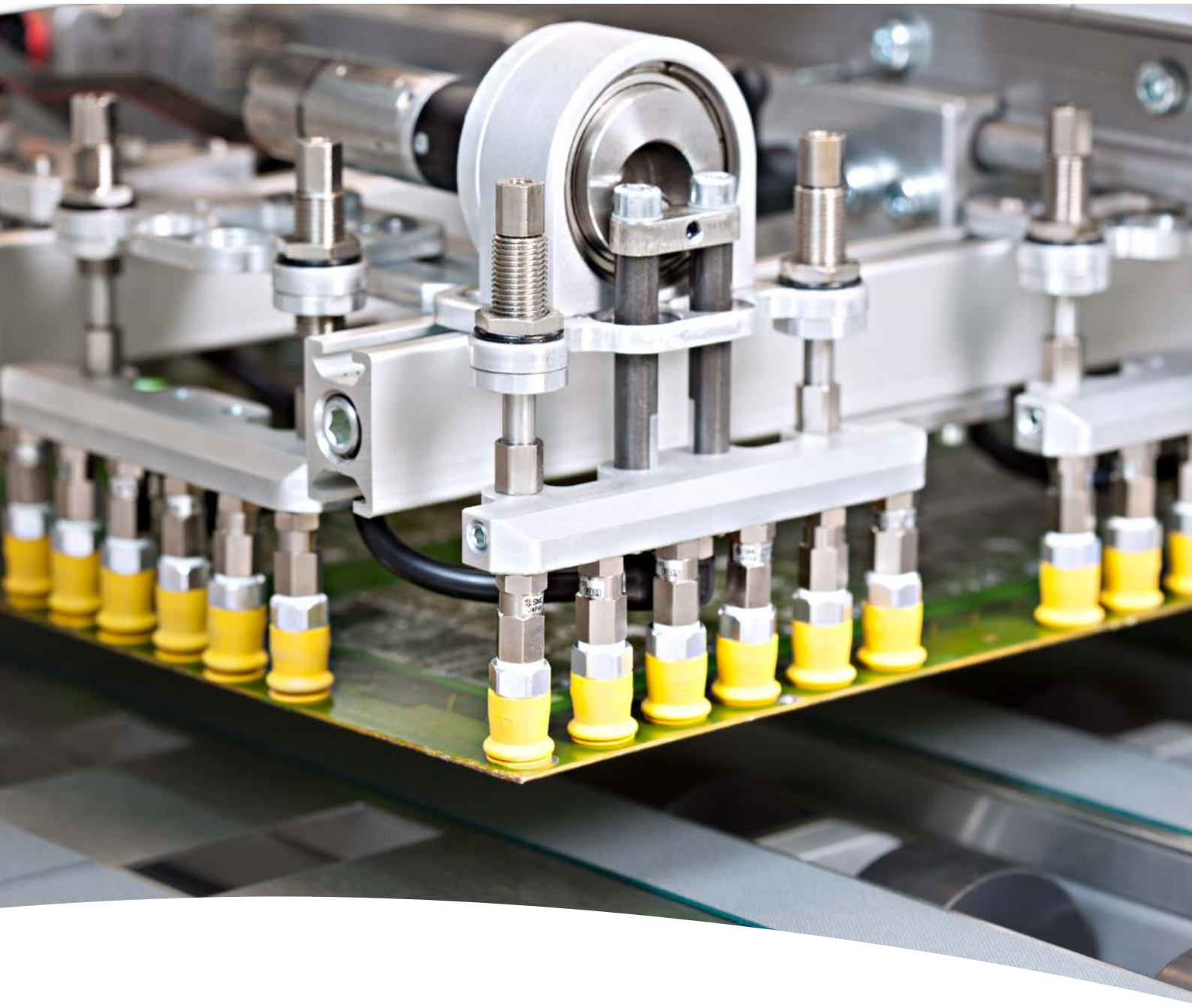
SCHMALZ



Effective Protection of Sensitive Components

Solutions for ESD Protection

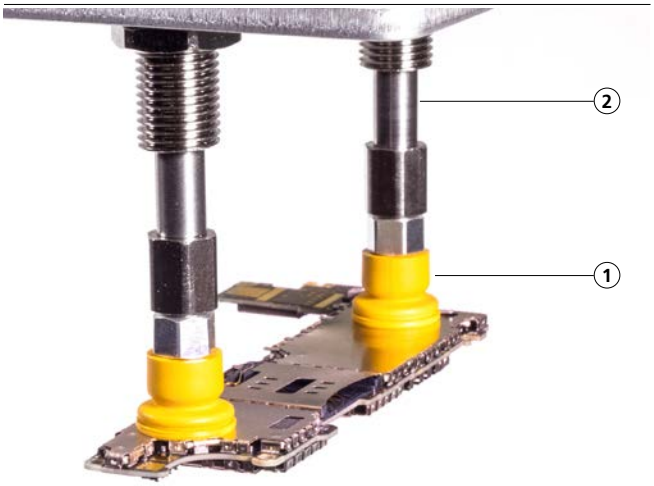
ELECTRONICS

WWW.SCHMALZ.COM/ELECTRONICS

Solutions for Electrostatic Discharge

Gripping Systems with ESD Protection

Electrostatic charges and the resulting uncontrolled electrostatic discharge (ESD) produce irreversible damage to electrical, electronic, or optoelectronic components such as IC chips or printed circuit boards. An uncontrolled and rapid equalization of potentials results in a high electrical voltage and causes irreparable faults on assembled circuit boards and their sensitive components. The dissipative resistance of Schmalz components for ESD protection prevents uncontrolled electrostatic discharge.



Complete system with suction cups FSGA and conductive spring plungers FSTIm

Application

- Handling of electronic components such as assembled printed circuit boards (PCBs), raw PCBs, complex ICs, etc.
- Use in the handling of display glass and battery components
- Mounting of electronic components

① Vacuum suction cups made of NBR-ESD

- Dissipative material for optimum equipotential bonding with a specific resistance range
- Protection of electronic components thanks to fast and safe electrostatic discharge
- Available as flat and bellows suction cups with different geometries and dimensions
- No process contamination due to absence of carbon

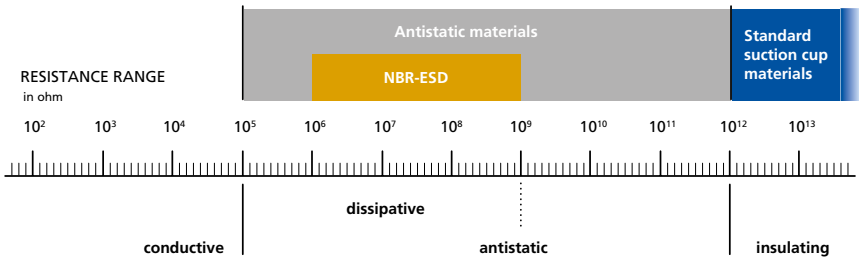
② Conductive spring plungers

- Conductive spring plungers for safe electrostatic discharge
- Careful handling of very sensitive workpieces due to gentle placement
- Internal spring and precision guidance of plunger rod ensure minimal particle emissions in cleanroom applications

Suction Cup Material NBR-ESD

Technical Specifications

Resistance values of NBR-ESD

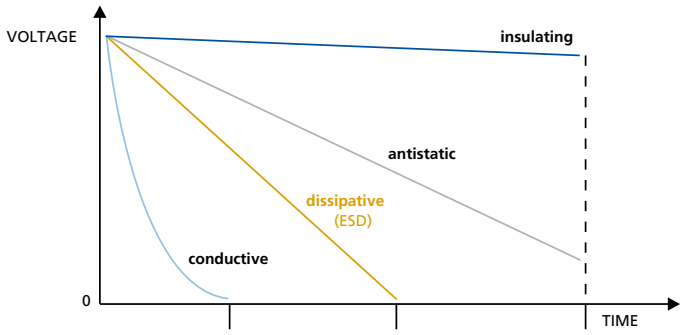


Resistance values and classification of NBR-ESD

The ESD material from Schmalz features a dissipative resistance. Voltages applied to the workpiece are dissipated in a controlled, non-damaging manner.

The ESD resistance range is shown in this diagram and extends from 10^6 Ω to 10^9 Ω.

Voltage discharge curve of NBR-ESD



Voltage discharge curve of NBR-ESD

The main objective of ESD protection is to ensure controlled discharge of electrostatic charges. Conductive or insulating materials have different discharge properties and can damage electronic components or hinder the discharge process.

The NBR-ESD material from Schmalz achieves specific resistance values. It protects workpieces and components against uncontrolled electrostatic discharge.

Properties	Conductive	Dissipative (NBR-ESD)	Antistatic	Insulating
Conductivity	very high	high	medium	low
Discharge	uncontrolled	controlled	controlled	none
Workpiece safety	low	high	medium	low

ESD Solutions from Schmalz

Product Selection

Vacuum suction cups made from NBR-ESD

Flat suction cups SUF
- Diameter: 1 to 25 mm

WWW.SCHMALZ.COM/SUF

Flat suction cups SFF / SFB1
- Diameter: 10 to 40 mm

WWW.SCHMALZ.COM/SFF-SFB1-ELECTRONICS

Bellows suction cups FSGA (1.5 folds)
- Diameter: 4 to 33 mm

WWW.SCHMALZ.COM/FSGA

Bellows suction cups FSG (2.5 folds)
- Diameter: 3 to 32 mm

WWW.SCHMALZ.COM/FSG

Spring plungers

Flat suction cups SGON (oval)
- Dimensions: 4 x 2 to 90 x 30 mm

WWW.SCHMALZ.COM/SGON

Spring plungers FSTIm-CO
- Stroke: 5 to 10 mm

WWW.SCHMALZ.COM/FSTIM

Spring plungers FSTImc
- Stroke: 5 to 10 mm

WWW.SCHMALZ.COM/FSTIMC

Spring plungers FSTE
- Stroke: 5 to 90 mm

WWW.SCHMALZ.COM/FSTE

Special grippers

Floating suction cups SBS
- Diameter: 20 to 60 mm

WWW.SCHMALZ.COM/SBS

Flow grippers SCG / SCGS
- Suction area diameter: 20 to 50 mm

WWW.SCHMALZ.COM/SCG .../SCGS

J. Schmalz GmbH
Johannes-Schmalz-Str. 1
72293 Glatten, Germany
T: +49 7443 2403-0
schmalz@schmalz.de
WWW.SCHMALZ.COM