

SAFETY AND OPERATIONS INSTRUCTIONS FROM:



PLEASE READ THIS INFORMATION CAREFULLY PRIOR TO
OPERATING EQUIPMENT

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 guidelines should always be used when operating the core drill.

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. Contact MK Diamond or your dealer for replacement.



CAUTION

Always keep alert. Do not allow familiarity (gained from frequent use) to cause a careless mistake. Always remember that a careless fraction of a second is sufficient to inflict serious injury.

GENERAL SAFETY



- **DO NOT** operate or service this equipment before reading this entire manual. Read and understand all warnings, instructions and controls on the machine.

- This equipment should not be operated by persons under 18 years of age.



- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, steel-toed 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 and parts before starting.



- **ALWAYS** wear proper respiratory, head, ear and eye protection equipment when operating this machine.

- Use the right tool. Do not use a tool or attachment to do a job for which it is not recommended. Do not alter the tool. Maintain all tools with care for the safest and best performance.
- **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.
- **ALWAYS** insure that the switch is off before plugging unit into electrical power.
- **NEVER** leave the drill running unattended. Turn power off.
- **DO NOT** over reach, maintain control. Keep proper footing and balance at all times. Maintain a firm grip.
- Should any part of this drill become missing or damaged, or any component fail to perform properly, shut off the drill and unplug the power source. Replace the missing, damaged, and/ or failed part before resuming operations.



ELECTRICAL SHOCK

NEVER touch electrical wires or components while the engine is running. They can be sources of electrical shock which could cause severe injury or burns.



ACCIDENTAL STARTS

Before starting the equipment, be sure the ON/OFF switch is in the "OFF" position to prevent accidental starting. Place the ON/OFF switch in the OFF position before performing any service operation.



ROTATING PARTS

Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate the motor with covers, shrouds, or guards removed.

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.

Use appropriate NIOSH-approved respiratory protection where dust hazard may occur. Paper masks or surgical masks without a NIOSH approval number are not recommended because they do little to protect the worker. For more information about respirator programs, including what respirators have received NIOSH approval as safe and effective, please visit the NIOSH website at:

<http://www.cdc.gov/niosh/topics/respirators>

Observe OSHA regulations for respirator use (29 C.F.R. §1910.134 and §1503.1).

Visit <http://www.osha.gov> for more information.

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/docs/96-112/>

<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 dust masks that are specially designed to filter out microscopic particles.

MK-MANTA III CORE DRILL

The MK-Manta III Core Drill is a powerful all-purpose drilling rig that is designed to drill holes, up to 14 inches in diameter (16 inches with the 2 inch spacer), in all types of concrete slabs, floors, walls, and ceilings. The MK-Manta III Core Drill is designed for easy anchoring using masonry anchors. A vacuum pump is provided to facilitate quick and easy anchoring to smooth floor surfaces.

MOTOR

The MK-Manta III Core Drill is designed for use with a variety of motors. All Milwaukee motors are powerful two speed units that provide the correct cutting speed over a range of diamond drill bit sizes.

CARRIAGE, COLUMN AND BASE

The carriage, column and base assembly of the MK-Manta III Core Drill is the strong, sturdy drilling platform that provides the rigidity needed to quickly drill accurately placed, straight, smooth holes in all types of concrete. The MK-Manta III's base is slotted to provide easy anchoring of the drill, in a variety of drilling situations, with a single masonry anchor. The slot also allows more than one hole to be drilled from a single anchor location. The base contains four leveling screws to insure accurate hole alignment even on uneven concrete surfaces. The carriage has a handle and the base has 6" wheels to provide easy transport. The carriage travel is controlled by a strong rack and pinion gear-system, that can be locked at any point on the column. The single spoke sliding handle allows the operator to easily control the drilling pressure and speed. At the top of the column is a strong jack-screw that allows for additional bracing to overhead or opposite surfaces.

VACUUM PUMP

The vacuum pump provides quick and reliable mounting to smooth concrete slab and floor surfaces. The powerful vacuum pump provides 25 inches of mercury (in-Hg) holding power which equates to over 1400 pounds of force, holding the MK-Manta III Core Drill securely, for safe, accurate drilling. The pump has a quick disconnect connector on the hose at the base.

WATER SYSTEM

The water system for the MK-Manta III Core Drill is a simple hose hook-up and shut-off valve that provides water flow to the diamond drill bit. The water travels to the center of the bit through the water swivel and spindle to insure that water is supplied to the cutting end of the bit, even in deep drilling operations.

UNPACKING

Open the accessory pack and check each item with the contents list, making certain that all items are accounted for and in good condition before discarding any packing material. If there are any missing or damaged parts, call our toll free number 1-800-421-5830 for instructions before proceeding with the assembly.

Contents of the carton: It varies depending on model. MK-Manta III Core Drill (including column, carriage, base and motor).

Contents of the Accessory Pack: washer plate (1), knobs (2), water valve (1), wrench (1), core bit washers (2), leveling bolts (4), control box (1), motor manual, MK-Manta III manual, MK Diamond warranty card, shear pins (6) and vacuum pump.



MK-Manta III



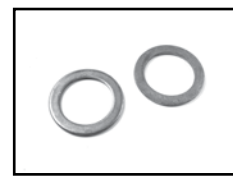
Washer Plate



Water Valve



Wrench



Core Bit Washers



Leveling Bolts



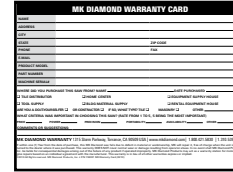
Control Box



Owner's Manual



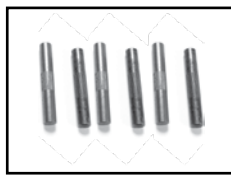
Motor Manual



Warranty Card



Vacuum Pump &
Base Gasket
(Combination Models Only)



Shear Pins
(Models 4090 &
4094 Only)

ASSEMBLY

Feed Handle and Meter Box



WARNING

For your own safety and protection, do not attempt to operate this drill until it is completely assembled and installed according to these instructions, and until you understand the machines capabilities and the potential hazards associated with it.

Step 1: Slide carriage assembly onto column. Assemble handle and hub.

Vacuum Gasket

Turn the vacuum base over. Press the gasket into the groove in the underside of the base. The gasket is cut at the factory to the correct length so that the two ends will butt together once the gasket is installed.

Step 2: Assemble the two pieces of the water valve, and install the valve into the water swivel on the motor, just above the spindle (see Milwaukee literature).

Final Assembly

Plug the cord from the motor into the upper outlet on the meter box (the one opposite the motor on-off switch). The other outlet on the meter box is for use with the vacuum pump.

DRILLING OPERATIONS

Electrical Requirements

The MK-Manta III Core Drill rig has been equipped with a Milwaukee motor. The drill should be used on an electrical circuit, separate from other loads, and protected by a 30 amp circuit breaker. The MK-Manta III Core Drill has been provided with a 20 Amp (NEMA L5-20P) locking plug.

Grounding

The MK-Manta III Core Drill is marked “Grounding Required” and has a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electrical shock.

Your tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances.



WARNING

Improperly connecting the grounding wire can result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool. Never remove the grounding prong from the plug.

EXTENSION CORDS

Do not use the tool if the cord or plug is damaged. IF damaged, have it repaired by an authorized service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician. The use of a circuit protected by a ground fault interrupter (GFCI) is highly recommended.

Use extension cords of the proper cable size, referring to the following chart.

| MOTOR SPECS | | | EXTENSION CORD LENGTH | | | |
|-------------|-----------|------|-----------------------|-------|------|------|
| Motor | Voltage | Amps | 25' | 50' | 100' | 200' |
| 154633 | 120V 1 Ph | 20 | 12 ga | 10 ga | 6 ga | 4 ga |
| 159264 | 120V 1 Ph | 15 | 14 ga | 10 ga | 8 ga | 4 ga |

**WARNING**

Never use an extension cord smaller than shown in the chart. Be sure your extension cord is properly wired and in good electrical 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.

NOTICE:

Using an extension cord with inadequately sized wire causes drop in voltage, resulting in loss of power and possible tool damage.

SECURING THE RIG: RECOMMENDED METHODS

A. USE A CONCRETE ANCHOR. Use either a 1/2 or 5/8 concrete anchor to secure the base to the work surface. Always be sure to level the rig and tighten the lock nuts on the leveling screws before tightening the anchor. Manta base should be secured using a concrete anchor. Insert bolt through the washer plate then into slot located on the base and then tighten the bolt firmly in the anchor. Follow concrete anchor manufacturer's instructions.

**WARNING**

It is essential to always secure the rig to the work surface to help prevent personal injury and also to protect the rig. An unsecured rig could rotate during drilling and possibly cause injury. It could also cause the bit to chatter against the work surface or bind in a hole, which can fracture the diamond. Always test the anchor for firm attachment before drilling.

B. VACUUM BASE. The MK-Manta III Comb Core Drill Rig is equipped with a vacuum pump. This pump is designed to provide approximately 1400 pounds of total holding power. In order to provide the most rigidity to your core rig the unit should be used on a relatively smooth surface such as concrete. If the surface is too porous or rough the vacuum mount may not hold securely.

1. Turn the vacuum pump on and step on the vacuum base until a vacuum is created and the base adheres to the work surface.
2. Level the rig using the leveling bolts. Use a minimum amount of adjustment to the leveling bolts to avoid breaking the vacuum seal.

The vacuum gauge should read approximately 25 pounds per square inch (PSI) of pressure. If the gauge reads 20 in-Hg less, check the work surface for conditions which may interfere with adequate suction such as cracks, dirt or debris on a porous surface.

**WARNING**

Do not drill if the gauge reads less than 20 in-Hg. Do not use vacuum base on cracked, uneven, porous or vertical surfaces.

C. ADDITIONAL SUPPORT. For added rigidity, you may use a telescoping extension assembly in conjunction with a concrete anchor or vacuum base. To use a telescoping assembly, first level the rig with the leveling screws. Secure the rig with an anchor or the vacuum base. Place the top flange of the extension against a ceiling or wall and place the other end on the jack screw of the column. The assembly is adjustable up to 14 feet.

DRILLING SPEEDS

Specifications for the different motors are listed in the table below.

| Motor | Amps | Motor Protection | RPM Range Low/High | Suggested Diameters in Medium Aggregate | |
|---------|------|------------------|--------------------|---|--------------------|
| 4004 | 20A | Clutch | 300 - 600 | Low - 7" - 14" | High - 4" - 7" |
| 4090 | 15A | Shear Pin | 375 - 750 | Low - 5" - 8" | High - 2-1/2" - 5" |
| 4094 | 20A | Shear Pin | 450 - 900 | Low - 6" - 10" | High - 2-1/2" - 6" |
| 4096 | 20A | Clutch | 450 - 900 | Low - 6" - 10" | High - 2" - 6" |
| 4097-20 | 15A | Clutch | 500 - 1,000 | Low - 3" - 5" | High - 1-3/4" - 3" |

DRILLING RIG SPECIFICATIONS

| | | | | | | |
|---|--------|-------------------|-------------------|-------------------|-------------------|----------------------|
| Bit Capacity | | 1/2" to 14" | | | | |
| Spindle | | 1-1/4"-7 | | | | |
| Bit Feed | | 27" | | | | |
| L x W x H (inches) | | 19" x 24" x 46" | | | | |
| L x W x H (mm) | | 480 x 610 x 1,170 | | | | |
| Motor | | Milwaukee 4004 | Milwaukee 4090 | Milwaukee 4094 | Milwaukee 4096 | Milwaukee 4097-20 |
| Volts / Amps | | 120V / 20A | 120V / 15A | 120V / 20A | 120V / 20A | 120V / 15A |
| Clutch | | Slip Clutch | Shear Pin | Shear Pin | Slip Clutch | Slip Clutch |
| Motor RPM | | 300/600 | 375/750 | 450/900 | 450/950 | 500/1,000 |
| Max. Horsepower | | 4.8 Hp | 2.5 Hp | 4.8 Hp | 4.8 Hp | 2.5 Hp |
| | | | | | | |
| Combination Base Drill Stand* <small>Includes Vacuum</small> | Weight | 109 lbs. | 109 lbs. | 109 lbs. | 109 lbs. | 109 lbs. |
| | Part# | 158639 | 158641 | 157449 | 157448 | 158640 |
| | | | | | | |
| Combination Tilt Base Drill Stand <small>Includes Vacuum</small> | Weight | 114 lbs. | 114 lbs. | 114 lbs. | 114 lbs. | 114 lbs. |
| | Part# | 158647 | 158649 | 158644 | 158645 | 158648 |
| | | | | | | |
| Anchor Tilt Base Drill Stand | Weight | — | 95 lbs. | 95 lbs. | 95 lbs. | 95 lbs. |
| | Part# | — | 158657 | 158652 | 158653 | 158656 |
| | | | | | | |
| Anchor Base Drill Stand | Weight | — | 74 lbs. | 74 lbs. | 74 lbs. | 74 lbs. |
| | Part# | — | 167324 | 167325 | 167326 | 167327 |

The MK-Manta III Core Drill, with Milwaukee motor will operate in either a high or low gear speed. This speed combined with applied pressure provides the cutting action for the core bit. Speed selection and pressure are determined by hardness of material, aggregate size and grade of diamond core bit. Generally, harder material and larger aggregates require more speed and pressure. Use low speed for large diameter bits and high speed for small diameter bits. Changing of the speeds is accomplished by using the speed shift lever built into the gear case.

NOTICE: Change the gears only when the motor is off.

All building materials and work surfaces are composed of aggregates of various size. Aggregates are materials such as gravel or crushed stone. The size of the grains and the hardness of the material affects the speed of drilling. Most building materials contain some type of steel reinforcements. All MK-Manta III bits are designed to cut through these types of reinforcing steel. However, bits should never be used for drilling solid steel plates. Proper selection of the diamond core bit should be based on material to be drilled and performance requirements.

DRILLING PRESSURE AND THE AMMETER

Steady, even pressure assures accurate holes and longer bit life. Always maintain consistent pressure so that the bit is constantly cutting.



NOTICE: Too much pressure will damage the bit and motor. Too little pressure will glaze over the diamonds, reducing cutting efficiency and prematurely wearing the bit. The ammeter is the gauge on the Control Box. It provides pressure feedback information during drilling, allowing the operator to help prevent motor overload and premature bit wear. The green areas are the operating range, and the red area is the overload range. Generally, the operator should keep the ammeter needle in the upper area of the operating range for large diameter bits, and in the lower green area for small diameter bits. If the bit contacts steel reinforcing rods, the needle on the ammeter may jump slightly showing a heavier load. If this occurs, do not decrease pressure or you may damage the diamonds. The MK-Manta III Core Drill may be operated with the ammeter needle into the red area for the short period of time that it takes to cut through a steel rod.

WATER SUPPLY

An adequate supply of clean water is necessary for drilling. Connect the water supply hose to the hose fitting on the output of the core drill motor. Take precautions that the water supply will not be interrupted during the drilling operations.

NOTICE: If a bit is run dry it can be ruined in a few seconds.

CARRIAGE RIGIDITY

It is essential that the carriage fits snugly on the column to prevent the motor or bit from wobbling during drilling. Through normal use the carriage may loosen from the column and begin to wobble. Before drilling, always make sure the carriage is rigid by trying to wiggle it with your hand. If the carriage is secure it should not move. If it does move, tighten the adjustment. Tighten only enough to remove the play. Do not over tighten.

SHEAR PIN AND CLUTCH PROTECTION

The MK-Manta III Core Drill uses either a shear pin or a friction clutch to protect the gear and motor against overload. The shear pin drives the outer portion of the drive spindle. If the motor should overload the pin will shear. Extra shear pins are supplied or can be ordered from MK Diamond's Customer Service. Tighten only enough to remove the play, do not over tighten. Another model features a friction clutch rather than a shear pin to protect the motor and gears. If the motor overloads the clutch will begin to slip and the bit will stop rotating. The clutch is factory-set and does not require adjustments. However, under normal use, the clutch may start to slip at low torque. If this happens, refer to the motor's Owner's Manual.

MOUNTING BITS

Bits with permanently attached adapters simply screw directly onto the threads of the drill spindle with copper washer. Ensure that the end of the bit butts up squarely against the shoulder on the spindle.

- Thread anti-clockwise to attach core bit.
- Thread clockwise to loosen.

**WARNING**

The MK-Manta III Core Drill, equipped with a Milwaukee motor, has a 1 -1/4" - 7 thread. For bits with other threads, use a shaft coupling. After a bit has been mounted, turn the power on and check that there is a minimum of run-out or wobble.

**WARNING**

To reduce the risk of injury, always unplug tool before attaching or removing accessories. Only use specifically recommended accessories. Others may be hazardous.

DRILLING PROCEDURE

When drilling through concrete floors, the core will generally drop from the diamond bit. Caution should be provided for people and property below the drilling area.

1. Ensure that you have read and fully understand the complete operation of the Manta III Core Drill you have purchased prior to commencing drilling operations.
2. Select and install a diamond core bit appropriate for the job.
NOTE: Grease the bit threads to help prevent the bit from seizing on the spindle due to surface corrosion.
3. Select either high or low gear speed according to the chart in the Drilling Speeds section of this manual. (Do not shift speed when motor is on.)
4. Connect water hose to water swivel.
5. Secure the rig as described in the Securing the Rig section of this manual.

**WARNING**

If using the vacuum base, do not continue operations unless the vacuum gauge reads more than 20 in-Hg. Normally, the gauge will read 23 inches or more.

DEEP DRILLING

When drilling holes that are longer than the core bit, follow the steps below.

1. Begin drilling the hole as usual. When you have drilled to the length of the bit, retract the bit from the hole and turn off the motor and water as usual.
2. Break off the core by driving a chisel or slender wedge into the circular kerf. Remove the core using core tongs, bent music wire or anchor bolts.
3. After removing the core, insert the bit carefully into the hole, attach a bit extension to the bit and core drill rig, then continue drilling as usual.

MAINTENANCE

Periodic maintenance, including cleaning, lubrication and inspection for wear and damage are routine servicing procedures. Following the procedures as outlined can prevent serious damage or malfunctioning of the machine, and aid in preserving the useful life of core drill bits.



CAUTION Before performing any maintenance to the MK-Manta III Core Drill, always unplug the unit from the electrical power source. Ensure the On-Off switch is in the Off position, after servicing, and before plugging the unit back in.

CLEANING

Clean the machine after use, being careful to remove dust and slurry from the motor, vents, carriage and column. Keep tool handles clean, dry and free of oil and grease. Use only mild soap and a damp cloth to clean this tool since certain agents and solvents are harmful to plastics and other insulated parts.



WARNING Never use flammable or combustible solvents around tools.

VACUUM BASE GASKET

Through normal use, the rubber gasket on the underside of the vacuum base can become worn, requiring replacement. Periodically check the gasket for wear. If replacement is required, clean the groove in the base before installing a new gasket.









TROUBLESHOOTING

| PROBLEM | WHAT TO DO? | INDICATION | CAUSE | SOLUTION/ RECOMMENDATIONS |
|--|------------------------------------|---|---|---|
| Low Penetration Rate Under Prevailing Drilling Parameters. | 1. Check fluid return. | Fluid not muddy. Evidence of steel cuttings. | Drilling in steel reinforcement. | Adjust drilling parameters to recommendations for reinforcement. |
| | 2. Check motor speed range. | | Speed not correct for the bit size used. | See recommended speeds. |
| | 3. Check wear picture of bit face. | Bit worn out | | Replace with new bit. |
| | | Diamond without exposure. (flush with bond matrix) | Insufficient bit load. | Increase bit load. |
| | | | Rotated with high RPM on reinforcement | Reduce RPM, or sharpen bit. |
| | | | Loose material at bottom of hole. | Break core, clean bottom of hole or reduce RPM and drill with increased bit load. |
| | | Face of bit plugged with cuttings | Not enough fluid pumped. Cuttings burnt to matrix. Diamonds prevented from cutting. | Clean bit face by sharpening methods such as drilling dry at low RPM in a concrete block 3/8" deep max. Increase water flow rate. |
| | | Face of bit covered with steel. Steel cuttings stick to bit face. | Steel cuttings stick to bit face. Diamonds prevented from cutting. | Clean bit face by drilling in abrasive concrete block. Reduce RPM. |
| | | Wear picture of polished diamonds. | Bit load too low. | Increase bit load. |
| | | | Bit speed too high | Use lower speed; increase bit load. |
| Heavy Wear at Steel Tube | | Deep grooves. | Worn or open guide ways on cradle. Borehole is getting undulated. | Adjust guidance on carriage. |
| | | | Protruding steel. Spindle is offset. Bit out of true. | Adjust guidance on carriage. Nicks or dirt on mounting faces. |
| | | Heavy Wear. | Bit is deformed. | Replace bit. |
| | | | Poor cleaning of abrasive cuttings. | Improve flushing. |
| | | | Crown clearance worn out. | Replace bit. |

TROUBLESHOOTING

| PROBLEM | WHAT TO DO? | INDICATION | CAUSE | SOLUTION/ RECOMMENDATIONS |
|--------------------|--|--|-------|---|
| No return of fluid | Check where fluid is leaking. | | | If Leaking can be tolerated, continue drilling with increased attention. |
| Bit Stuck | 1. Try to raise bit, if possible. 2. Stop rotation. | Loose material (cut steel or aggregates) is blocking between core and bit or between borehole and bit. | | Step 1: Apply wrench and rotate bit in both directions while bit is under tension. If not successful: |
| | | | | Step 2: Try to over drill a hole slightly larger than the stuck bit. |
| | | | | Disconnect bit and remove, break core. Start over with improved fastening of machine. |
| | | | | Disconnect machine, adjust guidance. |
| | 1. Stop rotation. 2. Raise bit. | No clearance between tube I.D. or O.D. and crown I.D. or O.D. | | Replace bit. |
| Shear Pin Fail | | Drill impacted to stall at lower speeds. | | Use recommended speed for the bit diameter used. Raise bit when it begins to load down. Feed bit slowly when chattering begins. |

ACCESSORIES

| ITEM | NUMBER | DESCRIPTION | |
|------|-------------------|---|---|
| 1 | www.MKDiamond.com | Core Bits MK-Black- <i>Supreme Grade for Concrete & Asphalt</i> Excellent performance in applications associated with moderate to high steel reinforcement. <i>Available Diameters 1/2" - 16"</i> |  |
| 2 | www.MKDiamond.com | Core Bits MK-Orange- <i>Premium Grade for Concrete & Asphalt</i> MK-Orange is a premium bit designed for wet drilling applications that include light to moderate steel reinforcement. <i>Available Diameters 1" - 16"</i> |  |
| 3 | www.MKDiamond.com | Core Bits MK-Yellow- <i>Standard Grade for Concrete & Asphalt</i> MK-Yellow is an excellent choice for all types of general wet drilling. <i>Available Diameters 1" - 14"</i> |  |
| 4 | www.MKDiamond.com | Core Bits MK-Blue Turbo - <i>Professional Grade for Concrete with Steel</i> MK-Blue is an excellent choice for all types of general wet drilling. <i>Available Diameters 2" - 6"</i> |  |
| 5 | www.MKDiamond.com | Core Bits MK-Black Turbo - <i>Supreme Grade for Concrete & Asphalt</i> MK-Black is an excellent choice for all types of general wet drilling. <i>Available Diameters 2" - 6"</i> |  |
| 4 | www.MKDiamond.com | Core Bit Extensions Multiple tube extensions may be used extending the drilling depth in increments of 12". <i>Available Diameters 1 - 1/4" to 6 /14"</i> <i>For Use with MK-Turbo Bits Only</i> |  |
| 5 | 304149 304150 | Shaft Extensions easily attach to the core bit and allow for a deeper drilling capacity. 12" Length 5/8" - 11 Male / 5/8" 11 Female 1 - 1/4" - 7 Male / 1 - 1/4" - 7 Female |  |
| 6 | 159620 | Motor Spacer kit for Manta III core drill rigs with Milwaukee motors. Allows rigs to use 16" bits. |  |