

P&H

KOBELCO

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T180B

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16.5-M ton Hydraulic Truck Crane

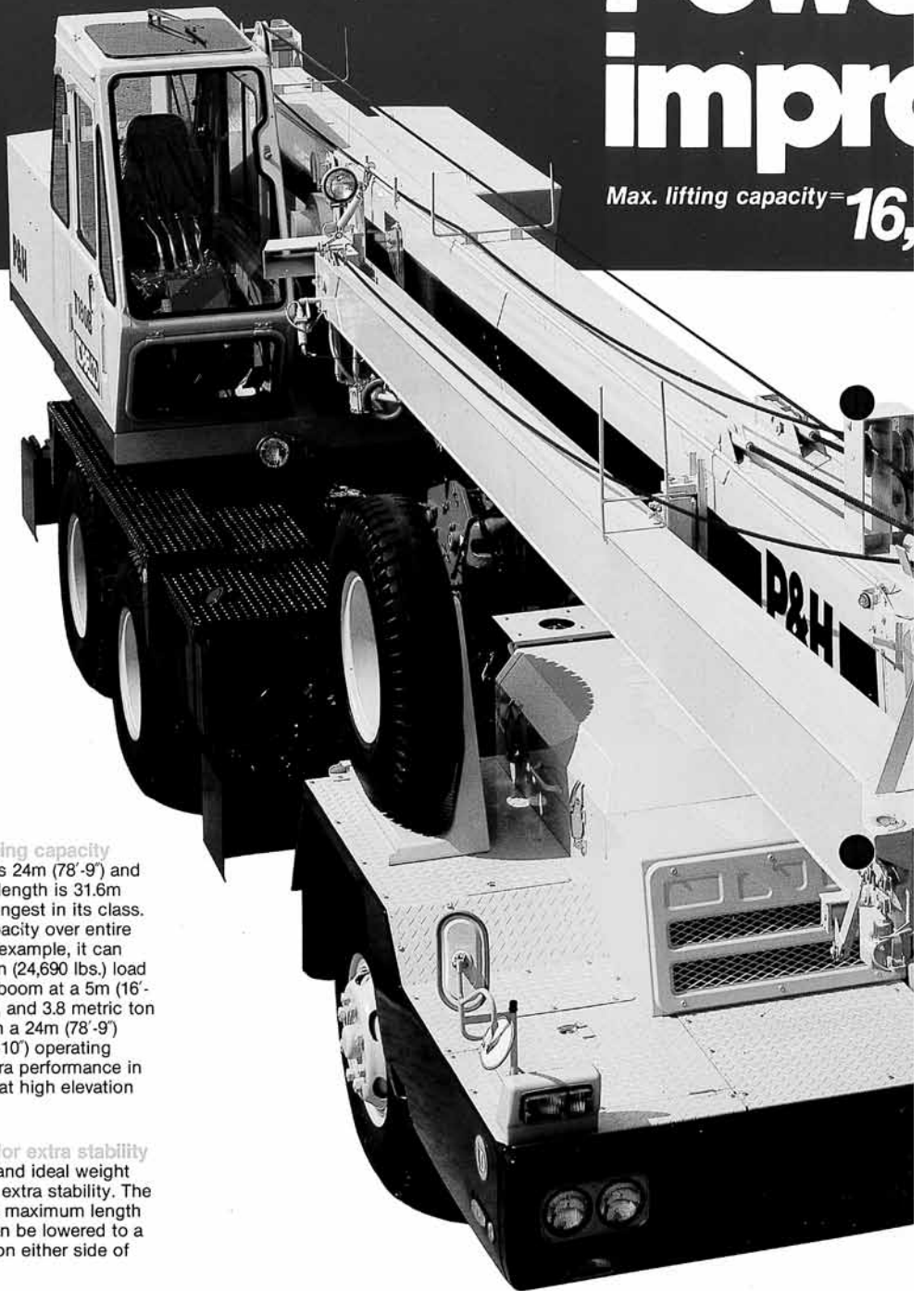


KOBE STEEL, LTD.

Bulletin No. KP-180B-4

Power impro

Max. lifting capacity = 16,



Outstanding working capacity

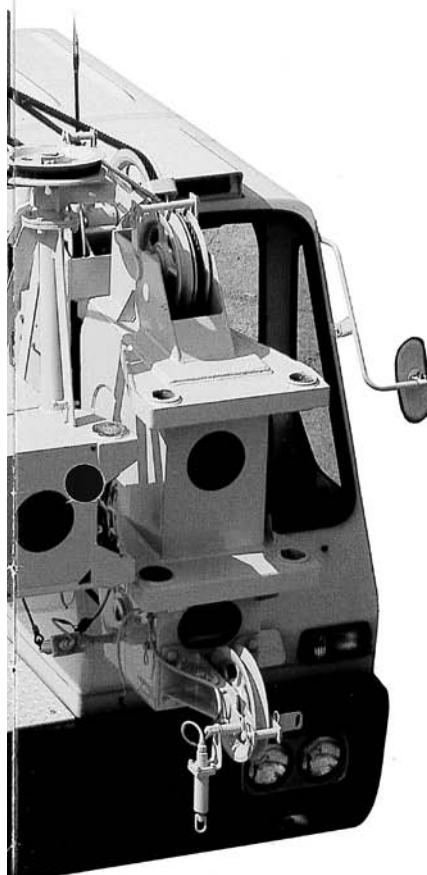
Max. boom length is 24m (78'-9") and max. boom and jib length is 31.6m (103'-8"), both the longest in its class. Excellent lifting capacity over entire working range; For example, it can hoist 11.2 metric ton (24,690 lbs.) load with a 9.6m (31'-6") boom at a 5m (16'-5") operating radius, and 3.8 metric ton (8,380 lbs.) load with a 24m (78'-9") boom at a 10m (32'-10") operating radius. Displays extra performance in loading work, work at high elevation etc.

Balanced design for extra stability

Telescoping boom and ideal weight distribution provide extra stability. The boom and jib at the maximum length of 31.6m (103'-8") can be lowered to a horizontal position on either side of carrier.

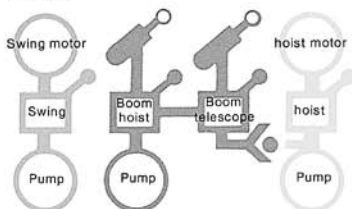
Powerful one with Proved performance

500 kg × 3.0 m (36,380 lbs. × 9'-10") Max. boom & jib length = 24 m + 7.6 m (78'-9" + 24'-11")



3-pump system provides excellent working capacity

As well as combined operation, simultaneous operation of three functions is easy without interference between the three independent pumps.



Delicate Easy inching

The special control valve in the hoist circuit allows high/low speed changeover with a single lever for main winch and auxiliary winch. In the low speed range, delicate inching can be made steplessly regardless of load and engine speed.

Telescoping hydraulic boom with three sections

The boom is made of high tensile strength steel plate. Its two sections can be extended or retracted simultaneously by single lever operation.

Smooth swing without shocks

Special brake valve and disc brake, in addition to the independent swing hydraulic circuit, allow smooth swing operation from start to stop.

Rapid jib setting only 3 minutes by one person

Jib is high tensile strength steel box type, and can be folded on the side of boom. Three minutes is all that is needed for folding or unfolding.

Easy operation in tight places

Small swing radius of rear end facilitates work in a tight places.

Easy setting of 5-lever outrigger

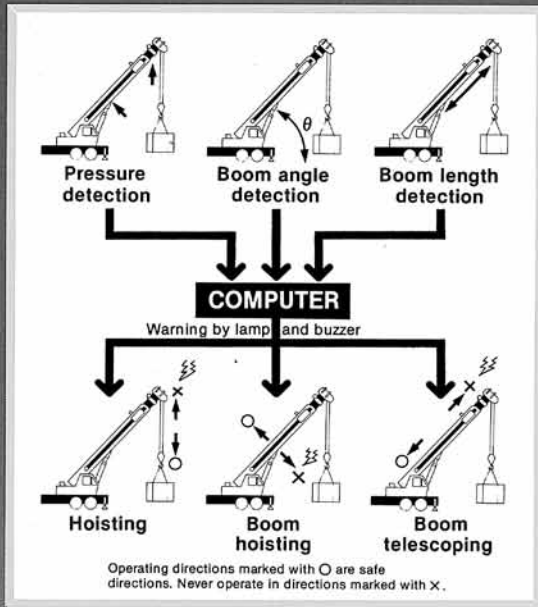


Field-proven P & H outrigger. Once the vertical/horizontal select lever is set, all operations can be controlled with a single lever. Each operation can be freely made by setting the select lever. Storable float eliminates the need for disassembly and assembly. Lever can be controlled from both sides of the carrier.

Deluxe cab based on human engineering

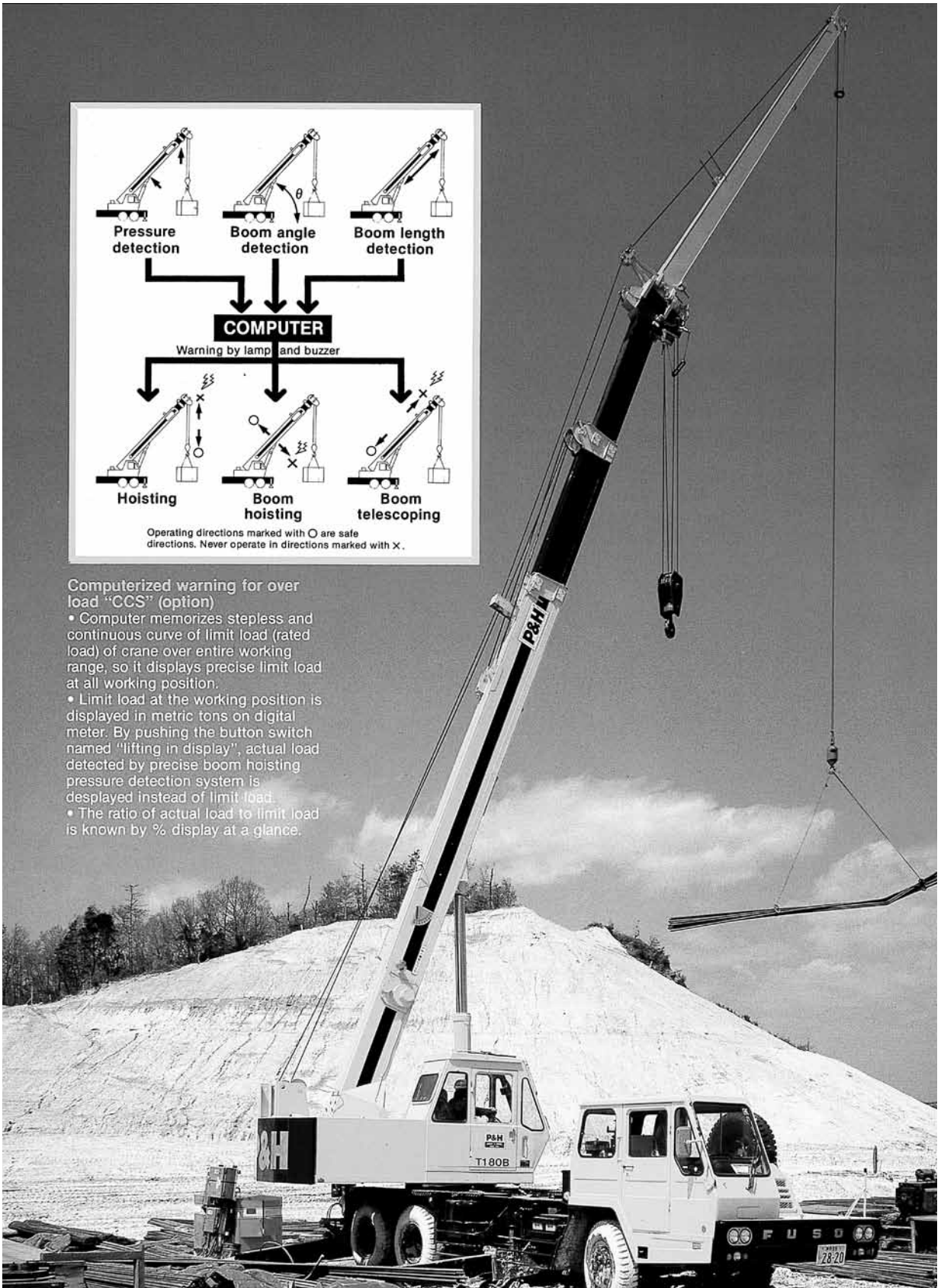
Light and roomy cab provides superior visibility. The four main operation levers are arranged on a control stand for more efficient control. The levers are semi-short finger control type and their lengths can be adjusted according to operator's desire. Meters are easy to see. High-back reclining seat allows comfortable high-elevation work. Cab design is based on human engineering to improve safety and comfort.

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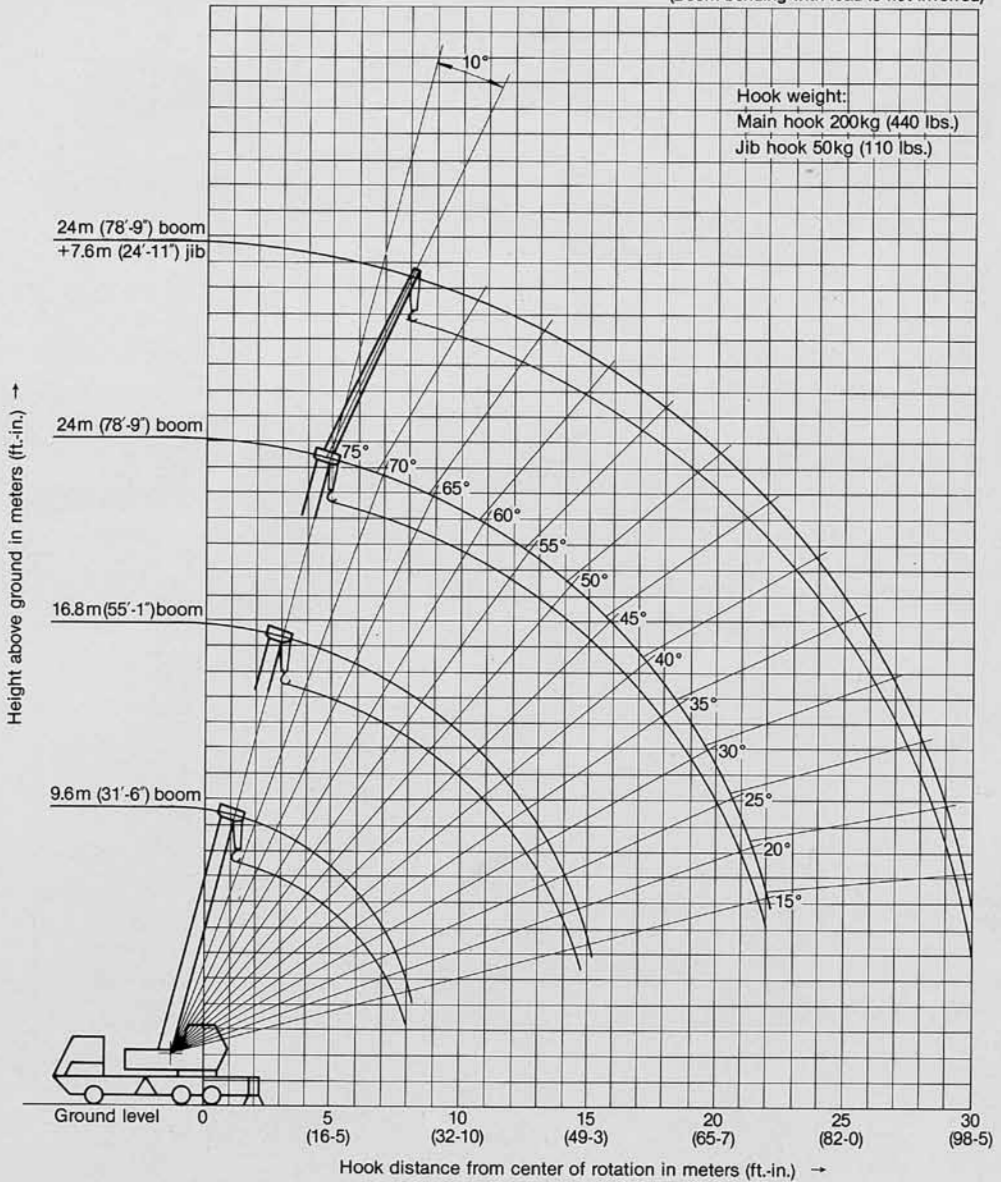
Computerized warning for over load "CCS" (option)

- Computer memorizes stepless and continuous curve of limit load (rated load) of crane over entire working range, so it displays precise limit load at all working position.
- Limit load at the working position is displayed in metric tons on digital meter. By pushing the button switch named "lifting in display", actual load detected by precise boom hoisting pressure detection system is displayed instead of limit load.
- The ratio of actual load to limit load is known by % display at a glance.

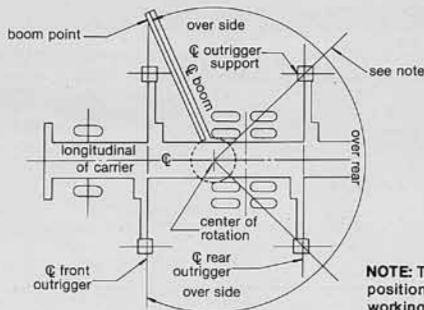


Working Ranges

(Boom bending with load is not involved)

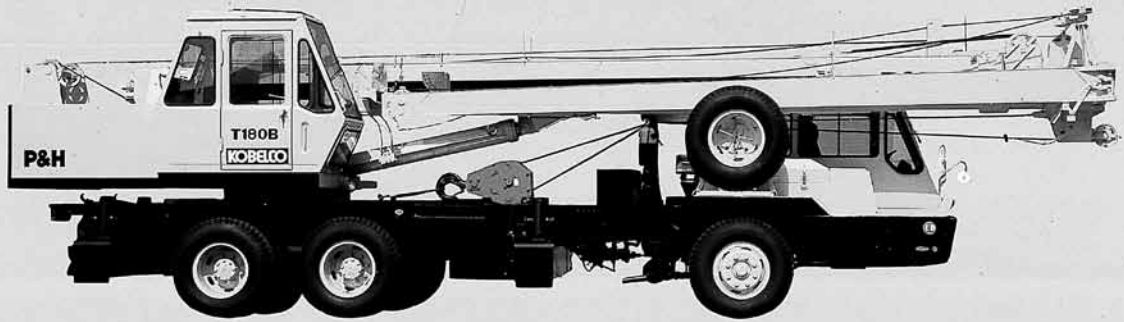


Working Areas



NOTE: These lines determine the limiting position of any load for operation within working areas indicated.

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Specifications

UPPER

SWING UNIT:

Hydraulic radial piston motor drives swing pinion through deck mounted planetary gear reducer. 360° continuous rotation.

SWING BRAKE:

Hydraulic brake valve applied automatically when swing control lever in neutral position, and hand operated disc brake applied in no swing motion in order to sure fix.

SLEWING RING:

Single row ball bearing swing circle—internal spur gear type swing gear integral.

MAIN WINCH:

Mounted on rear part of revolving frame. Driven with hydraulic plunger motor through planetary reducer and clutch.

Clutch—shoe type, internal expanding with hydraulic power.

Brake—band type, direct acting master cylinder and wheel cylinder.

Max. drum capacity 180m (591')

Hoist wire rope (14ø) IWRC 6 × Fi (22 + 7) c/o

AUXILIARY WINCH:

Mounted on rear part of revolving frame. Driven with the same hoist motor that drives main winch through planetary gear reducer.

Clutch—shoe type, internal expanding with hydraulic power.

Brake—band type, direct acting master cylinder and wheel cylinder.

Max. drum capacity 91m (299')

BOOM HOIST:

One double acting cylinder for boom hoist with integral safety holding valve.

tegral safety holding valve.

BOOM TELESCOPE:

Two telescopic boom sections can be hydraulically extended and retracted even with load.

Length, fully extended 24.0m (78'-9")

Length, fully retracted 9.6m (31'-6")

CONTROLS:

Four adjustable hand control levers for swing, telescope, boom hoist and winch, two short hand levers for main and auxiliary winch clutch ON-OFF. Two brake pedals for main and auxiliary winch drum brake. Foot pedal for engine throttle control.

OPERATOR'S CAB:

Compact full visibility Operator's cab is fully enclosed for working in all weather. Six operating control levers and brake pedals for main and auxiliary winches and acceleration pedals are conveniently arranged for the operator's comfort and efficiency.

SAFETY DEVICES:

Boom angle indicator, over hoist alarm bell, relief valves to prevent over-pressure to hydraulic circuits, safety holding valves for boom hoist and telescopic cylinders, counter balance valve for hoist motor, overload relief valves for swing motor.

Load indicator standard

Warning for over load optional

Warning for over load (automatically stopping) optional

HYDRAULIC SYSTEM

POWER SYSTEM:

Power for motions of upper structure and outriggers is delivered from carrier engine PTO to the hydraulic motors and hydraulic cylinders through hydraulic pumps mounted on the carrier.

PUMPS:

Carrier engine PTO drives 3 inline gear pumps.

First pump actuates winch motor.

Second pump actuator boom hoisting cylinder, boom extension cylinder, and second pump joints to first pump in case of high speed hoist and lowering operation.

Third pump actuates swing motor via outrigger hydraulic system.

MOTORS:

One hydraulic radial piston motor for swing.

One hydraulic plunger motor for hoist.

OIL TANK:

Capacity 290 liters (76.6 US gal.)

CARRIER

MAKE AND MODEL:

Left hand and right hand drive: Nissan KW30M (6 × 4)

POWER PLANT:

Nissan PE6, diesel, 6 cyl. 230 PS/2,300 rpm.

ELECTRICAL SYSTEM:

24 volt electric starting, 2 × 12 volt batteries, 120 A.H. × 2.

FUEL TANK:

Capacity 200 liters (52.8 US gal.)

CLUTCH:

Hydraulically operated clutch release mechanism with air assisted booster—Dry single plate.

TRANSMISSION:

Constant mesh, five speeds forward, and one reverse.

SERVICE BRAKE:

Foot Brake—Full air brake on all six wheels, dual air line system, internal expanding shoe type.

PARKING BRAKE:

Hand Brake—Manually actuated internal expanding duo-servo shoe type, acting on drum at transmission case rear.

STEERING:

Recirculating ball screw type with linkage power assistance.

FRAME:

All welded construction of high tensile steel, ladder type, box section side member.

SUSPENSION:

Front—Semi-elliptic leaf springs with anchor at front and hanging shackle at rear.

Rear—Underhanging high tensile steel equalizer beams with self adjusting spherical bearing at end, included two torque rods. (No spring)

AXLE:

Front—"I" section beam, reverse "Elliot" type.

Rear—Full floating type, pressed steel banjo type housing, in-line tandem type.

OUTRIGGERS:

Manual valve controlled, X-type hydraulic outriggers.

Eight double acting hydraulic cylinders for independent horizontal and vertical motion of each beam.

TIRES:

Front—10.00 × 20—16 PR.

Rear—10.00 × 20—16PR.

CAB:

All steel—one side type—two men, semi under floor type.

ELECTRICAL EQUIPMENT:

2 × 12V batteries, headlights, tail lights, stop lights, fog lights, licence light, parking lights, reverse light, side clearance lights.

ATTACHMENTS

BOOM:

All welded high tensile steel plate box type construction. Three sections—boom base section and two telescopic sections. Bottom diameter of point sheave 243mm (9.57")

HOOK BLOCK:

(Standard) 16.5 metric ton, three sheaves, with swivel hook and safety latch.

JIB:

(Standard) All welded high tensile steel plate box type construction, folded on the side of boom base section.

JIB HOOK:

(Standard) 2 metric ton for single jib line.

AXLE LOAD

With jib, spare tire, tools and crew 2 men (130 kg) (approx.)

	Left hand drive	Right hand drive
Total	19,720 kg (43,470 lbs.)	19,720 kg (43,470 lbs.)
Front axle	5,870 kg (12,940 lbs.)	5,870 kg (12,940 lbs.)
Rear axle	13,850 kg (30,530 lbs.)	13,850 kg (30,530 lbs.)

Performance

Max. lifting capacity	16,500 kg × 3.0 m (36,380 lbs. × 9'-10')	
Boom length	9.6 m—24.0 m (31'-6" — 78'-9")	
Jib length	7.6 m (24'-11")	
Max. boom & jib length	24.0 m + 7.6 m (78'-9" + 24'-11")	
Main hoist line speed (4th layer of drum)	hoisting	84 m/min (275.6 fpm)
	lowering	84 m/min (275.6 fpm)
Main hook speed (6 part line)	hoisting	14 m/min (45.9 fpm)
	lowering	14 m/min (45.9 fpm)
Aux. hoist line speed (4th layer of drum)	hoisting	84 m/min (275.6 fpm)
	lowering	84 m/min (275.6 fpm)
Boom hoisting speed (0°—78°)	51 sec.	
Boom lowering speed (78°—0°)	32 sec.	
Boom telescoping speed	extend	67 sec.
	retract	53 sec.
Swing speed	0~3.0 rpm	
Max. travelling speed	70 km/h (43.5 mph)	
Gradeability (tan θ)	0.3	
Min turning radius	9.5 m (31'-2")	
Gross vehicle weight with jib	19,720 kg (43,470 lbs.)	

Lifting Capacities

MAIN BOOM RATED LOADS IN KGS (LBS.)

Operating Radius in Meters (Ft.-In.)	9.6 m (31'-6") Boom	16.8 m (55'-11") Boom	24.0 m (78'-9")
3.0 (9-10)	16,500 (36,380)	10,000 (22,050)	
3.5 (11-6)	16,000 (35,270)	10,000 (22,050)	
4.0 (13-1)	14,000 (30,860)	10,000 (22,050)	
5.0 (16-5)	11,200 (24,690)	10,000 (22,050)	5,000 (11,020)
5.3 (17-5)	10,500 (23,150)	10,000 (22,050)	5,000 (11,020)
6.0 (19-8)	8,900 (19,920)	9,000 (19,840)	5,000 (11,020)
6.4 (21-0)	8,000 (17,640)	8,600 (18,960)	5,000 (11,020)
7.0 (23-0)	6,800 (14,990)	7,200 (15,870)	5,000 (11,020)
8.0 (26-3)	5,300 (11,680)	5,600 (12,350)	5,000 (11,020)
8.2 (26-11)		5,400 (11,900)	5,000 (11,020)
9.0 (29-6)		4,600 (10,140)	4,500 (9,920)
10.0 (32-10)		3,800 (8,380)	3,800 (8,380)
11.0 (36-1)		3,200 (7,050)	3,200 (7,050)
12.0 (39-4)		2,700 (5,950)	2,800 (6,170)
13.0 (42-8)		2,300 (5,070)	2,400 (5,290)
13.3 (43-8)		2,200 (4,850)	2,300 (5,070)
14.0 (45-11)		2,000 (4,410)	2,100 (4,630)
15.0 (49-3)		1,700 (3,750)	1,800 (3,970)
16.0 (52-6)			1,600 (3,530)
17.0 (55-9)			1,400 (3,090)
18.0 (59-1)			1,200 (2,650)
19.0 (62-4)			1,000 (2,200)
20.0 (65-7)			900 (1,980)
21.0 (68-11)			700 (1,540)
22.0 (72-2)			600 (1,320)

JIB RATED LOADS IN KGS (LBS.)

Main Boom Angle	9.6—24.0 m Boom + 7.6 m Jib (31'-6"—78'-9" Boom + 24'-11" Jib)
75°	2,000 (4,410)
70°	2,000 (4,410)
65°	1,750 (3,860)
60°	1,550 (3,420)
55°	1,400 (3,090)
50°	1,050 (2,310)
45°	750 (1,650)
40°	550 (1,210)
35°	400 (880)
30°	300 (660)
25°	200 (440)
20°	150 (330)
15°	100 (220)

NOTE:

- Operating radius is horizontal distance from centerline of rotation to a vertical line through the gravity center of the load.
- The ratings of main boom include weight of main hook—abt. 200kg (440 lbs.)—and other hoist attachments.
- The ratings of jib include weight of jib hook—abt. 50kg (110 lbs.)—and other hoist attachments.
- The ratings of jib are decided by boom angle.
- Deduct 550 kg (1,210 lbs.) from main boom ratings when jib is extended.
- Areas on plate where no ratings are shown, operation is not intended or approved.
- Ratings are contingent upon freely suspended leads and machine standing on a firm, level, uniformly supporting surface.
- The gross crane ratings shown do not exceed 78% of tipping load.
- Ratings above the heavy line are based on the machine hydraulic or structural competence and not on machine stability.
- Ratings above based on over side and rear with outriggers fully extended and set.

HOIST REEVING — 14mm (0.55") dia.

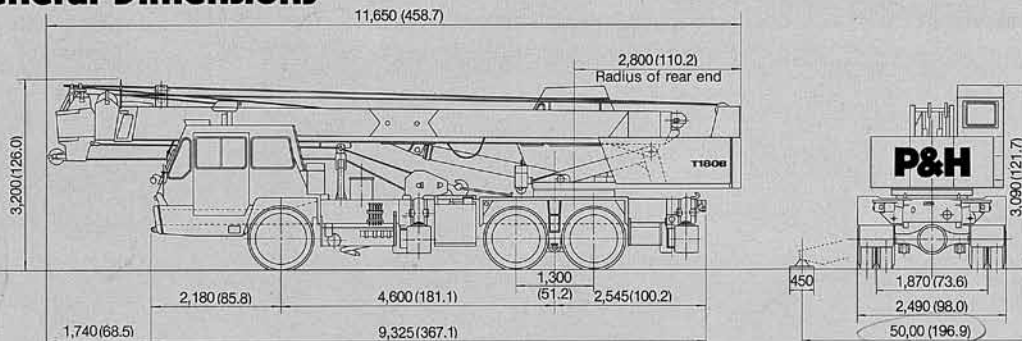
No. of Parts of Line	1	2	3	4	5	6
Max. Load—kg (lbs.)	2,750 (6,060)	5,500 (12,130)	8,250 (18,190)	11,000 (24,250)	13,750 (30,310)	16,500 (36,380)

OPERATION OF THIS EQUIPMENT IN EXCESS OF RATED LOADS AND DISREGARD OF INSTRUCTIONS VOIDS THE WARRANTY.

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P&H**KOBELCO****T180B****16.5-M ton Hydraulic Truck Crane****General Dimensions**

Unit: mm (in.)



NOTE: Due to our policy of continual product improvement, all designs and specifications are subject to change without advance notice. Data published herein is informational in nature and shall not be construed to warrant suitability of the machine for any particular purpose as performance may vary with the conditions encountered. These statements are correct at time of gone to press.

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