

# Hydraulic Crawler Drill

**HCR1200-DS III**

Tier3 / Euro Stage - 3





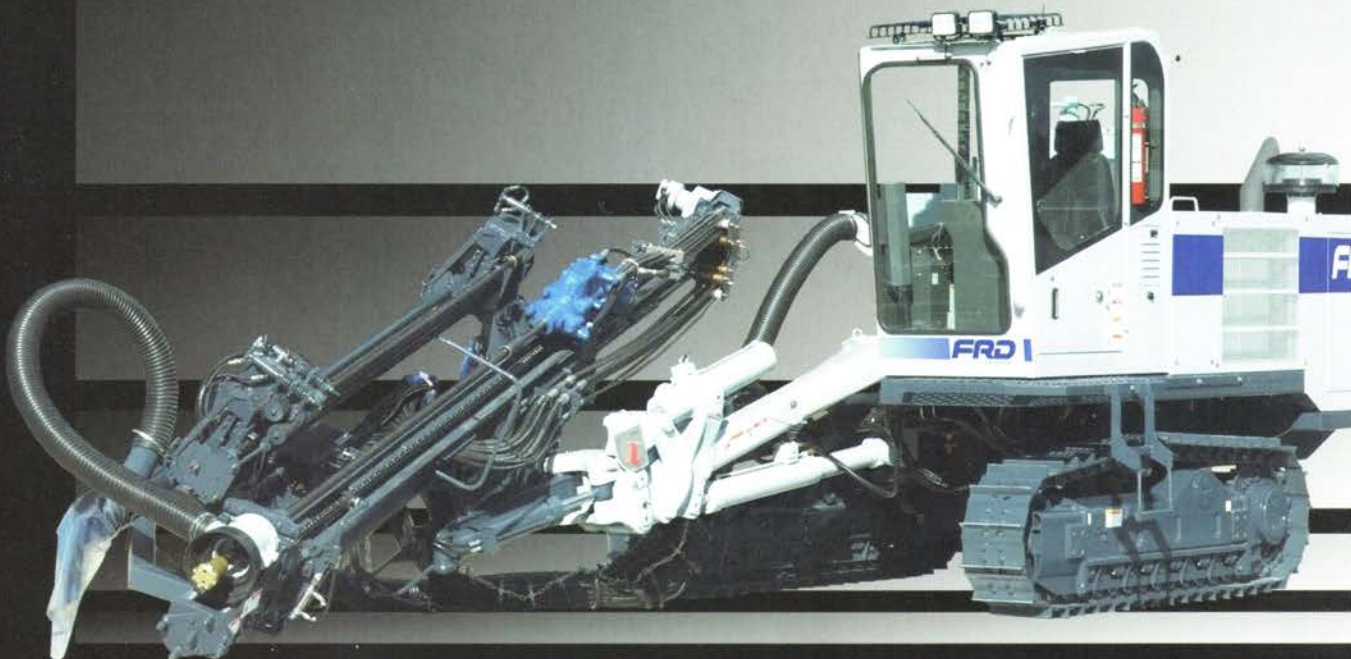
## *The ultimate combination of performance*

- ★ *Newly designed economy mode*
- ★ *New comfortable cab design*

*Tilt up control deck*

*Powerful pressurized air conditioner*

- ★ *Eco friendly engine*
- ★ *Heavy duty undercarriage*



*and economy.*

# HCR1200-DSIII

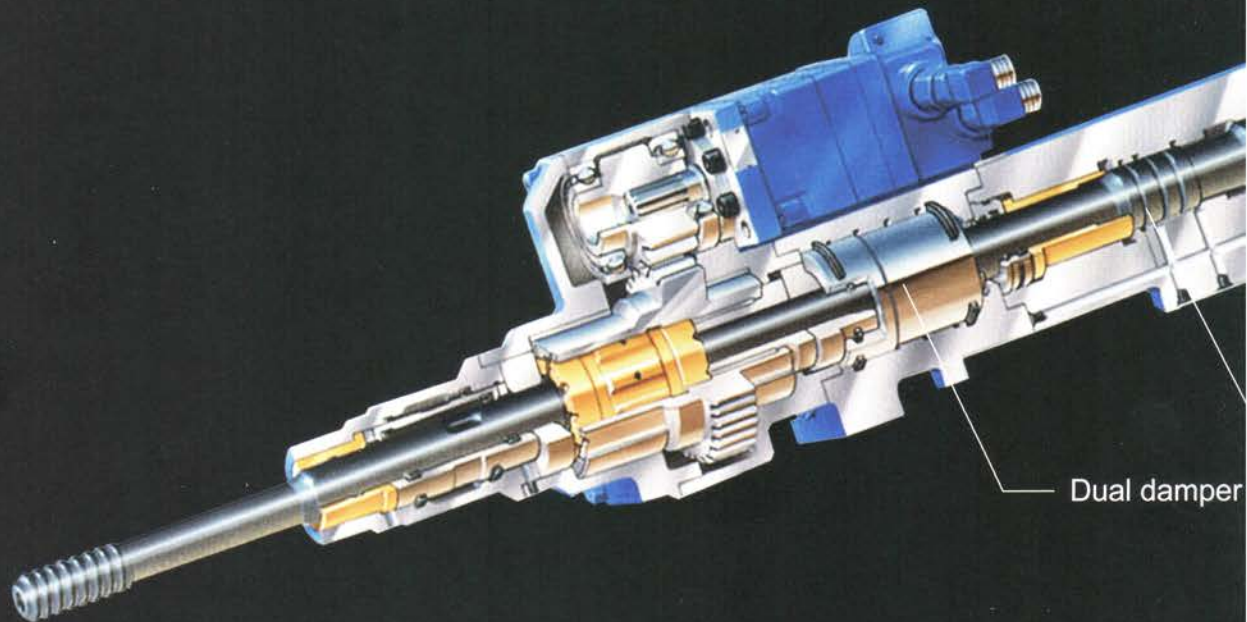
**FRD**  
FURUKAWA





## **Drilling performer, HCR1200-DS III** **High-produ**

**Drill faster and straighter with our patented**



### **Dual-damper system DDS**

FRD has developed the Dual-Damper System, a first in the industry. 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 greatly improved life of drilling accessories.  
(U.S. PATENT No.5,896,937)

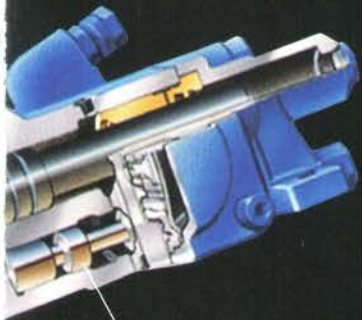
### **Compact valve design**

The FURUKAWA HD700 series drifter is designed to minimize drill noise and vibration without sacrificing performance. Incorporating a new piston design, the HD712 drifter maximizes energy transmission and drills effectively in a variety of rock types.

# HCR1200-DSIII

## Activity & Durability

### HD712 drifter.



— Compact valve design

— Newly designed piston



### 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 struck rods quickly.



# Maximizes operator performance with the ultimate in



**ECO-friendly**

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

## Low-emission engine

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



## Digital engine indicator

Easy check engine condition in the Cab.

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



## Engine throttle control

Adjust the engine speed.

- Position I : 1,250 min<sup>-1</sup>
- Position II : 1,600 min<sup>-1</sup>
- Position III : 1,800 min<sup>-1</sup>
- Position IV : 2,000 min<sup>-1</sup>
- Position V : 2,200 min<sup>-1</sup>

### CAUTION

The diesel fuel quality greatly affects the performance and life of the engine. Use only clean, high quality fuel.

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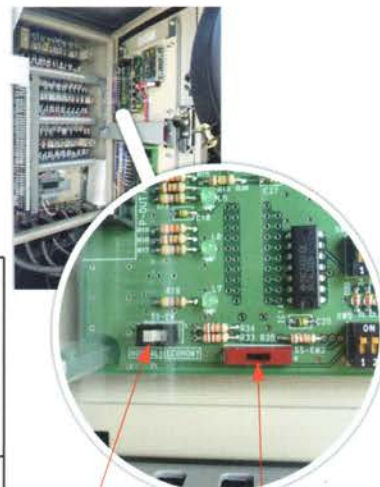
## Newly designed economy mode

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.

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



Power-saving switch  
Engine speed select switch

For the hole cleaning, Engine speed automatically increases up to 2,200 min<sup>-1</sup>.

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



### Warning lights

- 
- ① Charge (Alternator)
  - ② Engine diagnostic monitor  
Engine Fault  
Engine Diagnosis
  - ③ Engine Air cleaner
  - ④ Compressor Air cleaner
  - ⑤ Hydraulic oil return filter
- ⑥ Compressor discharge temperature gauge
  - ⑦ Hydraulic oil temperature gauge
  - ⑧ Digital engine indicator

### ● Engine Diagnostic Monitor

#### Engine Fault

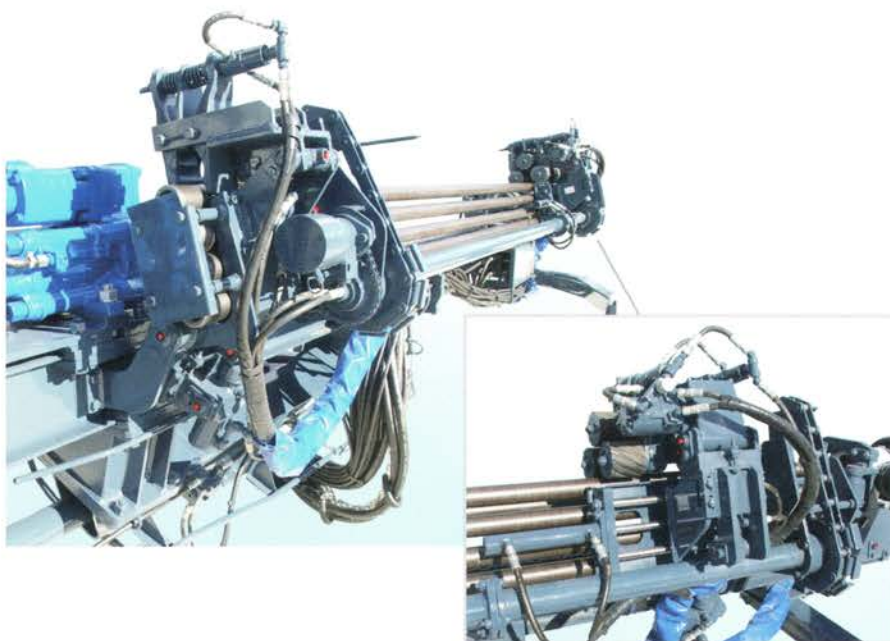
The warning lamp indicates a serious malfunction in the engine.

#### Engine Diagnosis

This alert indicator is used to indicate the existence of active fault in the engine with flashing codes.

## Field proven rod changer system

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



## Rod changing lever



- ①
 
 Roller rotation /  
Roller slide
- ②
 
 Carrier Swing in or out /  
Rod adding or  
Rod collection

# Easy operation and improved – reliability



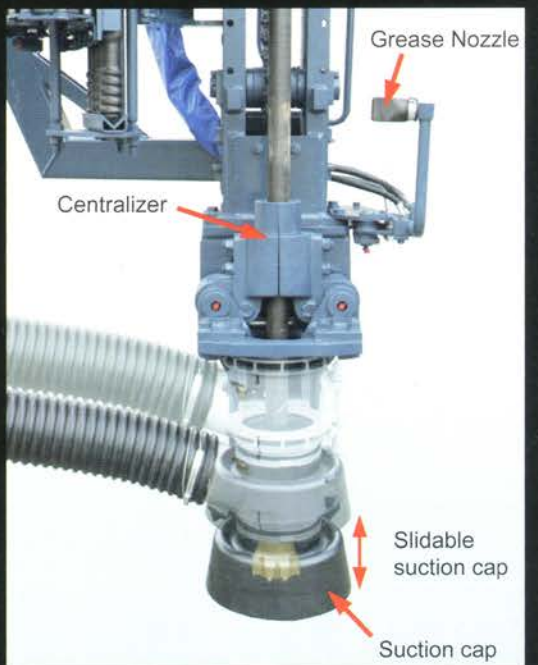
## High capacity compressor & Dust collector



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

## Easy to check hole

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





## Control deck



HCR1200-DSIII 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

### ■ Drilling Switch panel ⑤~⑪

- ⑤ Feed pressure control dial
- ⑥ Dust collector switch
- ⑦ Hood & Centralizer switch
- ⑧ Anti-jamming pilot lamp
- ⑨ Anti-jamming switch
- ⑩ Mode selector switch
- ⑪ Grease lubrication switch

### ■ 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.



### ■ 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.



## Heavy duty undercarriage & oscillating

Heavy-duty track frames 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 7.5 degrees total 15 degree to maintain machine level. And right -and-left tracks equalize 20 degrees to negotiate uneven ground.



Oscillating cylinder



Independent track oscillation provides safe tramming in any time.



without track oscillation

# Combining performance and economy



## New design comfort cab

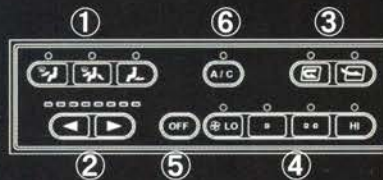
New design cab provides large windows at the front and on the right side to maximize operator visibility. Cab is air conditioned and pressurized with air filters to keep out dust.



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 switch
- 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 rest, 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 levers)
- ⑥ Horn switch
- ⑦ Traveling levers
- 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.

## Switch Panel



- ① Engine start switch
- ② Engine throttle control
- ③ FM/AM Radio
- ④ Air-conditioner control panel
- ⑤ Compressor switch
- ⑥ Front Light switch
- ⑦ Rear Light switch
- ⑧ Front window wiper and washer switch
- ⑨ Upper window wiper and washer switch



⑩ Speaker

# Easy Maintenance & Safety Functions.

## Accessibility For Maintenance

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

### Maintenance around guide shell

Guide shell on set horizontal position. Thus, it is easy to access drifter, rod changer for maintenance.



### Access to the right side cover



Access to receiver tank, hand pump, auto grease, drilling valve unit, pressure gauge ports, and drains.

### Hose connections



Hose terminals contribute to the maintainability of hoses replacement.

### Access to the left side cover



Access to engine related units, battery, electric control box.

### Upper cover



Improved rearward visibility.

### Access to the rear cover



Access to engine and compressor related filters.



### CAUTION

When you leave the machine, lock it to prevent theft or tampering.

## ■ For Easy maintenance & Safety equipment

### Synthetic hose reels



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

### Wear Plate



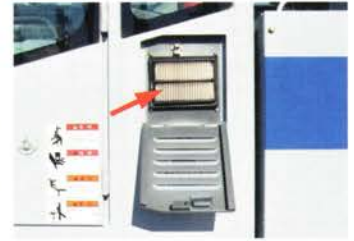
Synthetic wear plates (Optional) for drifter carriage

### Pre cleaner for engine



Protect filters from dusty area

### Air conditioner filter



In order to keep the cab clean, periodically clean and check the filter.

### Pressure gauge ports



Easy check and adjust for drilling performance with centred pressure gauge ports.

### Water separator for engine



The primary fuel filter separates water mixed with fuel to prevent trouble due to water.

### Drifter lubricating oil



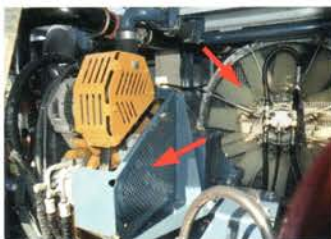
This machine is equipped with an automatic oiling type lubricator for lubricating drifter front section.

### Air filter



The air filter is separate and removes moisture and dust from the air circuit.

### Fan guards



Fan guards and belt guards are standard.

### Travel lock plates



Engage travel lock while drilling.

### Head guards



Roof is reinforced and overhead window is steel gauge protected.

### Fire extinguisher



Located at rear-right-side of the cab.

## ■ Optional equipment



Folding catwalk



Tool box



Side door mirror



Guide swing angle indicator by pendulum



Additional lights (70Wx2)



2 dimensional electric angle indicator  
① Guide swing angle  
② Guide tilt angle



Water tank for water injection system



Rear view monitoring camera



Heavy duty under cover



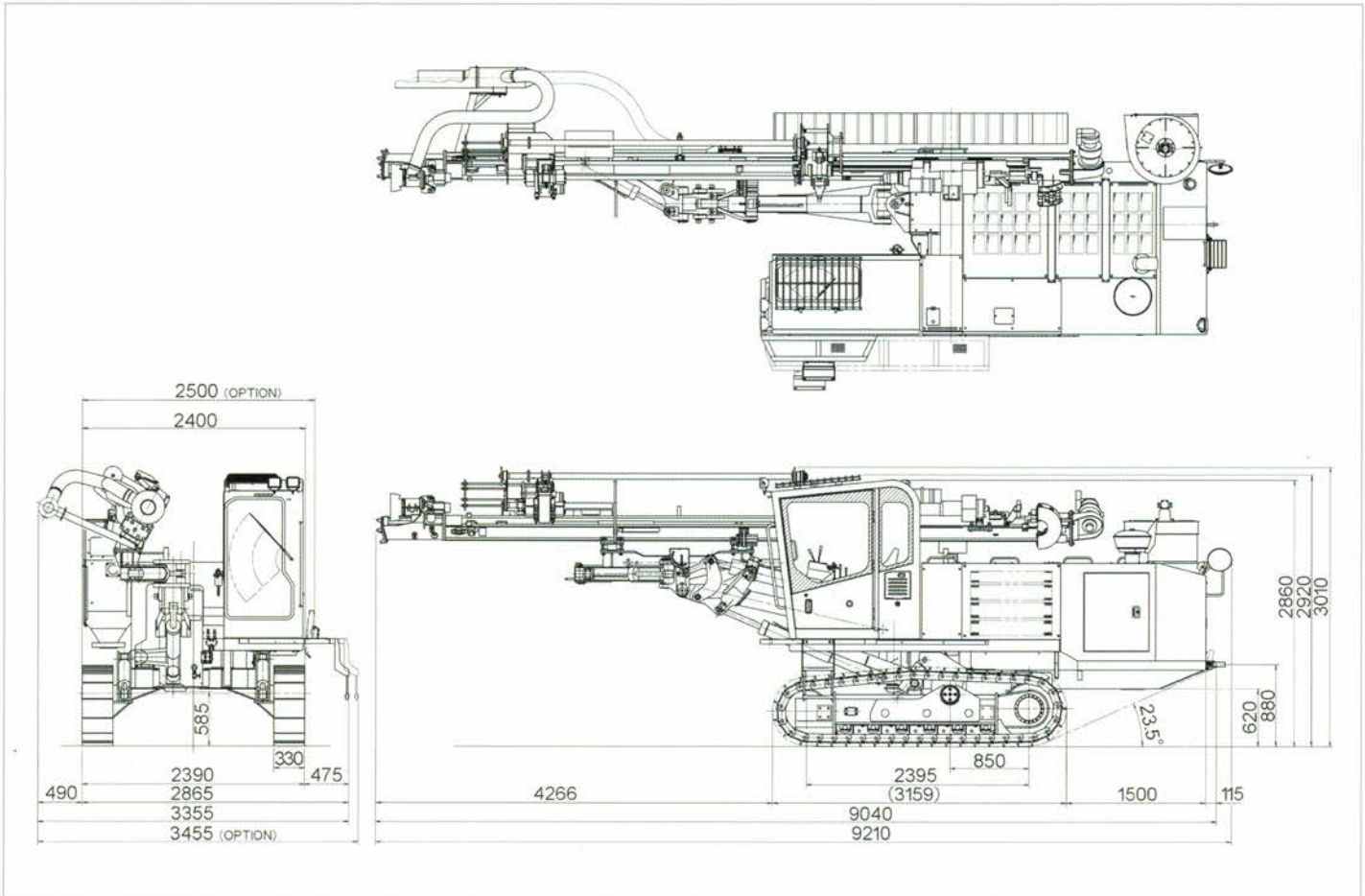
Emergency shut down system

# Standard & Option equipment Specifications

Model		HCR1200-DSⅢ
<b>Drifter</b>		
HD712		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	12ft	Standard
Rod size	32H, 38R (T38)	Select
	38H, 45R (T45)	Select
MM/MF rod	32H, 38R (T38)	Select
	38H, 38R (T38)	Select
Starter rod	14ft	Standard
Rotator		Standard
<b>Boom</b>		
Fix boom		Standard
<b>Undercarriage</b>		
Single 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
2dimensional 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

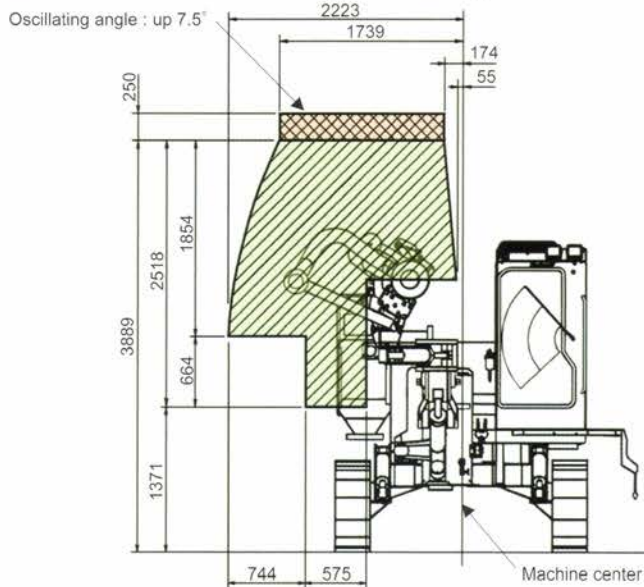
Model		HCR1200-DSⅢ
<b>Weight &amp; Dimensions</b>		
Operating weight (Standard Cab)		11,900 kg
Operating weight (ROPS/FOPS)		11,940 kg
Overall length		9,210 mm
Overall width		3,355 mm
Overall width (Transportation)		2,400 mm
Overall height		3,010 mm
Overall height (Transportation)		2,860 mm
<b>Drifter</b>		
Model		HD712
Weight		220 kg
Number of percussion		2,300 ~ 2,500 min <sup>-1</sup>
Number of rotation		0 ~ 190 min <sup>-1</sup>
<b>Undercarriage</b>		
Track length		3,159 mm
Ground contact length		2,395 mm
Width of shoe		330 mm
Ground clearance		585 mm
Oscillating angle		±7.5°
Traveling speed		0 ~ 3.2 km/h
Gradability		57.7 % (30°)
<b>Engine</b>		
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>
Fuel tank capacity		330 liter
<b>Hydraulic pump</b>		
Variable displacement piston		2
Gear pump		3
Hydraulic oil capacity		170 liter
<b>Compressor</b>		
Model		PDS265-S35C (AIRMAN)
Type		Screw 1-stage forced oil lubrication
Free air delivery		7.1 m <sup>3</sup> /min
Working air pressure		1.03 MPa
<b>Boom</b>		
Model		JF325
Type		Fixed boom
Boom lift angle		Up 54° · Down 20°
Boom swing angle		Right 45° · Left 10°
<b>Guide shell</b>		
Model		GH831
Length		7,825 mm
Feed length		4,736 mm (4,561 mm)
Guide slide length		1,500 mm
Guide swing angle		Right 30° · Left 90°
Guide tilt angle		180°
Max.rod pull force		31.4 kN
Feed type		Hydraulically operated chain drive
<b>Dust collector</b>		
Suction capacity		26 m <sup>3</sup> /min
Number of filter		5
<b>Rod arrangement</b>		
Number of rod		4
Control lever		2
<b>Bit &amp; rod</b>		
Recommended bit diameter		76 mm ~ 102 mm
Type of bit		Cross, Button, Ballistic, Conical
Size of rod		45R
Length of rod		3,660 mm (12 ft)
Starter rod (M)		4,000 mm (14 ft)

## ■ Dimensions

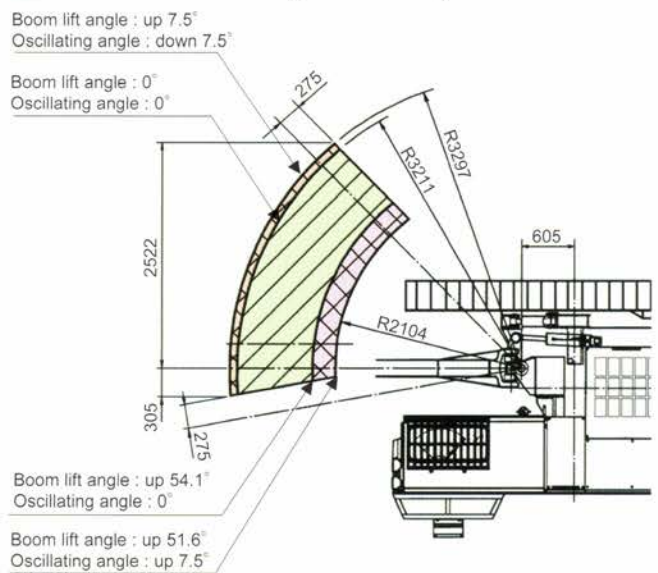


## ■ Drilling Coverage (mm)

### ■ Horizontal drilling coverage



### ■ Vertical drilling coverage





HCR Series

FRD Furukawa reserves right to change specifications without prior notice.

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