



HCR Series

FRD Furukawa reserves right to change specifications without prior notice.

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HCR910-DS-E2205-F3  
Printed in Japan

## Hydraulic Crawler Drill

### HCR910-DS

Tier3 / Euro Stage - 3



**FRD** FURUKAWA ROCK DRILL

**ECO-friendly**

***The ultimate combination of performance and economy.***

**HCR910-DS**

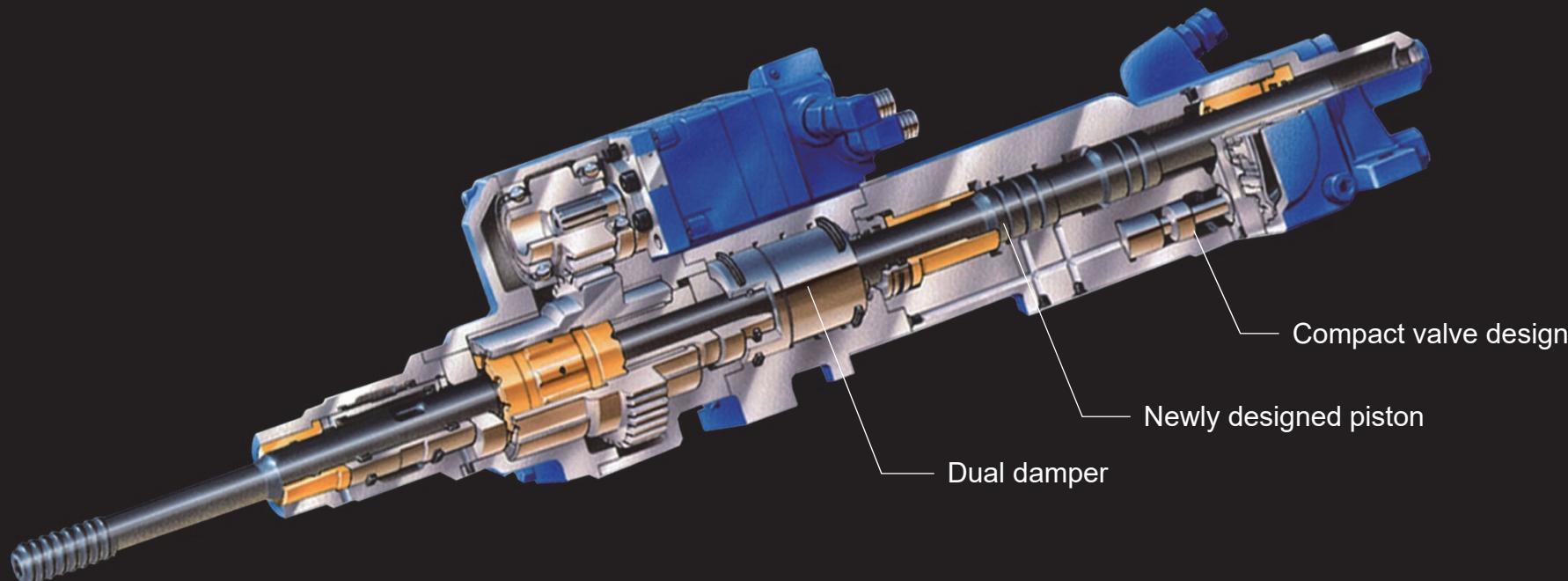
- ★ Newly designed economy mode
- ★ New comfortable cab design
- Tilt up control deck
- Powerful pressurized air conditioner
- ★ ECO friendly engine
- ★ Heavy duty undercarriage



# Drilling performer, HCR910-DS

## High-productivity & Durability

**Drill faster and straighter with our patented HD709 drifter.**



**HCR910-DS**

ECO Friendly



### Dual-damper system DDS

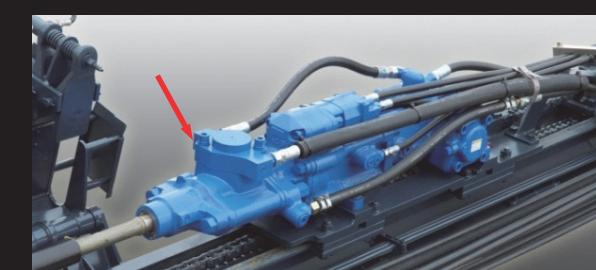
FRD has developed the industry's first Dual-Damper System. For maximum energy transfer, active DDS minimizes return of shock waves by keeping the bit firmly against the rock at all times during drilling. Active DDS minimizes percussion energy loss and by optimizing the overall feed force. An additional benefit is to greatly improved life of drilling accessories. (U.S. PATENT No.5,896,937)

### Compact valve design

The FURUKAWA HD700 series drifter is designed to minimize drill noise and vibration without sacrificing performance. Incorporating a new piston design, the HD709 drifter maximizes energy transmission and drills effectively in a variety of rock types.

### Reverse percussion system

The Reverse Percussion System (RPS) makes it easier to free a stuck rod. A substantial increase in extraction force allows the field proven RPS (optional) to remove stuck rods quickly.



# Maximizes operator performance with the ultimate in drilling technology.

HCR910-DS



Powerful CAT engine is fully compliant with tier3 / Euro stage-3 emission control. It gives full control for easy drilling.



Thanks to advanced hydraulic and pneumatic technology, output energy can be transferred to each component with minimum power loss. These systems support high productivity.



## Engine throttle control

Adjust the engine speed.

Position I :  $1,250 \text{ min}^{-1}$   
 Position II :  $1,600 \text{ min}^{-1}$   
 Position III :  $1,800 \text{ min}^{-1}$   
 Position IV :  $2,000 \text{ min}^{-1}$   
 Position V :  $2,200 \text{ min}^{-1}$

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## New designed economy mode

By using power-saving switch, fuel consumption is reduced during "light" work conditions. (Maximum 30 % reduction on previous models.)

While drilling, Engine speed can be adjusted lower than power mode. Engine speed can be selected from one of following speed.

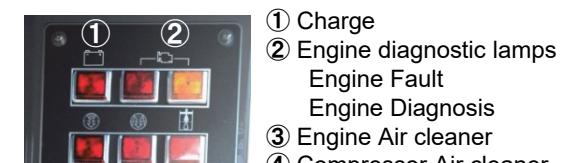
<b>"Light" work</b>  <b>According to rock condition</b>  <b>"Hard" work</b>	<b>1,600 min<sup>-1</sup></b>  <b>1,800 min<sup>-1</sup></b>  <b>2,000 min<sup>-1</sup></b>	<b>New economy mode</b> <small>(Have a choice from 3 types of power)</small>
	<b>2,200 min<sup>-1</sup></b>	<b>Power mode</b> <small>(Previous model has only this mode for drilling)</small>

For the hole cleaning, Engine speed automatically increases up  $2,200 \text{ min}^{-1}$ .

As a result, even in economy mode, you can realize the perfect cleaning as power mode does.



## ■ Warning lights



Compressor temperature gauge  
Hydraulic temperature gauge

## ■ Digital engine indicator



Easy check engine condition in the Cab.

- Engine rpm
- Engine hour meter
- Engine coolant temp
- Engine oil pressure etc.



## Field proven rod changer system

The hydro-mechanical In-line-1 conventional design rod changer is field proven. Rod change speed is extremely fast.

## Rod changing lever



- ① Roller rotation/Roller slide
- ② Carrier Swing in / Rod adding or Rod re-release

# Easy operation and improved - reliability

HCR910-DS



## High capacity compressor & Dust collector



High out-put compressor increases flushing air, provides faster drilling and decreases bit wear. The upgraded dust collector has a suction capacity. The dust collector includes an effective pre-cleaner to reduce the escape available for difficult drilling conditions



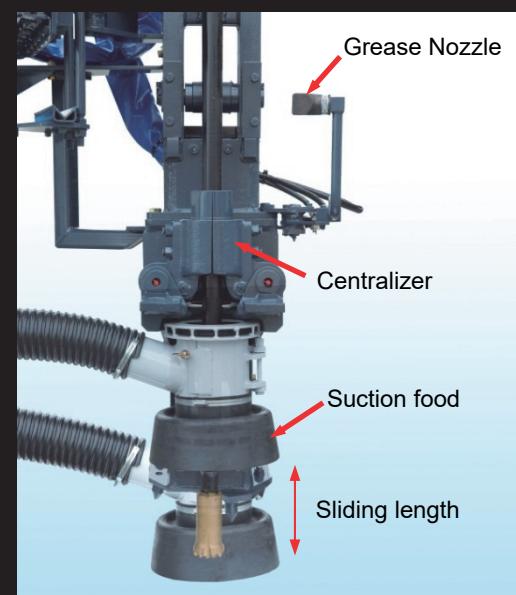
Dust collector



Pre-cleaner

## Easy to check hole

Sliding suction food can be raised to allow a fast visual check of operation.



Grease Nozzle  
Centralizer  
Suction food  
Sliding length

## New design and useful control deck



## Anti-jamming device

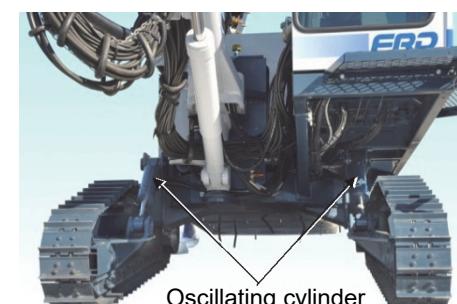
An anti-jamming device optimizes the drilling condition for a variety of rock types, thus offering extended bit and rod life, and consequent reduction in running cost.



## Heavy duty undercarriage & oscillating

Heavy-duty track flames provide strength and durability. One-piece drive sprockets are manufactured with hardened surfaces for longer life. Heavy-duty track links are forged from high-manganese alloy steel, and pins and bushings are induction-hardened. Standard full track guards protect undercarriage. Track tension can be adjusted easily with a grease gun.

The entire machine oscillates up-down 10 degrees total 20 degree to maintain machine level. And right -and-left tracks equalize 20 degrees to negotiate uneven ground.



Oscillating cylinder



When drilling  
When traveling



HCR910-DS is provided with operator proven "triple plus one" drill control design. FRD experienced operators will perform their skill level from day one, with triple hydraulic drill control and one air control lever layout. No learning time is required.

### Control panel ①~④

- ① Flushing lever
- ② Rotation lever
- ③ Feed lever
- ④ Percussion lever

### Switch panel ⑤~⑪

- ⑤ Feed control valve
- ⑥ Dust collector switch
- ⑦ Feed & Centralize
- ⑧ Anti-jamming pilot lamp
- ⑨ Anti-jamming
- ⑩ High rotation/Normal rotation switch
- ⑪ Grease lubrication switch

### Mode selector

A mode switching hydraulic circuit performs switching between N mode for homogeneous rocks and H mode for slant joints, thus enabling safe and speedy drilling.



# Combining performance and economy

HCR910-DS



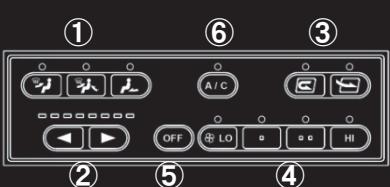
## New design comfort cab

New design cab provides large windows at the front and on the right side to maximize operator visibility. Cab is air conditioned and pressurized with air filters to keep out dust.

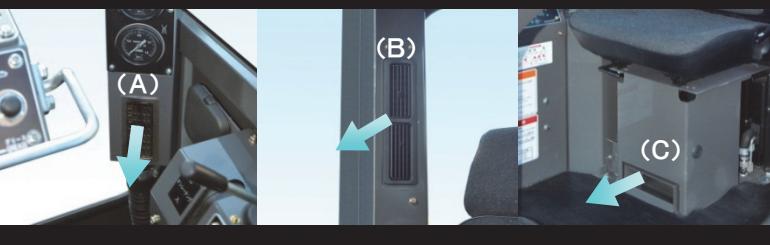


New design cab (Photo:Standard cab)

## Air Conditioner Ventilation duct



Control panel for air conditioner  
 ① Mode selector switch  
 ② Temperature control switch  
 ③ Internal/External air selector sw.  
 ④ Fan switch  
 ⑤ OFF switch  
 ⑥ Air conditioning switch



Front blow    Front/Rear blow    Foot blow

## ROPS/FOPS Cab (Option)

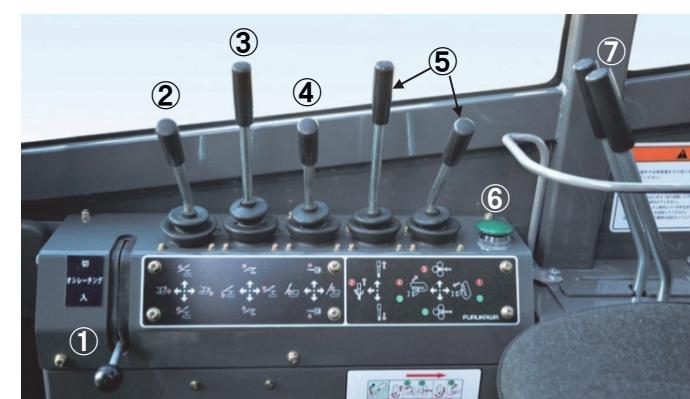
ROPS : Roll-Over Protective Structures  
 FOPS : Falling-Object Protective Structures

## Operator's seat

Hi-back operator's seat with fabric upholstery and arm rests, holds the operator in an optimum position all day.



## Comfortable control levers



Mutual design lever for easy control.

① Oscillating lock lever  
 ② Guide slide & Oscillating  
 ③ Guide tilt & Guide swing  
 ④ Boom lift & Boom swing  
 ⑤ Rod changer (2 lever)  
 ⑥ Hone Switch  
 ⑦ Traveling lever  
 ⑧ Drink holder

Pressure gauge installed to center pillar.  
 Easily checkable from sitting position.

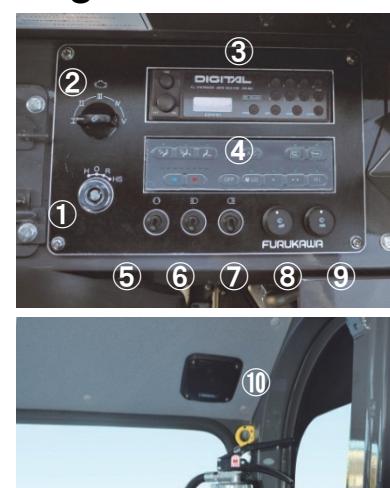
① Impact pressure gauge  
 ② Feed pressure gauge  
 ③ Rotation pressure gauge  
 ④ Flashing air pressure gauge

## Tilt type control deck



Tilt lock release pedal.

## Right side control box



① Engine start switch  
 ② Engine throttle control  
 ③ FM/AM Radio  
 ④ Control panel for air conditioner  
 ⑤ Compressor switch  
 ⑥ Front Light switch  
 ⑦ Rear Light switch  
 ⑧ Front window wiper switch  
 ⑨ Upper window wiper switch  
 ⑩ Speaker

# Easy Maintenance & Safety Functions.

HCR910-DS

## Tough hose reels



Extends hose life, ensures longer service life and reduces service load.

## Wear Plate



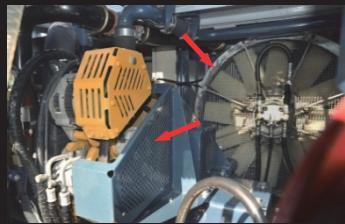
Synthetic wear plates (Optional) for drifter carriage

## Air conditioner filter



## For Safety equipment

### Fan guards



Fan guards and belt guards are standard.

### Travel lock plates



Engage travel lock while drilling.

### Head guard



Roof is reinforced and overhead window is steel gauge protected.

## Accessibility For Maintenance

Walk-around, ground-level maintenance provides fast, easy upkeep or repair. Hinged service doors provide easy access to required areas.



### Access to the right side cover

Fully openable access cover makes access to the radiator, the grease can and the drilling control valves easier.



### Access to the left side cover

Service for the engine and battery, the electric control panel can be reached from the left side access cover.



### Access to the Rear cover

Filters are within the reach.

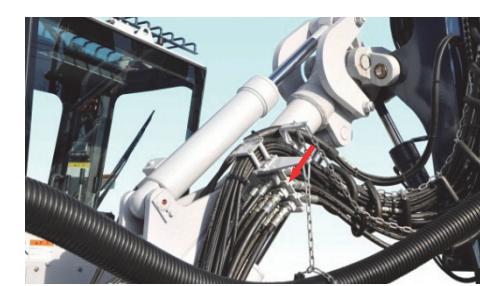


### Access to the Upper cover

Can easily access to the engine room.



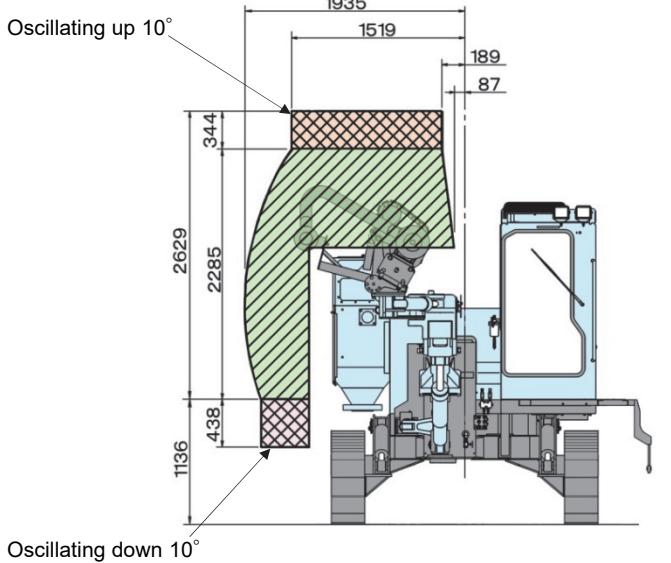
### Hoses and piping clearly accessible for Maintenance



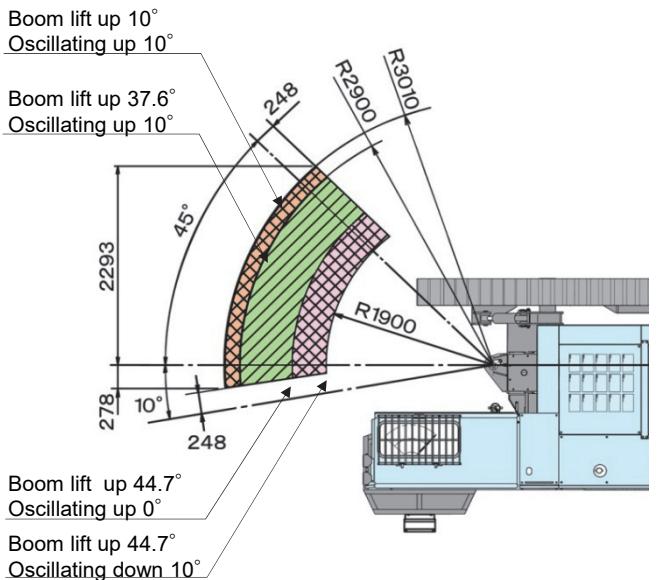
Model		HCR910-DS
<b>Drifter</b>		
HD709		Standard
Dual damper system		Standard
Reveres percussion		Option
<b>Guide shell</b>		
Hydraulic centralize		Standard
Sliding suction cap		Standard
Synthetic wear plate for carriage		Option
Synthetic hose reel		Standard
<b>Rod changer</b>		
Rod length	10ft	Standard
Rod size	32H, 38R (T38) 38H, 45R (T45)	Select
MM/MF rod	32H, 38R (T38) 38H, 38R (T38)	Select
Starter rod	10ft 12ft 13ft	Standard
Rotator		Standard
<b>Boom</b>		
Fix boom		Standard
<b>Undercarriage</b>		
Shingle shoe		Standard
Sprocket guard		Standard
Lifting eyes for transportation		Optional
<b>Dust collector</b>		
Pre-cleaner		Optional
Folding bracket for pre-cleaner		Optional
Exhaust shutter		Optional
Sinter-lamellar filter		Optional
<b>Cab</b>		
Steel cab		Standard
ROPS/FOPS cab		Optional
Air conditioner		Standard
High-backed seat		Standard
Seat belt		Optional
FM/AM radio		Standard
Rotating light (Yellow)		Optional
Leveler		Optional
Side door mirror		Optional
Additional lights (70Wx2)		Optional
Catwalk		Standard
Fire extinguisher		Standard
Evacuation hammer		Optional
<b>Control</b>		
Pull to drill, drill control		Standard
Direct boom control		Standard
Anti-jamming system		Standard
2-Lever rod-changer control		Standard
Track oscillation lock		Standard
Back-up buzzer		Standard
Engine throttle dial		Standard
Auto throttle control for percussion and air flow		Standard
<b>Others</b>		
Power saving mode selector		Standard
Tilt guide angle indicator		Standard
Swing guide angle indicator		Optional
2dimentional electric angle indicator		Optional
Emergency shut down system		Optional
Hour meter for engine		Standard
Hour meter for drifter		Optional
Tool box		Optional
Heavy duty under cover		Optional
Water separator for engine		Standard
Winter package		Optional
High capacity battery		Optional

## ■ Drilling Coverage (mm)

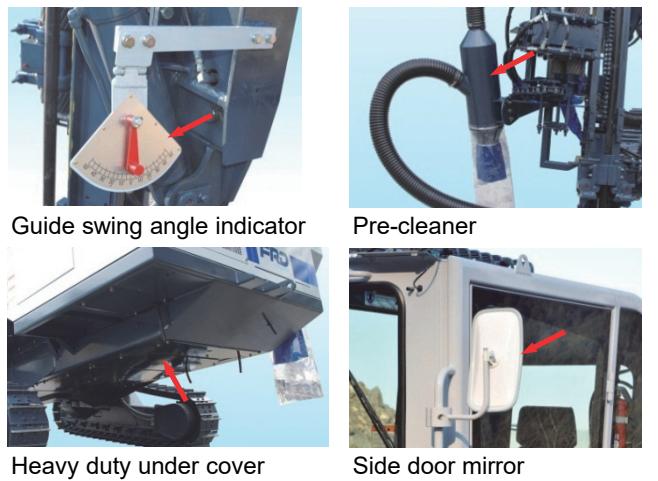
## ■ Horizontal drilling coverage



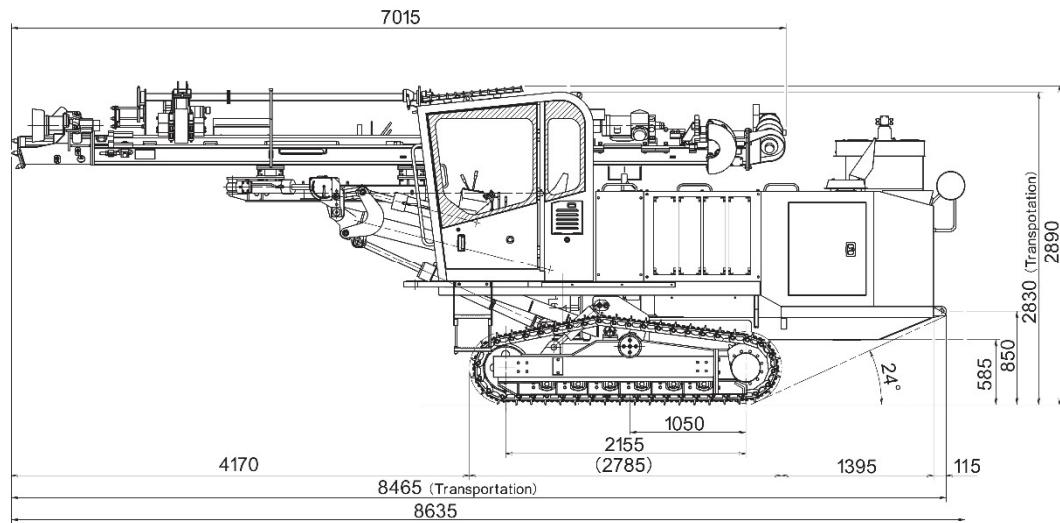
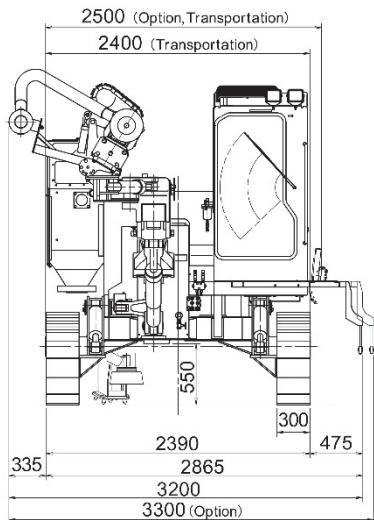
## ■ Vertical drilling coverage



## ■ Optional equipment



## ■ Specifications



Model	HCR910-DS	
Weight & Dimensions	Operating weight (Standard Cab)	10,450 kg
	Operating weight with ROPS/FOPS cab	10,490 kg
	Overall length	8,635 mm
	Overall width	2,865 mm
	Overall width (Transportation)	2,400 mm
	Overall height	2,890 mm
Drifter	Overall height (Transportation)	2,830 mm
	Model	HD709
	Weight	185 kg
	Number of percussion	2,250~2,500 min <sup>-1</sup>
Undercarriage	Number of rotation	0~250 min <sup>-1</sup>
	Track length	2,785 mm
	Ground contact length	2,155 mm
	Width of shoe	300 mm
	Ground clearance	550 mm
	Oscillating angle	±10°
	Traveling speed	0 ~ 3.8 km/h
Engine	Gradability	57.7 % (30°)
	Model	C7
	Type	Water-cooled, Direct injection, 6-cylinders, Air to air after cooled, turbo-charged, diesel
	Maker	CATERPILLAR®
	Output	168 kW / 2,200 min <sup>-1</sup>
Hydraulic pump	Fuel tank capacity	320 liter
	Variable displacement piston	2
	Gear pump	3
Compressor	Hydraulic oil capacity	170 liter
	Model	PDS265-S35A (AIRMAN)
	Type	Screw 1-stage forced oil lubrication
	Free air delivery	5.4 m <sup>3</sup> /min
Boom	Working air pressure	1.03 MPa
	Model	JF200
	Type	Fixed boom
	Boom lift angle	Up 43° • Down 30°
Guide shell	Boom swing angle	Right 45° • Left 10°
	Model	GH831
	Length	7,015 mm
	Feed length	4,089 mm (3,904 mm)
	Guide slide length	1,500 mm
	Guide swing angle	Right 50° • Left 50°
	Guide tilt angle	180°
	Max.rod pull force	24.5 kN
Dust collector	Feed type	Hydraulically operated chain drive
	Suction capacity	20 m <sup>3</sup> /min
Rod arrangement	Number of filter	4
	Number of rod	4
	Control lever	2
Bit & rod	Recommended bit diameter	65 mm ~ 90 mm
	Type of bit	Cross, Button, Ballistic, Conical
	Size of rod	32H,38R,45R, (38H)
	Length of rod	3,050 mm (10 ft)
	Starter rod (M)	4,000 mm (14 ft)