

## SPECIFICATION

### Controls & Indicators

Rotary Control	Combined On / Off switch & output voltage setting control.
Power ON	Illuminated when power is switched on.
High Voltage ON	Illuminated when there is a suitable connection between the two earth electrodes (also see figure 2) and the power is switched on.
Battery Low	Illuminates when the integral battery voltage falls below 7.5V approximately (indicating approximately 20 minutes of continual use remaining with battery supplied).

### Electrical Specification

Input Power	9V integral battery (use only alkaline: "PP3" or "6AM6" or "MN1604" or "6LR61" or "E-block")
Battery Life	>1 hour of continuous use (>200 lifts, based on 15 second charge time and alkaline battery).
Battery Replacement	Access to the integral 9V "PP3" battery is by removing the battery compartment cover from the rear of the unit (also see figure 2 ).
Output Voltage	10,000V (typically).
Output Polarity	Negative
Protection	Output proof against externally induced flashover and short circuit (unit folds back and resumes normal operation on removal of the fault condition). Supply input proof against polarity reversal of the battery by an internal diode.
Safety Interlock	Unit will only produce a high voltage charge when both earth electrodes are in contact with a suitable conductor i.e. in contact with the earth plate.
CE Marking	Tested by NEMKO to: IEC61010-1

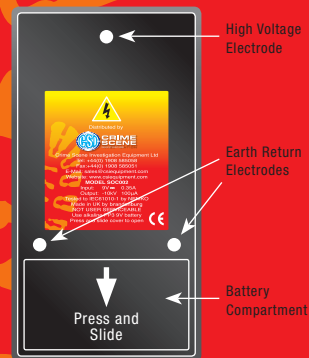
### Mechanical & Environmental Specification

Dimensions (LxWxH)	150 x 80 x 34.5mm plus 4mm for the electrodes (6" x 3.15" x 1.36" plus 0.15" for the electrodes).
Weight	240g (8.5 oz.) approximately.
Packaging	Fire retardant ABS plastic case (material to UL94V-0).
Temperature Range	0° to +50°C operating, -10° to +70°C storage. High voltage components are encapsulated for protection against humidity.

Fig. 1  
Top View



Fig. 2  
Bottom View



**ELECTROSTATIC  
DUST MARK  
LIFTING DEVICE**

Distributed by



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## PRODUCT DESCRIPTION



## WARNING

Extreme caution must be exercised when using this equipment. The output from this equipment is potentially lethal. This equipment should only be operated by suitably trained and qualified personnel in accordance with current health and safety regulations. All necessary protective clothing must be worn when operating this equipment.

### Operating Instructions for: SOC002

#### Making lifts from surfaces which have insulating properties.

Most lifts will be made from these types of surfaces. i.e. wooden window ledges, carpets, tiles, upholstery etc.

- 1) Place a sheet of Mylar film with the black side downwards on the area to be lifted / examined. If the mark is on a vertical surface secure the film with a piece of masking tape at the top edge of the film.
- 2) Place the earth plate within 50mm (2") of the Mylar film. If the mark is on a vertical surface, secure the earth plate with a piece of masking tape.
- 3) Place the Pathfinder electrostatic lifting device switched off (i.e. the control knob located on the top of the device in the "OFF" position, the "Power ON" lamp should also not be illuminated) onto the surface with the two earth electrodes touching the earth plate and the high voltage electrode in contact with the metallic side of the Mylar film (see fig 2).
- 4) Switch on (turn the rotary control knob clockwise approximately 45°), the "Power On" green lamp should illuminate, (if this fails to do so, check / replace the battery housed in the rear of the case). The red "High Voltage On" lamp should also illuminate, indicating the presence of high voltage at the high voltage electrode. Should this not illuminate check that the Pathfinder is correctly positioned on the earth plate, i.e. that the two earth electrodes are in good contact with the earth plate.

5) Adjust the voltage control knob clockwise increasing the voltage on the base of the Pathfinder and on the Mylar film, which will visibly be attracted to the surface it is on, until the maximum electrostatic adhesion of the film is achieved. If arcing or sparks are seen then reduce (turn control knob anticlockwise) the high voltage output. Remove any trapped air under the Mylar film using a suitably insulated roller which you should have to hand before commencing the lift.

6) Switch off the Pathfinder (turn the control knob fully anticlockwise to the "OFF" position, the "Power On" lamp will also be extinguished) and remove the Pathfinder from the earth plate and the film. Lifting it away from the earth plate will also cause the high voltage supply to be switched off, with the red "High Voltage On" lamp being extinguished.

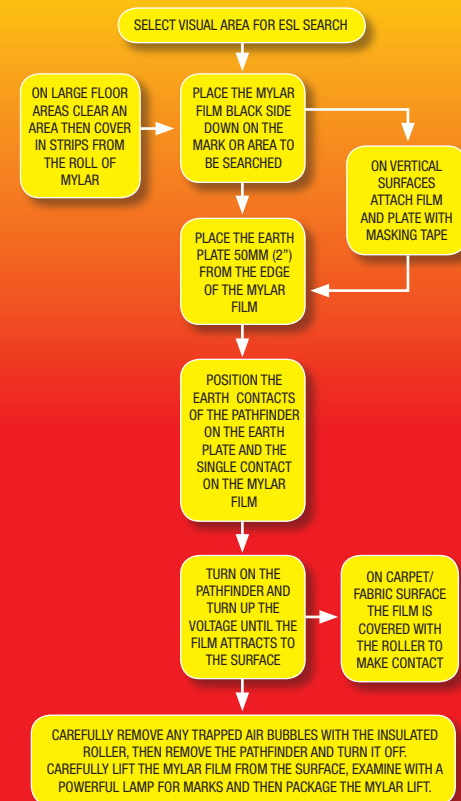
Warning: removing the Pathfinder from the earth plate will cut the high voltage supply, however the high voltage output electrode will remain charged for approximately 20 seconds, thus the Pathfinder unit should be placed in a safe position after removal from the earth plate.

7) Store the lifted mark either in a cardboard folder by attaching it with masking tape, or in the case of longer lifts made from rolls of Mylar film, store by carefully rolling up the lifted mark and placing in a cardboard tube.

#### Making lifts from surfaces which have conductive properties.

1) Prior to placing the earth plate, place a polycarbonate sheet (shoe lift backing sheet) on the surface first about 50mm (2") away from the dust mark. Place the earth plate on top of the polycarbonate sheet with it's edge about 6mm (0.25") away from the edge of the polycarbonate sheet. Place the Mylar film as normal onto the mark leaving at least a 25mm (1") gap between the film and the edge of the earth plate. Proceed to lift the mark as per the above instruction (section 3 onwards). Note, lifts should not be attempted without first insulating the earth plate. For vertical surfaces, fix the polycarbonate sheet, earth plate and Mylar film with masking tape as per above, before positioning the device to make a lift.

## MAKING A BASIC LIFT WITH THE PATHFINDER ESL A QUICK GUIDE



The PATHFINDER electrostatic dust mark lifting device has been ergonomically designed to eliminate the need for the wire connecting leads normally associated with more conventional devices. Its compact size allows it to be carried easily within the Crime Scene Examiner's case.

As a safety feature, the Pathfinder device is designed to only operate when placed correctly on to the earth plate or other suitable conducting medium (i.e. when both earth electrodes are in contact with the earth plate) and when there is a suitable insulating medium between the earth plate and the high voltage electrode.