

# DRILLING RIGS



**PROVEN AROUND THE WORLD**



# BENTEC

## Advanced Technology for Comprehensive Drilling Solutions.

With years of experience, Bentec is one of the world's leading manufacturers of high-quality drilling and workover rigs. In addition, our portfolio includes mechanical and electrical drilling equipment and control systems.

Bentec produces a full range of land rigs and drilling equipment and has been supplying packages that are operating successfully all around the world.

Bentec designs and manufactures a wide range of durable, cost effective and trouble free drilling rigs and drilling equipment for harsh and hostile environments ranging from light units to heavy duty ones with drawworks capacities of up to 3,000 hp.

Bentec provides comprehensive drilling solutions that include technically advanced, field proven equipment integrated into existing systems. Our products increase drilling efficiency, enhance health, safety and environmental (HSE) programs and maximize our customers' life cycle economics.

Bentec possesses an unparalleled capability in the design, manufacture, installation, commissioning and aftermarket service for a wide variety of drilling systems and equipment.

We deliver high grade mechanical drilling equipment like Top Drives, Drawworks, Iron Roughnecks, Mud Pumps, Pipe Handling Equipment and BOP Closing Units.

Our electrical equipment includes Power Control Rooms (VFD and SCR), infoDRILL, Anti Collision Systems, Soft Torque Rotary Systems, and Soft Pump Systems.

We are specialized in designing and manufacturing customized solutions tailored to your individual requirements. Our engineers continue to develop innovative drilling rig systems that can withstand any environmental challenge.

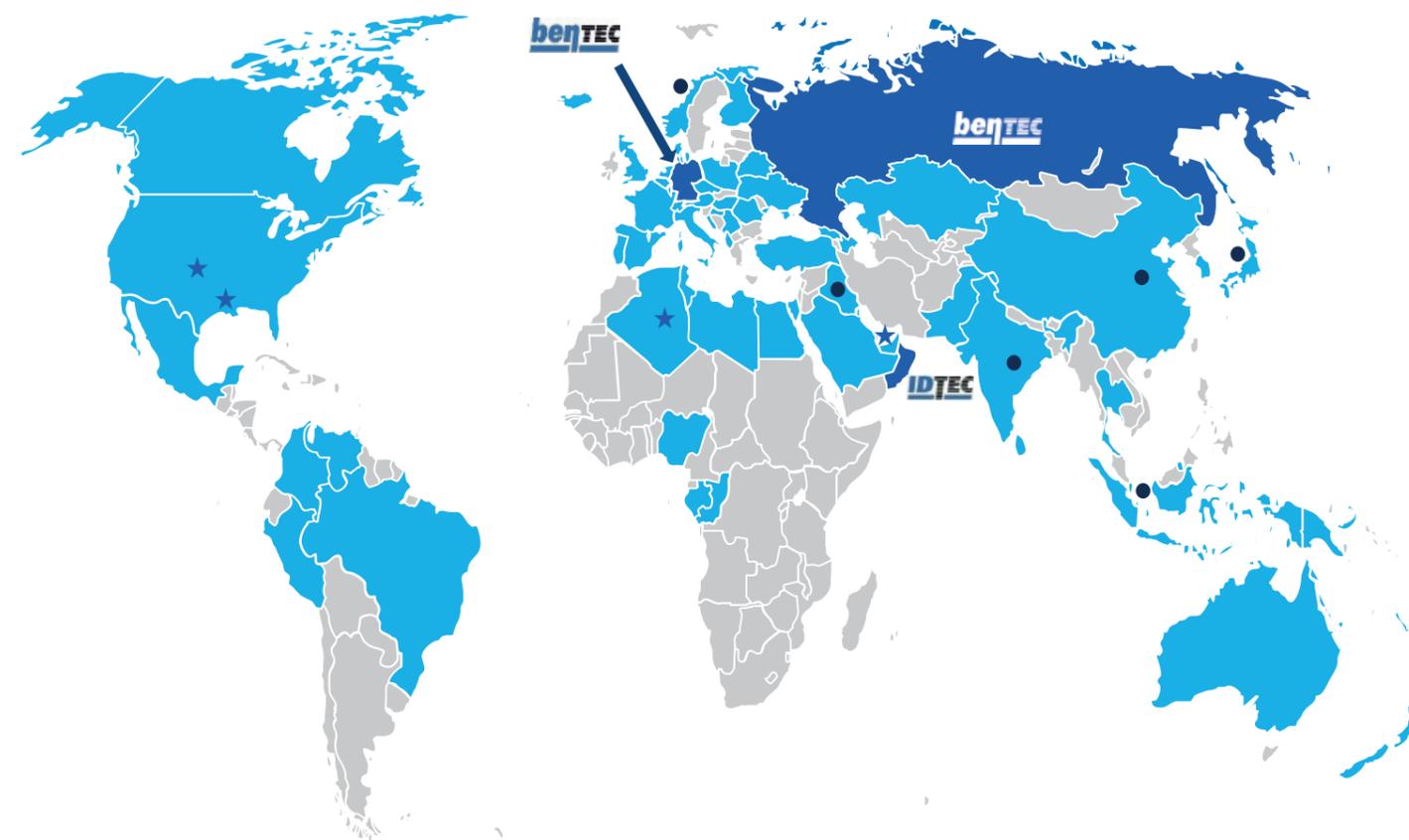
### BENTEC SOLUTIONS - MADE IN GERMANY

- design and manufacture of drilling rigs for worldwide use
- manufacture of mechanical and electrical main equipment and systems
- After Sales Service
- service, repair and overhaul
- spare parts supply and logistics
- upgrades
- recertification
- system integration and commissioning
- global project management



## Bentec Headquarters and Subsidiaries

Bentec is headquartered in Bad Bentheim, Germany, where it maintains production facilities of more than 100,000 m<sup>2</sup>, including its Training Centre. Additionally, we have production and service facilities in Tyumen, Russia and Nizwa, Sultanate of Oman. Furthermore Bentec got a wide range of operational hubs in North America, Algeria and United Arab Emirates as well as an extensive agent network.



★ Operational Hub

● Agent Network

## Bentec – Proven Around the World.

Bentec designs, manufactures and delivers reliable, safe and efficient rigs and equipment for oil, gas and geothermal drilling in the harshest and most hostile environments all around the world. By combining these prime solutions with extensive services ranging from 24/7 field support to a sophisticated training Bentec is a true vertically integrated system supplier.

Everything we do is oriented to our core values, above all to our strict health, safety and environment (HSE) policies.

# EURO RIGS



**Box-on-Box Substructure  
Bootstrap Mast**



**Key Features**

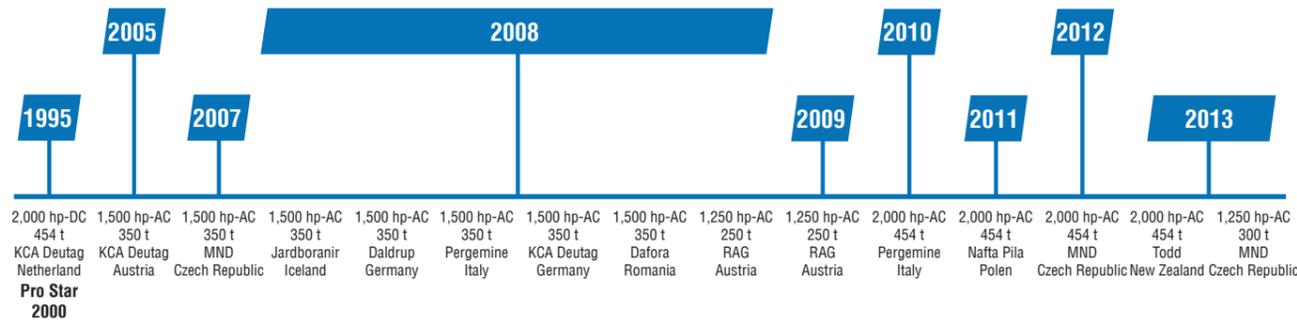
Ambient temperature	-20°C to + 40°C
Drawworks capacities	1,000 hp - 2,000 hp
Hook load capacities	440,000 lbs - 1,000,00 lbs (200 t - 454 t)

- API, DIN EN, ATEX certified
- HAZOP risk assessment
- CE equipment
- Testing & Commissioning
- Rig equipment located inside substructure boxes

**Benefits**

- Small footprint
- Noise reduced equipment
- Rig components & Equipment made by Bentec
- According to European regulations and road conditions
- Rig moves on European roads with standard trucks
- Low non-productive-time [NPT] < 1%
- Field approved equipment

**Bentec history - Euro Rigs**



**Why Bentec Euro Rigs?**

- Modular land rigs for small and sensitive locations.
- Designed to meet the special requirements of the European market.
- Built and certified in compliance with the latest European regulations, CE and ATEX certified equipment, according DIN EN regulations and with HAZOP risk assessment.
- Built according environmental regulations regarding noise and emission limits.
- Small footprint reduces pad construction costs significantly.
- The dimensions of the main mast parts reduced to European road transport limits. No exceptional road permits required, except for the drawworks and mud pumps.
- The containerized substructure, vertical lift mast, modularized mud tank system and optimized transport units ensure a rapid and save rig move.
- The EURO RIGS are engineered with a fast-move philosophy.
- The rig can optionally be equipped with a skidding or walking system for cluster locations.



# EURO RIG

# 200 t / 1,000 hp



## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Vertical Lift Mast

System:	Rig up by crane
Maximum rated static hook load:	440,000 lbs (200 t @ 10 lines)
Mast height:	108.00 ft (33.00 m)
Mast base:	21.33 ft x 18.37 ft (6.50 m x 5.60 m)

### Bentec Box on Box Substructure

System:	Rig up by crane
Height of drill floor:	20.34 ft (6.20 m)
Free height underneath rotary table:	16.40 ft (5.00 m)
Rotary capacity max.:	440,000 lbs (200 t)
Setback load max.:	310,000 lbs (140 t)

### Bentec Drawworks E-200-AC-SG (Single Gear)

Power Rating:	1,000 hp (735 kW)
Drill line diameter:	1 1/8" (29 mm)
Max.line pull:	49,500 lbs (220 kN)

### Bentec Top Drive TD-250 C

Load capacity:	275 ton (250 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1300-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,300 hp (970 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# 250 t / 1,250 hp

## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Vertical Lift Mast

System:	Rig up by crane or cylinder
Maximum rated static hook load:	550,000 lbs (250 t @ 10 lines)
Mast height:	108.00 ft (33.00 m)
Mast base:	21.33 ft x 18.37 ft (6.50 m x 5.60 m)

### Bentec Box on Box Substructure

System:	Rig up by crane
Height of drill floor:	20.34 ft (6.20 m)
Free height underneath rotary table:	16.40 ft (5.00 m)
Rotary capacity max.:	550,000 lbs (250 t)
Setback load max.:	375,000 lbs (170 t)

### Bentec Drawworks E-250-AC-SG (Single Gear)

Power Rating:	1,250 hp (920 kW)
Drill line diameter:	1 1/4" (32 mm)
Max.line pull:	62,000 lbs (276 kN)

### Bentec Top Drive TD-275-HT

Load capacity:	275 ton (250 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

# EURO RIG



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# EURO RIG

## 300 t / 1,250 hp



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Vertical Lift Mast

System:	Rig up by crane or cylinder
Maximum rated static hook load:	660,000 lbs (300 t @ 10 lines)
Mast height:	138.00 ft (42.00 m)
Mast base:	21.33 ft x 18.37 ft (6.50 m x 5.60 m)

### Bentec Box on Box Substructure

System:	Rig up by crane
Height of drill floor:	27.00 ft (8.20 m)
Free height underneath rotary table:	23.00 ft (7.00 m)
Rotary capacity max.:	660,000 lbs (300 t)
Setback load max.:	375,000 lbs (170 t)

### Bentec Drawworks E-300-AC-SG (Single Gear)

Power Rating:	1,250 hp (920 kW)
Drill line diameter:	1 1/4" (32 mm)
Max.line pull:	74,600 lbs (332 kN)

### Bentec Top Drive TD-350-HT

Load capacity:	350 ton (318 t)
Electric motors:	1,030 hp (758 kW)
Continuous torque:	46,500 ft-lb (63,000 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

## 350 t / 1,500 hp

### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Vertical Lift Mast

System:	Rig up by hydraulic cylinder
Maximum rated static hook load:	772,000 lbs (350 t @ 10 lines)
Mast height:	142.00 ft (43.30 m)
Mast base:	28.55 ft x 18.54 ft (8.70 m x 5.65 m)

### Bentec Box on Box Substructure

System:	Rig up by crane
Height of drill floor:	29.52 ft (9.00 m)
Free height underneath rotary table:	24.27 ft (7.40 m)
Rotary capacity max.:	772,000 lbs (350 t)
Setback load max.:	450,000 lbs (204 t)

### Bentec Drawworks E-1500-AC-(Double Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	87,100 lbs (387 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

# EURO RIG



### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Vertical Lift Mast

System:	Rig up by hydraulic cylinder
Maximum rated static hook load:	1,000,000 lbs (454 t @ 12 lines)
Mast height:	142.00 ft (43.30 m)
Mast base:	33.50 ft x 18.50 ft (10.20 m x 5.65 m)

### Bentec Box on Box Substructure

System:	Rig up by crane
Height of drill floor:	29.52 ft (9.00 m)
Free height underneath rotary table:	24.27 ft (7.40 m)
Rotary capacity max.:	1,000,000 lbs (454 t)
Setback load max.:	573,000 lbs (260 t)

### Bentec Drawworks E-2000-AC-(Double Gear)

Power Rating:	2,000 hp (1,470 kW)
Drill line diameter:	1 1/2" (38 mm)
Max. line pull:	105,200 lbs (468 kN)

### Bentec Top Drive TD-500-xT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Output torque:	52,000 ft-lb (70,580 Nm)

### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2" x 12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Four (4) Engine CAT 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools



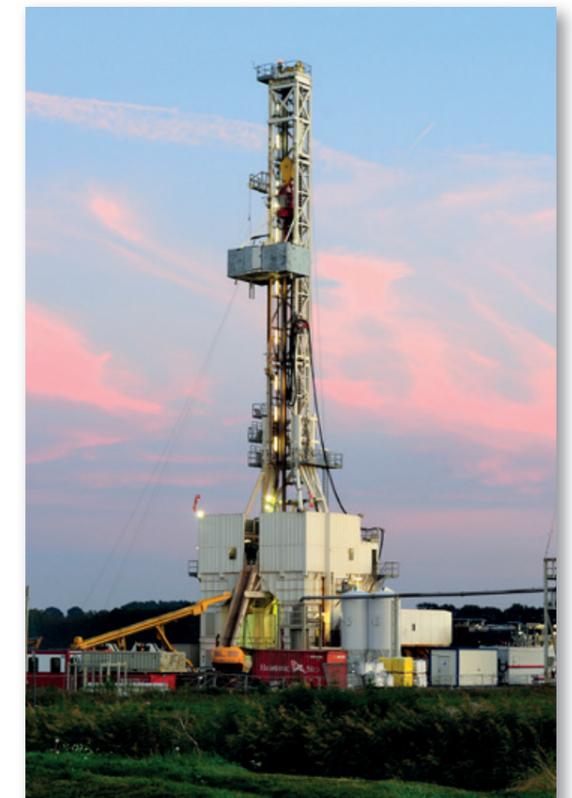
EURO Rig 1,250 hp-250t  
Austria



EURO Rig 1,250 hp-AC-300t  
Czech Republic



EURO Rig 2,000 hp-454t  
New Zealand



EURO Rig 1,500 hp-350t  
Germany

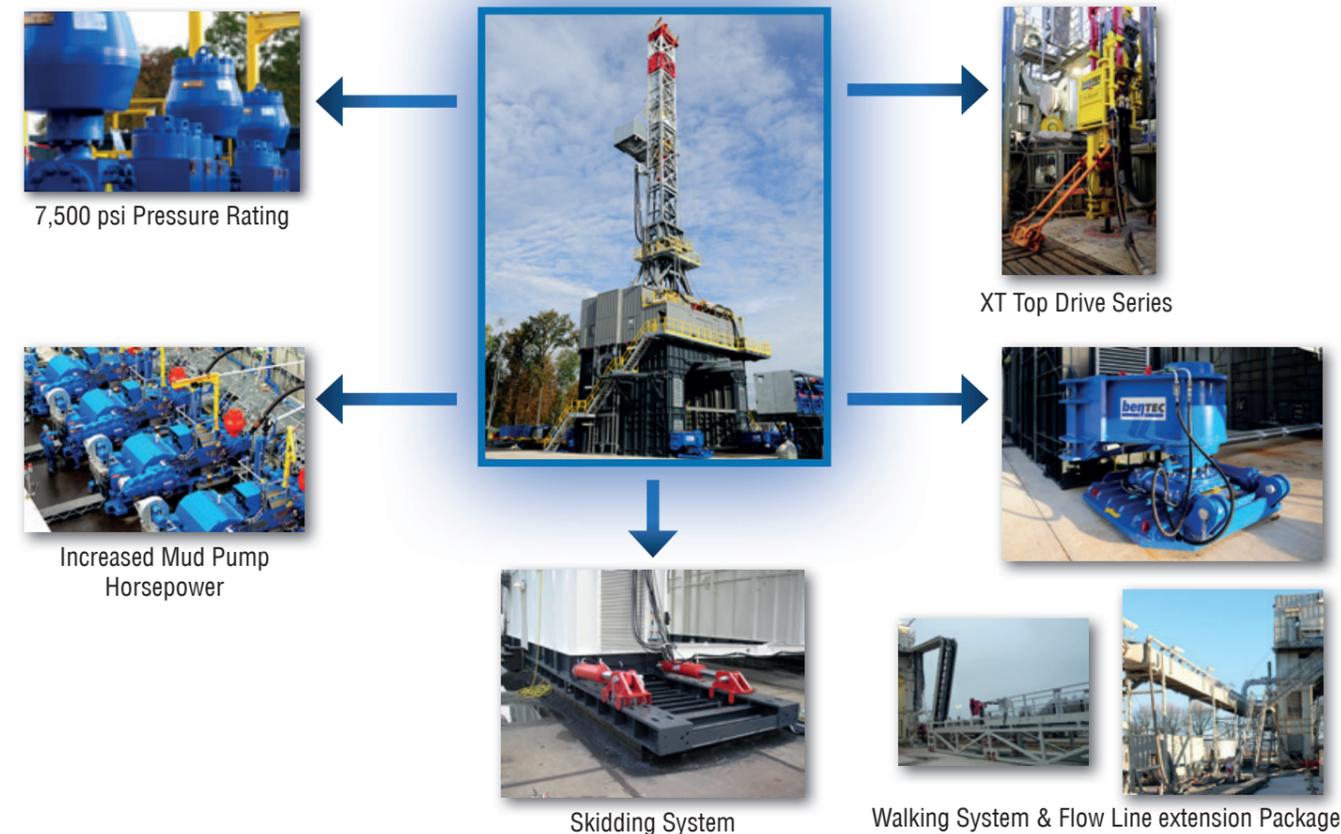
# EURO RIG - SUPER SPEC RIG

The previous pages showed our base rig configuration. Meeting each customer's vision of their drilling campaign requires often various performance upgrades to meet well requirements. With the advantage of a holistic product portfolio in Drilling Equipment and Drilling Enhancement Software, we enable our customer to lift a standard Spec Rig to a Super Spec Rig meeting most challenging drilling requirements and exceeding rig performance on drilling and tripping time.

Possible Euro Rig Configurations and its extensions to Super Spec Rigs

	1,000 hp / 200 t	1,250 hp / 250 t	1,250 hp / 300 t	1,500 hp / 350 t	2,000 hp / 454 t
<b>Base Spec</b>	As shown in previous pages				

Equipment	Controls & Drilling Enhancement Software
<p><b>Super Spec Rig Features &amp; possible upgrades</b></p> <ul style="list-style-type: none"> <li>7,500 psi Pressure rating</li> <li>XT-Series Top Drives</li> <li>Increased Mud Pumps Horsepower</li> <li>Enhanced Pipe Handling Package</li> <li>Hydraulic Catwalk System</li> <li>Pipe Guide Arm</li> <li>Remote Controlled Iron Roughneck</li> <li>Generator Peak Shaving Battery Container</li> <li>Rig Skidding System/Skidding System</li> <li>Rig Walking System</li> <li>Extended Grasshopper Designs</li> <li>Alternate Mast and Substructure Combinations</li> <li>Well Control Equipment</li> <li>Grid Supply</li> </ul>	<ul style="list-style-type: none"> <li>Soft Torque Rotary System</li> <li>Soft Pump System</li> <li>Direct Steering Control System</li> <li>Generator Load Management</li> <li>Rig CARE System</li> <li>Auto Driller Feed Off Mark II</li> <li>Remote Access System</li> <li>Rig Control System (Zone Interlock Management)</li> </ul>



# EURO RIG - SUPER SPEC RIG



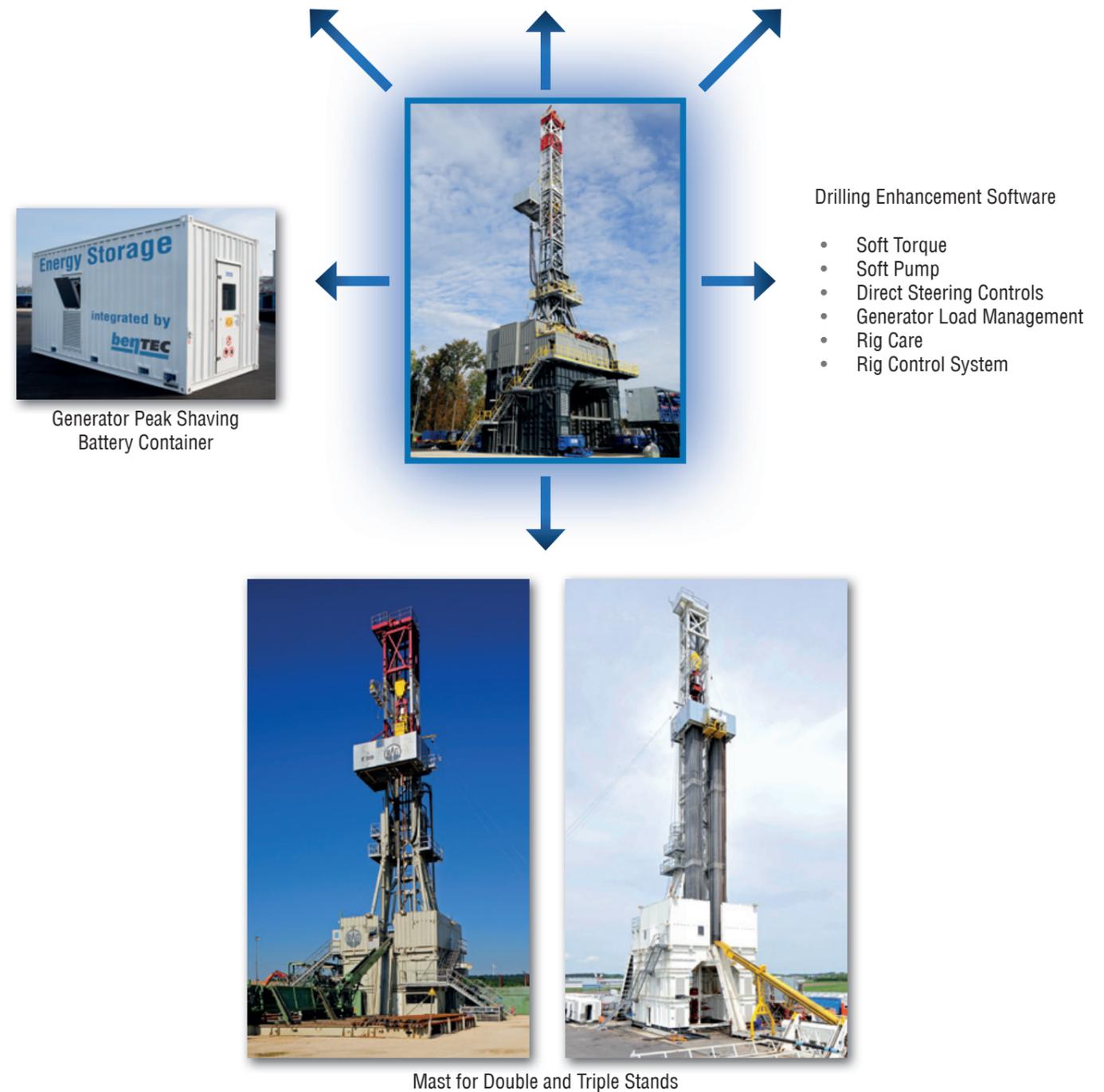
Hydraulic Catwalk



Pipe Guide Arm



Remote Controlled Iron Roughneck



# DESERT RIGS



- Swing Up or Parallel Lift Substructure
- Cantilever Mast



**Key Features**

**Speed Rig**

Ambient temperature	-20°C to + 55°C
Drawworks capacities	1,000 hp - 1,500 hp
Hook load capacities	440,000 lbs - 772,00 lbs (200 t - 350 t)

**Stationary Desert Rig - Swing up & Parallel Lift Type**

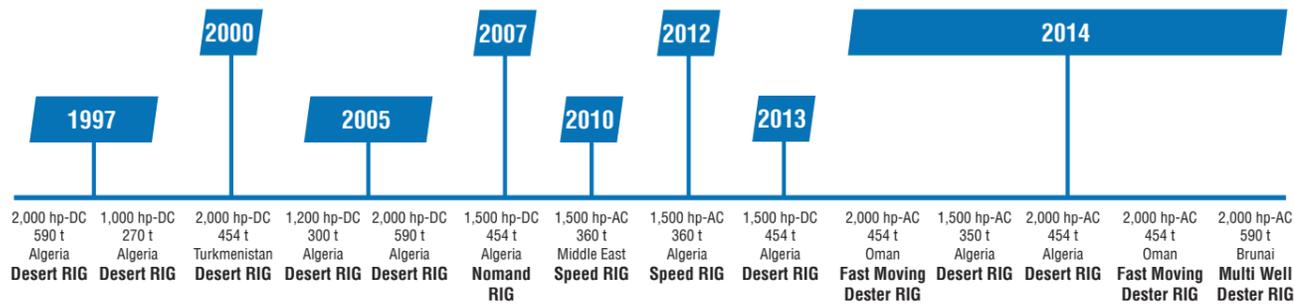
Ambient temperature	-20°C to + 55°C
Drawworks capacities	1,500 hp - 3,000 hp
Hook load capacities	772,000 lbs - 1,500,00 lbs (350 t - 680 t)

- API, DIN EN, ATEX certified
- HAZOP risk assessment
- CE equipment
- Testing & Commissioning

**Benefits**

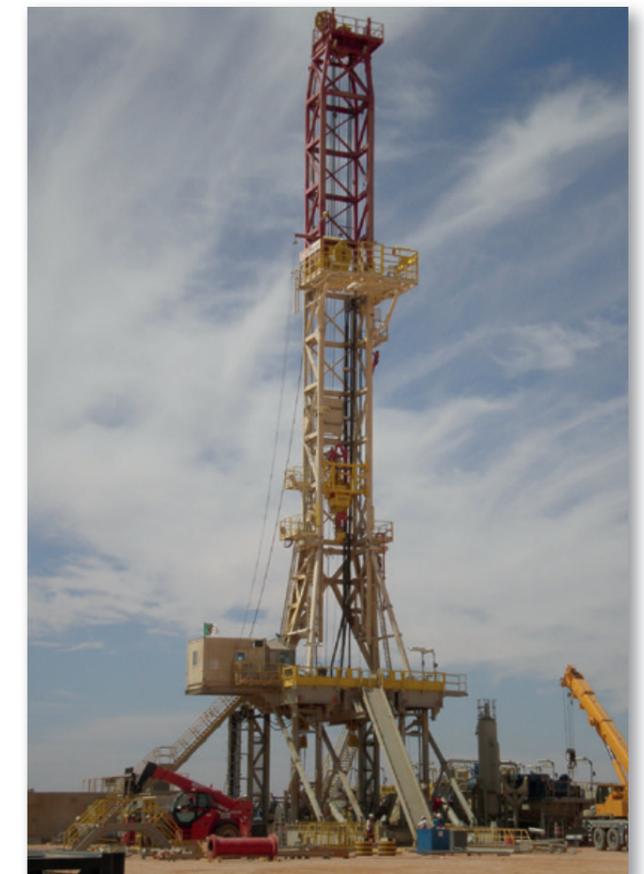
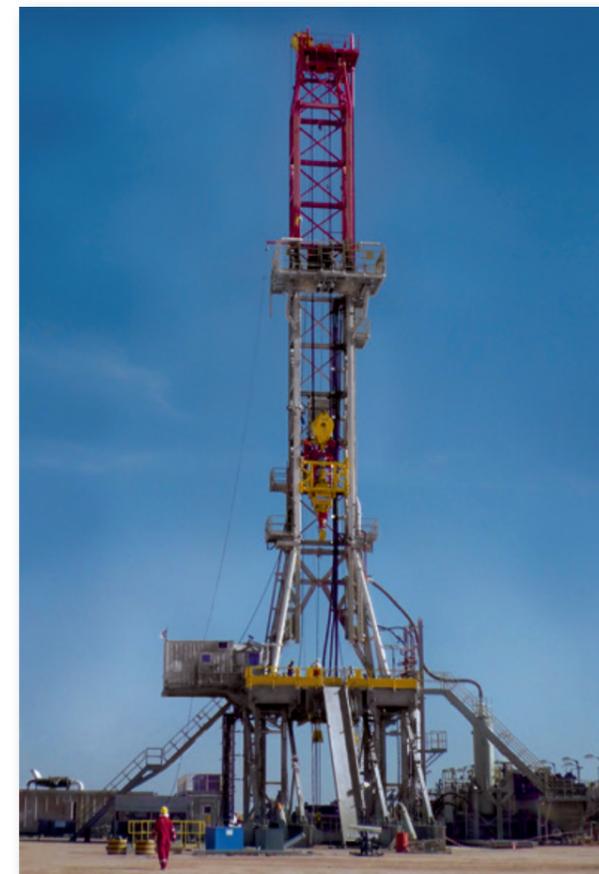
- Fast Rig Move
- Rig components & Equipment made by Bentec
- Low non-productive-time [NPT] < 1%
- Field approved equipment

**Bentec history - Desert Rigs**



**Why Bentec Desert Rigs?**

- Versatile design for different applications
- Superior drilling performance under extreme weather conditions and a safe, high quality working environment
- Components that require a certain level of maintenance are easily accessible and well illuminated
- Bentec Desert Rig is a highly efficient, light and fast moving rig with maximum safety and performance in a compact and highly mobile drilling package.
- Built and certified in compliance with the latest API regulations, CE and ATEX certified equipment, according DIN EN regulations and with HAZOP risk assessment
- The rig can optionally be equipped with a skidding or walking system for cluster locations.
- The Rig can be fitted with moving gear for highly mobile and fast rig moves.



# SPEED RIG

# 200 t / 1,000 hp

# 250 t / 1,250 hp

# SPEED RIG



## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing Mast

System:	Rig up by hydraulic cylinders
Mast height:	108.00 ft (33.00 m)
Mast base:	23.00 ft x 16.00 ft (7.00 m x 4.87 m)
Maximum rated static hook load:	440,000 lbs (200 t @ 10 lines)

### Bentec Parallel Lift Substructure

System:	Rig up by hydraulic cylinders
Height of drill floor:	25.00 ft (7.60 m)
Free height underneath rotary table:	20.00 ft (6.10 m)
Rotary capacity max.:	440,000 lbs (200 t)
Setback load max.:	250,000 lbs (113 t)

### Bentec Drawworks E-200-AC-SG (Single Gear)

Power Rating:	1,000 hp (735 kW)
Drill line diameter:	1 1/8" (29 mm)
Max.line pull:	49,500 lbs (220 kN)

### Bentec Top Drive TD-250-C

Load capacity:	250 ton (227 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1300-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,300 hp (970 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	943 bbl (150 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing Mast

System:	Rig up by hydraulic cylinders
Mast height:	138.00 ft (42.00 m)
Mast base:	23.00 ft x 16.00 ft (7.00 m x 4.87 m)
Maximum rated static hook load:	550,000 lbs (250 t @ 10 lines)

### Bentec Parallel Lift Substructure

System:	Rig up by hydraulic cylinders
Height of drill floor:	28.00 ft (8.50 m)
Free height underneath rotary table:	23.00 ft (7.00 m)
Rotary capacity max.:	550,000 lbs (250 t)
Setback load max.:	350,000 lbs (160 t)

### Bentec Drawworks E-250-AC-SG (Single Gear)

Power Rating:	1,250 hp (920 kW)
Drill line diameter:	1 1/4" (32 mm)
Max.line pull:	62,000 lbs (276 kN)

### Bentec Top Drive TD-275-HT

Load capacity:	275 ton (250 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# SPEED RIG

350 t / 1,500 hp



## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing Mast

System:	Rig up by hydraulic cylinders
Mast height:	142.00 ft (43.30 m)
Mast base:	23.00 ft x 16.40 ft (7.00 m x 5.00 m)
Maximum rated static hook load:	772,000 lbs (350 t @ 12 lines)

### Bentec Parallel Lift Substructure

System:	Rig up by hydraulic cylinders
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.30 ft (7.70 m)
Rotary capacity max.:	772,000 lbs (350 t)
Setback load max.:	500,000 lbs (227 t)

### Bentec Drawworks E-350-AC-SG (Single Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	78,900 lbs (351 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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## Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

## Bentec Power Control Room - AC-Variable Frequency Drive

## OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

## Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

350 t / 1,500 hp

## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	772,000 lbs (350 t @ 12 lines)

### Bentec Swing Up Substructure

System:	Rig up by raising lines
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	772,000 lbs (350 t)
Setback load max.:	550,000 lbs (250 t)

### Bentec Drawworks E-350-AC-SG (Single Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	78,900 lbs (351 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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## Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

## Bentec Power Control Room - AC-Variable Frequency Drive

## OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

## Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

# STATIONARY DESERT RIG

## Swing Up Substructure



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# STATIONARY DESERT RIG

454 t / 2,000 hp

## Swing Up Substructure



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	1,000,000 lbs (454 t @ 12 lines)

### Bentec Swing Up Substructure

System:	Rig up by raising lines
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	1,000,000 lbs (454 t)
Setback load max.:	700,000 lbs (318 t)

### Bentec Drawworks E-450-AC-SG (Single Gear)

Power Rating:	2,000 hp (1,470 kW)
Drill line diameter:	1 1/2" (38 mm)
Max.line pull:	94,200 lbs (419 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Four (4) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

680 t / 3,000 hp

# STATIONARY DESERT RIG

## Swing Up Substructure



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	152.00 ft (46.32 m)
Mast base:	35.00 ft x 8.00 ft (10.67 m x 2.45 m)
Maximum rated static hook load:	1,500,000 lbs (680 t @ 14 lines)

### Bentec Swing Up Substructure

System:	Rig up by raising lines
Height of drill floor:	35.00 ft (10.67 m)
Free height underneath rotary table:	30.00 ft (9.14 m)
Rotary capacity max.:	1,500,000 lbs (680 t)
Setback load max.:	800,000 lbs (363 t)

### Bentec Drawworks E-3000-AC (Double Gear)

Power Rating:	3,000 hp (2,200 kW)
Drill line diameter:	1 5/8" (42 mm)
Max.line pull:	123,000 lbs (547 kN)

### Bentec Top Drive TD-750-HT

Load capacity:	750 ton (680 t)
Electric motors:	1,600 hp (1,200 kW)
Continuous torque:	73,760 ft-lb (100,000 Nm)

### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Five (5) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# STATIONARY DESERT RIG

350 t / 1,500 hp

## Parallel Lift Substructure



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	772,000 lbs (350 t @ 12 lines)

### Bentec Parallel Lift (Sling Shot) Substructure

System:	Rig up by hydraulic winch
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	772,000 lbs (350 t)
Setback load max.:	550,000 lbs (250 t)

### Bentec Drawworks E-350-AC-SG (Single Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	78,900 lbs (351 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2" x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Three (3) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

454 t / 2,000 hp

# STATIONARY DESERT RIG

## Parallel Lift Substructure



### Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	1,000,000 lbs (454 t @ 12 lines)

### Bentec Parallel Lift (Sling Shot) Substructure

System:	Rig up by hydraulic winch
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	1,000,000 lbs (454 t)
Setback load max.:	700,000 lbs (318 t)

### Bentec Drawworks E-450-AC (Single Gear)

Power Rating:	2,000 hp (1,470 kW)
Drill line diameter:	1 1/2" (38 mm)
Max.line pull:	94,200 lbs (419 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2" x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Four (4) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# STATIONARY DESERT RIG

## 680 t / 3,000 hp

### Parallel Lift Substructure



#### Well Type

Shale, Conventional, Geothermal, Horizontal

#### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	152.00 ft (46.32 m)
Mast base:	35.00 ft x 8.00 ft (10.67 m x 2.45 m)
Maximum rated static hook load:	1,500,000 lbs (680 t @ 14 lines)

#### Bentec Parallel Lift (Sling Shot) Substructure

System:	Rig up by hydraulic winch
Height of drill floor:	35.00 ft (10.67 m)
Free height underneath rotary table:	30.00 ft (9.14 m)
Rotary capacity max.:	1,500,000 lbs (680 t)
Setback load max.:	800,000 lbs (363 t)

#### Bentec Drawworks E-3000-AC (Double Gear)

Power Rating:	3,000 hp (2,200 kW)
Drill line diameter:	1 5/8" (42 mm)
Max. line pull:	123,000 lbs (547 kN)

#### Bentec Top Drive TD-750-HT

Load capacity:	750 ton (680 t)
Electric motors:	1,600 hp (1,200 kW)
Continuous torque:	73,760 ft-lb (100,000 Nm)

#### Three (3) Bentec Mud Pumps: T-1600-AC (R)-7 1/2" x 12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

#### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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#### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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#### Power Generation

Five (5) Engine Caterpillar 3512B with Generator Leroy Somer  
Emergency generator Caterpillar C 15 ACERT

#### Bentec Power Control Room - AC-Variable Frequency Drive

#### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

#### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

#### Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

#### Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Grid Supply Container
- Moving equipment

#### Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools



Speed Rig 1,000 hp (200 t)



Speed Rig 1,250 hp (250 t)



Speed Rig 1,500 hp (350 t)



Swing Up Rig 1,500 hp (350 t)



Swing Up Rig 2,000 hp (454 t)



Swing Up Rig 3,000 hp (680 t)



Parallel Lift Rig 1,500 hp (350 t)



Parallel Lift Rig 2,000 hp (454 t)



Parallel Lift Rig 3,000 hp (680 t)

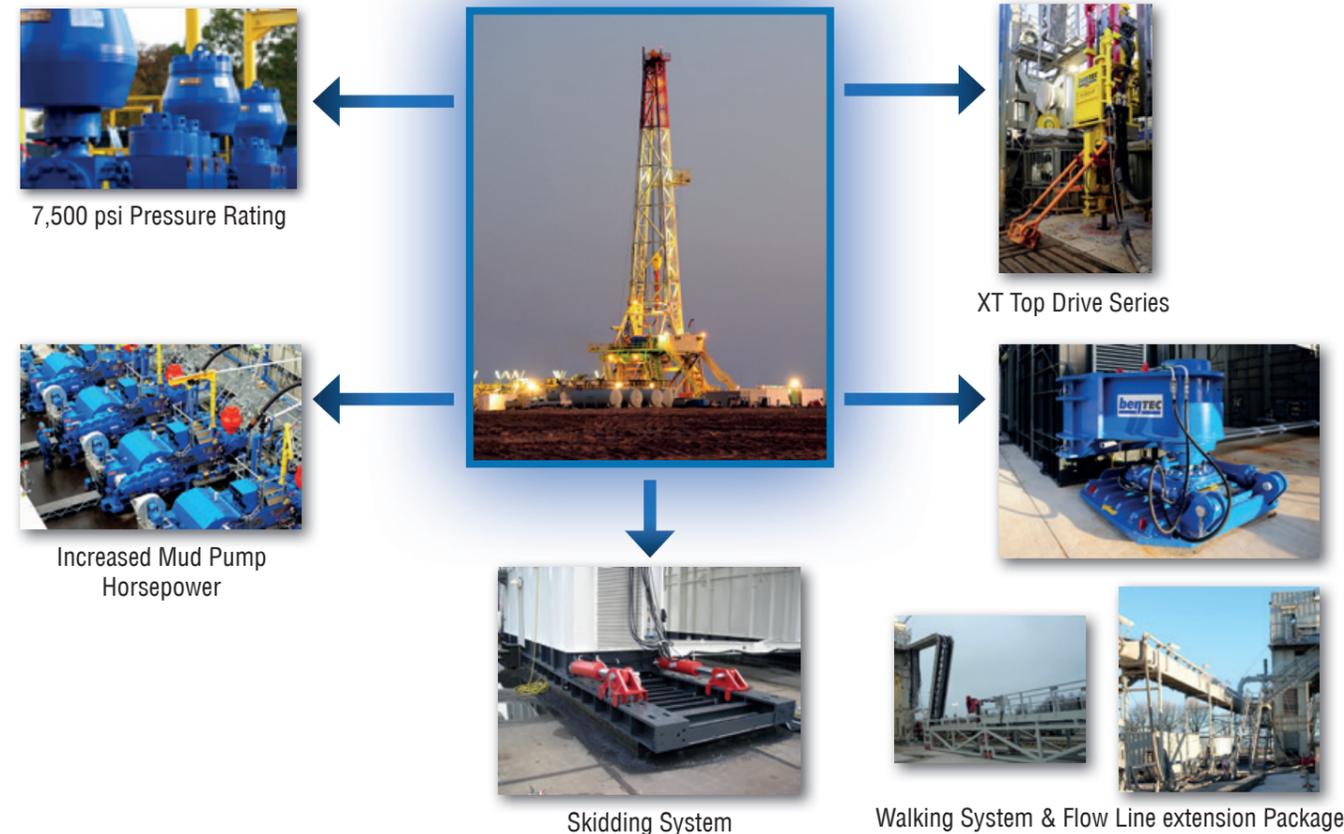
# DESERT RIG - SUPER SPEC RIG

The previous pages showed our base rig configuration. Meeting each customer's vision of their drilling campaign requires often various performance upgrades to meet well requirements. With the advantage of a holistic product portfolio in Drilling Equipment and Drilling Enhancement Software, we enable our customer to lift a standard Spec Rig to a Super Spec Rig meeting most challenging drilling requirements and exceeding rig performance on drilling and tripping time.

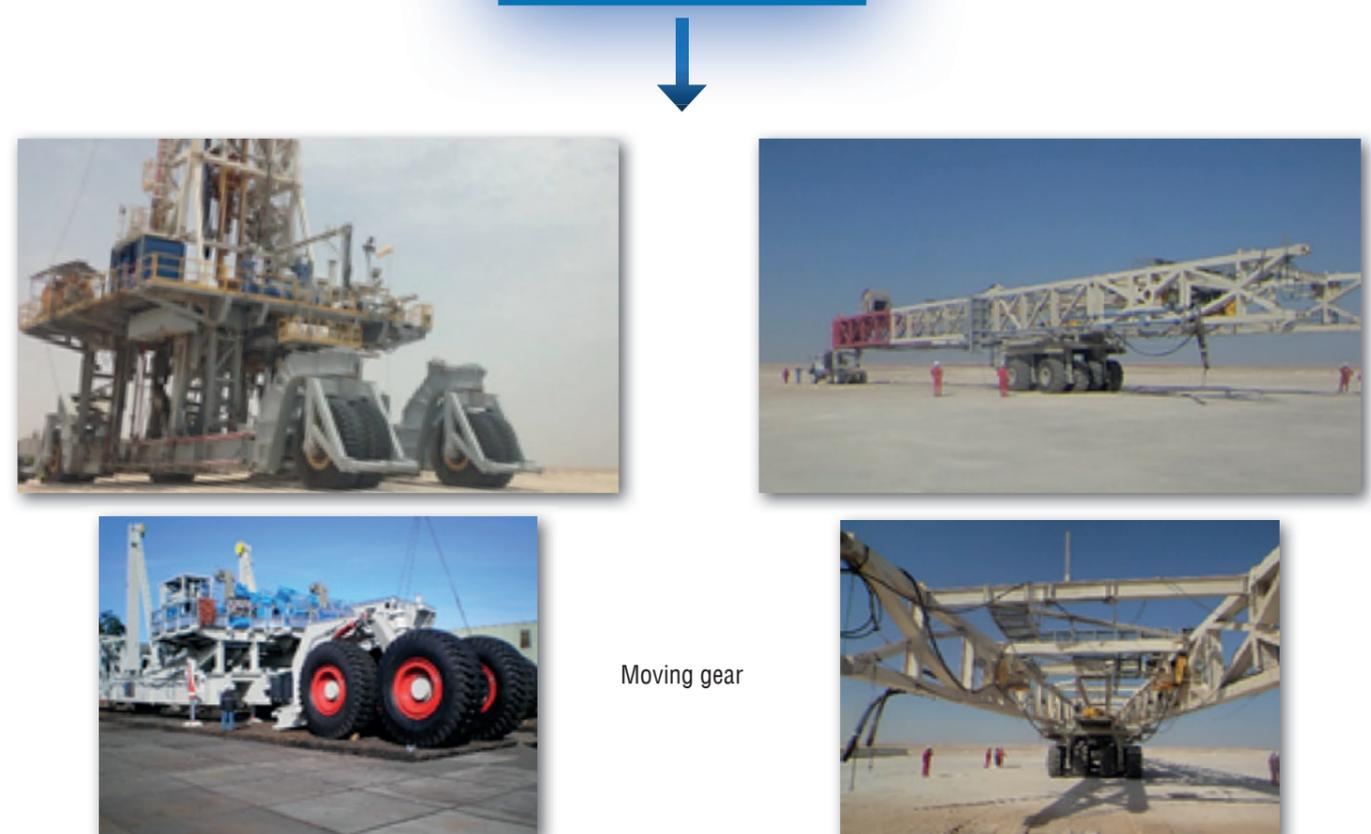
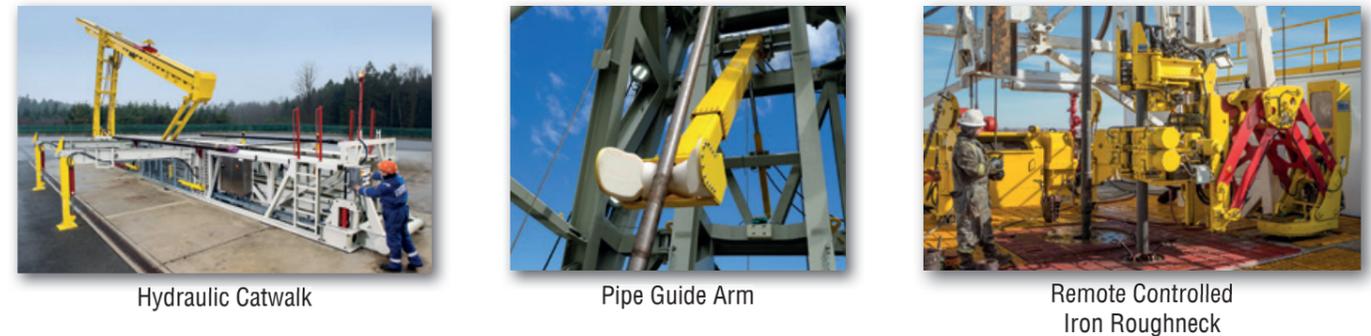
Possible Desert Rig Configurations and its extensions to Super Spec Rigs

	1,000 hp / 200 t	1,250 hp / 250 t	1,500 hp / 350 t	2,000 hp / 454 t	3,000 hp / 680 t
<b>Base Spec</b>	As shown in previous pages				

Equipment	Controls & Drilling Enhancement Software
<p><b>Super Spec Rig Features &amp; possible upgrades</b></p> <ul style="list-style-type: none"> <li>7,500 psi Pressure rating</li> <li>XT-Series Top Drives</li> <li>Increased Mud Pumps Horsepower</li> <li>Enhanced Pipe Handling Package</li> <li>Hydraulic Catwalk System</li> <li>Pipe Guide Arm</li> <li>Remote Controlled Iron Roughneck</li> <li>Generator Peak Shaving Battery Container</li> <li>Rig Skidding System/Skidding System</li> <li>Rig Walking System</li> <li>Extended Grasshopper Designs</li> <li>Alternate Mast and Substructure Combinations</li> <li>Well Control Equipment</li> <li>Grid Supply</li> </ul>	<ul style="list-style-type: none"> <li>Soft Torque Rotary System</li> <li>Soft Pump System</li> <li>Direct Steering Control System</li> <li>Generator Load Management</li> <li>Rig CARE System</li> <li>Auto Driller Feed Off Mark II</li> <li>Remote Access System</li> <li>Rig Control System (Zone Interlock Management)</li> </ul>



# DESERT RIG - SUPER SPEC RIG



# ARCTIC RIGS



Cluster Slider Rigs  
Stationary Rigs



**Key Features**

**Cluster Slider Rigs**

Ambient temperature	-45°C to + 40°C
Drawworks capacities	1,250 hp - 2,000 hp
Hook load capacities	550,000 lbs - 1,000,000 lbs (250 t - 454 t)

**Stationary Arctic Rig - Swing up Type**

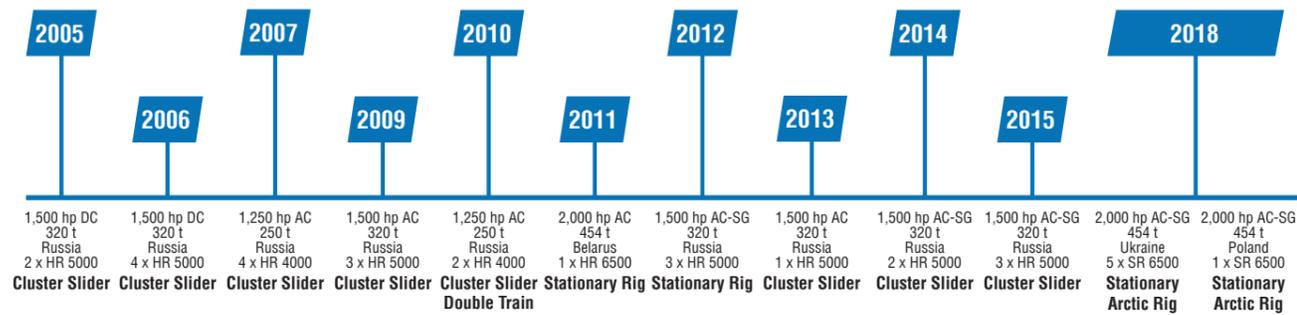
Ambient temperature	-45°C to + 40°C
Drawworks capacities	1,250 hp - 2,000 hp
Hook load capacities	550,000 lbs - 1,000,000 lbs (250 t - 454 t)

- GOST, DIN EN,
- HAZOP risk assessment
- Testing & Commissioning

**Benefits**

- Cluster Slider design (in one or two rows)
- Rig components & Equipment made by Bentec
- According to Russian regulations and road conditions
- Low non-productive-time [NPT] < 1%
- Field approved equipment

**Bentec history - Arctic Rigs**



**Why Bentec Arctic Rigs?**

- Cluster Slider or Stationary rigs for medium and deep wells
- Designed to meet the special requirements of the Russian and arctic environments
- Best in class innovative product designs
- Full customer orientation and professional project management from rig design to operation
- Built and certified in compliance with the latest GOST regulations, API regulations, CE and ATEX certified equipment and with HAZOP risk assessment
- Arctic Rigs can be manufactured in our subsidiary in Tyumen (Russia) and completed with equipment from Germany



# Cluster Slider HR 4000 Single/Double Train

250 t / 1,250 hp



## Well Type

Cluster, Shale, Conventional, Geothermal, Horizontal

### Bentec Cantilever Mast

System:	Open face, self-elevating
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	550,000 lbs (250 t @ 10 lines)

### Bentec Swing up/Box Type Substructure

System:	Raising by raising lines
Height of drill floor:	33.00 ft (10.00 m)
Free height underneath rotary table:	26.00 ft (8.00 m)
Rotary capacity max.:	550,000 lbs (250 t)
Setback load max.:	350,000 lbs (160 t)

### Bentec Drawworks E-250-AC-SG (Single Gear)

Power Rating:	1,250 hp (920 kW)
Drill line diameter:	1 1/4" (32 mm)
Max.line pull:	62,000 lbs (276 kN)

### Bentec Top Drive TD-275-HT

Load capacity:	275 ton (250 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

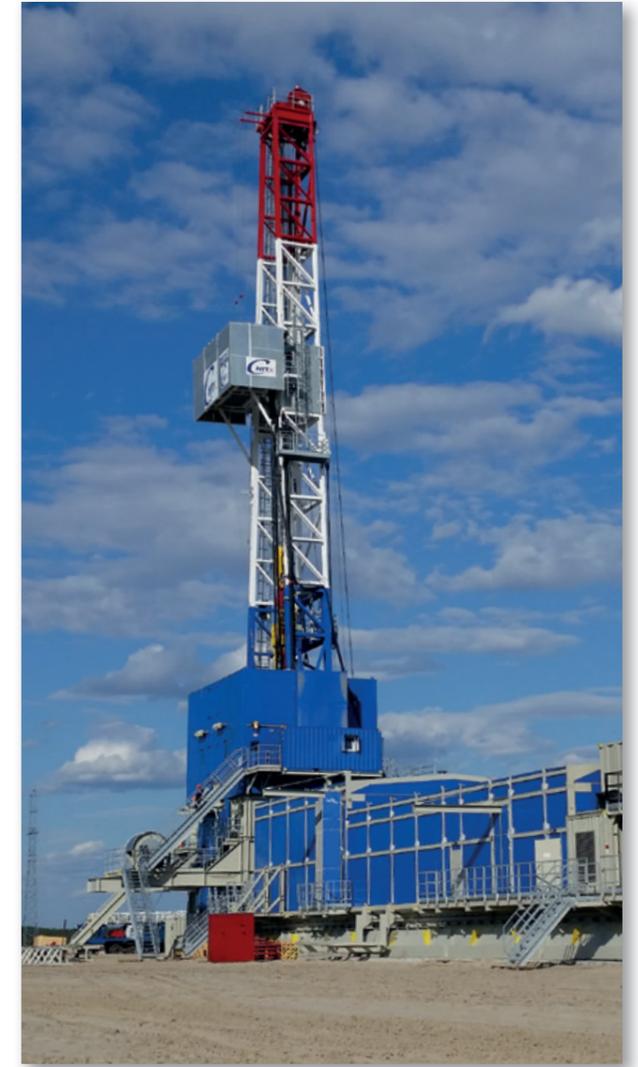
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

320 t / 1,500 hp

# Cluster Slider HR 5000 Single/Double Train



## Well Type

Cluster, Shale, Conventional, Geothermal, Horizontal

### Bentec Cantilever Mast

System:	Open face, self-elevating
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	705,000 lbs (320 t @ 12 lines)

### Bentec Swing up/Box Type Substructure

System:	Raising by raising lines
Height of drill floor:	33.00 ft (10.00 m)
Free height underneath rotary table:	26.00 ft (8.00 m)
Rotary capacity max.:	705,000 lbs (320 t)
Setback load max.:	500,000 lbs (227 t)

### Bentec Drawworks E-350-AC-SG (Single Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	78,900 lbs (351 kN)

### Bentec Top Drive TD-350-HT

Load capacity:	350 ton (318 t)
Electric motors:	1,030 hp (758 kW)
Continuous torque:	46,500 ft-lb (63,000 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-275 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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### Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# Cluster Slider HR 6000 Single/Double Train



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

400 t / 1,500 hp

## Well Type

Cluster, Shale, Conventional, Geothermal, Horizontal

### Bentec Cantilever Mast

System:	Open face, self-elevating
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	882,000 lbs (400 t @ 12 lines)

### Bentec Swing up/Box Type Substructure

System:	Raising by raising lines
Height of drill floor:	33.00 ft (10.00 m)
Free height underneath rotary table:	26.00 ft (8.00 m)
Rotary capacity max.:	882,000 lbs (400 t)
Setback load max.:	660,000 lbs (300 t)

### Bentec Drawworks E-1500-AC (Dual Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max.line pull:	87,100 lbs (387 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

454 t / 2,000 hp

## Well Type

Cluster, Shale, Conventional, Geothermal, Horizontal

### Bentec Cantilever Mast

System:	Open face, self-elevating
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	1,000,000 lbs (454 t @ 12 lines)

### Bentec Swing up/Box Type Substructure

System:	Raising by raising lines
Height of drill floor:	33.00 ft (10.00 m)
Free height underneath rotary table:	26.00 ft (8.00 m)
Rotary capacity max.:	1,000,000 lbs (454 t)
Setback load max.:	700,000 lbs (318 t)

### Bentec Drawworks E-450-AC-SG (Single Gear)

Power Rating:	2,000 hp (1,470 kW)
Drill line diameter:	1 1/2" (38 mm)
Max.line pull:	94,200 lbs (419 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

# Cluster Slider HR 6500 Single/Double Train



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# Stationary Arctic Rig SR 4000

250 t / 1,250 hp



## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	550,000 lbs (250 t @ 10 lines)

### Bentec Swing Up Substructure

System:	Rig up by raising lines
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	550,000 lbs (250 t)
Setback load max.:	350,000 lbs (160 t)

### Bentec Drawworks E-250-AC-SG (Single Gear)

Power Rating:	1,250 hp (920 kW)
Drill line diameter:	1 1/4" (32 mm)
Max. line pull:	62,000 lbs (276 kN)

### Bentec Top Drive TD-275-HT

Load capacity:	275 ton (250 t)
Electric motors:	672 hp (500 kW)
Continuous torque:	35,200 ft-lb (47,750 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	27 1/2" (698 mm)
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## Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

## Bentec Power Control Room - AC-Variable Frequency Drive

## OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

## Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

350 t / 1,500 hp

## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	772,000 lbs (350 t @ 12 lines)

### Bentec Swing Up Substructure

System:	Rig up by raising lines
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	772,000 lbs (350 t)
Setback load max.:	500,000 lbs (227 t)

### Bentec Drawworks E-350-AC-SG (Single Gear)

Power Rating:	1,500 hp (1,100 kW)
Drill line diameter:	1 3/8" (35 mm)
Max. line pull:	78,900 lbs (351 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,000 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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## Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

## Bentec Power Control Room - AC-Variable Frequency Drive

## OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

## Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

# Stationary Arctic Rig SR 5000



## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools

# Stationary Arctic Rig SR 6500

454 t / 2,000 hp



## Well Type

Shale, Conventional, Geothermal, Horizontal

### Bentec Open Face Self-Elevating, Free Standing (Cantilever) Mast

System:	Rig up by drawworks
Mast height:	142.00 ft (43.30 m)
Mast base:	30.00 ft x 8.00 ft (9.14 m x 2.45 m)
Maximum rated static hook load:	1,000,000 lbs (454 t @ 12 lines)

### Bentec Swing up Substructure

System:	Raising by raising lines
Height of drill floor:	30.00 ft (9.14 m)
Free height underneath rotary table:	25.00 ft (7.60 m)
Rotary capacity max.:	1,000,000 lbs (454 t)
Setback load max.:	772,000 lbs (350 t)

### Bentec Drawworks E-450-AC-SG (Single Gear)

Power Rating:	2,000 hp (1,470 kW)
Drill line diameter:	1 1/2" (38 mm)
Max.line pull:	94,200 lbs (419 kN)

### Bentec Top Drive TD-500-XT

Load capacity:	500 ton (454 t)
Electric motors:	1,140 hp (850 kW)
Continuous torque:	52,00 ft-lb (70,580 Nm)

### Two (2) Bentec Mud Pumps: T-1600-AC (R)-7 1/2"x12"

Electric motors:	1 x 1,600 hp (1,200 kW) each
Max. pressure:	5,000 psi

### Bentec Mud Tank System-Rectangular tanks

Active mud volume:	1,383 bbl (220 m <sup>3</sup> ) in basic configuration
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### Bentec Rotary Table RDE-375 – Emergency Drive

Diameter of opening:	37 1/2" (952 mm)
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### Power Generation

Transformer Container 6 kV  
Emergency generator Caterpillar C 15 ACERT

### Bentec Power Control Room - AC-Variable Frequency Drive

### OEM Solids Removal Systems

Shale Shaker, Mud Cleaner with Desander and Desilter

### Bentec Instrumentation System

Bentec "InfoDrill" Drilling Information System  
Ex-proof Stainless Steel Drillers Cabin

## Software Solutions

- Power Management System
- Z-Torque System
- Bentec Rig Care System
- Remote Drilling Process Control
- Bentec ROP Optimization

## Optional Equipment

- Bentec Rig Walking System/Skidding System
- Bentec Iron Roughneck
- Bentec Hydraulic Catwalk System
- BOP Closing Unit
- Casing Stabbing Board
- Gas Detection
- Generator sets

## Sub-supplied equipment

- BOP Stack
- Drill String
- Handling Tools



Cluster Slider HR 4000



Cluster Slider HR 5000



Cluster Slider HR 6000



Cluster Slider HR 6500



Stationary Arctic Rig SR 4000



Stationary Arctic Rig SR 5000



Stationary Arctic Rig SR 6500

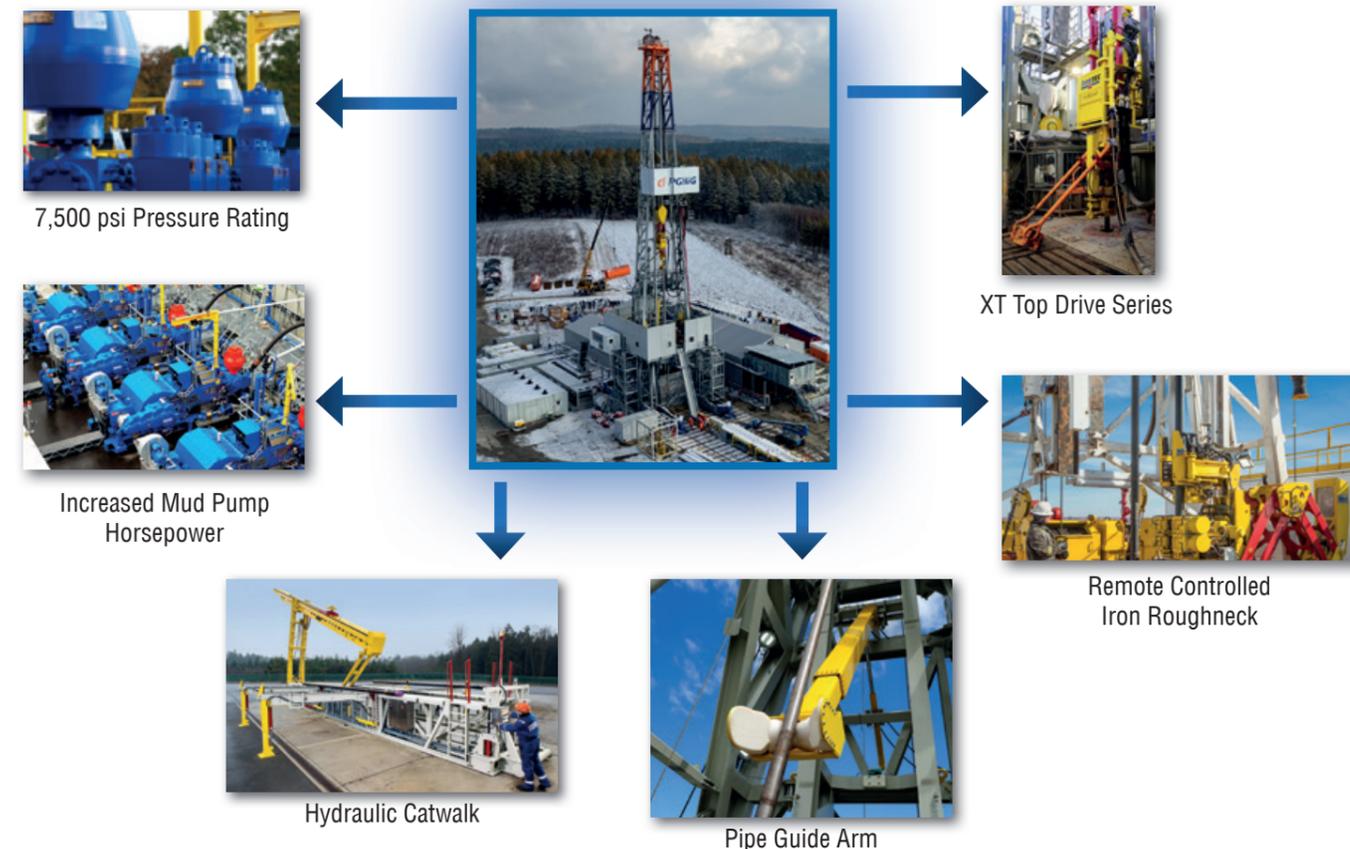
# ARCTIC RIG - SUPER SPEC RIG

The previous pages showed our base rig configuration. Meeting each customer's vision of their drilling campaign requires often various performance upgrades to meet well requirements. With the advantage of a holistic product portfolio in Drilling Equipment and Drilling Enhancement Software, we enable our customer to lift a standard Spec Rig to a Super Spec Rig meeting most challenging drilling requirements and exceeding rig performance on drilling and tripping time.

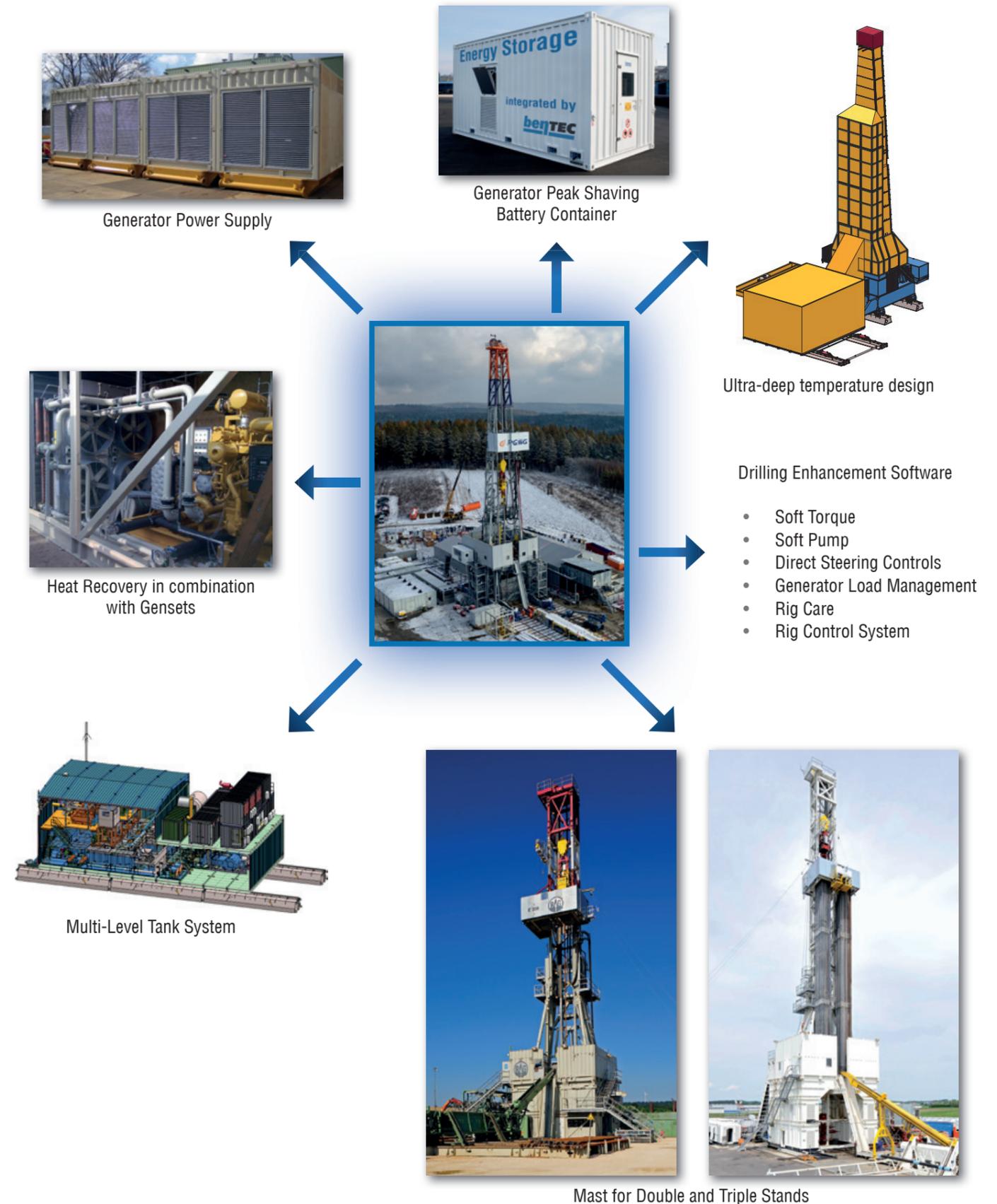
Possible Arctic Rig Configurations and its extensions to Super Spec Rigs

	1,250 hp / 250 t	1,500 hp / 320 t	1,500 hp / 350 t	1,500 hp / 400 t	2,000 hp / 454 t
<b>Base Spec</b>	As shown in previous pages				

	Equipment	Controls & Drilling Enhancement Software
<b>Super Spec Rig Features &amp; possible upgrades</b>	<ul style="list-style-type: none"> <li>7,500 psi Pressure rating</li> <li>XT-Series Top Drives</li> <li>Increased Mud Pumps Horsepower</li> <li>Enhanced Pipe Handling Package</li> <li>Hydraulic Catwalk System</li> <li>Pipe Guide Arm</li> <li>Remote Controlled Iron Roughneck</li> <li>Generator Power Supply</li> <li>Peak Shaving Battery Container</li> <li>Extended Grasshopper Designs</li> <li>Heat Recovery in Combination with Generator sets</li> <li>Multi-Level Tank System</li> <li>Ultra-deep Temperature Design</li> </ul>	<ul style="list-style-type: none"> <li>Soft Torque Rotary System</li> <li>Soft Pump System</li> <li>Direct Steering Control System</li> <li>Generator Load Management</li> <li>Rig CARE System</li> <li>Auto Driller Feed Off Mark II</li> <li>Remote Access System</li> <li>Rig Control System (Zone Interlock Management)</li> </ul>



# ARCTIC RIG - SUPER SPEC RIG



# SPECIAL RIGS



Taylor made Rigs  
On- and Offshore Solutions



## Key Features

### EUROMATIC RIG 480t

Ambient temperature	-20°C to + 40°C
Drawworks capacities	Up to 2,000 hp
Hook load capacities	Up to 1,060,000 lbs (480 t)
Drilling depth capacities	Up to 24,250 ft (7,400 m)
Pipe handling capacities	Diameters of 2 7/8" to 20"

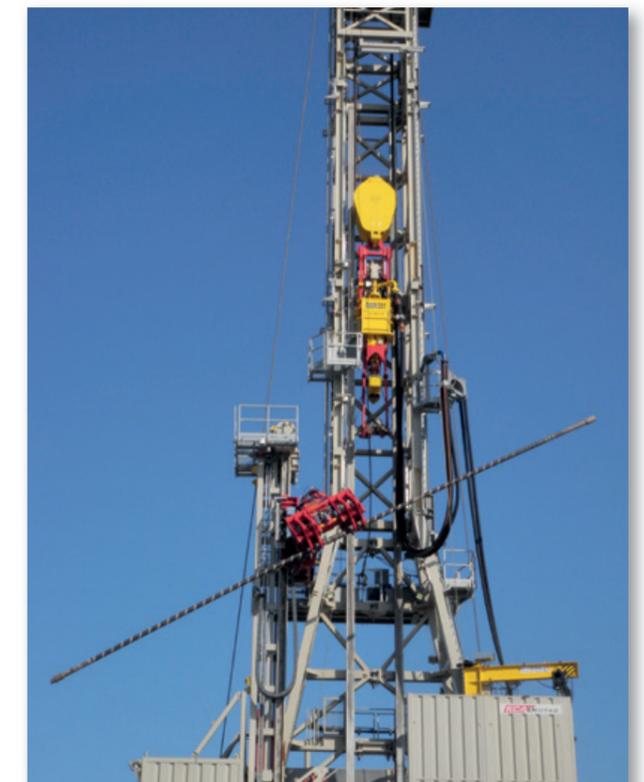
- GOST, DIN EN,
- HAZOP risk assessment
- Testing & Commissioning

## Benefits

- Box-on-box type substructure
- Freestanding mast
- Segmented mast sections, erected by crane
- Innovative mechanized pipe handling
- Entirely remote operation from drillers' cabin
- Hands-off philosophy
- Noise-reduced equipment and rig components made by Bentec
- Mechanical and electrical components fully integrated by Bentec
- Air-operated mud treatment system
- Less NPT with Bentec integrated products like Top Drive, Drawworks and Mud Pumps
- Field proven Bentec equipment

## Why Bentec Special Rigs?

We understand that every customer has its own vision of a drilling rig. Sometimes these visions can't be covered with a "standard" rig we are offering in a wide range. That can be due to special operator requirements, automation demands, safety aspects etc. Due to the fact that Bentec is a drilling rig manufacturer with an extensive own drilling equipment portfolio and extensive engineering division we have always put our focus on deliver the solutions our customers need. This has already lead us many times into leading edge special rig designs we have built across the world in nearly every environment.



### Modular Offshore Rig

- Modular concept according customer requirements
- Complies with strict environmental regulations
- Module dimensions and weights specific for offshore installation
- Drilling support module as a multiple lift design
- Mud plant and mud pump house installed on the seawall
- Floor base of 900 m<sup>2</sup>
- Equipped with field proven equipment

Power Rating:	2,500 hp / 500 t
Static hook load:	1,100,000 lbs (500 t @ 14 lines)
Design drilling depth:	29,900 ft (9,100 m)



### 3 000 hp Offshore Drilling Rig

- Freestanding cantilever mast design
- Erection with drawworks
- Modular Box-on-Box substructure
- Skiddable in x- and y-direction
- Innovative drag chain supports skidding operation
- Powerful 750 ton Bentec Top Drive
- 3,000 hp double gear Bentec Drawworks

Power Rating:	3,000 hp / 680 t
Static hook load:	1,500,000 lbs (680 t @ 14 lines)
Design drilling depth:	29,900 ft (9,100 m)



### Small Footprint Modular Rig

- Modular Offshore rig for Drilling, Workover and Plug & Abandonment activities
- Configurable for different platform configurations
- Most compact footprint of 10m x 15.5m
- Suitable for 10k BOP Stacks
- Maximized for 3rd Party Services i.e. Wireline, MWD/LWD
- Fully Certified: CE, API, DIN EN, ATEX

Power Rating:	1,250 hp - 2,000 hp
Static hook load:	440,000 lbs - 1,000,000 lbs
Design drilling depth:	3,000 m to 7,200 m
Climate	-20°C to + 40°C



### Pad Drilling Rig

- Drilling rig with walking system
- Rig design according customer requirements, environmental conditions and specific locations
- Fixed mud plant with power station
- Umbilical system according to customer requirements
- Less NPT with Bentec integrated products like Top Drive, Drawworks and Mud Pumps
- Field proven Bentec equipment, CE marked

Climate:	-45°C to + 55°C
Drawworks capacities:	1,000 hp - 3,000 hp
Hook load capacities:	440,00 lbs - 1,500,000 lbs (200 t - 650 t)
Drilling depth capacities:	Up to 29,900 ft (9,100 m)

### Light Fast-Moving Rig

- Light desert rig, fast moving with high mobility
- Faster rig with telescoping mast & substructure
- Reduction of rig preparation- and moving time
- Optimized tripping and casing running times
- Small footprints with appropriate level of mechanization and automation
- No setback - capable of running double drillpipe range II appr. 19 m (62 ft)
- Only three transport units for Mast & Substructure Package
- Fast rig move within 9 hours can be achieved within a distance of 10 km
- Less NPT with Bentec integrated products like Top Drive, Drawworks and Mud Pumps
- Field proven Bentec equipment, CE marked
- API or DIN EN certified
- HAZOP risk assessment

Power Rating:	1,000 hp / 200 t
Static hook load:	400,000 lbs (200 t @ 10 lines)
Design drilling depth:	9,850 ft (3,000 m)



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For a complete list of bentec's equipment, visit us online: <https://www.bentec.com/rigs/>