

# **P&H T180A**

## **HYDRAULIC TRUCK CRANE**

18ton. maximum crane load  
30.7m maximum boom and jib



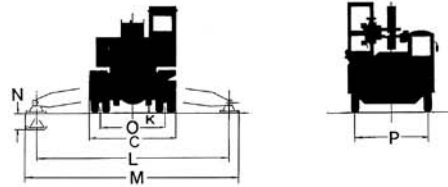
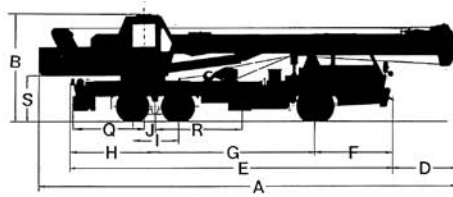
 **KOBE STEEL**

Bulletin No. KP-180A-2

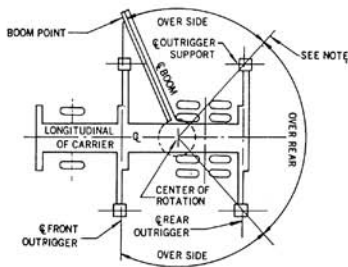
# GENERAL DIMENSIONS

## Nissan KW30M

<b>A.</b> Overall length in travelling condition .....	11.50 m	(37'-8¾")
<b>B.</b> Overall height .....	3.20 m	(10'-6")
<b>C.</b> Overall width .....	2.49 m	(8'-2")
<b>D.</b> Front overhang .....	1.41 m	(4'-7½")
<b>E.</b> Overall length of carrier.....	9.25 m	(30'-4¾")
<b>F.</b> Center of front axle to front of carrier.....	2.13 m	(6'-11¾")
<b>G.</b> Center of front axle to center of rear bogie .....	4.60 m	(15'-1¼")
<b>H.</b> Center of rear bogie to rear end of carrier.....	2.52 m	(8'-3¾")
<b>I.</b> Distance between axles (rear) .....	1.30 m	(3'-3¾")
<b>J.</b> Center of rear bogie to center of rotation .....	0.33 m	(1'-1")
<b>K.</b> Ground clearance .....	0.23 m	(9¾")
<b>L.</b> Effective length of outriggers .....	5.00 m	(16'-4¾")
<b>M.</b> Overall length of outriggers .....	5.45 m	(17'-10¾")
<b>N.</b> Wheel ground clearance—outrigger cyl's ext'ed.....	0.12 m	(4¾")
<b>O.</b> Tread width (rear) .....	1.87 m	(6'-1¾")
<b>P.</b> Tread width (front) .....	1.99 m	(6'-6¾")
<b>Q.</b> Distance from centerline of rotation to rear outrigger.....	1.77 m	(5'-9¾")
<b>R.</b> Distance from rear bogie to front outrigger.....	2.42 m	(7'-11¼")
<b>S.</b> Distance under counterweight to ground .....	1.35 m	(4'-5¾")

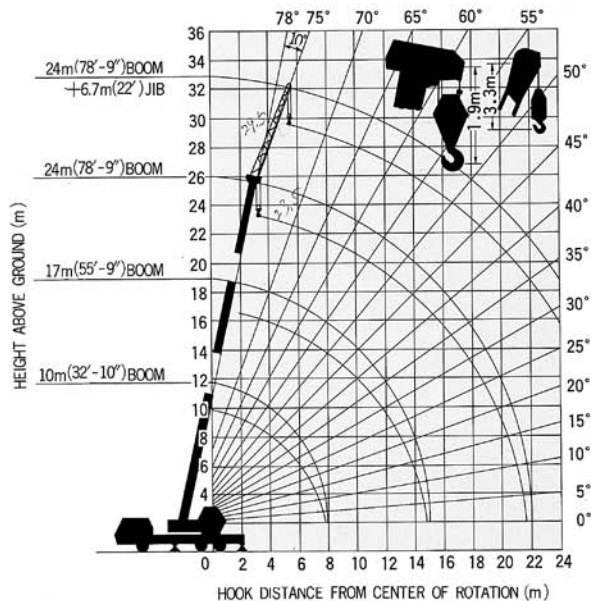


## AREAS OF OPERATION



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

## WORKING RANGES



# P&H T180A

## SPECIFICATIONS

### UPPER

**SWING UNIT:** Gear type hydraulic motor drives swing pinion through deck mounted planetary gear reducer. 360° continuous rotation.

Swing speed ..... 2.1 rpm

**SWING BRAKE:** Hydraulic brake valve applied automatically when swing control lever in neutral position, and negative auto disk 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 hoist motor through single stage gear reducer and clutch brake assembly.

Clutch—shoe type, internal expanding with hydraulic power.

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

MAX. DRUM CAPACITY ..... 230 m (755 ft)

HOIST LINE SPEED (at 3rd layer of drum)

HOISTING ..... 88 m/min (289 fpm)

LOWERING ..... 88 m/min (289 fpm)

MAIN HOOK SPEED (6 part line)

HOISTING ..... 14.6 m/min (47.9 fpm)

LOWERING ..... 14.6 m/min (47.9 fpm)

HOIST WIRE ROPE ..... (14  $\phi$ ) IWRC 6  $\times$  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 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 ..... 230 m (755 ft)

JIB HOOK SPEED (at 2nd layer of drum) .....

..... 81 m/min (266 fpm)

**BOOM HOIST:** One double acting cylinder for boom hoist and one double acting cylinder for telescopic boom sections. Each cylinder equipped with integral safety holding valve.

BOOM HOISTING SPEED (0–78°) ..... 65 sec.

BOOM LOWERING SPEED (78–0°) ..... 40 sec.



**BOOM TELESCOPE:** Two telescopic boom sections can be hydraulically extended and retracted even with load.

LENGTH, FULLY EXTENDED .....

..... 24.0 m (78'-9")

LENGTH, FULLY RETRACTED ..... 10.0 m (32'-10")

### TELESCOPING SPEED

EXTEND ..... 57 sec.

RETRACT ..... 43 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 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 cylinder, counter balance valve for hoist motor, overload relief valves for swing motor ..... standard  
Safe load indicator ..... 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 tandem pumps.

First pump actuates boom hoisting cylinder, boom extension cylinder and winch motor.

Second pump actuates winch motor, and first pump joints to second pump in case of high speed hoist and lowering operation.

Third pump actuates swing motor via outrigger hydraulic system.

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

**OIL TANK CAPACITY** ..... 380 l (100 gals)

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- Longest boom among those mounted on 18 ton 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.  
220 ps/2,300 rpm.

**ELECTRICAL SYSTEM:** 24 volt electric starting, 2×12 volt batteries.

**FUEL TANK CAPACITY:**.....200 l (53 gals.)

**CLUTCH:** Directly actuated through hydraulic power cylinder—Dry single plate.

**TRANSMISSION:** Five speed—forward, and one—reverse.

### BRAKES:

**SERVICE** —Full air brake on all six wheels, internal expanding shoe type.

**PARKING**—Manually actuated internal expanding shoes at propeller shaft.



**STEERING:** Ball and nut type with power booster.

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

### SUSPENSION:

**FRONT**—Semi-elliptic leaf springs with shock absorbers.

**REAR** —Solid bogie mounted with torque rod.

### AXLE:

**FRONT**—“I” section beam, reverse “Elliot” type.

**REAR** —Full floating type, pressed steel banjo type housing, tandem type.



**OUTRIGGERS:** Manual valve controlled, X-type hydraulic outriggers.

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

### TIRES:

**FRONT**—10:00×20 14 PR.

**REAR** —10:00×20 14 PR.

**CAB:** All steel—one side type—offset left (right) side of engine.

**LIGHTS:** Head lights, tail lights, parking lights, directional signal lights—front and rear, licence plate light, back up light, cab inside light and fog lamp. 24 V electrical system.

**EQUIPMENT:** Front bumper, full fenders, skirts, 2×12 V batteries, horn, rear view mirrors, air tank, boom rack, illuminated instrument panel with speedometer, ammeter, air

pressure gauge, oil pressure gauge and fuel gauge, tools and accessories.

### PERFORMANCE:

Gross vehicle weight with jib..... 19,750 kg (43,540 lbs)

Max. travelling speed..... 70 km/h (43 mph)

Grade ability (sin  $\theta$ ) ..... 0.28

Min. turning radius ..... 9.5 m (31 ft)

## ATTACHMENTS

**BOOM:** All welded high tensile steel plate box type construction.

Three sections—boom base section and two telescopic sections.

Three boom point sheaves with roller bearings.....standard  
Bottom diameter of point sheaves..... 243 mm (9 $\frac{5}{8}$ " )



**HOOK BLOCK:** (standard) 16.5 metric ton, three sheaves, with swivel hook and safety latch.

**JIB:** (Optional) Angle lattice type construction, folded on the side of boom base section.

Effective length ..... 6.7 m (22')

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

## AXLE LOAD

Total ..... 19,750 kg (43,540 lbs)

Front axle ..... 5,650 kg (12,460 lbs)

Rear axle ..... 14,100 kg (31,090 lbs)

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# LIFTING CAPACITIES

## LOAD RATINGS IN KG (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	
	Angle	kg (Lbs.)	Angle	kg (Lbs.)	Angle	kg (Lbs.)
3 (9-10)	69°	16,500 (36,380)	74°	10,000 (22,050)		
3.5 (11-6)	59°	15,000 (33,070)	72°	10,000 (22,050)		
4 (13-1)	56°	13,500 (29,760)	71°	10,000 (22,050)		
4.5 (14-9)	52°	12,200 (26,900)	69°	10,000 (22,050)		
5 (16-5)	48°	11,000 (24,250)	67°	10,000 (22,050)	74°	5,000 (11,020)
6 (19-8)	40°	8,150 (17,970)	63°	8,150 (17,970)	71°	5,000 (11,020)
7 (22-11)	29°	6,400 (14,110)	59°	6,400 (14,110)	69°	5,000 (11,020)
8 (26-3)	13°	5,200 (11,460)	55°	5,200 (11,460)	66°	5,000 (11,020)
9 (29-6)				4,250 (9,370)	64°	4,250 (9,370)
10 (32-10)				3,600 (7,940)	61°	3,600 (7,940)
12 (39-4)				2,700 (5,950)	55°	2,700 (5,950)
14 (45-11)				2,100 (4,630)	49°	2,100 (4,630)
16 (52-5)						1,600 (3,530)
18 (59-0)						1,200 (2,650)
20 (65-7)						900 (1,980)
22 (72-2)						700 (1,540)

## JIB LOAD RATINGS IN KG (LBS.)

Main Boom Angle	10-24 m Boom+6.7 m Jib (32'-10"-78'-9" Boom+22' Jib)
78°	2,000 (4,410)
75°	2,000 (4,410)
70°	2,000 (4,410)
65°	1,700 (3,750)
60°	1,400 (3,090)
55°	1,150 (2,540)
50°	930 (2,050)
45°	750 (1,650)
40°	600 (1,320)
35°	490 (1,080)
30°	400 (880)

## HOIST REEVING—14 mm (9/16") Dia. Wire Rope Min. Breaking Strength—15,600 kg (34,390 Lbs.)

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)

### Note:

- Operating radius is horizontal distance from centerline of rotation to a vertical line through the gravity center of the load. The gross crane ratings shown do not exceed 78 percent of tipping loads.
- The ratings of main boom include weight of main hook—abt. 200 kg (440 lbs.)—and other hoist attachments.
- The ratings of jib boom include weight of jib hook—abt. 50 kg (110 lbs.)—and other hoist attachments.
- The ratings of jib boom are decided by boom angle.
- Deduct 400 kg (880 lbs.) from main boom ratings when main boom is equipped with jib, deduct 800 kg (1,760 lbs.) from main boom ratings when jib boom is extended.
- Areas on plate where no ratings are shown, operation is not intended or approved.
- Ratings are contingent upon freely suspended loads and machine standing on a firm, level, uniformly supporting surface.

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

# **P&H T180A**

**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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