

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
Environmental, Transport, Storage & Disposal	5
General Information	6
Digital Control Box	7
Technical Data & Intended Use	8
Voltage and Power Supply	9
Safety Features	9
Electrical Requirements: Setup and Diagram	10
Noise Levels, Vibrations & Emissions	11
CE Declaration of Conformity	12
Operating Instructions	13
Maintenance Program and Warranty Periods	15
Maintenance	16
Assembly Under Hand Guard	16
Flexible Shaft: Service, Extensions, & Inspection	17
Changing Oil in Angle Gear	18
Products, Accessories & Spare Parts	19
Service Tools	20
Practical Tips & Safety Advice	21
Troubleshooting Flowchart	23
Troubleshooting Fault Codes	24
Warranty Policy & Procedure	25
Training	26

To watch practical demonstration videos, take a course, or to download an electronic copy of these Instructions, please visit 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.

ENVIRONMENT, TRANSPORT, STORAGE & DISPOSAL

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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 (6500 ft). Derate above 1000m or 3280 ft: 1% / 100m or 328 ft.
- Maximum Humidity: 95% 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 machines is using the same box that the machine has been shipped in.

Millers should be stored under cover in between +10°C to +40°C (50°F to 104°F). If the Miller has been stored in an environment colder than +10°C or 50°F, it 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.

DISPOSAL:

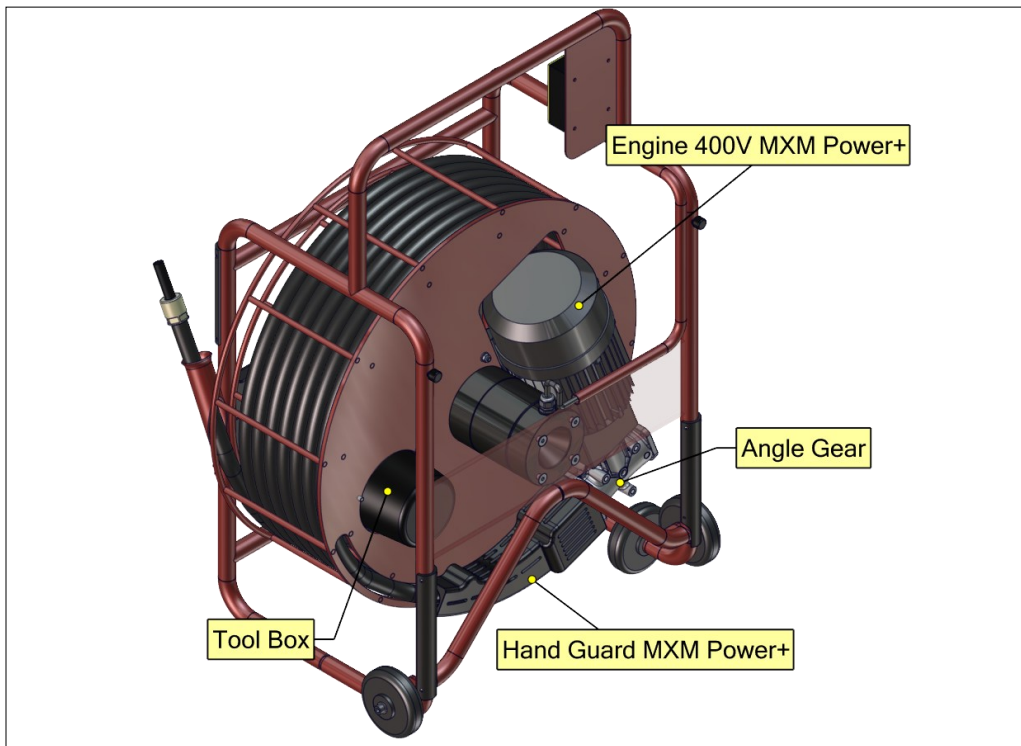
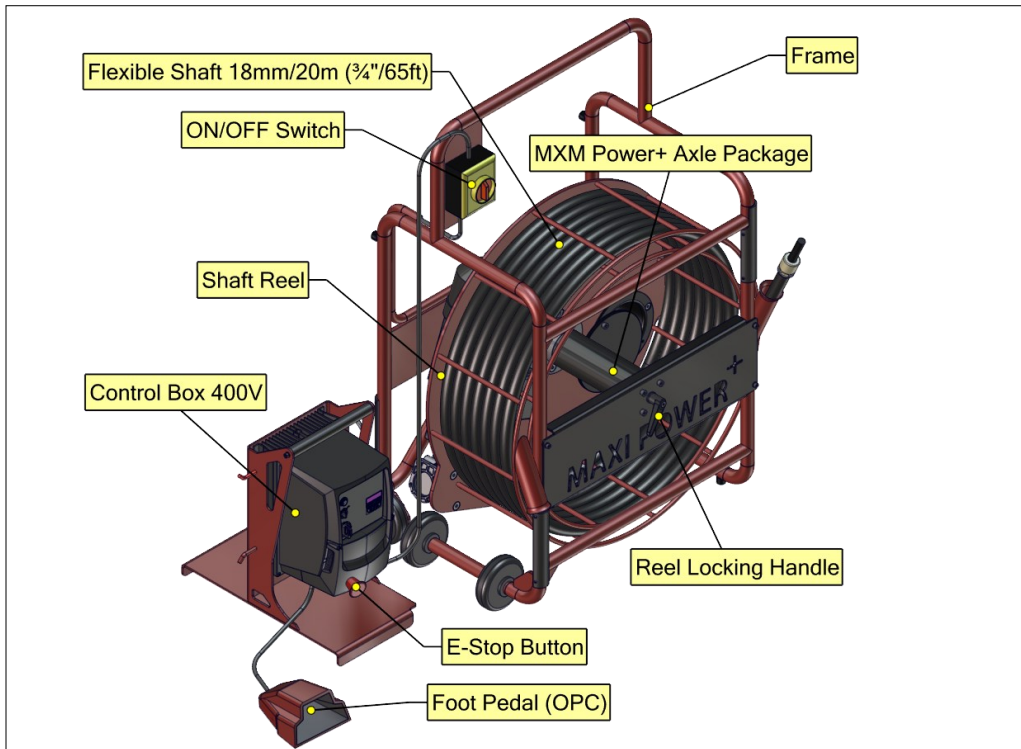
Miller motor, control box, electric wires and axle package including slip ring can be disposed in Europe at Waste Electrical and Electronic Equipment (WEEE) collection points. Miller frame, reel and shaft can be recycled in metal waste collection points.

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

Always follow local, state, and country specific waste handling rules and regulation.

GENERAL INFORMATION

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CAUTION

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

DIGITAL CONTROL BOX

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



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Parameters of your Miller have been pre-set by the manufacturer.

Picote Solutions accepts no liability for failures or accidents caused by tampering with or changing of the manufacturer settings. The control box has been pre-programmed and requires no additional adjustments.

Opening the box or changing the factory settings may cause damage and will void the warranty.

The Navigate button can be pressed to see the rotational speed (rpm), the amount of current sent to motor (A), power generated in motor (kW) and power frequency of motor (Hz).

Do not hold the button down continually.

TECHNICAL DATA

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Size (mm/inches)	Shaft (mm/inches)	Range (m/ft)	Diameter (mm/inches)	Rotating speed (rpm)	Voltage & Power (V/kW)	Power Source	Weight (kg/lb)	IP Class
1150x854x48 (945x34x19")	18mm (¾")	18 (60')	DN75-100 (3-4")* DN150-300 (6-12")**	500-1500	400-480V 4.0 kW ²	Electric 3-phase Motor	129 (284)	54

* for straight pipes ** for all descaling/cleaning ² Before serial number 00057 3 kW
Note: Machine weight: 113kg (249 lbs). Control Box weight: 16kg (35 lbs).

INTENDED USE:

1. Cleaning, descaling, and unblocking pipes, drains and sewers.
2. Reinstating CIPP lined connections by drilling and grinding.
3. Cutting excess length of cured linings.
4. Removing concrete deposits.
5. Removing metallic inserts.
6. Removing deformed or collapsed CIPP linings.
7. Internal pipe coating using the Picote Brush Coating System™

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

AVAILABLE TOOLING:

Original Tornado Chain	Original Premium Chain	Cyclone Tornado Chain
Premium Cyclone Chain	Smart Spider+	Smart Sweeper+
Smart Cutter™+	Smart Crusher+	Twister+
Twister Concrete Remover+		

Please check Picote Solutions Quick Guides and Tool Manuals for tooling options: www.picoteinstitute.com

VOLTAGE & POWER SUPPLY | SAFETY FEATURES

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Danger
400 Volts

Ensure that the supply voltage is correct. The voltage of the power source must be within the voltage range given on the nameplate of the machine.

The machine should be connected only to a 3 phase **400-480V power supply** as indicated on the nameplate, and can only be operated on three-phase AC supply rated for at least **16A current (EU/UK) and 30A (USA)**. The machine has been double sealed according to European standards.

The power source has to be grounded. The frequency transformer of the motor can cause residual current device to go off. If this happens frequently, change the power source to one with slower residual current device. **Residual current device should be type A** and residual current permission should be **30mA**. Use only residual current devices which are permitted in power feed from main power source.

POWER PLUGS:

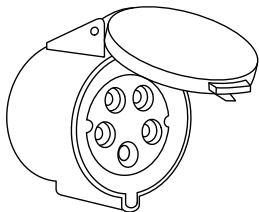
For safety purposes, this machine may be equipped with a specialty plug. If the plug does not fit securely or match the outlet, do not force it - contact an electrician to determine the required power supply.

Never alter the plug in any way. Use the plug with an extension cord only if it can be fully inserted into the cord's socket. Use the Maxi Miller Power+ with a heavy duty extension cord only.

EU/UK extension cord lead minimum thickness is **2.5 mm² / 14 AWG**.

USA extension cord lead minimum thickness is **4.0 mm² / 12 AWG**.

If a power generator is used, make sure that power rating is sufficient, **at least 8 kVA** measured, continuous output. Only a clean and stable sine wave is acceptable. Contact your reseller or Picote Solutions technical support for more information.



400/480V

The Maxi Miller Power+ (EU/UK) is equipped with a 5-pin 400V / 16A plug and for the USA it is equipped with a 480V / 30A plug. The plug fits into a three-phase 400V socket shown in the picture on the left. The Maxi Miller Power+ must be supplied with sufficient power and proper current rating.

If a power generator is used, minimum of 8 kVA is required. An adapter is provided to connect the Maxi Miller Power+ into a 5-pin 400 V / 32 A socket. Other adapters may be necessary for use with a generator connections.

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).

ELECTRICAL REQUIREMENTS: SETUP AND DIAGRAM

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Danger
400 Volts

Electrical shock can cause serious or fatal injury. Only qualified personnel should install, maintain or troubleshoot this equipment. Picote Solutions recommends that a properly trained electrician be available to wire a power distribution box to whatever power source is available. In the case where a generator is required, a minimum power requirement of 8 kVA 3 Phase 480 volt is necessary.

The Power+ has a 3 Phase Power configuration and uses a 4 wire cord (3Phase + Earth):

- (EU/UK) - Lead minimum thickness is 2.5 mm² / 14 AWG.
- (USA) - Lead minimum thickness is 4.0 mm² / 12 AWG.

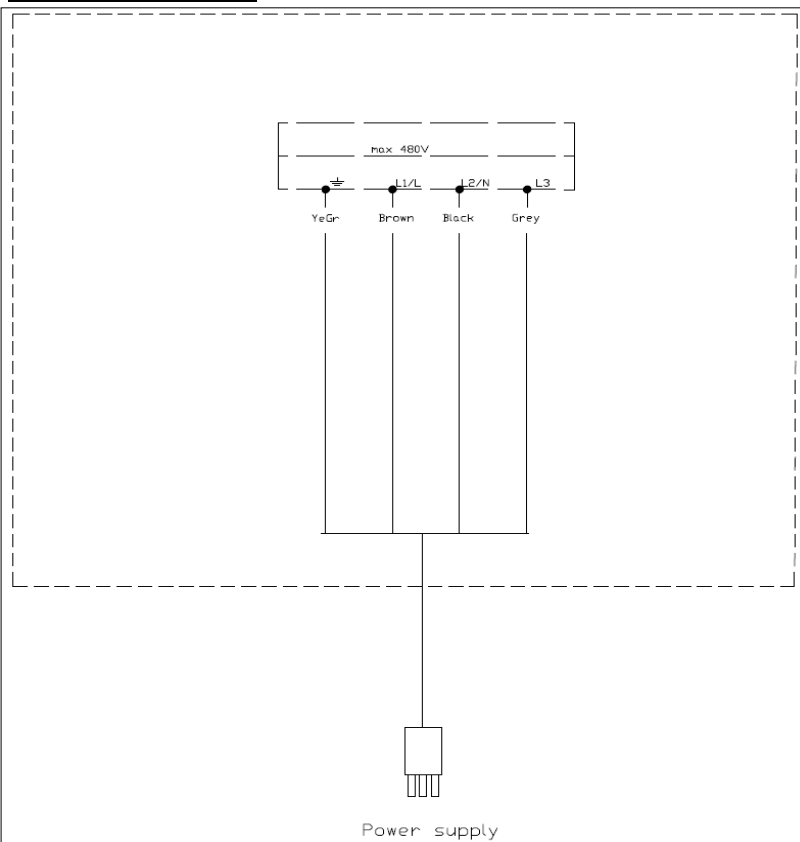
Be sure the system is properly grounded before applying power. Do not apply power before you ensure that grounds are connected. Electrical shock can cause serious or fatal injury. Follow the National Electrical Code (NEC) and local codes for the safe installation of the equipment.

Do not operate the Maxi Miller Power+ until you are sure that you are completely familiar with the safe operation of the machine, all accessories and safety equipment.

Improper use can lead to severe injury. The user manual defines proper use of this equipment.

Contact Picote Solutions if you do not understand any procedure or operation concerning this equipment or manual.

ELECTRIC DIAGRAM:



NOISE LEVELS, VIBRATIONS & EMISSIONS

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WARNING

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

Sound pressure level (LpA): 85 dB (A)

Sound power level (LWA): 98 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).

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/s²

Exposure Limit Value (ELV) 5,0 m/s²

Tooling	EAV	ELV
Smart Sweeper+ with Drill Head	1h 5 min	4h 22 min
Smart Sweeper+ with Crusher Head	2h 47 min	11h 8 min
Twister+	10h 46 min	Over 24h
Premium Cyclone Chain	15h 58 min	Over 24h
Smart Crusher DN100 (4")	55 min	3h 38 min
Smart Cutter™ DN150 (6")	9h 58 min	Over 24h

Values in the table have been measured in controlled environment in Picote Training facilities during pipe cleaning or liner removal work. Liner material in tests was polyester felt, epoxy resin hardened and time-cured hard.

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

CE DECLARATION OF CONFORMITY

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

Maxi Miller Power +
Model No: MXM P+ 18/20
is of series production and

Conforms to the following EU Directive:

2006/42/EC

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

EN62841-1

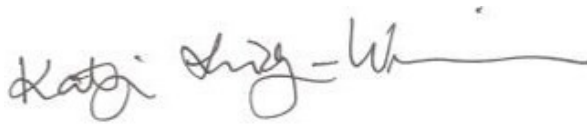
EN62841-3-14

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

1st June 2017



Katja Lindy-Wilkinson
C.E.O.
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OPERATING INSTRUCTIONS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

WARNING

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BEFORE OPERATION:

Before installing Picote tooling, 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.**

DO NOT ROTATE THE SHAFT 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 Foot Control Pedal or 'OPC' Foot Pedal. The machine will only run when the control is pressed/held down.
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. Check rotational direction of shaft and rpm. The rotational direction switch is on the control box (forward or reverse). The control of rotational speed is also located on the control box. Rotational speed increases when the speed control is turned clockwise.
4. Place the tooling inside the pipe.
5. Turn on the power switch.
6. Release the Red Emergency Switch Off Button.
7. The machine starts when the OPC foot pedal is pressed down.
8. Always hold the flexible shaft with both hands firmly while operating the machine.
9. Rotating the tool slowly makes it easier to move the tool forward inside the pipe.
10. The lifespan of the shaft outer casing can be prolonged by using a Sleeve Bearing designed for the outer casing.

DISPLAY MESSAGES:

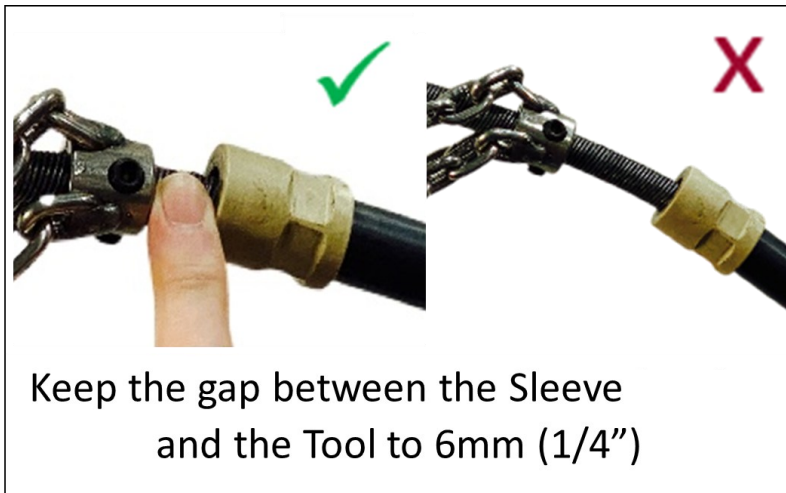
There is a display on the frequency transformer. The following messages may occur:

- Stop: The Miller is ready and waiting for OPC activation.
- (RED flashing dots): The Miller is using more current than nominal current.
- E-trip: The Miller is overloaded to the point that the power will be cut off momentarily. Lift your foot off the pedal and press the pedal down again to continue. Avoid overloading the motor.

OPERATING INSTRUCTIONS

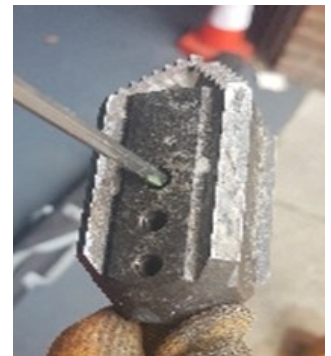
SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

ATTACHING TOOLS



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).



MAINTENANCE PROGRAMME & WARRANTY PERIODS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Maintenance Task	Months		
	3	6	12
Tightness of motor attachment			I
Alignment of motor & gear box			I
Condition of frame			I
Condition of wheels & rubber feet			I
Condition of Control Box			I
Condition of electric cables	I	I	I
Condition of electrical connections	I	I	I
Lubricate Shaft	P	P	P
Operation of E-Stop	I	I	I

I: Inspect, fix or replace if needed.

P: Perform, replace if needed.

R: Replace

Service Period	3 months	6 months	1 year
A			
B			
C			
A	Machine & Spare Parts except:		
B	Electric Motors		
C	Service Centre Repair Work		

MAINTENANCE

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⚠ WARNING

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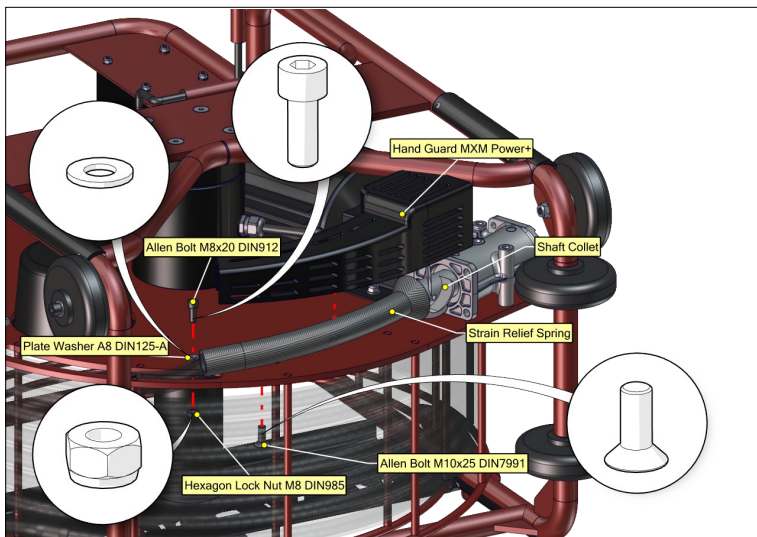
1. Before performing any maintenance always check that the machine is fully turned off and unplugged.
2. Always inspect the flexible shaft before each use. If there are potential weak points, or the shaft is damaged, cut off the damaged length using a band saw or replace the entire shaft as needed.
3. 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).
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 gear boxes.

CHANGING THE FLEXIBLE SHAFT:

Only use the shaft and its outer casing specified by Picote Solutions. Order the replacement shaft from your reseller. The flexible shaft is pre-treated with Picote Flexible Shaft Lubricant and the casing replaced prior to shipping.

1. Loosen the bolts holding the hand guard and remove the hand guard.
2. Loosen the bolts in the shaft socket that hold the shaft. Remove strain relief. Pull the old shaft out of the machine.
3. Insert new shaft: Before inserting the shaft inside the shaft socket, add strain relief.
4. Verify that the shaft goes all the way to the end. Tighten the bolts.
5. Mount the hand guard & tighten the bolts.
6. Look at the assembly under hand guard from below.

ASSEMBLY UNDER THE HAND GUARD:



MAINTENANCE

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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.

To add lubricant the shaft has to be disconnected from the clutch and removed from the reel. Around 1-1.5m (3-5ft) of shaft should be removed from the outer casing, with the lubricant applied to the inside of the casing. No more than **50ml/50g/2oz** will be required for the entire shaft. Too much lubricant can cause a strain on the shaft. 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 on a 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 available for the Maxi Miller Power+ in lengths of 11 metres (36 ft).

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

Before attaching or removing the shaft extension always make sure that the machine is fully turned off & 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 the extension onto the existing flexible shaft before pushing the extension down the pipe.

INSPECTING FLEXIBLE SHAFT FOR DAMAGE:

Carefully inspect the flexible shaft and its casing on a regular basis to ensure that there are no signs of wear and tear.

Change the flexible shaft and casing as and when required.

Damaged shaft needs to be trimmed back before attaching tools (see examples to right).



MAINTENANCE

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CHANGING OIL IN THE ANGLE GEAR:

The oil should be changed after every 3000 hours of use or 12 months.

1. Dismount the gear guard and the hand guard.
2. Take the shaft socket off of the shaft.
3. Loosen the bolts holding the angle gear.
4. Pull the angle gear away from the motor following the axle of the motor.
5. When the angle gear has been dismantled, loosen the oil screw (there is only one screw on the gearbox).
6. Pour the old oil out and add the new oil.
7. Reassemble the bevel gear by repeating the previous steps in reverse order.

Appropriate oils to use:

Shell omala 100 or Agip blasia 100 or Tamoil ep 100

Amount of oil:

42 g / 1.5 oz / 47ml

If there is problem that you cannot resolve with this manual, please consult your Picote Reseller or Picote Solutions.

PRODUCTS, ACCESSORIES & SPARE PARTS

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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.

US Models:

Maxi Miller Power+

- 3/4" shaft
- Cleaning 4-12"
- Cutting 3-12"
- Concrete Removal 6-9"
- Liner Removal 3-9" (3" in straight pipe only)
- Max Range: 60 ft + 2 x 36 ft ext
- Weight: 284 lbs
- Speed: 500-1500rpm

The Maxi Power+ is our most powerful Miller for the toughest jobs. Perfect for heavy tuberculation and problem roots. Remove concrete or failed CIPP liners with a range of heavy-duty, specialised tools. Unique power requirements mean the unit needs to be ran off a 3-phase 400V generator. For heavy-duty work in larger pipes.

Standard safety features: protective outer shaft casing, operator presence foot control, electronic safety clutch, and an E-stop.

Product #	Model
3570032018US	400v

EU/ROW Models:

Maxi Miller Power+

- 18mm shaft
- Cleaning DN100-300
- Cutting DN150-300
- Concrete Removal DN150-225
- Liner Removal DN75-225 (DN75 in straight pipe only)
- Max Range: 18m + 2 x 11m ext.
- Weight: 129kg.
- Speed: 500-1500rpm

The Maxi Power+ is our most powerful Miller for the toughest jobs. Perfect for heavy tuberculation and problem roots. Remove concrete or failed CIPP liners with a range of heavy-duty, specialised tools. Unique power requirements mean the unit needs to be ran off a 3-phase 400v generator. For heavy-duty work in larger pipes.

Standard safety features: protective outer shaft casing, operator presence foot control, electronic safety clutch, and an E-stop.

Product #	Model
3570032018	400v
3570032018UK	400v UK

Parts & Accessories:

1313002185	Shaft Connector 18mm to 18mm (3/4" to 3/4")
9570000034-1	Strain Relief Maxi Power+
1312021180020	Maxi Power+ Replacement Shaft 20.5m (67 ft)
1312021180011	Maxi Power+ Shaft Extension 11m (36 ft)
93212520180SB	Sleeve for 18mm (3/4") Shaft, Thick Casing

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

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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 $\approx 40\text{mm}$ ($1\frac{1}{2}''$) past the casing.

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



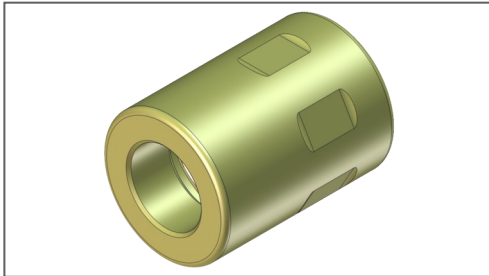
The Shaft Rounder is used to smooth the end of the flexible shaft, preventing the user from being cut by the otherwise sharp metal edge.



PRACTICAL TIPS & SAFETY ADVICE

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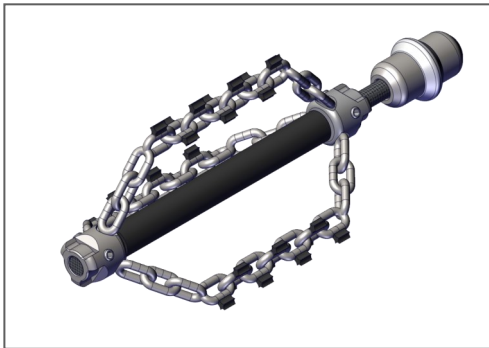
SLEEVE



Always use a Sleeve when working with the Maxi Power+. It prolongs the lifetime 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 on site 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.

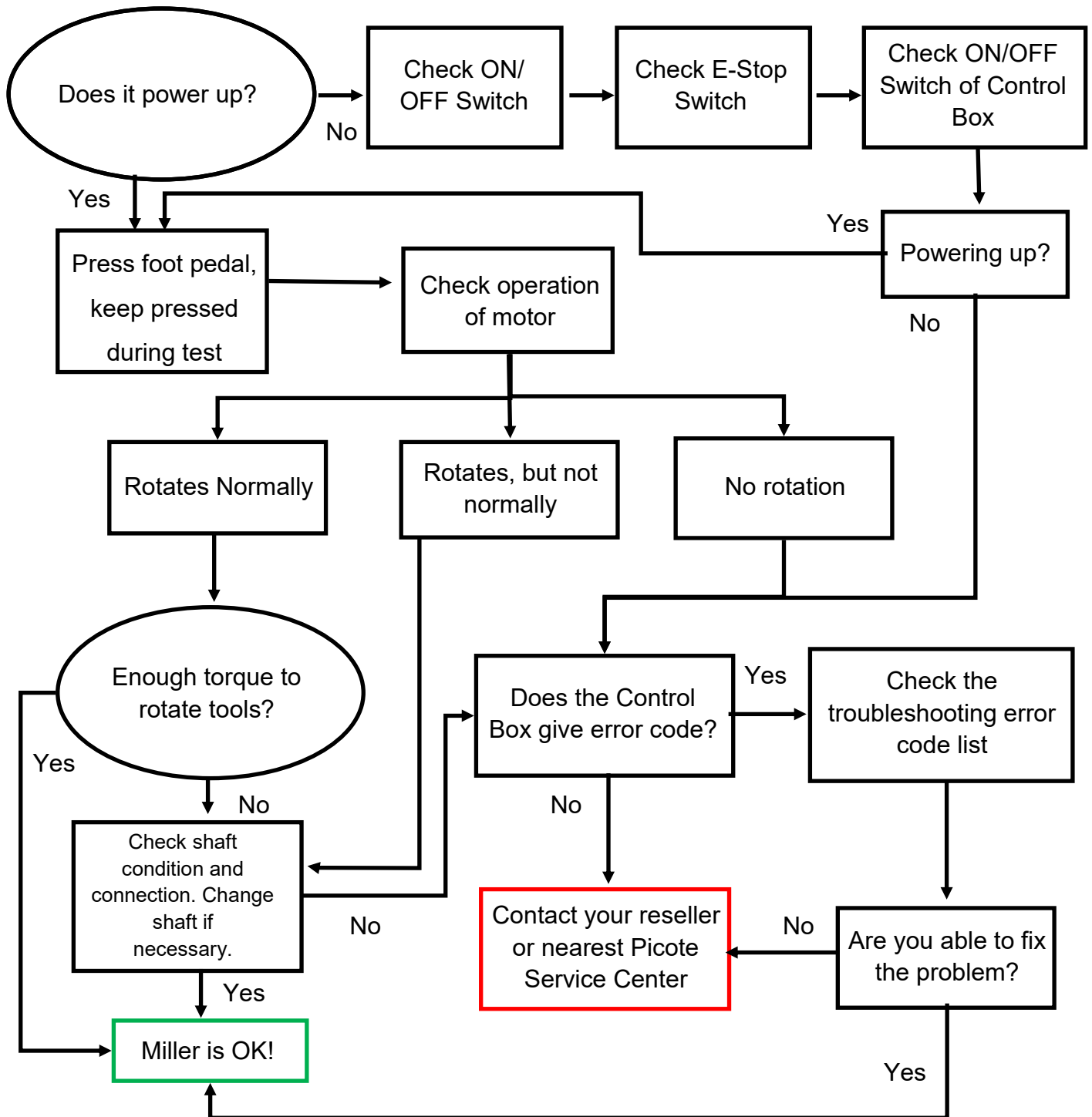
Place it ≈500mm (20”) from the end of the shaft.

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.



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

TROUBLESHOOTING FAULT CODES

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TROUBLE SHOOTING:

The Control Box will show fault codes according to different problems which the machine may encounter during use.

Please check from the list below the most common fault codes.

If a code other than the ones listed below is received or the fault does not amend, please write down the error code and contact your reseller or Picote Solutions.

Fault Code	Description	Suggested Cause
no-F _t	No Fault	Not required
0-1	Output over current	Instantaneous over current on the drive output. Excess load or shock load on the motor. Note: Following a trip, the drive cannot be immediately reset. A delay time is inbuilt, which allows the power components of the drive time to recover to avoid damage.
1 _t -trP	Motor thermal overload	The drive has tripped to prevent damage to the motor. Try not to overload motor. Ensure sufficient cooling air is free to circulate around the motor and that the entry and exit vents are not blocked or obstructed.
P5-trp	Power stage trip	Check for short circuits on the motor and connection cable.
0-volt	Over voltage on DC bus	Check the supply voltage is within the allowed tolerance for the drive.
U-volt	Under voltage on DC bus	The incoming supply voltage is too low. This trip occurs routinely when power is removed from the drive. If it occurs during running, check the incoming power supply voltage and all components in the power feed line to the drive.
0-t	Heatsink over temperature	The drive is too hot. Check the ambient temperature around the drive is within the drive specification: +50°C (122°F). Ensure sufficient cooling air is free to circulate around the drive. Increase the panel ventilation if required. Ensure sufficient cooling air can enter the drive, and that the bottom entry and top exit vents are not blocked or obstructed.
U-t	Under temperature	Trip occurs when ambient temperature is less than -10°C (14°F). Temperature must be raised over 10°C (14°F) in order to start the drive.
E-trip	External trip	Normally closed contact has opened for some reason. Check if the motor is too hot.
FLt-dc	DC bus ripple too high	Check incoming supply phases are all present and balanced.
P-L055	Input phase loss trip	Check incoming power supply phases are present and balanced.
h 0-1	Output over current	Check for short circuits on the motor and connection cable. Note: Following a trip, the drive cannot be immediately reset. A delay time is inbuilt, which allows the power components of the drive time to recover to avoid damage.
dAtA-F	Internal memory fault (IO)	Press stop-key. If fault persists, consult Picote Solutions.
dAtA-E	Internal memory fault (DSP)	Press stop-key. If fault persists, consult Picote Solutions.
Fan-F	Cooling Fan Fault	Consult Picote Solutions.
0-hEAt	Drive internal temperature too high	Drive ambient temperature too high, check adequate cooling air is provided. Increase the panel ventilation if required. Ensure sufficient cooling air can enter the drive, and that the bottom entry and top exit vents are not blocked or obstructed.
Out-F	Output fault	Indicates a fault on the output of the drive, such as one phase missing, motor phase currents not balanced. Check the motor and connections.

**Write down the Error Code flashing in the screen of Control Box if needed to contact the Picote Service Centre.
The Error Code narrows down the list of possible problems with your Miller unit.**

**If there is problem that you cannot resolve with this manual,
please contact your Picote Reseller or Picote Solutions at claims@picotesolutions.com**

WARRANTY POLICY & PROCEDURE

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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



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