



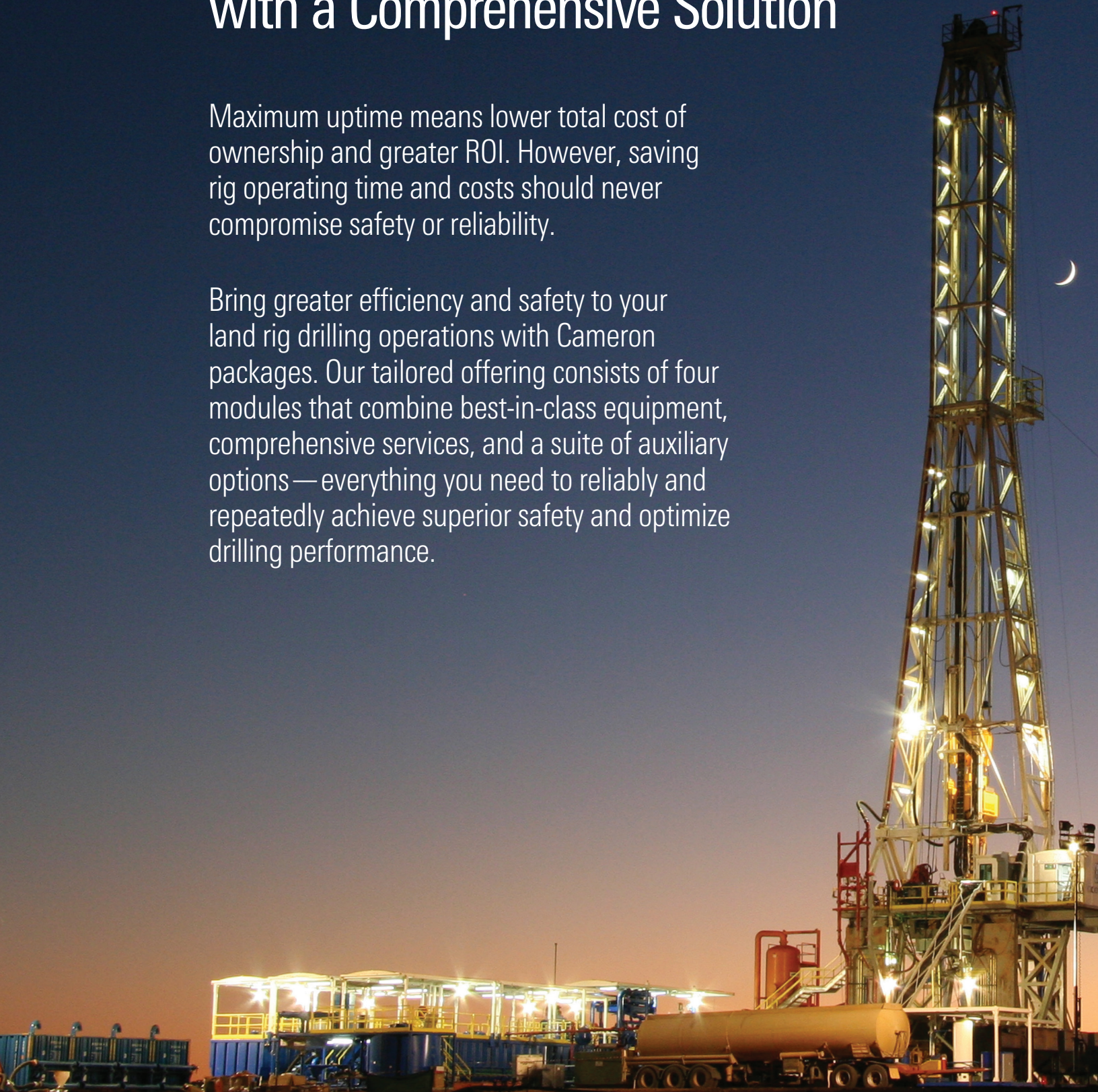
# Land Drilling Packages

Integrated, standardized solutions for efficient operations

# Maximize Drilling Efficiency with a Comprehensive Solution

Maximum uptime means lower total cost of ownership and greater ROI. However, saving rig operating time and costs should never compromise safety or reliability.

Bring greater efficiency and safety to your land rig drilling operations with Cameron packages. Our tailored offering consists of four modules that combine best-in-class equipment, comprehensive services, and a suite of auxiliary options—everything you need to reliably and repeatedly achieve superior safety and optimize drilling performance.



## APPLICATIONS

- Land drilling

## BENEFITS

- Expedited time to total depth (TD)
- Reduced total cost of ownership
- Minimized NPT
- Increased operational efficiency at the rig site
- Longer equipment service life and enhanced equipment reliability
- Improved HSE profile

## FEATURES

- Four tailored, standardized packages
- Complete rig assembly
- Drilling control system (DCS)
  - Plug-and-play connection and startup
  - Integration of all systems into one centralized, standardized, and scalable network
  - Seamless interface with Schlumberger software
  - Automated sequences

- Zone management system to minimize risk of machinery collision on drillfloor
- Real-time recording and storage of all drilling, equipment, and events data
- Analysis while drilling
- Software that minimizes top drive stick/slip
- Configurable drilling control room (DCR) with streamlined human-machine interface (HMI) and working environment
- Industry-leading drilling and pressure-control equipment
- Global services and support
  - Flexible procurement options, including condition-based maintenance (CBM) agreements
  - 24/7 global service network for minimized downtime
  - Remanufacturing facilities that ensure equipment availability
  - Training courses available for operators and maintenance personnel at strategically located centers around the world

# Land Drilling Packages

Rig Package Component	LDP-1000	LDP-1500	LDP-2000	LDP-3000
Mast and substructure	Integrated Schlumberger offering			
Top drive	TD-250-AC or TD-350-AC	TD-500-AC-2M (two 550-hp AC motors)	TD-500-AC-2M (two 550-hp AC motors)	TD-750-AC-1M-C (one 1,150-hp AC motor)
Drilling control room and system	Operator chair with DCS	Operator chair with DCS	Operator chair with DCS	Optional two operator chairs with DCS
Rotary table	AC or hydraulic 27½-in L-275	AC or hydraulic 37½-in L-375	AC or hydraulic 37½-in L-375	AC 49½-in L-495
Iron roughneck	T-P iron roughneck	T-P iron roughneck	T-P iron roughneck	T-P iron roughneck
BOP	11-in, 5,000-psi double U* surface ram-type BOP	13½-in, 10,000-psi double and single U BOP	13½-in, 10,000-psi double and single U BOP	13½-in, 15,000-psi double and single U BOP
Annular	11-in, 5,000-psi T-90* short-body annular BOP	13½-in, 5,000-psi T-90 BOP	13½-in, 5,000-psi T-90 BOP	13½-in, 10,000-psi DL* high-pressure annular BOP
Drawworks	LDW 550K drawworks (one 1,600-hp AC motor)	CDW-375 drawworks (two 1,150-hp AC motors)	CDW-500 drawworks (two 1,600-hp AC motors)	LDW 1500K drawworks (three 1,600-hp AC motors)
Drawworks power, hp	1,500	2,200	3,000	4,500
Hookload capacity, lbf [N]	550,000 [2,446,500]	750,000 [3,336,200]	1,000,000 [4,448,200]	1,500,000 [6,672,300]
BOP controls	12 bottles; one 25-hp, 460-V, 11-galUS/min triplex pump; three 40:1 air pumps	16 bottles; one 30-hp, 460-V, 14.5-galUS/min triplex pump; four 40:1 air pumps	16 bottles; one 30-hp, 460-V, 14.5-galUS/min triplex pump; four 40:1 air pumps	20 bottles; two 30-hp, 460-V, 14.5-galUS/min triplex pumps
Catwalk machine	2.3 SmartCat* catwalk machine	3.5–4.5 SmartCat catwalk machine	3.5–4.5 SmartCat catwalk machine	3.5–4.5 SmartCat catwalk machine
Choke and kill manifolds	3-in, 5,000-psi manifold	3-in, 10,000-psi manifold	3-in, 10,000-psi manifold	4-in, 15,000-psi manifold
Solids controls and mud mixing	Integrated offering with M-I SWACO for solids control, cuttings management, and fluids processing			
Mud pump	CMP* 1600 mud pump	CMP 1600 mud pump	CMP 1600 mud pump	CMP 2200 mud pump
Power systems	Variable frequency drive (VFD) house	VFD house, three generators, and optional local equipment room (LER)	VFD house, four generators, and optional LER	VFD house, five generators, and optional LER
Pipe handling	Mechanized	Mechanized	Mechanized	Mechanized

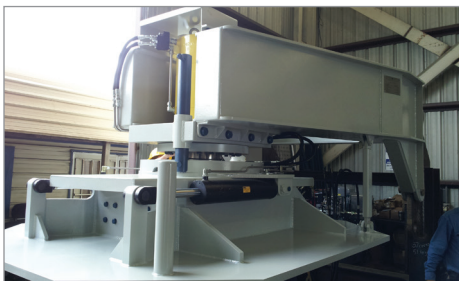


# LDP-1000

1,000-hp rig design with 550,000-lbf hookload and 11-in, 5,000-psi BOP

No.	Rig Package Component	Description
1	Mast and substructure	Integrated Schlumberger offering
2	Top drive	TD-250-AC or TD-350-AC
3	Drilling control room and system	Operator chair with DCS
4	Rotary table	AC or hydraulic 27½-in L-275
5	Iron roughneck	T-P iron roughneck
6	BOP	11-in, 5,000-psi double U BOP
7	Annular	11-in, 5,000-psi T-90 BOP
8	Drawworks	LDW 550K drawworks (one 1,600-hp AC motor)
	Drawworks power, hp	1,500
	Hookload capacity, lbf [N]	550,000 [2,446,500]
9	BOP controls <sup>†</sup>	12 bottles; one 25-hp, 460-V, 11-galUS/min triplex pump; three 40:1 air pumps
10	Catwalk machine	2.3 SmartCat catwalk machine
11	Choke and kill manifolds <sup>†</sup>	3-in, 5,000-psi manifold
12	Solids controls and mud mixing	Integrated offering with M-I SWACO for solids control, cuttings management, and fluids processing
13	Mud pump	CMP 1600 mud pump
14	Power systems	VFD house
15	Pipe handling	Mechanized

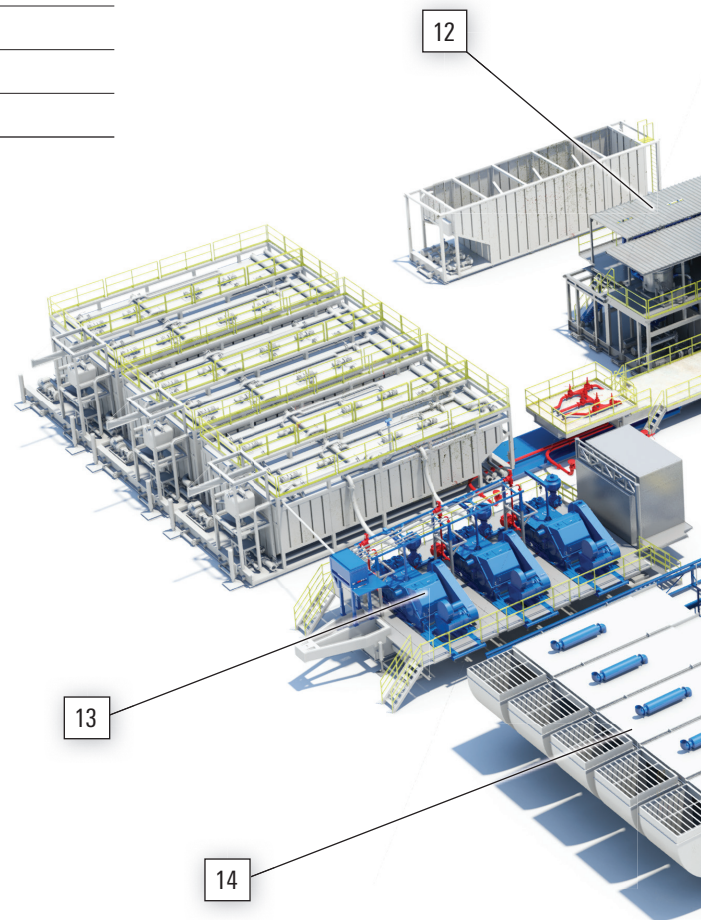
<sup>†</sup> Not visible in illustration

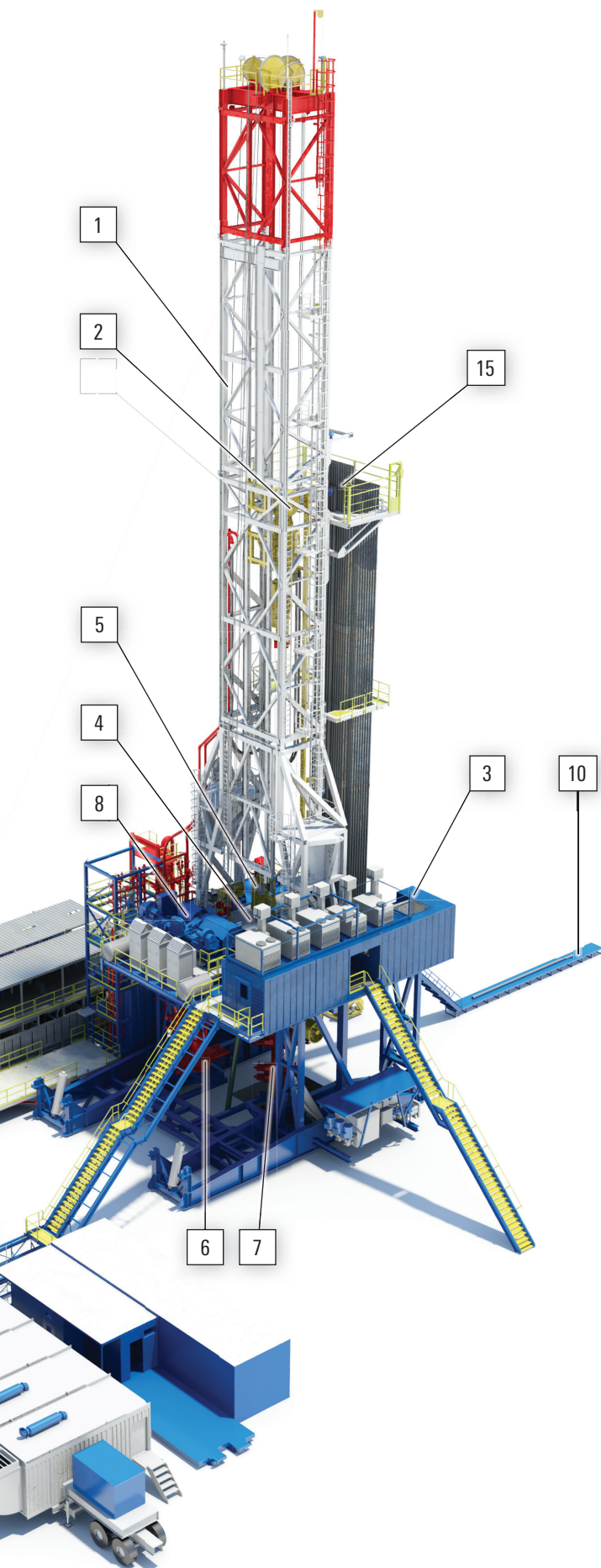


## Lift & Slide system

The Lift & Slide\* walking system employs four corner lift units, each sized for appropriate weight distribution.

- Walking speeds of 1 ft/min
- 360° rig movement
- Seven locking positions
- 1,000- and 1,500-t capacities





### U BOP

The pressure-energized U BOP is the most widely used ram-type BOP in the world.

- Reduced sealing force for long ram seal life
- Hydraulically opening bonnets
- Field-replaceable bonnet cylinders, pistons, and seals
- NACE compliance



### CMP 1600 mud pumps

Ideal for land applications, CMP mud pumps provide increased mobility and high performance in a compact design.

- 1,600 hp
- 7,500-psi pressure rating
- Carburized gear, premium antifriction roller bearings
- Water- and air-cooled heat exchangers
- Simplified discharge manifold

# LDP-1500

1,500-hp rig design with 750,000-lbf hookload and 13<sup>5</sup>/<sub>8</sub>-in, 10,000-psi BOP

No.	Rig Package Component	Description
1	Mast and substructure	Integrated Schlumberger offering
2	Top drive	TD-500-AC-2M (two 550-hp AC motors)
3	Drilling control room and system	Operator chair with DCS
4	Rotary table	AC or hydraulic 37 <sup>1</sup> / <sub>2</sub> -in L-375
5	Iron roughneck	T-P iron roughneck
6	BOP <sup>†</sup>	13 <sup>5</sup> / <sub>8</sub> -in, 10,000-psi double and single U BOP
7	Annular	13 <sup>5</sup> / <sub>8</sub> -in, 5,000-psi T-90 BOP
8	Drawworks	CDW-375 drawworks (two 1,150-hp AC motors)
	Drawworks power, hp	2,200
	Hookload capacity, lbf [N]	750,000 [3,336,200]
9	BOP controls <sup>†</sup>	16 bottles; one 30-hp, 460-V, 14.5-galUS/min triplex pump; four 40:1 air pumps
10	Catwalk machine	3.5–4.5 SmartCat catwalk machine
11	Choke and kill manifolds	3-in, 10,000-psi manifold
12	Solids controls and mud mixing	Integrated offering with M-I SWACO for solids control, cuttings management, and fluids processing
13	Mud pump	CMP 1600 mud pump
14	Power systems	VFD house, three generators, and optional LER
15	Pipe handling	Mechanized

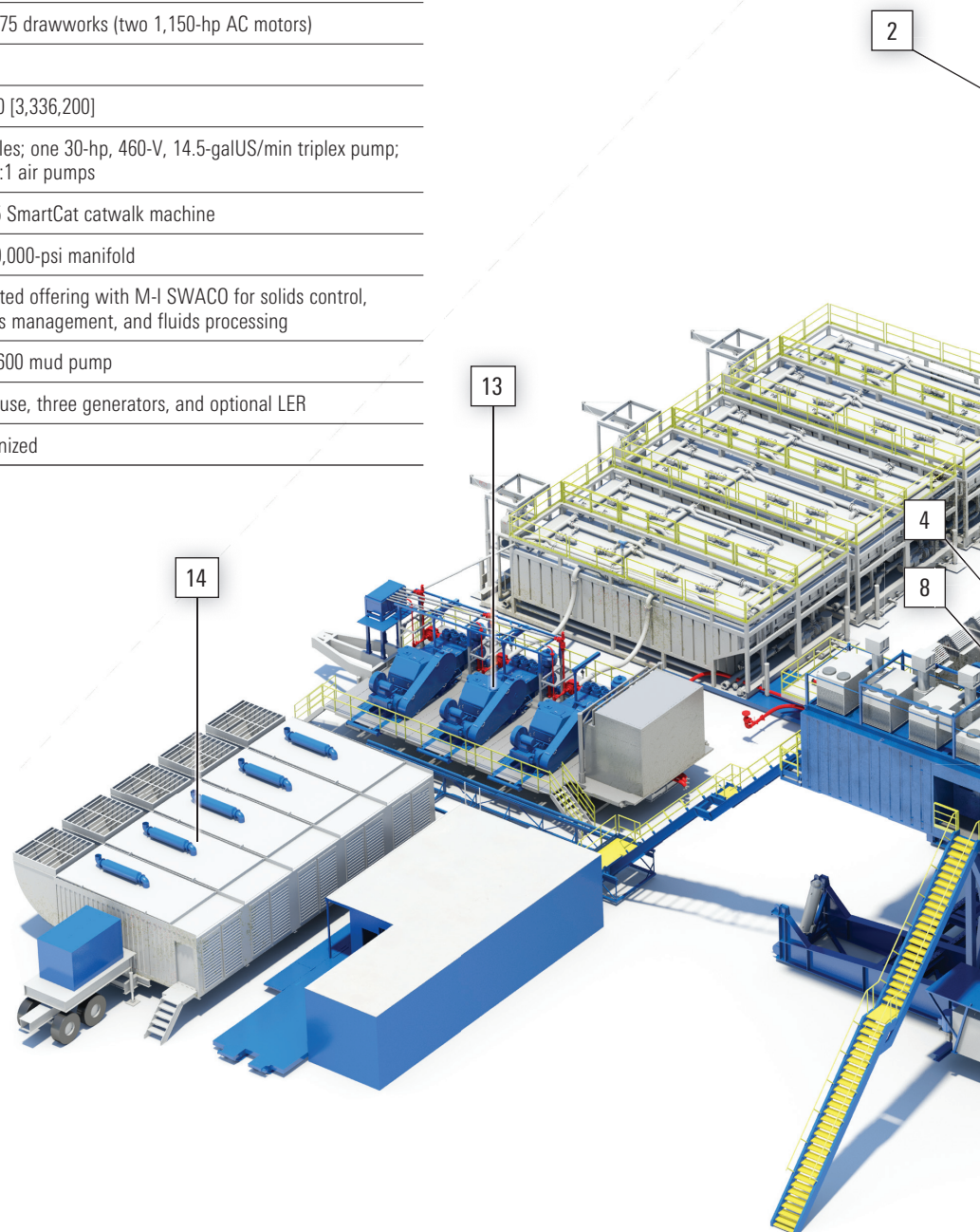
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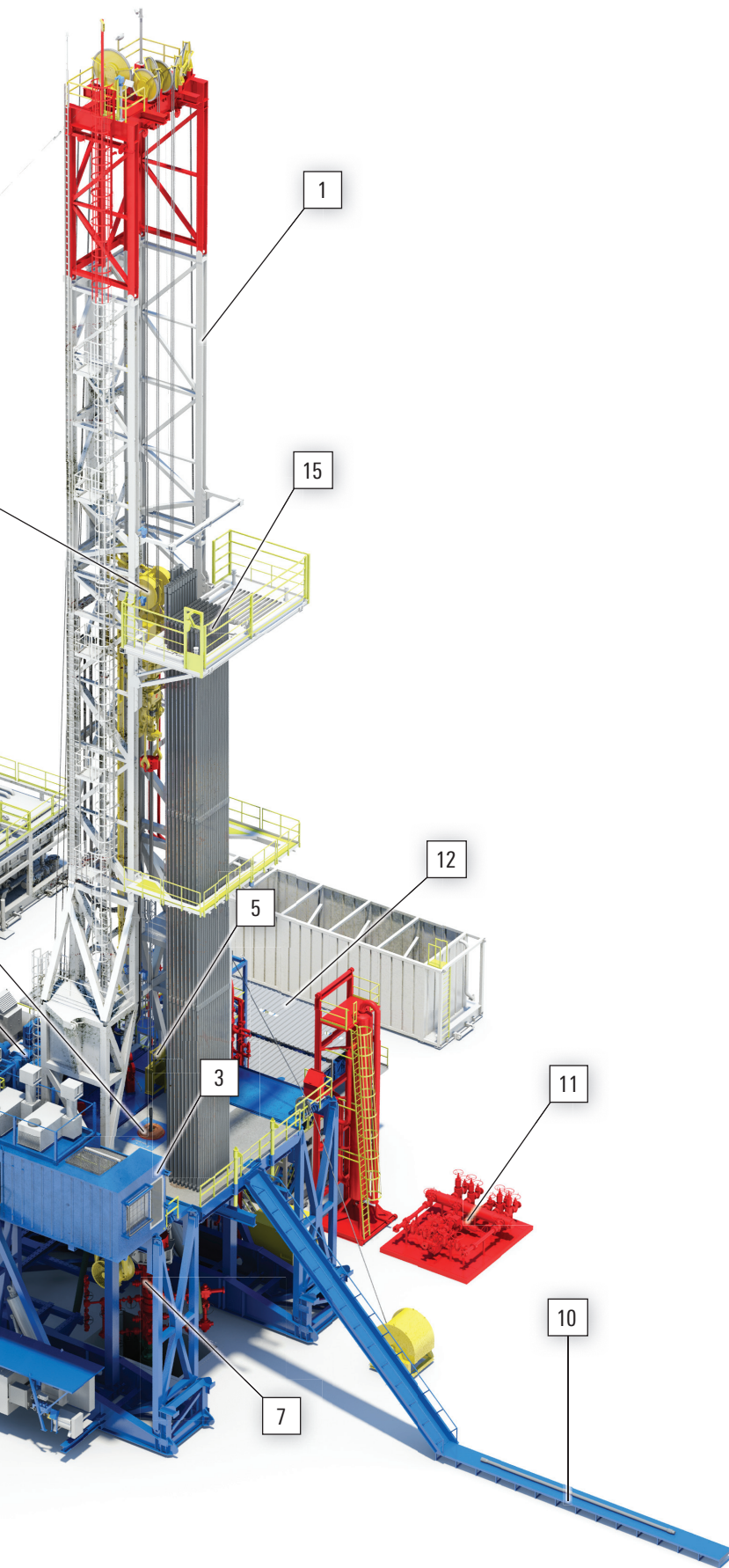


## CDW-375 drawworks

This powerful dual-motor drawworks provides high redundancy in a compact package.

- Dual 1,150-hp AC motors with a single gearbox
- High-capacity Wichita® plate brake
- Optional 2:1 planetary motor reducers





**TD-500-AC-2M top drive**

High-quality components, modularity, and reliable gearboxes, controls, and automation make Cameron top drives the preferred choice for optimized drilling.

- 500-T capacity
- Redundant dual-motor AC design
- High-precision, redundant sensors
- Robust gearbox design
- Dual retention of all fasteners



**T-90 BOP**

When vertical space is limited, the T-90 short-body annular BOP provides a dependable closing and sealing solution.

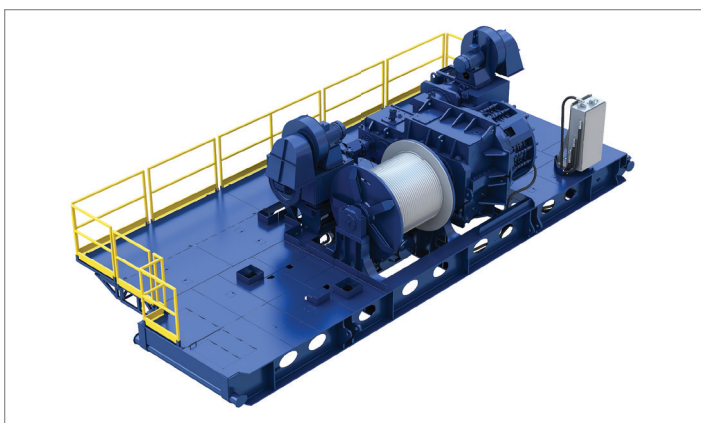
- 5,000-psi pressure rating
- Synthetic rubber packer
- Monogramable to API 16A

# LDP-2000

2,000-hp rig design with 1,000,000-lbf hookload and 13<sup>5</sup>/<sub>8</sub>-in, 10,000-psi BOP

No.	Rig Package Component	Description
1	Mast and substructure	Integrated Schlumberger offering
2	Top drive	TD-500-AC-2M (two 550-hp AC motors)
3	Drilling control room and system	Operator chair with DCS
4	Rotary table	AC or hydraulic 37 <sup>1</sup> / <sub>2</sub> -in L-375
5	Iron roughneck	T-P iron toughneck
6	BOP	13 <sup>5</sup> / <sub>8</sub> -in, 10,000-psi double and single U BOP
7	Annular	13 <sup>5</sup> / <sub>8</sub> -in, 5,000-psi T-90 BOP
8	Drawworks	CDW-500 drawworks (two 1,600-hp AC motors)
	Drawworks power, hp	3,000
	Hookload capacity, lbf [N]	1,000,000 [4,448,200]
9	BOP controls <sup>†</sup>	16 bottles; one 30-hp, 460-V, 14.5-galUS/min triplex pump; four 40:1 air pumps
10	Catwalk machine	3.5–4.5 SmartCat catwalk machine
11	Choke and kill manifolds	3-in, 10,000-psi manifold
12	Solids controls and mud mixing	Integrated offering with M-I SWACO for solids control, cuttings management, and fluids processing
13	Mud pump	CMP 1600 mud pump
14	Power systems	VFD house, four generators, and optional LER
15	Pipe handling	Mechanized

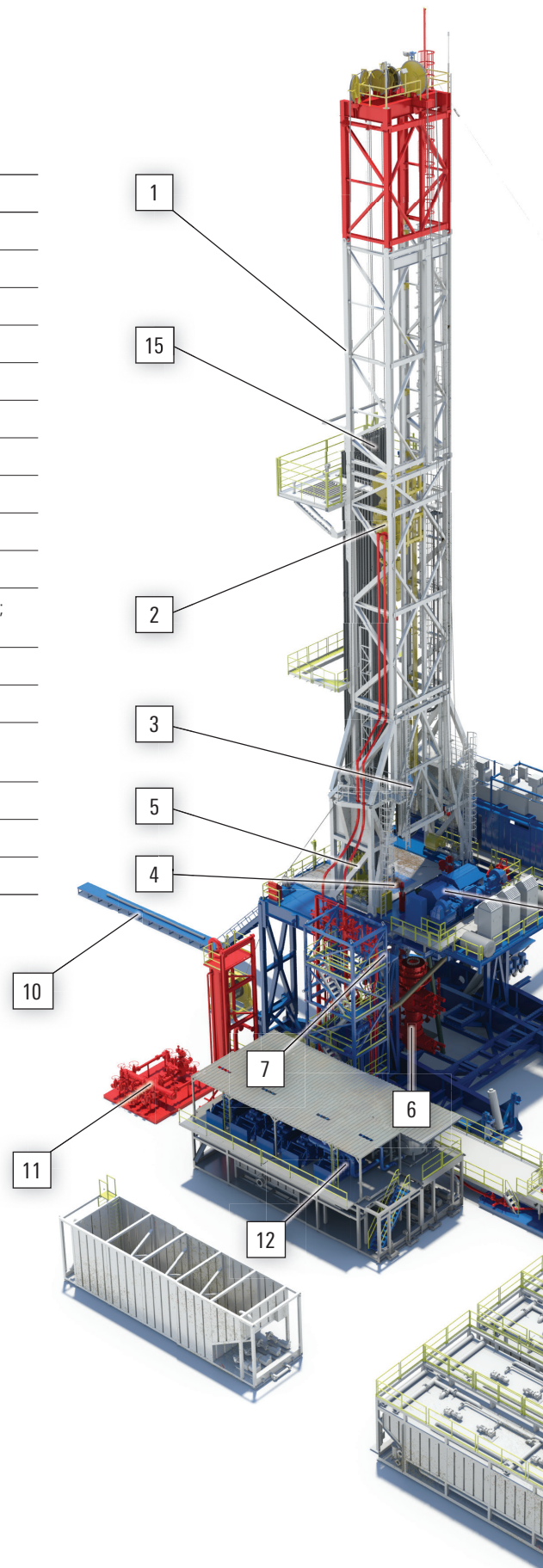
<sup>†</sup> Not visible in illustration



## CDW-500 AC drawworks

This power dual-motor drawworks provides high redundancy in a compact package, offering optional planetary speed reducers that enable full hoisting capacity at half speed in the event of motor interruption.

- Dual 1,600-hp AC motors with a single gearbox
- High-capacity Wichita plate brake
- Optional 2:1 planetary motor reducers





### Operator chair with DCS

The Cameron DCS portfolio features integrated control and information systems that boost drilling operations. Advanced programming and interface architecture make it easier to monitor and control sophisticated drilling equipment, increasing uptime through quicker changes between equipment tasks.

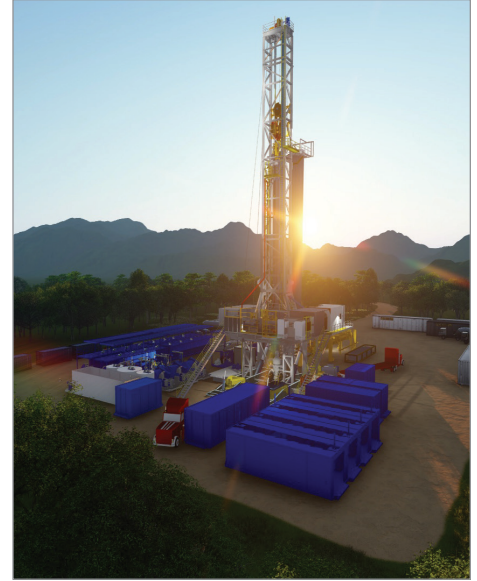
- All equipment integrated to chair
- Intuitive HMI
- Ergonomic adjustments for continuous stress-free operation
- Three front HMI screens for optimal line of sight
- Built-in redundancy



### Pipe handling equipment

Cameron provides effective and reliable pipe handling solutions for land rigs based on your needs. Engineered with a fail-safe design philosophy, Cameron pipe handling equipment ensures high uptime, improved safety, and reduced operation cost.

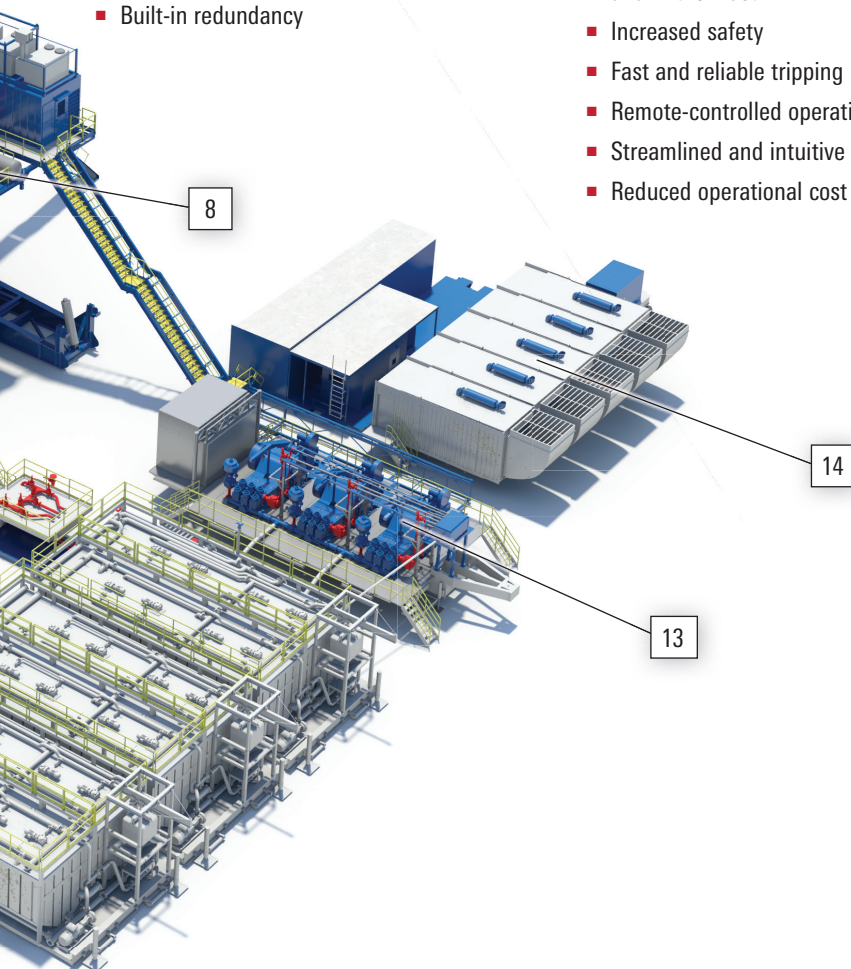
- Hands-off pipe handling
- Reduced need for workforce on drill floor and in the mast
- Increased safety
- Fast and reliable tripping
- Remote-controlled operations
- Streamlined and intuitive solutions
- Reduced operational cost



### Mast and substructure

The Maverick\* fast-moving rig's innovative design combines easy and fast rig-up and rig-down with a high level of structural strength. Able to handle the harsh challenges of high-volume horizontal drilling and move quickly, the Maverick rig has a proven track record of enhancing drilling efficiency in some of the world's most demanding pad drilling applications.

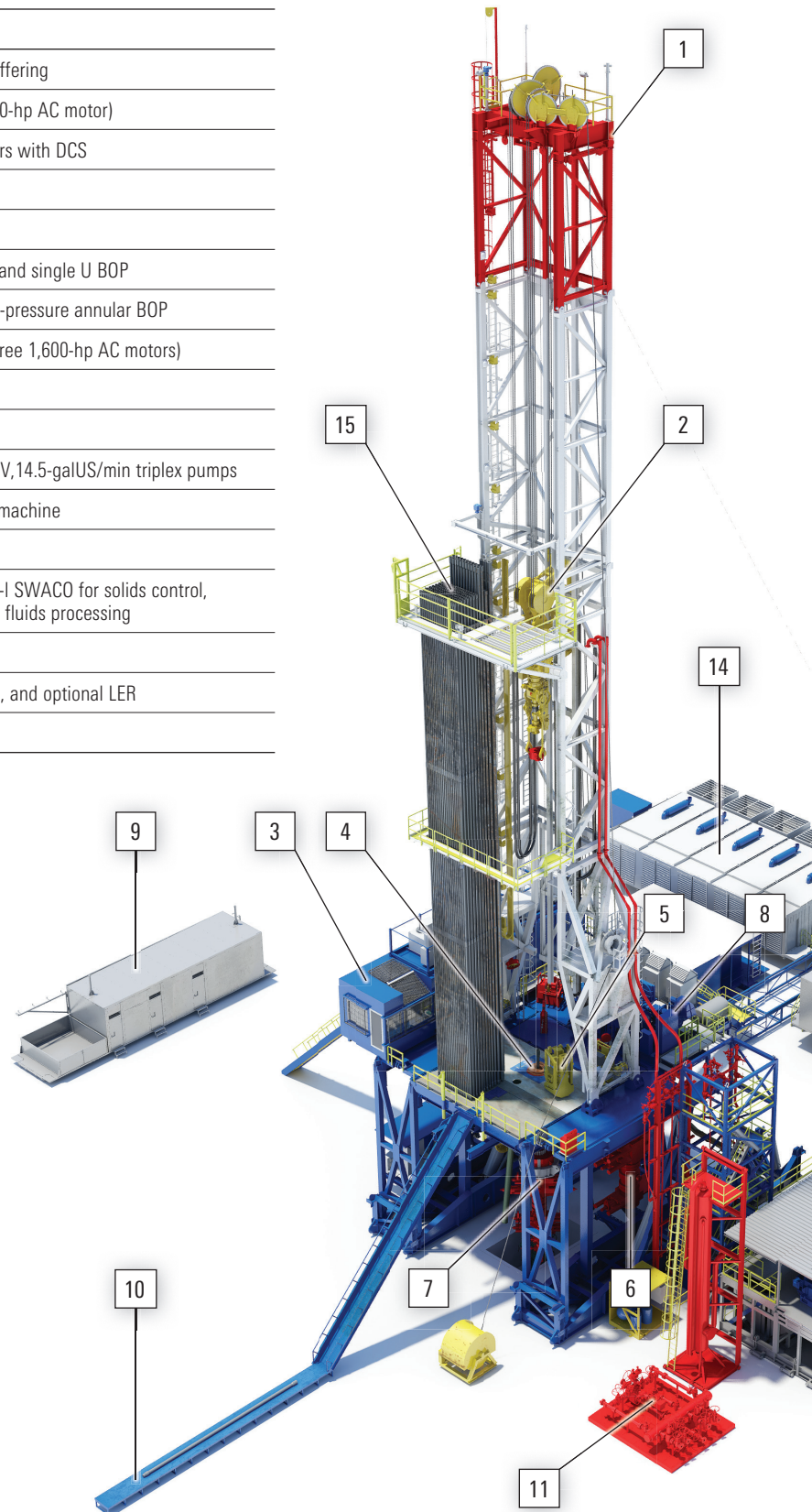
- Craneless mast and substructure rig-up
- Advanced hydraulics for mechanized rig-up and enhanced crew safety
- Mast-raising cylinders for raising the substructure and mast
- Built-in drill floor fluid containment
- Transportation of top drive in the middle section and the traveling block in the mast crown section
- Seamless integration with the Lift & Slide walking system to provide "rig walking" capability
- Ability to rotate using just a Lift & Slide system



# LDP-3000

3,000-hp rig design with 1,500,000-lbf hookload and 13<sup>5</sup>/<sub>8</sub>-in, 15,000-psi BOP

No.	Rig Package Component	Description
1	Mast and substructure	Integrated Schlumberger offering
2	Top drive	TD-750-AC-1M-C (one 1,150-hp AC motor)
3	Drilling control room and system	Optional two operator chairs with DCS
4	Rotary table	AC 49 <sup>1</sup> / <sub>2</sub> -in L-495
5	Iron roughneck	T-P iron roughneck
6	BOP	13 <sup>5</sup> / <sub>8</sub> -in, 15,000-psi double and single U BOP
7	Annular	13 <sup>5</sup> / <sub>8</sub> -in, 10,000-psi DL high-pressure annular BOP
8	Drawworks	LDW 1500K drawworks (three 1,600-hp AC motors)
	Drawworks power, hp	4,500
	Hookload capacity, lbf [N]	1,500,000 [6,672,300]
9	BOP controls	20 bottles; two 30-hp, 460-V, 14.5-galUS/min triplex pumps
10	Catwalk machine	3.5–4.5 SmartCat catwalk machine
11	Choke and kill manifolds	4-in, 15,000-psi manifold
12	Solids controls and mud mixing	Integrated offering with M-I SWACO for solids control, cuttings management, and fluids processing
13	Mud pump	CMP 2200 mud pump
14	Power systems	VFD house, five generators, and optional LER
15	Pipe handling	Mechanized





### LDW 1500K AC drawworks

The robust LDW drawworks increases drilling performance, safety, and reliability.

- 1,500,000-lbf hookload capacity
- Three 1,600-hp AC motors
- Dual braking system
- Emergency lowering controls
- Crown and floor saver



### 3.5–4.5 SmartCat catwalk machine

The SmartCat catwalk machine efficiently transports drillpipe, collars, casings, subs, and other equipment from the pipe deck to the drillfloor. It offers fast, smooth, and more flexible transport operations than traditional catwalks and tubular-type conveyor catwalks. The unique design optimizes the angle of the pipe onto the drill floor. In addition, the optional crane function ensures catwalk versatility and simplifies handling of objects between the ground level and drill floor.

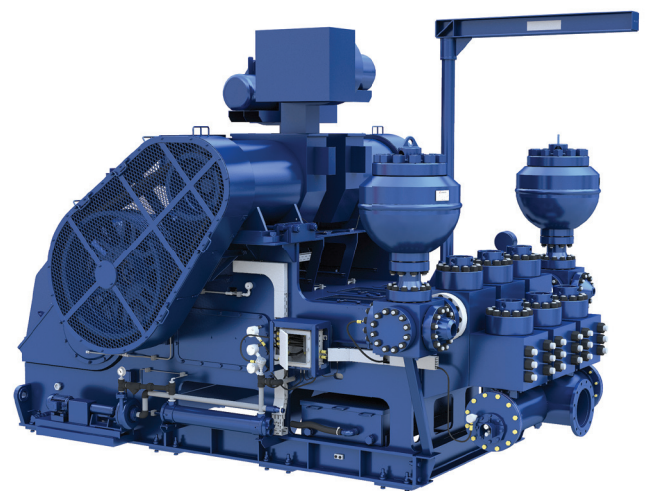
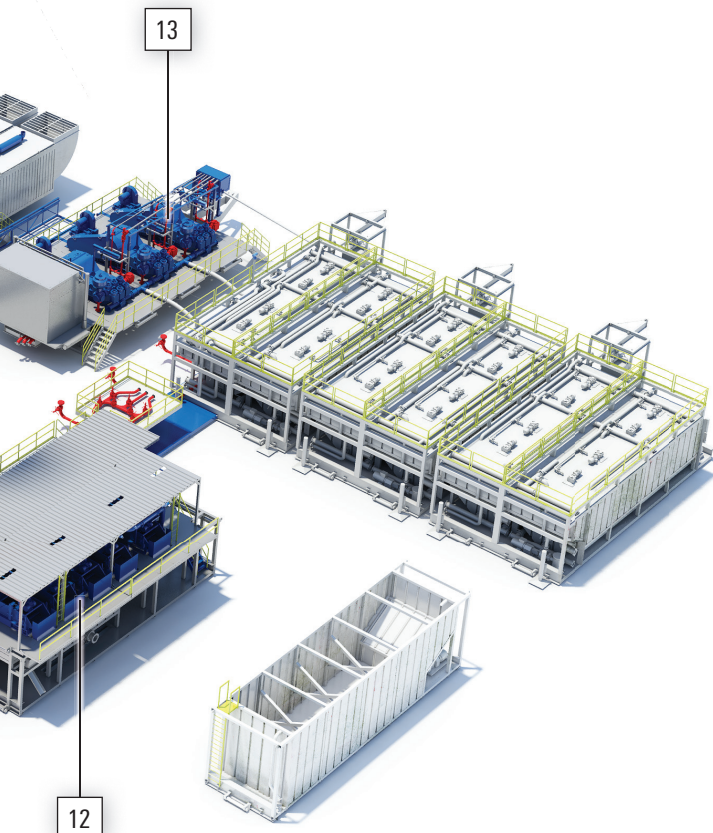
- Fully automated operation from DCR
- Automatic modes for operation
- Handling of a wide range of different tubulars
- Compact design



### Choke and kill manifolds

Our choke manifold systems manage well pressure fluctuations encountered during drilling by diverting flow through a series of valves and chokes.

- 15,000-psi pressure rating
- Compliance with API Standard 53 and API 16C
- ABS and DNV certification
- Components monogramable to API 6A



### CMP 2200 mud pump

With increased mobility in a compact design, CMP mud pumps provide greater efficiency in land applications.

- 2,200 hp
- 7,500-psi pressure rating
- Carburized gears and premium antifriction roller bearings
- Water- and air-cooled heat exchangers
- Simplified discharge manifold

# Options

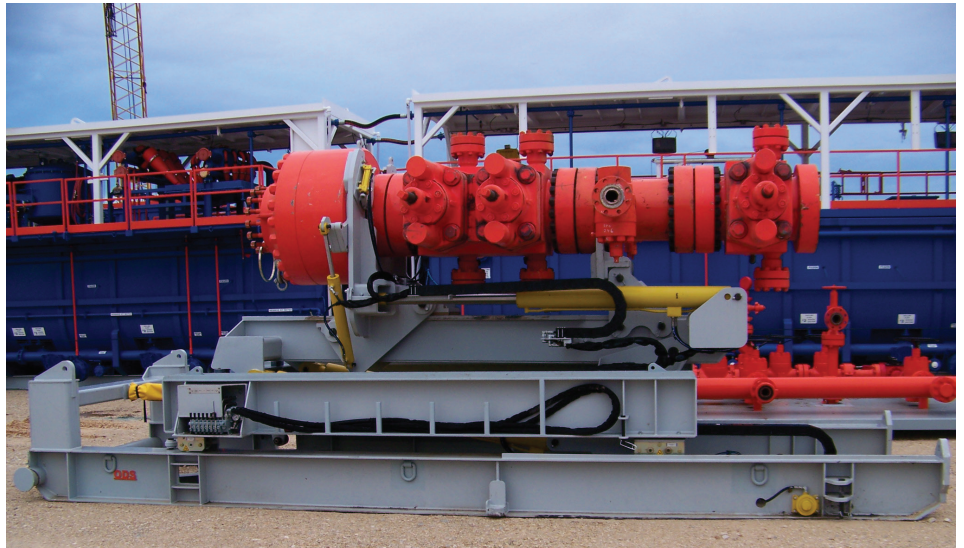
## Maximize rigsite uptime

Cameron supplies a comprehensive land drilling package from one supplier, enabling operations to begin as soon as the package is delivered at the rig site. This means decreased downtime for your crew and increased efficiency for your drilling operations.

## Customize your package

Because drilling conditions vary tremendously, we offer auxiliary components to give you the ability to build a fit-for-purpose rig system.

- Flexible top drive and mud pump options to fit hole size and flow rate requirements
- Additional drawworks sizes and horsepowers
- Second chair configuration for the DCR
- Lift & Slide walking system
- Liquid- or air-cooled VFDs
- Additional BOP and ram sizes and pressure ratings to meet your criteria
- Specialized elastomers for H<sub>2</sub>S and high-temperature applications
- Manual, hydraulic, and electrically actuated well control and drilling chokes
- Wrangler\* BOP handling system for safer, faster, and more efficient transport and installation of BOPs to the well center
- Mud standpipe and cement manifolds



*The Wrangler system enables the BOP stack to be transported via truck in a single, manageable piece and positioned more safely compared with onsite BOP assembly.*

# Increased Efficiency Through Integration

All Cameron land drilling packages seamlessly integrate with M-I SWACO solids control and drilling fluid mixing equipment to improve the efficiency of your operation, lower drilling costs, and optimize rig performance.

## Managed pressure drilling (MPD)

MPD equipment and services enable a closed-loop circulation system in which pore pressure, formation fracture pressure, and bottomhole pressure are balanced and optimized at surface. Drilling fluid is supplemented by surface back pressure, which can be adjusted in response to downhole conditions much more quickly compared with conventional methods of changing mud weight. Cameron can provide a land rig equipment package complete with M-I SWACO MPD equipment to increase the capabilities of your rig. Our experts can work with you to analyze, plan, and execute MPD programs while working with and training your personnel.

## Mixing and solids control

All Cameron land drilling packages interface with M-I SWACO solids control equipment and mixing technologies. These solutions are engineered to maintain fluid integrity, reduce fluid losses, minimize HSE impact, and lower drilling costs through NPT management.

Technologies include a complete line of shale shakers with OEM composite screens, new-generation centrifuges and pumps, cuttings dryers, and gas separation equipment.

# Services

With Cameron, you have a world of resources at your command—around the clock and around the globe. Dedicated to optimizing your operations and reducing your total cost of ownership, we have the most locations worldwide, staffed with qualified people who are accessible 24/7, so you are never without service when you need it. What's more, our integrated systems and advanced processes enable us to provide faster turnaround.

## 24/7 accessibility

Field service technicians are available around the world 24/7 to provide a wide variety of services that range from field repairs to preventive maintenance, technical support, and training no matter where you need it. With centers strategically located in major hubs around the globe, the level of service and support supplied combines localized expertise with worldwide communication capabilities.

Additionally, Cameron control systems are designed to enable remote access. A VPN router for secure authorization and a Cameron support PC are the only two components needed to enable a gateway to all Cameron centers.

## Subject matter expertise

As the OEM, we know our products better than anyone and know how to best service them. Our expert engineers, field service technicians, and training specialists consult with customers to recommend the best service and support that meet customer need and maximize asset life.

## Training

The Cameron drilling simulator is used to train the rig's operational and maintenance crews on machinery and control stations, sequences collaboration, manual operation, and unexpected scenarios. In addition, the simulator aids in internal training to ensure that our service personnel are continually updated with the latest features and equipment.

The drilling simulator uses 3D models based on the equipment and machine software that is used on the rig, which reduces variability between real life and simulator operations. The operator can reverse, stop, or change the operation at any time. In addition to suiting initial training requirements, the simulator training is an ideal refresher for those participants who have previously taken Cameron operational training.

## Distribution support

Cameron has one of the largest distribution networks in the world. Our distribution centers stock new and refurbished replacement parts based on the anticipated needs of local customers.

Our distribution centers are geographically located in all regions to ensure access to critical service parts with minimal downtime. These distribution centers serve as bases of operation for field sales order management, field inventory control, field purchasing, and product distribution.



# Land Drilling Packages



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