

# Operators Check List

## Picote Brush Coating™ System (Fast Cure Resin)

**DO NOT** use the equipment without prior training.

### **WARNING**

For your personal safety always ensure that you have read and understand the Operational and Safety Manual Instructions.

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

### Only Use Picote Tools Designed for Coating



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



**Danger** risk of serious injury, follow the instructions



**Danger** risk of serious injury from rotating parts

### 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 any 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 resin dust or fumes being inhaled or consumed, which could cause occupational asthma or dermatitis.

### Resin Temperatures

Resin Storage Temperature: +16°C (60°F) to +21°C (70°F)

Installation Temperature Range: +10°C (50°F) to +60°C (140°F)

Resin Application Temperature: +26°C (80°F) to +29°C (85°F)

***If the resin is below 20°C (68°F) the viscosity will be too low to pump and the resin will cure in the resin delivery hose.***

***Resins have limited work time. Higher temperatures will decrease the work time. If the resin is over +29°C (85°F) it is recommended to chill the resin slightly before installation. If too cold (see note above) the resin may become difficult to pump.***

### Cure Times

Time between coats: Between 1 to 1½ hrs @ 20°C (68°F) or until dry to the touch (curing time can be reduced to 30 to 45 minutes by using the Picote Heater).

Return to service: 4 hrs.

Can be re-coated within 12 hrs without any preparation. After 12 hrs the Smart Cutter™ and grinding panels must be used to abrade the coating surface to ensure proper bond of the next coat and the dust removed.

### Temperature Resistance

Finished Product: up to 82°C (180°F) for commercial hot water. For chemical solutions please refer to the DC1000E Resin Chemical Resistance Charts.

## Machine Performance

Mini Pump + Mini Cleaner: DN32 to DN75 (1¼" to 3") / Max length per run of 9 metres (30')

Mini Pump + Mini Miller: DN50 (2") / Max length per run of 9 metres (30') and DN100 (4") / Max length per run of 6 metres (20')

Maxi Pump + Maxi Miller: DN100 (4") / Max length per run is 18 metres (60') and DN150 (6") / Max length per run is 15 metres (50').

**Note: The fast cure resin is not recommended for use on pipe diameters greater than DN150 (6")**

## Pipe preparation procedure – Metallic Pipes

- Remove any fats, oils or grease using a suitable degreaser
- Clean the pipe using the Picote grinding chains or other comparable tools
- Flush the pipe with water, air or a vacuum cleaner to remove all debris
- If needed, smooth the pipe surface using the Smart Cutter™ and grinding panels
- Finally use the wire brush tool to remove any fine dust or remaining particles

## Pipe preparation procedure – Plastic Pipes

- Remove any fats, oils or grease using a suitable degreaser
- Clean the pipe using the PVC original and/or PVC cyclone chains
- Flush the pipe with water, air or use a vacuum cleaner to remove all debris
- Scour the pipe surface using the Smart Cutter™ and grinding panels
- Finally use the nylon brush tool to remove any fine dust or remaining particles

## Select the correct size coating brushes from the tables below

Recommended Coating Brush Diameters (Mini Cleaner / Mini Miller)				
Host Pipe Diameter	Front Coating Brush (Straight)	Front Coating Brush (Multiple Bends)	Rear Coating Brush	Distance Between Brushes
DN32 (1¼")	50mm (2")	N/A	N/A	N/A
DN40 (1½")	50mm (2")	50mm (2")	50mm (2")	40mm (1½")
DN50 (2")	75mm (3")	100mm (4")	50mm (2")	50mm (2")
DN70 (3")	100mm (4")	125mm (5")	75mm (3")	75mm (3")
DN100 (4")	125mm (5")	175mm (7")	100mm (4")	100mm (4")

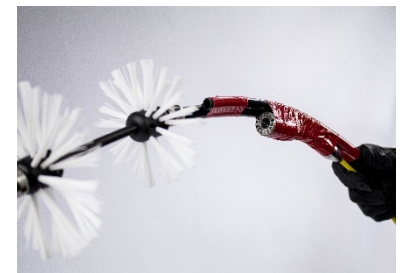
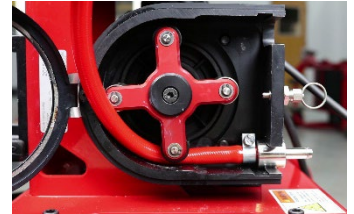
Recommended Coating Brush Diameters (Midi Miller / Super Midi / Maxi Miller)				
Host Pipe Diameter	Front Coating Brush (Straight)	Front Coating Brush (Multiple Bends)	Rear Coating Brush	Distance Between Brushes
DN70 (3")	100mm (4")	125mm (5")	100mm (4")	25-50mm (1"-2")
DN100 (4")	150mm (6")	175mm (7")	150mm (6")	25-50mm (1"-2")
DN150 (6")	200mm (8")	225mm (9")	200mm (8")	25-50mm (1"-2")

### Note:

1. The above configurations depend on pipe layout. It is advisable to do a dry run prior to coating.
2. Brush sizes noted are part number/description as per the catalogue
3. The actual brush diameter which is always larger than the diameter of the host pipe.

## Setting up the equipment

- **Picote Mini Pump:** Cut the red resin supply hose exactly to 248mm (9¾") or for simplicity use the pre-cut version. Bulk 25m (80') rolls also available.
- **Picote Maxi Pump:** Assemble the pre-cut pump hose and connectors.
- Once the pump hose has been installed, turn on the pump and check that it is working correctly by firstly covering the top hose fitting with your finger. If working correctly you should feel the hose sucking onto your finger. Next place your finger over the bottom hose fitting. If working correctly you should feel air blowing over your finger. Apply a small amount of Silicone Grease to lubricate the pump hose.
- Attach the smaller brush against the sleeve bearing leaving roughly 6mm (¼").
- Slide the larger brush onto the shaft followed by the supplied brush stopper. Space as detailed in the manual and tighten both securely. There is no need for a length of shaft casing over the shaft, between the brushes, as this will hinder flexibility around the bends.
- Attach the resin delivery hose 50-75mm (2-3") behind the sleeve bearing with duct tape. Exactly 300mm / 1ft away, secure the delivery hose to the shaft with more tape.
- Attach the camera head 100-200mm (4-8") behind the sleeve bearing. Check your camera screen to ensure that you have full view of the brush circumference.
- Once the brush is in full view on the screen, lightly tape the camera head from the very end all the way to the end of the camera spring.
- Once the camera is secure, insert the brushes into the pipe opening. Push in about 500mm (18") and tape camera, delivery hose and miller cable all together and once more 500mm (18") after that.
- Continue taping every 1 meter (3ft) and pushing into the pipe until the end of the pipe to be coated has been reached.



## Applying the coating

**Note: Preparation is key as the working time is significantly reduced compared to the standard DC1000E resin system**



- **Do Not Apply** any Picote Delivery Hose Lube to either the host pipe or Nylon Coating Brushes as this can have a detrimental affect to the Fast Cure resin
- **Keep to a minimum amount of mixed resin in the bowl.** The depth of resin should be maintained just above the 45 Deg cut on the resin supply hose. Ideally a small cup should be placed in the resin cup to reduce the volume of mixed resin. Set the variable speed dial on the pump to full speed and engage the pump to begin priming the delivery hose.
- Closely watch the CCTV screen for the resin flow moving the camera back and forth if necessary. Once resin can be seen flowing, turn the variable speed dial down to the appropriate speed for the pipe diameter.
- Start the coating from the far end. Keep pumping 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 along the pipe and do not go backwards and forwards.
- Carefully inspect that the resin covers the pipe wall. Be especially careful around bends, open joints, cracks and holes.
- Due to the speed of application it may be necessary to apply additional coats then required in the Table below.
- Once the first coat is complete, wait 1 to 1½ hours or until dry to touch before applying the next coat. This can be reduced to 30 to 45 minutes when using the Picote Heater.



- If the next coat is applied after 12 hours, the original coat will need to be abraded with a Smart Cutter™ and grinding panels to make sure that the layers bond well, remembering to remove the dust prior to applying the next coat.
- Alternate the colour of the resin between coats. This allows for a clear visual verification during application that resin has been evenly distributed throughout the pipe.

Pipe diameter	Number of Coats (Corrosion Resistance)	Number of Coats (Semi Structural)
DN32 (1¼")	2	2
DN40 (1½")	2	2
DN50 (2")	2	2
DN70 (3")	2	2
DN100 (4")	2	3 to 4
DN150 (6")	2 to 3	4 to 5

- 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.

TYPES OF LUBRICANT	
	
Lubricant for the pump rollers	Picote Miller Flexible Shaft Lubricant
	<p>Further assistance or information visit the Picote Institute at:</p> <p><a href="http://www.picoteinstitute.com">www.picoteinstitute.com</a></p>