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COURSE BROCHURE

Reciprocating Compressor Overhaul and Clearances Training Course

11 – 15 October 2027
Geneva

Reciprocating Compressor Overhaul and Clearances Training Course

Ref: 1823_66989 **Date:** 11 – 15 October 2027 **Location:** Geneva **Fees:** 7500 GBP

Reciprocating Compressor Overhaul and Clearances is a 1-week training course for mechanical technicians and rotating equipment engineers who strip, measure and rebuild piston compressors, and each participant leaves with a signed overhaul and clearance record for one machine. Hydrogen and air services depend on these machines, and a rebuild with wrong clearances or a mis-torqued crosshead can undo months of reliable running. Jupiter Prime Training delivers this course for overhaul crews.

Why Reciprocating Compressor Overhaul Matters Now

Ageing compressor fleets, tighter turnaround windows and the retirement of experienced fitters shape how overhauls are carried out today. Owners want shorter outages and integrity teams want traceable evidence that each rebuild meets tolerances. A crew that measures bore wear, rod run-out and bearing clearances accurately returns a machine that runs to its next planned stop; a crew that guesses invites valve breakage, packing leaks and crankshaft damage. The course rests on manufacturer overhaul manuals and recognised good engineering practice for rotating machinery, described in general terms.

Who Gains Most from Reciprocating Compressor Overhaul

- Fitters who dismantle cylinders, valves and packing cases during planned stops
- Rotating equipment engineers who approve clearance readings and release machines to service
- Maintenance planners who sequence overhaul tasks, spares and lifting plans
- Valve shop leads who refurbish valves, rings and packing
- Inspection technicians who record wear and dimensional findings

A crew of fitters, a planner and the responsible engineer attending together gains most, sharing one sequence and one set of limits.

Reciprocating Compressor Overhaul Capabilities

The outcomes follow the machine from frame to valve cover, linking every measurement to a release decision.

- Sequence a frame-to-cylinder teardown with isolation and lifting steps — the outage planner and permit holder
- Measure cylinder bore, piston and ring clearances against tolerance tables — the engineer releasing the unit
- Assess compressor valve plates, springs and seats for refurbishment or renewal — the valve shop lead
- Inspect packing cases and rod surfaces for wear and leakage paths — the integrity and emissions team
- Check crosshead, connecting rod and main bearing clearances with feeler and dial methods — the reliability engineer
- Specify reassembly torques, rod run-out limits and start-up checks — the operations shift taking the machine back

Key Reciprocating Compressor Overhaul Terms

- Rod run-out — The radial movement of the piston rod measured by dial indicator, showing alignment and crosshead condition.
- Rider band — A non-metallic ring on the piston that carries its weight and keeps metal parts off the cylinder bore.
- Packing case — The set of segmented rings around the piston rod that seals cylinder gas from the distance piece.
- Crosshead clearance — The gap between crosshead shoes and guides that controls rod alignment and lubrication film.
- Head-end clearance — The gap between piston and cylinder head at outer dead centre, set to prevent contact.
- Valve lift — The distance a valve plate travels from seat to guard, set to balance flow against impact wear.

Reciprocating Compressor Overhaul Day by Day

Day 1: Machine Anatomy and Overhaul Planning

- Frame, Running Gear and Cylinder Layout — Where Wear Concentrates
- Overhaul History and Failure Records — Scoping the Work Package
- Isolation, Purging and Lock-Out Steps — Safe Access to Gas Spaces
- Lifting Plans and Special Tools — Sequencing Crane and Bench Time
- Spares Kits and Critical Parts Lists — Avoiding Outage Extensions

Day 2: Cylinders, Pistons and Rings

- Bore Micrometry and Ovality Readings — Rebore or Liner Renewal Choice
- Piston Ring and Rider Band Wear Limits — Renewal Timing
- Piston-to-Rod Nut Torque and Locking — Preventing Loose Piston Failures
- Head-End and Crank-End Clearance Setting — Capacity and Contact Risk
- Cylinder Lubrication Quills and Feed Rates — Ring Life Balance

Day 3: Valves and Packing

- Valve Plate, Spring and Seat Inspection — Refurbish or Replace Decision
- Valve Lift and Lapping Practice — Flow Versus Impact Wear
- Packing Ring Segment Fit and Side Clearance — Leakage Control
- Piston Rod Surface Finish and Coating Checks — Packing Life
- Distance Piece Vents and Seal Gas — Containing Process Leakage

Day 4: Running Gear and Alignment

- Crosshead Shoe and Guide Clearances — Rod Alignment Acceptance
- Connecting Rod and Crankpin Bearing Readings — Shell Renewal Choice
- Main Bearing Plastic Gauge and Bridge Gauge Methods — Crankshaft Support
- Crankshaft Web Deflection Measurement — Frame Distortion Diagnosis
- Rod Run-Out Vertical and Horizontal Readings — Release Criteria

Day 5: Practising the Overhaul and Clearance Record

- Teardown Sequence Rehearsal on a Case Machine — Applying Planning Steps
- Clearance Data Sheet Completion — Applying Cylinder and Bearing Readings
- Valve and Packing Rebuild Sign-Off — Applying Refurbishment Limits
- Reassembly Torque and Pre-Start Checklist — Handover to Operations
- Signed Overhaul and Clearance Record — Release to Service Approval

Applying Reciprocating Compressor Overhaul After the Course

- Rebuild the clearance data sheet for one critical compressor using the bore, bearing and run-out methods from the course.
- Review the spares kit and lifting plan for the next planned stop of a hydrogen or air compressor.

Reciprocating Compressor Overhaul Questions FAQ

What is reciprocating compressor overhaul and why does it matter now?

Reciprocating compressor overhaul is the planned teardown, measurement and rebuild of cylinders, valves, packing and running gear. It matters now because outage windows are shorter and experienced fitters are retiring, so measured, recorded clearances protect reliability.

Which roles gain most from reciprocating compressor overhaul skills?

Fitters, rotating equipment engineers and maintenance planners gain most. Each gains measurement discipline, clear release criteria or a realistic sequence for refinery and manufacturing compressors.

How does reciprocating compressor overhaul differ from a predictive maintenance course?

Overhaul training focuses on hands-on teardown, clearance setting and reassembly during a stop. A predictive maintenance course watches valves, rod drop and oil trends while the machine runs, to decide when the next stop is needed.

What do you bring back from reciprocating compressor overhaul training?

You bring back a signed overhaul and clearance record for one machine, with teardown sequence, clearances and a reassembly checklist your crew can reuse.

Reciprocating Compressor Overhaul: The Way Forward

The signed overhaul and clearance record first informs whether a machine is released to service after its stop. Fitters, planners and the responsible engineer use it to compare readings between overhauls and spot accelerating wear. After its first use, revisit the tolerance tables and spares lists so the next teardown on a petrochemical or power plant compressor starts from evidence.