

Calibration inserts



Calibration inserts - Highlights

- Our standard calibration inserts allow you to save money compared to individually manufactured calibration inserts
- We only use high quality alloys
- Manufactured with the highest precision „Made in Germany“
- Our optimised hole patterns allow perfect positioning of external reference sensor and test specimens
- All standard calibration inserts are available directly from stock

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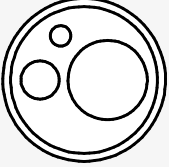
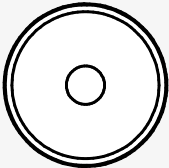
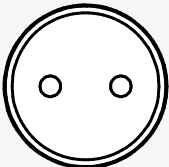
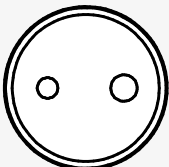
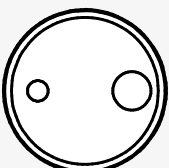
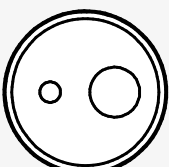
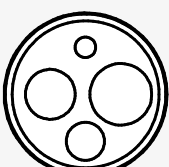
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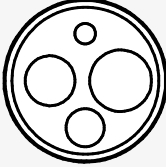
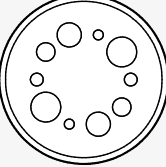
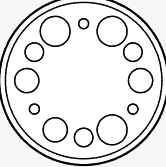
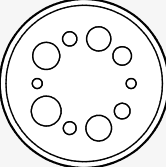
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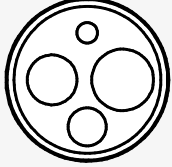
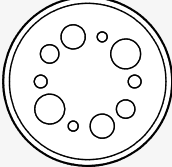
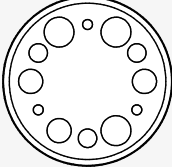
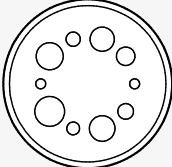
Article numbers // Drilling patterns // Savings

Compatible with	Dimensions / Material		
TP 37200E.2 / TP 37165E.2 / TP 17200S / TP 17165S / TP 17650S / TP 17200 / TP 17165 / TP 17650	Ø 28 mm x 150 mm / Brass		
Drilling Pattern [mm]		Article number	Savings
1 x Ø 3.5 1 x Ø 6.5 1 x Ø 13.5		EZ15028B03MS17	2 %
1 x Ø 6.5		EZ15028065MS00	0 %
2 x Ø 3.5		EZ15028B02MS09	23 %
1 x Ø 3.5 1 x Ø 4.5		EZ15028F02MS80	23 %
1 x Ø 3.5 1 x Ø 6.5		EZ15028H02MS01	23 %
1 x Ø 3.5 1 x Ø 8.5		EZ15028B02MS67	23 %
1 x Ø 3.5 1 x Ø 6.5 1 x Ø 8.5 1 x Ø 10.5		EZ15028C04MS15	36 %

Article numbers // Drilling patterns // Savings

Compatible with	Dimensions / Material		
TP 3M165E.2 / TP 3M255E.2	Ø 60 mm x 163 mm / Aluminium		
Drilling Pattern [mm]	Article number	Savings	
1 x Ø 3.5 1 x Ø 6.5 1 x Ø 8.5 1 x Ø 10.5		EZ16360C04AL05	52 %
2 x Ø 3.5 2 x Ø 4.5 2 x Ø 6.5 2 x Ø 8.5 2 x Ø 10.5		EZ16360D10AL85	61 %
3 x Ø 3.5 3 x Ø 6.5 3 x Ø 8.5 3 x Ø 10.5		EZ16360D12AL86	60 %
2 x Ø 3.5 1 x Ø 4.5 1 x Ø 5.0 1 x Ø 5.5 1 x Ø 6.5 1 x Ø 8.5 1 x Ø 9.0 1 x Ø 9.5 1 x Ø 10.5		EZ16360D10AL87	54 %

Article numbers // Drilling patterns // Savings

Compatible with	Dimensions / Material		
TP 17166S / TP 17166 / TP 17450S / TP 17450	Ø 60 mm x 150 mm / Aluminium		
Drilling Pattern [mm]		Article number	Savings
1 x Ø 3.5 1 x Ø 6.5 1 x Ø 8.5 1 x Ø 10.5		EZ15060D04AL78	52 %
2 x Ø 3.5 2 x Ø 4.5 2 x Ø 6.5 2 x Ø 8.5 2 x Ø 10.5		EZ15060D10AL79	61 %
3 x Ø 3.5 3 x Ø 6.5 3 x Ø 8.5 3 x Ø 10.5		EZ15060D12AL81	60 %
2 x Ø 3.5 1 x Ø 4.5 1 x Ø 5.0 1 x Ø 5.5 1 x Ø 6.5 1 x Ø 8.5 1 x Ø 9.0 1 x Ø 9.5 1 x Ø 10.5		EZ15060D10AL83	54 %

Description

Adapter sleeves

Dry-block calibrators are designed to simplify temperature calibration in the lab and in the field. With the help of adapter sleeves, straight temperature sensors with almost any length and diameter can be calibrated. The dry block covers the entire temperature range of the calibrator with no need for changing the calibration medium. Viscosity, flash point and outgassing are of no concern. Every adapter sleeve can be equipped with a single or several multi bores. Bores with diameters ranging from 1.5 to 25.5 mm can be realised in 0.5 mm steps.

Infrared calibration sleeves

A patented infrared calibration sleeve is used to calibrate IR pyrometers or thermal imaging cameras. The special surface structure and the asymmetrical shapes create a „cavity radiator“ with an emission factor of 0.9994, prevent the reflection of interference radiation and emit the required temperature in an ideal form. The pyrometer is simply held at the specified distance above the measurement opening, thereby forming the desired measurement area on the bottom for the calibration to be performed. A support base can be fitted directly on the unit.



Surface calibration sleeves

Surface temperature sensors are calibrated using special sleeves that are fitted vertically with the required contact force. Switching calibration control to the external reference sensor creates the best possible temperature reference point on the surface of the sleeve. The reference sensor is located directly beneath the abutting face of the sleeve. The sleeve is designed in such a way that the best temperature homogeneity is achieved in the centre of the abutting face. The special design of the abutting face enables good thermal contact. There is no need to use a thermally conductive paste or other thermal conduction aids.

Calibration liquids

Using a liquid calibration medium is advantageous for checking temperature sensors with unusual shapes or dimensions. The test item is immersed in the liquid without an insulating air gap, resulting in direct contact between the calibrator and the test item. The calibration liquid is chosen according to the desired calibration temperature. The sensor lid with 5 silicone plugs and / or a support base ensures the stable positioning of the test items in the calibration bath. The lid reduces heat emission over the surface of the liquid, thereby ensuring optimum measurement results.

Tub insert

Our tub insert is the ideal solution for applications in which a variety of liquids are used. It eliminates the time-consuming task of exchanging the liquids and cleaning the bath. The separate tub insert is just as leak-proof as the bath itself.

Calibration and testing software

The in-house calibration software application is used for temperature calibrators that are equipped with an external interface for programming and evaluating the calibration values. It can be operated easily from an external PC. The following calibration tasks can be performed:

- Programmable ramp functions
- Programmable temperature cycles
- Series tests (e.g. for incoming goods inspection)
- Preparing the test data in graphical and in tabular form
- Incorporating customer data in the certificates
- Programmable temperature gradients

Possible areas of application

If the sensor to be calibrated is too short to be inserted into the homogeneous temperature zone of the metal block, an external reference sensor can be used without any problems. This results in a small, flexible measurement zone.

Description

Particular attention is given to the physical construction to ensure that shocks have minimal effect on the reference sensor. The use of robust measuring elements in thinfilm technology ensure standardised and reliable performance.

Intensive ageing tests are carried out at the maximum operating temperature to examine longterm temperature stability. In order to detect longterm effects through thermal stress, a defined tempering process is carried out with a special selection of reference sensors over 300 hours. In the case of stress caused by thermocycling, no significant hysteresis effects were found.

The physical structure of the reference sensors requires that different materials be joined together. The special design of the joint areas prevents the occurrence of parasitic thermoelectric voltages. Thus the measurement reading is not affected by the temperature gradients from the measurement point to the handle.

In examining the self-heating characteristics it was seen that measurement currents ≤ 1 mA are ideally suited, since no distortion of the measurement result occurs. Here the self-heating effect can be neglected.

Technical features

Calibration reference sensors - Type TF

- Pt100 reference sensors for Series TP Premium
- linearization is effected in the controller

Calibration reference sensors - Type TFEE

- Pt100 reference sensors for TT-Scan and Series TP 38...
- linearization is effected in the sensor

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