

Audiological Bulletin 78

Performing in-situ RECD with the mind series *m*-models

News from Audiological Research and Communication

This bulletin describes how to measure Widex in-situ RECD for *m*-models using Compass. Widex in-situ RECD is only available for the mind series *m*-models when they are configured with a classic flex acoustic identity. Remember that Compass offers several help functions to explain the different options in the program: tooltips; Solution guide; videos; Using this window; and the help manual.

mind440, mind330 and mind220 *m*-models (*m4-m*, *m3-m* and *m2-m*) include the possibility of measuring the RECD with the hearing aid. This procedure is called Widex in-situ RECD and is part of the *m4-m*, *m3-m* and *m2-m* fitting procedure. The measurement is made using a special RECD probe and a plastic tube that is mounted on the hearing aid. The probe for the *m*-models can be ordered from Widex (part number 4 000 9600). Note that you cannot use the same probe as for the 9-models, since the microphones in the *m*-models are placed inside the hearing aid and not on the back of the hearing aids as in the 9-models. The plastic tube is the same as that used with 9-models.

While the mind fitting procedure takes into account all the acoustic aspects of the hearing aid and its coupling to the ear, the precision of the fitting may be further improved by performing an individual RECD measurement on the client. This ensures that the hearing aid delivers the exact amount of sound pressure at the eardrum prescribed for the given hearing loss – taking into account the shape of the individual client's ear canal.

To perform the RECD measurement, select *Widex in-situ RECD* in the RECD drop-down menu. This can be found in the Acoustic conditions panel in the Preconditions window.

After having selected the desired settings in the Preconditions window, press *Next*. Compass now starts the Fitting wizard, with the in-situ RECD measurement as the first step. The measurement is divided into two parts: (1) RECD calibration and (2) RECD measurement.

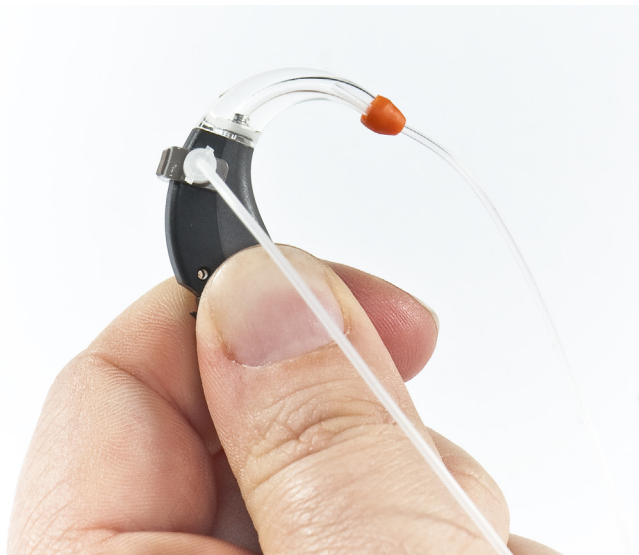
RECD calibration

The first step is to calibrate the hearing aid. This is necessary to be able to measure the in-situ RECD. Mount the RECD probe over the front (upper) microphone of the hearing aid. The plastic tooth of the attachment should block the microphone inlet that is facing the head of your client, and the probe tube should turn in the opposite direction.



Plastic tooth positioned in the microphone inlet

Then insert the probe tube 5 mm into the hook of the hearing aid. Please observe that the hearing aid should never be placed on the ear of the client while calibration is being performed.



Tubing is in the hook and the orange seal is in place

Mount the orange seal on the probe tube over the end of the earhook to provide a tight seal between the hook and the tube. Make sure that the noise level is low enough (in the green area), before you start the calibration.

Place the hearing aid on the table and start the calibration by clicking the button *Start calibration*. When the measurement is done, the calibration result is displayed as either OK or “---”.

If the calibration fails (---), a dialog box appears asking you to check the setup and repeat the measurement. If the calibration is OK, select *Next* to move on to the RECD measurement window.

RECD measurement

In the RECD measurement window, select whether you are measuring the RECD with an open or a closed vent in the “Mould used for RECD measurement” drop-down menu. If there is a vent in the earmould, we recommend leaving it patent during the measurement.

We also recommend that you check your client’s ear canal with an otoscope. You should be particularly concerned with identifying wax blockages in the ear canal.

Place the hearing aid on the ear, and place the probe tube and the earmould in the ear of the client. The probe should be positioned at these insertion depths from the intertragal notch:

- 31 mm for an adult male
- 28 mm for an adult female
- 15-25 mm for infants and children

Use the orange seal as a marker to mark the distance from the tip of the tube. You may also check the position of the probe tube at the eardrum with the otoscope after having inserted it in the ear canal.

Make sure that the noise level is low enough (in the green area) before you start the measurement. Then start the RECD measurement. If the measurement fails, a dialog box appears asking you to check the set-up once more and repeat the measurement.

The result of the in-situ RECD measurement is shown both as a graph and as values on the screen. The graph shows the in-situ RECD (in dB) as a function of frequency. The red (right ear) or blue (left ear) area indicates the range within which the measured in-situ RECD is expected to fall according to the age of your client and the vent size in the earmould.

When doing a binaural fitting, perform the measurement on the opposite ear. Alternatively you may choose to copy the RECD measured on one ear to the opposite ear. The best and most precise result will be obtained by performing the measurement on both ears, but in cases where this is not possible, the other approach may be used.

The measurement of the in-situ RECD is now finished and the in-situ RECD will be included in the fitting. Remove the RECD probe and select *Next* to continue to the Sensogram measurement.