PICOTE
LIFE FOR PIPES

MAXI MILLER POWER +

MODEL: MAXI MILLER POWER + 18/18

OPERATION & SAFETY MANUAL

⚠WARNING

These instructions are for your personal safety. Always ensure that you have read and understood these instructions before using the machinery. SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

Table of Contents

To watch practical demonstration videos, or to download an electronic copy of these Instructions, please visit www.picotesolutions.com. Please note that videos are not intended as a replacement or alternative to this operating and safety manual, but only as an additional learning tool.

SAFETY INFORMATION

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

Safety Symbols

Safety symbols are used throughout this manual to draw attention to potential hazards.

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

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

Danger risk of serious injury, follow instructions.

Danger risk of serious injury from rotating 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)

Always use Personal Protective Equipment when using the Maxi Miller Power+, including suitable overalls / protective clothing & footwear and the following:

Always wear suitable eye protection when using the Maxi Miller Power+ to prevent sewage, chemicals or other dust from irritating your eyes.

Always wear suitable ear protection when using the Maxi Miller Power+ to prevent any hearing loss.

Always wear suitable cut-resistant gloves when using the Maxi Miller Power+ to prevent any hand injuries. Any open injuries or skin irritations should be covered at all times to avoid contact with sewage, chemicals or dust.

Always wear a suitable ventilation mask when using the Maxi Miller Power+ to prevent any resin dust from being inhaled or consumed, which can cause occupational asthma or dermatitis as well as eye irritation.

Safety Symbols cont.

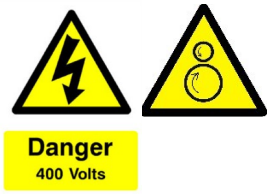
Safety symbols are used throughout this manual to draw attention to potential hazards.

Always remember

Dust produced can be dangerous to your health, inflammable or explosive.

Make sure the drain pipe has been **opened** and **ventilated** to stop any gases forming in the lateral drain where the work takes place.

Before assembly, use, replacement of parts or maintenance, unplug the Picote milling machine from its power socket.



High voltage. Failure to comply may lead to serious injury including electric shock or injury from rotating parts!

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

SAFETY REQUIREMENTS

WARNING *This section contains important safety information. Failure to comply could result in serious injury.*

Always read all safety warnings and instructions. Failure to follow warnings and instructions may result in electric shock, fire and/or serious injury.

1. **Always wear eye and ear protection as well as protective gloves.** Other personal protective equipment, such as respirator mask, gloves and overalls should be worn when necessary. Dust produced when working can be dangerous to your health, inflammable or explosive. Always wear appropriate protective equipment.
2. Make sure the pipe has been opened and ventilated to stop any gases forming in the lateral drain where the work takes place. Always ensure the pipe is grounded/earthed to prevent static electricity.
3. **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.**
4. **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 flexible power shaft for any signs of wear and tear, and repeat the process for the outer casing. Remove damaged parts by cutting the power shaft shorter (min. 50 mm/2") if steel strings of the power shaft are broken near the end of the power shaft.
5. When in use, it is very important that the machine is stable and on an even surface at all times. Working position is horizontal and lying flat.
6. **Never leave the machine running unattended**. Always hold the cable with both hands when operating the machine.
7. Do not touch the Cutter or Grinding Chains immediately after use; they may be hot and could burn your skin.
8. If the working environment is extremely hot and humid (less than 95% is acceptable), or badly polluted by conductive dust, always use a residual current device in main power source to ensure the safety of the operator.
9. 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 respirator mask.
10. 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.
11. Do not use the machine on any materials containing asbestos.
12. Never touch rotating parts. Do not stand on the machine.
13. Only use this machine with the accessories and spare parts offered by the manufacturer. Accessories and spare parts should only be used in the manner intended and as described by the manufacturer.
14. Only operate the foot pedal or OPC as instructed. Never place anything on it in place of a foot.
15. Do not change or touch the controls or wirings of the motor or frequency transformer.
16. Do not extend the shaft by more than one extension (11m/36ft). Use only Picote Solutions shaft extension and connector.

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.*

ENVIRONMENTAL

Operational Ambient Temperature Range:	-10...50 °C (14...122 °F) frost and condensation free
Storage Ambient Temperature Range:	-20...60 °C (-4...140 °F) frost and condensation free
Maximum Altitude:	2000m (6500 ft). Derate above 1000m: 1% / 100m
Maximum Humidity:	95% non-condensing

TRANSPORT

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

Never transport machine with tool attached to the shaft.

If using pick-up or trailor to transport Picote milling machines, cover the unit to protect it from raining water and dust.

STORAGE

It is recemmended that milling machines are stored indoors protected from rain and sunlight and in constant ambient temperature. Best way to store the machines is in the same box that the machine has been shipped.

If Maxi Miller Power+ will be stored in colder environment than +10 °C (50 °F), the milling machine should be stood at room temperature for 24hours before use.

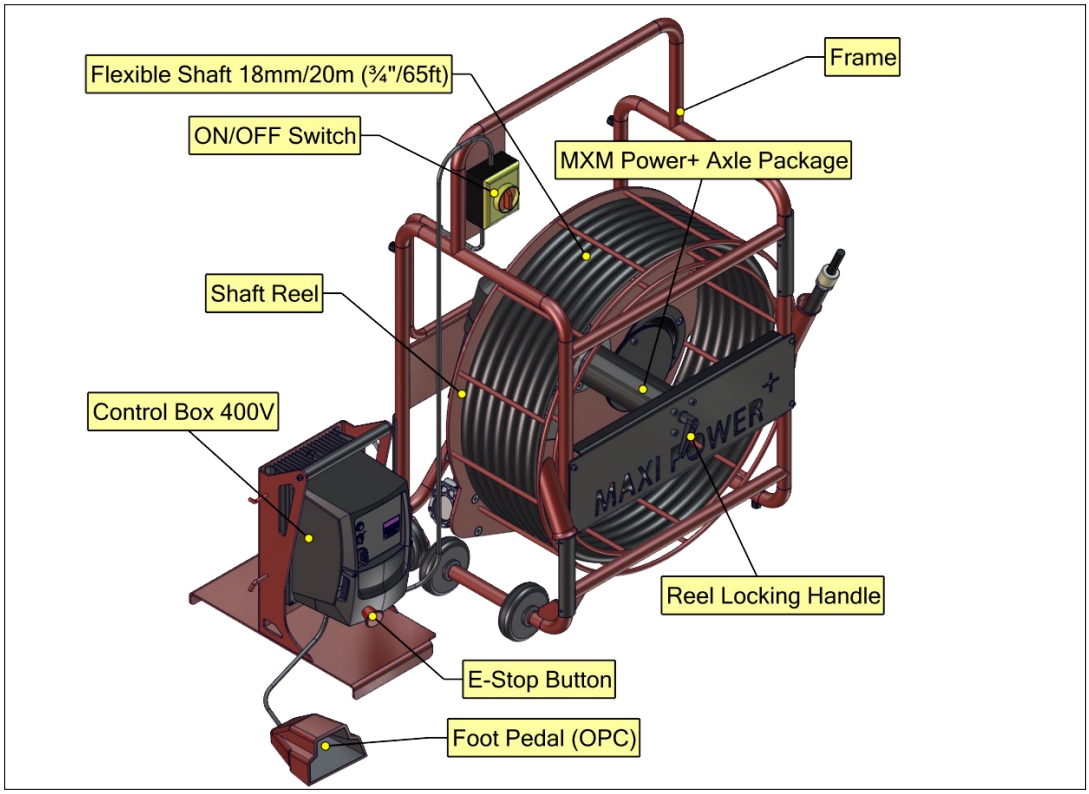
If Maxi Miller Power+ has been stored for long periods of time (over 2-3 months), it should be checked and tested according to maintence program before use.

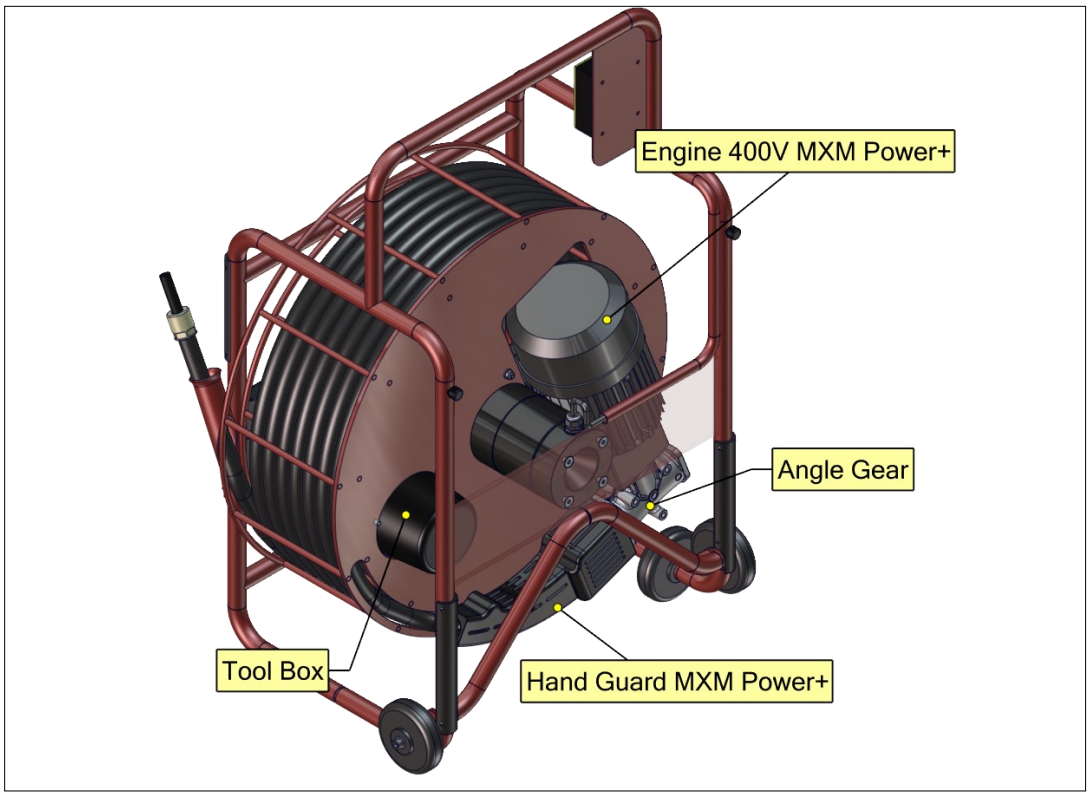
DISPOSAL

Maxi Miller Power+ 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 the local waste handling rules and regulation.

GENERAL INFORMATION





⚠ CAUTION When in use, always lay the machine down horizontally on the floor as shown above. When not in use some non-toxic Picote Flexible Shaft

Picote Maxi Miller Power+ 18/18

TECHNICAL DATA

Size (mm/inches)	Shaft (mm/inches)	Range (m/feet)	Diameter (mm/inches)	Rotating speed (rpm)	Voltage and power rating (V/kW)	Power Source	Weight (kg/lb)	IP Class
1150x854x489 /45x34x19	18 / ¾	20 / 65	DN150-225 *DN75-225 **DN150-300	500-1500	380 - 480V / 3.0 kW	Electric 3-phase Motor	129 / 284	54

*for straight pipes
**for descaling/cleaning

INTENDED USE

This machine is intended for the following uses;

1. Cleaning and maintenance of pipes, sewers and drains by grinding.
2. Descaling pipes
3. Reinstating branches in pipes, sewers and drains by drilling and grinding.
4. Cutting excess cured-in-place (CIPP) linings.
5. Removing deformed or collapsed CIPP linings.
6. Removing concrete or lime scale deposit from pipes, sewers and drains.

Always follow the manufacturer's instructions when installing and using the machine with accessories.

AVAILABLE TOOLING

Original Chain

Cyclone Chain

Original Tornado Chain

Cyclone Tornado Chain

Smart Spider Power+

Twister+

Smart Crusher

Twister+ Concrete Remover

Smart Cutter™

Please check Picote Solutions Quick Cleaning Guides and Tool Manuals for more detailed information.

OPERATING INSTRUCTIONS

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

⚠WARNING

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

⚠CAUTION

- Check that there is the correct length of flexible shaft without its plastic casing at the end of the flexible shaft. Check 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. Tighten the screws. **Consult accessory manuals (cutters & grinding chains) for detailed information.**
- Always check that the unit is set to rotate in the desired direction. The natural and intended rotational direction of the shaft is clockwise (=forward), due to its fabrication. When used clockwise the torque is at its optimum.
- **Anti-clockwise (=reverse) rotation direction is strictly for temporary use only!** It may result in shaft failure.

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 in the drain to remove dust.

STARTING & USING THE MACHINE

⚠WARNING *This section contains important safety information. Failure to comply could result in serious injury.*

1. Check the rotational direction of the shaft and the rpm. The rotational direction is checked using the forward/reverse switch on the control unit (forward or reverse). The control of the rotational speed is also located in the control unit. The rotational speed increases when the speed control is turned clockwise.
2. Place the tool inside the pipe.
3. Turn on the power switch.
4. Release the Red Emergency Button (if it's pressed down).
5. The machine starts when the OPC foot pedal is pressed down. Always hold the flexible shaft firmly while operating the machine.
6. Rotating the tool makes it easier to move the tool forward inside the pipe.
7. **Take all the shaft out from the reel when working to increase the force transferred to the tool.**
8. The machine has an Operator Presence Control or 'OPC'. When the control is not held down, the machine stops. The machine can also be stopped by pushing the Emergency Stop down, rotating the power switch to O, unplugging the machine or rotating main frame on/off switch to O.
9. The life span of the shaft outer casing can be prolonged by using Sleeves with Bearings designed for the outer casing.

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

Stop	The Maxi Miller Power Plus is ready and waiting for OPC activation
. . . .	The Maxi Miller Power Plus is using more current than nominal current
E-trip	The Maxi Miller Power Plus 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.

DIGITAL CONTROL BOX

⚠ CAUTION

Parameters of your Maxi Miller Power+ have been pre-set by the manufacturer. Picote Solutions has no liability for failures or accidents caused by tampering with or changing of the settings by end user. Control box is 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 (2) can be pressed to see the rotational speed (rpm), the amount of current send to motor (A), power generated in motor (kW) and power frequency of motor (Hz). Do not hold the button down continually.

TROUBLESHOOTING

The control box of the Maxi Miller Power + 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 of Maxi Miller Power + control box. If other code than below is received or fault does not amend, please write down the error code and contact your reseller.**

Fault Code	Description	Suggested Cause
no-FLt	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/+122F) . 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/+14F. Temperature must be raised over -10°C/+14F 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
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.

⚠WARNING **VOLTAGE & POWER SUPPLY**

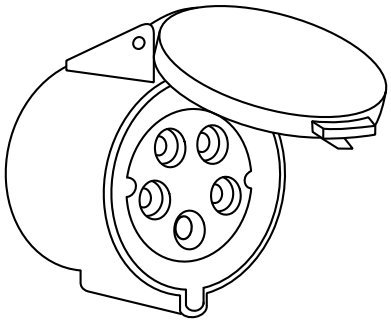
Ensure that the supply voltage is correct. The voltage of the power source must be within the voltage range given on the nameplate of the machine.

The machine should be connected only to a **380-480 V power supply** as indicated on the nameplate, and can only be operated on three-phase AC supply rated for at least **16 A current**. 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 **30 mA.** 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 Plus with a heavy duty extension cord only. Extension cord **lead minimum thickness is 2.5 mm^2 / 12 AWG up to 10 m**.

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



400 V

The Maxi Miller Power Plus is equipped with a 5-pin 400 V / 16 A plug. The plug fits into a three-phase 400 V socket shown in the picture on the left.

Power cable lead minimum thickness 2.5 mm^2 / 12 AWG.

The Maxi Miller Power Plus must be supplied with sufficient power and proper current rating. Minimum lead thickness for an extension cord is 2.5 mm^2 / 12 AWG.

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

SAFETY FEATURES

There is a safety gear with a Lock/Emergency Stop Button on the machine. The power supply to the motor is cut off when the Emergency Stop Button is pushed. Always make sure the Emergency Stop Button is pressed or completely unplug the machine when the machine accessories (e.g. Cutter or Grinding Chains) are not inside the drain. An additional on/off switch is located in the main frame of the machine for increased safety of operation.

The machine has an automatic safety clutch which shuts down the machine when the tools get stuck.

The machine has an operator presence control or 'OPC'. When the control is not held down, the machine stops. OPC is the most important safety device of the Miller machines. Never place anything on the place of a foot (for example a brick).

WARNING **ELECTRICAL REQUIREMENTS— ELECTRICAL SET UP**

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.

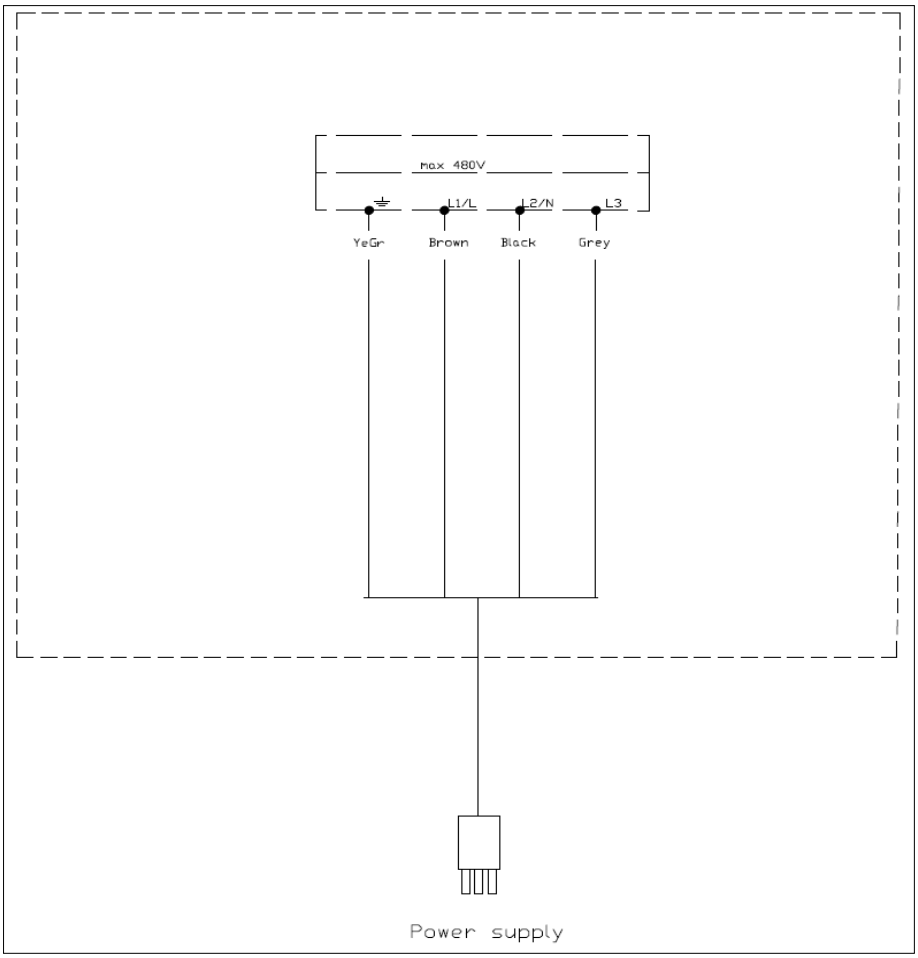
The Power Plus has a 3 phase power configuration. It uses a 4 mm^2 / 10 AWG 4 wire cord (3P + E).

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 the user manual.

ELECTRIC DIAGRAM



NOISE LEVEL & EMISSIONS

⚠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:

WEAR EAR PROTECTION

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

Sound power level (LWA): 98 dB (A)

Emissions during actual use of the machine can differ from the 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 tool head distance to user and working conditions. Vibration levels in here have been measured in lining removal work. Vibration has been determined according to ISO-5349 and EU-directive 2002/44/EG. In table above are shown safe daily exposure time for user.

Exposure Action Value (EAV) 2,5 m/s^2
Exposure Limit Value (ELV) 5,0 m/s^2

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

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 which 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

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

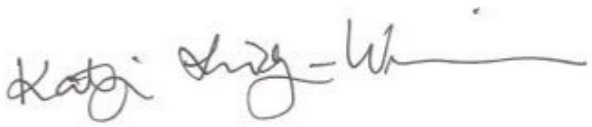
And is manufactured in accordance with the following standards or standardized documents:

EN60745

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.
Picote Solutions Oy Ltd
Pienteollisuustie 24, 06450 Porvoo, Finland

MAINTENANCE PROGRAM

	Months			
Maintenance task	3	6	12	24
Tightness of motor fixing			I	I
Alignment of motor & gear box			I	I
Condition of frame			I	I
Condition of wheels & rubber bushes			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

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 on page 23 Picote Warranty Policy and Procedure.

Service Period	3 months	6 months	1a
A			
B			
C			

A	Milling machine & spare parts, except
B	Electric motors
C	Service Centre repair work

MAINTENANCE

⚠WARNING

1. Before performing any maintenance always check that the machine is fully turned off and unplugged.
2. 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.
3. For safety and efficiency, always keep the machine and its motor, drive unit, ventilation and cooling slots clean.
4. Check that the screws for the shaft socket are securely tightened.
5. Check that all the bolts and screws on the machine are securely tightened.
6. It is recommended that the oil in the bevel gear should be changed about every 12 months. Use regular oil intended for gearboxes. See oil change instructions on page 17.

SERVICING THE FLEXIBLE SHAFT & ITS OUTER CASING

Prior to shipping the flexible shaft is pre-treated with liquid Picote Flexible Shaft Lubricant (non-hazardous) and the casing replaced. Always inspect the condition of the shaft and its outer casing regularly. Also, inspect at least every fifth working day that the shaft is properly attached under the hand guard at the machine end. If the twine of the shaft has opened from one end to the other so that there are visible holes in the shaft, the entire shaft has to be replaced.

Lubricant can be added between the flexible shaft and its outer casing when the shaft is removed from the machine. In order to add lubricant the cable needs to be 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 50ml/50g/1.5oz will be required for the entire shaft. Too much lubricant can cause strain on the cable. After lubricant is 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 shaft will push excess lubricant 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 reduce the load on 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)

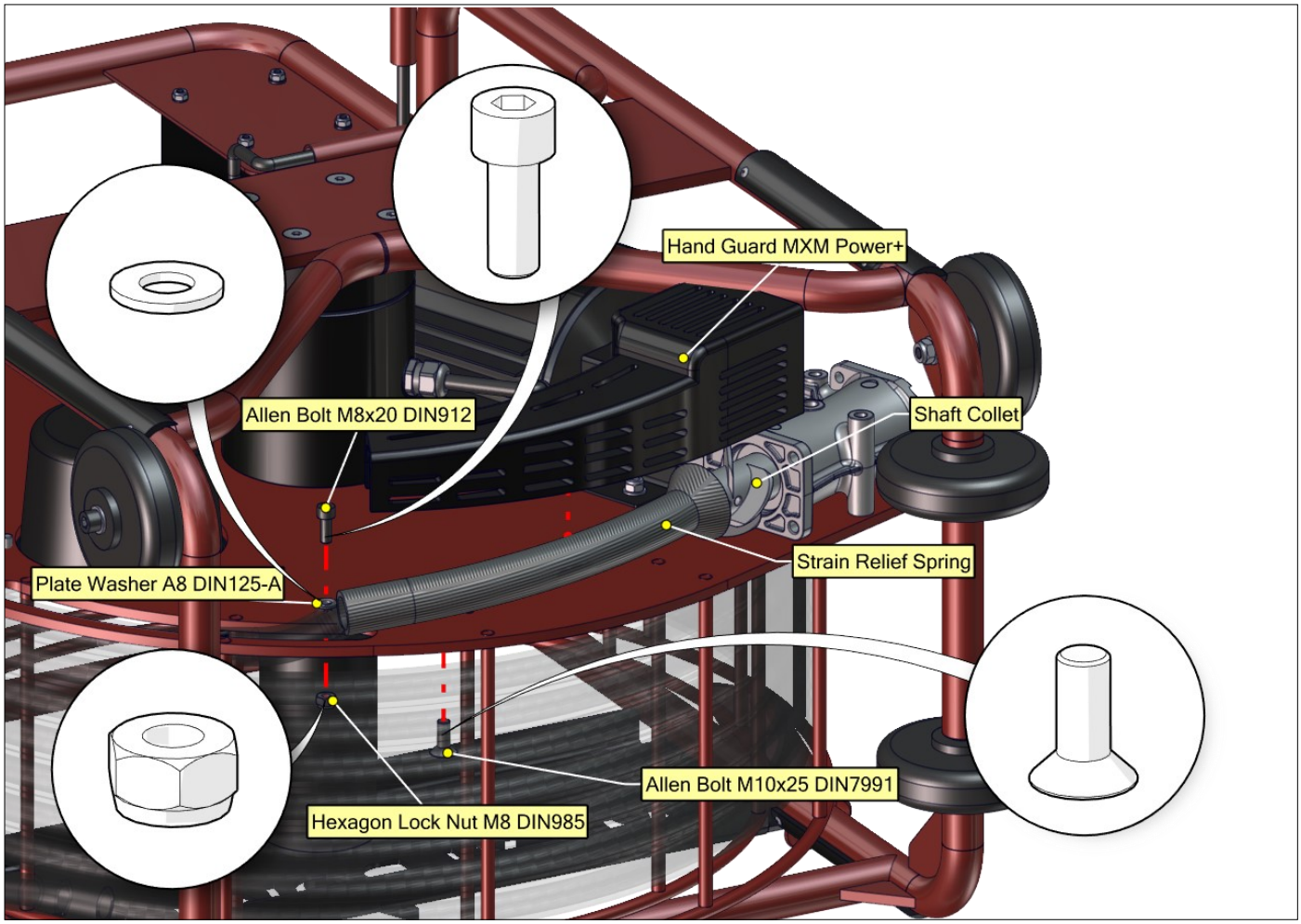
CHANGING THE FLEXIBLE SHAFT

Only use the shaft and its outer casing specified by the manufacturer of the machine. 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 strain relief spring. Remove hand guard.
2. Loosen the screws in the shaft socket that hold the shaft. Remove strain relief spring. Pull the old shaft out from the machine.
3. Insert new shaft. When inserting the shaft inside the shaft socket, verify that the shaft goes all the way to the end. Tighten the screws.
4. Make sure that strain relief is attached and contacts the shaft socket before attaching the hand guard.
5. Mount the hand guard. Tighten the bolts to 8 Nm.

Look at the assembly under hand guard from below.

ASSEMBLY UNDER THE HAND GUARD



FLEXIBLE SHAFT EXTENSION

Flexible extension shafts are available for the Maxi Miller Power+ in lengths of 11 metres (36ft). **Do not** extend the shaft by more than **one** extension 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 and un-plugged.

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.
4. You can then carry on machining.

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

CHANGING OIL IN THE ANGLE GEAR

The oil should be changed after every 1000 hours of use or 12 months.

1. Dismount the gear guard and the hand guard.
2. Remove the shaft socket from 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 dismounted, 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 angle 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: 0,042 kg / 1.4815 oz

Window of change: after every 3000 hours of use or 12 months

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

ACCESSORIES

⚠WARNING Only use 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 the instructions in the Picote Solutions manuals.

MAXI MILLER POWER+

3570032018	Maxi Miller Power + 18/18 400v
3570032018UK	Maxi Miller Power+ 18/18 400v UK
3570032018US	Maxi Miller Power+ 18/18 400v US

SPARE PARTS

1313002185	Shaft Connector 18/18
9570000034-1	Strain Relief Maxi Power+
1312021180020	Maxi Power+ spare shaft 20.5m
1312021180011	Maxi Power+ extension shaft 11m
93212520180SB	Sleeve for 18mm outer casing
1350000020	Picote Flexible Shaft Lubricant 0.5 liters
1350000021	Picote Flexible Shaft Lubricant Package, includes 6 bottles

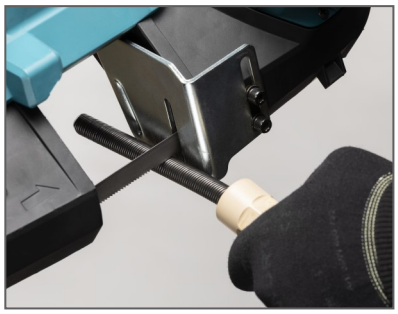
ADDITIONAL TOOLS

1100400001	Bearing Cleanser
1350000005	Pliers
1350000007	Cutter for Steering Wire
1350000018	Shaft Rounder
1350000006	Sheath Cutter 1
1350000011	Sheath Cutter 2 (Shaft inside outer casing)
1350000012	Cutter for Side Grinding Panels
1350000008	Hex Key 4mm
1350000009	Hex Key 3mm
1350000010	Hex Key 2.5mm
1350000013	Combo Hex Key 1-6mm
1350000001	Wrench 8mm

PRACTICAL TIPS & SAFETY ADVICE

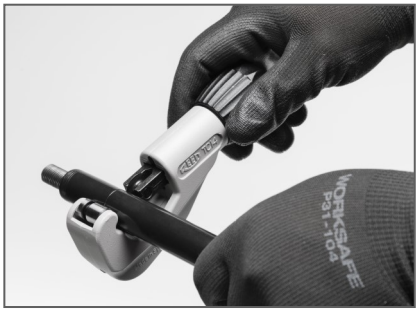
Here are some useful tips on how to get the most out of your Picote system. Always use the recommended tools for maintenance to avoid personal injury.

CUTTING THE FLEXIBLE SHAFT



Always inspect the flexible shaft before each use. If there are potential weak points or the shaft is damaged, cut off the damaged length using a bad saw.

CUTTING THE OUTER CASING



Always inspect the outer casing before each use. Easiest and safest way to shorten the outer casing to the correct length is using sheath cutter. Only the needed amount of bare shaft should be exposed in all times.

SHAFT ROUNDER

The shaft rounder smooth's the end of the flexible shaft, preventing the user from being cut by the otherwise sharp metal edge .

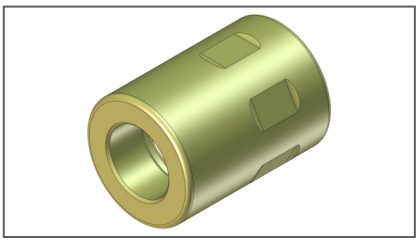
ATTACHING A SHAFT SOCKET

Feed the shaft through the socket to the end and **securely fasten**. The outer casing should reach all the way to the base of the shaft socket to protect the shaft.

PRACTICAL TIPS & SAFETY ADVICE

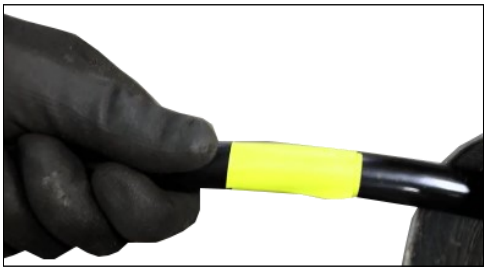
Here are some useful tips on how to get the most out of your Picote system. Always use the recommended tools for maintenance to avoid personal injury.

SLEEVE BEARING



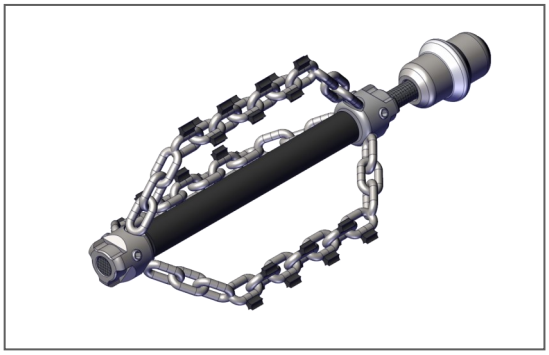
Always use Sleeve Bearing when using Maxi Miller Power+. It prolongs the lifetime of the flexible shaft and prevents the outer casing from melting in the tool end. Sleeve bearings can be re-used when outer casing is shortened.

ADDING A VISUAL MARKER FOR SAFETY



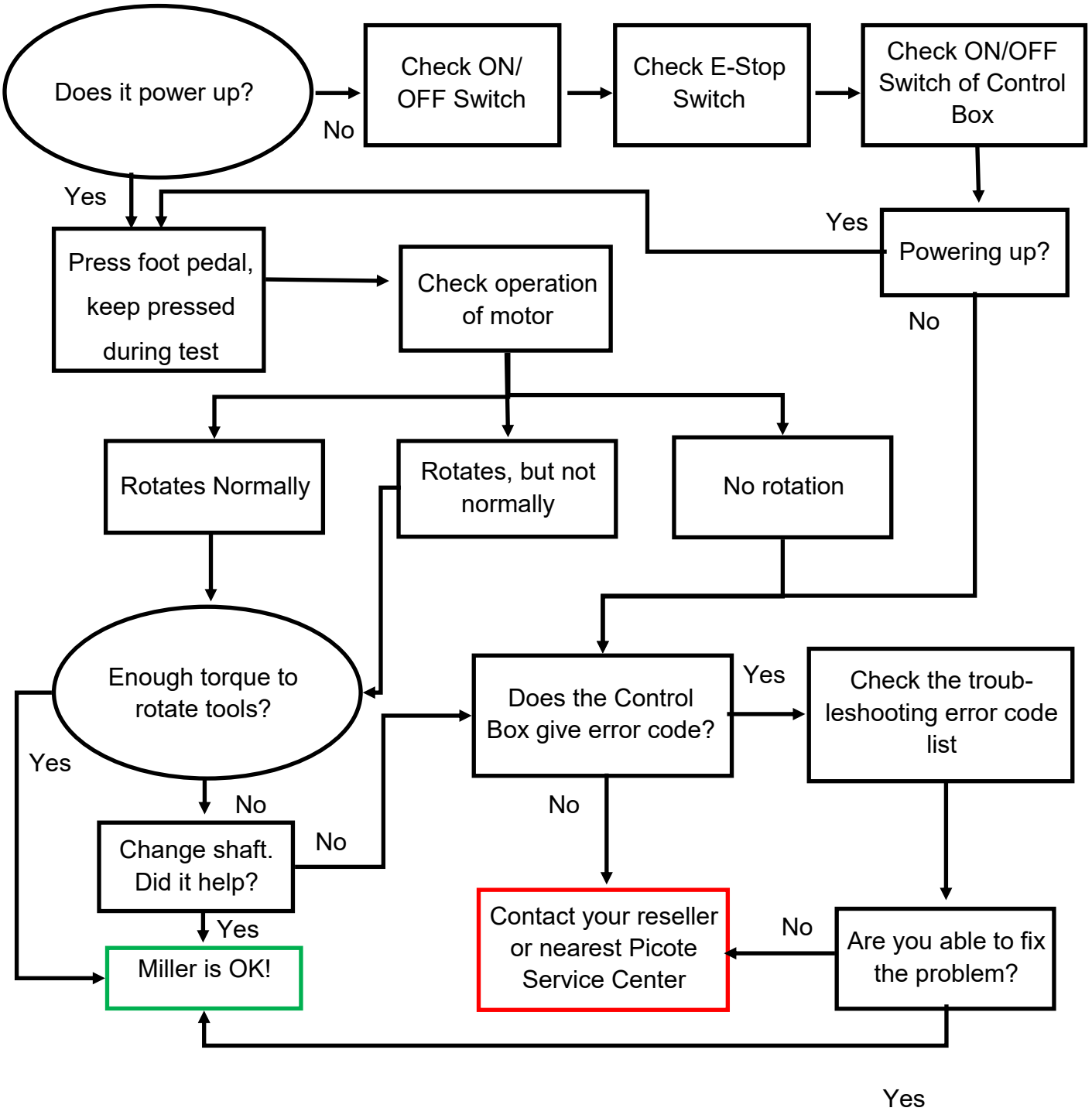
Attach a visual marker (tape) to the outer casing of the flexible shaft. Place it around half a meter from the end point of the shaft. The mark will indicate the tools location and prevent possible injuries when the tool is removed from the pipe, including injury by rotating parts.

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.

Trubleshooting Flowchart—Maxi Miller Power+



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 consult your Picote Reseller or Picote Solutions.

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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Revision number: Rev. 4
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Date: 24 OCT. 2019

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