

OPERATION MANUAL
CCH800-2
CRAWLER CRANE

Serial No. 2872 & up

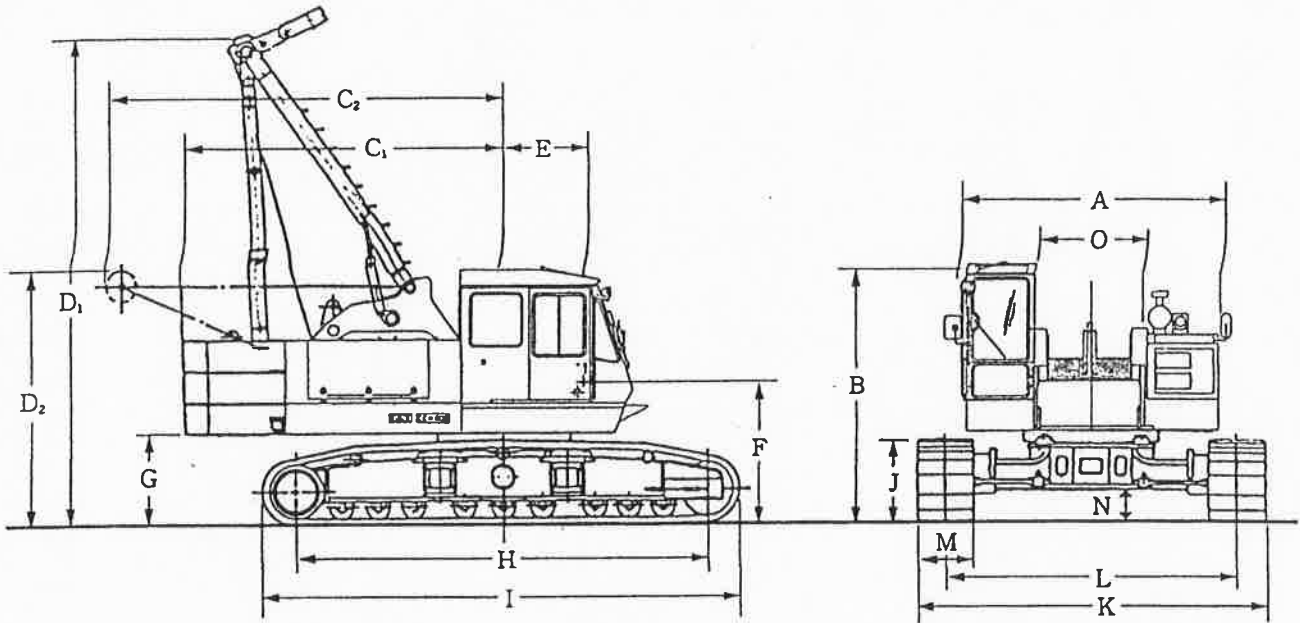
IHI

Ishikawajima Construction Machinery Co., Ltd.

SPECIFICATIONS

1. BASE MACHINE

1 - 1 Dimensions



(1) Superstructure

(Unit : mm)

Item	Name	Size	Remarks	Item	Name	Size	Remarks
A	Cab width	3400		E	Boom foot pin horizontal mounting	1100	
B	Cab height	3375		F	Boom foot pin vertical mounting	1910	
C ₁	Rear - end turning	4300	Outside of counter weight	G	Height of upper structure at rear end	1210	
C ₂	Gantry jib end distance	5200	Gantry is folded	N	Minimum ground height	405	
D ₁	Gantry height	6420	Raised	O	Boom foot pin mounting width	1400	
D ₂		3360	Folded				

(2) Undercarriage

Crawler type	Tambler center	Crawler length	Crawler height	Overall width of crawlers		Crawler center distance		Shoe width	Shoe pitch	Number of shoe	Ground contact area
	H (mm)	I (mm)	J (mm)	K (mm)		L (mm)		M (mm)	(mm)	(Left/Right)	(c m ²)
Standard	5460	6370	1110	Extend	Retract	Extend	Retract	915	250	106	109,400
				4795	3655	4640	3500				
Special spec.											

1 - 2 Weight

Name	Weight	Remarks
Base machine	approx. 50.4 ton	When the equipment is transported on site or by road the left and right crawler frame should be removed
Counterweight	25.0 ton	Standard counterweight (upper, 9.0 tons ; center, 8.0 ton lower 8.0 tons)
Style of upper figure	(Total) approx. 75.4 tons	

SPECIFICATIONS

1-3 Performance

(1) Speed

Name	Speed		Remarks
	High speed	Low speed	
Slewing	3.0 rpm		
Traveling	1.5 km/hr		
Main hoist	100 m/mm	50m/mm	1 Layer on drum
Auxiliary hoist	100 m/mm	50m/mm	1 Layer on drum
Boom	68 m/mm		1 Layer on drum
※ Third drum	68 m/mm		1 Layer on drum

(2) Gradability 30% (Approxe 17°) A base machine postare

(3) Drum winding capacity

Name	Drum groove (roop dia.)	Winding capa.	Remarks
Main hoist	Lebus type (φ 26)	Approxe 350 meter	10 Pum (Layer)
Auxiliary hoist	Lebus type (φ 26)	Approxe 350 meter	10 Pum (Layer)
Boom	Lebus type (φ 20)	Approxe 170 meter	7 Pum (Layer)
※ Third drum	Lebus type (φ 20)	Approxe 170 meter	7 Pum (Layer)

※ Mark is optional specification

1-4 Hydraulic units

(1) Main circuit

Pump	Control valve	Motor	

1) Traveling

First	Right side traveling	Variable with axial piston	Remote control operation spool	• Axial piston • Automatic parking	
Second	Left side traveling	Variable with axial piston	Remote control operation spool	• Axial piston • Automatic parking	

2) Winch

First	First speed	Variable with axial piston	Remote control operation spool	Axial piston	
Second	Second speed	Variable with axial piston	Remote control operation spool		

3) Boom

Second		Variable with axial piston	Remote control operation spool	Axial piston	
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4) Slewing

Third		Variable with axial piston	Remote control operation spool	Axial piston	
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5) ※ Third Drum

First		Variable with axial piston	Remote control operation spool	Axial piston	
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SPECIFICATIONS

(2) Sub (operation) circuit

Pump		Major use	Circuit pressure
Fourth	Gear pump	Remote control operation, Main/auxiliary clutch reduction, Individual brake release, Main/auxiliary brake assist, Primary/auxiliary automatic brake.	

(3) Hydraulic oil tank

Quantity of oil until tank level	370 ℓ
Quantity of oil system	450 ℓ

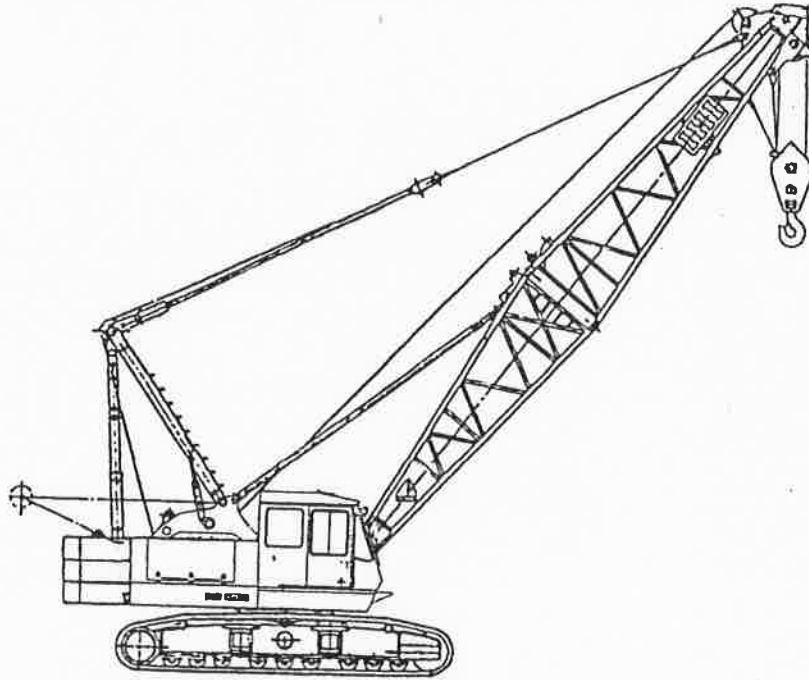
1 - 5 Engine

Manufacturer	HINO MOTORS
Engine name	EP100T type diesel engine (with turbocharger)
Model name	4 - cycle, When cooled, over head valve 2 direct injection type
Number of cylinder Diameter × Stroke	6 - 120 mm × 130 mm
Engine displacement	8.821 liters
Compression ratio	17.0 : 1
Rated output	230 ps/2100 rpm
Maximum torque	83 Kg m/1600 rpm
Fuel consumption ratio	Approx. 172 g/ps.h (2100 rpm)
Minimum RPM.	600 to 650 rpm (by engine only)
Supercharger	Exhaust turbine supercharger
Starter	24 - V, 7.0 - kW motor
Air cleaner	Dry filter type
Charger	AC 24V - 35A
Battery	12 - V, 150 - AH x 2 cells
Capacity of lubricating oil	H - 21 liters, L - 18
Fuel tank capacity	350 ℓ
Full capacity of cooling water	30 liters (15.5 liters for engine)

SPECIFICATIONS

2. STANDARD CRANE

2 - 1 Outline specification

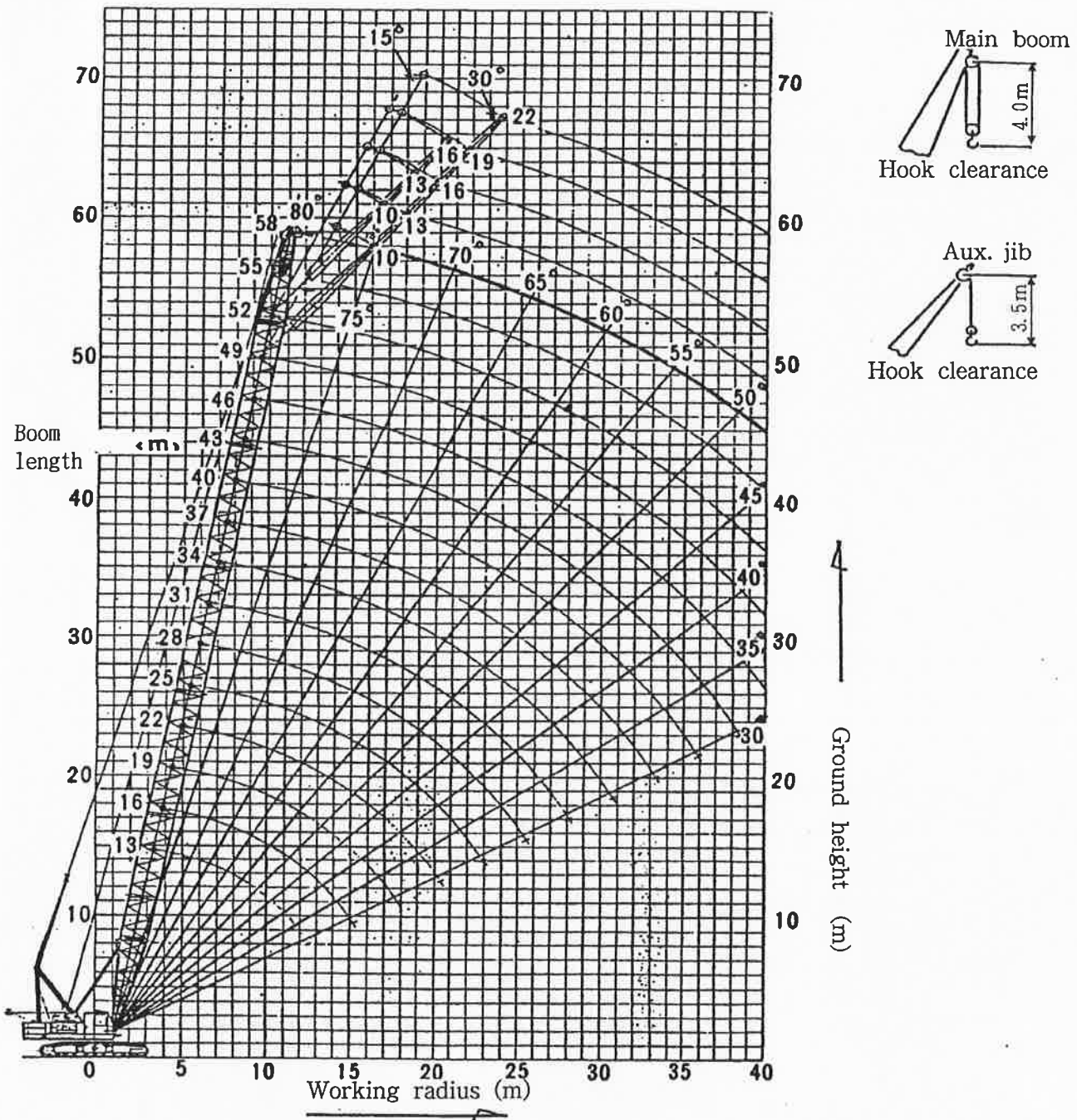


Lifting load	Main hoist	Maximum lifting load x working radius	80t x 4.0m
	Auxiliary hoist	Maximum lifting load x working radius	10t x 18m
Boom length	Main boom	Basic (inner and outer)	13m (6.5m + 6.5m)
		Maximum length	58m
	Aux. jib	Minimum to maximum	1m, 10m, 13m, 16m, 19m, 22m
	Maximum combination of boom and aux. jib		49m + 22m
Working range	Main boom	Working radius	4.0m ~ 40m
	Aux. jib	Working radius	6m ~ 40m
	Main boom	Maximum grounding lifting (58 meter long main boom)	Approx. 55 meters
	Aux. jib	Maximum grounding lifting (49 meters + 22 meters)	Approx. 64 meters
	Main boom	Boom angle	30° ~ 80°
	Aux. jib	Boom angle	58° ~ 80°
Number of rope part line	Main hoist	80 - ton hook	1 ~ 8 part of line
	Auxiliary hoist	10 - ton hook	1 part of line
	Boom hoisting/lowering		12 part of line
Weight of counterweight	Inner + Center + Outer + Add.		25.0 t
Working weight	Equipped with 13 meters basic boom		79.1 t (81.5t)
Average grounding pressure	Equipped with 13 meters basic boom		0.87 Kgf/cm ² (0.75)

Value in the < >, shown for with 915mm shoe plate.

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2-2 Working range diagram

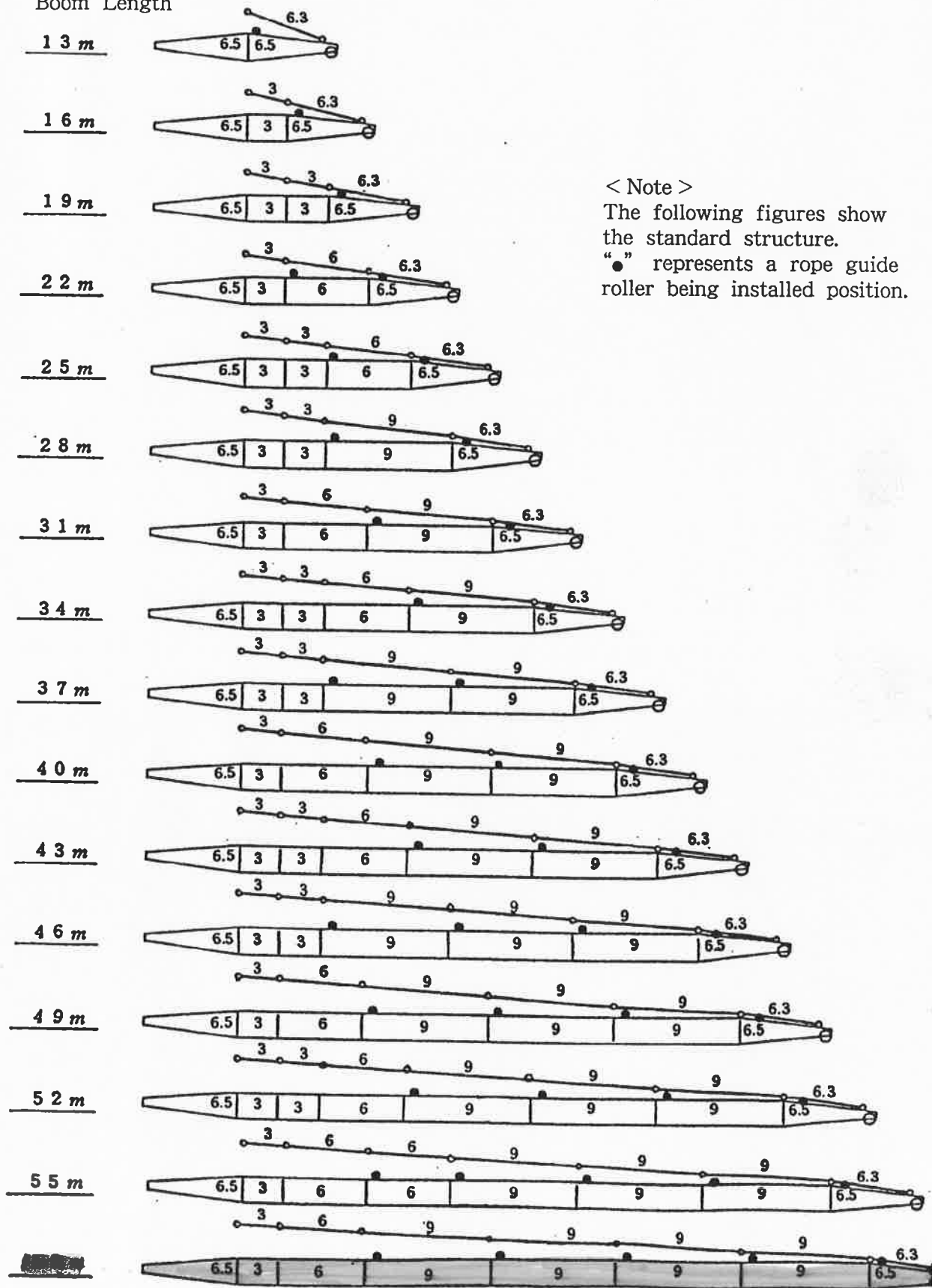


- (1) The working radius is the horizontal distance from the slewing center of the machine to the center of the hook.
- (2) The ground height is the vertical distance from the ground to the center of the main boom point shaft (or aux. jib point shaft).
- (3) The hook clearance is the distance from the position where the hook is fully hoisted to the boom point shaft.

SPECIFICATIONS

2-3 Structure of main boom and pendant rope

Boom Length

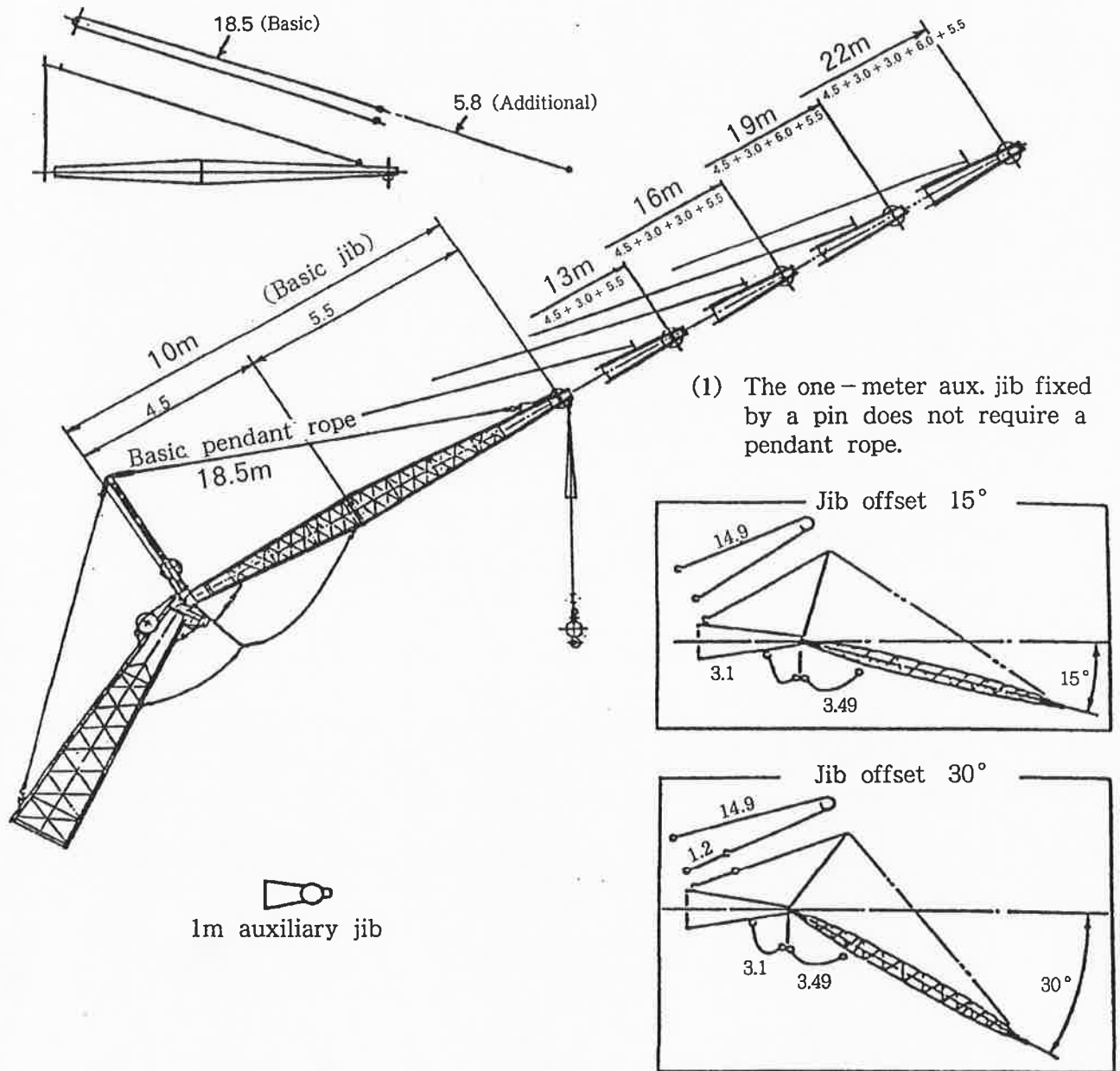


SPECIFICATIONS

2-4 Structure of aux. jib and pendant rope

Three meter insert jibs are added for ten meters of basic aux. jib.

For every three meters insert jib add, 5.8 meters of pendant rope is added for 18.5 m basic pendant rope.



2-5 Combination of Main boom and jib boom

Jib length (m)	Boom length (m)															
	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58
1.0	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
10	—	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—
13	—	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—
16	—	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—
19	—	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—
22	—	—	—	—	—	—	—	○	○	○	○	○	○	○	○	—

SPECIFICATIONS

2 - 6 Hook block

Type	80-ton hook block (standard)	50-ton hook block (option)
External dimension		
Weight	1100 Kg	700 Kg

	30-ton hook block (option)	10-ton hook block (Option)
External dimension		
Weight	600 Kg	400 Kg

2 - 7 Combination of boom and hook

Boom length (m)		13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58	
Rated lifting load		80.0	71.9	59.8	44.7	44.6	35.5	35.4	28.8	28.7	24.1	24.0	20.7	20.6	15.9	15.8	15.0	
Operable range	Main hoist	80-ton hook	←-----→															
		50-ton hook	←-----→															
		30-ton hook	←-----→															
	Auxiliary hoist	10-ton hook	← - - - One - meter jib - - - →															

Boom and aux. jib combination, refer to page 1 - 7

SPECIFICATIONS

STANDARD CRANE

2 - 8 Specification of wire ropes

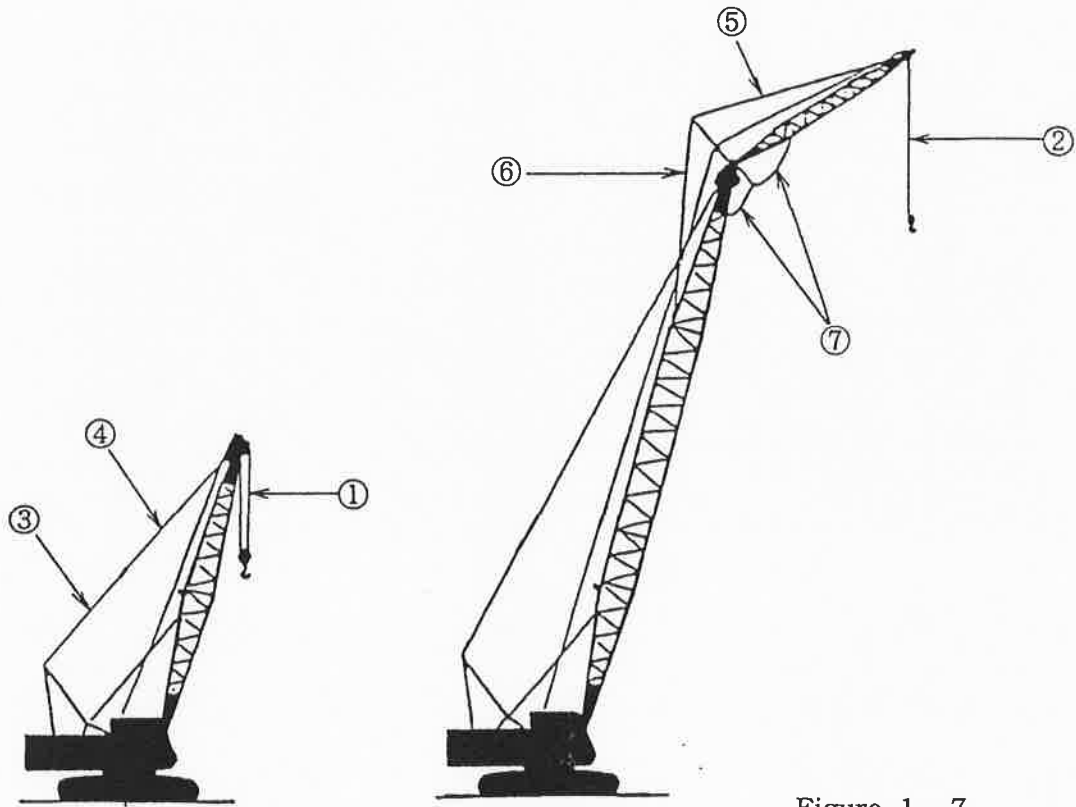


Figure 1 - 7

Item No.	Name of rope	Rope type	Rope diameter (mm)	Length	Assured break strength	Remarks
①	Main hoist	Toughsuper T7 × 7 + 6 Fi (29) IWRC	26	180	56.8	Shipping length
②	Auxiliary hoist		26	150	56.8	Shipping length
③	Boom hoist	6 × Fi (29) IWRC	20	150	30.0	12 - part of line
		6 × WS (31) IWRC			29.0	
④	Boom suspension pendant	Toughsuper T7 × 7 + 6 × WS (36) IWRC regular Z lay	34	6.3	104.0	For outer boom
				3		For 3 - meter insert boom
				6		For 6 - meter insert boom
				9		For 9 - meter insert boom
⑤	Jib suspension pendant	6 × Fi (25)	28	18.5	59.3	Basic type
				5.8		For jib extension
⑥	Jib strut suspension pendant	6 × Fi (25)	28	14.9	59.3	For jib offset 15°
				1.2		Added to jib offset 30°
⑦	Limit stop	6 × Fi (25)	14	3.1	14.9	Main boom side
				3.49		Aux. jib side

SPECIFICATIONS

2 - 9 Rated lifting load table

Unit : load (tons), angle (degrees)

Main jib 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		58.0	
	Working radius (m)	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	Load	Angle	
4.0	80.0	78.8																														
4.5	72.0	76.6	71.9	79.0																												
5.0	60.0	74.3	59.9	77.3	59.8	79.3																										
6.0	45.0	65.6	44.9	73.6	44.8	76.2	44.7	78.2	44.6	79.6																						
7.0	36.0	64.7	35.9	69.8	35.8	73.1	35.7	75.5	35.6	77.3	35.5	78.6	35.4	79.8																		
8.0	29.5	59.7	29.4	65.9	29.3	69.9	29.2	72.7	29.1	74.9	29.0	76.5	28.9	77.9	28.8	79.0	28.7	79.9														
9.0	25.0	54.3	24.9	61.8	24.8	66.6	24.7	70.0	24.6	72.5	24.5	74.4	24.4	76.0	24.3	77.2	24.2	78.3	24.1	79.2	24.0	79.9										
10.0	21.8	48.5	21.7	57.6	21.6	63.3	21.5	67.2	21.4	70.0	21.3	72.3	21.2	74.0	21.1	75.5	21.0	76.7	20.9	77.7	20.8	78.6	20.7	79.3	20.6	80.0						
12.0	17.2	34.8	17.1	48.5	17.0	56.2	16.9	61.3	16.8	65.1	16.7	67.9	16.6	70.1	16.5	72.0	16.4	73.5	16.3	74.8	16.2	75.8	16.1	76.8	16.0	77.6	15.9	78.3	15.8	79.0	15.0	79.6
14.0																																
16.0																																
18.0																																
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32.0																																
34.0																																
36.0																																
38.0																																
40.0																																

The rated lifting load of the auxiliary jib is as follows :

- (1) 1 - meter auxiliary jib ;
- (2) 10 - meter, 13 - meter 16 - meter, 19 - meter, and 22 - meter auxiliary jibs ;
Main boom being mounted. Use a value where 600kg is subtracted from the value in the above table.
- (3) In all cases, the working radius is the center distance of the auxiliary hoist hook
Main boom being mounted. The value in the above table is used.
- (4) In all cases, the maximum load should not exceed the value in the below table.

Mounting angle	One - meter auxiliary jib	10 - meter auxiliary jib	13 - meter auxiliary jib	16 - meter auxiliary jib	19 - meter auxiliary jib	22 - meter auxiliary jib
	15°	10 tons	10.0 tons	8.0 tons	8.0 tons	5.0 tons
30°	5.0 tons		5.0 tons	5.0 tons	3.5 tons	3.5 tons

SPECIFICATIONS

2-9-1 Notes on Rated Lifting Load Table

(1) The rated lifting load for all swing is determined on horizontal solid ground.

With in 78% of tipping load

Front stability: 1.15 or more

Conditions

- Crawler : Extended
- A-frame : Set at high A-frame
- Counterweight : 25.0 tons

(2) The actual lifting load is obtained by subtracting the weight of the lifting device such as a hook etc, from the table.

Type of hook	Weight to be subtracted
For main hoist:	
80 ton hook	1100 kgf
50 ton hook	700 kgf
30 ton hook	600 kgf
For auxiliary hoist: 10 ton-	400 kg

(3) The lifting load is restricted by the number of part line being hung as listed in the right - hand table.

Number of ropes hung	Restricted load	Number of ropes hung	Restricted load
1	10 ton	6	60 ton
2	20	7	70 ton
3	30	8	80 ton
4	40		
5	50		

Wire ropes for use (main and auxiliary hoists) 26 mm dia. T7 x 7 + 6 x Fi (29) 1 WRC, regular Z lay type C.
Breaking strength: 58.6 tons.

(4) The lifting load of the main hoist hook where the jib is mounted is obtained by subtracting the weight of the jib from the value in the table.

(The weight to be subtracted contains the hook weight for the auxiliary hoist.)

Type of jib	Weight to be subtracted
1 m	600 kg
10 m	1700
13 m	2100
16 m	2500
19 m	3000
22 m	3500

(5) The load where the hook for the primary hoist is mounted is obtained by subtracting the total weight of the primary hoist hook and auxiliary hoist hook from the total weight.

1100kg + 400kg = 1500kg
(80-ton hook)(10-ton hook)(weight to be subtracted)

SPECIFICATIONS

(6) Clamshell lifting capacity (Unit : tons)

Boom length (m) Working radius (m)	13	16	19	22	25
7.0~12.0	10.0	10.0	10.0	10.0	10.0
14.0		10.0	10.0	10.0	10.0
16.0			10.0	10.0	10.0
18.0				9.0	8.9
20.0				7.8	7.7
22.0					6.8

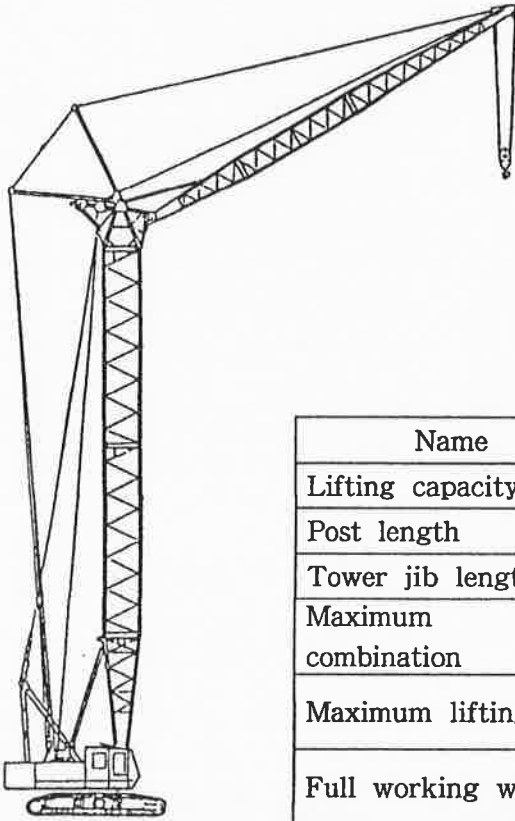
Notice :

- 1) Bucket work is limited as shown in the above table.
- 2) Bucket and lifting magnet operations cannot be performed by aux. jib boom.

SPECIFICATIONS

3. TOWER CRANE

3 - 1 Outline specification



Name	Specification	Remarks
Lifting capacity	15t × 13.5m	
Post length	26m~44m	3m interval, 7types
Tower jib length	19m~34m	3m interval, 6types
Maximum combination	44m + 34m Post + jib	
Maximum lifting	74.6m	Excluding 4.1m of hook clearance
Full working weight	Approx, 97.7ton	44m post + 34m jib
Average grounding pressure	0.89kgf/cm ²	

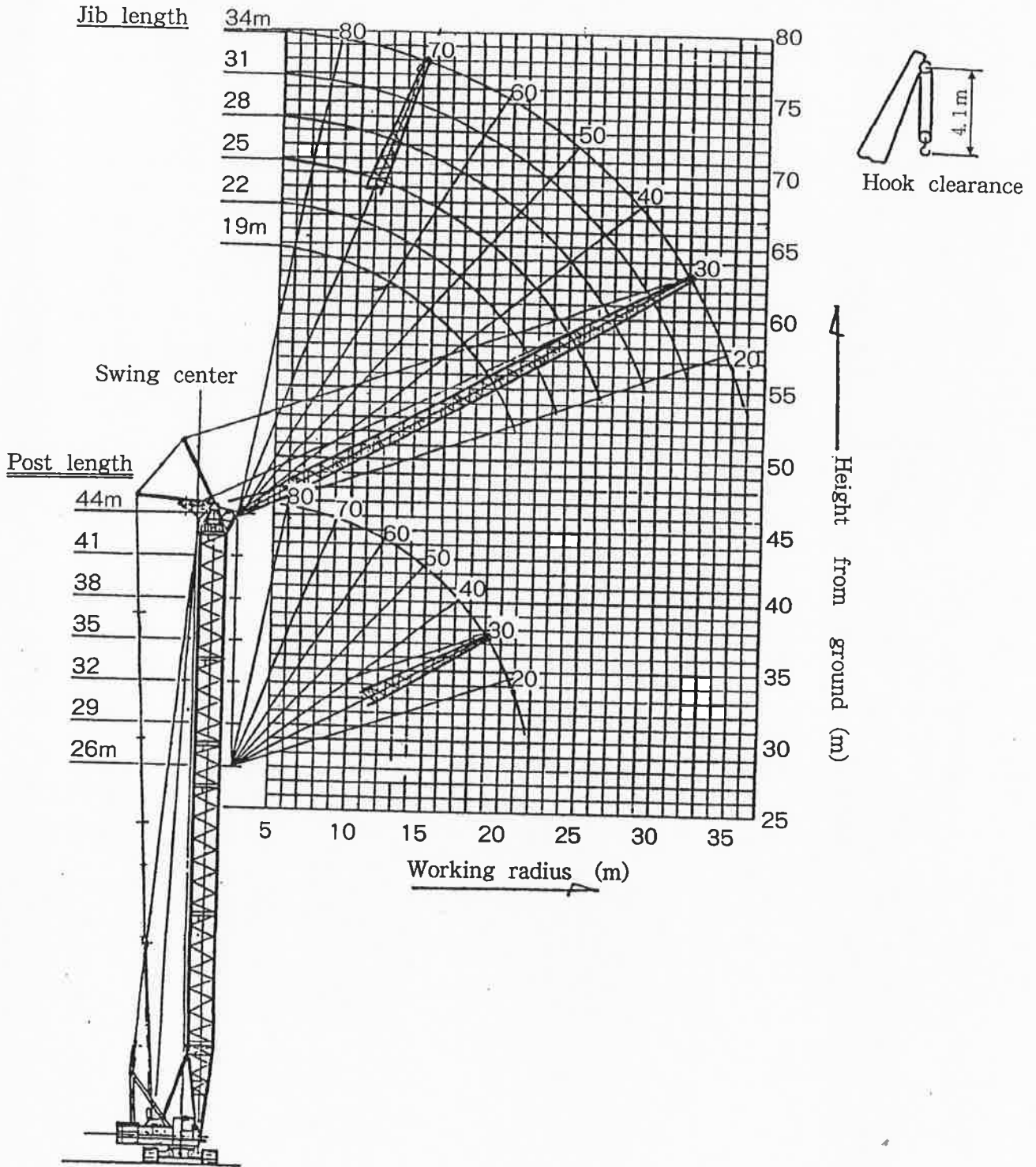
Jib length (m) Post length (m)	19	22	25	28	31	34
26	○	○	×	×	×	×
29	○	○	○	×	×	×
32	○	○	○	○	×	×
35	○	○	○	○	○	×
38	○	○	○	○	○	○
41	○	○	○	○	○	○
44	○	○	○	○	○	○
Minimum working radius (m)	5.9	6.4	7.0	7.5	8.0	8.5
Maximum working radius (m)	29.0	32.0	35.0	38.0	41.0	43.9

○ : Possible combination post and jib

× : Impossible use

SPECIFICATIONS

3 - 2 Working range diagram



- (1) The working radius is the horizontal distance from the center of slewing of the machine to the center of the hook.
- (2) The height from the ground is the vertical distance from the ground to the center of the tower jib point shaft.
- (3) The hook clearance means the distance from the hook to boom point shaft where the hook block can be hoisted to the highest position.