Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

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COURSE BROCHURE

Hydraulic Cylinder Repair Techniques

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 244715 · NQF Level 3 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with the theoretical and practical skills required to safely and effectively repair hydraulic cylinders. It covers fault diagnosis, disassembly, component inspection, seal replacement, and reassembly, ensuring cylinders are restored to optimal working condition. The course emphasizes adherence to safety standards and manufacturer specifications, aligning with industry best practices.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	244715
Accreditation	SAQA Accredited · NQF Level 3 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply safe working practices and use appropriate personal protective equipment (PPE) when repairing hydraulic cylinders.
- Analyze hydraulic cylinder faults and determine the extent of repair required.
- Demonstrate the correct procedures for disassembling and reassembling hydraulic cylinders.
- Inspect components for wear, damage, and tolerance, and replace parts as necessary.
- Select and install appropriate seals and packing materials according to manufacturer specifications.
- Test repaired hydraulic cylinders to ensure they meet operational requirements.

WHO SHOULD ATTEND

- This course is designed for technicians, maintenance personnel, and mechanical fitters who are involved in the repair and maintenance of hydraulic systems.
- It is also suitable for individuals seeking to formalize their skills in hydraulic cylinder repair.

COURSE OUTLINE

Day 1: **Hydraulic Cylinder Fundamentals and Fault Diagnosis**

- Introduction to hydraulic cylinders: types (tie-rod, welded, telescopic) and applications.
- Components: barrel, piston, rod, seals, bearings, and ports.
- Operating principles: pressure, flow, and force calculation.
- Common failure modes: seal wear, rod scoring, barrel damage, and leakage.
- Diagnostic procedures: visual inspection, pressure testing, and leak detection.
- Safety precautions: lockout/tagout, pressure release, and handling hydraulic fluids.
- Tools and equipment for diagnosis: gauges, flow meters, and bore scopes.
- Documentation and record-keeping for fault finding.

Day 2: **Disassembly, Inspection, and Seal Replacement**

- Preparation for disassembly: cleaning, marking, and securing the cylinder.
- Step-by-step disassembly procedures for various cylinder designs.
- Inspection techniques: visual, dimensional measurement (micrometers, calipers), and surface finish assessment.
- Identifying wear patterns and determining acceptable tolerances.
- Seal types and materials: O-rings, U-cups, wipers, and backup rings.
- Seal selection criteria: pressure, temperature, fluid compatibility.
- Proper installation tools and methods to avoid seal damage.
- Reassembly procedures: lubrication, torquing, and alignment.

Day 3: **Advanced Repairs, Testing, and Quality Assurance**

- Advanced repair methods: chrome plating, hard chrome repair, and metal stitching.
- Barrel honing and polishing techniques.
- Rod straightening and resurfacing.
- Welding procedures for cylinder attachments (with safety considerations).
- Final assembly: proper torquing, alignment, and lubrication.
- Testing procedures: pressure testing, leak testing, and cycle testing.
- Quality assurance: inspection reports, traceability, and compliance with standards.
- Troubleshooting post-repair failures and preventive maintenance tips.

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **6 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,200.00	**R 13,200.00**
1	In-House	R 17,800.00	**R 17,800.00**
1	On-Campus (Pretoria)	R 19,800.00	**R 19,800.00**

UPCOMING SESSIONS

Start	End	Method	Venue
02 Dec 2026	04 Dec 2026	On-Campus	Durban, South Africa
02 Dec 2026	04 Dec 2026	On-Campus	Lagos, Nigeria
09 Dec 2026	11 Dec 2026	On-Campus	Maseru, Lesotho
09 Dec 2026	11 Dec 2026	On-Campus	Kigali, Rwanda
09 Dec 2026	11 Dec 2026	On-Campus	Accra, Ghana
09 Dec 2026	11 Dec 2026	On-Campus	Cape Town, South Africa
09 Dec 2026	11 Dec 2026	On-Campus	Abu Dhabi, UAE
09 Dec 2026	11 Dec 2026	On-Campus	Victoria Falls, Zimbabwe

Contact us if no suitable date is listed — on-demand sessions can be arranged for groups.

HOW TO GET A QUOTATION OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 244715) and click **Get A Quotation**. Select your training method and number of delegates — your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to **apply@aaticd.co.za** — our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically — the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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