Customized Drilling Solutions
Nabors is committed to shortening the drilling cycle by improving drilling efficiency and safety. We are also committed to providing customized drilling solutions to the problems that operators face every day.

That’s why we developed our PACE® series of rigs.

PACE® rigs are equipped with innovative technology, including sophisticated instrumentation systems and the latest in engine emission technology. These Programmable A/C Electric Rigs are PLC controlled and designed for the unique drilling requirements of today. Their compact footprint and design result in faster move times and a corresponding reduction in drilling costs. They continue to set drilling records in key oil and gas areas and routinely surpass the drilling curve established by operators.
The PACE®-M Series rig is a programmable 1,000-hp AC electric rig with PLC controls. The driller’s console allows full control of the drawworks, top drive, mud pumps and all other significant equipment from a single location. The PACE®-M Series rig performs equally well either drilling single wells or in a multi-well pad configuration.

The PACE®-M Series rig drills in a broad range of depths and in a variety of geographical and geophysical areas. It has made drilling record wells a habit, including field record directional and horizontal wells. Its days-versus-depth drilling record routinely surpasses the drilling curve established by operators.

Specifications include:

**DRAWWORKS:**
1,000-horsepower AC drawworks featuring regenerative AC braking. Drawworks is driven by two (2) 800-hp AC motors. Autodrill functionality utilizing AC motors.

**POWER GENERATION:**
Three (3) – Caterpillar 3512C engines rated at 1,476 horsepower, each driving one (1) Kato 1365 KW generator, for a total of 4,428 horsepower. AC power generation, Variable Frequency Drive (VFD) and MCC unitized in a single house.

**MAST:**
Loadmaster 142’ telescoping mast manufactured to API-4F specification. Static hook load of 550,000 lbs on 10 lines. Mast is raised and lowered utilizing hydraulic cylinders. Mast top section is scoped utilizing traveling block. Mast is transported as a single load and has integrated top drive rails (enables top drive to travel in mast during rig move).

**SUBSTRUCTURE:**
Loadmaster hydraulically elevated substructure with 22’ floor height and 17’ 10” clear height under the rotary beams. Substructure is rated for 550,000 lbs rotary load simultaneous with a 350,000 lbs setback load.

**DRILLER’S CONTROL:**
Climate-controlled driller’s cabin provides integrated joystick control utilizing PLC technology. Touch screen controls provide state-of-the-art monitoring, control of rig equipment and drilling parameters.

**MUD PUMPS:**
Two (2) 1,600-horsepower mud pumps. Each powered by one (1) 1,500-horsepower AC motor, pumps are equipped with hydraulic liner retention and pump rod systems.

**MUD TANKS:**
One (1) tank system total capacity approximately 750 bbls; two (2) 6” X 8” centrifugal pumps powered with 75 horsepower electric motors. 100 bbl (2 x 50 bbl) trip tank.

**TOP DRIVE:**
Canrig 6027 AC 275-ton integrally mounted top drive with torque capacity of 30,000 ft. lbs and rotating speed of 105 RPM.

**ADDITIONAL EQUIPMENT:**
Dedicated man-rider winch  
Camera system  
Vacuum degasser  
Intercom system  
Automated catwalk / pipe handling system  
Iron Roughneck  
Two (2) hydraulic operated hoists  
BOP Handling system  
Rotating mousehole
The PACE® 1500 is a programmable 1,500-hp AC electric rig with PLC controls. It was designed for deeper drilling, particularly extended-reach horizontal wells. The driller’s console allows full control of the drawworks, top drive, mud pumps and all other significant equipment from a single location. Specifications include:

**DRAWWORKS:**
1,500-horsepower AC drawworks featuring regenerative AC braking. Drawworks is driven by two (2) 1,000-horsepower AC motors.

**PRIMARY POWER:**
Three (3) Caterpillar 3512C engines rated at 1,476 horsepower each, driving one (1) Kato 1365 KW generator, for a total of 4,428 horsepower. AC power generation, Variable Frequency Drive (VFD).

**MAST:**
147’ mast manufactured to API-4F specifications. Static hook load of 800,000 lbs on 12 lines.

**SUBSTRUCTURE:**
Pyramid hydraulically elevated substructure with 29’ 6” floor height and 25’ clear height under rotary beams. Substructure is rated for 800,000 lbs rotary load simultaneous with a 500,000 lbs setback load.

**DRILLER’S CABIN:**
Climate-controlled driller’s cabin provides integrated joystick control utilizing PC technology. Touch screen controls provide state-of-the-art monitoring, control of rig equipment and drilling parameters.

**MUD PUMPS:**
Two (2) 1,600-horsepower mud pumps. Each powered by one (1) 1,500 horsepower AC motor. Pumps are equipped with hydraulic liner retention and pump rod systems.

**MUD TANKS:**
Two (2) tank system. Total capacity approximately 1,000 BBL.

**TOP DRIVE:**
Canrig 1250 AC 500-ton integrally mounted top drive with torque capacity of 51,400 ft. lbs and rotating speed of 118 RPM.

**ADDITIONAL EQUIPMENT:**
Dedicated man-rider winch
Camera system
Vacuum degasser
Intercom system
Automated catwalk / pipe handling system
Iron Roughneck
Two (2) hydraulic operated hoists
BOP Handling system
Rotating mousehole
The **SUPER SUNDOWNER rig** design has been successful on numerous offshore multi-well platforms where space is at a premium. It was successfully adapted by Nabors for land application in the Rocky Mountains. The compact arrangement of the Super Sundowner enables operators to minimize the required footprint for the rig. The SUPER SUNDOWNER has several features that make it desirable, notably increased power and greater horizontal reach than competitive rigs. It can be custom designed to meet operators’ pad configuration and SIMOPS requirements. It can skid in two to five hours, release to spud, and frequently drills more than 20 wells on a pad.

Features include:

**DRAWWORKS:** 1,000-hp AC drawworks featuring regenerative AC braking. Autodrill functionality utilizing AC motors.

**POWER GENERATION:** Three (3) Caterpillar 3512C engines rated at 1,476 hp each, driving one (1) Kato 1365 KW generator, for a total of 4,428 hp. AC power generation, Variable Frequency Drive (VFD) and MCC unitized in a single house.

**MAST:** Loadmaster 142’ Bootstrap style mast manufactured to API-4F specification. Static hook load of 600,000 lbs.

**SUBSTRUCTURE:** Nabors (SUNDOWNER®) designed box-on-box substructure rated for 600,000 lbs rotary load simultaneous with a 300,000 lbs setback load.

**DRILLER’S CONTROL:** Climate-controlled driller’s cabin provides integrated joystick control utilizing PLC technology. Touch screen controls provide state-of-the-art monitoring, control of rig and drilling parameters.

**MUD PUMPS:** Two (2) 1,600-hp mud pumps. Each one powered by one (1) 1,500-hp AC motor.

**MUD TANKS:** Two (2) tank system total capacity approximately 800 BBL. Two (2) 50-BBL trip tanks.

**TOP DRIVE:** Canrig 6027 AC, 275-ton top drive with torque capacity of 30,000 ft. lbs. and rotating speed of 105 RPM.

**ADDITIONAL EQUIPMENT:**
- Dedicated man-rider winch
- Iron Roughneck
- BOP Handling system
- Automated catwalk / pipe handling system
- Intercom system
- Camera system
The PACE® Academy Rig is a programmable 1,000-horsepower AC electric rig with PLC controls. Built by Nabors’ wholly owned Canadian subsidiary, Acadamy Services, it is designed for winterized drilling activity. It is equipped with ROCKIT™, the Canrig directional steering control system designed to improve drilling efficiency on directional wells. Its ability to drill efficiently was demonstrated conclusively when it drilled to 10,000 feet in slightly more than four days. Also available in a 1,500-hp model.

Specifications include:

**DRAWWORKS:** Commander 650 A/C Drawworks driven by one (1) AC Motor rated at 1,150 hp.

**DRILLERS CONSOLE:**
- Enclosed, climate controlled driller’s cabin.
- All PLC technology (Programmable Logic Controls).
- Features “Joy Stick” control and touch screens.
- Cameras and monitor.
- Integrated Automatic Driller Functions, etc.
- Remote diagnostics via satellite.

**PRIMARY POWER:**
- Three (3) Caterpillar 3512 C engines rated at 1,476 hp each.
- VFD House for control and AC Power Distribution throughout the rig.

**MAST:**
- 142-ft. High Cantilever Mast rated at 650,000 lbs.

**SUBSTRUCTURE:**
- Self elevating with one-piece “center steel.”
- Floor Height 23 feet.
- Clear Height 19 feet.
- Maximum rotary table supporting capacity irrespective of setback load 500M lbs.

**MUD PUMPS:**
- Two (2) Gardner Denver PZ-10 triplex mud pump.
- Each pump is driven by one (1) 1150 AC motor.

**MUD TANKS:**
- Two (2) tank system, capacity 1,000 bbl.
- One (1) Suction Tank including:
  - #1 Suction Tank — 203 bbls
  - Pill Tank — 95 bbls
- #2 Suction Tank — 203 bbls
- Two (2) 75 HP Mix Pumps and Hopper
- Trip Tank: Trip tank with standard controls/indicators and two (2) 50 bbls each compartments.

**TOP DRIVE:**
- Canrig 6027AC 275 ton Top Drive with torque capacity of 30,000 ft. lbs and rotating speed of 105 RPM.

**OTHER FEATURES**
- Iron roughneck
- Two hydraulic hoists
- Rotating Mousehole
- BOP Handling System
- Automated Cat-Walk Pipe Handling System
The Nabors AC hybrid coil tubing rig incorporates PACE® technology and is ideal for shallow gas wells and for deeper re-entry and sidetrack drilling. This versatile rig can drill surface hole with jointed pipe and finish with 2 7/8 inch to 3 1/2 inch coil tubing, a particularly valuable combination when drilling horizontal wells.

Three CT series models are available:

CT 100 rated to 1500 meters or 5,000 feet
CT 200 rated to 1800 meters or 6,000 feet
CT 300 rated to 3000 meters or 10,000 feet

Specifications for the CT 100 are:

DRAWWORKS: Foremost variable speed with Eaton auxiliary brake and 100,000 lb hoisting capacity

RIG POWER: Caterpillar 1,220 hp generating 1800 rpm

DERRICK: Foremost 64 ft with 100,000 lb API rating

SUBSTRUCTURE:
- Maximum Load Capacity Rotary of 100,000 lbs
- KB-Ground 12’-5”
- Vertical Clearance for BOPs 10’-5”

ROTARY TABLE: Enid Drill Systems Hydraulic

SWIVEL: Foremost

TRAVELING EQUIPMENT:
- Web Wilson 75-ton bails
- Web Wilson 75-ton elevator
- Web Wilson 75-ton block/hook

DRILLING LINE: One inch wire rope rated to 114,000 lbs.

MUD PUMPS: Gardner Denver PZ9 powered by WEG AC 1153 HP

MUD TANKS:
- One 500-barrel with 30-barrel trip tank
- Two Brandt agitators

INSTRUMENTATION: Academy/Ryan

TOP DRIVE: Foremost RC 240

LUBRIC STRIPPER: Progressive Tech hydraulic

INJECTOR: Stewart & Stevenson

TUBING STORAGE REEL: Foremost
Focus On Safety

Nabors Drilling continually strives to improve on what is already an industry leading safety record. That's why PACE® rigs are equipped with:

- Automated floor wrenches, which eliminate injuries associated with making and breaking connections.
- Automated catwalks, which reduce crew exposure to pipe handling, the most common cause of injury.
- Cameras in the derrick, which permit the driller to view the derrick man and the top drive.
- Air-powered slips which prevent back injuries.

The effectiveness of PACE® rigs in reducing injuries is reflected in Nabors Drilling USA’s total recordable incident rate, which continues to drop each year as new safety initiatives are instituted.

Comprehensive Training

Nabors Drilling is meeting the demand for skilled rig hands by implementing one of the most comprehensive training programs in the industry. Key components of the program are:

- Strategically located training centers across the United States.
- Drilling simulators and training rigs that replicate actual drilling conditions.
- Positional training and competency testing.

In the last two years the company has trained more than 3,000 rig hands who are playing key roles in meeting the increased demand for Nabors rigs.

Standardized Maintenance

Proper rig maintenance is essential to avoid costly down time and improve drilling efficiency. That's why Nabors Drilling has implemented our MyMaintenance system.

The MyMaintenance system standardizes maintenance and maintenance techniques for all Nabors rigs. It involves the development of a historical database for each rig and includes regular audits. It also includes better planning of scheduled maintenance, which insures that the correct spare part is on location when needed. The result is longer equipment life, improved safety, reduced downtime and lower costs per well.
Key Accessories

Several key accessories, all of which are designed and manufactured by Nabors companies, accompany every Nabors PACE® rig. They include:

- A fully integrated Canrig AC Top Drive.
- The automated catwalk, which keeps rig hands from wrestling drill pipe to the rig floor, a common cause of injury and provides laydown and makeup capabilities.
- The Torq-Matic Automated Floor Wrench, which reduces personnel exposure to tubulars.
- A Canrig Drillers Cabin which provides complete control of the rig from a single location.

Fast Moving Rigs

PACE® rigs are designed to move rapidly, whether well-to-well or in pad drilling configuration. The following features insure PACE® rigs move efficiently:

- Revolutionary mast and substructure are designed to each move in fewer loads.
- Integrated Canrig top drive and traveling block remain in mast during transport.
- Automated BOP handling system moves the BOP in one piece, promoting faster, safer rig up.

Nabors is a leader in pad-drilling in Alaska, Canada and in the U.S. Rocky Mountains. The company has designed and installed various “fit for purpose” skid/pad systems for moving the rig from well to well on the same pad. PACE® rigs are specifically designed for installation of a lift and roll skidding system, or other advanced skidding systems. With these systems, pipe is racked back in the derrick, the BOP is attached to the substructure and the rig is skidded. The rig can be skidded release to spud in as little as two hours. The backyard remains in place and is only moved after multiple wells have been drilled, sometimes 20 or more.
Nabors Subsidiary Companies

Nabors Drilling is supported by several subsidiary companies committed to the same levels of quality, safety, efficiency and technology. These companies include:

Canrig Drilling Technology

Canrig manufactures top drives, automated floor wrenches and automated catwalks. The company has built a reputation for innovation since inception. This began with the industry’s first portable electric top drive and has continued with such achievements as the development of the folding torque guide and the early adaptation of local PLCs. Canrig also introduced remote diagnostics and remote equipment condition monitoring, both of which enhance top drive performance and improve drilling efficiency. Canrig recently deployed ROCKIT®, the company’s directional steering control system which saves rig time while improving the rate of penetration during directional drilling.

Canrig is also one of the fastest growing suppliers of drilling data, analysis and reporting systems and software in the world. The company’s array of sophisticated products and services includes Rigwatch drilling instrumentation systems, RIGREPORT® wellsite reporting software, DML digital mudlogging systems and RIGWATCH EXPLORER® log analysis software. Information collected by these products is available to drilling contractors and operators anytime, anywhere via myWells.com, a unique internet portal. This allows real-time access to well data and facilitates the management of drilling operations.

Ryan Energy Technologies

Ryan Energy Technologies provides complete horizontal and directional drilling services and solutions along with measurement while drilling (MWD) services for both conventional and unique drilling applications. The company specializes in proprietary downhole and surface technologies and equipment, particularly as they apply to multi-well pads, multi-leg horizontals, underbalanced wells, casing drilling and coal bed methane projects. Ryan provides specialized planning for client directional projects. This well plan is executed by skilled, experienced directional drillers and MWD engineers. Ryan also provides technical training using the company’s Learning Management System in conjunction with testing certification by PETEX/UT. Ryan is committed to safety, which is evidenced in the company’s track record of zero LTA’s since 2000.
Peak USA Energy Services

Peak USA Energy Services is a diversified company with capabilities in rig moving, custom heavy hauling, crane and rigging services and general freight services. The company services its customers from terminals in Texas, Oklahoma, Arkansas and the Rocky Mountains. During its two decades of existence, Peak has developed a reputation for excellence in the services we provide. This includes continually updating equipment and technology to better meet the demands of an ever changing marketplace. Peak also delivers unparalleled customer service, 24 hours a day, 365 days a year. This allows operators to plan projects with confidence that Peak will meet their needs.
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