## **OPERATION AND PARTS MANUAL**



Revision #2 (09/04/19)



THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

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## DM15A9C/CDM2CSA — PROPOSITION 65 WARNING



## **AWARNING**



#### SILICOSIS 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 the respiratory precautions mentioned above.

# **AWARNING**



#### RESPIRATORY HAZARDS

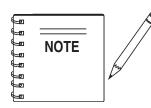
Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturers or suppliers, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the materials being used.

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As a continuing effort to update our parts book, contact the MULTIQUIP literature department for the latest revision of your "Operation and Parts Manual"

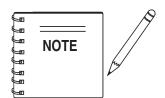


Specification and part number are subject to change without notice.

## DM15A9C/CDM2CSA— SAFETY MESSAGE ALERT SYMBOLS

#### FOR YOUR SAFETY AND THE SAFETY OF <u>OTHERS!</u>

Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the Safety Messages 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 MQ Models DM15A9C/CDM2SA Core Drill Motor and Drill Rig

Before using this core drill stand and electric motor, ensure that the operating individual has read and understands all instructions in this manual.

#### **SAFETY MESSAGE ALERT SYMBOLS**

The three (3) Safety Messages shown below will inform you about potential hazards that could injure you or others. The Safety Messages specifically address the level of exposure to the operator, and are preceded by 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.

#### HAZARD SYMBOLS

Potential hazards associated with the operation of the *DM15A9C* (electric motor) and *MQ CDM2CSA* (drill rig) will be referenced with Hazard Symbols which appear throughout this manual, and will be referenced in conjunction with Safety Message Alert Symbols.



#### WARNING - Respiratory Hazards

ALWAYS wear approved *respiratory* protection when required.





#### **CAUTION - Eye and Hearing Hazards**

**ALWAYS** wear approved eye and hearing protection.





#### **CAUTION - Accidental Starting Hazards**

**ALWAYS** place the core-drill's **ON/OFF** switch in the **OFF** position when the drill is not in use.





#### **CAUTION - Over Speed Conditions**

**NEVER** tamper with the factory settings of the core drill. Personal injury and damage to the core drill can result if operating in speed ranges above maximum allowable.





#### **CAUTION - Rotating Drill Bit**

Rotating drill bit can cut and crush. Keep hands and feet clear.





#### **CAUTION - Equipment Damage Hazards**

Other important messages are provided throughout this manual to help prevent damage to your drill, other property, or the surrounding environment.

## DM15A9C/CDM2CSA— RULES FOR SAFE OPERATION



#### Read this manual!

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 MQ DM15A9C (electric motor) and CDM2SA (drill rig)

#### **GENERAL SAFETY**

- DO NOT operate or service this equipment before reading 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, steel-toed boots, hard hat 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.







■ ALWAYS wear proper respiratory (mask), hearing and eye protection equipment when operating the core drill.



- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications.
- NEVER use accessories or attachments, which are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.

- NEVER operate the core drill in an explosive atmosphere or near combustible materials. The electric motor of this coredrill emits sparks during operation and shut-down. A explosion or fire could result
  - causing severe **bodily harm or even death** if the sparks make contact with combustibe or explosive materials.
- Maintain this equipment in a safe operating condition at all times.
- Keep bystanders, children and vistors away while operating the core drill. Distractions can cause you to loose control.
- DO NOT wear wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.
- 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 be sure the operator is familiar with proper safety precautions and operation techniques before using core drill.
- ALWAYS keep work area clean and free of foreign matter and debris. Also keep work area well lit.
- Avoid accidental starting. Make sure power ON/OFF switch is off before applying power.
- **NEVER** leave the core drill unattended. When not in use always unplug the core drill from power source.
- ALWAYS remove any adjusting keys or wrenches before turing the core drill on. A wrench or key that is left attached to the rotating part of the core drill may result in personal injury.
- **DO NOT** overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the core drill in unexpected situations.
- Keep all *inexperienced* and *unauthorized* people away from the equipment at all times.
- Become familiar with the components of the core drill before operating.
- ALWAYS replace any worn or damaged warning decals.
- **NEVER** touch drill bit cutting edges during operation. Also allow drill bit a sufficient amount of time to cool before touching.

## DM15A9C/CDM2CSA — RULES FOR SAFE OPERATION

- Maintain the core drill and drill bits with care. Make sure bit maintains good diamond exposure. A dull bit will cause glazing.
- **NEVER** drill into a work piece that is not secured.
- Use this core drill only for its intended purpose. DO NOT use this core drill for applications not recommended.
- Inspect the drill after each use. Replace any damaged or worn parts immediately. DO NOT use a defective core-drill.
- NEVER cover the air vents on the body of the core drill.

  ALWAYS leave these vents exposed. These vents are essential for the cooling of the electric motor. NEVER place tape over the vent to keep out dust.
- If a malfunction occurs, immediately unplug the core drill from the power source and correct the problem. If the problem can not be corrected, contact Discountequipment.
- DO NOT force your core drill. Excerting excessive force while drilling will damage your machine and is hazardous.
- ALWAYS make sure drill bit is installed securely so that it will not slip or fall out. It is haz ardous to use a core drill with a loose fitted drill bit.
- Some materials contain chemicals which may be toxic. Take precautions to prevent dust inhalation and skin contact

## ELECTRICAL SAFETY

- ALWAYS test the ON/OFF switch on the core drill before operating. The purpose of this switch is to shut down the electric motor.
- **NEVER** use a extension cord that is frayed or damaged where the insulation has been cut.
- **NEVER** carry the core drill by its power cord or disconnect it by yanking the cord from the power outlet.
- ALWAYS make certain that the proper extension cord has been selected for the job. See Table 1.
- **NEVER** allow power cord to *lay in wate*r.
- **NEVER stand in water** while operating the core drill.

- When connecting the core drill to a power receptacle, make sure the receptacle circuit is connected to either a GFCI receptacle or a receptacle protected by a 20 amp circuit breaker.
- When plugging the core-drill into a power receptacle, check the nameplate for the correct operating voltage. Operating the core drill at the wrong voltage will damage the electric motor. ALWAYS read the nameplate before applying power.
- This core drill is equipped with a 3-prong male power plug. **DO NOT** use a 2-prong adapter when plugging into a wall outlet. This will defeat the purpose of the ground circuit. If the plug does not fit into the receptacle, contact a qualified electrician to install a 3-conductor wall receptacle (outlet).
- Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electrical shock if your body is grounded.
- **DO NOT** expose the the core drill to rain or wet conditions. Water entering the drill wii increase the risk of electrical shock.
- When operating the core drill outside, be sure to use the apporpriate outdoor extension cord. This type of extension cord reduces the risk of electrical shock.
- ALWAYS be on the lookout for hidden wiring, the possibility exists of the drill bit making contact with hidden wiring. Contact with a "live" wire can cause electrical shock to the operator.
- ALWAYS remove the AC power cord from the power source before performing any service or maintenance on the core drill. This preventative safety measure reduces the possibility of accidental starting.

## DM15A9C/CDM2CSA—RULES FOR SAFE OPERATION

#### **TRANSPORTING**

- **ALWAYS** secure the core drill and drill rig with rope or tie-downs when transporting is required.
- **ALWAYS** wrap power cord neatly to avoid damage.
- **ALWAYS** place wrenches in a safe location where they can be located easily. Keep tools clean.

#### **MAINTENANCE**

- **NEVER** lubricate components or attempt service on a running core drill.
- **ALWAYS** allow the core drill a proper amount of time to cool before servicing.
- Keep the core drill in proper running condition.
- Fix damage to the core drill immediately and always replace broken parts. Replace with only MQ recommended parts.

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#### **EMERGENCIES**

■ ALWAYS know the location of the nearest *fire* extinguisher and first aid kit.





■ In emergencies *always* know the location of the nearest phone or *keep a phone on the job site*. Also know the phone numbers of the nearest *ambulance*, *doctor* and *fire department*. This information will be invaluable in the case of an emergency.









## DM15A9C/CDM2CSA — GENERAL INFORMATION

#### **APPLICATION**

The *MQ DM-15A9C Stationary Core Drill Motor* is designed to be used with the *MQ CDM-2CSA Lightweight Drilling Rig*. The core drill motor is intended only for wet drilling applications involving concrete type materials. Up to 9-inch (229 mm) diameter holes can be drilled for *wet* drilling applications using *standard* MQ wet drill bits. All MQ wet drill bits allow for a *14-inch cutting depth*. Dry cutting applications are not recommended with this unit.

#### **Power Plant**

The MQ DM-15A9C is powered by a 120 VAC 2-speed electric motor @15 amps. Min/Max RPM's is 600/1200. The unit weighs 20.0 lbs (9.0 kg.)

#### **Features**

This unit is equipped with the following:

- 2-Speed Electric Motor
- Internal Water Feed System
- Vacuum Pump (Option)

#### Standard MQ Drill Bits (Wet)

This core drill can use the following series of wet drilling bits:

- GCB Series economy quality small jobs.
- GB Series standard quality small to mid-size jobs.
- PRB Series premium quality for fast speeds.
- PCB Series super premimum quality and long life.
- PCB Series pro quality, high steel content and extremely hard aggregate small jobs.



Contact Discount-equipment for the core drill bit that best fits your application or accessories.

#### Threads/Adapters

The MQ DM15A9C core drill is supplied with a 1-1/4" X 7 thread shaft to be used specifically with the Multiquip wet drill bits. If it ever becomes necessary to reduce the shaft size, a 5/8" X11 reducer is available as an option.

#### **Supplied Tools**

■ 17, 19, 36 and 46 mm wrenches

#### **Extension Cords**

Use only 3-prong type extension cords with grounding pin. Always connect extension cord to a matching 3-prong receptacle. **NEVER** use a 3 to 2 prong adapter, this type of adapter will defeat the ground circuit protection capability. Always use an extension cord of adequate current carrying cability. Use Table 1 as a guidline when selecting the proper extension cord.

### DANGER - ELECTROCUTION HAZARDS

During operation of this core drill, there exists the possibility of *electrocution*, *electrical shock or burn*, which can cause *severe bodily harm* or even *DEATH!* 



To avoid these hazards:

**NEVER** use damaged or worn cables when plugging the core drill into an AC power receptacle.

**NEVER** grab or touch a live power cord with wet hands.

**NEVER** stand in water and touch a live power cord.



Table 1. Cable Selection (60 Hz, Single Phase Operation)					
Current in	Load In Watts	M	th		
Amperes	At 120 Volts	#10 Wire	#16 Wire		
2.5	300	1000 ft.	600 ft.	375 ft.	250 ft.
5	600	500 ft.	300 ft.	200 ft.	125 ft.
7.5	900	350 ft.	200 ft.	125 ft.	100 ft.
10	1200	250 ft.	150 ft.	100 ft.	
15	1800	150 ft.	100 ft.	65 ft.	
20	2400	125 ft.	75 ft.	50 ft.	
CAUTION: E					

## DM15A9C/CDM2CSA — GENERAL INFORMATION

#### **Operator Technique**

Always drill with consistent uniform pressure. **NEVER** subject the drill bit to sudden impacts. Uneven pressure can damage a bit. Slow bit penetration leads to bit glazing. Excessive drill pressure can overload the drill motor. Always try and let the drill bit do the work and try not to force the bit through the material.

If vibration occurs while drilling do the following:

- Stop drilling
- Turn motor off
- Check for loose nuts or bolts on the equipment
- Check for bit runout. Replace if necessary

#### **Drilling Performance**

Factors that influence core drilling:

- Amount of water flow
- Condition of equipment
- RPM of electric drill motor
- Amount and size steel
- Age of concrete
- Aggregate (size, type, hardness, abrasiveness)
- Operator technique
- Bit runout

#### Bit Glazing

Bit binding is caused by either a dull (glazed) bit or a poorly stabilized drilling rig. The causes of glazing are as follows:

- Wrong RPM for drill bit diameter
- Excessive feed pressure
- Low feed pressure
- High steel content in material work surface
- Large hard aggregate
- Too much water
- Low electric motor RPM's

#### Water

Water acts as a coolant, eliminating the heat caused by the friction of the drilling. This preserves the integrity of the drill bit. Without water acting as a coolant, the heat buildup during drilling will greatly reduce the life cycle of the drill bit.

During drilling water flushes loose, abrasive particles created during drilling. These particles consist of aggregate, sand, and various metals from embedded steel. The hole must be free of debris to allow the core bit to work.

If loose particles are not properly flushed from the hole, an unecessary drag will occur along the side of the core barrel. This can contribute to bit glazing (less power) and damage to the electric motor. In addition loose particles contribute to premature bit wear.

Monitor water flow continuously. Water volume should be adjusted until water return is muddy. Clear streaks indicate too much water volume. Excessive water volume is the leading cause of bit glazing. Excessive water prevents adequate segment material contact. When the bit segments do not make proper contact with the work surface (hydro-planing) they begin to glaze. Adequate water volume varies according to bit diameter. Use only enough water during drilling to flush particles from the work surface.

## DM15A9C — SPECIFICATIONS/DIMENSIONS (MOTOR)

Table 2. Electric Motor Specifications				
	Model	DM15A9C		
Core Drill Motor	Motor	120 VAC, 60 Hz @600 RPM (low speed, 1200 RPM (high speed)		
	Current	15 amps		
	Watts	1,800		
	Applicable Drill Bit Diameter Standard Wet Drill Bits	1~9 inches (25.4-228.6 mm)		
	Dry Net Weight	20 lbs. (9.07 Kg.)		

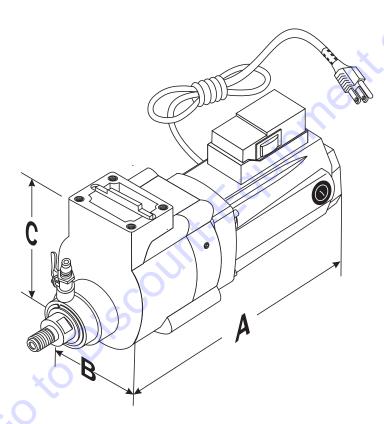


Table 3. DM15A9C Dimensions			
A (Length)	18.75 in. (476.25 mm)		
B (Width)	8.25 in. (209.55 mm)		
C (Height)	6.00 in. (152.40 mm)		

Figure 1. DM15A9C Electric Motor Dimensions

## CDM2CSA — DIMENSIONS (DRILLING RIG)

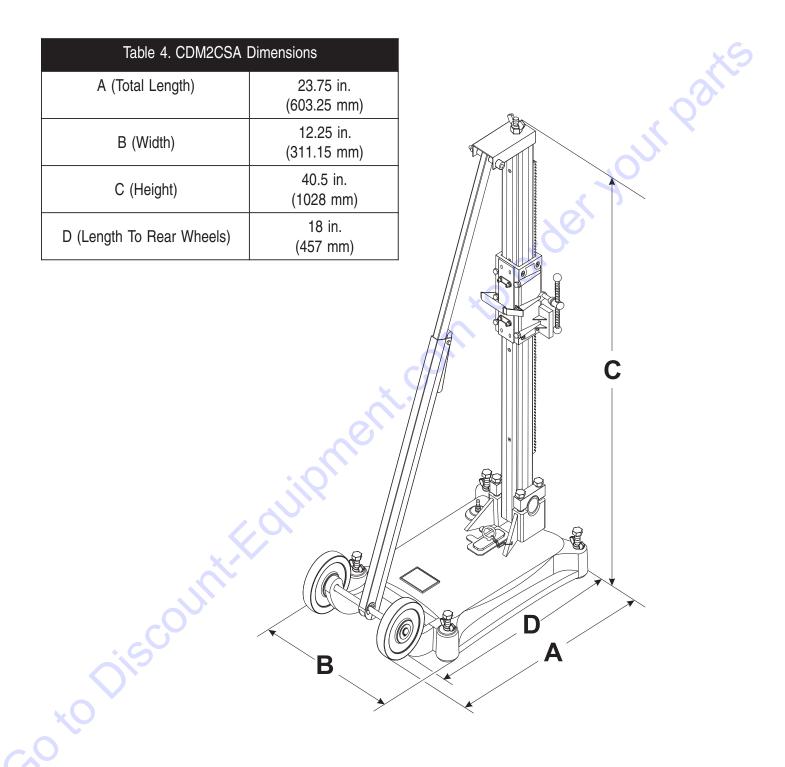
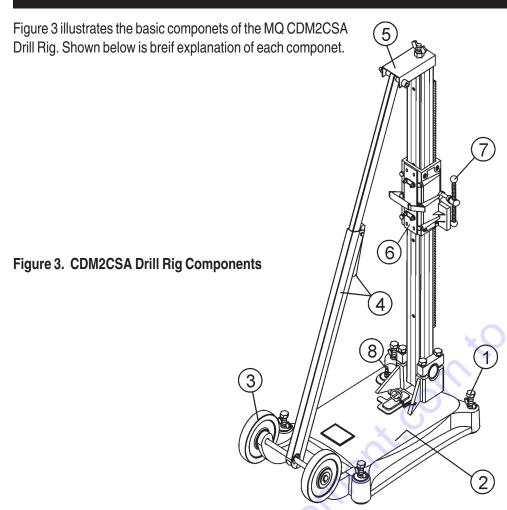


Figure 2 CDM2CSA Drill Stand

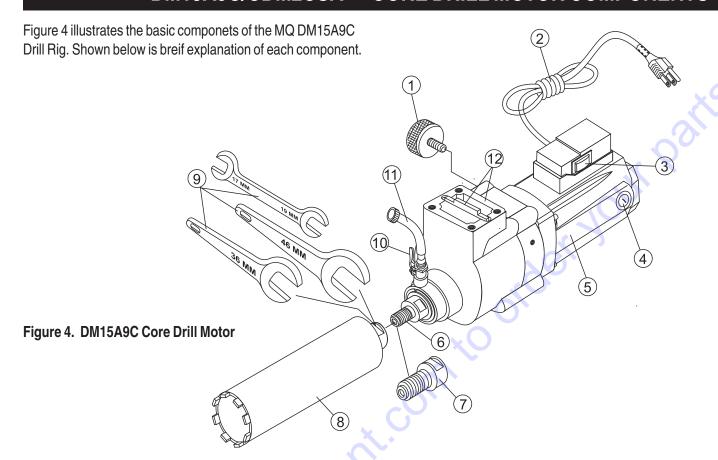
## DM15A9C/CDM2CSA— DRILL RIG COMPONENTS



- 1. **Leveling Screws** Use these screws (4) to level the the drill rig.
- 2. **Base** Supports the column rack and associated components.
- 3. Wheels 2 rear wheels have been provided for ease of maneuverability. To move the drill rig grab hold of the handle on the cradle assembly and tilt the unit slightly, then pull or push.
- 4. Angle Rod This is an adjustable rod. To shorten or lengthen, squeeze and hold the rod release trigger. Set angle rod to desired position, release trigger.
- 5. Adjustment Rod Cover Lock This cover must be secured to the column mast at all times when the unit is in use. NEVER! use the drill rig with this cover removed. The possibility exists of the column falling.

- 6. Cradle Assembly This unit is responsible for the raising and lowering of the core drill and is placed onto the colum rack. There is a tensioner knob located on the side of the cradle that determines the ease at which the cradle will move up and down along the rack.
  - Adjust the tension so that the cradle moves smoothly and freely. Before placing core drill onto cradle, always make sure the tension knob is securely tightened. This will prevent the core drill from falling.
- Cradle Raise/Lower Handle Use thishandle to raise or lower the core drill.
- 8. **Vacuum Hose Fitting** Connect the output end of the vacuum pump hose to this fitting.

## DM15A9C/CDM2CSA — CORE DRILL MOTOR COMPONENTS



- Speed Adjustment Knob Use this knob to adjust the speed of the electric motor. Turn knob counterclockwise to loosen. Push knob toward shaft end to decrease motor speed. Pull knob back towards ON/ OFF switch to increase motor speed. Once knob is in desired position, lock in place by turning fully clockwise.
- AC Power Cord Plug this 16 ft. (4.87 meters) power cord into a 115 VAC grounded type receptacle. NEVER remove the ground pin from the plug. This will defeat the ground circuit and greatly increase the possibility of electrical shock.
- ON/OFF Rocker Switch

  Press this rocker switch to start and stop the electric motor.
- 4. Electric Motor Brush Covers (2) Insert tip of a flat blade screwdriver into slot on brush cover, turn counterclockwise and remove cover to gain access to brushes.
- 5. **Drill Body** –The electric motor and associated components are contained inside the drill body.
- 6. **Main Shaft** Attach core drill bit to this shaft. Main shaft is 1-1/4"-7 (7 threads per inch) male. Shaft size fits most core bits from 1-1/2" through 9" diameter.

- 7. **Adapter Reducer –** Multiquip offers (option) a reducing adapter, 1-1/4"-7 female to 5/8"-11 male for bits smaller than 1-1/2" diameter.
- 8. **Core Drill Bit** Place bit onto main shaft and tighten securely. Contact Discount-equipment for the core drill bit that best fits your application.
- 9. **Wrenches** 3 wrenches are supplied with the DM15A9C electric core drill motor. These wrenches (17,19, 36 and 46 mm) are used to install and remove the core drill bits.
- 10. **Water Shut-off Valve** Turn this valve downward to let water flow and up to stop.
- 11. **Water Tube/Adapter** Connect this tube/adapter to a water source, typically a garden hose.
- 12. **Core Drill Base/Woodruff key** Attach this base to the cradle assembly located on the column rack. Align woodruff key with slot on base of cradle.

#### **Before Starting:**



#### **CAUTION - Read Manual**

Before attempting to operate this core drill, and to avoid serious injury to personnel, always read and understand operation manual. Failure to read and understand operation manual could result in serious harm or even death!



#### **DANGER - Flammable/Combustible Materials**

**NEVER** operate the core drill in or around flammable materials. The core drill emits sparks. If contact is made between the sparks and the flammable material, the posibility exists of fire or explosion causing damage to the equipment and severe bodily harm even death!



#### **CDM-2CSA Drill Rig Assembly Instructions**

Assemble the the CDM-2CSA Drilling Rig as follows:

- Open the shipping container and place all associated components on a suitable workbench that is clean and free of debris.
- Make sure all assembly components are accounted for by checking them against items listed in Table 5. If any components are missing, contact Discountequipment.

	Table 5. Assembly Parts List				
	Item	QTY.			
	1	17/19 mm wrench	1		
X	2	36 mm wrench	1		
	3	46 mm wrench	1		
	4	1-1/2 x13 mm screw	4		
	5	5/8-inch lock washer	4		

## A

#### **Warning - Toxic Fumes**

**NEVER** operate the core drill in a confined or enclosed area structure that does not provide ample *free flow of air*.



3. Place the drilling rig in an upright position on a firm flat surface (Figure 5).

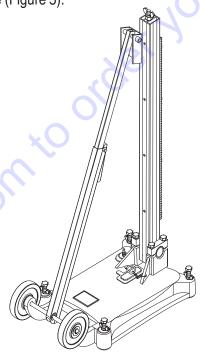


Figure 5. Dril Rig (upright Position)

4. Remove the wingnut located at the top of the column as shown in Figure 6.

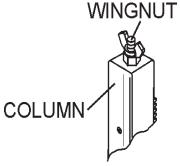


Figure 6. Wingnut Removal

5. Locate the cradle assembly (Figure 7) and place it directly over the column. Make sure the cradle handle is located on the right side of the column if you are standing at the back (wheels) of the drilling rig. It may be necessay to loosen the cradle tension knob slightly to allow the cradle to slip onto the column rack.

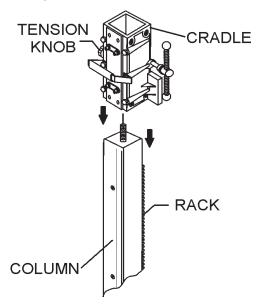


Figure 7. Cradle Assembly

 Once the cradle assembly makes contact with the rack, turn the cradle raise/lower handle (Figure 8) clockwise so that the cradle moves in a downward position. Continue turning handle until the desired position has been reached.

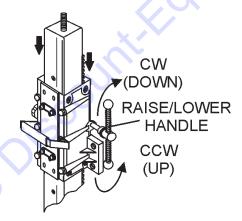


Figure 8. Cradle Raise/Lower Handle

7. Once the cradle has been mounted onto the column rack, align the top plate (Figure 9) on the adjustment bar with the stud on the top of the column. It may be necessary to squeeze the trigger release (Figure 8) mechanism on the adjustment bar to to raise or lower the adjustment bar.

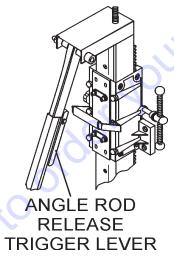


Figure 9. Adjustment Bar Placement

8. Re-install the wingnut that was removed in step 4.

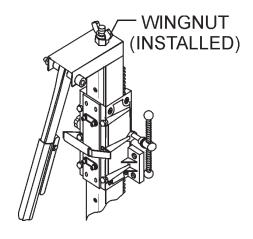


Figure 10. Securing the Adjustment Bar

9. The unit is now ready to be secured to the work surface.

#### Securing the Drill Rig Assembly

Secure the Drilling Rig as follows:

## A

#### **DANGER - Drill Rig Tipping**

**DO NOT** attempt to use this unit until it has been securely anchored to a suitable surface. The possibility exists of severe bodily harm and damage to the equipment if the core drill bit becomes stuck or binds thus causing the unit to tip over.

This drilling rig can be secured by various methods. Please read the next few paragraphs to determine which method best suits your application.

**Method 1** incorporates the use of a *vacuum pump*. The vacuum pump will provide the necessary suction when used in conjunction with the supplied rubber gasket seal.

- 1. Lay drilling rig in the down position so that access to base plate is possible.
- Make sure rubber gasket seal is placed evenly into base plate groove as shown in Figure 11. For best results apply a little water to the seal. Applying water to the seal will make a tighter suction when the vacuum pump is turned on. If seal is worn or damaged, replace with a new one.

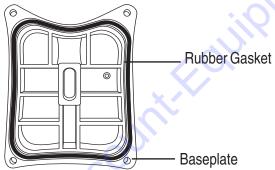


Figure 11. Baseplate Rubber Gasket (Bottom View)

- 3. Return the drilling rig to its upright position.
- 4. Insert supplied vacuum adapter pad into slot on base of drilling rig as shown in Figure 12.

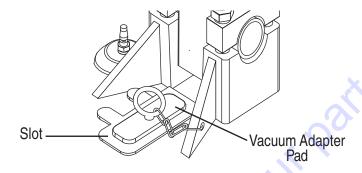


Figure 12. Vacuum Adapter Pad Insertion

On the vacuum pump there is a vacuum hose (Figure 13).
 Connect the free end of the vacuum hose to vacuum line hose fitting located on the baseplate.

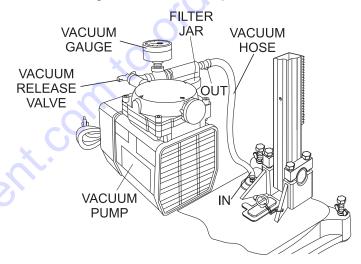


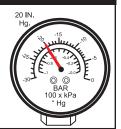
Figure 13. Vacuum Pump

- Plug the power cord on the vacuum pump into a 120 VAC, 60 Hz power source. The unit will turn on immediately, there is no OFF/ON switch.
- 7. Step on the base until it lowers and adheres to the work surface.
- 8. Tighten the leveling screws (4) only enough to eliminate rocking. Over-tightening can lift the gasket off the ground and release the vacuum.



#### **CAUTION - VACUUM GAUGE READING**

**DO NOT** attempt to use this unit until the vacuum guage reads a minimum of 20 in. Hg. The possibility exists of the gasket vacuum seal being broken and the unit tipping over.



**Method 2** incorporates drilling a hole 1/2-inch in diameter into the drill rig support surface (wall or floor), and inserting an expansion type anchor.

 Using a masonry bit, drill a hole approximately ½-inch in diameter. When drilling the hole make sure it is approximately 200 mm away from center. See Figure 14. Make the depth of the hole so that the desired anchor is flush or just beneath the surface

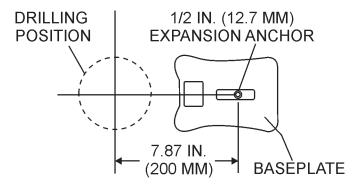


Figure 14. Baseplate Drilling Alignment

- Insert the anchor (Figure 15) into the 1/2-inch hole that
  was drilled into the surface. It may be necessary to
  slighty tap the anchor into the hole. For best results, a
  tight fit of the anchor is required. This will keep the anchor
  from pulling out.
- 3. Align the slot on the baseplate with the 1/2-inch hole on the surface.
- 4. Insert a 1/2-inch X 4.75 (not to exceed 4.75 inches) bolt with a 1/2-inch washer through the baseplate slot and screw it into the anchor.
- 5. Fully tighten the 1/2-inch bolt to secure the drill rig. If the drill rig does not tighten down all the way, it may be necessary to use additional 1/2-inch flat washers to fully secure the drill rig.



Different size wrenches may be required depending on type of core bit.

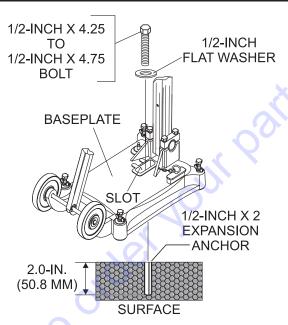


Figure 15. Baseplate (Expansion Anchor)

#### Attaching the Core Bit to the Core Drill

- 1. Place the core bit and core drill motor on a suitable workbench or area that is free of clutter dirt and debris. If desired the core drill bit can be attached to the motor after the motor has been secured to the drill rig,
- Before installing the core bit, make sure that the power cord
  of the core drill is unplugged from the AC wall receptacle.
  NEVER install the core bit on core drill that has power applied
  to it
- 3. Screw the core bit onto the main shaft of the core drill by turning it clockwise by hand until tight (Figure 16).
- Using the supplied wrenches continue to tighten the core bit.
   When using the wrenches, apply pressure in the opposite direction to fully tighten.

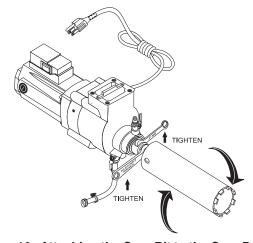


Figure 16. Attaching the Core Bit to the Core Drill

#### Attaching the Core Drill Motor to the Cradle

- There may be an aluminum adapter plate (Figure 17) attached to the core drill motor. Remove this plate using a 6 mm allen wrench before attempting to secure the drill motor to the cradle. This adapter plate is intended to be used on other MQ drill rig stands.
- 2. The core drill motor can be secured to the cradle (Figure 17) by means of 4 retaing screws and lock washers. Use a 6 MM allen wrench to tighten the screws. Make sure to align the woodruff key on the drill base with the slot on the cradle.
- The core drill motor is very heavy and with the added weight of the drill bit makes it even heavier. When mounting the drill motor to the cradle assembly, always

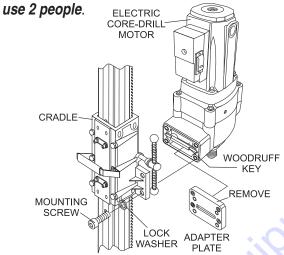


Figure 17. Attaching the Core Drill Motor to the Cradle Connecting Water to the Core Drill

 Attach the supplied water hose and garden hose fitting to the core drill as shown in Figure 18. Be sure to place wormclamps on each end of the hose to prevent leaking.

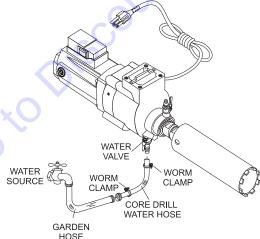


Figure 18. Connecting the Water

#### **Applying Power to the Core Drill**

- This core drill requires 115 VAC, 60 Hz power. Applying power to the drill that is not specified will cause severe damage to the core drill. Always read serial plate tag before applying power to the core drill.
- 2. The power plug on this core drill is a 3-prong grounded type plug. **ALWAYS** connect this plug to a 3-prong grounded receptacle. **NEVER** plug this device into a 2-prong type receptacle. This will defeat the ground circuit. The use of a 3-prong to 2-prong adapter is strictly prohibited.

## Warning - Accidental Starting

To avoid accidental starting, **ALWAYS** keep fingers away from the power **OFF/ON** switch when applying power.



3. Connect the core drill's AC power cord to a 115 VAC wall receptacle (Figure 19) that is protected by a 20 amp circuit breaker. For best results connect the power cord to a GFCI receptacle.

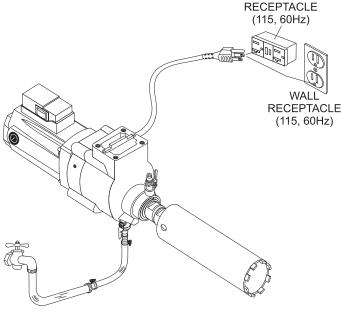


Figure 19. Connecting the Power

## DM15A9C/CDM2CSA — OPERATION

#### **Operation**

1. Place the valve on the water source to the **ON** position, and then turn the water valve on the core drill (Figure 20) to the **ON** position (down). Verify that water is flowing smoothly and evenly. Turn the valve clockwise to increse water flow and counterclockwise to decrease water flow.

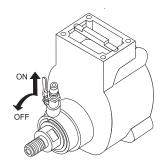


Figure 20. Water Valve (ON Position)

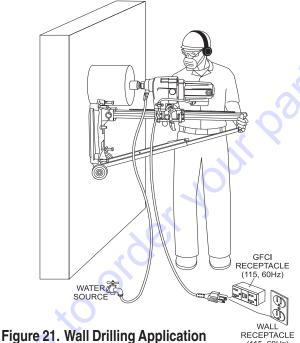
- If water is not flowing, check all connections and correct the problem. Water should be flowing at a rate of one or two gallons per minutes.
- Turn the core drill power **ON/OFF** switch to the **ON** position. The drill bit should begin to rotate at the desired rpm setting.
- Hold the cradle handle, then slightly loosen the cradle lock knob and slowly rotate clockwise the raise/lower handle to lower the bit into the work surface (Figures 21 and 22). applying steady even pressure.
- 5. Water flow is adequate when the water and cuttings are flushed in a circular pattern about 1/2-inch (12.7 mm) around the bit.
- 6. To help reduce bit "walking", always use a light pressure to start the hole and wait for the bit to penetrate the work surface completely before increasing the pressure.
- 7. When the cut is complete, keep the drill motor ON and rotate the raise lower handle counterclockwise to remove the bit.



ALWAYS be on the lookout for exposed wiring or buried electrical connections when drilling.

### **Danger - Drill Bit Cores**

When drilling from high places, cores can often drop from the drill bit. When drilling in high places make sure work personnel and equipment below are clear of drilling area. The possibility exists of a core falling on equipment causing damage to the equipment or severe bodily harm even death! to work personnel.





When removing the bit from the cut, always keep the power on. This will prevent bit from being stuck as the bit is being raised. ALWAYS drill with uniform pressure and keep the bit straight. When drilling through steel rebar, reduce the pressure to avoid overloading the motor.

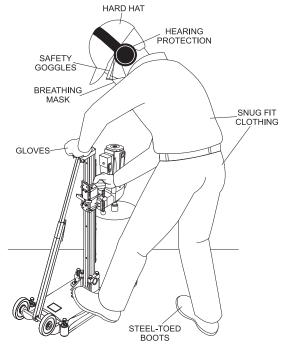


Figure 22. Floor Drilling Application

## DM15A9C/CDM2CSA — SHUTDOWN

contro order your parts

#### **Shutdown**

- Place the power ON/OFF switch on the core drill motor in the OFF position and unplug the power cord from the wall receptacle or power source.
- 2. Allow a sufficient amount of time for the core drill bit to cool before attempting to remove it from the core drill motor.
- 3. Using the wrenches as illustrated in Figure 4, remove the core drill bit from the drill.
- If desired remove the core drill motor from the cradle. Tighten
  the cradle lock knob to prevent the cradle from falling off the
  column rack.
- If a vacuum pump was used to secure the unit, unplug its power cord from the wall receptacle or power source. Open the the vacuum release valve to release the vacuum pressure.
- 5. If a an expandable anchor was used to secure the unit, remove the securing bolt so that the unit can be moved.
- 6. Once the core drill has been cleaned, place the core drill into its carrying case along with all associated hardware. Be sure to wrap the power cord neatly into the carrying case. This will extend the life of the cord.
- 7. Clean the drill bit with a mild cleaning solution, removing dirt and foreign matter.
- 6. Store the drill rig and core drill motor out of the reach of children, in a location that is moisture free.

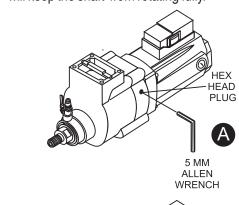


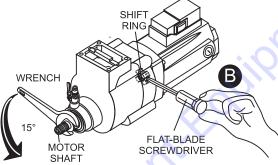
## DM15A9C/CDM2CSA — MAINTENANCE

#### Maintenance

#### **Clutch Adjustment**

- 1. The DM15A9C electric motor is basically maintenance free. However, it may become necessary at some time to adjust the clutch.
- 2. Using a 5 mm allen wrench, remove the hex plug as shown in Figure 23A to gain acess to the clutch adjustment hole.
- 3. Insert a small blade screwdriver (Figure 23B) into the access hole so that it prevents the motor shaft from rotating fully.
- 4. Using the supplied wrenches (Figure 23B) rotate the motor shaft counterclockwise about 15 degrees. The screwdriver will keep the shaft from rotating fully.





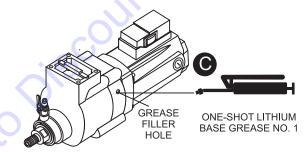


Figure 23. Clutch Adjustment/Lubrication

#### Lubrication

- Using a 5 mm allen wrench, remove the hex plug as shown in Figure 23A.
- Visually inspect to see if grease is present. It may be necessary to insert a small blade screw driver or similar device into the filler hole to determine if the grease level is low.
- 3. If the grease level is low, apply 1 shot of lithium base grease, grade N0.1. **DO NOT** over fill. See Figure 23C.
- 4. Reinstall hex plug and tighten securely.

#### Carbon Brushes

- Using a flatblade screw driver unscrew the plastic cap as shown in Figure 24 to gain acess to the carbon brushes. There is a plastic cap on each side of the drill motor.
- Periodically check the carbon brushes for signs of wear.
   Typically replace brushes when the wear height is down to 0.2 inches (5mm). Using defective or worn brushes could cause motor failure.
- 3. Replace worn or defective brushes with new ones. Keep them clean so that they can slide freely within the brush holder. Use only MQ recommended parts.

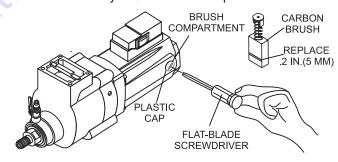


Figure 24. Carbon Brush Replacement

#### Cleaning and Storage

- Clean drill motor and drill rig with a mild soap and a damp cloth removing dirt and foreign debris that might have accumulated on the equipment during operation. DO NOT use gasoline or harmful chemical as a cleaning agent some of these chemicals are harmful to plastics.
- 2. Remove any dirt and dust from the motor vents
- 3. Store equipment in a clean dry location that is moisture free out of the reach of children and unauthorized personnel.

## DM15A9C/CDM2CSA — TROUBLESHOOTING

## CORE DRILL — EXPLANATION OF CODE IN REMARKS COLUMN

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

The contents and part numbers listed in the parts section are subject to change *without notice*. Multiquip does not guarantee the availibility of the parts listed.

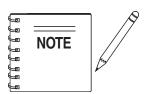
#### Sample Parts List:

NO.	PART NO.	PART NAME	QTY.	<u>REMARKS</u>
1	12345	BOLT	1	INCLUDES ITEMS W/*
2*		WASHER, 1/4 IN.		NOT SOLD SEPARATELY
2*	12347	WASHER, 3/8 IN.	1	MQ-45T ONLY
3	12348	HOSE	A/R	MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

#### NO. Column

**Unique Symbols** - All items with same unique symbol (\*, #, +, %, or >) in the number column belong to the same assembly or kit, which is indicated by a note in the "Remarks" column.

**Duplicate Item Numbers** - Duplicate numbers indicate multiple part numbers are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.



When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

#### **PART NO. Column**

**Numbers Used** - Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the "Remarks" Column.

#### QTY. Column

**Numbers Used** - Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the "Remarks" Column.

#### **REMARKS Column**

Some of the most common notes found in the "Remarks" Column are listed below. Other additional notes needed to describe the item can also be shown.

**Assembly/Kit** - All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

"INCLUDES ITEMS W/(unique symbol)"

**Serial Number Break** - Used to list an effective serial number range where a particular part is used.

Indicated by:

"S/N XXXXX AND BELOW"

"S/N XXXX AND ABOVE"

"S/N XXXX TO S/N XXX"

**Specific Model Number Use** - Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

"XXXXX ONLY"

"NOT USED ON XXXX"

"Make/Obtain Locally" - Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

"Not Sold Separately" - Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

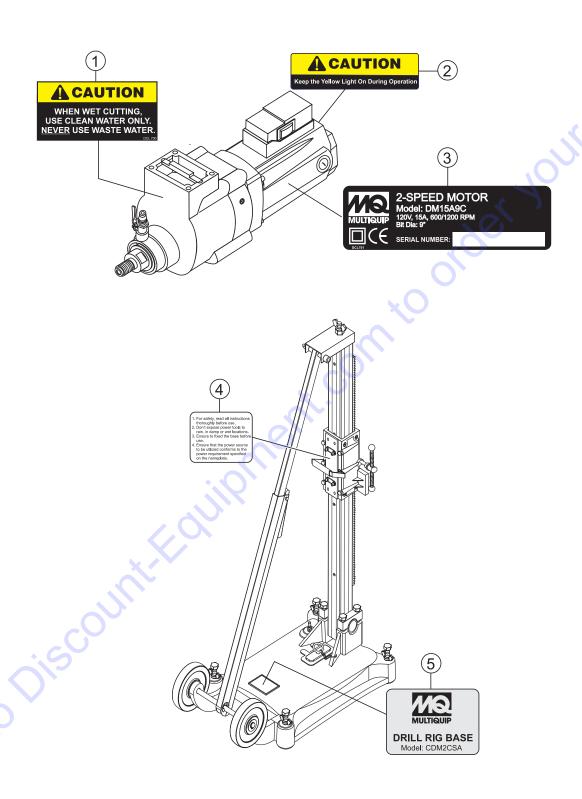
## DM15A9C/CDM2CSA—SUGGESTED SPARE PARTS

#### DM15A9C/CDM2CSA Core Drill and Drilling Rig

1 to 5 Un	its	
<b>Qty P/N</b>	CARBON BRUSH	all balk
		orger 70°
	diiphent.co	
Disco		
30,00		

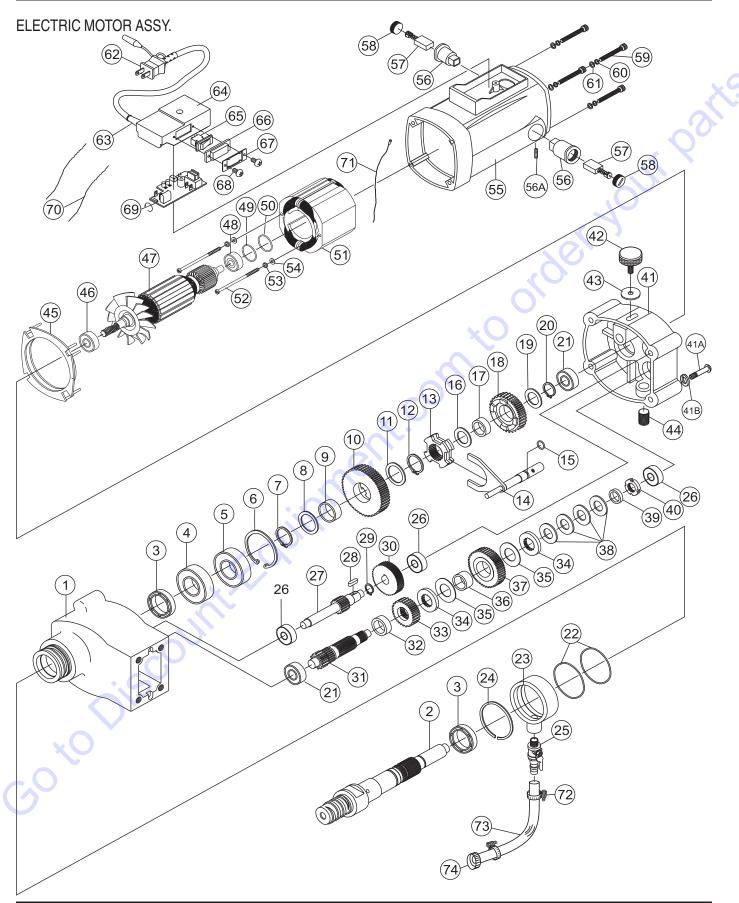
## DM15A9C/CDM2CSA— NAMEPLATE AND DECALS

#### NAMEPLATE AND DECALS



## DM15A9C/CDM2CSA— NAMEPLATE AND DECALS

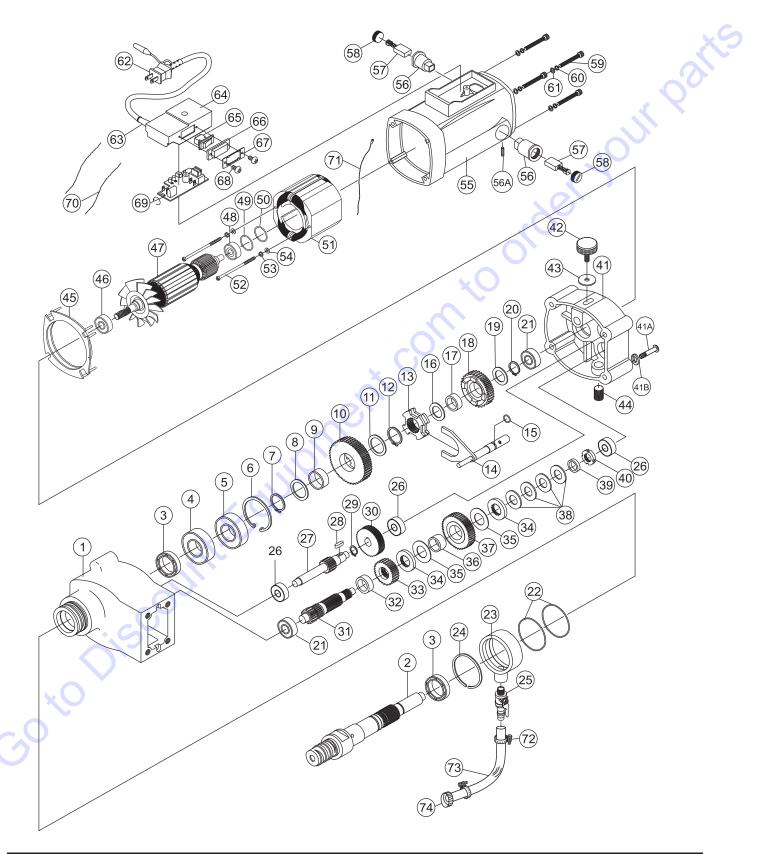
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NO. 1 2 3 4 5	PART NO. DCL700 CDL001 DCL704 CDL002 CDB001	PART NAME DECAL: CAUTION CLEAN WATE DECAL: CAUTION, OPERATION DECAL: MODEL INFORMATION DECAL: INSTRUCTIONS DECAL: MQ LOGO		REMARKS
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#### ELECTRIC MOTOR ASSY.

NO.	PART NO.	PART NAME	QTY.	REMARKS
1	CD290001	GEAR CASE	1	<u>IIEMAIIIO</u>
2	CD290001 CD290002	MAIN SHAFT	1	
3			1	
	CD290003	SEAL, 34X48X8 MM	1	
4	CD290004	BEARING, 6206LLU	1	
5	CD290005	BEARING, 6206ZZ	l 4	
6	CD290006	SNAP RING, R62	1	
7	CD290007	SNAP RING, S30	1	
8	CD290008	METAL COLLAR	1	
9	CD290009	METAL COLLAR	1	
10	CD290010	FIRST GEAR	1	
11	CD290011	METAL COLLAR	1	
12	CD290012	SNAP RING, S29	1	
13	CD290013	SHIFT RING	1	
14	CD290014	SHIFT LEVER	1	
15	CD290015	O-RING, 11X2.0 MM	1	
16	CD290016	METAL COLLAR	1	
17	CD290017	METAL	1	()
18	CD290018	SECOND GEAR	1	
19	CD290019	METAL COLLAR	1	
20	CD290020	SNAP RING, S22	1	
21	CD290021	BEARING, 6202ZZ	1 -	
22	CD290022	O-RING, 60X2.0 MM	1	
23	CD290023	WATER SUPPLY COVER	Ì	
24	CD290024	SNAP RING, IS63		
25	CD290025	WATER COCK	. <b>O</b> i	
26	CD290026	BEARING, 6201ZZ	1	
27	CD290027	FIRST PINION	1	
28	CD290028	WOODRUFF KEY, 5X5X12 MM	1	
29	CD290029	SNAP RING, S15	1	
30	CD290029	THIRD GEAR	1	
31	CD290030 CD290031	SECOND GEAR	1	
32	CD290031 CD290032	SPACER	1	
33	CD290032 CD290033	FORTH GEAR	1	
34	CD290033 CD290034	PLATE	2	
35	CD290034 CD290035	FRICTION PLATE	2	
36		METAL	1	
30 37	CD290036 CD290037	FIFTH GEAR	1	
38	CD290037 CD290038	DISK SPRING, 35.2X18.3X2.0 MM	4	
39	CD290039	METAL COLLAR	1	
40	CD290040	FINE U-NUT	1	
41	CD290041	DIAPHRAGM	1	
41A	CD2900411	DIAPHRAGM SCREW, M8 60	4	
41B	CD2900412	DIAPHRAGM LOCK WASHER, M8	4	
42	CD290042	SPEED CHANGE KNOB	1	
43	CD290043	RUBBER WASHER	1	
44	CD290044	PLUG, 1/8"	1	
45	CD290045	BAFFLE	1	
46	CD290046	BEARING, 6201LLU	1	
47	CD290047	ARMATURE	1	
48	CD290048	BEARING, 6200ZZ	1	
49	CD290049	FILING RING, 6200	1	
50	CD290050	O-RING	1	
51	CD290051	FIELD	1	
52	CD290052	FIELD SCREW, M5X85 MM	2	

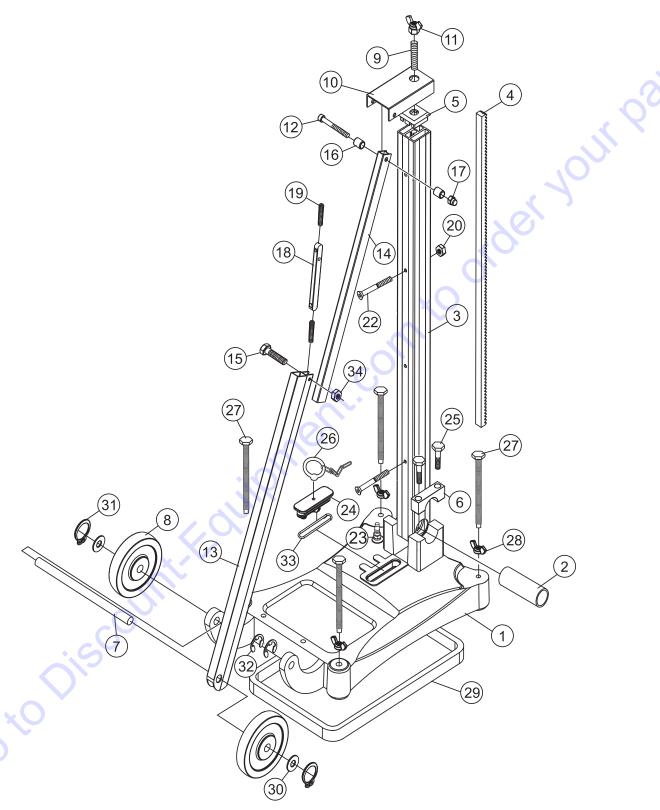
#### ELECTRIC MOTOR ASSY.



#### ELECTRIC MOTOR ASSY.

NO. 53 54 55 56 56A 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74	PART NO. CD290053 CD290054 CD290055 CD290056 CD590056 CD590057 CD290058 CD290059 CD290060 CD290061 CD290062 CD290063 CD290065 CD290066 CD290066 CD290067 CD290068 CD290069 CD290070 CD290071 CD101569 CD101570 CD101571	PART NAME  WASHER, LOCK 5 MM WASHER, FLAT 5 MM MOTOR HOUSE BRUSH TUBE BRUSH TUBE SCREW, M5X10 MM CARBON BRUSH BRUSH COVER SCREW, M6X45 MM WASHER, LOCK 6MM WASHER, FLAT 6MM ELECTRIC CABLE RUBBER TUB SWITCH BOX SWITCH SWITCH COVER SWITCH SCREW, 1/8 X 1/4" LED INDICATOR CABLE EARTH CABLE HOSE CLAMP PLASTIC WATER HOSE, 4-INCH FITTING, BRASS BARB 3/4 X 3/8"	2	REMARKS
		FITTING, BRASS BARB 3/4 X 3/8"		
		/CDM2CSA — OPERATION AND P	ARTS MANUAL — REV	. #2 (09/04/19) — PAGE 33

DRILLING RIG ASSY.

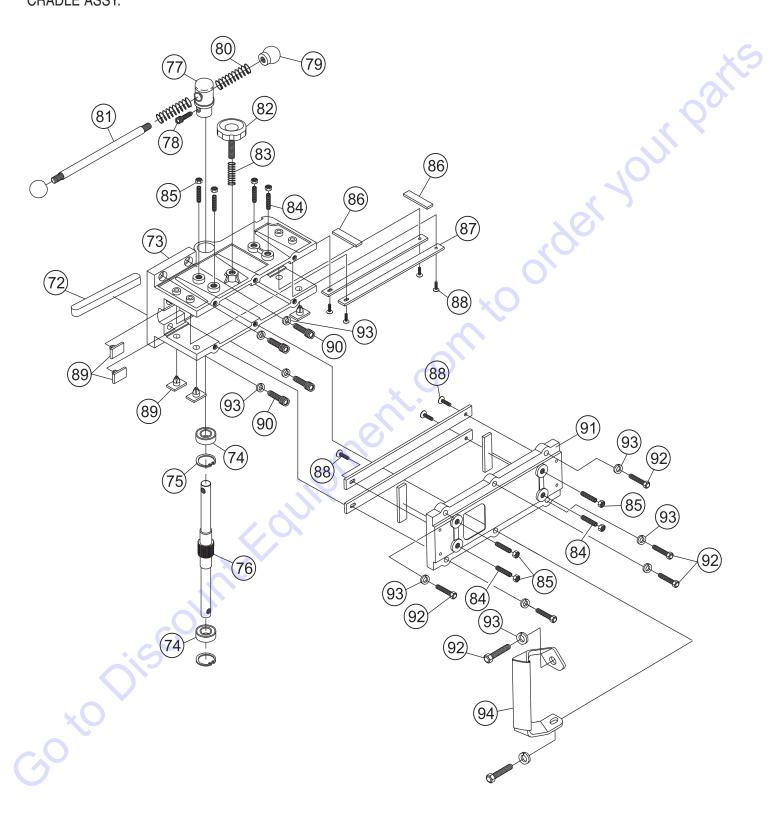


## CDM2CSA — DRILLING RIG ASSEMBLY

#### DRILLING RIG ASSY.

<u>NO.</u>	PART NO.	PART NAME	QTY.	<u>REMARKS</u>	
1	CD290072	BASE	1		
2	CD290073	POLETUBE	1		-5
3	CD290074	POLE	1		
4	CD290075	RACK	1		
5	CD290076	POLE COVER	1		
6	CD290077	FIXED PLATE	2		
7	CD290078	WHEEL SHAFT	1		4 4
8	CD290097	WHEELS, 4"	2		
9	CD290079	SCREW, M12X50 MM	1		<b>)</b>
10	CD290080	METAL COVER	1	(()	
11	CD290081	ADJUST NUT, M12	1		
12	CD290082	SCREW, M8X60 MM	1	2	
13	CD290083	ANGLE ADJUST TUBE-2	1		
14	CD290084	ANGLE ADJUST TUBE-1	1		
15	CD290085	SCREW, M6X20 MM	1		
16	CD290086	METAL COLLAR	1		
17	CD290087	NUT	1	() ·	
18	CD290088	SHIFTER	1		
19	CD290089	SCREW, M6X35 MM	1		
20	CD290090	NUT, M6	1		
21	CD290091	SPRING	1		
22	CD290092	SCREW, M6X55 MM	4		
23	CD290093	VALVE	1		
24	CD290094	AIR COVER			
25	CD290095	SCREW, M12X40 MM	4		
26	CD290096	CHAIN PIN	1		
27	CD290098	SCREW, M12X100 MM	4		
28	CD290099	NUT, M12	4		
29	CD290100	GASKET	1		
30	CD290101	WASHER	4		
31	CD290102	S-RING, S1/2	2		
32	CD290103	E-RING, E12	2		
33	CD290104	O-RING, 3X53 MM	1		
34	CD290105	NUT, M6	1		

#### CRADLE ASSY.

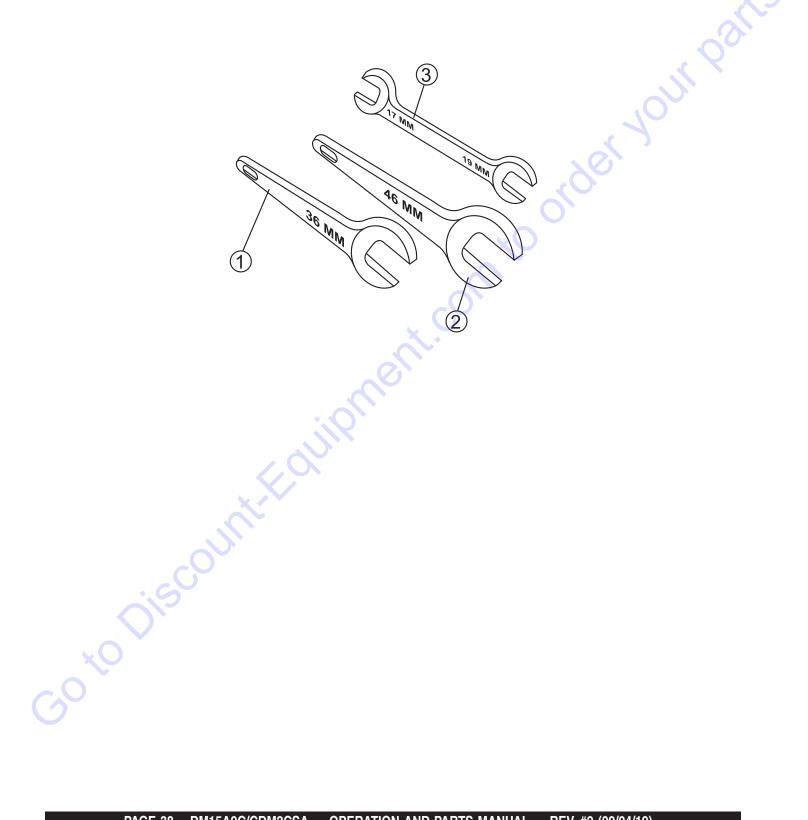


## CDM2CSA — CRADLE ASSEMBLY

#### CRADLE ASSY.

NO. 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94	PART NO. CD2704023 CD2704064 CD2704065 CD2704066 CD2704067 CD2704068 CD2704069 CD2704070 CD2704073 CD2704074 CD2704075 CD2704077 CD2704077 CD2704077 CD2704078 CD2704079 CD2704080 CD2704081 CD2704083 CD2704085	PART NAME  KEY, 10X10X105 MM FEEDING HOUSE BEARING, 6003ZZ SNAP RING FEED SHAFT FEEDING HEAD SCREW, M8X25 MM KNOB SPRING FEEDING HANDLE KNOB BOLT SPRING SET SCREW, M6X20 MM HEX, NUT, M6 PLATE FRI CTION PLATE-LONG SCREW, 5/32X1/2" FRICTION PLATE-SHORT SCREW, M8X30 MM FEEDING HOUSE COVER SCREW, M8X20 MM WASHER, LOCK M8 HANDLE	1 6 10	REMARKS	orkies and the second s
Gox		C/CDM2CSA — OPERATION AND		EV. #2 (09/04/19) — PAGE	37

**TOOLS** 



## DM15A9C — TOOLS

				DM15A9C —TOOLS
TOOL	.S			
NO. 1 2 3	PART NO. CD2704103 CD290008 CD290106	PART NAME 36 MM WRENCH 46 MM WRENCH 17/19 MM WRENCH	<u>QTY.</u> 1 1 1	REMARKS
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