



# BATTERY MINI MILLER

BATTERY MINI MILLER 8/16 | BATTERY MINI MILLER +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.**

# TABLE OF CONTENTS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

TOPIC	PAGE
Safety Information	3
General Machine Safety Information	4
Environment, Transport, Storage & Disposal	5
General Information	6
Technical Data & Intended Use	7
Available Tooling	7
Voltage & Power Supply	8
Safety Features	8
Noise Levels, Vibrations & Emissions	9
CE Declaration of Conformity	10
Operating Instructions	11
Attaching Tools	12
Rotation Speed Dial	13
Maintenance Programme & Warranty Periods	14
Maintenance	15
Flexible Shaft: Changing, Service, Extensions, Inspection	15
Products	18
Accessories & Spare Parts	19
Service Tools	20
Practical Tips & Safety Advice	21
Batter Mini Miller +C 8/16	23
Battery Mini Miller +C: Camera Kit Instructions	24
Battery Mini Miller +C: Camera Function Guide	25
Battery Mini Miller +C: Technical Data	26
Battery Mini Miller +C: Spare Parts	27
Troubleshooting Flowchart	28
Warranty Policy & Procedure	29
Training	30

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



**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

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.



1. **Always wear eye and ear protection as well as heat and cut-resistant gloves.**  
Other personal protective equipment, such as dust mask and protective clothing should be worn when necessary.
2. 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.
3. **Before each use** inspect Miller and shaft carefully for any potential damage. **Change damaged parts immediately.**
4. Ensure the pipe has been opened and ventilated to prevent any gases accumulating.
5. Dust produced when working can be dangerous to your health, inflammable or explosive. 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.
6. If the working environment is extremely hot and humid, or badly polluted by conductive dust, use a GFCI-enabled power outlet to increase operator safety.
7. Ensure that the Miller ventilation openings are kept clear when working in dusty conditions to avoid damaging internal parts. If it should become necessary to clear dust, first unplug the machine.
8. When in use, it is very important that the machine is stable and on an even surface at all times.
9. **Never leave the machine running unattended.**
10. Always hold the shaft when operating the machine.
11. **Never touch rotating parts.**
12. **Do not touch the tooling immediately after use**, it may be hot and could burn skin.
13. **Do not use on any pipes containing asbestos fibres.**
14. Do not stand on the machine.
15. **Only operate the foot pedal (OPC) as instructed. Never place anything on it in place of the operator's foot.**
16. **Do not extend the shaft by more than one extension.**
17. Only use the Miller 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.

# ENVIRONMENT, TRANSPORT, STORAGE & DISPOSAL

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



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

### **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 (6500 ft). Derate above 1000m (3280 ft): 1% / 100m (328 ft).
- **Camera Maximum Humidity:** 90% non-condensing

### **TRANSPORT:**

Picote Millers should be transported laid down and secured with ratchet straps to prevent any sudden movements or accidents caused by hard braking or an accident.

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

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

### **STORAGE:**

It is recommended that Picote Millers be stored indoors to protect them from rain and sunlight, and also in a constant ambient temperature. The best way to store the Miller is in the original box that it was shipped in.

The Miller should be stored under cover in between +10°C to +40°C (50°F to 104°F).

If stored in an environment colder than +10°C (50°F), the Miller 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% before storing for long periods. **NEVER leave unit unattended while it is charging.**

+C Versions: Charge DVR battery fully before storing for long periods. **NEVER leave DVR unit unattended while it is charging.**

### **DISPOSAL:**

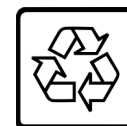
Miller motor, control box, electric wires and axle package including slip ring can be disposed in Europe at Waste Electrical and Electronic Equipment (WEEE) collection points. Miller frame, reel and shaft can be recycled in metal waste collection points.

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

The machine and optional +C camera monitoring box includes 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!**

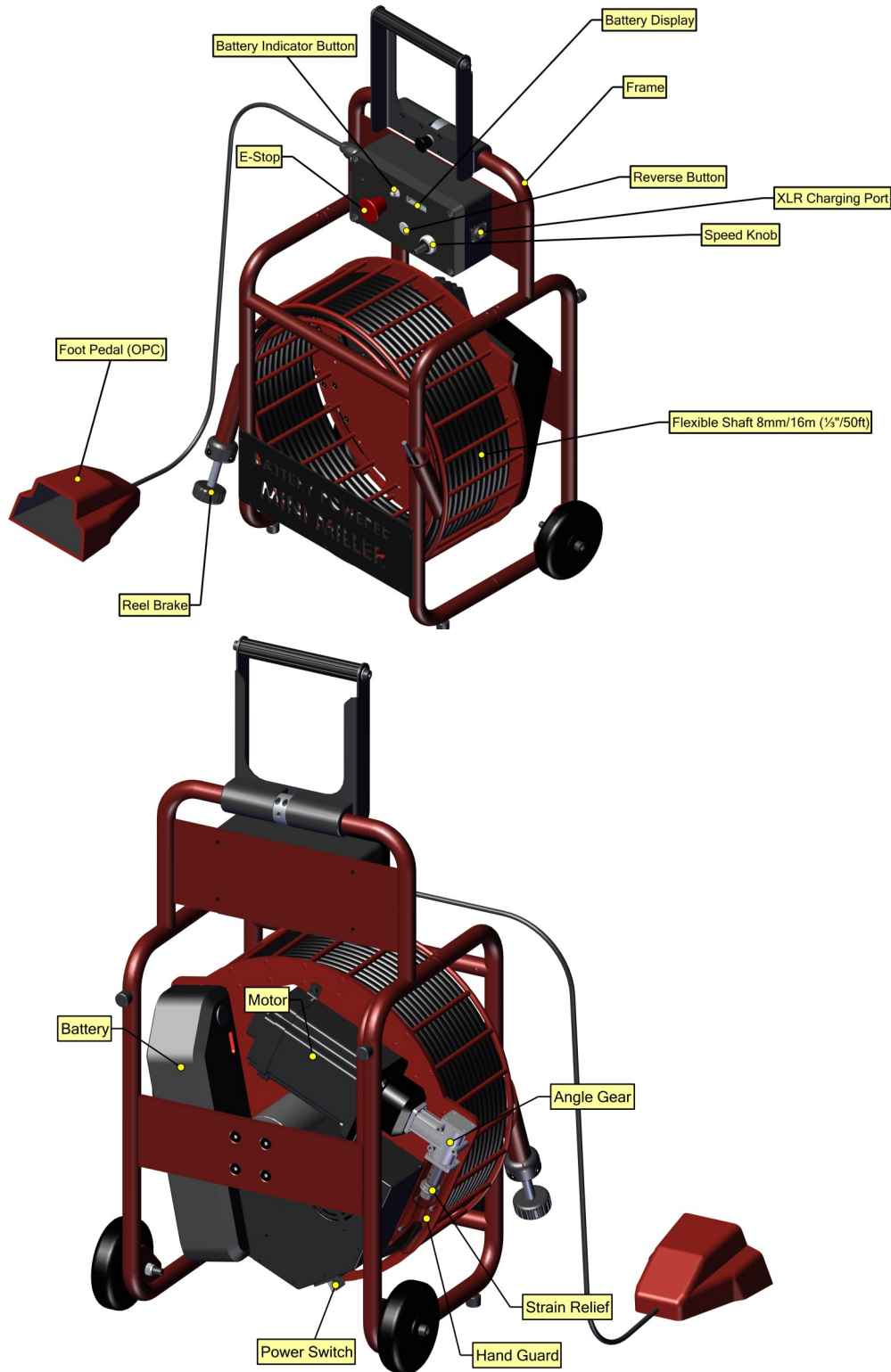


**Li-ion**



# GENERAL 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.



# TECHNICAL DATA

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Size (mm/inches)	Shaft (mm/inches)	Range (m/ft)	Pipe Diameter (mm/inches)	Rotating Speed (rpm)	Output (W)	Power Source	Weight (kg/lbs)
740x519x404 (29x20x16")	8mm (1/3")	16m (50)	DN50-150 / 2-6"	550-2200	48V:1200	Electric Motor	32 (60)

## **INTENDED USE:**

1. Cleaning, descaling, and unblocking pipes, drains and sewers.
2. Reinstating CIPP lined connections drilling 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:**

Original Chains	Cyclone Chains	3D Chains
Smart Cutter™	Nylon Cleaning / Coating Brush	Mini Sweeper
Special Drill Head	Wire Brush	Twister Mini Flexi
Tiger Bore	Tiger Drill Chains	Twister Express
Pipe Cutter		

Please check Picote Solutions Quick Guides and Tool Manuals for more detailed information: [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 universal charger with voltage range of 110V AC ~ 240V AC. The charger has a voltage switch at the supply side. Choose voltage based on your location.

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 (7.4 V).

### **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



## WARNING

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 detailed below have been measured at the Picote training facilities in Finland.

Vibration has been determined according to ISO-5349 and EU-directive 2002/44/EG.

### 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	Working Distance (m/ft)	EAV	ELV
Mini Twister DN50 (2")	2m (6.6 ft)	10h 14 min	Over 24h
Mini Twister DN50 (2")	10m (32.8 ft)	Over 24h	Over 24h
Original Cleaning Chain DN50 (2")	0-2m (0-6.6 ft)	9h 42min	Over 24h
Original Cleaning Chain DN50 (2")	0-15m (0-49.2 ft)	16h 42 min	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 Miller**

**Model No: 8/16**

and

**Battery Mini Miller +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

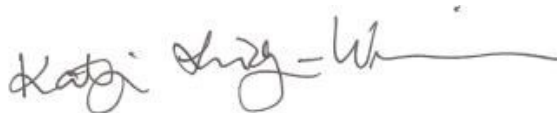
EN62841-3-14

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**

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



### **BEFORE OPERATION:**

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

Always round off the sharp edges of the shaft to avoid cuts and to make it easier to insert the shaft into the tool or for a leader to be used.

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 completely inside the tooling. Position the shaft inside the tooling, as far as it will go, and tighten the screws. **Consult accessory tooling manuals for detailed information.**

### **DURING 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.

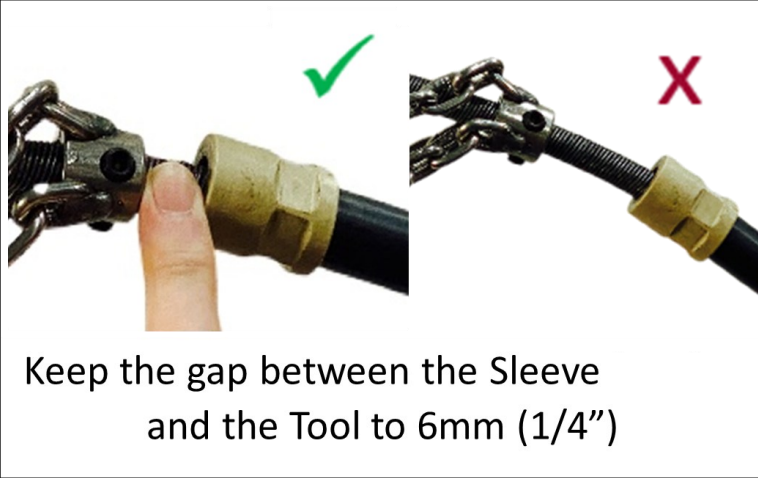
### **STARTING & USING THE MACHINE:**

1. Machine has an Operator Presence Control Foot Control Pedal or 'OPC' Foot Pedal. The machine will only run when the foot pedal is pressed/held down.
2. Machine can also be stopped by pushing the Emergency Stop Button down, rotating the power gear to "O" or unplugging the machine.
3. The control of the rotational speed is also located on the Control Box. The rotational speed increases when the 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 shaft with both hands firmly while operating the machine.
10. Rotating the tooling slowly makes it easier to move forward inside the pipe.
11. The lifespan of the shaft outer casing can be prolonged by using a Sleeve Bearing 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

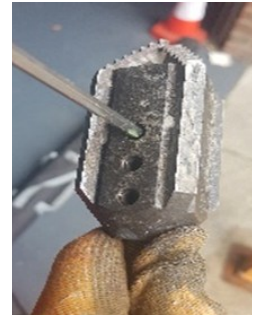
## ATTACHING TOOLING:



SLEEVE

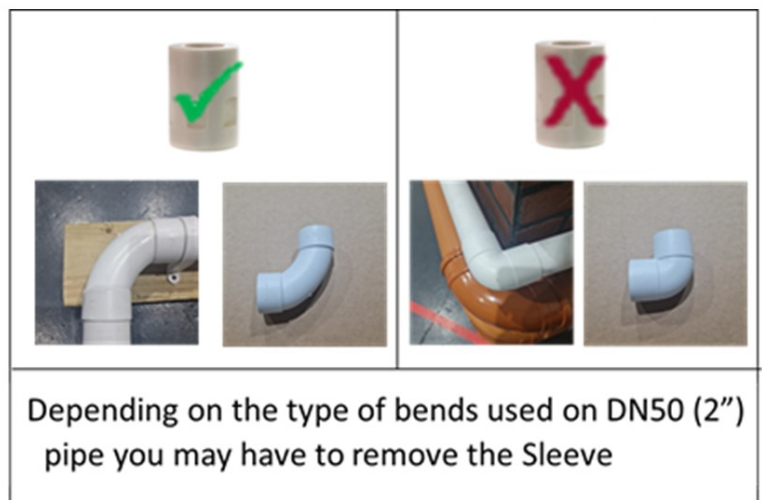
## TIGHTENING SET SCREWS:

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



## SLEEVE IN DN50 (2") BENDS:

Depending on the type of bend you may not be able to easily navigate a DN50 (2") bend unless you first remove the Sleeve. This is usually the case for tight bends. (see examples to the right).



# ROTATION SPEED DIAL

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

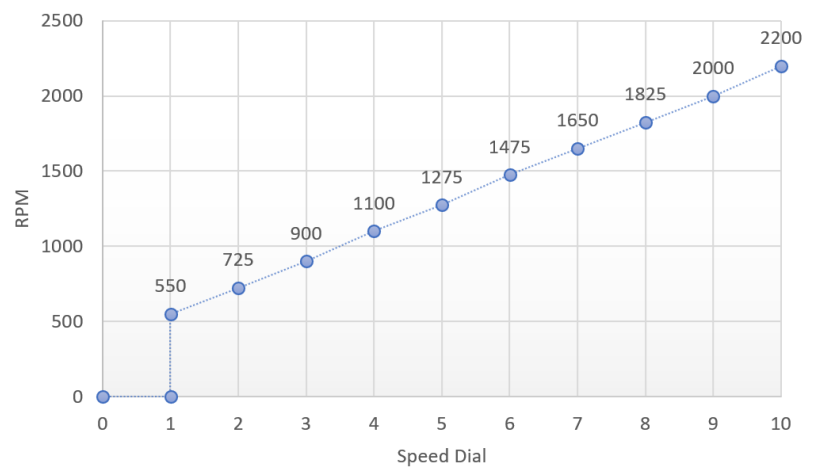
## WARNING

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

Optimal rotation speed of the Battery Mini Miller or Battery Mini Miller +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.



# 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
Condition of frame			I	I
Condition of wheels & rubber feet			I	I
Condition of Control Box			I	I
Vacuum the dust filter on the Control	P	P	P	P
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
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

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.



**Danger**  
Electric shock risk

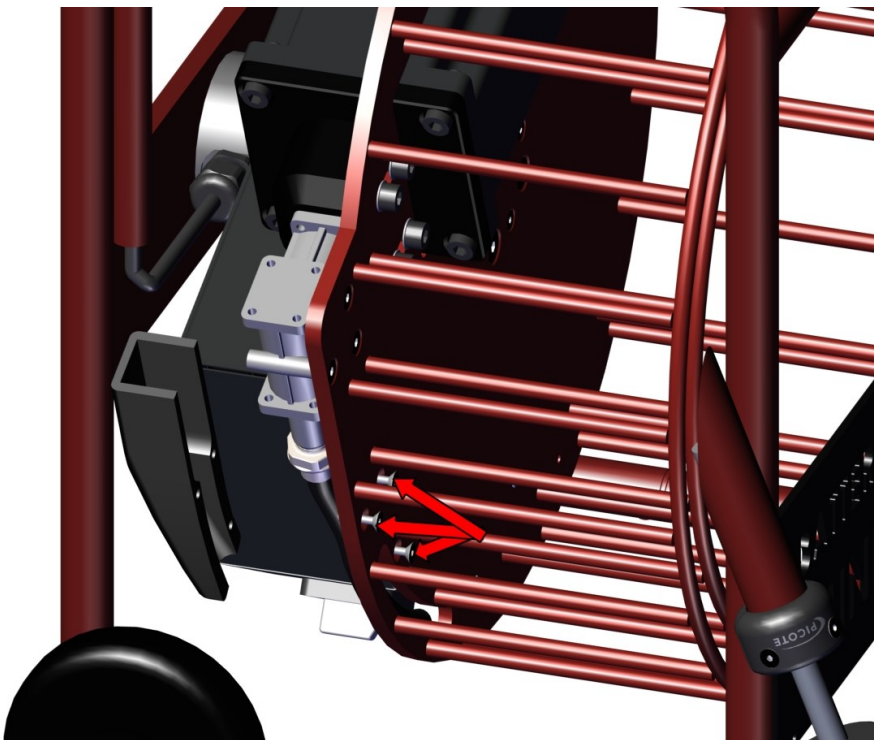
1. **Before performing any maintenance always check that the machine is fully turned off and battery removed.**
2. Always inspect the flexible shaft before each use. If there are potential weak points, or the shaft is damaged, cut off the damaged length using a band saw or replace the entire shaft as 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.

### **CLEANING THE MACHINE:**

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

### **REPLACING THE FLEXIBLE SHAFT:**

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

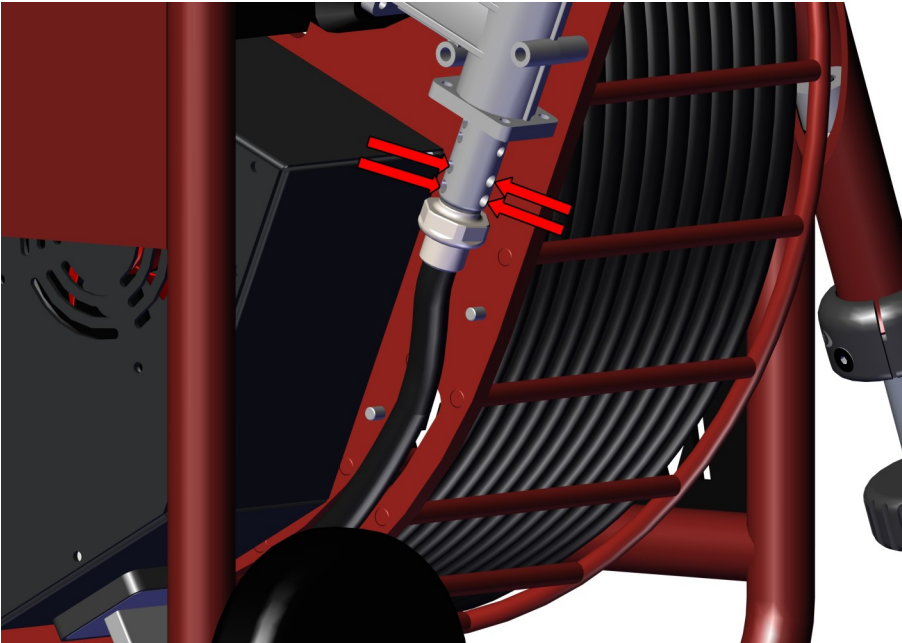




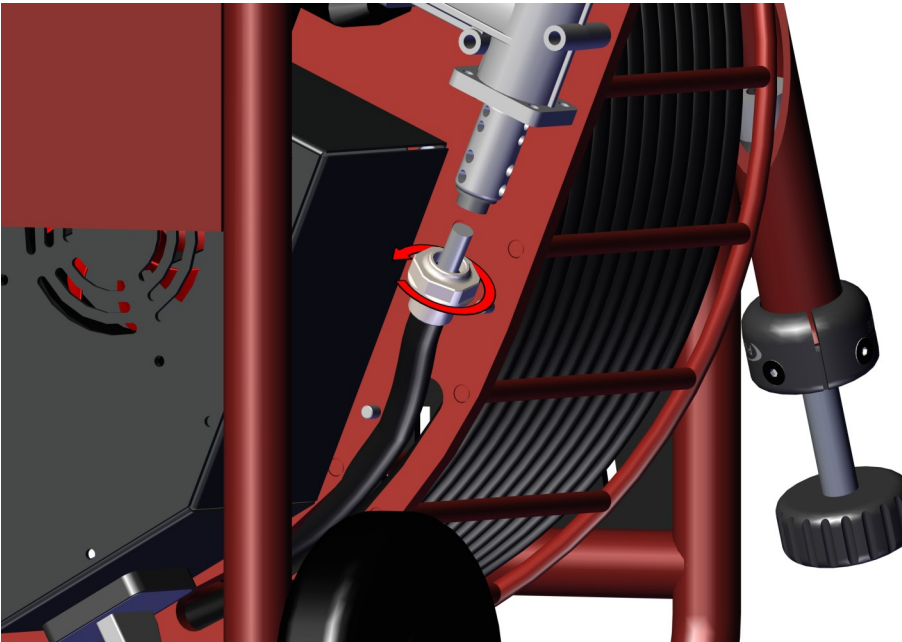
# MAINTENANCE

## 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 THE 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 **20ml/20g/1oz** 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 life span and decrease the friction caused by the shaft when it turns around. 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 shaft extensions are available for the Battery Mini Miller in lengths of 10m (32 ft).

**Do not** extend the shaft by more than **one** extension and only use a Picote shaft extension and connector.

**Before attaching or removing the shaft extension always make sure that the machine is turned off and unplugged.**

1. Machine as far as possible with the flexible shaft *before* fitting the extension.
2. Remove the flexible shaft from the pipe.
3. Push the extension down the pipe and then connect onto the existing flexible shaft using a shaft connector.

**Note:** For vertical pipes connect extension onto the existing flexible shaft **before** pushing the extension down the pipe.

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### US Versions

#### Super Mini Miller (Battery Powered)

- 1/3" shaft
- Cleaning 2-4"
- Cutting 2-3"
- Coating 2-6"
- Max Range: 50 ft + 32 ft ext
- Weight: 73 lbs
- Speed: 550-2200rpm

The Super Mini Miller 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 & Coating. 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.

Product #	Model
3540003817US	120v

#### Super Mini Miller+C (Battery Powered)

- 1/3" shaft
- Cleaning 2-4"
- Cutting 2-3"
- Coating 2-6"
- Max Range: 50 ft + 32 ft ext
- Weight: 83 lbs
- Speed: 550-2200rpm

Same great features as the Super Mini Miller (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. Includes two 7/8" color camera heads with 512hz integrated sondes (one self-leveling and one standard). Non self-leveling camera head designed for use during Picote Brush Coating™.

Camera Specs (Self-leveling & Non self-leveling): Head Diameter 7/8", 98 ft cable. 7" color monitor. Lighting: 12 LEDs with brightness control. Digital footage counter. Stainless steel camera head (IP68). Record footage via SD card.

Product #	Model
3540003817US	120v

### EU/ROW Versions

#### Battery Super Mini Miller

- 8mm shaft
- Cleaning DN50-100
- Cutting DN50-75
- Coating DN50-150
- Max Range: 16m + 10m ext.
- Weight: 33kg.
- Speed: 550-2200rpm.

The Battery Super Mini Miller 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™. 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
3540002817	230v
3540002817UK	110v

#### Battery Super Mini Miller +C

- 8mm shaft
- Cleaning DN50-100
- Cutting DN50-75
- Coating DN50-150
- Max Range: 16m + 10m ext.
- Weight: 38kg.
- Speed: 550-2200rpm.

Same great features as the Battery Super Mini Miller but also features an integrated 30m colour camera that makes viewing of cleaning and cutting jobs easier and helps to make Picote Brush Coating™ setup even simpler. Includes two 23mm colour camera heads with 512hz integrated sondes (one self-leveling and one standard). Non self-leveling camera head designed for use during Picote Brush Coating™.

Camera Specs (Levelling & Non self-leveling): Head Diameter 23mm, 30m cable. 512hz integrated sonde. Stainless steel camera head (IP68). 17.8cm colour monitor. Lighting: 12 LEDs with brightness control. Digital footage counter. Record footage via SD card.

Product #	Model
3540003817	230v
3540003817UK	110v

# ACCESSORIES & SPARE PARTS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



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

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.

## **SPARE PARTS:**

1312030085017	Mini Miller Replacement Shaft, 8mm (1/8") Shaft Thick Casing, 17.5m (57.4 ft)
1312030085010	Flexible Shaft Extension, 8mm (1/8"), Thick Casing, 10m (32 ft)
9123050001	Shaft Connector 8mm to 8mm (1/8" to 1/8")
93212321085	Sleeve 8mm (1/8")
9540004013EU	Spare Charger EU for Mini Cleaner & Mini Miller Batteries
9540004013US	Spare Charger US for Mini Cleaner & Mini Miller Batteries
9540004013UK	Spare Charger UK for Mini Cleaner & Mini Miller Batteries
9590001108S	Foot Pedal with Quick Coupling
9540004012S	Battery Dock for Battery Mini Miller/Cleaner
9540004011	Spare Battery

# 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

# 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 clockwise direction to allow the shaft to return to its natural resting length/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 ~40mm (1½") past the casing/Sleeve.

Hubs and Original chains without a leader require more exposed shaft.

### CUTTING THE OUTER CASING



Always inspect the 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 is used to smooth the end of the flexible shaft, preventing the user from being cut by the otherwise sharp metal edge.

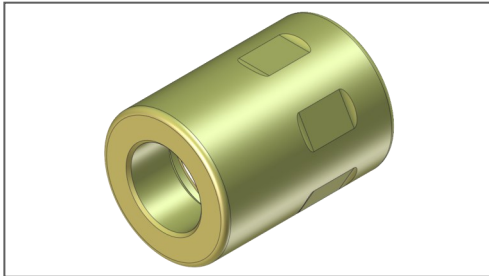




# PRACTICAL TIPS & SAFETY ADVICE

## SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

### SLEEVE

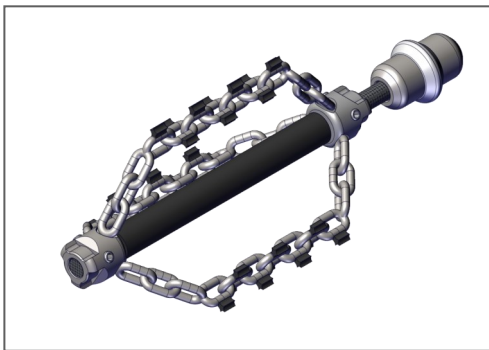


Always use a Sleeve when working with the Mini Miller.

It prolongs the life of the flexible shaft and prevents the outer casing from melting in the tool end.

The Sleeve can be reused when the outer casing is shortened.

### CREATING LEADERS



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

This way you easily and quickly switch between tools.

**Leaders should always be used if the situation permits it.**

### ADDING A VISUAL SAFETY MARKER



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

Place it ≈500mm (20”) from the end of the shaft.

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





# BATTERY MINI MILLER +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)
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.

# BATTERY MINI MILLER +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





## 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 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

# BATTERY MINI MILLER +C | CAMERA TECHNICAL DATA

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

	ITEM	PARAMETER
<b>General</b>	Unit Weight	14 Kg (31 lbs)
<b>Camera</b>	Camera Size	Ø23mm×45mm (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 12xLED (White)
	Water-Proof	20m (65 ft) Water
	Power Consumption	70 mA (LED OFF), 140 mA (LED ON)
<b>DVR</b>	Screen	17.8cm (7"), 16:9 color LCD screen
	Screen Resolution	800x480 RGB
	Features	Sonde, self-levelling, 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

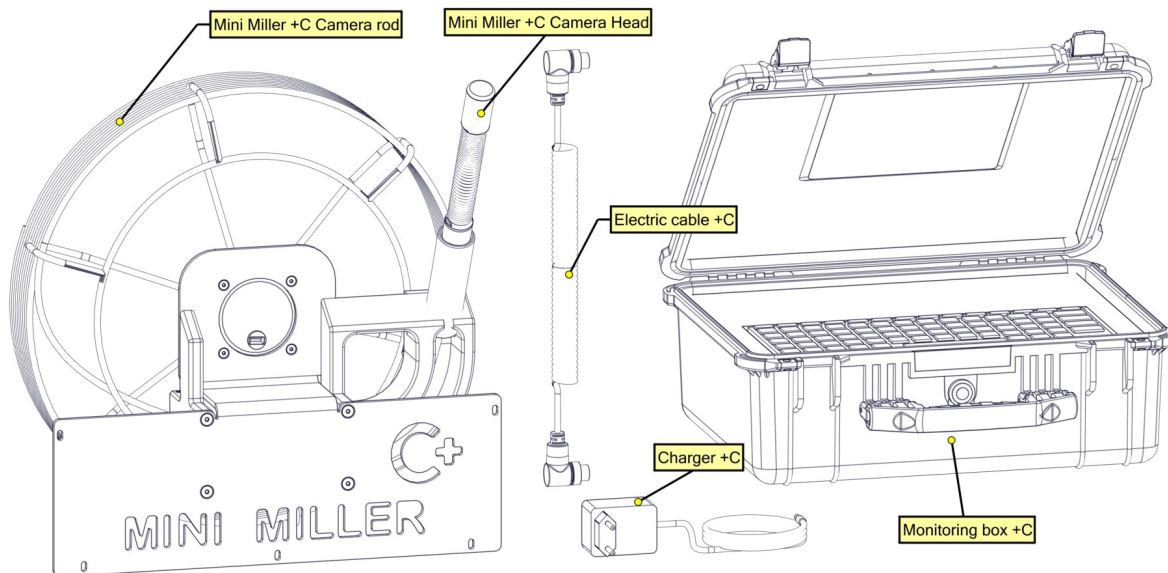
SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

## MINI MILLER +C UPDATE KIT:

3540001000EU	Mini Miller +C EU
3540001000US	Mini Miller +C US
3540001000UK	Mini Miller +C UK
3540001000AU	Mini Miller +C AU

## SPARE PARTS:

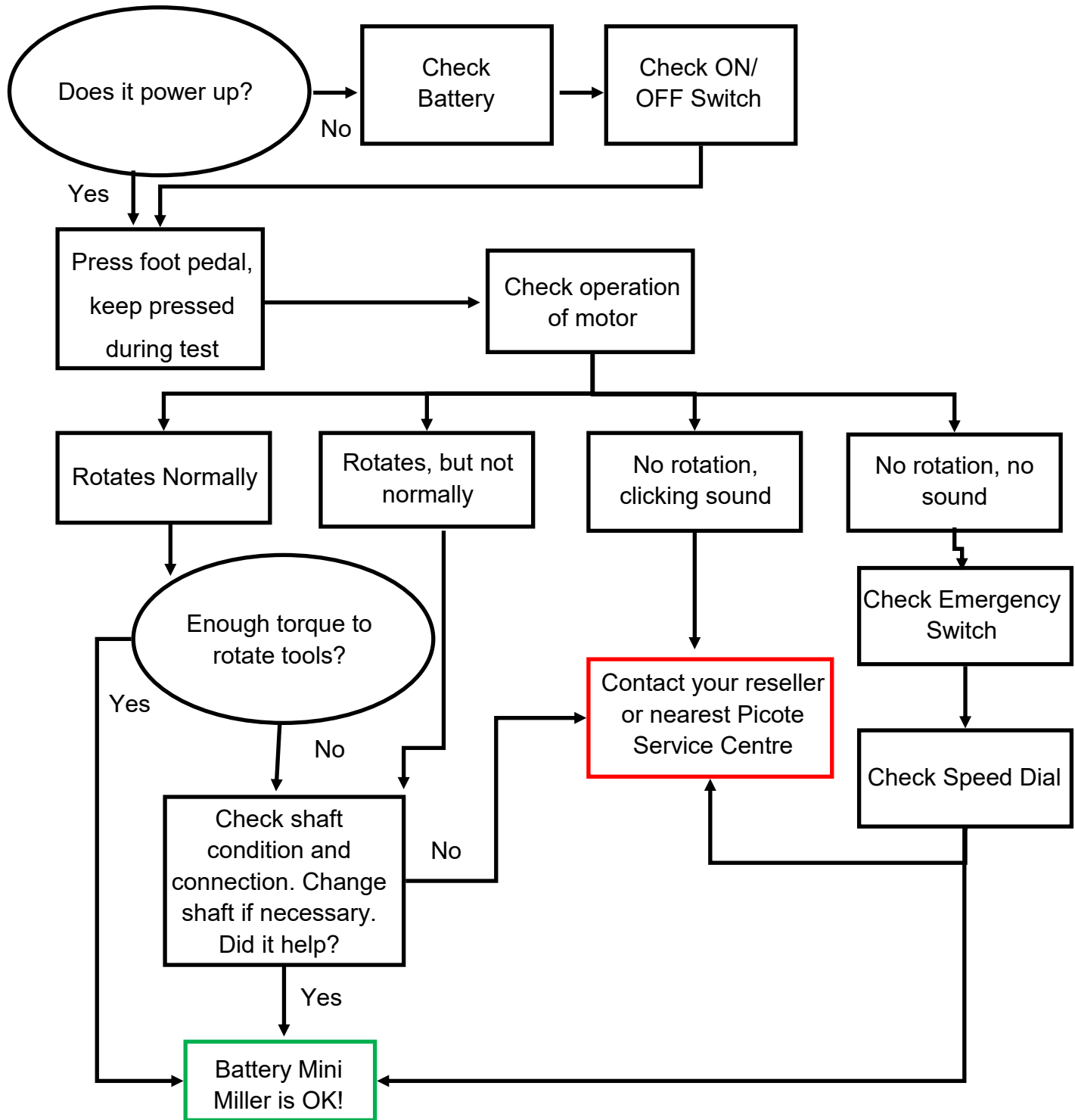
900001754	Mini Miller +C Camera Head
900001688	+C Charger EU
900001691	+C Charger US
900001689	+C Charger UK
900001804	Mini Miller +C Camera Rod
900001758	Electric cable +C
900001755	Monitoring Box +C



Number (config)	Description (config)	Qty
900001758	Electric cable +C	1
900001804	Mini Miller +C Camera rod	1
900001688 (EU), 900001691 (US), 900001689 (UK)	Charger +C	1
900001754	Mini Miller +C Camera Head	1
900001755	Monitoring box +C	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.

**EXCEPT AS SPECIFIED IN THIS WARRANTY, ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON INFRINGEMENT, SATISFACTORY QUALITY OR ARISING FROM A COURSE OF DEALING, LAW, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW. TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE EXCLUDED, SUCH WARRANTY IS LIMITED IN DURATION TO THE WARRANTY PERIOD. BECAUSE SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, THE ABOVE LIMITATION MAY NOT APPLY. This disclaimer and exclusion shall apply even if the express warranty set forth above fails of its essential purpose.**



# 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.





Revision Date: March 2025

Revision number: 2

Author: Richard Swan

Accepted: Ryan Boldan: March 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**

Free E-learning course is available at:  
**[www.picoteinstitute.com](http://www.picoteinstitute.com)**

**Claims**

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

**Authorised Resellers:**

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