



MAINTENANCE MANAGEMENT TRAINING

Mobile Hydraulics for Earthmoving and Handling Equipment

3 day course

Classroom, online or in-house

Course overview

Mobile hydraulic systems work harder, dirtier and hotter than fixed plant, and most failures on them are contamination failures that were introduced during the last repair. This course covers both the system and the discipline around it. Delegates work through hydraulic principles applied to a machine, then through pumps, covering gear, vane and piston types and the load sensing and pressure compensated control that modern machines use. Valves and control systems follow, including directional, relief and counterbalance valves and what each protects. Cylinders and motors are covered with their seal arrangements and failure symptoms. Reservoirs, coolers and filtration are addressed, with cleanliness targets treated as the central maintenance control. Contamination control during repair is covered directly, because a machine is most at risk with a hose off. Hoses, fittings and routing follow. Fault finding is taught by pressure and flow measurement rather than by substitution. Safety around stored energy and accumulators is covered. The course closes on commissioning after repair and on oil condition monitoring.

What you will learn

- Explain gear, vane and piston pumps and load sensing control
- Identify what directional, relief and counterbalance valves protect
- Diagnose cylinder and motor seal failures from symptoms
- Hold cleanliness targets through filtration and reservoir management
- Prevent contamination during repair work
- Select, route and terminate hoses and fittings correctly
- Fault find by pressure and flow measurement, and work safely with stored energy

Who should attend

- Plant and earthmoving equipment technicians
- Hydraulic specialists in mining and construction
- Maintenance supervisors on mobile fleets
- Workshop staff rebuilding hydraulic components
- Operators responsible for machine condition

Course outline

- 01 Failures introduced during the last repair
- 02 Hydraulic principles on a machine
- 03 Gear, vane and piston pumps
- 04 Load sensing and pressure compensation
- 05 Directional, relief and counterbalance valves
- 06 Cylinders, motors and seal failures
- 07 Filtration, cleanliness targets and contamination control
- 08 Hoses, fault finding by measurement, stored energy and commissioning

Upcoming dates



Dates	Venue	Format	Fee per delegate
28 to 30 September 2026	Maseru, Lesotho	Classroom	R14,950
28 to 30 December 2026	Accra, Ghana	Classroom	USD 995
3 to 5 February 2027	Johannesburg, South Africa	Classroom	R14,950
24 to 26 March 2027	Online	Online	R6,500

Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriScience.co.za, or WhatsApp us on **+27 63 479 1136**.

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