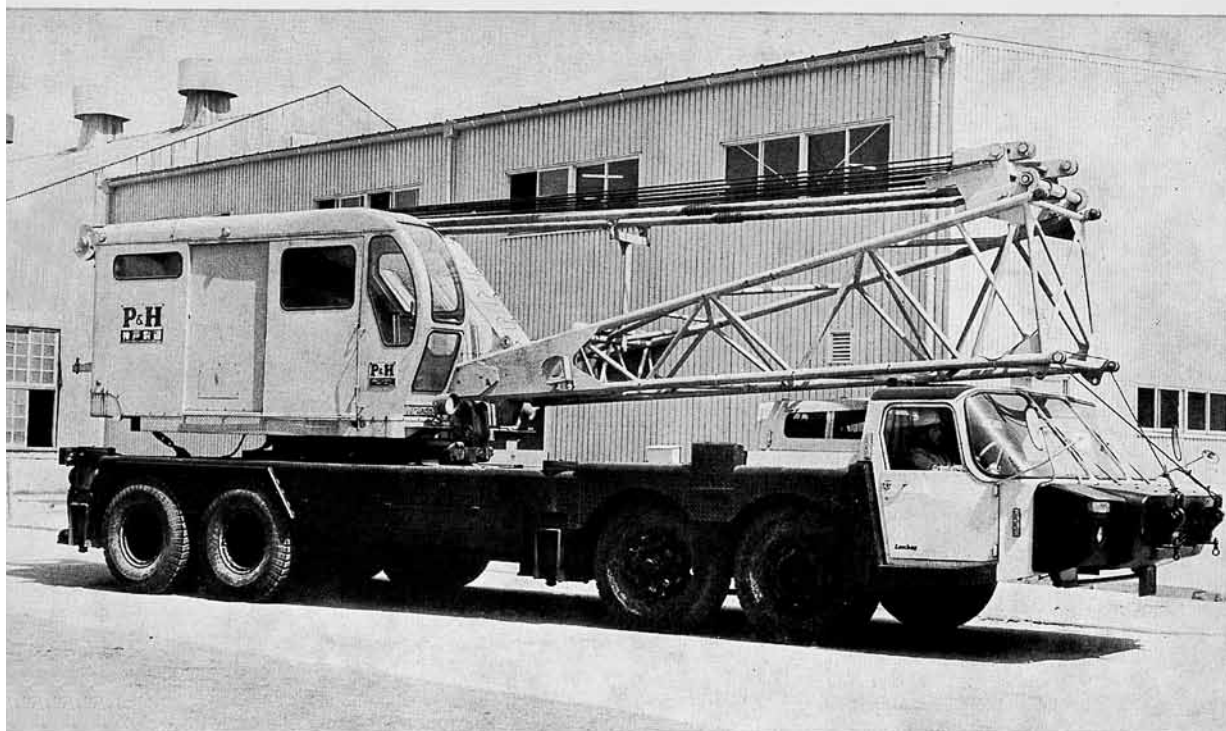


# P&H

# 670-TC

CRANE, CLAMSHELL



## P&H 70 TON TRUCK CRANE . . . THE CHAMPION WEIGHT LIFTER with EXTRA SAFETY, STABILITY and RELIABILITY

- Exclusive P&H Magnatorque swing provides silk-smooth swing motion, requires no adjustments, practically eliminates maintenance of swingers.
- Exclusive P&H Power Box design completely seals all gears, provides automatic lubrication from oil bath.
- Mitsubishi K701 carrier perfectly matched to P&H upper for single source service responsibility for entire rig. Frame and outriggers are High tensile strength steel for greatest strength.
- Independent precision planetary boom hoist is fast, smooth, and "Triple-Safe". Standard equipment.
- P&H hydraulic control system with power assist provides easy and precise control of machine functions.
- High tensile alloy steel tubular chord boom furnished as standard, provides greater strength for longest booms without "load-robbing" weight.
- 10 speeds forward with 2 in reverse increase between job mobility, provide the right gear ratio for every situation.
- Air brakes, on all 8 wheels and Maxi-brakes are standard on rear wheels for safe, fast and effective operation.
- Hydraulic Outriggers with aluminum floats, standard.

Bulletin No. KP-670T-3



## KOBE STEEL, LTD.

# BASIC MACHINE

## UPPER MACHINERY

### POWER PLANT:

#### Diesel:

Mitsubishi, 6DC20C, 6 cyl. (with transmission) 138 ps @ 1800 rpm (standard)  
 Cummins, H743C, 6 cyl. (with transmission) 135 ps @ 1800 rpm (optional extra)

**THROTTLE:** Mitsubishi and Cummins engines—Twist grip on swing lever (standard).

**TRANSMISSION:** Three speed standard. Engine clutch and transmission shifter controls at operator's station (standard).

**FUEL TANK** ..... Capacity—330 ℓ (85 gal.)

**CONTROLS:** Full flow power hydraulic.

**SWING UNITS:** Swing motion thru two magnetorque units.

**CLUTCHES:** Band type, internal expanding, separate clutch for each machine function.

**BRAKES:** (Front and Rear drum) band type—external contracting—full wrap design—with spring set fail safe device.

**DUAL BRAKES:** (Optional) Additional hydraulic brakes with spring set safety device operates in parallel with standard brake. Planetary load lowering option cannot be used with dual brake on same drum.

**BOOM HOIST ASSEMBLY:** Independent internal expanding band type clutch, with automatic brake and planetary lowering. Twin external safety ratchets for locking main drum and planetary drum. Main drum mounted on anti-friction bearings.  
 Boom hoist line speed

2nd

Raising ..... 30 m/min. (100 F.P.M.)  
 Lowering ..... 20 m/min. (65 F.P.M.)

**MAIN DRUMS:** Drums in tandem, mounted on anti-friction bearings (see separate sheets covering attachments for further details).

**THIRD DRUM:** Mounts on extension of front drum shaft to the left of main drum. Does not interfere with any other machine function or front end attachment. (Optional extra.)

**GANTRY:** High gantry, folding type, for use with all attachments.

**COUNTERWEIGHT:** One piece external, pin connected ..... 10,200 kg (22,500 lbs.)

Power hydraulic removal available.

**TYPE OF FASTENING TO LOWER:** 6 adjustable hook rollers, one double front, two double rear.

**SWING ROLLERS:** 28 rollers, live roller circle.

**SWING GEAR:** Internal cut teeth—1,494 mm (58.8") pitch dia.

**ROTATING SPEED** ..... 4.3 R.P.M.

**SWING BRAKE:** External band—spring set, hydraulic release.

## MITSUBISHI K70I CARRIER

8 Wheel, 4 Wheel Drive, 12 Tires

**WEIGHT:** Including turret and standard hydraulic type outriggers, with 13:00x20—16 P.R. tires ..... approx. 28,000 kg (62,000 lbs.)

**FRAME:** Box section frame members of High tensile strength steel construction housings.

**OUTRIGGER HOUSINGS:** Two independent housings, front and rear, pin connected and removable.

**OUTRIGGER BEAMS:** High tensile strength steel box, full length—reinforced. Jack screw—at beam ends.

Extended position from center of carrier ..... 3,130 mm (10'-3")

**HYDRAULIC OUTRIGGERS:** Total of 8 double acting hydraulic cylinders provide independent horizontal and vertical motion of each beam, solenoid valve controlled.

### POWER PLANT:

**Diesel:** Mitsubishi 8DC20W, 8 cyl., 250 PS @ 2200 rpm (std.)

**CLUTCH:** Single dry plate

### TRANSMISSIONS:

For Mitsubishi 8DC20W:

Main—5 speed forward, 1 reverse.

Auxiliary—2 speed.

**Max. travelling speed** ..... 55 km/h (34 mph)

**Min. turning radius** ..... 12 m (40')

**Climbing ability (sin θ)** ..... 0.270

**BRAKES—SERVICE:** Air on all wheels—Maxi brakes rear.

### SUSPENSION:

**Front and Rear:** Torque rods and equalizer bogie beams.

**STEERING:** Ball & Nut type with hydraulic power booster.

**RADIATOR:** Vertical flat tube and fin type, core thermostatic temperature control.

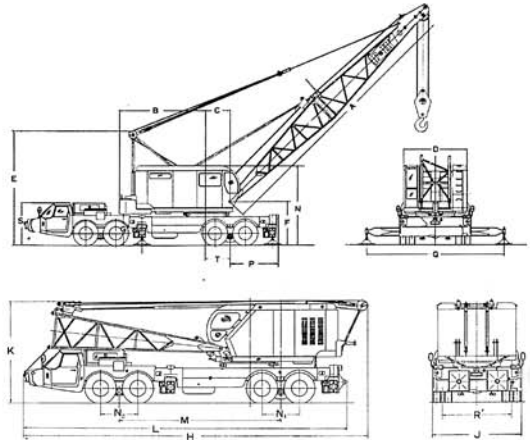
**FUEL TANK CAPACITY** ..... 300 ℓ (78 gal.)

**TIRES:** Twelve—13:00x20—16 PR (standard).

**CAB:** Steel—two men type low line system—safety glass.

**LIGHTS:** Headlights, tail lights, stop lights, directional signal lights front and rear, license plate lights, clearance lights on outrigger housings and truck cab. (Clearance lights also furnished on crane cab.) Reflectors on rear. All rear lights recessed in frame, also license plate bracket. 24 volt electrical system.

**EQUIPMENT:** Front bumper, full fenders, skirts, running boards, hood, rigging compartment, frame decking, leatherette cushion seat, 12 volt battery, horn, rear view mirror, electrical windshield wiper, air compressor reserve air tank with hose extension, illuminated instrument panel, with speedometer, ammeter, oil pressure gauge, fuel gauge, air pressure gauge, water temperature indicator, low air pressure indicator light, tachometer, towing hooks front and rear, dash mounted air brake valve, tools and accessories including one hydraulic jack for truck use.



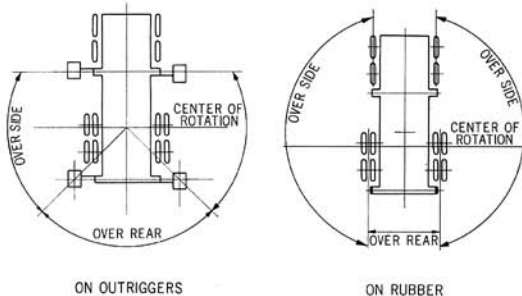
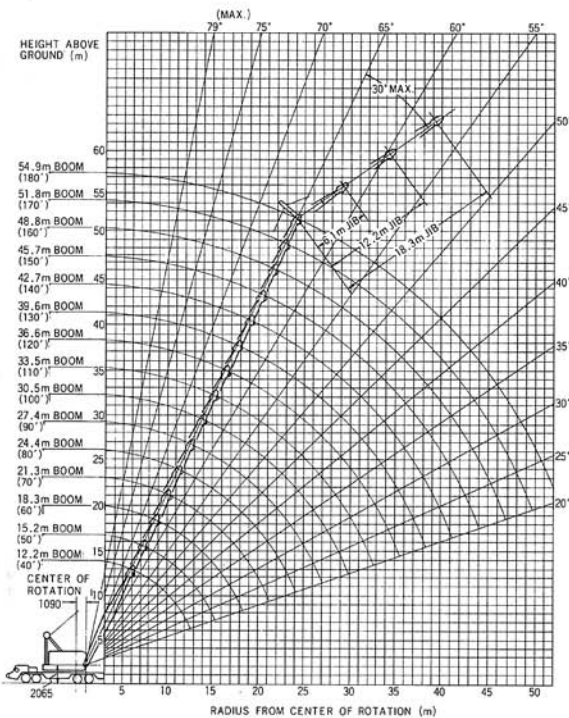
## GENERAL DIMENSIONS

	mm	(Ft.-Ins)
A Length, basic boom	12,190	(40-0)
B Radius of rear end (counterweights)	3,940	(12-1 1/2)
C Center of rotation to boom foot pin	1,090	(3-6 1/2)
D Width of cab	2,950	(9-8 1/2)
E Clearance height over gantry (raised)	5,530	(18-1 3/4)
F Height from ground to boom foot pin	2,065	(6-9 1/2)
G Counterweight ground clearance	1,520	(4-11 1/2)
H Overall length (travelling posture)	12,170	(39-11)
J Overall width (travelling posture)	3,300	(10-10)
K Overall height (travelling posture)	4,000	(13-1 1/2)
L Length, carrier	11,620	(38-2)
M Wheelbase	5,800	(19-3/4)
N1 Wheelbase (rear)	1,350	(4-5 1/2)
N2 Wheelbase (front)	1,350	(4-5 1/2)
— Tread (front)	2,490	(8-2 1/2)
— Tread (rear)	2,510	(8-2 3/4)
P Center of rear bogie to rear of carrier	2,090	(6-7 3/4)
Q Center to center of outrigger floats (fully extended)	6,260	(20-6 1/2)
S Height of carrier cab	2,100	(6-10 3/4)
T Crane offset—center of rotation to center of rear bogie	1,200	(3-11 1/4)
— Min. ground clearance	290	(0-11 1/4)
<b>Axle Loads (Travelling Posture)</b>		
Front	13,300 kg	(29,320 lbs)
Rear	33,400 kg	(73,630 lbs)
Total	46,700 kg	(102,950 lbs)

## P&H CRANE BOOM

The P&H boom has lattice-type, all-welded construction and chords of tubular high tensile strength alloy steel which provides the strongest crane boom available with the lowest relative weight.

- The P&H open-throat design provides greater load clearance. Boom point sheaves ride on anti-friction bearings for longer wear.
- Booms feature an "offset" head for added clearance factor which gives increased lifting height for each boom length.
- P&H pin connections permit fast, easy erection and takedown.



AREAS OF OPERATION

## CRANE SPECIFICATIONS

### GENERAL DATA

**BOOM:** Tubular High tensile strength steel chords [1,270 mm (50") × 1,270 mm (50") chordal dimension] lattice construction. Basic length, pin connected in two equal sections...12.19 m (40 ft.) Open throat with five boom point sheaves on offset boom point on anti-friction bearings—pitch diameter..... 475 mm (18 3/4") 12 part boom hoist reeving, standard. Roller type boom point sheave guard (optional extra).

**HOOKE BLOCK:** 25 ton Single sheave with swivel hook and three part hoist line standard. Additional parts of line optional extra.

**POWER CONTROLLED LOAD LOWERING:** Planetary device for controlling load lowering speed with engine. Standard on both front and rear main hoist drums.

**THIRD HOIST DRUM:** Mounted on extension of main front drum shaft—optional extra.

**BOOM BACKSTOP:** Telescoping type with spring bumper. (optional extra)

**GANTRY:** High gantry—folding type (standard).

**WORKING WEIGHT:** [Including block]...59,300 kg (130,700 lbs.) (Counterweight included in working weight and removable 10,200 kg (22,500 lbs.).)

### DRUM SHAFT ASSEMBLY

Lagging Smooth P.D.	Cable Dia.	Max. Cable Capacity	*Line Pull	*Line Speed
Front—420 mm (16 1/2")	24 mm (3/4")	205 m (672')	15,300 kg (33,660 lbs)	36.9 m/min (121 fpm)
Rear—416 mm (16 3/8")	20 mm (3/4")	250 m (820')	15,000 kg (33,000 lbs)	36.5 m/min (120 fpm)

\*Line pulls and speeds based on single line and first layer of rope and at 2nd of transmission.

### HOIST REEVING

Number of Parts of Main Hoist Reeving	1	2	3	4	
Maximum Load in kg (Lbs.)	7,000 (15,400)	14,000 (30,800)	21,000 (46,200)	28,000 (61,600)	
5	6	7	8	9	10
35,000 (77,000)	42,000 (92,400)	49,000 (107,800)	56,000 (123,200)	63,000 (138,600)	70,000 (154,000)

### MAXIMUM JIB RATINGS in Kg (Lbs.)

Offset Angle Jib to Boom under Full Load	6.1 m (20') Jib	12.19 m (40') Jib	18.29 m (60') Jib
10°	10,000 (22,000)	5,600 (12,340)	3,650 (7,990)
20°	7,250 (15,970)	5,000 (11,000)	3,200 (6,990)
30° (Max.)	5,900 (12,970)	4,000 (8,820)	2,700 (5,990)

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

### MAXIMUM BOOM LENGTH TO LIFT OFF GROUND in Meters (Ft.)

	WITH OUTRIGGERS		WITHOUT OUTRIGGERS
	Boom Only	Boom & Jib	Boom Only
Side	54.86 (180)	48.77 + 12.19 (160) (40)	36.58 (120)
Rear	54.86 (180)	*54.86 + 18.29 (60)	36.58 (120)

\*This length needs front bumper weight. (2,700 kg) (opt. extra)

**CRANE RATED LOADS in Kg (Lbs.) WITH OUTRIGGERS (Over Side and Over Rear)**

Operating Radius in m (Ft.)	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	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	54.86 m (180') Boom
3.5 (11-6)	70,000 (154,300)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3.65 (12-0)	70,000 (154,300)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4.0 (13-1)	66,600 (146,900)	66,400 (146,400)	...	...	...	...	...	...	...	...	...	...	...	...	...
4.5 (14-9)	61,800 (136,300)	61,600 (135,800)	61,400 (135,400)	...	...	...	...	...	...	...	...	...	...	...	...
5 (16-5)	57,100 (125,900)	56,900 (125,500)	56,700 (125,000)	56,500 (124,600)	...	...	...	...	...	...	...	...	...	...	...
6 (19-8)	48,300 (106,500)	48,100 (106,100)	47,900 (105,600)	47,700 (105,200)	47,500 (104,700)	42,000 (92,600)	...	...	...	...	...	...	...	...	...
7 (22-11)	38,900 (85,800)	38,700 (85,300)	38,500 (84,900)	38,300 (84,500)	38,100 (84,000)	37,900 (83,600)	35,000 (77,200)	...	...	...	...	...	...	...	...
8 (26-3)	30,700 (67,700)	30,500 (67,300)	30,300 (66,800)	30,100 (66,400)	29,900 (66,000)	29,700 (65,500)	29,500 (65,000)	29,300 (64,600)	29,100 (64,200)	28,800 (63,700)	...	...	...	...	...
9 (29-6)	24,900 (54,900)	24,800 (54,700)	24,700 (54,500)	24,600 (54,400)	24,500 (54,300)	24,300 (54,000)	24,200 (53,600)	24,000 (53,200)	23,800 (52,800)	23,600 (52,500)	23,000 (50,700)	...	...	...	...
10 (32-10)	21,200 (46,700)	21,100 (46,500)	21,000 (46,300)	20,900 (46,100)	20,800 (45,900)	20,700 (45,600)	20,600 (45,400)	20,500 (45,200)	20,400 (45,000)	20,200 (44,500)	19,900 (43,900)	19,600 (43,200)	...	...	...
12 (39-4)	16,200 (35,700)	16,100 (35,500)	16,000 (35,300)	15,900 (35,100)	15,800 (34,800)	15,700 (34,600)	15,600 (34,400)	15,500 (34,200)	15,400 (34,000)	15,300 (33,700)	15,200 (33,500)	15,000 (33,100)	14,800 (32,600)	14,500 (32,000)	...
14 (45-11)	...	13,400 (29,500)	13,300 (29,100)	13,200 (28,700)	13,100 (28,300)	12,800 (27,800)	12,600 (27,400)	12,500 (27,000)	12,400 (26,600)	12,300 (26,200)	12,200 (25,900)	12,100 (25,700)	12,000 (25,500)	11,900 (25,400)	11,400 (25,100)
16 (52-5)	...	...	11,200 (24,700)	11,000 (24,300)	10,800 (23,800)	10,600 (23,400)	10,400 (22,900)	10,200 (22,500)	10,100 (22,300)	10,000 (22,100)	9,900 (21,800)	9,800 (21,600)	9,700 (21,400)	9,600 (21,200)	9,400 (20,700)
18 (59-0)	...	...	9,600 (21,200)	9,400 (20,700)	9,200 (20,300)	9,000 (19,800)	8,800 (19,400)	8,600 (19,000)	8,500 (18,800)	8,400 (18,600)	8,300 (18,500)	8,200 (18,400)	8,100 (18,300)	8,000 (18,200)	7,800 (17,700)
20 (65-7)	...	...	8,200 (18,100)	8,000 (17,600)	7,800 (17,200)	7,600 (16,800)	7,400 (16,300)	7,300 (16,100)	7,200 (15,900)	7,100 (15,700)	7,000 (15,500)	6,900 (15,400)	6,800 (15,300)	6,700 (15,200)	6,400 (14,500)
25 (82-0)	...	...	...	...	5,700 (12,600)	5,500 (12,100)	5,300 (11,700)	5,200 (11,500)	5,100 (11,300)	5,000 (11,100)	4,900 (10,800)	4,800 (10,600)	4,700 (10,400)	4,600 (10,200)	4,400 (9,700)
30 (98-5)	...	...	...	...	...	...	4,100 (9,000)	3,900 (8,600)	3,700 (8,200)	3,600 (7,900)	3,500 (7,700)	3,400 (7,500)	3,300 (7,300)	3,200 (7,100)	3,000 (6,600)
35 (114-10)	...	...	...	...	...	...	...	3,200 (7,100)	3,100 (6,800)	3,000 (6,600)	2,900 (6,400)	2,800 (6,200)	2,700 (6,000)	2,600 (5,800)	2,400 (5,300)
40 (131-3)	...	...	...	...	...	...	...	...	...	2,400 (5,300)	2,300 (5,100)	2,200 (4,900)	2,100 (4,600)	2,000 (4,400)	1,800 (4,000)
45 (146-8)	...	...	...	...	...	...	...	...	...	...	...	1,500 (3,300)	1,400 (3,100)	1,300 (2,900)	1,100 (2,400)
50 (163-1)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	800 (1,800)

**CRANE RATED LOADS in Kg (Lbs.) WITHOUT OUTRIGGERS (Over Side and Over Rear)**

Operating Radius in Feet (m)	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	33.53 m (110') Boom	36.58 m (120') Boom
4.5 (14-9)	20,550 (45,300)	...	...	...	...	...	...	...	...
5 (16-5)	17,650 (38,900)	17,500 (38,600)	...	...	...	...	...	...	...
6 (19-8)	13,700 (30,200)	13,550 (29,900)	13,400 (29,500)	...	...	...	...	...	...
7 (22-11)	11,100 (24,500)	10,950 (24,100)	10,800 (23,800)	10,700 (23,600)	10,550 (23,300)	...	...	...	...
8 (26-3)	9,300 (20,500)	9,150 (20,200)	9,000 (19,800)	8,900 (19,600)	8,750 (19,300)	8,650 (19,100)	...	...	...
9 (29-6)	7,950 (17,500)	7,800 (17,200)	7,650 (16,900)	7,550 (16,600)	7,450 (16,400)	7,300 (16,100)	7,200 (15,900)	...	...
10 (32-10)	6,900 (15,200)	6,750 (14,900)	6,650 (14,700)	6,500 (14,300)	6,400 (14,100)	6,300 (13,900)	6,200 (13,700)	6,100 (13,500)	6,000 (13,200)
11 (36-1)	6,100 (13,500)	5,950 (13,100)	5,800 (12,800)	5,700 (12,600)	5,600 (12,300)	5,500 (12,100)	5,400 (11,900)	5,300 (11,700)	5,200 (11,500)
12 (39-4)	5,400 (11,900)	5,250 (11,600)	5,150 (11,400)	5,050 (11,100)	4,900 (10,800)	4,800 (10,600)	4,700 (10,400)	4,600 (10,100)	4,500 (9,900)
14 (45-11)	...	4,250 (9,400)	4,100 (9,000)	4,000 (8,800)	3,900 (8,600)	3,800 (8,400)	3,700 (8,200)	3,600 (7,900)	3,500 (7,700)
16 (52-5)	...	...	3,350 (7,400)	3,250 (7,200)	3,150 (6,900)	3,050 (6,700)	2,950 (6,500)	2,850 (6,300)	2,750 (6,100)
18 (59-0)	...	...	...	2,700 (6,000)	2,600 (5,700)	2,500 (5,500)	2,400 (5,300)	2,300 (5,100)	2,200 (4,900)
20 (65-7)	...	...	...	...	2,150 (4,700)	2,050 (4,500)	2,000 (4,400)	1,950 (4,300)	1,850 (4,100)
25 (82-0)	...	...	...	...	...	...	1,200 (2,600)	1,100 (2,400)	1,000 (2,200)

Operating radius is horizontal distance from centerline of rotation to a vertical line through the gravity center of the load. Gross crane ratings shown are for units mounted on Mitsubishi K701 crane carrier with dual front and rear axles and do not exceed 78% of tipping loads. The crane ratings include weight of hook, block, slings and all other load handling accessories. Ratings with outriggers are based on outriggers extended to a fulcrum point 3.13m (10'-3") from center of carrier. Ratings with outriggers depend upon proper inflation, capacity, and condition of tires.

Gantry must be in raised position for all conditions. Standard boom hoist reeving: 12 part line. Ratings are based on counterweight of 10,200kg (22,500 lbs.). Center hitch required for boom lengths 45.72 m (150ft.) and over. Ratings shown are based upon boom insert arrangement shown in the care and operation manual.

When boom is equipped with jib, main hook ratings should be reduced by 500kg (1,100 lbs.) for 6.09m (20 Ft.) jib; 900 kg (2,000 lbs.) for 12.19m (40 ft.) jib and 1,400 kg (3,080 lbs.) for 18.29m (60 Ft.) jib.

Ratings on outriggers apply to lifts over sides and rear only.

**WEIGHT OF LOAD HANDLING ACCESSORIES**

Single Sheave Hook Block	500 kg (1,100 lbs.)
Three sheave Hook Block	700 kg (1,540 lbs.)
Five Sheave Hook Block	1,200 kg (2,640 lbs.)
Clamshell	Depends on size and make

Backstops recommended for all boom lengths. At radii and boom lengths where no ratings are shown on plate, operation is not intended or approved. Ratings are based upon freely suspended loads and machine standing on firm, level, uniformly supporting surface. Safe loads depend upon ground conditions, boom lengths, radius of operation, and proper handling, all of which must be taken into account by the user. Ratings are contingent upon machine being equipped with proper P&H boom.

**GREATER CAPACITIES,  
LONGER BOOMS  
WITH P&H BOOM CONSTRUCTION**

The P&H boom has tubular high Tensile Strength Steel Alloy chords with lattice-type all-welded construction. This provides greater strength and added rigidity against twisting strains at a minimum weight. In clamshell operation, this relative lightness permits heavier loads and faster work cycles.

Basic boom sections and inserts are designed for greater rigidity, fast assembly and take-down. Open throat and offset boom point design assures excellent performance when converted to heavy-duty crane service.

**CLAMSHELL 1.5 m<sup>3</sup> (1 7/8 Cu. yds.)  
SPECIFICATIONS**

**GENERAL DATA**

- BOOM:** Tubular high tensile alloy steel chords, lattice construction, pin connected, two equal sections, basic length ... 12.19 m (40 Ft.)  
Open throat with five boom point sheaves offset from centerline on anti-friction bearings, pitch diameter ..... 475 mm (18 1/16")  
12 part boom hoist reeving (standard).  
Roller type boom point sheave guard (optional extra).
- GANTRY:** High gantry—folding type—standard.
- TAGLINE WINDER:** Spring Type
- BOOM BACKSTOP:** Telescoping type with spring bumper (optional extra).
- WORKING WEIGHT:** Without bucket—  
approx..... 58,900 kg (129,800 lbs.)  
Removable counterweight included in working weight .....  
10,200 kg (22,500 lbs.)

**CLAMSHELL WORKING RANGES in m (Ft.-Ins.)**

Operating Radius "D" in m (Ft.-Ins)	HEIGHT OF BIN "E"					
	12.19 m (40') Boom		15.24 m (50') Boom		18.29 m (60') Boom	
7 (22-11)	7.9 (26-0)	.....	.....	.....	.....	.....
8 (26-3)	7.3 (24-0)	10.9 (35-10)	.....	13.8 (45-3)	.....	.....
9 (29-6)	6.5 (21-4)	10.3 (33-10)	.....	13.2 (43-4)	.....	.....
10 (32-10)	5.5 (18-1)	9.7 (31-10)	.....	12.0 (39-4)	.....	.....
12 (39-4)	2.7 (8-10)	7.9 (26-0)	.....	10.2 (33-6)	.....	.....
14 (45-11)	.....	5.4 (17-9)	.....	7.8 (25-7)	.....	.....
16 (52-5)	.....	.....	.....	.....	.....	.....
Height and Width of Stock Pile at Radius "G"	F	V	F	V	F	V
	6.0 (19-8)	13.2 (43-4)	8.1 (26-7)	17.6 (57-9)	10.3 (33-10)	22.0 (72-2)
	G		G		G	
	9.6 (31-6)		11.8 (38-9)		14.0 (45-11)	

"T" height of clamshell bucket varies between 4.1 m (9'-10") and 4.5 m (14'-9"), depending upon size and make of bucket.

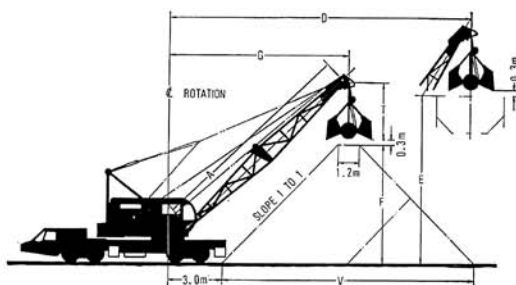
**CLAMSHELL RATED LOADS in Kg (Lbs.)**

Operating Radius in Feet (m)	12.19 m (40') Boom	15.24 m (50') Boom	18.29 m (60') Boom
7 (22-11)	6,350 (14,000)	.....	.....
8 (26-3)	6,350 (14,000)	6,350 (14,000)	.....
9 (29-6)	6,350 (14,000)	6,350 (14,000)	6,350 (14,000)
10 (32-10)	5,800 (12,800)	5,650 (12,400)	5,550 (12,200)
12 (39-4)	4,500 (9,900)	4,400 (9,700)	4,300 (9,500)
14 (45-11)	.....	3,550 (7,800)	3,450 (7,600)
16 (52-5)	.....	.....	2,800 (6,200)

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.

To select bucket size best suited for your application, use the following formula: Refer to chart to obtain clamshell capacity in pounds. Clamshell capacity = cu. meter capacity of bucket × (weight of material per cu. meter) + (weight of specific clamshell bucket). 1.5 m<sup>3</sup> is maximum allowable digging-type bucket. Larger size may be approved depending on type of material, type of bucket—within limitations of rating chart.

Ratings are contingent upon machine being equipped with proper P&H boom. Maximum boom length recommended for clamshell operation ..... 18.29 m (60 Ft.)  
Limit on clamshell rating ..... 6,350 kg (14,000 lbs.)



**DRUM SHAFT ASSEMBLY**

Clam. Leggings (Smooth)	Cable Dia.	*Line Pulls	*Line Speeds
Front Drum 420 mm (16 1/2") P.D. ....	24 mm (5/8")	15,300 kg (33,600 lbs.)	36.9 m/min (121 fpm)
Rear Drum 420 mm (16 1/2") P.D. ....	24 mm (5/8")	14,900 kg (32,780 lbs.)	36.9 m/min (121 fpm)

\*Line pulls and speeds based on single line and first layer of rope and at 2nd gear of transmission.



**Higher Production Capacities  
Lower Operating Costs**

Data published herein is statistical and for information only. Performance may vary with the conditions encountered.  
**Kobe Steel, Ltd.** reserves the right to make changes in specifications without advance.

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