

## SB, ESD protection, electrical products, 2013-11

### SYMPTOM/DESCRIPTION

Electrostatic Discharge (ESD) is harmful to all electronic devices and components.

A person may carry thousands of volts from being charged sitting in a car seat, wearing shoes with synthetic soles or a synthetic jacket. All discharges one can feel are certain to destroy electronic components. Even those discharges one can't feel may still damage or destroy electronic components. When working with electronic components in our products, always use proper ESD protection!

An indication of the amount of charge a person can carry is that every time there is a visible spark between a person and an object, that person has to be charged with at least 4.000 volts per cm the spark travels in thin air!

The only way to avoid ESD is to ensure that the product and the person handling the product have the same electric potential.

For more information about ESD, please refer to: [http://en.wikipedia.org/wiki/Electrostatic\\_discharge](http://en.wikipedia.org/wiki/Electrostatic_discharge)

### AFFECTED UNITS

All products including electronics are sensitive to ESD!

### CORRECTIVE ACTION

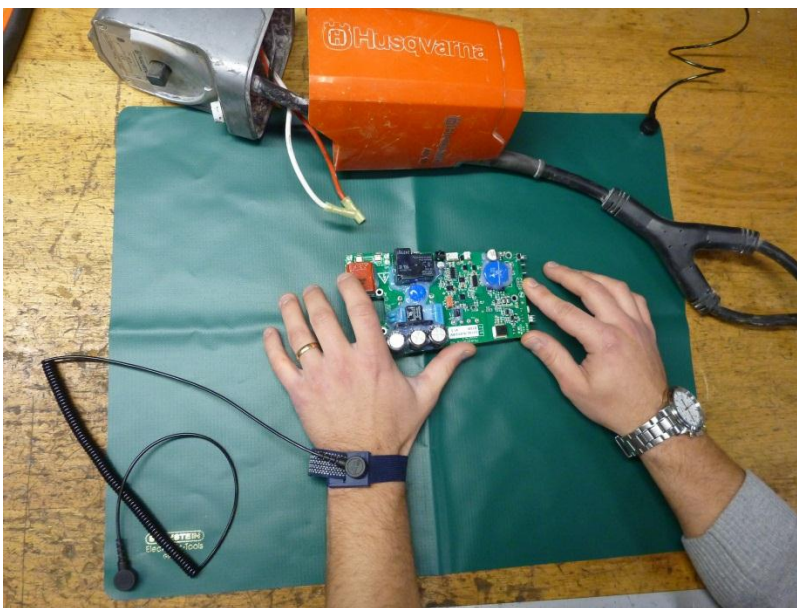
There is no way to correct damage caused by ESD. The component or assembly has to be replaced.

### PROCEDURE

**WARNING!** Make sure there is no power to the product before starting repairs!

1. Wash and dry the product to avoid dirt or water to get to the electronics.
2. Connect the ESD table top mat to ground (i.e. ground pin in a grounded power outlet). See example in picture 2. If the product has to be repaired where there is no proper grounding, connect the product's ground to the mat.
3. Connect product chassis or ground pin to proper ground (i.e. ground pin in a grounded power outlet). Make sure power is not connected! If the product has to be repaired where there is no proper grounding, connect the product's ground to the mat.
4. Connect the wristband to the mat and put the band on your wrist.
5. Open the product and perform necessary service. Person and product now have the same potential!
6. Make sure all electrical component assemblies taken out of the product casing is put on the ESD-protection mat.

7. If electrical components are to be replaced, make sure to unpack the new components on the ESD-protection mat.
8. Do not disconnect any of the ground wires from 2, 3 and 4 above until the repair/handling of electrical components is finished.
9. If the mechanic is needed elsewhere before the repair is finished, just take off the wrist band and put it on the mat until the repair can be continued. Then start by putting the wrist band back on.



Picture 1: Illustration of ESD protection usage.



Picture 2: ESD mat connected to ground.

## PARTS INFORMATION

**ESD-protection gear** shown in picture 1 and 2 can be ordered on **part number 523 05 92-01**. The kit includes mat, wrist band with wire and connector, ground wire with clip and connector.

## WARRANTY INFORMATION

No warranties apply if damage can be determined caused by ESD!