

QUICK AND EASY MEASUREMENT WITH THE INTERAPID 312 LEVER DIAL TEST INDICATOR DERO, FEINMECHANIK AG, LIEDERTSWIL – SWITZERLAND



DERO, a skilled partner for fine and precision mechanics since 1946

“The TESA INTERAPID 312 has been used in our production, without ever letting us down. We have no reason to change this instrument, which has become a reference for the positioning and control of our parts after machining,” explains Michel Degen, a member of the administrative board of DERO Feinmechanik AG and the grandson of Franz Degen, one of the two founders of the company.

The main capability of DERO is the production of very sophisticated precision parts, which are assembled in small and medium series.

Furthermore, DERO offers a complete range of centring vices for measuring or machining workpieces. The company was founded in 1946 by Franz Degen and Werner Roth in Liedertswil, in the canton Basel-Country.



The mechanical expertise of DERO meets the requirements in the field of machine tools, medical technology or also chemical and food industries. Thanks to these markets, DERO has grown constantly and now has a production facility with an area of 4000 square meters. Today the company employs 45 employees and 4 trainees in the field of polymechanics.

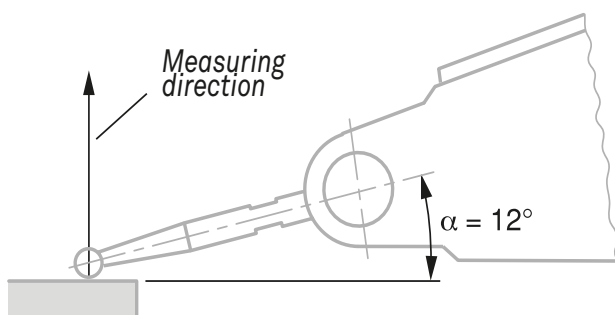
“The quality of TESA is anchored in our products and allows us to provide our customers with parts of high added value and unique accuracy,” states M. Degen.

The required time for inspection tasks has been drastically reduced thanks to the TESA INTERAPID 312

Today, DERO has more than 100 TESA INTERAPID 312 lever dial test indicators in use. Each workplace is equipped with several of these instruments that are mounted on holders and can be used to measure a reference point or the centre of a bore.

The TESA INTERAPID 312 has a resolution of 2 microns on the dial, which allows highly precise verification of the dimensions. The dial is mounted at 20° to optimize the readability of the values.

This instrument differs from conventional lever dial test indicators because it is the only one on the market that is designed to give a true reading when the angle of attack is 12° (see figure). This technical advantage allows users to see the absolute value without correcting the read value.



The INTERAPID 312 is equipped with various functions.

At DERO, it is used:

- Before processing, to check the correct positioning of the part on the machine tool.
- After processing, to check for possible form defects.

Thanks to the small space requirement of the instrument, the test can easily be performed directly at the machining centre. “Whereby we gain valuable time because the workpiece does not need to be removed from the clamping fixture, so no reference loss occurs and the machining can continue”, confirms M. Degen.

Any form defect to be tested on a workpiece can be measured quickly and easily using the TESA INTERAPID 312, which allows this workpiece to be reworked to achieve the desired tolerances. The detected shape errors can be of various types: Straightness errors, axial and radial runout errors and others.

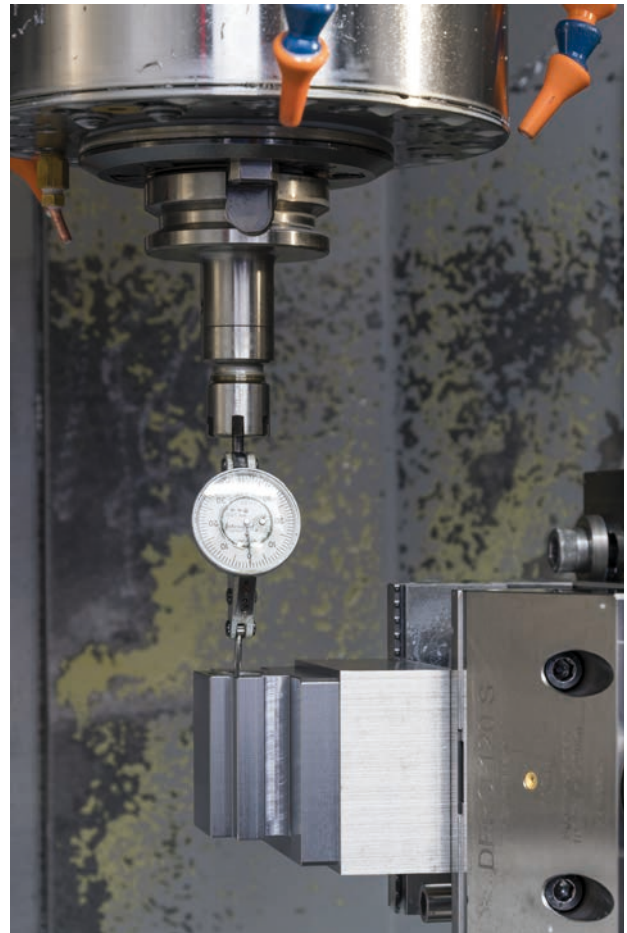
The large measuring range of the instrument of 1,6 mm is ideal for checking on significant dimensional deviations.

Wide application flexibility for aligning the spindle of a machine tool to the centre of a bore

The TESA INTERAPID 312 is often used for positioning workpieces to be machined in a machine tool. The reference point is defined by finding the centre of the bore as shown in the adjacent figure.

This operation is quick and easy thanks to the TESA INTERAPID 312, as this instrument can be mounted on the machine to measure the position of the bore.

“In spite of the modernization of the machine tools, the determination of the reference points with a lever dial test indicator remains a quick and easy solution which is appreciated by the users so that you can rely on the different machining steps during your work”, confirms M. Degen.

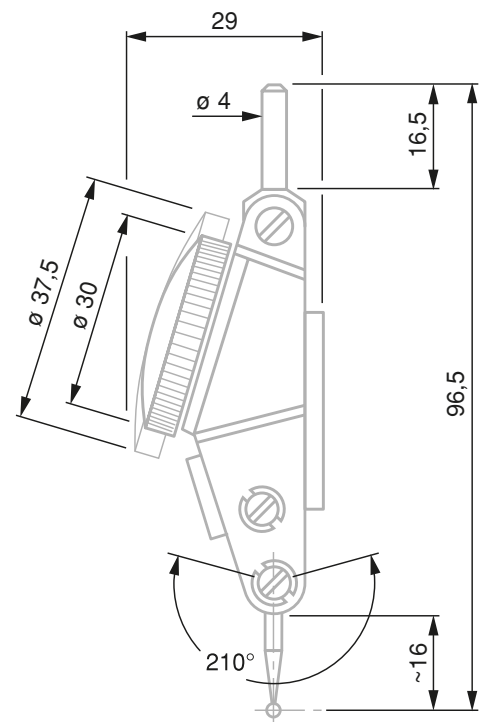


The TESA INTERAPID can be fixed on the machine to determine the bore position.

Workpiece to be positioned with the TESA INTERAPID 312 on the DERO centring vices in the spindle of a milling machine.



Measurement of radial runout errors of a workpiece on a measuring bench



Assembly drawing of the TESA INTERAPID 312 (mm)



Control with two TESA INTERAPID 312 to position a rotating part on a grinding machine.

Practical for precise positioning of rotating parts

The photo above shows a typical application used by DERO employees. The axis diameter must be grinded to ensure the tight mounting tolerances.

The two INTERAPID 312 allow a precise positioning of the workpiece to be machined in order to ensure the radial runout without errors.

By positioning the centring steady rest, the alignment of the workpiece can be maintained during internal grinding.



Just like TESA, we have been striving for 70 years to produce the highest precision to provide our customers with an optimal performance," says M. Degen.

"For us, there is no better instrument in the field of processing technology in the workshop, than the TESA INTERAPID 312.

We are very satisfied, as we manufacture our parts in less time and thereby ensure the highest quality.

For this reason, the TESA INTERAPID 312 is our preferred choice, as it was in my father's time."

We would like to thank DERO Feinmechanik AG for their friendly support and for the authorization to publish this case study.



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DERO

FEINMECHANIK AG

70 years DERO Feinmechanik AG. The DERO Feinmechanik AG was founded on 1 September 1946 by Franz Degen Senior and Werner Roth in Liedertswil (popularly known as “Tschoppenhof”) in the canton Basel-Country.

The company was already a supplier in the field of fine and precision mechanics at that time.

Soon a special manufacturing program for the development of the DERO 60 and 120 universal clamping fixtures followed and is widely known far beyond the Swiss borders, thanks to its high precision and the universal applicability.

Around the same time, DERO Feinmechanik AG began to produce the Reglus drilling devices for the company Reglus AG.

After several years of business growth, new premises with



Established in 1941 and headquartered in Renens, Switzerland, TESA SA manufactures and markets precision measuring instruments that stand for quality, reliability and longevity.

For more than 75 years, TESA has distinguished itself in the market through its excellent products, its unique expertise in micromechanics and precision machining as well as its proven experience in dimensional metrology.

The TESA brand is the global market leader in the field of height gauges and a pioneer thanks to its wide range of instruments, including callipers, micrometers, dial gauges, lever-type dial test indicators and inductive probes. TESA is a true benchmark for the inspection of incoming goods, as well as for production workshops and quality assurance laboratories.

Through its worldwide distribution network the company focuses on the mechanical engineering, micromechanical, automotive, aerospace, watchmaking and medical industries.

In 2001, TESA became part of Hexagon, a leading global provider of information technologies.

www.tesatechnology.com

production and office space were needed in 1968.

In 1983 the three brothers Heinz Degen, Franz M. Degen and Kurt Degen took over the operational management.

The machinery park continuously grew and their premise extended in 1981, 1996 as well as in 2009.

DERO Feinmechanik AG currently has approx. 45 employees and is managed by René Hänni as an independent, family owned SME.

At DERO, we continuously invest in further education, technology and services and constantly strive to improve our products and services further so we are able to meet the challenges of the future.

www.dero.ch