



# OPERATOR'S MANUAL



## HIGH SPEED VARIABLE SPEED DRILL PRESS MODEL: DP-1250VS-HS

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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, (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's 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 attorneys' 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@baileighindustrial.com](mailto:sales@baileighindustrial.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
- Set-up 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 unauthorized 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. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death.**

Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.



**DANGER**



**WARNING**



**CAUTION**

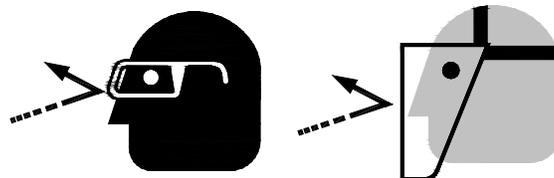


**SAVE THESE INSTRUCTIONS.**  
**Refer to them often and use them to instruct others.**



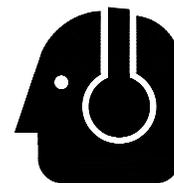
**PROTECT EYES**

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



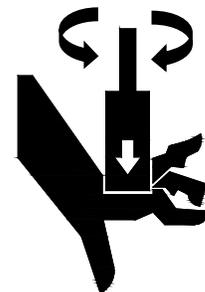
**PROTECT AGAINST NOISE**

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**

**NEVER** place Keep hands, fingers, or any part of your body away from rotating tooling bit.



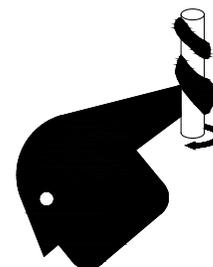
**HIGH VOLTAGE**

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



**ENTANGLEMENT HAZARD – ROTATING SPINDLE**

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





## 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**

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. **Dressing material edges.** Always chamfer and deburr all sharp edges.
7. **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.



8. **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.
9. **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.
10. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
11. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
12. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
13. **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.
14. **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.
15. **Blade adjustments and maintenance.** Always keep blades sharp and properly adjusted for optimum performance.
16. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
17. **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.
18. **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.
19. **DO NOT** touch live electrical components or parts.
20. **Turn off** power before checking, cleaning, or replacing any torch parts.
21. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
22. **DO NOT** bypass or defeat any safety interlock systems.
23. Keep visitors a safe distance from the work area.



### Additional Safety Precautions

- Turn off main power to the machine and wait for the drill bit, or cutting tool to stop turning before removing debris, removing or securing the piece part, or changing the position of the work table.
- Never expose your hands or limbs to the cutting area while the machine is operating.
- When the machine is NOT in use, the drill bit or tool should NOT be rotating.
- Never leave the machine running while unattended. Turn the power OFF. Do not leave the machine until the spindle comes to a complete stop.
- 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.
- Never start the machine before clearing the table of all objects (tools, scrap pieces, etc.)
- Properly lock the drill bit, cutting tool, or sanding drum in the chuck before operating the machine.
- Do not remove any warning signs.
- Check safety equipment, such as safety covers, emergency stop buttons, safety mats, railings, light booms, ramps, and warning signs.
- Make sure electrical cables are well protected from damage. Check insulation periodically for wear.
- Never use the drill press without the swing-away safety guard.
- Make sure the actuator of the limit switch is seated in the detent of the round pad or the machine will not run.





## TECHNICAL SPECIFICATIONS

Table Size	22" x 18.5" (560 x 470mm)
Quill Diameter	2.95" (75mm)
Spindle Nose to Table	36.41" (925mm)
Spindle Nose to Base	48.22" (1225mm)
Spindle Speed High	375 – 4000 rpm
Spindle Speed Low	100 – 1070 rpm
Spindle Taper	MT3 / MT4 optional
Table Slot	.625" (15.8mm)
Tapping Capacity	3/4" (19mm)
Swing	20.8" (530mm)
Drill Capacity	1.25" (32mm)
Spindle Travel	5.9" (150mm)
Column Diameter	4.52" (115mm)
Base Dimensions L x W	27" x 19" (686 x 483mm)
Power	220V, 60hz, 1ph
Main Motor	2hp (1.5kw)
Shipping Weight	847lbs (385kg)
Shipping Dimensions	40" x 25" x 83" (1016 x 635 x 2108mm)

## 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](mailto:sales@baileighindustrial.com), Phone: 920.684.4990, or Fax: 920.684.3944.



**Note:** The photos 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 in one crate. 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 plug in the power cable, or turn the power switch on until the missing parts are obtained and installed correctly.

### Cleaning

Your machine may be shipped with a rustproof waxy oil coating and grease on the exposed unpainted metal surfaces. To remove this protective coating, use a degreaser or solvent cleaner. 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.

**⚠ 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.





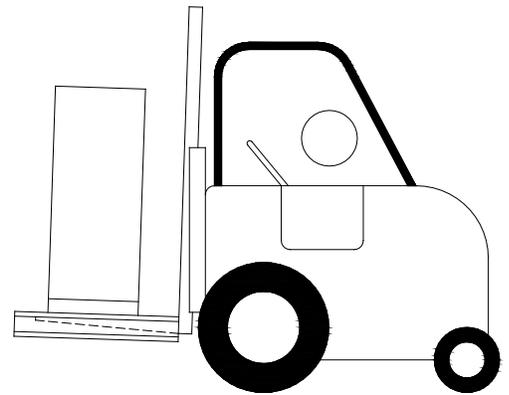
## TRANSPORTING AND LIFTING



**IMPORTANT:** 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.

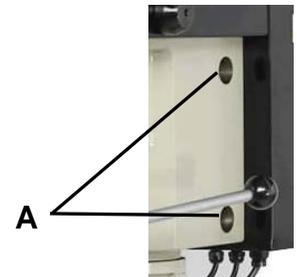
### Follow these guidelines when lifting with truck or trolley:

- 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:

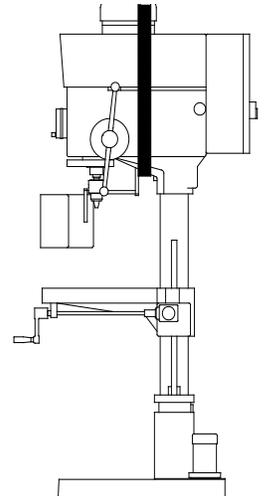
- Always lift and carry the machine with the lifting straps around the head of the machine.
- Take proper precautions for handling and lifting. Remove the coolant valve bracket from the head to avoid damaging it. **DO NOT** let the lift strap damage the guard limit switch or guard support bracket.
- Check to see that the machine head is secured to the column using a 10mm hex wrench on bolts (A).



**IMPORTANT:** Failure to lock the machine head to the column may result in personal injury or machine damage.



- 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, and lower slowly until it touches the floor.



## **INSTALLATION**

### **IMPORTANT:**

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

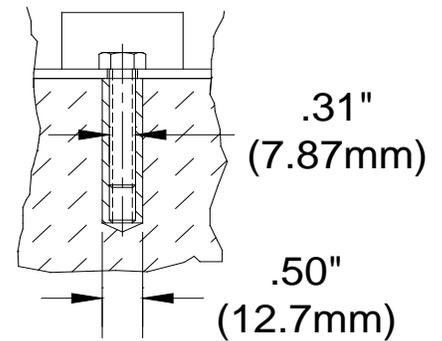
- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for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



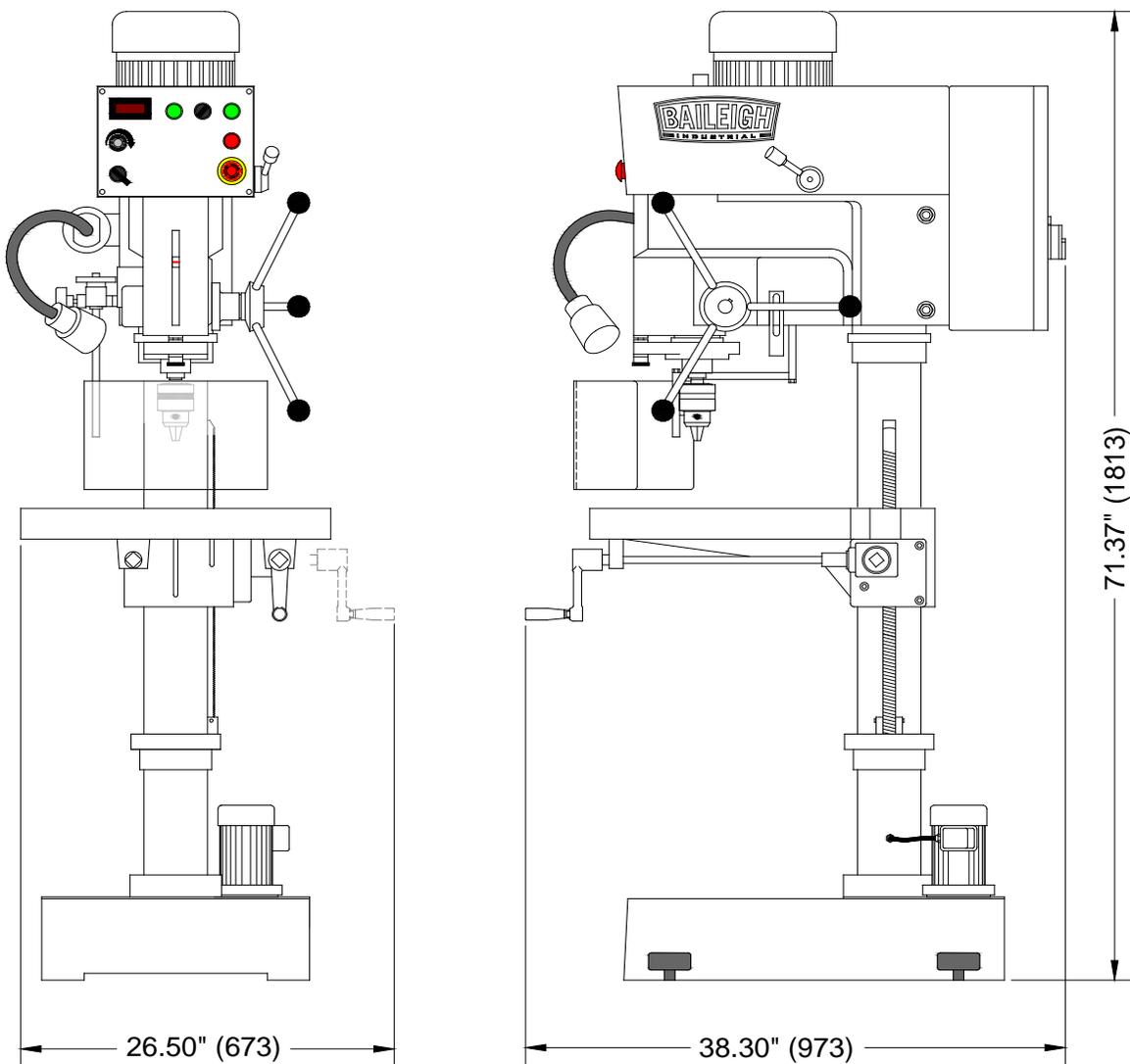
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

### Anchoring the Machine

- Once positioned, anchor the machine to the floor, as shown in the diagram, using bolts and expansion plugs or sunken tie rods that connect through holes in the base of the stand.

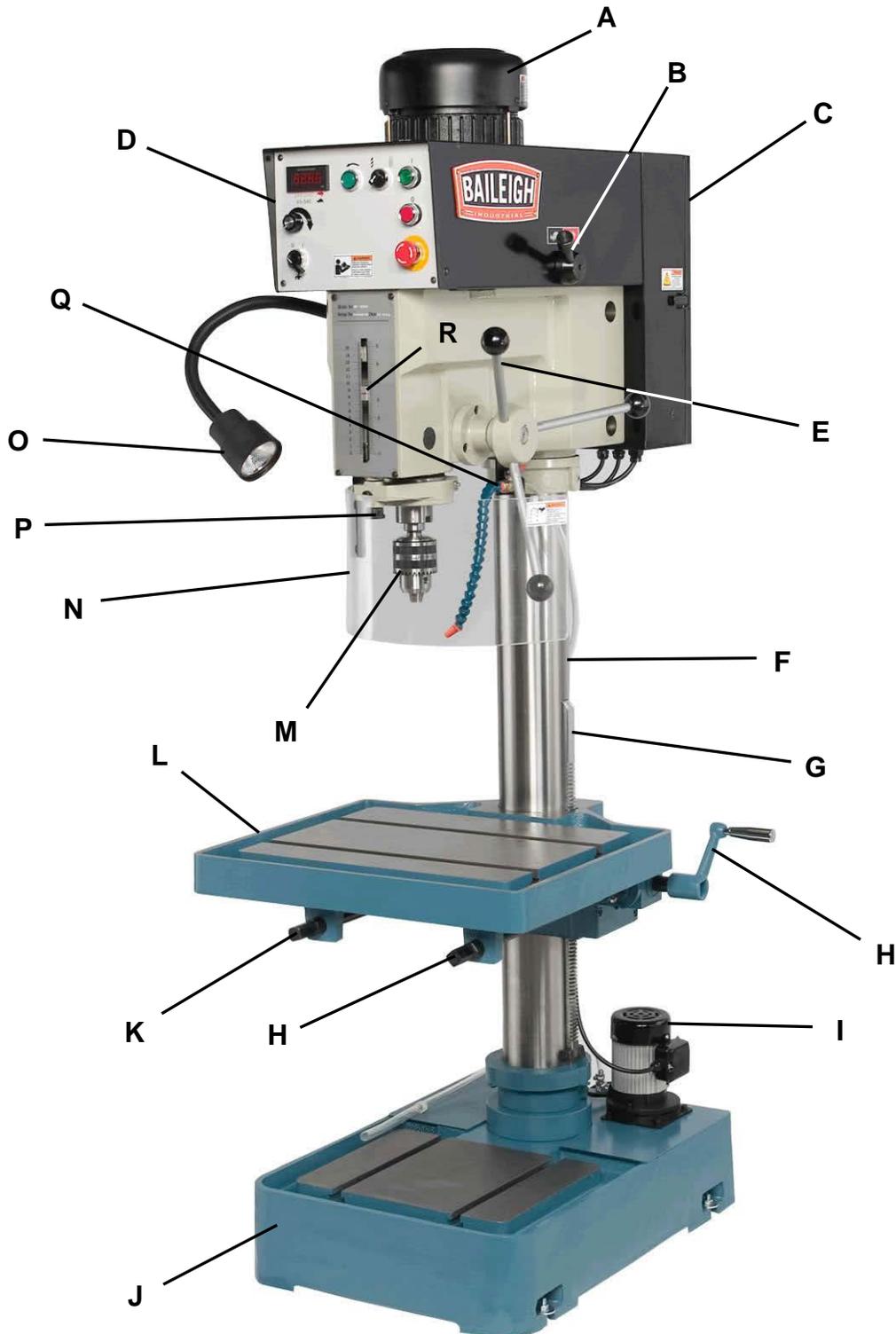


### OVERALL DIMENSIONS



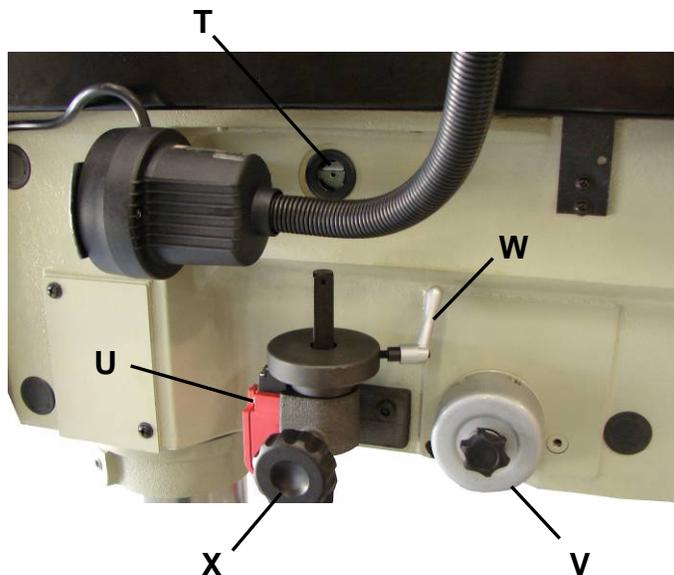


## GETTING TO KNOW YOUR MACHINE





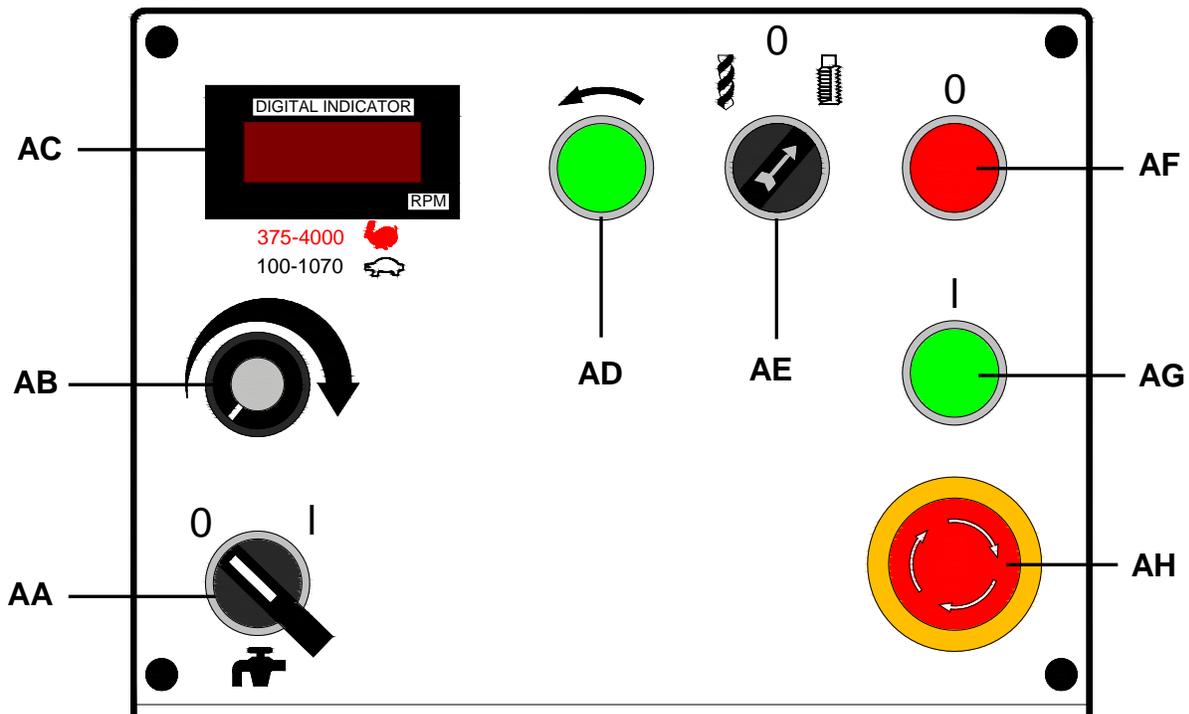
S



A	Motor	Provides power to the chuck
B	2-Speed Hi-Lo	Changes spindle speed RPM. <b>DO NOT</b> change spindle RPM until the spindle has stopped completely
C	Electrical Enclosure	Houses the electrical components
D	Control Panel	Houses the operators controls
E	Down-Feed Handle	Changes down-feed from Auto to Manual
F	Column	Supports the table and head
G	Gear Rack	Engages the table for height adjustment
H	Handle	Table height adjustment at two locations
I	Coolant Pump	Pumps coolant up to the chuck
J	Base	Support for drill press and coolant reservoir
K	Work Table Lock	Secures table when pivoting on column
L	Work Table	Adjustable table with T-slots
M	Chuck <i>(Not Included)</i>	Holds various tooling for drilling and tapping
N	Safety Guard	Adjustable guard with limit switch shut-off
O	Work Light	Provides adequate lighting for work area
P	Depth Scale Lock	Locks the position of the depth scale
Q	Coolant Shut-Off Valve	Controls volume of coolant
R	Depth Scale	Use for setting the depth in manual mode
S	Main Power Disconnect	Turns main power ON-OFF to the drill press
T	Oil Level Gauge	Shows current level of gear oil



U	Limit Switch	Stops machine when guard is swung away
V	Spring Cover	Tensions down-feed handles (DO NOT REMOVE)
W	Guard Knob	Use to hold guard after pivoting sideways
X	Guard Adjustment Knob	Change guard height and lock with knob



AA	Coolant Pump On/Off Switch	Starts the coolant flow for cutting.
AB	Spindle Speed Knob	Changes the speed of spindle rotation.
AC	Digital Indicator	Displays the rate of spindle rotation in RPM.
AD	Reverse Button	Reverses the spindle rotation for tapping only.
AE	Drilling / Tapping Selector Switch	Selects the mode of operation: drilling or tapping.
AF	Stop Button	Stops the spindle motor.
AG	Start Button	Starts the spindle motor. A 10 second wait is required before a machine restart or the machine will not start.
AH	Emergency Stop Button	Stops all machine functions. Turn the switch clockwise (cw) to reset the switch.



B - High / Low Gear Selector - A gear transmission lever that selects Hi or Low speeds.



**IMPORTANT:** Use only while the machine is stopped. Failure to do so will cause damage to the gear system.



### 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. Below the work table are three crankshafts. The two crankshafts (H) control the up /down motion of the table. Always unlock the table with crankshaft (K) before changing the height or rotating it. Then lock the work table to secure in position. The one handle works for all three crankshafts.



### Machine Base

The machine base houses the coolant reservoir and supports the coolant pump (I). The coolant is pumped up to a nozzle where a valve controls the flow onto the tool. The coolant / lubricant enters the table drain and flows back to the reservoir.





## 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.

### Motor Specifications

Your tool is wired for 220 volt, 60Hz alternating current. Before connecting the tool to the power source, make sure the machine is cut off from power source.

### Considerations

- Observe local electrical codes when connecting the machine.
- The circuit should be protected with a time delay fuse or circuit breaker with a amperage rating slightly higher than the full load current of machine.
- A separate electrical circuit should be used for your tools. 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 tool.
- 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 tool 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 tool is properly grounded.
- Repair or replace damaged or worn cord immediately.

### **Extension Cord Safety**

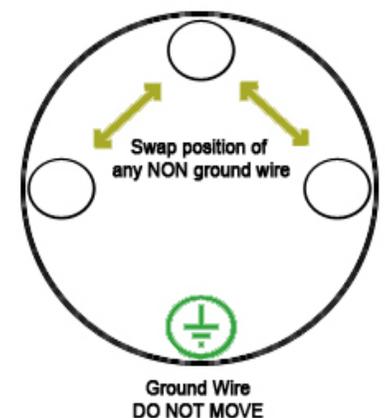
Extension cord should be in good condition and meet the minimum wire gauge requirements listed below:

AMP RATING	LENGTH		
	25ft	50ft	100ft
0-6	16	16	16
7-10	16	16	14
11-12	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.

### **Plug Connection**

1. Have an electrician install the correct plug for the application.
2. Once hooked up, turn on the power supply and start the machine to verify motor direction and operation.
3. Stop the motor and turn OFF the power before continuing and assembly or installation.





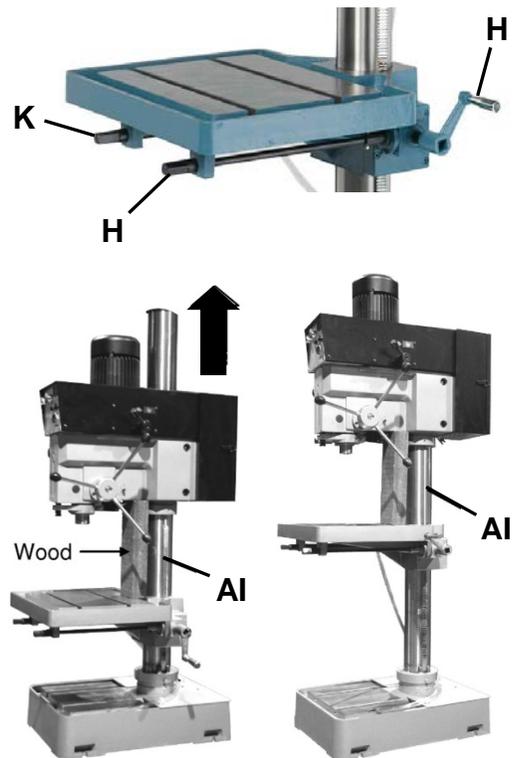
## SET UP AND ADJUSTMENTS

### Adjusting the Machine Head Height

**⚠ WARNING:** Failure to lock the collar can result in personal injury or damage to the machine.

The machine head is lowered for shipping and must be raised before operating.

1. Unlock the table by turning crankshaft (K) counterclockwise (ccw).
2. Place a piece of wood between the table and the machine head. (DO NOT place the wood under the collar (AJ)).
3. Raise the table just enough to hold the block of wood in place.
4. Loosen the two bolts (Z) on the machine head counterclockwise (ccw) with a socket wrench.
5. Turning either crankshaft (H) clockwise (cw) will raise the head.
6. STOP when the top of the machine head is flush with the top of the column. DO NOT allow the column to be below the top of the head.
7. Using the wrench, securely lock the two bolts (Z).
8. Now loosen the two setscrews on collar (AJ), slide it up to the machine head, and tighten the setscrews.
9. Once the machine head is safely secured, remove the block of wood.
10. To lower the head, reverse the above steps.



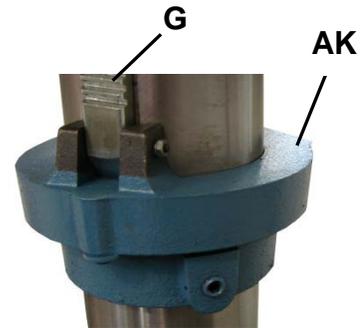
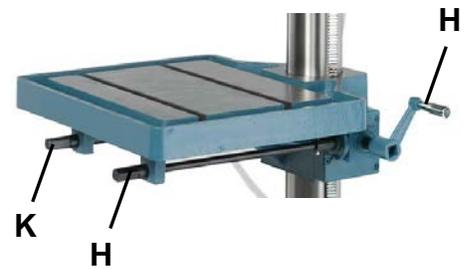


## Adjusting the Gear Rack Height

**⚠ WARNING:** Failure to lock the collar can result in personal injury or damage to the machine.

To raise the table to an adequate working height requires raising of the column gear rack.

1. Lock the table by turning crankshaft (K) clockwise (cw).
2. Unlock column bearing (AK) by loosening the two setscrews.
3. Raise the gear rack (G) by turning crankshaft (H) counterclockwise (ccw).
4. Lock column bearing (AK) by tightening the two setscrews.
5. After unlocking, the table can now be raised or lowered for normal operation.





## OPERATION

**⚠ CAUTION:** Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges. When handling large heavy materials make sure they are properly supported.

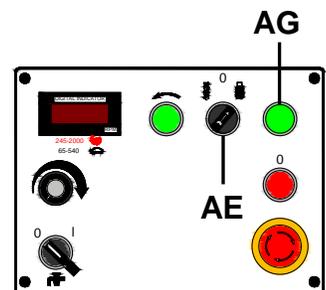
### Drilling

1. Load and secure the piece part to the table.
2. Secure drill bit in the chuck.
3. Unlock the table, adjust to the desired height, and relock the table.
4. Adjust the safety guard up or down as needed.
5. Select the transmission mode with handle (B)



**Important: DO NOT** change transmission spindle selection until the spindle has stopped completely. Switching transmission with the motor on and spindle turn can damage gears.

6. Select drilling mode with selector switch (AE). Selector switch (AE) shown in drill position.
7. Set the drill bit depth to zero position by lowering it to the top surface of the piece part, using the down-feed handles.
8. While holding the zero position, turn the depth scale lock knob (AL) counterclockwise (ccw) to release depth stop knob (P).
9. Rotate Knob (P) to set the drill depth on the scale with indicator (R).
10. Re-tighten lock knob (AL).
11. Start machine by pressing start button (AE).
12. Turn on the coolant selector switch (AA).
13. Begin drilling using the down-feed handles to lower the chuck.





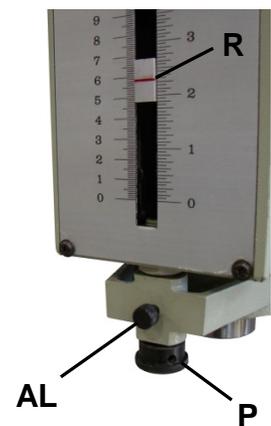
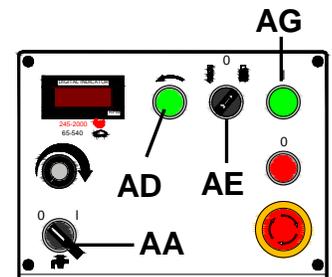
## Tapping

1. Load and secure the piece part to the table.
2. Secure tapping tool in the chuck.
3. Unlock the table, adjust to the desired height, and relock the table.
4. Adjust the safety guard up or down as needed.
5. Select the transmission mode with handle. In general, speeds for tapping will require low transmission (turtle) mode.



**Important: DO NOT** change transmission spindle selection until the spindle has stopped completely. Switching transmission with the motor on and spindle turn can damage gears.

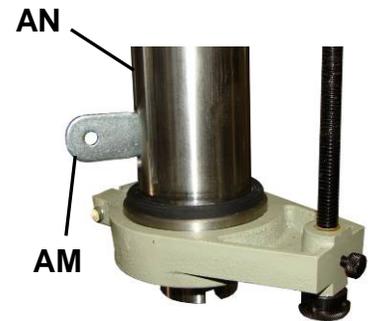
6. Selector switch (AE) shown in tapping position.
7. Set the tap tool depth to zero position by lowering it to the top surface of the piece part, using the down-feed handles.
8. While holding the zero position, turn the depth scale lock knob (AL) counterclockwise (ccw) to release depth stop knob (P).
9. Rotate knob (P) to set the drill depth on the scale with indicator (R).
10. Re-tighten lock knob (AL).
11. Start machine by pressing start button (AE)
12. Turn on the coolant selector switch (AA).
13. Begin tapping using the down-feed handles (E) to lower the chuck. When the tap reaches the bottom of the preset depth, the spindle will automatically reverse direction. You can also reverse the tapping operation at anytime by pressing the green reverse button (AD).





### Removing Tooling From 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 (AM) into the slot (AN) of the quill and tap the end of the drift key with a hammer until the bit or chuck arbor falls out.



### MATERIAL SELECTION

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

When selecting materials keep these instructions in mind:

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



## LUBRICATION AND MAINTENANCE



**WARNING:** 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.
- Do a general cleaning by removing dust and metal chips from the machine.
- Top off the coolant reservoir. (80% of full tank capacity)
- Clean filter screen located on the machine base as often as necessary.
- Check that the guard and emergency stop are in good working order.

### Weekly Maintenance

- Check the oil fill window. It is located on the side of the drill head and should be at least half full at all times.
- Thoroughly clean the machine including the coolant tank. See accessing and cleaning the cooling system.
- 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.
- Clean and grease the sliding surfaces.

### Monthly Maintenance

- Check that all screws on the motor, the pump, and the guard are tight and secure.
- Check that the guard is operating properly.
- There is a grease fitting (V) on the side of the drill head pivot for lubricating the gear shaft. Using a grease gun, inject grease through this fitting.



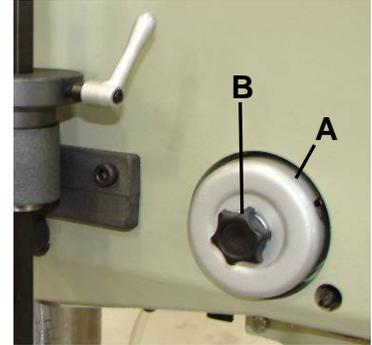
**Note:** Proper maintenance can increase the life expectancy of your machine.



### Return Spring

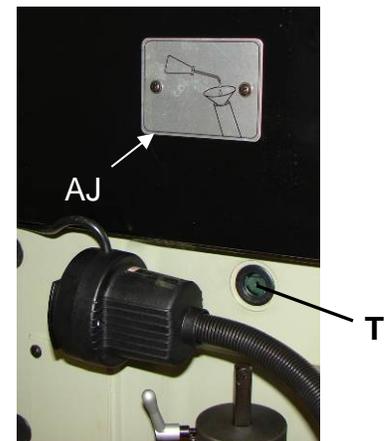
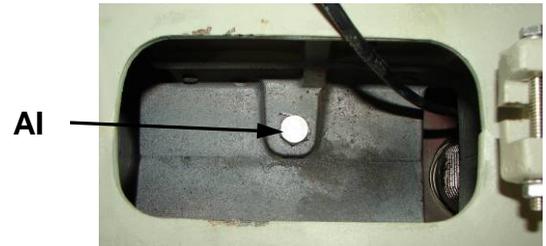
The return spring does the raising of the spindle. It has been preset at the factory and no further adjustments should be attempted. If an adjustment becomes necessary, please contact a service representative at Baileigh Industrial. Ph: (920-684-4990)

The figure at right shows the spring cap (A) which houses the spring and grip knob (B).



### Replacing Gearbox Oil

- 1st Time: After initial operation of 30 hours.
  - 2nd Time: After 1 month of operation
  - 3rd Time: Every 12 months of operation
1. To change the oil you need to remove the cover plate on the underside of the head.
  2. Remove the oil drain plug (AI) visible through the access hole. (Have a drain pan or container handy to collect the used oil). Be sure the gearbox is completely empty before putting the oil drain plug back in.
  3. Remove the oil add cover plate (AJ) covering the oil fill tube and fill the gearbox with fresh SAE 80W-90 gear oil until it reaches the center of the oil sight window (T).



### Oil Disposal

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



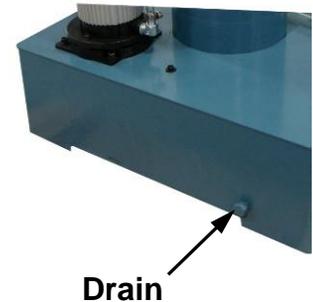
### **Greasing the Machine**

- Grease the gear rack on the column to keep the table moving smoothly.
- Lubricate the spline of the spindle and the teeth of the quill with a #2 grease.



### **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.



### **Accessing and Cleaning the Coolant System**

- Clean the drain screens on the machine base and the drains on the ends of the table.
- Drain and wash out the dirt and debris from the reservoir
- Thoroughly clean the pump and pump inlet
- 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.

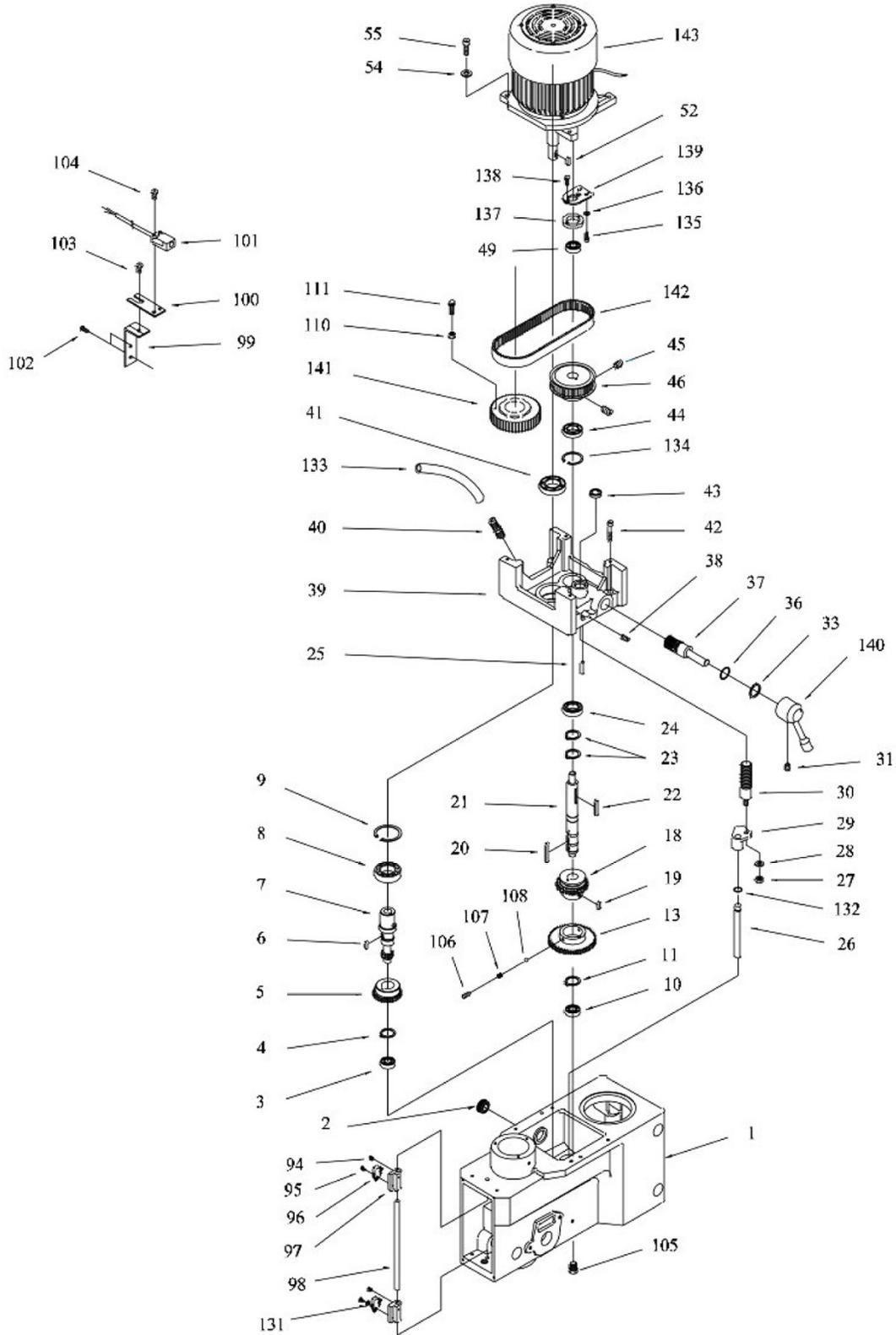
### **Storing Machine for Extended Period of Time**

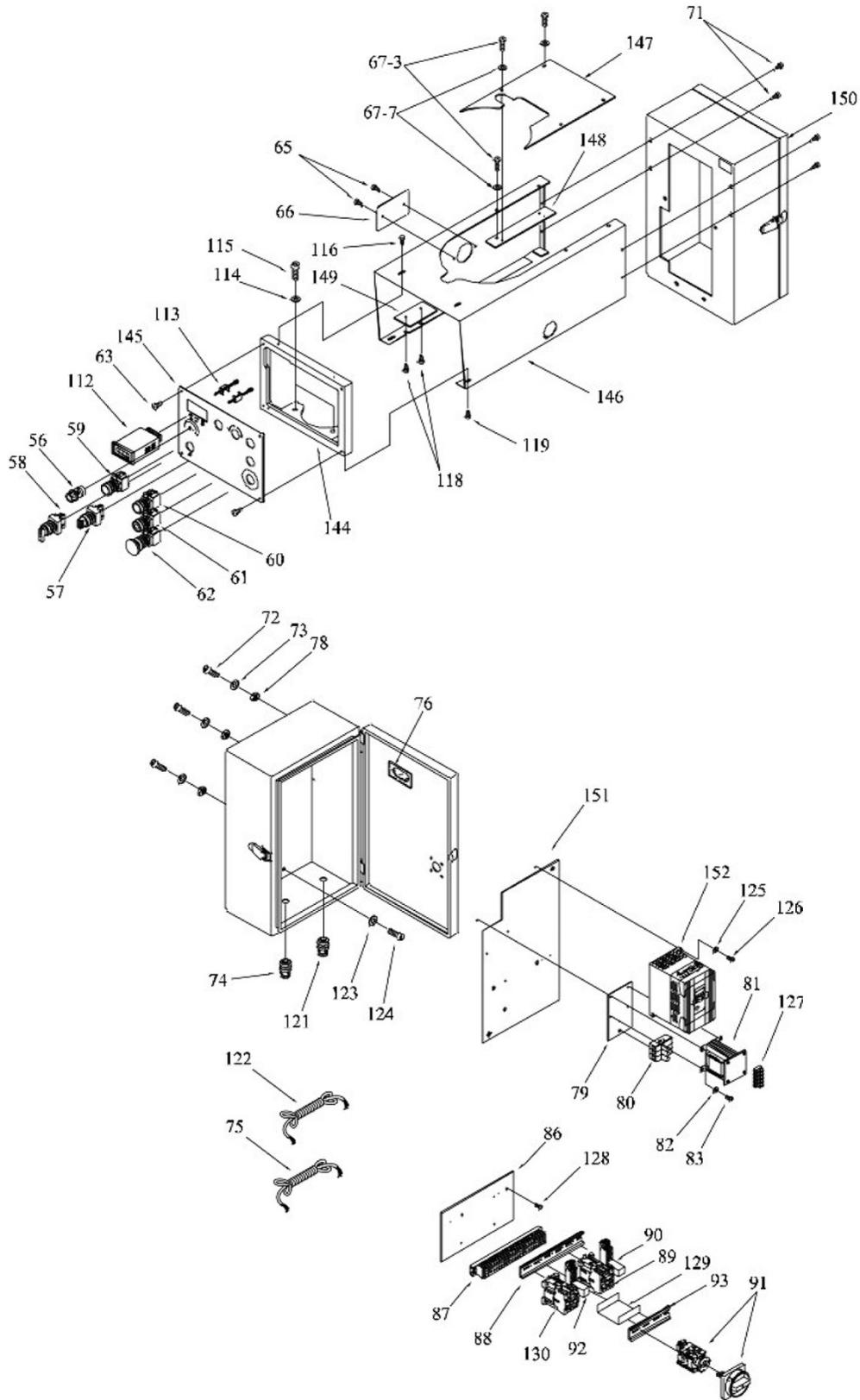
If the drill press is to be inactive for a long period of time, prepare the machine as follows:

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



# HEAD, MOTOR, AND ELECTRICAL PARTS DIAGRAM







**Head, Motor, and Electrical Parts List**

No.	Description	Size	Qty.
1	Head Body		1
2	Oil Window	S-30	1
3	Ball Bearing	6202z	1
4	C-Clip	S-31	1
5	Gear	M=2,T=32	1
6	Key	6x20	1
7	Drive Shaft	M=2,T=13	1
8	Ball Bearing	6007z	1
9	C-Clip	R-62	1
10	Ball Bearing	6002z	1
11	C-Clip	S-25	1
13	Gear	M=2,T=56	1
18	Gear	M=2,T=36	1
19	Key	6x20	1
20	Key	7x55	1
21	Shaft		1
22	Key	7x40	1
23	C-Clip	S-25	2
24	Ball Bearing	6005z	1
25	Taper Pin	5x38	2
26	Rod		1
27	Hex Nut	M10	1
28	Lock Washer	M10	1
29	Speed Change Block		1
30	Screw Bar		1
31	Set Screw	3/8"x3/8"	1
33	Oil Ring	30x17x7	1
36	C-Clip	R-30	1
37	Gear Shift	T-18	1
38	Set Screw	M6x8	1
39	Gear Box		1
40	Oil Filter	3/8"x3/8"	1
41	Oil Seal	62x35x10	1



No.	Description	Size	Qty.
42	Hex Socket Capscrew	M8x35	4
43	Oil Seal	25x5	1
44	Oil Seal	47x25x8	1
45	Set Screw	M8x8	2
46	Drive Pulley		1
49	Ball Bearing	6202z	1
52	Key	6x20	1
54	Washer	M8	4
55	Hex Socket Cap Screw	M8x25	4
56	Emergency Stop Switch		1
57	Stop Switch		1
58	Start Switch		1
59	Selection Switch D/T		1
60	Pump Switch		1
61	Speed Control Knob		1
62	Reversal Switch		1
63	Screw		4
65	Cross Head Screw	3/16"x3/8"	2
66	Oil Filter Cover		1
67-3	Cross Head Screw	3/16"x3/16"	8
67-7	Washer	3/16"	8
71	Cross Head Screw	M6x16	4
72	Hex Socket Cap Screw	5/16"x1"	3
73	Washer	5/16"	3
74	Relief For Power Cable		1
75	Power Cable		1
76	Plastic Plate		1
78	Nut	5/16"	3
79	Insulation Board		1
80	Fuse (0.5A)		2
80	Fuse (2A)	Without CE	1
80	Fuse (3A)	With CE	1
81	Transformer	With CE	1
81-1	Transformer	Without CE	1
82	Washer	M4	4



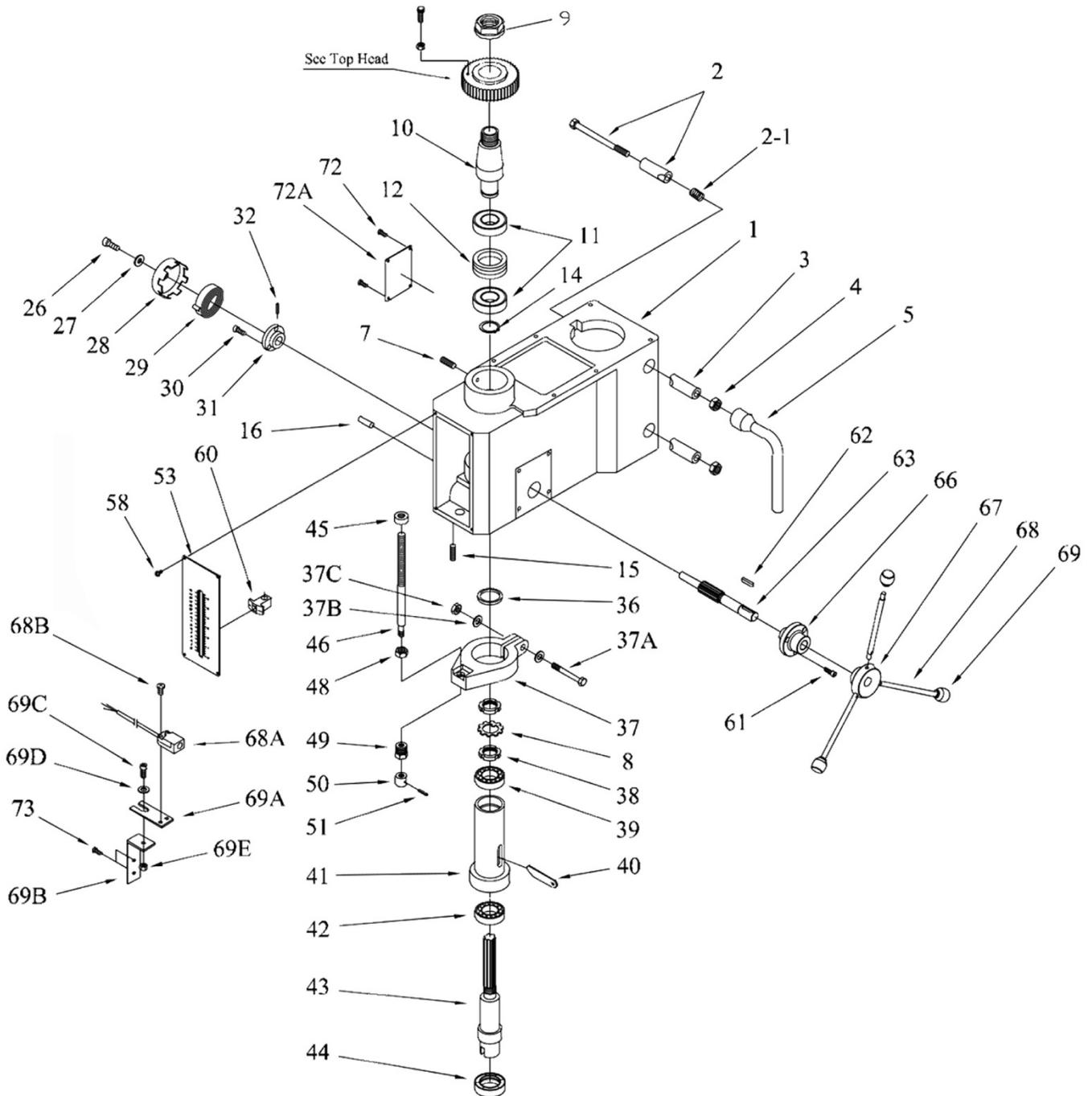
No.	Description	Size	Qty.
83	Screw	M4x20	4
86	Connecting Board		1
87	Terminal Plate		1
88	Aluminum Rail Plate		1
89	Contacto		1
90	Relay		1
91	Safety Switch Assembly		1
92	Relay Without CE		1
93	Aluminum Rail Plate-Sm		1
94	Set Screw	1/4"x1/4"	4
95	Cross Head Screw	M3x16	4
96	Micro Switch		2
97	Micro Switch Bracket		2
98	Micro Switch Support Rod		1
99	Sensor Bracket		1
100	Sensor Support		1
101	Sensor		1
102	Hex Socket Cap Screw	M5x10	2
103	Screw	M4x6	1
104	Screw	M4x20	2
105	Hex Head Plugs	3/8"	1
106	Set Screw	M10x10	2
107	Spring		2
108	Steel Ball	M8	2
110	Hex Nut	3/16	1
111	Hex Socket Cap Screw	3/16"x3/4"	1
112	Digital Display		1
113	Holder Screw		2
114	Washer	M8	2
115	Hex Socket Cap Screw	M8x20	2
116	Screw	M5x8	2
118	Screw	M5x8	4
119	Screw	M5x8	4
121	Cable Relief For Pump	Cable	1
122	Pump Cable		1



No.	Description	Size	Qty.
123	Washer	M8	4
124	Hex Socket Cap Screw	M8x12	4
125	Washer	M4	2
126	Screw	M4x20	2
127	Terminal Plate		1
128	Screw	M4x8	5
129	Safety Switch Bracket		1
130	Contactor For CE Mod.		1
131	Washer	1/8"	4
132	Oil Ring	P-11	1
133	Tube		1
134	C-Clip	R-47	1
135	Hex Socket Cap Screw	M8x12	2
136	Washer	M5	2
137	Bearing Support		1
138	Flat Head Screw	5x12	2
139	Ball Bracket		1
140	Speed Lever		1
141	Drive Spindle Pulley	M=8,T=64	1
142	Belt	680x8m	1
143	Motor		1
144	Plate Bracket		1
145	Control Panel LD		1
145-1	Digital Display		1
146	Pulley Cover		1
147	Top Cover		1
148	Fixed Plate		2
149	Dust Plate		2
150	Electric Control Box		1
151	Electric Base Plate		1
152	Delta Inverter	VFD-B	1



# HEAD AND SPINDLE PARTS DIAGRAM





### Head and Spindle Parts List

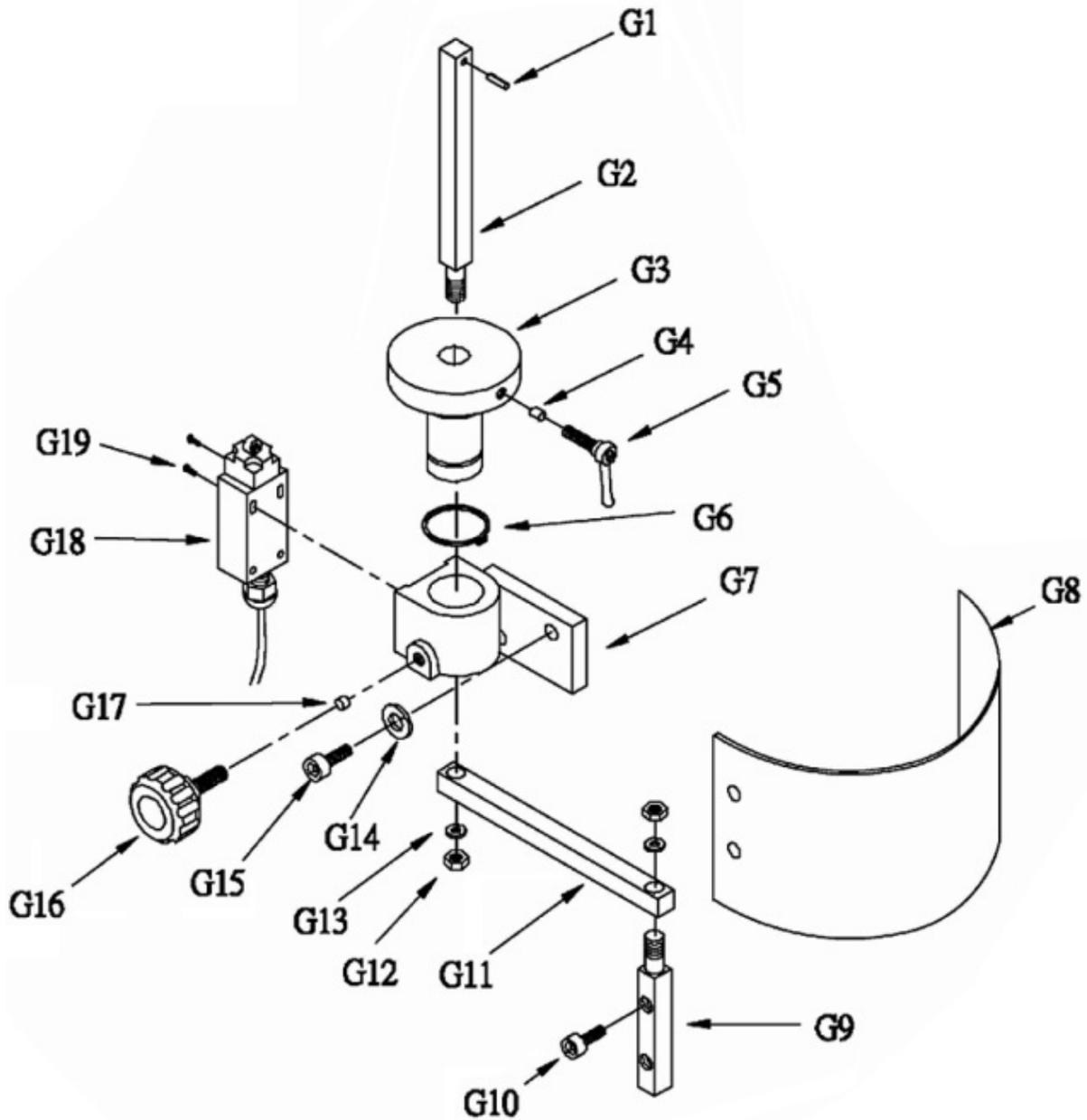
No.	Description	Size	Qty.
1	Head body		1
2	Head body hex. bolt		2
2-1	Spring		2
3	Bushing		2
4	Nut		2
5	Handle		2
7	Set screw	5/16"x3/4"	1
8	Star washer		1
9	Spindle nut		1
10	Spindle taper sleeve		1
11	Ball bearing	6009zz	2
12	Bearing spacer		1
14	C-Clip	S-45	1
15	Screw bushing		1
16	Quill support pin		1
26	Set knob		1
27	Washer	25x2x1/4"	1
28	Spring cover		1
29	Spring		1
30	Screw	3/16"x3/8"	3
31	Spring bracket		1
32	Pin	3X20	1
36	Rubber washer		1
37	Feed base		1
37A	Hex. head screw	1/4"x2"	1
37B	Spring washer	1/4"	2
37C	Nut	1/4"	1
38	Lock nut		2
39	Taper roller bearing	30206	1
40	Drift key		1
41	Quill		1
42	Taper roller bearing	30207	1
43	Spindle shaft	MT3	1



No.	Description	Size	Qty.
43	Option	MT4	1
44	Bearing cap	72.45.10	1
45	Hex. nut		1
46	Scale rod		1
48	Lock nut		1
49	Support base		1
50	Set knob		1
51	Pin	3x15	1
53	Face plate		1
58	Screw	3/16"x5/16"	4
60	Depth scale bracket		1
61	Set screw	3/16"x1/2"	1
62	Key	7x20	1
63	Pinion shaft		1
66	Flange		1
67	Body handle		1
68	Handle rod		3
68A	Sensor		1
68B	Screw	M4x20	2
69	Knob		3
69A	Sensor Support		1
69B	Sensor Bracket		1
69C	Screw	M4x6	1
69D	Washer	M4	1
69E	Hex Nut	M4	1
72	Cover		1
72A	Cover cap screw		2
73	Hex Socket Cap Screw	M5x10	2



## SPINDLE GUARD PARTS DIAGRAM



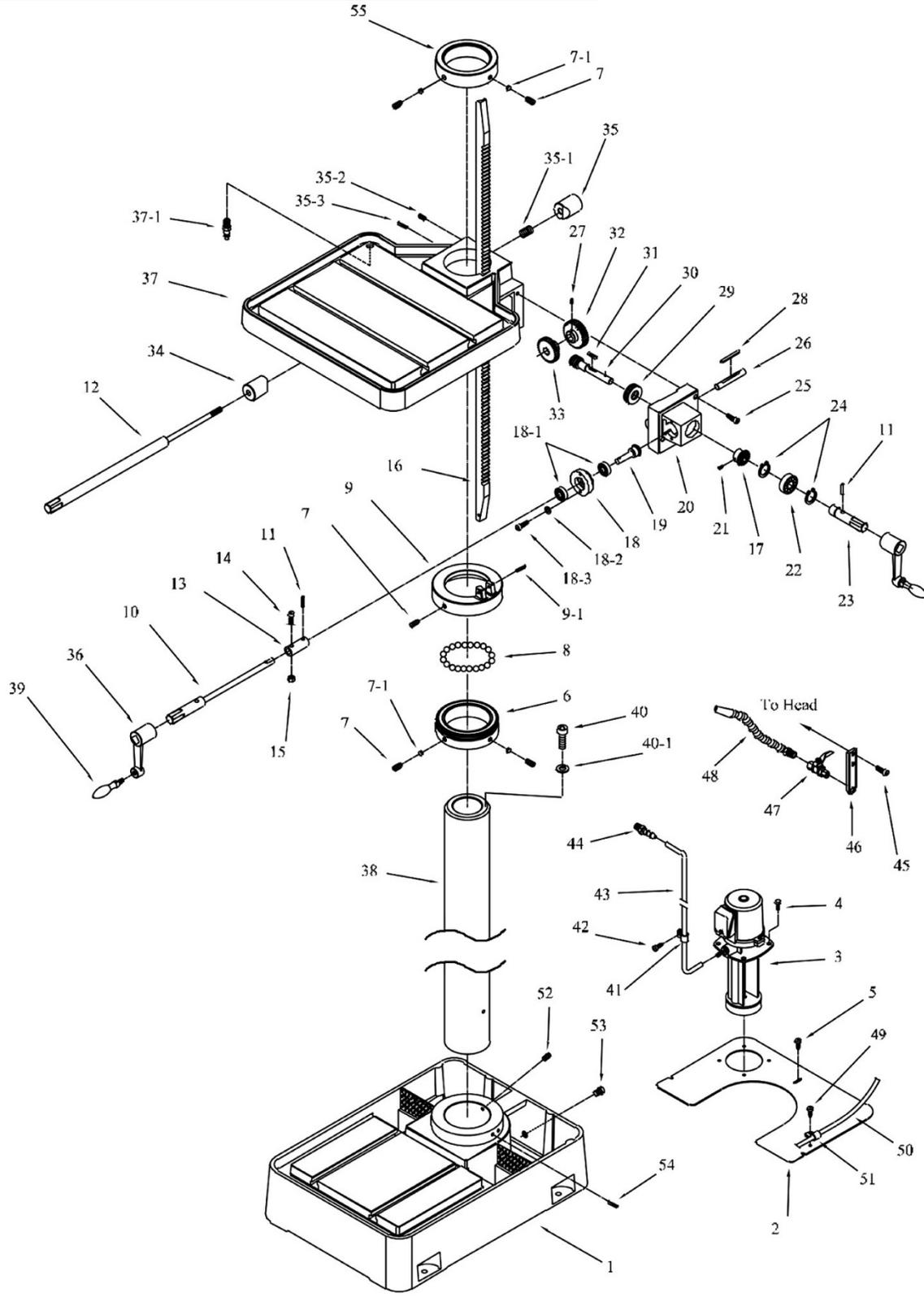


**Spindle Guard Parts List**

No.	Description	Size	Qty.
G1	Roll Pin		1
G2	Vertical Position Bar		1
G3	Pivot		1
G4	Wedge Pin		1
G5	Ratchet Handle Lock Screw		1
G6	External Retaining Ring		1
G7	Mounting Block		1
G8	Plastic Guard		1
G9	Guard Mounting / Pivot Bar		1
G10	Socket Head Cap Screw		2
G11	Horizontal Extension Bar		1
G12	Nut		1
G13	Lock Washer		1
G14	Lock Washer		2
G15	Socket Head Cap Screw		2
G16	Knob		1
G17	Wedge Pin		1
G18	Limit Switch		1
G19	Pan Head Cap Screw		2



# COLUMN, TABLE, AND BASE PARTS DIAGRAM





**Column, Table, and Base Parts List**

Item	Description	Size	Qty.
1	Coolant base		1
2	Cover		1
3	Coolant pump	1/8HP,230V	1
3	Coolant pump	1/8HP,460V	1
4	Screw w/washer	1/4"	2
5	Cross screw	1/4"x1/2"	1
6	Support bearing collar		1
7	Set screw	3/8"x5/16"	4
7-1	Brass block	3/8"	4
8	Steel ball	M10	40
9	Column bearing collar		1
9-1	Spring pin	4x50	1
10	Crank shaft		1
11	Spring pin	4x25	1
12	Connection rod		1
13	Sleeve		1
14	Hex. socket cap screw	1/4"x1-1/2"	1
15	Hex nut	1/4"	1
16	Rack		1
17	Bevel gear		1
18	Flange		1
18-1	Ball bearing	6202zz	2
19	Small bevel gear		1
20	Gear bracket		1
21	Set screw	1/4"x3/8"	1
22	Ball bearing	6005zz	1
23	Crank shaft		1
24	C-Clip	S-25	2
25	Hex socket cap screw	M8x35	3
26	Shaft		1
27	Set screw	M6x6	2
28	Key	5x5x50	1
29	Thrust bearing	51102	1
30	Worm shaft		1
31	Key	4x4x20	1
32	Gear		1
33	Worm gear		1
34	Lock sleeve		1
35	Lock sleeve (thread)		1



Item	Description	Size	Qty.
35-1	Spring		1
35-2	Hex. socket cap screw	M6x25	1
35-3	Spring pin	5x20	2
36	Lift handle crank		1
37	Table		1
37-1	Connector	3/8"	1
38	Column		1
39	Handle		1
40	Screw		1
40-1	Washer		1
41	Clamping		1
42	Cross cap screw	3/16"x3/8"	1
43	Tube		1
44	Connector		1
45	Hex. socket cap screw	M8x20	1
46	Support plate		1
47	ON/OFF valve		1
48	Nozzle		1
49	Cross cap screw	3/16"x3/8"	1
50	Tube		1
51	Clamping		1
52	Set screw	1/2"x1"	2
53	Hex. head plugs	3/8" NPT	1
54	Spring pin	4x50	1
55	Rock collar		1





### Electrical Component Parts List

Item	Description	Data	Qty.
Q	Disconnecting Device	500VAC, 16A, 60Hz	1
FU1	Fuses	500V~10 x 38	1
FU2	Fuses	1A	1
FU3	Fuses	4A	1
KM1 KM2	Contactor	Coil 24V, 50/60 Hz Ui=660V, AC1=25A AC# 220V, 2.2KW 380V, 4.0KW , 4<<a>>	1 1
FR	Over Relay	0.3~0.45A	1
KR	Relay	2P	1
TR	Transformer	AC, 400V, 24V 52VA (1.2A)	1
VFD-B	Variable speed AC motor driver	460V, 4A, 230V, 7A, 1.5KW	1
BR	Braking resistors	200W, 400Ω 200W, 100Ω	1
VR	Adjust-speed switch	0.05Ω Max.	1
SB3 SB2	Push buttons on stop	600V, PL 24V 1a, 250V, 10A, 1b	1 1
SB1	Emergency stop	250V, 10A	1
SB4	Tapping switch	250V, 3A	1
SB5	Reverse switch	600V, 250V, 10A, 1a	1
SB6	Pump switch	600V, 250V, 10A, 1a	1
XB	Terminal block	AC 600V, 20V, 1P, 2X, 10A	23
QS1	Limit switch	AC-15, 3A / 240V	1
QS2	Micro Switch (Reverse)	AC, 125V, 12A	1
QS3	Micro Switch (Forward)	AC, 250V, 6A	1
M1	Motor	220V, 2HP	1
M2	Motor	220V, 1/8HP	1



## Electrical Enclosure Components





## TROUBLESHOOTING



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

FAULT	PROBABLE CAUSE	REMEDY
Drill Press Does Not Run	<ol style="list-style-type: none"> <li>1. Wrong voltage</li> <li>2. Emergency switch has been pressed.</li> <li>3. Electrical enclosure door malfunction.</li> <li>4. Safety guard malfunction because of the limit switch.</li> <li>5. Limit switch faulty</li> </ol> <p>Stop button was pressed.</p>	<ol style="list-style-type: none"> <li>1. Make sure the machine voltage matches the nameplate.</li> <li>2. Turn E-Stop switch clockwise (cw) to reset. Wait 10 sec. for the Delta motor controller to reset. Push the start button.</li> <li>3. Make sure door is closed properly and switched to ON (locked) position.</li> <li>4. Make sure limit switch actuator is in the center detent position.</li> </ol> <p>Replace limit switch.</p> <ol style="list-style-type: none"> <li>6. Wait 10 sec. for the Delta motor controller to reset. Push the start button.</li> </ol>
Excessive Vibration	<ol style="list-style-type: none"> <li>1. Improper belt tension.</li> <li>2. Uneven belt wear. (hard spots)</li> <li>3. Motor or spindle pulley out of balance.</li> <li>4. Bad motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust belt tension.</li> <li>2. Replace belt.</li> <li>3. Balance or replace problem pulley.</li> <li>4. Replace motor.</li> </ol>
Motor Stalls	<ol style="list-style-type: none"> <li>1. Over feeding.</li> <li>2. Dull drill or tap.</li> <li>3. Motor not building up to running speed.</li> <li>4. Bad motor</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce feed rate.</li> <li>2. Sharpen drill &amp; keep sharp.</li> <li>3. Replace or repair motor.</li> <li>4. Replace motor.</li> </ol>
Noisy Operation	<ol style="list-style-type: none"> <li>1. Noisy spline.</li> <li>2. Noisy motor</li> </ol>	<ol style="list-style-type: none"> <li>1. Lubricate spline.</li> <li>2. Check motor bearings or loose fan motor.</li> </ol>
Drill or Tool Heats up or Burns Work	<ol style="list-style-type: none"> <li>1. Excessive speed.</li> <li>2. Chips not clearing.</li> <li>3. Dull tool.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce speed.</li> <li>2. Use pecking operation to clear chips.</li> </ol>



	<ol style="list-style-type: none"> <li>4. Feed rate too slow.</li> <li>5. Failure to use cutting oil or coolant. (on steel.)</li> </ol>	<ol style="list-style-type: none"> <li>3. Sharpen tool or replace.</li> <li>4. Increase feed enough to clear chips.</li> <li>5. Use cutting oil or coolant on steel.</li> </ol>
Drill Leads Off	<ol style="list-style-type: none"> <li>1. No drill spot.</li> <li>2. Cutting lips on drill off center.</li> <li>3. Quill loose in head.</li> <li>4. Bearing play.</li> </ol>	<ol style="list-style-type: none"> <li>1. Center punch or center drill work piece.</li> <li>2. Regrind drill.</li> <li>3. Tighten quill.</li> <li>4. Check bearings and reseal or replace if necessary.</li> </ol>
Excessive Drill Runout or Wobble.	<ol style="list-style-type: none"> <li>1. Bent drill bit or tool.</li> <li>2. Bearing play.</li> <li>3. Drill not seated properly in chuck.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace drill bit or tool. (Do Not attempt to straighten.)</li> <li>2. Replace or reseal bearings.</li> <li>3. Loosen, reseal, and tighten chuck.</li> </ol>
Work or Fixture Comes Loose or Spins	<ol style="list-style-type: none"> <li>1. Failure to clamp piece part or work holding device to table.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clamp piece part or work holding device to table surface.</li> </ol>

### **Troubleshooting the Inverter**

Prior to operating or adjusting any electronic component, Qualified personnel must take the following aspects into consideration:

- Disconnect machine from the power supply.
- DO NOT use bare hands or metal tools to remove or install sensitive electronic parts.
- As residual voltage still exists in the capacitor after the voltage has been turned off, wait until the light disappears from the lighted display before proceeding with any work.
- Visually inspect the electronic circuit board for any defects.
- NEVER connect the alternating current directly to the output connector (U/V/W) of the speed controller.
- The electronic self-diagnosis program can notify you of situations like motor overloading, voltage fluctuations, etc. When the program detects an error, the machine will stop immediately, and the error will be displayed on the inverters digital display. Follow the solutions to correct any errors.



Code	Error Description	Solution
O.C.	<ul style="list-style-type: none"> <li>* The voltage inverter detects that the output current exceeds the normal value.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if motor voltage matches that of the voltage inverter.</li> <li>* Check connection between the motor and the voltage inverter.</li> <li>* Check if the motor is overloaded.</li> </ul>
O.U.	<ul style="list-style-type: none"> <li>* The voltage inverter of the motor is detected with a D.C. high voltage lateral pressure value that exceeds the acceptable range.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if the circuit input voltage matches that of the voltage inverter.</li> <li>* Frequent on/off and forward/reverse directions result in high voltage self-protection.</li> </ul>
O.H.	<ul style="list-style-type: none"> <li>* The touch pole cooling device of the motor voltage inverter indicates an overheat condition.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if the circuit input voltage matches that of the voltage inverter.</li> <li>* Make sure the cooling device is free from dirt and foreign objects.</li> </ul>
O.L.	<ul style="list-style-type: none"> <li>* The frequency converter detected an output exceeding 150% above normal for 1 minute.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if the motor is overloaded. Tooling may be dull. Check for proper sized tooling, gear speed, and feed rate.</li> </ul>
o.c.A o.c.d o.c.n	<ul style="list-style-type: none"> <li>* Electric current is too large during acceleration.</li> <li>* Electric current is too large during deceleration.</li> <li>* Electric current is too large during normal operation.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if the output connection of the motor adjuster is insulated improperly.</li> </ul>
G.F.F	<ul style="list-style-type: none"> <li>* Grounding or safety wire issues.</li> </ul>	<ul style="list-style-type: none"> <li>* Check if grounding is adequate.</li> <li>* Replace safety fuses.</li> </ul>
C.F1~3 or others	<ul style="list-style-type: none"> <li>* Internal EEPROM cannot be read or programmed.</li> <li>* Current sensor error.</li> <li>* U-phase error.</li> <li>* W-phase error</li> </ul>	<ul style="list-style-type: none"> <li>* Replace Variable Frequency Drive</li> </ul>



NOTES



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