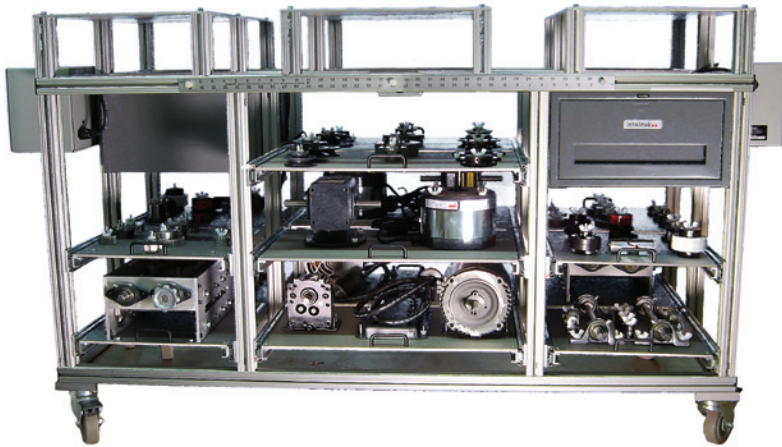


Mechanical Training Bench (ME10)

MECHANICAL SYSTEMS



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

JOB MASTER

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!

1.4: Skill Drill

1.4.2: Brake Interior

Perform the following:

1. Place the electric brake on the bench top and remove its outer casing.
2. Inspect the inner workings of the fail-safe brake. Note how the input hub on the friction disk does not move when the brake is not energized.
3. Locate the manual release on the outside of the brake housing. With a flathead screwdriver, rotate the release until the stud is vertical. This moves the armature away from the friction disk and frees the input hub.



P O W E R E D B Y

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

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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 | ■ 3-piece jaw coupling | ■ Gear box housing with mounted flanged roller bearings and shafts |
| ■ Shaft collars | ■ Chain coupling | ■ Split taper bushings (5/8" and 1/2") |
| ■ Plain-mounted pillow block bearings | ■ Universal joint coupling | ■ Keystock |
| ■ Roller-mounted pillow block bearings | ■ S-flex coupling | ■ Dial indicator set with magnetic base and shaft alignment accessories |
| ■ Fixed-pitch V-belt sheaves | ■ 3-phase C-face drive motor | ■ Feeler gauges |
| ■ Variable-pitch V-belt sheaves | ■ Adjustable-drive motor mounting base | ■ Belt tension gage |
| ■ V-belts | ■ 120V electric disc brake | ■ Shim set |
| ■ Synchronous drive belts | ■ Parallel shaft speed reducer | ■ Digital tachometer |
| ■ Synchronous belt sheaves | ■ C-face right angle speed reducer | ■ Level |
| ■ Chain sprockets | ■ Spur gear set of 3 | ■ Taper gauge |
| ■ Roller chain | ■ Helical gear set of 3 | ■ 3/6" rigid ruler |
| ■ Chain puller | ■ Worm gear set of 2 | ■ Mounting hardware |
| ■ Chain breaker | ■ Bevel gear set of 2 | |
| ■ Rigid 2-piece coupling | | |
| ■ Flexible grid coupling | | |

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.

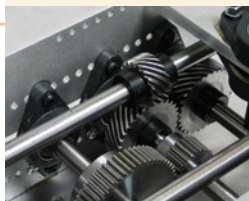
Optional Accessories

- 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

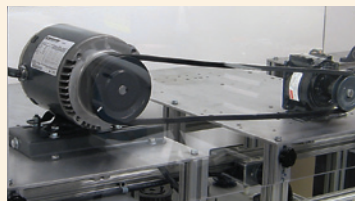
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MECHANICAL SYSTEMS

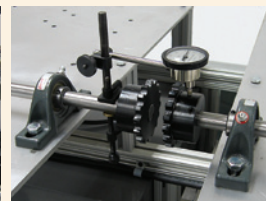
GEAR DRIVES



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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