

**P&H**

**KOBELCO**



# 435A-TC

**36-M ton Truck Crane**



**KOBE STEEL, LTD.**

Bulletin No. 435A-TC-5

**KOBELCO**

# 435A-TC

## Basic Machine

## Specifications

### ● UPPER MACHINERY

**POWER PLANT:**

**Diesel:** Mitsubishi 6 DB 10 C (standard).....  
 6 cyl., 110 mm (4.33") bore x 150 mm (5.91") stroke,  
 8,553 cc (522 cubic inch) displacement, 4 cycle, water  
 cooled, 96 PS @ 1,400 rpm full load engine output.

G.M. 4-53N (optional) ..... 4 cyl., 94 PS @ 2,000 rpm

**TRANSMISSION:** 2 speed transmission, high gear is normal operating speed.

**THROTTLE:** Twist grip control on swing lever, for all operations.

**BATTERIES:** Two 12 volt, 120 ampere-hour capacity.

**RADIATOR:** Vertical tube and fin type core, thermostatically controlled.

**FUEL TANK:** Capacity ..... 220 liters (58.1 US gal.)

**AIR CLEANER:** Dry type with replaceable paper element.



**BOOM HOIST ASSEMBLY:** Independent planetary gear type with external ratchet and automatic brake provides for raising or lowering boom under power and locking boom.

Clutch—406.4 mm (16") dia. x 63.5 mm (2.5") wide, band type, internal expanding.

Brake—457 mm (18") dia. x 63.5 mm (2.5") wide, band type, external contracting "full wrap" design, spring set hydraulic release.

Drum—230 mm (9.06") pitch dia. x 145 mm (5.71") long. Smooth drum mounted on antifriction bearings.

Drum Total Capacity ..... 95 m (312')

Cable Dia. .... 14 mm (0.55")

Line Speed (1st layer):

Hoisting—low	..... 29 m/min (95.1 fpm)
—high	..... 48 m/min (157.5 fpm)
Lowering—low	..... 17 m/min (55.8 fpm)
—high	..... 28 m/min (91.9 fpm)



**MAIN DRUM ASSEMBLY:** Drums opposite each other mounted on antifriction bearings on single drum shaft.

Clutches—584 mm (23") dia. x 76 mm (3") wide, band type internal expanding.

Brakes—711 mm (28") dia. x 89 mm (3.5") wide, band type, external contracting "full wrap" design.

Drums—400 mm (15.75") pitch dia. x 266 mm (10.47") long. Cast groove.

**(LINE DATA FOR L.H. DRUM)**

Drum Total Capacity ..... 130 m (4.27')

Cable Dia. .... 20 mm (0.79")

Line Pull ..... 7,450 kg (16,400 lbs.)

Line Speed (1st layer):

Hoisting—low	..... 29 m/min (95.1 fpm)
—high	..... 48 m/min (157.5 fpm)
Lowering—low	..... 19 m/min (62.3 fpm)
—high	..... 31 m/min (101.7 fpm)

**(LINE DATA FOR R.H. DRUM)**

Drum Total Capacity ..... 130 m (130')

Cable Dia. .... 20 mm (0.79")

Line Pull ..... 7,450 kg (16,400 lbs.)

Line Speed (1st layer):

Hoisting—low	..... 29 m/min (95.1 fpm)
—high	..... 48 m/min (157.5 fpm)



**SWING CLUTCHES:** 533.4 mm (21") dia. x 114.4 mm (4.5") wide, two shoe type, internal expanding.

**SWING BRAKE:** Spring set hydraulic release, V-type.

**FASTENING TO LOWER:** 6 adjustable hook rollers—one double front, two double rear, bolted to frame and hooked under lip of roller path on carrier.

**SWING ROLLERS:** Live roller circle with 26 rollers (equally spaced) held in place by retainer.

**SWING GEAR:** Internal cut teeth.

**SWING SPEED:** Low ..... 2.5 rpm

High ..... 4.3 rpm



**CONTROLS:** Direct acting hydraulic.

**FRAME:** All welded frame and power box constructed of heavy steel plate. Shafts mountings are line bored to insure precise alignment of all parts.

**POWER BOX:** Completely seals gearing (except swing) provides automatic lubrication from oil bath. Involute splined shafts are used, turn in roller and ball bearings. Gears are hardened, trouble free operation. Deck machinery is in compact arrangement, easy maintain and repair.

**GANTRY:** High gantry folding type, three position telescopic, for use with all attachments. Raised and lowered by boom hoist ropes.

**COUNTERWEIGHT:** Cast construction, one piece external removable ..... 6,800 kg (15,000 lbs.)



**OPERATOR'S CAB:** All steel, totally enclosed from weather, offset right side of machine. Full vision cab has safety glass throughout, sliding door, windshield wiper and operator's four-way adjustable seat. Cab heater (optional) available.

**LIGHTING:** 2—cab front flood lights, 1—cab inside light, 1—trouble light.

**INSTRUMENTS:** Gauges for engine: fuel gauge, oil pressure gauge, water temperature gauge, and ammeter.

**SAFETY DEVICE:** Crane over hoist alarm bell. Boom over hoist kickout (Automatic boom hoist limiting device). L.H. and R.H. hoist drum locks. Safety latch on hook block(s).

**TOOLS AND ACCESSORIES:** A set of tools and accessories are furnished to each unit.

**● CARRIER**  
**8Wheels, 4Wheel Drive, 12 Tires**

**MAKE AND MODEL:** Nissan Diesel Motors KG50XTL

**WEIGHT:** Including turret, hydraulic outriggers and standard tires  
 ..... 18,300 kg (40,300 lbs.)



**POWER PLANT:** Diesel: Nissan Diesel RD8 (standard ..... 90° V type, 8 cyl., 135 mm (5.31") bore x 125 mm (4.92") stroke, 14,313 liters (873 cubic inch) displacement, 4 cycles, water cooled, direct injection open type combustion chamber, natural aspirated air induction, 24 volt-5.5 KW electric starter, 24 volt-700 watt alternator, centrifugal force type governor, 300 PS @ 2,500 rpm full load engine output (JIS), 100kg-m(723 ft.-lbs.) @ 1,400 rpm max. torque (JIS).

**RADIATOR:** Vertical tube and corrugate fin type core, thermostatically controlled.

**FUEL TANK:** Capacity ..... 200 liters (58.2 US gal.)

**CLUTCH:** Single dry type. Hydraulically operated release mechanism with air assisted booster.

**TRANSMISSION:** MAIN TRANSMISSION: 10 speeds forward plus 2 reverse.

**PROP. SHAFTS:** Front, intermediate and interaxle prop. shaft—U joint plate bearing construction.



**FRONT AXLE:** Tandem-weld axle ends, steel tube and forged steel, reverse, "ELLIOT" steering knuckles.

**REAR AXLE:** Full floating, cast steel banjo type housing, inline tandem type.



**STEERING:** Ball nut type steering gear with hydraulic power booster.

**SERVICE BRAKE:** Full air brake on all wheels, dual air line system, internal expanding leading and trailing shoe type.

**EMERGENCY BRAKE (PARKING BRAKE):** Mechanically operated by hand brake lever, internal expanding duo-servo shoe type acting on drum at rear of auxiliary transmission.

**ENGINE RETARDER (EXHAUST BRAKE):** Electric-pneumatic operated shutter.

**SUSPENSION:** Front and Rear—Torque rods plus equalizer beams.

**TIRES:** Twelve (12). **FRONT:** Single x 4, 12.00 x 20-18 PR. **REAR:** Double x 4, 12.00 x 20-18 PR.



**OUTRIGGER HOUSINGS:** Four (4) fabricated independent boxes of high tensile strength steel plate. Front and rear boxes are pin connected and removable.

**OUTRIGGER BEAMS:** Four (4) fabricated reinforced box section beams of high tensile strength steel plate. Beams telescope to fully extended position of 2,800 mm (110.24") from longitudinal centerline of carrier to centerline of jackscrew.

**FLOATS:** Four (4) aluminum floats.

**HYDRAULIC OUTRIGGER ASSEMBLY:** Eight (8) double acting hydraulic cylinders provide independent horizontal and vertical movement of each beam.

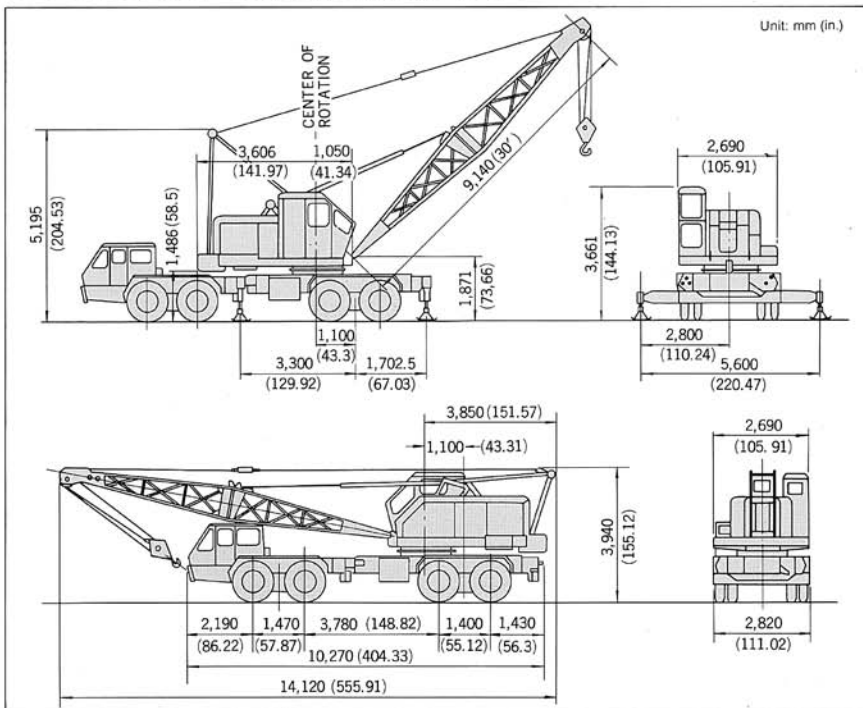
**CAB:** Steel, semi-under floor type, two men cab offset to left side of engine compartment, all windows safety glass, electric windshield wiper, full reclining driver seat, fixed assistant seat, sun visor and two large review mirrors. Crank down door window and side-by type right side window.

**LIGHTING:** Dual type sealed beam headlights, tail lights, stop light, directional signal lights, parking lights, fog lights, licence plate lights, clearance lights, backup light, cab dome light and reflector.

**● PERFORMANCE**  
**(Based on Nissan Diesel RD8 Engine)**

**MAX. TRAVEL SPEED** ..... 74 km/h (46 mph)  
**GRADEABILITY** tan  $\theta$  (G.V.W. 37,000 kg)..... 0.26%  
**MIN. TURNING RADIUS** ..... 11.8 m (38'-9")

# General Dimensions



# 36-M ton Truck Crane

51.82m Boom  
42.67m Boom + 12.19m Jib

## ● GENERAL DATA



**BASIC BOOM:** Two piece, open throat lattice type tubular boom consisting of a tapered base section and a tapered tip section having four offset boom point sheaves 451 mm (17.76") pitch dia. with anti-friction bearings. Sections are pin connected, have a 1,124 mm (44.25") deep x 1,156 mm (45.5") wide cross section and complete with suspension cable assemblies. High tensile steel chords all welded. Boom extendible to 51.82 m (170')

Basic length ..... 9.14 m (30')  
 Boom base section ..... 4.57 m (15')  
 Boom tip section ..... 4.57 m (15')

**BOOM INSERT SECTION (OPTIONAL):** Boom insert available for extension, tubular lattice type, high tensile steel chords, all welded, having 1,124 mm (44.25") deep x 1,156 mm (45.5") wide cross section and with suspension cable assemblies, pin connections.

Available in 3.05 m (10'), 6.10 m (20') and 9.14 m (30') long.

**BASIC JIB (OPTIONAL):** Open throat tubular lattice type, high tensile steel chords, all welded, two equal tapered sections, bolt connected, having a 406 mm (18") deep x 508 mm (20") wide cross section and with single jib point sheave, compression strut and guy cables assemblies. Extendible to 12.19 m (40'). For lifts not exceeding 4,530 kg (10,000 lbs.).

Basic length ..... 6.10 m (20')  
 Jib base section ..... 3.05 m (10')  
 Jib tip section ..... 3.05 m (10')

**JIB INSERT SECTION (OPTIONAL):** Jib insert available for extension; tubular lattice type, high tensile steel chords, all welded, with cable assemblies, bolt connections.

Available in 3.05 m (10') long.

**SUSPENSION WIRE ROPE:** Boom suspension wire rope, 30 mm (1.18") dia. Intermediate boom suspension wire rope, 18 mm (0.71") dia. [required when boom length is 39.62 m (130') or longer]—optional. Jib suspension wire rope, 18 mm (0.71") dia.—optional.



**HOOK BLOCKS:** 36.3 metric ton block with three sheaves, swivel hook, safety latch and seven (7) parts hoist line—standard.

13 metric ton block with single sheave, swivel hook, safety latch and three (3) part line—optional.

5 metric ton weighted ball hook with safety latch for job—optional.

**BOOM HOIST REEVING:** Twelve (12) parts line, 13 mm (0.55") dia. wire rope—spreader sheaves on plain bearings.

**POWER CONTROLLED LOAD LOWERING:** Planetary device for lowering load under power on left drum. Safe lowering through reverse planetary gearing in drum. External brake on drum engages planetary gears.

**BOOM BACKSTOP:** Telescoping type with spring bumper. Required for all boom lengths.

**WIRE ROPE GUIDE ROLLERS (OPTIONAL):** Use as required to eliminate wire rope interference.

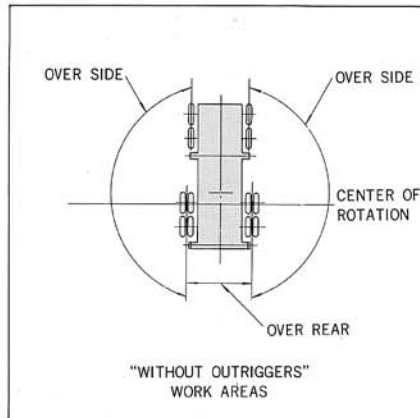
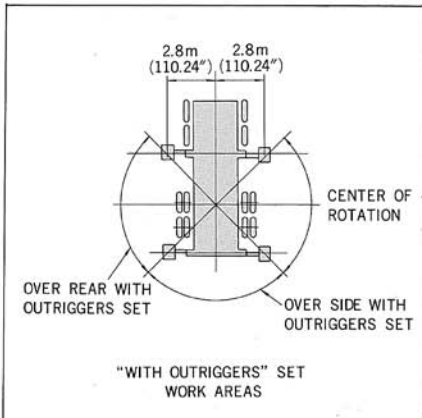
**WORKING WEIGHT:** Approx. 37,000 kg (81,600 lbs.) Including 9.14 m (30') boom, 36.3 metric ton hook block and 6,800 kg (15,000 lbs.) counterweight.

## DRUM WORKING DATA

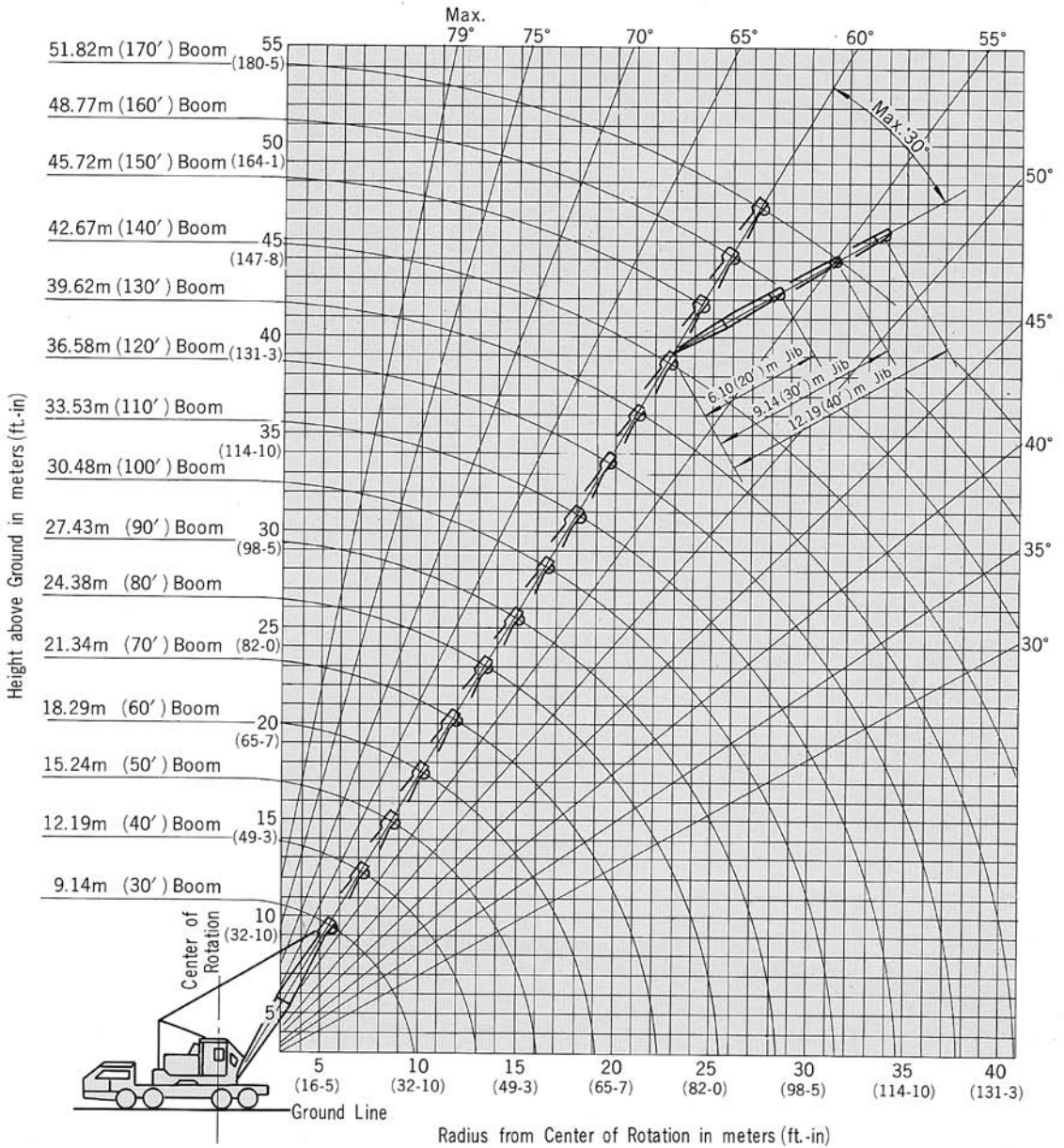
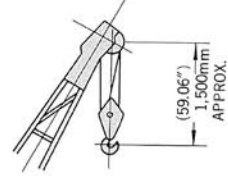
		L.H. Drum	R.H. Drum	Boom Hoist Drum
Drum Pitch Dia.		400 mm (15.75")	400 mm (15.75")	230 mm (9.06")
Drum Length		266 mm (10.47")	266 mm (10.47")	145 mm (5.71")
Cable Dia.		20 mm (0.79")	20 mm (0.79")	14 mm (0.55")
Capacity Total		130 m (427')	130 m (427')	95 m (312')
* Line Speed High	Hoisting	48 m/min (157.5 fpm)	48 m/min (157.5 fpm)	48 m/min (157.5 fpm)
	Lowering	31 m/min (101.7 fpm)	31 m/min (101.7 fpm)	28 m/min (91.9 fpm)
* Line Pull		7,450 kg (16,400 lbs.)	7,450 kg (16,400 lbs.)	—
Bare Drum		Groove	Groove	Smooth

\* Line Speed and Line Pull based on single line in normal gear shift and rated engine speed.

## ● WORKING AREAS



# Working Ranges



# Lifting Capacities

## RATED CRANE LOADS IN KGS (LBS.) – MAIN BOOM IN OVER SIDE AND REAR WORK AREAS WITH OUTRIGGERS FULLY EXTENDED AND SET

Operating Radius in Meters (Ft.-In.)	9.14 m (30') Boom	12.19 m (40') Boom	15.24 m (50') Boom	18.29 m (60') Boom	21.34 m (70') Boom	24.38 m (80') Boom	27.43 m (90') Boom	30.48 m (100') Boom
3.65 (12-0)	36,300 (80,000)							
4.0 (13-1)	32,300 (71,210)	32,200 (70,990)						
5.0 (16-5)	26,000 (57,320)	25,900 (57,100)	25,800 (56,880)					
6.0 (19-8)	21,400 (47,180)	21,300 (46,960)	21,200 (46,740)	21,100 (46,520)	21,000 (46,300)			
7.0 (23-0)	17,500 (38,580)	17,400 (38,360)	17,300 (38,140)	17,200 (37,920)	17,100 (37,700)	17,000 (37,480)		
8.0 (26-3)	14,700 (32,410)	14,600 (32,190)	14,500 (31,970)	14,400 (31,750)	14,300 (31,530)	14,200 (31,310)	14,100 (31,090)	14,000 (30,860)
9.0 (29-6)	12,600 (27,780)	12,500 (27,560)	12,400 (27,340)	12,300 (27,120)	12,200 (26,900)	12,100 (26,680)	12,000 (26,460)	11,900 (26,230)
10-0 (32-10)		11,000 (24,250)	10,900 (24,030)	10,800 (23,810)	10,700 (23,590)	10,600 (23,370)	10,500 (23,150)	10,400 (22,930)
12.0 (39-4)		8,790 (19,380)	8,690 (19,160)	8,590 (18,940)	8,490 (18,720)	8,390 (18,500)	8,290 (18,280)	8,190 (18,060)
14.0 (45-11)			7,000 (15,430)	6,900 (15,210)	6,800 (14,990)	6,700 (14,770)	6,600 (14,550)	6,500 (14,330)
16.0 (52-6)				5,680 (12,520)	5,580 (12,300)	5,490 (12,100)	5,390 (11,880)	5,300 (11,680)
18.0 (59-1)				4,810 (10,600)	4,710 (10,380)	4,620 (10,190)	4,520 (9,960)	4,430 (9,970)
20.0 (65-7)					4,000 (8,820)	3,910 (8,620)	3,820 (8,420)	3,730 (8,220)
22.0 (72-2)						3,380 (7,450)	3,290 (7,250)	3,200 (7,050)
24.0 (78-9)							2,860 (6,310)	2,770 (6,110)
26.0 (85-4)							2,510 (5,530)	2,420 (5,340)
28.0 (91-10)								2,120 (4,670)
Operating Radius in Meters (Ft.-In.)	33.53 m (110') Boom	36.58 m (120') Boom	39.62 m (130') Boom	42.67 m (140') Boom	45.72 m (150') Boom	48.77 m (160') Boom	51.82 m (170') Boom	
9.0 (29-6)	11,800 (26,010)	11,700 (25,790)						
10.0 (32-10)	10,300 (22,710)	10,200 (22,490)	10,100 (22,270)					
12.0 (39-4)	8,090 (17,840)	7,990 (17,610)	7,890 (17,390)	7,790 (17,170)	7,690 (16,950)	6,900 (15,210)	5,700 (12,570)	
14.0 (45-11)	6,400 (14,110)	6,300 (13,890)	6,200 (13,670)	6,100 (13,450)	6,000 (13,230)	5,800 (12,790)	5,050 (11,130)	
16.0 (52-6)	5,200 (11,460)	5,110 (11,270)	5,010 (11,050)	4,920 (10,850)	4,820 (10,630)	4,720 (10,410)	4,400 (9,700)	
18.0 (59-1)	4,330 (9,550)	4,240 (9,350)	4,140 (9,130)	4,050 (8,930)	3,950 (8,710)	3,850 (8,490)	3,750 (8,270)	
20.0 (65-7)	3,640 (8,020)	3,550 (7,830)	3,460 (7,630)	3,370 (7,430)	3,280 (7,230)	3,190 (7,030)	3,100 (6,830)	
22.0 (72-2)	3,110 (6,860)	3,020 (6,660)	2,930 (6,460)	2,840 (6,260)	2,750 (6,060)	2,660 (5,860)	2,570 (5,670)	
24.0 (78-9)	2,680 (5,910)	2,590 (5,710)	2,500 (5,510)	2,410 (5,310)	2,320 (5,110)	2,230 (4,920)	2,140 (4,720)	
26.0 (85-4)	2,330 (5,140)	2,240 (4,940)	2,150 (4,740)	2,060 (4,540)	1,970 (4,340)	1,880 (4,140)	1,790 (3,950)	
28.0 (91-10)	2,030 (4,480)	1,940 (4,280)	1,850 (4,080)	1,760 (3,880)	1,670 (3,680)	1,580 (3,480)	1,490 (3,280)	
30.0 (98-5)	1,770 (3,900)	1,680 (3,700)	1,590 (3,510)	1,500 (3,310)	1,410 (3,110)	1,320 (2,910)	1,230 (2,710)	
32.0 (105-0)		1,460 (3,220)	1,370 (3,020)	1,280 (2,820)	1,190 (2,620)	1,100 (2,430)	1,010 (2,230)	
34.0 (111-7)			1,180 (2,600)	1,090 (2,400)	1,000 (2,200)	910 (2,010)	820 (1,810)	

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



**RATED CRANE LOADS IN KGS (LBS.) – MAIN BOOM – WITHOUT OUTRIGGERS**

Operating Radius in Meters (Ft.-In.)	9.14 m (30') Boom		12.19 m (40') Boom		15.24 m (50') Boom		18.29 m (60') Boom	
	Over Side	Over Rear	Over Side	Over Rear	Over Side	Over Rear	Over Side	Over Rear
3.65 (12-0)	14,720 (32,450)	22,000 (48,500)						
4.0 (13-1)	13,110 (28,900)	19,450 (42,880)	13,010 (28,680)	19,350 (42,660)				
5.0 (16-5)	10,010 (22,070)	14,230 (31,370)	9,910 (21,850)	14,140 (31,170)	9,810 (21,630)	14,060 (31,000)		
6.0 (19-8)	8,010 (17,660)	11,150 (24,580)	7,910 (17,440)	11,070 (24,410)	7,810 (17,220)	10,980 (24,210)	7,710 (17,000)	10,900 (24,030)
7.0 (23-0)	6,680 (14,730)	9,120 (20,110)	6,580 (14,510)	9,040 (19,930)	6,480 (14,290)	8,950 (19,730)	6,380 (14,070)	8,870 (19,550)
8.0 (26-3)	5,660 (12,480)	7,680 (16,930)	5,570 (12,280)	7,600 (16,760)	5,480 (12,080)	7,510 (16,560)	5,390 (11,880)	7,430 (16,380)
9.0 (29-6)	4,900 (10,800)	6,610 (14,570)	4,810 (10,600)	6,520 (14,370)	4,720 (10,410)	6,440 (14,200)	4,630 (10,210)	6,350 (14,000)
10.0 (32-10)			4,180 (9,220)	5,690 (12,540)	4,090 (9,020)	5,610 (12,370)	4,000 (8,820)	5,520 (12,170)
12.0 (39-4)			3,260 (7,190)	4,490 (9,900)	3,180 (7,010)	4,400 (9,700)	3,100 (6,830)	4,320 (9,520)
14.0 (45-11)					2,550 (5,620)	3,570 (7,870)	2,470 (5,450)	3,490 (7,690)
16.0 (52-6)							2,040 (4,500)	2,880 (6,350)
18.0 (59-1)							1,660 (3,660)	2,420 (5,340)
Operating Radius in Meters (Ft.-In.)	21.34 m (70') Boom		24.38 m (80') Boom		27.43 m (90') Boom		30.48 m (100') Boom	
	Over Side	Over Rear	Over Side	Over Rear	Over Side	Over Rear	Over Side	Over Rear
6.0 (19-8)	7,610 (16,780)	10,810 (23,830)						
7.0 (23-0)	6,280 (13,850)	8,780 (19,360)	6,180 (13,620)	8,690 (19,160)				
8.0 (26-3)	5,300 (11,680)	7,340 (16,180)	5,210 (11,490)	7,260 (16,010)	5,120 (11,290)	7,170 (15,810)	5,030 (11,090)	7,080 (15,610)
9.0 (29-6)	4,540 (10,010)	6,270 (13,820)	4,450 (9,810)	6,180 (13,620)	4,360 (9,610)	6,100 (13,450)	4,270 (9,410)	6,010 (13,250)
10.0 (32-10)	3,910 (8,620)	5,440 (11,990)	3,820 (8,420)	5,350 (11,790)	3,730 (8,220)	5,260 (11,600)	3,640 (8,020)	5,180 (11,420)
12.0 (39-4)	3,020 (6,660)	4,230 (9,330)	2,940 (6,480)	4,150 (9,150)	2,860 (6,310)	4,060 (8,950)	2,780 (6,130)	3,970 (8,750)
14.0 (45-11)	2,390 (5,270)	3,400 (7,500)	2,310 (5,090)	3,320 (7,320)	2,230 (4,920)	3,230 (7,120)	2,150 (4,740)	3,140 (6,920)
16.0 (52-6)	1,960 (4,320)	2,800 (6,170)	1,880 (4,140)	2,710 (5,970)	1,800 (3,970)	2,620 (5,780)	1,720 (3,790)	2,540 (5,600)
18.0 (59-1)	1,580 (3,480)	2,330 (5,140)	1,500 (3,310)	2,250 (4,960)	1,420 (3,130)	2,160 (4,760)	1,340 (2,950)	2,070 (4,560)
20.0 (65-7)	1,320 (2,910)	1,970 (4,340)	1,240 (2,730)	1,880 (4,140)	1,160 (2,560)	1,800 (3,970)	1,080 (2,380)	1,710 (3,770)
22.0 (72-2)			1,020 (2,250)	1,590 (3,510)	940 (2,070)	1,500 (3,310)	860 (1,900)	1,410 (3,110)
24.0 (78-9)					750 (1,650)	1,260 (2,780)	670 (1,480)	1,170 (2,580)
26.0 (85-4)					580 (1,280)	1,050 (2,310)	500 (1,100)	970 (2,140)

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

- Operating radius is the horizontal distance from center-line of rotation to a vertical line through the center of gravity of the load.
- Gross crane ratings shown are for units mounted on the Nissan KG50TXL crane carrier with tandem front and rear axles.
- Ratings do not exceed 78% of tipping loads. Deduct weight of hook block(s), slings, cement bucket and all other load handling accessories from main boom or jib rating shown.
- Ratings with outriggers are based on outriggers extended to a fulcrum point 2.80 m (110.24") from center of carrier.
- Ratings without outriggers depend upon proper inflation capacity, and condition of tires.
- Areas on plate where no ratings are shown, operation is not intended or approved.
- Ratings are contingent upon the machine being equipped with the proper P&H KOBELCO boom.
- Gantry must be raised position for all operating conditions.
- Boom backstops are required for all boom lengths.
- Boom insert and guy cables must be arranged as shown in the "Owner and Operator's Manual".
- Standard boom hoist reeving is 12 parts line.
- Ratings are based on counterweight of 6,800 kg (15,000 lbs.)
- Mid-point suspension (centerhitch) required when boom length is 39.62 m (130') or longer.
- When boom is equipped with jib, main hook ratings must be reduced by 680 kg (1,500 lbs.) for 6.10 m (20') or 9.14 m (30') jib and 900 kg (1,980 lbs.) for 12.19 m (40') jib.
- Ratings shown are based on freely suspended loads and make no allowance for such factors as wind effect on lifted load, ground conditions, out-of-level, operating speeds or any other conditions that could be detrimental to the safe operation of this equipment. The operator, therefore, has the responsibility to judge the existing conditions and reduce lifted loads and operating speeds accordingly.
- Safe loads depend upon ground conditions, boom length, radius of operation and proper handling, all of which must be taken into account by the operation.

**NOTE:**

This P&H KOBELCO model 435A-TC meets the requirements of Japanese Mobile Construction Type Crane Safety Code.

**WARNING:**

- When operating crane "without outriggers" load lifted over rear and swung over side, will increase in radius due to tire deflection. This increase in radius must be compensated for by raising boom, or machine tip over.
- Welding or other repair to tubular steel booms may weaken the structure. See your P&H KOBELCO dealer for authorized boom repair service. Unauthorized repair will void all warranties.
- The wind effect on the lifted load can cause sufficient side load to overstress boom or jib structure. When suspended load will not remain in line with boom, derate chart 25%. We recommend stopping operation when wind is above 10 m/sec. (20 mph) and tying off, or lowering, boom when wind is above 16 m/sec. (35 mph). When continued operation under windy conditions is necessary, consult factory for special derate load rating chart.

**WEIGHT OF HOOK BLOCK**

Hook Blocks	Kg (Lbs.)
36.3 metric ton block with three sheaves (Std.)	300 (700)
13 metric ton block with single sheave (Opt.)	250 (550)
5 metric ton ball hook — for jib (Opt.)	120 (270)

**MAXIMUM JIB RATINGS FOR LIFTING CRANE SERVICE — KG (LBS.)**

Offset Angle Jib on Boom Under Full Load	6.10 m (20') Jib	9.14 m (30') Jib	12.19 m (40') Jib
10°	4,530 (10,000)	3,630 (8,000)	2,720 (6,000)
20°	4,030 (8,900)	3,180 (7,000)	2,270 (5,000)
30° Max.	3,630 (8,000)	2,720 (6,000)	1,810 (4,000)

- Jib crane ratings are based on strength of materials.
- Jib crane ratings at any radius from center of rotation are the same as crane ratings shown in table for main boom when operated at the same radius, but do not exceed maximum jib ratings shown.
- Maximum jib operating radius is not to exceed maximum operating radius of main boom on which it is being used.
- For bucket rating on jib, deduct 20% from maximum job ratings shown.
- Use of outriggers is recommended when boom is equipped with jib.

**MAXIMUM BOOM LENGTH TO LIFT OFF GROUND IN METERS (FT.) With 6,800 kg (15,000 lbs.) Counterweight**

Boom Over	WITH OUTRIGGERS SET	
	Boom Only	Boom and Jib
Side	42.67 m (140')	30.48 m + 12.19 m (100' + 40')
Rear	51.82 m (170')	42.67 m + 12.19 m (140' + 40')
Boom Over	WITHOUT OUTRIGGERS SET	
	Boom Only	Boom and Jib
Side	27.43 m (90')	21.43 m + 6.10 m (70' + 20')
Rear	30.48 m (100')	24.38 m + 6.10 m (80' + 20')

**MAIN HOIST REEIVING — 20 mm (0.79") dia.**

No. of Parts of Line	1	2	3	4
Max. Load — kg (lbs.)	5,000 (11,000)	10,000 (22,000)	15,000 (33,100)	20,000 (44,100)
No. of Parts of Line	5	6	7	
Max. Load — kg (lbs.)	25,000 (55,100)	30,000 (66,100)	36,300 (80,000)	

**BOOM MAKE-UP ARRANGEMENT CHART**

Boom Length Meters (Ft.)	Boom Arrangement
12.19 (40)	Base-A-Tip
15.24 (50)	Base-B-Tip
18.29 (60)	Base-A-B-Tip
21.23 (70)	Base-A-C-Tip
24.38 (80)	Base-B-C-Tip
27.43 (90)	Base-A-B-C-Tip
30.48 (100)	Base-A-C-C-Tip
33.53 (110)	Base-B-C-C-Tip
36.58 (120)	Base-A-B-C-C-Tip
39.62 (130)	Base-A-C-C-C-Tip
42.67 (140)	Base-B-C-C-C-Tip
45.72 (150)	Base-A-C-B-C-C-Tip
48.67 (160)	Base-B-B-C-C-C-Tip
51.82 (170)	Base-A-C-B-B-C-C-Tip

Base = 4.57 m (15') Tip = 4.57 m (15')  
 Inserts: A = 3.05 m (10'), B = 6.10 m (20'); C = 9.14 m (30')



# Clamshell

## 3.63metric ton Rated Load 15.24m Maximum Boom

### • GENERAL DATA



**BASIC BOOM:** Two piece, open throat lattice type tubular boom consisting of a tapered base section and a tapered tip section having four offset boom point sheaves 451 mm (17.76") pitch dia. with anti-friction bearings. Sections are pin connected and complete with suspension cable assemblies. High tensile steel chords all welded. Boom extendible to 15.24 m (50')

Basic length ..... 9.14 m (30')  
 Boom base section ..... 4.57 m (15')  
 Boom tip section ..... 4.57 m (15')

**BOOM INSERT SECTION (OPTIONAL):** Boom insert available for extension, with suspension cable assemblies, tubular lattice type, high tensile steel chords, all welded, pin connections. Available in 3.05 m (10') and 6.10 m (20') long.

**BOOM HOIST REEVING:** Twelve (12) parts line.

**BOOM BACKSTOP:** Telescoping type with spring bumper.

**TAGLINE WINDER:** Power operated friction disc type. Spring type (optional).

**WORKING WEIGHT:** Approx. 40,350 kg (88,700 lbs.) Including 9.14 m (30') boom, 0.8 m<sup>3</sup> (1 cu. yd.) bucket and 6,800 kg (15,000 lbs.) counterweight, furnished as standard.

### DRUM SHAFT ASSEMBLY

Clamshell Drums	Pitch Dia.	Cable Dia.	* Line Pulls	* Line Speeds
L.H. Grooved Drum	400 mm (15.75')	20 mm (0.79')	7,450 kg (16,400 lbs.)	48 m/min (158 fpm)
R.H. Grooves Drum	400 mm (15.75')	20 mm (0.79')	7,450 kg (16,400 lbs.)	48 m/min (158 fpm)

\* Line Pull and Line Speed based on single part line in normal gear shift and rated engine speed.

### CLAMSHELL RATED LOADS IN KG (LBS.)

Operating Radius in Meters (Ft.-In.)	9.14 m (30') Boom	12.19 m (40') Boom	15.24 m (50') Boom
6.0 (19-8)	3,630 (8,000)		
7.0 (23-0)	3,630 (8,000)		
8.0 (26-3)	3,630 (8,000)	3,630 (8,000)	
9.0 (29-6)		3,630 (8,000)	3,630 (8,000)
10.0 (32-10)		3,630 (8,000)	3,630 (8,000)
11.0 (36-1)			3,250 (7,160)

Clamshell ratings shown also apply to magnet, grapple and all other material handling buckets except dragline which is rated separately. For clamshell and magnet operations, the weight of bucket or magnet is considered a part of the load and the total weight of bucket plus contents or magnet plus load must not exceed the corresponding ratings shown.

Ratings are contingent upon machine being equipped with proper P&H KOBELCO boom, with gantry in raised position.

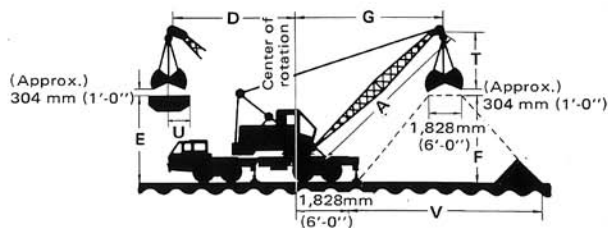
- Maximum boom length recommended for clamshell operation ..... 15.24 m (50')
- Limit on clamshell rating ..... 3,630 kg (8,000 lbs.)
- Maximum allowable heavy digging bucket size ..... 0.8 m<sup>3</sup> (1 cu. yd.)

Larger size may be approved depending on type of material, type of bucket - within limitations of rating charts.

**NOTE:** To select bucket size best suited for your application, use the following formula: Refer to charts above to obtain clamshell capacity in kgs. Clamshell capacity = (cubic meter capacity of bucket) x (weight of material per cubic meter) + (weight of specific clamshell bucket).

### CLAMSHELL WORKING RANGES IN METERS (FT.-IN.)

A - Boom Length	9.14 m (30')		12.19 m (40')		15.24 m (50')	
D - Operating Radius in Meters (Ft.-In.)	HEIGHT AND 1/2 WIDTH OF BIN					
	E	U	E	U	E	U
6.0 (19-8)	6.3 (20-8)	1.8 (5-11)				
7.0 (23-0)	5.6 (18-4)	2.3 (7-7)	9.2 (30-2)	1.6 (5-3)		
8.0 (26-3)	4.6 (15-1)	3.2 (10-6)	8.6 (28-3)	2.0 (6-7)		
9.0 (29-6)			7.8 (25-7)	2.5 (8-2)	11.6 (38-1)	1.8 (5-11)
10.0 (32-10)			6.9 (22-8)	3.1 (10-2)	11.0 (36-1)	2.1 (6-11)
11.0 (36-1)					10.2 (33-6)	2.5 (8-2)
12.0 (39-4)					9.2 (30-2)	3.0 (9-10)
Height and Width of Stock Pile	F	V	F	V	F	V
	4.72 (15-6)	10.67 (35-0)	6.86 (22-6)	14.94 (49-0)	8.99 (29-6)	19.20 (63-0)
G - Radius	7.77 (25-6)		9.91 (32-6)		12.04 (39-6)	
T - Bucket Height	Varies up to 3.00 m (9'-10") depending upon make and capacity of bucket.					





# 435A-TC

**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 going to press.

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