

# **1500 KW DRILL PRESS**

## **OPERATOR MANUAL**



**Please read the manual and instruction carefully before operating or servicing the tool.**

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## SAFETY GUIDELINES

**WARNING** – Read all safety warnings and instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

### PERSONAL SAFETY

1. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
2. Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
3. Prevent unintentional starting. Ensure the switch is in the “OFF” position before connecting to power source and/or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energised power tools that have the switch in the “ON” position can cause accidents.
4. Remove any adjusting key or wrench before turning the power tool on. A wrench or key left attached to the rotating part of the power tool may result in personal injury.
5. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
6. Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery or long hair can get caught in moving parts.
7. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of a dust collection can reduce dust-related hazards.
8. Do not let familiarity gained from frequent use of the tool allow you to become complacent and ignore tool safety principles. A careless action can cause severe injuries within a fraction of a second.

## BEFORE USING THE TOOL

To avoid serious injury and damage to the tool, read and follow all of the Safety and Operating Instructions before operating the machine.

1. Read the owner's manual. Learn how to use the tool for its intended design.
2. Keep the guards in place and that it is in working condition.
3. Remove adjusting keys and wrenches. Get into the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning the tool on.
4. Keep the work area clean. Cluttered areas and benches are prone to causing accidents.
5. Do not use the tool in dangerous environments. Do not use power tools in damp locations, or expose them to rain or snow. Keep the work area well illuminated.
6. Keep children away. All bystanders should be kept at a safe distance from the work area.
7. Make workshop child proof with padlocks, master switches or by removing the starter keys.
8. Do not force the tool. It will do a better and safer job operating under its intended use.
9. Use the right tool. Do not force the tool or its attachment to do a job that it was not intended to do.
10. Use proper extension cord. Make sure your extension cord is in good condition. When using an extension cord, make sure to use one heavy enough to carry the current the tool requires. An undersized cord will result in drop in line voltage and in power loss; causing the tool to overheat.
11. Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewellery which may get caught in the moving parts. Non-slip footwear is recommended. Wear protective hair covers or hair ties to hold onto and cover long hair.
12. Always wear eye protection. Any power tool can possibly throw loose foreign objects into the eyes and cause possible permanent eye damage. Always wear safety goggles (not regular glasses) that comply with ANSI/ISEA Z87.1-2015 Standard. Everyday eyeglasses have only impact-resistant lenses. They are not safety glasses. Note: Glasses or goggles not in compliance with ANSI/ISEA Z87.1-2015 Standard could seriously injure you when they break.
13. Wear a face mask or dust mask. Sawing operation produces dust.
14. Secure work. Use clamps or a vice to hold work when practical. It is safer than using your hand and it frees up both hands to operate the tool.
15. Disconnect tools from power source before servicing and when changing accessories such as blades, bits and cutters.
16. Reduce the risk of unintentional starting. Make sure switch is in the "OFF" position before plugging the tool in.
17. Use recommended accessories. Consult this Instruction Manual for recommended accessories. The use of improper accessories may cause risk of injury to yourself or others.
18. Never stand on the tool. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. Check for damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged and should be properly repaired or replaced.
20. Never leave the tool running unattended, turn the power to the "OFF" position. Do not walk away from tool until the blade comes to a complete stop and the tool is unplugged from the power source.
21. Do not overreach. Keep proper footing and balance at all times.
22. Maintain the tools with care. Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories.
23. Do not use power tool in the presence of flammable liquids or gases.
24. Do not operate the tool in the presence of flammable liquids or gases.

25. Dust generated from certain materials can be hazardous to your health. Always ensure sawing operations in well-ventilated area provide for proper dust removal
26. Wear hearing protection to reduce the risk of induced hearing loss.

#### DRILL PRESS SAFETY

**WARNING** – For your own safety, do not try to use your drill press or plug it in until it is completely assembled and installed according to the instructions and until you read and understood the following:

**WARNING** – Feed workpiece into a sanding drum or other approved accessory, against the direction of rotation.

**WARNING** – A kickback occurs when workpiece suddenly binds on the cutting edge of the tool and the workpiece is thrown by the cutter in the direction of the cutter's rotation. This can cause serious injuries.

**WARNING** – Do not allow familiarity (gained from frequent use of the drill press) to become commonplace. Always remember that a careless fraction of a second is sufficient to inflict a severe injury.

This tool is not intended for use by young or infirmed operator unless supervised by a responsible operator to ensure that they can use the tool safely. Young children should be supervised to ensure that they do not play with the tool.

1. Your drill press must be bolted securely to a workbench. In addition, if there is any tendency for your drill press to move during certain operations, bolt the workbench to the floor.
2. This drill press is intended for use in dry conditions and indoor use only.
3. Always wear safety goggles which comply with ANSI/ISEA Z87.1-2015 standard. Use a face or dust mark along with safety goggles if the drilling operation is dusty. Use ear protectors, especially during extended periods of operation.
4. Do not try to drill material that are too small to be securely held. Do not drill material that does not have a flat surface unless it is clamped securely.
5. Always keep hands out of the path of the drill bit. Avoid awkward hand positions where a sudden slip could cause your hand to move into the drill bit.
6. Do not install or use any drill bit that exceeds 175mm (7 inches) in length or extends more than 150mm (6 inches) below the chuck jaws. They can suddenly bend outwards or break.
7. Do not use wire wheels, route bits, shaper cutter, circle (fly) cutters or rotary planers on this drill press.
8. When drilling a large piece of material make sure it is fully supported at the table height.
9. Do not perform any operation hands-free. Always hold the workpiece firmly against the table so it will not rock or twist. Use clamps or a vice for unstable workpieces.
10. Make sure there are no nail or foreign objects intruded into the workpiece to be drilled.
11. Whenever possible, position the workpiece to contact the left side of the column; if it is too short or the table is tilted, clamp solidly to the table.
12. If the workpiece overhangs the table such that it will fall or tip if not held on, clamp it to the table or provide auxiliary support.
13. Set the drill press to a speed appropriate to the job.
14. Do not start the drill press while the drill bit is touching the workpiece.
15. When using a drill press vice, always fasten it to the table.
16. Make sure all clamps and locks are firmly tightened before drilling.
17. Securely lock the head and table support to the column, and the table to the table support before operating the drill press.
18. Never turn your drill press on before clearing the table of all objects (tools, scraps of wood, accessories etc.).
19. Before starting the operation, job the motor switch to make sure the drill bit does not wobble or vibrate.

20. Let the spindle reach full speed before starting the drilling process. If your drill press makes an unfamiliar noise or if it vibrates excessively, stop immediately, turn the drill press off and unplug it. Do not restart until the problem has been solved.
21. Do not perform layout assembly or setup work on the table while the drill press is on.
22. Do not exceed the RPM stated on the bit or accessory. See the instructions that come with the accessory.
23. When drilling large diameter holes, clamp the workpiece firmly to the table. Otherwise, the bit may grab and spin the workpiece at high speed. Do not use fly cutters or multiple-part cutters, as they can come apart or become unbalanced in use.
24. Make sure the spindle has come to a complete stop before touching the workpiece.
25. To avoid injury from accidental starting, always turn the switch off and unplug the drill press before installing or removing any accessory attachments or making any adjustments.
26. This tool is not intended for use by operators (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are under supervision or given instruction concerning use of the tool by the operator responsible for their safety.
27. Children should be supervised to ensure that they do not injure themselves while operating the tool.
28. If the supply cord is damaged, it must be repaired by the manufacturer, its service agent or similarly qualified personal in order to avoid accidents.
29. Drum sanders must never be operated on this drill press at a speed greater than the speed rating of the drum sander.

**CAUTION – DO NOT EXPOSE TO THE RAIN OR EXPOSED IN A DAMP ENVIRONMENT**

**WARNING** – For your own safety read instruction manual before operating the drill press. Always wear eye protection. Do NOT wear gloves, neckties or loose clothing. Clamp workpieces or braces against column to prevent rotation. Use the recommended speed for the drill accessory and workpiece material.

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## ELECTRICAL SAFETY

### **WARNING – THIS TOOL MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCKS.**

1. Please follow ISO/ICS 29.120 and IEC 60364 Standards in the presence and operation of electrical accessories.
2. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce the risk of electric shock.
3. Avoid bodily contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of an electric shock if your body is earthed or ground.
4. Do not expose the power tool to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
5. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep the cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
6. When operating a power tool in an outdoor environment, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
7. If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.
8. In the event of a malfunction or breakdown, grounding provides the path of least resistance for electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment grounding conductor and requires a grounding plug (not included). The plug must be plugged into a matching electrical receptacle that is properly installed and grounded in accordance with all local codes and ordinances.
9. Do not modify any plug. If it will not fit the electrical receptacle, have the proper electrical receptacle that is properly installed and grounded in accordance with all local codes and ordinances or by a qualified electrician.
10. Improper electrical connection of the equipment grounding conductor can run the risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment grounding conductor. Do not connect the equipment grounding conductor to a live terminal if repair or replacement of the electric cord or plug is necessary.
11. Check with a qualified electrician or certified servicer if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded when installing or replacing a plug. Replace a damaged or worn cord immediately.
12. Make sure the extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current the tool will draw out. An undersized cord will cause a loss in line voltage resulting in loss of power and overheating. Only use cords listed by Underwriters Laboratories (UL). When operating a power tool outdoors, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of an electric shock.
13. Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

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

## LASER SAFETY

**WARNING** - A laser light radiated when the laser guide is turned on. Avoid direct eye contact. Always un-plug the drill press from the power source before making any adjustments.

**WARNING** – Laser Radiation. Never aim the beam at a work piece with a reflective surface. Bright shiny reflective sheet metal or similar reflective surfaces are not recommended for laser use. Reflective surfaces could direct the beam back toward the operator or bystanders.

- Please follow ISO/ICS 25 31.260 Standards when using the laser.
- A laser pointer is not a toy and should not be in the hands of children or unauthorised personals. Misuse of this tool can lead to irreparable eye damage.
- Any adjustments to increase the laser power is forbidden.
- When using the laser pointer, do not point the laser beam towards people and/or reflective surfaces. Even a laser beam of lower intensity may cause eye damage. Therefore, do not look directly into the laser beam.
- If the laser pointer is stored for more than three months without use, please remove the batteries to avoid damage from possibly leaking batteries.
- The laser pointer is stored for more than three months without use, please remove the batteries to avoid damage from possibly leaking batteries.
- The laser pointer has no servicing components. Never open the housing for repair or adjustments.
- Do not attempt to repair or disassemble the laser level. If unqualified personnel attempts to repair this laser product, serious injury may result. Any repairs required on this laser product should be performed by an authorized service centre personnel.

**CAUTION** – The use of optical instruments with this product will increase eye hazard. Avoid direct eye contact.

**WARNING** – For your own safety, never connect the plug to the power source outlet until all assembly steps are complete and you have read and understood the safety and operating instructions.

**WARNING** – The drill press is a heavy power tool and should be lifted with the help of two or more people to safely assemble it.

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## SPECIFICATIONS

<b>Drilling Capacity</b>	Ø32mm (1-1/4")
<b>Motor Power</b>	1500W
<b>Motor Voltage</b>	240 V 50Hz
<b>Motor Current</b>	6.2A
<b>Motor Phase</b>	4
<b>Motor Pole</b>	4
<b>Motor Speed (no load)</b>	1420 RPM
<b>Motor Class</b>	B
<b>Motor Duty Cycle</b>	S2
<b>Chuck Capacity</b>	20mm
<b>Spindle Stroke</b>	120mm
<b>Spindle Speed</b>	12
<b>Speed 50/60 Hz</b>	150-2450/180-2940 RPM
<b>Spindle Taper</b>	MT4
<b>Auto-feeding step of work table</b>	225mm
<b>Max. distance from spindle end to surface of table</b>	700mm
<b>Max. distance from spindle end to surface of base</b>	1225mm
<b>Swing</b>	450mm
<b>Table size</b>	360 x 360mm
<b>Base size</b>	470 x 360mm
<b>Column Diameter</b>	Ø92mm
<b>Height</b>	1710mm
<b>Net Weight/Gross Weight</b>	115/120 Kg
<b>Packing size</b>	1415 x 650 x 305mm

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## ASSEMBLY

### UNPACKING

Unpack the drill press and all its parts, and compare against the list below. Do not discard the carton or any packaging until the drill press is completely assembled.

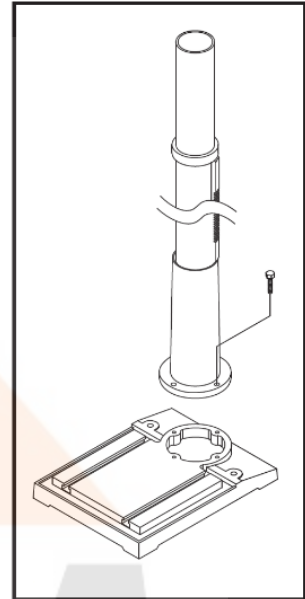
To protect the drill press from moisture, a protective coating has been applied to the machined surfaces. Remove this coating with a soft cloth moistened with kerosene or WD-40®. Do not use acetone, gasoline or lacquer thinner to clean. Apply a coat of good paste wax to the table and column. Wipe all parts with a clean dry cloth.

### TOOLS NEEDED BEFORE ASSEMBLY

- Adjustable wrench
- Allen wrench
- Phillips screwdriver
- Hammer and block of wood

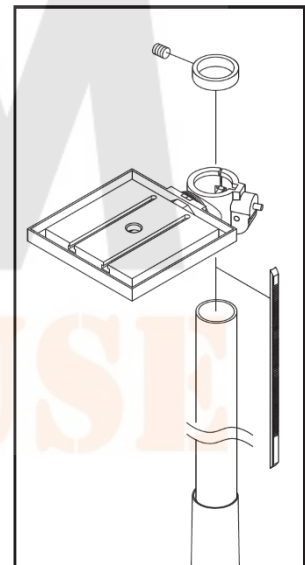
### BASE TO COLUMN

1. Set the base on the floor
2. Place the column tube on the base, align the column support holes with the base holes.
3. Install a bolt in each column support hole and tighten down with a wrench.



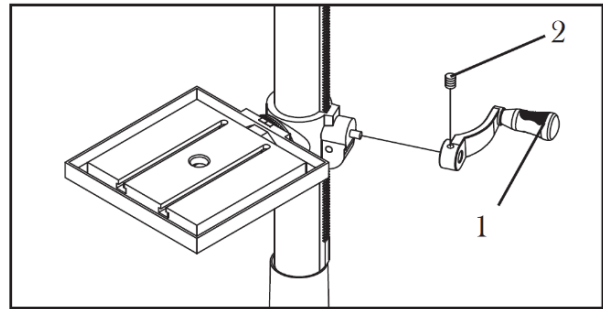
### TABLE TO COLUMN

1. Loosen the set screw in the rack collar and remove the collar.
2. Remove the rack from the column.
3. Insert the worm shaft into the hole of the table support crank handle from inside the table support. The worm shaft should extend outside the housing at about 25mm (~1").
4. Insert the rack into the geared groove of the table support. Make sure the worm shaft on the inside of the table support is engaged with the teeth of the rack. The table support should sit at the centre of the rack.
5. Slide the table support and rack assembly down together onto the column. Insert the bottom edge of the rack into the lip of the column support. Hold it in this position for now.
6. Place the collar bevel side down over the rack. Tighten the set screw with the 3mm Allen wrench to hold the rack in position.



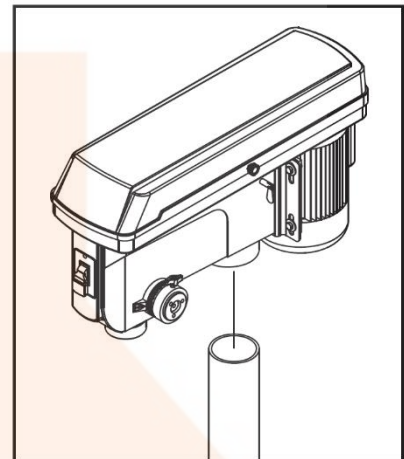
**Note:** Make sure there is enough clearance to allow the table to rotate around the column. The collar must sit loosely over the rack and not angled to the column. To avoid column or collar damage, only tighten the set screw enough to keep the collar in place.

7. Insert the table support crank handle into the worm gear shaft on the side of the table support. Make sure the set screw is aligned on the flat of the shaft and as close to the table support as possible. Tighten the set screw.
8. Position the table in the same direction as the base, and tighten the column lock handle.



#### DRILL PRESS HEAD TO COLUMN

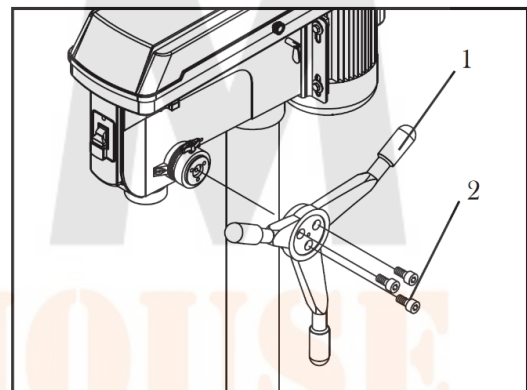
1. Lift the drill press head assembly carefully and place the mounting hole of the drill press head onto the top of the column. Make sure the head is seated properly on the column.
2. Align the direction of the drill press head to the direction of the base and the table.
3. Tighten the two set screws using an Allen wrench.



#### FEED HANDLES

1. Thread the three feed handle rods into the holes on the feed hub.
2. Tighten securely by hand.

**Note:** one or two of the feed handles may be removed if an unusually-shaped workpiece interferes with the handle rotation.



#### LASER

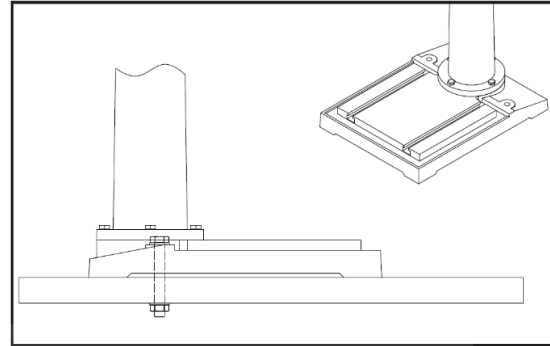
1. Ensure the laser is turned off.
2. Pull the tab down and lift the laser switch cover off.
3. Insert the batteries in the laser battery compartment.
4. Close the laser switch cover.
5. Screw the laser under the drill press head in the two designated holes.
6. Tighten the screw with a screwdriver.

**CAUTION** – Remove the laser light battery when the tool is to be stored without use for a few days or more. If left in compartment, the batteries might leak and damage the laser light assembly. Damage due to leaking batteries is not covered under the warranty.

## MOUNT THE DRILL PRESS

1. The drill press must be securely fastened through the mounting holes to a stand or work bench with heavy-duty fasteners. This will prevent the drill press from tipping over, sliding, or walking during operation.

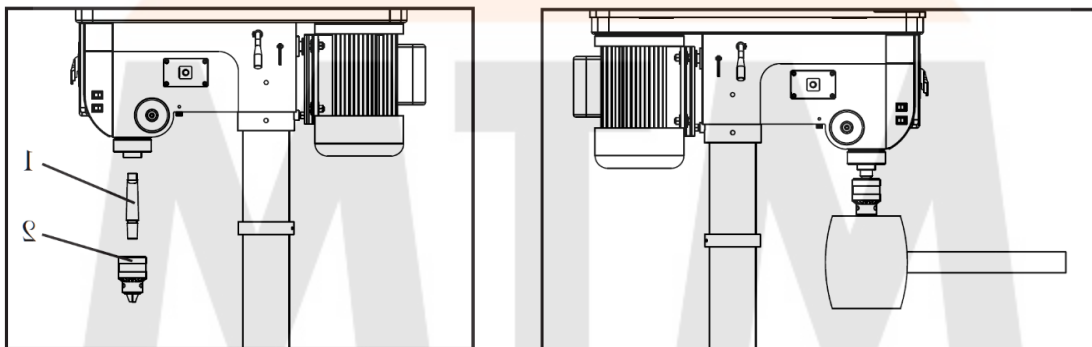
**IMPORTANT** – If the stand or workbench has a tendency to move during operation, fasten it securely to the floor.



## INSTALL THE CHUCK

**WARNING** – be sure the drill press is turned “OFF”, and the drill press is disconnected from the power source prior to installing, removing or adjusting the chuck.

1. Inspect and clean the taper hole in the chuck and the spindle. Remove all grease, coatings, and particles from the chuck and spindle surfaces with a clean cloth.
2. Open the chuck jaw by turning the chuck barrel clockwise by hand. Make sure the jaws are completely recessed inside the chuck.
3. Seat the chuck on the spindle by placing a block of wood under the chuck and tapping the wood with a hammer. Otherwise, tap the chuck with a rubber mallet.

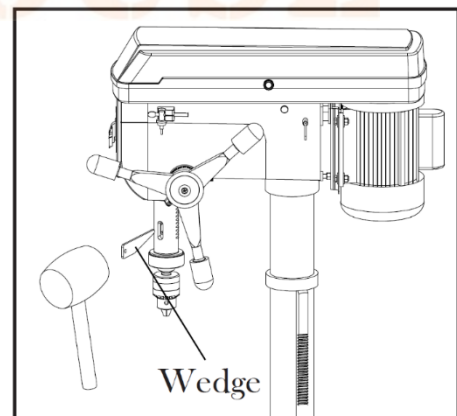


**CAUTION** – To avoid damaging the chuck, make sure the jaws are completely recessed into the chuck. Do not use a metal hammer directly to drive the chuck into the spindle.

## REMOVE THE CHUCK

1. Turn the feed handles to lower the chuck to the lowest position.
2. Place a ball joint separator above the chuck and tap it lightly with a hammer to cause the chuck to drop from the spindle.

**Note:** To avoid possible damage, be prepared to catch the chuck as it falls.



## CHUCK GUARD

1. Loosen the bolt and unscrew the feed stop rod from the heel block.
2. Remove the heel block from the spindle.
3. Slide the chuck guard onto the spindle and secure by tightening the bolt.
4. Attach feed stop rod to guard.
5. Loosen the wing nuts to adjust the guard to your desired height.
6. Pull the bottom of the guard towards the front of the drill press and up to expose the spindle for installing the chuck and changing drill bits.

Do not adjust the chuck guard or leave it in the open position while the drill is in operation or the spindle is turning.

## INSTALL THE BELT

1. Open the pulley and belt cover.
2. Loosen the belt and tension lock knobs on both sides of the drill press.
3. Slide the motor as close to the drill press head as possible.
4. Place a belt on the motor pulley and the spindle pulley in the proper position for the desired speed. See spindle speeds for the belt configuration.
5. Pull the motor away from the drill press head until the belt is properly tensioned. Tighten the belt tension lock knobs.

**Note:** The belt should be tight enough to prevent slippage. Correct tension is set if the belt flexes about 13mm (1/2") when thumb pressure is applied at the midpoint of the belt between the pulleys.

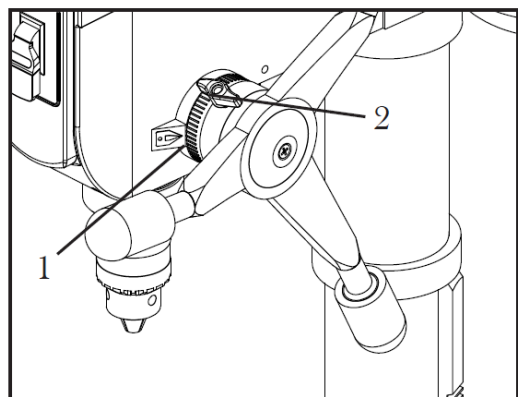
## ADJUSTMENTS

### ALIGN THE BELT PULLEYS

1. Check the alignment of the pulleys with a ruler or measuring tape by laying the straight edge across the top of the pulleys.
2. If the pulleys are not aligned, release the belt tension by loosening the belt tension lock knobs on the side of the head.
3. Loosen the motor mount nuts with an adjustable wrench and lower or raise the motor until the pulleys are aligned.
4. Tighten the motor mount nuts with an adjustable wrench to maintain the position.
5. Lock the motor for the proper belt tension and tighten the tension lock knobs.

### FEED DEPTH ADJUSTMENT

Turn the depth scale ring to the desired depth. Lock the scale ring in place with the depth knob. The spindle will now stop after traveling the selected distance.

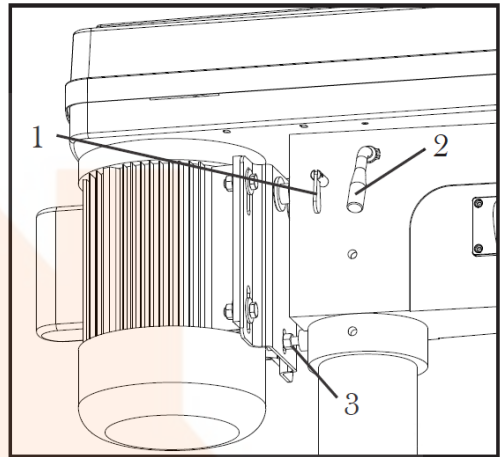


## SPINDLE SPEED

This drill press offers 12 spindle speeds ranging from 150 - 2450 / 180 – 2940 RPM. The highest speed is obtained when the belt is in position on the largest motor pulleys step and smallest spindle pulley stop.

### ADJUST THE SPEEDS AND TENSION OF THE BELT

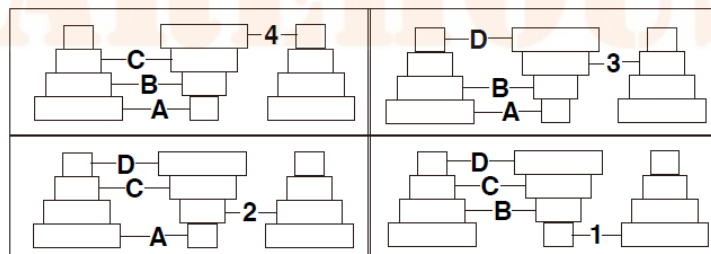
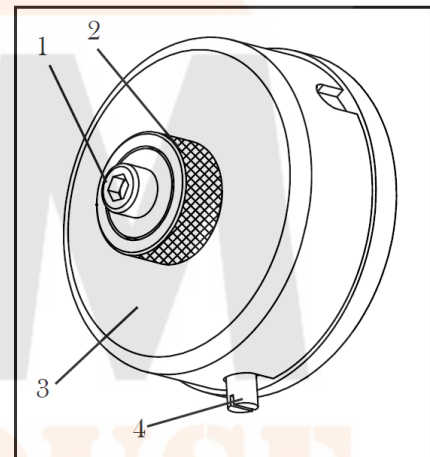
1. Open the drill press pulley cover.
2. Loosen the belt tension knobs on both sides of the drill press head.
3. Pull the motor toward the drill press head.
4. Set the belt on the desired steps of the spring and spindle pulleys according to the belt positions on the spindle speed chart.
5. Pull the motor away from the drill press head to increase the belt tension. Tighten the tension knobs.
6. The belt should be tight enough to prevent slippage. Correct tension is set if the belt flexes about 13mm (1/2") when thumb pressure is applied at the midpoint of the belt between the pulleys.



### QUILL SPEED ADJUSTMENT

The quill return spring may need adjustment if the quill starts returning too slowly or rapidly. Make sure to wear gloves during quill spindle adjustments to help prevent injuries from sudden and rapid disengagement of the spring housing.

1. Loosen the screw and nut making sure that the spring housing remains engaged with the head casting.
2. While firmly holding the spring housing, pull out the housing and rotate it (counter-clockwise to increase or clockwise to decrease the spring tension) until the set screw becomes engaged with the next notch on the spring housing.
3. Turn the nut until it contacts the spring housing. Tighten the screw against the nut to hold the housing in place.



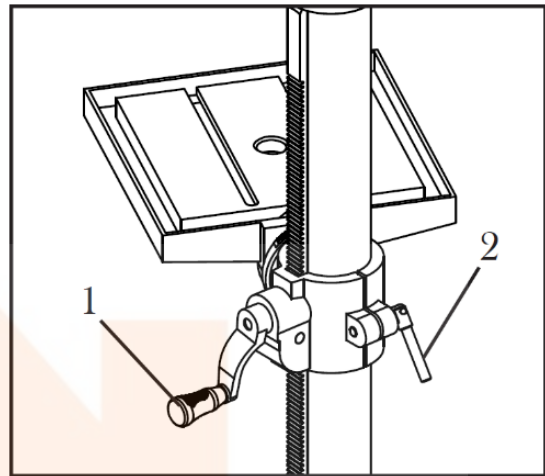
#### SPINDLE SPEED

180 RPM - A4	520 RPM - B3	1520 RPM - B1
290 RPM - B4	560 RPM - A2	1720 RPM - D2
320 RPM - A3	1000 RPM - D3	2150 RPM - C1
400 RPM - C4	1240 RPM - C2	2940 RPM - D1

## TABLE ADJUSTMENTS

### RAISE OR LOWER THE TABLE

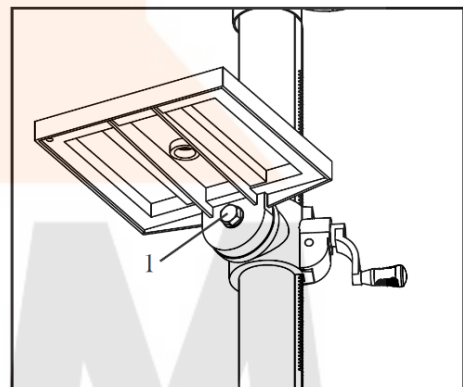
1. Loosen the column lock handle and turn the crank handle until the table is at a desired height.
2. Tighten the table lock handle before drilling.
3. Rotate the table around the column by loosening the column lock handle and turning the table around the column to the desired position.
4. Tighten the lock handle before drilling.



### TILT THE TABLE

The table can be tilted from 0° to 45° to the left and right.

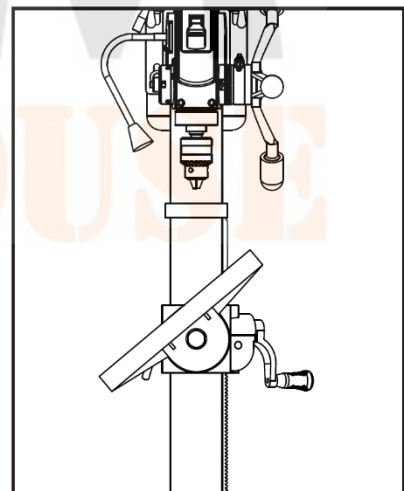
1. Loosen the bevel lock bolt with a wrench.
2. Tilt the table to the desired angle, using the bevel scale as a basic guide.
3. Re-tighten the bevel lock bolt.
4. To return the table to the original position, loosen the bevel lock bolt. Realign the bevel scale to the 0° setting.
5. Tighten the bevel lock bolt with the wrench.



### SQUARE THE TABLE TO THE HEAD

1. Insert a 7.6 cm (3") drill bit into the chuck and tighten.
2. Raise the lock the table about 2.5 cm (1") from the end of the drill bit.
3. Place a combination square on the table. The drill bit should be parallel to the straight edge of the square.
4. If an adjustment is needed, loosen the bevel lock with a wrench.
5. Square the table to the bit by tilting the table.
6. Tighten the bevel lock bolt when square.

**Note:** All the necessary adjustments for the operation of your drill press have been done at the factory. Please do not modify them. However, because of normal wear and tear of your tool, some readjustments might be necessary.



## SPINDLE RETURN SPRING

The spindle is equipped with an auto-return mechanism. The main components are a spring and a notched housing. The spring was properly adjusted at the factory and should not be readjusted unless absolutely necessary. If it needs to be adjusted, proceed as follows:

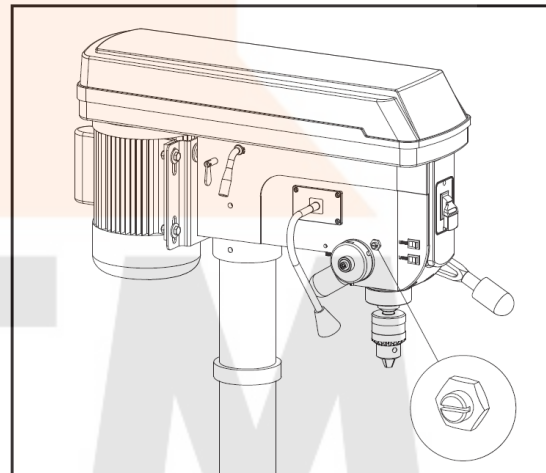
1. Unplug the drill press.
2. Place a screwdriver into the loop to hold the spring in place.
3. Loosen the two housing nuts approximately 6mm (1/4"). Do not remove the nuts from the threaded shaft.
4. While firmly holding the spring housing, carefully pull it out until it clears the raised notch. Turn it until the next notch is engaged with the raise notch (to increase the tension, turn it counter-clockwise; to decrease the tension, turn it clockwise). Tighten the two housing nuts.

**IMPORTANT** – Do not overtighten the two nuts. If the nuts are tightened too much, the movement of the spindle and feed handles will be sluggish.

## ANGULAR PLAY OF THE SPINDLE

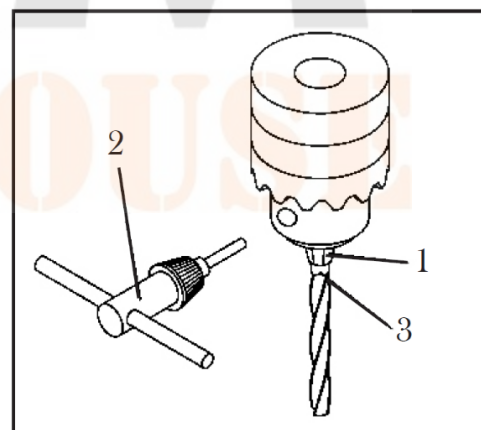
Move the spindle to the lowest downward position and hold it in place. With your other hand, try to make it revolve around its axis with a side motion. If there is too much play, proceed as follows

1. Loosen the lock nut.
2. Turn the screw clockwise to eliminate the play but without obstructing the upward and downward motion of the spindle (a little bit of play is normal).
3. Tighten the lock nut.



## INSTALL THE DRILL BITS

1. Place the chuck key into the side keyhole of the chuck, meshing the gear teeth.
2. Turn the chuck key counter-clockwise to open the chuck jaws.
3. Insert a drill bit into the chuck far enough to obtain maximum gripping of the chuck jaws but not far enough to touch the spiral grooves (flutes) of the drill bit when the jaws are tightened.
4. Centre the drill bit in the chuck jaws before final tightening of the chuck.
5. Use the chuck key for final tightening make sure the drill bit will not slip while drilling.
6. Remove the chuck key before commencing drill operation.



**WARNING** – to avoid injury, make sure the chuck key is removed from the chuck before starting any drilling operation.

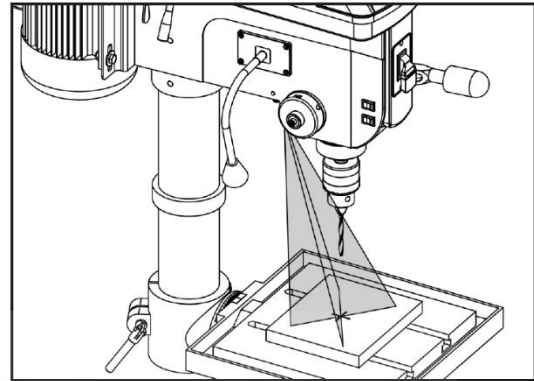


## CALIBRATING LASER GUIDE

**WARNING** – Do not stare directly at the laser beam. Please observe all safety rules. Never aim the beam at a person or an object other than the workpiece. Do not project the laser beam into the eyes of others. Always make sure the laser beam is aimed at a workpiece where the surface is not reflective as the laser beam could project into your eyes or the eyes of bystanders.

The laser guide should be adjusted prior to the operation.  
To adjust the laser guide:

1. Secure a piece of scrap wood on the table.
2. Mark an "X" on a piece of scrap wood.
3. Insert a small drill bit into the chuck and align tip to the intersection of the lines of the "X".
4. Turn on the laser switch and verify that the laser lines align with the "X" on the workpiece.
5. If the laser lines do not align, loosen the set screws on each side of the head and rotate the laser guides until the lines meet in the centre of the "X". Retighten the lock knobs to secure it in place.



## OPERATION

### SWITCHES

1. To turn ON the drill press on, push the red plastic housing up and flip up the yellow housing.
2. Push the green button to turn on the drill press.
3. To turn OFF the drill press, pushed the red button.

### POSITION THE TABLE AND WORKPIECE

Always place a piece of backup material (wood, plywood etc.) on the table underneath the workpiece. This will prevent splintering on the underside of the workpiece as the drill bit breaks through. To keep the material from spinning out of control, it must be clamped onto the table via a drill press vice or G-clamp.

**Note:** For small workpieces that cannot be clamped to the table, use a drill press vice. The vice must be clamped or bolted to the table to avoid injury.

**WARNING** – To prevent the workpiece and backup material being torn from your hand while drilling, position them to the left side of the column. If the workpiece and the backup material are not long enough to reach the column, clamp them to the table. Failure to do this could result in personal injury.

### DRILLING A HOLE

**WARNING** – To avoid injury, make sure the chuck key is removed from the chuck before starting any drilling operation.

Use a centre punch or sharp nail to dent the workpiece where you want the hole. With the switch OFF, bring the drill bit down to the workpiece, lining it up with the location of the hole. Turn the drill ON and pull down on the feed handles with only enough effort to allow the drill to cut.

- Feeding too slowly might cause the drill bit to turn.
- Feeding too rapidly might stop the motor, causing the belt or drill to slip, tearing the workpiece loose, or breaking the drill bit.
- For deeper cuts, drill into the workpiece about 6mm (1/4") and raise the drill bit out of the workpiece. This will clear chips out of the hole. Drill again another 6mm (1/4") and raise the drill bit out of the hole to clear debris and chips. Repeat until the drill bit feeds to the other end of the workpiece.

Practise with scrap material to get the feel of the tool before attempting to do any regular drilling operation. When drilling metal, it will be necessary to lubricate the tip of the drill with oil to prevent overheating the drill bit.

## GENERAL DRILLING GUIDELINES

**WARNING** – To avoid injury, make sure the chuck key is removed from the chuck before starting any drilling operation.

### DRILLING SPEEDS

Important factors when determining the best drilling speed:

- Type of material
- Size of the hole to be drilled
- Type of drill bit or cutter
- Desired quality of the cut

Remember, smaller drill bits require greater speed than larger drill bits. Softer materials require greater speed than harder materials.

### DRILLING METAL

- Use metal-piercing twist drill bits.
- It is always necessary to lubricate the tip of the drill with oil to prevent overheating the drill bit.
- All metal workpieces should be clamped down securely. Any tilting, twisting, or shifting causes a rough drill hole, and increases the potential of the drill bit breakage.
- Never hold a metal workpiece with your bare hands. The cutting edge of the drill bit may seize the workpiece and throw it, causing serious injury. The drill bit will break if the metal piece suddenly hits the column.
- If the metal is flat, clamp piece of wood under it to prevent turning. If it cannot be laid flat on table, then it should be blocked and clamped.

### DRILLING WOOD

- Brad point bits are preferred. Metal piercing twist bits can be used on wood.
- Do not use auger bits. They turn so rapidly that they lift the workpiece off the table and whirl it around.
- Always protect the drill bit by positioning the table so the drill bit will enter the centre hole when drilling through the workpiece.
- To prevent splintering, feed slowly when the bit is about to cut through to the back side of the workpiece.
- To reduce splintering and protect the point of the bit, use scrap wood as a backing or a base block under the workpiece.

## FEEDING THE DRILL BIT

- Pull down on the feed handles with only enough force to allow the drill bit to cut.
- Feeding too rapidly might stall the motor, cause the belt to slip, damage the workpiece, or break the drill bit.
- Feeding too slowly will cause the drill bit to heat up and burn the workpiece.

**WARNING** – To prevent the workpiece or backup material from being torn from your hands while drilling, you **MUST** position the workpiece against the **LEFT** side of the column. If the workpiece or backup material is not long enough to reach the column, clamp them to the table or use the drill press vice. Failure to secure the workpiece could result in personal injury.

## MAINTENANCE

**WARNING** – To avoid injury from accidental starting, always turn the power switch **OFF** and unplug the drill press before installing or removing any accessory or attachment before making any adjustment. Do not attempt to repair or maintain the electrical components of the motor. Contact a qualified service technician for this type of maintenance.

**MAINTAIN TOOLS WITH CARE** – Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories.

**CAUTION** – All servicing of the drill should be performing by a service qualified operator. Maintain your tool. It is recommended that the general condition of any tool be examined before it is used. Keep your tool in good condition by adopting a program of conscientious repair and maintenance in accordance with the recommended procedures found in this manual. Keep all cutting tools sharp and clean. Properly maintained cutting tool with sharp cutting edges are less likely to bind and are easier to control. Keep handles dry, clean, and free from oil and grease.

- 1. Before each use:**
  - a. Check the power cord and plug for any wear or damage.
  - b. Check for any loose screws, hardware or parts.
  - c. Check the area to make sure it is clear of any misplaced tools, lumber, cleaning supplies, etc. that could hamper the safe operation of the machine.
- 2. After each use:**
  - a. Disconnect the power cord.
  - b. Clear the scrap iron and pieces of workpiece leftovers.
  - c. Clean the surface of the workbench.
  - d. Add anti-rust oil onto the metal surface of workbench, baseboard, column and main spindle quill.
- 3. After every 100 hours of operations:**
  - a. Check the tightness of the spindle reset spring. Replace if too loose.
  - b. Lubricate the lifting gear rack of the workbench with lubricating grease.
  - c. Check that all clamp handles are in in good condition.
- 4. After every 3 months of operation:**
  - a. Pull the spindle down and oil the spindle sleeve moderately.

**5. After every 6 months of operation:**

- a. Check and ensure the bearing is in good condition.
  - b. Check whether the precision of the drilling machine meets the needs of the work.
  - c. Check that all electrical parts are in good condition.
6. To avoid a build-up of wood dust, regularly clean all parts of the machine using a soft cloth, brush or compressed air. A general cleaning should be done after every use to avoid future problems and ensure that machine is in ready condition for its next use.

**WARNING** – If blowing sawdust, wear proper eye protection to prevent debris from blowing into eyes.

7. Keep the machined surfaces of the drill press table and base free of resin and rust. Clean them regularly with a non-flammable solvent, then coat with a light film of dry lubricant spray or wax.
8. Lubricate the table bracket and locking lever bolts to keep them operating smoothly.
9. Clean the column on a regular basis to prevent the build-up of dust, drilling residue and rust. Treat the posts with a dry lubricant spray or a light coating of wax. Do not use ordinary oil which will collect dust and hamper the movement of parts along the column.
10. Periodically, lower the quill assembly and apply a light coating of machine oil to the quill and spindle surfaces. Raise and lower the quill a few times to distribute the oil on all of the internal surfaces.
11. Apply tube grease to the worm gears in the table elevation mechanism and rack to keep them operating smoothly.
12. The ball bearings in the spindle and pulley assemblies are lifetime lubricated, sealed and do not need any further care.
13. Keep the drive belt and pulley surfaces free of oil and grease. Periodically, check the drive belt for wear and replace if necessary.

**MTM**  
**WAREHOUSE**

## PART DESCRIPTION AND DEFINITION

**Base** – Supports the drill press. For additional stability, holes are provided on the base to bolt the drill press to the floor.

**Backup Material** – A piece of scrap wood placed between the workpiece and table. The backup board prevents wood in the workpiece from splintering when then drill passes through the backside of the workpiece. It also prevents drilling into the table top.

**Belt Guard Assembly** – Covers the pulley and belt during operation of the drill press.

**Belt Tension** – Refer to the “Assembly” section.

**Belt Tension Lock Knob** – Tightening the knob locks the motor bracket support maintaining correct belt distance and tension.

**Bevel Scale** – Shows degree of table tilt for bevel operations. Scale is mounted to the side of arm.

**Chuck** – Holds the drill bit or other recommended accessory to perform the desired operations.

**Chuck key** – A self-ejecting chuck key that will pop out of the chuck when you release it. This action is designed to help prevent throwing the chuck key from the chuck when the power is turned “ON”. Do not use any other key as a substitute: order a new one if damaged or lost.

**Column** – Connects the head, table and base on a one-piece tube for easy alignment and movement.

**Column Support** – Supports the column and provides mounting holes for the column to the base.

**Depth Scale** – Indicates depth of hole being drilled.

**Depth Scale Pointer** – Indicates the drilling depth by pointing to the depth scale.

**Depth Scale Lock** – Locks the depth scale to the selected depth.

**Drill Bit** – The cutting tool used in the drill press to make holes in a workpiece.

**Drill ON/OFF Switch** – This drill features a locking ON/OFF switch that is intended to help prevent operation by children and other unauthorised personnel.

**Drilling Speed** – Adjustable by placing the belt in any of the step grooves in the pulleys. See Spindle Speed inside the belt guard.

**Feed Handle** – Moves the chuck up or down. One or two of the handles may be removed if necessary whenever the workpiece is an unusual shape that interferes with the handles.

**Head Locks** – Locks the head to the column. Always lock head into place while using the drill press.

**Revolution Per Minute (RPM)** – The number of turns completed by a spinning object in one minute.

**Spindle speed** – The RPM of the spindle.

**Spring Cap** – Adjusts the quill spring tension.

**Support Lock** – Tightening the locks table support to the columns. Always have it locked in place while operating the drill press.

**Table** – provides a working surface to the support the workpiece.

**Table Bevel Lock** – Locks the table in any position from 0° to 45°.

**Table Lock** – Locks the table after it is rotated to various positions.

**Table Support** – Rides on the column to the support table arm and table.

## DRILL PRESS SPEED CHART

### Recommended Operating Speed for the given material (RPM)

Drill Type	Soft Wood	Hard Wood	Acrylic	Brass	Aluminium	Steel	Glass & Tile
<b>Twist Drill Bits</b>							
1/16" to 3/16"	3000	3000	2500	3000	3000	3000	NR
1/4" to 3/8"	3000	1500	2000	1200	2500	1000	NR
7/16" to 5/8"	1500	750	1500	750	1500	600	NR
11/16" to 1"	750	500	NR	400	1000	350	NR

**Note:** Lubricate drill with oil when cutting steel 1/8" or thicker. Use centre punch on all holes to prevent the drill from wavering.

### Brad Point Bits

1/8"	1800	1200	1500	NR	NR	NR	NR
1/4"	1800	1000	1500	NR	NR	NR	NR
3/8"	1800	750	1500	NR	NR	NR	NR
1/2"	1800	750	1000	NR	NR	NR	NR
5/8"	1800	500	750	NR	NR	NR	NR
3/4"	1400	250	750	NR	NR	NR	NR
3/8"	1200	250	500	NR	NR	NR	NR
1"	1000	250	250	NR	NR	NR	NR

**Note:** Raise 1/4" and smaller bits often to clear shavings and prevent heat build-up.

### Forstner Bit

1/4" to 3/8"	2400	700	NR	NR	NR	NR	NR
1/2" to 5/8"	2400	500	250	NR	NR	NR	NR
3/4" to 1"	1500	500	250	NR	NR	NR	NR
1-1/8" to 1-1/4"	1000	250	250	NR	NR	NR	NR
1-3/8" to 2"	500	250	NR	NR	NR	NR	NR

**Note:** Raise 1/4" -3/8" bits often clear shavings and prevent heat build-up. Make several shallow passes with larger bits; allow bit to cool between passes.

### Glass & Tile Bits

1/8"	NR	NR	NR	NR	NR	NR	750
3/16"	NR	NR	NR	NR	NR	NR	600
1/4"	NR	NR	NR	NR	NR	NR	500
5/16"	NR	NR	NR	NR	NR	NR	400
3/8"	NR	NR	NR	NR	NR	NR	350
1/2"	NR	NR	NR	NR	NR	NR	200

**Note:** Wear safety goggles. Use drill press only. Do not apply excessive pressure. Lubricate with water while drilling. Reduce quill pressure when bit tip emerges from back side.

Hole Saws							
1" to 1-1/2"	500	350	NR	250	250	NR	NR
1-5/8" to 2"	500	250	NR	150	250	NR	NR
2-1/8" to 2-1/2"	250-500	NR	NR	150	250	NR	NR

**Note:** Do not use with brass or aluminium thicker than 1/16". Avoid dense hardwoods such as maple.

Multi-spur bits							
2-1/8" to 4"	250	250	NR	NR	NR	NR	NR

**Note:** Smaller sizes also available; use Forstner speeds.

Spade Bits							
1/4" to 1/2"	2000	1500	NR	NR	NR	NR	NR
5/8" to 1"	1750	1500	NR	NR	NR	NR	NR
1-1/8" to 1-1/2"	1500	1000	NR	NR	NR	NR	NR

**Note:** Clamp workpiece to table to improve quality of the hole.

Circle Cutters							
1-1/2" to 3"	500	250	250	NR	NR	NR	NR
3-1/4" to 8"	250	250	250	NR	NR	NR	NR

**Note:** Drill one side, flip workpiece over, place centre bit in the same hole and resume cutting.

Countersinks							
2-flute	1400	1400	NR	NR	NR	NR	NR
5-flute	1000	750	750	250	250	250	NR

**Note:** Raise and lower frequently for quicker cutting.

Countersink screw pilot bit							
All Sizes	1500	1000	500	500	NR	NR	NR

**Note:** Clear Twist often.

Plug Cutters							
Any	1000	500	NR	NR	NR	NR	NR

**Note:** Cut to full depth so bit chamfers the plug.

**NR – Not Recommended**

- Recommendation are based on visual and tactile tests under workshop conditions. Drilling faster than recommended can cause overheating. Speeds slower than recommended may cause poor quality holes.
- All wood testing done on face grain. Reduce speeds when drilling end grain.
- Speeds based on new bits.

Be aware that these are only recommended RPMs for the drill bit. Different thickness and variation of the material being drill may require lowering or increasing the RPM.

## TROUBLESHOOTING

Problem	Cause	Solution
<b>Noisy operation.</b>	<ol style="list-style-type: none"> <li>1. Incorrect belt tension.</li> <li>2. Dry spindle.</li> <li>3. Loose spindle pulley.</li> <li>4. Loose motor pulley.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust tension to recommended.</li> <li>2. Lubricate the spindle.</li> <li>3. Check tightness of retaining nut on the pulley and tighten if necessary.</li> <li>4. Tighten the set screws in the pulleys.</li> </ol>
<b>Drill bit burn the material.</b>	<ol style="list-style-type: none"> <li>1. Incorrect speed.</li> <li>2. Chips not exiting the hole.</li> <li>3. Dull drill bit.</li> <li>4. Feeding too slow.</li> <li>5. Drill bit not lubricated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Change to the appropriate speed.</li> <li>2. Retract drill bit frequently to clear chips.</li> <li>3. Resharpener the drill bit.</li> <li>4. Increase feeding speed.</li> <li>5. Lubricate the drill bit.</li> </ol>
<b>Drill press does not come up to speed.</b>	<ol style="list-style-type: none"> <li>1. Extension cord too light or too long.</li> <li>2. Low current.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace with adequate size and length.</li> <li>2. Get in contact with a qualified electrician.</li> </ol>
<b>Drill press vibrates excessively.</b>	<ol style="list-style-type: none"> <li>1. Stand on uneven surface</li> <li>2. Bad belt(s).</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust stand so that it even to the floor.</li> <li>2. Replace the affected belt(s).</li> </ol>
<b>Drill bit leads off, hole not round.</b>	<ol style="list-style-type: none"> <li>1. Hard grain in wood or lengths of cutting lips and/or angles not equal.</li> <li>2. Bent drill bit.</li> </ol>	<ol style="list-style-type: none"> <li>1. Resharpener the drill bit correctly.</li> <li>2. Replace the drill bit.</li> </ol>
<b>Wood splinters on workpiece</b>	<ol style="list-style-type: none"> <li>1. No backup material supporting the workpiece.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use backup material.</li> </ol>
<b>Workpiece pulled loose by hand.</b>	<ol style="list-style-type: none"> <li>1. Not supported or clamped properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Add backup material for the workpiece or clamp it.</li> </ol>
<b>Drill bit binds in workpiece.</b>	<ol style="list-style-type: none"> <li>1. Workpiece pinching the drill bit or excessive feed pressure.</li> <li>2. Improper belt tension.</li> </ol>	<ol style="list-style-type: none"> <li>1. Add backup material for the workpiece or clamp it.</li> <li>2. Adjust belt tension to recommended.</li> </ol>
<b>Excessive drill bit runout or wobble.</b>	<ol style="list-style-type: none"> <li>1. Bent drill bit.</li> <li>2. Worn spindle bearing.</li> <li>3. Drill bit not properly installed in the chuck.</li> <li>4. Chuck not properly installed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use a straight drill bit.</li> <li>2. Replace the bearings.</li> <li>3. Properly install the drill bit.</li> <li>4. Properly install the chuck.</li> </ol>
<b>Quill returns too slow or too fast</b>	<ol style="list-style-type: none"> <li>1. Spring has improper tension.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the spring tension.</li> </ol>
<b>Chuck will not stay attached</b>	<ol style="list-style-type: none"> <li>1. Dirt, grease or oil on the tapered inside surface of the chuck or on the spindle's tapered surface.</li> </ol>	<ol style="list-style-type: none"> <li>1. Using a household detergent, clean the tapered surface of the chuck and spindle to remove all dirt, grease and oil.</li> </ol>
<b>Motor will not run</b>	<ol style="list-style-type: none"> <li>1. Defective or broken switch.</li> <li>2. Defective or damaged power cord.</li> <li>3. Open circuit, loose connections, or burned out motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Get it replaced by a qualified service technician.</li> <li>2. Get it replaced by a qualified service technician.</li> <li>3. Get it checked by a qualified service technician.</li> </ol>

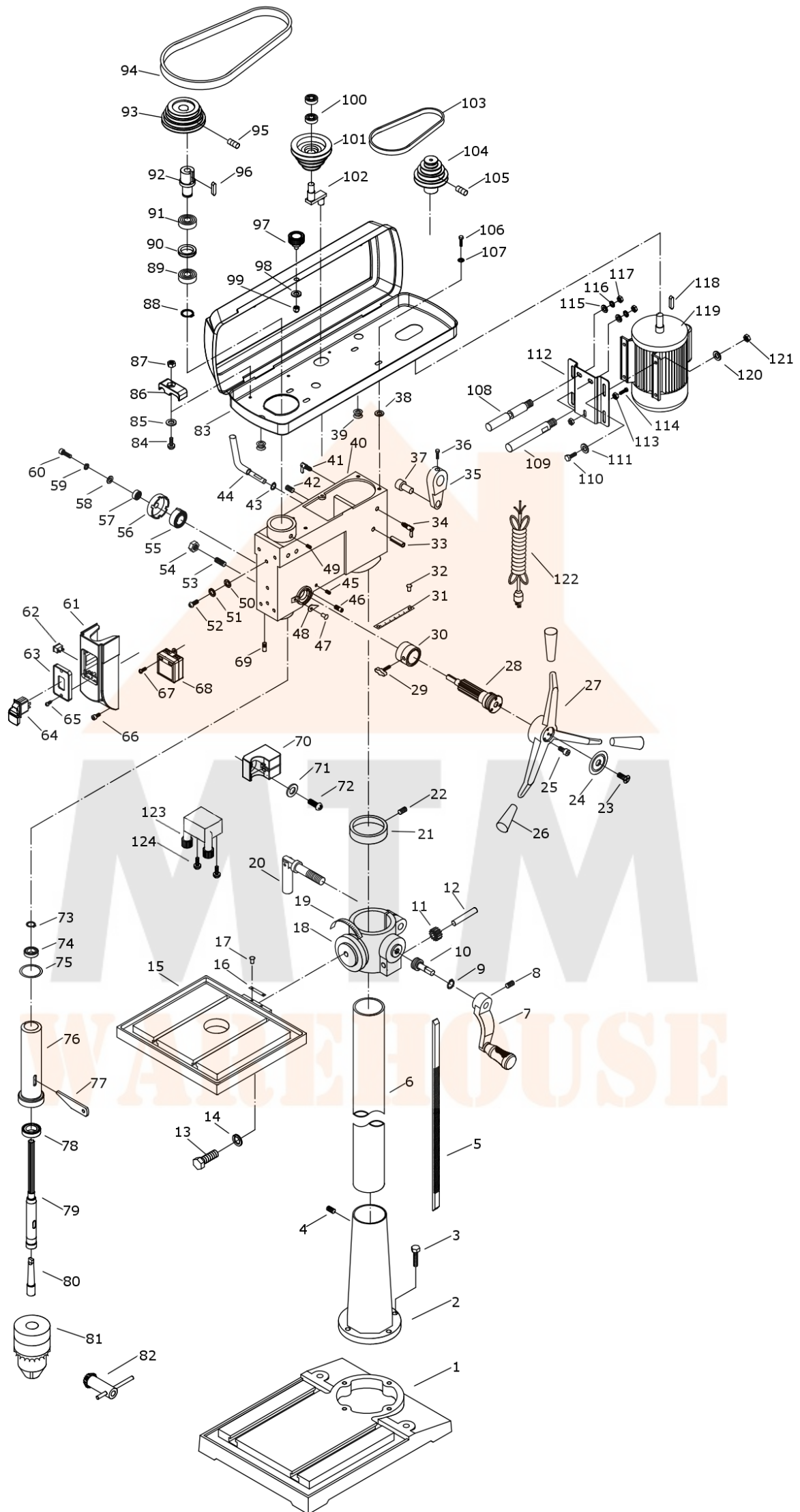


	4. Low voltage.	4. Check the power line for the proper voltage. Use another circuit or have a qualified electrician upgrade the service.
<b>Motor constantly stalls</b>	<ol style="list-style-type: none"> <li>Short circuit in the motor.</li> <li>Incorrect fuses or circuit breakers.</li> <li>Overloaded circuit.</li> <li>Low Voltage</li> </ol>	<ol style="list-style-type: none"> <li>Get it checked by a qualified service technician.</li> <li>Replace with the correct fuse or circuit breaker for the circuit.</li> <li>Turn off other connected machines and retry.</li> <li>Check the power line for proper voltage. Use another circuit or have a qualified electrician upgrade the service.</li> </ol>

## PART LIST AND DIAGRAM

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
1	WP5232-001	Base	1	27	WP5232-027	Feed handle	1
2	WP5232-002	Column Support	1	28	WP5232-028	Gear shaft	1
3	WP5232-003	Hex head bolt	4	29	WP5232-029	Wing screw	1
4	WP5232-004	Set Screw	2	30	WP5232-030	Scale ring	1
5	WP5232-005	Gear rack	1	31	WP5232-031	Depth scale	1
6	WP5232-006	Column	1	32	WP5232-032	Rivet	2
7	WP5232-007	Table adjusting handle	1	33	WP5232-033	Spring pin	2
8	WP5232-008	Set screw	1	34	WP5232-034	Wing screw	1
9	WP5232-009	Retaining ring	1	35	WP5232-035	Belt tension block	1
10	WP5232-010	Worm shaft	1	36	WP5232-036	Hex head bolt	1
11	WP5232-011	Worm gear	1	37	WP5232-037	Pin	1
12	WP5232-012	Pin	1	38	WP5232-038	Rubber washer	4
13	WP5232-013	Hex head bolt	1	39	WP5232-039	Bushing	2
14	WP5232-014	Lock washer	1	40	WP5232-040	Head	1
15	WP5232-015	Table	1	41	WP5232-041	Wing screw	1
16	WP5232-016	Pointer	1	42	WP5232-042	Set screw	2
17	WP5232-017	Rivet	2	43	WP5232-043	Retaining ring	1
18	WP5232-018	Table support bracket	1	44	WP5232-044	Belt tension handle	1
19	WP5232-019	Angle scale	1	45	WP5232-045	Set screw	2
20	WP5232-020	Table locking handle	1	46	WP5232-046	Pin	1
21	WP5232-021	Column collar	1	47	WP5232-047	Rivet	2
22	WP5232-022	Set screw	1	48	WP5232-048	Pointer	1
23	WP5232-023	Flat head screw	1	49	WP5232-049	Set screw	1
24	WP5232-024	Hub cover	1	50	WP5232-050	Serrated washer	1
25	WP5232-025	Socket head screw	3	51	WP5232-051	Lock washer	1
26	WP5232-026	Handle cap	3	52	WP5232-052	Pan head screw	1

No.	Part No.	Description	Qty	No.	Part No.	Description	Qty
53	WP5232-053	Set screw	1	90	WP5232-090	Ball bearing	1
54	WP5232-054	Nut	1	91	WP5232-091	Spacer	1
55	WP5232-055	Spring	1	92	WP5232-092	Ball bearing	1
56	WP5232-056	Spring cap	1	93	WP5232-093	Sleeve	1
57	WP5232-057	Nut	1	94	WP5232-094	Spindle pulley	1
58	WP5232-058	Flat washer	1	95	WP5232-095	V-belt	1
59	WP5232-059	Lock washers	1	96	WP5232-096	Set screw	1
60	WP5232-060	Socket head screw	1	97	WP5232-097	Key	1
61	WP5232-061	Switch box	1	98	WP5232-098	Belt house knob	1
62	WP5232-062	Laser switch	1	99	WP5232-099	Flat washer	1
63	WP5232-063	Switch plate	1	100	WP5232-100	Nut	1
64	WP5232-064	Switch	1	101	WP5232-101	Ball bearing	2
65	WP5232-065	Thread forming screw	2	102	WP5232-102	Idle pulley	1
66	WP5232-066	Socket head screw	4	103	WP5232-103	Crank shaft	1
67	WP5232-067	Pan head screw	2	104	WP5232-104	V-belt	1
68	WP5232-068	Transformer	1	105	WP5232-105	Motor pulley	1
69	WP5232-069	Set screw	1	106	WP5232-106	Set screw	1
70	WP5232-070	Chuck key seat	1	107	WP5232-107	Hex head bolt	4
71	WP5232-071	Flat washer	1	108	WP5232-108	Flat washer	4
72	WP5232-072	Pan head screw	1	109	WP5232-109	Sliding shaft (A)	1
73	WP5232-073	Laser	2	110	WP5232-110	Sliding shaft (B)	1
74	WP5232-074	Retaining ring	1	111	WP5232-111	Hex head bolt	4
75	WP5232-075	Ball bearing	1	112	WP5232-112	Flat washer	4
76	WP5232-076	Rubber washer	1	113	WP5232-113	Motor support plate	1
77	WP5232-077	Quill	1	114	WP5232-114	Nut	2
78	WP5232-078	Chuck removing tool	1	115	WP5232-115	Hex head bolt	1
79	WP5232-079	Ball bearing	1	116	WP5232-116	Flat washer	4
80	WP5232-080	Spindle	1	117	WP5232-117	Lock washer	2
81	WP5232-081	Arbour	1	118	WP5232-118	Nut	2
82	WP5232-082	Chuck	1	119	WP5232-119	Key	1
83	WP5232-083	Chuck key	1	120	WP5232-120	Motor	1
84	WP5232-084	Belt house	1	121	WP5232-121	Flat washer	4
85	WP5232-085	Pan head screw	3	122	WP5232-122	Nut	4
86	WP5232-086	Flat washer	3	123	WP5232-123	Power cord	1
87	WP5232-087	Cord clamp	3	124	WP5232-124	Laser assembly	1
88	WP5232-088	Nut	3	125	WP5232-125	Pan head screw	2
89	WP5232-089	Retaining ring	1	126	WP5232-126	Hex wrench (not shown)	4





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