

EPF 2000  
Electrostatic-pneumatic Flocking Unit



# EPF Electrostatic-pneumatic Flocking Unit

Suitable for flocking three-dimensional objects and surfaces with deep recesses and undercuts, such as glove boxes, consoles, packaging and profiles. The hand held flocking nozzle includes a high voltage electrode. This mobile unit has a flock storage container, a flock feed system, a high voltage generator and a control unit. The flock dosing is infinitely adjustable.

Flat surfaces and round moulded parts benefit from being flocked using electrostatics. Concave surfaces, deep recesses or even undercuts however are a challenge for flocking. According to Faraday's Law no electrical field can be created inside a hollow space. As a consequence the field lines only get to the edge of such cavities. Electrostatic-pneumatic flocking, i.e. flocking with air assistance, was developed in order to obviate this adverse effect when flocking three-dimensional objects.

## Basic components of the machine

The mobile machine is supplied with the high voltage cable, handle, air hose and the cup nozzle with ball electrode.

The basic unit includes the flock hopper with a capacity of 45 litres (corresponding to approx. 5 – 10 kg of flock fibre dependent upon the length/titre and type), the flock dosing system, airflow fan unit, high voltage generator and the control units. The flock dosing unit forms the bottom of the flock hopper. The standard equipment includes 3 perforated sheet steel screens with different gauge sizes to allow better feed when using different flock lengths. The flock "feed speed" can be controlled by increasing or decreasing the rotation of the spiral brush which is continuously adjustable. The flock is dosed into the air stream and blown through the air hose and passed the ball electrode where it picks up its electrostatic charge. The air volume of the fan can be adjusted very precisely because the air flow may have a significant influence on the flocking result, dependent upon the flock length and shape of the object to be flocked.

The flock fibres are blown, in an air stream, around a high voltage electrode, into the cavities or undercuts. They pick up an electrostatic charge and, with the help of the airflow, penetrate into these cavities embedding in a vertical position resulting in an even flock pile and superior "flock finish".

**A.** Typical flocked objects using the EPF combination of electrostatics and pneumatics are illustrated opposite.

The complete high voltage unit is installed as a plug-in-unit. The front panel includes both the kV &  $\mu$ A measuring instruments, the high voltage control, the high voltage and remote control connections, an earth connection and the ON/OFF switch. The plug-in unit comes with integrated earthing.

The control unit, which contains the main power switch, also includes the controls for flock dosing and air flow (via potentiometers and scales) that allow the adjustments necessary to produce exact conditions and values for any given project.

**B.** Objects to be flocked are as various as the available electrodes for the EPF. Most applications can be effected with the 40 mm $\varnothing$  ball electrode supplied as standard equipment.

Special applications require special electrodes, and these can be produced and supplied, after discussions, as required by the customer.

