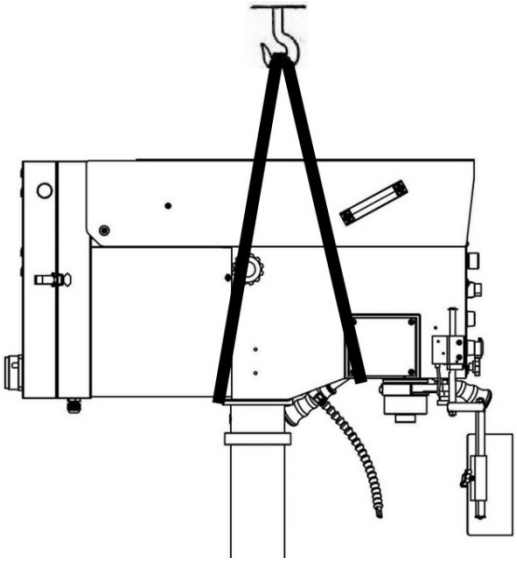
NOTICE: *Lifting and carrying operations should be carried out by skilled workers, such as a truck operator, crane operator, etc. If a crane is used to lift the machine, attach the lifting chain carefully, making sure the machine is well balanced.*

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.

Follow these guidelines when lifting crane or hoist:



- Always lift and carry the machine with the lifting holes provided at the top of the machine.
- Use lift equipment such as straps, chains, capable of lifting 1.5 to 2 times the weight of the machine.
- Take proper precautions for handling and lifting.
- Check if the load is properly balanced by lifting it an inch or two.
- Lift the machine, avoiding sudden accelerations or quick changes of direction.
- Locate the machine where it is to be installed, then lower slowly until it touches the floor.

INSTALLATION

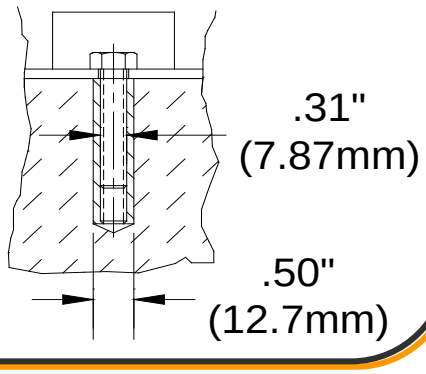
IMPORTANT:

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

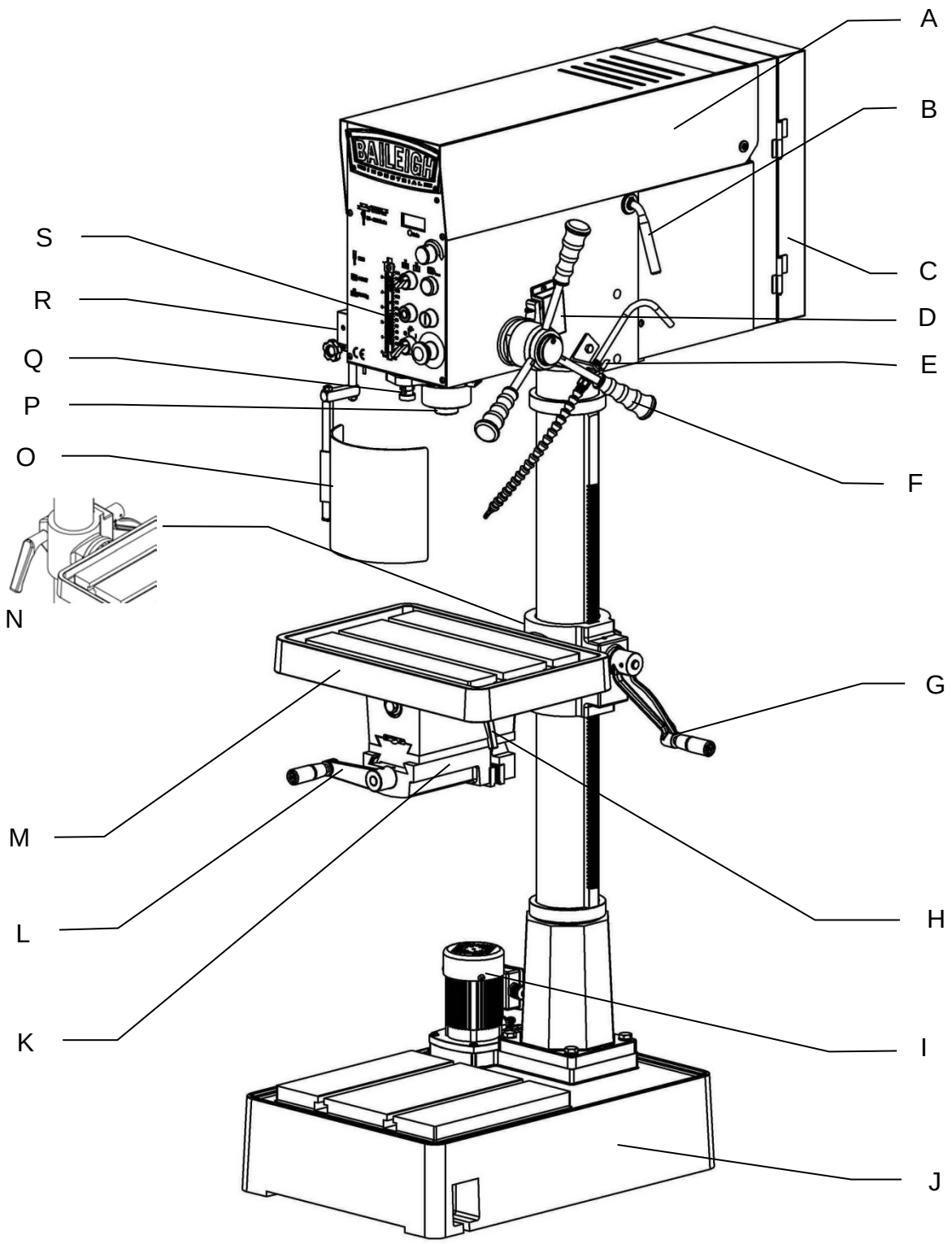
- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for 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.

Anchoring the Machine

- Once positioned, anchor the machine to the floor, as shown in the diagram. Use sunken tie rods that connect through and are sized for the holes in the base of the stand.
- This machine requires a solid floor such as concrete at a minimum of 4” (101mm) thick.

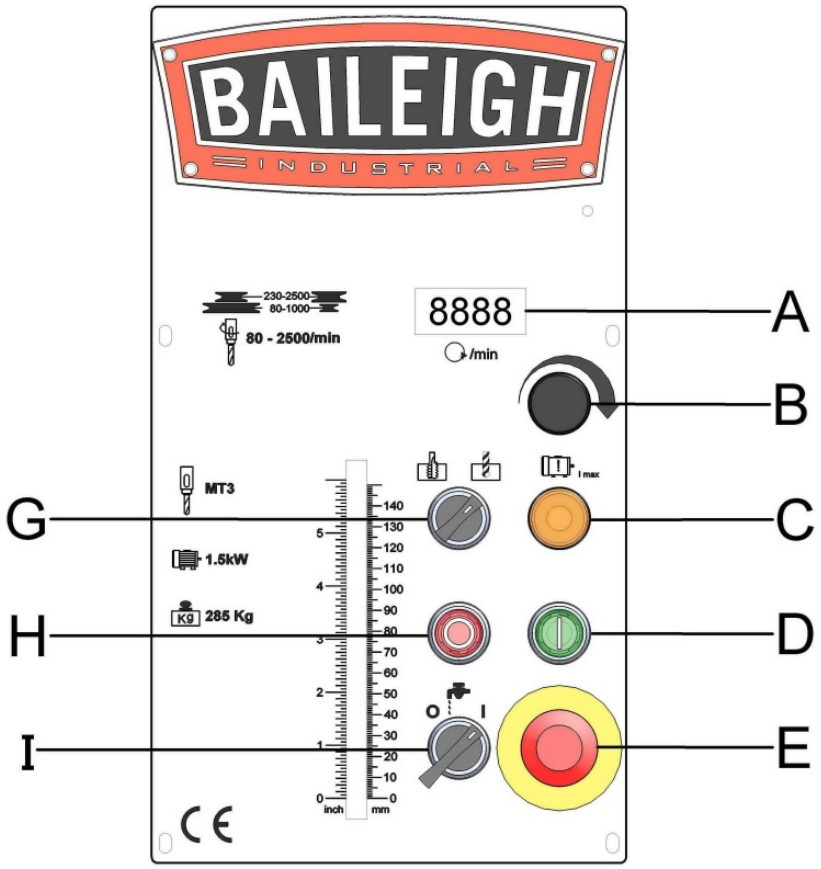


GETTING TO KNOW YOUR MACHINE



A	Motor Cover	Contains the motor and drive components
B	Belt Tension Handle	Cammed lever used to loosen and tighten the belt tension.
C	Electrical Enclosure	Houses the electrical components
D	Tapping/Feed Switch	When in tapping mode, this switch engages the spindle rotation and feed function when the quill feed handle is pulled slightly forward.
E	Coolant Nozzle W/Valve	Coolant nozzle and flow control valve. May be placed as needed to direct coolant flow to the work area.
F	Down - Feed Handle	Controls up-down movement of the spindle
G	Table Elevation Crank Handle	Loosen the column clamping nut and then crank the handle to adjust the table height.
H	Table Rotation Lock	Lock bolt used to hold the table in position on its rotational axis.
I	Coolant Pump	Pumps coolant to the chuck.
J	Base	Supports the drill press.
K	Vice 4” (101mm)	Built in vise used to clamp and hold work material.
L	Vice Crank Handle	Opens and closes the vise jaws.
M	Work Table	Adjustable table with T-slots
N	Table Elevation Clamp Handle	Locks the table to the column to hold the height and position setting.
O	Safety Guard	Adjustable guard with limit switch shut-off
P	Chuck	Holds various tooling for drilling and tapping.
Q	Depth Stop Knob	Moves the depth stop up and down
R	Limit Switch	Stops the machine if the guard is in an open position
S	Depth Indicator	Used for setting the drill or tap depth

Control Panel



A	Digital Indicator	Displays the rate of spindle rotation in RPM.
B	Spindle Speed Control Knob	Changes the speed of spindle rotation.
C	Fault Light	Stops machine. Illuminates to indicate an operating fault.
D	Start Button (Top, Green)	Starts the spindle motor.
E	Emergency Stop Button	Stops all machine functions. Turn the switch clockwise (cw) to reset the switch.
G	Drilling / Tapping Selector Switch	Selects the mode of operation: drilling or tapping.
H	Stop Button (Bottom, Red)	Stops the spindle motor.
I	Coolant On/Off Switch	Starts and stops the coolant pump.

Drill Head

The drill head attaches to the top of the column. It houses the motor, spindle, controls, and transfer mechanisms. Attached to it is the electrical enclosure, the protective guard, the work light, and the coolant valve with nozzle.

Work Table

The sturdy work table can be positioned at varying heights and rotated 180° in either direction. It has T-slots to allow the use of 1/2” or M14 bolts. At the back-right side of the work table is the crankshafts. The crankshaft (A) controls the up /down motion of the table. Always unlock the table with clamping nut (not visible in this picture.) at the back of the column, before changing the height or rotating it. Then lock the work table to secure in position.

Machine Base

The sturdy machine base supports the entire machine as well as provides a secondary work table. It has T-slots to allow the use of 1/2” or M14 bolts.

Coolant Pump and Tank

The coolant pump and tank are located in the base. An access cover on the side of the base allows access to the coolant tank for cleaning.
The flow valve is mounted to the side of the drill head with a flexible nozzle which may be positioned as needed.

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.

Down Feed Handles

1. Thread the down feed handles into the down feed hub.
2. Tighten securely.

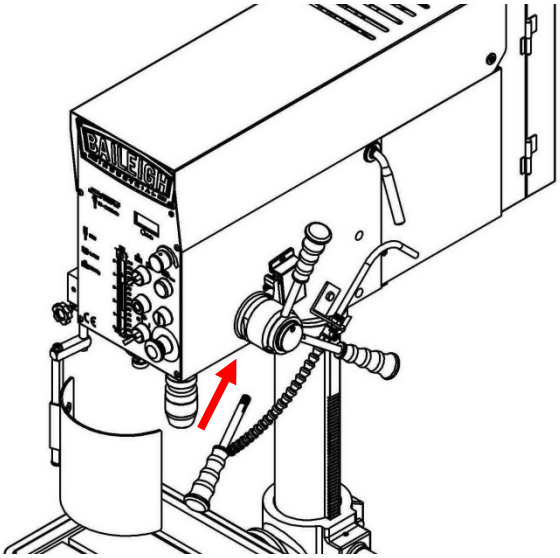
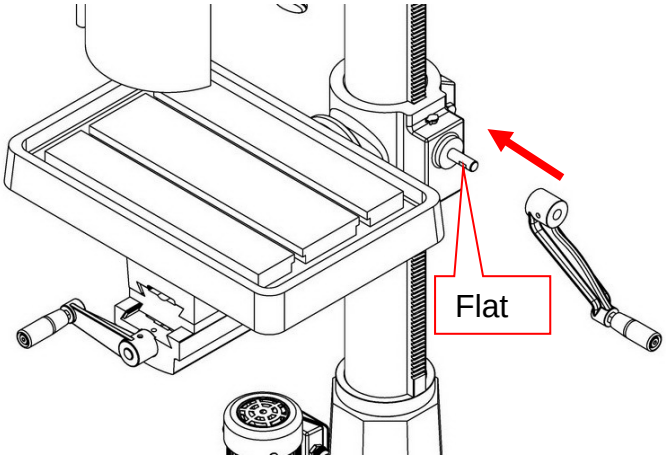


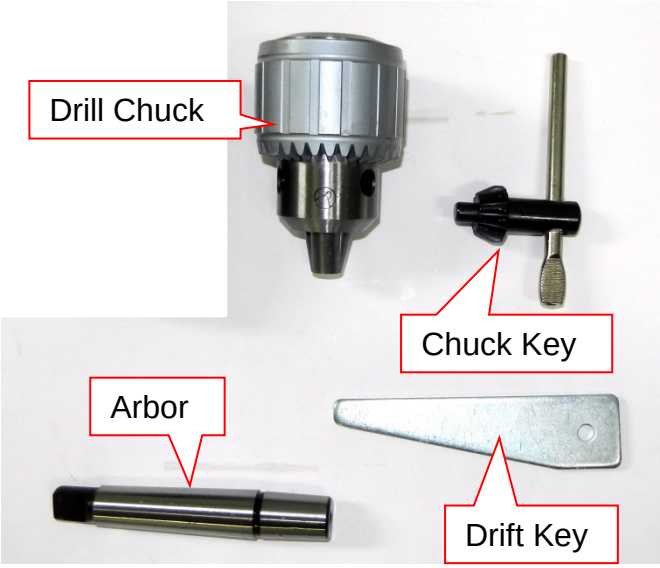
Table Elevation Crank Handle

1. Align the crank handle set screw to the flat on the pinion shaft.
2. Slide the handle onto the shaft until the shaft is flush with the outer surface of the crank handle hub.
3. Tighten the set screw to secure the handle to the shaft.



Drill Chuck Install

The drill chuck attaches to the spindle by means of the arbor. Matched tapers on the arbor and the inside of the chuck create a semi-permanent assembly when properly joined.



To assemble the drill chuck and mount it to the spindle:

1. Use mineral spirits to thoroughly clean the drill chuck, arbor, and spindle sockets and dry all surfaces before assembly. Failure to clean the mating surfaces may cause the tapered fit to loosen during operation, resulting in separation and an unsafe condition.
2. Use the chuck key to adjust the jaws of the drill chuck until they are fully retracted inside the drill chuck body.
3. Place the drill chuck face down on a workbench. The arbor has a short taper and a long taper. Place the short taper into the socket in the back of the drill chuck and tap it with a rubber or wooden mallet. If the chuck fails to remain secure on the arbor, repeat Steps 1 & 2.
4. Slide the arbor into the spindle socket while slowly rotating the drill chuck. The socket has a rectangular pocket where the tang, or flat portion of the arbor, fits into.
5. Seat the chuck with a rubber mallet.

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 ±5%, and for the frequency is ±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.

Power cord connection:

1. 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 is a way that does NOT create a trip hazard.
2. Connect the power cord to the power supply and check that the power cord has not been damaged during installation.
3. 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.

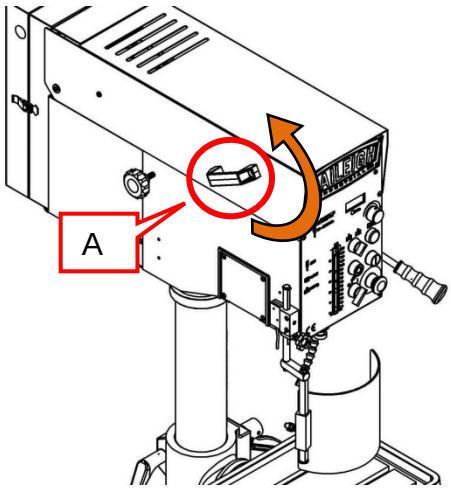
MACHINE ADJUSTMENTS

Speed Selection Recommended

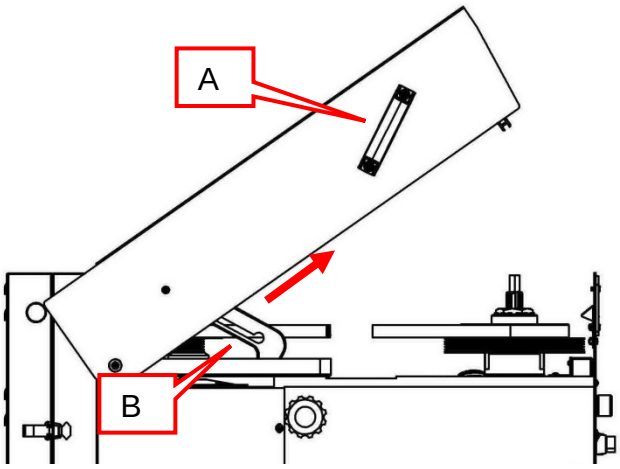
Drill m/m	Material									
	Cast Iron		Steel		Iron		Aluminum		Alloy Copper	
										
∅2	4780	2390	1275	635	3980	1910	7960	3980	4460	2230
∅3	3185	1590	850	425	2650	1275	5310	2655	2970	1485
∅4	2390	1195	640	320	1990	955	3980	1990	2230	1115
∅5	1910	955	510	255	1590	765	3185	1590	1785	890
∅6	1590	795	425	210	1330	640	2655	1330	1485	745
∅7	1365	680	365	180	1140	545	2275	1140	1275	635
∅8	1195	600	320	160	995	480	1990	995	1115	555
∅9	1060	530	285	140	885	425	1770	885	990	495
∅10	955	480	255	125	800	380	1590	800	890	445
∅11	870	435	230	115	725	350	1450	725	910	405
∅12	795	400	210	105	665	320	1330	665	745	370
∅13	735	365	195	100	610	295	1225	610	685	340
∅14	680	340	180	90	570	270	1135	570	635	320
∅15	640	320	170	85	530	255	1060	530	600	300
∅16	600	300	160	80	500	240	995	500	560	280
∅17	560	280	150	75	470	225	935	470	525	260
∅18	530	265	140	70	440	210	885	440	495	250
∅19	500	250	135	67	420	200	835	420	470	235
∅20	480	240	130	65	400	190	795	400	445	225
∅25	380	190	100	50	320	155	640	320	355	180
∅30	320	160	85	45	265	130	530	265	300	150
∅40	240	120	65	30	200	95	400	200	225	110
Note	Processing is adjustable on the cutting materials as well as the material of the cutting to real cutting conditions.									

Pulley Cover Open and Close

Open the cover – Hold the handle of left side of the cover (A) and push upward to the highest point and then release slightly.
The latch bracket (B) will lock into position to hold the cover in the open state.

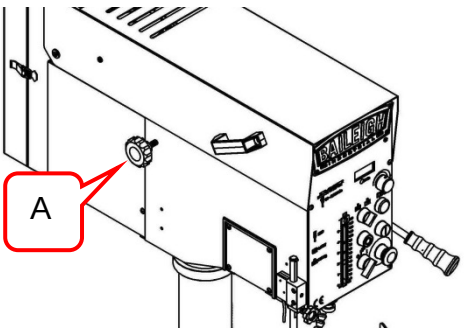


Close the cover – Hold the handle of left side of the cover (A) and push upward to the highest point.
Lift up and forward on the latch bracket (B) to release the latch and then lower the cover to the closed position. (The motor power can not be started when the cover is open.)

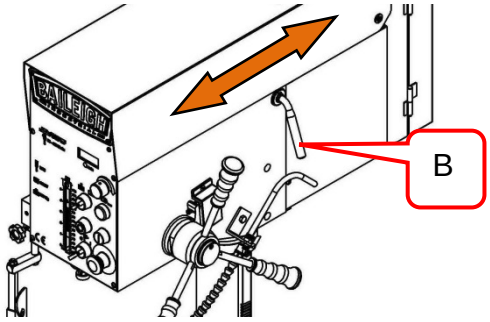


Speed Range Change

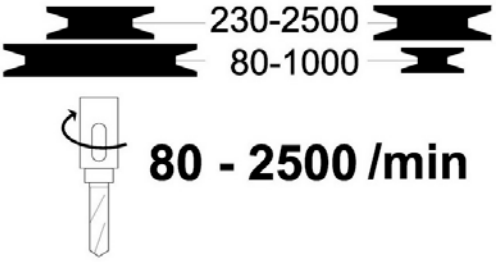
1. Disconnect the drill press from the power supply.
2. Lift the belt cover and latch it into the open position.
3. Loosen knob (A) on the left side of headstock.
4. Push handle (B) forward to release the belt tension.
5. Use the chart to determine the rpm desired.
6. Rotate the belt pulley slowly to help re-position the belt in the correct groove.



7. Pull back on handle (B) to apply proper tension to the belt. For proper belt tension, use 10 lbs pressure or hand pressure on the belt. The recommended deflection is about 10 – 12mm.
8. Tighten the lock knob (A) on the motor base to hold the belt tension.
9. Lift slightly on the cover and release the prop latch to allow the cover to close.



IMPORTANT: *The drive belt is a multi-groove V-belt. The belt must run true and straight across an even set of sheaves. Do not allow the belt to run at an angle between the sheaves. Do not allow even part of the belt to be above or below the sheaves.*



OPERATION

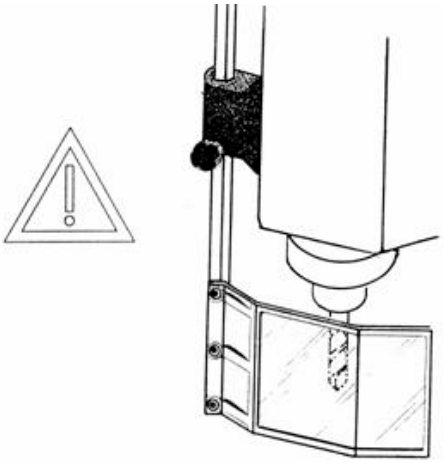
⚠ CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

Machine Usage

The drilling machine was designed to be used with specific tools and for certain machining operations.
The most common machining operation is the drilling of holes with helicoidal drills. The drilling of hole is carried out by the combination of a drill turning movement and a feed movement in the turning spindle direction.
Besides the helicoidally drill, other tools can be used to drill holes. There is a great variety of drill types and shapes in the market which can be used on this machine, provided that they are designed for such a purpose and that can be fixed in the spindle taper. They will usually be the Morse taper or ISO type. The drill shanks should have the corresponding taper to the spindle in which they are to be fitted or parallel shank if they are going to be fitted by means of a tool holder.
Do not ever use tools which were not designed to be used in a drilling machine and that have been adapted.
A drilling machine can also perform other machining operations a part from the drilling, such as tapping, reaming, chamfering, punch marking, countersinking, spot facing, to perform such operations, it is necessary to have appropriate tools, specially designed for this sort of jobs. In the tapping case, besides using correct tool, the machine has to be provided with such a device that reverses the turning direction of the tool when it reaches the depth previously fixed.

Drill Protection Guard

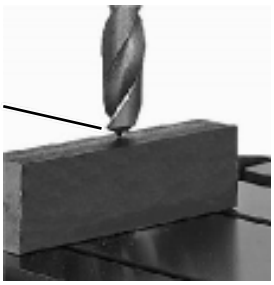
The machine is provided with a security drill guard.
Before pressing the starting push button, set the drill guard in the working position, otherwise the machine controls will not start.



⚠ ***Important**: If the guard is opened when operating the machine, the machine will stop. **DO NOT** REMOVE THE GUARD UNDER ANY CIRCUMSTANCES.*

Safety guard must be properly positioned with the limit switch roller in the detent of the adjustable ring or the machine will not run. The electrical enclosure cover must be closed and locked, and the emergency stop button must be reset by turning clockwise (cw).

1. Load and secure the piece part to the table.
2. Secure drill or tapping bit in the chuck.
3. Unlock the table, set to desired position, and lock.
4. Adjust the safety guard as necessary.
5. To set the depth stop, use the down-feed handle (A), to bring the tip of the drill or tapping bit to the surface of the work piece (B) and hold this position. (This is zero position.)
6. Rotate knob (C) to set the drill depth on the scale with indicator (D).
7. Release the down feed handle and allow the quill to raise to the full up position.
8. Select either the drilling or tapping mode with selector switch.
9. Press green start button to begin spindle rotation.
10. Spindle speed is set with knob speed control knob and can be read on the digital indicator.



11. Turn ON the coolant using the paddle switch on the face of the drill head.
12. Use the quill feed handle to start drilling or tapping.
13. While tapping, the spindle will reverse rotation when the depth stop is reached. The quill will also the reverse direction to lift the tap out of the work piece.

Note: *In general, use low speeds for tapping. By tapping at high RPM there is a danger of damage to the piece part or the tooling. While tapping, the tool can be backed out at any time by reversing the feed handle.*

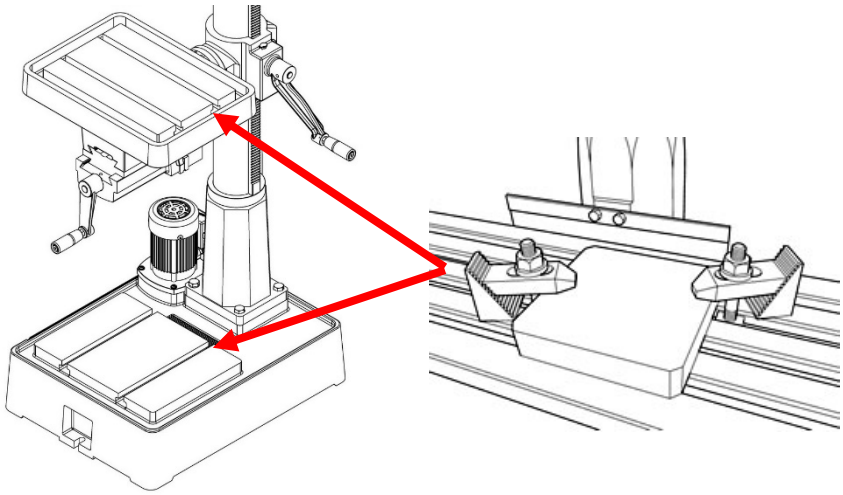
14. At the end of the operation, press the red stop button to turn OFF the machine.

IMPORTANT: *In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the E-STOP button. Twist the button clockwise (cw) to reset.*

Piece Clamping

Tangential cutting forces and axial forces in the feed direction of the tool are mainly produced during the milling/drilling process. The tangential forces produce a moment of forces which make the piece being machined want to turn. Therefore, the pieces to be machined (or tapped) must be clamped in an appropriate device such as a machine vise and the vise must be securely clamped to the machine table.
It is the operator's responsibility to obtain and use proper vise and mounting hardware to secure the vise to the work table and the work piece into the vise.

There are two T grooves in the worktable. They are used to secure the work piece.
There are two T grooves in the base, too. It is convenient for securing longer, heavier and larger working pieces.

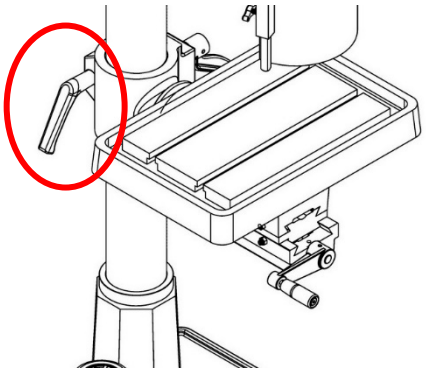


Note: *Material clamps not included.*

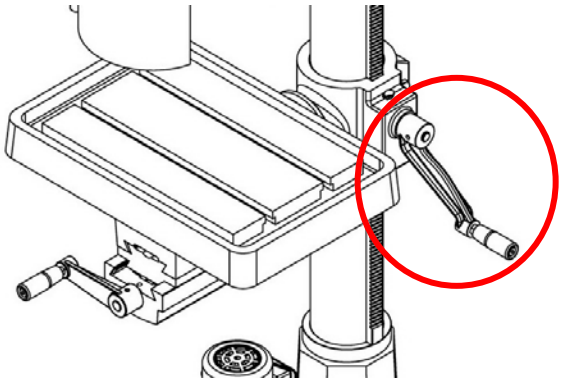
Work Table and Vise Adjustment

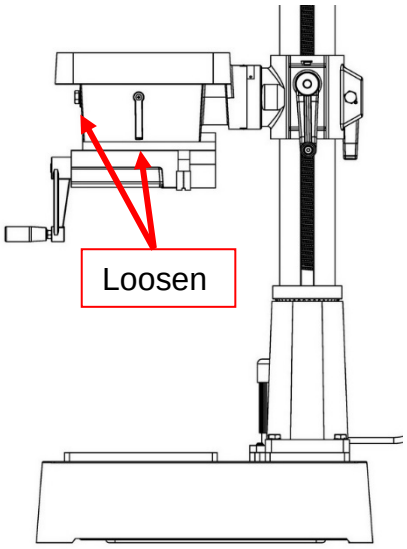
The drill press has two work table. The base table which is a fixed position table which does allow for larger size material and the movable table which has several ways to be positioned and adjusted. Both tables have T-slots to be used to secure the material and or vise to clamp and hold the work piece from moving during the machining process.
The movable work table may be positioned by;

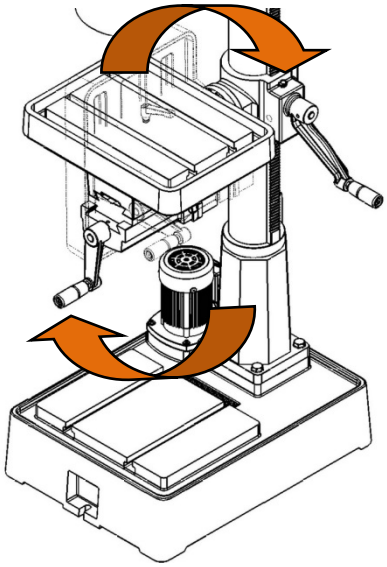
- Loosen the column clamp to unlock the table arm from the column.

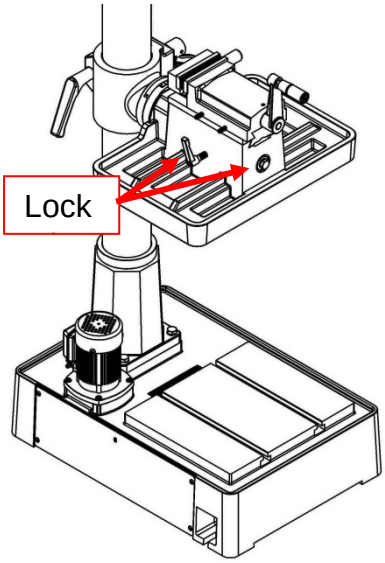


- Rotate the table and arm as an assembly around the column or use the hand crank to raise or lower the table and arm assembly.
- Always lock the column clamp before machining any material.
- To flip the table on the center post, unlock the lock handle (and if needed, the adjusting bolt) and rotate the table as desired. Tighten the lock handle to secure the table in place.

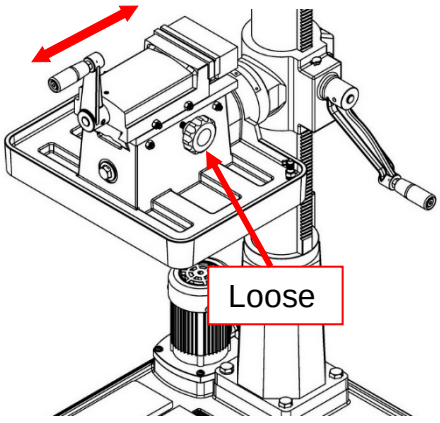








- Be sure to tighten the adjusting bolt as needed to insure that the table does not move during operation.
- As needed, loosen the hand knob on the side of the vise and slide the entire vise in or out as needed to position the work piece under the drill bit.



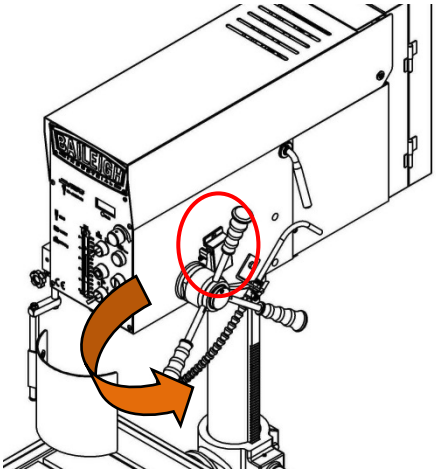
Tapping

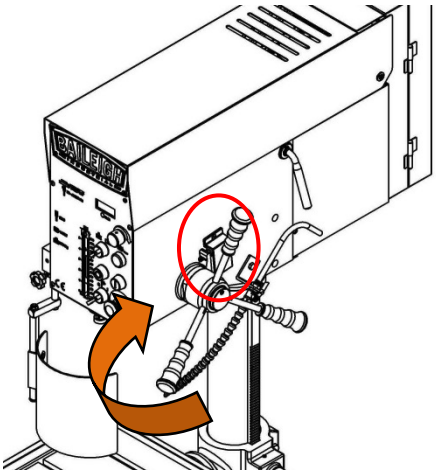
NOTICE: *This is a conventional drill, not a special purpose machine, therefore frequent tapping jobs will wear the motor and gears.* Temperature of motor will be increased quickly when tapping due to low motor RPM and frequently motor direction be changed. Therefore, rapid and continuous tapping shall be avoided. Maximum of eight times per minutes of tapping is recommended. The machine shall be stopped for cooling if the motor is too hot.

In general, speeds for tapping require low speeds.

Important: *Chamfer the holes before tapping. A tapping rate of eight times per minute or less is recommended.*

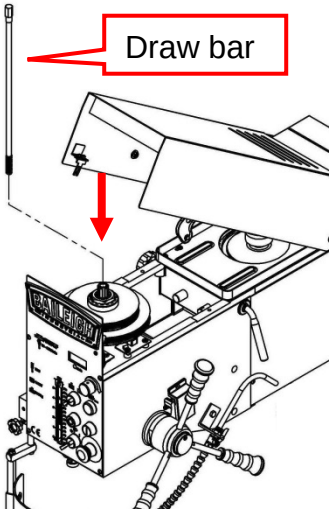
1. Set the drill press up similar to a drilling operation. Setting depth and securing material.
2. Install the desired tap for the operation.
3. Turn the selector switch on the electrical cabinet to tapping mode.
4. Start the machine by pushing button.
5. Turn on the coolant selector switch.
6. Begin tapping. Use the down-feed handles to enter the tapping bit into the piece part. Release hold of the handles. The bit will automatically reverse upon reaching the depth stop.
7. If needed, push back on the feed handle to reverse the tap before the travel reaches the travel stop point.





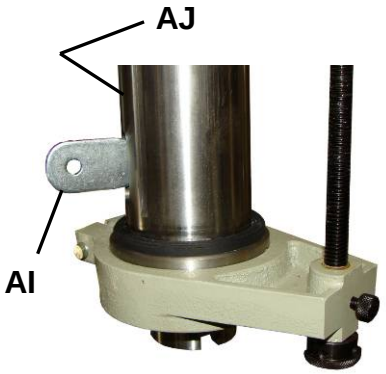
Using the Drawbar

The drawbar has a M12 x 1.75 right-hand thread and should be tightened with normal pressure using a wrench. To loosen the collet, back off the drawbar, and if the collet does not open, give the top of the drawbar a slight tap. The spindle has a non-sticking taper and the collet should release readily. When tightening or loosening the drawbar, it is necessary to lock the spindle. To do this, use the spindle brake which is located on the left side of the belt housing, turning it either left or right until it binds. Make sure the quill feed handle is raised all the way.
The drawbar is especially useful during tapping to prevent the tapping chuck from becoming loose when the spindle changes direction.



Removing Tooling from the Spindle

1. Disconnect machine from the power source.
2. Place a piece of wood on the table for protection.
3. Position the work table approximately 10” under the bit and lower the spindle about 6”.
4. Place the drift key (customer supplied) (AI) into the slot (AJ) of the quill and tap the end of the drift key with a hammer until the bit or chuck arbor falls out.



Chips During Machining

The machining process removes material from the piece. This material is released in chips, which can be of different shapes depending on the material itself. The most common ones are of three types: fragmented chips in small bits, short helicoidal chips and long helicoidal chips.
The chips fragmented in small bits can be rejected from the machining area and can be dangerous if they reach the eyes of the operator. To avoid this, it is advisable to wear safety glasses.
The long helicoidal chips tend to roll up the tool and gain considerable volume before breaking, which is dangerous if they reach the operator as they may produce injuries.
The reached volume may also displace the dill protector from its security position, increasing the risk of an accident. It is advisable to use chip breaking tools to machine materials which produce such chips. For further information contact the tool manufacturer.

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.

Daily Maintenance

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- Check that the guard and emergency stop are in good working order.
- Do a general cleaning by removing dust and metal chips from the machine.
- Top off the coolant reservoir, the full capacity is 3 gallons (11 liters).
- Clean filter screens located on the work tables of the machine.
- Sharpen or replace any worn or damaged tooling.
- Clean the spindle taper hole and tool taper.

Weekly Maintenance

- Clean the machine and the area around it.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Thoroughly clean the machine including the coolant reservoir.

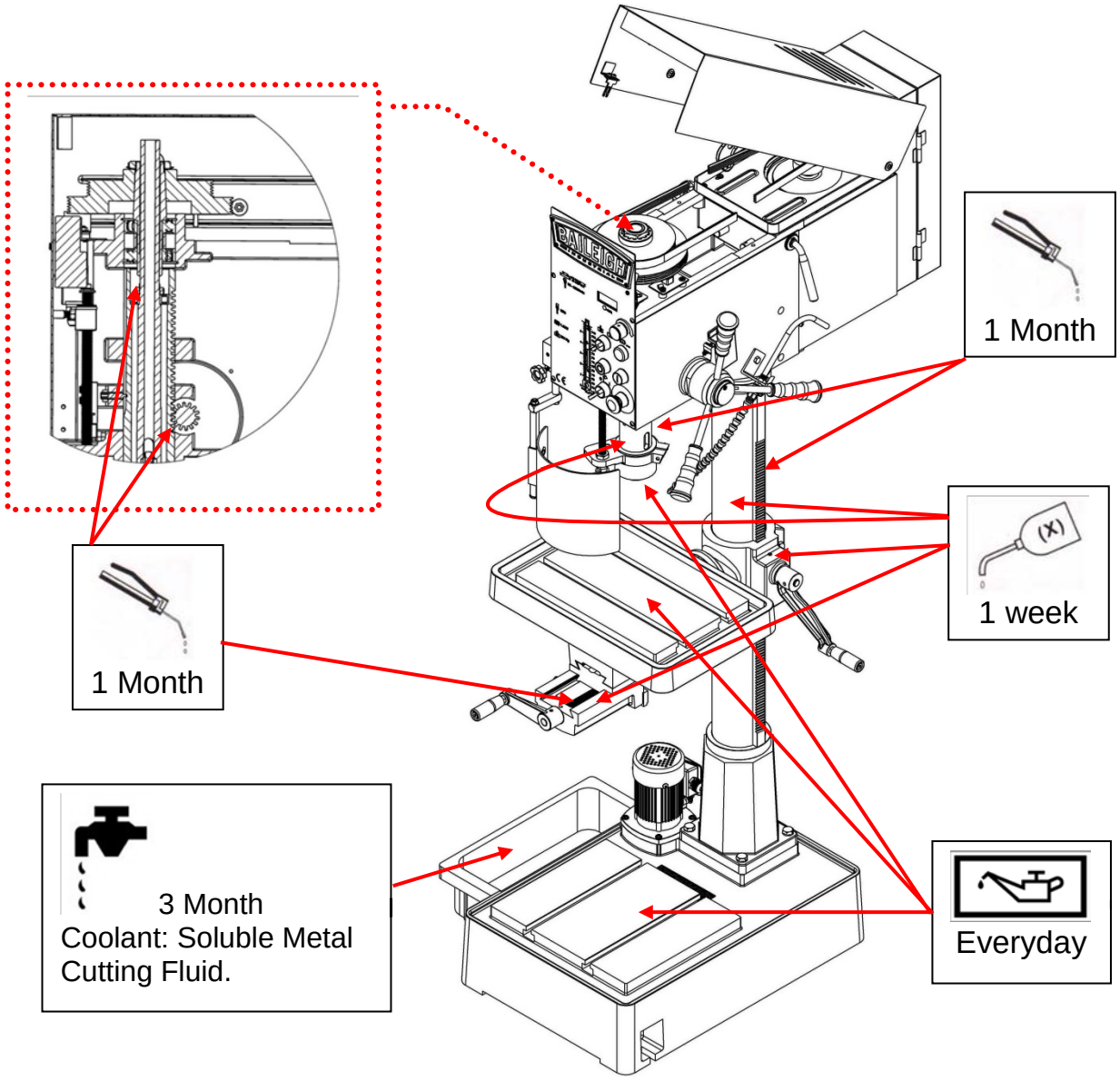
Monthly Maintenance

- Check that all screws and bolts are tight and secure.
- Wipe built-up grime from the machine with a rag and a mild solvent.
- Check for worn or damaged electrical cables.
- Lubricate the spindle splines. Lower quill assembly and pour 6-8 drops of oil into hole in center of pulley.
- Lubricate the quill rack. Lower the quill assembly and oil rack (or gear teeth) on back of quill. Raise and lower quill several times to spread oil across rack.
- Lubricate the rack. Lightly oil the teeth evenly on rack.

***Note**: When cleaning chips and debris from the machine, use a brush and a shop vacuum. **DO NOT** blow off the machine with compressed air. The force of the compressed air may force chips into critical mechanisms or may inflict injury to yourself or others.*

Lubrication

- Keep quill and column lubricated with light oil. Use 20 wt. non-detergent oil for oil lubrication.
- Use a general purpose (NLGI #2) grease for grease lubrication.



Accessing and Cleaning the Coolant System

1. Clean the drain screen.
2. Drain and wash out the dirt and debris from the reservoir.
3. Replace coolant drain plug.
4. Thoroughly clean the pump and pump inlet
5. Re-fill tank with coolant solution.

Oils for Lubricating Coolant

Any 10:1 (water to coolant) solution will work, however we recommend Baileigh B-Cool 20:1 (water to coolant) biodegradable metal cutting fluid. It has excellent cooling and heat transfer characteristics, is non-flammable, and extends tool and machine life. Each gallon of concentrate makes 21 gallons of coolant.

Coolant and 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 Drill Press is to be inactive for a long period of time, prepare the machine as follows:

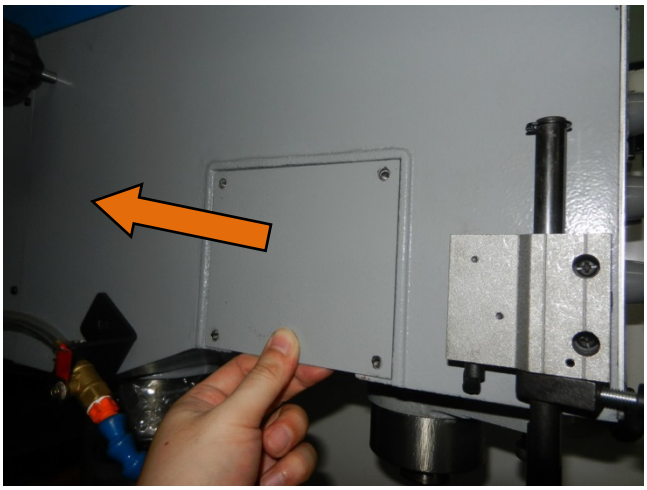
- Detach the plug from the electrical supply panel.
- Empty and clean the coolant reservoir.
- Clean and grease the machine.
- Cover the machine.

Feed Shaft Spring Tension

The feed shaft return spring is adjusted at the factory; however, during the life of the drill press you may want to adjust the feed shaft return spring so the feed shaft return pressure suits your operating needs.

To adjust the feed shaft spring tension:

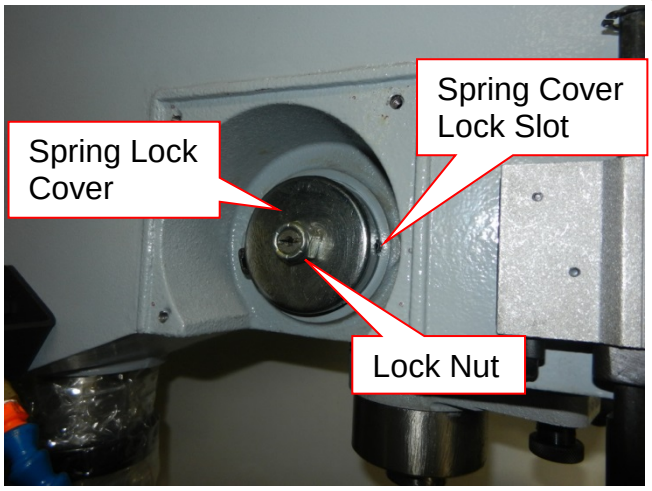
1. Disconnect the drill press from the power supply.
2. Remove the cover panel to access the spring assembly.

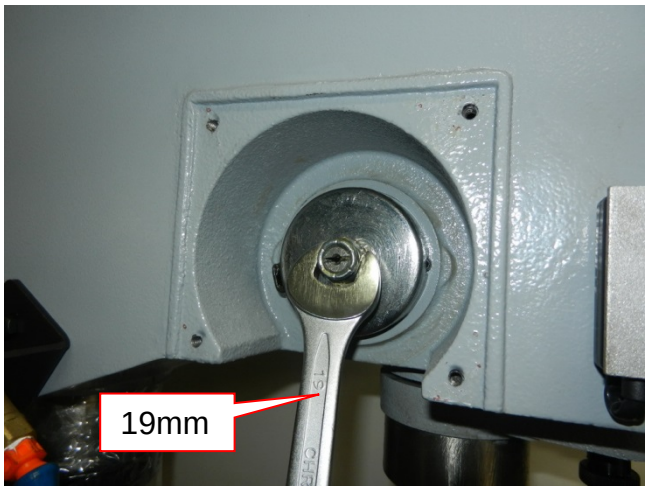


3. Wipe off any oil on the spring lock cover so it does not slip in your fingers when you hold the cover from spinning.
4. While holding the spring lock cover against the side of the head stock so the cover stays splined with the locking lug; loosen the lock nut approximately 1⁄4" turn.
5. Put on heavy leather gloves to protect your hands from possible lacerations if the spring uncoils during the next step.
6. Pull the cover outward just enough to disengage the spring-cover lock slot from the locking lug.

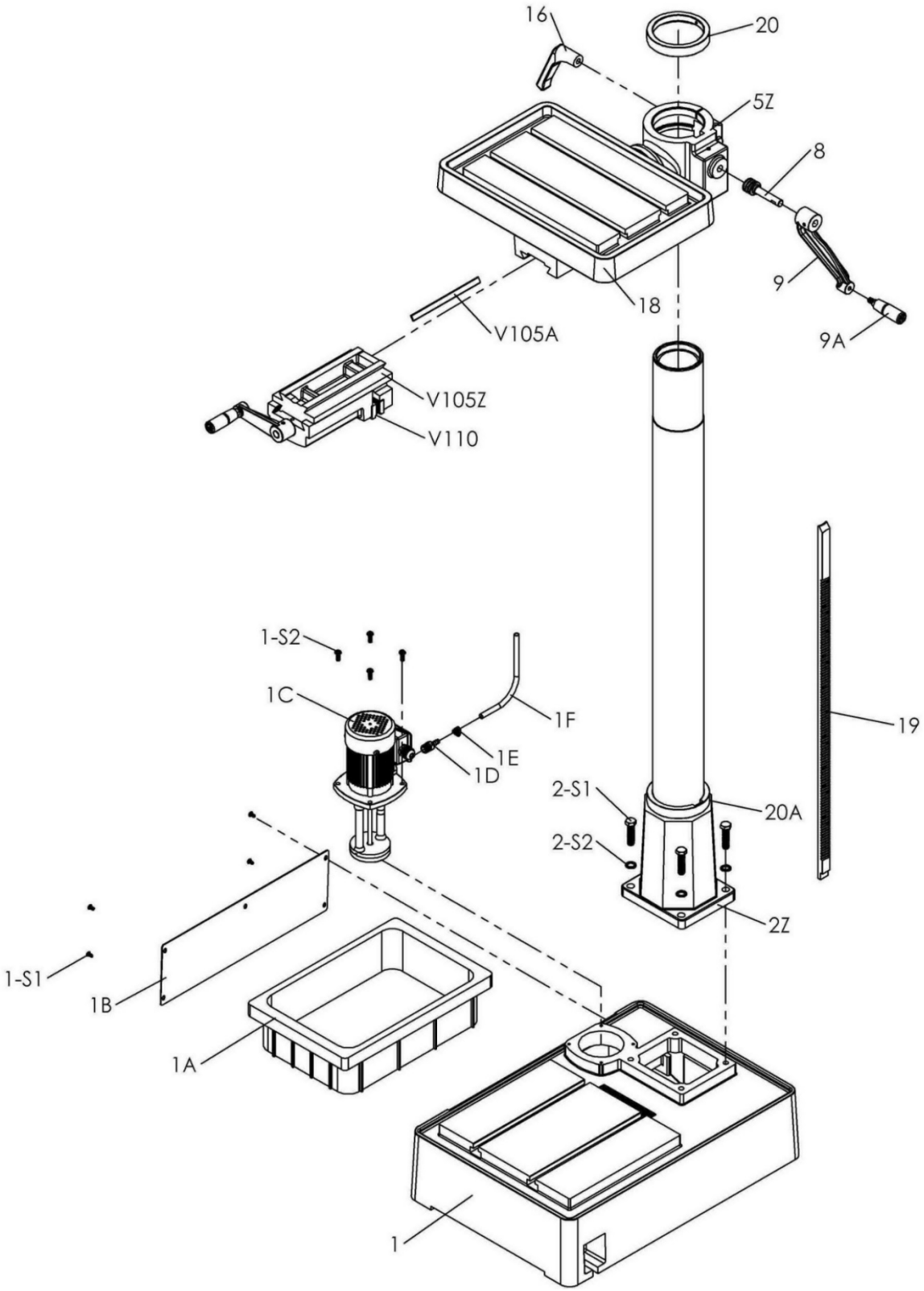
***Note**: It is important to keep a good grip during this step. Letting go of the cover will cause the spring to rapidly uncoil.*

7. Rotate the cover counterclockwise to increase spring tension, or let the cover slowly unwind in the clockwise direction to reduce spring tension.
8. Engage the next available spring-cover lock slot with the locking lug and hold the spring lock cover tightly against the side of the headstock.
9. Snug the cover nut against the spring cover just until the nut stops, and then back off the nut approximately 1⁄3 turn, or just enough so there is no binding at complete spindle travel.
10. Hold the cover nut and tighten the jam nut against the cover nut.

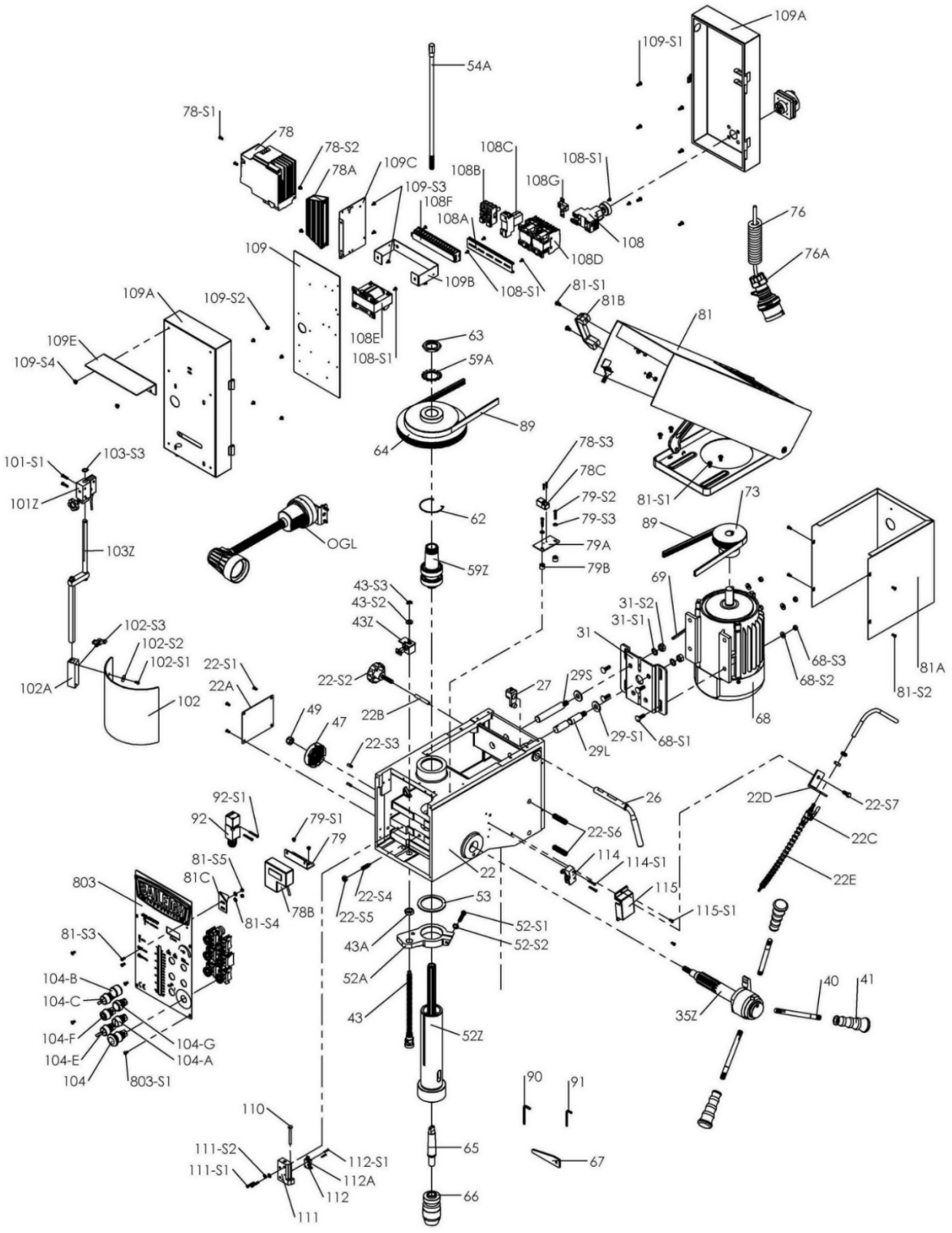




BASE AND TABLE PARTS DIAGRAM



HEAD CONTROL PARTS DIAGRAM



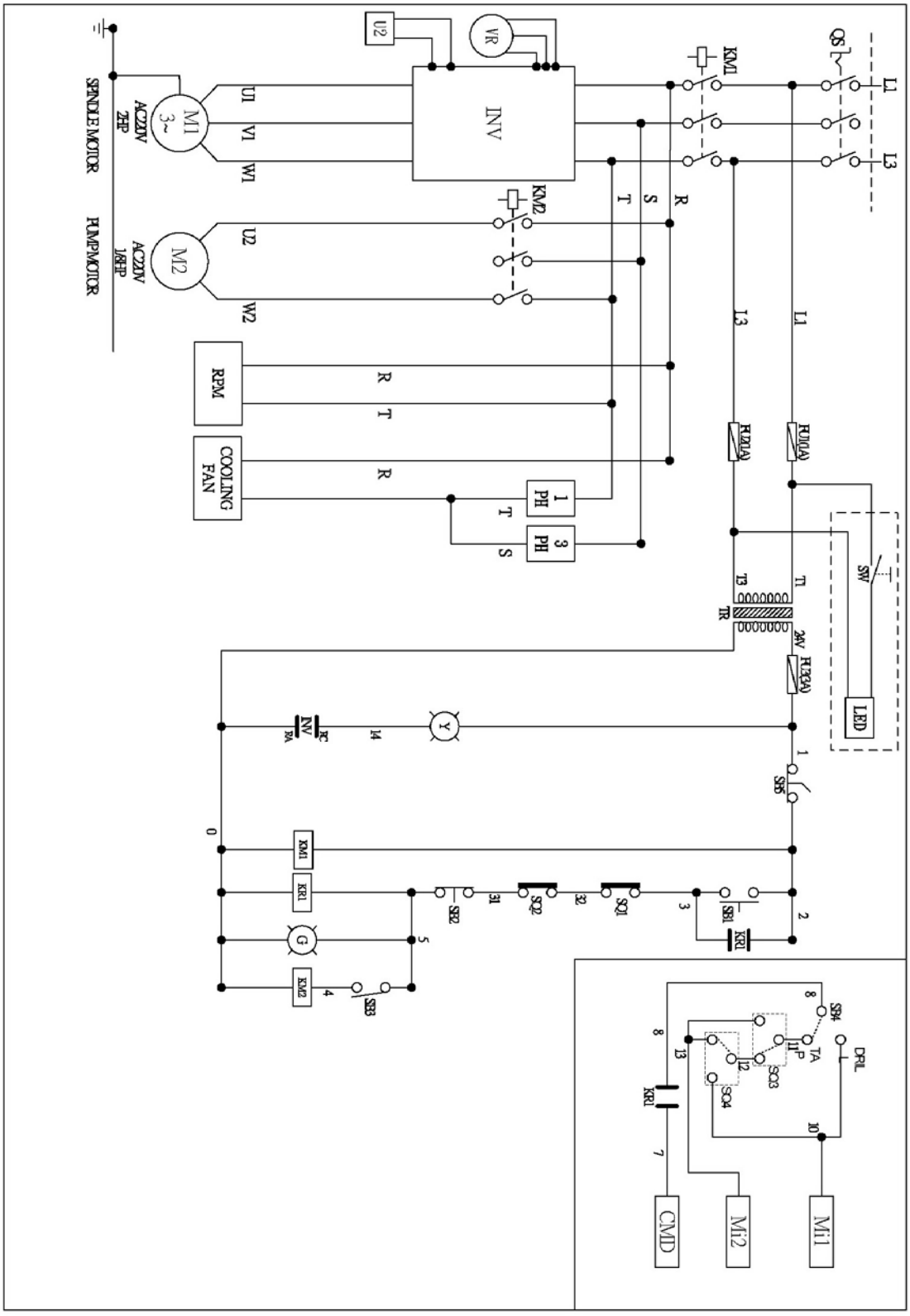
Parts List

Item	Description	Item	Description
1	Base	78B	Rpm Display Unit
1A	Water Tank	78C	Speed Sensor
1B	Base Cover	78-S1	Screw
1C	Pump Motor 240V	78-S2	Screw
1D	Adapter	78-S3	Screw
1E	Clamp	79	Rpm Switch Retainer Plate
1F	Hose	79A	Proximity Switch Retainer Plate
1-S1	Screw	79B	Bush
1-S2	Screw	79-S1	Screw
2Z	Column Set	79-S2	Screw
2-S1	Bolt	79-S3	Washer
2-S2	Spring Washer	81	Pulley Cover
5Z	Table Bracket Set	81A	Rear Pulley Cover
8	Worm	81B	Grab Handles
9	Table Handle	81C	Plate
9A	Handle Bolt	81-S1	Screw
16	Clamp Handle	81-S2	Screw
18	Table	81-S3	Screw
19	Rack	81-S4	Washer
20	Rack Ring	81-S5	Nut
20A	Rack Ring	89	V-Belt
22	Head Body	90	Allen Wrench (L)
22A	Side Cover	91	Allen Wrench (S)
22B	Shaft	92	Micro Switch
22C	Valve	92-S1	Screw
22D	Fixing Plate	101Z	Micro Switch Bracket Set
22E	Nozzle	101-S1	Screw
22-S1	Screw	102	Safety Guard
22-S2	Lead Bolt	102A	Safety Guard Slide
22-S3	Pin	102-S1	Screw
22-S4	Set Screw	102-S2	Washer
22-S5	Nut	102-S3	Lead Bolt
22-S6	Set Screw	103Z	Bracket Rod Set

Item	Description	Item	Description
22-S7	Bolt	103-S3	C-Ring
26	Shifter Bar	104	Emergency Stop Switch
27	Shifter	104-A	On Switch
29L	Slide Bar (L)	104-B	Rpm Switch
29S	Slide Bar (S)	104-C	Change Switch
29-S1	Washer	104-E	Change Switch
31	Motor Base Plate	104-F	Off Switch
31-S1	Spring Washer	104-G	Fault Lamp
31-S2	Nut	108	General Switch
35Z	Feed Shaft Set	108A	Aluminum Strip
40	Feed Handle	108B	Fuse Ste
41	GRIP	108C	Contactor Relay
43	Depth Rod	108D	Electric Controller
43A	Hex Nut	108E	Transformer
43Z	Position Set Bracket Set	108F	Socket
43-S2	Washer	108G	Grounding
43-S3	C Type Buckle	108-S1	Screw
47	Spring Cap	109	Wire Terminal Plate
49	Nut	109A	General Switch Box
52Z	Spindle Set	109B	Switch Bracket
52A	Sleeve	109C	Switch Bracket
52-S1	Bolt	109E	Protection Cap
52-S2	Spring Washer	109-S1	Screw
53	Rubber Washer	109-S2	Screw
54A	Draw Bar	109-S3	Screw
59Z	Spindle Sleeve Set	109-S4	Screw
59A	Lock Washer	110	Steel Bar
62	Snap Ring	111	Micro Switch Plate
63	Pulley Nut	111-S1	Screw
64	Spindle Pulley	111-S2	Washer
65	Taper Arbor	112	Micro Switch Body
66	Drill Chuck	112A	Micro Switch Trigger
67	Drill Shifter	112-S1	Screw
68	Motor	114	Micro Switch
68-S1	Bolt	114-S1	Screw

Item	Description	Item	Description
68-S2	Washer	115	Micro Switch Cover
68-S3	Nut	115-S1	Screw
69	Motor Wire	V105Z	Vise Set
73	Motor Pulley	V105A	Set Slider
76	Wire	V110	Mount Piece
76A	Wire Plug (Option)	803	Switch Cover
78	Speed Controller	803-S1	Screw
78A	Braking Resistor	OGL	Led Work Lamp

ELECTRICAL DIAGRAM



Parts List

Item	Description	Type/Model, Ratings/Technical Data	PCS	Parts No
QS	General On/Off Switch	ZH-C316, AC 440V 16A	1	108
KM1	Contactor for M1	CU-11, AC 220V/24V/12A	1	108D
KM2	Contactor for M2	CU-11, AC 220V/24V/12A	1	108D
TR	Transformer	YLC-101, AC220V/24V/60VA	1	108E
SB1	Push Button	GBF-22, INO AC 125V, 6A	1	104-A
SB2	Push Button	GBF-22, INC AC 125V, 6A	1	104-F
SB3	Selection Switch Pump	GLCS-22, INC AC 125V, 6A	1	104-E
SB4	Selection Switch (Drill/Tap)	GCS-22, INA AC125V,6A	1	104-C
SB5	Emergency Stop	GLEB-22, INC AC 125V, 6A	1	104
INV	Inverter	VFD-E, AC 220V / 1.5kW	1	78
U2	Braking Resistor	QSOJ013, 200W85Ω	1	78A
VR	Speed Adjusting Knob	RV24YN, DC 10V	1	104-B
M1	Motor Main Spindle	834V, 1.5kW / AC 220V/3Ph 6.6A	1	68
M2	Motor Pump	JP-2150, 0.1kW/ AC 220V /1Ph 0.4A	1	1C
COOLING FAN	Motor Cooling Fan	UF-12A38, AC 220V / 1PH	1	68
SQ1	Micro-Switch Chuck Guard	VM5, AC 250V / 10A	1	101A
SQ2	Micro-Switch Cover Guard	QKS8, AC 250V / 12A	1	92
SQ3	Limit Switch Tapping	MJ2-1703, AC 250V / 15A	1	114
SQ4	Limit Switch Reverse	VX-5-1A2, AC 250V / 5A	1	112
FU1, FU2	Fuse Ste	EFB-110N, FUSE-F1, F2-1A	2	108B
FU3	Fuse Ste	EFB-110N, FUSE-F3-3A	1	108B
KR1	Relay	MY2N-GS, 24VAC / 28V 5A	1	108C
Y	Fault	PLN22Y24, AC 30V,0.5A	1	104-G
RPM	RPM Display Unit	RPM108, 220V	1	78B
LED	Led Work Lamp	OGL-L601-L22, 220V /12V 6W	1	OGL

TROUBLESHOOTING

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

SYMPTOM	DISPOSITION
Drill insert in working piece and spindle shaft stop.	1. Push emergency button 2. Turn off the power 3. Use hand to turn the spindle shaft countermarch. Let the tool withdraw from the working piece. 4. Suction the chip on the hole. 5. Turn on power again. 6. Adopt slowly feed make sure in normal condition then recovery the normal feed.
Cutting fluid in abnormal condition and not supplied in adequate quantity.	1. Check the pump is running or not 2. Check if the hose is leaking or not.
Spindle shaft can not running completely.	1. Check the belt tension condition 2. If belt tension is too loose, adjust the belt shifter, otherwise change the aging belt.
Motor do not work	1. Check the power and switch 2. Check the power cable is damaged or not if cable is broken, change it directly.
Spindle shaft has noise	1. Check bearing 2. Check V – belt, if tightly degree over specific tension will cause noise.
Drill oscillation	1. Check chuck condition 2. Make sure the drill is properly fixed in the chuck.
Pump stop suddenly or slow down	1. Impeller is clogged. 2. Overloading protection device of motor starts. 3. Motor failure.

NOTES

NOTES

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