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Endevco®

INSTRUCTION MANUAL
For Model 2222C, Microminiature Accelerometer IM2222C, Revision C

The instructions contained in this manual are relative to installing and removing the Endevco Model 2222C Microminiature Accelerometer. Because of its extremely small size and physical construction, certain special precautions must be observed when mounting and removing to avoid damaging the unit.

Accessories, Adhesive, Solvent and Tools

For use at room temperature:
* Petro wax or bees wax

For use up to 60°C:
* All-temperature glue stick and hot-melt glue gun
* Solvent: Follow the recommendations from glue stick manufacturers

For use up to 125°C:
* Adhesive: Cyanoacrylate (Loctite Super Bonder 430 Adhesive is recommended)
* Solvent: Nitromethane base (Loctite X-NMS Solvent 768 is recommended)
  Alternatives: Acetone, Chlorothene (Trichloroethane) or equivalent hydrocarbon solvent
* Cotton swabs or lint-free tissue
* Toothpicks or equivalent applicators

Endevco P/N 31849 Adhesive Kit contains most of the required items for mounting transducer. Contact the factory for details.

CAUTION: Observe precautions recommended by manufacturer of adhesive or solvent.

Special Precautions

The following precautions should be observed when performing the accelerometer mounting and removal procedures given below.

WARNING: Do not break cement bond by striking accelerometer or by using any tool that makes a metal-to-metal contact with the accelerometer. Always break the bond with the supplied tool after the cement has been softened, by twisting or torquing the accelerometer, stressing the bond in shear.

CAUTION: Exercise care to prevent getting adhesive or solvent on the accelerometer connector.

Mounting Procedure

1. Ensure that mating surfaces are smooth and flat.
2. Remove all traces of grease, oil and oily residue from mating surfaces using cotton swabs and solvent.
3. Apply a tiny drop of Cyanoacrylate, approximately 1/5 the diameter of the mounting pad (side opposite gold lid).

4. Spread the cement with toothpick to form thin, uniform layer covering area of contact, and immediately position accelerometer on mating surface.
5. Press down and hold accelerometer firmly in place for 30 seconds while cement sets. Allow cement to set for at least several minutes for maximum strength.
6. If the accelerometer is to operate at low frequencies and/or large acceleration levels, the accelerometer cable must be secured to the vibrating structure as close as possible to the accelerometer to avoid cable damage.

Removal Procedure

1. Apply solvent around accelerometer base (side opposite gold lid) with cotton swab and wait a short period for cement to soften. Repeat the procedure if the solvent evaporates too soon.
2. Break cement bond, using removal tool P/N 2943B (supplied with the accelerometer). Always use this tool to remove the Model 2222C Accelerometer from the test structure. Twist or torque the accelerometer, stressing the bond in shear.
3. Remove cement residue on the accelerometer using a cotton swab dipped in solvent or equivalent remover. A short soak will facilitate this process. Repeat, if necessary, to remove all traces of adhesive. Ensure that all excess adhesive forming fillet around the accelerometer case or built up on the sides of the accelerometer has been removed.

   Failure to heed this caution may prevent proper use of removal tool and result in damage to the accelerometer.
4. Wipe surfaces clean with cotton swabs or lint-free tissue dipped in solvent.
5. **NOTE:** The accelerometer base must **not** be filed, sanded, roughened, or edges burred during removal of the cement. A rough mounting surface on an accelerometer can result in poor frequency response and an increase in transverse sensitivity.

Replacement of 3093 Cable Assembly

CAUTION: Do not detach cable from accelerometer while the Model 2222C Accelerometer is exposed to a dirty or humid environment. Detachment of cable will expose the sensing element to the atmosphere, and any conducting or solid particles or moisture entering the accelerometer will result in deterioration of its operation.

Only remove the cable assembly in a clean, dry (<50% RH) atmosphere. Note that the connector has a right-hand thread. Hold the accelerometer between two fingers. Align the flats on the connector with the open end of the wrench (P/N 16205, supplied with the accelerometer). Turn cable connector counter clockwise (CCW) to remove cable assembly.

To install cable assembly, dip the small threaded end of the new cable into the capsule of sealing compound (supplied). Again, holding the accelerometer with two fingers on one hand, screw the connector into the case and tighten with the 16205 wrench, using about 1-lbf (~4.5 N) force on the tool. This is approximately a 1 lbf-in (~0.1 Nm) torque. For most people, the accelerometer will become difficult to hold in the fingers for torque values greater than 1 lbf-in.

CAUTION: Do not clamp the accelerometer in a vise during attachment of cable. It is recommended that the cable connector be back-threaded before engaging the threads to prevent cross-threading.

WARNING: If the lid came off due to mounting mishap, DO NOT try to repair unit in the field. Special repair procedure and materials are needed to maintain proper electro-magnetic shielding of sensing element. Contact the factory whenever repair is required.

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