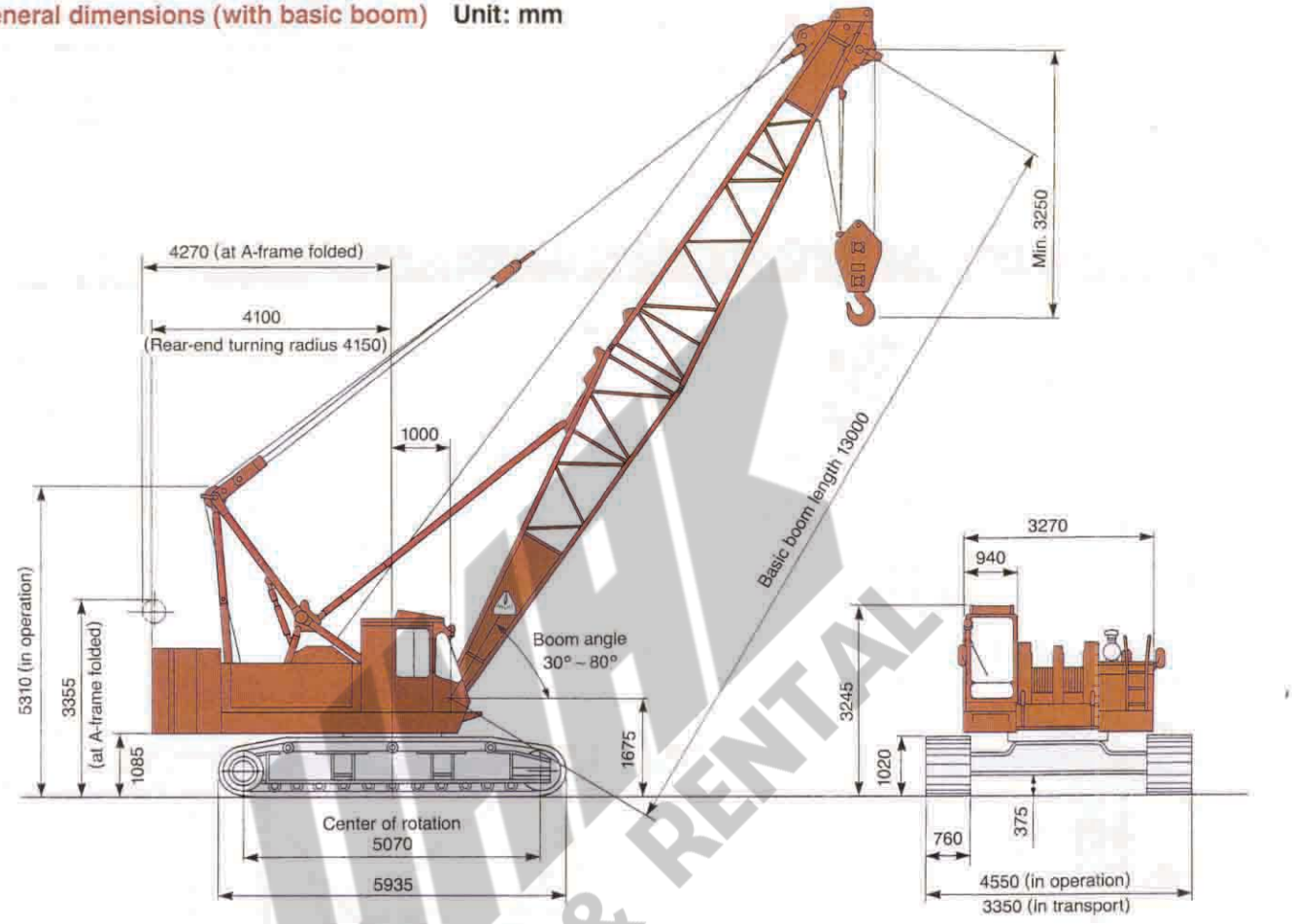
IHI

DCH700

Fully Hydraulic Crawler-Spanner Crane

Lifting Capacity (JIS) 70 metric tons

■General dimensions (with basic boom) Unit: mm



The versatile crawler crane, can do its part.

DCH700 is a high line-pull and heavy-duty fully hydraulic crawler crane that can be used for a wide range of jobs—from lifting to digging.

Dual drums on a single shaft are mounted on the superstructure. Each drum is independently driven for enhanced versatility. The crane comes equipped with a basic 13m lattice boom whose maximum lifting capacity is rated at 70 metric tons at load-hoisting rope-speed of 66m/min.

The diesel engine puts out 215ps/2000rpm assuring enough power for a wide range of works. All functions are hydraulic for excellent manoeuvrability and performance.

The overall width of crawler frames can be changed. The frames are extended to the maximum width for greater stability in operation and retracted to the minimum for the convenience of transportation.

The rear-end turning radius is less than 4.2m, and the crane can be used at limited job sites.

■Specifications

Performance	
Swing speed	3.4rpm
Travel speed	*1.3km/h
Gradeability	40% (22°)
Opeation system	
Power source	Hydraulic
Transmission system	Hydraulic
Drum type	Independent two drum on single shaft (DOUBLE WING)
Swing system	Swing bearing
Hydraulic pump	Variable displacement axial plunger pump×2 Gear pump×2
Engine	
Model	Hino EP100T
Type	4-cycle, water cooled, direct injection diesel
Cylinder bore stroke	6-120mm×130mm
Total displacement	8.821ℓ
Rated output	215PS/2000rpm
Max. torque	83kg·m/1600rpm
Rated fuel consumption rate	172g/PS·h
Fuel tank capacity	300ℓ

Note: Speed marked "*" will be changed to the loads given.

SALE & RENTAL

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■Standard equipment

- Instruments
  - Engine tachometer (hour meter)
  - Hydraulic oil pressure gauge
  - Hydraulic oil temperature
  - Coolant temperature
  - Engine lubrication oil pressure

  ] indicated in OK monitor
  - Fuel gauge
- Lighting equipment
  - Working light 24V×80W
  - Room light 24V×20W
- Safety equipment
  - Hook overwinding prevention device (automatic stop)
  - Boom overwinding prevention device (automatic stop)
  - Telescopic boom limit stop
  - Swing lock
  - Drum lock for main hoist, auxiliary hoist and boom (ratchet/pawl type)
  - Hydraulic relief valve
  - Counterbalance valve
- Other standard equipment
  - Cab heater (hot water type)
  - Windshield wiper
  - Roof glass wiper
  - Sun visor
  - Reclining operator's seat
  - Radio
  - Cigarette lighter
  - Ashtray
  - Rear view mirror (R/L)
  - Signal horn
  - Electric fuel filling pump
  - Swing warning flasher
  - Low-noise operator's cab
  - Wire mesh boom walkway (for inner boom)
  - Step to operator's cab (foldable type)
  - A-frame erecting device

■Optional equipment & accessories

- Moment limiter (overload prevention)
  - Warning at 90% of rated load
  - Stop automatically at 100% of rated load
  - Warning at optionally setting boom angle
- Yellow rotary light
- Wireless phone
- Bullhorn
- Cab cooler
- Combustion type cab heater (in lieu of hot water type)
- Spark arrester
- Boom point clearance lamp
- Working light on boom
- Name plate (both side of outer boom)
- Wire mesh walkway on boom back (outer and insert boom)
- 3m, 6m, 9m insert boom with pendant rope
- 6m basic jib boom, 3m, 6m, insert boom with pendant rope
- 1m auxiliary jib
- 6.5 ton hook block (for jib boom)
- 3rd drum

For foundation work

- Drum shell and sheave for φ26mm rope
- φ26mm wire rope
  - T7×7+6×Fi (29) IWRC regular Z lay
  - Guaranteed strength 49.9 ton

Crane DCH700

■Specifications of Crane

Maximum lifting load × working radius		70 ton × 3.7m
Maximum boom height with jib		61m (46m boom + 15m jib)
Jib boom length		Max. 15m/Min. 1m
Rope speed	Load hoisting and lowering	High speed 66m/min Low speed 33m/min
	Jib load hoisting and lowering	High speed 66m/min Low speed 33m/min
	Boom hoisting and lowering	60m/min
Part lines	70 ton hook	10-part lines
	6.5 ton hook	1-part line
	Boom hoisting and lowering	14-part lines
Total operating weight (with 13m boom)		60.1 tons (Approx.)
Average ground bearing pressure		0.74kg/cm²

Note: The rope speed changes depending on the load.

■Wire rope

Place of use	Rope diameter (mm)	Guaranteed strength (t)	Rope type
Main hoisting	φ22	41.3	D
Boom hoisting	φ16	19.2	C
Boom suspension	φ38	108.0	C
Aux. hoisting	φ22	41.3	D

Note: Wire rope shall be supplied at suitable length to boom length.
Rope type
C.....6×Fi (29) IWRC, preformed, regular Z lay.
D.....T7×7+6×Fi (29) IWRC, preformed, regular Z lay.

■Rated lifting loads

Unit: Metric ton

Working radius (m)	Boom length (m)														
	13.0	16.0	19.0	22.0	25.0	28.0	31.0	34.0	37.0	40.0	43.0	46.0	49.0	52.0	55.0
3.7	70.0														
4.0	65.0	4.2m×63.1													
4.5	55.8	54.8	4.7m×50.8												
5.0	46.6	46.4	46.3	5.2m×45.6											
5.5	39.9	39.7	39.6	39.6	5.7m×38.7										
6.0	34.9	34.6	34.6	34.5	34.5	6.2m×33.5									
7.0	27.8	27.6	27.5	27.4	27.3	27.2	27.1								
8.0	23.0	22.8	22.7	22.7	22.5	22.4	22.3	22.3	22.2						
9.0	19.6	19.4	19.3	19.2	19.1	19.0	18.8	18.8	18.8	18.7	18.5				
10.0	17.1	16.9	16.7	16.7	16.5	16.4	16.3	16.3	16.2	16.1	16.0	16.0	15.4		
12.0	13.5	13.3	13.1	13.1	12.9	12.8	12.6	12.6	12.6	12.5	12.3	12.3	12.2	12.1	
14.0		10.9	10.7	10.7	10.5	10.4	10.3	10.2	10.1	10.0	9.9	9.9	9.7	9.6	9.6
16.0			9.0	8.9	8.8	8.7	8.5	8.5	8.4	8.3	8.2	8.1	8.0	7.9	7.8
18.0				7.6	7.5	7.4	7.2	7.2	7.1	7.0	6.8	6.8	6.6	6.5	6.5
20.0				6.6	6.5	6.4	6.2	6.2	6.1	6.0	5.8	5.8	5.6	5.5	5.5
22.0					5.7	5.6	5.4	5.4	5.3	5.2	5.0	5.0	4.8	4.7	4.6
24.0						4.9	4.8	4.7	4.6	4.5	4.3	4.3	4.1	4.0	3.9
26.0						2.5m×4.3	4.2	4.2	4.1	4.0	3.8	3.7	3.6	3.5	3.4
28.0							3.8	3.7	3.6	3.5	3.3	3.2	3.1	3.0	2.9
30.0								3.3	3.2	3.1	2.9	2.8	2.7	2.6	2.5
32.0									2.8	2.7	2.6	2.5	2.3	2.2	2.0
34.0										2.4	2.2	2.1	2.0	1.8	1.7
36.0											1.9	1.8	1.7	1.5	1.4
38.0											1.6	1.5	1.4	1.2	1.1

Note:

1. Above rated loads are based on firm level ground, within 78% of tipping load at any points 360° around the machine and with front stability of 1.15 or more.
2. Working radius is horizontal distance from center of rotation to a vertical line through the center line of gravity of the load.
3. The weight of the hook block and other lifting devices must be considered to be a part of the load.
   - 70 ton hook block..... 1 ton
   - 6.5 ton hook block..... 0.12 ton
4. Crawler frame and A-frame should also be extended before working.
5. When the jib boom fitted, actual loads that can be lifted with the hook block for main hoisting should be reduced the following weight from the rated loads shown in table below (the weight to be deducted includes that of the auxiliary hoisting hook block).

Jib boom length (m)	1.0	6.0	9.0	12.0	15.0
Weight to be deducted (ton)	0.5	0.75	0.95	1.20	1.45

6. Depending on the number of part lines, rated lifting load is limited as follows:
   - 1-part line.....up to 7 tons
   - 2-part line.....up to 14 tons
   - 3-part line.....up to 21 tons
   - 4-part line.....up to 28 tons
   - 5-part line.....up to 35 tons
   - 6-part line.....up to 42 tons
   - 7-part line.....up to 49 tons
   - 8-part line.....up to 56 tons
   - 9-part line.....up to 63 tons
   - 10-part line.....up to 70 tons
7. The rated load for jib should not exceed the value in the table below.

Unit: Metric ton

Jib offset angle	Jib boom length			
	6m	9m	12m	15m
15°	6.5	6.5	4.8	4.2
30°	6.5	6.0	4.3	3.7

8. The angle formed by the extension line of the main boom and center line of the jib boom should not exceed 30° under loaded condition.
9. 1m aux. jib can be installed to 13 to 52m main boom. The rated loads for the 1m aux. jib must be reduced 0.5 ton from rated lifting loads of the main boom. However do not exceed 6.5 tons.

SALE & RENTAL

Clamshell DCH700

Specifications of Clamshell

Maximum lift above ground		13.5m (19m boom + 1.2m³ bucket)
Rope speed	Bucket hoisting and lowering	High speed 66m/min Low speed 33m/min
	Bucket opening and closing	High speed 66m/min Low speed 33m/min
	Boom hoisting and lowering	60m/min
Part lines	Bucket hoisting and lowering	6-part lines
	Bucket opening and closing	1-part line
	Boom hoisting and lowering	14-part lines
Rated lifting capacity		6.0 tons
Counterweight		21 tons
Total weight (19m boom + 1.2m³ bucket)		64.5 tons
Average ground bearing pressure		0.78kgf/cm²

Note: The rope speed changes depending on the load.

Wire rope

Place of use	Rope diameter (mm)	Guaranteed strength (t)	Rope type
Bucket hoisting and lowering	φ22	36.3	A
Bucket opening and closing	φ22	36.3	A
Boom hoisting and lowering	φ16	19.2	A
Boom suspension	φ38	108	A
Tag line	φ10	5.5	B

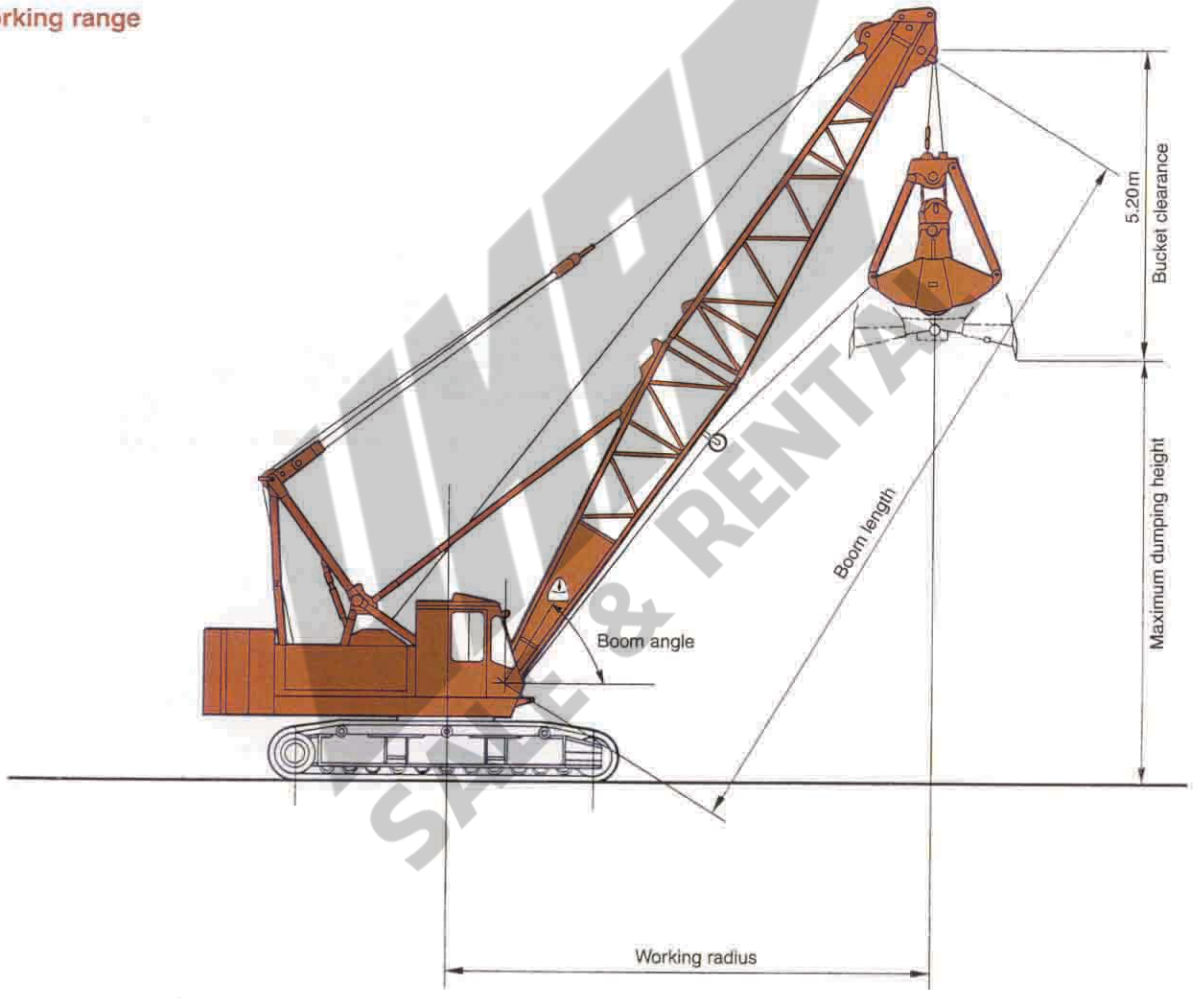
Note: Wire rope shall be supplied at suitable length to boom length.
Rope type
A.....6 × Fi (29) IWRC regular Z lay.
B.....6 × 19 fiber core regular Z lay.

Clamshell Bucket Specifications

Type	Capacity	Weight
General purpose (Heavy load handling)	1.2m³	* 3.1 ton

*: Do not exceed 3.1 tons.

Working range



Working range and allowable loads

Unit: Metric ton

Boom length (m)	13				16				19			
Boom angle	35°	45°	55°	65°	35°	45°	55°	65°	35°	45°	55°	65°
Working radius (m)	12.1	10.7	9.0	7.0	14.5	12.8	10.7	8.3	17.1	14.9	12.4	9.6
Rated lifting load (t)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Maximum dumping height (m)	3.6	5.4	6.9	8.1	5.3	7.5	9.3	10.8	7.0	9.6	11.8	13.5

Notes:
1. Allowable lifting loads are the upper limit of the "bucket weight + load" during clamshell work.
Use a bucket suitable for the kind of the load required so that the allowable load figures in the table are not exceeded.
2. Please contact us or manufacturer for clamshell only operations.

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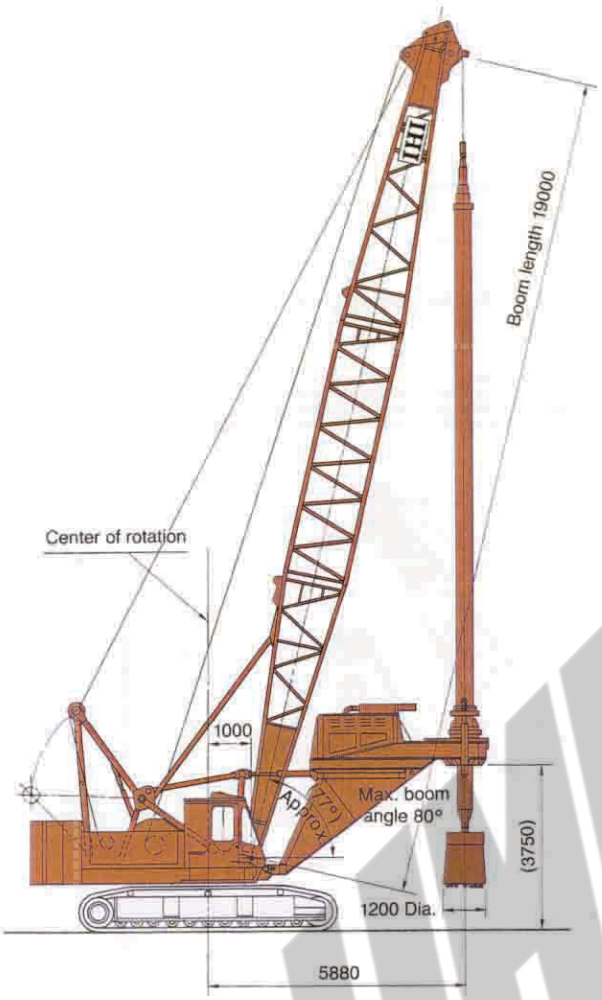
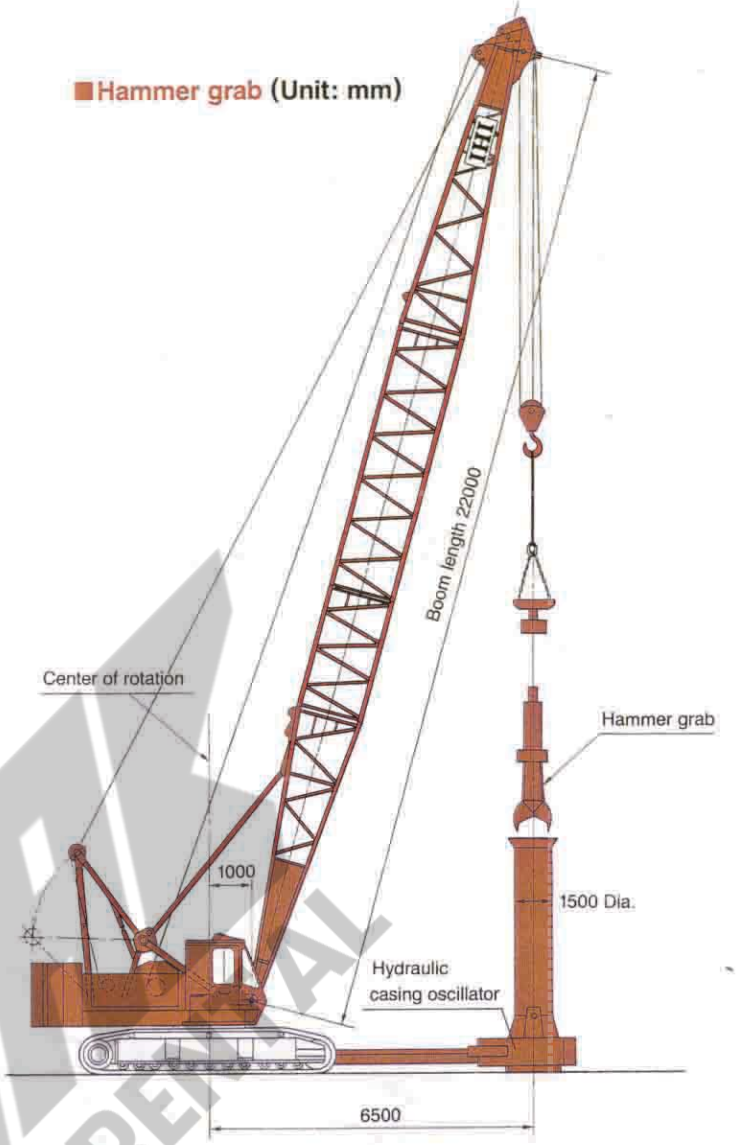
Applicable Foundation Work Attachment

■Kelly bar (Unit: mm)



■Hammer grab (Unit: mm)



■Specifications of Kelly bar

Maximum depth of hole	32m
Hole diameter	1.2m
Bucket capacity	0.92m³
Specific volume of soil	1.8
Equipments	
Power	160PS/2100rpm
Croud max. force	1600kg
Max. torque	21000kg-m
Drilling speed	0–130rpm
Weight	7100kg
Kelly bar	
Telescopic Kelly bar	3 element
Kelly bar length	12.87m
Kelly bar weight	3620kg
Bucket	
I.D×L	1.08m×1m
Bucket capacity	0.92m³
Bucket weight	1135kg

Note 1: Above attachment is not included in our scope of delivery.
2. Please contact us or a manufacturer of crane if interested in the above attachments.

■Specifications of Hammer grab

Maximum depth of hole	35m
Hole diameter	1.5m
Hammer grab weight	6500kg
Bucket capacity	0.8m³
Specific volume of soil	1.8
Hyd. casing oscillator weight	15000kg

Note 1: Above attachment is not included in our scope of delivery.
2. Please contact us or a manufacturer of crane if interested in the above attachments.

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