VIRGINIA ABRASIVES™

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VIRGINIA ABRASIVES™

DIAMOND CORE DRILL

Model

VA - CD3

OPERATING MANUAL

Item#
433-20000

Please read these instructions carefully before using.

CE

WARNING To reduce the risk of injury, user must read instruction manual

1. General Power Tool Safety Warnings

WARNING Read all safety warnings and all instructions. ***Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.***

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1) Work area safety

a) Keep work area clean and well lit. ***Cluttered or dark areas invite accidents.***

b) Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. ***Power tools create sparks which may ignite the dust or fumes.***

c) Keep children and bystanders away while operating a power tool. ***Distractions can cause you to lose control.***

2) Electrical safety

a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. ***Unmodified plugs and matching outlets will reduce risk of electric shock.***

b) Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. ***There is an increased risk of electric shock if your body is earthed or grounded.***

c) Do not expose power tools to rain or wet conditions. ***Water entering a power tool will increase the risk of electric shock.***

d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. ***Damaged or entangled cords increase the risk of electric shock.***

e) When operating a power tool outdoors, use an extension cord suitable for outdoor use. ***Use of a cord suitable for outdoor use reduces the risk of electric shock.***

f) If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. ***Use of an RCD reduces the risk of electric shock.***

3) Personal safety

a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. ***A moment of inattention while operating power tools may result in serious personal injury.***

8. STANDARD ACCESSORY

Electric brush 2 pieces

9. MAIN PART LIST AND THE BREAKDOWN DRAWING

THE PARTS LIST OF 433-20000 ENGINEERING DRILL

CE Declaration of Conformity

We:

Declare that the product detailed below:

Diamond core drill
Model: VA - CD3

Satisfies the requirement of the Council Directives:

Machinery Directive 2006/42/EC
Low Voltage Directive 2006/95/EC
Electromagnetic Compatibility Directive 2004/108/EC

And comply with the norms:

EN60745-1/A11: 2010
EN60745-2-1: 2010
EN55014-1/A1: 2009
EN55014-2/A2: 2008
EN61000-3-2/A2: 2009
EN61000-3-11: 2000

Position of Signature: Product Engineer

Date: Wang Guolu

water is coming in the top of the drill, please check and replace the sealing washer immediately. The gear in the gear case can use lubricating oil, if you find some lubricating oil penetrate the mid-cover air port, please replace the rubber sealing sealing oil ring on the rotor spindle. The brand of special lubricating oil is 110# industrial gear oil. It is not allowed to use common engine oil.

5) Keep the drill clean and dry If not in use, please clean the drill and it should be kept in dry, clean place, dismantle the drill bit, the main shaft of the drill and the connecting parts of drill thread should be smeared some grease so as to protect them.

6) Adjust safety clutch (When you find the friction of clutch become too small.)

Environmental Protection and Guarantee

ENVIRONMENT PROTECTION

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local Authority or retailer for recycling advice.

7. SOLUTION TO THE PROBLEMS DURING USING

Problems	Possible Reasons	Solution
Motor doesn't run When connecting Power supply	1.Power supply disconnected 2.Switch breaker positioned 3.Brush ill contacting or use up 4.The winding of stator & rotor circuit open	1.Check and connect power supply 2.Check and repair switch or replace improperly or ill Contacting switch 3.Replace electric brush 4.Check or replace stator & rotor open circuit.
Heavy sparks and ring Sparks occur on Commutator of motor	1.Rotor winding is on short circuit or open circuit 2.Brush spring positioned Improperly or ill contacting 3.Commutator worn seriously	1.Repair or replace rotor. 2.Adjust the spring pressure 3.Replace a new
Drill vibrated	1.The base fixed loosened 2.The gap between elevating body and square rack largened 3.Elevating body and connecting bolts loosened	1.Reassemble and fix the frame 2.Adjust the gap 3.Check
Drill speed is slow	1.Drill bit worn 2.Ceiling pouring quality is bad, there are grits or chips in gap 3.Drill vibrated 4.The nuts on the safety friction	1.Repair or replace drill bit 2.Stop the drill, remove the foreign materials from gap 3.Adjust and tighten connecting bolt. 4.Tightening nuts clutch loosened

b) Use personal protective equipment. Always wear eye protection. *Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*

c) Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.
Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

d) Remove any adjusting key or wrench before turning the power tool on. *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*

e) Do not overreach. Keep proper footing and balance at all times. *This enables better control of the power tool in unexpected situations.*

f) Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts. *Loose clothes, jewellery or long hair can be caught in moving parts.*

g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. *Use of dust collection can reduce dust-related hazards.*

4) Power tool use and care

a) Do not force the power tool. Use the correct power tool for your application. *The correct power tool will do the job better and safer at the rate for which it was designed.*

b) Do not use the power tool if the switch does not turn it on and off. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*

c) Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. *Such preventive safety measures reduce the risk of starting the power tool accidentally.*

d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*

e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. *Many accidents are caused by poorly maintained power tools.*

f) Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

g) Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed. *Use of the power tool for operations different from those intended could result in a hazardous situation.*

5) Service

a) Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

2. Diamond Core Drill Safety Warnings

1. Use auxiliary handles supplied with the tool. Loss of control can cause personal injury.
2. Consider work area environment: Don't use diamond core drill in damp or wet locations. Don't expose diamond core drill to rain. Keep work area well-lit. In particular no inflammable liquids or gases must be present. The series motor produce sparks during normal rotating, the sparks may cause the risk of fire.
3. Grounding of class I tools is necessary while in use to protect you from electric shock, class I tools is equipped with an approved three-conductor cord and three-prong grounding-type plug, the green/yellow conductor in the cord is the grounding wire, one end of wire is in the grounding sign of tool outer shell, the other end of wire is connected with the ground wire of plug. Never connect the green/yellow wire to a live terminal.
4. ⚠Warning! The socket must fitted with grounding, don't insert class I tools into the socket without grounding.
5. Use extension cords when tool is used outdoors or indoors, use special extension wire board. Use only three-conductor cord and with reliable grounding.
6. Take care of downward direction in the high position, safety belt and safety cap etc are recommended.
7. In order to avoid unintentional electric shock, please check the grounding condition of electrified body in working area before operating, it is not allowed to operate the tool under the uncertain condition, once the drill bit touched the electrified body in the wall, floorboard or baseboard, the electrified outer shell of drill may cause personal injuries.
8. The safety equipment is recommended when drilling on high the ceiling to avoid the drill core injuring the persons downstairs or damaging the property downstairs.
9. Connecting the soft pipe with the inner diameterΦ 16mm to the adaptor of the valve.
10. Please make sure that there is no leak of water in order that it will not damp the motor when you use the liquid and the attachments.
11. Usually inspect the hoses and other critical parts of the tool which coulddeterior ate;
    When appear of leak of water from the testing hole of the gear box, must turn off the tool immediately then replacing the rubber seal.
12. The maximum permitted pressure of the liquid supply is 0.12MPa;
13. ⚠Warning! Never to use the tool without the RCD provided;
14. You have to test the correct operation of the RCD before starting work: the red light will be on after pressing the button "RESET"; and the light will be off after pressing the

5. MAIN TECHNICAL PARAMETER

Type	433-20000
Style	Portable style
Max. Drilling Dia	Φ 3 inches
Rated voltage	120V
Rated frequency	60HZ
Rated input power	1500 W
No load speed	3450/1800/950min
Weight	22 lbs.
External Dimension	410×100×375 mm
Noise pressure level / K=3dB(A)	dB(A)
Noise power level / K=3dB(A)	dB(A)
Vibration / K= 1.5 m/s²	$a_{h,DD}$= m/s²

6. MAINTENANCE

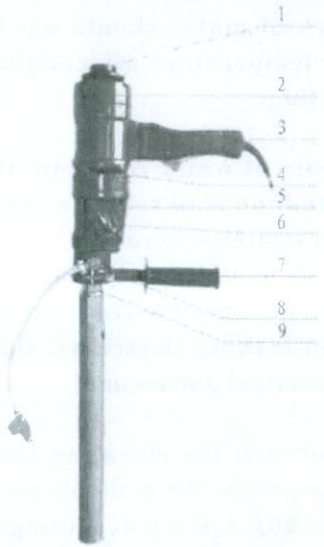
1) If the drill had any troubles, please send it to an authorized service center. It is not strictly allowed to dismantle or replace the parts optionally.

2) Please check the electric brush and commutator periodically, when the brushes are worn by the length of about 7mm, they must be changed. Use only original ones, otherwise, the commutator may be damaged, the both brushes must be changed at the same time. If you find heavy sparking in running or the commutator are worn or burned seriously, please check and repair the commutator or replace a new rotor.

3) The drill should be checked and repaired periodically after used for a long time. Its main items are: whether the electrical wire is good or not, the grounding is reliable or not, the inner wire, switch and plug works well or not, the insulating resistance of motor is safe or not, the stator and rotor are in short circuit or not, the bolts are loosened or not, please replace the lubricating oil and wearing parts etc.

4) Replace the rubber sealing washer in time. After using for a long time, if you find the

Fig.3 433-20000



1.Rear cover
2.rear cover
3.Swith
4.SingIe phase series motor
5.reducer casing
6.AdjustabIe speed knob
7.Assistant handIe
8.Feed water device
9.output shaft

button "TEST"; you can only to operate the tool when the RCD can work correctly.

15. Replacement of the plug or the supply cord shall always be carried out by the manufacturer of the tool or his service organization;

16. Keep liquid clear off the parts of the tool and away from persons in the working area in order that the water can not enter into the electronic equipment of the tool and keep your safety. It must be use catchment set when the machine working with elevation.

3. HANDLING INSTRUCTIONS

1. How to install the drill

Before operating, fix the base on the work piece reliably and tightly, fasten it with expansion bolts, then fastening 4 bolts on the base uniformly, in the end, tightening them with the nuts.

2. Check the voltage:

Make sure the voltage is the same as that indicated on the board of the tools, the voltage in the circuits should be kept at +/-5%.

3. How to install bit:

Installing the diamond-thin bit carefully, the end thread shall match with the end output shaft. The end thread should be smeared with grease firstly, after tightening the drill bit, let it idly run, do make sure that its radial motion is corresponded with the general requirement, then you can operate the drill.

4. There are should some water in the water switch of drill.

5. Opening a bore, drilling a bore:

Start the drill under no-load condition, after starting, loosen the feed value, you can begin to drill when you see the outflow of water from the drill bit. When drilling a bore with the portable drill, put the drill to a certain inclined angle firstly (See fig.1, fig.2), drill a crescent-shape notch on the surface of concrete, then holding the drill vertically, if the drill swayed, the drill bit may be damaged. You should drill slowly and uniformly, don't force the tools, you can increase thrust when the drill bit has been drilled into the work piece about 5mm depth. During drilling, if the rotary speed of motor reduced obviously, that means it has an excessive load, please reduce its feed pressure properly to keep its rotary speed can be in an ideal location, if the motor emits fume or peculiar smell, please shut off the drill at once, the work will have to wait to avoid the motor overloading and the coil burned down. The clutch on the output shaft may be skidded, the RCD jumped and the motor stopped if the drill forces into the reinforcing steel bar, these improper operation methods, which will reduce the life of drill bit and damage the motor.

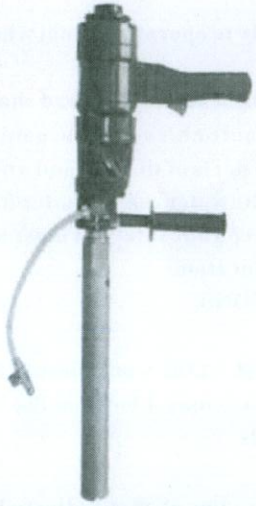


Figure 1

6. Material:

When drilling on the reinforced concrete, if the drill bit touched the reinforcing steel bar, the current will be increased suddenly, the motor vibrated and the drill overloaded, at this time, the drill thrust should be reduced properly, the lower current can have a bad effect on the drill speed and the drill bit. If the grit, gravel falls into the drill or the drill touches the reinforcing steel bar, the drill will be caught, the higher excess current happened, and the clutch skidded, here, please shut off the tool, remove the drill bit and clean the clips in the gap, please wait for about 3 minutes, let the drill cool down before restarting the switch to continue drilling, when drilling the wood, thick blacktop and asphalt felt etc, its current will be increased, so please drill slowly, uniformly and slightly. If the clutch skidded continuously, please stop the drill and retighten the clutch.

7. Remove drill core:

When the drill bit almost drills through the floorboard or wall etc materials, be careful in reducing its drill speed to avoid drilling forcibly. When drilling again, please shut off the tool, remove the drill bit and clean its wall with water, after cleaning the chip, beat the drill slightly with the wood stick, be careful in removing the drill core and damaging the

drill bit, then installing the drilling to continue operating.

8. Keep the motor ventilate and cool down:

During operating the ventilated notch of motor should not be clogged with dirt to avoid the higher temperature affecting the life of motor or burning down the winding.

9. Waterless operation forbidden:

When operation, there should be plenty of water flow onto the surface of the drill bit to cool down, and the mud can be washed out to avoid damaging the drill bit and sealing washer.

10. Avoid dampening the motor:

Do keep the enclosure of the motor away from the water to avoid reducing its insulating performance or leaking electricity. Only use the machine with the direction of vertical downward!

11. Drill vibrated

When drilling sometimes, the gap between the elevating body and square pipe and rack increased may cause the drill vibrated, at this time, please shut off the tool and adjust the track lining or idle wheel on elevating body, through tightening some relative bolts to adjust it to proper gap.

12. When adjusting the speed, the machine must be stopped, then turning the knob, it is not allowed to turn the knob when starting the machine, otherwise the gears may be damaged.

4. STRUCTURE, FEATURE AND USAGE

This tool is a kind of portable diamond core drill, it designs two-gear rotary speed, you can turn the knob to adjust its speed, high gear is suitable for the diamond drill bit of 20-52 diameters, low gear is suitable for the diamond drill bit of 52-78 diameters, it is also equipped with safety friction clutch, it is easy, safe and reliable to use. Using the diamond thin-wall drill bit produced by our company, which can drill a bore in all directions on the reinforced concrete, brick and stone etc, its have the advantages of no dust, no vibration, high precision and promote in drill speed. They are widely used in the fields of construction, pipe installation, road, bridge and engineering quality control and sampling etc.

See fig.3 to know main parts structure.