



Discover the

LUCAS PRIME PD100/50

Safer Drilling

Faster Mobilisation

Reliable Results

Introducing

The Lucas Prime PD100/50

The Prime PD100/50 is an intelligent, ultra-high-capacity track-mounted crawler drill rig, specialising in heavy-duty directional drilling, large-diameter bores, and the structural handling of Range 3 tubulers and casing strings up to 15.93 inches in diameter. Featuring a powerful 442 HP Caterpillar C15 engine, a massive 2,200,000 lb rack-and-pinion carriage drive, and a fully integrated automatic rod loading crane, it is engineered for extreme load environments with maximum operator isolation.



The Lucas Prime PD100/50 is designed to deliver measurable outcomes where it matters most:

- Reduced exposure through an automatic rod loader, onboard crane, and a dedicated drill cab control console.
- Lower cost per metre through high-torque rack-and-pinion drive engineering and precision force limiters
- Predictable delivery through a rugged, self-propelled crawler track design capable of independent site positioning.

Advanced Operator Control & Visibility

- Infinitely variable rotary torque managed via an advanced pinion and gear drive system.
- Dual-range high-torque rotation delivering 36,878 ft-lb at low speeds and up to 18,436 ft-lb for faster cycling.
- Fully enclosed, climate-managed drill cab housing a centralised control console with integrated gauges and data logging systems.

Built-In Diagnostics & System Intelligence

- Electronic motor control technology and an integrated Diesel Particulate Filter that monitors engine health and emissions.
- Advanced rack-and-pinion travel assembly equipped with an adjustable force limiter to prevent over-stretching tubular strings.
- Precise feed speed tracking providing smooth crawling control from 2 mm/min up to speeds of 20 m/min.

Situational Awareness & Site Integration

- Features an adjustable operational drill angle ranging from 10 degrees up to 45 degrees for steep directional accuracy.
- Rear-mounted mud swivel layout featuring a wide 3" internal diameter and a massive 2,650 kN maximum axial load rating.
- Self-propelled track-mounted crawler design utilizing wide 800 mm pads for minimized ground pressure and superior site stability.

Increased Productivity & Operational Efficiency

- High-performance 4-pinion carriage drive delivering 220,000 lb (981 kN) of thrust and pullback capacity.
- Integrated automatic rod loader designed to hold 5 x 12m Range 3 pipes or 7-inch casing strings seamlessly.
- Onboard jack-up mounted utility crane providing independent lifting power up to 2,380 kg at an extended 10.3 m radius.

Telemetry & Future-Ready Automation

- Cab-mounted digital logging architecture configured to support modern drilling optimization and real-time electronic parameter tracking.
- Aligned with modern tier-one safety mandates by completely isolating crews from heavy hydraulic clamping and breaking zones.

Robust, Mine-Ready System Design

- Caterpillar C15 6-cylinder turbodiesel engine package delivering 442 HP of continuous duty power within a silenced acoustic enclosure.
- Heavy-duty hydraulic breakout unit providing 52,500 ft-lb of breaking torque and 169,000 lbf clamping force.
- Large-capacity fuel infrastructure supported by an 800 L onboard diesel tank for extended production runs.



PRIME PD 100/50 SPECIFICATIONS

PERFORMANCE LIMITS	
Max. Pull Back/Thrust	222,000 lb (981 kN)
High Torque Range	36,878 ft-lb (50,000 Nm) @ 0 - 40 RPM
Low Torque Range	18,436 ft-lb (25,000 Nm) @ 0 - 80 RPM
Max. Rotary Speed	80 RPM

CLAMPING & BREAKOUT	
Unit Type	Hydraulic clamping and breaking unit
Max Breakout Torque	52,500 ft-lb (71,000 Nm)
Max Clamping Force	169,000 lbf (750,000 kN)
Clamp Grip Range	4.13" - 15.93" (105 - 404 mm) outside diameter

CARRIAGE & FEED SETUP	
Carriage System	• Rack and pinion • 4-pinion drive with adjustable force limiter
Feed Speed Range	2 mm/min to 20 m/mm (65.616 ft/min)
Feed length	14 m
Brakes	Integrated carriage breaks

ENGINE & POWER	
Engine	Caterpillar C15 6-cylinder turbodiesel (aftercooled)
Rating	442 HP (330 kW) continuous duty
Features	• Electronic motor control • Diesel particulate filter • Sound enclosure
Fuel Capacity	800 L

ONBOARD CRANE	
Mounting	Onboard jack-up style crane
Lift Capacity	2,380 kg at 10.3 m reach

ROD LOADER & STORAGE	
System	Automatic rod loader
Storage Capacity	5 x 12 m pipe capacity (range 3) or 7-inch casing

MUD SWIVEL ASSEMBLY	
Position	Rear-mounted mud swivel
Internal Diameter	3" (76 mm)
Max Axial Load	2,650 kN

MOBILITY & ANGLES	
Travel System	Self-propelled on track-mounted crawler
Track Width	800 mm wide tracks
Drill Angle Capacity	10 ° - 45 °

RIG INFRASTRUCTURE	
Manufacturer	Prime Drilling (Serial No: 11712)
Controls	Drill cab mounted console with gauges and logging system



Our Clients

At Lucas, we consider ourselves privileged to have a diverse range of clients, from global industry leaders to local councils. Our commitment to understanding and adapting to each of our clients' unique challenges is what drives us. By forging strong, collaborative relationships, we consistently deliver tailored solutions that meet our clients' specific needs, exceed expectations, and contribute directly to their success.

GLENCORE

arrowenergy

RioTinto

BMA
BHP Mitsubishi Alliance

Peabody

AngloAmerican

QPM
ENERGY

CENTENNIAL

Whitehaven

Evolution
MINING

KESTREL COAL
RESOURCES

fitzroy

origin

TRI-STAR

Santos

GM³

About Us

Who we are

Founded in Sydney, Australia in the 1950's, the company became a highly specialised mining and infrastructure service provider in Australia. AJ Lucas listed on the Australian Stock Exchange in 1999 and saw considerable growth in the following years, concentrating on the resources market and undertaking significant projects in the Water, Oil and Gas segments.



What we do

Lucas Drilling provides a comprehensive suite of drilling services which includes exploration, production and directional drilling. Lucas also provides a range of engineering services including design of wells, drilling optimisation, professional steering services, specialised equipment and geosteering for directional drilling programmes.

Our Experience

With over 40 years of experience in the mining and coal seam gas industries, Lucas has developed a unique operating platform designed to deliver high-value solutions to complex and critical projects.

Our People

Lucas is recognised for having a highly skilled and respected workforce of approximately 285 employees, many of whom live and work within our operating regions. Performance management and leadership development are central to maintaining high levels of team engagement. We prioritise the growth of our people by offering customised training programs and opportunities to gain industry-recognised qualifications. Additionally, our promotion and rotation initiatives across various operational areas enhance our employee's versatility and experience. This commitment to employee development is reflected in retention of our field leadership; with the average tenure in excess of 12 years.

Health & Safety

Our personnel are highly skilled with an outstanding safety record. We are committed to maintaining an injury-free workplace through an embedded safety culture and a comprehensive Occupational Health and Safety System. These ensure effective environmental and safety practices across all our operations. Our Safety and Quality Management Systems are accredited to AS/NZS and ISO standards.

Contact Us

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