



# OPERATOR'S MANUAL

Metal Working



## VARIABLE SPEED DRILL PRESS MODEL: DP-1200VS

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## THANK YOU & WARRANTY

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

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

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

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

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

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



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

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

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

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

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

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

**Summary of Return Policy.**

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

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

**For Customer Service & Technical Support:**

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



## **INTRODUCTION**

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

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

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

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

## **GENERAL NOTES**

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

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

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



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



## IMPORTANT

### PLEASE READ THIS OPERATORS MANUAL CAREFULLY

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



## SAFETY INSTRUCTIONS

### LEARN TO RECOGNIZE SAFETY INFORMATION

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



Follow recommended precautions and safe operating practices.

### UNDERSTAND SIGNAL WORDS

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

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

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

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

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

**DANGER**

**WARNING**

**CAUTION**

**NOTICE**

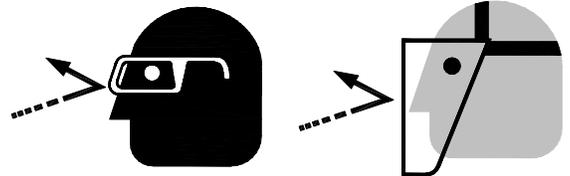


**SAVE THESE INSTRUCTIONS.**  
**Refer to them often and use them to instruct others.**



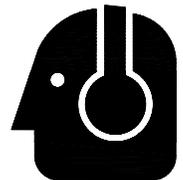
**PROTECT EYES**

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



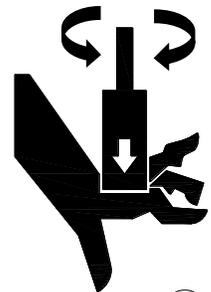
**PROTECT AGAINST NOISE**

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.**



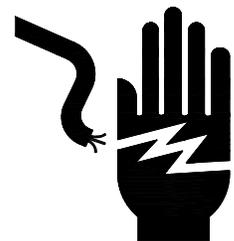
**ENTANGLEMENT HAZARD – ROTATING SPINDLE**

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.



### CALIFORNIA PROPOSITION 65

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



### SAFETY PRECAUTIONS



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

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

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



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

### **Dear Valued Customer:**

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



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

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**
3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
6. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
7. **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 is 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 protection.** Always wear ISO approved protective eye wear when operating machinery. Wear a full-face shield if you are producing metal filings. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specification. Use of eye wear which does not comply with ANSI Z87.1 specification could result in severe injury from breakage of eye protection.
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. **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.
16. **DO NOT** touch live electrical components or parts.



17. Be sure all equipment is properly installed and grounded according to national, state, and local codes.
18. Keep all cords dry and free from grease and oil.
19. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
20. Keep visitors a safe distance from the work area.
21. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
22. **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.
23. Turn off power before checking, cleaning, or replacing drill bits, or making adjustments or servicing the machine.
24. 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.
25. Never expose your hands or limbs to the cutting area while the machine is operating.
26. 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.
27. **Properly** lock the drill bit in the chuck before operating the machine.
28. **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.
29. 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.
30. 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.)
31. **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.
32. 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**

Maximum Drill Capacity	1.0625" (27mm)
Maximum Tapping Capacity	0.5" (13mm)
Depth (Spindle center to Column edge)	11" (279.4mm)
Swing	22" (559mm)
Minimum Distance from Spindle to Table	1.25" (32mm)
Maximum Distance from Spindle to Table	23.5" (597mm)
Maximum Distance from Spindle to Base	44.5" (1130mm)
Quill Diameter	3" (76.2mm)
Spindle Taper	MT3
Chuck Size	0 – .51" (0 – 13mm), JT6
Spindle Travel	6" (152mm)
Spindle Speeds	10 - 2250 RPM
Table Travel	22.25" (565mm)
Table Rotation	360°
Table Size	16.75" x 19" (425 x 482mm)
Table Working Surface	13" x 15" (330 x 381mm)
Base Size	16.5" x 25.75" (420 x 654mm)
Base Working Surface	12.75" x 15" (324 x 381mm)
T-Slot Width	2@ 0.625" (15.875mm)
Column Diameter	4" (102mm)
Machine Dimensions (L x W x H)	34" x 36" x 72" (863 x 914 x 1830mm)
Base Footprint	26" x 16.75" (660 x 425mm)
Power Requirements	220V, 1Ph, 60hz
Drill Motor	2hp (1.5kw) 220V, 3Ph, 60hz, 7A
Coolant Pump	1/8hp (.1kw) 220V, 1Ph, 60hz, .25A
Coolant Tank Capacity	3gal (11L)
Shipping Dimensions (L x W x H)	60" x 44" x 83" (1524 x 1118 x 2108mm)
Net Weight	583lbs. (265kgs.)
Shipping Weight	705lbs. (320kgs.)
Based on a material tensile strength of *60000 PSI – mild steel	



## TECHNICAL SUPPORT

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

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



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



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



## UNPACKING AND CHECKING CONTENTS

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

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

### Cleaning

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

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

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

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



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



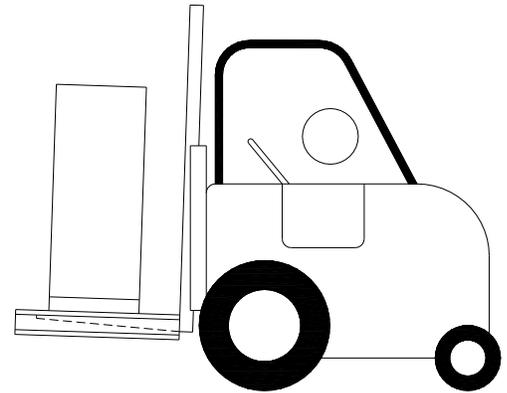


## TRANSPORTING AND LIFTING

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

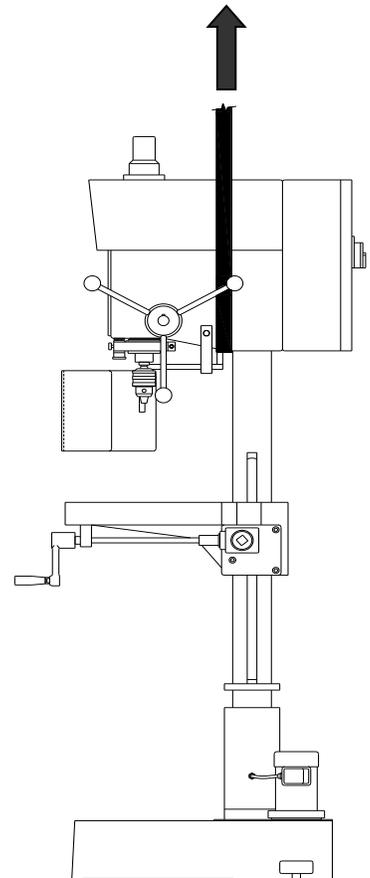
### **Follow these guidelines when lifting with truck or trolley:**

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



### **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

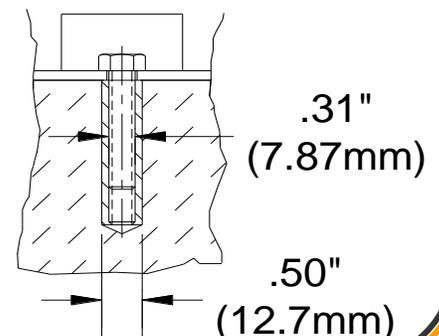
### **IMPORTANT:**

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.

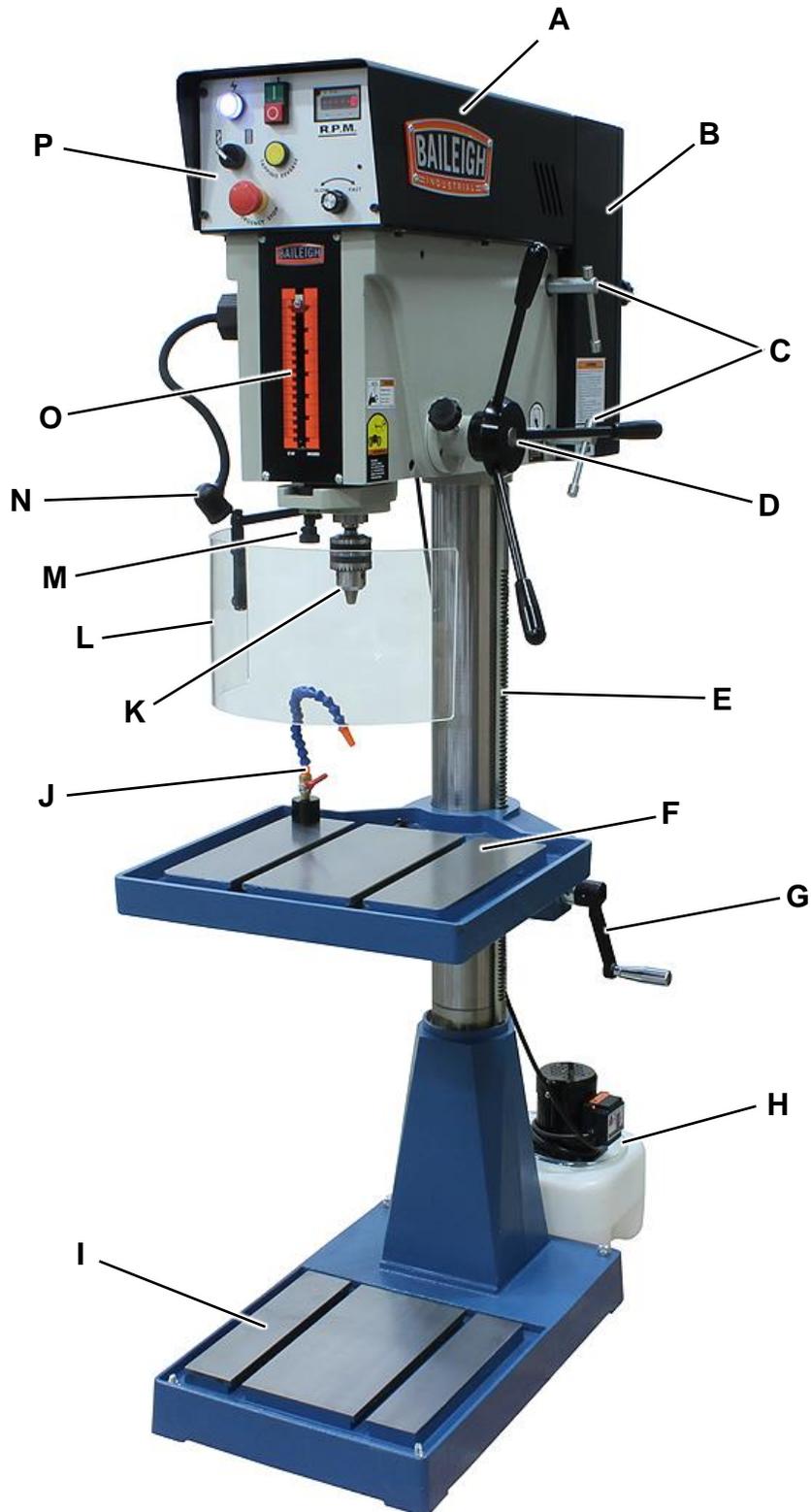
### Anchoring the Machine

- 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

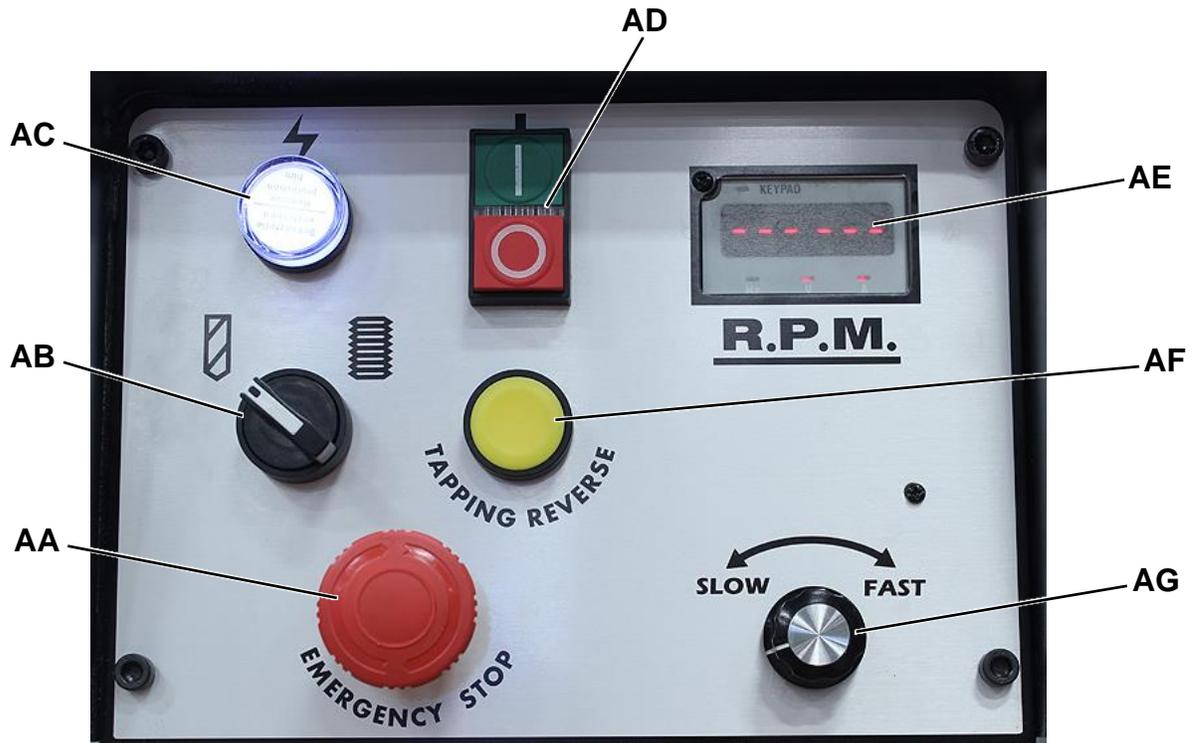




A	Motor Cover	Contains the motor and drive components
B	Electrical Enclosure	Houses the electrical components
C	Head to Column Locks	Loosen and tighten to lock the head to the column. The head can rotate 180° in each direction from center. ALWAYS lock the head secure before operations.
D	Down - Feed Handle	Controls up-down movement of the spindle
E	Column with Gear Rack	The column supports the table and head, The gear rack engages the table for height adjustment.
F	Work Table	Adjustable table with T-slots
G	Crank Handle	Loosen the column clamping nut and then crank the handle to adjust the table height.
H	Coolant Pump	Pumps coolant to the chuck.
I	Base	Supports the drill press.
J	Coolant Nozzle W/Valve	Magnetically mounted coolant nozzle and flow control valve. May be placed as needed to direct coolant flow to the work area.
K	Chuck	Holds various tooling for drilling and tapping.
L	Safety Guard	Adjustable guard with limit switch shut-off
M	Depth Stop Knob	Moves the depth stop up and down
N	LED Work Light	Magnetically mounted work light provides additional light directly toward the work area.
O	Depth Indicator	Used for setting the drill or tap depth
P	Control Panel	Houses the operating controls
Q	Guard Knob	Use to hold guard after pivoting sideways



R	Limit Switch	Stops the machine if the guard is in an open position
S	Guard Adjustment Knob	Change guard height and lock with knob
T	Quill Spring Adjuster	GRASP FIRMLY. Pull out and rotate 90 at a time to increase or decrease the spring tension on the quill retractions spring.



AA	Emergency Stop Button	Stops all machine functions. Turn the switch clockwise (cw) to reset the switch.
AB	Drilling / Tapping Selector Switch	Selects the mode of operation: drilling or tapping.
AC	Power Indicator Lamp	Illuminates when power is on at the control panel.
AD	Start Button (Top, Green)	Starts the spindle motor.
AD	Stop Button (Bottom, Red)	Stops the spindle motor.
AE	Digital Indicator	Displays the rate of spindle rotation in RPM.
AF	Tapping Reverse Button	Manually reverses the spindle rotation for tapping only. Normal operation will use the depth stop to reverse the spindle during tapping.
AD	Spindle Speed Knob	Changes the speed of spindle rotation.



### **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 5/8" or M16 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 5/8" or M16 bolts.

### **Coolant Pump and Tank**

The coolant pump and tank are free standing and may be positioned as needed within the length of the power cord and hoses. The nozzle is mounted magnetically so that it may also 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.

### Mount Drill Chuck And Arbor

1. Be sure spindle taper, arbor taper and chuck taper are clean and dry.
2. Insert arbor into spindle, push arbor into spindle and twist arbor slightly to release air trapped in taper.
3. Mount chuck onto arbor, push chuck over arbor and twist chuck slightly to release air trapped in taper.
4. Be sure chuck and arbor are securely mounted.

### Coolant Pump and Tank

1. Unwrap the coolant pump and place the tank assembly on the floor (typically at the back of the base) or on the base of the drill press.
2. Connect the drain hose to the bottom corner of the work table.
3. Route the cord and the hoses from the work table to the tank.
  - a. Route the power cord and hoses so that they will NOT become entangled in the machine in any way.
  - b. Route the power cord and hoses in a way that does NOT create a trip hazard.
4. Fill the tank with the desired coolant to be used.



## **Work Lamp**

The LED work lamp is a separate free-standing unit which requires its own power supply.

The power supply may be 100VAC to 220VAC.

1. Using the screws included with the lamp, mount the lamp to the magnetic base.
2. Position the lamp on a flat surface of the drill press as desired. This is typically on the left side of the drill head.
3. Route the cord from the lamp to the power supply. 100VAC to 220VAC. (The cord is supplied with a molded NEMA5-15 plug. This may be cut off and replaced with a NEMA6-15 if it is desired to connect to 220VAC.
  - a. Route the power cord so that it will NOT become entangled in the machine in any way.
  - b. Route the power cord in a way that does NOT create a trip hazard.
4. Using the flexible arm, position the lamp head to direct the light to the work source.



***NOTICE:*** Never allow the power cord to become entangled with the machine. Specific areas to be aware of include but are not limited to the spindle the quill feed handle and the spindle guard.



## ELECTRICAL

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

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

### Power Specifications

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

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

### Considerations

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

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



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

**Extension Cord Safety**

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

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

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

**Power cord connection:**

1. 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.
4. Turn the switch OFF when the machine is not in operation.

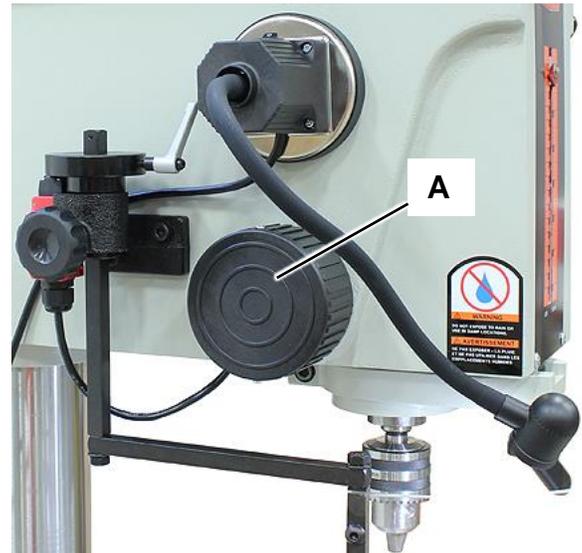


## MACHINE ADJUSTMENTS

### Quill Spring Adjustment

The quill spring may be adjusted to suit the operators needs based upon the operation and tooling being used. This may be most noted during tapping functions for the retract operation during tapping. The spring will also weaken over time and tightening will be needed to fully retract the quill.

**NOTICE:** *The adjustment knob WILL be under a spring load. Grasp the knob firmly to avoid the knob spinning uncontrolled. If the knob does slip and spin, simply twist the knob to add tension back into the spring.*



1. Firmly grasp the knob (A) and pull out away from the drill head.
2. Turn the knob in 90° increments counterclockwise (CCW) to increase the spring tension, and clockwise (CW) to remove spring tension.
3. Press the knob into the drill head at 90° intervals to lock the adjustment.
4. After each 90° interval, test the retraction of the quill. When properly set, the spring will fully retract the quill including the chuck and tooling with the least amount of tension required to do so. This will minimize the free spin speed of the quill feed handle if the handle is accidentally released when the quill is lowered.

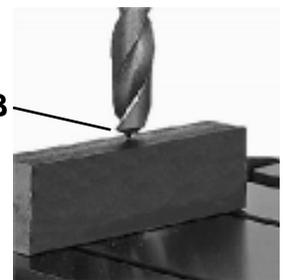


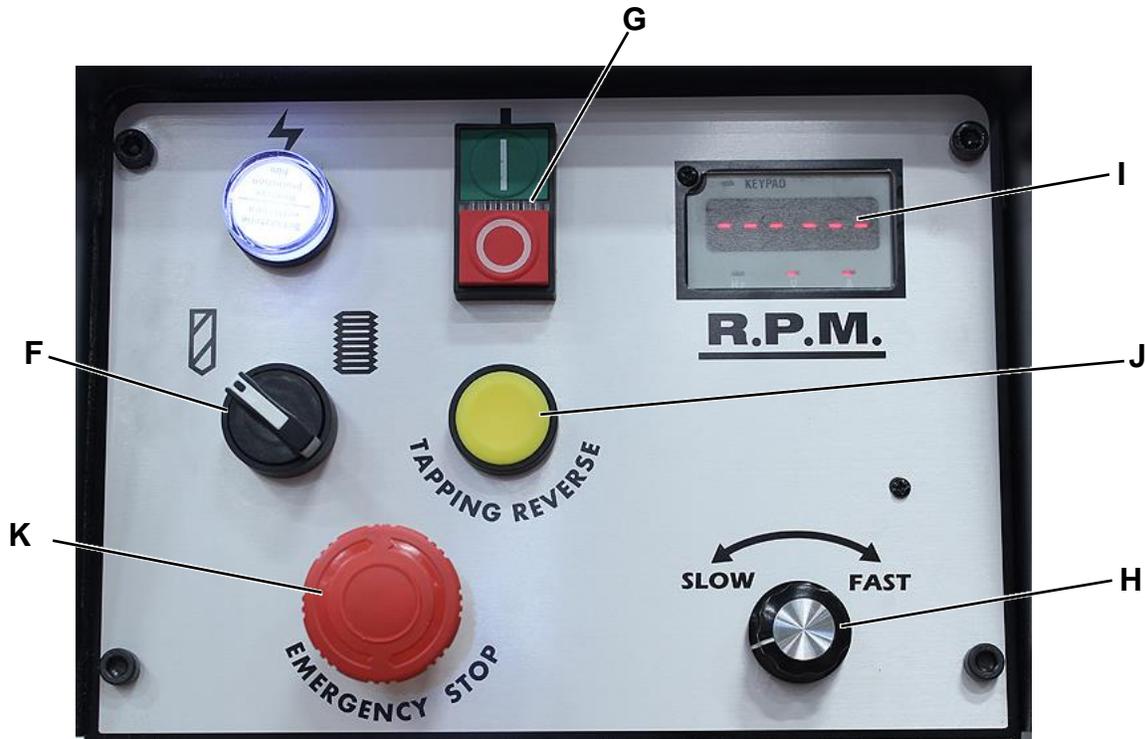
## OPERATION

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

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.) The quill lock (C) may be used (tightened) to hold the quill in this position.
6. Rotate knob (D) to set the drill depth on the scale with indicator (E).
7. If used, release the quill lock (C) and allow the quill to raise to the full up position.





8. Select either the drilling or tapping mode with selector switch (F).
9. Press green start button (G) to begin spindle rotation.
10. Spindle speed is set with knob (H) and can be read on the digital indicator (I).
11. Turn ON the coolant by using the push button switch on the left side 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, or when the Tapping Reverse (J) button is pressed. 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 pressing the reverse button (AB).

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

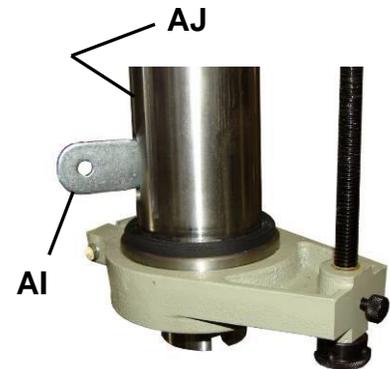


**IMPORTANT:** In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the E-STOP button (K). Twist the button clockwise (cw) to reset.



### 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.



### LUBRICATION AND MAINTENANCE



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

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

- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.



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

#### Lubrication

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

#### 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.

### **Greasing the Machine**

1. Grease the gear rack on the column to keep the table moving smoothly.
2. Lubricate the spline of the spindle and the teeth of the quill with a High-performance Multi-Purpose Grease.
3. Grease the down-feed and spindle gears. Access them by removing the perforated screen.





### **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.

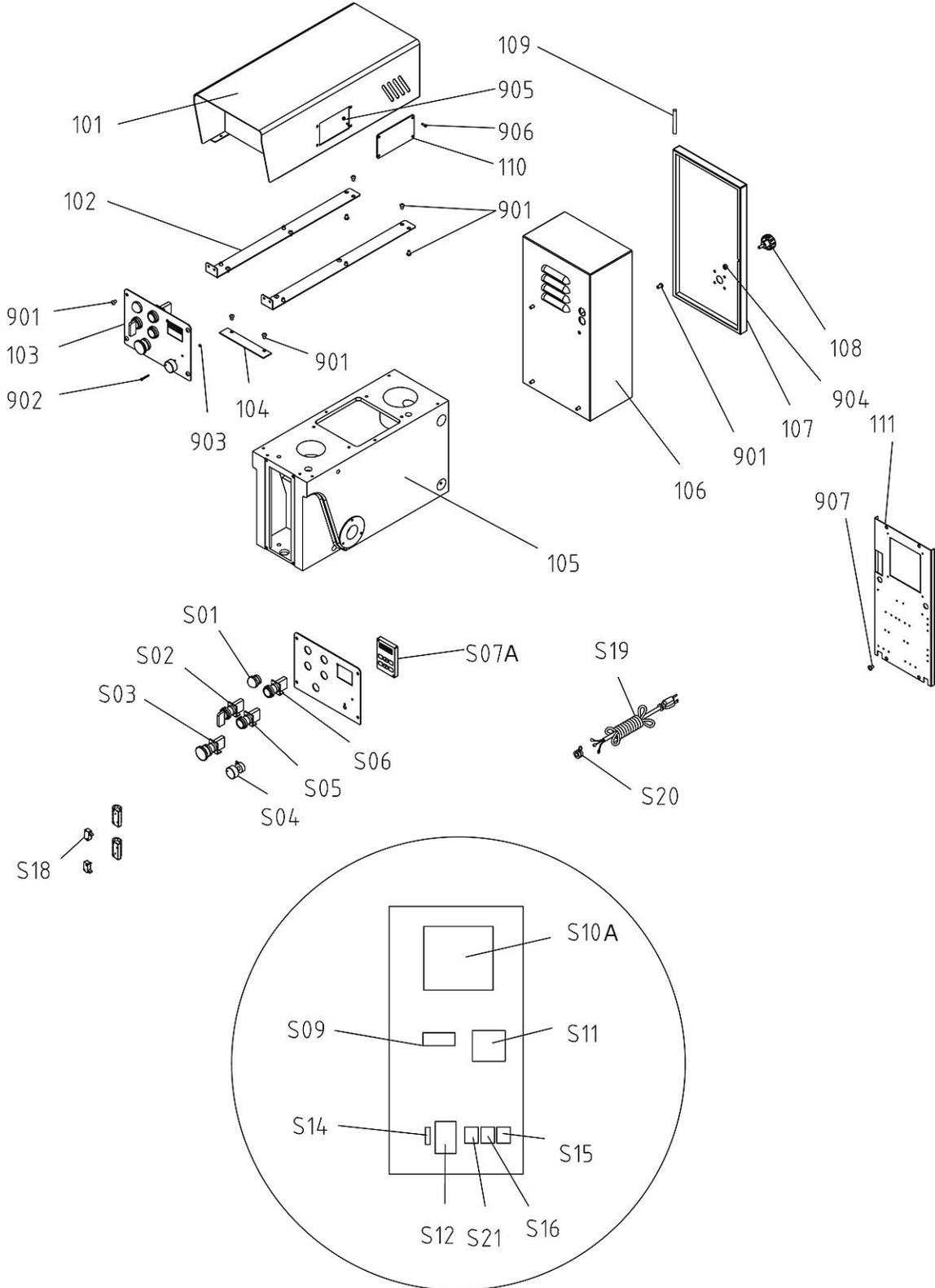
### **Storing Machine for Extended Period of Time**

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.



# HEAD CONTROL PARTS DIAGRAM





## Head Control Parts List

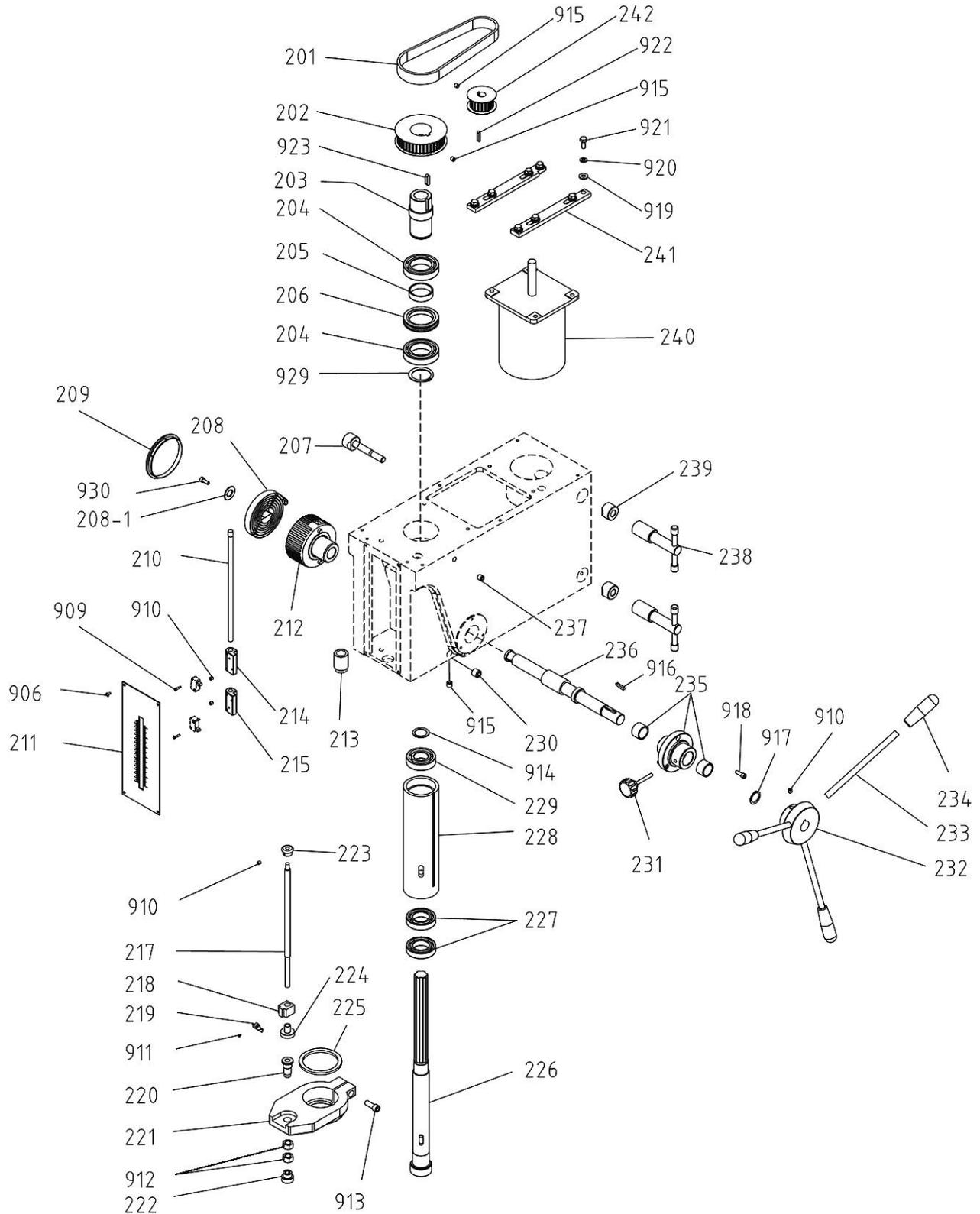
Item	Item	Description
101	DP1200VS-101	Pully Cover
102	DP1200VS-102	Cover Base R/L
103	DP1200VS-103	Switch Table
104	DP1200VS-104	Cover Base
105	DP1200VS-105	Head
106	DP1200VS-106	Control Box
107	DP1200VS-107	Door
108	DP1200VS-108	Knob Bolt
109	DP1200VS-109	Hinge Pin
110	DP1200VS-110	Panel
111	DP1200VS-111	Board
901	DP1200VS-901	Cap Screw
902	DP1200VS-902	Phillips Head Screw
903	DP1200VS-903	Nut M3
904	DP1200VS-904	Nylon Nut
905	DP1200VS-905	Hex Nut
906	DP1200VS-906	Phillips Head Screw 3/16"
907	DP1200VS-907	Phillips Head Screw 1/4"
S01	DP1200VS-S01	W - Power Indicator Light
S02	DP1200VS-S02	SA1 – Drill/Tap Selector Switch
S03	DP1200VS-S03	SB1 – E-Stop Button
S04	DP1200VS-S04	VR102 - Variable Resistor (Speed Control)
S05	DP1200VS-S05	SB3 – Tapping Reverse Button, Yellow
S06	DP1200VS-S06	SB2 – On/Off Push Button Switch w/Light
S07		RM5G Inverter Display Panel (Replaced by RM6S, Item S10A)
S07A	DP1200VS-S07A	Motor Inverter Display Panel (part of Inverter)
S09	DP1200VS-S09	Terminal Block 3P
S10		RM5G Inverter Motor Controller (Replaced by RM6S, Item S10A)
S10A	DP1200VS-S10A	INV – AC220V Motor Controller RM6S
S11	DP1200VS-S11	TR – Transformer
S12	DP1200VS-S12	KM – Contactor
S14	DP1200VS-S14	FU1 – Fuse
S15	BB7216M-RELAY	Relay, MY2-10, 5A 220VAC



Item	Item	Description
S16	BB7216M-RELAY	Relay, MY2-10, 5A 220VAC
S18	DP1200VS-S18	Limit Switch
S19	DP1200VS-S19	Power Cord
S20	DP1200VS-S20	Strain Relief
S21	BS20SA-D24	Relay, 4p MY4N-J, 24Vcoil, 3A 250VAC



## LOWER HEAD PARTS DIAGRAM





**Lower Head Parts List**

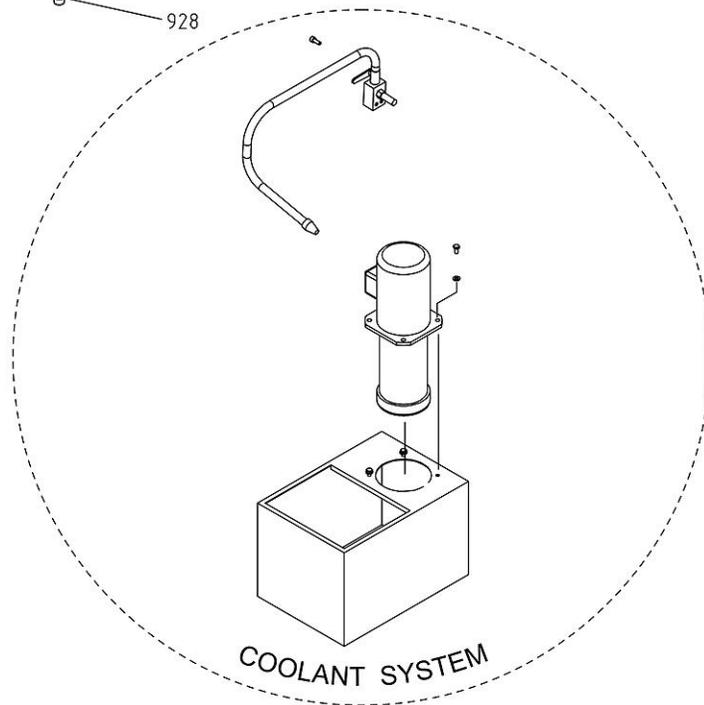
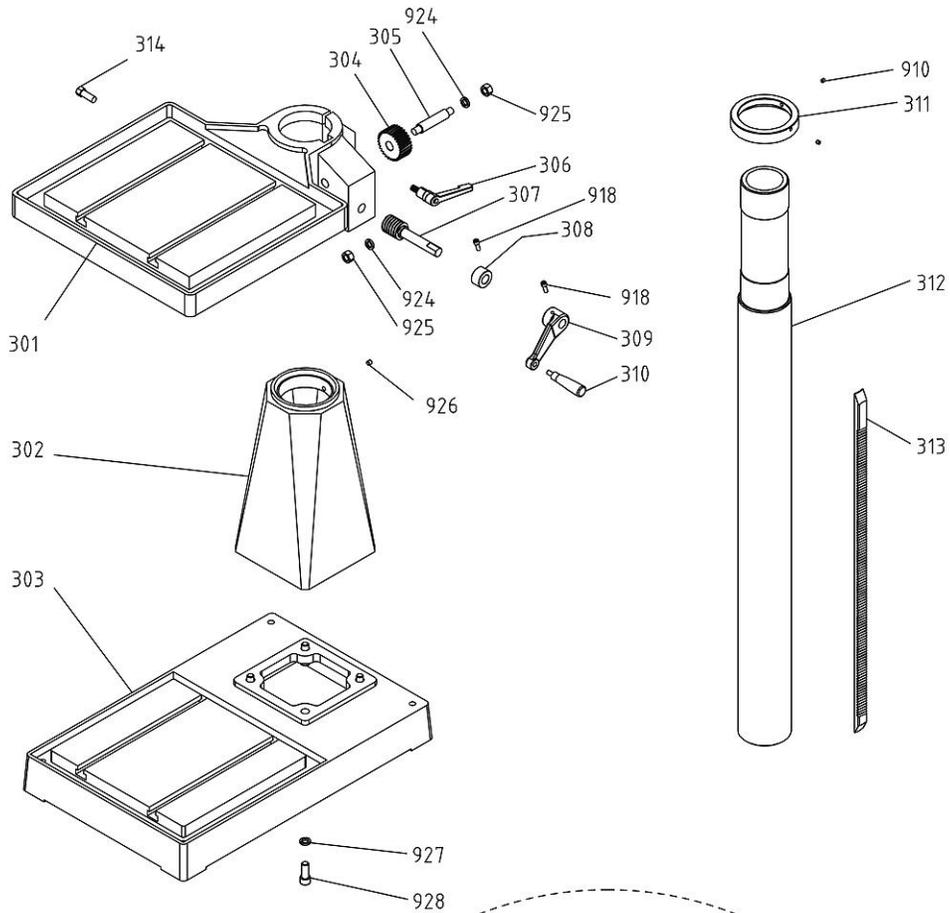
Item	Item	Description
201	DP1200VS-201	Belt
202	DP1200VS-202	Pully
203	DP1200VS-203	Shaft
204	DP1200VS-204	Bearing 6009ZZ
205	DP1200VS-205	Space (I)
206	DP1200VS-206	Space (O)
207	DP1200VS-207	Aluminum Sheath (M)
208	DP1200VS-208	Spring
208-1	DP1200VS-208-1	Shaft Cover
209	DP1200VS-209	Spring Cover
210	DP1200VS-210	Shaft
211	DP1200VS-211	Plane
212	DP1200VS-212	Spring Base
213	DP1200VS-213	Base
214	DP1200VS-214	Switch (UP)
215	DP1200VS-215	Switch (UP)
217	DP1200VS-217	Depth Stop Scale Stud
218	DP1200VS-218	T Type Nut
219	DP1200VS-219	Pointer
220	DP1200VS-220	Base
221	DP1200VS-221	Quill Clamp
222	DP1200VS-222	Knob
223	DP1200VS-223	Nut
224	DP1200VS-224	Space
225	DP1200VS-225	Rubber Washer
226	DP1200VS-226	Shaft
227	DP1200VS-227	Bearing 6007ZZ
228	DP1200VS-228	Quill
229	DP1200VS-229	Bearing 6206
230	DP1200VS-230	Key
231	DP1200VS-231	Knob Bolt
232	DP1200VS-232	Handle Body
233	DP1200VS-233	Handle



Item	Item	Description
234	DP1200VS-234	1/2" Knob
235	DP1200VS-235	Pinion Connector Assembly
236	DP1200VS-236	Feed Shaft
237	DP1200VS-237	Screw
238	DP1200VS-238	Lock Handle
239	DP1200VS-239	Aluminum Sheath (W)
240	DP1200VS-240	2hp Motor 3ph
241	DP1200VS-241	Motor Base
242	DP1200VS-242	Pully
906	DP1200VS-906	Phillips Head Screw 3/16"
909	DP1200VS-909	Phillips Head Screw
910	DP1200VS-910	Set Screw
911	DP1200VS-911	Phillips Head Screw
912	DP1200VS-912	Hex Nut
913	DP1200VS-913	Cap Screw
914	DP1200VS-914	External Retaining Ring S30
915	DP1200VS-915	Set Screw
916	DP1200VS-916	Key 6*6*25mm
917	DP1200VS-917	External Retaining Ring S25
918	DP1200VS-918	Cap Screw
919	DP1200VS-919	Flat Washer
920	DP1200VS-920	Lock Washer
921	DP1200VS-921	Hex Bolt
922	DP1200VS-922	KEY 5x5x30mm
923	DP1200VS-923	KEY 7x7x30mm
929	DP1200VS-929	External Retaining Ring S45
930	DP1200VS-930	Socket Head Cap Screw



## BASE AND TABLE PARTS DIAGRAM



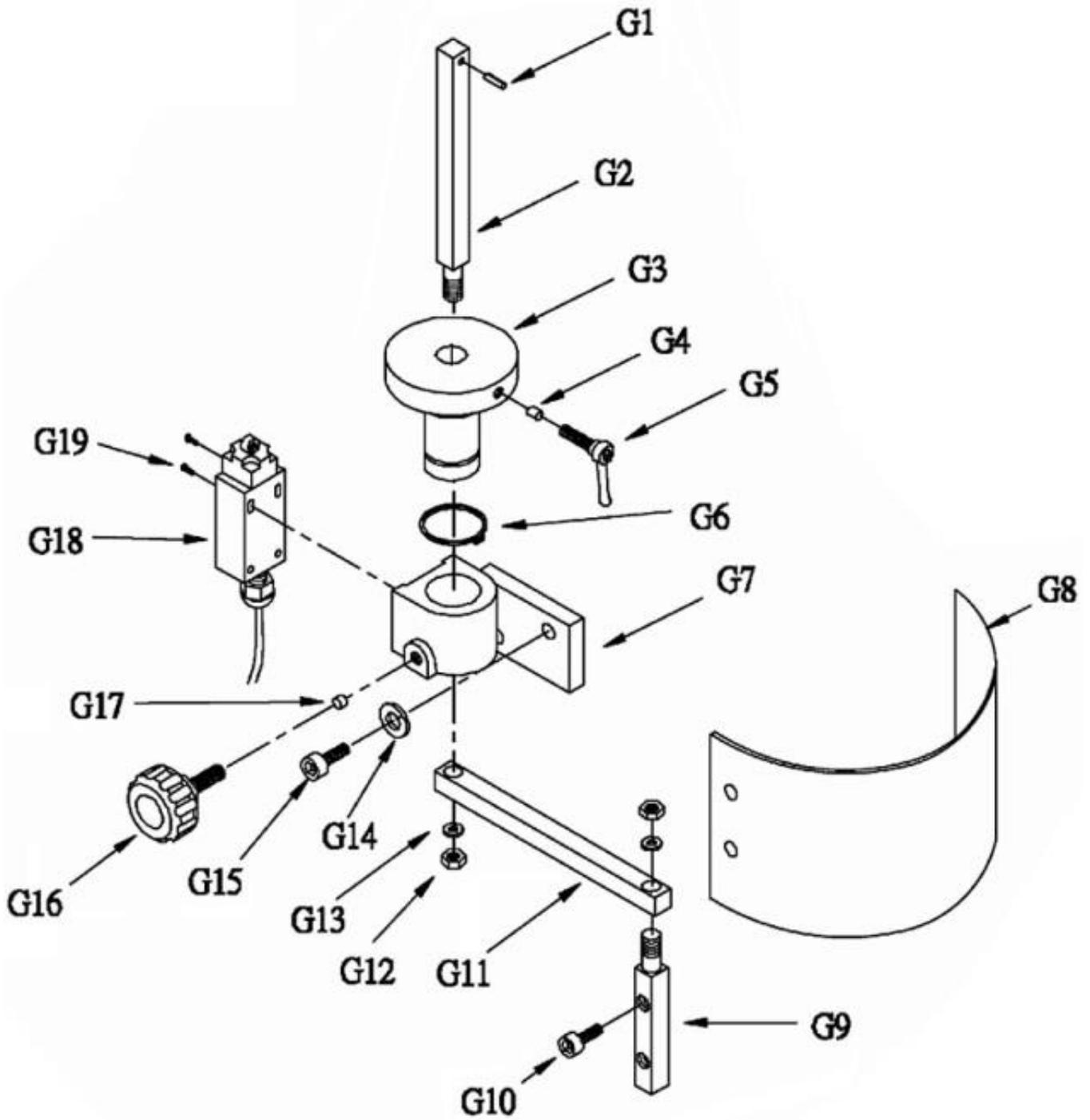


### Base and Table Parts List

Item	Item	Description
301	DP1200VS-301	Table
302	DP1200VS-302	Column Base
303	DP1200VS-303	Base
304	DP1200VS-304	Gear
305	DP1200VS-305	Gear Shaft
306	DP1200VS-306	Handle Lock
307	DP1200VS-307	Shaft
308	DP1200VS-308	Space
309	DP1200VS-309	Handle
310	DP1200VS-310	Handle
311	DP1200VS-311	Retaining Collar
312	DP1200VS-312	Column
313	DP1200VS-313	Rack
314	DP1200VS-314	Cock
910	DP1200VS-910	Set Screw
918	DP1200VS-918	Cap Screw
924	DP1200VS-924	Lock Washer
925	DP1200VS-925	Hex Nut
926	DP1200VS-926	Set Screw
927	DP1200VS-927	Spring Washer
928	DP1200VS-928	Hex Bolt



**CHUCK GUARD PART DIAGRAM**





**Chuck Guard Parts List**

Item	Part No.	Description	Qty.
G1	DP15VSF-G1	Spring Pin, 3x16mm	1
G2	DP15VSF-G2	Support Bracket Bar	1
G3	DP15VSF-G3	Bushing	1
G4	DP15VSF-G4	Spacer	1
G5	DP15VSF-G5	Ratchet Lock Handle M6x20	1
G6	DP15VSF-G6	C-Clip S30	1
G7	DP15VSF-G7	Bracket	1
G8	DP15VSF-G8	Safety Shield, Lexan 410x210mm	1
G9	DP15VSF-G9	Lower Bracket Bar	1
G10	DP15VSF-G10	Hex Socket Head Cap Screw M8x12	1
G11	DP15VSF-G11	Support Arm	1
G12	DP15VSF-G12	Hex Nut 3/8"	1
G13	DP15VSF-G13	Spring Washer 3/8	1
G14	DP15VSF-G14	Spacer	1
G15	DP15VSF-G15	Socket Head Cap Screw M8x20	1
G16	DP15VSF-G16	Lock Bolt with Knob M8x18	1
G17	DP15VSF-G17	Spacer	1
G18	DP15VSF-G18	QS1, Micro Switch (Highly, ED-4-3-32)	1
G19	DP15VSF-G19	Screw M4x20	1



## TROUBLESHOOTING



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

FAULT	PROBABLE CAUSE	REMEDY
Spindle does not turn	No power to drill press. Defective switch. Defective motor.	Check wiring, fuse or circuit breaker. Replace switch. Replace motor.
Noisy spindle	Defective bearings	Replace bearings
Noisy operation	Worn variable speed belt. Dry spindle. Loose pulley.	Replace belt, See Replace Worn Variable Speed Belt. Lubricate spindle, See Lubrication. Check motor pulleys, tighten as necessary.
Excessive spindle runout	Worn or defective bearings	Replace bearings.
Drilled holes not round	Improper mounting of drill bit, chuck or arbor. Worn or broken bit. Speed or feed too fast. Workpiece drilling needs lubrication.	Mount properly. Replace bit. Reduce speed or feed as needed. Use cutting fluid.
Bit burns or smokes	Incorrect speed. Chips not coming out of table. Dull bit. Feeding too slow. Bit not lubricated. Bit running backwards.	Change speed. Retract bit frequently to clear chips. Sharpen or replace bit. Feed faster; enough to allow drill to cut. Lubricate bit. Check motor rotation to be sure it is clockwise facing shaft end.
Excessive drill runout or wobble	Bent bit. Bit not properly installed in chuck. Chuck not properly installed. Worn spindle bearings.	Replace bit. Install bit properly. Install chuck properly. Replace bearings.
Drill bit binds in workpiece	Workpiece pinching bit or excessive feed.	Support or clamp work, decrease feed pressure.

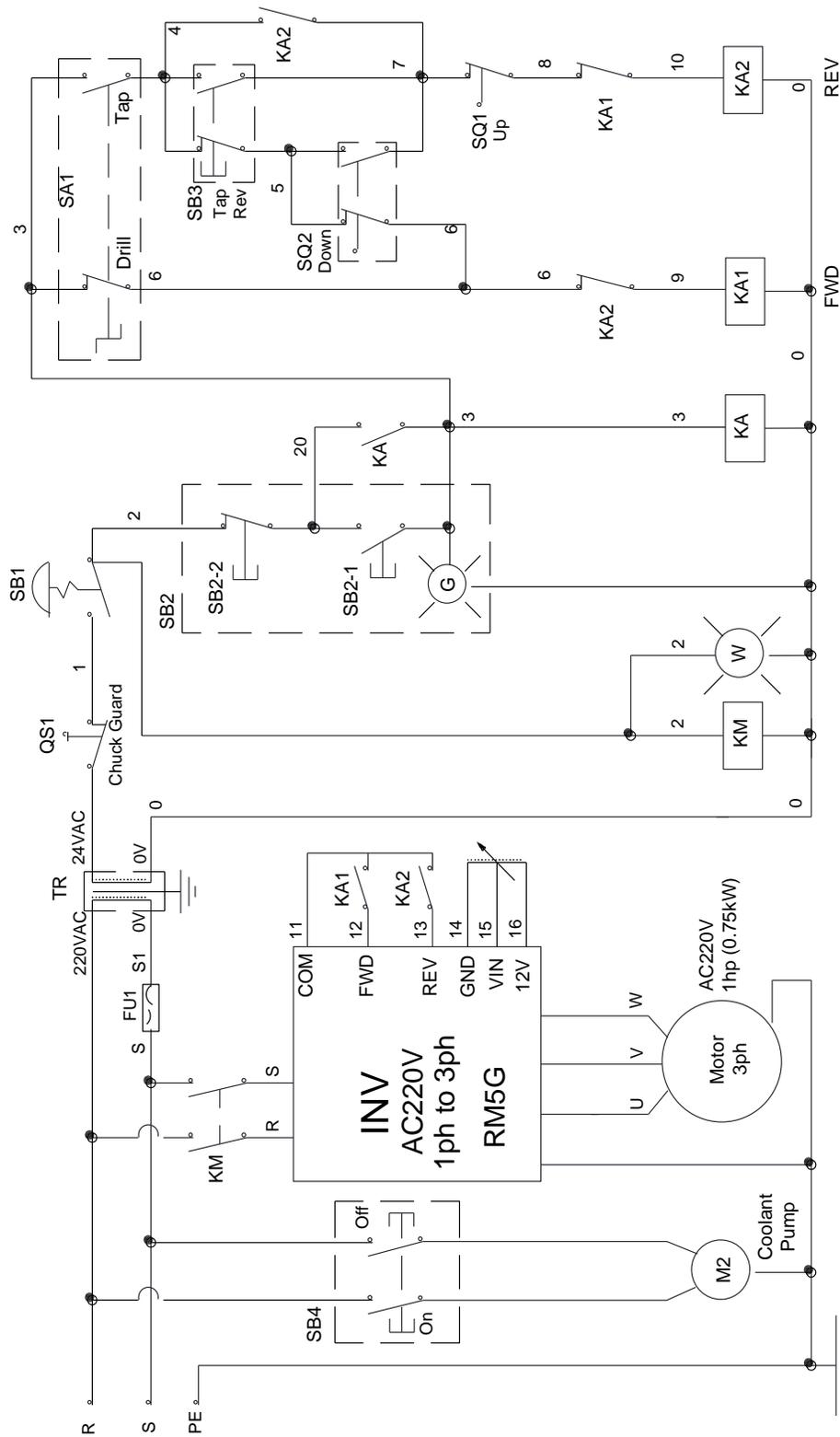


Improper belt tension.  
Workpiece not supported or  
clamped properly.

Adjust tension.  
Support or clamp workpiece  
securely.

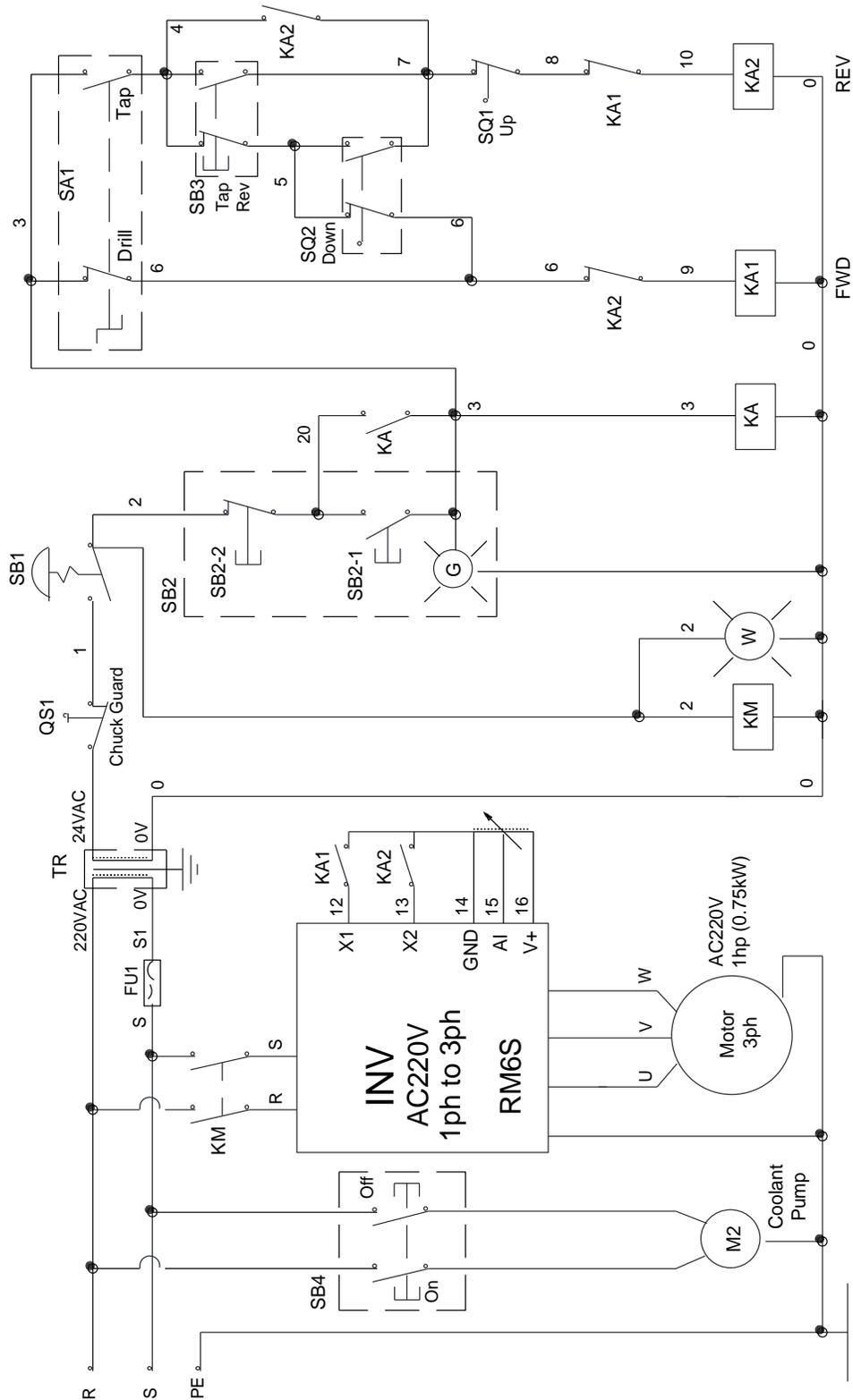


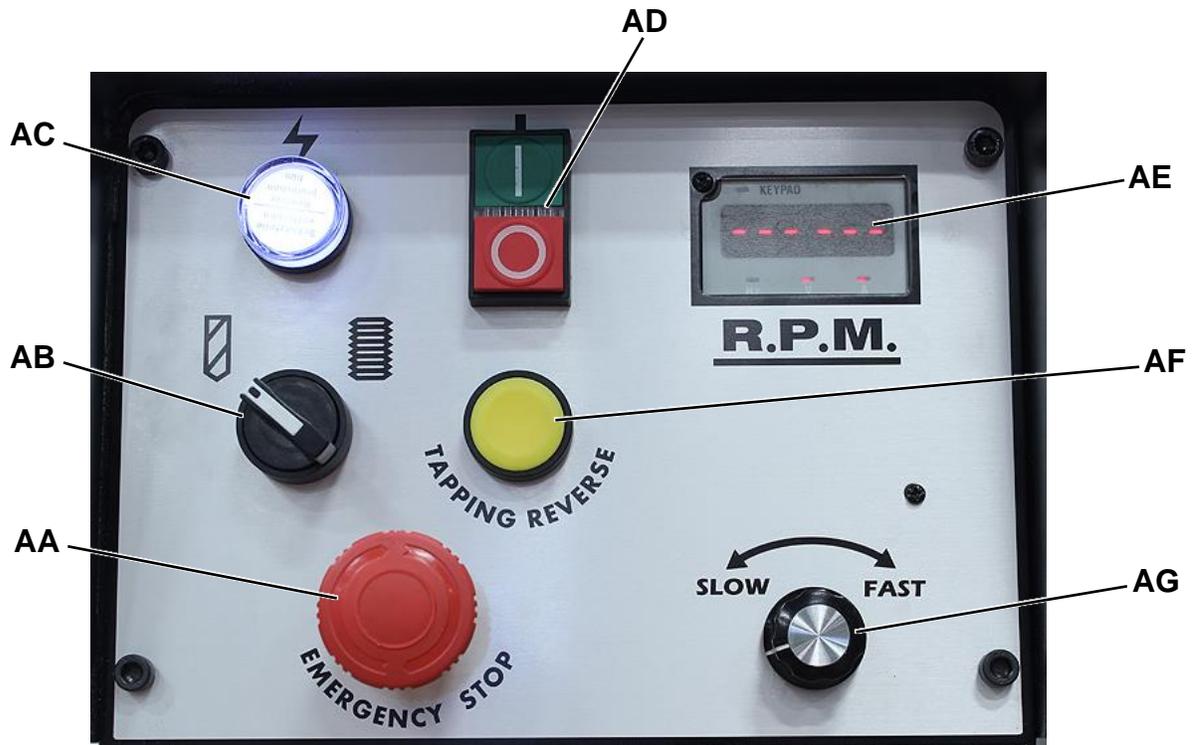
# ELECTRICAL DIAGRAM - RM5G INVERTER





# ELECTRICAL DIAGRAM - RM6S INVERTER





AA	Emergency Stop Button	Stops all machine functions. Turn the switch clockwise (cw) to reset the switch.
AB	Drilling / Tapping Selector Switch	Selects the mode of operation: drilling or tapping.
AC	Power Indicator Lamp	Illuminates when power is on at the control panel.
AD	Start Button (Top, Green)	Starts the spindle motor.
	Stop Button (Bottom, Red)	Stops the spindle motor.
AE	Digital Indicator	Displays the rate of spindle rotation in RPM.
AF	Tapping Reverse Button	Manually reverses the spindle rotation for tapping only. Normal operation will use the depth stop to reverse the spindle during tapping.
AD	Spindle Speed Knob	Changes the speed of spindle rotation.



## **FAULT, MAINTENANCE AND TROUBLE SHOOTING**

### Descriptions

The inverter equips with complete protective functions. If protective function is activated, power transistors will be turned off and display will show what fault is. After proper troubleshooting, to short RST and COM, or press  in keypad, inverter will operate.

Protections and display	Functions	Trouble Shooting
Over current for loss speed (acceleration)	During acceleration, if output current exceeds the stall prevention limit during acceleration (F_070), acceleration will be terminated. Until output current less than the setting value, acceleration will be continuous.	Increase acceleration time or use the higher capacity inverter.
Over voltage for loss speed (deceleration)	During deceleration, too high regenerative voltage will cause termination of deceleration. Until the regenerative voltage is not too high, deceleration will be continuous.	Increase deceleration time or use dynamic brake unit.
Over current O.C.	Output current exceeds 220% of rated current of inverter. Inverter is shutdown.	Output terminals (U, V, W) is short-circuited, overload, acceleration time too small, start at free running, or mismatched characteristics of motor.
Over voltage O.E.	Due to the higher regenerative voltage or voltage of power source, the main circuit DC voltage exceeded the over voltage detection level. 200V series: Approx. DC410V 400V series: Approx. DC820V	Increase deceleration time or use high braking torque and dynamic brake unit. Decrease input voltage.
Over load O.L.	Motor overload protection operates by build- in electronic thermal overload relay.	Decrease motor load.
Over load OL1	RM5G series 150% inverter rated output current for one minute. RM5P series 120% inverter rated output current for one minute.	Use high-capacity inverter
Over heat O.H.	When the temperature of heat sink is too high or external thermal relay to be activated, inverter is shutdown	Improve the cooling system or clear heat sink.
Under voltage L.E.	the main circuit DC voltage is decreased 33% of rated value, inverter	Increase the capacity of power source for avoiding line voltage



Protections and display	Functions	Trouble Shooting
	will display "LE".	of power source to be decreased significantly.
"-----" and the set frequency display alternately	Forward/Reverse operation error (When F_001=0)	Check the wiring of FWD and REV terminals.
GF protection	Protection for unbalanced output current. Break of fuse inside the inverter	Check the leakage current of motor. Change inverter
EEr	EEPROM error	Change inverter
Err_00, Err_01	Disconnection of operating keypad, KP-201C or KP-202C.	Check keypad and inverter connections
S.C.	Break of fuse inside the inverter Break of IGBT module	Change inverter
PAdF	KP-202C is removed in running.	Resume KP-202C
Ad_Err	AD converter fault	Change inverter
OLO	Overload detection	Lower the motor load
thr	External fault detection	Check the external fault input terminal
db.	When the inverter is stop, the main circuit DC voltage exceed the voltage detection level. 200V series: Approx. DC385V 400V series: Approx. DC785V	Check the power supply voltage.

### NOTES



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