CM 350 B

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:

Masonry Saws: **CM 350 B** Code: **70184632547**

is in conformity with the following Directives:

- "MACHINES" 2006/42/CE
- "ÉLECTROMAGNÉTIC COMPATIBILITY" 2014/30/EU
- "NOISE" 2000/14/CE

and European standard:

EN 12418 – Masonry and stone cutting-off machines – Safety

Valid for machines as of serial number: 221000012

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, 12.06.2023.

François Chianese, executive officer and responsible for the technical file. Bascharage, Luxembourg.

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Declares that this product:

Code: 70184632547 Masonry Saw: CM 350 B

is in conformity with the following standard:

- Supply of Machinery (Safety) Regulations 2008
- Electromagnetic Compatibility Regulations 2016
- Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001

and European standard:

• EN 12418 – Masonry and stone cutting-off machines – Safety

Valid for machines with a serial number greater than: 221000012

Authorised Representative:

SAINT-GOBAIN ABRASIVES

Unicorn House • Unit 1, Amison Close

Redhill Business Park • Stafford • England • ST16 1WB

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Bascharage, 12.06.2023

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CM 350B OPERATING INSTRUCTIONS

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1 BASIC SAFETY INSTRUCTIONS

The CM 350 B is exclusively designed for the cutting of construction products mainly on construction sites.

Uses other than the manufacturer's instructions shall be considered as contravening the regulations. The manufacturer shall not be held responsible for any resulting damage. Any risk shall be borne entirely by the user. Observing the operating instructions and compliance with inspection and servicing requirements shall also be considered as included under use in accordance with the regulations.

1.1 Symbols

Important warnings and pieces of advice are indicated on the machine using symbols. The following symbols are used on the machine:



Read operator's instructions



Ear protection must be worn



Hand protection must be worn



Eye protection shall be worn



Danger: risk of cut



Rotation direction of the blade

1.2 Machine plate

Important data can be found on the following plate located on the machine:



1.3 Safety instructions for particular operating phases

Before commencing work

- Before commencing work, make yourself familiar with the working environment at the place of use. The working environment includes: obstacles in the area of work and manoeuvre, the firmness of the floor, necessary protection at the site relating to public thoroughfares and the availability of help in the event of accidents.
- Site the machine on an even, firm and stable base!
- Check for correct mounting of the blade regularly.
- Immediately remove damaged or badly worn blades, as they endanger the operator whilst rotating.
- The material to be cut must be held securely in place on the conveyor cart to allow no movement during cutting operation.
- Always cut with the blade guard in position.
- Only fit NORTON diamond blades to the machine! The use of other tools can damage the machine!
- Read the blades' specifications carefully to choose the correct tool for your application.
- Attention is drawn to the use of BS2092 safety goggles in conformity with specified Processes No.8 of the Protection of Eyes Regulation 1974, Regulation 2(2) Part 1.

Battery powered machine

- Always turn off the machine and separate it from the battery before any work on the machine is done.
- Avoid contact of the electric connections with water projection or humidity.
- In case of emergency, you can stop the machine by pushing on the emergency stop.
- In the event of the machine breaking down or stopping for no apparent reason, switch off the machine and separate it from the battery. Only a qualified electrician is allowed to investigate the trouble and remedy the fault.

2 MACHINE DESCRIPTION

Any modification, which could lead to a change in the original characteristics of the machine, may be done only by Saint-Gobain Abrasives who shall confirm that the machine is still in conformity with the safety regulations.

2.1 Short description

The CM 350 B Masonry saw is designed for durability and high performance for onsite wet and dry cutting operations of a wide range of masonry, refractory and natural stone products.

As with all other NORTON products, the operator will immediately appreciate the attention given to detail and quality of materials used in construction. The machine and its component parts are assembled to high standards assuring long life and minimum maintenance.

2.2 Purpose of use

The machine is designed for wet and dry cutting of a large range of building and refractory materials, or tiles. It is not designed for cutting wood or metals.

2.3 Layout



Frame and feet (1)

The frame is made of a jig-welded reinforced steel construction to ensure perfect rigidity. 4 removable legs fit into housings welded on frame sides and locked into place with wing screws. The front feet are adjustable. It is also equipped with wheels and handles for transportation.

Cutting head (2)

Spring loaded jig-welded steel console. The motor fixing points and the pivot are machined for perfect fit. A locking system allows straight-through cutting without any other accessory.

Blade guard (3)

Jig-welded steel construction with 350mm-diameter blade capacity, which offers maximum operator protection and increased visibility of the work piece.

Incorporated in the blade guard is an outer metal cover, which can be easily opened to allow easy access to shaft for inspection and blade replacement when motor is switched off, while fully protecting the blade when in operation.

Blade shaft (4)

Precision-machined blade shaft, held in ball bearings and is driven by a heavy-duty V-section drive belt. The blade shaft assembly is completely enclosed in a cutting head console, accessible for inspection by way of a removable plate. The removable blade flange is tightened by means of a hexagonal nut.

Conveyor cart (5)

Steel welded construction with non-slip top. The machine guide system permits precise cuts to be made by virtue of four roller sheaves set at an inclination to compensate for wear.

The nylon-plastic sheaves and sealed-bearings permit easy operation. The variable angle guide-acut and the large surface area of the conveyor cart permits precise positioning of the material.

Water cooling system (6)

The coolant system comprises:

- A submersible mechanical water pump.
- Plastic suction pipe delivering the water from the water pan to the cutting head.
- A large capacity water pan supplied with drain plug.
- A water-tap, fitted to the blade guard, permitting controlled water flow.
- Two water nozzles located inside the blade guard ensure adequate flow of water to both sides of the cutting blade.
- A water curtain, fixed to head axle restricts water spray and minimises water loss.

Battery motor and control panel (7)

The eGX battery engine from Honda which integrates the battery directly on the engine On the control panel you can find:

- The Power button
- The ON/OFF switch
- The 3 LEDs (green, orange and red) to indicate the state of the motor
- Emergency stop

2.4 Technical Data

Technical data					
Battery motor	1,8kW				
Max. blade diameter	350mm				
Bore	25,4mm				
Rotation speed of the blade	2500 min ⁻¹				
Cutting depth	110mm (without reversing the material)				
Flange diameter	95mm				
Sound pressure level	88,8 dB (A) (selon ISO EN 11201)				
Sound energy level	108,8 dB (A) (selon ISO EN 3744)				
Max. cutting length	600mm				
Table dimension (L x W)	460x400mm				
Machine dimensions without feet (L x W x H)	1390x530x1100 mm				
Machine dimensions with feet (L x W x H)	1390x750x1750 mm				
Weights					
Machine cpl. (without battery)	122 kg				
Machine cpl.	128,5 kg				
Ready for use (with water)	160 kg				
Battery technical data					
Type de battery	Battery lithium ion rechargeable				
Tension	DC 72V				
Power capacity	720Wh				
Rated capacity	10.0Ah				
Temperature range					
Charging	5 à 30°C				
Operating	-15 à 40°C				
Storage	-5 à 30°C				
Charger technical data					
Charger type	CC/CV quick charger				
Input voltage	AC 100 à 240V				
Input frequency	50/60Hz				
Output voltage	DC 82.8V				
Output current	8.5A				

2.5 Statement regarding the vibration emission

Declared value of vibration emission following EN 12096.

Machine	Measured value of vibration emission at m/s ²	Uncertainty K	Tool used
Model / code		m/s ²	Model / code
CM 350 B 70184632547	2.17	0.31	Clipper ALFA Ø350

- The vibration value is lower and does not exceed 2.5 m / s.
- Values determined using the procedure described in the standard EN 12418.
- 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...

2.6 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)
CM 350 B 70184632547	88,8 dB(A)	2,5 dB(A)	108,8 dB(A)	2,5 dB(A)

- Values determined using the procedure described in the standard EN 12418.
- 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.

3 ASSEMBLY AND COMMISSIONING

The machine is delivered fully equipped (although without diamond blade). It is ready for operation assembly the diamond blade, the feet and the conveyor cart and after connection to the appropriate power supply.

3.1 Tool assembly

Only NORTON blades with a maximum diameter of 350 mm can be used with the CM 350B.

All tools used must be selected with regard to their maximum permitted cutting speed for the machine's maximum permitted rotation speed.

Before mounting a new blade into the machine, switch off the machine and isolate it from the battery.

To mount a new blade, follow these steps:

- Open the shaft vent cover on the blade guard.
- Loosen the hexagonal nut on the blade shaft, which holds the removable outer flange.
- · Remove the outer flange.
- Clean the flanges and blade shaft and inspect for wear.
- Mount the blade on arbor ensuring that direction of rotation is correct. Wrong direction of rotation blunts the blade quickly.
- Replace outer blade flange.
- Tighten hexagonal nut with spanner supplied for this purpose.
- Shut the vent cover.

The blade bore must correspond exactly to the diameter of the blade shaft. Cracked or damaged bore is dangerous for the operator and for the machine.

3.2 Feet and conveyor cart assembly

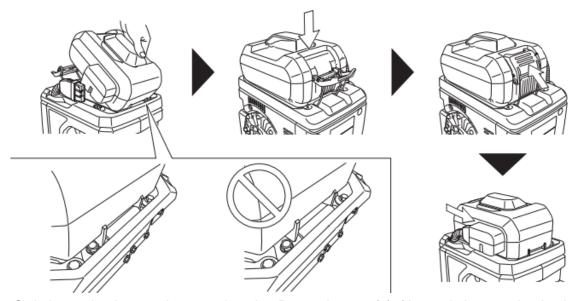
Feet and conveyor cart are located in the water pan. Place the four feet in the four openings on each corner of the frame. Tighten the four locking screws.

Place the conveyor cart on the guiding rails with the material stop facing the operator.

3.3 Quick reference guide for operation

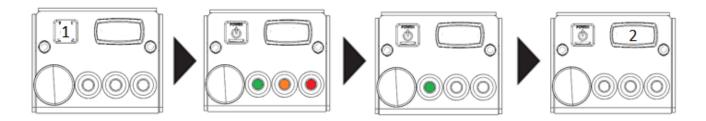


3.4 Battery fixation and starting the machine



- Switch on the battery by pressing the Power button (1) (the switch must be in the OFF position) the 3 LEDs will lit.
- Wait until the green LED on the control panel is the only one lit
- Put the switch to ON to start the motor and the rotation of the blade (2)

NOTE: When removing the battery, remember to replace the plastic cover on the motor plug to keep it clean.



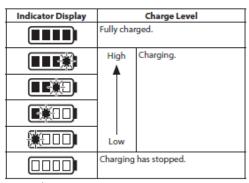
NOTE: These operations must be done each time the motor is restarted (even if the engine has just been stopped)

To stop the machine, put the switch on the control panel to OFF or press the emergency stop.

3.5 Charging the battery

This machine works with a battery, so you have to think about charging it. A fast charger is available for this. It will take between 1h and 1h30 to recharge a full battery charge. When charging the battery, the charger fan turns on to prevent the battery from heating up. The charger will stop automatically once the battery is fully charged, but the fan will remain on for a while to keep the battery cool.

NOTE: The battery must not be charged at a temperature equal to or lower than 5°C.



■: On, **: Flashing, □: Off

3.6 Water cooling system

Fill the water pan with clean water to approximately 2cm from top (ensure that bottom of pump is fully immersed in water).

Open the water-tap on blade guard (note that handle on water-tap should be in line with water-flow). Ensure that water is flowing freely in the circuit and is delivered adequately to both sides of the blade, as insufficient water supply may result in premature failure of the diamond blade.

The water pump must never run without water. Always make sure that there is enough water in the pan and refill if necessary.

In case of frost, empty the water cooling system from its water.

4 OPERATING THE MACHINE

4.1 Site of work

4.1.1 Siting the machine

- Remove from the site anything, which might hinder the working procedure!
- Make sure the site is sufficiently well lit!
- Make sure you have a continual adequate view of the working area so you can intervene in the working process at any time!
- Keep other staff out of the area, so you can work securely.

4.1.2 Space required for operation and maintenance

Leave 2 m in front of the machine and 1,5 m around it for usage and maintenance of the CM 350B.

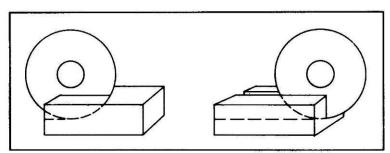
4.2 Cutting methods

To use the machine correctly, you must face it with one hand on the handle of the cutting head, and the other on the conveyor cart. Always keep your hands away from the moving blade.

To start the machine, press the power button, when the green LED is the only one lit, put the switch on the ON position. To stop the machine, put the switch on the OFF position or press the emergency stop.

4.2.1 Full depth or fixed cutting

In full depth or fixed cutting, the cutting head is locked in a fixed position and the material is pushed into it as shown.

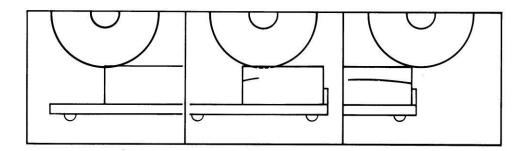


- Lower the cutting head to the desired cutting depth (in "through cutting", lower cutting head until blade periphery reaches max. 3mm under the surface of the conveyor cart) by means of the handle on the blade guard
- Fix position by tightening the clamping device
- Put material on conveyor cart
- Push the conveyor cart slowly and without undue pressure towards the rotating blade and cut the material as shown on the picture.

NOTE: While recommended, it is not absolutely necessary to lock the cutting head into a given depth position when jam cutting. The desired cutting depth can be maintained by holding firmly the depth feed handle on the blade guard. If the full depth of cut requires excessive pressure (on very dense material e.g.) make 2 or 3 shallow cuts.

4.2.2 Multiple step cutting

Multiple step cutting consists of moving the conveyor cart with the material to be cut back and forward under the rotating blade,



- Place the material to be cut on the conveyor cart firmly against the guide-a-cut and the backstop, keeping the hands well away from the blade.
- Move conveyor cart forward near the blade and pull down the cutting head until blade is lowered to a point where it will lightly contact the surface of the material.
- Then pass the material beneath with rapid full length strokes, taking a shallow cut (approximately 3 mm deep as shown on the picture) on the forward. On the backward stroke, lift the blade just clear over the cutting line.
- Complete each rapid stroke backward and forward by passing the material beyond the centre of the blade before starting the reverse movement of the conveyor cart.

NOTE: the harder the material, the more rapid should be the forward and backward strokes. Step cutting lessens the area of the blade circumference in contact with the material, keeping the blade cool, running free and cutting at peak efficiency.

4.2.3 General advice for the cutting

- Material weight under 15 kg and having dimensions smaller than 500x500x150mm can be cut with the machine.
- Before commencing work make sure tools are firmly seated!
- Select the right tools as recommended by the manufacturer depending on the material to be worked, the working procedure (dry or wet cut) to be carried out and the required efficiency.
- Apply cooling water continuously whilst cutting and in good time! Make sure the water pan contains enough water.
- When dry cutting, ensure sufficient dust extraction and wear a dusk protection mask!
- When cutting work is finished, close the water-tap so you can remove the cut pieces from the conveyor cart without getting wet.
- If the thermal protection trips, reactivate the motor by pushing on the black button located on the motor and wait until the motor has cooled down before starting the machine again.

5 TRANSPORT AND STORING

5.1 Securing for transport

Before transporting the machine, always remove the blade and empty the water pan. Also remove the conveyor cart, as it can be dangerous while you move the machine.

5.2 Transport procedure

Two people are necessary to move the machine. The machine can be moved with or without its feet. Always fold feet while transporting the machine in a van and a truck. The machine does not have lifting hooks. You can roll the machine on the floor using the wheels at the back of the machine.

5.3 Long period of inactivity

If the machine is not going to be used for a long period, please take the following measures:

- · Completely clean the machine
- Loosen the drive belts
- Empty the water system
- Disconnect the battery from the motor
- Ideally store the battery half-charged
- Take the water pump out of the slurry and clean it thoroughly.

The storage site must be clean, dry and at a constant temperature.

6 MAINTENANCE AND SERVICING

To ensure a long-term quality cutting, please follow the maintenance plan below:

		Begin of the day	During the changing of tool	End of the day or more often if required	Every week	After a fault	After a damage
Whole machine	Visual control (general aspect, watertightness)						
	Clean						
Flange and blade fixing devices	Clean						
Belts tension	Check and adjust						
Motor cooling fans	Clean						
Water pump	Clean						
Water pan	Clean						
Water hoses and nozzles	Clean						
Water pump filter	Clean						
Cart guiding bars	Clean						
Motor housing	Clean						
Reachable nuts and screws	Tighten up						

Maintenance of the machine

Always perform the maintenance of the machine with the battery disconnected.

Lubrification

Norton Clipper machines are equipped with lifetime lubricated bearings and ball bearings. It is therefore unnecessary to grease or oil the machine.

Cleaning of the machine

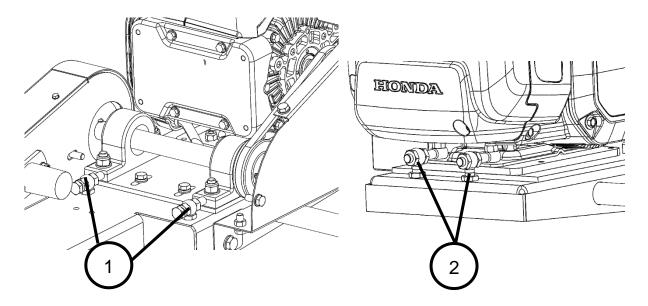
Your machine will last longer if you clean it thoroughly after each day of work, especially water pump, water pan (which can be removed for easy cleaning), motor and blade flange.

Adjustment and replacement of the belts

To adjust the belts:

• Firstly, remove the belt guard on the left by unscrewing the 4 nuts. Also remove the jackshaft guard by unscrewing the 5 screws.

- Loose the 2 bolts maintaining the jackshaft plate and the 4 bolts maintaining the motor plate.
- First shift the jackshaft by using the two screws on the side of the belt tension assembly (1 on the following picture). Then retighten the 2 bolts maintaining the jackshaft plate.
- Then shift the engine by using the screw at the back of the motor (2 on the following picture). Then retighten the 4 bolts maintaining the motor plate.
- Remount the belt guard and the jackshaft guard.

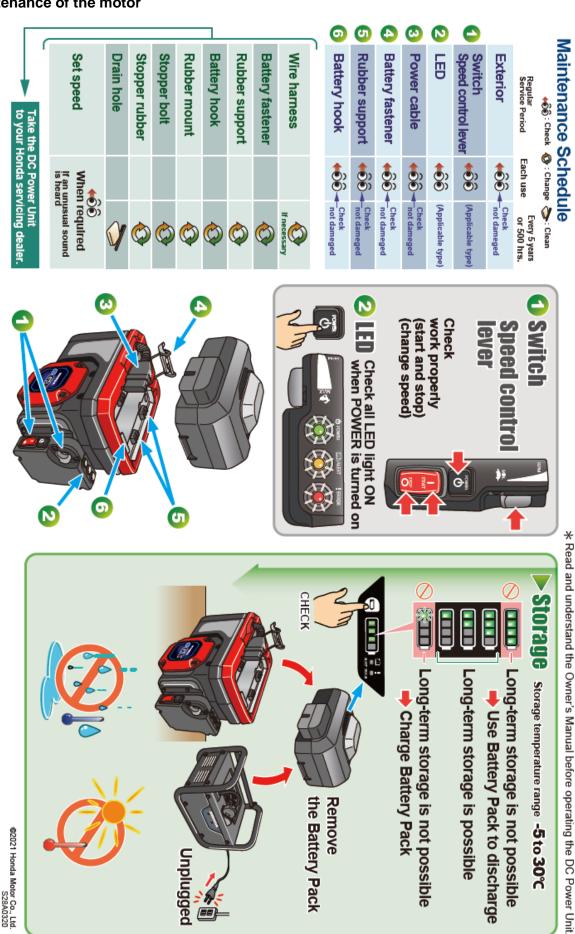


To replace the belts:

- Firstly, remove the belt guard on the left by unscrewing the 4 nuts. Also remove the jackshaft guard by unscrewing the 5 screws.
- Loose the 2 bolts maintaining the jackshaft plate and the 4 bolts maintaining the motor plate.
- move the engine and the jackshaft forward on the cutting head.
- Remove the old belts and adjust the new ones.
- Firstly, tighten the belt between the blade shaft and the jackshaft. Then retighten the two screws (1 on the picture) on the belt tension assembly and retighten the 2 maintaining bolts for the jackshaft plate.
- Then tighten the belt between the motor and the jackshaft. Retighten the screw at the back of the motor (2 on the picture) and the 4 bolts maintaining the motor plate.
- Remount the belt guard and the jackshaft guard.

NOTE: Do not use the machine without the protection guard.

Maintenance of the motor



7 FAULTS: CAUSES AND CURES

7.1 Fault-finding procedures

Should any fault occur during the use of the machine, turn it off, and isolate it from the electrical supply. Any works dealing with the electrical system or supply of the machine can only be carried out by a qualified electrician.

7.2 Trouble-shooting guide

Trouble	Possible source	Resolution
Motor is not running	Battery low	Check the battery charge (if necessary recharge it)
	Defective switch	CAUTION : can only be solved by qualified electrician
	Defective motor	Change motor or contact motor manufacturer
Blade is not turning	Belts not tightened or defective	Check the belts tension and change them if needed
Motor stops during the cutting, but can be restarted after a short period (overload	Cutting advance too quick	Cut slowly
protection)	Blade is blunt or glazed	Sharpen the blade in calcareous stone
	Defective blade	Change blade
	Wrong blade specification for the application	Change blade
No water on the blade	Not enough water in the pan	Refill the water pan
	Water tap is closed	Open tap on blade guard
	Water supply system is blocked up	Clean water supply system
	Water pump is not working	Check if pump is connected to the motor
		Change the pump

7.3 Customer service

When ordering spare parts, please mention:

- The serial number (seven 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 --- 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 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.

190, Bd J.F.Kennedy L- 4930 BASCHARAGE Grand-Duché de Luxembourg.

Tel.: 00352-50 401-1 Fax: 00331 83717792

7.4 Spare parts

In order to consult the spare parts lists, we invite you to visit the after-sales website of Norton Clipper by using the following address:

https://spareparts.nortonabrasives.com

For a quick access, you can also use the QR Code shown below using your mobile phone:





This electronic catalogue provides exploded views and spare parts lists for different machines designed by Norton Clipper so you can find references you need.

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

SAINT-GOBAIN ABRASIVES **INDUSTRIEWEG 21** 9420 ERPE-MERE BELGIUM.

TEL: +32(0) 2 267 21 00

SAINT-GOBAIN CONSTRUCTION PRODUCTS CZ.A.S. **DIVIZE ABRASIVES** SMRČKOVA 2485/4 180 00 PRAHA 8 CZECH REPUBLIC

TEL: +420 255 719 326 FAX: +420 255 719 321

SAINT-GOBAIN ABRASIVES A/S DYBENDALSVÆNGET 2, DK-2630 TAASTRUP **DENMARK**

TEL: +45 4675 5244

PO BOX 643706 FORTUNE TOWER OFFICE 2106

JLT BLOCK C (NEXT TO METRO STATION) JUMEIRA LAKE TOWER, DUBAI UNITED ARAB EMIRATES

TEL: +971 4 431 5154 FAX: +971 4 431 5434

SAINT-GOBAIN ABRASIFS RUE DE L'AMBASSADEUR - B.P.8 78 702 CONFLANS CEDEX **FRANCE**

TEL: +33 (0)1 34 90 40 00 FAX: +33 (0)1 39 19 89 56

SAINT-GOBAIN ABRASIVES GMBH **BIRKENSTRASSE 45-49** D-50389 WESSELING **GERMANY**

TEL: +49 (0) 2236 703-0 FAX: +49 (0) 2236 703-730

SAINT-GOBAIN ABRASIVES KFT. 1225 BUDAPEST BÁNYALÉG U. 60/B. HUNGARY

TEL: +36 1 371 22 50 FAX: +36 1 371 22 55 SAINT-GOBAIN ABRASIVI S.P.A VIA PER CESANO BOSCONE 4 I-20094 CORSICO MILANO

TEL: +39 02 44 851

ITALY

FAX: +39 02 44 78 266

SAINT-GOBAIN ABRASIVES S.A. 190 RUE J.F. KENNEDY L-4930 BASCHARAGE GRAND DUCHE DE LUXEMBOURG

TEL: +352 50 401 1 FAX: +331 83 717 792

NO. VERT (FRANCE): 0800 906 903

SAINT-GOBAIN ABRASIFS, S.A. 2 ALLÉE DES FIGUIERS AIN SEBAÂ - CASABLANCA MOROCCO

TEL: +212 5 22 66 57 31 FAX: +212 5 22 35 09 65

SAINT-GOBAIN ABRASIVES BV **GROENLOSEWEG 28**

7151 HW EIBERGEN P.O. BOX 10 7150 AA EIBERGEN THE NETHERLANDS TEL: +31 545 466466 FAX: +31 545 474605

SAINT-GOBAIN ABRASIVES AS

KARIHAUGVEIEN, 89

0186 OSLO NORWAY

TEL: +47 63 87 06 00 FAX: +47 63 87 06 01

SAINT-GOBAIN HPM POLSKA SP. Z O.O. UL. NORTON 1, 62-600 KOŁO

62-600 KOŁO POLAND

TEL: +48 63 26 17 100 FAX: +48 63 27 20 401

SAINT-GOBAIN ABRASIVOS, L. DA

ZONA INDUSTRIAL. MATA I-SECTOR VIII, NO. 122

APARTADO 6050 4476 - 908 MAIA PORTUGAL.

TEL: +351 229 437 940 FAX: +351 229 437 949 SAINT-GOBAIN GLASS **BUSINESS UNIT ABRASIVI**

PUNCT DE LUCRU: LOC.VETIS, JUD.

SATU MARE 447355 STR. CAREIULUI 11

PARC INDUSTRIAL RENOVATIO

ROMANIA

TEL: +40 261 839 709 FAX: +40 261 839 710

SG HPM RUS 58, F. ENGELS STR. STROENIE 2 105082 MOSCOW RUSSIA

TEL: +74 955 408 355 FAX: +74 959 373 224

SAINT-GOBAIN ABRASIVES (PTY) LTD 2 MONTEER ROAD ISANDO 1600 P.O. BOX 67 SOUTH AFRICA TEL: +27 11 961 2000 FAX: +27 11 961 2184/5

SAINT-GOBAIN ABRASIVOS, S.A. CTRA. DE GUIPÚZCOA, KM. 7,5 E-31195 BERRIOPLANO (NAVARRA)

SPAIN

TEL: +34 948 306 000 FAX: +34 948 306 042

SAINT GOBAIN ABRASIVES AB GÅRDSFOGDEVÄGEN 18A 168 66 BROMMA • SVERIGE

SWEDEN

TEL: +46 8 580 881 00 FAX: +46 8 580 881 30

SAINT-GOBAIN INOVATIF MALZEMELER

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ALTAYÇEŞME MAH. ÇAMLI SOK. NO:21

ESAS OFISPARK KAT:9 34843 MALTEPE, İSTANBUL • TURKEY TEL: 0090-216-217 12 50

FAX: 0090-216-442 40 74

SAINT-GOBAIN ABRASIVES LTD.

UNICORN HOUSE UNIT 1, AMISON CLOSE

REDHILL BUSINESS PARK STAFFORD ST161WB UNITED KINGDOM TEL: +44 1785 279 553

FAX: +44 1785 213 487



Saint-Gobain Abrasifs 190 Rue J.F. Kennedy L-4930 Bascharage Grand Duche de Luxembourg

Tel: +352 50 4011 Fax: +331 83717792 no. vert (France) 0800 906 903 www.nortonabrasives.com/fr-fr