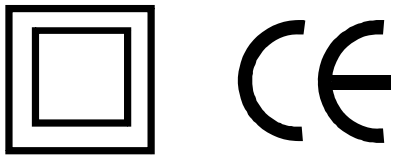
# DIAMOND CORE DRILL



## INSTRUCTION BOOK

**To maintain the operation safety, make sure read and understand this instruction book BEFORE operating this equipment.**

# 1.SAFETY

Note: Since this is general instruction for safety, some of them may not be applicable to some of your machines.

1. Use your machine properly.
   Don't use your machine for applications not recommended in the instruction manual.

2. Safe operation by proper handling.
   Follow the instructions in this manual to use your machine properly.
   Do not allow children and others who are not familiar with operation to use your machine.

3. Avoid moisture
   It could cause electric shocks.
   Do not use your machine in rain, damp, wet places, etc. Do not allow oil or liquid to enter the machine.
   Excessive moisture is shock hazards and worsen insulation of the motor.

4. Protection against shock hazards
   Make sure that the power source is provided with an earth leakage breaker.
   An earth leakage breaker is available from an electric appliance shop.
   Ground your machine unless it is double insulated.

5. Precaution against ignition and explosion.
   Motor emits sparks during operation and when switched on and off.
   Never use your machine in the presence of flammable and explosive atmosphere such as lacquer, paint, benzene, thinner, gasoline, gaseous fumes, adhesives and the like. Operation in such environments is very hazardous.

6. Keep work area clean and well lit.
   Cluttered, dark work areas invite accidents.

7. Keep bystanders away.

Bystanders, especially children should be kept at a safe distance from the work area.

8. Insist on genuine accessories and cutting tools.
   Use recommended cutting tools and accessories. The use of accessories other than recommended is hazardous.

9. Use right parts in right place.
   Be sure cutting tools and accessories are properly installed in a right place and right way.
   It is hazardous to use the machine with accessories loose fitted or tightened too much by means of unrecommended tools.
   Do not remove secured cover or screws which are essential for safety.

10. Check before each use.
    Never forget to remove tools such as a spanner or screwdriver used for inspection and installation.
    Since such tools could be flung away at starting, operation with such tools attached is very dangerous.
    Make a habit of checking that locking devices are removed from your machine before turning it on.

11. Full open vents on motor
    The events on the motor is essential for motor cooling. Do not cover the vents on your motor to shut off dust.
    Do not insert metal pin etc through the vents. It is shock hazards.

12. Dress properly.
    Wear proper dress for operation. Do not wear ties, loose fitted sleeves, knitted gloves, etc.
    They may be caught in moving parts. Wear safety cap, rubber gloves and rubber-soled shoes to ensure safety.

13. Protect eyes with safety glasses.
    Use safety glasses during operation. Safety glasses should be worn during sawing. Safety glasses are available from machine and tool shops. Wear a dust musk for

dusty operation.

14. Maintain balance and control
    Unstable and unbalanced operation is dangerous.
    Keep proper footing and balance all the time.

15. Use power of specified voltage.
    Use your machine at nameplate voltage. If the machine is operated at higher voltage than specified, it will decrease efficiency, and abnormally increase motor speed, resulting in machine failure.

16. Do not force your machine.
    Do not use your machine and accessories for a purpose for which they are not designed. Excessive force not only damages your machine but also is hazardous.

17. Do not carry a plugged in machine with your finger on the switch. It could cause injury by accidental starting.

18. Keep hands away from all cutting edges and moving parts.
    Never touch cutting edges and moving parts during operation.

19. Stop operation when abnormalities are found.
    When the machine fails to perform properly or any abnormalities are found, stop operation immediately and have it inspected and repaired.

20. Unplug machine when it is not in use
    Unplug the machine after each use or before changing accessories, cleaning, inspection or at the time of power outage. Before plugging the machine, always check that the switch is off to avoid accidental starting.

21. Do not abuse cord.
    Never carry your machine by its cord or disconnect it by yanking the cord from the outlet. It could cause disconnection or shout circuit. Keep the cord away from cutting edges and heat, etc. If the cord is damaged, stop operation right away and have it replaced or repaired.

22. Handle machine with care.
    Take care not to hit or drop the machine. It could cause cracks, deformation or damage on the enclosures and others.

23. Always keep cutting edge sharp and clean.

24. Maintain your machine carefully.
    Keep your machine clean. Especially keep the motor and switch free from dust and dirt.
    Keep the cord away from oil and grease to protect it from damages.

25. Periodical inspection ensures safety.
    Periodically inspect your machine for safe, efficient usage.

26. Inspection and repairs at the authorized service center.
    Contact our sales agents or service center for inspection or repairs. When replacing parts, insist on the specified genuine parts.

27. Store idle machine with care
    When not in use, store your machine in a dry, secured place.
    Keep out of reach of children. Avoid wet, damp and rainy places such as under eaves. Storage in such places deteriorates insulation and is shock hazards.

## 2. Notes For Use Of Diamond Core Drill

1. BE SURE TO TAKE MEASURES AGAINST ELECTRIC SHOCK.
   Make sure the power source is provided with an earth leakage breaker. If not, use earth leakage breaker. It is available from an electric appliance shop. To ensure safety, it is recommended to wear rubber gloves and rubber boots.

2. KEEP WATER OUT OF MOTOR INTERIOR.
   If water enters the motor interior, insulation performance drops, which may cause electric shock and burning.

3. BE SURE TO FEED WATER DURING DRILLING.
   Since overheat of a diamond bit shortens its service life, be sure to feed water during operation. Do not recycle waste water.

4. USE DIAMOND BIT.
   This drill is designed for use with a diamond bit. Do not use other cutting tools than a diamond bit.

5. DO NOT APPLY UNDUE FORCE.
   If you apply undue force to a drill, the motor will be overheated. Drilling capacity drops and service life will be shortened.

6. START DRILLING AFTER ROTATION HAS INCREASED ENOUGH.
   Turn on the switch and wait until rotational speed increase completely, and then start drilling.

7. KEEP HAND OFF ROTATING BIT.
   Pay extensive care never to touch a rotating bit. It is very hazardous, causing serious injury.

8. OPERATION AT HIGH PLACES.
   When a drill is operated at a high place, secure it on a safe and stable place.

9. CARE FOR DRILLING IN CONCRETE STRUCTURE.
   Check embedded wiring in a wall, floor, ceiling, etc. before starting operation.

10. DO NOT USE A DRILL UPWARDS.
    Since water is always used for operation, upward operation causes water to get into motor interior, which is very dangerous. Never use drill for upward operation.

11. CARE FOR DRILLING THROUGH FLOOR.
    When drilling a hole through the floor, a core often drop from a bit at the time of penetration. So provide protection for personnel and material below the area.

12. WHEN ABNORMALITIES OCCUR, TURN OFF THE SWITCH IMMEDIATELY.
    Turn off the switch immediately if a diamond bit stops or abnormal noises are heard during operation.

13. CLEAN MAIN BODY AFTER OPERATION.
    After operation, water drops, chips, etc lie on the main body.

14. DOUBLE INSULATION
    Double insulation is a structure in which two different types of insulation are used to insulate the machine exterior from conductive part for operator's safety.
    Thus insulated electric tools are called double insulated tools and marked with ! . In a double insulated motor, even when either insulation should fail, the other insulation works to provide more safety against electric shock.
    To preserve the double insulated feature for safe usage, avoid using parts other than recommended or reassembling a drill by yourself.
    Contact our sales stores or service centers for assembly or disassembly, and replacement of spare parts for the electric system.

15. Built in controllable clutch system
    If you apply undue force to a drill or DIAMOND BIT stuck by steel bar suddenly, we design clutch system to protect DIAMOND BIT and motor.
    While drilling through steel bar, CIRCUIT PROTECTOR might be energizes, causing motor stop. In this case, raise DIAMOND BIT once, get BIT TIP away from the work surface, and then reset SWITCH on.
    SWITCH can not be reset with BIT TIP rest on the work surface because CIRCUIT PROTECTOR would be energized again.

## 3. Standard Accessories

1. Spanner 27mm----------1
2. Spanner 32mm----------1

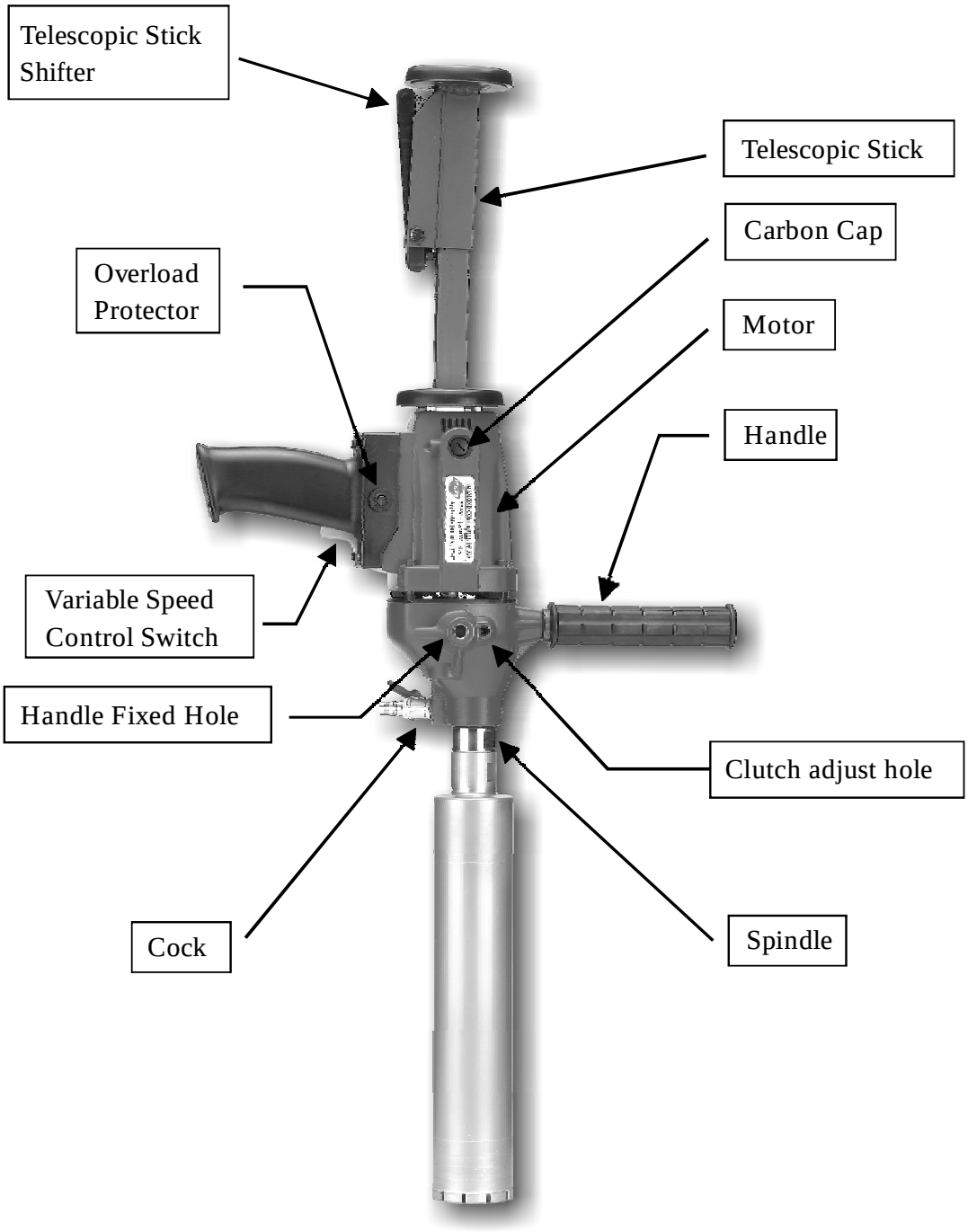
## 4. Application

Sampling test pieces in concrete, masonry, brick and asphalt.
Drilling in reinforced concrete for the purpose of piping and wiring for air-conditioning, telephone, electricity, water and gas supply etc.

## 5. Specification

| | | |
|---|---|---|
| Type | | 110V |
| Motor | | Single phase series motor |
| Power supply | | Singlephase AC.110V |
| Current | | 12A |
| Demand | | 1350W |
| Applicable bit dia. | | 25-75mm |
| Size | Height | 280mm |
| | Width | 130mm |
| | Depth | 480mm |
| Weight | | 4kg |

## 6. Description



## 7. Notes To Users

Check the following before starting operation.

1. Checking of earth leakage breaker
   Before starting to use your drill, make sure that the power source for the machine is provided with earth leakage breaker in accordance with safety rules and regulations and technical standards on electric equipment.

2. Before plugging the machine, check the following.
   (a) Check service voltage.
   Use your machine at nameplate voltage.
   If a machine is connected with voltage exceeding nameplate voltage, motor speed will abnormally increase, which may lead to machine break-down.
   (Note) Do not use your machine with D.C. power. It is hazardous and damages the machine.

   (b) Make sure that the switch is off
   If a machine is plugged in with the switch (circuit protector) turned on, it will abruptly start and could lead to an unexpected accident.
   To prevent accidental starting, from a habit to make sure the switch is off before plugging your machine.

   (c) Check a power receptacle.
   If a plug can not be snugly fitted into a receptacle or come loose easily out of a receptacle, repairs are required.
   Have your nearby repair shop repair it. Use of defective appliances causes overheating and invites accidents.

## 8. Operating Instructions (WET DRILLING)

(A) Cutter Attachment And Water Supply

1. Thread DIAMOND BIT onto DRILL end. By applying a little coating of grease then, the bit will be removed easily.
   Use our recommended DIAMOND BIT. The use of an un-recommended bit could lead insufficient performance of the machine.

2. Connect a hose between WATER COCK and a water source for water feeding.
   The water cock can accept either a vinyl hose (Internal dia. 15mm) or a one touch coupler(female).
   When you connect vinyl hoses, secure them with a hose band.
   When a water source is not available nearby, the use of a water tank T-13L (optional accessories) is recommended.

(B) Start Drilling

1. Make sure the DRILL SWITCH (CIRCUIT PROTECTOR) is OFF before plugging your machine.
   (Note) Never fail to supply water onto DIAMOND BIT. The operation without water will damages bit tip.

2. Hold the TELESCOPIC STICK SHIFTER and pull it out, then prop it by your shoulder.

3. Start water feeding. Water supply can be adjustment by the knob of WATER COCK.
   Water flow as thick as a pencil (8-10mm dia.) Is recommended.

4. Turn the switch on and start drilling.
   Press DIAMOND BIT lightly on the work surface. To prevent BIT from wondering, apply light pressure on one side of BIT TIP down to 5mm depth. After that, keep drilling with uniform pressure and keep the BIT straight.
   When drilling through steel bar during operation, reduce the pressure to avoid overloading on MOTOR.

(Note) DIAMOND BIT can perform drilling with light force.
Do not apply excessive force.
Too much force reduces motor speed resulting is slow operation.
Excessive force energizes CIRCUIT PROTECTOR.
Such operation does not only shorten the life of DIAMOND BIT but also leads to motor failure.

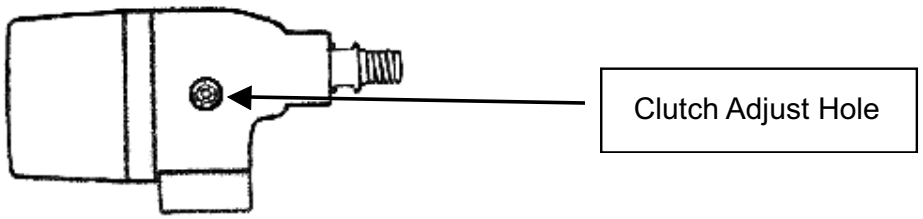
(Note) While drilling through steel bar, CIRCUIT PROTECTOR might be energizes, causing motor stop. In this case, raise DIAMOND BIT once, get BIT TIP away from the work surface, and then reset SWITCH on.
SWITCH can not be reset with BIT TIP reset on the work surface because CIRCUIT PROTECTOR would be energized again.

## 9. Trouble Shooting

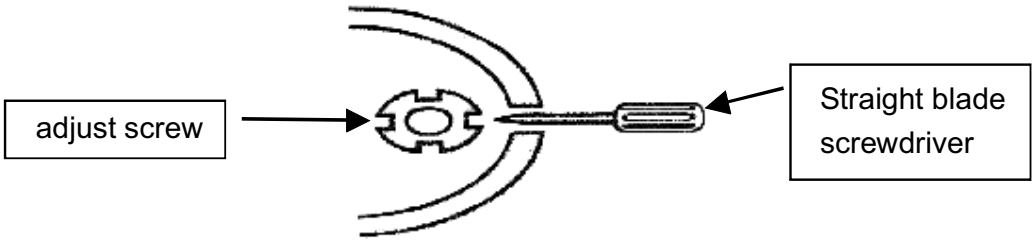
| Fault | Immediate action | Reason | Remedy |
|---|---|---|---|
| Bit is stuck | Turn SWITCH off | Steel bar or stone, etc. is caught between core and BIT | Try to rotate BIT in both directions using spanner to lift it out. |
| | | Because of excessive wear, bit tip has become flush with shank | Replace BIT. |
| Drilling is slow in normal operation | Check waste water | If waste water is contaminated with steel chip, DRILL is cutting rebar. | Adjust the pressure on so as not to overload MOTOR |
| | Check Bit for abrasion<br>Check Bit for abrasion | BIT is worn | Replace BIT |
| | | Diamond is not exposed on TIP surface | Dress BIT |
| | | Chips are deposited on BIT surface. | Increase water feed pressure |
| | | | Dress or brush BIT with a wire |
| | | Steel chips are scorched on BIT surface. | Remove steel chips |

While current are not achieve indicate current of this machine but clutch idling, means DIAMOND BIT idling but motor still operating, then you have to do adjustments as following:

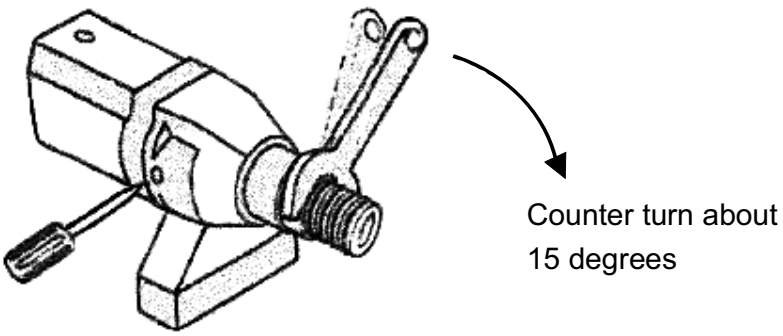
(A) Use hexagon spanner(5mm) to loosen screw which inside the CLUTCH ADJUST HOLE.




(B) Use the straight blade screwdriver to let adjust screw which inside the gear box getting stuck.




(C) Use spanner which our machine enclosed to hold the SPINDLE and counter turn about 15 degrees till tighten the clutch.



## 10.Maintenance and Inspection

CAUTION: Be sure to turn SWITCH off and unplug the machine before maintenance and inspection.

1. Checking of DIAMOND BIT

The use of a worn DIAMOND BIT dulls cutting, and overload the motor, and efficiency will also be decreased. Replace a worn bit right away.

2. Checking of carbon brush

Carbon brushes included in the motor unit are consumables.
The excessive abrasion of carbon brushes would cause motor failure.
Accordingly, when they are abraded up to the wear limit line(5mm), replace them with new ones. Keep them clean so that they can slide freely within the brush holder.

(Note) In replacement, be sure to use our genuine carbon brush.
You can remove carbon brushes by detaching CARBON CAP(see the Fig. In "6.DESCRIPTION") using a straight blade screwdriver. After replacement, tighten CARBON CAP securely.

3. Handling of MOTOR

The winding of MOTOR can be called the heart of this machine.
Pay attention not to flaw or stain the winding with washing oil or water etc.
(Note) Dust or dirt inside MOTOR is likely to cause motor failure. After each use, let MOTOR idle and feed air into MOTOR to drive dust and dirt out.

4. Cleaning of surface

Wipe dirt and stains on the enclosure surface.
Keep cord sheath clean from damage. If it is damaged, replace it.

5. Checking of attaching screws

Carry out periodical checking of attaching screws for looseness. If any screw is found loose, tighten it.
The use of the machine with loose screws is very hazardous.

6. Storage of machine and accessories

Store idle machines and accessories in a secured place. The following places are not suitable for storage.

Where children can reach and take out the goods with ease.

Wet and damp places.

Where the goods are subject to extreme temperature changes.

Where the goods are exposed to direct sunlight.

Where inflammable, explosive substances are stored.

(Do not store the goods in these places.)

## 11. Repairs

This machine has been manufactured with rigorous accuracy.
Accordingly, in case the machine should fail, never try to repair by yourself, but contact our agent nearby your work place.