



**The German perfect industrial design, beauty and quality of experience**

The new Cayken marks a new beginning in industrial grade drill machine aesthetic design and manufacturing process. It follows the consistent style of the leaders, with a forward-looking design ideas and the perfect ergonomic design, opened up a new era of drilling industry.

**Germany Cayken authorized manufacturer:** shanghai chengxiang mechanical and electric equipment co.,ltd

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**OPERATING INSTRUCTION**  
**<http://www.cayken.com.cn>**

# Operation Manual

## WARNING

To prevent electric shock or fire, please strictly abide by the procedures in the operation manual.  
The machine only for the specialized persons, please do not let other people to operate. If any violation of the instructions operation and cause personal injury or machine damage, our company disclaim all responsibility.  
The machine can only maintain by the people who has the certification.

## THANKS TO THE BUYER

Great thanks for buying the series of diamond drill of CAYKEN . Please read operation manual and must pay attention to safety precaution.  
The right operation, will make you fully feel our products superior performance.  
Please put this manual in a safe place for future reference.

## ABOUT THIS MANUAL

The machine model of the description in this manual:

1800(E)	2050(E)	2350(E)	
The following model options in oil.			
2550(E)	2550C(E)	2550B(E)	2550BC(E)
3050(E)	3050C(E)	3050B(E)	3050BC(E)
3550(E)	3550C(E)	3550B(E)	3550BC(E)
4050(E)	4050C(E)	4050B(E)	4050BC(E)
4550(E)	4550C(E)	4550B(E)	4550BC(E)
5050(E)	5050C(E)	5050B(E)	5050BC(E)
3050/3C(E)	3550/3C(E)	4050/3C(E)	4550/3C(E) 5050/3C(E)

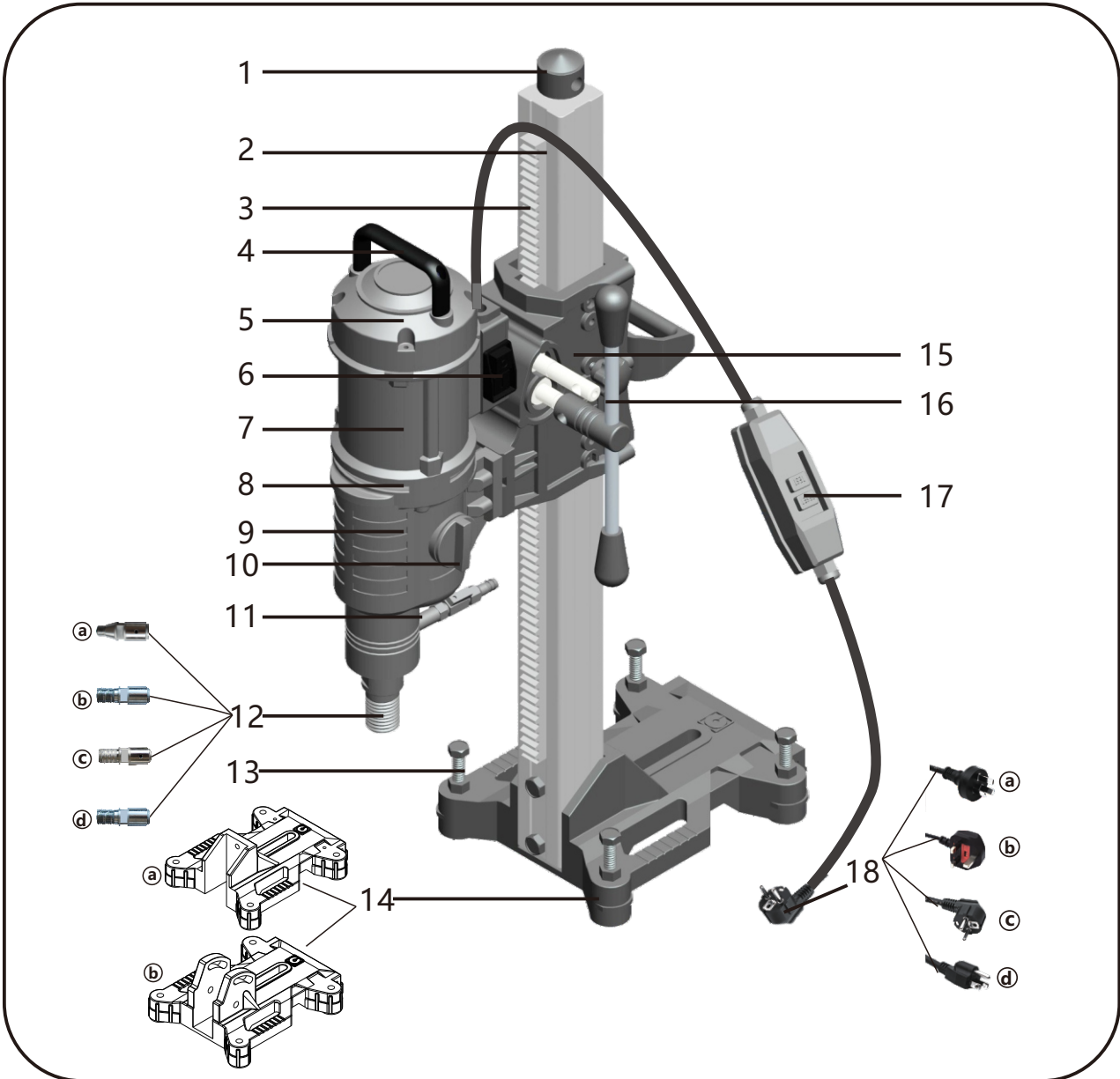


Confirm the machine model according to the nameplate.



Shanghai Chengxiang Electromechanical Equipment Co., Ltd. reserves the rights of final explanation.

## THE PRODUCT STRUCTURE.



- |                     |   |
|---------------------|---|
| 1, Top              | 10, Shift knob  |
| 2, Column           | 11, Water tap   |
| 3, Rack             | 12, Principal axis ( a,M22 b,coarse thread c,square teeth d,UNC ) |
| 4, Handle           | 13, Regulating screw  |
| 5, Cover            | 14, Base ( a,ordinary b,Angle)                                    |
| 6, Power sw         | 15, Lifting device  |
| 7, The stator shell | 16, Lift rocker   |
| 8, The middle cover | 17, PRCD  |
| 9, Gear box         | 18, Plug ( a,CN b,GB c,EP d,US )                                  |

TECHNICAL PARAMETER

MOD.	Rated voltage(V)	Rated power(W)	Rated frequency(Hz)	The corresponding speed(rpm)		Maximum drilling(mm)
1800 1800E	110/220~	3800	50-60	750	100-750	180 ( 7 " )
2050 2050E	110/220~	4000	50-60	700	100-700	205 ( 8 " )
2350 2350E	110/220~	4180	50-60	600	100-600	230 ( 9 " )
2550 2550B 2550QA	110/220~	4350	50-60	580		255 ( 10 " )
2550E 2550BE	110/220~	4350	50-60	100-580		255 ( 10 " )
2550BC 2550C	110/220~	4350	50-60	400/800		255 ( 10 " )
2550CE 2550BCE	110/220~	4350	50-60	100-400/800		255 ( 10 " )
3050 3050B	110/220~	4650	50-60	380		305 ( 12 " )
3050E 3050BE	110/220~	4650	50-60	100-380		305 ( 12 " )
3050BC 3050C	110/220~	4650	50-60	380/760		305 ( 12 " )
3050CE 3050BCE	110/220~	4650	50-60	100-380/760		305 ( 12 " )
3050/3C 3050/3CE	110/220~	4650	50-60	100-430/550/700		305 ( 12 " )
3550 3050B	110/220~	4880	50-60	300		355 ( 14 " )
3550E 3550BE	110/220~	4880	50-60	100-300		355 ( 14 " )
3550BC 3550C	110/220~	4880	50-60	300-600		355 ( 14 " )
3550CE 3550BCE	110/220~	4880	50-60	100-300/600		355 ( 14 " )
3550/3C 3550/3CE	110/220~	4880	50-60	100-420/520/680		355 ( 14 " )
4050 4050B 4050QA	110/220~	5180	50-60	280		405 ( 16 " )
4050E 4050BE	110/220~	5180	50-60	100-280		405 ( 16 " )
4050BC 4050C	110/220~	5180	50-60	100-280/550		405 ( 16 " )
4050CE 4050BCE	110/220~	5180	50-60	100-280/550		405 ( 16 " )
4050/3C 4050/3CE	110/220~	5180	50-60	100-400/510/630		405 ( 16 " )
4550 4050B	110/220~	5280	50-60	260		455 ( 18 " )
4550E 4550BE	110/220~	5280	50-60	100-260		455 ( 18 " )
4550BC 4550C	110/220~	5280	50-60	350-700		455 ( 18 " )
4550CE 4550BCE	110/220~	5280	50-6	100-350/700		455 ( 18 " )
4550/3C 4550/3CE	110/220~	5280	50-60	100-350/530/700		455 ( 18 " )
5050 5050B	110/220	5380	50-60	240		505 ( 20 " )
5050E 5050BE	110/220~	5380	50-60	100-240		505 ( 20 " )
5050BC 5050C	110/220~	5380	50-60	300/760		505 ( 20 " )
5050CE 4050BCE	110/220~	5380	50-60	100-300/760		505 ( 20 " )
5050/3C 5050/3CE	110/220~	5380	50-60	100-300/580/760		505 ( 20 " )

For the continuous improvement of products, the company reserves the right to change the technical data without prior notice to the right.

TECHNICAL CHARACTERISTICS DESCRIPTION

The above series of drilling machine can only be installed on the frame to use. This machine is applicable to the trained professionals to operate, in the rock, concrete, asphalt materials such as drilling or coring. The hole diameter is morethan 250mm, you must use the high performance expansion bolt. Diamond bit, is a hollow tubular drill at the front end of welding (or sintering) up with diamondsegments. If necessary, the cooling water can pass through a special device collected.

THE RULES FOR SAFE OPERATION

Note: when using electric tools, to avoid the risk of electric shock or fire, please follow the rules for safe operation. Please read carefully before operating the machine, and these rules will be stored in the location of insurance.

- 1.Keep your workplace tidy.An untidy working area will increase the risk of accidents.
- 2.Take ambient conditions into account.Do not expose power tools to rain.Do not use power toolsnear comb-ustible gases.
- 3.Protect yourself against electric shock.Avoid physical contact with earthed parts,e.g. Pipes,heaters,ovens and fridges.
- 4.Keep children well away.Do not let unauthorized persons touch the cool or cable and keep them well away from your working area.
- 5.Keep your power tool safely.Tools not in use should be kept in dry,locked locations and away fromthe reach of children.
- 6.Do not overload your power tools.They will work better and more safely in the given performance range.
- 7.Wear suitable working clothing.Do not wear loose clothing or jewelry,otherwise you may be caught by mo-ving parts.When working in the open rubber gloves and non-slip shoes are recommended.Cover long hair with a hair net.
- 8.Connect a dust extraction facility to power tool if this is possible and satisfy yourself that it is working properly.
- 9.Do not use the cable for any other purpose.Do not carry the tool by the cable and do not use it to pull the plug from the socket.
- 10.Do not bend too far over.Avoid an abnormal body position.Make sure you are standing safely and always maintain you balance.
- 11.Take good care of you power tools.Keep them sharp and clean so that they work better and more safely. Follow the maintenance instructions and information when changing a tool.Check the cable regularly and have it renewed by a recognized expert if it is damaged.Check the extension cable regularly and replace it if it is damaged.Keep hand grip dry and free of oil and grease.
- 12.Remove the mains plug from the power supply when not in use,before servicing and when changing the tool.
- 13.Do not allow any tool spanner to remain on the tool.Before switching on,satisfy yourself that spanners have been removed.
- 14.Avoid unintended startup.Do not carry any power tool which is connected to the mains while your finger is at the switch.Ensure that the switch is off when connection up the mains power supply.
- 15.When working in the open,use only authorized extension cable and which are identified for such use.
- 16.Always be alert,Observe your work.Proceed with care and do not use the power tool if you can't concentrate.
- 17.Check your machine for damage.Before using the power tool again,you must check carefully that protective devices or damaged parts are functioning correctly,that they are not sticking,that no parts are broken,that all other parts are correctly and perfectly fitted and that all other conditions which could influence the operation of the machine are safe and correct.Damaged protective devices and parts should be repaired or exchanged at a customer service work shop,unless otherwise indicated in the operating instructions.Damaged switches must be replaced at a customer service workshop.Do not use power tool if the switch can't be switched on or off.
- 18.Attention:it is your interest only use the accessories and additional equipment which are shown in the ope- rating instructions or offered in the relevant catalogue.The use of power tools or accessories other than those indicated can put you into persona danger.

## PREPARATION

Please follow the steps below, assemble and connect the core drill machine. You can do this work with tools attached with the machine.

**ATTENTION:** You must make sure that the motor's switch is off when connecting up the mains power supply.

Step 1: Unwrap the package, check the machine and accessories according to the packing list. Satisfy yourself that the machine has not been damaged in transit. Check that the normal voltage is the same as the voltage indicated on the rating plate. Check all the parts according to the packing list.

Step 2: Electrical connection

According to the European standard EN 61029-1 and IEC 1029-2-6, the electrical connection of diamond core drills with water supply must be operated via a residual current device and to a properly earthed socket. In accordance with these regulations, our products are fitted with an inline protector mounted in the cord. This contains both RCD protection and under voltage tripping. The PRCD must be switched on using the ON key after the power plug has been inserted into the socket outlet. In the event of a voltage drop, the PRCD will switch off and must then be switched on again once the power supply has been reestablished. The rated current, i.e. the fault current at which the PRCD switch off, is 30 mA.

**ATTENTION:** the PRCD must not lie in water. It must be checked for perfect function at regular intervals by pressing the TEST key.

Never operate a diamond core drilling machine without PRCD directly from the main system.

STEP 3 water connection.

Use the attached accessories "Quick connector" to connect the water to the water supply system.

**ATTENTION:** Use only clean water, as dirty water will cause the seals wear very quickly. Max. Water pressure 3 bar.

Step 4 Safety test

After having switched on the motor starts softly. Press "TEST" button on the PRCD, the motor stops immediately. Press RESET button on the PRCD to supply electricity again.

**ATTENTION:** Do not operate the machine if the PRCD goes wrong.

## PUTTING INTO OPERATION

1. Select suitable diamond drill bits.

Our products have 4 kinds of thread, only use suitable high quality diamond tools, use sharp tools and ensure that the diamond segments are sufficiently larger than the inner and outer diameter of the drill bit tube. Apply water-resistant grease to the tool thread so that the tool can be easily loosened. Ensure that the radial run out at the diamond segments of the drill bit is no greater than 1 mm (eccentricity).

## PUTTING INTO OPERATION

2. Fix the rigs to the working place

Fixing methods: dowel fixing, vacuum fixing, bracing. The most common method of fixing is dowel fixing. Use metal dowels if at all possible. The diameter of the dowels must be at least 12 mm. With vacuum fixing, ensure there is a sufficiently great vacuum. Make sure that the sealing ring is not worn out. Ensure that the rig is only rigid when the sealing ring is relaxed via jack screws on the base of the rig.

**Note:** We strongly recommend the use of the expansion bolt is fixed, and as the location of the expansion screw. The column is the best direction to. Due to fixation the consequences of the company does not assume any responsibility.

### 三、 Start drilling

The rig received related training for professional use, can be achieved in the rock, concrete, Li Qing Materials such as drilling or coring. Please be sure to operate in accordance with the operating rules. Through the introduction of ball valve, adequate water, so that the debris was completely out, if the slurry mixture filled drill machine, you will not be able to introduce adequate water. Please according to the requirements for the bit to feed pressure, or at the top of the diamond bit may be polished, so the drilling efficiency will be greatly reduced. Sometimes, the drill cutter head can be sharpened on SIC materials. Please note that the bit do not shake, otherwise the matrix above diamond may fall off. When drilling encountered metal materials, for use in low speed, and increase the feed pressure. When the card drill, not to open. Open and shut down the machine way loose please immediately shut down the machine, use a bit of loose wrench around, and carefully remove the drilling machine. Vertical drilling, must ensure that the special water collecting device, and strictly prevent motor inlet. In the course of work in any interruption, only need to restart the machine can, but make sure that before the start of the drill bit in the machine can rotate freely, no stuck in the hole.

## FRICTION CLUTCH

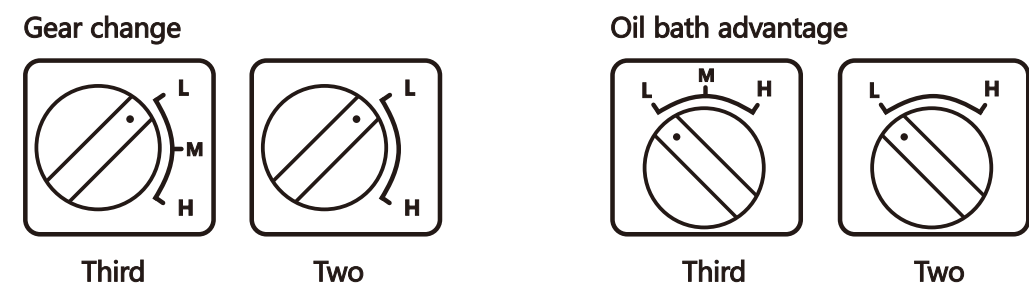
The integrated friction clutch protects operating personnel, the machine and the tool against high mechanical overloads, please ensure that the release time of the clutch is not more than 3-4 seconds, because otherwise wear and heat will increase rapidly.



MAINS SWITCH AND INTEGRAL OVER CURRENT PROTECTION

After having switch on the motor starts softly.If the machine is being overloaded,the motor electronic switches over to the pulsating operation for showing the operator the overload.If the force is then not reduced,the motor switches off after a few seconds.After switching the machine off and on again,the motor start again softly.Before switching the machine on again ,ensure that the drill bit can be turned easily and is not jammed in the drill hole.The motor electronic can temporarily be used on 260 Volt.Higher voltages however can cause irreparable damages.Please note that when operating the machine via a generator,this does not generate higher voltage peaks.

GEAR CHANGE



In order to improve the drilling efficiency, some models with three stage gear. There are high, medium and low-grade, high speed file (H file) forIn small bits and soft materials; medium file (M file) for medium bit and hard materials; low profile (L profile) forDrill and hard materials. In the machine to stop rotating or poking button will stop state shift.The machine must be in place to shift in the shift, if the boot spindle does not turn or tooth so-und, that stalls not to hangA, must immediately close the switch, and again toggle knob to the desired gear position, and rotates (for spindle gear), aThe obvious Guadang card in place so far. Turn off the power switch immediately, at the same time toggle knob rotates the spindle. In the machineOperate at full load or stuck, do not shift.

L H as for the low profile, high speed, M speed gear (gear type), this is a low gear,If the low speed to high speed spin clockwise and counterclockwise knob.

OIL BATH ADVANTAGE

Oil bath diamond core drill machine is a new and professional tool used for reinforced concrete,brick,rock. Oil immersion device of a high precision machining of aluminum liquid oil has good sealing, and the expansion of seal strength also won't appear leakage. Liquid oil immersion device can make the high-speed rotating gear increase 2-3 times longer service life, and gear wheels without noise.

OIL BATH ADVANTAGE

Oil immersion device sealing with resistance to high speed, high temperature resis- tant, wear resistant properties. And long service life.

TROUBLE SHOOTING

Problems	Cause	Remedies
Motor does not work	Power supply was cutted off,plug failed or loosed.	Check the power supply,check the plug and switch
	Carbon brush jammed,or escaped from the commutator	Resetting the carbon brush
	PRCD protection works	Press RESET button on the PRCD
	PRCD goes wrong	Change PRCD
Drilling slowly	Drill bit worn out	Change drill bit
	Feeding pressure too low	Use greater pressure
	Drill bit segment were pasted by the chips	Clean drill bit with enough water supply.Change to the next lower gearstep.
	Too high speed	Use a greater pressure and next lower gear.
	Drilling through iron reinforcements	Clean the bore hole with enough water supply
	Too much chip in the bore hole	Check the ball valve,check the water flow.
	Less water supply or water leakage.Drill bit becoming glazed	Resharpener the drill bit again by SIC grindstone.
Drill bit jam	Rebar chip or concrete block was jammed between the tube and the core or the hole wall.	Switch the machine off,loosen the drill bit by turning right and left using a suitable wrench
	Rig fixing not steady enough,it goes out of the original position	Refixing the rig
	Too much gap between the column and the carriage	Adjust the gap to better condition
Drill bit under-cutting	Drilling spindle does not straight	Repair or change the spindle
	Drill bit does not straight	Change the drill bit
	Abrasive chip can not be flushed out	Set enough water supply
Water supply bush leakage	Rotary shaft seal worn out	Change the rotary shaft seal

## MAINTENANCE AND REPAIR

**ATTENTION:** You must remove the main plug from the supply socket before beginning any maintenance or repair work.

Clean the machine with a dry or moist cleaning-rag and not with a jet of water. Make sure that no water gets into the motor or the switch box. Ensure that the ventilation slots are always clean. Clean and grease the tool thread, too.

### ◆ Oil bath gear

The gear oil should be changed after the first 300 hours of operation. Ensure that this work is carried out in a specialist workshop, or proceed as follows: Clamp the machine vertically in the vice. Remove the three hexagon socket screws. Take off motor and intermediate cover. Change gear oil-use only original oil. The filling quantity is 300-310ml. To reassemble, proceed vice versa and ensure that the shim ring is on the front shaft.

**ATTENTION:** if gear oil escapes, stop the machine immediately. Leakage of oil damages the gear.  
**Water connection**

If water escapes from the overflow hole on the water connection ring, the rotary shaft seals must be replaced immediately. This should only be done in an authorized specialist workshop.

### Carbon brushes

The carbon brushes should be examined for wear after about 300 hours in operation, and replaced if necessary. As with all other work on the motor, this should only be carried out by an electrician.

## WARRANTY

We warrant all products manufactured or sold by it against defects in workmanship or materials for a period of 12 months from the date of shipment to the customer. Please contact our factory or the authorized repair shop in your local area for replacement or repair of defective parts.

This warranty does not cover normal wear and tear, overloading, non-compliance with the operating instruction and intervention by unauthorized persons or the use of parts from other companies.

※We don't warranty the situation that machine is not fixed by users and damaged.

