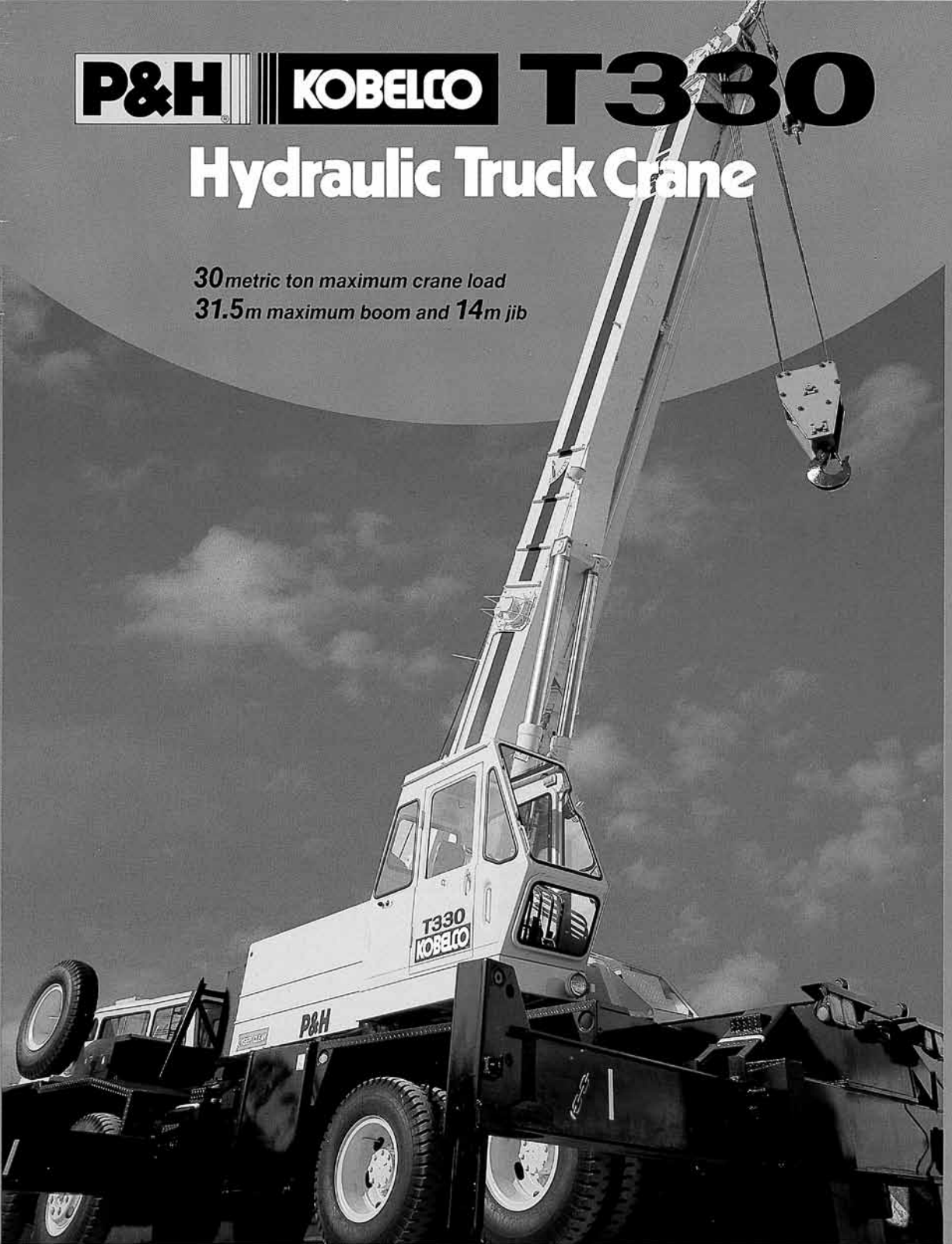




P&H **KOBELCO** **T330**

Hydraulic Truck Crane

30 metric ton maximum crane load
31.5m maximum boom and 14m jib



 **KOBE STEEL, LTD.**

Bulletin No. KP T330 (N)-1



30-ton jobs are a

Extra stability and wide working range.

Unsurpassed lifting stability

The T330 excels in lifting stability, benefiting from a strong, light boom, M-type hydraulic outriggers for extremely wide extension width, and the rear mounting of the boom, boom cylinders, and winch. The rated crane load of the 31.5m (103' 4") main boom is 550kg (1,210 lbs.) when the boom is horizontally positioned, the performance is second to none. The truck crane has the largest lifting capacity at all boom lengths, the widest working range, and the largest lift from ground level in its class.

Rugged, lightweight boom

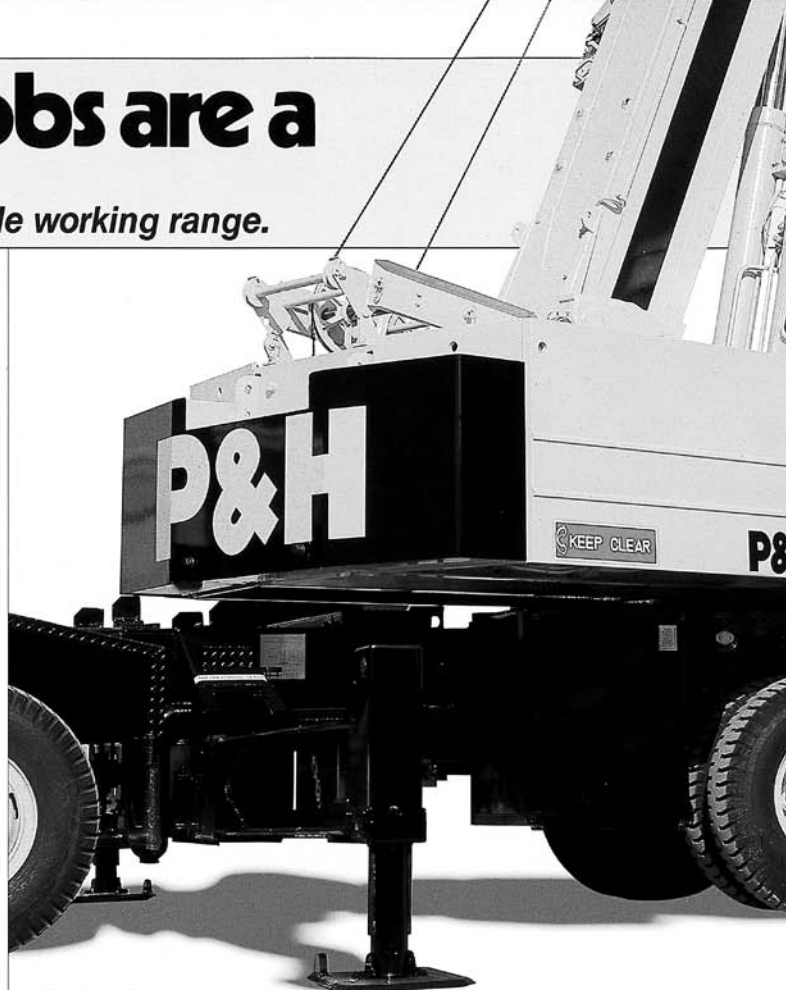
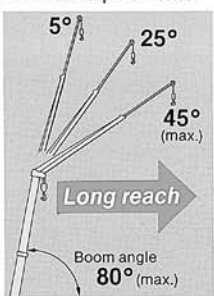
A completely new boom design is used, with a functionally-designed layout of auxiliary sheave (Pat. pending), boom telescope sheaves and jib (Pat. pending). This results in a rugged boom with a minimum deflection and easy handling. Travelling is also simplified by the streamlined design.

Newly designed twist jib (Pat. pending)

The jib is sturdy, lightweight and compact. Its compression truss basic section incorporates a box-construction tip that can be extended when necessary. For storage, the extended jib is twisted so that its sides face up and down, and then turned upward to be held beside the boom. This storage arrangement assures the driver safe travelling with a wider view. Since the jib is turned downward for extension, the space required for setting can be minimal. Setting is easy even in confined areas.

Maximum jib offset angle 45°

The jib offset angle can be set at 5°, 25° or 45° depend on work requirements. This is ideal for jobs at elevated heights or jobs requiring a long reach.

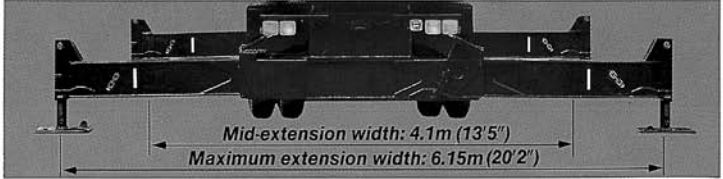
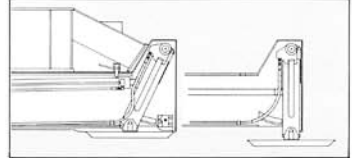


KOBELCO'S exclusive M-type hydraulic outriggers (Pat. pending)

- The outriggers are compact when stored and wide when extended. The new M-type hydraulic outriggers are the fruits of Kobe Steel's advanced technology. The maximum extension width is 6.15m (20'2"), the longest in its class. Coupled with oversized floats, they significantly improve machine stability during work.
- The jack cylinder protrudes slightly above the beam, and is protected from damage by a cover. Handling the load near the crane can be done with safety. The cylinder rods are not exposed outside the beams, so there is no fear of oil leaks caused by rod damage.

Self-storing floats

Floats are large and almost identical in size to ordinary floor plates. Despite their size, they are automatically stored flush within the vehicle's width. The special storing design for the jack cylinder and floats results in the longest extension width in its class.





breeze with **P&H** **KOBELCO**

Max. lifting capacity: 30,000kg x 2.8m (66,140 lbs. x 9'2")

Max. boom & jib length: 31.5m + 14.0m (103'4" + 45'11")



Easy boom extension

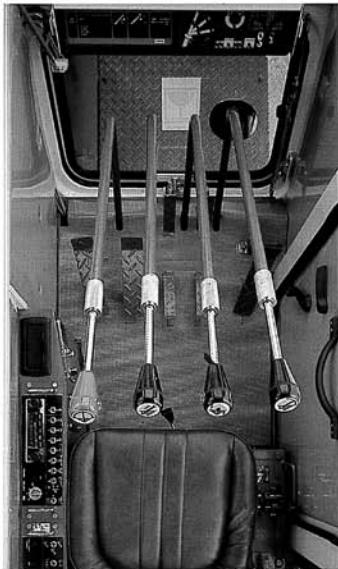
A single lever controls boom extension, from 10.5m (34'5") to 31.5m (103'4"). This is much simpler and more efficient than conventional models, which require different levers for each extension stage.

Roomy cab with excellent visibility

The Check-and-Safety monitor is inset in the front window frame for better front view. Operation stand is eliminated to provide enough leg room and clear downward view. The T330's cab offers roominess and excellent visibility.

Deluxe, complete cab with added safety and comfort

The cab is extremely attractive, designed for improved work efficiency. It contains: Check-and-Safety monitor for safe operation. Side console with neatly-arranged switches for convenience. Long main control levers that can be easily controlled with a short stroke. Winch and boom telescope levers with pedals for hand/foot control selection (for ex. left hand for swing, right hand for boom hoist and right foot for accelerating or left foot for winch). High-back reclining seat. Decorated door trim and walls. Door window is rolled up and down by handle.



Smooth swinging

The hydraulic swing control system is used to provide outstanding swing performance. Swing speed is precisely controlled according to lever stroke. This eliminates shocks when starting and stopping. Sure and speedy operational handling is assured with minimum load shake.

Swing free switch which prevents sideways movement of load

Because a push button activated swing free switch is fitted to the grip on the winch lever, it is possible to easily bring the boom to the load center without having to operate the swing lever. This is accomplished by activating the switch during winch lever operation.

2-system winch brakes for added safety

Both the main and auxiliary winches use negative/positive brake systems. The negative brake automatically functions when the winch lever is returned to neutral with the clutch lever set at ON. In addition, it functions when the clutch lever is set at OFF. With the negative brake, the utmost safety is assured. The positive brake, identical to that of an automobile in function, allows free-fall braking by depressing the foot brake when the clutch lever is at FREE position.

Check-and-Safety monitor

- Computerized monitoring display of crane operation. All necessary information during crane operation is displayed by digital and lamp indicators on a single panel for at-a-glance confirmation.
- Overload prevention data for 7 important factors are displayed. They are: lifting load (actual load), load limit (rated crane load), load moment, boom angle, boom length, operating radius and lift from ground level. All data are digitally displayed, except for the load moment (%) which is indicated by a lamp.
- Working points are indicated by respective lamps on the illustrations of the main boom, jib, auxiliary sheave, working area, outrigger and main/auxiliary hook blocks. Safety monitors are provided for overload, boom angle limit, over wind, oil temperature, accumulator pressure, jib extended, or stored.
- Automatic stopping devices assure safe crane operation against over loading and over winding.



Specifications

UPPER



SWING UNIT

Hydraulic axial plunger motor drives swing pinion through deck mounted planetary gear reducer. 360° continuous rotation. Brake valve can select free or lock when swing control lever in neutral position.

SWING PACKING BRAKE

Hand operated disc brake mounted on swing reducer.

SWING GEAR

Internal spur gear.

SLEWING RING

Single row ball bearing swing circle.



MAIN WINCH

Mounted on rear part of revolving frame. Driven by hydraulic axial plunger motor through double stage gear reducer and clutch.

Clutch: Band type, internal expanding with hydraulic

power.

Brake: Band type. Both positive and negative brake systems provided.

Drum: 352mm (13.9") P.C.D., 603.5mm (23.8") wide, 528mm (20.8") dia. flanges.

Max. drum capacity 280m (919')

Hoist wire rope IWRC6×Fi (22+7) c/o, 16mm (0.63") dia. 170m (558') length.



AUXILIARY WINCH

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

Clutch: Band type, internal expanding with hydraulic

power.

Brake: Band type, Both positive and negative brake systems provided.

Drum: 352mm (13.9") P.C.D., 603.5mm (23.8") wide, 528mm (20.8") dia. flanges.

Max. drum capacity 280m (919')

Hoist wire rope IWRC6×Fi (22+7) c/o, 16mm (0.63") dia. 100m (328') length.

(Main winch drum and auxiliary winch drum have the same dimensions except wire rope length.)

BOOM HOIST

Two double acting cylinders with integral safety holding valve.



BOOM TELESCOPE

Full power telescoping by two full power cylinders with holding valve and wire ropes.

CONTROLS

Four adjustable hand control levers for swing, telescope, boom hoist and winch (boom telescope and winch levers with pedals), two short hand levers for main and auxiliary winch clutch and negative brake ON-OFF. One short hand lever for swing brake lock. Two brake pedals for main and auxiliary winch drum brake at free fall. Foot pedal for engine throttle control.



OPERATOR'S CAB

All weather, full vision with safety glass.

SAFETY DEVICES

Boom angle indicator, over wind alarm buzzer, relief valves to prevent over-pressure to hydraulic circuits, safety holding valves for boom hoist and telescopic cylinders, counter balance valve for hoist motor and safety monitor (include over wind, telescoping miss, oil temperature, accumulator pressure, jib stored or extended.)

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 4-inline gear pumps.

First pump actuates boom hoist cylinders, boom telescope cylinders and winch motor assist for high speed.

Second pump actuates winch motor. Third pump actuates swing motor via outrigger hydraulic system. Fourth pump actuates pilot circuits for clutches and negative brake cylinders, and boom sequencing changeover valve.

MOTORS

One, hydraulic axial plunger piston motor for swing.

One, hydraulic axial plunger motor for hoist.

CONTROL VALVES

One set of 3 stack, 4 way valves and one set of 2 stack, 4 way valves and one remote control valve.

OIL RESERVOIR

Capacity 410 liters (108.3 US gal.)





CARRIER

- Nissan Diesel Motor KG45SXL Truck Crane Carrier; left hand steering.
- Nissan Diesel Motor KG45SXN Truck Crane Carrier; right hand steering.
- Nissan Diesel Motor KG45SXN Truck Crane Carrier (for Australia); right hand steering.

TYPE
Front engine, forward control, 8x4.

FRAME
All welded construction, ladder type.



OUTRIGGERS
KOBELCO hydraulic M-type with self-storing floats, eight double-acting hydraulic cylinders for independent horizontal and vertical motion of each beam, manual valve controlled at side of carrier.



POWER PLANT
Nissan Diesel Motor PE6 (T) Diesel Engine, 4 cycles, direct injection, water cooled, in-line diesel engine, 6 cylinders.
Max. output (JIS rated) 275PS at 2,300 rpm
Max. torque (JIS rated) 98kg-m (709 ft.-lbs.) at 1,200 rpm

ELECTRICAL SYSTEM
24 volt AC. Battery: 12 volt, 120 A.H. x 2

FUEL TANK
200 liter (52.8 US gal.) capacity.

CLUTCH
Dry single plate, hydraulically control with air assisted booster.

TRANSMISSION
(KG45SXL, KG45SXN)
6 forward and 1 reverse speeds. Constantmesh (1st & Rev.) and synchromesh (2nd ~ 6th) gears.
(KG45SXN for Australia)
9 forward and 2 reverse speeds. Constantmesh.

BRAKE
Service: Full air brake on all 8 wheels, (dual air line system,) internal expanding (leading and trailing shoe type.)
Parking: Mechanically operated by hand brake lever, internal expanding on propeller shaft.

Auxiliary: Exhaust brake.
Emergency (Maxi brake): KG45SXN for Australia only.

SUSPENSION
Front: Semi-elliptic leaf springs.
Semi-elliptic leaf springs with load shearing (KG45SXN for Australia only).
Rear: Equalizer beams and torque rods.

FRONT AXLE
Reverse—"ELLIOT" type, 1 beam.

REAR AXLE
Full-floating type.

TIRES
(KG45SXL, KG45SXN)
Front: Single x 4, 10.00-20-14PR
Rear: Dual x 4, 10.00-20-14PR
(KG45SXN for Australia only)
Front: Single x 4, 11.00-20-14PR
Rear: Dual x 4, 10.00-20-14PR

CAB
All steel welded construction, 2-man, semi-below floor type.

ATTACHMENTS

BOOM
Four sections, consisting of a boom base and three power telescoping sections, all welded high tensile steel plate box type construction.

Fully retracted length 10.5m (34'5")
Fully extended length 31.5m (103'4")

JIB
High tensile steel square pipe truss construction and all welded high tensile steel plate box type construction, 8.4m (27'7") and 14.0m (45'11") length. Twist jib (storage on left hand side boom) basic section, downward turning for jib stretch) with suspension rod. Single sheave with ball bearing.



HOOK BLOCK
Main: 30 metric ton (66,140 lbs.) four sheaves with swivel hook and safety latch.
Jib: Weighted ball with swivel hook and safety latch.

AXLE LOAD

With jib, square tire, tool and 2-man crew (150kg) (approx.)

	KG45SXL, KG45SXN	KG46SXN for Australia
Total (G, V, W)	28,400kg (62,610 lbs.)	28,700kg (63,270 lbs.)
Front axle	9,280kg (20,460 lbs.)	9,480kg (20,900 lbs.)
Rear axle	19,120kg (42,150 lbs.)	19,220kg (42,370 lbs.)

PERFORMANCE

• **CRANE**

Max. rated lifting capacity	30 metric ton x 2.8m (66,140 lbs. x 9'2")	
Boom length	10.5m ~ 31.5m (34'5" ~ 103'4")	
Twist jib length	8.4m (27'7"), 14.0m (45'11")	
Boom derricking angle	-3° ~ 80°	
* Boom derricking time	55 sec. (-3° ~ 80°)	
* Boom telescoping time	115 sec. (10.5m ~ 31.5m)	
* Hoisting line speed (Main winch)	High	100m/min (328.1 fpm) (4th layer)
	Low	50m/min (164.0 fpm) (4th layer)
* Hoisting line speed (Aux. winch)	High	86m/min (282.2 fpm) (2nd layer)
	Low	43m/min (141.1 fpm) (2nd layer)
* Swing speed	3.1 rpm	

NOTE: *Speed; subject to no load.

• **CARRIER**

	KG45SXL KG45SXN	KG45SXN for Australia
Max. travel speed (estimate)	64 km/h (39.8 mph)	74 km/h (46.0 mph)
Gradeability (tan θ) (estimate)	0.36	0.52
Min. turning radius	10.5 m (34'5")	

T330 Hydraulic Truck Crane



Lifting Capacities

RATED LOADS IN KG (LBS.)

Chart 1

With outriggers fully extended with front jack (opt.)—360°/With outriggers fully extended without front jack (opt.)—over side and rear.

Operating Radius in Meters (Ft.-In.)	Main Boom			
	10.5m (34'5") Boom	17.5m (57'5") Boom	24.5m (80'5") Boom	31.5m (103'4") Boom
2.8 (9-2)	30,000 (66,140)			
3.0 (9-10)	28,000 (61,730)	16,500 (36,380)		
3.5 (11-6)	25,000 (55,120)	16,500 (36,380)		
4.0 (13-1)	22,700 (50,040)	16,500 (36,380)	10,500 (23,150)	
4.5 (14-9)	20,700 (45,840)	16,500 (36,380)	10,500 (23,150)	
5.0 (16-5)	19,000 (41,890)	16,500 (36,380)	10,500 (23,150)	
6.0 (19-8)	15,500 (34,170)	14,000 (30,860)	10,500 (23,150)	7,800 (17,200)
7.0 (23-0)	12,950 (28,550)	11,800 (26,010)	10,500 (23,150)	7,800 (17,200)
8.0 (26-3)	10,650 (23,480)	10,250 (22,600)	8,900 (19,620)	7,800 (17,200)
8.5 (27-1)	9,650 (21,270)	9,150 (20,170)	8,400 (18,520)	7,350 (16,200)
8.75 (28-8)		8,650 (19,070)	8,100 (17,860)	7,200 (15,870)
9.0 (29-6)		8,200 (18,080)	7,900 (17,420)	7,000 (15,430)
10.0 (32-10)		6,800 (14,990)	7,000 (15,430)	6,300 (13,890)
10.5 (34-5)		6,200 (13,670)	6,450 (14,220)	6,000 (13,230)
11.0 (36-1)		5,850 (12,860)	5,900 (13,010)	5,700 (12,570)
12.0 (39-4)		4,700 (10,360)	5,000 (11,020)	5,200 (11,460)
14.0 (45-11)		3,350 (7,390)	3,750 (8,270)	4,100 (9,040)
14.5 (47-7)		3,050 (6,720)	3,500 (7,720)	3,800 (8,380)
15.0 (49-3)		2,800 (6,170)	3,250 (7,170)	3,550 (7,830)
15.75 (51-8)		2,550 (5,620)	2,950 (6,500)	3,200 (7,050)
16.0 (52-6)			2,850 (6,280)	3,150 (6,940)
18.0 (59-1)			2,150 (4,740)	2,450 (5,400)
20.0 (65-7)			1,850 (3,840)	1,900 (4,190)
22.0 (72-2)			1,200 (2,650)	1,500 (3,310)
22.75 (74-8)			1,050 (2,310)	1,400 (3,090)
24.0 (78-9)				1,150 (2,540)
26.0 (85-4)				850 (1,870)
28.0 (91-10)				550 (1,210)
29.75 (97-7)				400 (880)

Chart 2

With outriggers mid-extended to 4.1m (13'5") centers—360°/With outriggers fully extended without front jack (opt.)—over front.

Operating Radius in Meters (Ft.-In.)	Main Boom			
	10.5m (34'5") Boom	17.5m (57'5") Boom	24.5m (80'5") Boom	31.5m (103'4") Boom
2.8 (9-2)	30,000 (66,140)			
3.0 (9-10)	28,000 (61,730)	16,500 (36,380)		
3.5 (11-6)	25,000 (55,120)	16,500 (36,380)		
4.0 (13-1)	22,700 (50,040)	16,500 (36,380)	10,500 (23,150)	
4.5 (14-9)	18,000 (39,880)	16,500 (36,380)	10,500 (23,150)	
5.0 (16-5)	14,050 (30,970)	13,550 (29,870)	10,500 (23,150)	
6.0 (19-8)	9,850 (21,720)	9,250 (20,390)	10,500 (23,150)	7,800 (17,200)
7.0 (23-0)	7,350 (16,200)	6,850 (15,100)	7,650 (16,870)	7,800 (17,200)
8.0 (26-3)	5,700 (12,570)	5,250 (11,570)	6,050 (13,340)	6,450 (14,220)
8.75 (28-8)	4,700 (10,360)	4,400 (9,700)	5,100 (11,240)	5,450 (12,020)
10.0 (32-10)		3,350 (7,390)	3,950 (8,710)	4,300 (9,480)
12.0 (39-4)		2,150 (4,740)	2,700 (5,950)	3,050 (6,720)
14.0 (45-11)		1,200 (2,650)	1,850 (4,080)	2,100 (4,630)
15.75 (51-8)			500 (1,100)	1,250 (2,750)
17.0 (55-9)				900 (1,980)
18.0 (59-1)				650 (1,430)
19.0 (62-4)				450 (990)
20.0 (65-7)				550 (1,210)

Chart 3

With outriggers fully extended with front jack (opt.)—360°/With outriggers fully extended without front jack (opt.)—over side and rear.

Boom Angle	31.5m (103'4") Boom +8.4m (27'7") Jib			31.5m (103'4") Boom +14.0m (45'11") Jib		
	Jib Offset			Jib Offset		
	5°	25°	45°	5°	25°	45°
80°	3,000 (6,610)	1,600 (3,530)	900 (1,980)	2,000 (4,410)	850 (1,870)	570 (1,260)
77°	3,000 (6,610)	1,600 (3,530)	900 (1,980)	2,000 (4,410)	850 (1,870)	570 (1,260)
76°	3,000 (6,610)	1,600 (3,530)	900 (1,980)	1,920 (4,230)	850 (1,870)	570 (1,260)
75°	3,000 (6,610)	1,600 (3,530)	900 (1,980)	1,830 (4,030)	830 (1,830)	560 (1,230)
70°	2,320 (5,110)	1,420 (3,130)	860 (1,900)	1,470 (3,240)	760 (1,680)	540 (1,190)
65°	1,880 (4,140)	1,270 (2,800)	830 (1,830)	1,200 (2,650)	700 (1,540)	520 (1,150)
60°	1,600 (3,530)	1,150 (2,540)	810 (1,790)	960 (2,150)	640 (1,410)	500 (1,100)
55°	1,390 (3,060)	1,050 (2,310)	790 (1,740)	830 (1,830)	600 (1,320)	490 (1,080)
50°	930 (2,050)	840 (1,850)	700 (1,540)	730 (1,610)	550 (1,210)	480 (1,060)
45°	570 (1,260)	500 (1,100)	400 (880)	440 (970)	360 (790)	310 (680)
42°	410 (900)	350 (770)		300 (660)	250 (550)	
41°	370 (820)	320 (710)		270 (600)	200 (440)	
40°	320 (710)	280 (620)		220 (490)	180 (400)	

NOTE:

- Operating radius is the horizontal distance from centerline of rotation to a vertical line through the center of gravity of the load.
- Load ratings do not exceed 75% of tipping loads.
- Load ratings are the allowable maximum lifting capacities on a firm and level surface, and include hook block(s), slings, and all other load handling accessories.
 - Main hook block weight: 350kg (770 lbs.)
 - Auxiliary hook block weight: 70kg (150 lbs.)
- Ratings above the heavy line are based on the machine's hydraulic or structural competence and not on machine stability.
- Since the operating radius is based on the actual value considered with boom deflection, be sure to operate depending on the actual radius. To operate with the jib mounted on boom, operate basing on actual boom angle only.
- Load ratings with outriggers fully extended are over rear, over side and over front lifting capacities with the machine leveled. Load ratings with outriggers mid-extended are based on the condition of 4.1m (13'5") distance of outriggers, and over rear, over side and over front lifting capacities with the machine leveled.
- To determine load ratings in-between those shown on chart, proceed as follows:
 - for boom lengths not shown, use rating of rated boom length with lower rating load.
 - for load radii not shown, use rating of next longer rated radius.
- Rated load for auxiliary sheave are reduced the main hook weight 350kg (770 lbs.) from the main boom rated load and load per line should not exceed 3,000kg (6,610 lbs.).

9. Standard hoist reevings are shown below.

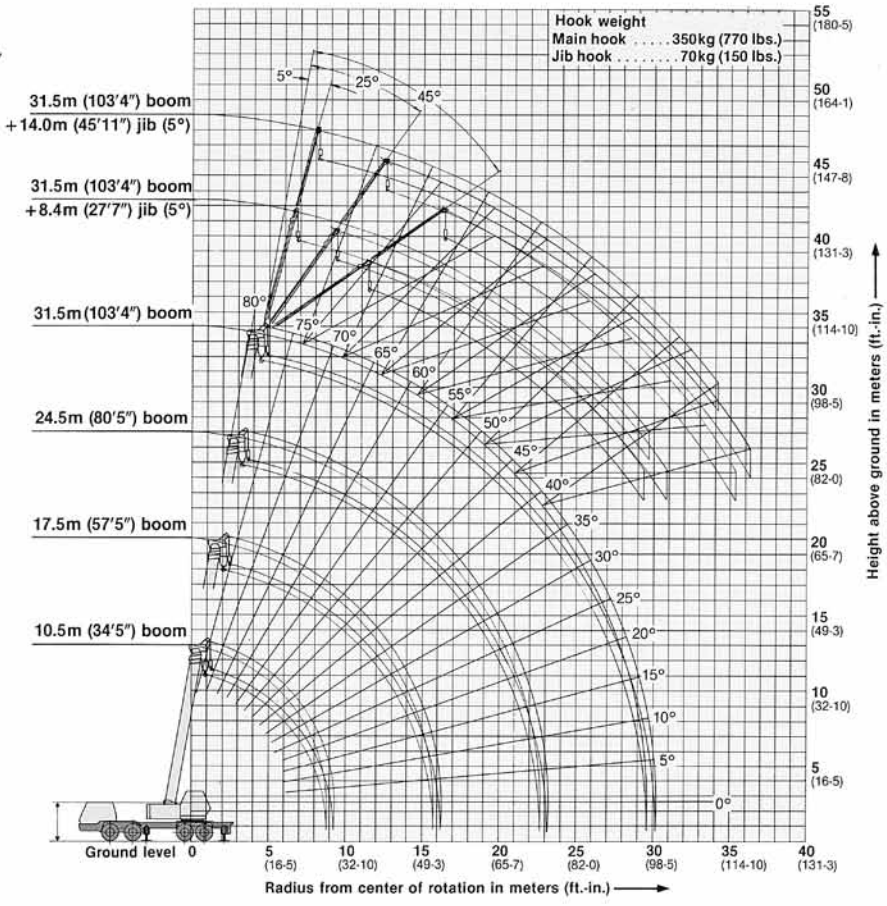
Boom length	10.5m (34'5")	10.5m - 17.5m (34'5" - 57'5")	17.5m - 24.5m (57'5" - 80'5")	24.5m - 31.3m (80'5" - 103'4")	Aux. sheave & jib
No. of parts of line	10	8	6	4	1

- When outriggers are fully extended without the front jack, over front lifting capacities are less than those of over rear and over side. When turning the machine from over side to over front, be careful not to allow load aloft to exceed over front ratings.
- Load ratings for free fall operation are one fifth of rated loads shown above. In this case, each permissible load for single line is 600kg (1,320 lbs.) for main and auxiliary hoist line.
- When outriggers are mid-extended—360° or fully extended without the front jack—over front, do not operate the jib.
- The ratings for boom with 8.4m (27'7") extending jib are the value 1,200kg (2,650 lbs.) less than the value seen from Chart 1. The ratings for boom with 14.0m (45'11") extending jib are the value 1,300kg (2,870 lbs.) less than the value seen from Chart 1.

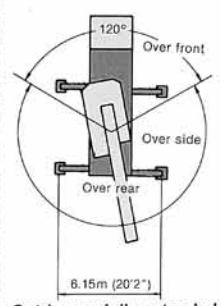
OPERATION OF THIS EQUIPMENT IN EXCESS OF RATED LOADS OR DISREGARD OF INSTRUCTIONS VOIDS THE WARRANTY.



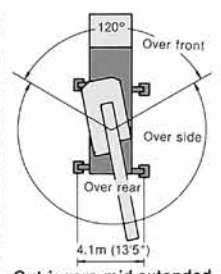
Working Ranges



Working Areas



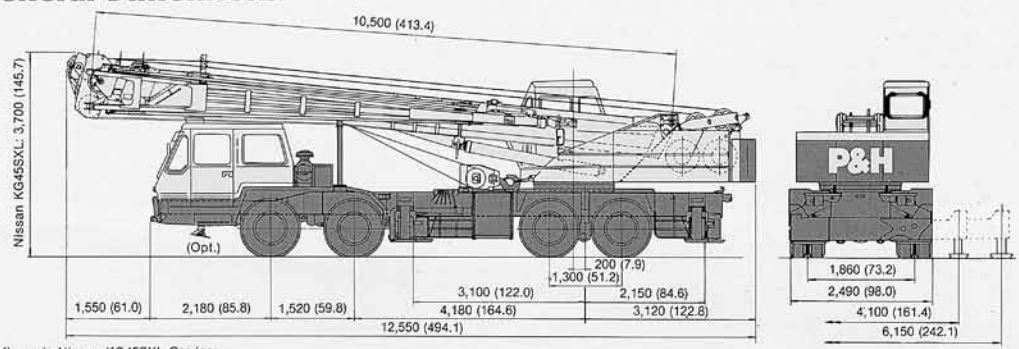
Outriggers fully extended



Outriggers mid-extended

General Dimensions

Unit: mm (in.)



* This figure is Nissan KG45SXL Carrier.



P&H **KOBELCO**
T330

Hydraulic Truck Crane

NOTE: Due to 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. These statements are correct at time of going to press.



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