

ROCAM 4



DE Bedienungsanleitung
EN Instructions for use
FR Instruction d'utilisation
ES Instrucciones de uso
IT Istruzioni d'uso
NL Gebruiksaanwijzing

DA Brugsanvisning
SV Bruksanvisning
FI Käyttöohje
PL Instrukcja obsługi
HU Kezelési útmutató
JA マニュアル

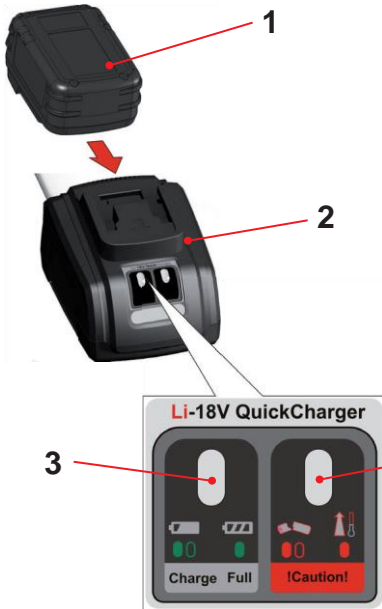


A Overview

no. 1200001381- basic



B Battery-Charger



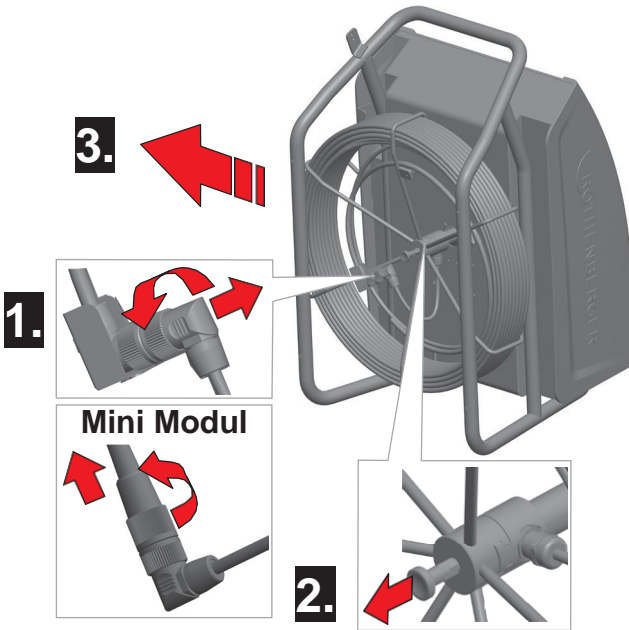
15810
18V - 3,0Ah

15811- 230V Typ C
1500000231- 230V Typ I
1000001434- 230V Typ G
1000000030- 110V Typ A

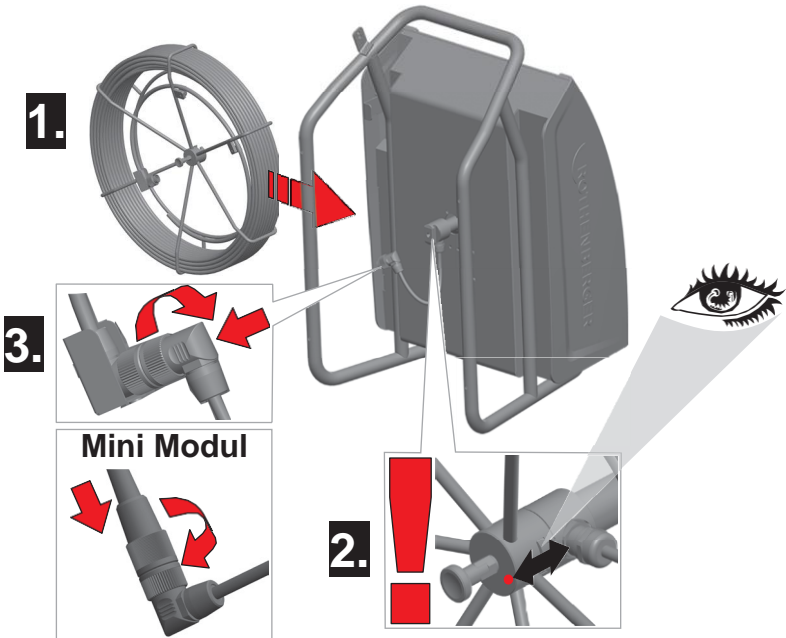
Replace the reel

C

1



2



Intro

EU-KONFORMITÄTSEKTLÄRUNG

Wir erklären in alleiniger Verantwortung, dass dieses Produkt mit den angegebenen Normen und Richtlinien übereinstimmt.

EU-DECLARATION OF CONFORMITY

We declare on our sole accountability that this product conforms to the standards and guidelines stated.

DECLARATION EU DE CONFORMITÉ

Nous déclarons sous notre propre responsabilité que ce produit est conforme aux normes et directives indiquées.

DECLARACION DE CONFORMIDAD EU

Declaramos, bajo nuestra responsabilidad exclusiva, que este producto cumple con las normas y directivas mencionadas.

DICHARAZIONE DI CONFORMITÀ EU

Dichiariamo su nostra unica responsabilità, che questo prodotto è conforme alle norme ed alle direttive indicate.

EU-KONFORMITEITSVERKLARING

Wij verklaren in eigen verantwoordelijkheid dat dit product overeenstemt met de van toepassing zijnde normen en richtlijnen.

EU-KONFORMITETSEKTLÆRING

Vi erklærer som eneansvarlig, at dette produkt er i overensstemmelse med anførte standarder, retningslinjer og direktiver.

EU-FÖRSÄKRAN

Vi försäkrar på eget ansvar att denna produkt uppfyller de angivna normerna och riktlinjerna.

TODISTUS EU-STANDARDINMUKAISUUDESTA

Todistamme täten ja vastaamme yksin siitä, että tämä tuote on alluueteltujen standardien ja standardomisasiakirjojen vaatimusten mukainen.

DEKLARACJA ZGODNOŚCI EU

Oświadczamy z pełną odpowiedzialnością, że produkt ten odpowiada wymaganiom następujących norm i dokumentów normatywnych.

EU-AZONOSSÁGI NYILATKOZAT

Teljes felelősségünk tudatában kijelentjük, hogy jelen termék megfelel a következő szabványoknak vagy szabványossági dokumentumoknak.

EU 適合宣言

当社は自らの責任において、本製品が上記の規格およびガイドラインに適合していることを宣言します。



ROCAM 4:

2014/30/EU, 2014/35/EU, 2014/53/EU, 2011/65/EU
DIN EN 60065, DIN EN 61326-1,
EN 301 489-17 v2.2.1, EN 300 328 v1.8.1



Charger:

2014/30/EU, 2014/35/EU, 2011/65/EU
DIN EN 60335-1, DIN EN 60335-2-29, DIN EN 55014-1,
DIN EN 55014-2, DIN EN 61000-3-2, DIN EN 61000-3-3

Herstellerunterschrift

Manufacturer / authorized representative signature

ppa. Thorsten Bühl Kelkheim, 28.01.2016
Director Corporate Technology

Technische Unterlagen bei / Technical file at:
ROTHENBERGER Werkzeuge GmbH
Spessartstrasse 2-4
D-65779 Kelkheim/Germany

DEUTSCH - Originalbetriebsanleitung!

Bedienungsanleitung bitte lesen und aufbewahren! Nicht wegwerfen! Bei Schäden durch Bedienungsfehler erlischt die Garantie! Technische Änderungen vorbehalten!

page 21

ENGLISH

Please read and retain these instructions for use. Do not throw them away! The warranty does not cover damage caused by incorrect use of the equipment! Subject to technical modifications!

page 39

FRANÇAIS

Lire attentivement le mode d'emploi et le ranger à un endroit sûr! Ne pas le jeter! La garantie est annulée lors de dommages dus à une manipulation erronée! Sous réserve de modifications techniques!

página 58

ESPAÑOL

¡Por favor, lea y conserve el manual de instrucciones! ¡No lo tire! ¡En caso de daños por errores de manejo, la garantía queda sin validez! Modificaciones técnicas reservadas!

Pagina 77

ITALIANO

Per favore leggere e conservare le istruzioni per l'uso! Non gettarle via! In caso di danni dovuti ad errori nell'uso, la garanzia si estingue! Ci si riservano modifiche tecniche!

bladzijde 96

NEDERLANDS

Lees de handleiding zorgvuldig door en bewaar haar goed! Niet weggooien! Bij schade door bedieningsfouten komt de garantieverlening te vervallen! Technische wijzigingen voorbehouden!

side 115

DANSK

Læs betjeningsvejledningen, og gem den til senere brug! Smid den ikke ud! Skader, som måtte opstå som følge af betjeningsfejl, medfører, at garantien mister sin gyldighed! Ret til tekniske ændringer forbeholdes!

sida 133

SVENSKA

Läs igenom bruksanvisningen och förvara den väl! Kasta inte bort den! Garantin upphör om apparaten har använts eller betjänats på ett felaktigt sätt! Med reservation för tekniska ändringar!

sivulta 151

SUOMI

Lue ja säilytä tämä käyttöohje! Älä heitä pois! Takuu ei kata käyttövirheistä aiheutuvia vahinkoja! Oikeudet teknisiin muutoksiin pidätetään!

strongy 169

POLSKI

Instrukcję obsługi proszę przeczytać i przechować! Nie wyrzucac! Przy uszkodzeniach wynikających z błędów obsługi wygasa gwarancja! Zmiany techniczne zastrzeżone!

oldaltól 188

MAGYAR

Kérjük, olvassa el és őrizze meg a kezelési utasítást! Ne dobja el! A helytelen kezelésből származó károsodások esetén megszűnik a jótállás! Műszaki változtatások fenntartva!

ページ 207

日本語

操作説明書は目を通したあと、保管してください！捨ててはいけません！操作を誤ったために生じた損害に対しては、保証は行ないません！本装置に対する技術上の変更により説明書の内容に一致しない場合があります！

Art. No.:Description

1500001470	ROCAM 4 - 30m cable, Ø 30mm camera head EU
1500001471	ROCAM 4 - 30m cable, Ø 40mm camera head EU
1500001553	ROCAM 4 - 30m cable, Ø 30mm camera head UK
1500001554	ROCAM 4 - 30m cable, Ø 40mm camera head UK
1500001556	ROCAM 4 - 30m cable, Ø 30mm camera head JP
1500001557	ROCAM 4 - 30m cable, Ø 40mm camera head JP
1500001558	ROCAM 4 - 30m cable, Ø 30mm camera head USA
1500001559	ROCAM 4 - 30m cable, Ø 40mm camera head USA
1500001560	ROCAM 4 - 30m cable, Ø 30mm camera head AUS
1500001561	ROCAM 4 - 30m cable, Ø 40mm camera head AUS

1	Safety Notes	22
1.1	Intended use	22
1.2	General Power Tool Safety Warnings	22
1.3	Special safety instructions	24
2	Technical data ROCAM 4.....	26
2.1	Technical data Battery / Charger	27
3	Function of the Unit.....	27
3.1	Overview (A)	27
3.2	Working notes	27
3.3	Battery / Charger (B)	27
3.4	Changing the battery	28
3.5	Working with the device.....	28
3.6	ROCAM positioning.....	29
3.7	Monitor unit with touchscreen	29
3.8	User interface start up screen.....	30
3.9	Picture / Video mode	30
3.10	User interface operating elements	32
3.10.1	Using the ROCAM 4 app.....	35
3.10.2	Data transmission to a PC.....	36
3.11	Replace the reel (C)	36
4	Care and Maintenance.....	37
5	Accessories	37
6	Customer service.....	37
7	Disposal	38

Markings in this document:



Danger!

This sign warns against the danger of personal injuries.



Caution!

This sign warns against the danger of property damage and damage to the environment.



Call for action

FCC-Statement (Class A, Group 1)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Federal Communications Commission Statement

NOTE – This equipment has been tested and found to comply with the limits for a Class A , Group 1 digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technicians for help.

Class A, Group 1 Note

Warning – This is a Class A, Group 1 product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

1.1 Intended use**ROCAM 4:**

The ROCAM 4 TV inspection system is solely for inspecting empty, clean pipes, hollow cavities and hollow spaces, as indicated under Technical data. Other uses are discouraged.

Do not leave camera heads in the sun for extended periods. This can damage the camera module! All applicable standards and regulations must be observed.



This tool is only suitable for indoor use. Never expose tool to rain!

Among others, these particularly include:

- Laws on technical equipment (Equipment Safety Act) and associated regulations
- Low Voltage Directive
- UVV VBG 1 „General regulations“
- UVV VBG 4 „Electrical systems and equipment“
- Guidelines for work in containers and confined spaces (BG rule 77), Guideline for work-stations.

Battery / Charger:

The quick charger charges ROTHENBERGER 18V DC / 3Ah batteries art. no: 15810.

Do not use this product in any other way as stated for normal use.

1.2 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 electrically-operated (corded) power tool or battery-operated (cordless) power tool.

1) Work area safety

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

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 (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is 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 or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- e) **When operating a power tool outdoors only, use an extension cords 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.

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 momentary lack of attention 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 these devices can reduce dust related hazards.

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 tools 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) Battery tool use and care

- a) **Recharge only with the charger specified by the manufacturer.** A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.
 - b)  **WARNING! Use power tools only with specifically designated battery packs and respectively battery types.** Use of any other battery packs may create a risk of explosions, injury and fire.
 - c) **When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another.** Shorting the battery terminals together may cause burns or a fire.
 - d) **Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help.** Liquid ejected from the battery may cause irritation or burns.
- 6) Service**
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.

1.3 Special safety instructions

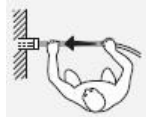
ROCAM 4:

Wear proper work clothes, work gloves, safety glasses and safety shoes.

Do not perform any work inside the device! Only trained technical personnel (customer service) are allowed to work in this area!

It is prohibited to use the TV inspection system for medical uses of any sort!

Do not use force to pull the camera head and reel cable out of the pipe!



Always set the pipe cable next to the "axis"; otherwise there is a risk of injury!

The reel cable is rigid and is therefore under mechanical stress! Hold firmly when unwinding from the reel!

Keep a firm footing.

According to UVV, the minimum distance must be 50 cm (average 64 cm)!



Before each use, check the reel cables for damage. Damaged reel cable must be replaced! Contact with electrically charged live parts can be fatal!

Battery / Charger:

This charger is not intended for use by children and persons with physical, sensory or mental limitations or a lack of experience or knowledge. This charger can be used by children aged 8 and above and by persons who have physical, sensory or mental limitations or a lack of experience or knowledge if a person responsible for their safety supervises them or has instructed them in the safe operation of the charger and they understand the associated dangers. Otherwise, there is a danger of operating errors and injuries

Supervise children during use, cleaning and maintenance. This will ensure that children do not play with the charger.

Do not charge non-rechargeable batteries!



RISK OF EXPLOSION!

Physical injury!!

The battery charger may not be used to charge other batteries or rechargeable batteries. Ventilation slots of the battery charger must not be covered up.

Please pay attention to the following symbol on the label of the charger:



This tool is only suitable for indoor use. Never expose tool to rain!

No metal parts are allowed to enter the battery section of the charger (risk of short circuit).



RISK OF FIRE! Short-circuit! Do not bridge contacts of the battery charger with metal parts!

Do not charge battery in direct sunlight. Only use the battery in an ambient temperature between -10°C and 50°C.



RISK OF FIRE! Never charge batteries near acids and highly flammable materials.

Battery fluid may leak from damaged removable batteries under conditions of extreme load or extreme temperatures. Any areas that have come into contact with battery fluid should be washed immediately with soap and water. If battery fluid comes into contact with the eyes rinse them thoroughly for at least 10 minutes and consult a doctor immediately.

Do not store batteries with metal objects (danger of short circuit).

Check before each use: Carry out a visual inspection each time before using the battery charger. Never charge a damaged battery pack. Replace by a new one.

The power supply (plug) / charging cable should be inspected regularly for signs of damage and ageing (brittleness) and should only be used in perfect condition.

Never break open battery packs and chargers and store only in dry rooms. Keep dry at all times.



Do not use battery in older versions of ROCAM! Risk of damage of ROCAM and personal injury!

Storage:

The battery should be disconnected from the battery charger, so that the fully charged battery does not discharged in the charger.

Only store the charger unplugged and only in temperature between 0-30°C.

Do not store the charger in direct sunlight!!

Transport:

The contained lithium-ion batteries are subject to the Dangerous Goods Legislation requirements. The user can transport the batteries by road without further requirements. When being

transported by third parties (e.g.: air transport or forwarding agency), special requirements on packaging and labelling must be observed. For preparation of the item being shipped, consulting an expert for hazardous material is required.

Dispatch batteries only when the housing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packaging. Please also observe specific national regulations.


2 Technical data ROCAM 4

Battery voltage.....	18 V DC
Battery capacity	3,0 Ah
Rated power consumption	16 W
Working temperature	-10 ... +50 °C
Storage temperature	-30 ... +50 °C
Dimensions (L x W x H, mm)	560 x 400 x 340
Weight (with battery)	18,6 kg
Monitor	Touchscreen 10.4"
Picture/Video format	JPG / AVI (resolution 720px. x 600px.)
Video Out	Micro HDMI
Memory capacity.....	4 GB SD-card (max. 32 GB)
Camera module	CMOS colour PAL
Camera head diameter	ø 30 mm, ø 40 mm (optional ø 25 mm Mini Modul)
Slide cable length	30 m (optional 8 m Mini Modul)
Slide cable diameter	ø 7.0 mm (optional ø 5,5 mm Mini Modul)
Working range	Ø 40 - 100 mm (optional Mini Modul) Ø 70 - 150 mm (30 mm camera head) Ø 100 - 300 mm (40 mm camera head)
Positioning transmitter	33 kHz (bolt-on optional)
Protection class camera head.....	IP 68

Included in delivery: ROCAM 4 TV- inspection system with Camera head ø30 mm or ø40 mm, guide ball, positioning transmitter 33 kHz, USB cable, test adaptor, manual, 4 GB SD card, battery and charger.

2.1 Technical data Battery / Charger

Battery, art.-no.:	15810	Charger, art. no.:	EU 15811, AUS 1500000231, UK 1000001434, USA / JA 1000000030
Typ/ model.....	Lithium-Ion Battery	Typ/ model	Charger for 18V Li-Ion Akku
Voltage	18 V DC	Input voltage	100V – 240V AC
Capacity	3,0 Ah	Input capacity.....	0,7 – 1,3 A
Charging voltage.....	21 V DC, max. 21,25 V DC	Input frequency	50 – 60 Hz
Charge current.....	1500 mA, max. 3000 mA	Input power	58 W
Charging temperature	5° - 45° C	Charging voltage.....	21V DC
Max. discharging temperature.....	-20°C +60°C	Max. charge current	2000 mA
Approx. charging time (90% full) ..	ca. 85 min	Rated output	42 W max.
Weight	ca. 630 g	Number of battery cells ...	5-10
Recharge battery pack before first use!		Weight	ca. 675 g

 Pay attention to the electrical outlet voltage! Check the label on the bottom of the charger.

3 Function of the Unit

3.1 Overview

(A)

1	Camera head	7	Monitor unit
2	Positioning probe	8	Reel
3	Bending spring	9	Frame
4	Reel cable	10	Holder / Bracket
5	Rear flap	11	Guide hook
6	Front flap		

3.2 Working notes

- Do not bend the reel cable! The cable may break!
- Do not pull the reel cable over sharp edges! The cable may become damaged!



ATTENTION! Always protect ROCAM 4 against water, and use only recommended indoors. Only the camera head (1) and reel cable (4) may come into contact with water!

3.3 Battery / Charger

(B)

Power connection:

Connect only to single-phase a.c. current and only to the system voltage indicated on the rating plate. It is also possible to connect to sockets without ground, as the design conforms to safety class II.

Charging the battery:



ATTENTION! Overvoltage can damage or destroy the batteries and charger. Always observe correct voltage!

The lithium-ion battery can be charged at any charging level and charging can be interrupted at any time without damaging the battery (no memory effect).

- Insert plug of the battery charger into a wall socket: Red and green LEDs are lit.
- Connect the battery (1) to the battery charger (2): Charging control light (3) flashes green: Battery is charged. Charging control light (3) is lit green: Battery is fully charged. (For charging time, see Technical Data).
- Keep button pressed and remove the battery.
- Disconnect plug from the wall socket.

Storage:

The place of storage must be inaccessible to children.

- Keep button pressed and remove the battery.
- Disconnect plug from the wall socket.
- Store battery charger in a dry, frost-proof location.

Store the battery only in a charged state! Fully recharge the battery after 12 months of storage, at the latest!

Troubleshooting:

Before evaluating faults, disconnect the plug!

- Fault lamp (4) is lit red: Battery temperature outside the permissible charging temperature (5°C to 45°C).
- Fault light (4) flashes red: Battery is defective.

If the battery temperature is between 5°C and 45°C and the red fault light (4) is nevertheless lit, there may be a faulty contact.

- Clean contact points on battery.

In the event of other faults, please contact ROTHENBERGER Service. Repairs should only be carried out by ROTHENBERGER service centres or dealers authorised by ROTHENBERGER.

3.4 Changing the battery

- Open the rear cover (5).
- Insert the battery into the compartment on the right side of the accessory compartment until it clicks. To remove, press the locks and pull the battery out.

3.5 Working with the device



Wear protective clothing! Always stand next to the reel cable!

- Push reel cable (4) with bending spring (3) from the holder (10) / reel (8) take and remove cap.
- Remove the cap from the camera head (1) and screw on the bending spring (3).



Caution: Check for cleanliness and damage!

- If necessary, additional accessories can be attached to camera. When using pipe diameters greater than 70 mm, always use guide body!
- Clean the pipe system before inspection.
- Press button on the bottom cover (6), open the cover. Hold the door during opening.
- Turn the device on with the Power-button, located bottom front center of the monitor (7). The monitor unit (7) can be removed from the basic device for optimal viewing angle.



Excessive pressure on the touch screen may damage the monitor unit!

- Remove the camera head (1) from the holder (10) and pull the cable (4) from the reel (8). The cable is rigid and is under mechanical stress. Therefore, hold it firmly when unwinding from the reel. By pressing in the holder / bracket (10), it can be clamped!

- Guide the camera head (1) into the pipe system and carefully push it with the cable (4). Caution: Unwinding the reel too quickly may cause it to continue to spin.
- For optimal results, a camera head (SL40) with a stronger light yield up to DN300 can be screwed on. Camera heads are interchangeable.



Do not pull the cable (4) over sharp edges, and do not bend it!! Check the camera cable before each use for damage!



While it is being pushed, the cable (4) may loop: Breakage may result!!

During advancement through several pipe bends, the camera image is always upright.

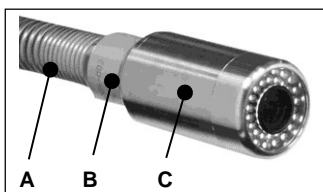
- After work is finished, pull the cable (4) out of the pipe and push it directly onto the reel (8). Remove coarse dirt and water with a rag while winding cable on reel.
- Clean thoroughly (see section 4.).
- Dismantle camera head (1) and accessories, plug cap and insert bending spring (3) with reel cable (4) into the reel (8).
- Camera head (1) and accessories should be cleaned and safely stored.
- Close the flap.



Camera head and accessories must be cleaned after each use, dismantled and stored safely. Abnormal transport of the camera head can cause damage!

- Check the camera head regularly the camera head (1) for leaks. For this purpose, screw the test adaptor on the camera head, applying a maximum pressure of 1 bar by an air pump with pressure indicator. If this test indicates a drop in pressure, replace camera head.

3.6 ROCAM positioning



The grey, cylinder-shaped positioning probe (B) can be screwed by hand between the camera head (C) and the bending spring (A). Only finger tight, to avoid damaging threads!

The positioning probe emits magnetic fields that are received by the positioning receiver and are transformed visually and audibly.

The 33 kHz measuring system can penetrate masonry, stone, wood and plastic.

The intensity of the signal changes depending on the position and distance from the receiver.

3.7 Monitor unit with touchscreen

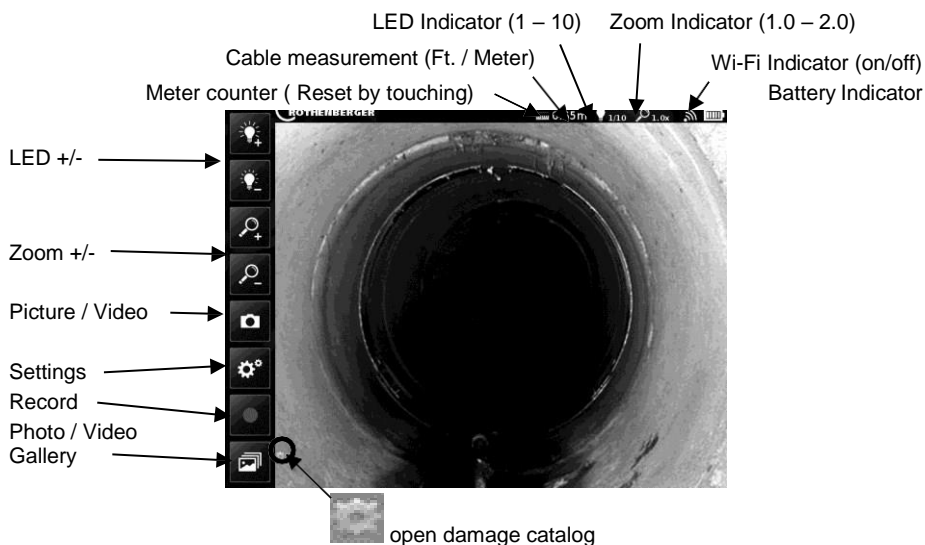


The ROCAM 4 comes with a 4GB SD card to save photo's and video's. This can be removed for data transfer.

Connections Micro-HDMI, mini USB and SD card are on the side of the monitor unit.

Only use a screened USB cable to make a connection between ROCAM 4 and a computer!

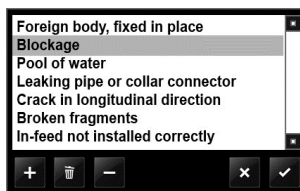
3.8 User interface start up screen



Choose the type of damage in the damage catalog and confirm . This will be shown in the left bottom of the screen, and also by saving images/videos:

Setting up damage catalog:

- Foreign body, free
- Blockage
- Pool of water
- Leaking pipe or collar connector
- Crack in longitudinal direction
- Crack in transverse direction
- Broken fragments
- In-feed not installed correctly
- Laid incorrectly
- Wear, mechanical
- Wear, corrosive
- Encrustation
- Deformation



- + Add a new damage
- 🗑️ Delete damage
- switch off damage
- x back
- ✓ confirm

3.9 Picture / Video mode

- Select picture mode or video mode .
- Touch the record picture / video button . Touch the stop video button . Data is automatically saved as a jpg, avi, or wav files.
- Open photo / video gallery and select required photo / video (only if SD-card is installed in monitor).
- Scroll left or right , to select saved pictures or Videos.

Video mode:



Play saved video



Pause. Video stops and the current view can be edited



and then saved (s. photo mode)



File naming





Delete video's. Confirm with  yes or  no / back

Photo mode:



Audio annotation for selected photo.



Stop audio Annotation



Play saved audio annotation



Pause



Marking Mode / Drawing on Saved Images



Drawing arrows (touch button / then draw arrow with stylist / drag to relocate)



Drawing circles (touch button / then draw circles with stylist / drag to alter size and/or relocate)



Add text to saved pictures from the damage catalog



Choose color of the text/drawing



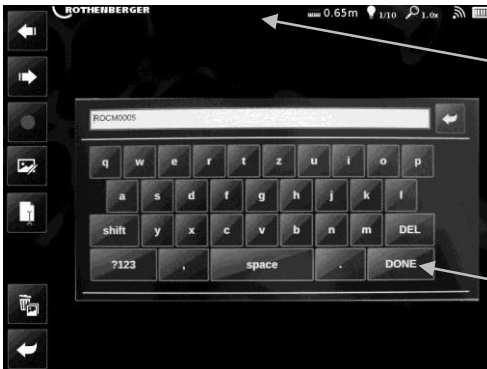
Save photo (photo is automatically renamed, original remains)



Touch arrow (or) circle / touch delete button to remove arrow (or) circle



File Naming / Text Annotation





Folder Name Will Appear in the Top Tool Bar
(Don't use special characters)

Done button saves title



Delete pictures. Confirm  yes or  no / back



Delete audio file from saved pictures. Confirm  yes or  no / back



Return to photo / video gallery



Return to live screen

3.10 User interface operating elements



FW (Firm Ware Version)
IP (IP Address)
Wi-Fi (SSID / Hot Spot)



Tools menu



Set time



Wi-Fi (on / off)



Live image Streaming



Set date



Language



Remove SD card



Time / Date Stamp (On / Off)



Unit of measure (feet / meter)



Auto Shut Off (0 / 10 / 20 / 30)



Voice recording for Video (on / off)



LCD Brightness



Folder Options



Format / Wipe SD Card



Reset damage Catalog to presetting

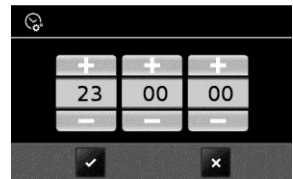
Set Time:



Set hour / minute / second by using + / - buttons. Saving with



 or cancel 

hour / minute / second



Set date:



Set month / day / year by using + / - buttons. Saving with  or cancel .

day / month / year



Time / date stamp:

Optional time / date stamp when saving photo's/video's



on



off



Auto shut off:



Set the unit to automatically turn off after 0, 10, 20, or 30 minutes

LCD Brightness:





Select from 5 different brightness levels for optimum viewing

Format / Wipe (4G) SD Card:



Formatting will erase all saved images and/or video only in folder ROCAM 4 on SD card.

Not other Saved Data! Confirm with  yes or  no / back

Wi-Fi on / off:

Wireless Hot Spot with ROCAM 4 Device on/off



on



off

- Download to transmit data to a smartphone/tablet App in iOS/App Store or Android/Play Store (for use of the app see 3.10.1).

Language Selection:



Following languages are available:

DE, EN, ES, FR, IT, NL, PT, DA, SV, FI, PL, CS, TR, HU, SLO, RU, BG, GRI, RU, CHI, JA, AR, HI

Unit of Measure:



Choose between „meter ” or “feet”:

m = meter, ft.= feet

Voice recording:

Optional recording of audio with video / photo.

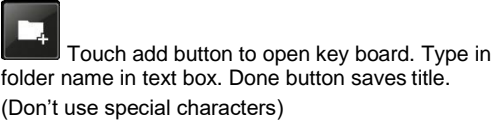


Folder Options:

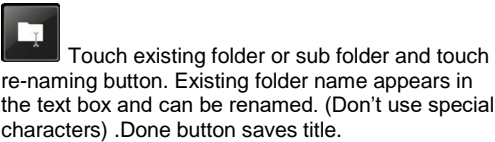


Folders and subfolders can now be renamed or added, based on the time and date.

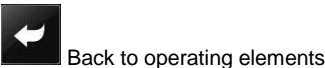
Add folder:



Re-Name existing folders:



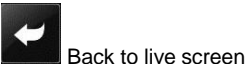
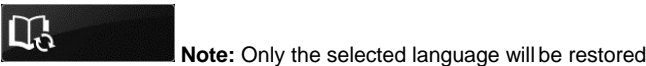
Note: Pictures and videos are saved in a folder created daily. To look at older recordings, select the appropriate folder.



Live image streaming:



Reset damage catalog to presetting:






Remove SD card safely:



Push button before removing SD card. Otherwise already stored data on the SD card could be lost.

3.10.1 Using the ROCAM 4 app

→ Switch on both wifi functions over the system settings of ROCAM 4 





→ Using the settings of the Android/ iOS device, connect with the network “rocam4_hotspot”. The password for this is: “letroc4in”.

→ After making the configuration, leave the system settings of ROCAM 4 and switch to Live-bild.




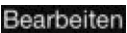


→ Open the app on the Android/ iOS device. This image appears .

Here one can select between the live picture transmission  and viewing the recordings which have been made over the app  (pictures/videos).














→ Create the desired pictures/videos over live picture transmission .

Under Recordings  there appears the list of all of the photos and videos taken. Tap on the desired file and it will open and can therefore be viewed or processed.

The selected picture is displayed in close-up. One can select from 3 options:

- | | <u>Android device</u> | <u>iOS device</u> | |
|----|---|---|--|
| 1. |  Microphone (audio commentary) |  Microphone (audio commentary) | |
| 2. |  Image processing |  Image processing | |
| 3. |  Split |  Split | |

The processing menu appears after "Image processing" was selected.



<u>Android device</u>		<u>iOS device</u>	
	Retrogressive		Retrogressive
	Restore		Restore
	Colour palette		Colour palette
	Save		Save
	Select the stylus for processing:		Stylus
	Stylus		Eraser
	Eraser		Text
	Text		Styles
	Styles		

To transmit this one returns to the previous menu and selects the "Share" option (dependent on the installed programs).



Android device iOS device

3.10.2 Data transmission to a PC

→ Switch on the wifi function over the system settings of ROCAM 4  .

! The SD card of the ROCAM 4 must be inserted!!

- Switch on the wifi function on the PC and connect with the wireless network "roc-am4_hotspot". The network security key required to make the connection is: "letrocam4in".
- Open the respective browser on the PC and enter the IP address of the ROCAM 4 <http://192.168.5.1>.

One is now automatically connected with the existing ROCAM 4 directories and can view the desired pictures and videos.

Proceed as one would normally to save the one or the other on the PC.

3.11 Replace the reel

(C)



Switch off ROCAM 4 before replacing the reel!

- Installing ROCAM 4 vertically. Front flap (6) must be closed here!
- Remove camera head (1) from the holder (10) and take the reel cable (4) carefully out of the guide hook (11) (Only SL40: remove camera head).
- Position camera head (1) with cable (4) into the reel (8).
- Bayonet connection operated by a half turn, and pulling gently (hold counterpart).
- Use caution not to damage the connector!
- Loosen locking bolts by pulling gently from the lock and Turning it 90 °. Restrain reel (8) to prevent from slipping.
- Push reel (8) toward T-slot and remove the side. Use caution not to damage the connector.

- Mount in reverse order, paying attention when inserting the reel (8) on mark.
The software automatically detects the connected camera head.

4 Care and Maintenance



Always clean the device after every pipe inspection!

- Turn the device off with the power button on the monitor (7) and remove the battery, and pull the electrical plug.
- Close the cover and press until it clicks.
- Take off the reel (8) from the ROCAM 4 (see section 3.11) and clean under running water.
- Only clean the reel when removed from device.



The device must be protected against water and must only be cleaned with a damp cloth!

- Insert dried reel (8) back into the device (see section 3.11).

Charger:

If the supply cord of this product is damaged, it must be replaced by an authorized repair shop appointed by the manufacturer, because special tools are required.

5 Accessories

Accessory Name	ROTHENBERGER- Part Number
Mini-Modul	1500001472
Camera head 30 mm	1500000123
Camera head 40 mm	1500000122
Guide ball for brush tool 30 mm	1500000817
Guide ball for brush tool 40 mm	69112
Brush tool Ø 100 mm	69113
Brush tool Ø 150 mm	69117
Roll carriage for 40 mm Ø 150 mm	69118
Roll carriage for 40 mm Ø 200 mm	69119
Power supply 230 V	1500001562

6 Customer service

The ROTHENBERGER service locations are available to help you (see listing in catalog or on-line) and replacement parts and service are also available through these same service locations. Order your accessories and spare parts from your specialist retailer or using our service-after-sales hotline:

Phone: + 49 (0) 61 95 / 800 – 8200
Fax: + 49 (0) 61 95 / 800 – 7491
Email: service@rothenberger.com
www.rothenberger.com

Components of the unit are recyclable material and should be put to recycling. For this purpose registered and certified recycling companies are available. For an environmental friendly disposal of the non-recyclable parts (e.g. electronic waste) please contact your local waste disposal authority.

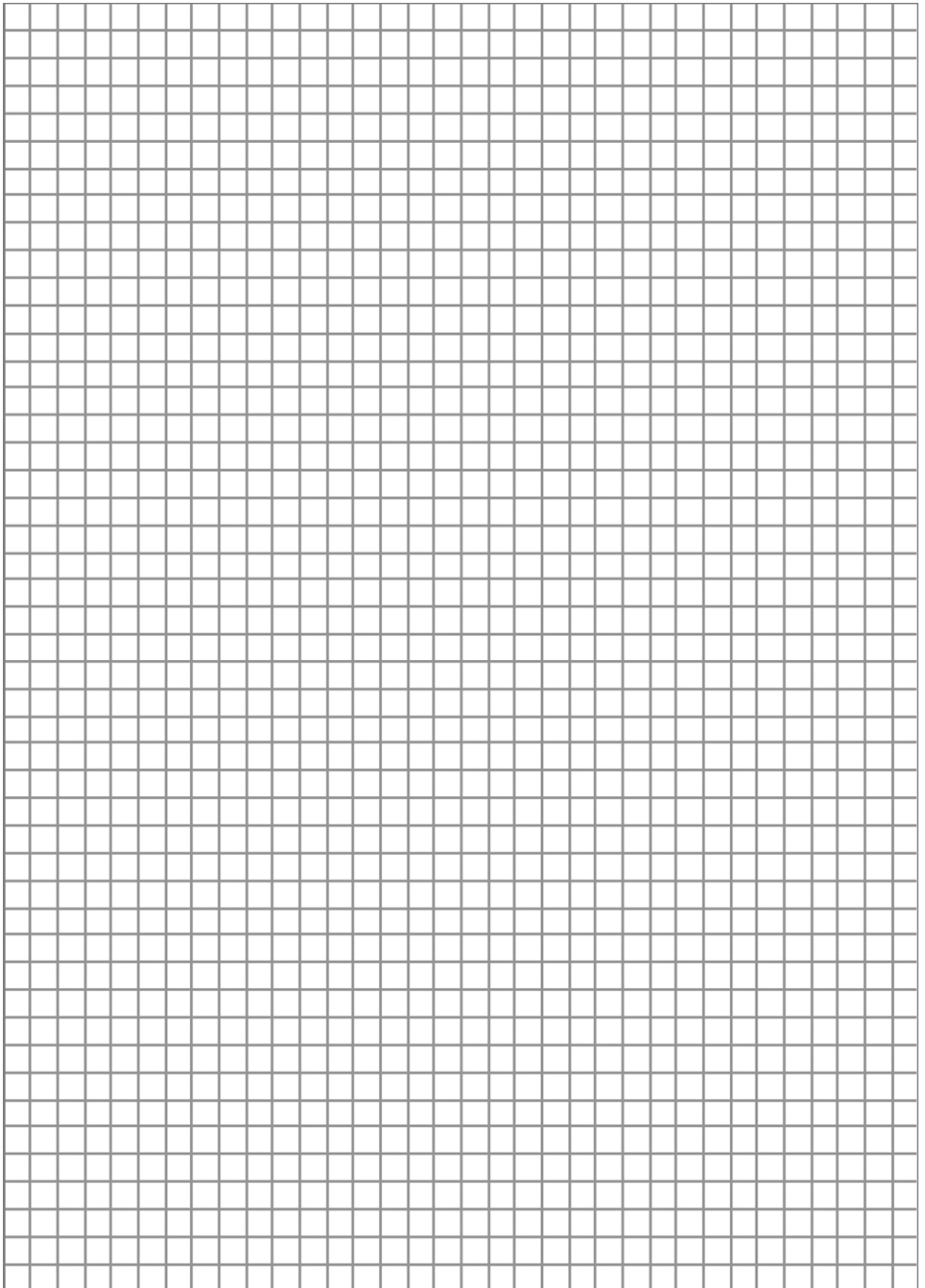
Old batteries can be taken to your specialist dealer who will dispose of them in conformity with environmental regulations.

For EU countries only:

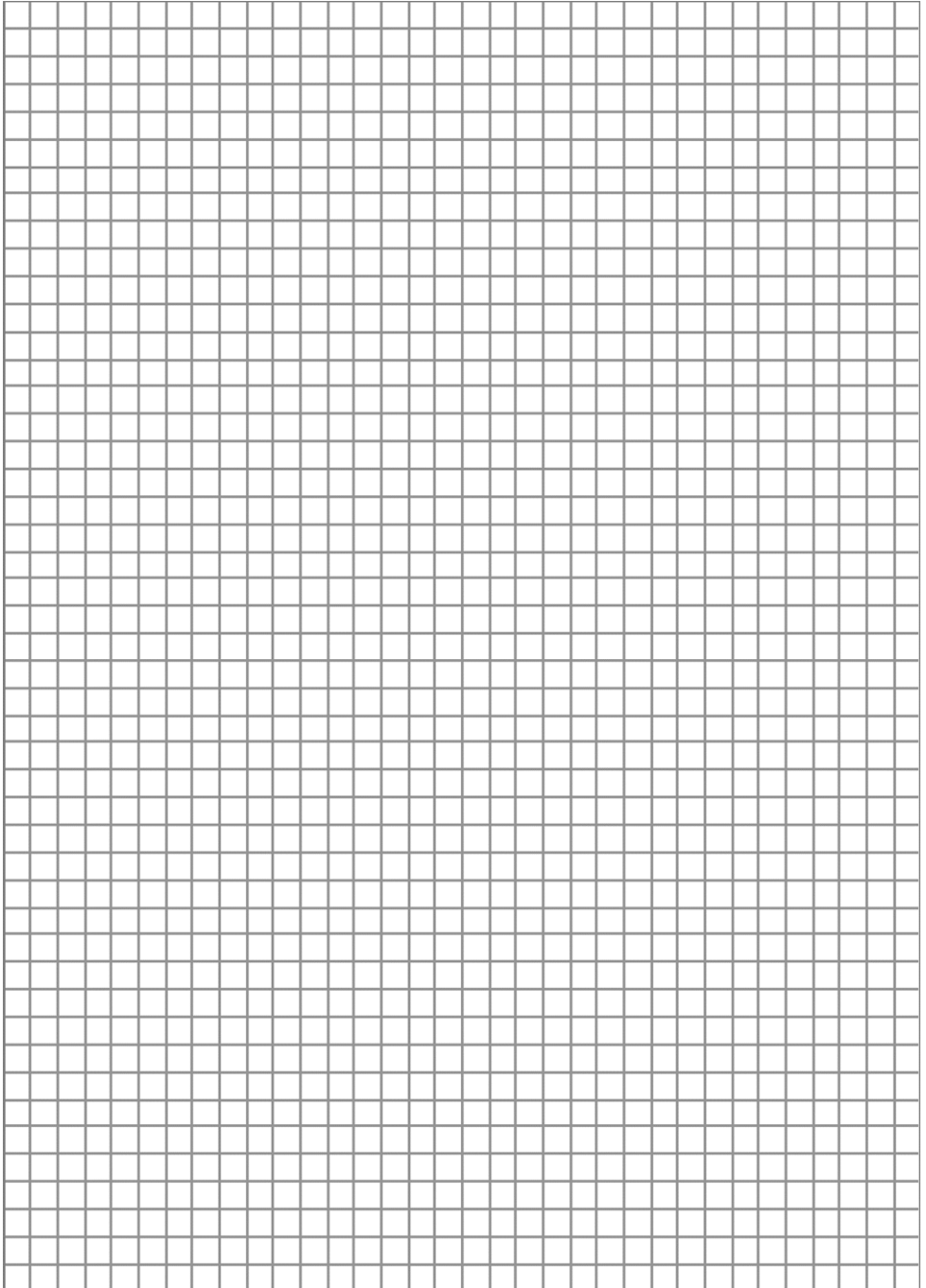


Do not dispose of electric tools with domestic waste. In accordance with European Directive 2012/19/EC on waste electrical and electronic equipment and its implementation as national law, electric tools that are no longer serviceable must be collected separately and utilised for environmentally compatible recycling.

NOTES



NOTES



ROTHENBERGER Worldwide

Australia	ROTHENBERGER Australia Pty. Ltd. Unit 6 • 13 Hoyle Avenue • Castle Hill • N.S.W. 2154 Tel. + 61 2 / 98 99 75 77 • Fax + 61 2 / 98 99 76 77 rothenberger@rothenberger.com.au www.rothenberger.com.au	Italy	ROTHENBERGER Italiana s.r.l. Via G. Rolas Romoli 17-19 • I-20019 Settimo Milanese Tel. + 39 02 / 33 50 001 • Fax + 39 02 / 33 50 0151 info@rothenberger.it • www.rothenberger.it
Austria	ROTHENBERGER Werkzeuge- und Maschinen Handelsgesellschaft m.B.H. Gewerbeparkstraße 9 • A-5081 Anif Tel. + 43 62 46 / 7 20 91-45 • Fax + 43 62 46 / 7 20 91-15 office@rothenberger.at • www.rothenberger.at	Netherlands	Nederland bv Postbus 45 • NL-5120 AA Rijen Tel. + 1 61 / 29 35 • Fax + 31 1 61 / 29 39 08 info@rothenberger.nl • www.rothenberger.nl
Belgium	ROTHENBERGER Benelux bvba Antwerpssteenweg 59 • B-2630 Aartselaar Tel. + 32 3 / 8 77 22 77 • Fax + 32 3 / 8 77 03 94 Info@rothenberger.be • www.rothenberger.be	Poland	ROTHENBERGER Polska Sp.z o.o. Ul. Annopol 4A • Budynek C • PL-03-236 Warszawa Tel. + 48 22 / 2 13 59 00 • Fax + 48 22 / 2 13 59 01 biuro@rothenberger.pl • www.rothenberger.pl
Brazil	ROTHENBERGER do Brasil LTDA Av. Fagundes de Oliveira, 538 - Galpão A4 09050-300 - Diadema / SP - Brazil Tel. + 55 11 / 40 44-4748 • Fax + 55 11 / 40 44-5051 spacante@rothenberger.com.br • www.rothenberger.com.br	Russia	Russia Avtosavodskaya str. 25 115280 Moscow, Russia Tel. + 7 495 / 792 59 44 • Fax + 7 495 / 792 59 46 info@rothenberger.ru • www.rothenberger.ru
Bulgaria	ROTHENBERGER Bulgaria GmbH Boul. Sitnjakovo 79 • BG-1111 Sofia Tel. + 35 9 / 2 9 14 • Fax + 35 9 / 2 46 12 05 info@rothenberger.bg • www.rothenberger.bg	South Africa	ROTHENBERGER-TOOLS SA (PTY) Ltd. P.O. Box 4360 • Edenburg 1610 165 Vanderbijl Street, Meadowdale Germiston Gauteng (Johannesburg), South Africa Tel. + 27 11 / 3 72 96 31 • Fax + 27 11 / 3 72 96 32 info@rothenberger.co.za • www.rothenberger.co.za
China	Pipe Tool (Shanghai) Co., Ltd. D-4, No.195 Qianpu Road, East New Area of Songjiang Industrial Zone, Shanghai 201611, China Tel. + 86 21 / 67 60 61 • + 86 21 / 67 60 20 67 Fax + 21 / 67 20 • office@rothenberger.cn	Spain	S.A. Ctra. Durango-Elorrio, Km 2 • E-48220 Abadiano (Vizcaya) (P.O. Box) 117 • E-48200 Durango (Vizcaya) Tel. + / 6 21 01 00 • Fax + / 6 21 01 export@rothenberger.es • www.rothenberger.es
Czech Republic	CZ Prumyslova 1306/7 • 102 00 Praha 10 Tel. +420 730 • Fax +420 267 310 187 prodej@rothenberger.cz • www.rothenberger.cz	Sweden	Sweden AB Hemvärmsgatan 22 • S- 171 54 Solna, Sverige Tel. + 46 / 80 23 00 • Fax + 46 8 / 54 60 23 01 roswe@rothenberger.se • www.rothenberger.se
Denmark	Scandinavia A/S Smedevænget • DK-9560 Hadsund Tel. + 45 / 15 75 • Fax + 45 / 15 68 23 roscaan@rothenberger.dk	Switzerland	(Schweiz) AG Zürich Herost. 9 • Tel. + 44 / 435 30 30 • Fax + 41 44 / 401 06 08 info@rothenberger-werkzeuge.ch
France	ROTHENBERGER France S.A. 24, rue des Drapiers, BP 45033 • F-57071 Metz, Cedex 3 Tel. + 33 3 37 87 74 92 92 • Fax + 33 3 / 87 74 94 03 Info-fr@rothenberger.com • www.rothenberger.fr	Turkey	TÜRKİYE Center, Barbaros Bulvarı No:9 TR-34775 Şerifali / Ümraniye-Istanbul Tel. + 90 / 85 • Fax + / 216 87 rothenberger@rothenberger.com.tr www.rothenberger.com.tr
Germany	ROTHENBERGER Deutschland GmbH Industriestraße 7 • D-65779 Kelkheim/Germany Tel. + 49 61 95 / 800 81 00 • Fax + 49 61 95 / 800 37 39 verkauf-deutschland@rothenberger.com www.rothenberger.com	UAE	East FZCO PO Box 261190 • Jebel Ali Free Zone Dubai, United Arab Emirates Tel. + / 48 83 97 77 • Fax + 971 / 48 97 57 office@rothenberger.ae
Greece	ROTHENBERGER Werkzeuge Produktion GmbH Lilienthalstraße 71-87 • D-37285 Hesse nach Lichtenau Tel. + 49 56 02 / 93 94-0 • Fax + 49 56 02 / 93 94 36	USA	ROTHENBERGER EQUIPMENT TRADING & SERVICES LLC PO Box 91208 • Mussafah Industrial Area Abu Dhabi, United Arab Emirates Tel. + 971 / 25 60 01 54 • Fax + 971 / 25 50 01 53 usaesales@rothenberger.ae
Hungary	ROTHENBERGER Hellas S.A. Agias Kyriakis 45 • 17564 Paleso Faliro • Greece Tel. + 30 210 94 02 049 • +30 210 94 07 302 / 3 Fax + 30 210 94 07 322 ro-he@otenet.gr • www.rothenberger.com	UK	ROTHENBERGER UK Limited 2, Kingshome Park, Henson Way, Kettering • GB-Northants NN16 8PX Tel. + 44 15 36 / 31 03 00 • Fax + 44 15 36 / 31 08 00 Info@rothenberger.co.uk
India	ROTHENBERGER Hungary Kft. Gubacsi út 26 • H-9097 Budapest Tel. + 36 1 / 3 47-50 40 • Fax + 36 1 / 3 47 0 50 59 Info@rothenberger.hu • www.rothenberger.hu	USA	ROTHENBERGER USA LLC 7130 Clinton Road • Loves Park, IL 61111, USA Tel. +1 / 80 05 45 76 98 • Fax + 1 / 81 56 33 08 79 pipetools@rothenberger-usa.com www.rothenberger-usa.com
India	ROTHENBERGER India Pvt. Ltd. Plot No 17, Sector - 37, Pace city-I Gurgaon, Haryana - 122 001, India Tel. 9212464898900 • Fax 92124-4019471 contactus@rothenbergerindia.com www.rothenberger.com		ROTHENBERGER Werkzeuge GmbH Industriestraße 7 D- 65779 Kelkheim / Germany Telefon + 49 (0) 61 95 / 800 - 0 Fax + 49 (0) 6195 / 800 - 3500 info@rothenberger.com