

SCHNIER



Manual **EASY Flocker**

Art.Nr.:
810375
80 kV
300 µA

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1. Product and manufacturer

1.1. Product description

The EASY Flocker is a mobile high voltage supply for hand flocking. The built-in microcontroller allows a very precise and fast control of the HV output voltage.

The EASY Flocker is supplied via a mains plug. The EASY Flocker has an internal wide range power supply with an input of 85 - 265V/AC / 47-63Hz.

1.2. Specifications




Input voltage	85 - 265 V/AC und 120 - 370 V/DC
Input current	380 mA at 230 V AC / 760 mA at 115 V AC
Output voltage	10-80 kV negative
Output current	max 300µA
Surroundings	+15°C to 40°C max. 70% rel. humidity, non-condensing.
Storage temperature	-20°C - +70°C
Size	Look at 4.1.
Weight	6,4 kg
Protection class	IP 54
HV connection	Anode tube with 4 mm HV connection socket

1.3. Product identification

These operating instructions are part of the device:

Product: High voltage supply
Type: EASY Flocker
Part number: 810375

1.4. Type plate

 schnier.de  EN 50050-3	Type:	EASY Flocker
	Part-Sn°:	810375-
	MF-Date:	
	Input:	85-265V / 50-60 Hz max. 80W
	Output:	80kV / 300µA
	Protect.-Class:	IP 54
	Disch. Energ.:	350mJ
		 II 3D T < 50°C
		Admissible combin. of devices, see manual

1.5. Warranty

The warranty is 24 months after delivery.

Any kind of warranty expires if the device has been opened, modified, parts have been replaced with non-original parts or these operating instructions have not been observed.

1.6. Manufacturer

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2. Guide to this operating manual

These operating instructions must be read, understood and observed in all points by all persons who are responsible for the devices and electrostatic systems. Only with knowledge of these operating instructions can errors be avoided and safe and trouble-free operation be guaranteed. SCHNIER Elektrostatik GmbH accepts no liability for damage resulting from non-observance of these operating instructions!

These operating instructions apply to:

Installation and maintenance personnel (e.g. machine setters, IT specialists, electrically qualified persons) who have been trained by the manufacturer or operator with regard to the manual and corresponding safety regulations.





Operating personnel (e.g. machine setters, IT specialists, persons with electrical qualification) who have been trained by the manufacturer or operator with regard to the manual and corresponding safety regulations.

2.1. Accessibility of the operating instructions / storage

The operating instructions must always be available and ready to hand at the plant for the responsible specialist personnel (operating, maintenance and repair personnel, etc.). The operating manual must be kept by the operator for the entire service life of the system. If the plant or parts of the plant are resold, the operating manual must be handed over to the new owner, as it is an integral part of the plant.

2.2. Occupational safety symbols and expressions

Note: In this manual, the terms "live parts" or "active parts" refer to "parts that have a high voltage potential during normal operation.

Symbol	Impact
	This symbol warns of potentially hazardous situations which, if not avoided, could result in death or injury.
	This symbol warns of potentially dangerous electric shocks that can result in death or injury if not avoided.
	Warning of damage to the equipment or malfunctions
	Note for simple, rational procedure

3. Intended use


This device is intended exclusively for use as a high-voltage supply for flocking application equipment.

The combination of this high-voltage generator with the application device as well as the surrounding flocking unit itself must thereby meet the safety requirements of the product standard

EN 50050-3:2013

Correspond.

This high-voltage supply may only be operated outside explosive atmospheres.

	ATTENTION Any commissioning outside this provision is prohibited.
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This device must not be used alone. It may only be put into operation after complete and proper installation of the hand cable and the flock applicator.

3.1. Further notes on hazard prevention


General:

- Deviation from the conditions for the above-mentioned intended use is not permitted.
- Furthermore, the operating instructions of the surrounding installation must be observed.
- The system may only be operated by trained personnel.
- The operating personnel must have read and understood these operating instructions.
- The personnel must be informed at appropriate intervals about accident prevention regulations and operating instructions.
- During repair and maintenance of the surrounding plant, the conditions for normal use of this HV supply apply.



Disconnection from the mains:

	For cleaning, maintenance or repair purposes, the device must be disconnected from the mains by pulling out the plug
	To replace the applicator, the device must be disconnected from the power supply by pulling out the plug.

Damages / Modifications:

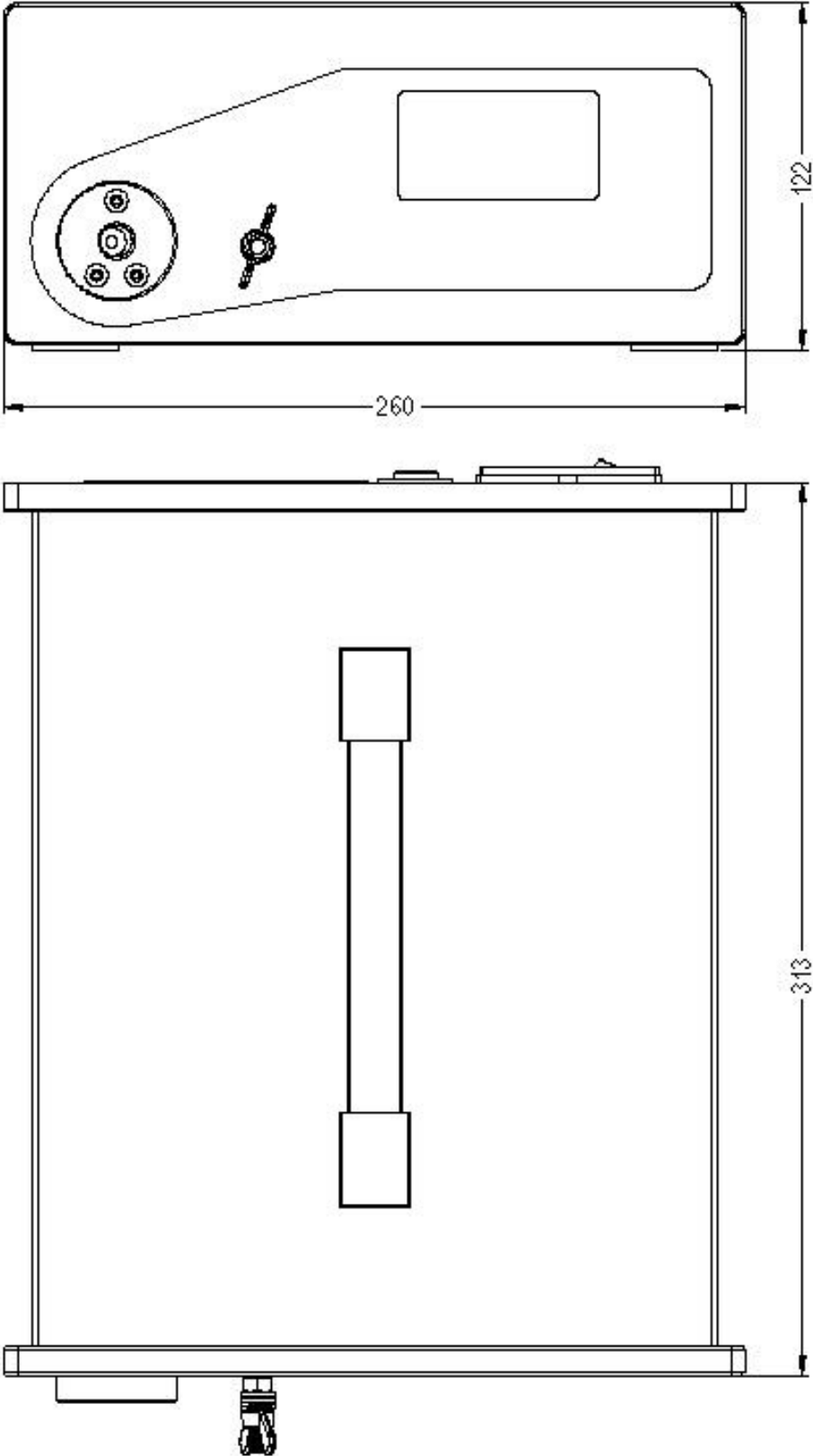
	No structural modifications of any kind may be made to this device.
	Damaged devices must be disconnected from the mains immediately by pulling out the plug.

3.2. Further requirements for the surrounding plant

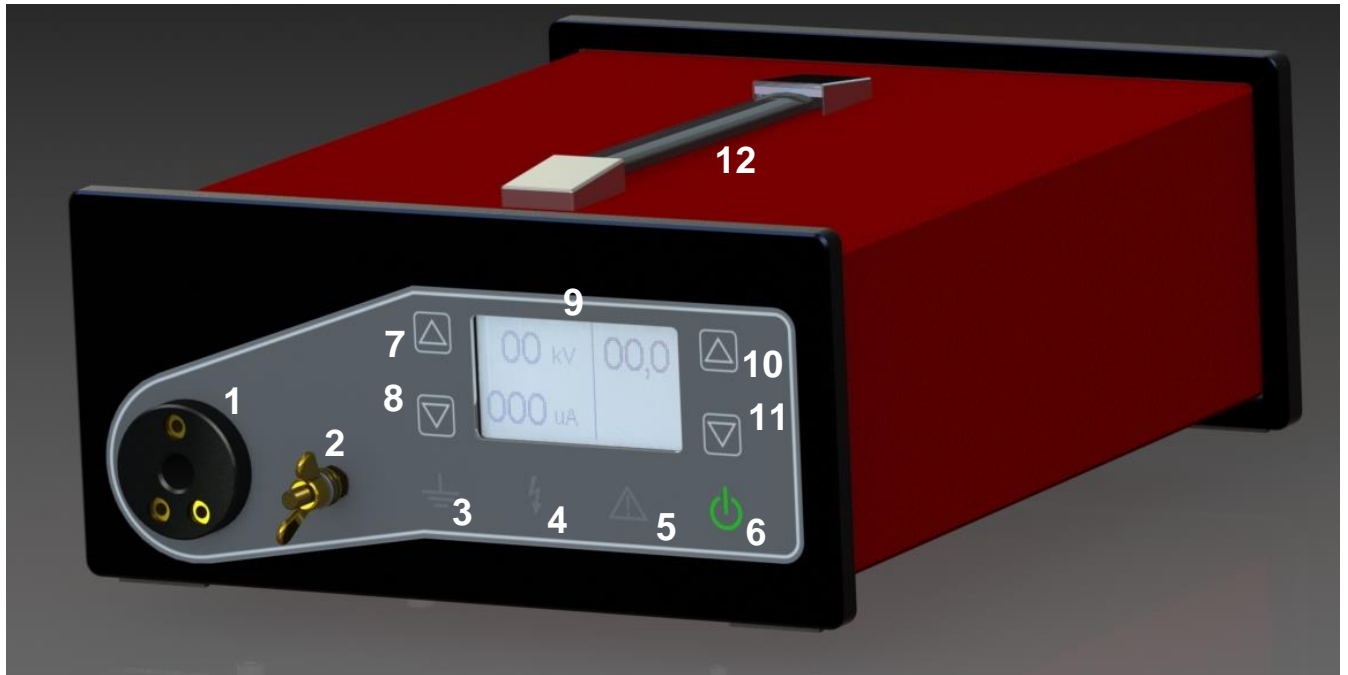
	The HS supply may only be used within a temperature range of 15°C to 40°C and at a relative humidity between 10% and 70% (non-condensing).
	During operation, interference may occur due to radiated interference at devices in the immediate vicinity.

4. Structure and overview

4.1. Dimensioned drawing



4.2. Device overview




- | | | | |
|---|----------------------------|----|----------------------------------|
| 1 | HV-Connection | 10 | Button "increase μA " |
| 2 | Ground connection | 11 | Button "reduce μA " |
| 3 | Signal lamp "not grounded" | 12 | Carrying handle |
| 4 | Signal lamp "HV On/Off" | 13 | Main switch |
| 5 | Signal lamp "malfunction" | 14 | Fuse box |
| 6 | Signal lamp "operation on" | 15 | Power socket |
| 7 | Button „increase kV“ | 16 | Remote control socket |
| 8 | Button "reduce kV" | 17 | Type plate |
| 9 | Display | | |

5. Functional description

5.1. Commissioning

- Screw the flock applicator into the high-voltage cable.
CAUTION: only tighten "hand-tight", otherwise the cable could be damaged.
- Insert the high-voltage cable into the HV connection [1] and tighten the union nut.
- Connect the ground wire to the workpiece with the [2] ground connection.
- Plug the power cable first into the power socket [14], and then the other end into the socket.
- plug the other end into the socket.
- Switch on the main switch [13].

	The anode tube behind the HV connection [1] must always be clean and dry. Moisture and contamination in connection with high voltage can lead to irreparable damage. Never plug a damp or dirty HV cable into the EASY Flocker.
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After switching on, the display [9] lights up first and then the "Supply On" signal lamp [6]. In addition, the signal lamp "HS On/Off" [4] lights up in green. (The "HS On/Off" signal lamp [4] changes color to red as soon as the high voltage is switched on).

5.2. Description Display

The left side of the display shows the actual value of the high voltage at the top and the setpoint value for the high voltage at the bottom.

The right side of the display shows the actual value of the operating current at the top and the set value for the current limitation at the bottom.

Voltage actual value	00 kV	000 uA	Current actual value
Voltage setpoint	20 kV	300 uA	Current limitation

5.3. Setting the high voltage

- The setpoint for the voltage can be increased in 1kV steps via the key [7].
- Via key [8] the setpoint for the voltage can be reduced in 1kV steps.
- Via key [10] the setpoint for the current limitation can be increased in 10 μ A steps.
- Via key [11] the setpoint for the current limitation can be reduced in 10 μ A steps.

5.4. Switching on the high voltage

The high voltage can be switched on either via the trigger on the hand cable or via the remote control socket.

	WARNING The remote control socket is not accessible during hand-set operation. Therefore, it is closed with an M8 screw.
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As soon as the high voltage is switched on, the signal lamp "HS On/Off" changes from green to red. After switching on, the display [9] shows the actual voltage value in kV and the flowing current in μ A (see 4.3).

After switching off the high voltage, the applied high voltage is discharged via the internal measuring and discharging resistor. During discharging, the signal lamp "HS On/Off" flashes red. It only changes back to green when the high voltage has been completely discharged.

The setpoints for high voltage and current limitation can also be changed when high voltage is switched on.

5.5. Current limitation


When the high voltage is switched on, it is constantly maintained at the kV setpoint value until the set current limit is reached. When the current limit is reached, the voltage is automatically reduced.

This means:

If, for example, 100 μ A is set as current limit and 50kV as voltage setpoint, then the EASY flocker regulates the output voltage to 50kV after switching on the high voltage. If an operating current of 100 μ A is reached during flocking, then the voltage is reduced if necessary to prevent exceeding 100 μ A.

5.6. Ground monitoring

The EASY Flocker has an earth monitoring function. If the EASY Flocker detects that it is not connected to earth, the signal lamp "Earth missing" [3] lights up and the high voltage cannot be switched on.

	WARNING This monitoring does not replace the obligation to connect a protective conductor according to the VDE regulations.
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5.7. Malfunction

If the "malfunction" signal lamp [5] lights up, this means that an error has occurred in the device. If this error does not go out after switching the main switch [13] off and on, then there is a device defect and the EASY Flocker must be sent in for checking.

6. Declaration of conformity

Manufacturer:	SCHNIER Elektrostatik GmbH Bayernstrasse 13 D-72768 Reutlingen
Product:	Hochspannungsversorgung
Type:	Elektrostatisches Handflockgerät
SCHNIER Art.-Nr.:	EASY Flocker Art.-Nr. 810375
Trade name:	EASY Flocker
Usage:	Device for flocking of various flat and molded parts

It is expressly declared that the machine complies with all relevant provisions of
The following EC directives or regulations:

2014/34/EU	Directive 2014/34/EU of the European Parliament and of the Council of 26.02.2014 on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast). Published in 2014/L 96/309 of 29.03.2014
2006/42/EG	Directive 2006/42/EC of the European Parliament and of the Council of 17.05.2006 on machinery and amending Directive 95/16/EC (recast) (1) Published in L 157/24 of 09.06.2006
2014/30/EU	Directive 2014/30/EU of the European Parliament and of the Council of 26.02.2014 on the harmonization of the legislation of the Member States relating to Electromagnetic Compatibility (recast). Published in 2014/L 96/79 of 29.03.2014

Reference of the harmonized standards applied in accordance with Article 7(2):

EN 55011:2009	Electrostatic hand spraying equipment- Safety requirements Part 3: Hand-held spraying Equipment for flammable flock; German version EN 50050-3:20213
EN ISO 12100:2010-11	Safety of machines - general design principles risk assessment and risk reduction (ISO 12100:2010)
EN 60204-1:2018	Safety of machinery - Electrical equipment of Machines - Part 1: General requirements

- EN 55011:2009 (IEC 60204-1:2016, modified)
Industrial, scientific and medical equipment
Radio disturbance characteristics - Limits and methods
of measurement
(IEC/CISPR 11:2009, modified);
German version EN 55011:2009
- EN 61000-3-2:2006 Electromagnetic compatibility (EMC) - Part 3-2: Limits
Part 3-2: Limits - Limits for
Harmonic currents (equipment input current
16 A per conductor).
(IEC 61000-3-2:2005 + A1:2008 + A2:2009);
German version EN 61000-3-2:2006 + A1:2009
+ A2:2009
- EN 61000-3-3:2008 Electromagnetic compatibility (EMC) Part 3-3: Limits
Limitation of voltage variations,
voltage fluctuations and flicker in public
low-voltage supply networks for equipment
With a rated current < 16 A per conductor, which are not
subject to any special connection condition.
(IEC 61000-3-3:2008);
German version EN 61000-3-3:2008
- EN 61000-6-1:2007 Electromagnetic compatibility (EMC)
Part 6-1: Generic standards - Immunity for
residential, commercial and light-industrial environments.
establishments. (IEC 61000-6-1:2005); German version
EN 61000-6-1:2007
- EN 1127-1:2019 Explosive atmospheres - Explosion prevention and
protection
Part 1: Fundamentals of the methodology

Rommelsbach 19.10.2021



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