

# PD 500

CORE DRILLING RIG  
TECHNICAL PROMOTION  
CATALOGUE



**MBEF**  
MAKİNE SONDAJ

DRILL RIG CATALOGUE

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# ABOUT US

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MAKİNE SONDAJ

MBEF Makine was established in 2011 to design and manufacture track mounted hydrolic core drill rigs. In a very short time, the company has recorded a consistent growth in the mining business and became a leading manufacturer and supplier of drill rigs and equipment.

Having its headquarters in Ankara Turkey MBEF Makine has the ability to serve all wireline drilling equipment in accordance with universal size standards. Throughout the years, we have used our experiences along with our customers operations feedback, to produce the most innovative products in the market.

Besides its own manufactured products, MBEF Makine also maintains the Turkish authorized distributorship of drilling equipment and spare part manufacturing companies which have already gained recognition in international drilling sector.

# TO THE CENTER OF THE WORLD WITH PD 500

PD-500

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# MBEF MAKİNE AND PD 500 SERIES



## In Any Condition And Any Formation...

PD 500 is as surface core drill rig developed by MBEF Makine to run problem free in any drilling condition and formations.

## Domestic Product and Steady as a Rock!

PD 500 series, manufactured in MBEF Makine Ankara Manufacturing Facilities with domestic capital and labor, is one move ahead of the machines in its own class with user friendly simple design, hard condition resistant structure and superior production quality.

## Do Not Waste Your Time with Details!

Besides core drill rigs, MBEF Makine manufactures and sells the equipment groups which are used in the field and spare parts of drill rigs.

## Name of Developing Technology: PD 500

PD 500 series, which is used repeatedly in domestic and foreign searching areas, is developed through emerging technologies and feedbacks of experts and PD 500 drill rig comes up as a result of R&D activities.

## Special to Work, Special to You...

PD 500 drill rig is manufactured by being privatized for the work. It is manufactured with a capacity change upon demand; hydraulic systems and mechanic factors can be arranged according to the demand.

# MBEF DRILL EQUIPMENT PRODUCT RANGE



## Core Barrel Assembly And Overshot Assembly

- Head Assembly, inner tube, core lifter case, core lifter, stop ring, locking coupling, adapter coupling and outer tube for two and three tube models.

## Diamond Products (Cutters)

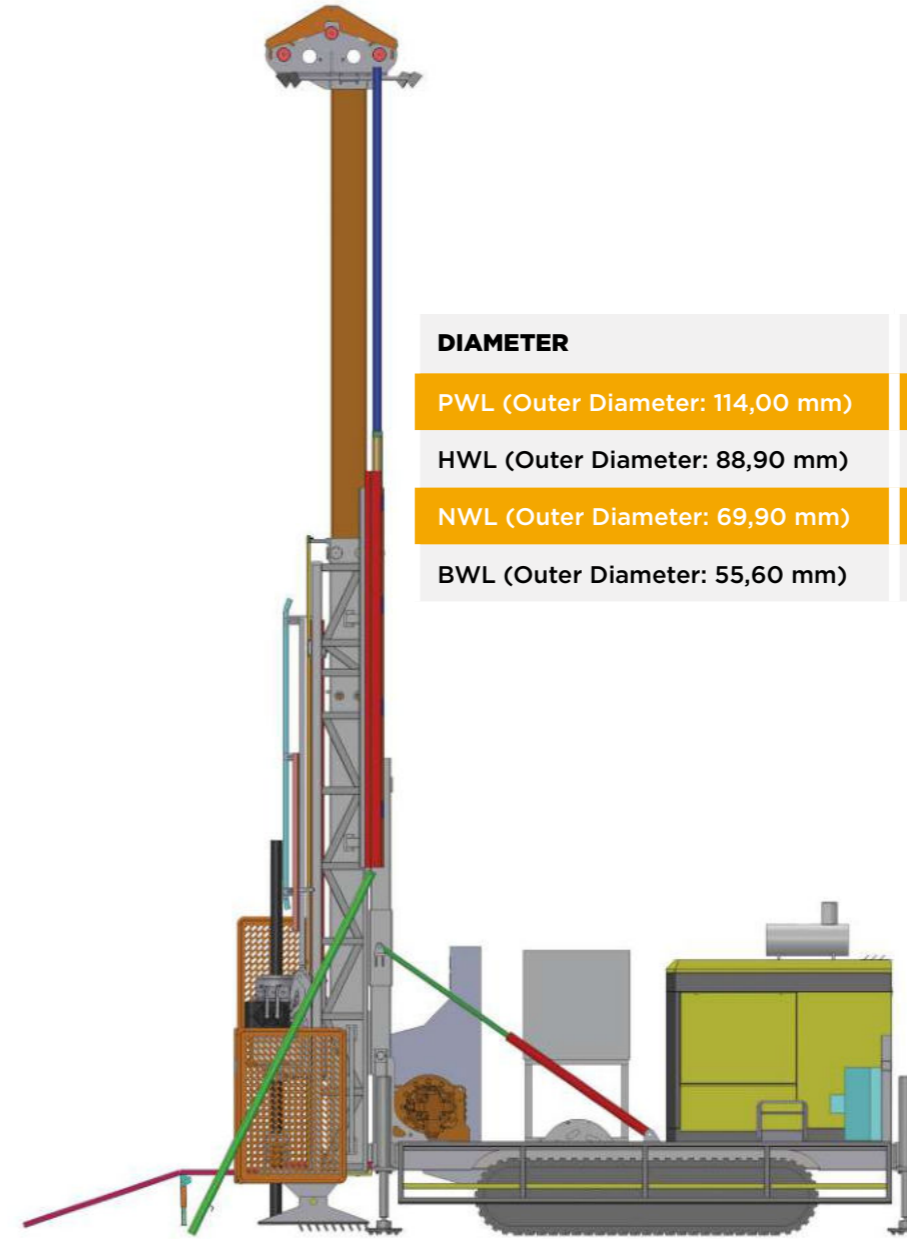
- HAYDEN impregnated diamond bits, reaming shells and drilling rods and casings (in all dimensions).

## Auxiliary Equipment

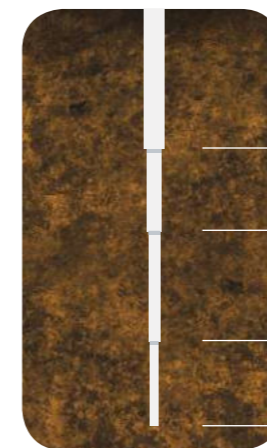
- Water swivels and hoisting plugs, rod recovery tools, rod/casing cutters, pipe wrenches, adaptors in all dimensions, water pump spare parts, nitrogen gas pistons.

# PD 500

## PD 500 DEPTH CAPACITIES



DIAMETER	DIAMETER DRILLING CAPACITY
PWL (Outer Diameter: 114,00 mm)	900 mt
HWL (Outer Diameter: 88,90 mm)	1500 mt
NWL (Outer Diameter: 69,90 mm)	2000 mt
BWL (Outer Diameter: 55,60 mm)	2500 mt



- PWL - 900 mt
- HWL - 1500 mt
- NWL - 2000 mt
- BWL - 2500 mt

# POWERFUL AND RELIABLE

# COOL ER

## HYDRAULIC SYSTEM

MAIN PUMP 112cc	
Brand	Kawasaki
Model	K3VL112
Maximum Flow	201,6 liter/minute
Operating Pressure	280 bar

MAIN PUMP 45cc (MUD PUMP AND WALKING)	
Brand	Kawasaki
Model	K3VL45
Maximum Flow	81 liter/minute
Operating Pressure	200 bar

MAIN PUMP 28CC (MIXER AND COOLER)	
Brand	Kawasaki
Model	K3VL28
Maximum Flow	50.4 liter/minute
Operating Pressure	180 bar

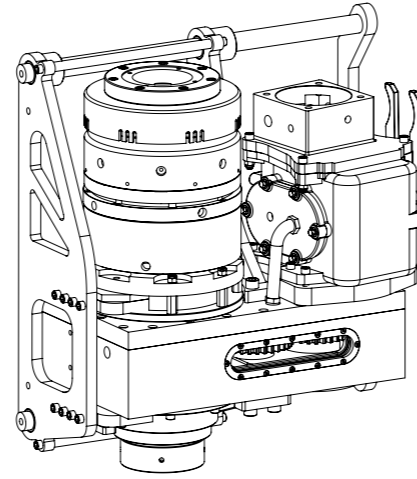
SERVICE PUMP 28CC	
Brand	Kawasaki
Model	K3VL28
Maximum Flow	50.4 liter/minute
Operating Pressure	180 bar

Hydraulic Tank Capacity	350 liter
Cooling Capacity	300 liter/minute

If desired, pumps of different brands and series can be preferred.

## ROTATION UNIT

Rotation Engine	Rexroth 107 cc with variable displacement
Transmission	4 Gears
Jaw System	Nitrogen Piston or Spring
Holding Capacity	20.000 kg
Max. Flow	1.200 rpm
Hydraulic Side Slip	30 cm
Max. Coupling Diameter	117 mm
Lubrication Tandem	(8cc pump+8cc engine) 8 liter/min maximum flow



There are 2 rotation unit lubrication pumps, both hydraulically controllable and operating with morset rotation, and a cooler.

## TORQUE AND RPM RATING ENGINE RUNING @ 1800 RPM

	Speed (RPM)	Torque (stall) Nm
1. Gear	122-199	5322-3254
2. Gear	245-400	2648-1620
3. Gear	440-714	1486-908
4. Gear	769-1250	849-519

## POWER UNIT

Brand / Model	Ford / Ecotorq 9L
Engine Type	Turbo Diesel, Water Cooled
Cylinder Volume / Number	8.974 cc / 6 Cylinder
Max. Flow	2.200 rpm
Max. Power	380 hp ( 283KW)

SOLO  
DAP

## MAST AND CRANE SYSTEMS

Min. Height	Openable Telescopic
Min. Height	6.270 mm
Min. Height	9580 mm
Rod Pull Capacity	6 mt
Drilling Angle Interval	45° - 90°
Feed Stroke	3.400 mm

## FEED CYLINDER

Pressure Capacity	12.500 kg
Pull Capacity	24600 kg
Maximum Thrust Capacity	12.500 kg

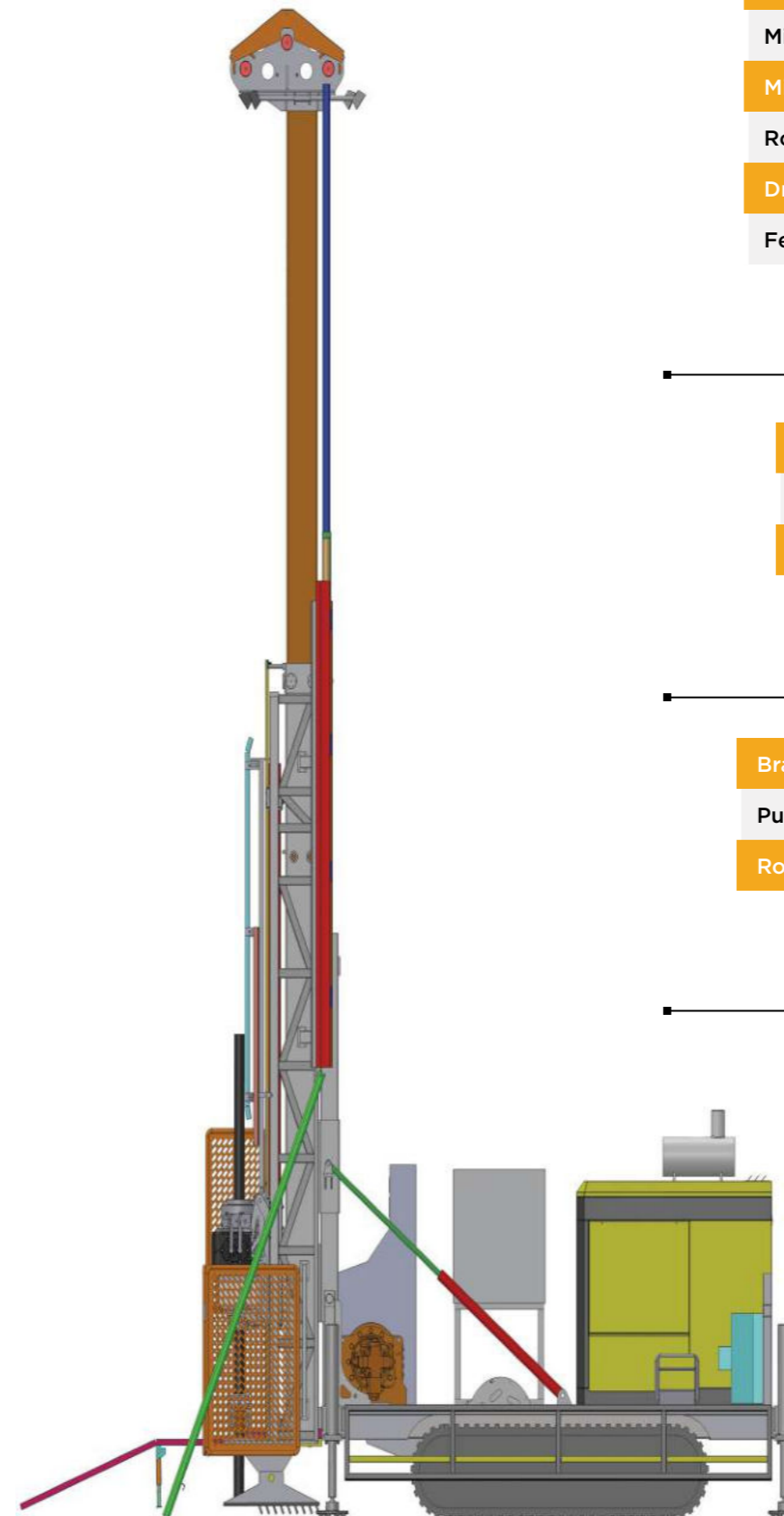
## MAIN DRUM

Brand	Braden
Pull Capacity	18.000 kg
Rope Diameter / Length	Ø 18 mm / 28 m

## ROD HOLDER

It is a jaw system that opens with a hydraulic system and closes with a hydraulic system.

Maximum Inner Diameter	Ø 140mm
Holding Capacity	20000kg





## DRAW WORKS

<b>Main Line Hoist</b>	HRD40 BRADEN (USA)
Hook Load	18144kg
Hoisting Speed	13-43 m/min
Main Hoist Cable	Ø16-Ø22 mm (Variable)
Main Hoist Cable Length	25-32m
Minimum Rupture Strength	236 KN
<b>Wire-line Hoist</b>	
Rotation Motor	Danfoss OMT 400 with speed brake
Level Pull	Bare Drum=1225 kg Full Drum =224 kg
Pull Speed	Variable
Wire Diameter	Ø4.8mm- Ø8mm (Variable)
Drum Capacity	2200m
Minimum Rupture Strength	2130 kg

**IN ANY  
CONDITION  
AND ANY  
FORMATION**

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# MUD PUMP MOVEMENT SYSTEM

## MUD PUMP MUD PUMP

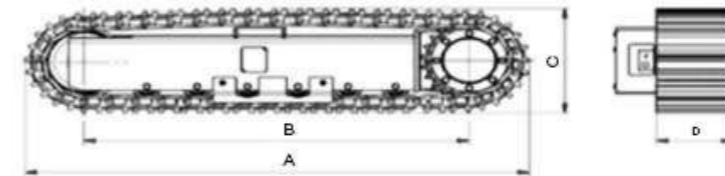
Brand	MBEF
Pump Type	Horizontal Triplex with 3 Pistons
Working Cycle	Constant: 740 rpm, Max: 925 rpm
Pump Capacity	130 L / min
Maximum Pressure	80 bar

## MOVEMENT SYSTEM MOVEMENT SYSTEM

Brand / Model	TRACKONE / T0150A51 - A52
Speed Values	1.8 km/h - 2.9km/h
Maximum Load	12.000 kg

### Tracked Technic Dimension

A(mm)	B(mm)	C(mm)	D(mm)
2713	2130	612	400



# IN ANY NEEDED DIMENSION AND SIZE

# PD 500 MEASURES

## PD 500 MEASURES

Transport Position	
Height	2.575 mm
Length*	6.200 mm
Width*	2.300 mm
Weight	12.000 kg

\*All platforms in closed position

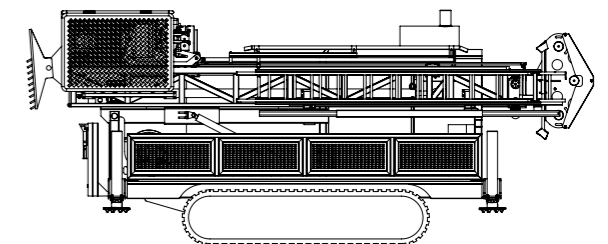
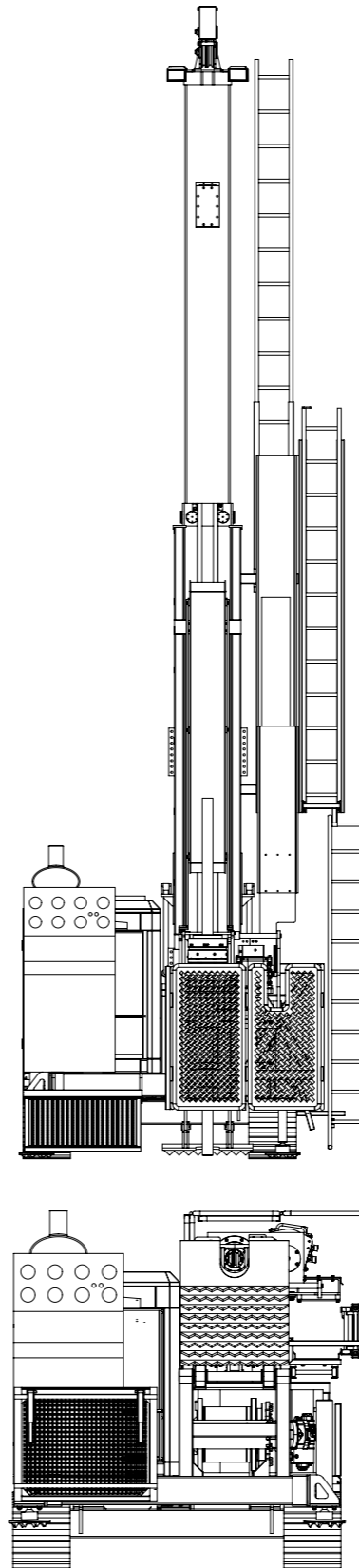
45° Inclined Mast (wide open)	
Height	7.110 mm
Length*	7.030 mm
Width*	3.200 mm

\*Front and side platforms extended position

90° Vertical Mast (wide open)	
Height	9.680 mm
Length*	7.030 mm
Width*	3.200 mm

\*Front and side platforms extended position

90° Upright Mast (wide open)	
Height	9.680 mm
Length*	7.030 mm
Width*	3.200 mm



# SUSTAINABLE GROWTH IN INTERNATIONAL MARKETS

RD500



## FOLDABLE MAST LADDER

PD 500, having telescopic mast system, also includes ladder integrated to the mast.

The workers, thanks to this ladder moving with mast, can climb up to the mast easily and complete their works in safe with its design allowing the use of safety belt.

The ladder foldaway together with the mast and makes you save place.

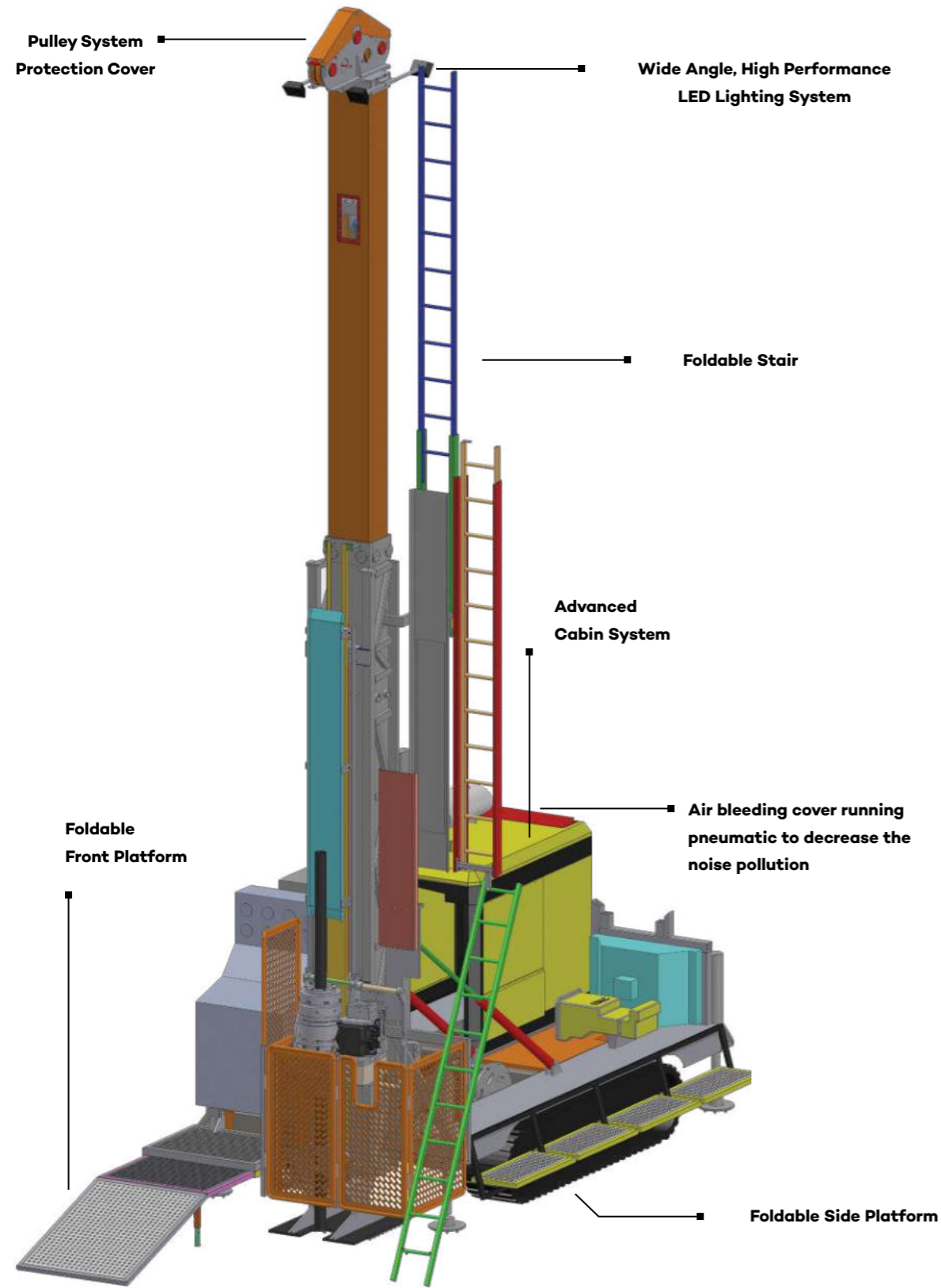
## EMERGENCY STOP AND WARNING BUTTON

"Emergency Stop Buttons" have been placed to the critical points to be reached easily in order to increase effective usage and emergency intervention standards in PD 500.

Additionally, buzzer is placed in the back side of the machine to enable the fastest warning of operator in case of emergency.

PD 500





### Rotation Unit Protective Cage

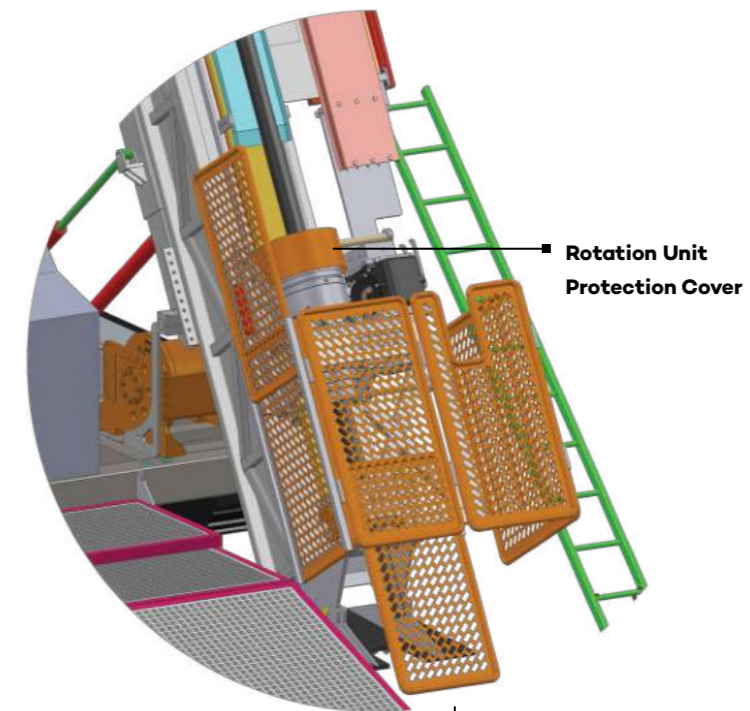
PD 500 rotation unit protective cage is used to prevent the contact of personnel to rotation unit accidentally and increase the safety to top level.

The sensor system, addable to the product optionally, warns the operator vocally when the protective cage is opened. Thus, the mast enables the required protection even in 45° leaning position with additional piece extended in inclined drills.

### Rotation Unit Protection Cover

Positioned on the upper side of rotation unit of PD 500 drill rig, rotation unit protection cover is designed to prevent any negative situation that a rotation unit may create in a high speed.

Including a hinged connection, protection cover can be lay aside easily by removing the pin in case of any intervention to the rotation unit. The cover should run in off-position during drilling operation.

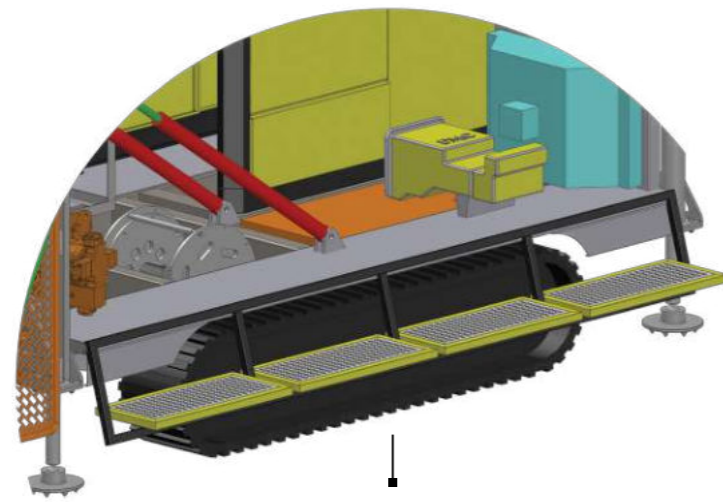


Rotation unit protection running safe even in angled shaft. Rotation unit side protection adjustable pneumatic or manual

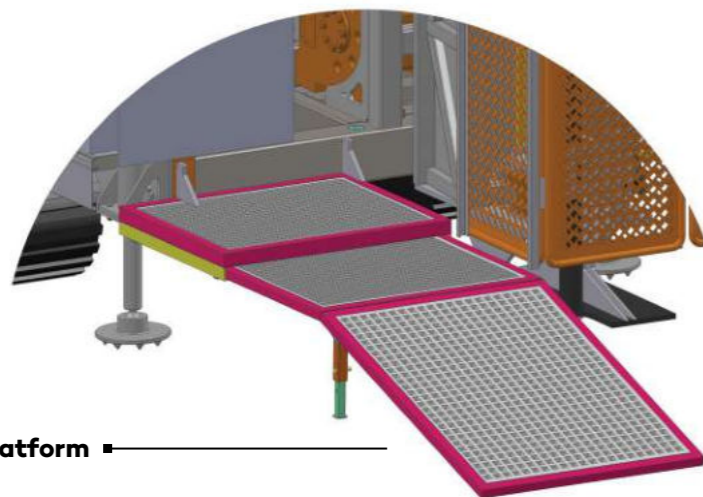
### Foldable Front and Side Platforms

In front and side parts of PD 500, there are foldable platforms designed to make personnel work comfortable and safe. Since the platforms are sectional, they can be used partially as well.

As the platforms provides conveniences in case of intervention to the machine when necessary, they do not occupy extra place as they are easily folded during transport or when they are not used.



Foldable Side Platform



Foldable Front Platform

### Lighting System

Cutting-edge technology product 4 LED lamps can be added to the mast of PD 500 optionally. Thus, a better area visibility is provided during night works and a higher performance is obtained than standard lamps.

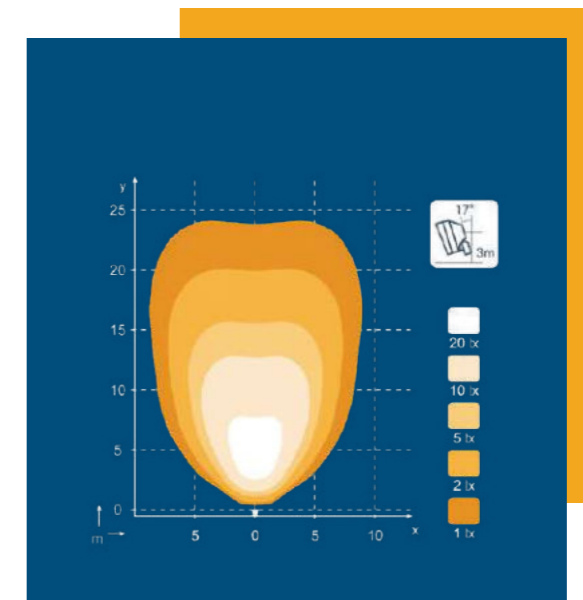
### Enhanced Engine Cabin

There are acoustic (non-combustible) foam rubbers inside the cabin to decrease the noise of engine in PD 500 series optionally. Thus, the noise is minimized for both environment and workers.

The fire extinguishing ball, located in PD 500 series as a standard, works as the first responder in case of a possible fire by exploding and warns the workers with its noise.

### Technical Features of Used Lamp

Used Light Flux	: 3.700 lm - 5.900 lm
Color Temperature	: 6.000 K
Nominal Voltage DC	: 12 - 24 V
Input Voltage Interval DC	: 9 - 32 V
Energy Consumption	: 50 W
Nominal Current Value 12V	: 4.2 A
Nominal Current Value 24V	: 2.1 A
Operating Temperature	: -40° C / 85° C



# PD 500 OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT EQUIPMENT

## PD 500 OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT EQUIPMENT

### Useful Control Panel

All analog and digital indicators located in PD 500 are positioned on the key points which do not allow the distraction of the operator inside the cabin. Thus, the operator can simultaneously follow up all the indicators.

With the Compact Control Panel of PD 500 developed with the feedbacks obtained from the area, the increase of performance is targeted.

### Remote Control (Optional)

The mobilization of the machine is provided in tough and dangerous conditions through the remote control positioned optionally in PD 500 series. The movement of the machine can be controlled in a fast and slow way through this remote control.

Besides, some functions on the remote control such as emergency stop, speed adjustment and buzzer are included.

### Multifunctional Control Monitor

The operator, with the help of the control monitor located optionally in PD 500, can monitor all significant values through a single monitor. Preventing the oversight of any value, this monitor also offers the adjustment of several parameters for the user.

### About the Engine

- Temperature
- Oil pressure condition
- Engine speed
- Engine hour
- Instant fuel consumption
- Average fuel consumption
- Start-stop
- Increase of speed
- Decrease of speed
- Battery condition
- Maintenance time adjustment

### About Hydraulic System

- Hydraulic oil level
- Oil temperature
- Pressure on the lines (if demanded)

The system instantly sounds the alarm in case of an abnormal change in values.



# TO THE CENTER OF THE WORLD WITH PD 500...

# STANDARD FEATURES

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### STANDARD FEATURES

- Foldable Mast Ladder and Safety Belt
- Foldable Side and Front Platforms
- LED Lighting System
- Rotation Unit Protective Cage and Protection Cover
- Rod Breaker
- Rotation Unit Tachometer
- Rod Stabilizer
- Transmission and Rotation Unit Observation Window
- Fire Extinguishing Balls in Engine Cabin

### OPTIONAL PRODUCTS

- Sound Insulation Cabin
- Telescopic Support Legs Openable to Sideways
- Water, Impact, Vibration Resistant LED Lighting System
- Switch with Audible Alarm when Rotation Unit Protective Cage Open
- Remote Control for the Movement System
- Remote Control with Integrated Monitor
- Hydraulic Movable Rod Stabilizer
- Internal Compressor (8 bar)
- Internal Weld Generator  
(It welds and has 220V-380V electric output.)
- Camera System and Monitor to Control Blind Spots
- Multi Functional Control Monitor
- Make up and break out of drill rod threads during rod tripping operations.

Information such as weight, size, brand and model specified in our catalog may vary according to customer preferences and desired optional features.



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