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# Motor-Driven Machine Train Overhaul for Technicians Training Course

4 – 8 April 2027
Dubai

# Motor-Driven Machine Train Overhaul for Technicians Training Course

**Ref:** 1674_61355 **Date:** 4 – 8 April 2027 **Location:** Dubai **Fees:** 4900 GBP

Motor-Driven Machine Train Overhaul for Technicians is a 1-week training course for mechanical maintenance technicians and supervisors who strip, inspect and rebuild trains of motor, variable-speed drive, coupling, pump and compressor, producing a machine train overhaul job pack. Shorter shutdown windows mean every overhaul must be done right first time. Jupiter Prime Training runs this course to sharpen the bench and field skills that keep machine trains turning.

## Why Motor-Driven Machine Train Overhaul for Technicians Matters Now

Three forces shape this subject: plants squeezing overhauls into tighter outage windows, wider use of variable-speed drives that change how motors and driven machines wear, and supervisors who must sign off work done by mixed in-house and contract crews. A crew that follows clear strip-down sequences, measures fits and clearances and records what it finds returns machines that run smoothly; a crew that improvises sees repeat seal leaks, hot bearings and early trips. The course draws on manufacturer overhaul manuals, bearing fit and clearance tables, mechanical seal installation practice and laser alignment tolerances.

## Who Gains Most from Motor-Driven Machine Train Overhaul for Technicians

- Technicians dismantling and rebuilding pumps and their seals
- Fitters overhauling reciprocating and screw compressors
- Technicians handling motor bearings, couplings and soft foot correction
- Supervisors checking measurements and signing off rebuilt machines
- Crew members recording findings for engineers and planners

A maintenance crew gains most when its fitters and supervisor attend together and agree one overhaul record format.

## Motor-Driven Machine Train Overhaul for Technicians Capabilities

Participants leave able to take a machine train apart in the right order, measure what matters and put it back within tolerance.

- Apply safe isolation and lock-out steps to motor, drive and process sides — permit holders
- Calculate bearing fits and running clearances from measured dimensions — rebuild approval
- Specify mechanical seal installation steps and face checks — leak-free start-up
- Test motor insulation and variable-speed drive parameters before reconnection — electrical colleagues
- Assess alignment and soft foot readings against tolerance — run-up decisions
- Build a findings record with photos and measurements — engineers and planners

## Key Motor-Driven Machine Train Overhaul for Technicians Terms

- Machine train — the linked chain of driver, drive, coupling and driven machine that works as one unit.
- Interference fit — a joint where the shaft is slightly larger than the bore, so the part grips once pressed or heated on.
- Running clearance — the designed gap between rotating and stationary parts, such as wear rings or bearing shells.
- Seal face flatness — how evenly the mating seal faces contact, checked with an optical flat before fitting.
- Variable-speed drive — power electronics that change motor speed by varying supply frequency and voltage.
- Bump test — a short start used to confirm rotation direction before coupling the machine.

## Motor-Driven Machine Train Overhaul for Technicians Day by Day

### Day 1: Preparing the Machine Train for Work

- Isolation and Lock-Out Sequences — Securing Motor, Drive and Process Energy
- Pre-Overhaul Condition Readings — Recording Vibration, Temperature and Leaks
- Overhaul Manuals and Drawings — Planning Strip-Down Order and Special Tools
- Match Marking and Parts Tagging — Keeping Reassembly Orientation Correct
- Lifting and Rigging of Casings — Protecting Rotors and People

### Day 2: Pump and Mechanical Seal Rebuilds

- Centrifugal Pump Strip-Down — Inspecting Impellers, Wear Rings and Sleeves
- Wear Ring Clearance Measurement — Deciding Re-Use or Replacement
- Cartridge and Component Seal Fitting — Setting Compression and Face Contact
- Seal Flush Line Checks — Confirming Cooling and Lubrication Paths
- Bearing Housing Rebuild — Fitting Bearings, Oil Rings and Shields

### Day 3: Compressor Overhaul Tasks

- Reciprocating Compressor Valves — Inspecting Plates, Springs and Seats
- Piston Rings and Rider Bands — Measuring Wear and Gaps
- Crosshead and Rod Run-Out Checks — Correcting Alignment Faults
- Screw Compressor Rotor Inspection — Reading Contact Patterns and End Float
- Compressor Lubrication Systems — Cleaning Filters, Coolers and Oil Lines

### Day 4: Motors, Drives and Couplings

- Motor Bearing Replacement — Heating, Fitting and Greasing Correctly
- Insulation Resistance Testing — Confirming Winding Health Before Restart
- Variable-Speed Drive Parameter Checks — Ramp, Current Limit and Fault Logs
- Coupling Inspection and Fitting — Grid, Disc and Gear Types
- Laser Alignment and Soft Foot Correction — Meeting Run-Up Tolerances

## Day 5: Practising the Machine Train Overhaul Job Pack

- Pump Train Case — Applying Seal and Bearing Rebuild Steps
- Compressor Train Case — Applying Valve and Ring Measurements
- Drive Fault Case — Applying Motor and Drive Checks
- Supervisor Sign-Off Walkthrough — Checking Records Before Return to Service
- Machine Train Overhaul Job Pack — Sequencing Steps, Checks and Records

## Applying Motor-Driven Machine Train Overhaul for Technicians After the Course

- Rewrite the strip-down and rebuild sequence for one critical pump train using the overhaul record format.
- Run a soft foot and laser alignment check on a recently rebuilt train and log the corrections made.

## Motor-Driven Machine Train Overhaul for Technicians Questions FAQ

### What is motor-driven machine train overhaul for technicians, and why does it matter now?

It is the hands-on strip-down, inspection and rebuild of motor, drive, coupling and driven machine as one train. It matters now because shutdown windows are shorter and repeat failures after overhaul are costly.

### Which roles gain most from motor-driven machine train overhaul for technicians?

Mechanical fitters, technicians and the supervisors who sign off their work gain most. Examples come from water treatment pumping stations and gas processing compressor houses.

### How does motor-driven machine train overhaul for technicians differ from a static equipment maintenance course?

It deals with rotating trains of motors, drives, pumps and compressors. Static equipment courses cover vessels, exchangers, tanks and piping that do not rotate.

### What do you bring back from motor-driven machine train overhaul for technicians?

You bring back a sequenced overhaul pack with measurements, checks and records for typical pump and compressor trains.

## Motor-Driven Machine Train Overhaul for Technicians: The Way Forward

The machine train overhaul job pack sets the strip-down order, measurements, rebuild checks and sign-off records for each train. Its first use is planning the next pump or compressor overhaul. Technicians and supervisors keep it current, and after a few overhauls its recorded clearances deserve a review with engineers to spot recurring wear.