

MAXI COATING PUMP

PICOTE BRUSH
COATING™
SYSTEM

OPERATION & SAFETY MANUAL



⚠️ WARNING

These instructions are for your personal safety. Always ensure that you have read and understood these instructions before using any of the Picote Brush Coating™ System Range.

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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 & Symbols



WARNING

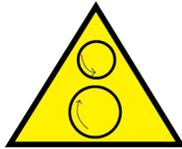
This section contains important safety information. Failure to comply could result in serious injury or death.

Safety Symbols



DANGER

Risk of serious injury, follow instructions



DANGER

Risk of serious injury from rotating parts



DANGER

Risk of serious injury from electric shock

Personal Protective Equipment **PPE**

Always use Personal Protective Equipment when using the Picote Coating System, including suitable overalls / protective clothing & footwear and the following:



Always wear suitable eye protection when using the Coating System to prevent coating resin or other dust from irritating your eyes.



Always wear a suitable ventilation mask when using the Coating System to prevent any resin dust or vapors being inhaled or consumed, which can cause occupational asthma or resin dermatitis as well as eye irritation.



Always wear suitable ear protection when using the Coating System to prevent any hearing loss.



Always wear suitable resin-resistant gloves when using the Coating System to prevent any skin irritations. Any open injuries or skin irritations should be covered at all times to avoid contact with resin or dust.

Always Remember



Always ensure that the machine is fully turned off and unplugged before inspection, maintenance, or installing any accessories to the machine. Failure to comply may lead to serious injury including electric shock.



Dust produced when working 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. Failure to comply may lead to serious injury including injury from rotating parts.

Environmental, Transport, Storage & Disposal



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 Coating Pump 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 the pump unit locked on top of the Picote milling machine. In a case of accident, the locking system may fail.

If using pick-up or trailer to transport Picote Maxi Coating Pump, cover the unit to protect it from raining water and dust.

STORAGE

It is recommended that the coating pumps 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 originally shipped.

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

If Maxi Coating Pump 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

Maxi Coating Pump motor, control box, pumping assembly and electric wires can be disposed in Europe at Waste Electrical and Electronic Equipment (WEEE) collection points. Pump frame can be recycled in metal waste collection points.

Dispose unused coating resin according to local waste regulation. Safest way to dispose the product is to mix the product in well ventilated location while using nonflammable container. Mixed product will generate heat while hardening. Follow instructions of MSDS.

Always follow the local waste handling rules and regulation.

CE Declaration of Conformity

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

Maxi Coating Pump
is of series production and

Conforms to the following EU Directive:

2006/42/EC

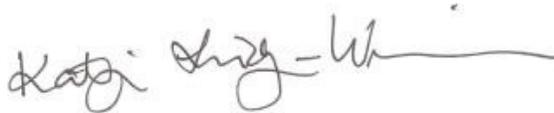
And is manufactured in accordance with the following standards or standardised documents:

EN 809 + A1/AC, EN 60204-1:2018

The technical documentation is kept by our authorised representative in Europe who is:

Picote Solutions Oy Ltd, Raudoittajantie 4
06450 Porvoo, Finland

1st January 2017



Katja Lindy-Wilkinson
C.E.O.

Picote Solutions Oy Ltd
Raudoittajantie 4, 06450 Porvoo, Finland

WRc APPROVED CERTIFICATE



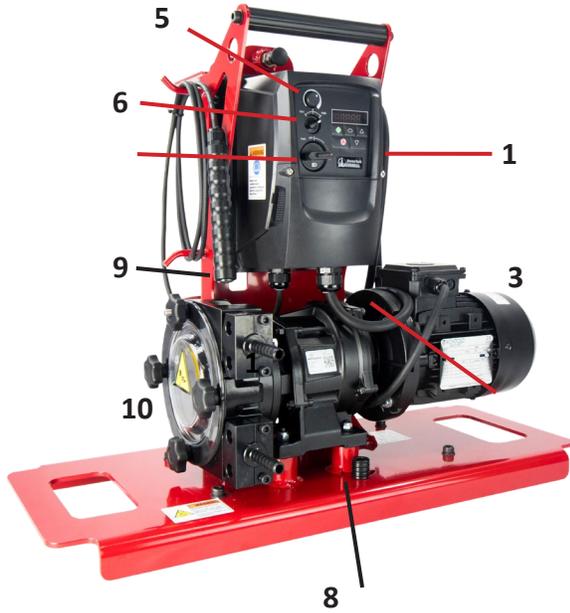
Picote Brush Coating System™ has been granted with WRc Approved Certificate for non-potable and waste water application for pipe diameters DN32 (1¹/₄") to DN300 (12").

Certificate Number: PT/431/0918

Issued: September 2018

Expiry: March 2020

Product Certificate and Assessment Schedule can be downloaded from picotebrushcoating.com.



General Description

1. Power Cord
2. Resin Supply Hose Holder
3. Motor
4. Resin Cup Location
5. Speed Control
6. Reverse/Forward
7. On/Off Button
8. Release, locks pump to Miller
9. Resin Release Button
10. Pump Housing
11. Smart Mixer Platform

Intended Use

This machine is intended for the following uses:

1. Coating pipes from DN70-300 / 3'' - 12''
2. Cleaning sewers and drains with a degreaser.

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

SIZE	HOSE	RANGE	ROTATING SPEED	OUTPUT (kw)	POWER SOURCE	WEIGHT
66x43x55 cm	8/10mm	Max 30-39m	Depends on pipe diameter	0.25	110v or 230v	23kg
26x16.9x21.7''		Max 100-130ft				51 lbs



Voltage

Ensure that the supply voltage is correct. The voltage of the power source must match the value given on the nameplate of the machine. Available in 230v and 110v.



Power Supply

The machine should be connected only to a power supply of the same voltage as indicated on the nameplate, and can only be operated on single-phase AC supply.



This machine has a hand-held locking operator control bottom or "LOC". When the control button is pushed the pump is engaged and will operate until depressed.

The Maxi Miller powers the Maxi Coating Pump

Note: can also be used with the Midi or Super Midi Miller

WARNING

Please refer to the Maxi Miller manual for more information



General Description

1. Cable Rack
2. Frame
3. Flexible Shaft
4. Motor & Bevel Gear (not shown)
5. Emergency Stop Bottom (red)
6. Power Switch
7. Forward/Reverse
8. Speed Control
9. Foot Pedal—Operator Presence Control
10. Hand Guard & Strain Relief / Inside Hand Guard (not shown)

Intended Use

This machine is intended for the following uses:

1. Coating pipes from DN70-300 / 3"- 12"
2. Cleaning and unblocking pipes, drains and sewers by grinding.
3. Descaling pipes.
4. Reinstating branches in sewers and drains by drilling and grinding.
5. Cutting excess length of cured linings.
6. Removing concrete deposits.
7. Removing metallic inserts.

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



WARNING

Please refer to the Maxi Miller manual for more information

The Maxi Miller powers the Maxi Coating Pump

Note: can also be used with the Midi or Super Midi Miller

SIZE	SHAFT	RANGE	ROTATING SPEED	OUTPUT (kW)	POWER SOURCE	WEIGHT	IP CLASS
1150x850x489	12mm	30m	500-1500rpm	110V:1.13kW	110v or 230v	89kg	54
45x34x19"	1/2"	100ft		230V:1.5kW		196lb	

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



VOLTAGE

Ensure that the supply voltage is correct. The voltage of the power source must match the value given on the nameplate of the machine.



POWER SUPPLY

The machine should be connected only to a power supply of the same voltage as indicated on the nameplate, and can only be operated on single-phase AC supply.



FOOT PEDAL

The machine has an operator presence control or 'OPC'. When the control is not held down, the machine stops.



EMERGENCY STOP

There is an 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 and completely unplug the machine when the machine accessories (e.g. Cutter or Grinding Chains) are not inside the pipe.



Parameters of your Maxi Miller & Maxi Coating Pump 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 (2) 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.

First make sure you have all the required parts.

PRODUCT NAME	PRODUCT #	DESCRIPTION	INFORMATION	
1. MILLER & COATING PUMP 	222020000	Maxi Coating Pump EU 230v	<i>Hoses, brushes & other parts sold separately</i>	
	222020001	Maxi Coating Pump USA 110v		
	3560032012	Maxi Miller 12/30, 30m / 98ft	12mm / 1/2" Shaft	
	3560042012	Maxi Miller 12/30 Plus, control box with 5m / 16.4 ft cord		
	2. HOSES & SHAFT PARTS			
	222020005	Delivery Hose 200m/650ft 1/2" Color-Orange		
	222020003	Pumping Hose Package	<i>Supplied in packages of 10x</i>	
	1312021125010	Maxi Miller spare shaft, 12mm / 1/2" with thick outer casing	30m / 98.4ft	
	9123050001	Shaft Connector 12mm/12mm	<i>Necessary to attach a shaft extension</i>	
	93212322125	Sleeve 2 Plastic 12mm/1/2" Thick Casing		
	900000902	Hose Clamps 16mm		
	3. COATING BRUSHES & STOPPERS			
		2120012100	Coating Brush 100mm/4"	<i>Please check page 14 for coating brush selection guide.</i>
		2120012125	Coating Brush 125mm/5"	
		2120012150	Coating Brush 150mm/6"	
2120012175		Coating Brush 175mm/7"		
2120012200		Coating Brush 200mm/8"		
2120012225		Coating Brush 225mm/9"		
2120012250		Coating Brush 250mm/10"		
2120012275		Coating Brush 275mm/11"		
2120012300		Coating Brush 300mm/12"		
2120012350		Coating Brush 350mm/14"		
900000756	Brush Stopper 12mm/1/2"	<i>Stopper for securing brushes.</i>		

First make sure you have all the required parts.

PRODUCT NAME	PRODUCT NUMBER	DESCRIPTION	INFORMATION
	5. PICOTE 100% SOLIDS EPOXY 2110001001	Picote Dual Color Resin Kit, 5.58kg / 12lbs	6 Cartridge Kit (3 White, 3 Dark Grey) with 8 Tips & 3 Nuts.
	2110001006	Picote Grey Resin Kit, 5.58kg/12lbs	6 Grey Cartridges with 8 Tips & 3 Nuts
	2110001005	Picote White Resin Kit, 5.58kg/12lbs	6 White Cartridges with 8 Tips & 3 Nuts
	2110001003	Delivery Hose Lube 1 QT / 946ml	Special Lubricant to reduce friction
	2220200004	Coatin Resin Cup, 10pcs	
	6. PICOTE SMART MIXER 2130001001	Picote Smart Mixer	Battery powered cartridge case with spare battery, charger and additional 600ml piston. Please see the Smart Mixer operating manual for more information.
	2130000002	Nut (pack of 10)	
	2130000001	Tip (pack of 10)	
7. DRAIN CAMERA	Use your own mini CCTV camera system		larger cameras will cause issues with weight and navigation through bends
8. OTHER ITEMS	Duct Tape Resin Cups Acetone, Rags & Bucket with Lid Latex/Nitrile Gloves Razor Knife Scissors 7mm Nut Driver for Hose Clamps 3, 5, 6mm Hex Key for Screws		Be sure you have plenty of rags for the clean-up process.



IMPORTANT!

Substrate preparation is one of the **most crucial** steps in the coating process as specialized coating resin is designed to bond to the host pipe. Be sure to remove **all** scale, grease, dust and any other debris completely from the pipe before coating. If coating plastic pipe be sure to abrade thoroughly with Pi-cote Smart Cutter™ grinding panels.

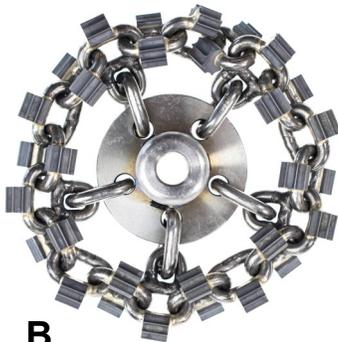
STEP 1



Clean the host pipe very well. Use Original (a) or Cyclone (b) grinding chains with carbides for cast iron pipes and flush with water. For PVC pipes, use the special PVC chains (c). Use a wire brush (d) to remove final dust and other remaining particles.



A.



B.



C.



D.

OPTIONAL STEP: For pipe with excessive build-up of fats, oils or grease (FOG) a degreaser may be necessary. This can be pumped into the pipe during cleaning if necessary using the coating pump system and Eco-friendly degreasing agent.

STEP 2



When necessary, run the Smart Cutter™ with side grinding panels through the pipe to create a rough surface and allow for the resin to have the best possible bond to the pipe wall.



STEP 3



The pipe MUST be dry before continuing with the coating setup. Use the Picote Heater to expedite the process.



Once the original pipe is clean, move on to the Coating System Assembly



Required Tools & Parts

Maxi Coating Pump
Nut Driver
Picote Hose Lube
Resin Cup
Delivery Hose
Resin Supply Hose
Hose Clamps 16mm
Pumping Hose Package
Scissors
Tubing Cutters
Hex Key 3, 5, 6
Silicone Grease
Hose Connectors
Towels
Gloves



BEFORE BEGINNING ASSEMBLY



DANGER

Risk of serious injury from rotating parts!

- Have plenty of rubber gloves and towels available. Wearing a double layer of rubber gloves is useful when applying lubricant.
- Be sure that all machines have the required power supply.
- Test machines and power source to ensure adequate and safe operation.



MAXI COATING PUMP

STEP 1 ▶ Assemble the black resin pump hose by inserting a hose connector on each end. A small amount of silicone grease should be applied to the thicker end of the connector in order to insert into the hose. It is important to make sure the hose connectors are seated completely into the pump hose.



STEP 2 ▶ Once the pump hose is assembled, apply silicone grease to the outside. Then place the hose into the pump housing. Note: Do not insert hose into the roller assembly at this time.



STEP 3 ▶ Next reinstall and tighten the locking blocks making sure the pump hose connectors are positioned properly. Note: The locking block should fit into the groove on the hose connector.



MAXI COATING PUMP

STEP 4 ▶ To seat the pump hose in between the rollers and housing set-up, turn the pump on. Make sure the pump is set in forward direction and the speed dial is set to the slowest setting possible. Start the pump by engaging the trigger. Slowly push the hose into housing starting from the top right going counter-clockwise until the hose is completely inside the housing.



STEP 5 ▶ Place the cover plate back on the pump housing, ensuring the cover is flush and can be secured evenly all around. Set the pump speed dial to full speed and test for proper suction by placing a finger over the end of the top hose connector. Positive suction should be obvious. If no suction is present the mounting blocks may need to be secured more tightly.



STEP 6 ▶ Cut a 1.3m / 4.3ft of orange resin supply hose. Piece needs to be long enough to reach from the resin cup to the top hose connector. Connect to the top hose connector and secure with a hose clamp. Guide the other end through the guide holes and place in resin supply cup. Be sure there is a 45° cut on the end placed in the resin supply cup to allow for proper resin flow into the hose.



Once the host pipe is clean and dry,
CONTINUE TO THE BRUSHES & DELIVERY HOSE

BRUSHES & DELIVERY HOSE



Required Tools & Parts

Maxi Coating Pump
Maxi Miller
Delivery Hose
Hose Clamps 16 mm
Scissor Style Tubing Cutter
Silicone Hose Grease
Hose Connectors
Nut Driver
Allen Keys
Towels
Gloves

Before Beginning Assembly



DANGER

Risk of serious injury from rotating parts!

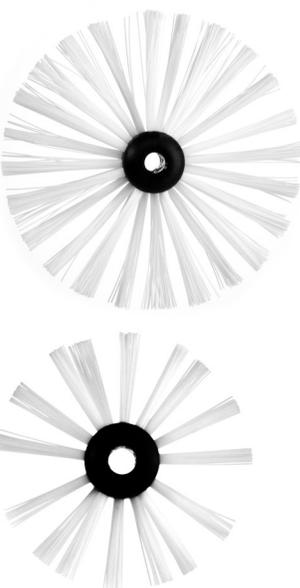
- Have extra brush stoppers and hose connectors available.
- Use a angle grinder or portable band saw to cut Maxi Miller shaft if necessary.
- Have a roll of duct tape available.



SELECTING COATING BRUSHES

When choosing the appropriate coating brushes for your coating job, refer to the chart listed below. For the best results use brushes as least 2 sizes larger than the host pipe.

Recommended Coating Brush Diameters			
Host Pipe Diameter	Front Coating Brush Diameter (Straight)	Front Coating Brush Diameter (Multiple Bends)	Rear Coating Brush
DN70 (3")	100mm (4")	125mm (5")	75mm (3")
DN100 (4")	125mm (5")	175mm (7")	100mm (4")
DN150 (6")	175mm (7")	225mm (9")	175mm (7")
DN200 (8")	225mm (9")	250mm (10")	225mm (9")
DN225 (9")	250mm (10")	275mm (11")	250mm (10")
DN300 (12")	350mm (14")	350mm (14")	300mm (12")



INSPECT THE MAXI MILLER SHAFT

Damaged, frayed, separated or in anyway compromised flexible shaft should be removed.

STEP 1

Cut the outer casing back leaving 180mm / 7" to 230mm / 9" of exposed shaft. Alternatively **Tool Leaders** can be assembled and attached to the shaft using shaft connectors.



STEP 2

Place the brushes and brush stopper on the shaft. Bring the brush stopper to the end of the shaft and secure. Place first brush against backside of the stopper and secure. Place second brush 25mm / 1" behind the first brush and secure.

Note: Be careful not to strip the threads in the brushes when tightening the set screws.



STEP 3 ▶ Attach delivery hose to the flexible shaft casing 50mm to 75mm / 2" to 3" behind the sleeve. Secure using duct tape. Then secure the delivery hose to the flexible shaft again by taping 250mm to 300mm / 10" to 12" behind the first.



STEP 4 ▶ Using your camera screen, position and attach the camera 100mm to 200mm / 4" to 8" behind the delivery hose ensuring the rear brush is visible in the camera monitor. In pipes DN100 / 4" and larger, it is recommended to tape the entire camera head and spring for easier cleanup. In smaller pipes it is recommended to leave the spring of the camera untaped in order to retain flexibility.

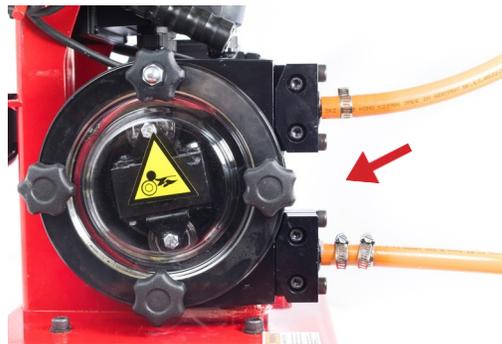


TIP

If you find it difficult to push the hose set-up through the pipe, try applying a small amount of Delivery Hose Lubricant to the tape marks. This will reduce friction when moving around the bends.



STEP 5 ▶ Once the hose set-up is completely assembled and the brushes are pushed to the far end of the pipe to be coated, cut the delivery hose and attach it to the bottom hose connector. Secure with 2 hose clamps.



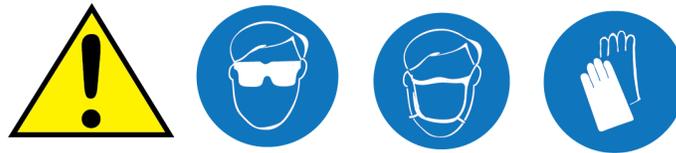
Once the delivery hose and pump are assembled,
CONTINUE TO PREPARING THE RESIN

Required Tools & Parts



MAXI COATING PUMP
 DUAL COLOR 100% SOLIDS RESIN
 SMART MIXER
 GLOVES
 SCISSOR STYLE TUBING CUTTERS
 TOWELS
 ACETONE
 WASTE BIN

Before Beginning Preparation



- In case of spills or accidents have plenty of rubber gloves, towels, chemical spill kit and acetone readily available.
- Be sure to prepare all cartridges before pumping any resin. This will allow you to have more efficient work-flow.
- Save a few cartridge caps to reseal unused material.

IMPORTANT

The resin is best when kept at temperature between 20-25 °C / 68-77 °F. If resin is too warm it will greatly limit working time and may cure too quickly. If resin is too cold it may impair the ability for the system to pump the resin.



Resin Calculator

Use the resin calculator to determine how much resin will be needed to complete all necessary coats. Refer to the chart below for recommended number of coats. To receive resin calculator, please send a request to support@picotesolutions.com.

PIPE DIAMETER NUMBER OF THE COATS	
DN70 / 3"	3 to 4
DN100 / 4"	3 to 4
DN150 / 6"	4 to 5
DN200 / 8"	5 to 6
DN225 / 9"	6 to 7
DN300 / 12"	8 to 9

- A minimum of 4 coats need to be applied when the pipe is going to be cleaned using High Pressure Water Jetting .
- Maximum Water Jetting Pressure is 2600 PSI or 180 Bar.
- A minimum of 3 coats need for abrasion resistance.



To best prevent contact with resin on skin, wear two sets of PVC or nitrile gloves on top of each other. The top pair can be then removed easily during the clean-up process to eliminate mess.

Before you begin preparing the resin for application, verify the following:

(A) The Maxi Miller and Maxi Coating Pump are ON. (B) The Maxi Miller speed is set between 950 to 1100 rpms. (C) The Maxi Coating Pump is set to full speed. (D) The Maxi Miller and Coating Pump are set to rotate clockwise.

STEP 1

There are 4 stages to setting up the resin cartridge. Always keep the cartridge upright to avoid resin leakage and possible premature mixing of resin.

A. Choose the desired color of resin for the first application. It is best to begin with the color that gives the most contrast to the original pipe. If you are coating a light pipe, use the dark grey first, or in dark pipe use the white resin to start with.

B. Remove the nut and cartridge cap, and set aside for later.





C. Cut the mixer tip back two notches. This will improve the flow of resin and allow cleaner operation of the Smart Mixer during pumping.



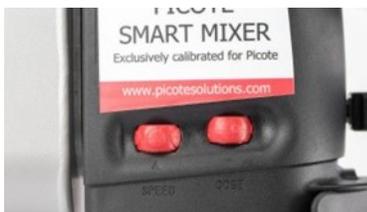
D. Attach the static mixer tip and secure with the nut.



STEP 2

Once the mixing tip and nut are securely fastened, insert the resin cartridge into the Smart Mixer. Now change the speed dial on the Smart Mixer to the 4th setting.

Refer to the Smart Mixer manual for further information.



STEP 3

Feather the trigger to allow the pistons to seat properly and evenly on the back of the cartridge. Once resin flows into the tip, slowly dose a small amount of resin (no more than 30g / 1 oz) into a cartridge bag and dispose of it. This will ensure the resin is mixed properly before allowing it to be pumped through the system.

Required Tools & Parts



- MAXI COATING PUMP
- DUAL COLOR 100% SOLIDS RESIN
- SMART MIXER
- GLOVES
- SCISSOR STYLE TUBING CUTTERS
- TOWELS
- ACETONE
- WASTE BIN

Before Beginning Preparation



- Have plenty of gloves, towels and Acetone available in case of spills or accidents.
- Use Digital Infrared Thermometer Non-Contact Tool to monitor the temperature of the resin while coating.
- Be sure to have a crew large enough to cover the cable, maintenance of Smart Mixer and and coating application.
- Have ice available for temperatures over +27 °C / +80 F.

TIP

If you find it difficult to push the hose set-up through the pipe, try applying a small amount of Delivery Hose Lubricant should be poured into the pipe, prior to pushing the hose setup down the pipe. This will reduce friction when moving around the bends.



STEP 1

Once the resin supply cup is $\frac{1}{3}$ full, set the coating pump to full speed and begin pumping resin by pressing the coating pump control switch.



STEP 2

Watch the CCTV screen to observe the resin flow. Note: it may be difficult to see the flow of resin if the camera is turned upside-down. Watch closely and move the camera back and forth if necessary to check for resin flow.



STEP 3

Once resin can be seen flowing into the pipe, stop the pump and turn the speed dial down to the appropriate speed for the diameter pipe being coated. Typically, optimum rotation speed is in between 1000-1200 rpms. (Pump speed can vary based on operators discretion).



STEP 4

Start the coating from the far end of the pipe. Pump out resin and brush it on. Pay close attention to the flow of resin and lay a consistent bead into the pipe. Also, watch the bead of the resin around the edge of the brush. Pull slowly and evenly for 1m / 3ft.



STEP 5

Stop the pump and brushes and push back into the pipe to visually verify the coating has covered all required areas evenly. Repeat this process in 1m / 3ft sections until the pipe is fully coated. Be especially careful around bends.



STEP 6

Once first coat is complete, apply heat (Picote Heater) to the pipe before starting the next coat to speed up dry time. Wait 2.5 hours or until dry to touch before applying the next coat.



STEP 7 ▶ If the next coat is applied after 24 hours, the original coat will need to be abraded with a Smart Cutter™ first to make sure that the layers bond well.



STEP 8 ▶ Dual Color Method. Apply over existing color with new color. Verify that resin has been applied everywhere. The Dual Color Method allows for clear visual verification during application that resin has been evenly distributed everywhere.



Once the coating has been applied,
CONTINUE TO CLEANING THE COATING SYSTEM



Required Tools & Parts

GLOVES
ACETONE
DUCT TAPE
WASTE BIN
SISSOR STYLE TUBING CUTTERS
TOWELS
BUCKET WITH LID
NUT DRIVER
ALLEN KEYS 3mm, 5mm, 6mm

Before Beginning Cleaning Process



- Have plenty of gloves, towels and Acetone available in case of spills or accidents.
- Have buckets ready for cleaning the brushes and camera.
- Have a roll of duct tape and a large waste bin nearby.

STEP 1

After the coating has been applied, turn the pump rotation to reverse. This will cause the resin to flow back to the cup and reduce dripping resin during the cleaning process. When the resin stops dripping, place the brushes in a bucket of Acetone that is deep enough to submerge to brushes, but not full to the top. Use a bucket lid with a hole or notch to allow for the hoses to pass through. Use a rag or towel to seal around the opening and avoid splashing of acetone outside of the bucket. For best cleaning, turn the Maxi Miller to full speed and run the brushes for a short time to rinse off the resin. Brushes and shaft should be clean enough for reuse after cleaning.



STEP 2

Wipe the camera head and the Maxi Miller shaft clean with an acetone soaked rag. Once the resin is removed, cut away the tape and recoil the cleaned camera and Miller shaft into their holders.



STEP 3

Stop the pump from spinning in reverse and shut the system down completely. Isolate the power supply. Remove the cartridge from the Smart Mixer. Recap for later use if there is unused material in the cartridge.



STEP 4

Wipe down the delivery hose and remove from hose connector. Tape both ends to avoid dripping resin and set aside. Save hose clamps for later use.

STEP 5 ▶ Carefully remove the supply hose from the cup and wipe down the end.

STEP 6 ▶ Loosen the locking blocks and tape the ends of the pumping hose. Remove the pump hose from the pump housing and dispose of.

STEP 7 ▶ Empty and clean the resin cup for later use or dispose of responsibly.



STEP 8 ▶ Make final inspection to verify that the machine is clean and that everything has been wiped down.

STEP 9 ▶ Collect all the contained waste including used gloves, delivery hose, rags etc. into thick waste bags and seal properly. If large amounts of mixed coating resin was left, let it harden separately, for example, in the resin cup. Dispose according to waste laws and regulation. Follow instructions from coating resin MSDS.

Note! Mixed resin will generate heat while curing. Do not add large amounts of mixed resin inside the waste bags before it has cured and keep the resin in well ventilated location while curing.

CURING

During the curing process, it is very important to prevent any dirt, debris or water from getting into the pipe. The pipe must stay clean and dry during the entire coating and curing process. Water can keep the resin from bonding properly. The resin is ready for additional coats once the surface is dry to touch.

AMBIENT CURING

Cure time: approximately 3 to 3.5 h in temperature 16 to 26 °C / 60 to 80 °F.

HEAT CURING

Cure time: approximately 1.5 to 2 h at a temperature of 54 °C / 130 °F.

When adding heat the pipe should never exceed a constant temperature of 65 °C / 150 °F.

ADDITIONAL COATS

Refer to the chart below to determine the recommended number of coats to apply. Additional coats should always be applied in contrasting layers. This will give a visual verification to each coat that is applied. If the previous coat sits longer than 24h before coated again, the pipe will need to be abraided with Smart Cutter™.

A minimum number of 4 coats needs to be applied to the pipes that will be cleaned using high pressure water jetting.

Maximum water jetting pressure is 2600 psi or 180 bar.

A minimum number of 3 coats is required for abrasion resistance.

PIPE DIAMETER	RECOMMENDED NUMBER OF COATS
DN32 / 1.1/4"	2
DN40 / 1.1/2"	2
DN50 / 2"	2
DN70 / 3"	3 to 4
DN100 / 4"	3 to 4
DN150 / 6"	4 to 5
DN200 / 8"	5 to 6
DN225 / 9"	6 to 7
DN250 / 10"	7 to 8
DN300 / 12"	8 to 9



RETURN TO SERVICE

Below are the proper wait times and conditions required before returning to service.

4 HOURS: Light use, water contact

24 HOURS: Pressure testing, completely cured

For potable water pipes, the final coat should be white.

PICOTE 100% SOLIDS EPOXY

Mixing ratio 2:1 / Pot life about 25 min

Package Sizes:

Cases contain 3 white and 3 dark gray cartridges each with 900ml of epoxy inside.

For large scale projects, cases of all white and all grey can be ordered.



Re-coat - 2.5 hrs @ 70 °F / 21 °C / **Restore flow** - 4 hrs. / **Final Cure** - 24 hrs.

Can be re-coated within 24 hrs with no prep, sanding panels must be used after 24 hrs.

Installation: 50 °F / 10 °C - 140 °F / 60 °C / **Storage:** Room Temp 60 °F / 15.5 °C - 85 °F / 29 °C

Finished product: up to 250 °F / 121 °C constant

PICOTE
LIFE FOR PIPES

DC1000E

Meets the Requirements of NSF/ANSI 61-5

100% SOLIDS EPOXY
WHITE
FOR PROFESSIONAL USE ONLY
NET CONTENTS: 900 ml.

WARNING! MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. HARMFUL IF INHALED. MAY CAUSE EYE, SKIN RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF SWALLOWED.

FIRST AID: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN IF IRRITATION DEVELOPS AND PERSISTS. WASH CLOTHING BEFORE REUSE. IF INHALED: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN. IF SWALLOWED: DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY A MEDICAL PHYSICIAN.

FOR PROFESSIONAL USE ONLY: USE THE NECESSARY SAFETY EQUIPMENT (NITRILE OR LATEX GLOVES, EYE PROTECTION) REVIEW SAFETY DATA SHEET (SDS) FOR FURTHER INFORMATION.



UN 2735, Amines, liquid, corrosive, n.o.s., (Tallow Amine), 8, PGIII

Storage Temperature:

Room Temp 60 °F / 16°C - 85 °F / 29°C

Shelf life: 2 years from packaging when kept in accordance with storage instructions included in MSDS and Technical Data Sheet.

Industrial safety: Ready-measured product must not be in contact with skin (it adheres).

Gas emissions: No harmful VOCs released during mixing or after hardening.

Safety data sheet: Delivered with first order.

CARING FOR THE FLEXIBLE SHAFT (Maxi Miller)

The flexible shaft is pre-treated with **Picote Flexible Shaft Lubricant** and the casing replaced prior to shipping. Always inspect the condition and apply oil between the flexible shaft and its outer casing when required.

If necessary remove the shaft from its casing to treat. When the casing has been replaced, rotate manually for even coverage.



TIP: Picote Flexible Shaft Lubricant is now available for purchase.

FASTENER SCREWS FOR THE SMART CUTTER HUB

If you are unable to tighten the fastener screws properly, due to worn out hex socket heads, replace the fastener screws immediately. Otherwise, a brush or other tool can detach from the shaft during use, and fall into the pipe.

PUMP & MILLER PARTS

Keep parts clean. Where possible, remove resin from the Coating Pump, brushes, Miller and other parts carefully with acetone. See pages 25-27 for more information.

PLEASE READ YOUR **MAXI MILLER USER MANUAL FOR MORE DETAILED INSTRUCTIONS ON HOW TO PROPERLY MAINTAIN THE MACHINE**

MAINTENANCE PROGRAM

Maintenance task	Months			
	3	6	12	24
Tightness of motor fixing			I	I
Tightness pump assembly fixing			I	I
Condition of pump assembly	I	I	I	I
Condition of rollers	I	I	I	R
Condition of frame & quick locks			I	I
Condition of electric components	I	I	I	I
Clean resin stains	P	P	P	P
Operation of Smart Mixer	I	I	I	I
Condition of hose clamps	R	R	R	R

I: Inspect, fix or replace if needed.

P: Perform, replace if needed.

R: Replace

WARRANTY PERIODS

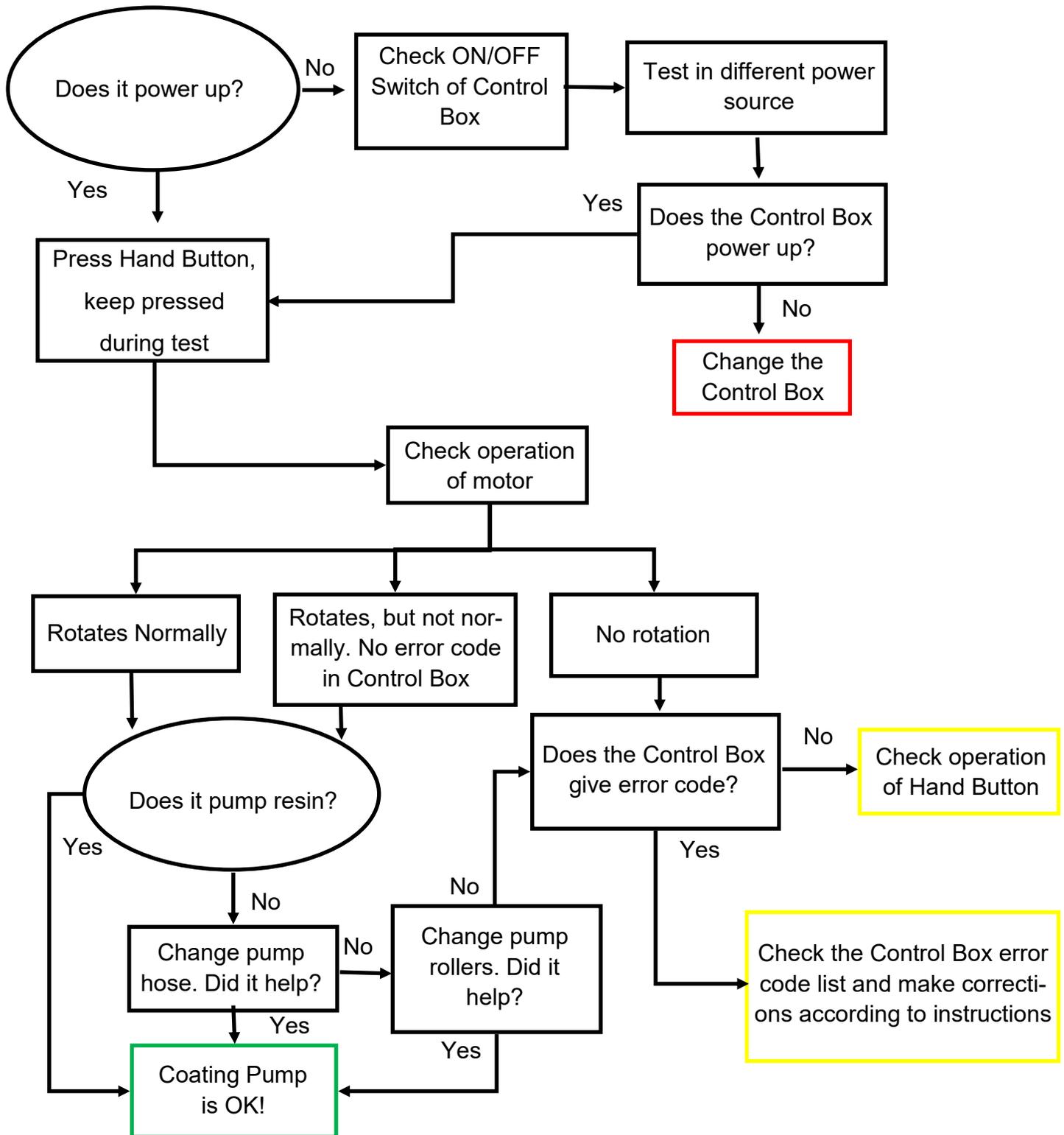
Service Period	3 months	6 months	1a
A			
B			
C			

A Milling machine & spare parts, except

B Electric motors

C Service Centre repair work

Troubleshooting flowchart—Mini & Maxi Coating Pump



ERROR CODE LIST

TROUBLE SHOOTING

The control box of the Mini Coating Pump 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 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 _t	No Fault	Not required
0-1	Output over current	Instantaneous over current on the drive output. Excess load or shock load on the motor. <i>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.</i>
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. <i>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.</i>
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.

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.

Otherwise, the Products are sold AS IS. End User is responsible for using the Products within their specifications and instructions as contained in the Documentation.

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

For More Information



Picote offers a range of training options at our World-wide Training Centers in Anderson, SC, USA, Finland and in our new training center in UK. Contact your reseller or Picote Solutions for details.



Please Contact:

Your Reseller / Salesperson or Picote Solutions

For Information and Support

Email: sales@picotesolutions.com

INNOVATIVE THINKING

In Finland, Picote is a very well established contracting company, successfully rehabilitating thousands of drains and sewer pipes with trenchless methods since 2008. By focusing on in-house research and development, our company also offers a growing range of unique, patented and patent pending products, which are now available to the international market. The resourceful tools and machinery have been devised and perfected as a direct result of feedback and evaluation from work sites. As a contractor ourselves, we know that durability, reliability and safety do matter at the work site, and that value of money is also a priority. That's why at Picote we are proud of our innovative, quality products.

Designed for professionals, by professionals.

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