

A large industrial drilling rig, the Lucas Wei 100, is shown in operation at a construction site. The rig is mounted on a multi-axle trailer and features a prominent yellow and red color scheme. A worker in an orange shirt and white hard hat is visible near the base of the rig. The background shows a cloudy sky and some trees.

Discover the
LUCAS WEI 100

Safer Drilling
Faster Mobilisation
Reliable Results

 **LUCAS**

✦ Introducing

The Lucas WEI 100

The WEI D100 (DRS200) is a fully API-compliant, ultra-heavy-capacity trailer-mounted multipurpose drill rig, specialising in deep directional drilling and high-load production programs. Featuring a massive 100-tonne hold-back capacity, an integrated intelligent pipe handler, and a fully automated drill cab package, it delivers high-torque performance across a variable mast angle range from 45 degrees to vertical.



The Lucas WEI 100 Slant is designed to deliver measurable outcomes where it matters most:

- Reduced exposure through a hands-free automated iron roughneck and electronic interlock pipe loader system.
- Lower cost per metre through an intelligent Auto Driller system and a 16-metre Range 3 top head stroke.
- Predictable delivery through a mobile, self-contained trailer package equipped with remote rig setup functions.

Advanced Operator Control & Visibility

- Dual-range rotation drive with 35,056 ft-lbf of torque at low speeds and 170 RPM for operational tracking.
- Equipped with a flexible tilting top head assembly of 0° to 85° supporting automated pipe alignment between top drive and pipe handler.
- Auto Driller system with automation set points for top drive torque, top drive RPM, weight-on-bit (WOB), and support rate of penetration (ROP).

Built-In Diagnostics & System Intelligence

- Electronic interlock parameters integrated in all pipe loader functions to prevent dropped pipe hazards.
- Advanced full electro-over-hydraulic (EOH) drillers console featuring industrial HMI screens and a dedicated 4-camera rig surveillance feed.
- Dual control infrastructure including a secondary control panel on the drillers deck to maintain full drilling capability without the main cab.

Situational Awareness & Site Integration

- Variable lattice mast structure designed to step precisely from 45° to vertical in clear 5-degree increments.
- Wide-clearance drilling base featuring an 18" to 24" API power slips layout with up to a 40" full passage with the bowl removed.
- Sub-floor utility management supported by an integrated 5-tonne blowout preventer (BOP) handling structure under the rig floor.

Increased Productivity & Operational Efficiency

- High-performance rack-and-pinion feed system delivering 100 t hold-back and 40 t pull-down capacity up to 0.9 m/s.
- High-pressure circulating system rated at 5,000 psi with hydraulically operated vent valves and Fig 602 hammer union connections.
- Caterpillar C18 industrial power package developing 630 HP within a soundproof acoustic enclosure to optimise daily operations.

Telemetry & Future-Ready Automation

- Smart PLC control systems supporting comprehensive data logging and advanced remote machine setup functions.
- Engineered to align with strict tier-one safety standards by mechanically isolating all deck hands from active high-torque makeup zones.

Robust, Mine-Ready System Design

- Highly mobile main rig trailer footprint with transport dimensions of 13.91 m by 2.70 m, and a 53 t gross weight.
- Integrated 4-tonne utility jib crane with a 180-degree slew angle capable of reaching well center at any operational mast angle.
- Trailer-mounted 20-foot Dog House equipped with automated hydraulic access stairs and a 2,000 L fuel tank capacity.



WEI 100 SPECIFICATIONS

PERFORMANCE LIMITS

Max. Hold Back	100 t
Max. Pull Down	40 t
Low Speed Torque	4,753 daNm(35,056 ft-lbf) @ 45 RPM
High Speed Torque	1,800 daNm (13,276 ft-lbf) @ 170 RPM

ENGINE & POWER TRAIN

Engine	Caterpillar C18 Industrial (6-cylinder turbo-charged aftercooled)
Rating	630 HP 'C' curve with soundproof enclosure
Fuel Tank Capacity	2,000 L
Gearbox	Twin Disc Technodrive driven by Parker hydraulic pumps

WINCHES & CRANES

Winch Model	4 t Jib Winch
Slew Reach	180° slew angle with full well- center reach at all mast positions

CONTROL DOG HOUSE

Enclosure	20' trailer mounted dog house with hydraulic access stairs
Cab Console	Full EOH panel with HMI screens and 4 x camera monitor layout

TRANSPORT DIMENSIONS

Transport Size	13.91 m (L) x 2.7 m (W) x 4.5 m (H)
Gross Weight	53 t (main rig trailer configuration)

DRILL RIG MAST

Mast Type	2 section sliding lattice mast
Operating Angles	45° to vertical in 5° increments
Top Drive Stroke	16 m (optimised for Range 3 tubulars)

RIG BASE & SLIPS

Table Height	3.5 m
API Power Slips	3½" to 24"
Full Passage	37½" (opens to 40" with bowl removed)

IRON ROUGHNECK UNIT

Clamping Range	3 ½" to 24" (single block change)
Max. Make-up Torque	9,500 daNm (70,068 ft-lbf) - limited to 8,500 daNm
Max. Break-out Torque	9,500 daNm (70,068 ft-lbf)
Clearance	24 ½" full opening passage (removable for 40" passage)

CIRCULATING & MIST PUMPS

Fluid System	3 ½" ID, 5,000 psi rated piping layout
Connections	Fig 602 Hammer & Unions and hydraulic vent valves
Mist Pumps	FMC L1114 Triplex pump package

TOP DRIVE QUILL

Swivel Connection	4 ⅝" FH Pin with 5" full bore through quill
Water Swivel	3" internal fluid swivel
Assembly Type	Hydraulically tilting mechanism for 9 m tubulars up to 2,800 kg

CARRIAGE FEED SPEEDS

Max. Speed Up	0.9 m/s
Max. Speed Down	0.9 m/s
Automation	Integrated multi-parameter Auto Driller system

TUBULAR HANDLER

Handling Range	4 ⅝" FH Pin with 5" full bore through quill
Max. Lift Capacity	3,000 kg
Protection	Fully integrated safety electronic interlocks



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.

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