



# BATTERY MINI CLEANER

BATTERY MINI CLEANER 8/16 | BATTERY MINI CLEANER +C 8/16

## OPERATION & SAFETY MANUAL



### **WARNING**

*These instructions are for your personal safety. Always ensure that you have read and understood these instructions before using the equipment.*

**SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

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To watch practical demonstration videos, take a course, or to download an electronic copy of these Instructions, please visit [www.picoteinstitute.com](http://www.picoteinstitute.com). Please note that videos and courses are not intended as a replacement or alternative to this operating and safety manual, but only as an additional learning tool.

# SAFETY INFORMATION

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## WARNING

This section contains important safety information.  
Failure to comply could result in serious injury or death.

### Safety Symbols



**Danger** risk of serious injury, follow instructions.



**Danger**  
Electric shock risk

**Danger** risk of serious injury or death by electrocution, follow instructions.



**Danger** risk of serious injury from moving parts, follow instructions.



**Danger** risk of serious injury from hot parts, follow instructions.



**Danger** do not touch. Risk of injury, follow instructions.

### Personal Protective Equipment (PPE)



Suitable eye protection to protect against injuries and chemicals from irritating eyes.



Suitable ear protection to protect against hearing loss.



Suitable heat and cut-resistant gloves to help prevent any hand injuries. Any open injuries or skin irritations should always be covered to avoid contact with sewage, chemicals or dust.



Suitable respirator to prevent any dust or fumes being inhaled or consumed, which could cause occupational asthma or dermatitis.

# GENERAL MACHINE SAFETY INFORMATION

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## **WARNING**

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1. **Always wear eye and ear protection, as well as heat and cut-resistant gloves.** Other personal protective equipment, such as dust mask, gloves & overalls should be worn when necessary.
2. Dust produced when working can be dangerous to your health, inflammable or explosive. Ensure that the ventilation openings are kept clear when working in dusty conditions. If it should become necessary to clear dust, first unplug the machine. Avoid damaging internal parts.
3. Make sure the pipe has been opened and ventilated to prevent any gases accumulating.
4. Always ensure that the machine is fully turned off and unplugged before inspection, maintenance, or installing any accessories to the machine. Always follow the instructions in the manufacturer's manual.
5. **Before each use** inspect the machine carefully for any potential break or damage. **Change damaged parts immediately.** It is especially important to check the end of the shaft for any signs of wear and tear, and repeat the process for the outer casing.
6. When in use, it is very important that the machine is stable and on an even surface at all times.
7. **Never leave the machine running unattended.** Always hold the cable when operating the machine.
8. **Do not touch tooling immediately after use,** it may be hot and could burn your skin.
9. If the working environment is extremely hot and humid, or badly polluted by conductive dust, use a GFCI-enabled power outlet to ensure the safety of the operator.
10. Make sure that the job location is well ventilated before grinding or drilling. Always use a vacuum extraction system in the pipe to remove dust. The operator must wear a dust mask when using dry grinding to clean pipes.
11. **Do not use the machine on any pipes containing asbestos fibres.**
12. **Never touch rotating parts.**
13. Do not stand on the machine.
14. Only use this machine with the accessories and spare parts offered by the Picote Solutions. Accessories and spare parts should only be used in the manner intended and as described by Picote Solutions.
15. Only operate the foot pedal or OPC as instructed. Never place anything on it in place of a foot.
16. **Do not use the Mini Cleaner or Mini Cleaner +C with an extension.**



# ENVIRONMENT, TRANSPORT, STORAGE & DISPOSAL

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## **WARNING**

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### ENVIRONMENTAL:

- **Operational Ambient Temperature Range:** -10°C to +50°C (14°F to 122°F), frost and condensation free.
- **Storage Ambient Temperature Range:** -20°C to +60°C (-4°F to 140°F), frost and condensation free.
- **Maximum Altitude:** 2000m (6,560 ft). Derate above 1000m (3,280 ft): 1% / 100m (328 ft).
- **Maximum Humidity:** 95% non-condensing.
- **Camera Maximum Humidity:** 90% non-condensing.

### TRANSPORT:

Millers should be transported in a car or other vehicle and laid down and secured with ratchet straps to prevent any sudden movements or accidents caused by hard braking or accident.

**Never transport the machine with tooling attached to the shaft.**

On +C models, always retract the camera back to its housing for transport.

If using a pick-up or trailer to transport, always suitably cover the Miller to protect it from the elements.

### STORAGE:

Millers should be stored indoors to protect them from rain and sunlight, somewhere with a constant ambient temperature. The best way to store the Miller is using the same box that it was shipped in.

**If the Miller has been stored in an environment colder than +10°C or +50°F, the machine should be stood at room temperature for 24 hours before use.**

If the Miller has been stored for long periods of time (over 2-3 months), it should be checked and tested according to the maintenance programme before use.

Charge the machine battery to around 80% capacity before storing for long periods.

**NEVER leave the battery unit unattended while it is charging.**

Charge the DVR battery fully before storing for long periods.

**NEVER leave the DVR unit unattended while it is charging.**

### DISPOSAL:

Miller motor, control box, electric wires and axle package including slip ring can be disposed in Europe at Waste Electrical and Electronic Equipment (WEEE) collection points. Miller frame, reel and shaft can be recycled in metal waste collection points.

Outer casing of the shaft can be disposed of as plastic waste.

The Battery Mini Cleaners and optional +C camera monitoring box contain a Li-ion battery.  
Recycle Li-ion batteries according to local, regional, and national waste handling rules and regulation.

**Do not dispose of in fire! Do not puncture!**

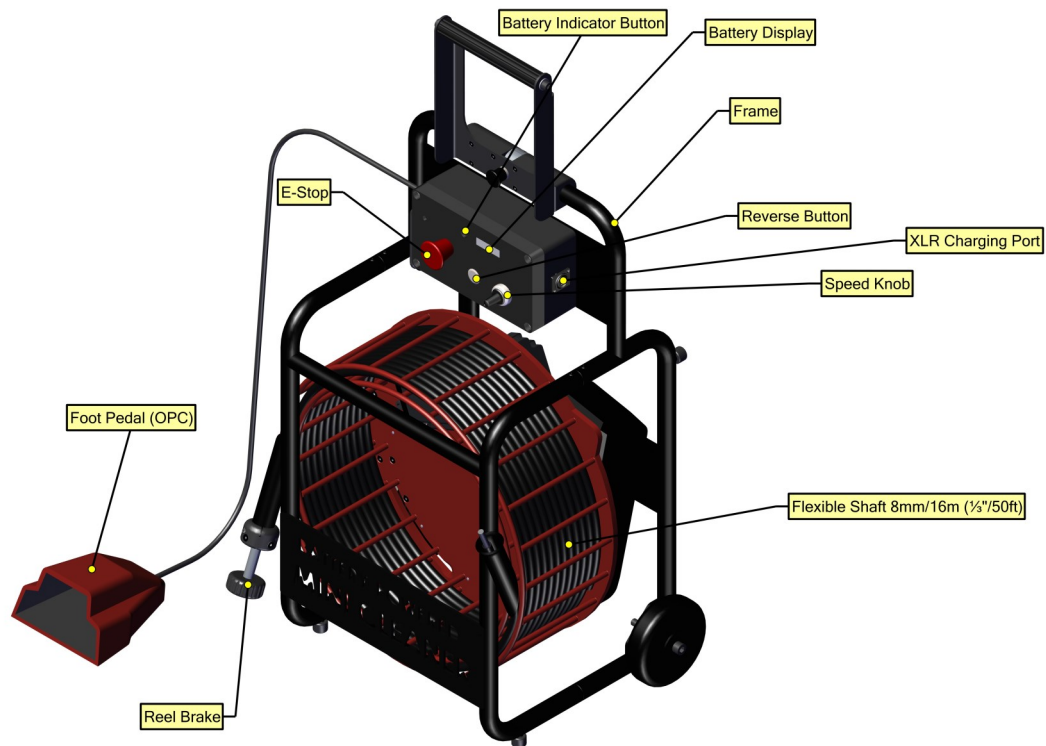


**Li-ion**



# GENERAL MACHINE INFORMATION

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



## **! CAUTION**

When in use always lay the machine down horizontally on the floor. When not in use so non-hazardous Picote Flexible Shaft Lubricant might leak from the hand guard.

# GENERAL MACHINE SAFETY INFORMATION

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Model	Size (mm/inches)	Shaft (mm/inches)	Range (m/ft)	Pipe Diameter (mm/inches)	Rotating Speed (rpm)	Output (W)	Power Source	Weight (kg/lbs)
Battery Mini Cleaner	740x519x404mm (29x20x16")	8mm (1/3")	16m (50')	DN32-75 (1¼-3")	550-2200	48V:1200	Electric Motor	35.3 (78)
Battery Mini Cleaner +C	740x519x404mm (29x20x16")	8mm (1/3")	16m (50')	DN32-75 (1¼-3")	550-2200	48V:1200	Electric Motor	37.6 (83)

## **INTENDED USE:**

1. Cleaning, descaling, and unblocking pipes, drains and sewers.
2. Reinstating CIPP lined connections by drilling/cutting and grinding.
3. Internal pipe coating using the Picote Brush Coating System™.

Always follow the Picote Solutions instructions when installing and using the machine with tooling and accessories.

## **AVAILABLE TOOLING:**

Cleaning Chain	Cyclone Chains	Original Chains
Smart Cutter™	Smart Cutter™	Mini Sweeper
3D Chains	Twister Mini Flexi	Special Drill Head
Coating Brushes	Cleaning Brushes	Tiger Bore

Please check Picote Solutions Quick Guides and Tool Manuals for tooling options: [www.picoteinstitute.com](http://www.picoteinstitute.com)

# VOLTAGE & POWER SUPPLY | SAFETY FEATURES

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

The Machine is supplied with a universal charger with a voltage range of 110V AC ~ 240V AC.

The charger has a voltage switch at the supply side. Choose voltage based on your location.

The Camera power supply can operate with Input: 110V AC ~ 240V AC, Output: 12V DC 1200mA.

The DVR unit has in-built 5200 mAh Li-ion battery (7.4V).

### **CHARGER POWER PLUGS:**

**220-230V:** EU Schuko 230V 16A

UK Plug 230V 13A

Australia: CEE 16A 230V

**110-125V:** NEMA 5-15 Plug

### **SAFETY FEATURES:**

**The machine is equipped with an Emergency Switch Off Button.**

The power supply to the motor is cut off when the Emergency Switch Off Button is pushed. Always make sure the Emergency Switch Off Button is pressed or completely unplug the machine when the machine tooling and accessories (e.g. Cutter or Chains) are not inside a pipe. Always engage the Emergency Switch Off Button and unplug the machine from the power source when performing any maintenance or repairs to the machine.



**The machine is operated by a Foot Pedal Operator Presence Control or 'OPC'.** When the foot pedal is not held down, the machine stops. Never place any kind of object on the pedal in place of the operator's foot (such as a brick).

# NOISE LEVELS, VIBRATIONS & EMISSIONS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



**This section contains important safety information.**  
**Failure to comply could result in serious injury or loss of hearing.**



The typical A-weighted noise level determined according to **EN60745**:

Sound pressure level (LpA): 90 dB (A)

Sound power level (LWA): 103 dB (A)

## **WEAR EAR PROTECTION:**

Emissions during actual use of the machine can differ from declared values depending on the ways that the machine is used. Safety measures to protect the operator should be determined by actual conditions, taking into account all aspects of the operating cycle (such as when the machine is switched off and when it is running idle).

**Due to continuing product development, the specifications herein are subject to change without notice.**

## **VIBRATION:**

Hand vibration levels depend on the distance from the tool head to the user and working conditions. The vibration levels below have been measured during normal lining activities at Picote worksites in Finland. Vibration has been determined according to ISO-5349 and EU-directive 2002/44/EG. The table below details the safe daily exposure time for the user depending on tool used.

### **Safe daily exposure time for user:**

**Exposure Action Value (EAV) 2,5 m/s<sup>2</sup>**

**Exposure Limit Value (ELV) 5,0 m/s<sup>2</sup>**

Tooling / Pipe Size	Working Distance m/ft	EAV	ELV
Original Cleaning Chain DN32 (1¼")	0-2m (0-6.6 ft)	50min	3h 18min
Original Cleaning Chain DN32 (1¼")	5-7m (16-23 ft)	9h 37min	Over 24h
Original Cleaning Chain DN50 (2")	0-2m (0-6.6 ft)	7h 13min	Over 24h
Original Cleaning Chain DN50 (2")	5-7m (16-23 ft)	Over 24h	Over 24h
Mini Smart Sweeper DN50 (2")	0-2m (0-6.6 ft)	Over 24h	Over 24h
Mini Smart Sweeper DN50 (2")	5-7m (16-23 ft)	17min	1h 8min
Special Drill Head DN50 (2")	0-2m (0-6.6 ft)	5h 27min	21h 48min
Special Drill Head DN50 (2")	5-7m (16-23 ft)	Over 24h	Over 24h
Twister Mini Flexi DN50 (2")	5m (16 ft)	6h 9min	Over 24h
Smart Cutter™ DN50 (2")	5m (16 ft)	Over 24h	Over 24h
Cyclone Chain PVC DN100 (4")	2m (6.6 ft)	21h 58min	Over 24h
Cyclone Chain PVC DN100 (4")	5-7m (16-23 ft)	15h 43min	Over 24h

# CE DECLARATION OF CONFORMITY

**SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE**

We Picote Solutions Oy Ltd as the responsible manufacturer, declare that the following Picote Solutions Oy Ltd drain cleaning machine:

**Battery Mini Cleaner**

**Model No: 8/16**

and

**Battery Mini Cleaner +C**

**Model No: 8/16**

are of series production and

**Conform to the following EU Directive:**

2006/42/EY

And is manufactured in accordance with the following standards or standardised documents:

EN62841-1


EN62841-3-14

ISO-5349-1:2001

The technical documentation is kept by our authorised representative in Europe who is:

Picote Solutions Oy Ltd, Pienteollisuustie 24  
06450 Porvoo, Finland

30th March 2021



Katja Lindy-Wilkinson  
C.E.O.

Picote Solutions Oy Ltd  
Pienteollisuustie 24, 06450 Porvoo, Finland



# OPERATING INSTRUCTIONS

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### **WARNING**

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#### **BEFORE OPERATION:**

**Before installing Picote tools, always make sure that the machine is fully turned off and unplugged.**

Always round off sharp edges of the shaft to avoid cuts and make it easier to insert shaft into tooling/leaders.

Check that there is the correct length of flexible shaft (without its outer casing) exposed and that all screws have been loosened so that the shaft can be easily inserted inside the tool. Position the shaft inside the tool, as far as it will go, and tighten the screws. **Consult accessory manuals (cutters & grinding chains) for detailed information.**

**DO NOT ROTATE THE CABLE IN REVERSE UNDER LOAD!**

#### **WHILE IN OPERATION:**

Always lay the machine down horizontally on the floor. During drilling, grinding and cutting processes, always use a separate vacuum extraction system or run water in the drain to remove dust. When not in use some non-hazardous Picote Flexible Shaft Lubricant might leak from the hand guard

#### **STARTING & USING THE MACHINE:**

1. The machine has an Operator Presence Control or 'OPC' Foot Pedal. When the control is not held down, the machine stops.
2. The machine can also be stopped by pushing the Emergency Stop Button down, rotating the power gear to "O" or unplugging the machine.
3. The speed control switch is on the Control Box. Rotational speed increases when speed control knob is turned clockwise.
4. Hold down the directional button to temporary reverse shaft direction (**we do not recommend running any tooling in reverse as to avoid damage to the shaft**).
5. Place the tooling inside the pipe.
6. Turn on the power switch.
7. Release the Red Emergency Switch Off Button.
8. The machine starts when the OPC foot pedal is pressed down.
9. Always hold the flexible shaft with both hands firmly while operating the machine.
10. Rotating the tool slowly makes it easier to move the tool forward inside the pipe.
11. The lifespan of the shaft outer casing can be prolonged by using a Sleeve designed for the outer casing.
12. Electronic Safety Clutch:
  - If the machine is overloaded the safety clutch separates the shaft from the motor.
  - User will hear a loud noise when this happens.
  - Release the foot pedal, pull the shaft back a little bit and continue working.
  - **Avoid overloading the motor.**

# OPERATING INSTRUCTIONS

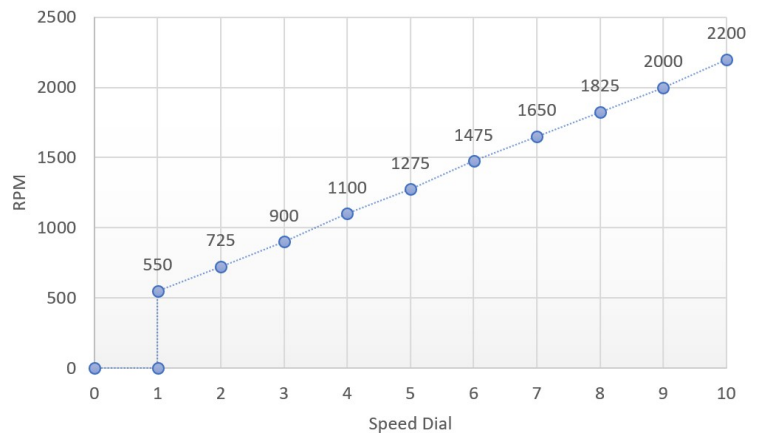
SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

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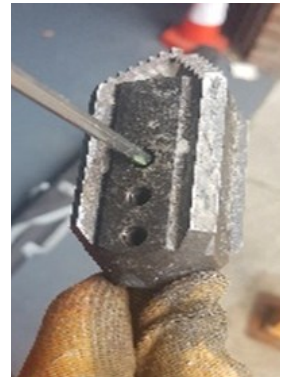
**Optimal rotation speed of the Battery Mini Cleaner or Battery Mini Cleaner +C is dependent on the workload:**

- Minimum rotation speed is normally best when moving the tool around tight bends.
- When beginning to work, adjust the speed up to the level which seems to work the best.
- The speed dial can be found on the control box (see below image). Set the speed by rotating the knob.  
Check the corresponding rotation speed from table below.



### TIGHTENING SET SCREWS:

When you add a tool always tighten the screws starting from the screw furthest away from the end of the flexible shaft (where applicable).

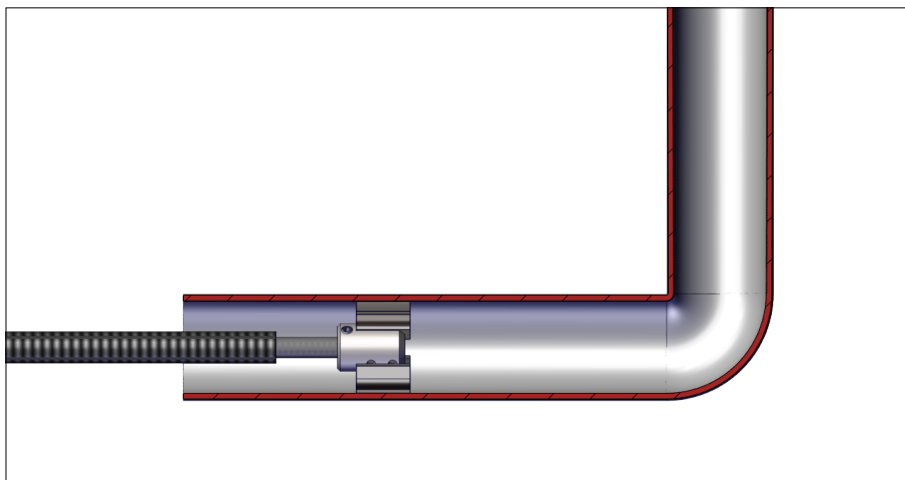


# NAVIGATING DN32-50 (1¼ -2”) KNUCKLE BENDS

**SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE**

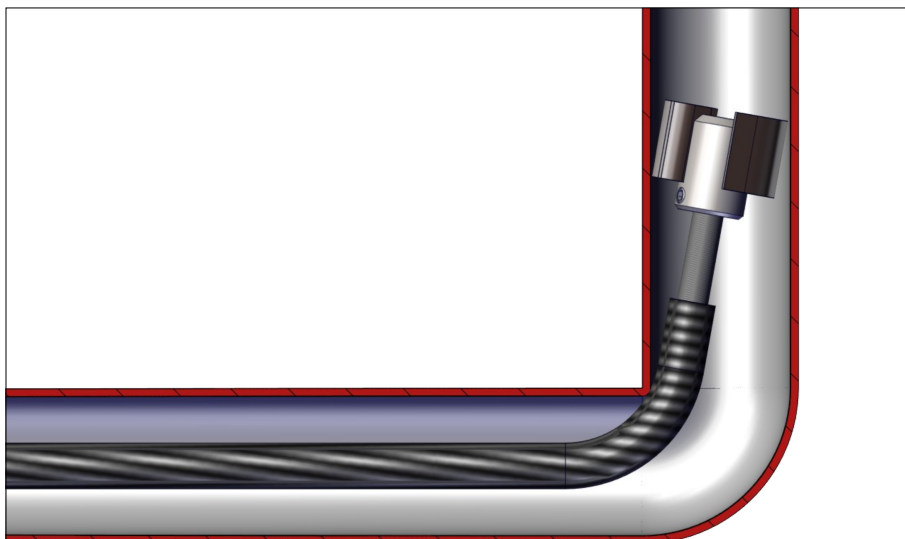
**Step 1.** Always keep the Mini Cleaner and Mini Cleaner +C as close as possible to the pipe where work takes place. This way only a small portion of the shaft is unsupported.

**Step 2.** Place the tool completely inside the pipe before powering up. Rotating the tool slowly makes it easier to move the tool through tight bends.



**Step 3.** Push and rotate at the same time at a low speed.

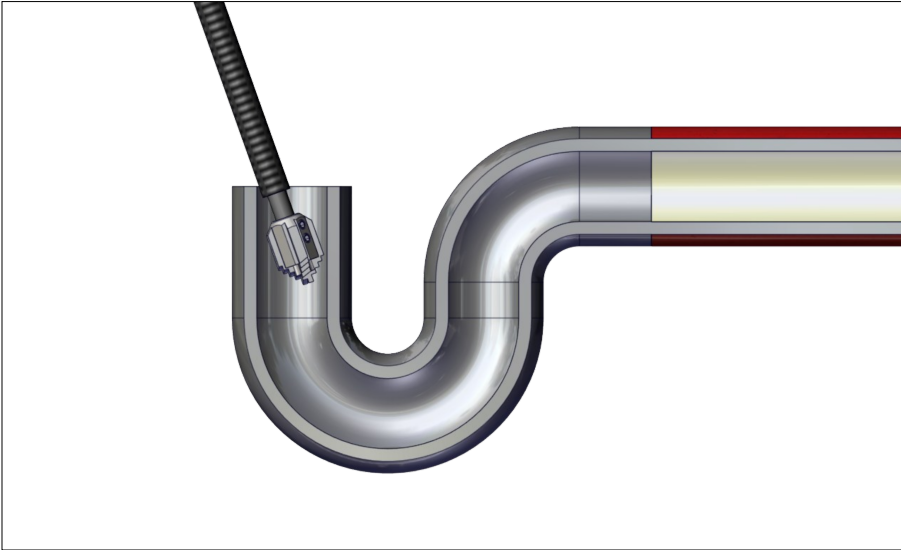
The shaft is flexible enough to navigate through several 90° bends. Move the tool constantly back and forth in the pipe. The special spring outer casing in the Mini Cleaner and Mini Cleaner +C can melt because of the friction heat created if the tooling is kept in the same place for long periods of time.



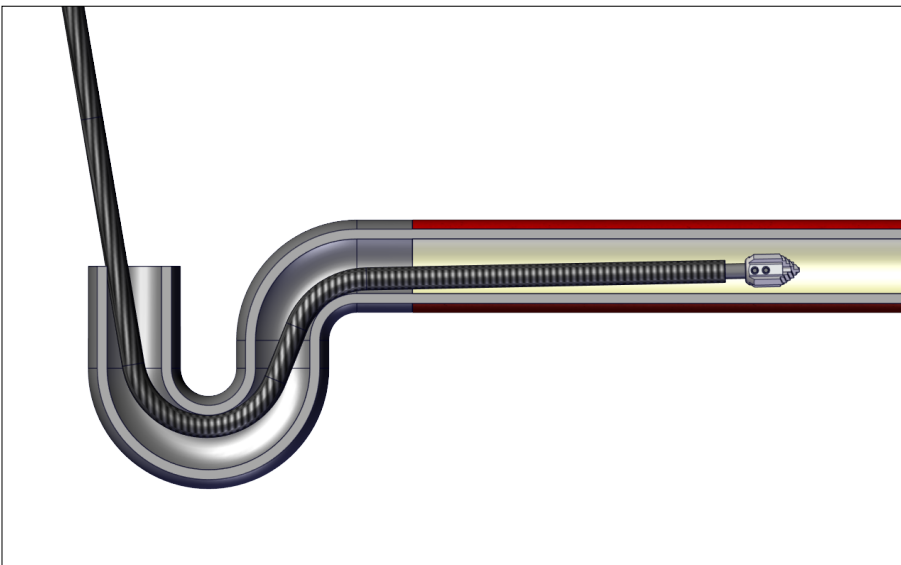
# NAVIGATING THROUGH DN50 (2") P-TRAPS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

**Step 1.** Place the tool completely inside the pipe before powering up. Rotating the tool slowly makes it easier to navigate through tight bends.



**Step 2.** Move tool constantly back and forth in the pipe. The special spring outer casing in the Mini Cleaner/ Mini Cleaner +C can melt because of friction heat created by tooling being kept in the same place over long periods of time.



# MAINTENANCE PROGRAMME & WARRANTY PERIODS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Maintenance Task	Months			
	3	6	12	24
Tightness of motor attachment			I	I
Alignment of motor			I	I
Condition of frame			I	I
Condition of wheels & rubber feet			I	I
Condition of Control Box			I	I
Condition of electric cables	I	I	I	I
Condition of electrical connections	I	I	I	I
Lubricate Shaft	P	P	P	P
Operation of E-Stop	I	I	I	I
Operation of Safety Clutch	I	I	I	I
I: Inspect, fix or replace if needed. P: Perform, replace if needed. R: Replace				

## WARRANTY PERIODS:

Picote Solutions grants limited warranty for certain machines, equipment & components.  
Read more detailed information in the Picote Warranty Policy and Procedure section.

Service Period	3 months	6 months	1 year
A			
B			
C			
A	Milling machine & spare parts, except;		
B	Electric motors		
C	Service Centre repair work		

# MAINTENANCE

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**Danger**  
Electric shock risk

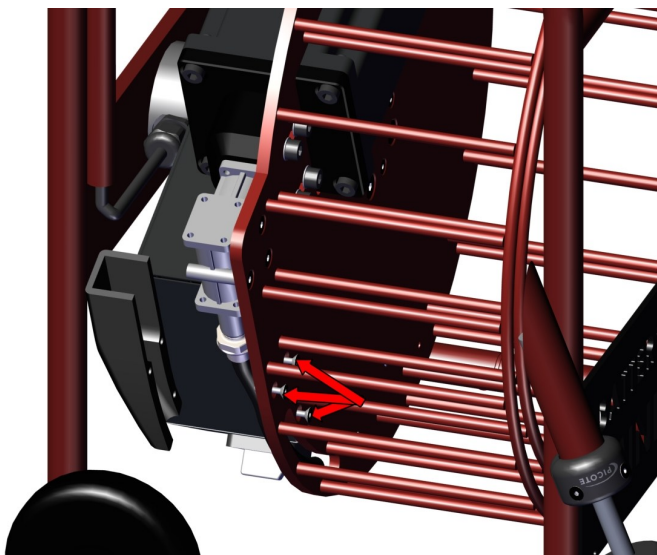
- 1. Before performing any maintenance always check that the machine is fully turned off and unplugged.**
2. Always inspect the flexible shaft before each use. If there are potential weak points, or the shaft is damaged, cut off the damaged length using a band saw or replace the entire shaft as needed.
3. For safety and efficiency always keep the machine and its motor, drive unit, ventilation and cooling slots clean.
4. Remove handguard and check that the screws for the shaft socket are securely tightened (weekly check).
5. Check that all the bolts and screws on the machine are securely tightened.
6. It is recommended that the oil in the angle gear should be changed about every 12 months. Only use regular oil developed for gearboxes.

### CLEANING MACHINE:

**Do not pour or spray water on the machine!** Use a damp cloth with mild soap solution to clean the surfaces.

### REPLACING FLEXIBLE SHAFT:

To replace the flexible shaft on the Battery Mini Miller or Battery Mini Miller +C pull out the shaft from the reel undo the 3 retaining screws and remove hand guard.

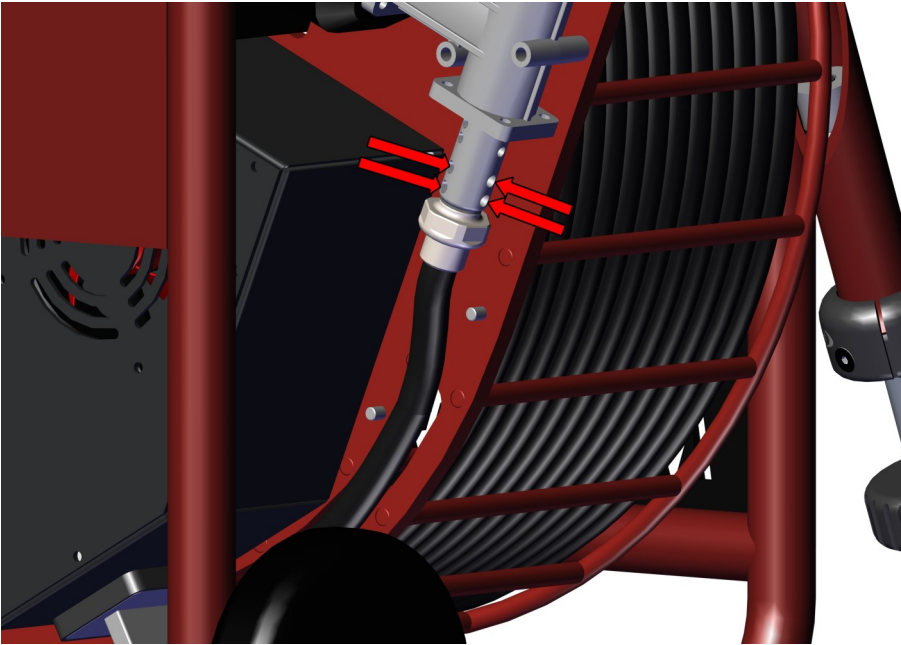




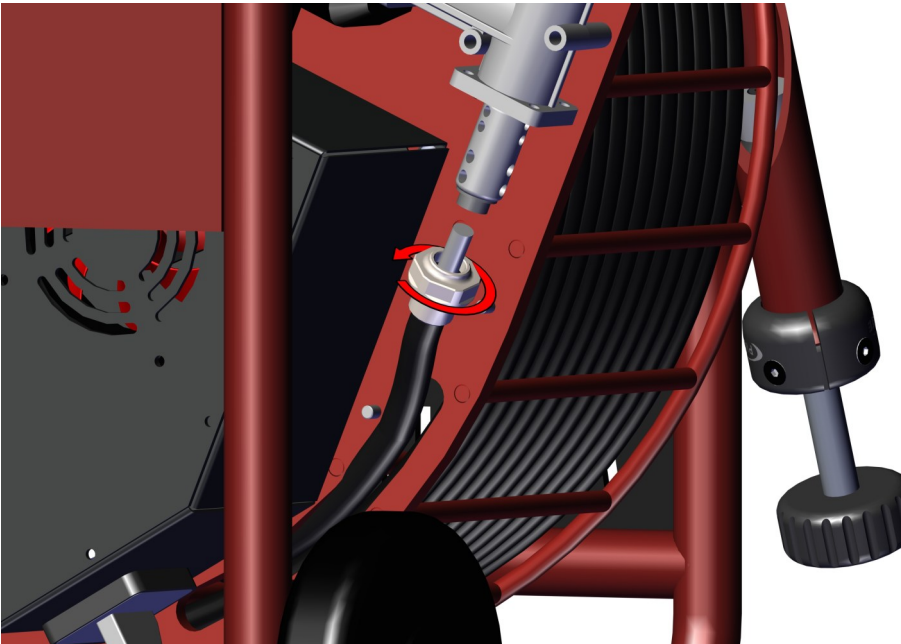
# MAINTENANCE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Next loosen the set screws on the shaft socket. Pull out the shaft from the socket.



Unscrew the strain relief from the outer casing.



Remove the shaft completely. Reassemble in reverse order.

# MAINTENANCE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### **SERVICING FLEXIBLE SHAFT & OUTER CASING:**

The flexible shaft is pre-treated with Picote Flexible Shaft Lubricant and the casing replaced prior to shipping. Always inspect the condition of the shaft and its outer casing regularly. Also, inspect at least once a week that the shaft is well attached under the hand guard at the machine end. If the shaft appears to have gaps between the windings from the beginning to the end, the entire shaft will need to be replaced.

In order to add lubricant the shaft needs to be disconnected from the clutch and removed from the reel. The shaft needs to be taken out from outer casing about 1-1,5m (3-5ft) and lubricant needs to be added on the other side, inside the cavity.

No more than **40ml/40g/1.4oz** will be required for the entire shaft. Too much lubricant can cause a strain on the cable.

After the lubricant has been poured, the free shaft end should be pushed through the outer casing. The shaft will push the lubricant evenly inside the outer casing.

Connect the shaft to the machine and rotate with low rotation speed so that the shaft will push excess lubricant to the outside. Use a mat to protect the work area under the machine to prevent damage to floors.

Keeping the shaft well lubricated will prolong its lifespan and decrease the friction caused by the shaft while it turns round. Lower friction will decrease the burden caused to the motor.

If preferred, the shaft can be taken out of its outer casing for lubrication.

**Appropriate oil to use:** Picote Flexible Shaft Lubricant (available from your reseller).

### **FLEXIBLE SHAFT EXTENSION:**

Flexible extension shafts **are NOT available** for the Battery Mini Cleaner or Battery Mini Cleaner +C.

**Do not** extend the shaft with extensions in any situations.

### **WARNING**

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#### US Versions:

#### **Super Mini Cleaner+C (Battery Powered)**

- 1/3" shaft
- Cleaning 1¼-3"
- Cutting 1¼-3"
- Coating 1¼-3"
- Max Range: 50 ft (no ext.)
- Weight: 83 lbs
- Speed: 550-2200rpm

Designed with plumbers in mind. Same great features as the Super Mini Cleaner (Battery Powered) but also features an integrated 98 ft. color camera that makes viewing of cleaning and cutting jobs easier and helps to make Picote Brush Coating™ setup even simpler. Features a smaller color camera head that allows it to follow the Mini Cleaner, even through 2" P-traps & bends.

Camera Specs: Head Diameter 7/8", 98 ft cable, 512hz integrated sonde, 7" color monitor. Lighting: 8 LEDs with brightness control Digital footage counter. Stainless steel camera head (IP68). Record footage via SD card.

Product #	Model
3540003816US	120v

#### EU/ROW Versions:

#### **Battery Super Mini Cleaner**

- 8mm shaft
- Cleaning DN32-75
- Cutting DN32-75
- Coating DN32-75
- Max Range: 16m (no ext.)
- Weight: 33kg.
- Speed: 550-2200rpm

The Battery Super Mini Cleaner runs off long-lasting batteries - but it is much more than just a battery-powered version. It is a complete reimagining of what smaller diameter pipe cleaning and rehabilitation equipment can be with new features like an electronic clutch, stepless speed control and a dedicated motor, making it more mobile, efficient, eco-friendly and far more powerful! It makes quick work of cleaning, descaling, root removal, cutting, reinstatements & Picote Brush Coating™ in DN32-75 pipes. Easy to transport and operate regardless of power outlet locations or availability! Includes Standard Battery for up to 3 hours of continuous work. Can run while plugged into a wall outlet. This is not an upgrade, it's a whole new way of working! Safer, stronger, smarter. Operate with a 1.5kVA 110V/16amp transformer in UK.

Product #	Model
3540002816	230v
3540002816UK	110v

# PACKAGES

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



### WARNING

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You must use only the Picote Solutions accessories and attachments with the machine described in this operations manual. The use of other accessories or attachments could present a risk of injury or death. The accessories or attachments should only be used in the proper and intended manner, and always follow Picote Solutions instructions.

#### MINI CLEANER TOOLING PACKAGES:

3540000816TK	Mini Cleaner Tool Kit (USA & ROW) Includes:
1000818025	Hub 8.5x18x25 (DN32-40)
1381084032	Cleaning Chain DN32
1381084040	Cleaning Chain DN40
2125000032CL	Cleaning Brush DN32
2125000040CL	Cleaning Brush DN40
1240035045	Cleaning Panel DN32 35x45 (10 pcs)
1240040050	Cleaning Panel DN40 40x50 (10 pcs)

3540000818CL	Mini Cleaner Cleaning Package (USA & ROW) Includes:
1360080051	Smart Sweeper Head DN40-50 (1½-2")
1000818025	Smart Cleaner Hub 8.5x18x25 DN32-40 (1¼-1½")
1201030050	Side Grinding Panel 30x50 DN40 (1½") Package
1381084040	Cleaning Chain DN40 (1½")
1300212025	Front Drill Head 25mm for DN50 (2") pipes

3540000818CU	Mini Cleaner Cutting Package (USA) Includes:
1360080051	Smart Sweeper Head DN40-50 (1½-2")
1000818025	Smart Cleaner Hub 8.5x18x25 DN32-40 (1¼-1½")
1201030050	Side Grinding Panel 30x50 DN40 (1½") Package
1230000054	Twister Mini Flexi DN50 (2")

# SPARE PARTS & SERVICE TOOLS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## SERVICE TOOLS:

### Shaft Rounder

1350000018



Rounds sharp edges of the shaft.

### Sheath Cutter 1

1350000006



Used when there is no shaft in the outer casing.

### Sheath Cutter 2 (Shaft inside outer casing)

1350000011



Used when there is shaft inside the outer casing.

### Cutter for Side Grinding Panels

1350000012



Used when there is no shaft in the outer casing.

### Picote Flexible Shaft Lubricant



Prolong the lifespan of your Miller with Picote's Flexible Shaft Lubricant. Instructions on maintaining the shaft, including how to lubricate are included in your Miller operating manuals.

Product #

Size

1350000020

.5L / 16.9 oz Bottle

1350000021

6 Bottle Package

### Hex Keys



Product #

Model

1350000008

Hex Key 4mm

1350000009

Hex Key 3mm

1350000010

Hex Key 2.5mm

1350000013

Combo Hex Key 1-6mm

## SPARE PARTS:

131203108517	Mini Cleaner Replacement Shaft with Spring Casing 16.5m (54.1 ft)
9311713099	Mini Cleaner Shaft Spring Casing only 16.5m (54.1 ft)
9530000134-1	Strain Relief Spring Mini Cleaner for Safety Clutch
900001204	Mini Cleaner Safety Clutch
900001203	Silicone Spring for Mini Cleaner (RED)



# PRACTICAL TIPS & SAFETY ADVICE

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## ! WARNING

This section contains important safety information.  
Failure to comply could result in serious injury or death.



Here are some useful tips on how to get the most out of your Picote system.  
Always use the recommended tools for maintenance to avoid personal injury.

### CUTTING THE FLEXIBLE SHAFT



Always inspect the flexible shaft before each use. Run the machine briefly in a clockwise direction to allow the shaft to return to its resting position.

If there are potential weak points or the shaft is damaged, cut off the damaged length using a band saw.

For most tools, the shaft should extend  $\approx 40\text{mm}$  ( $1\frac{1}{2}''$ ) past the casing.

NOTE: Hubs & Original chains without leaders require more exposed shaft.

### CUTTING THE OUTER CASING



Always inspect the shaft outer casing before each use.

The easiest and safest way to shorten the outer casing to the correct length is using a Sheath Cutter.

Only the necessary amount of bare shaft should be exposed at any time.

### SHAFT ROUNDER



The Shaft Rounder smooths the end of the flexible shaft, preventing the user from being cut by the otherwise sharp metal edge.

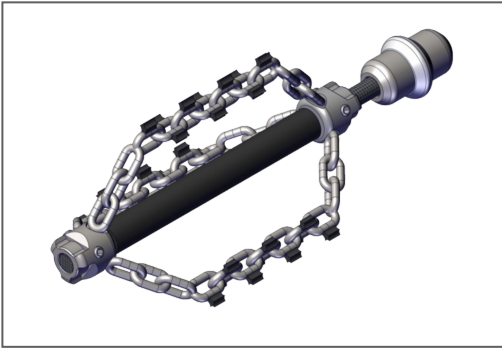




# PRACTICAL TIPS & SAFETY ADVICE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### CREATING LEADERS



You can extend the life of the flexible shaft and increase productivity on site by making individual leaders for the most commonly used tools.

This way you can easily and quickly switch between tools.

Leaders should always be used if the situation permits it.

### ADDING A VISUAL MARKER FOR SAFETY



If not using a leader, attach a visual marker (tape) on the outer casing of the flexible shaft.

Place it around 500mm (20") from the end of the shaft.

The marker will indicate the tool location and help prevent possible injury from the rotating parts by alerting you when the tool is about to exit the pipe.



# BATTERY MINI CLEANER +C 8/16

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



**This machine is intended for the following uses:**

1. Tool for inspecting pipes before, during and after work (Navigates through DN50/2" bends and P-traps)
2. Working inside pipes; the CCTV is fitted with an integrated Sonde (512hz)

Always follow Picote Solutions instructions when installing and using the machine with accessories.

# MINI CLEANER +C | CAMERA KIT INSTRUCTIONS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## **BEFORE OPERATION:**

1. Before using +C camera kit, install SD card in SD slot.
  - SD card needing to be 32 GB or smaller.
  - Needs to be a Class 10, High Speed Card.
2. Connect DVR to camera reel with included cable.



## **SCREEN ICONS:**

1. SD Card
2. Battery level
3. Image Reverse
4. Image Reverse & Mirror
5. Image Mirror
6. Timestamp
7. LED Brightness
8. Record
9. Meter Counter








# +C | CAMERA FUNCTION GUIDE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### 1. Live video

- Press  to turn on/off the DVR
- Press  to start/stop recording
- Press  to mirror or/and reverse the image
- Press  to adjust the brightness of the camera LEDs
- Press  to take a picture

### 2. Video settings menu

- Press  to enter settings menu
- Use  and  to navigate in the menu
- Press  to confirm the selection
- Press  to exit the settings menu



### 3. Playback menu

- Press  to enter playback mode
- Use  and  to browse through the files
- Press  to confirm the selection and preview media files
- Use  and  to preview previous/next file
- Press  to playback video
- Press  to enter the play settings

### 4. Playing video

- Press  to play/pause the video
- Press  to stop playing the video
- Press  to rewind
- Press  to forward
- Press  to change rewind/forward speed

### 5. DVR settings menu

- Press  to enter video settings,
- then press  to enter DVR settings

# MINI CLEANER +C | CAMERA TECHNICAL DATA

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

	ITEM	PARAMETER
<b>General</b>	Unit Weight	14Kg (31 lb)
<b>Camera</b>	Camera Size	Ø14mm×20.5mm (Main body)
	Video Resolution	PAL 720×576 25FPS Max. NTSC 720×488 30FPS Max
	Front Lens	Sapphire
	Shell Material	304# Stainless Steel
	Lighting	Built-in 4xLED (White)
	Water-Proof	20m (65 ft) Water
	Power Consumption	40 mA (LED OFF), 60 mA (LED ON)
<b>DVR</b>	Screen	17.8cm (7"), 16:9 color LCD screen
	Screen Resolution	800x480 RGB
	Features	Sonde, image mirror, image flip
	External Memory	SD Memory Card up to 32GB
	Cable Length	30m (100 ft)
	Meter Counter	Yes
	Single Charge Work Time	6 Hours
	Charging time	8 Hours
	Language	English, German, French, Spanish, Italian, Chinese, Japanese, Russian, Portuguese
<b>Tool Box</b>	Size (L x W x H)	380x260x150mm (15x10x6")

# +C | CAMERA ACCESSORIES & SPARE PARTS

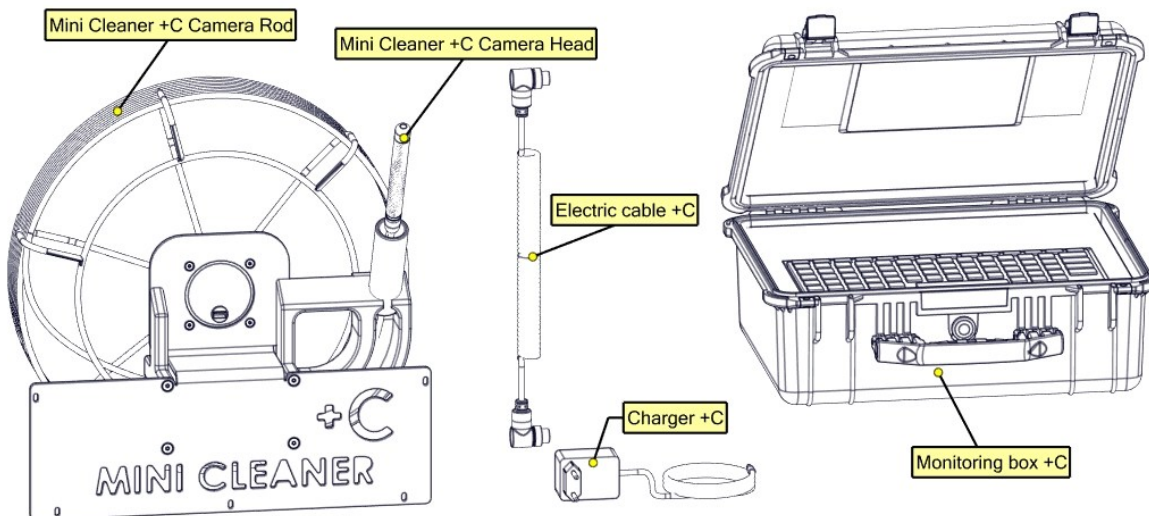
SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## MINI CLEANER +C UPDATE KIT:

3540002000EU	Mini Cleaner +C EU
3540002000US	Mini Cleaner +C US
3540002000UK	Mini Cleaner +C UK
3540002000AU	Mini Cleaner +C AU

## SPARE PARTS:

900001760	Battery Mini Cleaner +C Camera Head
900001688	+C Charger EU
900001691	+C Charger US
900001689	+C Charger UK
900001805	Battery Mini Cleaner +C Camera Rod
900001758	Electric cable +C
900001755	Monitoring Box +C

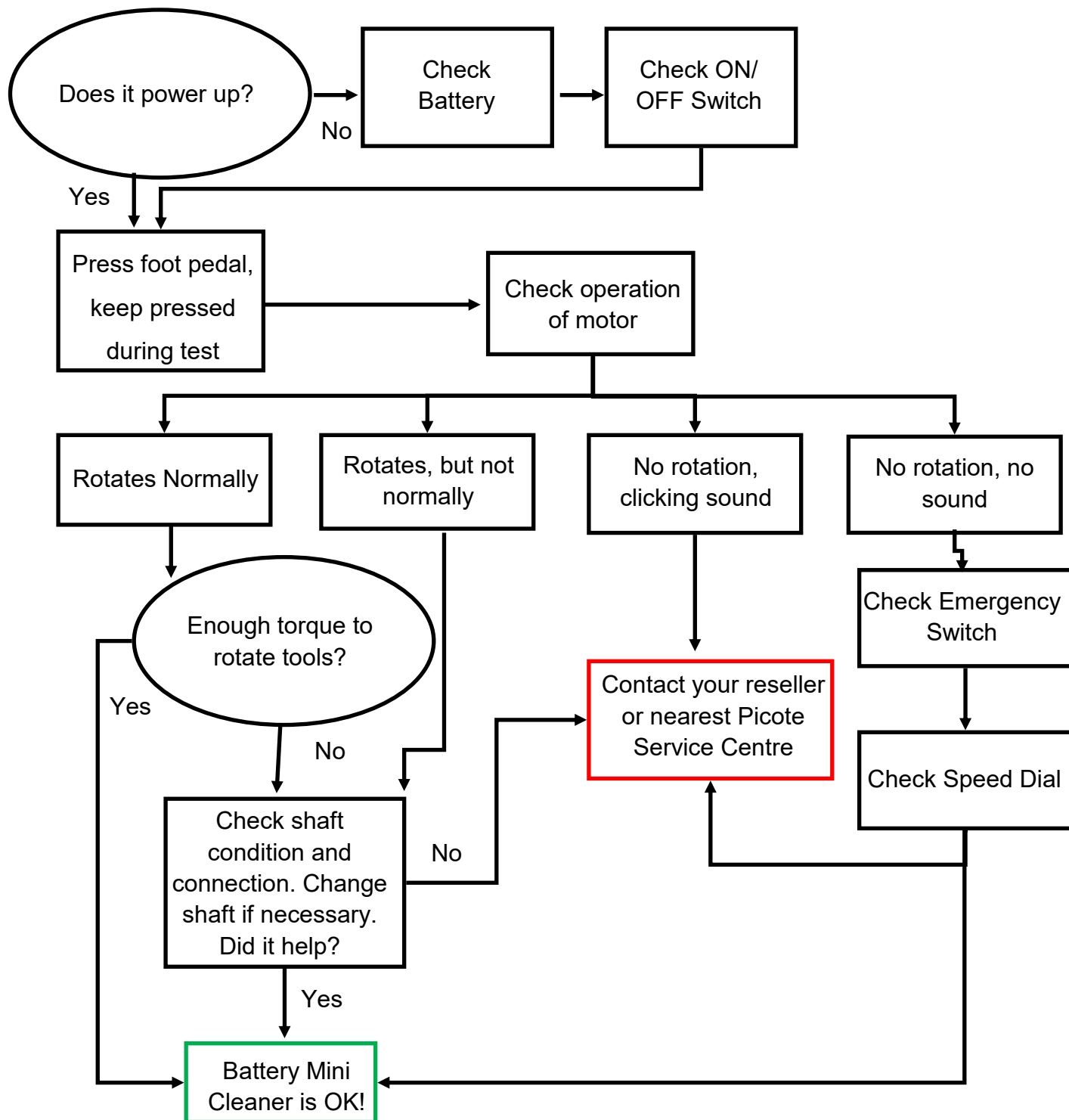


Number (config)	Description (config)	Qty
900001758	Electric cable +C	1
900001688 (EU), 900001691 (US), 900001689 (UK), 900001690 (AU)	Charger +C	1
900001760	Mini Cleaner +C Camera Head	1
900001755	Monitoring box +C	1
900001805	Mini Cleaner +C Camera Rod	1



# TROUBLESHOOTING FLOWCHART

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



If there is problem that you cannot resolve with this manual,  
please contact your Picote Reseller or Picote Solutions at [claims@picotesolutions.com](mailto:claims@picotesolutions.com)

# WARRANTY POLICY & PROCEDURE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### Limited Warranty:

Picote warrants to the original End User that the Product purchased by such End User will operate in accordance with, and substantially conform to their published specifications when shipped or otherwise delivered to the End User and for a period of one (1) year, except electric motors for which the warranty period shall be six (6) months, provided, however, that Picote does not warrant any claim or damage under this Warranty if such claim or damage results from:

1. Consumable parts or normal wear and tear resulting from use of the Products,
2. Product overload or overheated motor,
3. Regular periodic maintenance of Products,
4. Misuse, neglect, or improper installation or maintenance of the Products, or use of Products not for their intended purpose,
5. Products that have been altered, modified, repaired, opened or tampered with by anyone other than Picote or an authorized Picote Service Centre, or unsuitable or unauthorized spare parts, accessories or third party products when using the Products or;
6. the use of the Products not in compliance with their respective Documentation, user manuals, safety and maintenance instructions, and any usage restrictions contained therein, or
7. accident, fire, power failure, power surge, or other hazard.

Otherwise, the Products are sold AS IS. End User is responsible for using the Products within their specifications and instructions as contained in the Documentation.

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# TRAINING

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## TRAINING CENTRES:

- Phoenix, Arizona, **USA**
- Porvoo, **Finland**
- Sandhurst, England, **UK**



Picote is highly recommended to get the most out of your investment.

Certificates are awarded for all certification trainings.

Visit our website at [www.picotegroup.com](http://www.picotegroup.com) or contact us at [training@picotesolutions.com](mailto:training@picotesolutions.com) to find out about course offerings, pricing, and scheduling.





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Author: Richard Swan

Accepted: Ryan Boldan: May 2025



**Please Contact:**

Your Reseller / Salesperson or Picote

**[www.picotegroup.com](http://www.picotegroup.com)**

**International Offices**

Finland. United Kingdom. USA.

**Technical Support**

[support@picotesolutions.com](mailto:support@picotesolutions.com)

**Production & R&D**

Pienteollisuustie 24  
06450 Porvoo, Finland  
[support@picotesolutions.com](mailto:support@picotesolutions.com)

**E-Learning**

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