

# Advanced Vibration Analysis Training System Plus



Model: 203E-PAC

Industrial maintenance technicians must learn to operate, maintain, troubleshoot, and repair a wide variety of mechanical systems used to manufacture products. One of the key diagnostic tools technicians will use during preventive maintenance as well as to maintain optimum efficiency is vibration analysis.

Excessive vibration detected during routine monitoring can signal a potential problem that can be remedied before a breakdown occurs. Vibration analysis can also be used to finely tune systems to ensure they're working at peak efficiency. Vibration analysis plays an important role in various industries, from HVAC and automotive to oil and gas and food and beverage.

DAC Worldwide's Advanced Vibration Analysis Training System Plus (203E-PAC) is a versatile, precision-machined, rotating device for demonstrating the causes and effects of vibration in industrial rotating machinery. Learners using the trainer can isolate individual, vibration-causing variables in order to distinguish and identify their unique signatures.

The 203E-PAC includes:

- [Extended Vibration Analysis Training System \(203E\)](#)
- [Vibration Meter \(203-003\)](#)
- [Bearing Fault Kit \(203-010\)](#)
- [Supplemental Coupling Kit \(203-015\)](#)
- [Mechanical Rub Kit \(203-019\)](#)

**Industry-Standard Components Provide Realistic, Hands-On Training**

Technical training is most effective when learners can gain hands-on practice with industry-standard components they'll encounter on the job. The Advanced Vibration Analysis Training System Plus features common, industrial-quality components to provide learners with a realistic training experience that will build skills that translate easily to the workplace.

The Advanced Vibration Analysis Training System Plus is a sturdy unit that features a 1/3 HP, 3450 RPM, inverter-duty, 3-phase, AC motor with precision SCR speed control and a digital RPM indicator with magnetic pick-up.

Some of the industrial-quality components learners will find on the trainer include: t-slotted, modular work surface; indexing pins; CNC-machined pillow blocks; jack-shaft; right-angle gear reducer; adjustable magnetic brake; connecting arm/linear slide mechanism; and precision-machined rotors.

Standard accessories included with the training system include: Allen wrench set; combination wrench set; balancing weight/washer set; clay; vibration isolating feet; resonance demonstration kit; spring/weight demonstration kit; balancing phase target; and shim stock. The system requires 110/220 VAC, single-phase electric.

### **Courseware & Hands-On Exercises**

The Advanced Vibration Analysis Training System Plus' courseware consists of a user's guide with hands-on exercises. These can be used as part of either an instructor-led course or self-directed study for maintenance technicians to learn vibration fundamentals, vibration measurement, vibration causes, data collection, and balancing.

Learners will explore a wide variety of fundamental topics, including: effects of frequency and displacement; illustrating resonance; understanding critical speed; proper pickup mounting; understanding imbalance; understanding vibration caused by misalignment; witnessing vibration from bearing faults; witnessing looseness; calculating the effects of imbalance; and single plane balancing.

### **Expand Training Capabilities with Custom Options**

The Advanced Vibration Analysis Training System Plus can be customized with a wide array of options to create a training system that matches a particular industry's or user's specific needs. In industry, one size rarely fits all and this trainer can be tailor-made to your exact needs.

For example, the training system's capabilities can be expanded by adding one or more of the following options: resonance and elastic shaft kit; gear fault accessory; shaft alignment tool kit; magnetic base/dial indicator set; electromechanical workstation; vibration analyzer; eccentric/cocked rotor kit; journal bearing kit; crack demonstrator kit; pump cavitation demonstration accessory; fan demonstrator set; motor fault kit; and load/brake device accessory.

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## **FEATURES & SPECIFICATIONS**

- 1/3 HP, 3450 RPM, inverter-duty, 3-phase, AC motor.
- Precision SCR speed control.
- Digital RPM indicator with magnetic pick-up.

- Heavy-duty, formed-steel, powder-coated baseplate weldment with adjustable feet.
- Aluminum, t-slotted component mounting surface.
- Three, precision-machined split pillow blocks.
- Two, precision-machined rotors, allowing for the study of single plane, dual plane and overhung imbalance.
- Jack-shaft assembly incorporating positive drive belts, related sheaves, idler, and gears.
- Right angle gear reducer.
- Magnetic brake (adjustable).
- Connecting arm/linear slide assembly, allowing for study of vibration in conjunction with reciprocating motion.
- Provision for creating rotor imbalance using set screws/washers or clay on rotor rims.
- Three, ½" diameter, precision-ground shafts of different lengths.
- Precision, helical-beam coupling standard.
- Provision for attachment of vibration pick-ups via 1/4-28 studs throughout.
- Steel baseplate mounting strips allowing for attachment of standard accessories, and modular guards.
- Keyed instructor switch.
- Motor mounting sub-base with tapered alignment pins, allowing for re-positioning and easy return to aligned position.
- Fine-thread motor jacking bolts.
- High-durability, urethane coatings, anodizing and powder-coated surfaces throughout.
- Modular polycarbonate guards, accommodating many component arrangements, while allowing for pick-up.
- Packaging for shipment via motor freight.

## **PRODUCT DIMENSIONS**

- **Product Dimensions**

(L x W x H)

32" x 22" x 13" (813 x 559 x 330 mm)

160 lbs. (73 kg)

- **Shipping Dimensions**

(L x W x H)

46" x 38" x 20" (1168 x 965 x 508 mm)

220 lbs. (100 kg)

## **OPTIONS**

- Recommended #903 Extended Electromechanical Workstation.

- #203-012 - Resonance and Elastic Shaft Kit
- #203-020 - Gear Fault Accessory
- #208-001 - Shaft Alignment Tool Kit
- #208-003 - Standard Shim Kit
- #208-015 - Magnetic Base/Dial Indicator Set
- #570-000 - IPT Rotating Equipment Training Manual
- #570-001 - IPT Rotating Equipment Handbook
- #203-011 - Eccentric/Cocked Rotor Kit
- #203-013 - Replacement Bent Shaft Kit
- #203-025 - Load/Brake Device Accessory, Mechanical
- #203-500 - Use/Exercise Guide (Additional)

## **UTILITIES**

- 115V/60Hz/1Ph power

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