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Progressive Cavity Pump Teardown, Repair and Rebuild Training Course

20 – 24 September 2027
Madrid

Progressive Cavity Pump Teardown, Repair and Rebuild Training Course

Ref: 1919_70593 **Date:** 20 – 24 September 2027 **Location:** Madrid **Fees:** 6200 GBP

Progressive Cavity Pump Teardown, Repair and Rebuild is a 1-week training course for rotating equipment and production engineers built around a PCP rebuild procedure and inspection record each participant drafts for one pump model. Abrasive fluids and short run lives make repair shop decisions a direct driver of uptime. Jupiter Prime Training delivers this Progressive Cavity Pump Teardown, Repair and Rebuild course.

Why Progressive Cavity Pump Teardown, Repair and Rebuild Matters Now

Three pressures shape PCP repair today: hotter, sandier fluids that attack stators faster, budgets that favour refurbishing rotors over buying new ones, and fewer experienced fitters who can read a worn stator in oilfield and process plant service alike. A repair shop that measures interference, chrome wear and elastomer swell before reassembly returns pumps that hold their rated head. One that swaps parts by habit sends back pumps that fail early. The course applies manufacturer dimensional data and structured failure analysis to every teardown.

Who Gains Most from Progressive Cavity Pump Teardown, Repair and Rebuild

- Engineers who approve rebuild scopes and parts lists for pulled downhole and surface pumps
- Engineers responsible for stator elastomer selection and fluid compatibility testing
- Engineers who own rotor refurbishment, chrome plating and dimensional checks
- Engineers who set up drive heads, couplings and installation practice on site
- Engineers who track run life and feed findings back to selection

A production engineer and a repair shop engineer serving the same pump fleet gain most when they attend together.

Progressive Cavity Pump Teardown, Repair and Rebuild Capabilities

Participants work from the rotor-stator pair outward, linking bench wear to sizing, elastomer and installation choices.

- Assess rotor-stator interference from measured minor and major diameters — rebuild or replace decision
- Specify stator elastomer grade against fluid temperature, aromatics and gas — pump selection engineers
- Test rebuilt pumps on a bench for flow, pressure and slip — release to field
- Apply failure analysis to torn, burnt or swollen stators — root cause reports to operations
- Design installation checks for rod string, drive head and torque anchors — field crews
- Build a repair history per serial number — fleet run-life reviews

Key Progressive Cavity Pump Teardown, Repair and Rebuild Terms

- Rotor-stator interference — the designed oversize of the steel rotor against the elastomer cavity that seals each moving cavity.
- Elastomer swell — volume growth of the stator rubber in well or process fluid, which tightens the fit and raises torque.
- Slip — fluid leaking back between cavities, rising with pressure and worn interference.
- Hysteresis burn — heat damage inside the stator rubber caused by repeated flexing under excessive interference or dry running.
- Pitch — the axial length of one full cavity, fixing displacement per revolution together with eccentricity and rotor diameter.
- Drive head — the surface unit that turns the rod string and controls backspin.

Progressive Cavity Pump Teardown, Repair and Rebuild Day by Day

Day 1: Pump Geometry and Repair Shop Context

- Rotor-Stator Geometry and Displacement — Matching Pump Model to Duty
- Single and Multi-Lobe Designs — Head, Speed and Wear Trade-Offs
- Oilfield Versus Industrial Duty Profiles — Repair Scope Expectations
- Receiving Inspection and Pull Report — Evidence Before Disassembly
- Repair Shop Safety and Handling of Long Rotors — Bench Layout Choices

Day 2: Teardown and Measurement

- Stator Sectioning and Visual Grading — Wear Pattern Classification
- Rotor Diameter and Chrome Thickness Gauging — Refurbish or Scrap Decision
- Interference Calculation From Measurements — Fit for Next Run Conditions
- Elastomer Hardness and Swell Testing — Fluid Compatibility Confirmation
- Teardown Photo Log and Findings Sheet — Traceable Failure Evidence

Day 3: Failure Analysis and Troubleshooting

- Stator Failure Modes Catalogue — Distinguishing Chemical, Thermal and Abrasive Damage
- Rotor Wear and Fatigue Signatures — Rod Coupling and Torque Questions
- Production Data and Torque Trend Review — Linking Field Symptoms to Bench Findings
- Gas Interference and Pump-Off Diagnosis — Speed and Intake Changes
- Five-Why Root Cause Worksheet — Corrective Action Owners

Day 4: Rebuild, Elastomer and Drive Choices

- Elastomer Selection Matrix — Nitrile, Hydrogenated and Fluoro Grades by Fluid
- Rotor Rechroming and Undersize Rotor Options — Restoring Target Interference
- Bench Test Procedure for Rebuilt Pumps — Release Criteria for Flow and Slip
- Drive Head, Gearbox and Backspin Brake Overhaul — Surface Equipment Reliability
- Installation Checklist for Rod String and Torque Anchor — Spacing and Tag-Off

Day 5: Practising the PCP Rebuild Procedure

- Teardown Case Walkthrough on a Failed Stator — Applying the Findings Sheet
- Interference and Elastomer Choice for a New Duty — Applying Sizing Checks
- Repair Cost Versus New Pump Comparison — Rebuild Scope Approval
- Serial Number Repair History Template — Fleet Run-Life Tracking
- PCP Rebuild Procedure and Inspection Record Draft — Standard for One Pump Model

Applying Progressive Cavity Pump Teardown, Repair and Rebuild After the Course

- Section and grade the next pulled stator and share the root cause with operations.
- Start a repair history for each pump serial number and compare run life before and after rebuild.

Progressive Cavity Pump Teardown, Repair and Rebuild Questions FAQ

What is Progressive Cavity Pump Teardown, Repair and Rebuild and why does it matter now?

Progressive Cavity Pump Teardown, Repair and Rebuild is the bench discipline of dismantling, measuring and restoring PCPs. It matters now because harsher fluids shorten stator life and many fleets refurbish rather than replace pumps.

Which roles gain most from Progressive Cavity Pump Teardown, Repair and Rebuild?

Rotating equipment and production engineers gain most from Progressive Cavity Pump Teardown, Repair and Rebuild.

How does Progressive Cavity Pump Teardown, Repair and Rebuild differ from an artificial lift design course?

Progressive Cavity Pump Teardown, Repair and Rebuild starts on the repair bench. An artificial lift design course chooses the lift method and sizes the well system, while this course measures worn parts and sets rebuild standards.

What do you bring back from Progressive Cavity Pump Teardown, Repair and Rebuild?

You bring back a draft PCP rebuild procedure and inspection record for one pump model, with interference targets, elastomer choice and bench test criteria.

Progressive Cavity Pump Teardown, Repair and Rebuild: The Way Forward

The PCP rebuild procedure and inspection record first informs whether the next pulled pump is rebuilt or replaced. Repair shop engineers, production engineers and field crews use it to measure, release and install pumps. After its first use, revisit the interference targets against actual run life in each well or plant.