

HILTI

TE MD20 LST

Bedienungsanleitung

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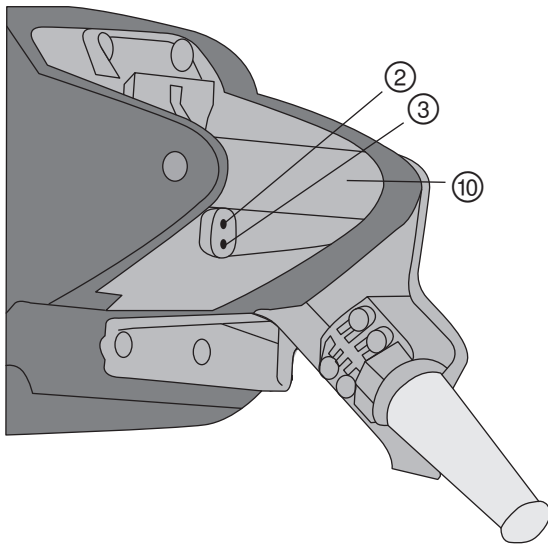
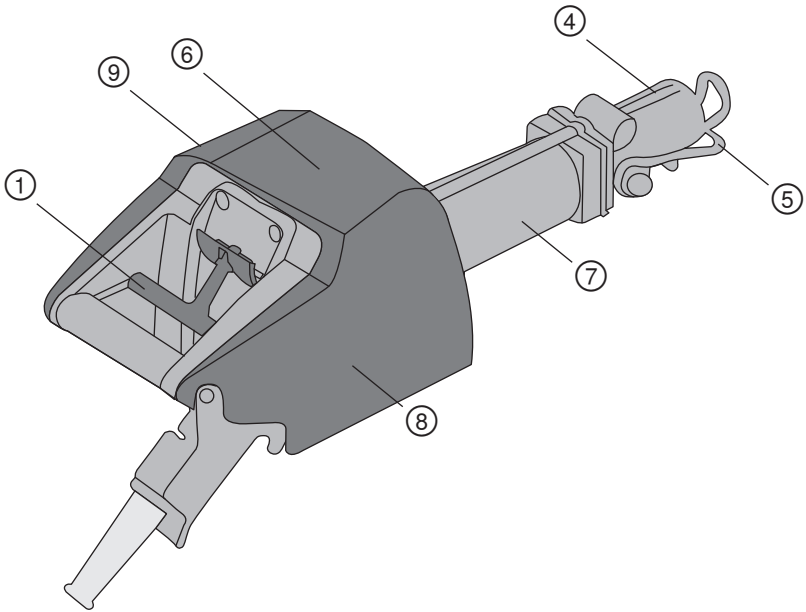
Operating instructions

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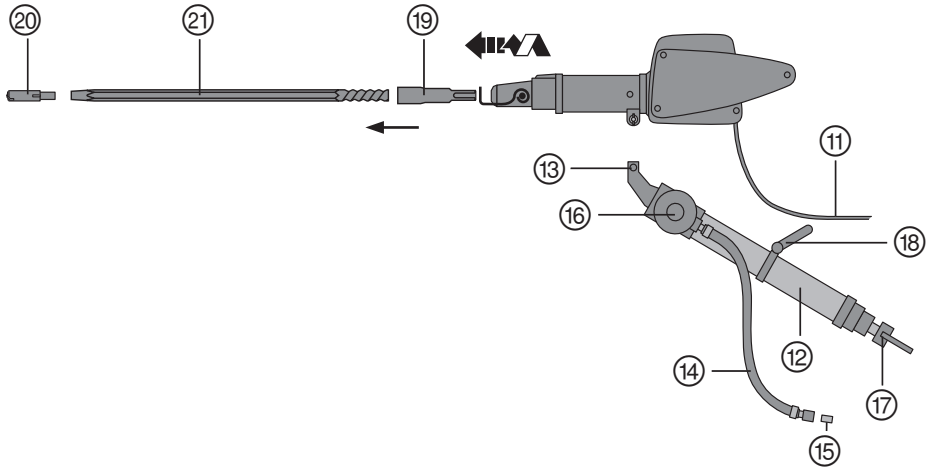
Manual de instrucciones

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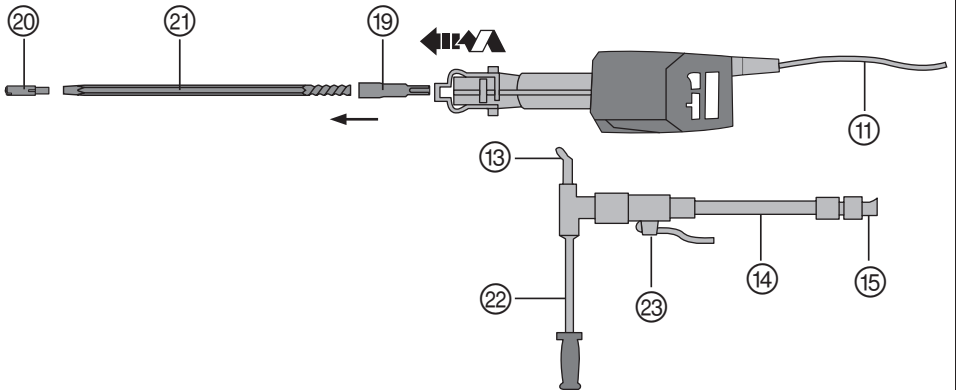


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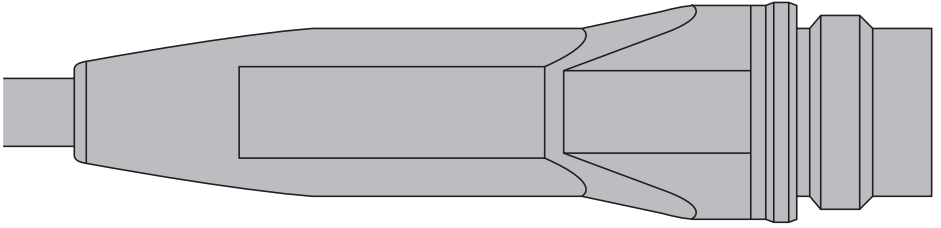
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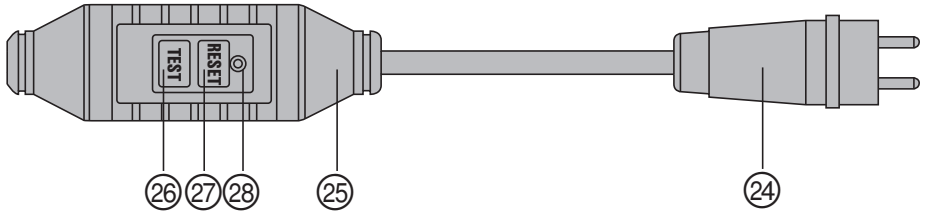


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ORIGINAL OPERATING INSTRUCTIONS

TE MD20 LS T rotary hammer drill

It is essential that the operating instructions are read before the tool is operated for the first time. Always keep these operating instructions together with the tool. Ensure that the operating instructions are with the tool when it is given to other persons.

Operating controls and parts of the tool 1

- ① ON / OFF switch
- ② Fault indicator (red LED)
- ③ Ready and service indicator (green LED)
- ④ Chuck
- ⑤ Drill bit lock
- ⑥ Rotary hammer drill
- ⑦ Hammering mechanism
- ⑧ Electronics
- ⑨ Gearing section
- ⑩ Grip

Tool with water leg 2

- ⑪ Connecting cable
- ⑫ Water leg
- ⑬ Connecting pin
- ⑭ Water hose
- ⑮ Water hose protective sleeve
- ⑯ Regulating valve
- ⑰ Support base
- ⑱ Carrying handle
- ⑲ Connection end
- ⑳ Drill bit
- ㉑ Drill steel

Tool with side handle 3

- ⑪ Connecting cable
- ⑬ Connecting pin
- ⑭ Water hose
- ⑮ Water hose connection sleeve
- ⑲ Connection end
- ㉑ Drill head
- ㉒ Drill rod
- ㉓ Side handle
- ㉔ Ball valve

Plug with approval for use in environments where there is a risk of explosion as per 5.8.1 4

Tool versions: TE MD20 LS T EM / TE MD20 LS T / TE MD20 LS T HA / TE MD20 LS T IM

Plug and PRCD (no explosion protection!) 5

Tool versions: TE MD20 LS T PRCD / TE MD20 LS T HA PRCD / TE MD20 LS T EM PRCD

- ㉔ Plug
- ㉕ PRCD ground fault circuit interrupter
- ㉖ TEST button
- ㉗ RESET button
- ㉘ Indicator lamp

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1. General information

1.1 Indication of danger

-WARNING-

Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

-CAUTION-

This word is used to draw attention to a potentially dangerous situation which could lead to minor personal injury or damage to the equipment or other property.

-NOTE-

Draws attention to an instruction or other useful information.

1.2 Pictograms

Warning signs



General warning



Warning: electricity



Warning: hot surface



Warning: avoid hand injuries

Obligation signs



Wear eye protection



Wear a safety helmet



Wear ear protection



Wear ear protection



Wear safety footwear

Symbols



Read the operating instructions before use

1 These numbers refer to the corresponding illustrations. The illustrations can be found on the fold-out cover pages. Keep these pages open while studying the operating instructions.

In these operating instructions, the designation "the tool" always refers to the TE MD20 LS T rotary hammer drill.

If the tool is used in areas where there is risk of explosion, the information printed on a grey background in these operating instructions must be observed. No changes or modifications may be made to the tool without consent from the approval authority.

Location of identification data on the tool

The type designation and serial number can be found on the type plate on the tool. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: _____

Serial no.: _____

2. Description

The tool is a water-cooled, electrically-powered rotary hammer drill with pneumatic hammering mechanism. Handheld use is only allowed with the following tools in combination with the side handle TE-MAG. The letter „T“ in the name of the tools indicates that the tool is equipped with a „dead-man switch“.

The tool is available in various versions:

TE MD20 LS T	(FFE: 2004397)
TE MD20 LS T HA	(FFE: 2008150)
TE MD20 LS T IM	(FFE: 2008151)
TE MD20 LS T PRCD	(FFE: 2008152)
TE MD20 LS T HA PRCD	(FFE: 2008153)
TE MD20 LS T EM	(FFE: 2051680)
TE MD20 LS T EM PRCD	(FFE: 2008154)

The TE MD20 LS T / TE MD20 LS T HA / TE MD20 LS T EM / TE MD20 LS T IM are suitable for use in areas where there is a risk of explosion and in mining environments.

3. Insert tools and accessories

TE-MCE connection end
TE-MDR drill steel, in various lengths
TE-MDH drill bit head, in various versions
TE-MEC extension cord for use in areas where there is a risk of explosion.
TE-MAC PRCD adapter cable for use only in areas where no explosion protection is necessary; only applicable in electric circuits where the nominal voltage is 220-230 V.
For rig-guided drilling: TE-MW water leg in various lengths used in conjunction with the TE MW 2G or TE MW 4G support base (and, where necessary, with TE MW E water leg extension in various lengths).
For handheld drilling: Side handle TE-MAG
Please contact Hilti Customer Service for more information about accessories.

4. Technical data

	TE MD20 LS T TE MD20 LS T HA TE MD20 LS T EM TE MD20 LS T IM	TE MD20 LS T PRCD TE MD20 LS T HA PRCD TE MD20 LS T EM PRCD
Rated voltage	220–240 V single phase	220–230 V single phase
Rated current	15 A	15 A
Mains frequency	50–60 Hz	50–60 Hz
Torque	100 Nm	100 Nm
Revolutions (counter-clockwise)	205 r.p.m.	205 r.p.m.
Impact energy	28 J	28 J
Dimensions	770×210×230	770×210×230
Drill bit head diameter	28–51 mm	28–51 mm
Drill steel length	up to 2,4 m	up to 2,4 m
Protection class I	Protection class I	Protection class I
Storage temperature without cooling water	–20°C to +55°C	–20°C to +55°C
Noise and vibration information (measured in accordance with EN 60745-2-6) under load		
Typical A-weighted sound power level:	109 dB (A)	109 dB (A)
Typical A-weighted emission sound pressure level:	98 dB (A)	98 dB (A)
Wear ear protection!		
For the given noise level in accordance with EN 60745-2-6, measurement uncertainty is 3 dB.		
Typical weighted vibration TE MD20 in concrete $a_{h, HD}$:	11 m/s ²	11 m/s ²
Uncertainty (K)	2 m/s ²	2 m/s ²
Weight according to EPTA-Procedure 01/2003	27,7 kg	27,7 kg
Protection against entry of water or foreign objects	Plug: IP 66, IP 67 Tool: IP 66	Plug: IP 44 PRCD: IP 55 Tool: IP 66
Explosion protection	I M2 / II2 G 94/9/EG EEx d I/IIA T4	No explosion protection

Right of technical changes reserved.

-NOTE-

The vibration emission level given in this information sheet has been measured in accordance with a standardised test given in EN 60745 and may be used to compare one tool with another. It may be used for a preliminary assessment of exposure. The declared vibration emission level represents the main applications of the tool. However if the tool is used for different applications, with different accessories or poorly maintained, the vibration emission may differ. This may significantly increase the exposure level over the total working period. An estimation of the level of exposure to vibration should also take into account the times when the tool is switched off or when it is running but not actually doing the job. This may significantly reduce the exposure level over the total working period. Identify additional safety measures to protect the operator from the effects of vibration such as: maintain the tool and the accessories, keep the hands warm, organisation of work patterns.

5. Safety rules

In addition to the safety rules listed in the individual sections of these operating instructions, the following points must be strictly observed at all times.

-WARNING-

Read all safety warnings and instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

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

5.1 Work area 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.*

5.2 Electrical safety



- 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.*
- 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.*
- Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
- 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.*
- Use of the power tool is permissible only in conjunction with an AC/DC sensitive ground fault circuit breaker with a rating of max. 10 mA (type A or B, as per IEC 61008) or an equivalent or better protective system (insulation or earth/ground leakage sensor).**

Use of a protective system of this kind reduces the risk of electric shock.

5.3 Personal safety

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

5.4 Power tool use and care

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

- e) **Maintain power tools.** Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

5.5 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.

5.6 General safety rules for supporting or securing devices

WARNING Read all safety rules and instructions supplied with the supporting / securing device or power tool. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

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

- **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.** Power tools starting inadvertently are the cause of many accidents.
- **Set up the supporting or securing device properly before fitting the power tool.** Correct assembly is important in order to avoid risk of collapse.
- **Mount the power tool securely on the supporting / securing device before use.** Movement of the power tool on the supporting / securing device may lead to a loss of control.
- **Set up the supporting / securing device on a solid, even and level surface.** The power tool cannot be guided smoothly and safely if the supporting / securing device is unsteady or moves out of place.
- **Do not overload the supporting / securing device and do not use it as a substitute for a ladder or working platform.** Overloading or standing on the supporting / securing device may raise its point of balance and cause it to topple over.

5.7 Safety rules for rotary hammers and breakers

- **TWear ear protectors.** Exposure to noise can cause hearing loss.
- **Use the side handle supplied with the tool.** Loss of control can cause personal injury.
- **Hold power tool by insulated gripping surfaces when performing an operation where the accessory may contact hidden wiring or the power tool's own cord.** Contact with a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

5.8.1 Correct use



a) Environmental conditions

Amendment to 5.1. b

TE MD20 LS T / TE MD20 LS T HA / TE MD20 LS T IM

Use of the TE MD20 LS T / TE MD20 LS T HA / TE MD20 LS T IM / TE MD20 LS T EM tools in areas where there is a risk of explosion is permissible.

These tools comply with the requirements of 94/9/EC (ATEX) for

Group I cat. M2 → Mining and in atmospheres where there is a risk of explosion

Group II cat. 2G → Other areas where there is a risk of explosion, where gasses and vapors of the Group IIA (at the request of the customer also gasses and vapors of the Group IIB) with ignition temperatures above 135°C may occur.

TE MD20 LS T PRCD / TE MD20 LS T HA PRCD / TE MD20 LS T EM PRCD

Do not work with these tools in areas where there is a risk of explosion in which flammable liquids gases or dusts are present.

Electric tools generate sparks which could ignite the dust or vapors.

Amendment to 5.2. c

The tool must only be used under environmental conditions where the single parts (tool, plugs, if applicable PRCD) are adequately protected against ingress of water or other foreign matter according to their rated IP-protection class.

Amendment to 5.2.e

Use only extension cords which are approved to be used under the existing environmental conditions.

- b) The tool is designed for drilling in rock (not in reinforced concrete) with drill bits of 28–51 mm diameter to depths of up to 2.4 m.
- c) Use the power tool correctly for its intended application and only when it is in good condition.
- d) Tampering with or modification of the power tool, its switch or grips is not permissible.
- e) The tool and its ancillary equipment may present hazards when used incorrectly by untrained personnel or not as directed.
- f) To avoid the risk of injury, use only genuine Hilti accessories and ancillary equipment.
- g) Observe the information printed in the operating instructions concerning operation, care and maintenance.

5.8.2 General hazards presented by the tool



- Keep the grips dry, clean and free from oil and grease.
- Do not touch or hold rotating parts.
- Never leave the tool unsupervised.
- When not in use, the tool must be stored in a dry place, locked up or where out of reach of unauthorised persons and children.
- Ensure that the workplace is well ventilated.
- Objects which could cause injury should be removed from the working area.
- Keep other persons in particular children outside the area affected while you are working.
- To avoid tripping while working, always lead the supply cord, extension cord and water hose away from the rear of the tool.

ATTENTION!

- Use only the original accessories or items of additional equipment listed in the operating instructions. The use of other drill heads or accessories may present a risk of injury.

Mechanical hazards



- Follow the instructions concerning care and maintenance and change drill bits in good time.

-NOTE-

The following information printed on the grey background has to be generally respected for all tools and in all environments.

The drill steel connection end and chuck are coordinated components that form an integral part of the explosion protection system. Ensure that genuine Hilti insert tools are used and that they are correctly fitted and secured in the chuck.

Electrical hazards



- Ensure that the tool is earthed and that the earth connection has been checked for correct functionality. Operation of the tool without an earth connection presents a risk of fatal accident.

-WARNING-

- Use the tool only when connected to an electric supply equipped with a pulse-controlled ground fault circuit interrupter (type A or B as per IEC 61008) or a corresponding PRCD with a max. sensitivity rating of 10 mA. Check to ensure that the ground wire circuit is not broken when the ground fault circuit interrupter or PRCD is triggered. Equivalent or superior protective systems may be used (e.g. ground leakage sensor for the AC/DC circuit).
- Check the condition of the electric supply and extension cords and plug connectors at regular intervals. Replace damaged extension cords.
- To avoid safety hazards repairs to Hilti power tools and their electric supply cords and plugs must be carried out only by a trained repair specialist certified by Hilti.
- To avoid safety hazards repairs to Hilti extension cords and their plugs and couplers electric supply cords and plugs must be carried out only by a trained repair specialist certified by Hilti.
- Do not touch the supply cord in the event of it becoming damaged while working. Disconnect the supply cord plug from the socket.
- Do not use the supply cord or extension cord for purposes for which they were not intended.
- Never carry the tool by the supply cord.
- Check that the ON / OFF switch works correctly each time before using the power tool. The power tool must switch off automatically when the switch is released. Have switches repaired by a suitably trained repair specialist authorized by Hilti.

Thermal hazards



- Operate the tool only when water is flowing in order to prevent overheating of the power tool, the drill head and the drill steel.

5.8.3 Requirements to be met by users

- The tool is intended for professional use.

-NOTE-

The following information printed on the grey background has to be generally respected for all tools and in all environments.

The tool may be operated, serviced and repaired only by authorised, trained personnel. This personnel must be informed of any special hazards that may be encountered.

5.8.4 Personal protective equipment

The user and persons in the immediate vicinity must wear suitable eye protection, a safety helmet, ear protection, protective gloves and safety footwear when the tool is in use.



6. Before use

It is essential that safety rules printed in these operating instructions are read and observed.

-CAUTION-

The tool must be disconnected from the mains supply while being set up and made ready for use.

6.1 Fitting the drill bit

Parts used: TE-MDR and TE-MDH

Push the drill bit head onto the front end of the drill steel and tap it lightly until it holds securely.

	-CAUTION-
	<ul style="list-style-type: none"> ■ The tool, drill bit and drill support are heavy. ■ There is a risk of pinching parts of the body. ■ Wear a safety helmet, protective gloves and safety footwear.

	-CAUTION-
	<ul style="list-style-type: none"> ■ The drill bit may become hot during use. ■ There is a risk of burning the hands. ■ Wear protective gloves when changing drill bits.

6.2 Fitting the drill steel

Use TE-MDR drill steels or drill steels according Hilti specification with appropriate fit to the tool only.

(Comment: Hilti rods differ in length and shape of the connecting part to standard rods)

1. Clean away any dirt adhering to the connection end and apply a little grease to it.
2. Screw the drill steel fully into the connection end.
3. Guide the connection end into the chuck and rotate it until the grooves and splines are in alignment and then push it in as far as it will go.
4. Close the chuck locking mechanism and check that the connection end is held securely.

6.3 Fitting the water leg/side handle

Use only the TE-MW water leg (with fitted TE-MW 2G or TE-MW 4G support base) intended for use with the power tool, or the TE-MAG side handle as water supply is assured only when these parts are used.

1. Clean off any dirt adhering to the connecting pin on the water leg / side handle.
2. Position the guide on the underside of the front housing of the tool on the water leg / side handle and insert the connecting pin in the hole provided.
3. Secure the connection by inserting the retaining pin in the hole in the connecting pin.
4. The securing plate on the connecting pin must be released before separating the tool from the water leg / side handle (e.g. for transport). The water leg / side handle can then be pulled away from the tool.

6.4 Water connection

-NOTE-

The following information printed on the grey background has to be generally respected for all tools and in all environments.

The tool and drill bit are water-cooled and the water has a flushing function during drilling.

- Water pressure: min. 3 bar, max. 5 bar
- Water temperature: approx. 10–20°C
- Cooling water flow rate: approx. 10 l/min
- Permissible degree of water pollution: <40 µm.

-NOTE-

In order to ensure that the maximum permitted water pressure of 5 bar at the power tool is not exceeded, a pressure reduction valve is incorporated in the TE-MW water leg and in the TE-MAG side handle. The maximum water pressure in the supply line to the pressure reduction valve in the water leg or side handle must not exceed $p_{max} = 20$ bar.

The cooling water is supplied to the tool through a stud on the water leg saddle/side handle which is connected to the water supply.

If the Hilti TE-MW water legs or TE-MAG side handles are used, connection to them is by way of a 1" tapered sleeve.

Check the flow of water. Water must spray out of the bores in the drill bit.

6.5 Electrical connection

6.5.1 General points

The tool must be powered by an alternating current sup-

ply that complies with the information given on the type plate.

The tool must be connected to an adequately dimensioned earth conductor by way of the mains plug. The earth connection must be checked at regular intervals to ensure correct functionality.

The electric supply must be equipped with a pulse-controlled / DC-sensitive ground fault circuit breaker (type A or B as per IEC 61008) with a sensitivity of max. 10 mA. This device must be checked at regular intervals in accordance with the manufacturer's instructions.

Equivalent or superior protective systems may be used (e.g. ground leakage sensor for the AC/DC circuit).

6.5.2 Connecting the TE MD20 LS T / TE MD20 LS T HA / TE MD20 LS T EM / TE MD20 LS T IM to the electric supply

If operated in atmospheres where there is a risk of explosion

Only approved plug/socket systems (EEx d I/IIA, IP66) in accordance with 94/9/EC may be used, e.g. Hilti TE-MPH with intrinsically safe pilot contact, monitored earth/ground, 220–240 V phase, neutral conductor. Disconnection from the power supply must be by way of an isolating switch.

-CAUTION-

Check to ensure that the tool is switched off before connecting it to the electric supply.

-NOTE-

The plug **4** is equipped with a pilot contact which allows use of an external ground connection monitoring system (pilot contact switching). In addition, in the TE MD20 LS T, TE MD20 LS T EM and TE MD20 LS T HA, a diode is fitted between the pilot contact and the ground lead. A line terminator is incorporated in the TE MD20 LS T IM.

The monitoring circuit must be self-testing (intrinsic-safe) in accordance with EN/IEC 60079-11.

6.5.3 Connecting the TE MD20 LS T PRCD / TE MD20 LS T HA PRCD / TE MD20 LS T EM PRCD to the electric supply

Ground fault circuit interrupters of the PRCD **5** type are incorporated in the supply cords of the TE MD20 LS T PRCD / TE MD20 LS T HA PRCD / TE MD20 LS T EM PRCD. When making one of these tools ready for use, proceed as follows:

-CAUTION-

Check to ensure that the tool is switched off before connecting it to the electric supply.

1. Plug the tool's supply cord into the electric supply socket.
2. Press the "RESET" button on the PRCD ground fault circuit interrupter (the indicator lamp must then light).
3. Press the "TEST" button on the PRCD ground fault circuit interrupter (the indicator lamp must then go out).

-WARNING-

If the indicator lamp continues to light, further use of the tool is not permissible. Have the tool repaired by a qualified specialist using genuine spare parts.

4. Press the "RESET" button on the PRCD ground fault interrupter (the indicator must then light).

The tool is then ready for operation.

6.6 Use of extension cords and connecting cables

Use only extension cords and adapter cords of adequate cross section which have been approved for use in the application concerned. The cord may otherwise overheat or a drop in performance may occur.

The recommended conductor cross-section is 2.5 mm² over a length of max. 60 m.

Check that the extension cord and plug are adequately protected by a suitably-rated fuse in the electric supply. To avoid overheating, always unroll the full length of the extension cord from the drum even when only a short length is required.

Connect the tool to the electric supply only once it has been set up ready for use.

-NOTE-

When the tool is operated in areas where there is a risk of explosion, only approved extension cords or supply cords may be used, the plugs or connectors (TE-MPH) of which must be approved for use in damp areas and designed to ensure safe connection and disconnection in areas where there is a risk of explosion (please also refer to section 6.5).

-NOTE-

When the tool is operated in areas where there is no risk of explosion, extension cords which are at least approved for use in damp areas / outdoors must be used. The plug on the tool's supply cord and the connector on the extension cord must be fully compatible and ensure the specified degree of protection against ingress of water or other foreign matter.

6.7 Use of a generator or transformer


When the tool is powered by a generator or transformer, the following conditions must be fulfilled:



- AC voltage, output power at least 7000 VA.
- The operating voltage must be within +5% and –10% of the rated voltage at all times.
- Frequency range 50–60 Hz.
- Automatic voltage regulation with starting boost.
- The unit must be correctly earthed.
- A ground fault circuit breaker as described at section 6.5 must be used. Equivalent or superior protective systems may be used (e.g. ground leakage sensor for the AC/DC circuit).

Never operate other machines or appliances from the generator or transformer at the same time. Switching other machines or appliances on and off may cause undervoltage and / or overvoltage peaks, resulting in damage to the tool.

7. Operation

It is essential that the safety precautions printed in these operating instructions are read and observed.

	-CAUTION-
	<ul style="list-style-type: none">■ The tool and the drilling operation emit noise.■ Excessive noise may damage the hearing.■ Wear ear protection

 	-CAUTION-
	<ul style="list-style-type: none">■ Drilling may cause hazardous splintering of the material.■ Splintering material may injure parts of the body and the eyes.■ Wear eye protection and a safety helmet.

-CAUTION-

Take care to ensure that you are in a secure, stable position before switching the tool on. Check that you are able to operate the ON / OFF switch with the hand on the rear grip reliably at all times.

7.1 Drilling

-NOTE-

The following information printed on the grey background has to be generally respected for all tools and in all environments.

1. Open the water valve on the water leg. Make sure that water flows continuously while drilling.
2. Bring the tool with the water leg into the drilling position.
3. Switch on at the ON / OFF switch.
4. Regulate the contact pressure at the water leg so that the drill bit runs centrally in the hole being drilled. The tool should hammer evenly without kicking back.
5. Move the water leg as necessary, as the drilling operation continues.

-NOTE-

- In the event of the drill bit head jamming in the hole while drilling, proceed as follows:
- Leave the power tool switched on and hold it securely as the forces that occur may be higher than during normal operation (this is due to activation of the slip clutch - the mechanical device that disconnects the motor from the gearing).
- Free the jammed drill bit by altering the drilling advance pressure through adjustment of the control valve on the water leg.
- If this fails to free the jammed drill bit, switch off the power tool, separate the power tool from the drill steel and then use a suitable tool to extract the drill bit from the hole.

-CAUTION-



When retracting the water leg, take care to ensure that no parts of the body are pinched between the moving part and the fixed part of the water leg. This presents a risk of injury!

7.1.2 Drilling with the side handle

-NOTE-

From ergonomic point of view handheld drilling with the side handle can only be recommended vertical down. For applications sideways or upwards the tool may be used with the water leg.

1. Open the ball valve on the side handle. Make sure that water flows continuously while drilling.
2. Bring the tool into the drilling position.
3. Switch on at the ON / OFF switch.
4. Guide the tool in a way that the drill bit runs centrally in the hole being drilled.
5. Press the tool against the underground that the tool hammers evenly without kicking back.

-NOTE-

To handle the tool safely the maximum length of the drill rod has to be adapted to the existing working conditions (drilling angle, size of user, etc.). Drill deep holes where required with drill rods with increasing lengths or work on suitable platforms with changeable heights.

-NOTE-

In the event of the drill head jamming in the hole while drilling, proceed as follows:

- Leave the power tool switched on and hold it securely as the forces that occur may be higher than during normal operation (this is due to activation of the slip clutch - the mechanical device that disconnects the motor from the gearing).
- Free the jammed drill bit by altering the drilling advance pressure through adjustment of the control valve on the water leg.
- If this fails to free the jammed drill bit, switch off the power tool, separate the power tool from the drill steel and then use a suitable tool to extract the drill bit from the hole.

7.2 Finishing drilling

1. Pull the drill steel and drill head out of the hole while the tool is still running.
2. Switch off at the ON / OFF switch.
3. Close the water valve on the water leg / side handle.

Removing the drill bit: Lay the drill steel down flat on a hard surface so that the full length of the drill bit is in contact with this surface. Strike the side of the drill bit with a hammer several times while rotating the drill steel between each hammer blow. The hammer blows should cause the drill bit to be released from the drill steel. Take care to avoid damage to the drill steel.

-CAUTION-

Take care to ensure that no persons in the vicinity are injured when removing the drill bit.

8. Care and maintenance

Disconnect the supply cord plug from the mains socket.

8.1 Care of insert tools

Remove any dirt adhering to the surface of the insert tools and protect them from corrosion by rubbing them with an oily cloth from time to time.

8.2 Care of the tool

The outer casing of the tool is manufactured from impact-resistant plastic. The grip section is manufactured from synthetic rubber.

-NOTE-

The following information printed on the grey background has to be generally respected for all tools and in all environments.

Check all external parts of the tool for damage at regular intervals and check that all controls operate faultlessly. Damaged plastic parts of the housing must be replaced immediately due to their explosion protection function.

Use a slightly damp cloth to clean the outside of the tool at regular intervals. Always keep the grip sections of the

tool free from oil and grease. Do not use cleaning agents or polishes, etc., containing silicone.

Keep the chuck clean. Check the drill steel for damage and wear at the grooves and ensure that the water passage is not obstructed.

Do not operate the tool when parts are damaged or when the controls do not operate faultlessly. If necessary, have the tool repaired at a Hilti service centre.

Electrical sections of the tool may be repaired only by trained electrical specialists.

8.3 Maintenance of the tool

Regular maintenance is necessary in order to ensure that the tool remains ready for use when required. After a pre-set number of operating hours, the operating status lamp (green lamp) begins to blink. The tool may continue to be operated for some time in this state. The tool will finally switch itself off after the set service interval is exceeded by more than 10%.

The tool must be serviced at an authorized Hilti service center.

Repairs to the power tool and plug connector system are subject to restrictions concerning electrical safety and approval / explosion protection requirements and may thus be carried out only by suitably trained specialists authorized by Hilti.

8.4 Checking the tool after care and maintenance

After care and maintenance work, the specified checks and inspections must be carried out and documented accordingly.

9. Troubleshooting

9.1 Explanation of the operating status / service indicator lamps

The tool is equipped with two lamps which indicate its operating status or faults by lighting in different ways:

Fault indicator (red lamp)	Ready and service indicator (green lamp)	Tool status	Cause / action required
Off	Off	The tool is not ready.	No electric power. See "Troubleshooting"
Off	Lights	The tool is ready for operation.	
Lights	Lights	The tool has overheated.	The tool has switched itself off. The red lamp remains lit until the tool has cooled down. The tool does not restart automatically after cooling down (switch must be operated).
Blinks	Lights	Fault in the tool or electric supply voltage.	The tool has switched itself off. See "Troubleshooting"
Off	Blinks	Servicing is due.	Have the tool serviced at a Hilti service center.

9.2 Troubleshooting

Fault	Possible cause	Remedy
The tool doesn't start and the green ready indicator doesn't light.	No voltage from the electric supply.	Plug in a different power tool of the type (TE MD20) and check whether it works. If the fault persists: Check the electric supply (fuses, circuit interrupters or equivalent protective systems or pilot contact circuit). If necessary, have the power tool repaired by a qualified electrical specialist.
	Fault or poor contact in the extension cord or plug connectors.	Replace the extension cord and check whether the tool works. Return defective parts to Hilti Service.
The tool doesn't start and the fault indicator (red lamp) lights.	The tool has overheated.	Check the water supply. Allow the tool to cool down. The tool is ready for further use when the red lamp no longer lights.
The tool doesn't start and the fault indicator (red lamp) blinks.	The tool is faulty or an internal safety function has been activated.	Switch the tool off and then on again (reset). If the fault persists: Switch the power tool off and disconnect it from the electric supply. Reconnect it to the electric supply after approx. 20 sec. and switch back on at the ON / OFF switch. If the fault persists, have the power tool repaired by a qualified electrical specialist. If the fault persists, have the power tool checked by Hilti Service.
The connection end is broken off in the chuck.		<ol style="list-style-type: none"> 1. Disconnect the tool from the electric supply. 2. Open the locking mechanism. 3. Remove the broken piece of the connection end.
No water flows.		Check the water supply to the water leg / side handle. Check that the connecting pin and drill steel are seated correctly. Check that water can flow through the drill bit head.

10. Disposal



Return waste material for recycling

Most of the materials from which Hilti power tools are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back your old electric tools for recycling. Please ask your Hilti customer service department or Hilti sales representative for further information.

Disposal of drilling slurry

With regard to environmental aspects, allowing drilling slurry to flow directly into rivers, lakes or the sewerage system without suitable pre-treatment is problematical. Ask the local authorities for information about applicable regulations.

We recommend the following pre-treatment:

- Collect the drilling slurry (e.g. use an industrial vacuum cleaner).
- Allow the slurry to settle and dispose of the solid material at a construction waste disposal site (the addition of a flocculent may accelerate the settling process).
- Water from the drilling slurry should be neutralised by adding a neutralising agent or large quantity of water before it is allowed to flow into the sewerage system.



Only for EU countries

Disposal of electric tools together with household waste is not permissible!

In observance of European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

11. Manufacturer's warranty – tools

Hilti warrants that the tool supplied is free of defects in material and workmanship. This warranty is valid so long as the tool is operated and handled correctly, cleaned and serviced properly and in accordance with the Hilti Operating Instructions, and the technical system is maintained. This means that only original Hilti consumables, components and spare parts may be used in the tool.

This warranty provides the free-of-charge repair or replacement of defective parts only over the entire lifespan of the tool. Parts requiring repair or replacement as a result of normal wear and tear are not covered by this warranty.

Additional claims are excluded, unless stringent national rules prohibit such exclusion. In particular, Hilti is not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the tool for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.

For repair or replacement, send tool or related parts immediately upon discovery of the defect to the address of the local Hilti marketing organization provided.

This constitutes Hilti's entire obligation with regard to warranty and supersedes all prior or contemporaneous comments and oral or written agreements concerning warranties.

12. EC declaration of conformity ((original))

Designation: Rotary hammer
Type: TE MD20 LS T, TE MD20 LS T HA
Year of design: 2002

We declare, on our sole responsibility, that this product complies with the following directives and standards: 94/9/EC, 2011/65/EU, 2006/42/EC, EN ISO 12100, EN 60079-0, EN 60079-1, EN 60745-1, EN 60745-2-6.

Certificate number: DMT 02 ATEX E 208 X
Issued by: EXAM BBG
Prüf- und Zertifizier GmbH
Dinnendahlstr. 9
D-44809 Bochum
Germany

Hilti Corporation Feldkircherstrasse 100,
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06/2012



Lars Tänzer
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06/2012

Technical documentation filed at:
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Zulassung Elektrowerkzeuge
Hiltistrasse 6
86916 Kaufering
Deutschland

Designation: Rotary hammer
Type: TE MD20 LS T EM, TE MD20 LS T IM
Year of design: 2002

We declare, on our sole responsibility, that this product complies with the following directives and standards: 94/9/EC, 2011/65/EU, 2006/42/EC, 2004/108/EC, EN ISO 12100, EN 60079-0, EN 60079-1, EN 60745-1, EN 60745-2-6.

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Dinnendahlstr. 9
D-44809 Bochum
Germany

Designation: Rotary hammer
Type: TE MD20 LS T PRCD,
TE MD20 LS T HA PRCD
Year of design: 2002

We declare, on our sole responsibility, that this product complies with the following directives and standards: 2011/65/EU, 2006/42/EC, EN ISO 12100, EN 60745-1, EN 60745-2-6.

Designation: Rotary hammer
Type: TE MD20 LS T EM PRCD
Year of design: 2002

We declare, on our sole responsibility, that this product complies with the following directives and standards: 2011/65/EU, 2006/42/EC, 204/108/EC, EN SO 12100, EN 60745-1, EN 60745-2-6.



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