



MINI MILLER

MODEL:

MINI MILLER 8/17



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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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



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 when using the Mini Miller, including suitable overalls / protective clothing & footwear and the following:



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



Always wear suitable ear protection when using the Mini Miller to prevent any hearing loss.



Always wear suitable cut-resistant gloves when using the Mini Miller 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 Mini Miller to prevent any resin dust or fumes being inhaled or consumed, which can cause occupational asthma or dermatitis as well as eye irritation.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

GENERAL MACHINE SAFETY WARNING



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.

SAFETY REQUIREMENTS





WARNING

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



1. **Always wear eye and ear protection as well as cut-resistant gloves.** Other personal protective equipment, such as dust 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 drain pipe has been opened and ventilated to stop any gases forming in the lateral drain where the work takes place.
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.
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 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 Picote Solutions. Accessories and spare parts should only be used in the manner intended and as described by the 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.

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

Mini Miller 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 trailer to transport Picote milling machines, cover the unit to protect it from raining water and dust.

STORAGE

It is recommended 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 Mini Miller 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 Mini Miller has been stored for long periods of time (over 2-3 months), it should be checked and tested according to maintenance program before use.

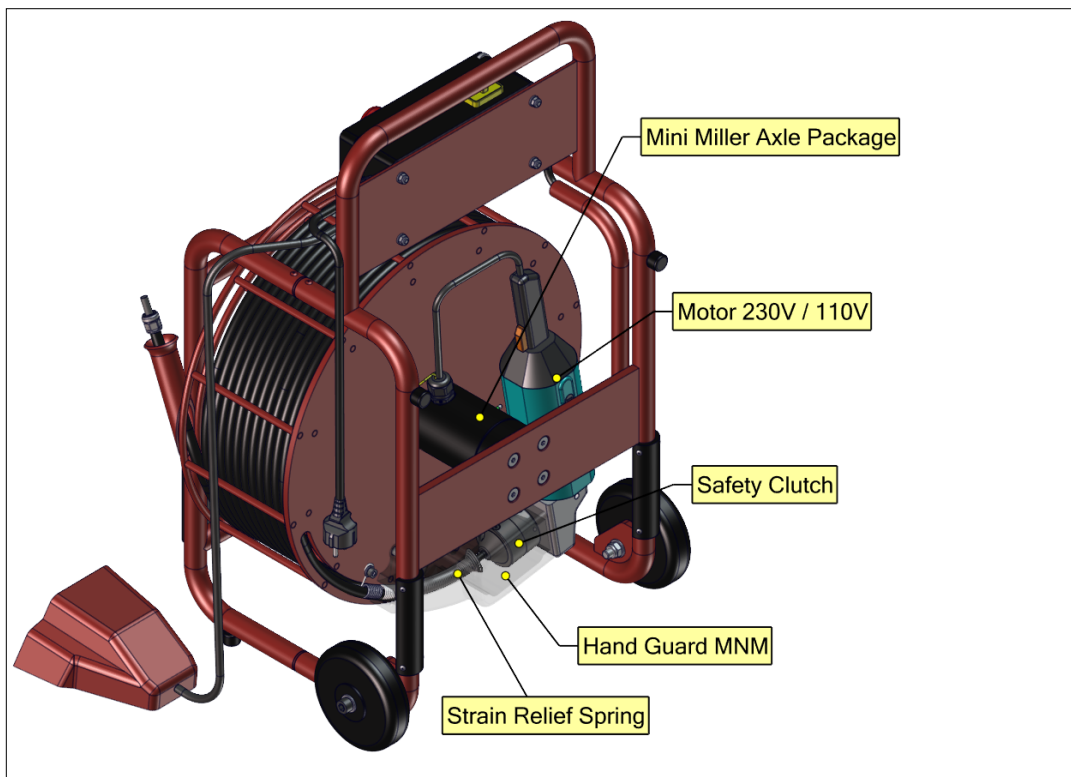
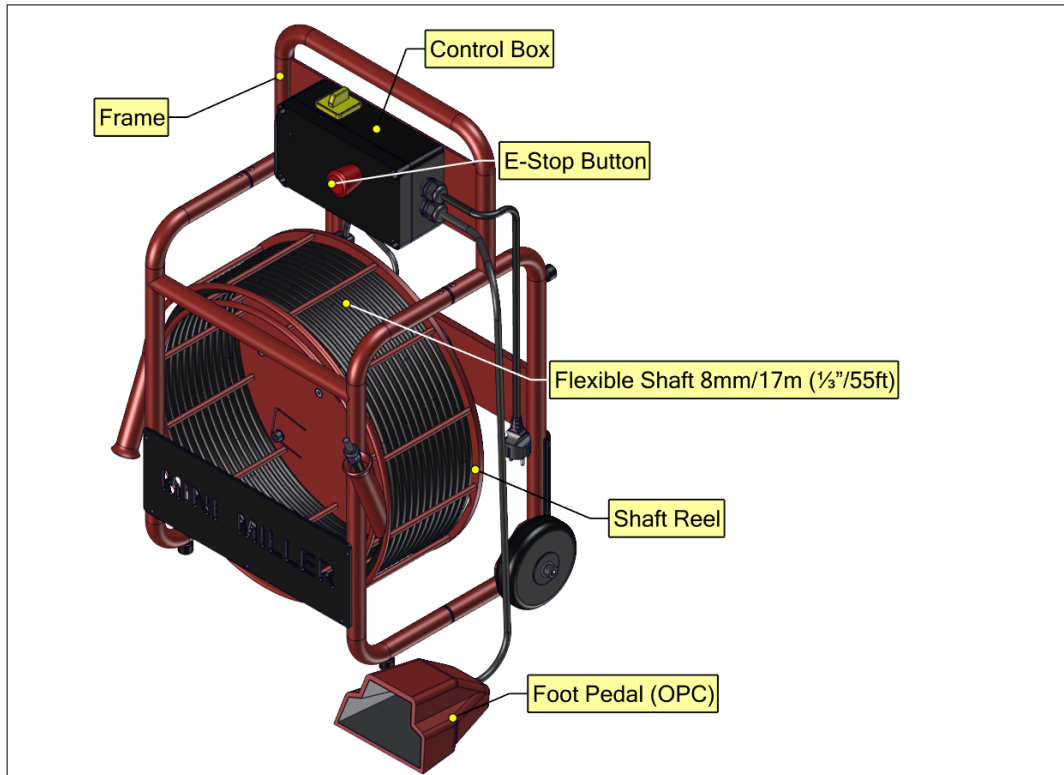
DISPOSAL

Mini 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 the local waste handling rules and regulation.

Picote Mini Miller 8/17

GENERAL INFORMATION



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

Picote Mini Miller 8/17

TECHNICAL DATA

| Size (mm/inches) | Shaft (mm/inches) | Range (m/ft) | Drain Diameter (mm/inches) | Rotating Speed (rpm) | Output (W) | Power Source | Weight (kg/lbs) |
|----------------------------|----------------------|-----------------|--|----------------------------|------------------------|-------------------|--------------------|
| 740x519x404 29"x20"x16" | 8 / 1/3" | 16 / 52 | DN50-DN100 / 2"-4" DN50-DN150 / 2"-6" for cleaning pipes | 500-2900 | 110V:1100 230V:1200 | Electric Motor | 27 / 50 |

INTENDED USE

This machine is intended for the following uses;

1. Cleaning and unblocking pipes, drains and sewers by grinding.
2. Descaling pipes.
3. Reinstating branches in sewers and drains by drilling and grinding.
4. Internal pipe coating using the Picote Brush Coating™ System and the Mini Coating Pump.

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

AVAILABLE TOOLING

Original Chain

Cyclone Chain

Original PVC Chain

Cyclone PVC Chain

Twister Mini

Mini Sweeper

Special Drill Head

Smart Cutter™

Wire Brush

Coating Brush

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

VOLTAGE & POWER SUPPLY

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.

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 Mini Miller 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 1.5mm^2 .

110-125V: The Mini Miller is equipped with a 15 amp (125V) NEMA 5-15 plug. Power cable lead minimum thickness 2.5mm^2 / 12 AWG. The Mini 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 cord must be a 3 prong, 15amp (125V). If power generator is used, minimum 3 kW required. Adapters may be necessary for generator connections. Contact your reseller or Picote technical support for more information.

AUSTRALIA/UK: Mini Millers in these regions have special plugs.

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

UK: UK Plug BSEN 60309 16A 110V color yellow. Power cable lead minimum thickness 2.5mm^2 . Mini Miller requires a transformer to comply with the site power regulations and safe usage in UK.

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 place of a foot (such as a brick).

NOISE LEVEL, VIBRATION & 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): 90 dB (A)

Sound power level (LWA): 103 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 tool head distance to user and working conditions. Vibration levels in here have been measured during normal lining work activities at working site in Finland. 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/s²

Exposure Limit Value (ELV) 5,0 m/s²

| Tooling | Working Distance | EAV | ELV |
|--------------------------------------|------------------|-----------|----------|
| Twister DN50 / 2" | 2m / 6.6ft | 10h 14min | Over 24h |
| Twister DN50 / 2" | 10m / 32.8ft | Over 24h | Over 24h |
| Original Cleaning Chain DN50 / 2" | 0-2m / 0-6.6ft | 9h 42min | Over 24h |
| Original Cleaning Chain DN50 / 2" | 0-15m / 0-49.2ft | 16h 42min | Over 24h |

CE DECLARATION OF CONFORMITY

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

Mini Miller

Model No: 8/17

is of series production and

Conforms to the following EU Directive:

2006/42/EC

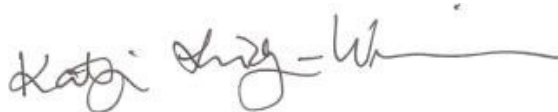
And is manufactured in accordance with the following standards or standardised documents:

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

OPERATING INSTRUCTIONS

Before operation:



- Before installing Picote tools, always make sure that the machine is fully turned off and unplugged.
- Always round off the sharp edges of the shaft to avoid cuts and to make it easier to insert the shaft into the tool or 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.**

Always check that the tool is set to rotate in the **clockwise direction**. Due to its fabrication, the natural and intended rotational direction of the shaft should be clockwise so that the torque is at its optimum.

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



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

1. Check the rotational speed of the shaft before powering up. The control of the rotational speed is located in the motor. The rotational speed can be selected from 1 to 6.
2. Place the tool inside the pipe.
3. Turn on the power switch.
4. Release the Red Emergency Switch Off Button.
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. 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.
8. The life span of the shaft outer casing can be prolonged by using Sleeve Bearing designed for the outer casing.

There is a mechanical safety clutch installed in Mini Miller. If the machine is overloaded the safety clutch separates the shaft from the motor. User will hear a loud noise when this happens. Release the foot pedal, pull the shaft back a little bit and continue working. If the safety clutch is released constantly the silicone spring inside of it may have worn down. Look at the Safety Clutch— Spring Change instructions to change the spring. Brief changing instructions can be found also in this manual pages 13-14. Avoid overloading the motor.

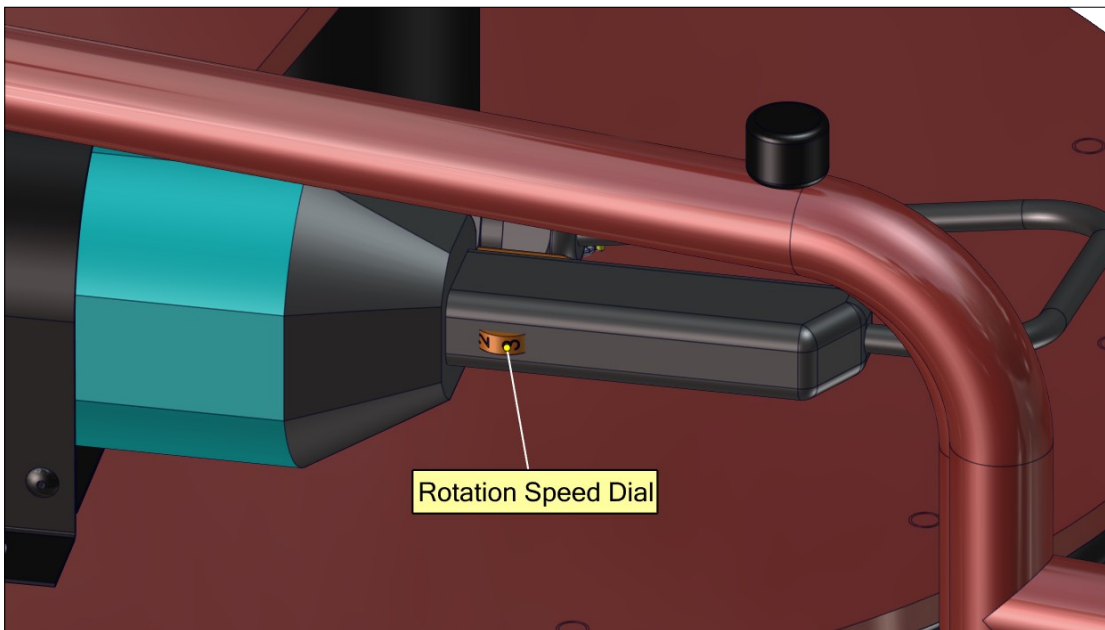
ROTATION SPEED DIAL

⚠ WARNING

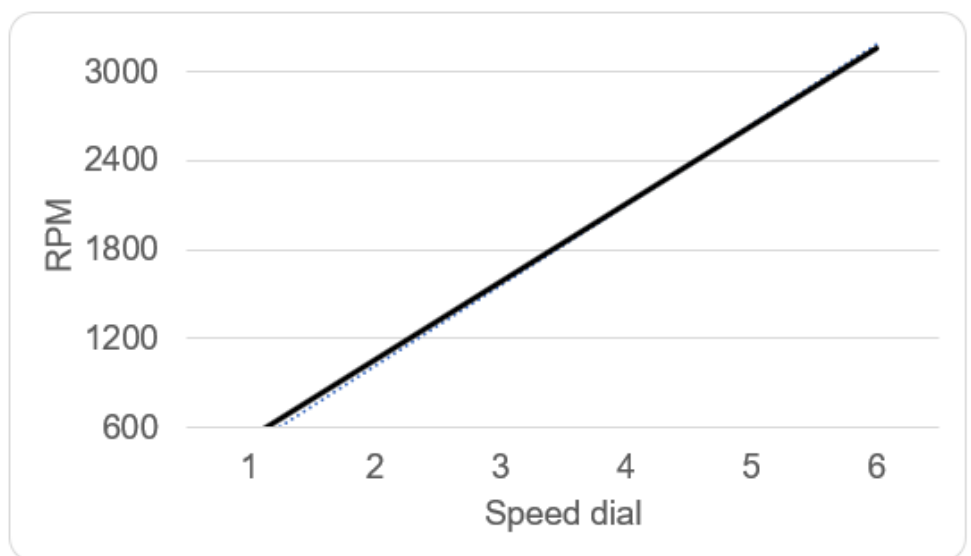
This section contains important safety information. Failure to comply could result in serious injury.

Optimal rotation speed of the Mini Miller is depends on work. Minimum rotation speed is normally the best when moving the tool around tight bends. When beginning to work, adjust the speed up to the level which seems to work the best.

Speed dial can be found from the motor itself (look at the image below). Set the speed by rotating the button. Check the corresponding rotation speed from table below.



| Rotation Speed | Speed dial | | | | | |
|----------------|------------|---|---|---|---|---|
| 3200 | | | | | | X |
| 2700 | | | | | X | |
| 2100 | | | X | | | |
| 1500 | | X | | | | |
| 900 | X | | | | | |
| 600 | X | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 |



MAINTENANCE PROGRAM

| Maintenance task | Months | | | |
|-------------------------------------|--------|---|----|----|
| | 3 | 6 | 12 | 24 |
| Change motor carbon brushes | | | I | R |
| Tightness of motor fixing | | | I | I |
| Alingment of motor | | | 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 |
| Safety clutch silicone ring | I | I | I | I |
| Operation of safety clutch | I | I | I | I |

I: Inspect, fix or replace if needed.

P: Perform, replace if needed.

R: Replace

WARRANTY PERIODS

Picote Solutions grants limited warranty for certain machines, equipment & components. Read more detailed information on page 20 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. Only use regular oil developed for gearboxes.

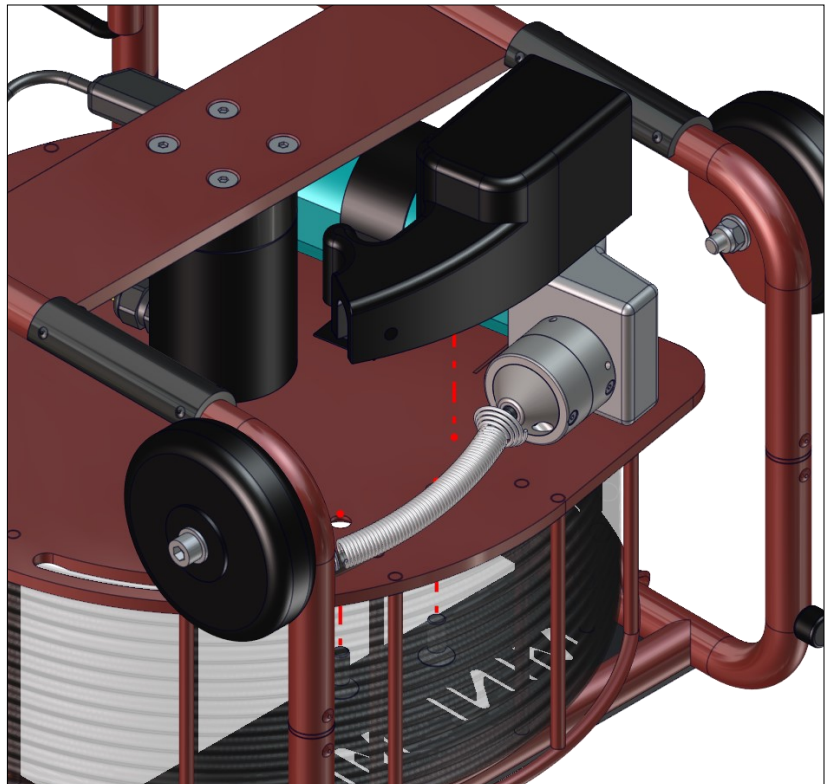
REPLACING CARBON BRUSHES

Remove and check carbon brushes regularly and replace when worn down to the limit mark. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.

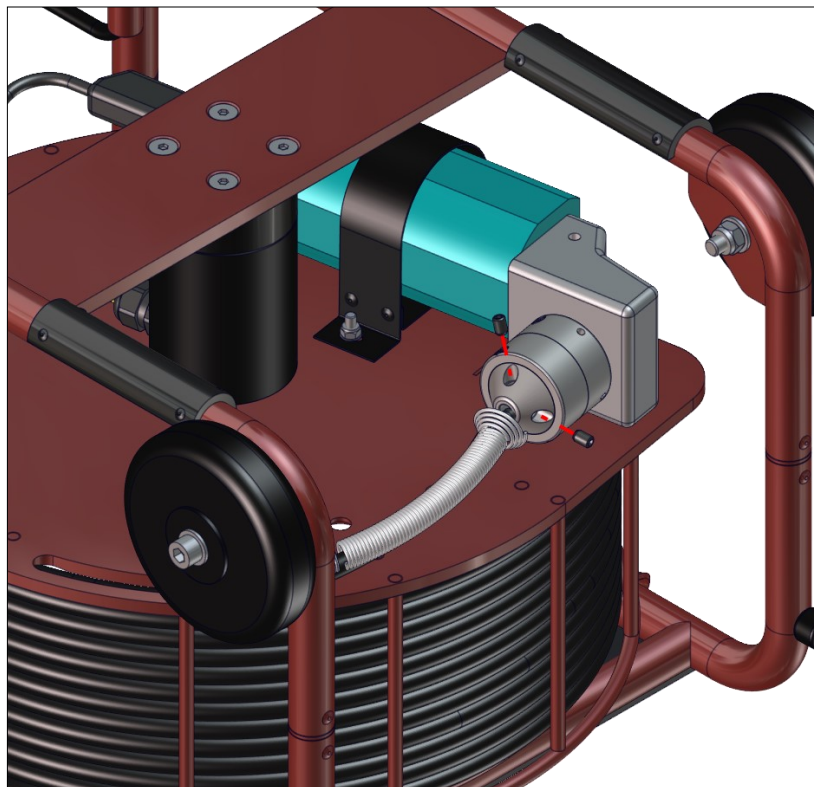
The complete motor is needed to be removed in order to change both of the carbon brushes. Follow the steps shown below.

Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps.

Step 1. Open Allen bolts and remove hand guard.



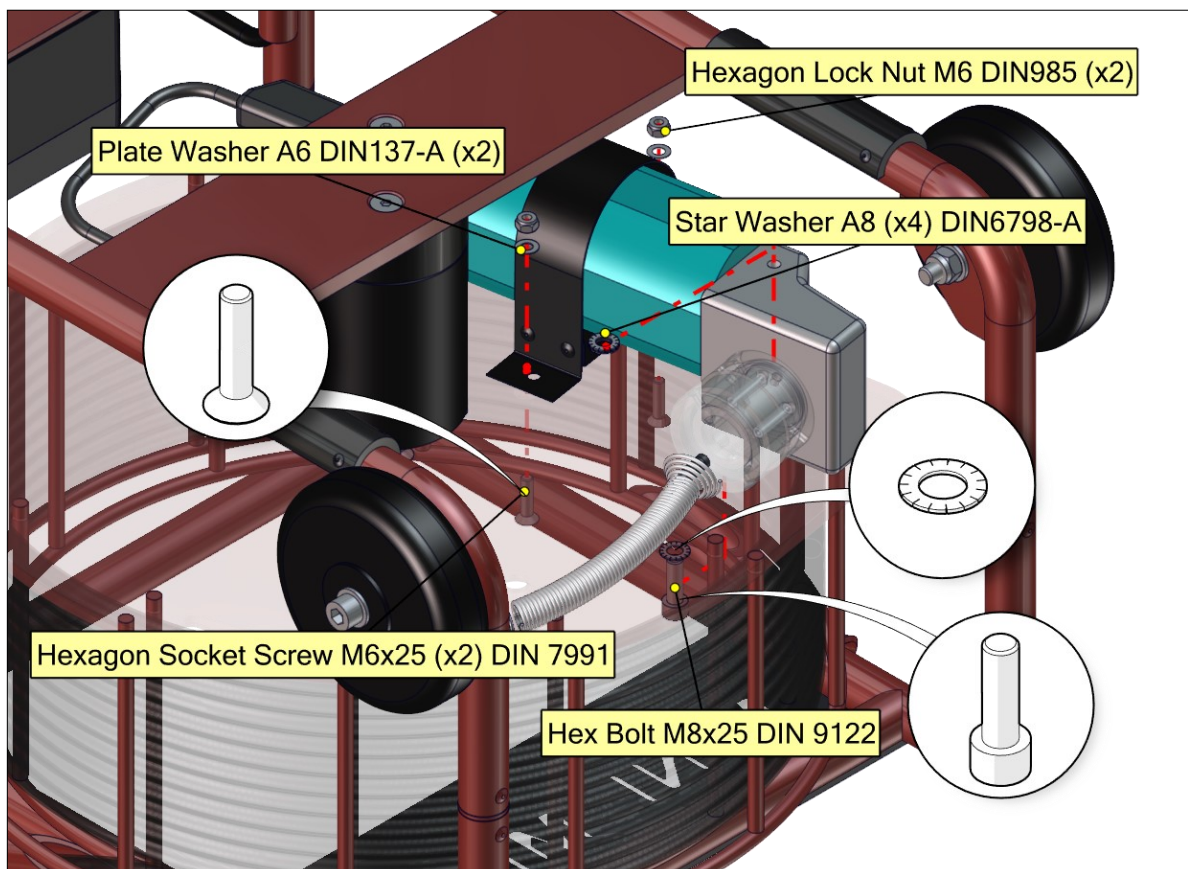
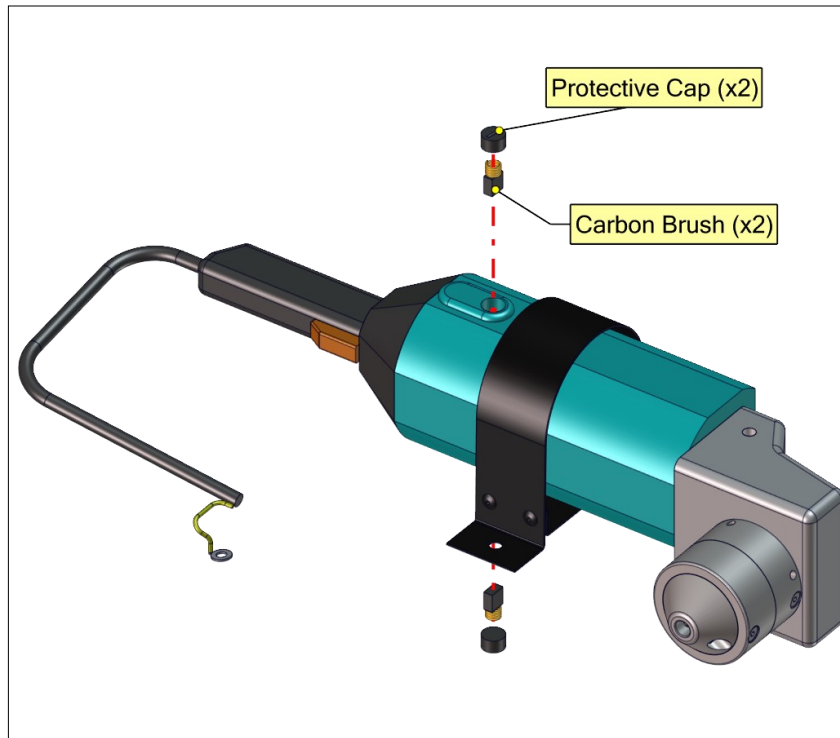
Step 2. Open Set Screws and detach the shaft from the Safety Clutch.



Step 3. Open the Allen Bolts which attach the motor to the reel.



Step 4. Open the protective caps with screwdriver and replace both of the carbon brushes. Repeat the steps in opposite order to assemble Mini Miller again. Tighten the Hex Bolt M8x25 which is attaching the motor to the reel in torque of 12 Nm. **Recommended to use Loctite 542.**

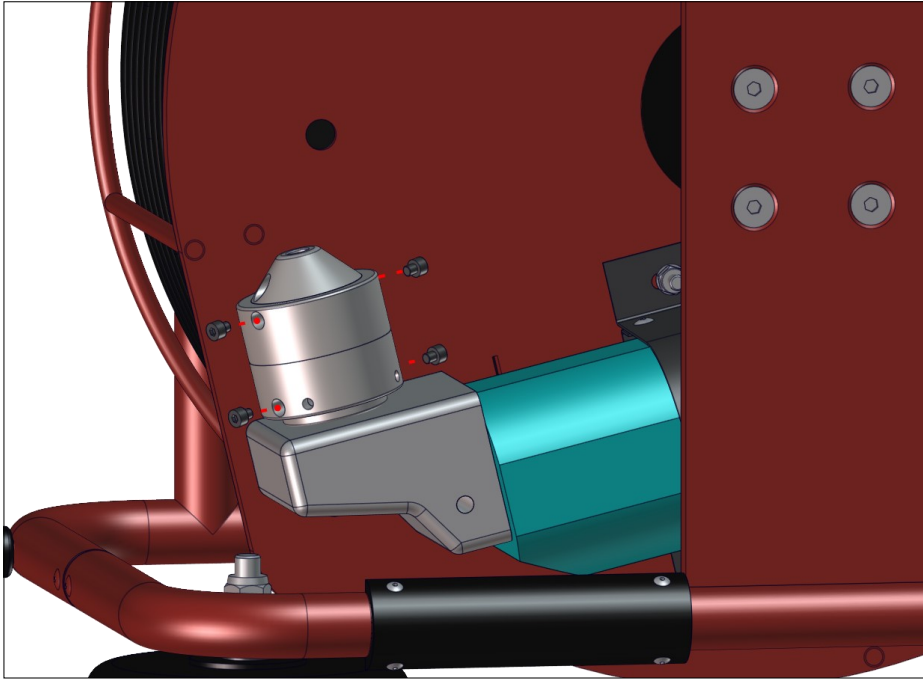


REPLACING SAFETY CLUTCH SPRING

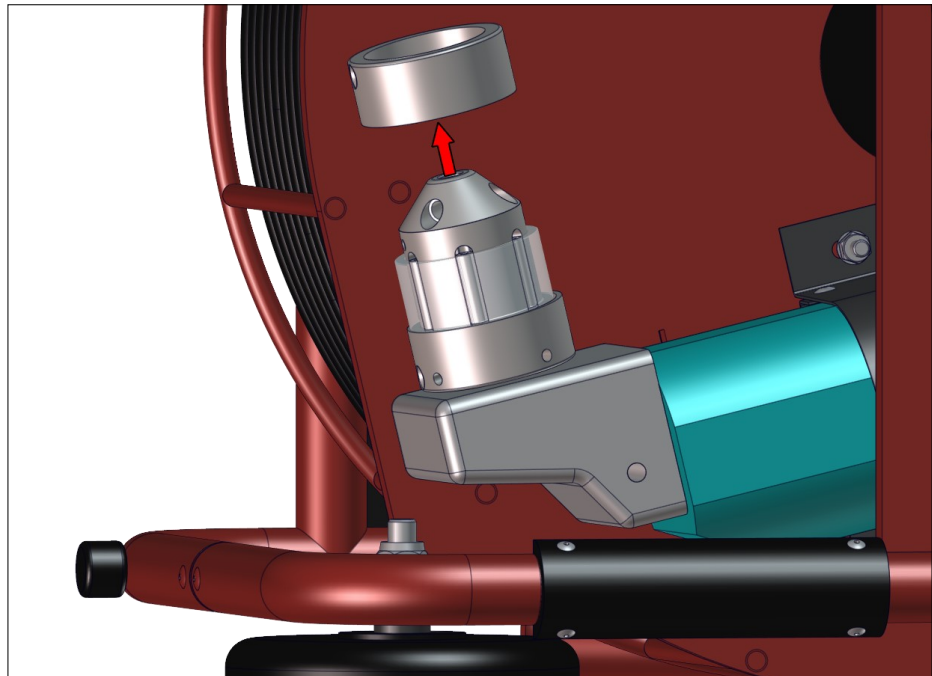
Remove and check the silicone spring of the Safety Clutch regularly and replace when worn down. When safety clutch begins to release constantly the spring should be changed.

Silicone Spring can be easily changed even in field conditions.

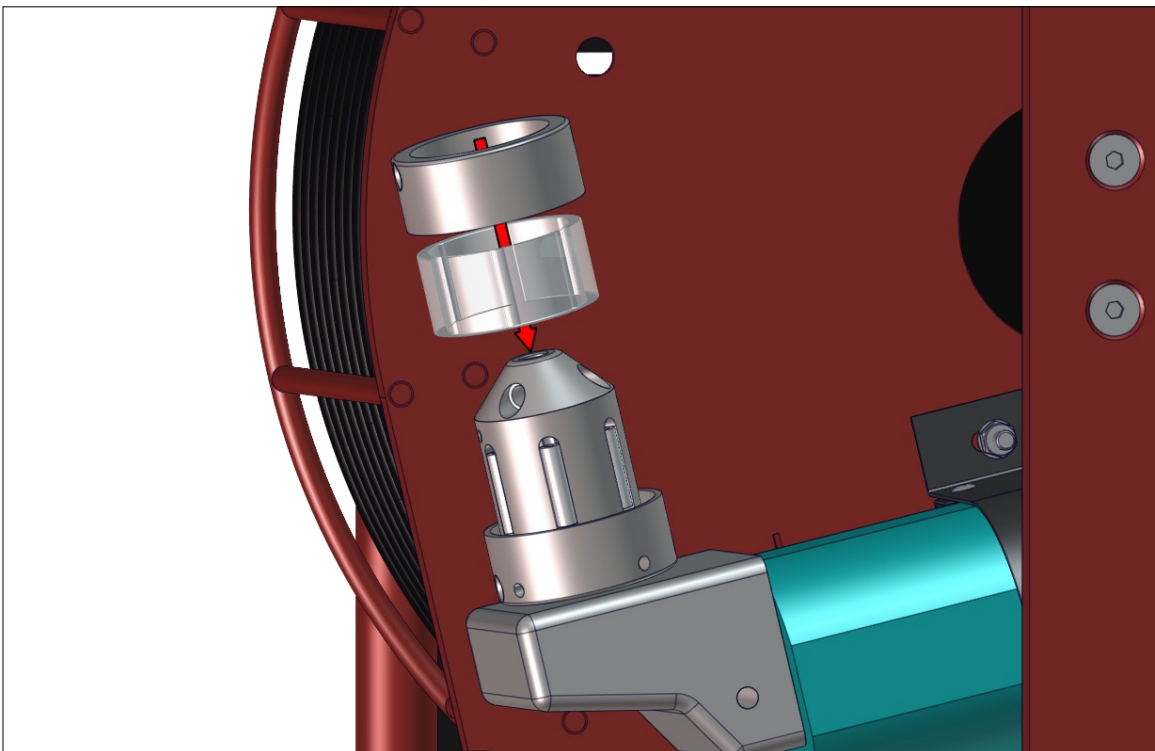
Step 1. Remove the hand guard and detach the flexible shaft from the Safety Clutch. Open and remove four screws from the Safety Clutch Covers.



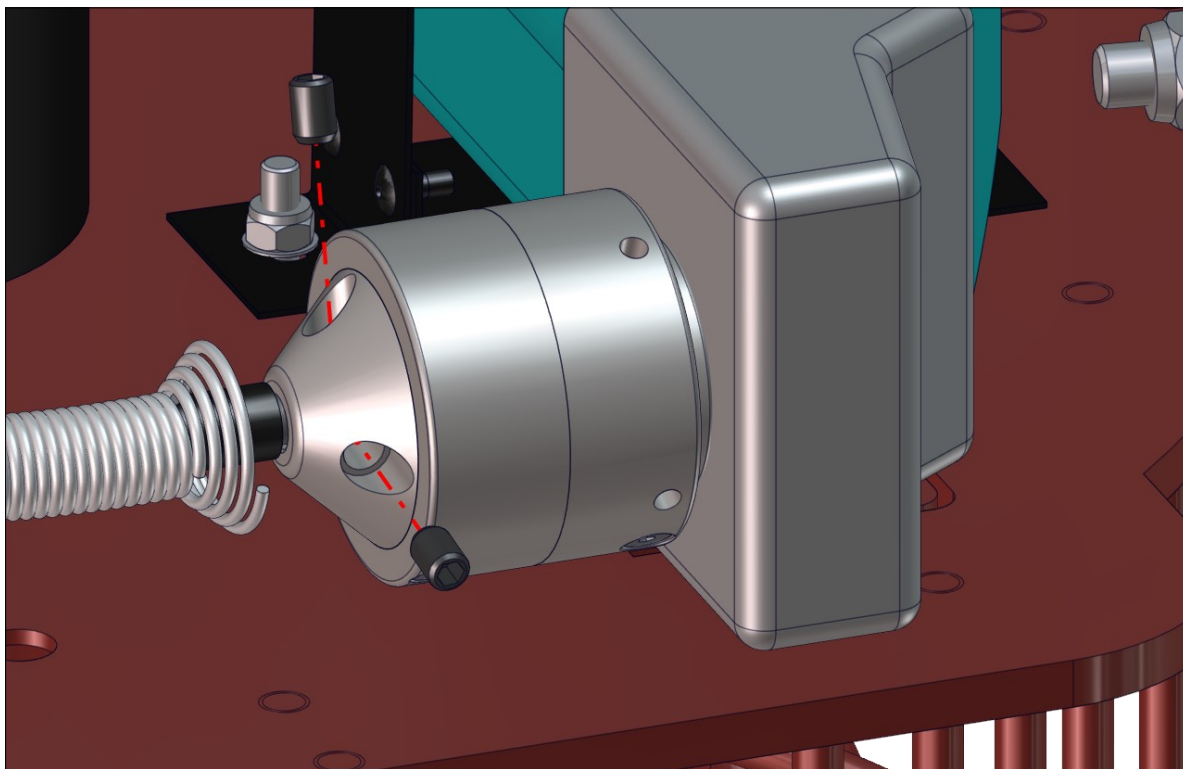
Step 2. Remove the Upper Cover and push the Lower Cover down.



Step 3. Remove the old Silicone Spring and replace it with a new one. Be careful not to drop axles from the heart of the clutch. Repeat the steps in reverse order.



Step 4. Correct way to install shaft into safety clutch is shown below. There can be only a small gap in between the outer casing and safety clutch. Push the cable all the way to the bottom of the safety clutch. **Recommended to use Loctite 542.**



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 every fifth working day 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. 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 20ml/20g/1oz will be required for the entire shaft. Too much oil 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 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)

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. Open bolt which is holding strain relief spring.
3. Loosen the screws in the safety clutch that hold the shaft. Pull strain relief spring away from the shaft. Pull the old shaft out of the machine.
4. Insert new shaft. Before inserting the shaft inside the safety clutch, add strain relief spring and tighten it. Verify that the shaft goes all the way to the end. Tighten the screws.

FLEXIBLE SHAFT EXTENSION

Flexible extension shafts are available for the Mini Miller in lengths of 10 metres (33ft). **Do not** extend the shaft by more than **one** extension and only use a Picote shaft extension and connector.

Before attaching or removing the shaft extension always make sure that the machine is 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.

ACCESSORIES & SPARE PARTS

⚠ 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.

MINI MILLER

| | |
|------------|-------------------|
| 3540000817 | Mini Miller G8/17 |
|------------|-------------------|

MINI COATING PUMP

| | |
|------------|---|
| 2220100001 | Mini Coating Pump EU, AUS 230v (Now includes 3 hose connectors and 2 brush stoppers) |
| 2220100002 | Mini Coating Pump U.S., UK 110v (Now includes 3 hose connectors and 2 brush stoppers) |

SPARE PARTS

| | |
|---------------|---|
| 1312020085018 | Mini Miller / 8mm Shaft / 18 metres (59 ft) |
| 1312030085017 | Mini Miller / 8mm Shaft Thick Casing / 17.5 metres (57.4ft) |
| 1312020085010 | Flexible Shaft 8mm / 10 metres (33ft) |
| 1312030085010 | Flexible Shaft 8mm Thick Casing / 10 metres (33ft) |
| 9123050001 | Shaft Connector 8mm/8mm |
| 93212321085 | Sleeve 2 Plastic 8mm |
| 9530000134 | Strain Relief Micro/Mini 9/13mm casing |
| 9530000134-1 | Strain Relief Spring Micro/Mini for Safety Clutch |
| 9530000041 | Safety Clutch Upgrade Kit for Micro and Mini Millers |
| 900000856 | Micro/Mini Miller Safety Clutch |
| 900000920 | Silicone Spring 5pcs, spare parts |
| 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 band 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



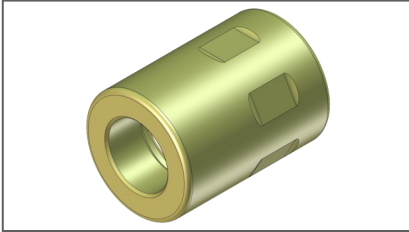
Feed the shaft through the socket to the end and **securely fasten**. The outer casing should reach all the way to the base of the shaft socket to protect the shaft.

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 Mini Miller. 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.

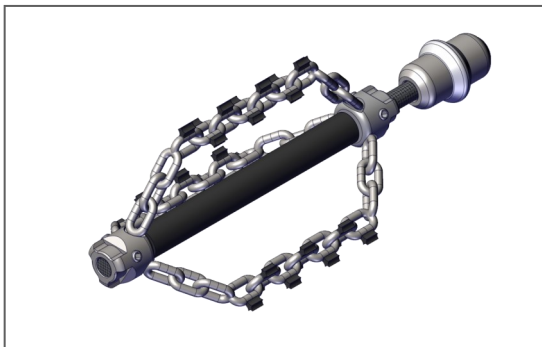
ADDING A VISUAL MARKER FOR SAFETY



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.



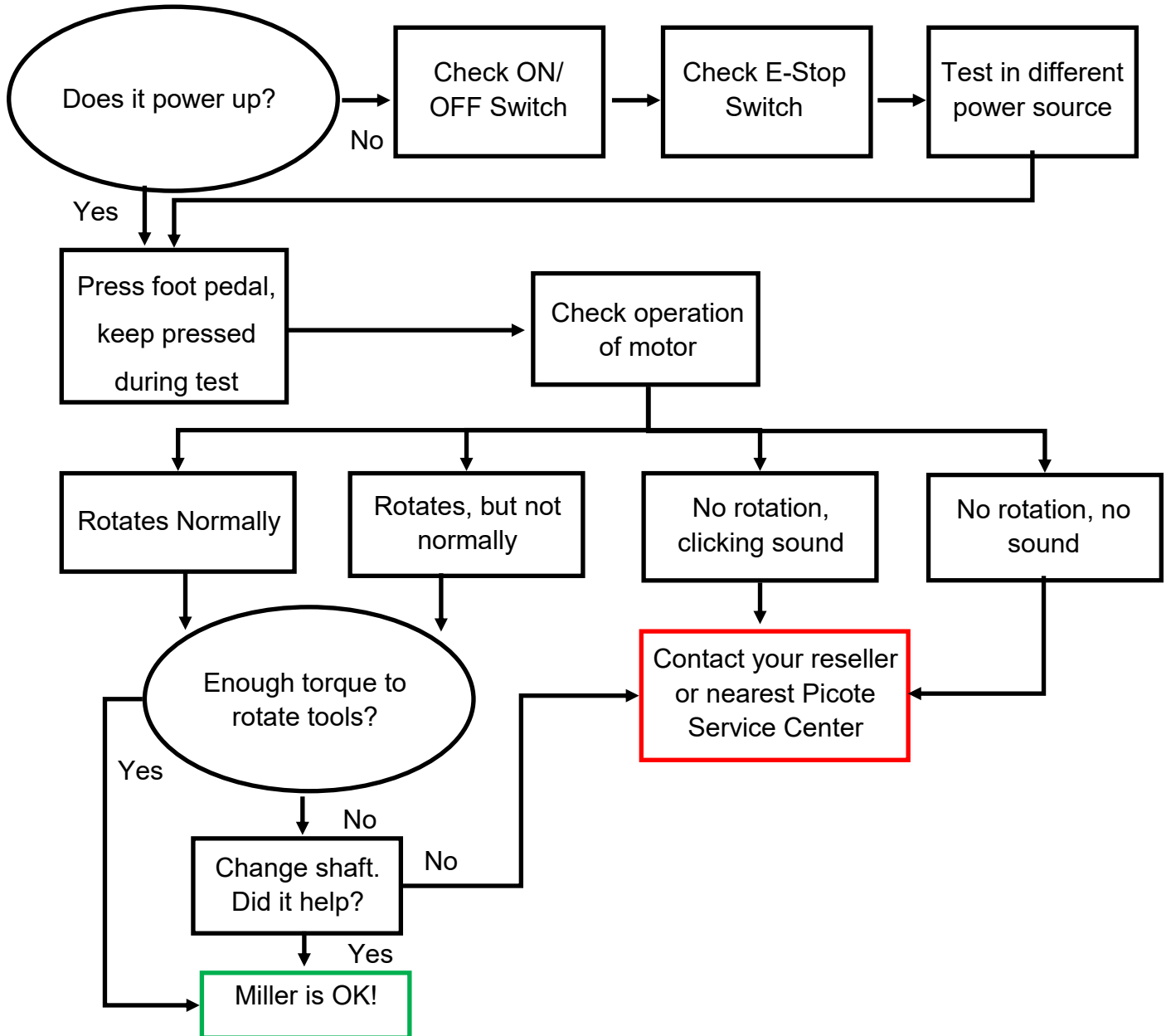
CREATING LEADERS



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.



TROUBLESHOOTING FLOWCHART



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

WARRANTY POLICY AND PROCEDURE

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.

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