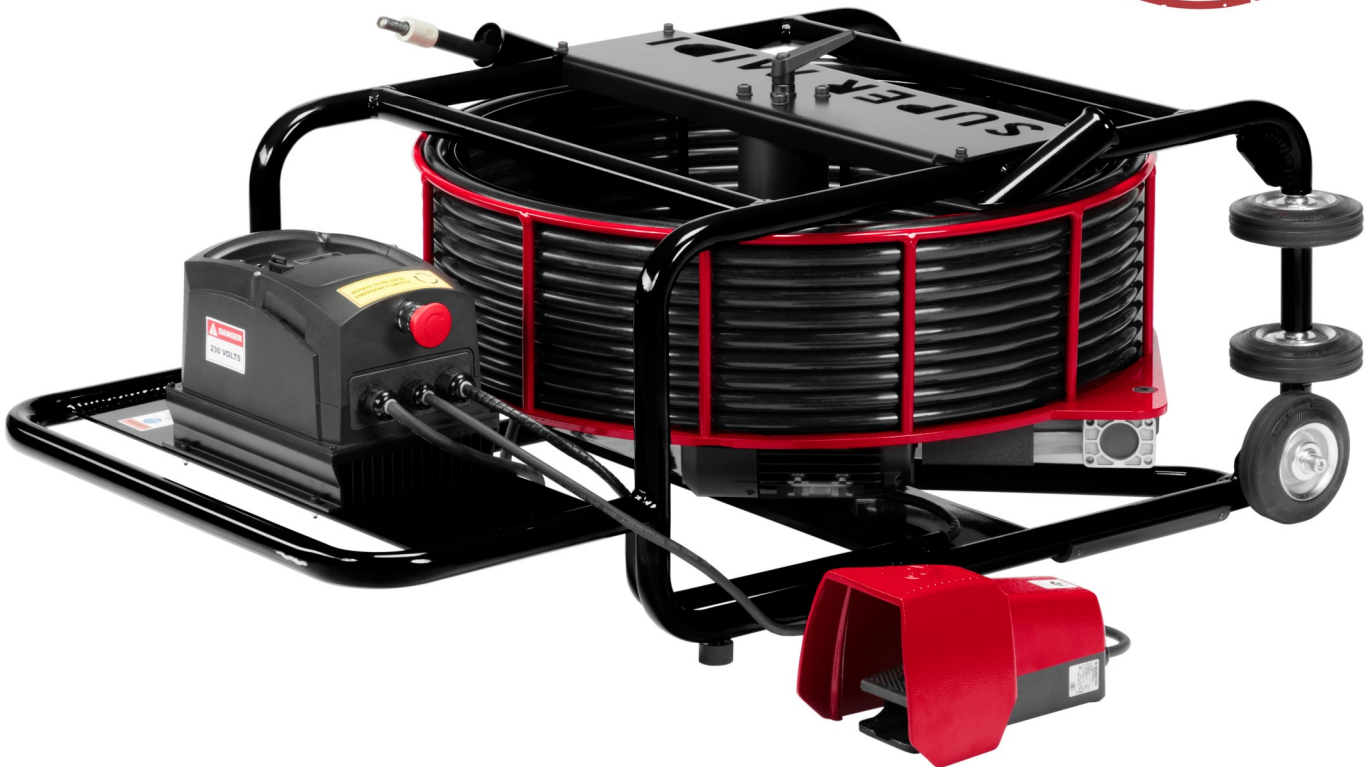




MIDI CLEANER 10/23

Midi Cleaner 10/23 / Super Midi 10/23

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.

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SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

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

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, 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 including suitable protective clothing, footwear, plus:



Suitable eye protection to protect against sewage, chemicals or dust 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.

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 heat and cut-resistant gloves.**

Other personal protective equipment, such as dust mask, gloves & overalls should be worn when necessary. Dust produced when working can be dangerous to your health, inflammable or explosive. **Always wear appropriate personal protective equipment.**

2. Make sure the pipe has been opened and ventilated to prevent any gases accumulating.
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 shaft for any signs of wear and tear, and repeat the process for the outer casing.
5. When in use, it is very important that the machine is stable and on an even surface at all times.
6. **Never leave the machine running unattended.** Always hold the cable 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, or badly polluted by conductive dust, use a GFCI-enabled power outlet 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 dust mask when using dry grinding to clean pipes.
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 pipes containing asbestos fibres.**
-  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 Picote Solutions. Accessories and spare parts should only be used in the manner intended and as described by Picote Solutions.
14. Only operate the foot pedal or OPC as instructed. Never place anything on it in place of a foot.
15. **Do not extend the shaft by more than one extension.** Use only Picote Solutions shaft extension and connector.



WARNING 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: 1% / 100m
Maximum Humidity:	95% non-condensing

TRANSPORT

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

Never transport the machine with tool attached to the shaft. If using a pick-up or trailer to transport Picote Millers always suitable cover the unit 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.

The Midi Cleaner should be stored under cover in between +10 °C to +40 °C (50 °F to 104 °F). If the Midi Cleaner has been stored in an environment colder than +10 °C or 50 °F , the machine should be stood at room temperature for 24 hours before use.

If the Midi Cleaner 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.

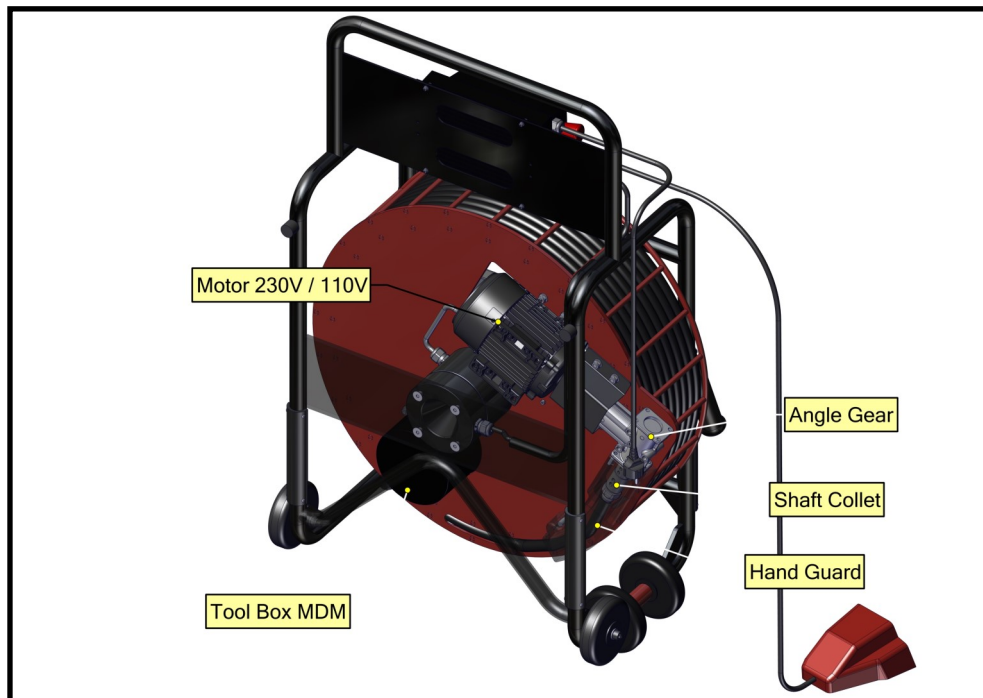
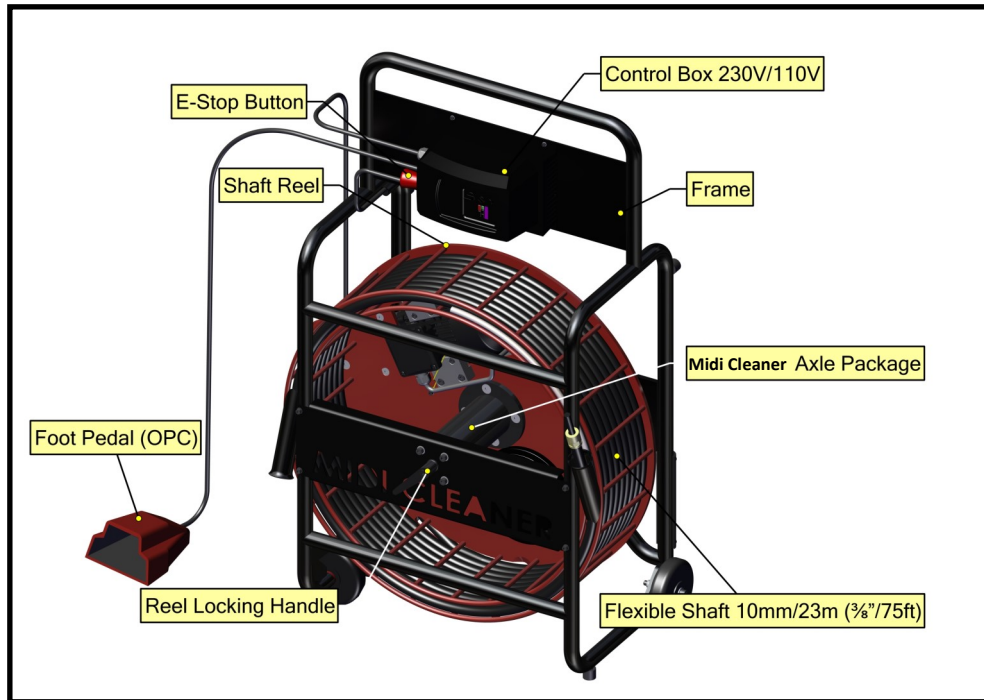
DISPOSAL

The Midi Cleaner 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

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



CAUTION

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



Parameters of your Midi Cleaner 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

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Size (mm/inches)	Shaft (mm/ inches)	Range (m/ feet)	Diameter (mm/inches)	Rotating speed (rpm)	Voltage/ Output (V:W)	Power Source	Weight (kg/lb)	IP Class
1122x712x466 44 x 28 x 18	10 ($\frac{3}{8}$ ")	23 (75')	DN50-DN150 (2" - 6")	500 - 1500	110V:1.5kW 230V:1.5kW	Electric Motor	65 (144)	54

INTENDED USE

This machine is intended for the following uses;

1. Cleaning and unblocking pipes, drains and sewers by grinding DN50 - DN150 / 2" - 6"
2. Descaling pipes DN50 - DN150 / 2" - 6"
3. Reinstating branches in sewers and drains by drilling and grinding DN50 - DN100 / 2" - 4"
4. Cutting excess length of cured linings DN100 / 4"
5. Removing metallic inserts DN100 / 4"
6. Picote Brush Coating™ DN50 - DN200 / 2" - 8"

AVAILABLE TOOLING

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

Cleaning Chain	Original Chain	Cyclone Chain
Original PVC Chain	Cyclone PVC Chain	Tiger Drill Chain
Tiger Bore	Tiger Twister	Smart Spider
Mini Smart Sweeper	Twister Mini Express	Twister Lateral Cutter
Special Drill Head	Twister Metal Grinder	Nylon Brush Wire Brush
Twister Cleaner	Smart Cutter™	3D Chains (Premium and PVC)



Tools marked in red require a 12/10 Shaft Connector and Leader for 12mm tools.



Tools marked in black require an 8/10 Shaft Connector and Leader for 8mm tools.

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

www.picoteinstitute.com

VOLTAGE & POWER SUPPLY

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

Ensure that the supply voltage is correct. The voltage of the power source must match the value given on the nameplate of the machine within the tolerances of $\pm 10\%$. Machines with a 230V plate can be used in 220V mains and 110V machines in the 120V grid.

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 or GFI to trip out. If this happens frequently, change the power source to one without residual current device or GFI.

Power plugs

For safety purposes, use only grounded outlets. If the plug does not fit securely or match the outlet, do not force it — contact an electrician to determine 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 receptacle. Use the Midi Cleaner with a heavy duty extension cord only.

If a power generator is used as power source, ensure that the power rating is sufficient.

220-230V: EU Schuko 230V 16A. Power cable lead minimum thickness 2.5mm^2 .

110-125V: The Midi Cleaner is equipped with a 15 amp (125V) NEMA 5-15 plug. Power cable lead minimum thickness 2.5mm^2 / 12 AWG. The Midi Cleaner Miller must be supplied with sufficient power and proper current rating. A minimum of 15 amps are needed to operate it safely and efficiently. When used with an extension cord, the plug must be a 3 prong, 15amp (125V). If a power generator is used, a minimum 3 kW required. Adapters may be necessary for generator connections. Contact your reseller or Picote technical support for more information.

AUSTRALIA/UK: Midi Cleaners in these regions have special plugs.

Australia: CEE 16A 230V colour blue. Power cable minimum lead thickness 2.5mm^2 .

UK: UK Plug BSEN 60309 16A 110V colour yellow. Power cable lead minimum thickness 2.5mm^2 . Midi Cleaner requires a transformer to comply with the site power regulations and safe usage in UK. For example: 3.3KVA Site Transformer 1 X 16AMP outlet 110V.

NOTE: If working with a generator always use the 110 V transformer. **Do not** plug Midi Cleaner directly in to the generator.

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 accessories (e.g. Cutter or Grinding Chains) are not inside a pipe. Always unplug the machine from the power source when performing any maintenance or repairs to the machine.

The machine is operated by foot pedal (Operator Presence Control or 'OPC'). When the control is not held down, the machine stops. Never place any kind of object on the pedal in place of a 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**:



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

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

VIBRATION

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

Safe daily exposure time for user:

Exposure Action Value (EAV) 2,5 m/s²

Exposure Limit Value (ELV) 5,0 m/s²

Tooling	Working Distance	EAV	ELV
Twister DN100 / 4"	2m / 6.6ft	Over 24h	Over 24h
Twister DN100 / 4"	12m / 39.4ft	13h 25 min	Over 24h
Original Cleaning Chain DN150 / 6"	0-2m / 0-6.6ft	1h 33min	6h 11 min
Original Cleaning Chain DN150 / 6"	10m / 32.8ft	3h 14min	12h 57min

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:

Midi Cleaner / Super Midi 10mm

Model No: 10/23

is of series production and

Conforms to the following EU Directive:

2006/42/EY

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

EN62841-1

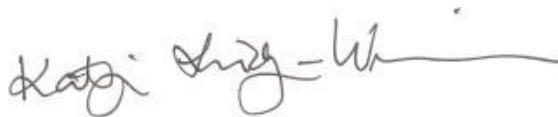
EN62841-13

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

15th June 2020



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

Before operation:



WARNING



Danger
Electric shock risk

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



CAUTION

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 plastic casing) at the end of the flexible shaft and that all screws have been loosened so that the shaft can be easily inserted inside the tool. Position the shaft inside the tool, as far as it will go, and tighten the screws. **Consult accessory manuals (cutters & grinding chains) for detailed information. DO NOT ROTATE THE CABLE IN REVERSE UNDER LOAD!**

While in operation:

- Always lay the machine down horizontally on the floor. During drilling, grinding and cutting processes, always use a separate vacuum extraction system or run water in the drain to remove dust.

STARTING & USING THE MACHINE



WARNING

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

1. 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 Button down, rotating the power gear to "O" or unplugging the machine.
2. Check the rotational direction of the shaft and the rpm. The rotational direction switch is on the control box (forward or reverse). The control of the rotational speed is also located on the control box. The rotational speed increases when the speed control is turned clockwise.
3. Place the tool inside the pipe.
4. Turn on the power switch.
5. Release the Red Emergency Switch Off Button.
6. The machine starts when the OPC foot pedal is pressed down. Always hold the flexible shaft with both hands firmly while operating the machine.
7. Rotating the tool slowly makes it easier to move the tool forward inside the pipe.
8. The lifespan of the shaft outer casing can be prolonged by using a Sleeve Bearing designed for the outer casing.

Display messages

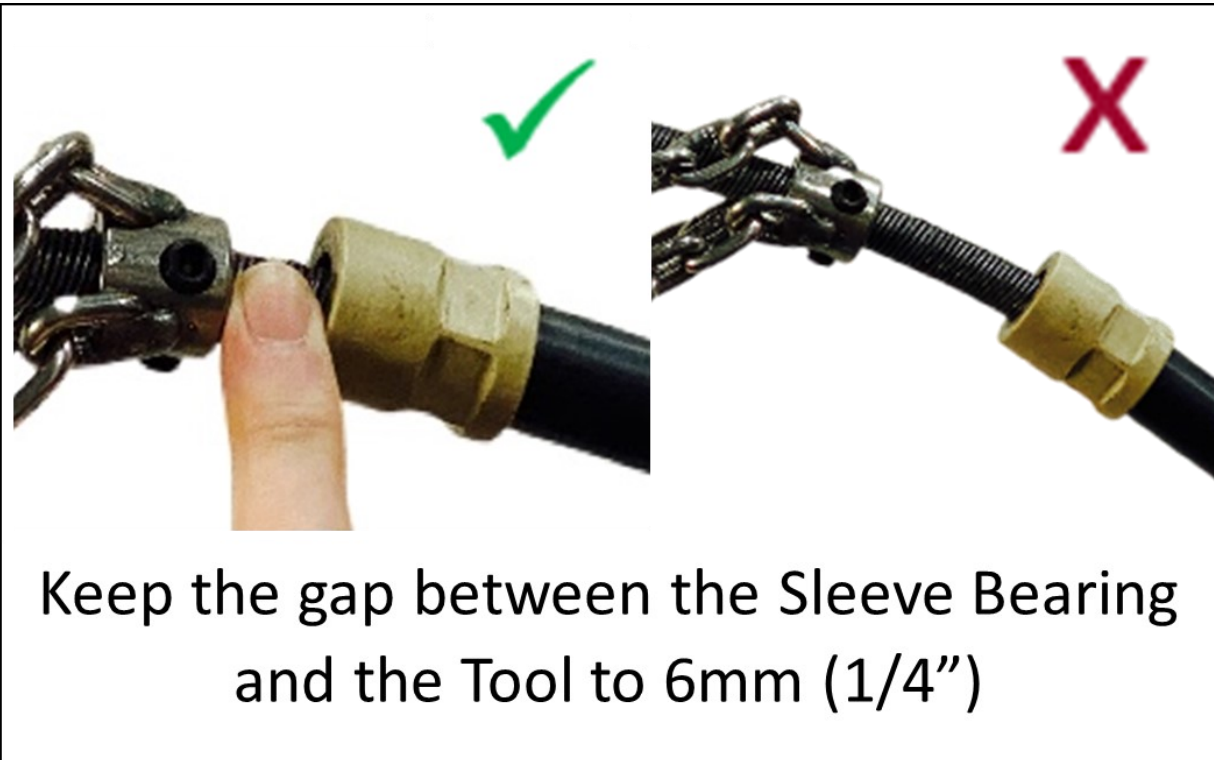
There is a display on the frequency transformer. The following messages may occur:

- | | |
|--------|---|
| Stop | The Midi Cleaner is ready and waiting for OPC activation |
| | The Midi Cleaner is using more current than nominal current (RED flashing dots) |
| E-trip | The Midi Cleaner 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

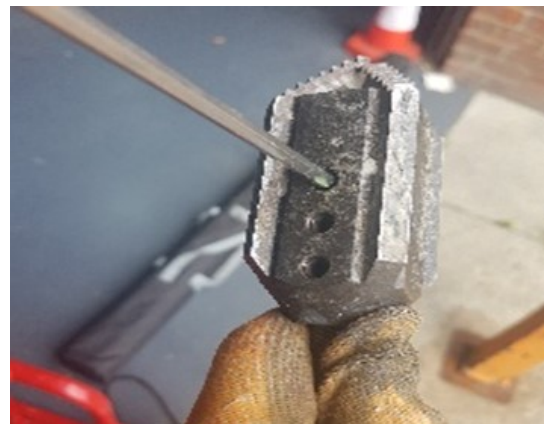
SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

ATTACHING TOOLS



TIGHTENING THE 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 fixing			I
Alignment of motor & gear box			I
Condition of frame			I
Condition of wheels & rubber bushes			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

WARRANTY PERIODS

Picote Solutions grants limited warranty for certain machines, equipment & components. Read more detailed information on page 29 (Picote Warranty Policy and Procedure).

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



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 bevel gear should be changed about every 12 months. Only use regular oil developed for gearboxes.

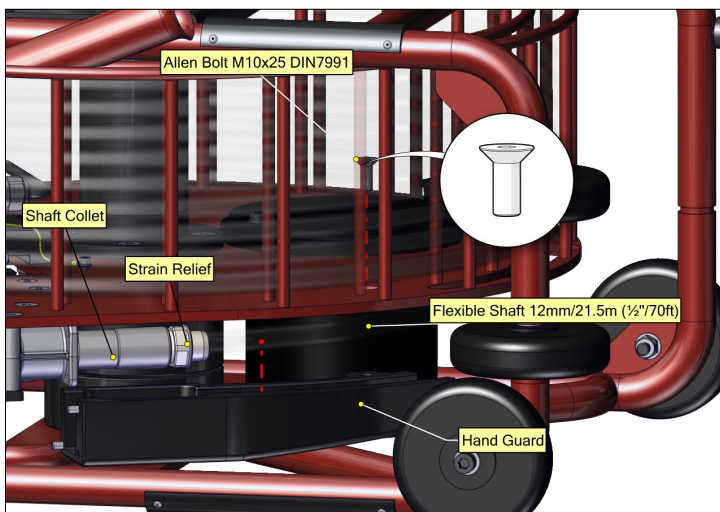
CHANGING THE FLEXIBLE SHAFT

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 screws 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. Verify that the shaft goes all the way to the end. Tighten the screws.
4. Mount the hand guard. Tighten the bolts.

Look at the assembly under hand guard from below.

ASSEMBLY UNDER THE HAND GUARD



SERVICING THE FLEXIBLE SHAFT & ITS 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.

Lubricant can be added between the flexible shaft and its outer casing when the shaft is attached to the machine. 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 **20ml/20g/1oz** 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 Midi Cleaner in lengths of 10 metres / 32ft. **Do not** extend the shaft by more than **one** extension and **only** use a Picote Solutions shaft extension and connector.

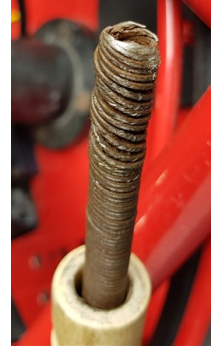
Before attaching or removing the shaft extension always make sure that the machine is fully turned off and unplugged.

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.
4. You can then carry on working.

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).



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.

ACCESSORIES & SPARE PARTS

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

WARNING

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.

MIDI CLEANER

3551031000	Midi Cleaner 10/23
3551031000US	Midi Cleaner 10/23 110V US
3551031000UK	Midi Cleaner 10/23 110V UK

MAXI COATING PUMP

22220200000	Maxi Coating Pump 230v - includes 10x Pumping Hose with Hose Connectors, 10x Resin Cup & 2x Hose Clamp 16mm
2220100001	Maxi Coating Pump USA 110V - includes 10x Pumping Hose with Hose Connectors, 10x Resin Cup & 2x Hose Clamp 16mm
9550004000	Maxi Pump Bracket for Super Midi

SPARE PARTS

1312020105025	Midi Cleaner / 10mm ($\frac{3}{8}$ ") Shaft Thin Outer Casing / 25 metres (82ft)
1312020105010	Flexible Shaft 10mm ($\frac{3}{8}$ ") / 10 metres (32ft)
1313002105	Shaft Connector 10mm/10mm ($\frac{3}{8}$ " / $\frac{3}{8}$ ")
93212322105	Sleeve 2 Plastic 10mm ($\frac{3}{8}$ ") (Thin outer casing for Miller)
9550000070	Strain Relief Midi Cleaner
1350000020	Picote Flexible Shaft Lubricant 0.5 liters
1350000021	Picote Flexible Shaft Lubricant Package, includes 6 bottles

ADDITIONAL TOOLS

1350000005	Pliers	1350000012	Cutter for Side Grinding Panels
1350000018	Shaft Rounder	1350000008	Hex Key 4mm
1350000006	Sheath Cutter 1	1350000009	Hex Key 3mm
1350000011	Sheath Cutter 2 (Shaft inside outer casing)	1350000010	Hex Key 2.5mm
1350000013	Combo Hex Key 1-6mm		

PRACTICAL TIPS & SAFETY ADVICE

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

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 resting position. If there are potential weak points or the shaft is damaged, cut off the damaged length using a band saw. For most tools, the shaft should extend ~40mm (1 ½") 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.



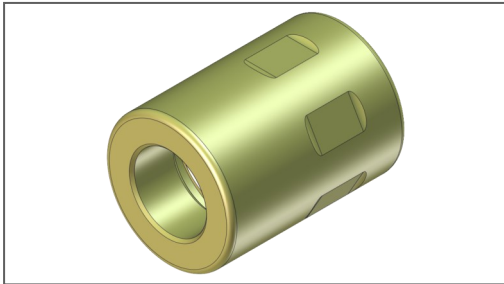
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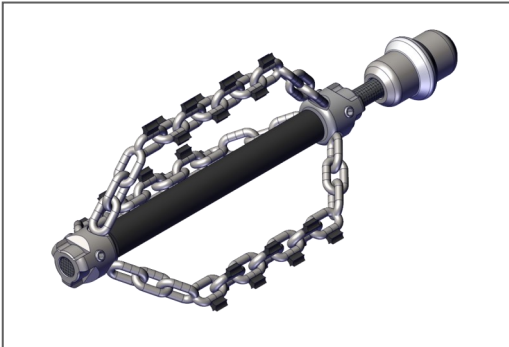


SLEEVE



Always use a Sleeve when working with the Midi Cleaner. It prolongs the lifetime of the flexible shaft and prevents the outer casing from melting in the tool end. Sleeves can be reused when outer casing has been 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 can easily and quickly switch between tools. Leaders should always be used if the situation permits it.



ADDING A VISUAL MARKER FOR SAFETY

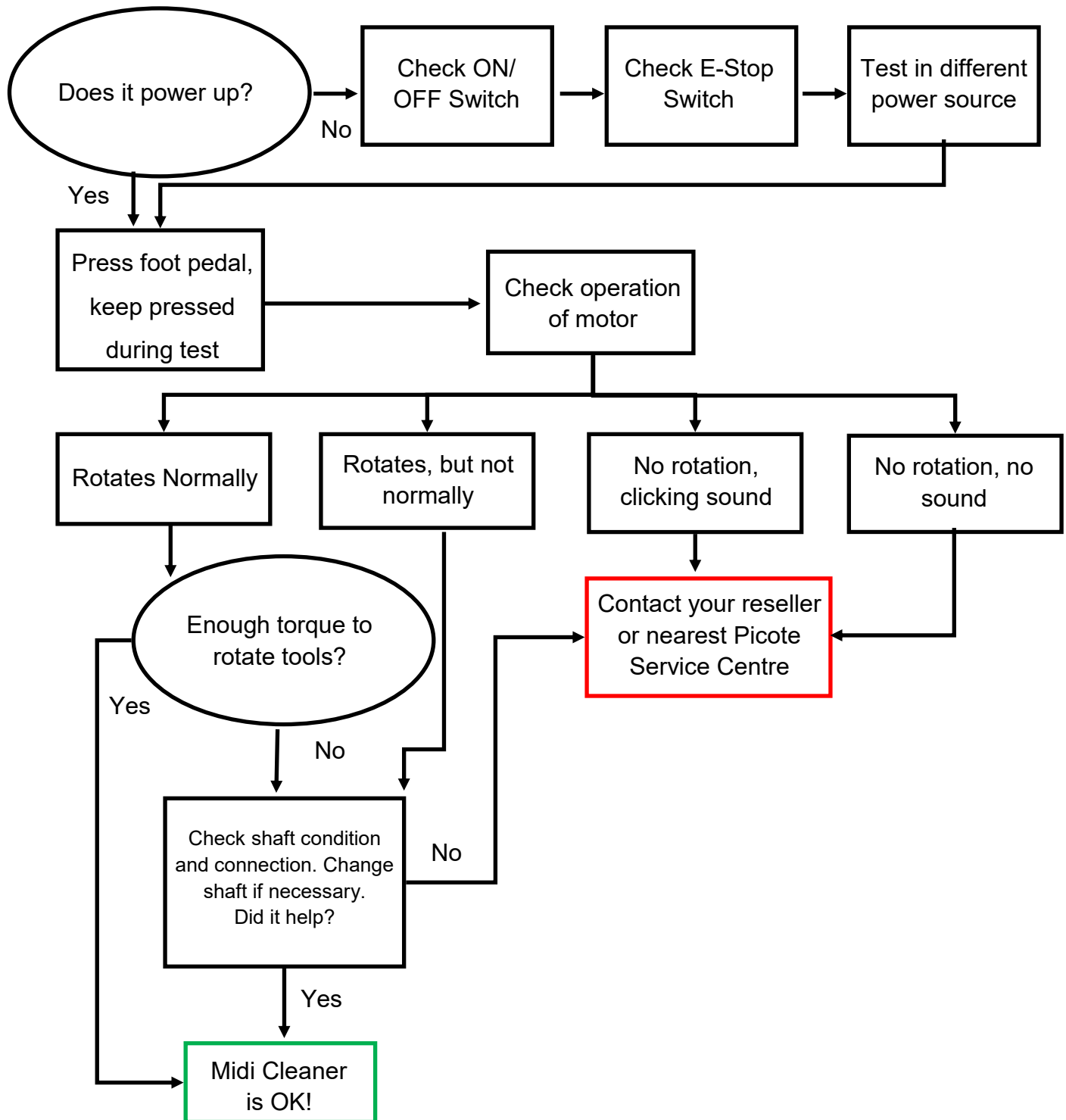


If not using a “leader” attach a visual marker (tape) on the outer casing of the flexible shaft. Place it around 500mm (20”) from the end of the shaft. The marker will indicate the tools location and help prevent possible injury from the rotating parts by alerting you when the tool is about to exit the pipe.



TROUBLESHOOTING FLOWCHART

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE



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

TROUBLESHOOTING FAULT CODES

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

TROUBLE SHOOTING

The control box of the Midi Cleaner 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 the Midi Cleaner control box. If a code other than those shown below is received, or if the fault does not correct, please write down the error code and contact your reseller.**

Fault Code	Description	Suggested Cause
no-F _{lt}	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 _{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.

If there is problem that you cannot resolve with this manual, please consult 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.

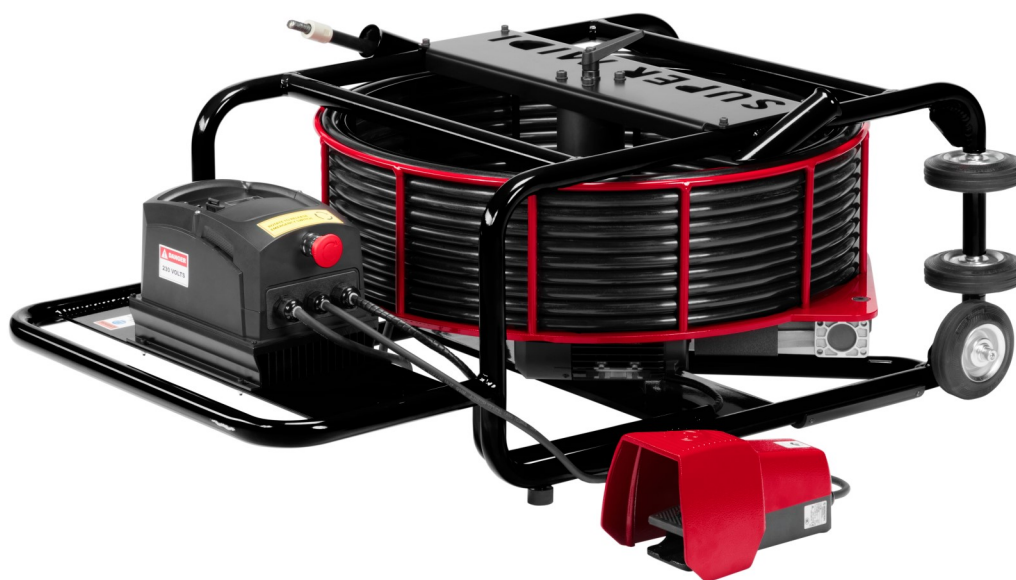
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Please Contact:

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