

Automation Devices, Inc.

MODELS 9000 (222) & 9100 (223) DYNA-MITE VIBRATOR INSTRUCTIONS

➤ DESCRIPTION

The ADI Models 9000 (222) and 9100 (223) Dyna-Mite vibrators are electromagnetic vibrators that operate from a 120 Volt AC 60 Hz power source (240 Volt AC and/or 50 Hz are also available). They require only a switch for ON and OFF operation. If the application requires variable amplitude, an ADI Model 9150 Controller is available. The Model 9000 (222) Dyna-Mite vibrator produces 7,200 vibrations per minute at a 60 Hz line frequency. The Model 9100 (223) Dyna-Mite vibrator coil has a molded-in silicon diode rectifier that reduces the vibrator's output frequency to 3,600 vibrations per minute, thus increasing the amplitude of vibration.

Each of these compact vibrators produces a bidirectional motion in a plane along the axis of its mounting screw. A cover provides dust-tight protection and reduces electromagnetic interference. These vibrators are rated for continuous operation.

➤ INSTALLATION

The Model 9000 (222) Dyna-Mite vibrator was designed for installation in smaller areas. The selection of connectors, grounding, and fusing is provided by the installer as part of the installation. A 1-Amp fuse is recommended to protect the circuit (overcurrent protection is to be provided externally). A green wire connected to the baseplate is provided for grounding. Two 10-inch long 20 AWG leads come from the coil and are for connection to the power source (check nameplate rating).

The Model 9100 (223) Dyna-Mite vibrator is supplied with a 2-foot long 18 AWG three-conductor SJTO type cord. A 1-Amp fuse is recommended to protect the circuit (overcurrent protection is to be provided externally). A green wire connected to the baseplate is provided for grounding. The black and white coil wires from the coil are to be connected to the power source (check nameplate rating).

Both models are mounted using a 1/4"-20 screw fastened into a threaded hole in the base of the vibrator. Depending on the operating requirements, the Dyna-Mite vibrators may be mounted in any position. The direction of vibration is along the centerline of the 1/4"-20 mounting screw.

CAUTION: Be sure the threads of the mounting screw do not protrude more than 3/8 inch into the base mounting plate.

➤ COIL-TO-ARMATURE GAP ADJUSTMENT

(Refer to the assembly drawings on the back of this sheet.)

The coil-to-armature air gap is set at the factory. If the voltage at your plant is above or below the nameplate voltage, field adjustment may be necessary. Between the armature and the baseplate are two O-rings (P/N 9035), under compression, which maintain the coil-to-armature air gap. The adjustment is accomplished using the two recessed #8 socket head cap screws (P/N 7031) that pass through the baseplate (P/N 9001 or 9101), one on either side of the mounting screw, and into the threaded holes in the Armature (P/N 9016). As the two armature screws are tightened, the O-rings are further compressed, the armature pulls further away from the coil, and the coil-to-armature air gap is increased. Conversely, as the two armature screws are loosened, the O-rings expand and the air gap is decreased.

Proper gap adjustment is obtained by letting the Dyna-Mite vibrators warm up for a period of five minutes before the adjustment is attempted. Loosen the two armature screws alternately until a metallic hammering sound is heard, then tighten the screws until the hammering stops. Rotate the vibrator to various positions in the air to ensure that it will not hammer if it is upside down or sideways. Tighten the screws until it no longer hammers in any position. An alternative to letting the vibrator warm up is to tighten the screws one quarter turn beyond when it no longer hammers. This procedure may need to be repeated once or twice to attain maximum vibration. **The adjustment screws MUST be adjusted equally so that the armature remains parallel with the coil.** Some additional tightening may be necessary after an extended period of operation.

CAUTION: Overtightening the armature screws produces too large an air gap which causes the Dyna-Mite to generate excessive heat, possibly leading to premature failure.

If the armature adjustment screws are replaced, use only a #8-32 x 3/8 inch long screw (P/N 7031) as a longer screw will interfere with proper operation. During normal operation, it is normal for the Dyna-Mite to generate heat. This temperature rise is expected and the Dyna-Mite vibrators were designed and constructed with heat resistant materials where necessary.

NOTE: The reverse side of this bulletin contains an exploded view and a parts list for each model of vibrator.

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