P&H T250

HYDRAULIC TRUCK CRANE

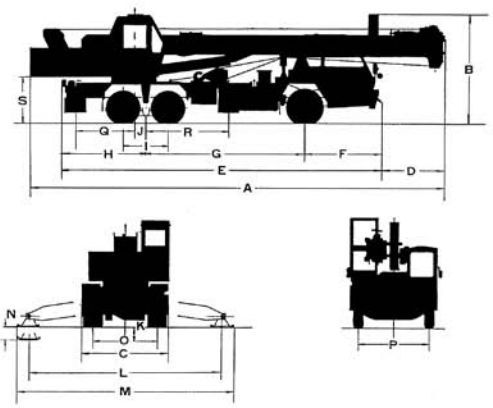
23metric ton. maximum crane load
38.5m. maximum boom and jib

KOBE STEEL

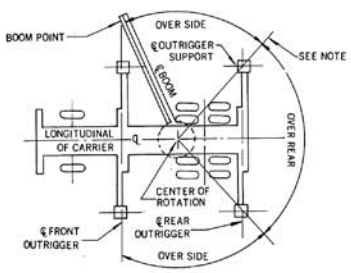
Bulletin No. KP-T250-4

GENERAL DIMENSIONS

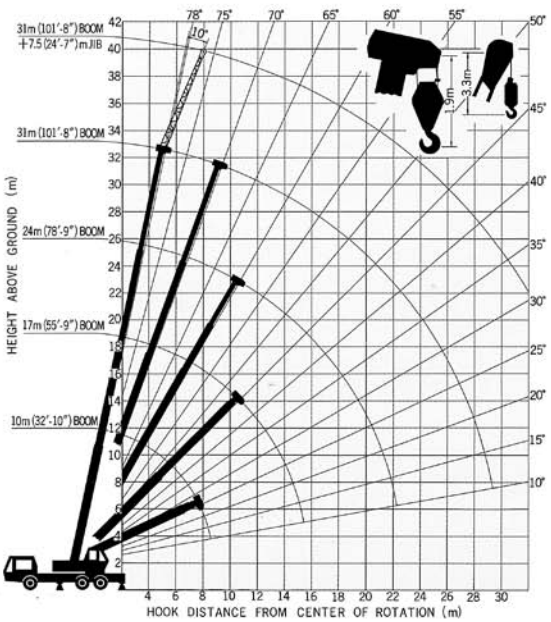
		Nissan KM 30M
A.	Overall length in travelling condition	11.99 m (39'-4.05")
B.	Overall height	3.25 m (10'-7.95")
C.	Overall width	2.49 m (8'-2.03")
D.	Front overhang	1.86 m (6'-1.23")
E.	Overall length of carrier	9.43 m (30'-11.26")
F.	Center of front axle to front of carrier	2.18 m (7'-1.83")
G.	Center of front axle to center of rear bogie	4.60 m (15'-11.02")
H.	Center of rear bogie to rear end of carrier	2.65 m (8'-8.33")
I.	Distance between axles (rear)	1.30 m (4'-3.18")
J.	Center of rear bogie to center of rotation	0.33 m (1'-99")
K.	Ground clearance	0.24 m (9.45")
L.	Effective length of outriggers	5.30 m (17'-4.66")
M.	Overall length of outriggers	5.70 m (18'-8.41")
N.	Wheel ground clearance—outrigger cyl's ext'ed	0.09 m (3.54")
O.	Tread width (rear)	1.87 m (6'-1.62")
P.	Tread width (front)	1.99 m (6'-6.35")
Q.	Distance from centerline of rotation to rear outrigger	1.87 m (6'-1.62")
R.	Distance from rear bogie to front outrigger	2.45 m (8'-0.46")
S.	Distance under counterweight to ground	1.40 m (4'-7.12")



AREAS OF OPERATION



WORKING RANGES



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SPECIFICATIONS

UPPER

SWING UNIT: Radial piston type hydraulic motor drives swing pinion through deck mounted planetary gear reducer. 360° continuous rotation.
Swing speed ..... 3.1 rpm

SWING BRAKE: Hand operated disc brake mounted on swing reducer.

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 hoist motor through single stage gear reducer.
Clutch—shoe type, internal expanding with hydraulic power.
Brake—band type, direct acting master cylinder and wheel cylinder.
MAX. DRUM CAPACITY ..... 200 m (656 ft)
HOIST LINE SPEED (at 4th layer of drum)
HOISTING ..... 94 m/min (308 fpm)
LOWERING ..... 94 m/min (308 fpm)
MAIN HOOK SPEED (7 part line)
HOISTING ..... 13.4 m/min (44.0 fpm)
LOWERING ..... 13.4 m/min (44.0 fpm)
HOIST WIRE ROPE ..... IWRC 6×Fi (22+7) c/o, 16 mm dia. × 165 m (0.63″ × 540 ft)

AUXILIARY WINCH: Mounted on rear part of revolving frame. Driven with the same hoist motor that drives main winch through single stage gear reducer.
Clutch—shoe type, internal expanding with hydraulic power.
Brake —band type, direct acting master cylinder and wheel cylinder.
MAX. DRUM CAPACITY ..... 210 m (689 ft)
JIB HOOK SPEED (at 2nd layer) ..... 101 m/min (331 fpm)
HOIST WIRE ROPE ..... IWRC 6×Fi (22+7) c/o, 14 mm dia. × 85 m (0.55″ dia. × 280 ft)

BOOM HOIST: One double acting cylinder for boom hoist and two double acting cylinders for telescopic boom sections. Each cylinder equipped with integral safety holding valve.
BOOM HOISTING SPEED (0–80°) ..... 62 sec.
BOOM LOWERING SPEED (80–0°) ..... 35 sec.

BOOM TELESCOPE: Three telescopic boom sections can be hydraulically extended and retracted even with load.
LENGTH, FULLY EXTENDED ..... 31 m (101′-8″)
LENGTH, FULLY RETRACTED ..... 10 m (32′-10″)
TELESCOPING SPEED
EXTEND ..... 100 sec.
RETRACT ..... 100 sec.

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. One short hand lever for swing brake lock. 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 all weather. Seven operating control levers, 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, relief valves to prevent over-pressure to hydraulic circuits, safety holding valves for boomhoist and telescopic cylinders ..... standard
Load indicator ..... optional
Warning for over load ..... optional
Warning for over load (automatically stopping) ..... optional

HYDRAULIC SYSTEM

POWER SYSTEM: Power for all 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 gear type three inline pumps.
First pump actuates winch motor, and second pump joints to first pump in case of high speed hoist and lowering operation.
Second pump actuates boom hoisting cylinder, boom extension cylinder and winch motor.
Third pump actuates swing motor via outrigger hydraulic system.

MOTORS: One radial piston type hydraulic motor for swing. One radial piston hydraulic motor for hoist.

OIL TANK CAPACITY ..... 380 lt (100 gal.)

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- Longer boom among those mounted on this class hydraulic truck cranes, best suitable for jobs at high levels.
- Well-balanced structures with excellent stability.
- Three independently driven hydraulic pumps to perform three functions accurately and simultaneously.
- Main winch that can perform accurate inching.
- Hydraulically operated telescopic boom.
- Very smooth rotating motion.
- Highly reliable safety devices.

CARRIER

MAKE AND MODEL:
Left hand drive : Nissan, KW30M (6×4)

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.

FUEL TANK CAPACITY ..... 200lt (53 gal.)

CLUTCH: Dry single plate, hydraulically operated clutch release mechanism with air assisted booster.

TRANSMISSION: Five speed forward, and one reverse.

BRAKES:
SERVICE —Full air brake on all six wheels, dual air line system internal expanding shoe type. (Nissan KW30M Carr.)
PARKING—Mechanically operated by hand brake lever, 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 ends, includes two torque rods. (No springs)

AXLE:
FRONT—"I" section beam, reverse "Elliot" type.
REAR —Full floating type, pressed steel banjo type housing, inline tandem type.

OUTRIGGERS: Manual valve controlled, X-type hydraulic outriggers.
Eight double acting hydraulic cylinders for indpendent horizontal and vertical motion of each beam ..... standard

TIRES:
FRONT—10:00—20—16 PR
REAR —10:00—20—16 PR

CAB: Steel, two men, semi under floor type one side cab.

ELECTRICAL EQUIPMENT: 2×12V batteries, Head lamps, Tail lamps, Stop lamps, Fog lamps, Licence lamp, Parking lamps, Reverce lamp, Side clearance lamps.

EQUIPMENT: Sun visor, Cigarette lighter, Window washer, Primary filter, Steel tool box and tools, Spare wheel, P/M P.T.O. hour meter.

PERFORMANCE:

	KW30M Carrier
Gross vehicle weight with jib	23,190 kg (51,130 lbs.)
Max. travelling speed	70 km/h (43 mph)
Grade ability (tan θ)	0.25
Min. turning radius	9.5 m (31 ft)

ATTACHMENTS

BOOM: All welded high tensile steel plate box type construction. Four sections—boom base section and three telescopic sections.
Four boom point sheaves with roller bearings ..... standard
Bottom diameter of point sheaves ..... 286 mm (11.26″)

HOOK BLOCK: (Standard) 23 metric ton, three sheaves, with swivel hook and safety latch.

JIB: (Standard) Tubular lattice type construction, folded on the side of boom base section.
Jib length ..... 7.5 m (24′-7″)

JIB HOOK: (Standard) Two metric ton for single jib line.

AXLE LOAD

with jib, spare tire, tools and crew 2 men (130kg) (287 lbs.) (approx.)

	KW30M Carrier
Total	23,190 kg
Front axle	6,150 kg
Rear axle	17,040 kg

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LIFTING CAPACITIES

RATED CRANE LOADS IN KGS (LBS.) WITH OUTRIGGERS—Over Rear and Over Side

Operating Radius in m (ft.-in.)	10 m (32'-10") Boom		17 m (55'-9") Boom		24 m (78'-9") Boom		31 m (101'-8") Boom	
	Angle	kg (Lbs.)	Angle	kg (Lbs.)	Angle	kg (Lbs.)	Angle	kg (Lbs.)
3 (9-10)	64	23,000 **(50,710)**	76	13,500 (29,760)				
3.5 (11-6)	61	20,000 (44,090)	74	13,500 (29,760)				
4 (13-1)	58	17,900 (39,460)	72	13,500 (29,760)	78	7,000 (15,430)		
4.7 (15-5)	54	15,000 (33,100)	70	13,500 (29,760)	76	7,000 (15,430)		
5 (16-5)	52	14,000 (30,900)	69	12,750 (28,110)	75	7,000 (15,430)		
6 (19-8)	44	11,300 (24,900)	65	10,750 (23,700)	73	7,000 (15,430)	78	4,000 (8,820)
7 (22-11)	34	9,100 (20,060)	61	8,700 (19,180)	70	7,000 (15,430)	77	4,000 (8,820)
7.5 (24-7)	28	8,100 (17,860)	59	7,700 (16,980)	69	7,000 (15,430)	76	4,000 (8,820)
8 (26-3)	22	7,250 (15,980)	57	6,900 (15,210)	67	6,550 (14,440)	75	4,000 (8,820)
9 (29-6)			53	5,500 (12,130)	65	5,800 (12,790)	73	4,000 (8,820)
10 (32-10)			49	4,400 (9,700)	62	5,000 (11,020)	70	4,000 (8,820)
10.5 (34-5)			46	4,000 (8,820)	60	4,550 (10,030)	69	4,000 (8,820)
11 (36-1)			44	3,600 (7,940)	59	4,150 (9,150)	68	3,800 (8,380)
12 (39-4)			39	3,000 (6,610)	56	3,500 (7,720)	66	3,400 (7,500)
13 (42-8)			33	2,500 (5,510)	54	3,000 (6,610)	64	3,100 (6,830)
14 (45-11)			26	2,000 (4,410)	51	2,550 (5,620)	62	2,800 (6,170)
15 (49-3)			19	1,600 (3,530)	48	2,200 (4,850)	60	2,500 (5,510)
16 (52-5)					45	1,900 (4,190)	58	2,150 (4,740)
17 (55-9)					41	1,600 (3,530)	55	1,900 (4,190)
18 (59-1)					36	1,300 (2,870)	53	1,650 (3,640)
19 (62-4)					33	1,100 (2,430)	51	1,400 (3,090)
20 (65-7)					28	900 (1,980)	48	1,200 (2,650)
21 (68-11)					23	700 (1,540)	45	1,000 (2,200)
22 (72-2)					16	550 (1,210)	42	850 (1,870)
23 (75-6)							40	700 (1,540)
24 (78-9)							36	550 (1,210)
25 (82-0)							33	450 (990)
26 (85-4)							29	350 (770)

Jib Ratings	
Main Boom+Jib	
Main Boom Angle	7.5 m (24'-7")
80°	2,000 (4,410)
75°	2,000 (4,410)
73°	2,000 (4,410)
70°	1,600 (3,530)
65°	1,300 (2,870)
60°	1,100 (2,430)
55°	950 (2,090)
50°	650 (1,430)
45°	350 (770)
40°	150 (330)

HOIST REEVING—16 mm (0.63") Dia. Wire Rope Min. Breaking Strength—19,500 kg (42,990 Lbs.)

Parts of Line	1	2	3	4	5	6	7
Max. Load kg (lbs.)	3,300 (7,280)	6,600 (14,550)	9,900 (21,830)	13,200 (29,100)	16,500 (36,380)	19,800 (43,650)	23,000 **(50,710)**

Note:

1. Operating radius is the horizontal distance from the centerline of rotation to the vertical line through the gravity center of the load. The gross crane ratings shown do not exceed 78% of tipping loads.
2. The ratings of main boom include weight of main hook—abt. 200 kg (440 lbs.)—and other hoist attachments.
3. The ratings of jib include weight of jib hook—abt. 50 kg (110 lbs.)—and other hoist attachments.
4. The ratings of jib are decided by boom angle.
5. Deduct 600 kg (1,320 lbs.) from main boom ratings when jib is extended.)
6. Areas on plate where no ratings are shown, operation is not intended or approved.
7. Ratings are contingent upon freely suspended loads and machine standing on a firm, level, uniform supporting surface.
8. Ratings above the heavy line are based on the machine hydraulic or structual competence and not on machine stability.

OPERATION OF THIS EQUIPMENT IN EXCESS OF LOAD RATINGS AND DISREGARD OF INSTRUCTIONS VOIDS THE WARRANTY.

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NOTE: In furtherance of our policy of continual product improvement, all designs and specifications are subject to change without advance notice. Data 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.

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