

Ear Measuring Instrument Model 126

General

As a result of the various casting, rolling and heat treatment processes used in the manufacture of sheet and strip made of ferrous and nonferrous metals, these materials tend to develop varying anisotropic properties, i.e. distinct crystal orientation takes place in various directions of the sheet resulting in diverging mechanical properties.

Anisotropy in sheet metal becomes apparent during deep drawing processes by causing earing at the ends of the drawn workpieces. This formation of ears is undesirable as it makes additional work and increases waste material.

Application and Purpose

The ear measuring instrument, Model 126, is intended for the numerical determination of ears which form on cylindrical deep drawn cups as a result of an isotropy. These standard cups show four ears together with the corresponding "valleys", which can have various depths and heights, depending on the existing anisotropy, the size of the initial blank and the diameter of the drawing punch.

Measuring the ears on standard cups by way of vernier calipers or similar measuring devices is time-consuming and complicated. With our ear measuring instrument this work is carried out electronically and the ear height can be read off immediately on a digital display.

The most practical stage for taking ear measurements is directly after the deep drawing test, preferably after carrying out the deep drawing cup test.

With the ear measuring instrument measurements can be taken on cups which have an inner diameter of between 15 and 100 mm and a sheet thickness of up to 6 mm.

Design

The ear measuring instrument, Model 126, is a sturdy desk-top device. Earing measurements are taken using transducers with associate amplifier. The height of the ears is displayed on a clear digital read-out, either as a percentage measurement or in mm.

All settings required for the testing process are simply entered by way of the control panel.

Handling

The ear measuring instrument is easy to operate. Once the test parameters have been pre-set and a centring ring corresponding to the standard cup selected, the standard cup is positioned on the testing plate.

The individual measuring results showing the height of the ears can be obtained as a percentage or mm value by actuating the push button.

Manufacture of Standard Cups

The standard cups required for the earing test can be made using Sheet Metal Testing Machines, models 106, 134, 142 or 145.

This entails cutting a circular blank from the strip and forming the cup in one operation, using the appropriate punching tools.



Technical Data

Dimensions of housing:

Width: 180 mm

Depth: 305 mm

Height: 225 mm

Net weight: 9 kg

Voltage: 230V AC, 50 Hz

Power requirement: 25 W

Measuring Accuracy

Height of ears: ± 0.1 mm

Height of cup: ± 0.1 mm

% relationship: ± 0.5 %

Measuring Range B1/B2

Cup inside : 15 - 50 mm

Height of ears: 0 - 10 mm

Height of cup: 11 - 45 mm

% relationship: 0 - 11 %

Preselection of sheet thickness: - 6 mm

Measuring Range B3/B4

Cup inside : 51 - 100 mm

Height of ears: 0 - 15 mm

Height of cup: 11 - 70 mm

% relationship: 0 - 11 %

Preselection of sheet thickness: 0 - 6 mm

Order Information

Order No.	Product Name
0029.01.31	Ear Measuring Instrument, Model 126

Accessories (optional)

To enable the acquisition of additional data, the ear measuring instrument can be equipped with a BCD output or RS232-C interfaces or with a measuring result printer.