



# 5/8" HOLLOW CHISEL MORTISER WITH TILTING HEAD

Head tilts 0°-30° right and left



MODEL: MA-1050ST

# INSTRUCTION MANUAL

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# WARRANTY INFORMATION



**2-YEAR  
LIMITED WARRANTY  
FOR THIS HOLLOW CHISEL MORTISER**

**KING CANADA TOOLS  
OFFERS A 2-YEAR LIMITED WARRANTY  
FOR INDUSTRIAL USE.**

## **PROOF OF PURCHASE**

Please keep your dated proof of purchase for warranty and servicing purposes.

## **REPLACEMENT PARTS**

Replacement parts for this product are available at our authorized King Canada service centers across Canada.

## **LIMITED TOOL WARRANTY**

King Canada makes every effort to ensure that this product meets high quality and durability standards. King Canada warrants to the original retail consumer a 2-year limited warranty as of the date the product was purchased at retail and that each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, normal wear and tear, negligence or accidents, repairs done by an unauthorized service center, alterations and lack of maintenance. King Canada shall in no event be liable for death, injuries to persons or property or for incidental, special or consequential damages arising from the use of our products.

To take advantage of this limited warranty, return the product at your expense together with your dated proof of purchase to an authorized King Canada service center. Contact your retailer or visit our web site at [www.kingcanada.com](http://www.kingcanada.com) for an updated listing of our authorized service centers. In cooperation with our authorized serviced center, King Canada will either repair or replace the product if any part or parts covered under this warranty which examination proves to be defective in workmanship or material during the warranty period.

## **PARTS DIAGRAM & PARTS LISTS**

Refer to the Parts section of the King Canada web site for the most updated parts diagram and parts list.

**KING CANADA INC. DORVAL, QUÉBEC, CANADA H9P 2Y4**

**[www.kingcanada.com](http://www.kingcanada.com)**



# GENERAL & SPECIFIC SAFETY RULES

## 1. KNOW YOUR TOOL

Read and understand the owners manual and labels affixed to the tool. Learn its application and limitations as well as its specific potential hazards.

## 2. GROUND THE TOOL.

This tool is equipped with an approved 3-conductor cord and a 3-prong grounding type plug to fit the proper grounding type receptacle. The green conductor in the cord is the grounding wire. **NEVER** connect the green wire to a live terminal.

## 3. KEEP GUARDS IN PLACE.

Keep in good working order, properly adjusted and aligned.

## 4. REMOVE ADJUSTING KEYS AND WRENCHES.

Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.

## 5. KEEP WORK AREA CLEAN.

Cluttered areas and benches invite accidents. Make sure the floor is clean and not slippery due to wax and sawdust build-up.

## 6. AVOID DANGEROUS ENVIRONMENT.

Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lit and provide adequate surrounding work space.

## 7. KEEP CHILDREN AWAY.

All visitors should be kept at a safe distance from work area.

## 8. MAKE WORKSHOP CHILD-PROOF.

With padlocks, master switches or by removing starter keys.

## 9. USE PROPER SPEED.

A tool will do a better and safer job when operated at the proper speed.

## 10. USE RIGHT TOOL.

Don't force the tool or an attachment to do a job for which it was not designed.

## 11. WEAR PROPER APPAREL.

Do not wear loose clothing, gloves, neckties or jewelry (rings, watch) because they could get caught in moving parts. Non-slip

footwear is recommended. Wear protective hair covering to contain long hair. Roll up long sleeves above the elbows.

## 12. ALWAYS WEAR SAFETY GLASSES.

Always wear safety glasses (ANSI Z87.1). Everyday eyeglasses only have impact resistant lenses, that are **NOT** safety glasses. Also use a face or dust mask if cutting operation is dusty.

## 13. DON'T OVERREACH.

Keep proper footing and balance at all times.

## 14. MAINTAIN TOOL WITH CARE.

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

## 15. DISCONNECT TOOLS.

Before servicing, when changing accessories or attachments.

## 16. AVOID ACCIDENTAL STARTING.

Make sure the switch is in the "OFF" position before plugging in.

## 17. USE RECOMMENDED ACCESSORIES.

Consult manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.

## 18. NEVER STAND ON TOOL.

Serious injury could occur if the tool tips over. Do not store materials such that it is necessary to stand on the tool to reach them.

## 19. CHECK DAMAGED PARTS.

Before further use of the tool, a guard or other parts that are damaged should be carefully checked to ensure that they will operate properly and perform their intended function. Check for alignment of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other parts that are damaged should be properly repaired or replaced.

## 20. NEVER LEAVE MACHINE RUNNING UNATTENDED.

Turn power "OFF". Don't leave any tool running until it comes to a complete stop.

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## SPECIFIC SAFELY RULES FOR HOLLOW CHISEL MORTISERS

1. **DO NOT USE** until unit is completely assembled and installed according to instructions.

2. **IF YOU ARE NOT** thoroughly familiar with the operation of mortising machines, obtain advice from your supervisor, instructor, or other qualified person.

3. **MAKE CERTAIN** the machine is fastened to a supporting surface to prevent it from tipping over during operation.

4. **NEVER TURN MORTISING MACHINE ON** before clearing the table of all objects (tools, scrap pieces, etc.).

5. **ALWAYS KEEP** hands, fingers and hair away from the rotating bit.

6. **DO NOT ATTEMPT** to mortise material that does not have a flat surface, unless a suitable support is used.

7. **ALWAYS CLAMP** workpiece securely to table with vise or holddowns to prevent lifting.

8. **ALWAYS SUPPORT** workpiece securely against fence to prevent rotation.

9. **BE SURE** drill bit is sharp, not damaged and properly secured in the chuck before operating.

10. **MAKE SURE** chuck key is removed before starting machine.

11. **NEVER START** mortising machine with the drill bit of chisel pressed against the workpiece.

12. **NEVER PERFORM LAYOUT**, assembly or setup work on mortising machine with cutting tool rotating.

13. **ADJUST DEPTH STOP** to avoid drilling into the table.

14. **ALWAYS STOP** the machine before removing scrap pieces from the table.

15. **SHUT OFF POWER**, remove the drill bit and chisel and clean the table before leaving the machine.

16. **DO NOT WEAR** gloves, neckties or loose fitting clothing.

17. **NEVER OPERATE** mortising machine if any part is damaged or broken until it is properly repaired or replaced.

18. **NEVER PLACE YOUR FINGERS** in a position where drill or cutting tool could contact them if workpiece should shift unexpectedly.

# SPECIFICATIONS & ELECTRICAL INFORMATION



MODEL	MA-1050ST
Chisel capacity	1/4" - 5/8"
Chuck capacity	1/2"
Maximum chisel stroke	6-1/2"
Maximum distance fence to center chisel	3"
Maximum distance chisel to table (with head in extended position)	9-1/2"
Under table hold down capacity	5-3/4"
Sliding table size	20" x 8-1/4"
Sliding table travel (right-left)	16"
Fence size	20" x 3-9/16"
Speed	1,720 RPM
Motor	3/4HP, 6A, 110V, 60Hz, 1 phase
Dimensions (LxWxH)	20" x 16" x 30"
Weight	135 lb

### WARNING!

ALL ELECTRICAL CONNECTIONS MUST BE DONE BY A QUALIFIED ELECTRICIAN. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY! ALL ADJUSTMENTS OR REPAIRS MUST BE DONE WITH THE MACHINE DISCONNECTED FROM THE POWER SOURCE. FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY!

### POWER SUPPLY

**WARNING:** YOUR MORTISER MUST BE CONNECTED TO A 110V, 15-AMP CIRCUIT BREAKER. FAILURE TO CONNECT IN THIS WAY CAN RESULT IN INJURY FROM SHOCK OR FIRE.

### GROUNDING

This Mortiser must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current, to reduce the risk of electric shock. This Mortiser is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Your Mortiser must be properly grounded. Not all outlets are properly grounded. If you are not sure if your outlet is properly grounded, have it checked by a qualified electrician.

**WARNING:** TO MAINTAIN PROPER GROUNDING OF YOUR MORTISER, DO NOT REMOVE OR ALTER THE GROUNDING PRONG IN ANY MANNER.

**WARNING:** IF NOT PROPERLY GROUNDED, THIS MORTISER CAN CAUSE ELECTRICAL SHOCK, PARTICULARLY WHEN USED IN DAMP LOCATIONS. TO AVOID SHOCK OR FIRE, IF THE POWER CORD IS WORN OR DAMAGED IN ANY WAY, HAVE IT REPLACED IMMEDIATELY.

### 110V OPERATION

As received from the factory, your Mortiser is ready to run for 110V operation. This Mortiser is intended for use on a circuit that has an outlet and a plug which looks like the one illustrated in Fig.1.

**WARNING:** DO NOT USE A TWO-PRONG ADAPTOR FOR THEY ARE NOT IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES. NEVER USE IN CANADA.

### EXTENSION CORDS

The use of any extension cord will cause some loss of power. Use the following table to determine the minimum wire size (A.W.G.-American Wire Gauge) extension cord. Use only 3-wire extension cords which have 3-prong grounding type plugs and 3-hole receptacles which accept the tool's plug.

For circuits that are further away from the electrical circuit box, the wire size must be increased proportionately in order to deliver ample voltage to the Mortiser motor. Refer to Fig.2 for wire length and size.

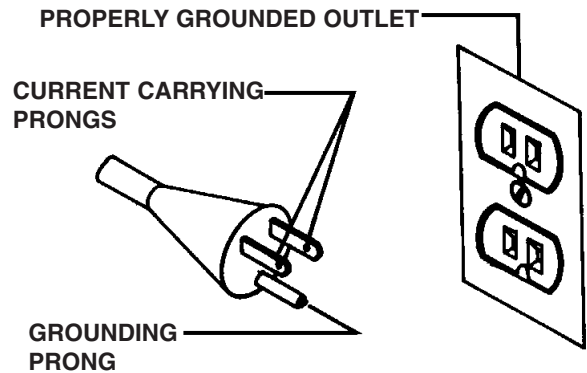


FIGURE 1

LENGTH OF CONDUCTOR	WIRE SIZES REQUIRED (AMERICAN WIRE GAUGE)
	<u>110V LINES</u>
0-25 FEET	NO.16
26-50 FEET	NO.16
51-100 FEET	NO.14

FIGURE 2



# SETTING-UP & GETTING TO KNOW YOUR HOLLOW CHISEL MORTISER

**WARNING:** For your own safety, never connect the hollow chisel mortiser to a power source until all assembly steps are complete, and you have read and understood safety, adjustments and operational instructions.

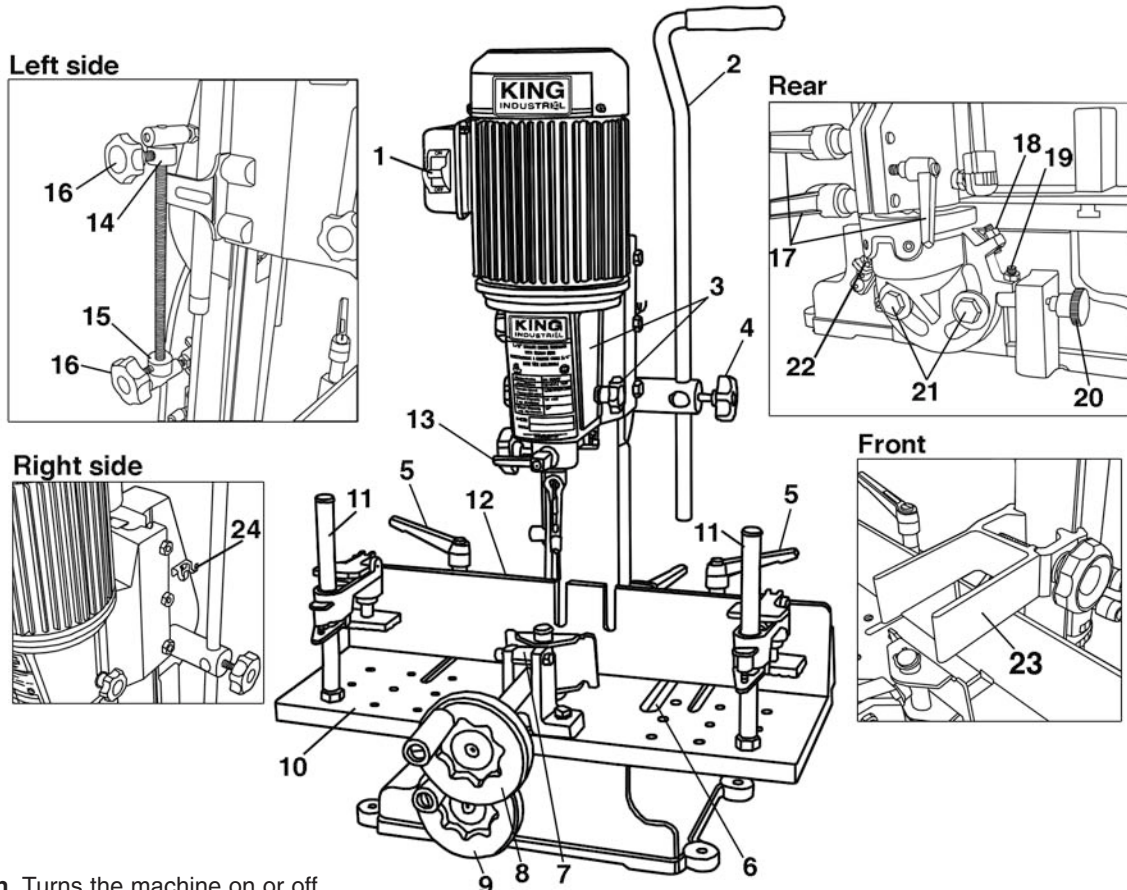
## UNPACKING AND CLEANING

Remove wooden crate around the machine, then unbolt mortiser from the crate base, keep this mounting hardware so you can use it to fasten the base to a workbench. Some parts are coated with rust prevention wax which must be removed before operation with a soft

cloth soaked in kerosene. Do not use acetone, gasoline, or lacquer thinner; these are dangerous products and may damage the plastic and rubber parts. It is recommended to apply a coat of paste wax to the sliding table work surface.

## SETTING UP YOUR MORTISER

For your safety, to avoid toppling the mortiser during use, fasten the mortiser base to a work bench or a stand. An optional stand (SS-1050ST) designed for this machine is available, simply ask your King Canada distributor for more information.



- 1-On/Off -Switch.** Turns the machine on or off.
- 2-Downfeed Lever.** Pulling this lever down brings the head and chisel towards the workpiece.
- 3-Chuck Cover and Lock Knob.** Open this cover or the other one on the opposite side to gain access to the chuck.
- 4-Downfeed Lever Lock Knob.**
- 5-Fence Lock Handles.** Locks the fence in the desired position.
- 6-Table Scale.**
- 7-Quick Release Vise Stop Plate.** Secures vise into position, lift it upwards to quickly position vise.
- 8-Quick Release Vise Handwheel.** Tightens your workpiece against the fence during operations.
- 9-Sliding Table Handwheel.** Adjusts the position of the sliding table.
- 10-Sliding Table.** This table can be moved longitudinally, which prevents having to unclamp your workpiece every time.
- 11-Table Hold Down (2).** Holds your workpiece against the table during operations.
- 12-Fence.** This adjustable fence moves back and forth and adequately supports your workpiece.
- 13-Chisel and Chisel Adaptor Lock Handle.** Fixes the chisel and chisel adaptor to the head casting flange.

- 14-Height Stop Bushing.** This bushing acts as a height stop, its purpose is to limit the upward travel of the head.
- 15-Depth Stop Bushing.** This bushing acts as a depth stop which limits the downward travel of the head.
- 16-Lock Knobs (2) for Stops.** Lock depth and height stops at the desired setting.
- 17-Head Swivel Lock Handles (3).** Adjust these 3 lock handles to swivel the head assembly clockwise or counterclockwise.
- 18-30° Head Tilt (Left side) Positive Stop Set Screw.**
- 19-0° Head Tilt (Left side) Positive Stop Set Screw.**
- 20-Head Tilt Positive Stop Lock Pin.** Pull out this lock pin when you desire to tilt head towards the right side, otherwise it is used as a lock pin for the positive stops 0° and 30° to the left.
- 21-Head Tilt Lock Bolts.** Loosen these bolts to tilt head.
- 22-30° Head Tilt (Right side) Positive Stop Set Screw.**
- 23-Column Mounted Hold Down.** Holds your workpiece against the table during operations. Can not be used in combination with sliding table movement unless workpiece is unclamped, repositioned, and reclamped in place.
- 24-Chuck Key Holder.**

# CONTROLS & ADJUSTMENTS



## Turning Mortiser On/Off

**WARNING:** For your own safety, never connect the hollow chisel mortiser to a power source until you have read and understood safety, adjustments and operational instructions in this manual.

The ON-OFF switch (A) Fig.3 is located on the motor and operating positions are clearly marked. Push switch up to turn the machine ON and down to turn it OFF. The switch comes with a removable safety key (B) that allows the switch to be locked in the OFF position. To activate the locking feature, push switch to the OFF position and pull the safety key out of the switch as shown. To reactivate the switch, simply reposition the safety key in the switch.

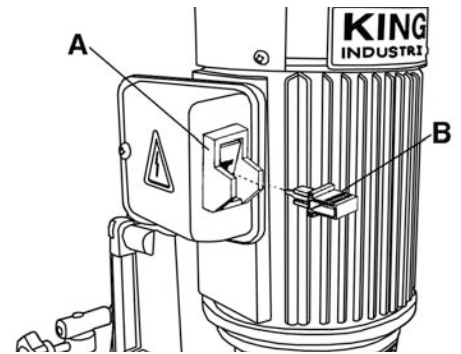


Figure 3

## Raising and Lowering the Head

A downfeed handle (A) Fig.4 on the right side of the head is provided to raise and lower the head. This handle may be repositioned for maximum leverage and comfort during operation. To do this, loosen large lock knob (B), remove downfeed handle from shaft (C) and reposition in the second mounting hole (D) in the shaft, retighten lock knob (B) and continue with your operation.

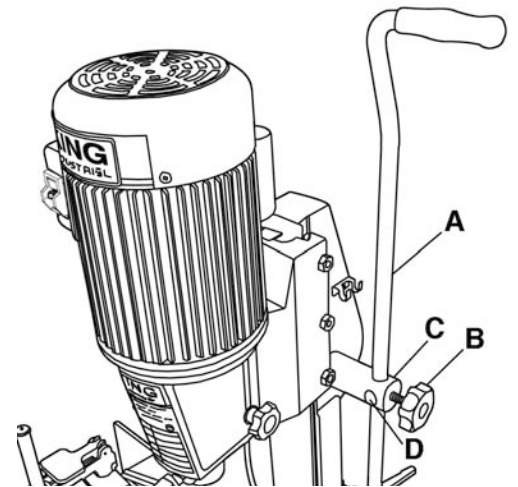


Figure 4

## Adjusting Depth and Height Stops

If you desire to set the cutting depth to a specific measurement or often to prevent drilling into the work table, a depth stop bushing (B) Fig.5 can be positioned and locked in place with lock knob (A). To set the chisel cutting depth to a specific measurement, first make sure the chisel and bit you intend on using is installed correctly in the head (see chisel & bit installation instructions). Example, if you wish to set the depth stop at 1" above the table surface, using the downfeed handle, lower the head until the tip of the bit is 1" above the table surface. Once this is done, loosen lock knob (A) and reposition the depth stop bushing (B) up against the stop plate (C) and retighten lock knob.

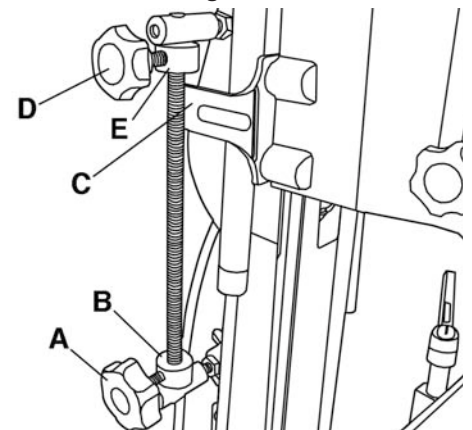


Figure 5

During repetitive operations, you may desire to limit the amount of upwards travel of the head making the downfeed distance shorter. Loosening the lock knob (D) Fig.5 and reposition the height stop bushing (E) downwards against the stop plate (C).

## Adjusting Position of Fence

The fence (A) Fig.6 can be moved in or out by loosening the 2 lock handles (B) and sliding the fence to desired position. The sliding table includes a scale (C), if you desire to set the fence at 2" away from the center of the drill bit, slide the fence to the 2" mark on the scale and tighten the 2 lock handles (B). It is very important that the fence be positioned parallel with the travel of the sliding table. The easiest way to achieve this is to measure from the front edge of the table to the fence. Tip: Because of the necessity of constantly setting the resetting the fence, it could be very useful to scribe a series of parallel lines (about 3mm apart) on the table to aid the setting operation.

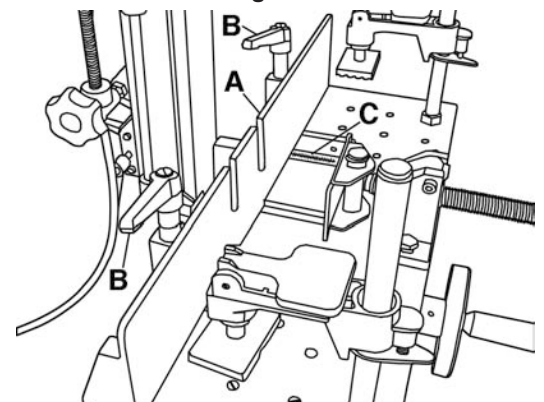


Figure 6

## Adjusting Sliding Table Position

The sliding table (A) Fig.7 is very convenient if you plan on making multiple cuts in the same workpiece, it allows you to move the sliding table over instead of unclamping and repositioning your workpiece. To move the the sliding table to the right or left, turn the lower handwheel (B).

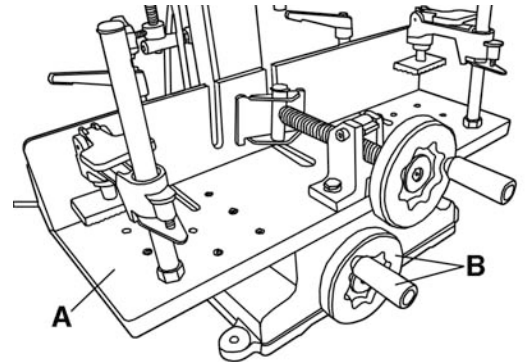


Figure 7

## Tilting Head (for specialized woodworking applications)

The head can be tilted from 0° to 30° toward the right or the left. To tilt the head, first begin by holding the head with one hand. Then with the other hand, loosen both head fixing hex. bolts (A) Fig.8 using the supplied 17mm open ended wrench.

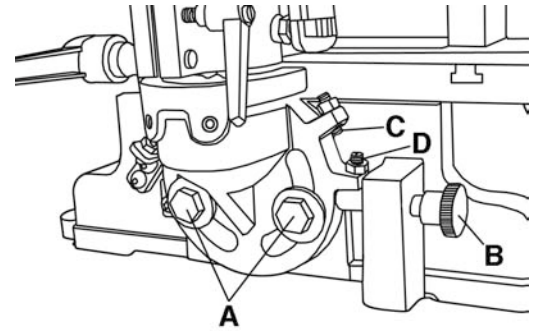


Figure 8

Then pull out the stop pin (B) Fig.8 and move the head to the desired angle. Line up the angle scale pointer (A) Fig.9 with the desired angle on the scale (B) Fig.9 and retighten both head fixing hex. bolts.

If you desire to quickly adjust the head angle to 30°, for left tilt simply push the stop pin back in until it comes into contact with positive stop set screw (C) Fig.8, for right tilts simply swing the head to the right until the head casting comes in contact with the right side positive stop set screw (C) Fig.9. If one or both positive stops do not give you a perfect 30° angle, they can be adjusted, see section below for instructions.

## Adjusting 0° and 30° Positive Stop Set Screws

The positive stop set screws (C,D-Fig.8 and C-Fig.10) are adjusted properly at the factory, but after time, if you find that the angle is slightly off, an adjustment may be necessary.

To adjust the 0° positive stop set screw (D) Fig.8, make sure the stop pin (B) is positioned below the 0° positive stop set screw as shown in Fig.8. Install a chisel and bit into the head following the instructions in this manual.

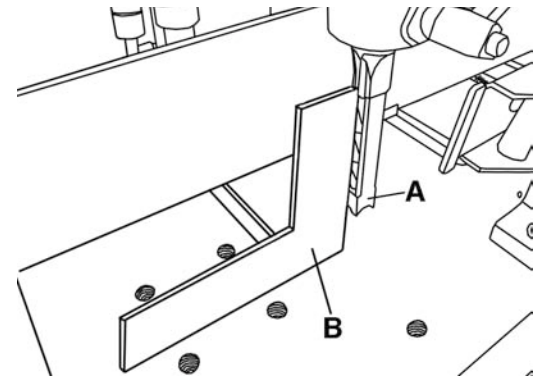


Figure 9

Place a square (B) Fig.9 on the sliding table and against the chisel (A) Fig.9 and check if the chisel is perfectly perpendicular to the square. If an adjustment is needed, loosen both head fixing hex. bolts (A) Fig.8 using the supplied 17mm open ended wrench, tilt the head until the chisel is perfectly perpendicular and retighten both head fixing hex. bolts. Loosen the 0° positive stop hex. nut, and reposition the set screw against the stop pin and retighten the hex. nut.

To adjust the 30° positive stop set screws (C) Fig.8 and Fig.10, use a 30° square or a protractor and follow the same procedures above.

## Swiveling Head (for specialized woodworking applications)

The head can be swiveled to the right or to the left up to 180°, it is important that you remove the chisel and bit from the head before proceeding with this adjustment.

First loosen the two large lock handles (D) Fig.10, then tighten the small lock handle (E) to widen the gap in the column sleeve casting. Swivel the head to the desired angle, loosen the small lock handle and tighten the two large lock handles to lock the head in position.

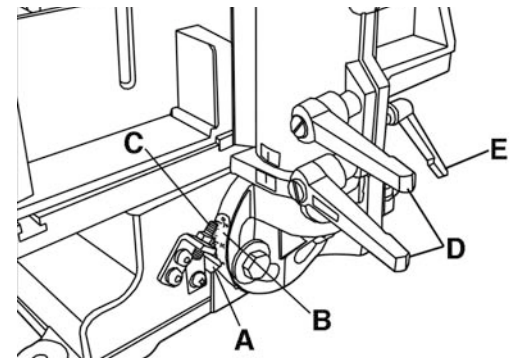


Figure 10

# CONTROLS & ADJUSTMENTS



## Adjusting the Working Height Capacity

The working height capacity can be increased by 3", we recommend you get help to do this, it could be very difficult to do this adjustment by yourself. To make this adjustment, loosen the two large lock handles (A) Fig.11, then tighten the small lock handle (B) to widen the gap in the column sleeve casting.

Raise the head by hand maximum 3" higher, do not go beyond 3" or else you may affect your cutting operations you will put your safety at risk. Then loosen the small lock handle and tighten the two large lock handles to lock the head in position. See Fig.11.

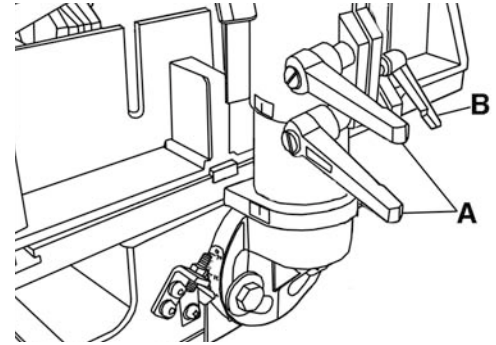


Figure 11

## Adjusting Quick Release Vise

This mortiser comes with a quick release vise (A) Fig.12 which allows you to rapidly adjust and secure a workpiece against the fence (B).

To rapidly adjust the position of the quick release vise, simply lift the stop plate (C), push the handwheel towards the workpiece, lower the stop plate and turn the vise handwheel (D) clockwise to tighten and secure the workpiece against the fence.

For some operations, it may be necessary to remove the quick release vise and use the table or column hold downs instead to secure your workpiece. To remove the quick release vise, undo and remove the fixing hex. bolts (E).

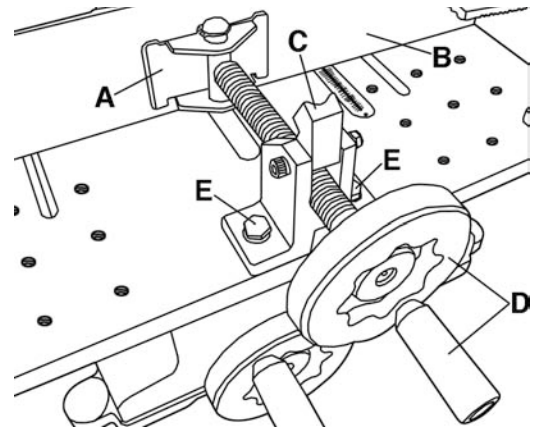


Figure 12

## Adjusting both 9 Position Table Hold Downs

This mortiser comes with two table hold downs, as shown in Fig.13. Each can be mounted in 9 different positions on both sides of the sliding table, depending on the size of the workpiece. Each table hold down gets bolted to the sliding table using the supplied 17mm open ended wrench.

To secure a workpiece to the sliding table, bolt the hown down shaft (A) Fig.13 as close to the workpiece as possible. Pull the spring loaded body clamp (B) upwards to adjust the height and position of the hold down plate (C). Position the hold down plate so that it just rests on top of your workpiece, then lower the latch (D) to further lower the hold down plate to firmly secure your workpiece to the table.

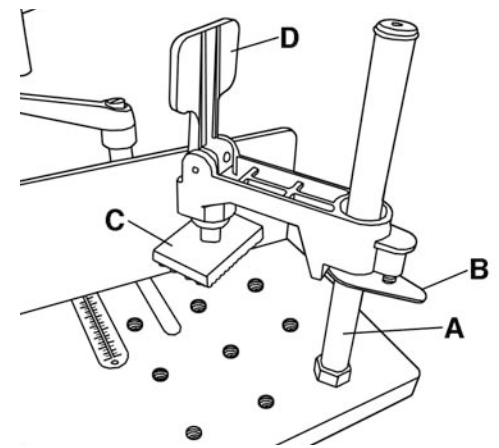


Figure 13

## Positioning Column Mounted Hold Down

This mortiser also comes with a fork hold down (A) Fig.14 which gets mounted to the column. Because this hold down slides down in between the slots in the fence and holds the workpiece against the table, it can only be used when making single cuts in a workpiece and when the fence/sliding table stays stationary in the centered position, or else you must unclamp, reposition and reclamp your workpiece for each cut.

To mount the fork hold down, loosen the lock knob (B), place the "V" groove clamps (C) of the hold down jaws over the "V" grooves of the column as shown. Position it on top of the workpiece and tighten the lock knob to secure the hold down and the workpiece in place.

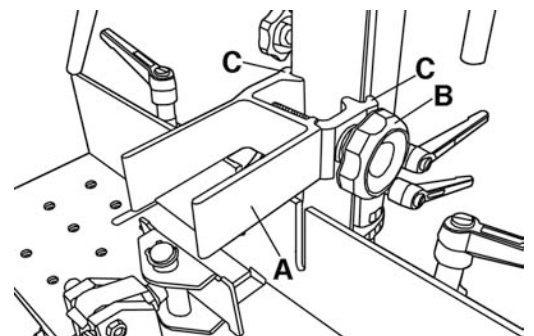


Figure 14

When using the column mounted hold down, it may be necessary to remove the quick release vise from the sliding table because it may interfere with your operation.





# CHISEL & BIT INSTALLATION/ADJUSTMENT

## Chisel and Bit Installation

**WARNING:** Make sure switch is in the **OFF** position and power cord is unplugged before performing checks, adjustments, or setup procedures.

Loosen the two lock knobs (A) Fig.15 on both sides of the head and lower the covers (B) to expose the chuck (C).

**NOTE:** There are two different size chisel bushings provided. Determine which size fits the chisel shank (5/8" or 3/4") to be used and store the remaining one in a safe place for future use.

Insert the appropriate chisel bushing (A) Fig.16 up through the hole in head (B), being sure that round hole in the side of chisel bushing faces the front of machine. The lock knob (C) must pass through this hole to secure chisel. Tighten the chisel bushing lock knob (C), located on front of the head, until the chisel bushing is held up in place.

**NOTE:** This lock knob should not become tight at this point. If it does, loosen it and retry, making certain that the round hole in the side of the chisel bushing is lined up with the lock knob.

Insert bit into chisel and insert chisel and bit up through hole in head assembly.

**NOTE:** The opening in the side of the chisel should always be to the right or left, never to the front or rear. The opening allows chips to escape during operation.

Push the chisel (A) Fig.17 up as far as possible into head, then lower chisel approximately 1/16". This setting is only temporary, the chisel will need to be repositioned against the head once the bit is secure in place. Tighten lock knob (C) to hold chisel in position. Push the drill bit (B) up through the chisel opening making sure that drill bit bottoms out in chisel before bottoming out in chuck. Secure the bit in the chuck using the chuck key supplied. Loosen lock knob (C) and push chisel up all the way into the head and retighten lock knob. Refer to Fig.17.

**NOTE:** Chisel was first lowered approximately 1/16" in the step above. The flat portion of the bit should be adjusted to a minimum of 1/16" away from the bottom of the chisel. For certain types of wood it may be necessary to increase this distance up to a maximum of 3/16" clearance. This assures having proper clearance between the cutting lips of the bit and the points of the chisel.

## Adjusting the Chisel Square with the Travel of the Table and the Fence

When the chisel is tightened in the machine, it must be square to the travel of the table and the fence. First you must make sure the fence is set parallel to the travel of the table, the easiest way to achieve this is to measure from the front edge of the table to both ends of the fence.

Once you are certain the fence is parallel to the table, now you can proceed with setting the chisel square with the fence. The easiest way to achieve this is to lower the head down to bring the chisel (A) Fig.18 as close to the table as possible. Use the head height stop bushing to hold it in this position. Place a square (B) against the fence and the side of the chisel, loosen chisel lock knob, set the chisel square and and retighten lock knob. Remember to have the chip ejection slot in the chisel to the side from which you will cut the mortise.

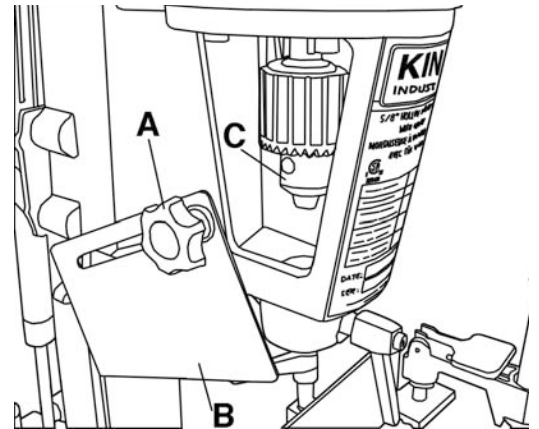


Figure 15

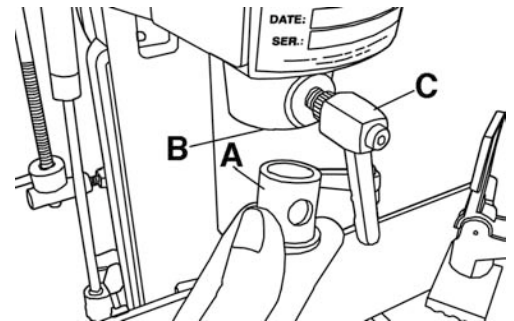


Figure 16

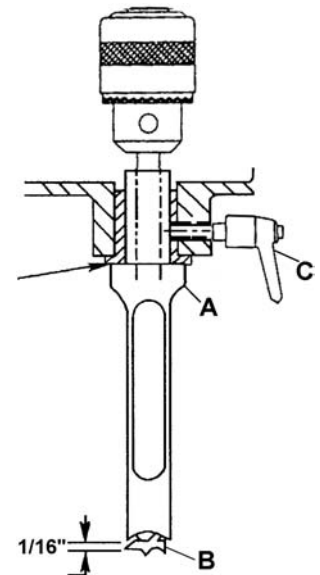


Figure 17

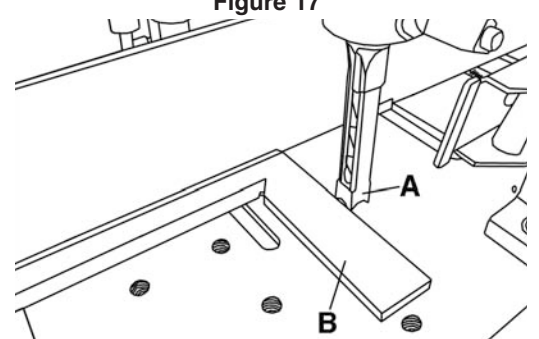


Figure 18

# OPERATION, MAINTENANCE & TROUBLESHOOTING



## Quick Setting the Fence/Chisel/Mortise Position

A quick set method for achieving the correct position of the fence is as follows:

Mark the center line of the mortise. Lower the head so that the bit point just pierces the center mark, but not so hard that the workpiece cannot be “spun”. Hold the head in place using the head height stop bushing. Adjust the fence position by sliding it up against the back of the workpiece, adjust the fence parallel with the front edge of the table and secure the fence in place. Clamp the workpiece in position using either the quick release vise, table hold downs or column mounted hold down. Then proceed with squaring the chisel with fence using a square.

## Quick Setting of the Mortise Depth

Put a mark on an easily accessible end of the workpiece to be mortised, at the depth you require. Loosen the height stop lock knob so that the bushing sits on the stop plate and follows the head movement. Pull the head down, and put the end of the wood against the chisel. Position the head so that the chisel points or the bit point are at the depth required. Tighten the height stop lock knob to hold the head in position. Loosen the depth stop lock knob and raise the depth stop bushing and position it to the underside of the stop plate and retighten the depth stop lock knob.

Release the height stop bushing and raise the head until you have sufficient clearance between the chisel and the workpiece. Reposition the downfeed lever to give the most comfortable position and test your adjustment by pulling on the lever, over the full distance of the movement you have just set, until it reaches the depth stop bushing. Readjust setting if necessary.

## Operational Hints

Make sure that the chisel and bit being used are sharp.

If you position the chisel opening to the right, this means that after the first cut, the sliding table should be moved to the left for subsequent cuts. This allows chips to escape freely through the opening in the chisel.

Make sure the workpiece is held firmly against the fence when cutting and that the hold down(s) being used are properly adjusted. The rate of penetration of the chisel must be fast enough to prevent burning at the tip of the bit, but not too fast as to stall the motor. You may encounter smoke from the bit or material once the chisel has engaged the material. The smoke created is a natural operating occurrence in

hollow chisel mortising and is caused by material chip friction and the resins in the stock being burned off. Bluing of the chisel after the initial use is not indicative of a dull chisel, it is indicative of too much heat which will lead to premature dulling and resin buildup on the cutting faces of the chisel. A dull chisel can be detected by the amount of excess force required to complete a cut.

When performing a through-mortise, a thin piece of wood (1/4”-1/2” thick) should be placed between the workpiece and the table and a depth stop adjustment should be made to prevent “chipout” at the bottom of the mortise and also to prevent damaging the table.

## Maintenance

There is very little maintenance required on your mortiser. Keep it clean, make sure the rack and pinion gears do not become clogged with chips/sawdust. Lightly spray oil on all exposed metal surfaces if the machine is going to stand idle for any length of time. Keep the chisels and bits sharp.

## Adjusting Sliding Fit Between Head and Column

To ensure a good sliding fit between head and column when head is raised and lowered. The correct adjustment is when a good snug sliding fit is obtained without any side movement between the head and column. The adjustment should not be too tight that it restricts the sliding movement or too loose that it affects accuracy.

Loosen hex. nuts (A) Fig.19 which secure set screws (B). Screw in set screws until movement is eliminated. Once adjustment is done, retighten hex. nuts.

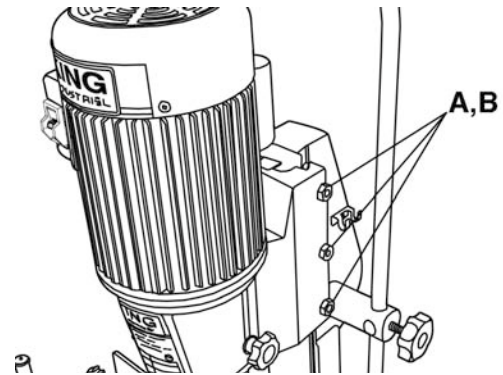


Figure 19

## TROUBLESHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
Bit burns or smokes	<ol style="list-style-type: none"> <li>1. Chips not coming out of hole.</li> <li>2. Dull bit.</li> <li>3. Feed rate too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Retract bit frequently to clear chips.</li> <li>2. Sharpen or replace bit.</li> <li>3. Feed faster.</li> </ol>
Excessive drill bit runout or wobble	<ol style="list-style-type: none"> <li>1. Bent bit.</li> <li>2. Chuck not properly installed.</li> <li>3. Bit not properly installed.</li> <li>4. Worn or loose chuck.</li> <li>5. Worn spindle bearings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace bit.</li> <li>2. Remove chuck and install properly.</li> <li>3. Remove bit and install properly.</li> <li>4. Replace chuck.</li> <li>5. Replace bearings.</li> </ol>
Drill binds in workpiece	<ol style="list-style-type: none"> <li>1. Workpiece twisting or moving.</li> <li>2. Excessive feed pressure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Support or clamp workpiece.</li> <li>2. Reduce pressure and clamp workpiece.</li> </ol>