

# CDM 253 - CDM 353

## OPERATING INSTRUCTIONS

Translation of the original instructions







The undersigned manufacturer:

**SAINT - GOBAIN ABRASIVES S.A.**  
**190, BD. J. F. KENNEDY**  
**L-4930 BASCHARAGE**

Declares that this product:

« Drill Motor » : **CDM 252 230V**  
**CDM 353 230V**

Code : **70184647809**  
**70184647810**

is in conformity with the following Directives :

- **"MACHINES" 2006/42/CE**
- **"LOW VOLTAGE" 2006/95/CE**
- **"ELECTROMAGNETIC COMPATIBILITY " 2004/108/CE**
- **"NOISE" 2000/14/CE**

And the European standard:

- **EN 60745-1; EN 55014; EN 61000**

Valid for machines as of serial number:  
70100000

Storage site for the technical documents:

Saint-Gobain Abrasives 190, Bd. J. F. Kennedy 4930 BASCHARAGE, LUXEMBOURG

This declaration of conformity loses its validity when the product is converted or modified without agreement.

Bascharage, Luxembourg, 01/02/2012.

A handwritten signature in black ink, appearing to read 'Olivier Plenert', is written over a light blue horizontal line.

Olivier Plenert, executive officer.



**CDM 253 – CDM 353  
OPERATING INSTRUCTIONS  
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## 1 Introduction

### ***Important Information***

This manual is written for users of the CDM 252/352 Core Drilling Motor and contains information on setting up, operating and maintaining the CDM 252/352. This manual is only applicable to the CDM 252/352 Core Drilling Motor. You will find the machine type designation on the type plate mounted on the machine.

The CDM 252/352 is designed for rig mounting and wet drilling only .

## 2 General Safety

When using the machine, the following safety measures must always be observed to reduce the risk of electric shock, physical injury and fire. Before using the equipment, read this information and pay particular attention to the machine usage instructions.

### ***Electric shock prevention***

An electric motor fitted with an earth connection and water-cooling may only be used if the power supply system and the machine are also fully earthed and connected to the mains electricity via a good working earth leakage safety device (PRCD or earth leakage box, see accessories). The residual current from the earth leakage safety device may be no higher than 10 mA (maximum). Test the earth leakage safety device for correct operation!

### ***Keep water away from electricity***

Prevent dripping, leaking or unintentional uncoupling of water hoses. Always give consideration to the cooling water when performing drilling or sawing operations overhead. When drilling overhead, a water catching ring must be used. This is also advisable when drilling walls. Always ensure that drainage water is drained away safely using, for example, a water suction appliance. Cords, plugs and electricity must never come into contact with water.

### ***Always stay alert***

Always pay attention to the job being performed, work sensibly and do not use the equipment if you are unable to concentrate. Ensure that you are always in a position where you can switch off the motor quickly. Do not use equipment that has a switch that cannot be switched on and off.

### ***Wear appropriate work clothing***

Do not wear loose clothing or jewellery as they can get caught in moving parts. When working outside in the open air, rubber gloves and non-slip footwear are recommended. Wear a hairnet to retain long hair.

### ***Use personal protection***

Wear a helmet for protection against falling parts, gloves for protection against sharp parts, safety goggles for protection against sparks and/or flying particles. Wear a dust mask for pulverulent activities. Ear protectors are recommended for noise levels above 80 dB(A). For noise levels above 90 dB(A), the wearing of ear protectors is mandatory.

### ***Use the right machine for the job and do not overload it***

Only use a machine suitable to carry out the job. It is safer and usually better to use drill bits with the diameters recommended for each rotational speed.

***Preventing unintentional start-up of the machine***

Remove the plug from the mains socket (for example, when carrying out maintenance or replacing parts). Ensure that the machine is switched off before reconnecting it to the mains power supply.

***Maintain the machine thoroughly***

Keep machine tools sharp and clean for better and safer performance. Follow maintenance procedures. Keep handles dry and free from oil and grease.

***Check machine for damage***

Check operation of moving parts: check that no parts are jammed / there are no broken parts / all parts are correctly fitted / any other conditions that may adversely affect machine operation. Damaged parts must only be repaired or replaced by an authorised professional.

***Use of accessories and attachments***

Only use those accessories and attachments specified in the manual or the catalogue. Use of accessories and attachments other than those specified can cause physical injury.

***Extension cords / cables***

Only use undamaged extension cables suitable for outdoor use and of an adequate diameter. Completely unroll cable drums to prevent heat build-up. Never carry the machine by the cable and do not use the cable to pull out the plug from the mains socket. Protect the cable from heat, oil and sharp edges.

***Repair of electrical equipment***

Electrical equipment must comply with the relevant safety regulations. Repairs must therefore only be carried out by a competent electrician, otherwise the user will be at risk of injury.

***Keep the work area clean and tidy***

An untidy work area can lead to accidents. Ensure that no unauthorised personnel, children and animals are allowed to come into contact with the equipment or are allowed access to the work area. When carrying out core drilling or sawing operations, ensure that the resultant drill and saw cuttings are cleaned up (particularly where there are drill and saw cuttings from floors and ceilings). Safely store away the machine after use in a dry and secure area inaccessible to children.

***Take account of prevalent environmental conditions***

Ensure that the work area is adequately illuminated. Give particular attention to the location of cables, pipes and steel reinforcements in the work area. Do not use electrical power tools in a damp environment (rain) or in the proximity of inflammable substances.

***Ensure work area is kept safe***

Safely secure all tools and attachments to prevent them from coming loose. Ensure that the equipment starter, all keys and other auxiliary tools have been removed. Stay away from dangerous moving parts. Avoid abnormal body postures and maintain a firm balance at all times.

The noise level depends on several factors, including: material, mounting, environment, drill diameter, drill type, drill speed, supply, drilling machine / rig and duration.



**LEVEL IN THE WORK AREA IS ABOVE 80 DB(A).**

### 3 Machine description

The Saint-Gobain Abrasives CDM 252 and CDM 352 core drilling motors have been designed only for rig mounting. It is not allowed to use them for manual drilling.. Both drilling machines are fitted with a start-up power supply limiter that ensures that whenever the machine is connected to the mains power supply the motor is not heavily overloaded and that start-up is quiet. An internal slipping clutch provides the user with extra protection.

#### 3.1 Function

- May only be used with diamond core drill bits to drill holes in concrete and stony materials.
- May only be used by appropriately trained personnel. Always maintain concentration when using the drill; experience has shown that the drill can jam at any time.
- Must be used with (class 1) earthed plugs and:
- (PRCD) earth leakage circuit breaker with undervoltage protection <10 mA or
- (FI Box) earth leakage box <10 mA and special plug.
- A water catching ring must be used when drilling overhead.
- Machine has been designed for wet drilling only

#### 3.2 Mains power supply

Check that the mains power supply corresponds to the voltage specified on the machine type plate. Ensure that the machine is switched off before connecting it to the mains power supply.



**CONNECT THE MACHINE IN COMBINATION WITH AN:  
EARTH LEAKAGE CIRCUIT BREAKER (PRCD) WITH UNDERVOLTAGE  
PROTECTION 10 mA OR AN  
EARTH LEAKAGE BOX (FI-BOX) 10 mA AND SPECIAL PLUG.**

#### **Use of the earth leakage circuit breaker (PRCD) 10 mA**

- The PRCD is a residual current device that automatically activates on detection of a current greater than 10 mA.
- The undervoltage protection automatically activates on detection of an undervoltage of less than 110 V
- (also activates whenever the plug is pulled out).
- Switch on the PRCD by plugging the machine into the mains power supply and pressing the green pushbutton (the red indicator lamp will illuminate).
- Test the PRCD before every use by pressing the test pushbutton.
- Never use the PRCD for switching on or off the machine

#### **Use of the earth leakage box (RCD) / (FI Box) 10 mA**

- The RCD is a safety device that automatically activates on detection of a current greater than 10 mA. Test the RCD before every use by pressing the test pushbutton (at least once a month).
- After the RCD has been activated, resolve the cause of the problem and reset the window cover.



### **3.3 Level / spirit level**

The machine is equipped with 2 levels for vertical and horizontal drilling (floors and walls).

### **3.4 Drilling rig**

Whenever a drilling rig is used the drilling machine must always be securely mounted in the rig and there must be no free play. The drilling rig itself must be firmly secured to the surface to be drilled using either bolts or a vacuum. For “wet” drilling, the machine must be connected to an appropriate water draw-off point via a quick coupling (do not use dirty water).

### **3.5 Gearbox**

The CDM 162 is fitted with a 3-speed gearbox. The gearbox may only be engaged when the machine has come to a complete stop. The change switch must only be turned by hand and not by wrenches or other mechanical devices. To facilitate gear changing, manually rotate the drill spindle left and right.

### **3.6 Training**

The machine should only be used by appropriately trained personnel. Always concentrate on the job when using the drilling machine. Experience has shown that the drill can jam at any time.

### **3.7 Electronic overload protection**

If the drilling machine draws too much current from the mains power supply, the overload protection will automatically disconnect the machine from the supply. Please note that the overload protection does not provide 100% protection against overloading, but acts only as a safeguard.

Before the overload protection can be reset, the ON/OFF switch must be switched off. The protection can be reset after about 10 seconds by pressing the pushbutton. The drilling machine can then be switched on again using the ON/OFF switch. After the overload has been reset, it is advisable to run the drilling machine unloaded (with water cooling) for 1 minute. This allows sufficient time for the electrical parts of the machine to cool down.

### **3.8 Slipping clutch**

The built-in slipping clutch protects the user, the machine and the drill against mechanical overload, and engages whenever the drill jams. Whenever the clutch engages, the drilling machine must be switched off immediately. If the clutch engages for longer than 2 to 3 seconds, this will cause excessive wear and a build-up of heat to occur.

### 3.9 Statement regarding the vibration emission

Declared value of vibration emission following **EN 12096**.

Machine Model / code	Measured value of vibration emission at m/s <sup>2</sup>	Uncertainty K m/s <sup>2</sup>	Tool used Model / code
CDM 253 70184647809	<2.5	0.5	Pro CB BETON
CDM 353 70184647810			

- The vibration value is lower and does not exceed 2.5 m/s<sup>2</sup>.
- Values determined using the procedure described in the standard **EN 60745-1; EN 55014; EN 61000**
- The measurements are made with new machines. Actual values may vary with site conditions, in terms of:
  - Materials worked
  - Wear Machine
  - Lack of maintenance
  - Inappropriate tool for application
  - Tool in poor condition
  - Unskilled operator
  - Etc...
- The exposure time to vibration is based on the performance of work (related to the adequacy Machine / Tool / worked material / operator)
- When evaluating risks due to hand-arm vibration, you need to take into account effective usage at rated power of machine during a full day of work; quite often you will realise that effective utilisation time represents around 50% of overall duration of work. You have to consider, of course, breaks, water feeding, preparation of work, time to move the machine, disk mounting...

### 3.10 Statement regarding noise emission

Declared value of noise emission following **EN ISO 11201** and **NF EN ISO 3744**.

Machine Model / code	Sound Pressure level $L_{Peq}$ EN ISO 11201	Uncertainty K (Sound Pressure level $L_{Peq}$ EN ISO 11201)	Sound power level $L_{Weq}$ NF EN ISO 3744	Uncertainty K (Sound power level $L_{Weq}$ NF EN ISO 3744)
CDM 253 70184647809	94 dB(A)	2.5 dB(A)	105 dB(A)	4 dB(A)
CDM 353 70184647810				

- Values determined using the procedure described in the standard **EN 60745-1**; **EN 55014**; **EN 61000**
- The measurements are made with new machines. Actual values may vary with site conditions, in terms of:
  - Wear Machine
  - Lack of maintenance
  - Inappropriate tool for application
  - Tool in poor condition
  - Unskilled operator
  - Etc...
- Measured values relate to an operator in normal use, as described in the manual position.

## 4 Important tips

- When performing “manual” drilling operations by hand, without the use of a pilot drill, the drill must never be positioned perpendicular to the material as this can cause the drill to “spin”. Spinning can be prevented by drilling the first centimetre at an angle. The drill can then be slowly brought to the desired position. It is much safer to use a pilot drill (optional)
- When using a drilling rig, ensure that it is securely mounted on the material to be drilled and that there is no free play.
- Overhead drilling with water-cooling must only be carried out in conjunction with an appropriate water collection device. Otherwise the water can penetrate the electrical parts of the drilling machine causing a risk of injury to the user and damage to the machine. (The machine must always be connected via an earth leakage protection device.)
- Only use diamond drills appropriate for the material to be drilled (do not use concrete drills for drilling wood, metal, etc). Diamond drills that are not perfectly round impose additional loading on bearings and gearboxes.
- Always drill carefully and sensibly. Avoid overloading the drilling machine at all times.
- Do not pick up or carry the drilling machine by the power supply cable.
- If the switch, cable, plug or casing will become damaged, switch off the machine immediately.
- Only switch on the machine when the diamond drill is able to rotate freely.
- Always use a counter-wrench (SW 32) to change out the diamond drill bit. Never use a hammer as this will damage the gears.

## 5 Maintenance and faults



**REMOVE THE PLUG FROM THE MAINS SOCKET BEFORE ANY MAINTENANCE OR CHECKS ARE CARRIED OUT.**

Regularly clean the cooling slots using compressed air. After 250 hours of operation, change the oil in the gearbox (80W90 max. 150 ml) and check the carbon brushes for wear. Adjust the torque of the slipping clutch as necessary (set torque is 13 Nm). Just as for electrical repairs, the above operations must only be carried out by a competent (electrical) professional. Only use original Saint-Gobain Abrasives parts for repair and replacement. Electrical equipment must be checked regularly by a competent electrician (about twice a year).

If there are any signs of oil or grease leakage, the machine must be switched off immediately as this will cause excessive wear on the gears. The machine must be checked by a competent professional.

If there are any signs of water leakage from the overflow (above the drill spindle), the machine must be switched off immediately. Water can penetrate the electrical parts of the drilling machine causing a risk of injury to the user and damage to the machine. When the machine is leaking, the retaining rings are defective, and must be replaced by a competent professional.

## 6 Warranty

The CDM252/352 Core Drilling Machine has a 12 month warranty period effective from the date of delivery. All warranty claims should be justified by submission of the purchase invoice.

The warranty includes the repair of any faults which can be traced back to material or manufacturing defects. However, the warranty does not cover all wear parts identified as “V” in the spare parts list and:

- Faults or damages caused as a result of incorrect usage or connection.
- Overloading of the machine.
- When bad or incorrect maintenance is carried out.
- When the information and recommendations in the manual are not followed.
- When the machine is used by unauthorised or untrained personnel.
- When the machine is used for purposes other than those for which it is designed.
- When the machine has been repaired using parts other than those specified in the manual.
- When the machine coding has been changed or removed.
- Damage caused by fire and/or transport.

In such cases we request that you return the machine. When returning the machine, we request that you include full details of the fault. Ensure that the machine is well packed to protect it against damage during transit.

## 7 Technical specifications

TYPE		CDM 252	CDM 352
VOLTAGE	V	230	230
CURRENT	A	14	15
FREQUENCY	HZ	50 – 60	50-60
POWER CONSUMPTION	W	3000	3300
EFFECTIVE OUTPUT	W	2100	2400
RPM ( LOADED )	1/MIN	300 / 640 / 960	230 / 480 / 720
CONCRETE DRILLS	– MM	80 / 120 / 250	100 /160 / 400
DRILL CONNECTION	G	1 ¼“ AG	1 ¼“ AG
SLIP NUT TORQUE	NM	60	90
OIL CAPACITY (80W90)	ML	300	300
WEIGHT	KG	15,5	15,5

## **7.1 Customer service**

When ordering spare parts, please mention:

- The serial number (7 digits).
- The code of the part.
- The exact denomination.
- The number of parts required.
- The delivery address.
- Please indicate clearly the means of transportation required such as "express" or "by air".  
Without specific instructions, we will forward the parts through the means which seem appropriate to us and but which is not always the quickest way.

Clear instructions will avoid problems and faulty deliveries. If not sure, please send us the defective part. In the case of a warranty is claim, the part must always be returned for evaluation. Spare parts for the motor can be ordered with the manufacturer of the motor or with their dealer, which is often quicker and cheaper.

This machine has been manufactured by Saint-Gobain Abrasives S.A.

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Guarantee can be claimed and technical support obtained from your local distributor where machines, spare parts and consumables can be ordered as well:

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