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KISTLER
measure. analyze. innovate.

Care of Cylinder Pressure Sensors

Valid for all Cylinder Pressure Sensors

Sensors are precision instruments requiring careful maintenance, which is essential for reliable measuring results.

Quartz cylinder pressure sensors must be cleaned regularly depending on the type of use, the length of time they are used and the fuel involved. Dirt and contamination can be removed as follows.

For cleaning, it is essential for the cable to be left connected to the sensor. If a cable is not connected to the sensor, the sensor connector must be sealed with the Protective Cap Type 1895.

1. Primary cleaning

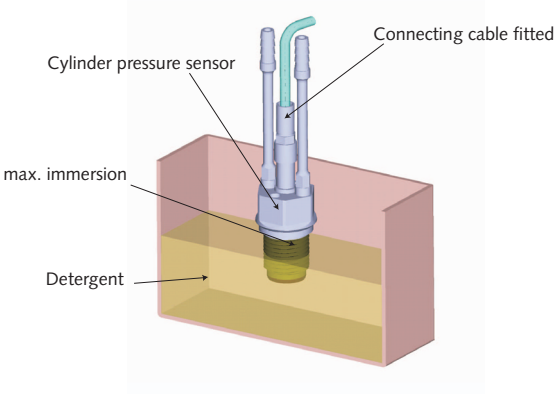
Clean off the layer of dirt deposited on the diaphragm with a slightly abrasive substance. This dirt consists of fuel residues, soot and lubricating oil. The following substance is recommended and can be ordered for Kistler under article number **6.970.010: Abrasive cleaning pad (grain 240)**

Warning!

The sensor front must never be cleaned with metallic substances such as wire brushes, sand blasting, grinding, scraping etc., since this could destroy the diaphragm and thus the sensor.

2. Secondary cleaning

For secondary cleaning, it is recommended that you immerse the sensor in a detergent on a mineral oil base (e.g. petroleum ether, petrol), clean it with a paint brush and then blow it out with compressed air. Please see page 2 for recommended cleaning sprays (document KI 15.301).



3. Secondary cleaning in an ultrasonic bath

If necessary, secondary cleaning of the sensors can be carried out in an ultrasonic bath, in which it is essential to comply with several conditions:

- The connecting cable must be screwed on
- Immerse the sensor in detergent **only up to the sealing ring**
- The ultrasonic bath should meet the following specifications:

Operating frequency	30 ... 50 kHz
Ultrasonic output power	50 ... 150 W
Ultrasonic power in the bath	max. 50 W/liter

- Suitable detergent:
  - Aqueous alkaline detergent (pH 7 ... 9)
  - Mineral oil based detergent e.g. petrol **(Caution! Flammable!)**
  - Bath temperature max. 140 °F
- Cleaning time: according to contamination, max. 2 min.

Warning:

1. **Excessively long cleaning times and ultrasonic baths with too high output power can cause destruction of the sensor.**

2. **On absolutely no account must the sensor be immersed in the detergent or ultrasonic bath liquid with the cable connector unsealed.**

000-066a-07.02 (IN03.6052a)

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

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Cleaning Cables & Connectors

Kistler high impedance (charge mode) systems require an insulation resistance (IR) of up to 1013 . Low IR is usually indicated by an erratic or drifting signal on the output device (i.e., O-Scope).

IR is usually checked with an insulation tester, such as Kistler 5493 (see data sheet 15.5493). In most cases dirt, oil, humidity and other environmental factors will result in low IR readings. The easiest method to alleviate this problematic condition is to clean the cables and connectors in the measuring chain. Connectors can include the sensor, all intermediate connectors such as cables, switch boxes, and the signal conditioning input connector. Due to the restrictions on the use of Freon TF aerosols, Kistler has tested and approved the following Freon TF replacements:

Miller-Stephenson
Danbury, CT

Type MS-941/CO2
Safezone precision cleaning solvent
NSN 6850-01-383-6719

Order directly from
Miller-Stephenson
Phone 800-992-2424
(four-can minimum order)

Micro Care
Bristol, CT

Type SuprClean or Type MCC-SPR
Precision electronic cleaner

Order from EPT
Setauket, NY
Phone 516-751-3333
(three-can minimum order)

Sherwin-Williams
Solon, OH

Type 02302
Spray-on contact cleaner

Order from A.T. Supply, Inc.
Amherst, NY
Phone 716-691-3331
(one-can minimum order)

WARNING: These cleaners may attack certain plastics including acrylic (Lucite), polycarbonates (Lexan), polystyrene and its copolymers (ABS) and cellulose acetate. Follow cleaner manufacturer's instructions.

Material Safety Data Sheets are available.

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