



# MAXIMA®

ONLY FOR REAL PROFESSIONALS



***Caromax 1800 - Operating Instructions***

***SERIAL NUMBER M***



**OPERATING INSTRUCTIONS****Diamond dry core drilling machines****Imprint**

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The national health and safety regulations and the requirements of this instruction manual are to be observed when using the machine.

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**Contents**

<b>1</b>	<b>About this instruction manual</b>	<b>4</b>
1.1	Important information	4
1.2	Symbols used in the instruction manual	4
<b>2</b>	<b>Safety Instructions</b>	<b>4</b>
2.1	Workplace safety	4
2.2	Electrical safety	5
2.3	Personal safety	5
2.4	Power tool use and care	5
2.5	Service	6
2.6	Safety Warnings for Drills	6
2.7	Additional safety warnings	6
2.7.1	Operating personnel requirements	6
2.7.2	Workplace safety	6
2.7.3	Electrical safety	7
2.7.4	Safety of people	7
2.7.5	Hazards when using and handling the power tool	8
2.7.6	Service / Maintenance / Repair	8
2.7.7	Explanation of the pictograms on the machine	9
<b>3</b>	<b>Technical Characteristics</b>	<b>10</b>
3.1	Technical specifications	10
3.2	EC Declaration of Conformity	11
3.3	Machine characteristics	11
3.4	Machine parts and controls	11
3.5	Intended use	11
<b>4</b>	<b>Before Starting Work</b>	<b>12</b>
<b>5</b>	<b>Operation and Control</b>	<b>12</b>
5.1	Tool Bit Assembly	12
5.1.1	Inserting a core drill bit shank	12
5.1.2	Inserting the dry diamond core drill bit on the core drill bit shank	13
5.1.3	Changing the centring drill bit	13
5.2	Connecting the dust extractor	13
5.3	Switching on the dry diamond drill and drilling	13
5.3.1	Drill centring hole	14
5.3.2	Drilling a box hole	14
5.4	Ending the drilling process	14
<b>6</b>	<b>Cleaning</b>	<b>15</b>
<b>7</b>	<b>Maintenance</b>	<b>15</b>
<b>8</b>	<b>Recommended uses for MAXIMA dry diamond core drill bits</b>	<b>15</b>
<b>9</b>	<b>Handling dry diamond core drill bits</b>	<b>16</b>
<b>10</b>	<b>Tools and Accessories</b>	<b>16</b>
<b>11</b>	<b>Disposal</b>	<b>16</b>
<b>12</b>	<b>Warranty</b>	<b>17</b>
	<b>Integration</b>	<b>23</b>

## 1 About this instruction manual

This instruction manual contains all important information necessary for safe handling of the dry diamond drill.  
The dry diamond drill is also referred to as the “tool” or “machine” in this instruction manual.

### Figure references

References to figures, which are located at the beginning of the instruction manual are displayed in the text with this symbol  (here, for example, the reference is to Figure number 1).

### 1.1 Important information



#### Read the instruction manual

Before starting any work with or on the tool, this instruction manual, the safety instructions and the warnings must be read through carefully and observed.

**Always keep this instruction manual together with the equipment.**



**An approved half-mask with filter must be worn!**

### 1.2 Symbols used in the instruction manual



#### DANGER

“**DANGER**” indicates an imminent hazard, which will result in immediate death or severe physical injuries.

→ This arrow indicates appropriate measures to avert the pending hazard.



#### WARNING

“**WARNING**” indicates an imminent hazard, which could result in death or severe physical injuries.

→ This arrow indicates appropriate measures to avert the pending hazard.



#### CAUTION

“**CAUTION**” indicates an imminent hazard, which can result in minor or moderate physical injuries.

→ This arrow indicates appropriate measures to avert the pending hazard.



#### NOTE

“**NOTE**” indicates possible property damage, gives use recommendations and helpful tips.

## 2 Safety Instructions

### 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 mainsoperated (corded) power tool or battery-operated (cordless) power tool.*

### 2.1 Workplace safety

- Keep work area clean and well lit.**  
*Cluttered or dark areas invite accidents.*
- 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.*
- Keep children and bystanders away while operating a power tool.**  
*Distractions can cause you to lose control.*

## 2.2 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 and 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.*

## 2.3 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.*

- 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.*

## 2.4 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.*

## 2.5 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.*

## 2.6 Safety Warnings for Drills

- **Wear ear protectors when impact drilling.**  
*Exposure to noise can cause hearing loss.*
- **Use auxiliary handle(s), if supplied with the tool.**  
*Loss of control can cause personal injury.*
- **Hold power tool by insulated gripping surfaces, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.**  
*Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*

## 2.7 Additional safety warnings

### 2.7.1 Operating personnel requirements

- **People below the age of 16 may not use the machine.**
- **The operating personnel must be familiar with the content of this instruction manual.**

### 2.7.2 Workplace safety

- **Secure the work area also behind openings and cutouts.**  
*Unsecured work areas can endanger you and other people.*
  - **Watch out for open and concealed electricity cables, and water and gas pipes. Use suitable detectors to find concealed utility pipes and cables, or contact the local utility company for advice.**  
*Contact with electricity cables can cause fires and an electric shock. Damage to a gas pipe can cause an explosion. Penetrating a water pipe causes damage to property or could cause an electric shock.*
  - **Do not use the power tool near flammable materials.**  
*Sparks could ignite these materials.*
  - **Avoid causing situations where other people can stumble or trip.**  
*Tripping over cables can cause serious injuries.*
  - **Secure the workpiece.**  
*A workpiece securely held in clamping devices or a vice is more safely held than in the hand.*
  - **Avoid dust accumulation in the workplace.**  
*Dusts can easily ignite.*
  - **Ensure adequate ventilation in closed rooms.**  
*Risk due to dust and impaired vision.*
  - **Dust from materials such as coatings containing lead, several types of wood, minerals and metals can be harmful to health and cause allergic reactions, respiratory diseases and/or cancer.**  
*Asbestos-containing material may only be machined by specialists.*
    - ▶ *Wherever possible, use a dust extractor suitable for the material you are working on (e.g. a special MAXIMA dust extractor).*
    - ▶ *Ensure the workplace is properly ventilated.*
    - ▶ *We recommend wearing a face mask respirator with filter class P2 or P3 (to EN 149:2001).*
- Observe the relevant regulations in your country for the materials to be machined.*

### 2.7.3 Electrical safety

- **Before each use, check the power tool, connection cable and plug for damage.**  
*Damaged equipment is dangerous, and no longer safe to use.*
- **Note the mains voltage! The power source voltage must match the details given on the rating plate of the power tool.**
- **If using the power tool with mobile generators, loss of power or atypical behaviour on switching on is possible.**
- **Do not use the power tool if the cable is damaged. Do not touch the damaged cable and disconnect the mains plug if the cable is damaged while you are working.**  
*Damaged cables increase the risk of an electric shock.*
- **Only use extension cables suitable for the machine's power consumption and which have a minimum core cross-section of 1.5 mm<sup>2</sup>. If you use a cable drum, always completely unwind the cable.**  
*The rolled up cable can heat up and start to burn.*
- **Regularly clean the ventilation slots of your power tool by blowing it out. Never use liquids. Never insert screwdrivers or any other objects into the ventilation slits. Do not cover the ventilation slits.**  
*The motor fan draws dust into the housing and a large accumulation of metal dust can cause electrical hazards.*
- **External electromagnetic interference (e.g. mains voltage fluctuations, electrostatic discharges) can cause the power tool to switch off automatically.**  
*In this case, switch off the power tool and then switch it back on again.*
- **Do not use any insert tools which require liquid coolant.**  
*The use of water or other liquid coolants could result in an electric shock.*

### 2.7.4 Safety of people

- **Wear personal protective equipment and, depending on the work situation, use:**



**Full-face protection, eye protection or safety glasses/goggles, hard hat and special apron**

*Protect yourself against debris thrown up by wearing a hard hat, safety goggles or face protection and wear an apron, if necessary.*



#### Hearing protection

*The typical A-weighted sound pressure level of this power tool is over 85 dB (A) while working with the tool. If you are exposed to loud noise for lengthy periods, there is a risk of hearing damage or even hearing loss.*



#### Anti-vibration safety glove

*At a release value A (8) for arm-hand vibrations of over 2.5 m/s<sup>2</sup>, the wearing of anti-vibration safety gloves is recommended.*



#### Non-slip safety footwear



#### Dust mask, half-face filter mask or face mask respirator

*Inhaling fine mineral dust can cause health damage. We recommend wearing a face mask respirator with filter class P2 or P3 (to EN 149:2001). Working with dry diamond core drill bits is a grinding process in which extremely fine dust is produced. When cutting materials containing quartz there is a very high risk of silicosis; in this case the machine should only be used in conjunction with a suitable dust extractor (e.g. a special MAXIMA S.p.A. dust extractor).*

- **Ensure other people keep a safe distance from your work area. Any person entering the work area must be wearing personal protective equipment.**  
*Broken pieces of the workpiece or broken insert tools can fly off and cause injuries, even outside the immediate work area.*
- **Keep the mains power lead away from rotating insert tools.**  
*If you lose control of the tool, the mains power lead can be cut or caught and your hand or arm can be pulled into the rotating insert tool.*
- **Never put down the power tool until the insert tool has come to a complete standstill.**  
*The rotating insert tool can come into contact with the surface on which the power tool is placed, which could cause you to lose control of the power tool.*
- **Do not leave the power tool running while you are carrying it.**  
*Your clothing can get caught by inadvertent contact with the rotating insert tool and the insert tool can drill into your body.*
- **If the machine is switched on, do not direct insert tools towards your own or other people's bodies. Do not touch or take hold of the tools.**

### 2.7.5 Hazards when using and handling the power tool

- **If the machine is used for hand-held drilling, always hold both handles firmly when switching on and while working with the machine.** (The additional handle must be tightly screwed onto the drill!). When switching on and while working with the machine, expect reaction torques (e.g. due to sudden jamming or breakage of the insert tool).
- **Do not use any accessories, which have not been especially provided and recommended for this power tool by the manufacturer.**  
*Just because you can attach the accessories to your power tool is not a guarantee of safe use.*
- **The approved speed of the insert tool must be at least as high as the maximum speed given on the power tool.**  
*Accessories which rotate faster than approved can break and fly off the tool.*
- **Change insert tools carefully and only use the mounting tools provided, if they are in perfect condition. Disconnect the mains plug before changing the insert tool.**  
*Use of the mounting tool provided prevents damage to the power tool and insert tool.*
- **Never use damaged insert tools. Before each use, check insert tools for splinters and cracks. If the power tool or insert tool is dropped or falls, check whether it is damaged, or use an undamaged insert tool. If you have checked and inserted the insert tool, keep yourself and other people nearby outside the plane of the rotating insert tool and let the power tool run at maximum speed for one minute.**  
*Most damaged insert tools break during this test period.*
- **Do not expose power tools to extreme heat or cold.**  
*Mechanical and electrical damage can occur during extreme heat and/or cold.*
- **Allow the insert tools, tool holders and other parts cool in the immediate vicinity of the work area after use.**  
*The equipment can be very hot after use. Do not touch or grip the parts. Risk of injury.*

- **Additional signs or other, non Maxima specific parts may not be screwed or riveted onto the motor, handle, gearbox or protective housing.**  
*This could damage the power tool and cause malfunctions to occur.*
- **Avoid unnecessary noise emissions.**
- **Note and follow the safety and work instructions for the accessories used.**

### 2.7.6 Service / Maintenance / Repair

- **If the power tool is dropped or becomes wet, have it checked.**  
*A possibly damaged power tool is dangerous and no longer safe to operate. Before using the power tool again, have it checked by our customer service or an authorised service centre of Maschinenfabrik MAXIMA S.p.A.*
- **Repair and maintenance work may only be carried out by an authorised workshop of Maschinenfabrik MAXIMA S.p.A.**  
*Otherwise, all liability and warranty claims against Maschinenfabrik MAXIMA S.p.A. expire.*
- **Ensure that original MAXIMA spare parts and original MAXIMA accessories only are used when needed.**  
*Original parts are available from authorised dealers. Use of non original parts can cause damage to the machine and an increased risk of accidents.*
- **Regular servicing by MAXIMA S.p.A. or a servicing and repair company authorised by us is specified.**  
*Many accidents are caused by poorly serviced and maintained power tools.*



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### 2.7.7 Explanation of the pictograms on the machine

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The CE mark on a product means that the product conforms with all the applicable European regulations and has been subjected to the prescribed conformity assessment procedures.



#### **Protection class II equipment**

The machine is insulated in such a way that it has no exposed metal parts that could be live in the event of a fault. It does not have a protective earth conductor.



#### **Environmentally friendly disposal of waste equipment**

Waste equipment contains valuable recyclable materials which should be reused or recycled. Batteries, lubricants and similar materials must not be allowed to get into the environment. Therefore, please dispose of waste equipment through suitable collection systems.



#### **Wear hearing protection!**

The typical A-weighted sound pressure level of this power tool is over 85 dB (A) – wear ear protectors when working with the tool!



#### **Read the instruction manual!**

Before starting any work with or on the machine, this instruction manual, the safety instructions and the warnings must be read through carefully and observed.

### 3 Technical Characteristics

#### 3.1 Technical specifications

Dry diamond drill type		CAROMAX 1800
Manufacturer		MAXIMA S.p.A.
Operating voltage (V/Hz)		~230 / 50 / 60
Power consumption (watt)		1800
Protection class		□ / II
Speed (min <sup>-1</sup> )		1650
Core drill bit diameter, hand-guided (mm)		32 – 205
Impact frequency (imp)		33000
Bit holder		M18
Weight (kg) <sup>1)</sup>		5.2
Speed electronics		Yes
Sound measurement <sup>2)</sup> K = 3 dB		
L <sub>pA</sub> (sound pressure) dB (A)		92
L <sub>WA</sub> (sound power) dB (A)		99
Vibration measurement: <sup>3)</sup> K = 1.5 m/s <sup>2</sup>		
Front handle (1) <b>1</b> m/s <sup>2</sup>		
Rear handle (2) <b>1</b> m/s <sup>2</sup>		5.5

<sup>1)</sup> Weight according to EPTA procedure 01/2003.

<sup>2)</sup> Measured values for noise determined according to EN 60745. **Wear hearing protection!**

<sup>3)</sup> Total vibration values (vector sum in three directions) determined according to EN 60745

The vibration emission values given in this instruction manual have been measured according to a method of measurement standardised in EN 60745 and can be used for comparison between power tools. They are also suitable for a preliminary estimate of the vibratory stresses.

The vibration emission values given represent the main applications of the power tool. If the power tool is used for other applications, with different insert tools or are insufficiently serviced, this can significantly increase the vibratory stresses over the whole work period. For a precise estimate of the vibration emission values, the times during which the tool is switched off or is running but not actually in use should also be taken into account. This can reduce the vibration stresses over the whole work period significantly.



#### WARNING

Health risk due to vibrations.

- Additional safety measures should be taken to protect the user, e.g. wearing anti-vibration protective gloves, correct maintenance of power tools and insert tools, keeping hands warm and good organisation of work sequences.

### 3.2 EC Declaration of Conformity



We herewith declare, with sole responsibility, that this product conforms to the following standards or normative documents:

EN 60745

in accordance with the provisions of the Directives 2006/42/EC; 2014/30/EU; 2011/65/EU

The head of development is authorised to write the technical documents.

These are available from:

MAXIMA S.p.A.

Via Matteotti, 6 - 42028 Poviglio (RE)

Presidente  
p.i. Mirco Dall'Olio

Poviglio, 01.09.2014

### 3.3 Machine characteristics

The machines are equipped with specially developed electronics with soft start. It monitors the speed and the green / red indicator lights (items 1 and 2, see Figure 1) help to achieve the most favourable work progress and therefore tool-protecting working conditions.

Visual display

Green: Speed for optimum drilling performance

Green / red: Speed within the limit range

Red: Speed too low – stopping

If this warning signal is ignored, i.e. the feed is not reduced, the electronics switch off on overload. After the dry diamond core drill bit has stopped, remove it from the drill hole. The machine can be restarted immediately.

The machine is also equipped with a selectable soft impact mechanism. It protects the diamond segments of the core drill bits, allows faster working and carries the drill dust away from the diamond segments, which in turn enables a longer tool life for the diamond core bits.

### 3.4 Machine parts and controls

(See Figure 1)

- 1 Green LED
- 2 Red LED
- 3 ON / OFF switch
- 4 Handle
- 5 Connection cable
- 6 Additional handle (can be mounted for left and right-handed persons)
- 7 Open-ended spanner size 22 / 24
- 8 Nozzle for dust extractor hose connection
- 9 Extraction dome with core drill bit shank and resettable centring drill bit
- 10 MAXIMA dry diamond core drill bit Ø 82 mm
- 11 Soft impact feature ON / OFF switch
- 12 Outside thread (M16) of the output shaft
- 13 Output shaft

### 3.5 Intended use

The CAROMAX 1800 dry diamond drill listed in this instruction manual is approved only for dry drilling in masonry (clay bricks, lime-sand blocks, undressed stone) and concrete.

The CAROMAX 1800 dry diamond drill may **not** be used for wet drilling.

The following materials may **not** be drilled: wood, metal and glass, etc.

**Observe the relevant regulations in your country for the materials to be machined and extraction.**

## 4 Before Starting Work

To ensure safe working with the dry diamond drill, the following points must be observed before each use:

- Read through all safety instructions and warnings in this instruction manual.
- Wear protective clothing such as hard hat, face protection or safety goggles, safety gloves and if necessary an apron.
- The voltage on the rating plate must be identical with the mains voltage.
- Before each use, check the machine, connection cable and plug, tight fit of the core drill bit shank (with or without extraction dome) and the dry diamond core drill bit.
- The additional handle must be tightly screwed onto the machine.
- Only use the dry diamond core drill bits recommended by MAXIMA S.p.A. for the respective use (see selection table with recommended uses on page 15).



### NOTE

The dry diamond core drill bit can be damaged irreparably by overheating or jamming in the core drill hole.

If harmful dust is produced during the work, a suitable dust extractor must be connected to the dry diamond drill (e.g. MAXIMA special dust extractor).

## 5 Operation and Control

### 5.1 Tool Bit Assembly

#### 5.1.1 Inserting a core drill bit shank

Before inserting the dry diamond core drill bits, either

- **2** a core drill bit shank with resettable centring drill bit or
- **3** a core drill bit shank with extraction dome and resettable centring drill bit must be screwed onto the dry diamond drill.



### DANGER

Risk of injury due to electric shock.

- ➔ Disconnect the mains plug before carrying out any work on the dry diamond drill.



### CAUTION

Risk of injury due to hot drill bits.

- ➔ The drill bits fitted can get hot if used for a lengthy time. Wear safety gloves when changing the drill bits or allow the drill bits to cool first.

#### Inserting a core drill bit shank without extraction dome

**2** Screw the core drill bit shank (4) with resettable centring drill bit (5) on the output shaft (1). Hold the output shaft (1) in position with an open-ended spanner size 22 and tighten the core drill bit shank (4) by turning it clockwise with a second open-ended spanner, size 24.

#### Inserting a core drill bit shank with extraction dome

**3** If the core drill bit shank (4) with extraction dome (3) and with resettable centring drill bit (5) is used, the extraction dome (3) must also be pushed towards the machine, so that the second open-ended spanner size 24 can grip the core drill bit shank (4); tighten by turning clockwise.

### 5.1.2 Inserting the dry diamond core drill bit on the core drill bit shank

Select the dry diamond core drill bit according to the required drillhole diameter and the material to be drilled.

#### Inserting a dry diamond core drill bit on the core drill bit shank without extraction dome

**2** Screw a dry diamond core drill bit (6) onto the core drill bit shaft (4). Hold the output shaft (1) in position with an open-ended spanner size 22 and tighten the dry diamond core drill bit (6) by turning it clockwise with a second open-ended spanner, size 24.

#### Inserting a dry diamond core drill bit on the core drill bit shank with extraction dome

**3** If the dry diamond core drill bit (6) is used on the core drill bit shank (4) with extraction dome (3), the extraction dome (3) must also be pushed towards the machine, so that the second open-ended spanner size 24 can grip the dry diamond core drill bit (6); tighten by turning clockwise.



#### NOTE

Check the fit and condition of the dry diamond core drill bit. A damaged dry diamond core drill bit may not be used and must be replaced immediately.

### 5.1.3 Changing the centring drill bit

A blunt or broken off centring drill bit must be replaced.

**2/3** Push the centring drill bit (5) with the knurled sleeve (2) towards the front and lock by turning the knurled sleeve (2). Hold onto the output shaft (1) with an open-ended spanner (size 22), use pliers to unscrew and remove the centring drill bit (5) anti-clockwise and replace with a new centring drill bit.

## 5.2 Connecting the dust extractor

### Connecting the dust extractor to the core drill bit shank with extraction dome

- Check the dust extractor to ensure that it is working properly.
- **4** Push the dust extractor hose (3) firmly onto the nozzle (2) of the extraction dome (1).



#### NOTE

The nozzle (2) is designed to fit the suction hose (3) of a MAXIMA special dust extractor.

**4** When the suction hose (3) is cold, a good deal of effort is required to push it onto the nozzle (2) of the extraction dome (1).

### Dust extraction for dry diamond core drill bits with 1 1/4" connection

If dry diamond core drill bits with 1 1/4" connection are used, the dust is extracted using the MAXIMA suction rotor (available as accessory, see MAXIMA catalogue in combination with a MAXIMA special dust extractor).

## 5.3 Switching on the dry diamond drill and drilling



#### NOTE

The dry diamond core drill bit can be damaged irreparably by overheating or jamming in the core drill hole.

If harmful dust is produced during the work, a suitable dust extractor must be connected to the dry diamond drill (e.g. MAXIMA special dust extractor).

Switch the drill's soft impact feature on or off, depending on the material to be drilled:

- Drilling **with soft impact** feature is recommended for drilling in concrete and other hard materials.
- Drilling **without soft impact** feature is recommended for drilling in abrasive materials and materials with a lower hardness.

### Switching on / off the soft impact feature

- **5 Switch on soft impact feature:**  
Press the side of the soft impact switch marked **green** (1).
- **6 Switch off soft impact feature:**  
Press the side of the soft impact switch marked **black** (2).



### 5.3.1 Drill centring hole

- **7/8** Push the centring drill bit (1) with the knurled sleeve (3) towards the front (A) and lock by turning anti-clockwise (B).
- Switch on the dust extractor connected to the extraction dome (2) (see "Chap. 5.2 Connecting the dust extractor").
- Always hold on tight to both handles of the dry diamond drill with both hands.
- **7/8** Move the centring drill bit (1) into the required position on the wall.
- **11** Press the ON / OFF switch (1) to switch on the dry diamond drill.
- **7/8** Drill until the diamond dry core drill bit is centred approx. 5 – 10 mm deep in the wall.
- **9/10** Switch off the machine and after it has stopped unlock the dry diamond core drill bit knurled sleeve (1) by turning it clockwise (A) and allow it to snap back (B).

### 5.3.2 Drilling a box hole

- Leave the dust extractor connected to the extraction dome switched on.

#### NOTE

The dry diamond core drill bit can be damaged irreparably by overheating or jamming in the core drill hole.  
The feed can only be as high as the diamond dry core drill bit can wear away the material. Therefore, do not exert too large a force on the dry diamond core drill bit and avoid canting.

- Feed the dry diamond core drill bit into the pre-centred hole.
- Switch on the dry diamond drill.
- Apply a light, uniform feed pressure and continue drilling to the required depth.
- Pull back the dry diamond core drill bit a little now and again to remove the drill dust.
- **11** If the feed is too fast, the red LED (2) lights up. Then, reduce the feed immediately until the green LED (3) lights up again.  
If this warning signal is ignored, i.e. the feed is not reduced, the electronics switch off the dry diamond drill on overload.  
The drilling process can then be restarted and continued as described above.

#### NOTE

Blunt dry diamond core drill bits can be resharpened if necessary using MAXIMA whetstones or other suitable materials.  
Note and follow the information and instructions on handling dry diamond core drill bits (see page 36).

### 5.4 Ending the drilling process

#### NOTE

To avoid damage to the diamond segments, do not switch off the dry diamond drill until the rotating dry diamond core drill bit has been completely removed from the masonry.

- **11** The dry diamond drill switches off as soon as the ON / OFF switch (1) is released.

#### Breaking out the drill core

#### NOTE

The dry diamond core drill bit can be damaged irreparably if it is jammed in the core drill hole.  
Never use the dry diamond core drill bit to break out the drill core!

- **12** Use a suitable tool to break out the drill core in the wall.

## 6 Cleaning



### DANGER

Risk of injury due to electric shock.

- Disconnect the mains plug before carrying out any work on the dry diamond drill.

The machine must be cleaned after each drilling work session.

- Carefully clean the machine and blow out with compressed air.
- Ensure handles are dry and free from grease.

## 7 Maintenance



### DANGER

Risk of injury due to electric shock.

- Disconnect the mains plug before carrying out any work on the dry diamond drill.

The dry diamond drill must be serviced at least once a year. Further, servicing will be necessary depending on the wear of the carbon brushes. Only servicing and repair firms authorised by MAXIMA may carry out maintenance of the machine. Also ensure that original MAXIMA spare parts and original MAXIMA accessories only are used.

## 8 Recommended uses for MAXIMA dry diamond core drill bits

### LASER ORO SPIRAL Tabella Tecnica

Cemento / Laterizi / Tegole	    
Calcestruzzo poco armato	    
Calcestruzzo molto armato	    
Graniti / Pietre Naturali / Porfidi	  
Marmi	
Refrattari	 
Arenarie / Piastre Ghiaiano Lavato	 
Ceramica bicottura	
Ceramica monocottura	
Gres Porcellanato / Klinker	
Cemento Fresco	
Asfalto	
Velocità di taglio	    
Durata media	   
sufficiente  medio  buono   ottimo    super   	

### ASPIRAZIONE 300 Tabella Tecnica

Cemento / Laterizi / Tegole	    
Calcestruzzo poco armato	    
Calcestruzzo molto armato	    
Graniti / Pietre Naturali / Porfidi	  
Marmi	
Refrattari	 
Arenarie / Piastre Ghiaiano Lavato	
Ceramica bicottura	
Ceramica monocottura	
Gres Porcellanato / Klinker	
Cemento Fresco	
Asfalto	
Velocità di taglio	    
Durata media	   
sufficiente  medio  buono   ottimo    super   	

## 9 Handling dry diamond core drill bits

- Always use and store dry diamond core drill bits in accordance with the manufacturer's instructions.
- Too soft diamond segments:
  - ▶ Dry diamond core drill bits wear too quickly at very high removal rate.  
**Remedy:** The material to be machined requires dry diamond core drill bits with a harder bond.
- Too hard diamond segments:
  - ▶ The diamond grains become blunt and do not break out of the bond. The dry diamond core drill bits no longer have any cutting power.  
**Remedy:** The material to be machined requires dry diamond core drill bits with a softer bond.
- If extraction is not used during machining, the dry diamond core drill bit rubs increasingly against "soft" drill dust. The core bit segments heat as a result, they become soft and the diamond splinters sink into the substrate. The dry diamond core drill bit becomes less sharp. The cutting performance reduces and the user increases the pressure on the dry diamond core drill bit, which in turn increases the effect. After drilling a few holes, the core bit segments are "glazed" or they tear off at the least resistance in the stone and the dry diamond core drill bit must be replaced.
- Sharpening the dry diamond core drill bit on the MAXIMA professional whetstone or on a soft stone between drilling enables sunken in diamonds to be re-released and the dry diamond core drill bit is sharp again.
- It is necessary to cool the drill bit segments through extraction to extend the life of the dry diamond core drill bit and to keep the cutting speed high.
- Excessive drilling pressure can cause material fatigue in the base metal and therefore the formation of cracks. Before use, ensure that there are no cracks in the dry diamond core drill bit.
- **11** The dry diamond core drill bit should plunge into the wall only after the working speed has been reached – green LED (3) lights up.
- After approx. 2 minutes of cutting time the machine should be run with no load for 10 seconds, so that the dry diamond core drill bit can cool.

## 10 Tools and Accessories

- **MAXIMA** dry diamond core drill bits for cutting boxes for all kinds of different areas of use (see "Chap. 8 Recommended uses for MAXIMA dry diamond core drill bits").
  - ▶ in hard stone (Vacuum 300)
    - Ø 68 mm
    - Ø 82 mm
  - ▶ in soft stone (Gold Spiral and Vacuum 300)
    - Ø 68 mm
    - Ø 82 mm
  - ▶ in sand-lime blocks (Gold Spiral and Vacuum 300)
    - Ø 68 mm
    - Ø 82 mm
  - ▶ in reinforced concrete (Gold Spiral and Vacuum 300)
    - Ø 68 mm
    - Ø 82 mm
- **MAXIMA** extraction dome with core drill bit shank and resettable centring drill bit, holder M18/M16
- **MAXIMA** replacement centring drill bit
- MAXIMA suction rotor M18 to 1¼"
- MAXIMA adapter for suction rotor M18 to 1¼"
- MAXIMA special dust extractor
- Professional whetstone
- MAXIMA plastic transport case

## 11 Disposal

Recycle the machine and its packaging in an environmentally friendly way in accordance with the provisions applicable in your country.



## 12 Warranty

The power tools placed on the market and distributed by MAXIMA S.p.A. take into account the regulations of the laws concerning engineering tools and equipment to protect against risks to health and safety. We guarantee the perfect quality of our products and accept the costs of subsequent repairs by replacing the damaged parts or replacement with a new tool in case of design, material and/or manufacturing errors within the warranty period. The warranty period for commercial use is 12 months.

The following are prerequisite for a warranty claim due to design, material and/or manufacturing errors:

### 1. Proof of purchase and compliance with the instruction manual

A mechanically produced original copy of a purchase voucher must always be submitted in order to make a warranty claim. It must contain the complete address, date of purchase and type designation of the product.

The instruction manual for the respective machine and the safety instructions must have been complied with.

Damage due to faulty operation cannot be recognised as a warranty claim.

### 2. Correct deployment of the machine

MAXIMA's products are developed and produced for specific purposes.

A warranty claim cannot be acknowledged in the event of failure to comply with the intended use in accordance with the instruction manual, misuse or use for another purpose or use of unsuitable accessories. The warranty does not apply if the machine is deployed in continuous and piece-work operation or for rental and hire purposes.

### 3. Compliance with servicing intervals

Regular servicing by us or a servicing and repair firm authorised by us is prerequisite for warranty claims. Servicing is specified for when the carbon brushes are worn, however at least once a year.

The machine must be cleaned in accordance with the provisions of the instruction manual. All warranty entitlements expire in case of intervention/tampering with the machine by third parties (opening the machine).

Servicing and cleaning work are not generally covered by the warranty.

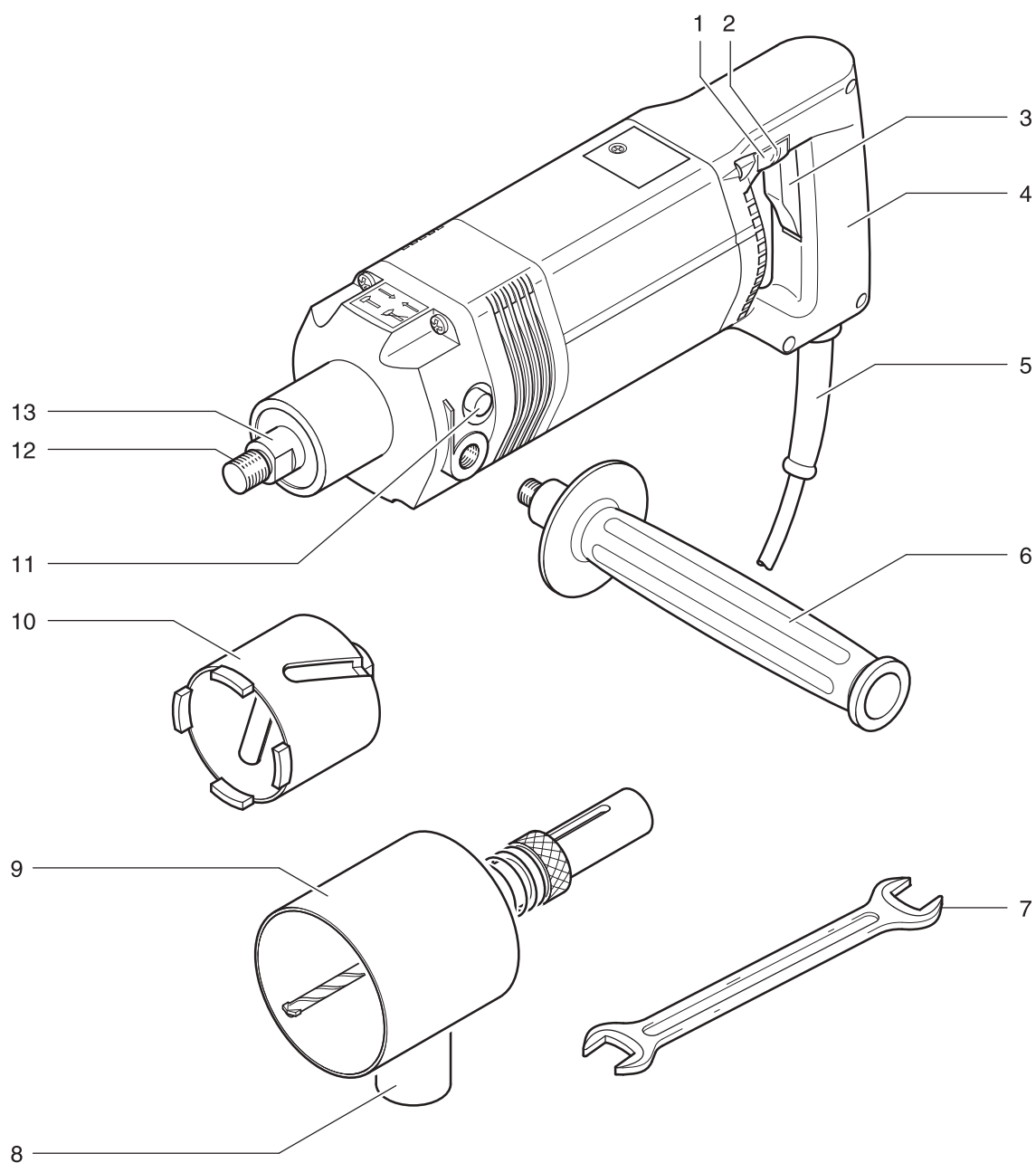
### 4. Use of original MAXIMA spare parts

Ensure that original MAXIMA spare parts and MAXIMA accessories only are used. They are available from authorised dealers. The type and quantity of grease are to be used according to the valid grease list. Use of non-original parts can cause consequential damage to the machine and an increased risk of accidents. Dismantled, partly dismantled machines and machines repaired with third party spare parts are excluded from the warranty.

### 5. Wearing parts

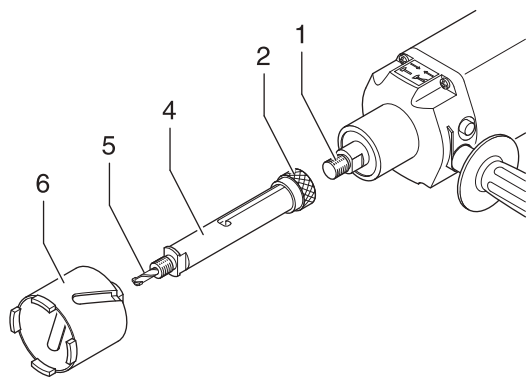
Certain components are subject to use-induced wear or normal wear and tear caused by use of the respective power tool. These components include, among other things, carbon brushes, ball bearings, switches, power cords, seals, shaft sealing rings. Wearing parts are not covered by the warranty.

1



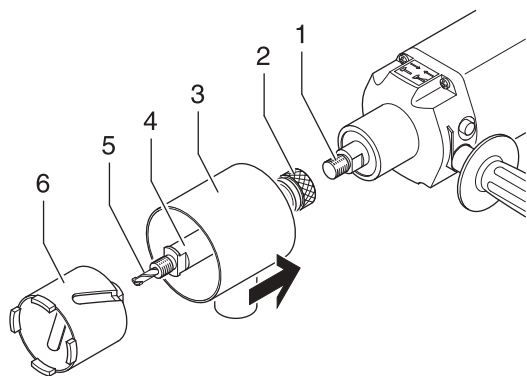


2



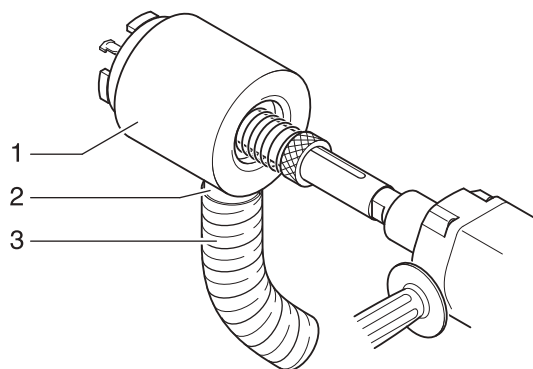
Core drill bit shank **without** extraction dome

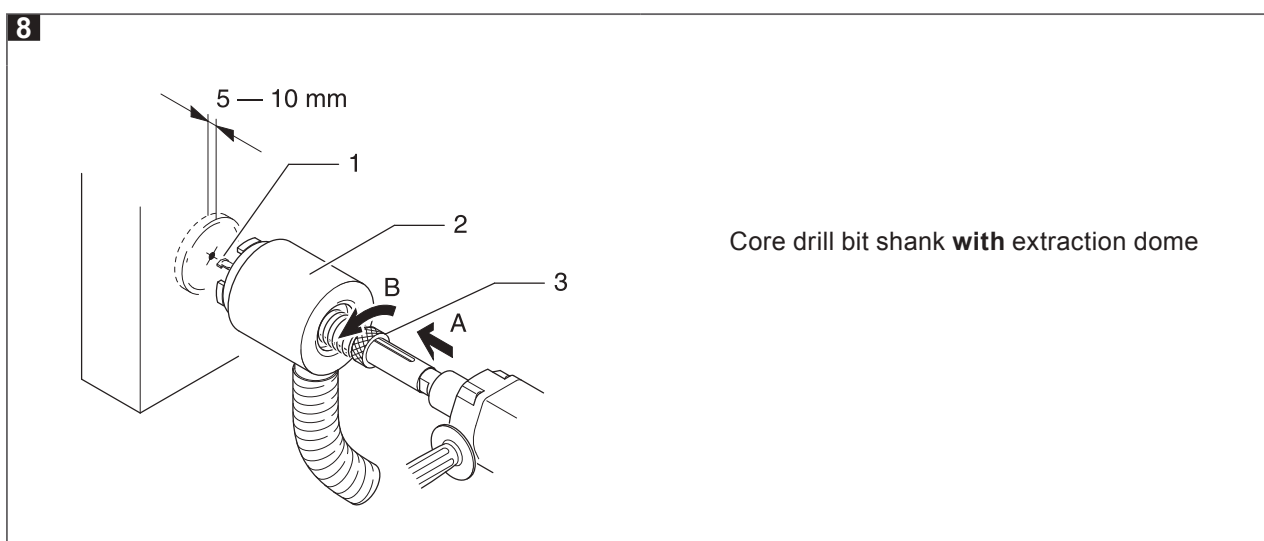
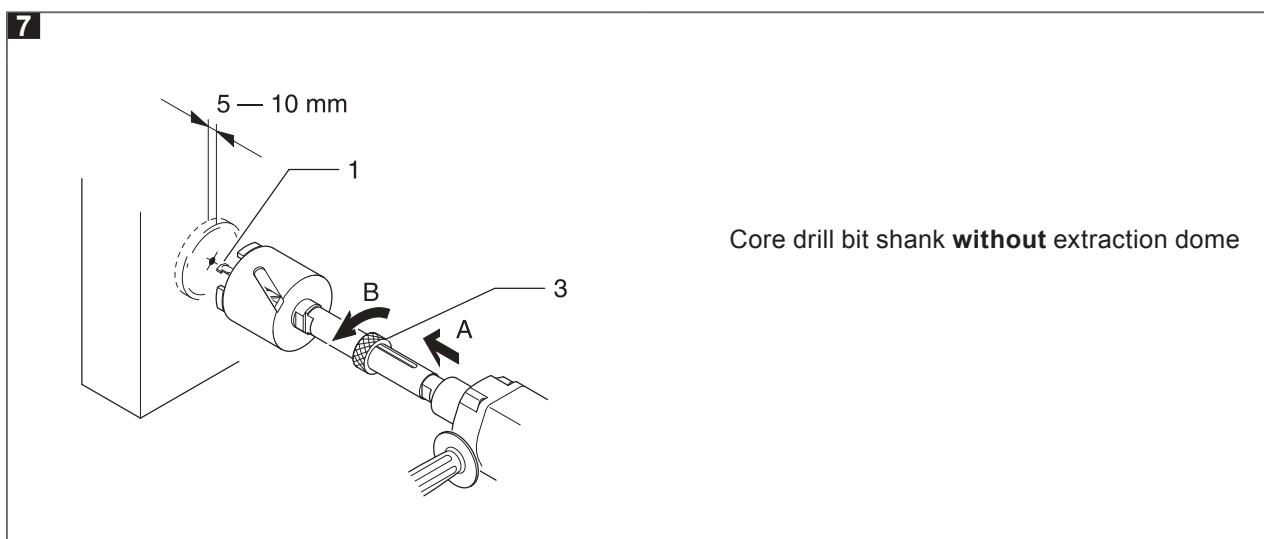
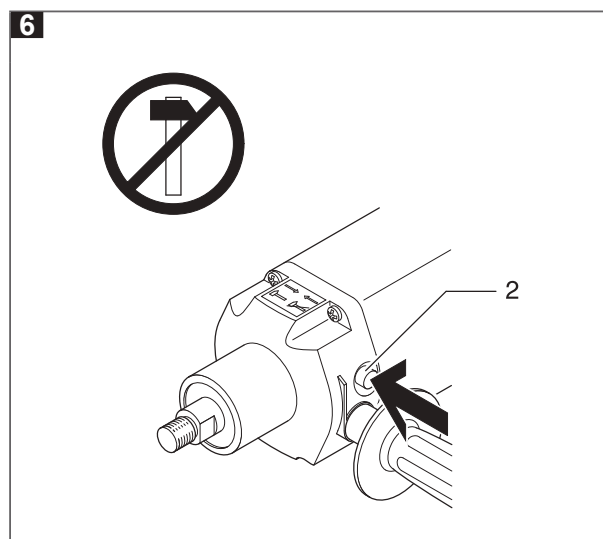
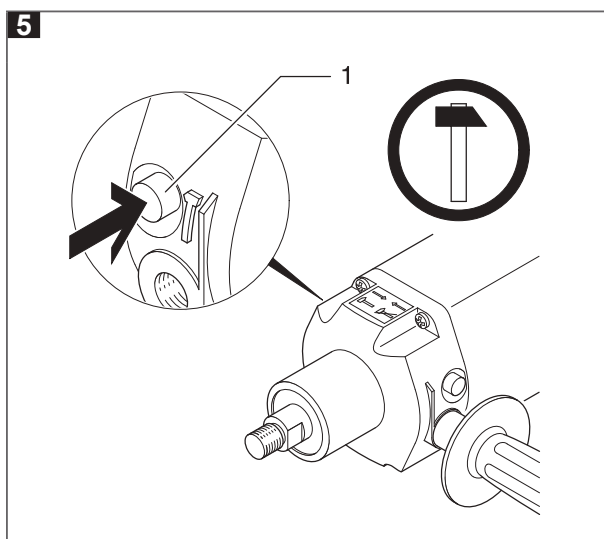
3



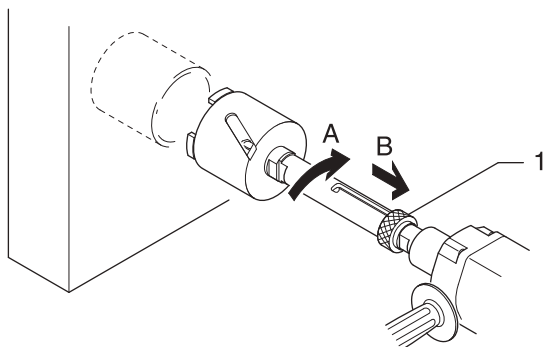
Core drill bit shank **with** extraction dome

4



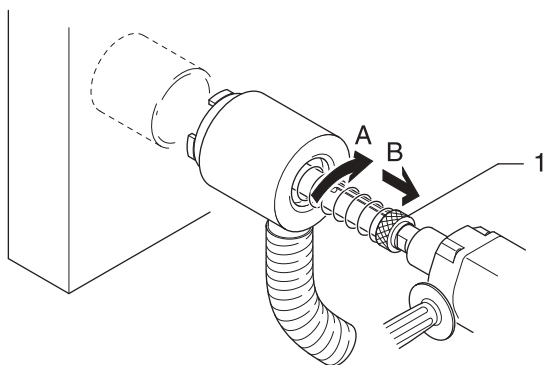


9



Core drill bit shank **without** extraction dome

10

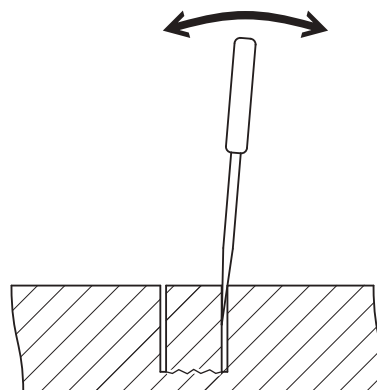


Core drill bit shank **with** extraction dome

11



12



POS.	COD.	DESCRIPTION
1	CMA65870	MOTOR SHAFT
2	CMA22475	SPHERE 4 DIN5401
3	CMA66571	CYLINDRICAL SPINDLE 4X18 GEH
4	CMA65904	SECURITY RING JL 42
5	CMA65920	SPACING RING J42 29X42X3
6	CMA65912	NILOS RING 61905 JV 28X42X0,3
7	CMA29744	BEARING 6905 LLU
8	CMA37705	RING OR 18X3,5
9	CMA52951	SECURITY RING SEEGER SW27
10	CMA38794	SECURITY RING J42X1,75 DIN472
11	CMA52852	SHAFT SEALING 42X30X7 DIN3760
12	CMA52878	IMPACT SHAFT
13	CMA52886	IMPACT HOUSING
14	CMA65888	GEAR HOUSING
15	CMA33019	BEARING 6203
16	CMA50716	SECURITY RING J40 DIN472
17	CMA51375	GEAR 35 TEETH
18	CMA59758	PERCUSSION INSERTION SPINDLE
19	CMA59774	RED CAP
20	CMA60749	O-RING 13X2
21	CMA59782	GREEN CAP
22	CMA50260	SELF-THREADING SCREW 4,8X100 DIN7981GAL
24	CMA22400	BEARING 629
25	CMA76463	COUNTER-SHAFT 21 D COMPL
27	CMA12724	SEALING
28	CMA22103	CYLINDRICAL SPINDLE 4X16 DIN 7
29	CMA65078	MOTOR COVER
30	CMA37127	PINION 5 D
31	CMA42713	ROLL BEARING 6201 2RS
33	CMA37747	ARMATURE 230 V.
34	CMA5116	BALANCE RING
35	CMA22681	ROLL BEARING 6000-2RS
36	CMA41418	SPACER
37	CMA15313	LATERAL HANDLE 210 MM
38	CMA36137	SCREW 3,9X80 DIN7981 GAL
39	CMA45856	STATOR 230 V.
40	CMA45443	MOTOR CASE
42	CMA45872	CARBON BRUSH
43	CMA32508	CARBON BRUSH HOLDER A2
44	CMA45625	COVER FOR CARBON BRUSH HOLDER
44	CMA7498	COVER FOR CARBON BRUSH HOLDER WITH BUBBLE
45	CMA21030	SCREW 3,9X13 DIN7981 GAL
47	CMA25221	CABLE PROTECTION
48	CMA24273	WIRE
49	CMA17913	CABLE DOG
50	CMA20990	SELF-THREADING SCREW 3,9X16 DIN7981 GAL
51	CMA44941	SELF-THREADING SCREW 4,8X38 DIN7981 GAL
52	CMA42721	SELF-THREADING SCREW 3,9X16 DIN7981 GAL
53	CMA09663	ELECTRONIC BOARD
54	CMA24265	SWITCH
55	CMA32607	COMPLETE HANDLE CPL.
56	CMA49684	HANDLE-BAR BASE
61	CMA61556	SOFT PERCUSSION WARING PLATE
62	CMA66167	MODEL PLATE
63	CMA31088	MAXIMA PLATE

**SUPPLEMENT TO USE AND MAINTENANCE MANUAL**  
**TO EXTEND THE CORE BIT RANGE FROM 32 mm TO 205 mm,**  
**ROTATING HEAD (SUCTION) AND NOT**



It is the customer's responsibility to ensure that, in the event that this document undergoes changes by MAXIMA SpA, only updated versions of the Manual are actually present at the point of use.



THE OFFICIAL LANGUAGE CHOSEN BY THE MANUFACTURER IS ITALIAN.  
 No liability is accepted for translations into other languages that do not conform to the original meaning.

## Index

<b>0</b>	<b>Foreword .....</b>	<b>25</b>
1	Purpose of the supplement to the use and maintenance manual .....	25
2	Recipients .....	25
3	Preservation of the supplement to the use and maintenance manual .....	25
4	Updating the use and maintenance manual and supplement .....	25
5	How to read the supplement to the use and maintenance manual .....	26
6	Pictograms .....	27
<b>1</b>	<b>General Information .....</b>	<b>27</b>
1	Manufacturer identification data .....	27
2	CE marking of equipment.....	27
3	Declaration.....	27
4	Safety regulations .....	28
5	Technical assistance information.....	28
6	Arrangements to be made by the customer .....	28
<b>2</b>	<b>Safety .....</b>	<b>28</b>
1	General safety warnings .....	28
2	Intended use.....	28
3	Contraindications for use.....	28
4	Danger zones .....	28
5	Safety devices .....	29
6	Signage .....	29
7	Residual risks.....	29
<b>3</b>	<b>Use .....</b>	<b>28</b>
8	Arrangements.....	29
9	Assembly.....	29
10	Workplaces .....	29
11	Connections.....	29
12	Preliminary checks .....	29
13	Adjustments .....	29
14	No-load tests.....	29
15	Load tests.....	29
<b>4</b>	<b>Equipment description.....</b>	<b>29</b>
1	Operating principle .....	29
2	Main components .....	29
3	Core bit dimensions d.205.....	30
4	Environmental conditions .....	30
5	Lighting.....	30
6	Vibrations .....	30
7	Noise emissions .....	30
8	Technical Data .....	30
9	Tools.....	31
10	Standard Supply .....	31
11	Electromagnetic environment .....	31



<b>5</b>	<b>Use of equipment .....</b>	<b>31</b>
1	Controls .....	31
2	Commissioning.....	31
3	Operating modes .....	31
<b>6</b>	<b>Maintenance .....</b>	<b>31</b>
1	Maintenance status.....	31
2	Electrical system functional checks .....	31
3	Equipment insulation .....	31
4	Special precautions .....	31
5	Cleaning .....	31
6	Lubrication .....	31
7	Scheduled routine maintenance.....	31
8	Extraordinary maintenance .....	32
9	Diagnostics and troubleshooting .....	32
<b>7</b>	<b>Accessories and spare parts .....</b>	<b>32</b>
1	Assistance .....	32
2	Accessories .....	32
3	Spare parts .....	32
<b>8</b>	<b>Supplementary Instructions .....</b>	<b>32</b>
1	Waste disposal.....	32
2	Decommissioning.....	32
3	Safe working procedures.....	32
<b>9</b>	<b>Attachments.....</b>	<b>32</b>
1	Equipment drawings .....	32
2	Wiring diagrams .....	32

## 0 Foreword

### 1 Purpose of the supplement to the use and maintenance manual

This supplement to the manual has been drafted to provide the user with a general knowledge of the equipment and to allow it to be used under safe conditions following the need to re-certify the equipment covered by this supplement, for the application of new coring tools not already provided for by the manufacturer, who proposes a maximum diameter of 150 mm. To certify that the use of the new core bit diameters does not alter the reliability and mode of use of the coring machine, the largest diameter was identified as the most demanding application, in the two versions, core bit without rotating vacuum head model LASER GOLD SPIRAL in diameter 205 mm and core bit with additional rotating vacuum head model VACUUM 300 also in diameter 205 mm. The core bit with a rotating vacuum head facilitates the work of coring despite having a heavier weight, it also causes more friction as well as affecting the weight and twist. The core bit without the rotating vacuum head is lighter, shorter and does not have the incidence of the rotating head. These two conformations address the harshest test condition: core bit without rotating vacuum head, in diameter 205 mm, core bit with rotating vacuum head, also in diameter 205 mm. Tests were therefore carried out with the 205 mm diameter with reference code FLO15202M16 referred to as LASER GOLD SPIRAL CORE BIT and with the 205 mm diameter with code FL25205A14 referred to as VACUUM 300 CORE BIT with rotating head with code TROTM18 referred to as ROTATING HEAD M18. These new tools, having a larger outside diameter than those indicated in the original manual, will exert a different torsional stress on the drill and different noise and vibration results when using the new tool. With regard to diameters smaller than those indicated, there are no significant deviations from the values given in the table in the original manual, of which this document is a mere supplement, so we can already declare core bits with diameters from 32 mm in both the LASER GOLD SPIRAL model without rotating vacuum head and the VACUUM 300 model with rotating vacuum head to be compliant for this Caromax 1800 coring machine model.



**The person in charge is obliged, in accordance with the regulations in force, to carefully read the contents of the Use and Maintenance Manual and this Supplement and to have it read to operators and maintenance technicians, for the parts for which they are responsible.**

The instructions, documentation and drawings contained in this supplement to the Manual are of a reserved technical nature and are the strict property of MAXIMA SpA. Therefore, outside the purposes for which it was produced, any reproduction, whether in full or in part, of the content and/or format, must take place with the prior consent of the Manufacturer.

*This supplement only takes into account the data resulting from the use of the above-mentioned tools, as they represent a more demanding application. Core bit diameters smaller than the one tested (less than 205 mm) indicated in the Maxima Spa Use and Maintenance Manual do not change the loads on the equipment and are therefore all to be considered compliant, from diameter 32 mm to diameter 205 mm.*

*Vibration and Sound Power tests were carried out by Vericert Srl, Notified Body No. 1878, for the tests themselves, whose reports accompany the new technical file integration. The results of the tests carried out demonstrate full compliance for core bits with diameters from 32 to 205 mm, both with rotating head (VACUUM 300 CORE BIT) and without rotating head (LASER GOLD SPIRAL), namely the worst situations that are also those that were tested and for which the shaft torsional load was recalculated.*

### 2 Recipients

This supplement to the Use and Maintenance Manual is intended for the installer, the operator/user and qualified personnel authorised to operate and maintain the equipment.

### 3 Preservation of the supplement to the user and maintenance manual

The supplement to the Use and Maintenance Manual must be kept carefully, together with the original document of which it is an integral part, and must accompany the equipment in all changes of ownership that it may undergo during its life cycle.

### 4 Updating the user and maintenance manual and supplement

MAXIMA SpA is only responsible for the Instructions drawn up and validated by the same (Original Instructions); any translations MUST always be accompanied by the Original Instructions in order to verify the correctness of the translation. In any case MAXIMA

SpA is not responsible for translations that have not been approved by MAXIMA SpA itself, so if an inconsistency is detected, attention should be paid to the original language and if necessary contact the MAXIMA sales department, which will make any changes deemed appropriate.

MAXIMA reserves the right to make design modifications, changes/improvements to the equipment and updates to the supplement to the Use and Maintenance Manual without prior notice to customers.

However, in the event of changes to the equipment in use at the Customer's premises, agreed with MAXIMA and authorised by it and which entail the adaptation of one or more chapters of the supplement to the Use and Maintenance Manual, it will be the responsibility of MAXIMA to send the Customer the parts of the supplement to the Use and Maintenance Manual affected by the change, with the new overall revised model of the same. It will be the Customer's responsibility, following the instructions accompanying the updated documentation, to replace the invalid parts with the new ones in all copies held.

## 5 How to read the supplement to the use and maintenance manual

The supplement to the Manual is divided into chapters, each of which is dedicated to a specific category of information and therefore addressed to the operators for whom the relevant competences have been defined.

To facilitate comprehension of the text, terms, abbreviations and pictograms are used, the meaning of which is indicated in Section 7.

### NUMBERING OF FIGURES

Each figure is numbered consecutively.

Numbering is done as follows:

Example Figure 0.1.2

Table	0	.	1	.	2
	↓		↓		↓
	Chapter	.	Paragraph	.	Sequential number

The sequential number starts again from 1 with each new paragraph.

### NUMBERING OF TABLES

Each table is numbered consecutively.

Numbering is done as follows:

Example Table 0-1.2

Table	0	-	1	.	2
	↓		↓		↓
	Chapter	.	Paragraph	.	Sequential number

The sequential number starts again from 1 with each new paragraph.

### ABBREVIATIONS

Chap.	= Chapter
Par.	= Paragraph
Sec.	= Section
P.	= Page
Fig.	= Figure
Tab.	= Table

### UNIT OF MEASUREMENT

The units of measurement present are those of the International System (SI).

Fundamental Quantities	Unit of measurement	Symbol
Time interval	second	s
Length	metre	m
Mass	kilogramme	kg
Thermodynamic temperature	kelvin	k
Substance quantity	mole	mol
Electrical current intensity	amperes	A
Light intensity	Candelas	cd
Temperature	celsius	°C

Mechanical quantities	Unit of measurement	Symbol	Conversion
Frequency	hertz	Hz	1 Hz = 1 s <sup>-1</sup>
Force	newton	N	1 N = 1 Kg m s <sup>-2</sup>
Pressure	pascal	Pa	1 Pa = 1 N m <sup>-2</sup>
Work, energy, quantity of heat	joule	J	1 J = 1 N m
Power	watt	W	1 W = 1 J s <sup>-1</sup>

## 6 Pictograms

### General

Pictograms are applied in areas where they are easily visible and readable by anyone approaching and in such a place that the person can react promptly to take the necessary action to avoid the danger.

The pictograms remain similar to those in the original Use and Maintenance Manual, since the modification made, as set out in this supplement, does not change the types of risk and danger already present in the equipment as received from the manufacturer.

## 1 General Information



### 1 Manufacturer's identification data

The manufacturer's data remain unchanged. The new application, approved and agreed upon with the manufacturer, underwent structural verifications, noise and vibration standards by means of calculations and instrumental tests in compliance with the specific mandatory standards reported in the updated Declaration of Conformity, by the Company Maxima Spa, in the heading.

## 2 CE marking of equipment

Each piece of equipment is identified by a rating plate on which, in addition to the CE mark, the reference data of the equipment is indelibly marked. The position of the plate on the equipment may vary from one to another.

Always quote these references for any communication with Maxima SpA or the service centres.

 	
MAXIMA SPA VIA MATTEOTTI, 6 42028 POVIGLIO (RE) ITALY Coring Drill	
Model	Caromax 1800
Series / Serial Number	06362
Year of manufacture	2018

## 3 Declaration

### EC DECLARATION OF CONFORMITY

(Annex II A DIR. 2006/42/EC)

**MAXIMA S.P.A.**

**MAXIMA SPA**

*Company*

**VIA MATTEOTTI, 6**

*Address*

**42028**  
*POST CODE*

**RE**  
*Province*

**POVIGLIO**

*City*

**ITALY**  
*State*

### DECLARES THAT THE EQUIPMENT

**CORING DRILL**

*Equipment*

**CAROMAX 1800**

*Model*

**06362**

*Serial number*

**2018**

*Year of manufacture*

**CAROMAX 1800**

*Trade name*

**INDUSTRIAL**

*Intended use*

### COMPLIES WITH THE DIRECTIVES

**Directive 2006/42/EC** of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC.

**Directive 2014/30/EU** of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

**Directive 2014/35/EU** of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

**Directive 2012/19/EU** of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

**Directive 2011/65/EU** on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast) (ROHS)

### Technical specification references

CEI EN 60745-1:2007; CEI EN 60745-2-1:2008

### AND AUTHORISES

**6Conforme.net**

*Company name*

**VIA GRAMSCI, 43**  
*Address*

**42124**  
*POST CODE*

**RE**  
*Province*

**REGGIO EMILIA**  
*City*

**ITALY**  
*Country*

### TO COMPILE THE TECHNICAL FILE ON ITS BEHALF

Poviglio (RE), 10/08/2018

**Maxima S.p.A.**

**CEO**

**Mirco Dall'Olio**

Scan of stamp and signature shown on the original document

The equipment is manufactured in accordance with the relevant EU directives applicable at the time of its placing on the market.

## PROHIBITION OF PUTTING INTO SERVICE

The equipment may not be put into service after having undergone further constructive modifications or additions of other components that are not part of routine or extraordinary maintenance without again being declared in conformity with the requirements of Directive 2006/42/EC and the applicable EC Directives.

For MAXIMA SpA

Poviglio, 10/08/2018

CEO  
Mirco Dall'Olio

Scan of stamp and signature shown on the original document

## 4 Safety regulations

The equipment was manufactured in accordance with the Technical Standards listed below.

STANDARD	TITLE
UNI EN ISO 12100	Safety of machinery - General principles for design - Risk assessment and risk reduction
UNI EN ISO 13849-1	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design

## 5 Technical assistance information

The equipment is covered by warranty, as stipulated in the general sales conditions. Should faulty operation or failure of parts of the equipment occur during the period of validity, which fall within the cases indicated in the warranty, Maxima SpA, after appropriate checks on the same, will repair or replace the faulty parts, as indicated in the Use and Maintenance Manual.

## 6 Arrangements to be made by the customer

There are no arrangements to be made by the customer, other than those prescribed in the Use and Maintenance Manual.

# 2 Safety

## 1 General safety warnings

Maxima SpA has put a lot of effort into designing this equipment to make it as SAFE as possible, also as a result of the application of the new 32 mm to 205 mm diameter tools, the reason for drafting this supplement.

With this in mind, following appropriate mechanical calculations, the equipment, provided with all the guards and safety devices deemed necessary and with sufficient information to be used safely and correctly, does not require any additional safety devices for its use other than those already established by the Original manual.

However, an additional precaution should be noted following the modification regarding the maximum torque applicable on the equipment's drive shaft. In fact, in the event of extraordinary maintenance requiring the replacement of the electric motor, it is not recommended to use products that apply a torque NOT greater than 49 Nm to the shaft, and therefore, taking into account the reductions present between the motor and the output, motors whose maximum torque does not exceed 5 Nm.

### General provisions

Mobile elements must always be used in accordance with Maxima SpA's instructions, as set out in this supplement and in the Manual, which must always be available to the operator at the workplace.

### Checks and tests

The tests must be carried out by a skilled person; they must be visual and functional, with the aim of guaranteeing the safety of the equipment, in the manner and timing indicated in the Use and Maintenance Manual.

## 2 Intended Use

The integration of the range of tools that can be used from diameter 32mm up to diameter 205mm, covered by this supplement, does not change the use envisaged in the original Manual.

## 3 Contraindications for use

The contraindications remain unchanged except for the impossibility of using motors with a maximum torque of more than 5 Nm.

## 4 Danger Zones

The danger zones remain the same as defined in the original Manual, even with the use of the tool provided in this supplement.



## 5 Safety devices

Please also refer to the existing Use and Maintenance Manual for safety devices.

## 6 Signage

The signage to be installed in the vicinity of the area where the equipment will be used with the new tool remains unchanged from the above-mentioned Use and Maintenance Manual.

## 7 Residual Risks

With regard to residual risks, already defined in the original Use and Maintenance Manual, which are present when the equipment is used and which cannot be eliminated, they cannot be eliminated but have been assessed as slight in frequency and severity.

## 3 Use

### 8 Arrangements

#### Arrangements for installation

For installation, a manoeuvring area suitable for the size of the equipment and the lifting gear chosen must be provided: please refer to the Manual for more precise instructions.

#### Preparing the electrical system

There are no changes compared to the Use and Maintenance Manual.

## 9 Assembly

The equipment is supplied without tools. These are a separately supplied product; it is the end user's responsibility to couple them correctly to the equipment following the requirements of the Use and Maintenance Manual. Maxima Spa shall not be held liable for damage or injuries caused by incorrect assembly and/or use with non-original Maxima tools.

## 10 Workplaces

The equipment must always be used in accordance with the requirements of the Use and Maintenance Manual and must operate orthogonally to the work surface.

## 11 Connections

The electrical connections of the equipment are made as described in the Use and Maintenance Manual.

## 12 Preliminary Checks

Before commissioning the equipment, a series of checks and tests must be carried out in order to prevent errors and accidents as indicated in the Use and Maintenance Manual.

## 13 Adjustments

See Use and Maintenance Manual.

## 14 No-load tests

Before carrying out load operations, carry out at least one no-load test in order to check for faults as described in the Use and Maintenance Manual.

## 15 Load tests

Carry out at least one load test in order to check for faults as described in the Use and Maintenance Manual.

# 4 Description of equipment

## 1 Operating principle

The operating principles are extensively described in the Use and Maintenance Manual and the application of the new tool does not change what has already been defined.

## 2 Main components

In addition to the components already mentioned and described in the supplied Use and Maintenance Manual, the original Maxima coring tools are the reason for this supplement.

The LASER GOLD SPIRAL CORE BIT has the following features:

Part no.	Ø	Length	Fitting	z	RPM
FLO15202M16	205 mm	150 mm	M16	9	400-700

The VACUUM 300 CORE BIT with rotating head has these other features:

Part no.	Ø	Length	Fitting	z	RPM
FL25205A14	205 mm	200 mm	1"1/4	9	400-700

### 3 Core bit dimensions Ø 205 mm

The 205 mm LASER GOLD SPIRAL core bit has a length of 150 mm.

The 205 mm VACUUM 300 core bit has a length of 200 mm.

Please refer to the Use and Maintenance Manual for the dimensions of the coring machine.

### 4 Environmental Conditions

Even equipment assembled with D205 core bits may only be used under the environmental conditions specified in the Use and Maintenance Manual.

### 5 Lighting

The equipment must be used with adequate lighting in the working environment as prescribed in the Use and Maintenance Manual.

### 6 Vibrations

The equipment with the application of the 205 mm core bits has hand/arm vibration values of:

Method of use	Value	Uncertainty
Without vacuum	78 m/s <sup>2</sup>	± 5 m/s <sup>2</sup>
With vacuum	78 m/s <sup>2</sup>	± 11 m/s <sup>2</sup>

Under conditions of proper use, vibrations are not such as to give rise to dangerous situations.

It will be the responsibility of the operator's employer to define use and rest times in accordance with the requirements of Legislative Decree 81/08 et seq.

### 7 Noise emissions

As far as noise emissions are concerned, instrumental tests revealed the following.

The reported values are:

- sound pressure - amplitude of the pressure wave, or sound wave;
- sound power - power transmitted in the form of sound;
- operator-perceived sound power - sound pressure measurement taken at the operator's ears;
- total measurement uncertainty - determined by environmental conditions and instrumentation

The following table shows the values measured for 205 mm diameter core bits, which represent the most severe conditions for the test performed.

Methods of use	Weighted sound pressure - $L_{pAeq}$	Sound power - $L_{WA}$	Perceived sound power $L_{PA}$	Uncertainty
Without vacuum(205 mm)	91,7 dB(A)	115,30 dB(A)	108 dB(A)	2,4 dB(A)
With vacuum (205 mm)	88 dB(A)	115,50 dB(A)	103 dB(A)	2,6 dB(A)

Data from tests carried out on other families of core bits with smaller diameters are also reported.

Methods of use	Weighted sound pressure - $L_{pAeq}$	Sound power - $L_{WA}$	Perceived sound power $L_{PA}$	Uncertainty
Without vacuum(32 mm)	87,4 dB(A)	110,9 dB(A)	105 dB(A)	2,4 dB(A)
With vacuum (32 mm)	84,7 dB(A)	108,2 dB(A)	101 dB(A)	2,4 dB(A)
Without vacuum(57 mm)	88.4 dB(A)	112.0 dB(A)	106 dB(A)	2,4 dB(A)
With vacuum (57 mm)	83.9 dB(A)	107.4 dB(A)	103 dB(A)	2,4 dB(A)

The values shown on the equipment are  $L_{WA}$  and  $L_{PA}$ .

### 8 Test core bit technical data



The characteristics of the equipment can be found in the Use and Maintenance Manual.

The Ø 205 LASER GOLD SPIRAL core bit is supplied by Maxima for dry drilling in reinforced concrete. It is equipped with a spiral and the conical body has a knurled segment with a concave/convex design that allows it to reduce friction and better discharge the removed material, thus improving drilling speed.

The following technical data are given:

Part no.	Ø	Length	Fitting	z	RPM
FLO15202M16	205 mm	150 mm	M16	9	400-700



The VACUUM 300 core bit is the tool in the range suitable for machining operations requiring vacuuming dust. The Vacuum 300 Core bit also mounts the same diamond segment as the 150 mm long core bits and is therefore capable of dry drilling materials such as reinforced concrete, bricks, tiles and concrete.

The useful cutting length is 300 mm.

It can also be used with water, the best results are obtained in dry use with dust vacuuming.

Always use the dust vacuum system in dry use.

The following technical data are given:

Part no.	Ø	Length	Fitting	z	RPM
FL25205A14	205 mm	200 mm	1"1/4	9	400-700

## 9 Tools

The D205 LASER GOLD SPIRAL, for which this supplement to the Use and Maintenance Manual was developed, can be used on the following materials: Cured Concrete / Bricks / Roofing Tiles, Lightly reinforced concrete, Heavily reinforced concrete, Granites / Natural stones / Porphyry, Refractories, Sandstones / Washed gravel tiles, Double-fired Ceramics, Single-fired Ceramics, Fresh concrete, Asphalt.

The D205 VACUUM 300 core bit, on the other hand, can be used on the following materials: Cured Concrete / Bricks / Roofing Tiles, Lightly reinforced concrete, Heavily reinforced concrete, Granites / Natural Stones / Porphyry, Marbles, Refractories

Sandstone/Washed gravel tiles, Double-fired Ceramics, Single-fired Ceramics, Fresh concrete, Asphalt.

## 10 Standard supply

The equipment is supplied complete to be put into service with the exclusion of the core bits sold separately.

It comes with:

- Use and Maintenance Manual;
- Supplement to the Use and Maintenance Manual;
- EC Declaration of Conformity and its updating;
- CE-marked rating plate.

## 11 Electromagnetic Environment

For electromagnetic compatibility, see the Use and Maintenance Manual.

## 5 Use of equipment

### 1 Controls

The controls are not modified for the use of the Ø 205 mm core bit. See the Use and Maintenance Manual.

### 2 Commissioning

See the Use and Maintenance Manual.

### 3 Operating modes

See the Use and Maintenance Manual.

## 6 Maintenance

### 1 Maintenance status

See the Use and Maintenance Manual.

### 2 Electrical system functional checks

The types of checks and measurements are described in the Use and Maintenance Manual.

### 3 Equipment insulation

See the Use and Maintenance Manual.

### 4 Special precautions

See the Use and Maintenance Manual.

### 5 Cleaning

See the Use and Maintenance Manual.

### 6 Lubrication

See the Use and Maintenance Manual.

### 7 Scheduled routine maintenance

See the Use and Maintenance Manual.

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## **8 Extraordinary Maintenance**

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See the Use and Maintenance Manual.

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## **9 Diagnostics and troubleshooting**

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For defects and/or malfunctions of the equipment not described in this supplement to the Manual or in the Manual itself, please contact MAXIMA SpA.

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## **7 Accessories and Spare Parts**

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### **1 Assistance**

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See the Use and Maintenance Manual.

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### **2 Accessories**

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Apart from the tool that is the reason for drafting this supplement, there are no further updates in the list of accessories that can be combined with the equipment compared to what is in the Use and Maintenance Manual.

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### **3 Spare parts**

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**ALWAYS USE ONLY ORIGINAL MAXIMA SPARE PARTS. FOR ANY SPARE PARTS CONTACT Maxima S.p.A.**

The use of non-original spare parts is discouraged: if this occurs, Maxima SpA's Warranty conditions (if still valid) and liability for the use of the equipment and for any damage to persons and/or things as indicated in the Use and Maintenance Manual will be forfeited.

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## **8 Instructions Additional**

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### **1 Waste Disposal**

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See the Use and Maintenance Manual.

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### **2 Decommissioning**

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See the Use and Maintenance Manual.

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### **3 Safe working procedures**

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See the Use and Maintenance Manual.

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## **9 Attachments**

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### **1 Equipment drawings**

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See the Use and Maintenance Manual.

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### **2 Wiring diagrams**

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See the Use and Maintenance Manual.











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