

# PR 500 M2

## Progress Rig

3/2015



## Specifications PR 500 M2

BAUER Deep Drilling provides with its deep drilling units an innovative, customized solution to the client's requirements in the oil, gas and energy field.

The PR 500 M2 is a modular, double range II deep drilling unit and is designed and manufactured on the key principles

- **Safety**
- **Environmental protection**
- **Efficiency**
- **Reliability**
- **Quality**

The automation of repetitive operational sequences coupled with enhanced rig availability due to redundancy of key systems and highest service and maintenance comfort increase the efficiency and performance of the rig and the drilling operation.

Eliminating work in dangerous heights (e.g. no fingerboard, self-erecting systems), providing hands-off or remote controlled operations, installation of anti-collision systems and the necessity of reduced man power ensure the highest possible safety level.

### Mast

Max. hook load . . . . .	500 tn . . . . .	1,000,000 lbs
Height . . . . .	36 m . . . . .	118.1 ft
Stroke length. . . . .	22 m . . . . .	72.2 ft
Total height incl. substructure. . . . .	46 m . . . . .	151 ft

### Substructure

Drill floor height . . . . .	9 m . . . . .	29.5 ft
Clear height below RT. . . . .	7.5 m. . . . .	24.6 ft
Rotary opening . . . . .	952.5 mm. . . . .	37 1/2"
BOP hoisting system. . . . .	2 x 27.5 tn . . . . .	2 x 55,000 lbs

### Drawworks

. . . . .	AC – gear-driven drawworks
Rated power . . . . .	2,200 HP . . . . . 2,200 HP
Single line pull (continuous / DW duty) . . . . .	48 / 58.5 tn . . . . . 96,000 / 117,000 lbs
Drill line size . . . . .	38 mm . . . . . 1 1/2"
AC drilling motors . . . . .	2 x 820 kW . . . . . 2 x 1,100 HP
Max. tubular length (2x range II) . . . . .	19 m . . . . . 62.3 ft

### Top drive

. . . . .	TDK 80-500 E – electrically driven
Hoisting capacity . . . . .	500 tn . . . . . 1,000,000 lbs
Horse power rating . . . . .	850 kW . . . . . 1,140 HP
Speed range . . . . .	0 to 228 rpm
Make up / break out torque . . . . .	120,000 Nm . . . . . 88,507 ft-lbs
Max. continuous torque @ 100 rpm. . . . .	80,000 Nm . . . . . 59,004 ft-lbs
Drilling torque @ max. 228 rpm . . . . .	29,000 Nm . . . . . 21,389 ft-lbs
Max. braking torque . . . . .	96,000 Nm . . . . . 70,805 ft-lbs
Washpipe ID full passage . . . . .	76 mm . . . . . 3"
Pressure rating max. . . . .	517 bar . . . . . 7,500 PSI
IBOP pressure stage . . . . .	1,034 bar . . . . . 15,000 PSI

### Hydraulic power unit

. . . . .	HE2100 electro-hydraulic
Rated power (main system) . . . . .	1 x 400 kW. . . . . 1 x 536 HP
Rated power (rig-up & emergency system) . . . . .	1 x 160 kW. . . . . 1 x 215 HP

### Pipe handling system

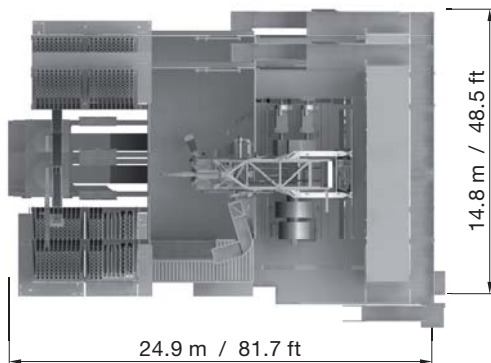
. . . . .	Vertical handling and storage system
Max. tubular length . . . . .	19 m . . . . . 62.3 ft
Drill pipe capacity . . . . .	2 3/8" – 6 5/8" . . . . . 2 3/8" – 6 5/8"
Drill collar capacity . . . . .	up to 9 1/2" . . . . . up to 9 1/2"
Number of pipe racks . . . . .	4 . . . . . 4
Total storage capacity (5" DP). . . . .	6,000 m . . . . . 19,684 ft

## Key features PR 500 M2

### Transport and set-up

Efficient and compact transport units allow a fast and safe moving and rig-up/down operation and a reduction of transport costs. The self-erecting system of the mast together with the compact dimensions of the components reduce enormously the necessary crane capacity for the rig-up.

The compact footprint of the unit, compared to conventional rigs of corresponding capacity, reduces the costs for wellsite preparation and the environmental impact.



Compact "footprint"

### Drawworks

The state-of-the-art, field proven, gear-driven drawworks guarantees highest efficiency and reliability.

The system is equipped with a joystick control. During drilling the feed off speed is controlled automatically:

- constant ROP
- constant WOB
- constant pump pressure
- constant top drive torque

### Pipe handling system

This innovative pipe handling system with excellent tripping speed and hands-off technology allows drill pipe and casing operation without the necessity of a finger board and derrickman and increases the work safety and working efficiency. The pipe handler directly interfaces with the top drive – no mouse hole necessary.

The automated handler system can handle tubulars of up to **19 m (2x Range II)**.

The pipe handler is equipped with a flexible clamping system to handle different diameters of pipes. The clamping system also can be adjusted in length to allow balanced lifting of different sizes and lengths of pipes.



Pipe handling system and vertical storage

The vertical pipe storage system is directly attached to the substructure. The vertical pipe racks have an adjustable partitioning to allow the storage of different pipe lengths. It remains – including drill pipes, collars – on the rig, also during skidding or walking operation.

Maximum storage capacity (4 pipe racks) is **6,000 m of 5" DP 2x Range II**.



## Key features PR 500 M2

### Top drive

The electrically driven top drive **BAUER TDK 80-500 E** is based on 40 years of experience in manufacturing rotary heads for drilling rigs. It is designed to meet advanced performance standards in terms of high drilling torque, high make up and break out torque, rotation speed, reliability and serviceability.

The top drive is equipped with a link system and remote and manual IBOP valves.

### Driller's cabin

The driller's cabin offers a high quality workplace with joystick control. The driller controls all drilling functions centrally from the ergonomic and air-conditioned cabin. The in-built instrumentation system for realtime and historical drilling data provides clear information to the driller and tool pusher at any time.

Automatic drilling control systems like constant weight on bit or constant speed control relieve the driller, improve the drilling performance and reduce the wear and tear costs (e.g. optimal drill bit operation). The system is also equipped with the digital data acquisition and storage system B-Tronic.



### Optional equipment and services

- Customized mud handling systems
- Skidding, walking systems and rig wheel systems for flexible drilling operations
- Rig components
- Triplex mud pumps
- 24/7 after sales service with worldwide spare and wear part availability
- Remote access and troubleshooting via WAN
- BAUER Training Center for customer's personnel



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