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## MK-212 SERIES OWNERS MANUAL & OPERATING INSTRUCTIONS



Revision 303	03.2012
Manual Part No. 159862	

**Caution:** Read all safety and operating instructions before using this equipment. This owners manual **MUST** accompany the equipment at all times.



### MK-212 SAW

### SAFETY

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Precaution and Operating Instructions could result in injury to yourself and others. This Operation and Parts Manual has been developed to provide complete instructions for the safe and efficient operation of the MK-212 Saw.

Before using this machine, ensure that the person operating the machine has read and understands all instructions in this manual.

#### SAFETY MESSAGE / ALERT SYMBOLS

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol (▲) and one of three words: **DANGER**, **WARNING**, or **CAUTION**.

#### ▲ DANGER

You **WILL** be **KILLED** or **SERIOUSLY INJURED** if you do not follow directions.

#### ▲ WARNING

You **CAN** be **KILLED** or **SERIOUSLY INJURED** if you do not follow directions.

#### ▲ CAUTION

You **CAN** be **INJURED** if you do not follow directions. It may also be used to alert against unsafe practices.

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury. Other important messages are preceded by the word **NOTICE**.

#### ▲ NOTICE

You can cause **PROPERTY DAMAGE** to your machine if you don't follow directions.

The safety labels should be periodically inspected and cleaned by the user to maintain good legibility at a safe viewing distance. If the label is worn, damaged or illegible, it should be replaced.

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### MK-212 SAW

### SAFETY

Potential hazards associated with the MK-212 Saw operation will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message/Alert Symbols.

#### HAZARD SYMBOLS



**ALWAYS** read this Owner's Manual before operating the machine.



**ALWAYS** avoid inhalation of and skin contact with silica dust and/or mist.



**ALWAYS** place the power ON/OFF switch in the **OFF** position when the machine is not in use.



**ALWAYS** wear approved eye protection.



**ALWAYS** wear approved respiratory protection.



**NEVER** operate equipment with covers, or guards removed. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.



**ALWAYS** use caution around gears. Keep fingers, hands, hair and clothing away from all moving parts to prevent injury.



**NEVER** touch the power cord with wet hands or while standing in water when it is connected to a power source.



**NEVER** operate the machine in an explosive atmosphere or near combustible materials.

### MK-212 SAW

### SAFETY

#### RULES FOR SAFE OPERATION

#### ▲ DANGER

Failure to follow instructions in this manual may lead to serious injury or even death! This equipment is to be operated by trained and qualified personnel only! This equipment is for industrial use only. The following safety guidelines should always be used when operating the MK-212 Saw.

#### GENERAL SAFETY



- **DO NOT** operate or service this equipment before reading this entire manual.

- This equipment should not be operated by persons under 18 years of age.
- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steeltoed boots and other protective devices required by the job.
- **NEVER** operate this equipment when not feeling well due to fatigue, illness or taking medicine.
- **NEVER** operate this equipment under the influence of drugs or alcohol.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult to read.
- **ALWAYS** check the machine for loose bolts before starting.



- **ALWAYS** wear proper respiratory (mask) hearing and eye protection equipment when operating this machine.



- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.



- **NEVER** leave the machine unattended. Turn off electric motor when unattended.



- **CAUTION** must be observed while servicing the machine. Rotating parts can cause injury if contacted.
- Ensure that any electrical extension cord is protected against damage. Always ensure that the electrical extension cord is not trapped underneath the machine. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage that will result in a loss of power and overheating. The Table shown on page 9 shows the correct AWG size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heaviest gage. The smaller the gage number, the heavier the cord.



- **DO NOT** allow extension cord to come into contact with water or fluids.
- **DO NOT** spray water onto electric motor.
- **NEVER** operate the machine in an explosive atmosphere.

- Before starting the machine, check that all guards are in position and correctly fitted.
- Keep area around the machine clear of obstructions which could cause persons to fall onto moving parts.
- **ALWAYS** ensure that the machine is on level ground before using.
- **DO NOT** overreach. Keep proper footing and balance at all times.

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- **NEVER** stand on the tool. Serious injury could occur if a power tool is tipped, or if a cutting tool is unintentionally contacted.
- Become familiar with the controls of the machine before operating. Know how to stop the machine quickly in case of emergency.
- **ALWAYS** secure work. Clamps or a vise should be used to hold work whenever practical. Keeping your hands free to operate a power tool is safer.
- **ALWAYS** disconnect AC power plug from power source before moving, cleaning or servicing the machine.
- **NEVER** leave a tool running unattended. Do not leave a tool until it comes to a complete stop.
- **ALWAYS** turn a power tool **OFF** when leaving the work area, or when a cut is finished.
- Make sure the OFF/ON power switch on the electric motor is always in the **OFF** position before inserting the machine's power plug into an AC receptacle.
- Operate electric motor only at the specified voltage indicated on the nameplate.
- **NEVER** disconnect any "emergency or safety devices". These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death! Disconnection of any of these devices will void all warranties.
- Unauthorized equipment modifications will void all warranties. Manufacturer does not assume responsibility for any accident due to equipment modifications.
- **NEVER** use accessories or attachments, which are not recommended by MK Diamond for this equipment. Damage to the equipment and/or injury to user may result.
- Replace damaged cutting blade before operating.
- **NEVER** try to stop a moving blade with your hand.
- **NEVER** touch electrical wires or components while the motor is running. Exposed, frayed or worn electrical motor wiring can be sources of electrical shock that could cause severe injury or burns.
- Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate a power tool with covers, shrouds, or guards removed.

### ⚠ WARNING

**NEVER** use this machine with any cutter designed for wood working.

### MAINTENANCE SAFETY

- **NEVER** lubricate components or attempt service on a running machine.
- Keep the machinery in proper running condition.
- Before using a power tool, check for damaged parts. A guard or any other part that is damaged should be carefully checked to determine if it would operate properly and perform its intended function. Always check moving parts for proper alignment or binding. Check for broken parts and mountings and all other conditions that may affect the operation of the power tool. A guard, or any damaged part, should be properly repaired or replaced.

### SAW SAFETY

### ⚠ WARNING

- Wear eye protection.
- Disconnect saw before servicing, when changing cutting blades and cleaning.
- Use tool only with smooth edge cutting blades free of openings and grooves.
- Replace damaged cutting blade before operation.
- Remove adjusting keys and wrenches.

### ELECTRICAL REQUIREMENTS AND GROUNDING INSTRUCTIONS

In order to prevent potential electrical shock and injury, the following electrical safety precautions and symbols should be followed at all times!

### ⚠ WARNING

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

- Do not modify the plug provided – if it will not fit the outlet; have the proper outlet installed by a qualified electrician.
- Improper connections of the equipment-grounding conductor can result in a risk of electric shock. The equipment-grounding conductor is the insulated conductor that has an outer surface that is green, with or without yellow stripes. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
- Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
- Repair or replace a damaged or worn cord immediately.

### ⚠ WARNING

This tool is intended for use on a circuit that has an outlet that looks like the one shown in Sketch A of Figure 1. The tool has a grounding plug that looks like the plug illustrated in Sketch A of Figure 1. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B, if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter, must be connected to a permanent ground such as a properly grounded outlet box.

**NOTE:** Use of a temporary adapter is not permitted in Canada.

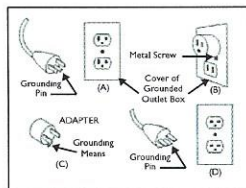


Fig. 1 Circuit and Adapter Information

### SILICA DUST WARNING



Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow respiratory precautions.

### CALIFORNIA PROPOSITION 65 MESSAGE

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead, from lead-based paints
- Crystalline silica, from bricks and cement and other masonry products
- Arsenic and chromium, from chemically treated lumber

For further information, consult the following sources:

<http://www.osha.gov/dsg/topics/silicacrystalline/index.html>

<http://www.cdc.gov/niosh/consilic.html>

<http://oehha.ca.gov/prop65/law/P65law72003.html>

<http://www.dir.ca.gov/Title8/sub4.html>

Your risk from these exposures varies depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

### ⚠ WARNING

To reduce the risk of electrocution, keep all connections dry and off the ground.

A Ground Fault Circuit Interrupter (GFCI) should be provided on the circuit(s) or outlet(s) to be used for this machine. Receptacles are available having built-in GFCI protections and may be used for this measure of safety. When using an extension cord, the GFCI should be installed closest to the power source, followed by the extension cord and lastly, the machine.

### ⚠ WARNING

The pump requires a GFCI. To reduce risk of electric shock when operating the machine with the pump plugged into the 3-pole receptacle on the motor, connect the saw to a GFCI outlet. See the pump manual and informational tags enclosed separately for all pump information.

### ⚠ CAUTION

Shock Hazard. For replacement, use only an identical pump, model PE-1 part #151271.

**NOTE:** Do not run pump dry. Also, be sure to disconnect and remove the pump when cutting dry.

### ⚠ WARNING

To avoid the possibility of the appliance plug or receptacle getting wet, position the machine to one side of a wall mounted receptacle. This will prevent water from dripping onto the receptacle or plug. A "drip loop," shown in Figure 2, should be arranged by the user to properly position the power cord relative to the power source. The "drip loop" is that part of the cord below the level of the receptacle, or the connector, if an extension cord is used. This method of positioning the cord prevents the travel of water along the power cord and coming in contact with the receptacle.

If the plug or receptacle gets wet, **DO NOT** unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the tool. Then unplug and examine for presence of water in the receptacle.

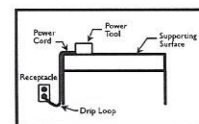


Fig. 2 Drip Loop Information



**WARNING**

Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords having an electrical rating not less than the rating of the product. Do not use damaged extension cords. Examine extension cords before using and replace if damaged. Do not abuse extension cords and do not yank on any cord to disconnect. Keep cords away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnection the product

**WARNING**

To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch the plug with wet hands.

**WARNING**

Use of undersized extension cords result in low voltage to the motor that can result in motor burnout and premature failure. MK Diamond warns that equipment returned to us showing signs of being run in a low voltage condition, through the use of undersized extension cords will be repaired or replaced totally at the customers expense. There will be no warranty claim.

To choose the proper extension cord,

- Locate the length of extension cord needed in table provided.
- Once the proper length is found, move down the column to obtain the correct AWG size required for that length of extension cord.

EXTENSION CORD MINIMUM GAGE FOR LENGTH				
VOLTS	TOTAL LENGTH OF CORD IN FEET			
	25 ft.	50 ft.	100 ft.	150 ft.
120v	AWG	AWG	AWG	AWG
	18	16	16	14

Table 1

**LOCK OUT METHOD**

In order to help prevent accidental starting and to help make your work area "kidproof," this machine is provided with a means to deactivate the functioning of the motor switch. The switch is equipped with a lockout tab that can be used with a lock to prevent movement of the switch. With the switch unable to move the motor cannot be turned on. Removing the lock reactivates the switch.



Fig. 3 Lock Out

**PRODUCT SPECIFICATIONS**

The MK-212 is a versatile Tile and Stone Saw. Operated and used according to this manual, the MK-212 will provide years of dependable service.

**GENERAL DESCRIPTION**

The MK-212 Saw is engineered as a stand mounted wet tile and stone saw. The saw includes a powerful 120v direct drive AC motor.

**MOTOR SPECIFICATIONS**

Motor specifications for the MK-212 are listed in the table below.

	MK-212-4	MK-212-6
Horse Power	2 hp	2 hp
Voltage	120v	120v
Overall Amperage	14.4 a	14.4 a / 6.7 a
Frequency	60	60
RPM	3400	3400
Weight	226 lbs	270 lbs
Part#	159414	157882

**THERMAL OVERLOAD PROTECTION**

The motor is protected by a thermal overload equipped with a manual reset.

**BLADE CAPACITY**

The MK-212-4 (Part# 159414) uses a ten (10) inch (254 mm) diameter wet cutting continuous rim MK Diamond blade.

The MK-212-6 (Part# 167882) uses a twelve (12) inch (305mm) diameter wet cutting continuous rim MK Diamond Blade.

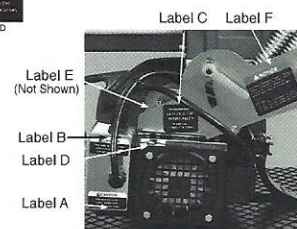
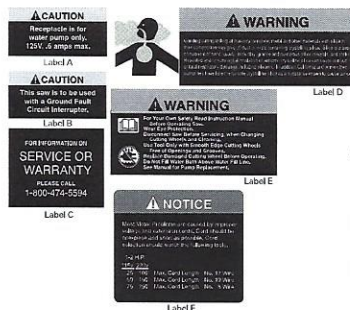
**TILE TYPES**

The MK-212 can cut a variety of tile types including stone, masonry, and lapidary products.

**NOTE:** The MK-212 is not designed to cut plastic or metals.

**SAFETY LABEL LOCATIONS**

Safety labels are located according to the table below and the exploded views at the end of this manual. The labels contain important safety information. Please read the information contained on each safety label. These labels are considered a permanent part of your saw. If a label comes off or becomes hard to read, contact MK Diamond or your dealer for a replacement.



Tile Master Label Sheet Part# 166012

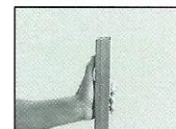
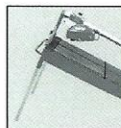
Decal/Label	Location	Description
A	Switch Box	Caution - Receptacle is for Water Pump Only
B	Switch Box	Caution - Use with GFCI only
C	Cutting Head Arm	Service/ Warranty
D	Motor - Back	Warning - Silica Warning
E	Motor - Back	Warning - Read Owners Manual
F	Cutting Head Arm	Notice - Voltage/extension cords

**TILE SAW SPECIFIC WARNINGS****WARNING**

Wear eye protection.  
Use splash guard for every operation for which it can be used.  
Disconnect saw before servicing, when changing cutting blades, and cleaning.  
Replace damaged cutting blade before operating.

**ASSEMBLY**

Follow the assembly instructions to prepare your MK-212 for operation.

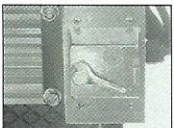
**SUPPORT LEG INSTALLATION**(A)  
Loosen the Cutting Head Locking Knob.(B)  
Move the Cutting Head to one end of the saw. Tighten the Cutting Head Locking Knob.(C)  
Obtain the first Leg.(D)  
Lift the end opposite of the cutting head; align the Leg with the Retaining Slot on the saw and install the Leg.(E)  
Tighten the Leg Retaining Wingnut.(F)  
Repeat Steps C through E for the second Leg.(G)  
Loosen the Cutting Head Locking Knob. Move the Cutting Head to the end with the two installed Legs.(H)  
Tighten the Cutting Head Locking Knob.(I)  
Install the remaining to Legs on the opposite side of the saw using Steps C through E.(J)  
Install center legs for the MK-212-6.



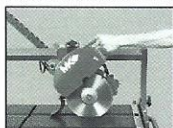
(S)  
Tighten the Blade Guard Retaining Knob.

### PRE-START INSPECTION

Prior to beginning work, a pre-start inspection of the saw should be performed.



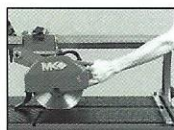
(A)  
Ensure the ON/OFF Switch is in the OFF position.



(B)  
Inspect the Diamond Blade for damage – verify the blade is correct for the material being cut.



(C)  
Inspect the MK-212 for damage – ensure the cord is free of cracks or cuts.



(D)  
Verify the Movable Cutting Head moves freely.

### WATER PUMP SETUP FOR OPERATION

The Water Pump can be setup for operation in two ways, External Water Source or Re-circulation.

**NOTE:** If using a dry blade for operation, DO NOT connect the water pump.

#### EXTERNAL WATER SOURCE

This is the preferred method of cooling.



(A)  
Remove water pump from water pan.



(B)  
Remove the Drain Plug.



(C)  
Place the Water Pump in an external container.



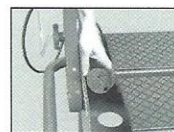
(D)  
Fill the external container until water completely covers the Water Pump suction.



(E)  
Place an external catch basin below the Water Basin drain hole.

#### RE-CIRCULATION

**NOTE:** When using the re-circulation method, the water should be changed often for longer pump life.



(A)  
Install drain plug in drain hole in bottom of water pan.



(B)  
Fill the Water Basin until water completely covers the Water Pump suction.

### MK-212 ELECTRICAL CORD SETUP



1. Before connecting the MK-212 to a power supply, be sure the voltage, cycle and phase meet the requirements of the table below.

VOLTAGE:	120v
CYCLE:	60hz
PHASE:	1-phase Single Phase

2. If using an extension cord, make sure the length and wire gauge correspond to the requirements listed in the table on page 13. An extension cord that is too small in wire gauge (diameter), or too long in length, will cause the motor to overheat and could cause premature failure.
3. Use an approved Ground Fault Circuit Interrupter (GFCI)
4. Do not cover the motor vents as this could lead to motor overheating.

**NOTE:** In order to avoid breaker tripping, a 20 amp circuit breaker should be used.



(A)  
Plug MK-212 into the GFCI (A GFCI should always be used when operating the MK-212).



(B)  
Plug the GFCI into the Power source.

### BLADE HEIGHT ADJUSTMENT



(A)  
Use Cutting Head Height Lock to adjust blade height.

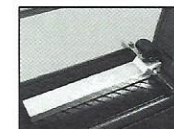


(B)  
The blade should not routinely be set in the full down position when cutting, only the diamond segment of the blade is below the table surface.

### 90° STRAIGHT EDGE CUTTING



**DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.



(A)  
Position the adjustable Rip Guide to desired cut length.



(B)  
A square should be used to check alignment of the Back Stop to the Blade.



(C)  
Place the tile against the Back Stop and Rip Guide. Verify the tile is seated against the Back Stop and Rip Guide.



(D)  
Turn the motor ON.



(E)  
Verify proper cooling flow on both sides of the blade.



(F)  
Perform the cut. Turn the motor OFF when work is complete.



**ANGLE CUTTING**

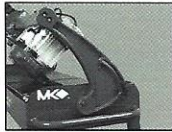
**NOTE:** To cut at an angle, the MK-212 has been designed with a pivoting cutting head.

**CAUTION**

**DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.



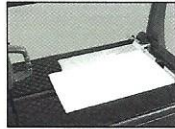
(A) Loosen the two Beam Post Cutting Head Pivot Knobs located on each end of the saw.



(B) Pivot the Cutting Head and retighten the two Pivot Knobs.



(C) Position the adjustable Rip Guide to desired cut length. Use a Square to check alignment of the Back Stop to the Blade.



(D) Place the tile against the Back Stop and Rip Guide. Verify the tile is seated against the Back Stop and Rip Guide.



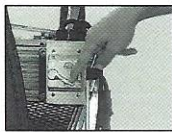
(E) Turn the motor ON.



(F) Verify proper cooling flow on both sides of the blade.



(G) Perform the cut.



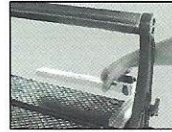
(H) Turn the motor OFF when work is complete.

**OFF-ANGLE CUTTING**

**NOTE:** To cut angles other than 90°, a Protractor (MK Diamond Part No. -159572) should be used.

**CAUTION**

**DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.



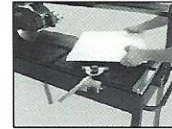
(A) Remove the adjustable Rip Guide.



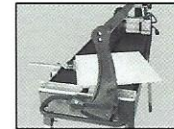
(B) Place the Protractor on the side of the cutting table. Adjust the Protractor to fit the tile being cut and tighten the Retaining Knobs to lock the Protractor.



(C) Set the desired Cutting Angle and tighten the Retaining Knob.



(D) Position the tile against the Protractor and the Stop.



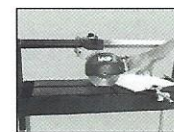
(E) Verify the tile is seated against the Stop and Protractor and that the desired angle is correct.



(F) Turn the motor ON.



(G) Verify proper cooling flow on both sides of the blade.



(H) Perform the cut.



(I) Turn the motor OFF when work is complete.