

## **Example Layout for Drilling Works**

**TOHO D2-K92 P2 Drilling Machine (From Japan)**

**General View & Specification of TOHO D2K92-P2**

**Self-Pulley System & Wire Roller Guide of TOHO D2K92-P2**

**Knock-Down & Weight Table of TOHO D2K92-P2**

**TOHO Other Series Drilling Machine (From Japan)**

**PM Crawler PM-3T-RT-D Specification**

**PM Crawler PM-3T-RT-D & PM-2T-RT-D Setup**

**PM-4500BHD Top Head Drilling Machine**

**PM-4500BHD Top Head Drilling Machine Specification**

**BOART LONGYEAR LX-6(DB525) & LX-4(DB520)**

**PM Drilling Machine D90R & D45**

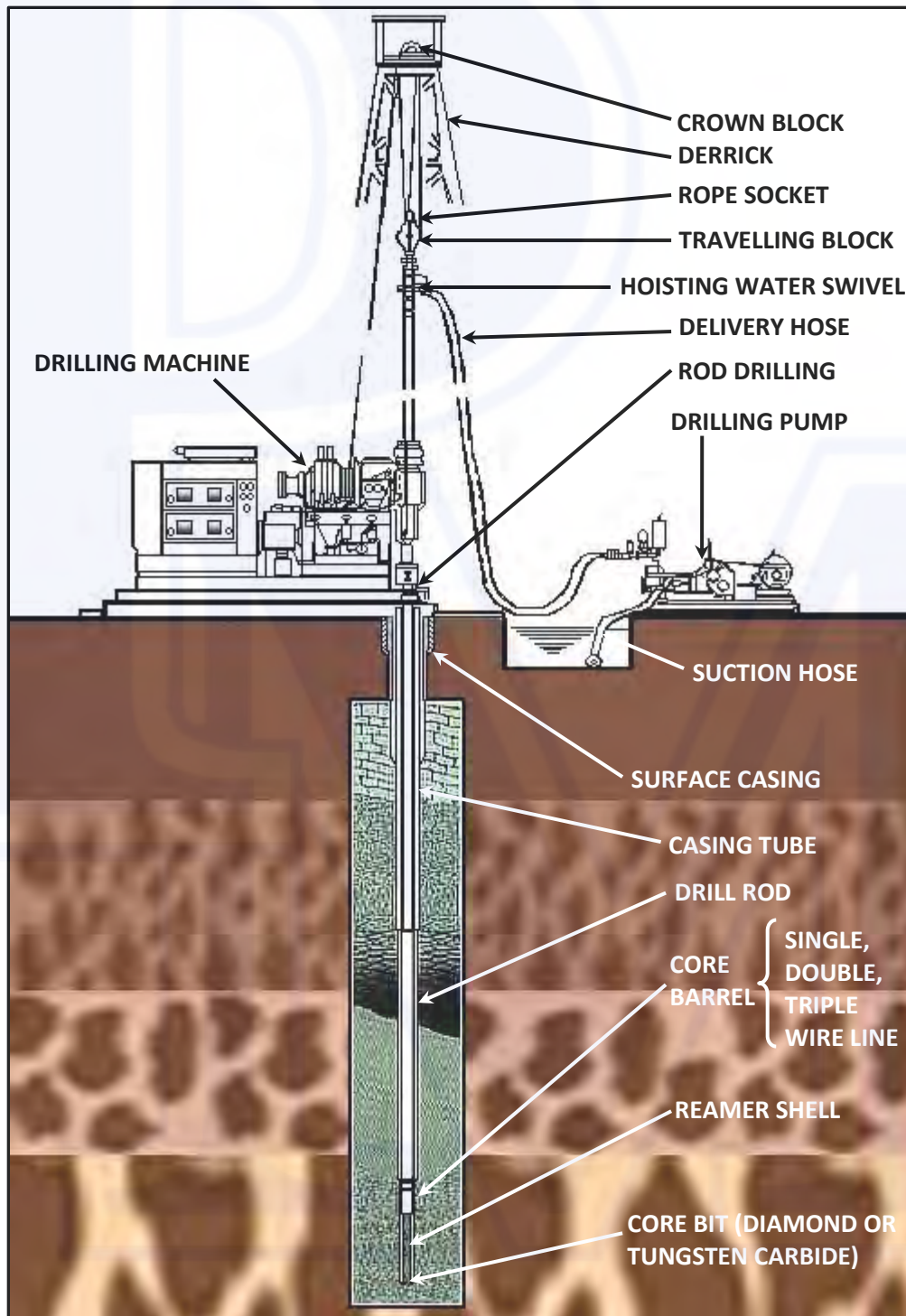
**PM Hydraulic Soil Nail Drilling Machine**



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**PRE-MAT DRILLING SUPPLIES PTE LTD**

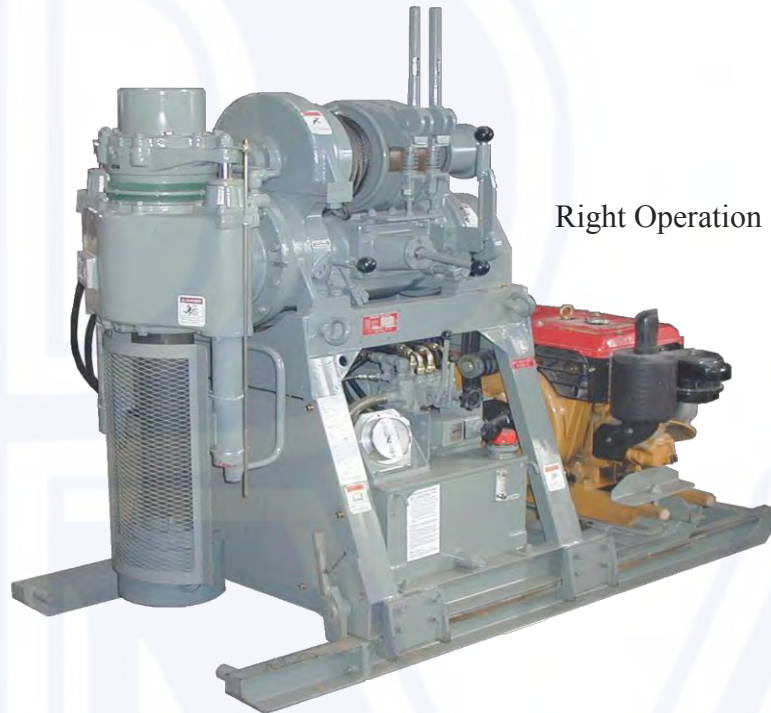
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## EXAMPLE LAYOUT FOR DRILLING WORKS



## **TOHO D2-K92 P2 (FROM JAPAN)**

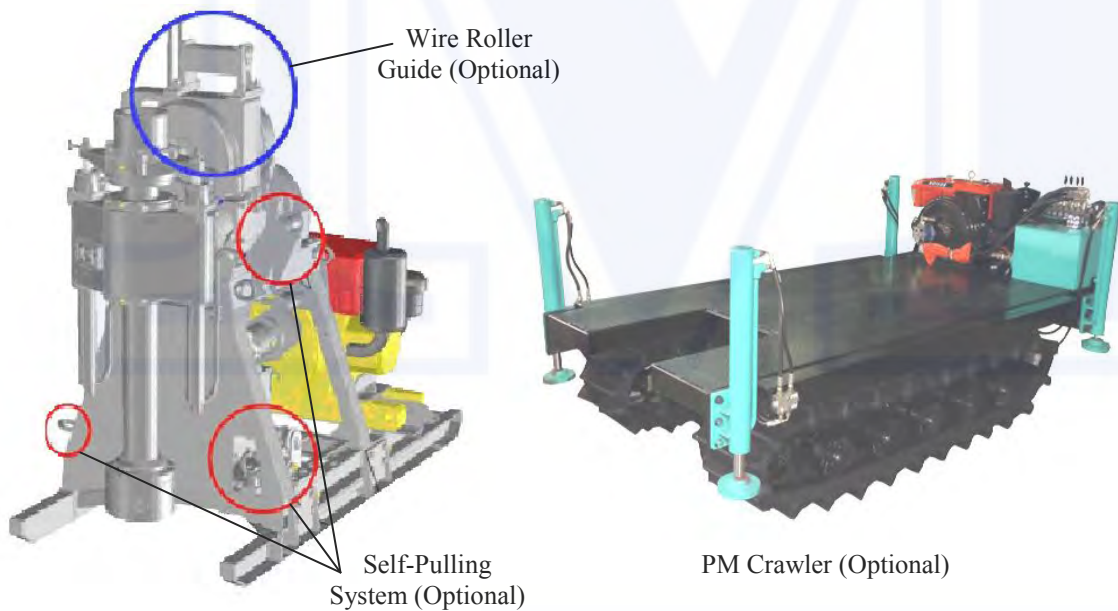
### *Multi-Purpose Drilling Machine*



Right Operation

### **Right and left side operations are available**

- *Soil Investigation*
- *Water Well*
- *Soil Foundation*

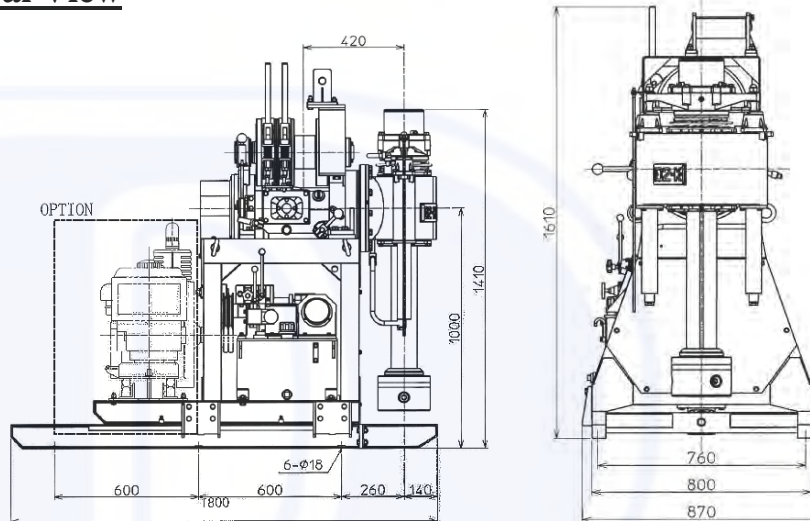


Wire Roller Guide (Optional)

Self-Pulling System (Optional)

PM Crawler (Optional)

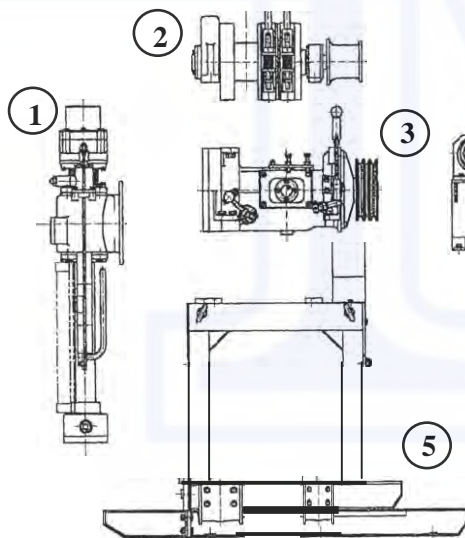
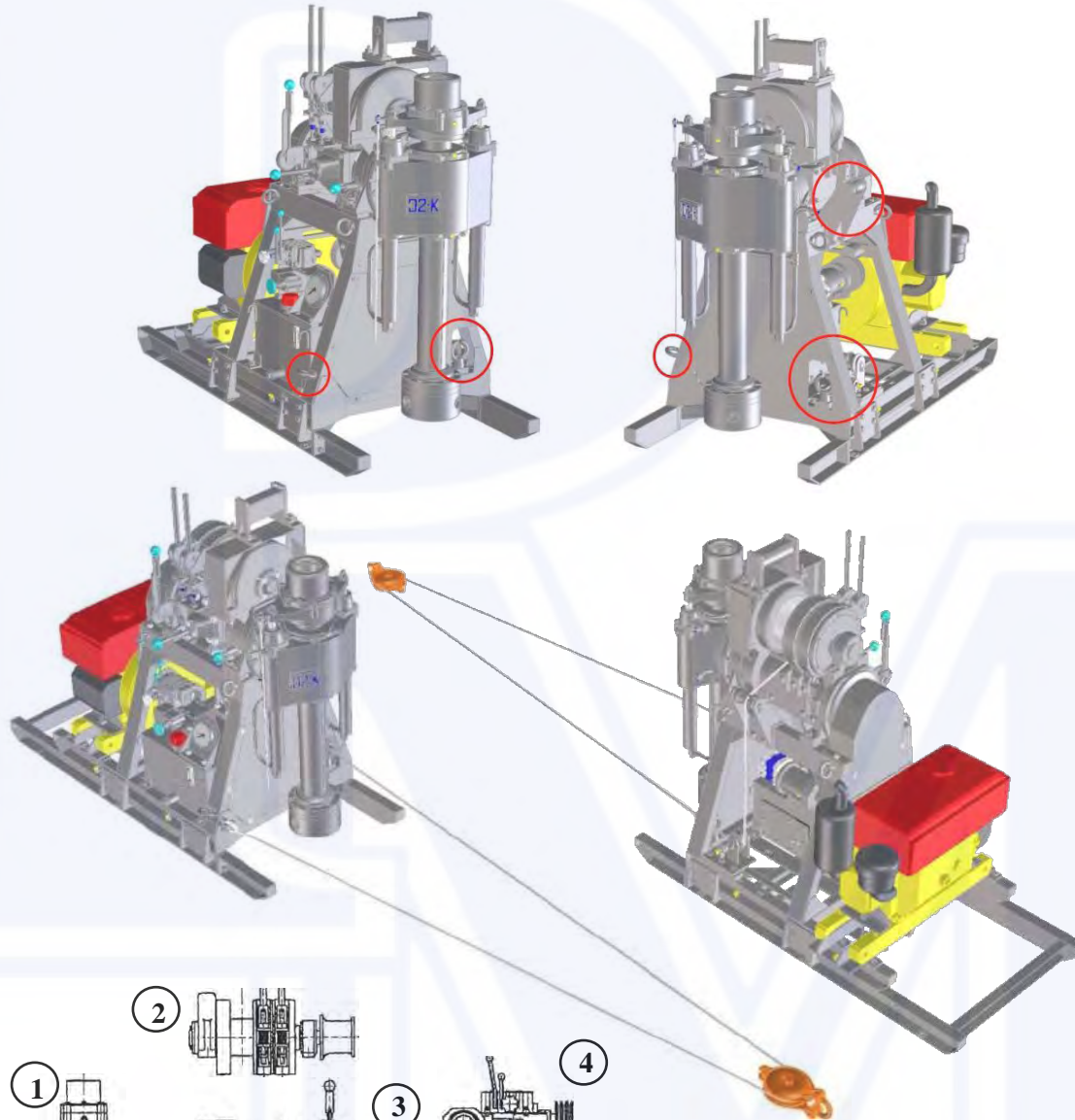
**General View**



**SPECIFICATIONS**

<b>DRILLING CAPACITY</b>	*Depth 250 m/BW, 200 m/NW, 110 m/HW
<b>SWIVEL HEAD</b>	
Type	Twin cylinder, Oil-hydraulic feed system, Spindle type
Angle Range	360°
Operation Side	** (A) Right (B) Left
I.D of Spindle	92mm
Stroke of Spindle	500mm
Revolving Speed of Spindle	60 : 180 : 355 Reverse- 65 rpm
Max. Spindle Torque	1.18kN-m (120 kgf-m)
Max. Thrust Capacity	21.5kN (2200kgf) at Oil-hydraulic pressure 7.4MPa (75kg/cm <sup>2</sup> )
Max. Balance Capacity	28.8kN (2900kgf) at Oil-hydraulic pressure 7.4MPa(75kg/cm <sup>2</sup> )
Pod Chuck	Manual, Three(3) jaw type ***Oil-hydraulic four(4) jaw type
Main Clutch	Single plate, dry disc type
Transmission	Sliding gear, Three(3) speed and the reverse one(1) speed
<b>HOIST DRUM</b>	
Type	Planetary gear, hand brake type
Hoisting Capacity	14.7kN (1500kgf) at single pull line
Rope Speed	15 : 45 : 85 m/ min at single pull line
Drum Capacity	Ø10mm wire rope X 35m length
<b>OIL -HYDRAULIC</b>	
Type	Constant delivery, gear type pump
Delivery Capacity	20 l/min at 1600 rpm
Max. Pressure	7.4 MPa (75kg/cm <sup>2</sup> )
<b>FRAME RETRACTION</b>	Oil-hydraulic slide, 400mm
<b>POWER (recommended)</b>	Electric Motor, 7.5kW, 3phase, 220V, 50 or 60Hz, or Diesel engine
	10PS(7.5kW) at 1800 rpm (rated cont. output)
<b>NET WEIGHT</b>	700kgf (without power) 800kgf (with oil-hydraulic chuck without power)
<b>DIMENSION (LXWXH)</b>	1800 x 870 x 1620 mm 1800 x 870 x 1655 mm (with oil-hydraulic chuck)
Remarks	*Drilling capacity calculated based on rod weight only.
	** (A) is standard, (B) is option. Please specify selection when ordering
	*** Option, please specify selection when ordering.

## TOHO D2K92 P2 (WITH PULLEY SYSTEM & WIRE ROLLER GUIDE ASSEMBLY)



**Knock-Down & Complete Weight Table**

No.	Section	Weight (kg)
1.	Feed Complete	165
2.	Drum Complete	100
3.	Gear Case Complete	140
4.	Oil Tank Complete	115
5.	Frame & Slide Base Complete	180
Body Weight (kg), without prime mover		700

## DRILLING SERIES

Drilling machine for geological survey, dam grouting, water well, water drainage

### DM-03 (RO)(LO)

\* RO : Right Operation; LO: Left Operation

Model		Wire Drum Hoist	Cathead Hoist
I. D. of Spindle	mm	47	
Spindle Speeds	rpm	65 : 125 : 370	
Torque (Max)	kN m	0.54 {55 kgf·m}	
Stroke of Spindle	mm	300	
Thrust Force	kN	8.2 {840 kgf}	
Balance Force	kN	13.5 {380 kgf}	
Power		3.7 kW / 4P or 5PS	
Dimensions (LxWxH)	mm	1130 x 500 x 960	1115 x 500 x 960
Mass	kg	200	180

Oil-hydraulic slide base or Oil hydraulic chuck is option equipment.

### DM-03 (LO)400ST Mounted BG-2 and CATHEAD HOIST

Model		Cathead Hoist
I. D. of Spindle	mm	47
Spindle Speeds	rpm	65 : 125 : 370
Torque (Max)	kN m	0.54 {55 kgf·m}
Stroke of Spindle	mm	400
Thrust Force	kN	8.2 {840kgf}
Balance Force	kN	13.5 {1380kgf}
Power		3.7kW /4P or 5PS
Dimensions (LxWxH)	mm	1505 x 800 x 1075
Mass	kg	340

Oil-hydraulic slide base or Oil hydraulic chuck is option equipment.

### DO-D(RO)(LO)

\* RO : Right Operation; LO: Left Operation

I. D. of Spindle	mm	43	
Spindle Speeds	rpm	(A) 60 : 170 : 330	(B) 110 : 320 : 625
Torque (Max)	kN m	(A) 0.59 {60 kgf·m}	(B) 0.32 {33 kgf·m}
Stroke of Spindle	mm	400	
Thrust Force	kN	15.9 {1620kgf}	
Balance Force	kN	21.2 {2160kgf}	
Power		3.7kW /4P or 5PS /1800 rpm	
Dimensions (LxWxH)	mm	1200 x 660 x 1090	
Mass	kg	290	

Spindle speed (A) is standard. Oil-hydraulic chuck is standard equipment.  
Manual chuck is option equipment. Drilling pump can build in this machine.

### D1-C-S1 (RO)(LO)

\* RO : Right Operation; LO: Left Operation

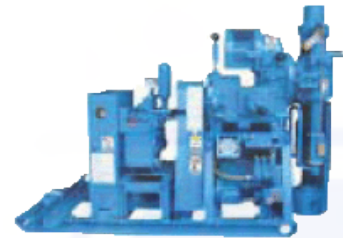
I. D. of Spindle	mm	48	58
Spindle Speeds	rpm	(A) 65 : 130 : 240 : 370 (A) 85 : 170 : 320 : 500 (A) 160: 310 : 590 : 900	(B) 50 : 100: 85 : 285 (B) 65 : 130:245: 380
Torque (Max)	kN m	(A) 0.81 {83 kgf·m } (A) 0.62 {63 kgf·m } (A) 0.33 {34 kgf·m }	(B) 1.05 {107 kgf·m } (B) 0.81 {83 kgf·m }
Stroke of Spindle	mm	500	
Thrust Force	kN	21.6 {2200kgf}	
Balance Force	kN	28.9 {2950kgf}	
Slide System	mm	Oil hydraulic : Stroke 300	
Power		5.5kW /4P or 8PS /1800 rpm	
Dimensions (LxWxH)	mm	1580 x 735 x 1390	1580 x 735 x 1430
Mass	kg	550	565

Spindle speed (A) is standard.  
Oil-Hydraulic slide base. Oil-Hydraulic chuck is standard equipment.

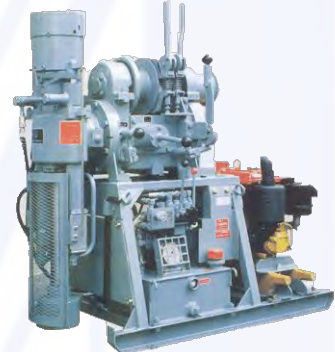
❖ **NOTES: Specifications are subject to change without prior notice.**



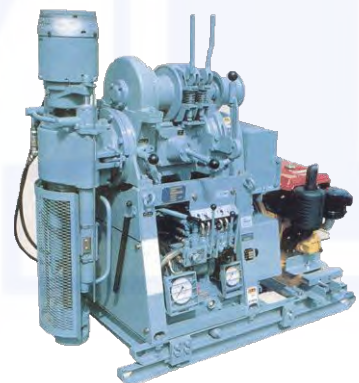
DM-03 (RO)(LO)



DM-03



DO-D (RO)(LO)



D1-C-S1 (RO)(LO)

**D2-JS(III)**

I. D. of Spindle	mm	48
Spindle Speeds	rpm	55 : 155 : 310
Torque (Max)	kN m	0.95 {97 kgf·m}
Stroke of Spindle	mm	500
Thrust Force	kN	21.6 {2200 kgf}
Balance Force	kN	28.9 {2950 kgf}
Power		5.5 kW / 4P or 7.5PS/1800 rpm
Dimensions (LxWxH)	mm	1430 x 800 x 1390
Mass	kg	470

Oil-hydraulic chuck is standard equipment. Manual chuck is option equipment.

**D2-KS58 (RO)(LO)**

\* RO : Right Operation; LO: Left Operation

I. D. of Spindle	mm	58
Spindle Speeds	rpm	(A) 60 : 120 : 230 : 360 (B) 100 : 190 : 360 : 560 (C) 130 : 260 : 500 : 770
Torque (Max)	kN m	(A) 0.88 {90 kgf·m} (B) 0.53 {54 kgf·m} (C) 0.40 {41 kgf·m}
Stroke of Spindle	mm	500
Thrust Force	kN	21.6 {2200 kgf}
Balance Force	kN	28.9 {2950 kgf}
Slide System	mm	Oil hydraulic : Stroke 400
Power		5.5 kW /4P or 7.5 PS /1800 rpm
Dimensions (LxWxH)	mm	1780 x 870 x 1620
Mass	kg	680

Spindle speed (A) is standard. Oil-hydraulic chuck is standard equipment.  
 Manual chuck is option equipment. Drilling pump can build in this machine.

**D2-K (II), (III)92(RO)(LO)**

\* RO : Right Operation; LO: Left Operation

Model	D2-K (II) 92	D2-K (III) 92
I. D. of Spindle	mm	92
Spindle Speeds	rpm	(A) 60 : 180 : 355 : 65 (R) (B) 30 : 90 : 170 : 35 (R)
Torque (Max)	kN·m	(A) 1.18 {120 kgf·m} (B) 2.35 {240 kgf·m}
Stroke of Spindle	mm	400
Thrust Force	kN	21.6 {2200 kgf}
Balance Force	kN	28.9 {2950 kgf}
Slide System	mm	Oil hydraulic : Stroke 400
Power		7.5 kW /4 P or 10 PS /1800 rpm
Dimensions (LxWxH)	mm	1800 x 870 x 1570
Mass	kg	700

Spindle speed (A) is standard.  
 Oil hydraulic slide base. Oil-hydraulic chuck is standard equipment.

**D3-92**

\* RO : Right Operation; LO: Left Operation

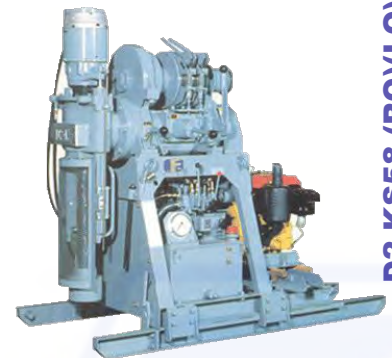
I. D. of Spindle	mm	92
Spindle Speeds	rpm	30 : 63 : 121 : 24 (R)
Torque (Max)	kN·m	3.49 {356 kgf·m}
Stroke of Spindle	mm	500
Thrust Force	kN	41.6 {4240 kgf}
Balance Force	kN	55.5 {5660 kgf}
Slide System	mm	Oil hydraulic : Stroke 400
Power		11 kW /4 P or 15 PS /1800 rpm
Dimensions (LxWxH)	mm	1843 x 873 x 1706
Mass	kg	935

Oil-Hydraulic slide base. Oil-Hydraulic chuck is standard equipment.

❖ **NOTES: Specifications are subject to change without prior notice.**



D2-JS(III)



D2-KS58 (RO)(LO)

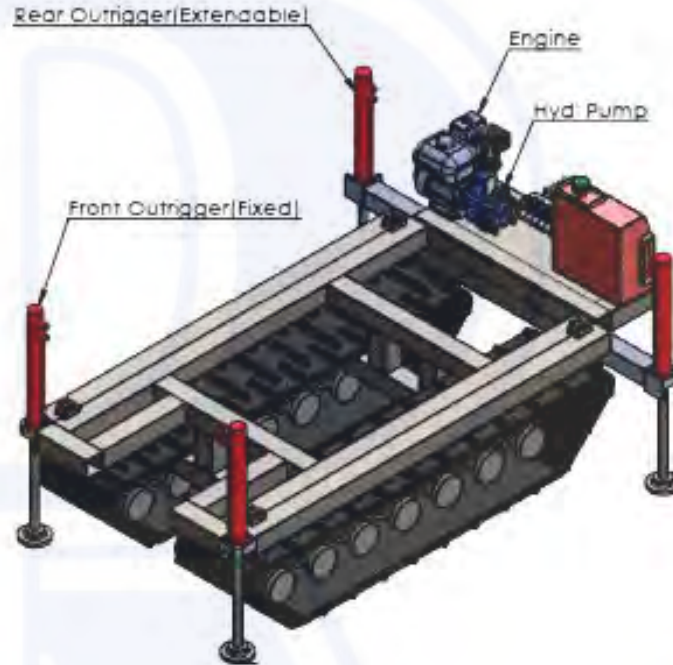


D2-K(II)92(RO)(LO)

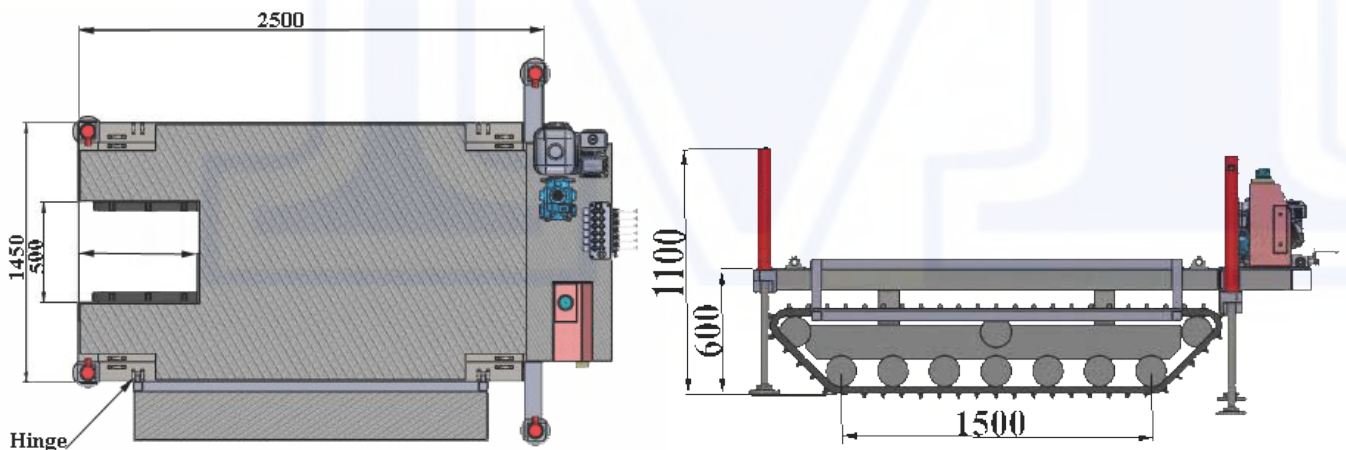


D3-92(RO)(LO)

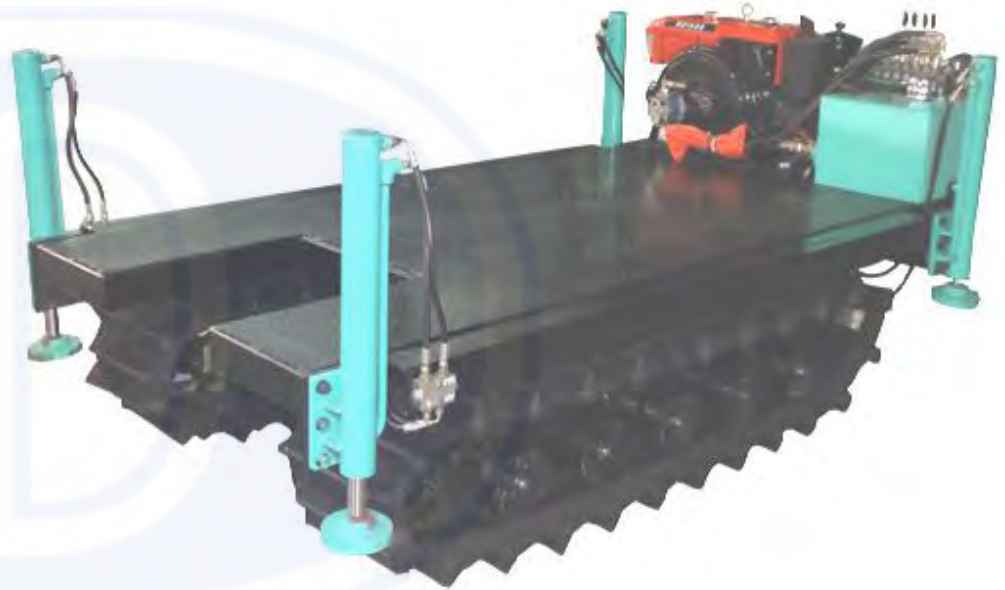
## PM CRAWLER



Model	PM-3T-RT-D CRAWLER
Capacity	3- Tons
Power Unit	9~10 HP Diesel Engine (Electric Start)
Track Type	2x Rubber Type 450mm (W) x 1500mm (L)
Front Outrigger	Fixed, Hydraulic Driven with Balancing Valve
Back Outrigger	Extendable, Hydraulic Driven
Flat Bed Size	2500mm (L) x 1450mm (W)
Overall Size	3050mm (L) x 1550mm (W) x 1100mm (H)
Flat Bed Height	600mm (from ground)
Flat Bed Opening	500mm x 600mm
Weight	1550kgs







## PM CRAWLER



**PM-3T-RT-D Crawler**



**PM-2T-RT-D Crawler**

## PM-4500-BHD

### TOP HEAD DRILLING MACHINE (WITH DRIFTER)



## PM-4500-BHD

### SPECIFICATIONS (made in KOREA)

<b>Drilling Capacity</b>	HQ size	250-300 M	
	NQ size	500 M	
	BQ size	600 M	
	These depth values are theoretical values. Drilling depth may vary according to ground conditions, equipment drilling angel, etc.		
<b>Dimension</b>	OA Lengths - transport	5.5 M	
	OA Width	1.8 M	
	OA Height - transport	2.3 M	
	OA Height- mast up	7.5 M	
	(Extension boom : 2 M)		
<b>Engine</b>	Weight	5.5 tons	
	Model	Hyundai D4DA	
	Rated power	100 HP / 1800 RPM	
	Fuel Capacity	180 L	
<b>Top Head Rotation</b>	Cooling system	Water Cooling	
	R.P.M	1st	700-1100
		2nd	600-700
		3rd	0-250
	Torque	1st	70-50 kg-m
		2nd	93-140 kg-m
		3rd	0-420 kg-m
<b>Feed System</b>	Cylinder	90mm x 55mm x 3250mm	
	Pull up capacity	12 tons	
	Pull down capacity	6 tons	
	Drill Pipe Max. Lengths	6 M	
<b>Gear Box</b>	Gear Box can slide one side		
	Gear Box can right & left		
<b>Winch</b>	Spool capacity	22 M of 12mm cable	
	Line Pull	3 tons	
	Wireline	500 M of 6mm	
<b>Hydraulic System</b>	General 3 Pump open loop system	Tank Capacity	160 L
		Filtration	10 micron
		Pump Model	K3V63X 2+40
		Cooling system	Air cooling
		Operating pressure	280 bar
<b>Light &amp; Electrical system</b>	Control panel	Gauge floodlights	
	Work	2-60 watt LED floodlights	
<b>Hydraulic Outrigger Jacks</b>	4 EA on the outer corners of the rigs		
<b>Drill Pipe Breakout</b>	Torque break-out	5 tons	
	Double Hydraulic clamp	45mm ~ 220mm	
	Centralizer	BW Rod or Casing, NQ-3PM, NW, HQ, NW Casing, HW Casing, PW Casing	
<b>Crawler (Rubber Type)</b>	Crawler Type	LG4500 Combine	
	Crawler speed	4 km/h	
<b>Mud Pump ( 3 cylinder )</b>	FMC Triplex Pump W1122BCD	1000PSI/ 70kg/cm <sup>2</sup> , 140L/min	
<b>Hydraulic Drifter</b>	DZH 700 (= JDMD700)		

**\*Specifications are subjected to changes without prior notice.**



[www.boartlongyear.com/db520-525](http://www.boartlongyear.com/db520-525)



- WirelineCoring

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- DTHdrilling

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- FlushRotary

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- MakeandBreakhydra  
ulicrodclamps

## **LX-6 (DB525)/LX-4 (DB520) Multipurpose Geotechnical Drill Rigs**

The DeltaBase 520 and 525 represent a family of compact and lightweight drill rigs capable of multiple drilling methods. The DB520's efficient drilling system with speeds up to 740 rpm and pullback of 25 kN (8550 lbf) provides a versatile rig in a very small package. The DB525 includes all of the features of the DB520 but with an upgraded mast which allows for deeper drilling and a larger drill head which offers increased torque and speed. This family of rigs is designed to meet the wide range of challenges on today's jobsite.

### **Advantages**

- Quick and simple drill-method switching. Wireline, DTH, flush rotary and auger drill possibilities integrated into one rig.
- Hydraulic mast raising and stabilization jacks plus an onboard water pump allow for fast mobilization of the rig on the drill hole
- Standard safety features including an interlocked safety cage, as well low speed, low torque rotation for safe rod management
- Swing out drilling control panel to provide clear view of the drill hole
- Optional automatic SPT and pressure meter connections for quick change to testing and sampling





## LX-6 (DB525)/LX-4 (DB520)

### Multiple Drilling Methods

- Wireline and Conventional Coring
- Down the Hole Hammer Drilling
- Flush Rotary Drilling
- Auger Drilling

### One Rig - Many Uses

- Site Investigation
- Core Sampling
- Undisturbed Sampling with Automatic SPT Equipment
- Pressure Meter Testing
- Micropiling
- Tube and Manchette Grouting
- Jet Grouting
- Water Well Drilling
- Minerals Exploration

### Fast Rig Mobilization

- Mounted on hydraulically powered steel tracks to cover difficult terrain and driven by electric remote control, the rig will get on site quickly
- Hydraulic mast raising and leveling jacks simplify rig setup
- On-board accessories including water pump, Automatic SPT, and rock rack mean that everything is on-site and ready to drill

### Features to Simplify Drilling

- Hydraulic mast dump of 500mm (1.6ft) to get the mast close to the drill hole. This is 1000mm (3.2ft) on the DB525
- Standard hydraulic side shift for drill head to give clear access to the drill hole and make rod pulling easier
- Standard 220mm (8.6") diameter double clamp for making and breaking rod joints quickly and safely
- Swing out drilling control panel to provide optimum view of the drill hole

### Safety Built In

- Standard safety cage with electrical interlocks on every rig
- Low speed, low torque hydraulic rotation circuit for making up rod joints
- Hydraulic breakout clamps for safely making and breaking rod joints
- Meets all CE safety standards for hydraulic drilling rigs

### Options for any Job

- DTH air oiler, shock absorber and air connections
- High altitude engine package
- Skid or towable trailer mounting
- Night lights

Reference Technical Data Sheets for additional technical information

All photographs are representation, actual equipment may not be exactly as shown. Boart Longyear is constantly striving to improve its products and must, therefore, reserve the right to change designs, materials, specifications and price without prior notice.

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## **BORING MACHINES**

### **BORING MACHINE MODEL D90R**

(Shown here with skid mounted)

Drilling Capacity	100 m (e.g. with NW casing)
Spindle Bore	92 mm
Spindle Stroke	50mm
Forward Speeds	91/340/524 rpm
Reverse Speed	77 rpm
Thrust	3,700 kgf
Hoist Capacity	1,250 kgf
Machine Retraction	370 mm
Power	14 HP (std.)
Weight (approx.)	1,110 kg (c/w Yanmar Engine TF 160)
Dimension (L x W x H)	1,110 x 2,030 x 1,750 mm
Mast	4-pole, 5.5 m high



### **BORING MACHINE MODEL D45**

(Shown here with skid mounted)

Drilling Capacity	50 m (e.g. with NW casing)
Spindle Bore	47 mm
Spindle Stroke	350mm
Forward Speeds	110/210/430 rpm
Thrust	2,500 kgf
Hoist Capacity	700 kgf
Machine Retraction	240 mm
Power	7 HP (std.)
Weight (approx.)	410 kg (c/w Yanmar Engine TF 70)
Dimension (L x W x H)	800 x 1,600 x 1,220 mm
Mast	4-pole, 5 m high



## HYDRAULIC SOIL NAIL DRILL MACHINE



1	<b>Machine Weight</b>	Mass & Rotator	122kg (approx)
		Power Pack	430kg
2	<b>Drill Rod Length</b>	-	1.5m
3	<b>Feed Assembly</b>	Feed Torque	959Nm
		Pull Back Torque	959Nm
4	<b>Rotator</b>	Speed	85RPM
		Torque	959Nm
5	<b>Hydraulic Power Pack</b>	-	ISUZU Engine 4 Cylinders 32H/P 1450RPM
6	<b>Hydraulic Oil Tank (With Cooler)</b>	-	85 litter
7	<b>Head (Height)</b>	-	100m (max)