



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 Component Overhaul for Agricultural Equipment

Agriculture and Nature Conservation / Secondary Agriculture

Unit Standard 251923 · NQF Level 2 · 8 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the skills to safely and effectively overhaul minor hydraulic components used in agricultural equipment. Participants will learn to diagnose faults, disassemble, inspect, repair, and reassemble hydraulic cylinders, valves, and pumps to restore functionality and ensure reliability.

Category	Agriculture and Nature Conservation
Subfield	Secondary Agriculture
Unit Standard	251923
Accreditation	SAQA Accredited · NQF Level 2 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply safe working practices when handling hydraulic components and systems.
- Analyze hydraulic component faults using systematic diagnostic procedures.
- Disassemble, inspect, and measure hydraulic components against manufacturer specifications.
- Demonstrate the correct techniques to overhaul and reassemble minor hydraulic components.
- Evaluate the performance of overhauled components through functional testing.
- Document overhaul procedures and findings in accordance with industry standards.

WHO SHOULD ATTEND

- This course is designed for agricultural equipment technicians, mechanics, and maintenance personnel who are responsible for repairing and maintaining hydraulic systems on farms or in agri-service centers.

COURSE OUTLINE

Day 1: Introduction to Hydraulic Systems and Safety

- Principles of hydraulics: Pascal's law, flow, pressure, and force.
- Overview of agricultural hydraulic systems: tractors, implements, loaders.
- Key components: pumps, valves, cylinders, motors, filters, reservoirs.
- Hydraulic fluids: types, properties, and contamination control.
- Safety protocols: lockout/tagout, pressure relief, handling fluids.
- Introduction to hydraulic schematic symbols and diagrams.

Day 2: Hydraulic Pumps and Motors

- Pump types: gear, vane, piston (axial and radial).
- Pump principles: displacement, flow rate, volumetric efficiency.
- Motor types and their applications.
- Disassembly procedures for gear pumps.
- Inspection: gears, housing, bearings, seals.
- Measurement techniques: feeler gauges, micrometers.
- Failure analysis: cavitation, wear, contamination.

Day 3: Control Valves and Cylinders

- Valve types: spool, poppet, check, relief, flow dividers.
- Valve operation: manual, solenoid, hydraulic pilot.
- Cylinder types: single-acting, double-acting, telescopic.
- Cylinder disassembly: gland removal, piston extraction.
- Seal identification and replacement: O-rings, U-cups, wipers.
- Cylinder reassembly and testing.

Day 4: System Components and Troubleshooting

- Filtration: types, micron ratings, maintenance.
- Reservoirs: design, baffles, breathers, sight glasses.
- Coolers and heat exchangers.
- Accumulators: types, charging, safety.
- Troubleshooting methodology: symptom analysis, systematic checks.
- Testing: pressure at pump, relief valve setting, cylinder drift.
- Case studies: common failures in tractors and loaders.

Day 5: Overhaul Procedures and Practical Integration

- Overhaul planning: tools, parts, manuals.
- Cleaning methods: ultrasonic, solvent, lint-free cloths.
- Assembly techniques: torque specifications, seal lubrication.
- Testing procedures: bench test, system integration.
- Documentation: work orders, measurements, test results.
- Final assessment: practical overhaul and oral questioning.

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 **8 NQF credits** at **NQF Level 2**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	R 23,000.00
1	In-House	R 29,900.00	R 29,900.00
1	On-Campus (Pretoria)	R 34,500.00	R 34,500.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Pretoria, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Dubai, UAE
10 Aug 2026	14 Aug 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Mauritius
17 Aug 2026	21 Aug 2026	On-Campus	Dubai, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Pretoria, South Africa

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

HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 251923) and click **Get A Quote / Apply**. 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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