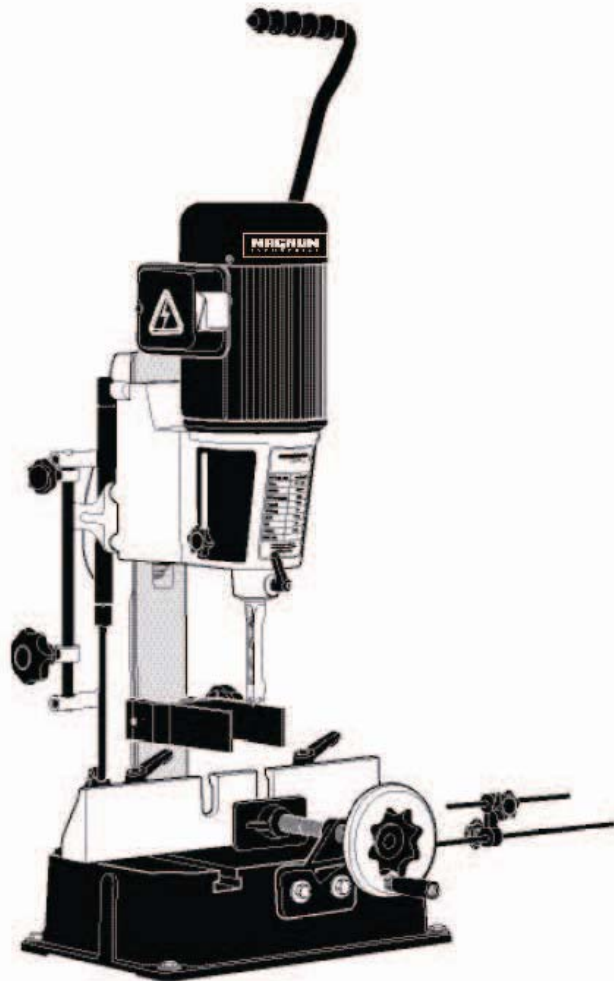


# **MAGNUM**

## **I N D U S T R I A L**

**MODEL NO.: MI-77150**



***OPERATING MANUAL***



# CONTENTS

- Safety instructions for machine tools
- Arrangement
- Specification
- Electrical Requirements
- MI-77150 Identification of Main Parts and Components
- Work operations
- Sharpening Bit and Chisel
- Adjustment for MI-77150
- Parts Diagram
- Parts and Service parts list

## **SAFETY RULES**

### READ CAREFULLY BEFORE OPERATING THE MACHINE

1. Learn the machine's applications and limitations, as well as the specific potential hazards particular to this machine. Follow available safety instructions and safety rules carefully.
2. Keep working area clean and be sure adequate lighting is available.
3. Do not wear loose clothing, gloves, bracelets, necklaces, or ornaments, Wear face, eye, ear, respiratory and body protection devices, as indicated for the operation or environment.
4. Keep hands well away from chuck, bit and all moving parts. Do not clear chips and sawdust away with hands. Use a brush.
5. Make sure the bit is moving at operation speed before using.
6. Do not push the chisel too hard. The bit and chisel will perform better and be safer working at the rate for which it was designed.
7. Whenever possible use a dust collector with shaving hood to minimize health hazards.
8. Never leave the machine with the power on.
9. Keep children away. Make sure that visitors are kept at a safe distance from the work area.

10. Use recommended speed mortising accessory and work piece material.
11. Never stand on tool. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
12. Be sure bit and chisel are securely locked in the machine.
13. Use suitable support if stock does not have a flat surface.
14. Do not force the machine. It will do the job better and be safer at a rate for which it was designed.
15. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning make sure it is properly attached before using the tool again.
16. Be sure that key and adjusting wrenches have been removed before turning power on.
17. Use only accessories designed for the machine.
18. Make sure tool is properly grounded. If tool is equipped with three-prong plug, it should be plugged into a three-pole electrical receptacle. Never remove the third prong.
19. Always disconnect tool before servicing and when changing accessories such as bit and chisel.
20. Make sure that switch is in 'OFF' position before plugging in cord.
21. Hold material firmly against the table.
22. Use ONLY recommended accessories. Use of accessories NOT recommended

by KMS TOOLS may result in a risk of injury.

23. During design & construction of this machine in addition to local standards and some relative standards. Do not use on drilling function and explosive material (e.g. aluminum, magnesium and their alloys).

24. Stand on proper position for operation. Please stand in front of machine for operation.

25. Disposing wasted material shall obey the local regulation and be deeply careful.

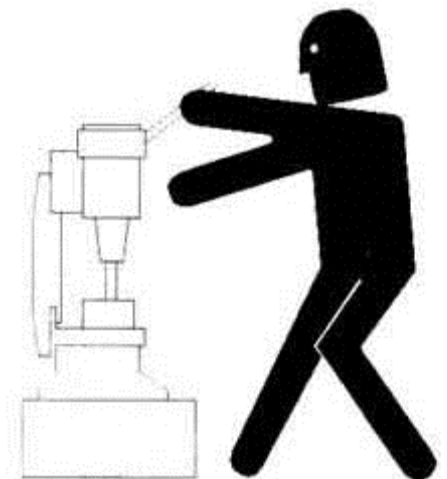
26. Workshop of user shall be with the fire extinguisher or other devices according to the local safety regulations and be deeply careful

27. Make sure machine is disconnected from power supply:

Make sure machine is disconnected from power supply before started the normal maintenance and service, adjustment, or repairing.

28. Never open the protective cover or the machine door while the machine is running. Never attempt to change the settings of all protective devices without consulting us

29. The noise level of this machine is testing on continuous running. a) The measurement of emission sound pressure level is defined according to European Standard, 1S03746.

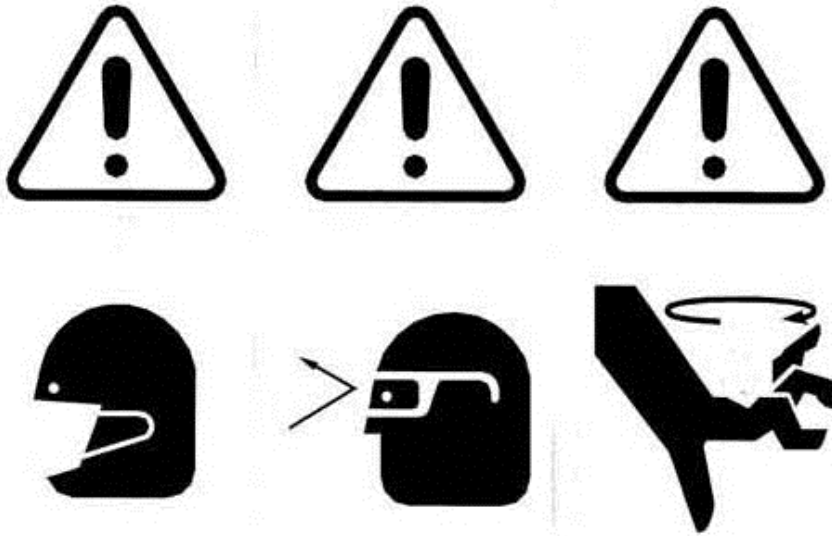


b) A-weighted sound pressure level measuring under no load at operation position is 71.4dB(A), and under load at operation position is 80.7dB(A).

30. Watch what you are doing. Do not operate machine when you are tired to avoid stabbing hazard.

Please wear goggle protection and mouth-muffle to operation.

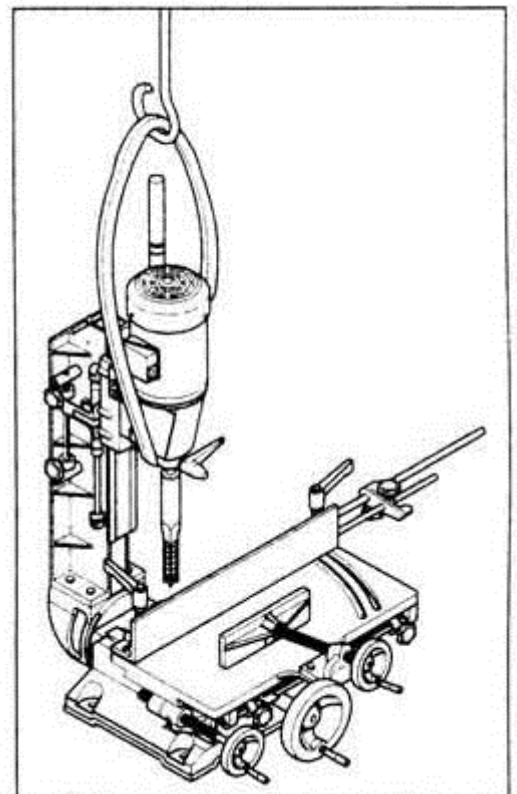
For the warning labels on the machine, refer afterward figures



31. We recommend that should be clamping well by vise before chiseling your work piece.

32. Transportation:

- A. Please refer to instruction manual in specifications and machine weight to arrange handling equipment. Be sure to use capable lifting device referring to lift of machine.
- B. The handling and transportation shall be carried out by qualified persons.
- C. During handling, people are strictly prohibited from entering into the path of machine movement and keep attention to the balance of machine



## **SPECIFICATION**

CHISEL CAPACITY 1/4" TO 5/8" ( 6TO 16MM)

MAXIMUM CHISEL STROKE 9" (228MM)

DISTRANCE FROM FENCE TO CHISEL CENTER 4" (102MM)

DISTRANCE FROM CHISEL TO TABLE ( CHISEL 1/4")

6" TO 9" (152MM TO 228MM)

CHUCK CAPACITY 1/2" (13MM)

FENCE SIZE 14 1/8" X 2 7/8"

TABLE SIZE 13 1/2" X 9" (360 X 265MM)

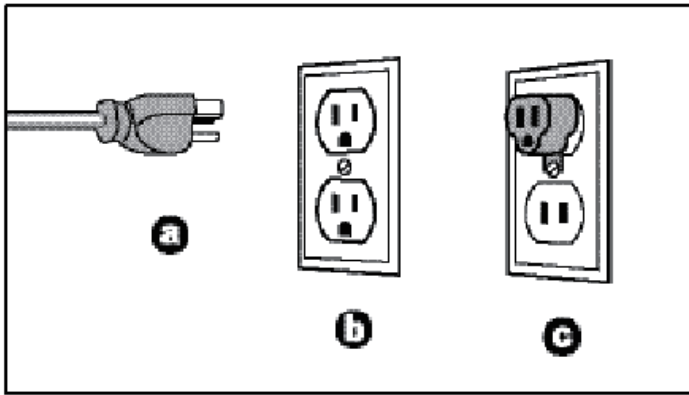
OVERALL HEIGHT 29" (736MM)

SPINDLE SPEED 1720 RPM

MOTOR 1/2HP,110 V,1PH,3.8A

WEIGHT 106 LBS (48 KG)

# ELECTRICAL REQUIREMENTS



## GROUNDING INSTRUCTIONS

In the event of an electrical malfunction or short circuit, grounding reduces the risk of electric shock. The motor of this machine is wired for 110V single phase operation and is equipped with a 3-conductor cord and a 3-prong grounding plug **a** to fit a grounded type receptacle **b**. Do not remove the 3rd prong (grounding pin) to make it fit into an old 2-hole wall socket or extension cord. If an adaptor plug is used **c**, it must be attached to the metal screw of the receptacle.

**Note: The use of an adaptor plug is illegal in some areas. Check your local codes. If you have any doubts or if the supplied plug does not correspond to your electrical outlet, consult a qualified electrician before proceeding.**

## CIRCUIT CAPACITY

Make sure that the wires in your circuit are capable of handling the amperage draw from your machine, as well as any other machines that could be operating on the same circuit. If you are unsure, consult a qualified electrician. If the circuit breaker trips or the fuse blows regularly, your machine may be operating on a circuit that is close to its amperage draw capacity. However, if an unusual amperage draw does not exist and a power failure still occurs, contact a qualified technician or our service department.

## EXTENSION CORDS

If you find it necessary to use an extension cord with your machine, use only 3-wire extension cords that have 3-prong grounding plug and a matching 3-pole receptacle that accepts the tool's plug. Repair or replace a damaged extension cord or plug immediately.

Make sure the cord rating is suitable for the amperage listed on the motor I.D. plate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. The accompanying chart shows the correct size extension cord to be used based on cord length and motor I.D. plate amp rating. If in doubt, use the next heavier gauge. The smaller the number, the heavier the gauge.

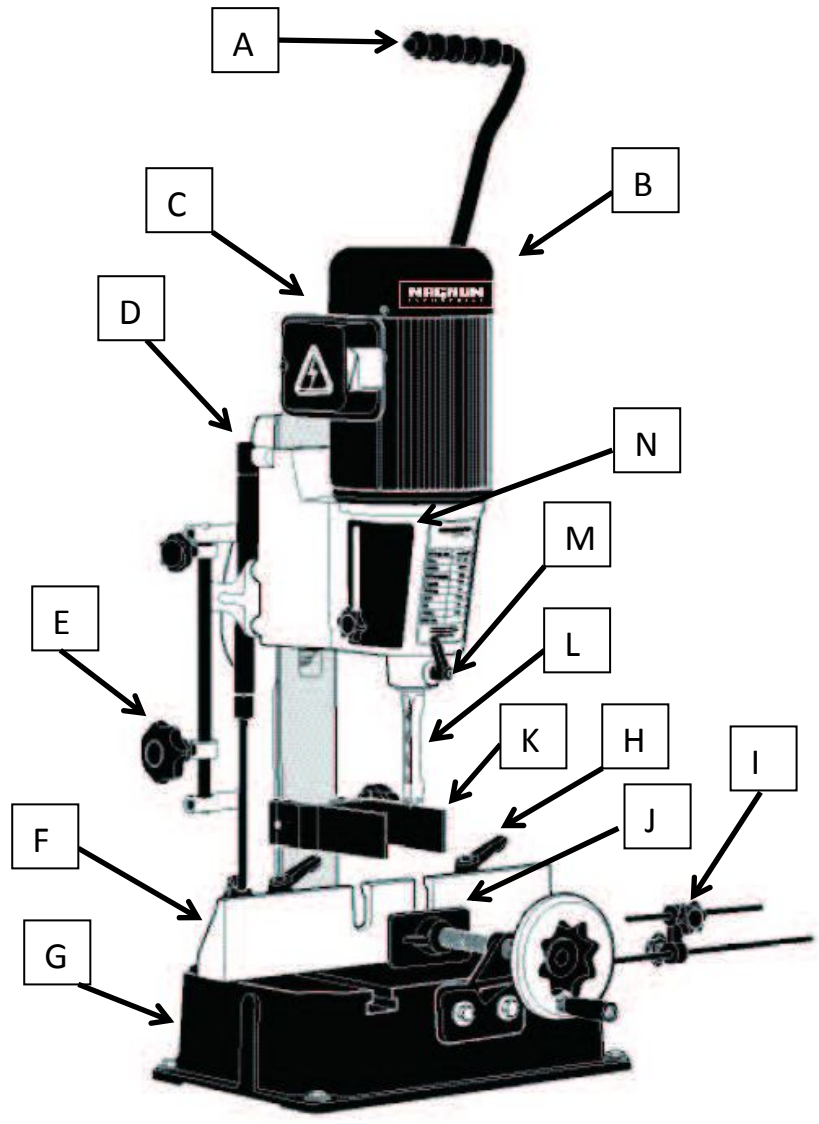
TABLE - MINIMUM GAUGE FOR CORD					
AMPERE RATING	TOTAL LENGTH OF CORD IN FEET				
	110 VOLTS	25 FEET	50 FEET	100 FEET	150 FEET
	220 VOLTS	50 FEET	100 FEET	200 FEET	300 FEET
AWG					
< 5	----->	18	16	16	14
6 TO 10	----->	18	16	14	12
10 TO 12	----->	16	16	14	12
12 TO 16	----->	14	12	* NR	* NR

\* NR = Not Recommended

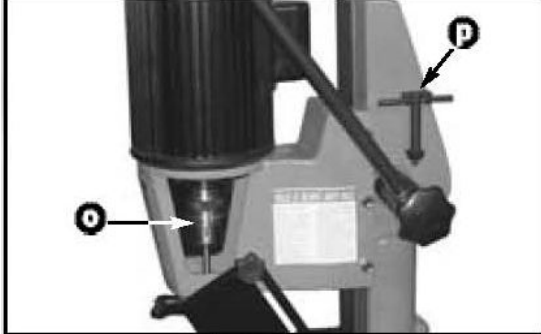


# MI-77150 IDENTIFICATION OF MAIN PARTS AND COMPONENTS

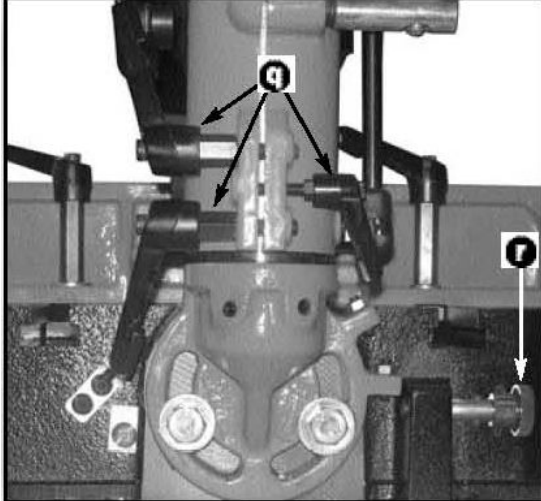
- A DOWNFEED HANDLE
- B MOTOR
- C ON / OFF SWITCH
- D GAS HEAD-CYLINDER
- E DEPTH STOP
- F FENCE
- G BASE
- H FENCE LOCKING LEVERS
- I WOTKPIECE STOP
- J WORKPIECE CLAMP
- K WPRKPIECE HOLD-DOWN
- L CHISE AND BIT
- M CHISEL LOCKING LEVER
- N SLIDE PLATES
- O CHUCK
- P CHUCK KEY
- Q RATCHET LEVERS
- R STOP PIN



**RIGHT SIDE VIEW**



**REAR VIEW**



## BASIC FUNCTIONS

This tilting head hollow chisel mortiser is designed to cut 90° and/or angled mortises in solid wood as well as other wood based stock. With its tilting, pivoting and extendable height head, the MI-77150 is designed to tackle a wide range of mortising applications suited to both hobbyist and professional users. Ideal for use in any furniture making or cabinet making applications that require mortise and tenon joinery, the unit is supplied with a set of 4 different sized chisels and bits to help the user cut mortises of varying widths to suit the application.

The unit is also supplied with 2 different sized chisel bushings, allowing the user to install chisel and bit sets of either 5/8" (4 supplied) or 3/4" (commonly available from other after-market sources) shank diameter.

This mortiser is designed to accommodate chisel and bit set sizes ranging from a minimum of 1/4" up to a maximum of 5/8".

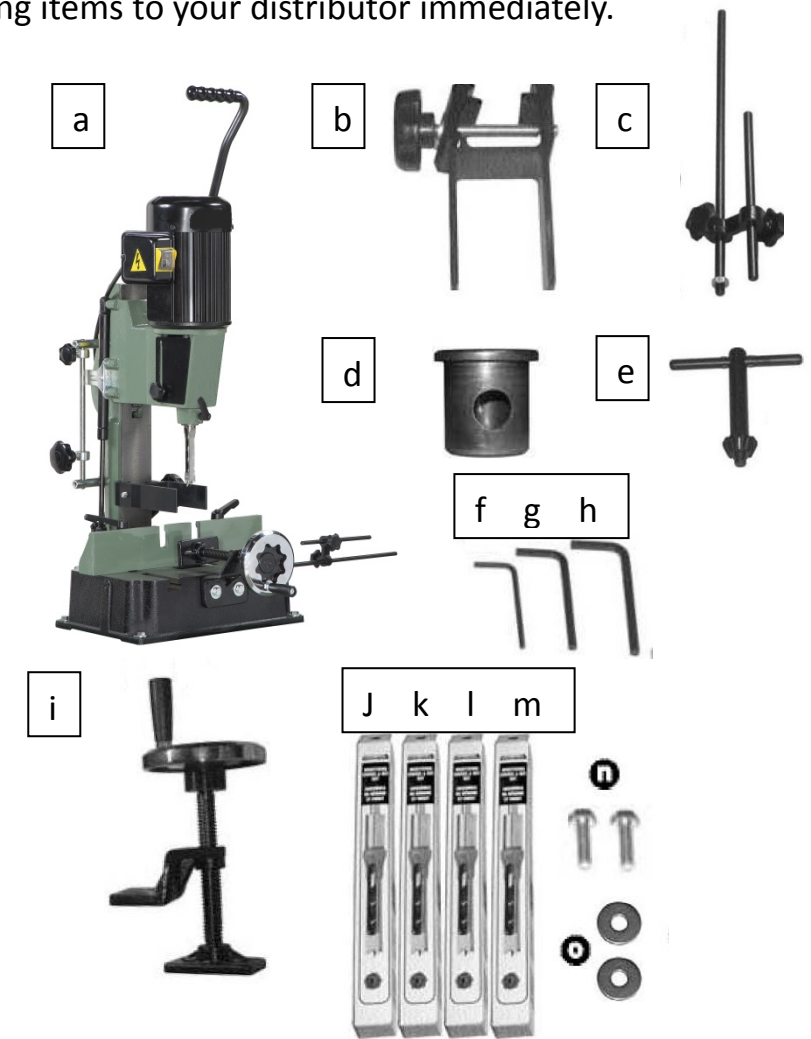
## UNPACKING

Carefully unpack and remove the mortiser and its components from the box and check for damaged or missing items as per the list of contents below.

NOTE: Please report any damaged or missing items to your distributor immediately.

### LIST OF CONTENTS QTY

a. MORTISER.....	1
b. WORKPIECE HOLD-DOWN.....	1
c. WORKPIECE STOP.....	1
d. 3/4" SHANK BUSHING ADAPTER...1	
e. CHUCK KEY.....	1
f. 3 MM ALLEN KEY .....	1
g. 4 MM ALLEN KEY .....	1
h. 5 MM ALLEN KEY .....	1
i. WORKPIECE CLAMP.....	1
j. 1/4" - 6 MM CHISEL AND BIT.....1	
k. 5/16" - 8 MM CHISEL AND BIT.....1	
l. 3/8" - 10 MM CHISEL AND BIT.....1	
m. 1/2" - 13 MM CHISEL AND BIT.....1	
n. HEX HEAD BOLT .....	2
o. FLAT WASHER.....	2



## WARNING!

CAREFULLY READ AND UNDERSTAND YOUR OWNER'S MANUAL BEFORE STARTING WORK OPERATIONS!

## WARNING!

MACHINE MUST BE PROPERLY GROUNDED AT ALL TIMES TO AVOID ELECTRIC SHOCK TO THE WORK OPERATOR!

## INSTALLATION AND SETUP

(4) Holes have been designed at the base of the cast iron to conveniently bolt and fasten your Mortiser to a workbench (optional stand), or a solid work surface. Place your machine on the worktable; use a marker to indicate the areas where the holes must be drilled. Properly fasten and bolt to surface. (Bolts and nuts not provided)

Note: Work area must provide enough space on both sides of the machine to allow movement for the work operator and clearance for long work materials. Avoid installing the machine in a small or dark work area, no obstacles should interfere when work operations are being performed.

## CHISEL & BIT INSTALLATION / REPLACEMENT (FIG.2)

1. Gently loosen lock knob; install your chisel and bit as illustrated.

Chisel must be positioned and pushed up against the bushing and into the slot, set the slot to the right or the left this will permit loose chips to unload from chisel when cutting mortises.

2. Gently re-tighten the lock knob in order to hold in position.

3. Loosen chuck and move the bit into the chuck in order to adjust the position of the bit.

4. The lower end of the bit must jut out from below the chisel between 1/16" to 3/16"; according to the work piece and the work operations that need to be performed.

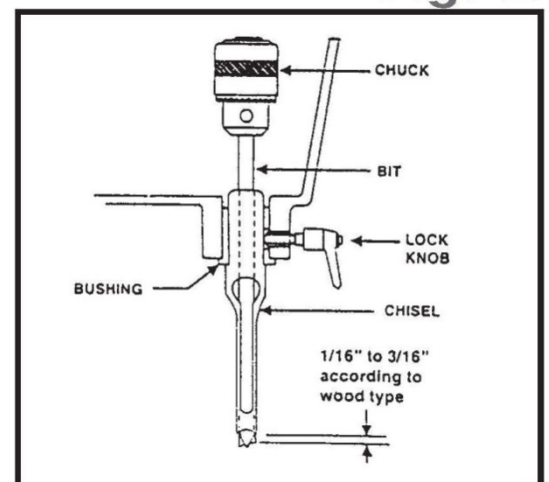
5. Re-tighten the chuck.

## MORTISING

To prevent burning at the tip of the bit; a fast and steady feed rate is required. Consider the type of material before feeding, the machine may stall or slow down if the feed rate is too fast. Perform practice cuts before starting work operations, various work material require different feedings.

To avoid overheating or rupture to the chisel or bit; do not position the slot against the blind end of the mortise; this will prevent the chips to unload from the chisel.

Fig. 2



## WORK OPERATIONS

1. Depth stop must be set to the required depth of cut (Fig.3).
2. Place your work piece on table; lock into position using the vise clamp. Turn hand wheel in order to move the table forward or backwards. Adjust table in accordance with the work piece to be mortised.
3. Adjust the stops according to the length of cut required (Fig.4).
4. Press the "On" switch; steadily and firmly feed the chisel and bit into the work piece by pulling down on the operating handle
5. To prevent burning at the tip of the bit; a fast and steady feed rate is required. Consider the type of material before feeding, the machine may stall or slow down if the feed rate is too fast.
6. Perform practice cuts before starting work operations, various work material require different feedings.
7. Complete the first mortising cut; carry the work piece towards the proper direction of the chisel slot to permit chips to unload clearly. Move the work piece in order for the chisel slot to release chips into the already cut part of the mortise (Fig.5).
8. To permit chips to unload while mortising deep cuts; the cuts must be carried out in several steps of 1" each cut. Place a piece of scrap wood under the back end to support the work piece; this will prevent breakage at the back end.

Fig. 3

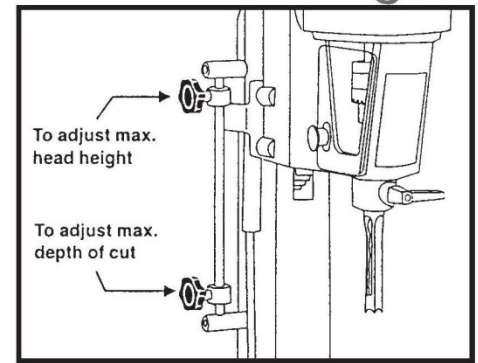


Fig. 4

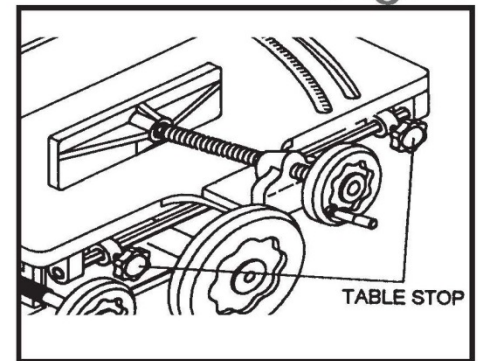
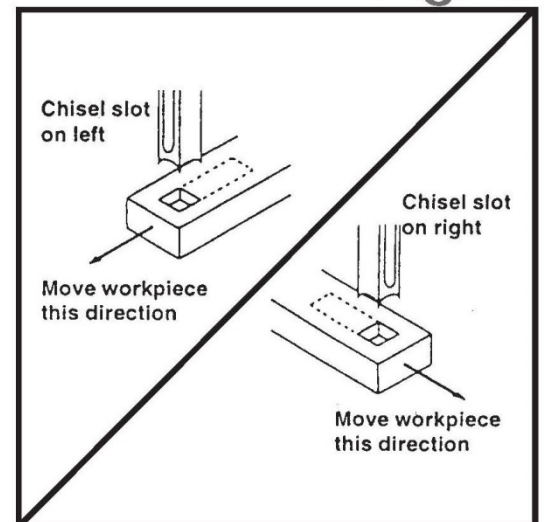


Fig. 5



### ATTENTION!

NEVER ATTEMPT TO LEAVE THE MACHINE RUNNING UNATTENDED!

### WARNING!

ALWAYS DISCONNECT THE MACHINE FROM THE POWER SOURCE WHEN NOT IN USE!

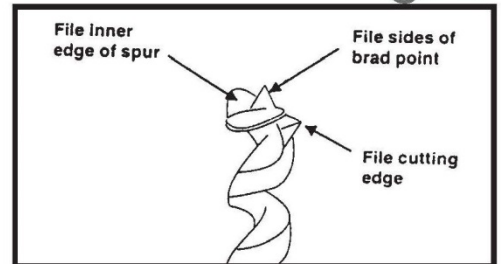
## SHARPENING BIT AND CHISEL

To ensure perfect performance and accurate work, it is necessary to keep bit and chisel sharp at all times. Dull bit or chisel can cause overheating and breakage resulting in unsatisfactory and inaccurate results.

If chisel and bit are badly worn and become difficult to sharpen, they must be replaced immediately.

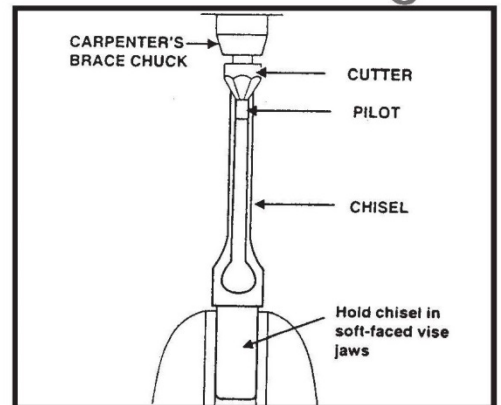
To sharpen: trace the original shapes and curves of the bit with a small smooth filer. To restore sharpness, file the inside edge of the spur, the sides of the brad point and the cutting edge inwards towards the flutes of the bit (Fig.6). Never attempt to sharpen the outside edge of the spur this will affect the diameter and performance of the bit.

Fig. 6



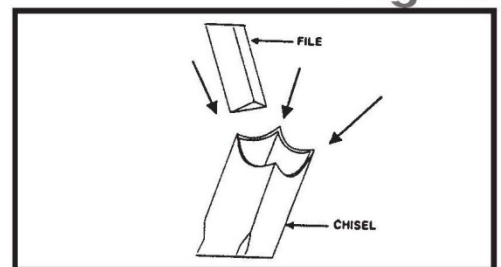
Chisel should always be sharpened with a proper size mortise chisel cutter. Verify the dullness of the chisel, two or three turns of the cutter in a carpenter's hand brace should be enough to sharpen the chisel. (Fig.7)

Fig. 7



Relieve the inner corners of the chisel with a small triangular smooth filer. Remove any particles from the outside of the chisel with a fine oilstone. (Fig 8)

Fig. 8



Chisel and bit will need to be replaced after a long period of use.

Worn out tools will result in inaccurate and unsatisfactory work operations.

### WARNING!

DISCONNECT MACHINE FROM POWER SOURCE BEFORE PERFORMING ANY REPAIRS OR ADJUSTMENTS!  
FAILURE TO COMPLY CAN CAUSE SERIOUS DAMAGES TO THE WORK OPERATOR AND THE MACHINE!



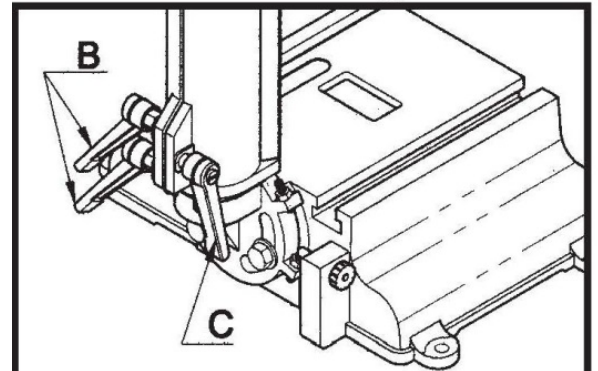
## MI-77150 TILT HEAD

This machine provides tilting head and swiveling 180° for specialized woodworkers.

### EXTEND WORKING CAPACITY ADJUSTMENT

1. Loosen two ratchet handles (B). (FIG.9)-1
2. Minor tighten ratchet handle (C) to split column a little bit.
3. Hold and lift the head with hands about 3" at proper position. (FIG. 10)-1
4. Loosen ratchet handle (C) and tighten ratchet handles (B).

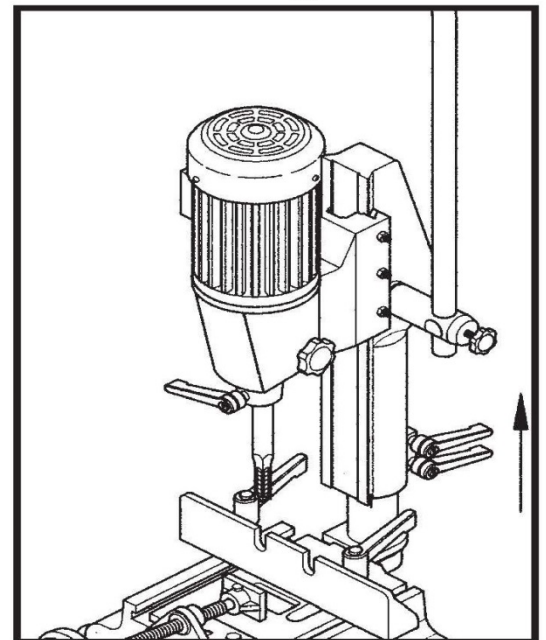
**Fig. 9-1**



### HEAD SWIVELING

1. Remove chisel before swiveling head. (FIG.9)-1
2. Loosen two ratchet handles (B).
3. Screw ratchet handle (C) tightly for swiveling Head to 180°.
4. Loosen ratchet handle (C) and tighten ratchet handles (B).

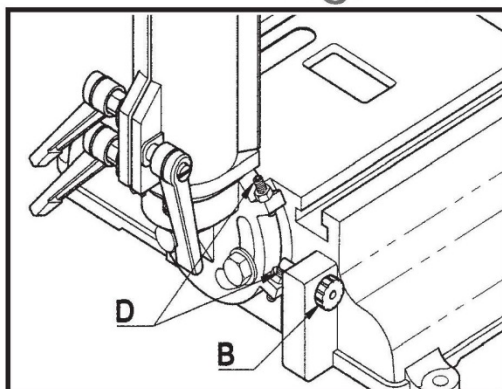
**Fig. 10-1**



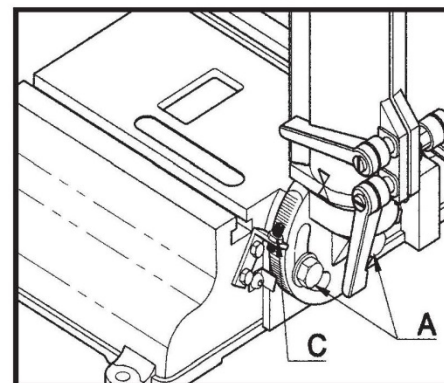
### HEAD TILTING

1. Hold the head and loosen two screws (A). (FIG.11)-1
2. Pull the pin (B) outward to move the head to desired angle.
3. Adjust screws (C) and (D) while angle is not accurate during period. (Fig 11, 12).

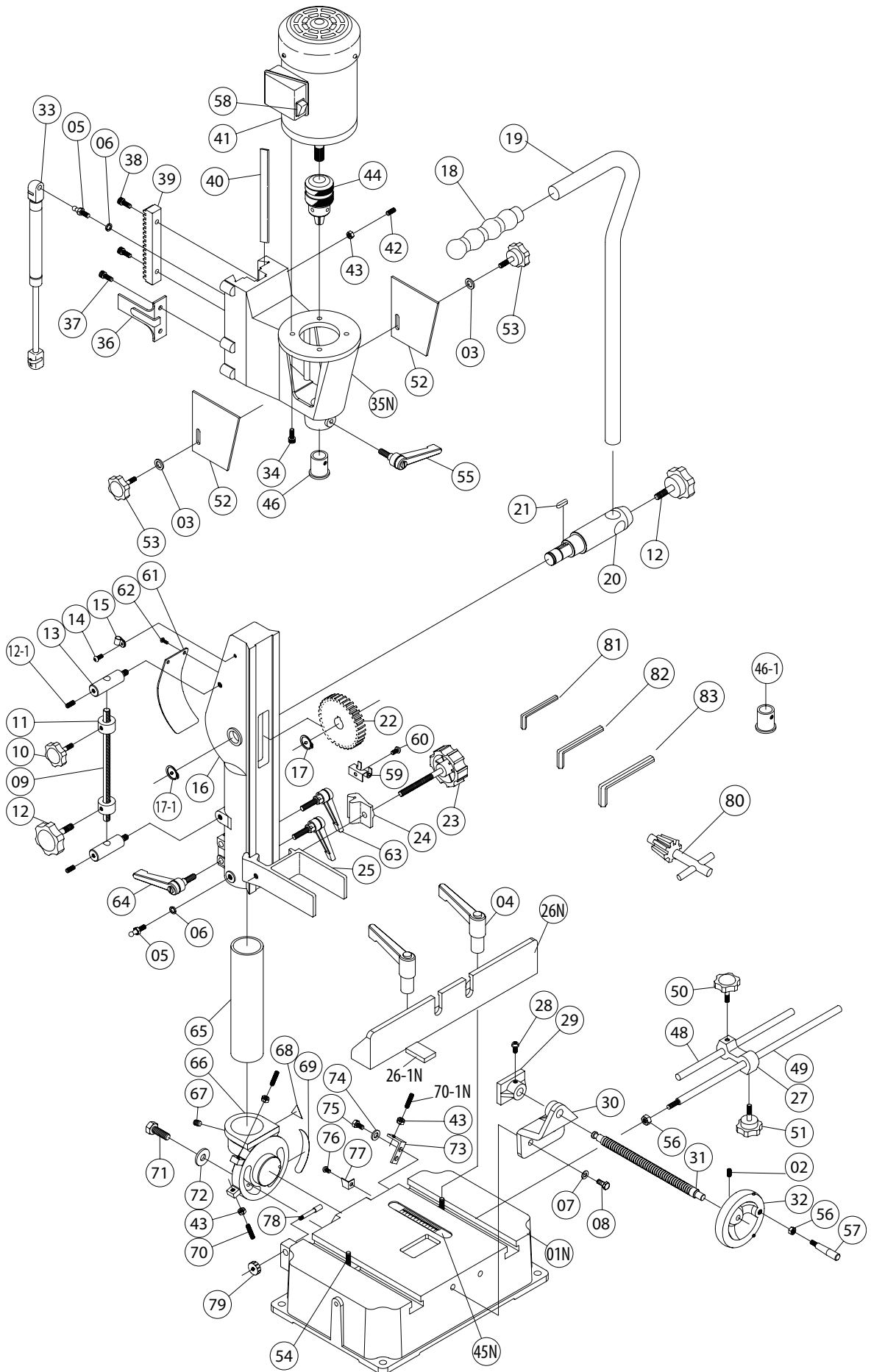
**Fig. 11-1**



**Fig. 12-1**



# DIAGRAM



## PARTS LIST MI-77150

PART NO.	DESCRIPTION	QTY
MI-77150-01N	BASE	1
MI-77150-02	SET SCREW 5/16 X 3/8	1
MI-77150-03	WASHER 1/4	2
MI-77150-04	RATCHET LEVER M8	2
MI-77150-05	SCREW M8	2
MI-77150-06	LOCK WASHER 3/8	2
MI-77150-07	WASHER 5/16	2
MI-77150-08	HEX HEAD BOLT 5/16 X 1	2
MI-77150-09	DEPTH STOP BAR	1
MI-77150-10	LOCK KNOB 5/16 X 3/4	1
MI-77150-11	ADJUSTING SLEEVE	2
MI-77150-12	LOCK KNOB 5/16	2
MI-77150-12-1	SET SCREW 5/16 X 3/8	2
MI-77150-13	STOP BAR SUPPORT POST	2
MI-77150-14	SCREW 3/16	1
MI-77150-15	CORD CLAMP 1/4	1
MI-77150-16	COLUMN	1
MI-77150-17	C RING 15	1
MI-77150-17-1	C RING 20	1
MI-77150-18	HANDLE GRIP	1
MI-77150-19	DOWNFEED HANDLE	1
MI-77150-20	DOWNFEED SHAFT	1
MI-77150-21	KEY	1
MI-77150-22	GEAR	1
MI-77150-23	LOCK KNOB 3/8 X 90	1
MI-77150-24	HOLD DOWN CLAMP ARM	1
MI-77150-25	HOLD DOWN CLAMP ARM	1
MI-77150-26N	FENCE	1
MI-77150-26-1N	SLIDE BAR	1
MI-77150-27	STOP BAR BLOCK	1
MI-77150-28	SCREW 1/4 X 5/8	1
MI-77150-29	WISE PLATE	1
MI-77150-30N	WISE MOUNT BRACKET	1
MI-77150-31	THREADED ROD	1
MI-77150-32	HANDWHEEL	1
MI-77150-33	GAS SPRING	1
MI-77150-34	CAP SCREW 1/4 X 1	4
MI-77150-35N	MACHINE HEAD	1
MI-77150-36	STOP PLATE	1
MI-77150-37	CAP SCREW 1/4 X 3/4	2
MI-77150-38	CAP SCREW 1/4 X 5/8	2
MI-77150-39	RACK	1
MI-77150-40	SLIDE PLATE	1
MI-77150-41	MOTOR	1
MI-77150-42	SET SCREW 5/16 X 3/4	3
MI-77150-43	HEX NUT 5/16	3
MI-77150-44	CHUCK X 13 MM	1
MI-77150-45N	SCALE	1
MI-77150-46	CHISEL BUSHING (5/8 SHANK)	1
MI-77150-46-1	CHISEL BUSHING (3/4 SHANK)	1
MI-77150-48	STOP BAR (SHORT)	1
MI-77150-49	STOP BAR (LONG)	1
MI-77150-50	LOCK KNOB	1
MI-77150-51	LOCK KNOB	1
MI-77150-52	SLIDE PLATE (CHUCK COVER)	2
MI-77150-53	LOCK KNOB 1/4	2

PART NO.	DESCRIPTION	QTY
MI-77150-54	BOLT M 8	2
MI-77150-55	RATCHET LEVER	1
MI-77150-56	NUT 5/16	2
MI-77150-57	HANDLE	1
MI-77150-58	SWITCH	1
MI-77150-59	CHUCK KEY HOLDER	1
MI-77150-60	SCREW 3/16	1
MI-77150-61	GEAR COVER	1
MI-77150-62	SCREW	2
MI-77150-63	RATCHET LEVER 5/16	2
MI-77150-64	RATCHET LEVER M6	1
MI-77150-65	COLUMN EXTENSION POST	1
MI-77150-66	COLUMN MOUNT BRACKET	1
MI-77150-67	SET SCREW	2
MI-77150-68	LABEL	2
MI-77150-69	ANGLE SCALE	1
MI-77150-70	SET SCREW	2
MI-77150-70-1N	SET SCREW M6X25	1
MI-77150-71	HEX HEAD BOLT	2
MI-77150-72	FLAT WASHER	4
MI-77150-73	TILT STOP BRACKET	1
MI-77150-74	FLAT WASHER	2
MI-77150-75	HEX HEAD BOLT	2
MI-77150-76	SCREW	1
MI-77150-77	POINTER	1
MI-77150-78	STOP PIN	1
MI-77150-79	NUT	1
MI-77150-80	CHUCK KEY	1
MI-77150-81	3 MM ALLEN KEY	1
MI-77150-82	4 MM ALLEN KEY	1
MI-77150-83	5 MM ALLEN KEY	1
MI-77150-B1	1/4" - 6 MM CHISEL AND BIT (NOT SHOWN)	1
MI-77150-B2	5/16" - 8 MM CHISEL AND BIT (NOT SHOWN)	1
MI-77150-B3	3/8" - 10 MM CHISEL AND BIT (NOT SHOWN)	1
MI-77150-B4	1/2" - 13MM CHISEL AND BIT (NOT SHOWN)	1