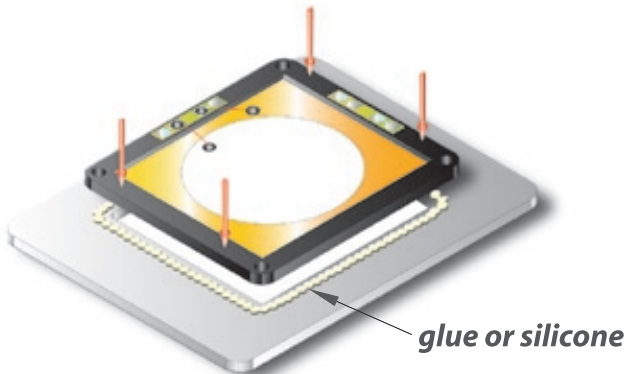


## MOUNTING INSTRUCTIONS FOR *SPS*-SPEAKERS

The SPS speakers can be mounted in several different ways. The mounting methods, illustrated below, are recommended to mount all the SPS speaker models. Please keep in mind that not too much mechanical stress is placed on the frame of the piezoceramic speaker after mounting.

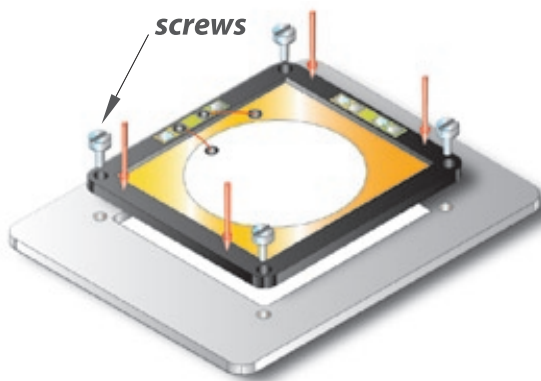
### Mounted with glue or silicone



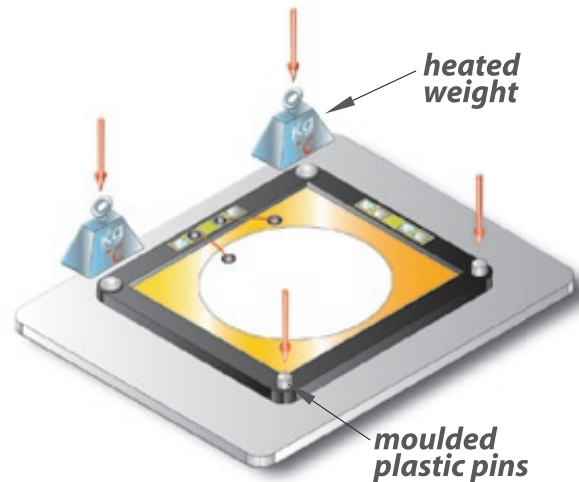
### Mounted with slot groove



### Mounted with screws

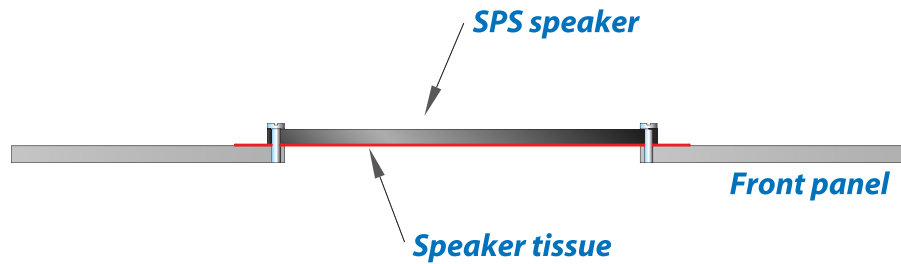


### Plastic deformation method (Ultrasonic)

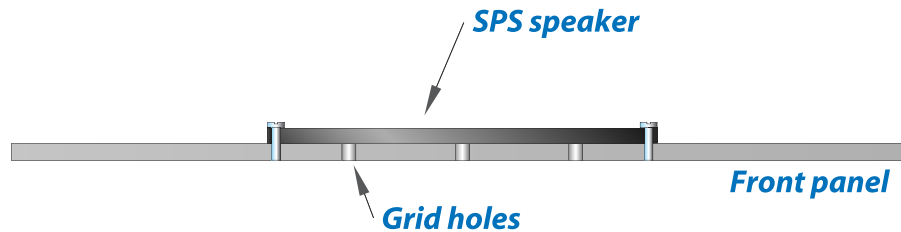


### Other methods...

### Speaker tissue



### Front holes

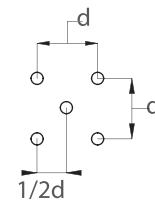


Front holes of

- 1 mm Ø for model SPS-2220-03
- 2 mm Ø for model SPS-3530-03
- 2 mm Ø for model SPS-4640-03
- 2 mm Ø for model SPS-8770-03

Distance front holes

- $d=3$  mm for model SPS-2220-03
- $d=5$  mm for model SPS-3530-03
- $d=5$  mm for model SPS-4640-03
- $d=10$  mm for model SPS-8770-03



\*Other designs of the hole pattern (grids) are also suitable. (SPS-2220-03, SPS-3530-03)

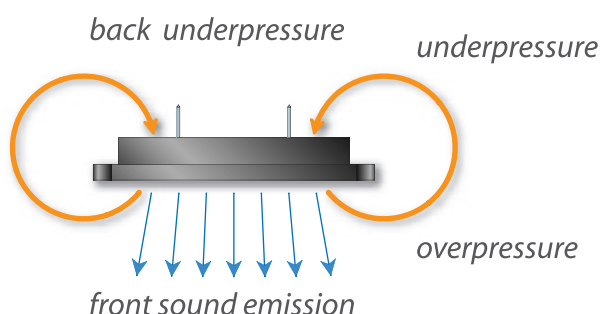
grid examples



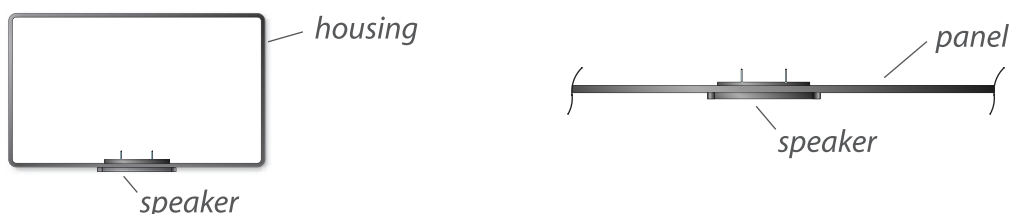
## MOUNTING RECOMMENDATIONS

### Important note:

Piezoceramic speakers produce sound by the forward and backward movement of a flat membrane. During this movement the membrane creates an air pressure wave in front and at the backside of the membrane. A forward movement will create a slight overpressure at the frontside and a slight underpressure at the backside and vice versa. It is therefore important that the front and backside are acoustically isolated from each other to avoid air pressure cancellation and consequently a serious reduction of the sound output.



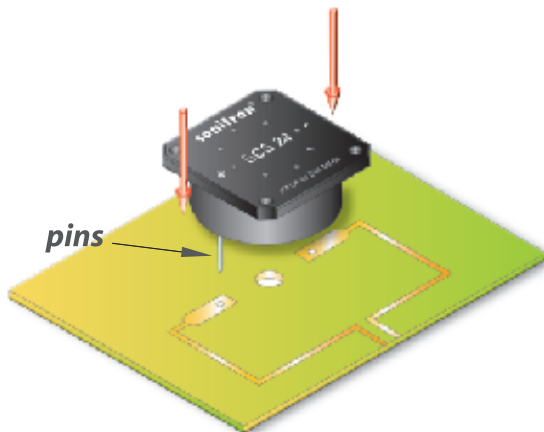
When a speaker is mounted in a panel or in the wall of a housing, the front side is acoustically isolated from the backside.



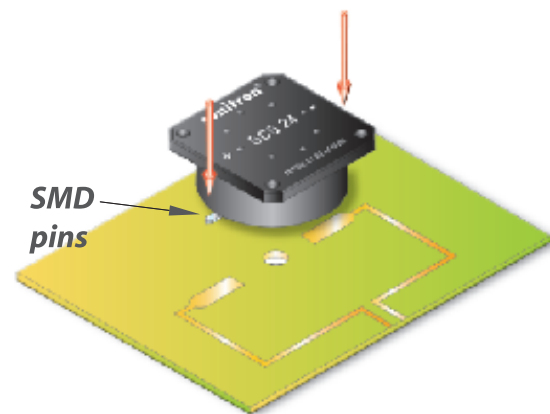
## MOUNTING INSTRUCTIONS FOR SCS-SPEAKERS

The SCS speakers can be mounted in several different ways. The recommended mounting methods illustrated below are the best ways to mount all the SCS speaker models.

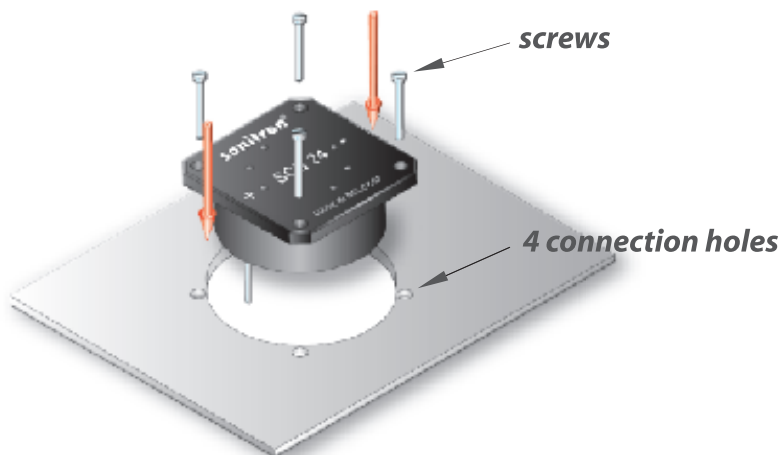
### Soldered with pins on the PCB



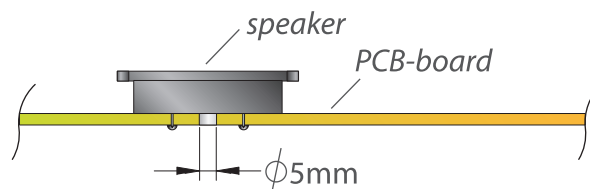
### SMD soldered on the PCB



### Panel mounting, secured with 4 screws



When mounted on a PC-board, a central hole in the PC-board of minimum 5 mm diameter is recommended.



### Other methods...