Mechanical Training Bench (ME10)

Mechanical Systems

Jobmaster Mechanical Training Bench shown with optional Two-Student Add-On.

The JobMaster **Mechanical Training Bench (ME10)** is a stand-alone mobile training station providing comprehensive training in mechanical power transmission.

Mechanical Training Bench presents the operating principles of power transmission the most effective way: with skills-based training using the same industrial-strength components used in factory environments. Students work with basic machines, machine statics and dynamics, shafts and keys, bearings, belt drives, chain drives, speed reducers, electric brakes and gear drives.

Core concepts are taught through self-paced e-learning curriculum. All the necessary resources, including printable instructions and diagrams are available online. Instructors are also provided comprehensive resources, including a detailed instructors' guide.

With JobMaster, you can be sure your training program will deliver the skills needed for success in automated manufacturing careers!

Add the **Optional Two-student Add-on** to make the ME Series a complete double-sided work station. (Factory-only option)

intelitek®

www.intelitek.com

JOBMASTER®

Industrial Maintenance Program®

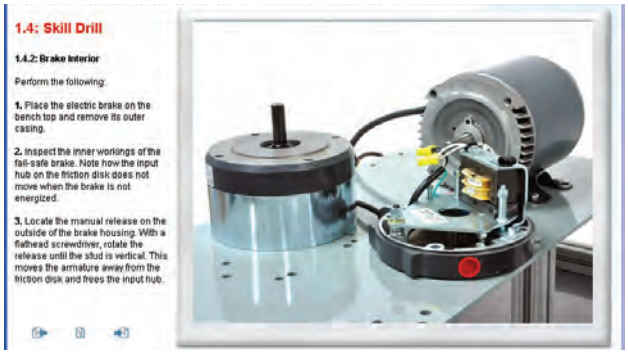
Skills-Based Training

The JobMaster™ Industrial Maintenance and Mechatronics Training teaches the specialized skills required for today's industrial technicians. JobMaster™ provides a superior blended learning solution for automated manufacturing training by combining industrial-grade components with engaging e-learning curriculum.

JobMaster™ courses are entirely skill-based, consisting of individual exercises that reproduce essential tasks performed by maintenance technicians, equipment operators, and machine repairmen. Each skill has been analyzed and field-tested by qualified technicians to teach the specific skills needed in the industrial environment.

intelitek's partners in development of the curriculum include 12 major US industrial companies, including Boeing, Caterpillar, Ford, GE, and US Steel.

JobMaster™, the new standard in industrial maintenance and mechatronics training!



POWERED BY

LearnMate®

JobMaster™ courses are powered by LearnMate™- intelitek's innovative e-learning platform. LearnMate's self-paced interactive content may be deployed stand-alone or through the robust learning management system (LMS). The LearnMate™ e-learning suite provides everything needed for the ultimate blended learning experience:

- SCORM-compliant interactive content
- Anytime, anywhere accessibility
- Student and class management
- Grade tracking
- Skill/competency reporting mapped to national academic skill standards

Mechanical Training Bench (ME10)

Specifications

Order # 16-ME10

- Mechanical Training Bench (ME10) E-Learning Course & Teachers' Guide
- Mechanical construction:
  - Frame Size (H x W x D): 39.5" x 60" x 29" (1219mm x 1524mm x 737mm)
  - Weight (approximate): 350 lbs (159 kg.)
  - 1.5" (38mm) square anodized slotted aluminum frame
  - 1/4" steel top mounting plates (3), pre-drilled and elevated for mounting mechanical drive components
  - 1/4" aluminum slide-out shelves (8) with full-length ball-bearing slides and threaded fasteners for secure component storage
  - Full swiveling and locking casters
  - Drawer — Full-suspension ball bearing slides interior dimensions: 6"H x 12"W x 16"D (15.25 cm x 30.5 cm x 40.5 cm)
  - Safety shield
- Mechanical Components
  - Steel shafting
  - Shaft collars
  - Plain-mounted pillow block bearings
  - Roller-mounted pillow block bearings
  - Fixed-pitch V-belt sheaves
  - Variable-pitch V-belt sheaves
  - V-belts
  - Synchronous drive belts
  - Synchronous belt sheaves
  - Chain sprockets
  - Roller chain
  - Chain puller
  - Chain breaker
  - Rigid 2-piece coupling
  - Flexible grid coupling
  - 3-piece jaw coupling
  - Chain coupling
  - Universal joint coupling
  - S-flex coupling
  - 3-phase C-face drive motor
  - Adjustable-drive motor mounting base
  - 120V electric disc brake
  - Parallel shaft speed reducer
  - C-face right angle speed reducer
  - Spur gear set of 3
  - Helical gear set of 3
  - Worm gear set of 2
  - Bevel gear set of 2
  - Gear box housing with mounted flanged roller bearings and shafts
  - Split taper bushings (5/8" and 1/2")
  - Keystock
  - Dial indicator set with magnetic base and shaft alignment accessories
  - Feeler gauges
  - Belt tension gage
  - Shim set
  - Digital tachometer
  - Level
  - Taper gauge
  - 36" rigid ruler
  - Mounting hardware
- Electrical construction:
  - Master power controller and disconnect switch with pilot lamp provides for lockout/tagout
  - Variable speed drive with adjustable speed trimpot
- Power Requirements:
  - USA: 120 VAC (+5%/-10%), 50-60 Hz, 10A
  - International: 240 VAC (+5%/-10%), 50-60 Hz, 8A

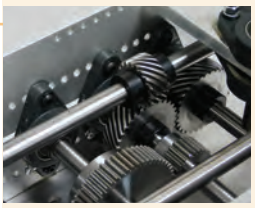
** International step-down transformer package (Order #10-PC09-0000) required for international applications.*

Optional Accessories

- Two-student add-on (factory hardware-only option)
- Vibration Analysis Tools — Order #16-ME12
- LASER Alignment Tools — Order #16-ME11
- Bearing Service Cart — Order #16-ME-13

Mechanical Systems

Gear drives



Belt drives

Shaft alignment

Course Outline

- ME01: Basic Machines
  - Skill 1: Measurement
  - Skill 2: Torque
  - Skill 3: Work
  - Skill 4: Power
  - Skill 5: Horsepower
  - Skill 6: Friction
  - Skill 7: Velocity
  - Skill 8: Acceleration
  - Skill 9: Mass and Inertia
  - Skill 10: Energy
  - Skill 11: Mechanical Advantage
  - Skill 12: Inclined Planes
  - Skill 13: Wedges
  - Skill 14: Screws
  - Skill 15: Levers
  - Skill 16: Wheel and Axles
  - Skill 17: Pulley
- ME02: Machine Statics and Dynamics
  - Skill 1: Identifying Stress, Strain and Combined Stresses
  - Skill 2: Identifying Material Fatigue and Fatigue Stress Points
  - Skill 3: Identifying Fatigue Failure and Failure Modes
- ME03: Machine Shafts and Keys
  - Skill 1: Measuring and Verifying Shafts
  - Skill 2: Demonstrating Shaft Expansion Principles
  - Skill 3: Measuring Eccentricity and Shaft Runout
  - Skill 4: Demonstrating Shaft Key Principles
  - Skill 5: Preparing a Key from Keystock
  - Skill 6: Shaft Troubleshooting and Failure Analysis
- ME04: Bearings
  - Skill 1: Identifying Bearing Types
  - Skill 2: Reading Bearing Dimensions
  - Skill 3: Mounting Bearing Housings
  - Skill 4: Reading a Tolerance Chart
  - Skill 5: Bearing Troubleshooting and Failure Analysis
- ME05: Belt Drives
  - Skill 1: Demonstrating Belt Drive Ratio Principles
  - Skill 2: Installing Belt Drives
  - Skill 3: Aligning a Belt Drive
  - Skill 4: Belt Tensioning
  - Skill 5: Installing Adjustable Speed Sheaves
  - Skill 6: Installing Positive Drive Systems
  - Skill 7: Belt Troubleshooting and Maintenance
- ME06: Chain Drives
  - Skill 1: Demonstrating Roller Chain and Sprocket Principles
  - Skill 2: Sizing Chain
  - Skill 3: Installing and Aligning Sprockets
  - Skill 4: Installing Chain Drives
  - Skill 5: Adjusting Slack
  - Skill 6: Troubleshooting and Maintenance
- ME07: Machine Shaft Couplings
  - Skill 1: Identifying Shaft Couplings
  - Skill 2: Correcting Soft Foot
  - Skill 3: Aligning Shafts
  - Skill 4: Aligning Rims and Faces
  - Skill 5: Connecting Chain Couplings
  - Skill 6: Connecting Universal Joints
- ME08: Gears
  - Skill 1: Demonstrating Gear Measurement Principles
  - Skill 2: Installing a Worm Gear Drive
  - Skill 3: Installing a Spur Gear Drive
  - Skill 4: Measuring Backlash
  - Skill 5: Installing a Helical Gear Drive
  - Skill 6: Installing a Bevel Gear Drive
  - Skill 7: Maintaining and Troubleshooting Gear Drives
- ME09: Machine Speed Reducers
  - Skill 1: Demonstrating Basic Speed Reducer Principles
  - Skill 2: Selecting a Speed Reducer
  - Skill 3: Maintaining and Troubleshooting Speed Reducers
- ME10: Electric Brakes
  - Skill 1: Operating Electric Brakes
  - Skill 2: Installing Electric Brakes
  - Skill 3: Maintaining and Troubleshooting Electric Brakes

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