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Replaces Form JD112C
Dated July 2012

BMC's IC-40-D is a self-propelled, industrial crane designed for in-plant lifting and material handling applications. It has the special features of low height, narrow width, short length, cargo deck, four-wheel steer, and four-wheel drive. The basic unit consists of a chassis and a hydraulic boom assembly. The chassis includes a frame, four hydraulic outriggers, an engine, a variable speed hydrostatic transmission, and two drive axles with power steering. The boom assembly includes a hydraulic-powered continuous rotation turret, a three-section telescopic boom, a hydraulic boom-elevating cylinder, hydraulic boom extension cylinders, and a hydraulic-powered hoist. A Rated Capacity Limiter is standard.

IC-40-D:

This model includes a 3-section hydraulically extended boom with capacity of 9,000 pounds (4,080 kg) at a 4-foot (1.2 m) load radius. It has a horizontal reach of 19.2 feet (5.8 m), and a vertical reach of 26.2 feet (8.0 m). Hoist is located on back of turret.

GENERAL:

Length:
Chassis 10 feet, 8 inches (3.3 m)
Overall 12 feet, 2 inches (3.7 m)

Width: 5 feet, 4 inches (1.63 m)

Height:
Deck 2 feet, 7 inches (79 cm)
Overall 6 feet, 10 inches (2.0 m)

Wheelbase: 6 feet, 7 inches (1.99 m)

Ground Clearance:
Chassis 10 inches (25 cm)
Minimum (Axle) 8 inches (20 cm)

Angle of Approach: 24 degrees

Angle of Departure: 24 degrees

Turning Radius: (Minimum) 9 feet, 10 inches (3.0 m)

Aisle Width for 90-degree Turn: (Minimum) 8 feet (2.4 m)

Travel Speed: (Maximum) 10 mph (16 km/h)

Outriggers:
Spread 7 feet, 8 inches (2.35 m)
Penetration 1/2 inch (12 mm)

Weight Distribution (Base Machine):
Front Axel 4,210 pounds (1,910 kg)
Rear Axel 4,710 pounds (2,140 kg)
Total 8,920 pounds (4,050 kg)

Tire Footprint Area: 40 square inches (260 cm²), each
Outrigger Footprint Area: 48 square inches (310 cm²), each
Drawbar Pull: 2,000 pounds (910 kg)

Gradeability:	24% (13°)
Grade Limit:	15%
Boom Movement:	
Rotation	Continuous
Elevation	70 degrees
Extension	12 feet (3.65 m)
Tailswing	43 inches (1.09 m)
Boom Speeds:	
Rotation	360 deg. in 33 sec. (1.4 rpm)
Elevation	17 seconds
Telescope	32 seconds
Sheave Height:	
Without Boom Extension	26 feet, 4 inches (8 m)
With Boom Extension	33 feet, 6 inches (10.2 m)
Horizontal Reach:	
Without Jib	19 feet, 2 inches (5.8 m), C/L Rotation
With Jib	27 feet, 2 inches (8.3 m), C/L Rotation

ENGINE:

Standard Gasoline:

Kubota 1.6L, EFI Dual Fuel, EPA T4F

Kubota WG1605-GL-E3 gasoline engine complete with multi-port electronic fuel injection, dual fuel, and engine management system. Water-cooled, 4-cylinder, 94 CID (1.6 L), 3.11-inch (79 mm) bore, 3.09-inch (78.4 mm) stroke, 44 HP (33 kW) at governed speed of 2,600 rpm. Maximum torque, 89 foot pounds (120 Nm) at 2,300 rpm. 70-amp alternator, 13.5-gallon (51 L) gas tank, and 33 lb (15 kg) LPG tank.

Optional Engines and Accessories:

Kubota 1.8L, EPA T4F Tier 4 D1803-CR-TIE4B

Kubota D1803-CR-TIE4B diesel engine. Water-cooled, 3-cylinder, turbo charged, 111 CID (1.8 L), 3.43-inch (87 mm) bore, 4.04-inch (102 mm) stroke. 49.6 HP (37 kW) at governed speed of 2700 rpm. Maximum torque 111 foot pounds (150 Nm) of torque at 1,600 rpm. 12V, 40-amp alternator. Dry weight: 406 pounds (184 kg). No weight change from gasoline engine.

Spark Arrestor Muffler

Spark arrestor muffler used in addition to standard muffler. Net Weight: 10 pounds (5 kg)

HYDROSTATIC TRANSMISSION PUMP:

Standard:

Sauer-Danfoss piston type, 2.8 CID (45 mL) per revolution, direct driven from engine crankshaft. Maximum flow 34 GPM (129 L/min). Maximum pressure- 4,000 PSI (275 bar). Electrohydraulic servo and electronic, automotive type controller.

AXLE:

Standard:

Front Axle:

Planetary drive/steer axle with an overall 16.15/1 ratio. Differential is limited slip. Axle is rigidly mounted to frame.

Rear Axle:

Planetary drive/steer axle with an overall 16.15/1 ratio. Differential is limited slip. Axle oscillates 1.5° in either direction.

Steering:

Standard:

Full-hydraulic steering unit controls a steering cylinder attached to each axle. Limited steering if engine dies. Rear axle is the primary steer. An electric switch in the operator's compartment is used to select rear-wheel steering, four wheel round steering, or crab steering. Electronic sensors and control box automatically align the steering when a new mode is selected.

Brakes:

Standard:

Primary braking from hydrostatic transmission. Foot-actuated wet-disc brakes in each axle for additional braking in some conditions. Lever-actuated parking brake to hold crane when not being driven.

Tires:

Standard:

28x9-15 pneumatic tires, 12 PR. Pressurized to 120 PSI (830 kPa) for crane rated loads.

Optional Tires:

Foam Filling of Tires:

Standard tires, foam filled to prevent flats. Net Weight: 390 pounds (177 kg).

Solid Rubber Tires Non-Marking:

Solid tires, non-marking compound. Net Weight: 300 pounds (136 kg)

Spare Tire & Wheel:

28x9-15 pneumatic tires, 12-PR. Net Weight: 140 pounds (63 kg)

Chassis:

Standard:

Cargo Deck:

29-square-foot (2.7 m²) area. A maximum of 6,000 pounds (2,720 kg) may be carried on the deck when centered over, or to the rear of the front axle. Nine stake pockets are provided in deck, and nine 1-inch (25 mm) diameter pipe stakes.

Outriggers:

Four hydraulic outriggers with box beam construction. Independent controls for each. Hydraulic cylinders are equipped with direct connected holding valves. Pad dimensions are 6 inches (15 cm) by 8 inches (20 cm).

Lifting Rings:

Includes four lift rings. One at each corner of the chassis for attaching and lifting sling cables.

Front Pulling Eye:

Heavy eye in front bumper provides for attachment of hook block so main winch line can be used for pulling loads at or near floor level.

Headlight and Taillight Grilles:

Consist of welded steel protective grilles for headlights and taillights. Easily removes or swings out of way for replacing bulbs.

Optional Chassis Accessories:

Auxiliary Winch:

Optional worm gear winch mounted behind front bumper, with a single lever control at the operator's console. Hydraulic powered to provide bare-drum line pull of 3,000 pounds (1,360 kg), at 20 feet-per-minute (6 m/min). Winch drum is 3.5 inches (89 mm) diameter by 6.2 inches (159 mm) long. The winch includes 80 feet (24.3 m) of 5/16 inch (7.94mm) wire rope, hook, and four-way roller guide. Net Weight: 120 pounds (55 kg).

Pintle Hook:

T-60-A Holland pintle hook mounted on rear frame member. Rated for 2,000 pounds (910 kg) tongue weight. Net Weight: 7 pounds (3 kg).

Lifting Sling :

Sling to attach to lifting rings. Net Weight: 20 pounds (9 kg)

Rear View Mirrors:

One right-hand and one left-hand mirror, 6" (152 mm) diameter, mounted on deck stakes. Pivot out of way when contacted by obstacle at side of deck. Net Weight: 12 pounds (6 kg)

Operator's Compartment:

Standard:

Operator control station provides one-position access to all chassis and crane functions. Includes adjustable operator's seat and retracting seat belt.

Drum Rotation Indicator:

Provides tactile feedback to operator when hoist drum is rotating. Feedback device attached to hoist control handle. Feedback is proportional to hoist speed

Operator's Compartment Accessories:

All Weather Cab:

Consists of rigid mounted canopy section and removable hinged door with safety glass. Rugged canopy structure with laminated glass front and top. Door is equipped with a keyed lock to protect operator's station. Cab door adds 2 inches (5 cm) to crane width on operator's side. Includes heater with 2-speed fan and 12-volt electric windshield wiper. Includes sliding window in the door, and one fold out window in rear to provide flow-through ventilation. Defroster fan and dome light included. Net Weight: 180 pounds (82 kg).

Cab Heater:

Heater with two-speed fan for units without All Weather Cab. Net Weight: 15 pounds (7 kg).

Operator Guard:

Tubular steel weldment with heavy expanded steel mesh top bolts over operator's compartment. Net Weight: 55 pounds (25 kg).

Floor mat:

Ribbed vinyl mat with foam backing for operator comfort.

Electrical System:

Standard:

Electrical Group:

12 Volt DC

Battery:

Group 24 with 550 CCA rating.

Lighting Group:

Consists of two headlights and taillight and 12 volt horn activated by button on instrument panel.

Display:

Located at operator's station and includes fuel gauge, voltmeter, oil pressure, water temperature and hydraulic oil temperature gauges. Hourmeter records hours only during actual engine operation.

Outrigger Alarm System:

112-decibel alarm with alternating two-tone sound is actuated by a switch when the OUTRIGGER DOWN controls are operated.

Back-Up Alarm:

Provides pulsating 97 dB sound from solid-state alarm when ignition is ON and transmission is in REVERSE.

Optional Electrical Accessories:

Strobe Lights:

Two yellow strobe lights mounted on turret for high visibility. Flash 60-120 times per minute. Draw 1/2 amps each. Includes operator-controlled switch.

Boom Work Lights:

Two work lights, one on side of boom to light boom tip, and one on side of turret to light ground under boom tip. Includes switch at operator's station. Net Weight: 10 pounds (5 kg)

Hydraulic System:

Standard:

Tandem pump mounted to rear end of hydrostatic piston pump which is driven by the engine crankshaft. Delivers 6 gpm (23 L/min) at 2,600 psi (179 bar) for boom circuits and 17 gpm (64 L/min) at 2,250 psi (155 bar) for hoist circuit. System protected by relief valves and two 10-micron filters. Hydraulic reservoir with 14 gallons (53 L) capacity.

Boom Assembly:

Standard:

Three section, high strength steel construction, equipped with bearing pads for efficient support and extension. Double-acting hydraulic cylinders extend boom sections. The double-acting extension cylinder and the boom elevation cylinder are equipped with direct connected holding valves. Boom angle indicator provided on both sides of boom.

Boom Hoist:

Standard:

Turret mounted, planetary gear hoist is hydraulically powered to provide bare-drum line pull of 5,000 pounds (2,270 kg) and a line speed of 86 ft/min (26 m/min). Hoist includes 85 feet (26 m) of 3/8 inch (9.5 mm) wire rope, downhaul weight, swivel hook, and sheave block for 2-part line. (Required for lifts over 4,500 pounds (2,040 kg).) Sheave block weight is 60 pounds (27 kg). Downhaul weight is 40 pounds (18 kg).

Boom Swing:

Standard:

Heavy-duty ball bearing rotation gear with external teeth supports boom. Rotation is powered by hydraulic motor and worm gear drive. 360 degree continuous rotation.

Boom Attachments:

Standard:

Anti-Two-Block Device:

Has electric solenoid dump valve which prevents damage to hoist rope and machine components from accidentally pulling load hook against boom tip. This valve will dump the HOIST RAISE, TELESCOPE EXTEND and BOOM LOWER circuits. No other circuits are affected. These circuits are returned to normal operations by operating the "HOIST LOWER" or "TELESCOPE RETRACT" control. This system uses a trip arm to activate switch.

Down Haul and Sheave Block:

Includes downhaul weight and hook for single part line. Downhaul and hook assembly weight is 40 pounds (18 kg). Also includes sheave block for two-parting line for lifts over 4,000 pounds (1,800 kg). Sheave block weight is 60 pounds (27 kg).

Rated Capacity Limiter:

Operator's aid that warns operator of impending overload with audible and visual signals. Has read-outs for load, boom angle, boom length and load radius. In the event of an overload, dumps the following boom functions: HOIST RAISE, TELESCOPE EXTEND, BOOM LOWER, SWING LEFT, and SWING RIGHT. These circuits are returned to normal by lowering load to a safe resting place with hoist or by retracting or raising boom to a shorter load radius. Key-operated, momentary override switch located under dashboard.

Optional Boom Attachments:

Boom Extension - 8 Foot (2.4 m):

Provides 8 feet (2.4 m) of additional length for lifting loads with load line. Boom extension may be stowed along side base boom section when not in use. Tip sheave, attaching brackets, and pins included. Deduct 100 pounds (45 kg) from Capacity Chart when boom extension is in stowed position. Includes switch and trip arm for Anti-Two-Block system. Net Weight: 130 pounds (59 kg).

Boom Extension - 8 Foot (2.4 m) Offset:

Same as standard boom extension except has three settings: 0 degrees (in-line), 15 degrees offset and 30 degrees offset. Net Weight: 150 pounds (68 kg)

Searcher Hook:

2000 pounds (907 kg) capacity. Swivel hook with spring latch hangs from support structure projecting outward from boom tip. Net Weight: 30 pounds (14 kg)

Specifications subject to change without notice.

For additional options or special equipment not listed, please consult your dealer salesperson or contact **Broderson Manufacturing Corp.**

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Dimensions and
values shown
are for reference
purposes only.
Specifications
subject to change.



IC-40-D Chart

CAPACITIES APPLY TO OPERATION ON FIRM LEVEL SURFACE				
LOAD RADIUS FEET	MAIN BOOM OR EXTENSION CAPACITIES IN POUNDS			
	360° ROTATION		OVER FRONT	
	ON RUBBER	ON OUTRIGGERS	ON RUBBER	ON OUTRIGGERS
4	7000	8500	7200	9000
5	5000	7000	6000	7000
6	3700	5850	5300	5850
8	2300	4150	4150	4150
10	1450	3400	3200	3400
12	1050	2850	2400	2850
14	900	2350	1900	2450
16	750	1900	1600	2150
18	650	1600	1300	1950
19	600	1450	1150	1850
20	550	1450	1150	1600
22	450	1250	1000	1450
24	400	1050	850	1300
26	350	850	750	1150
27	300	750	650	1100
8' BOOM EXTENSION	8-FOOT BOOM EXTENSION - STRAIGHT OR OFFSET			
	MAIN BOOM ANGLE			
	ANGLE	0°	10°	20°
	* 0°	1100	1200	1300
		1450	1600	1850
		2300	3500	
	* 15°	—	—	—
	* 30°	—	—	—

LOAD RADIUS IS THE HORIZONTAL DISTANCE FROM THE CENTER OF ROTATION OF THE UNLOADED CRANE TO THE VERTICAL LOAD LINE WITH THE LOAD APPLIED.

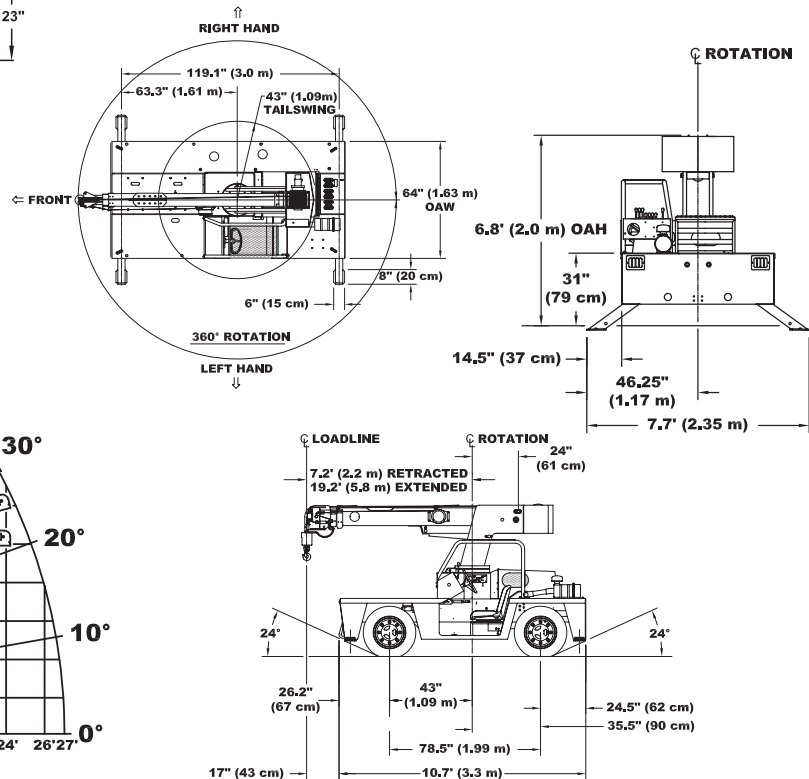
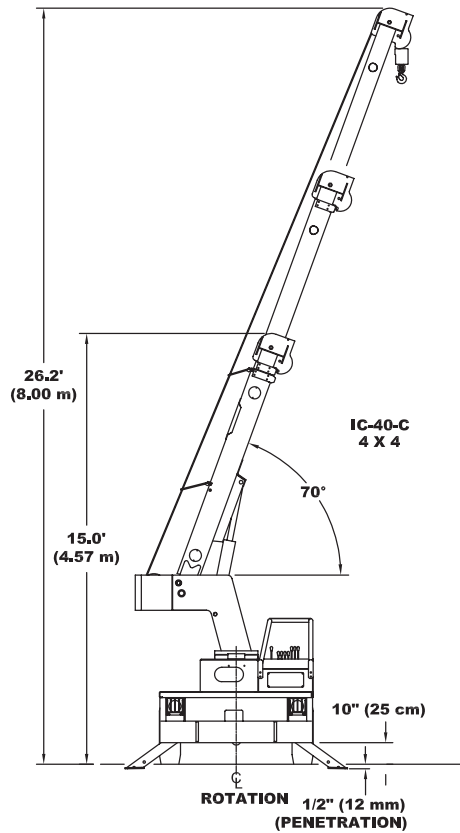
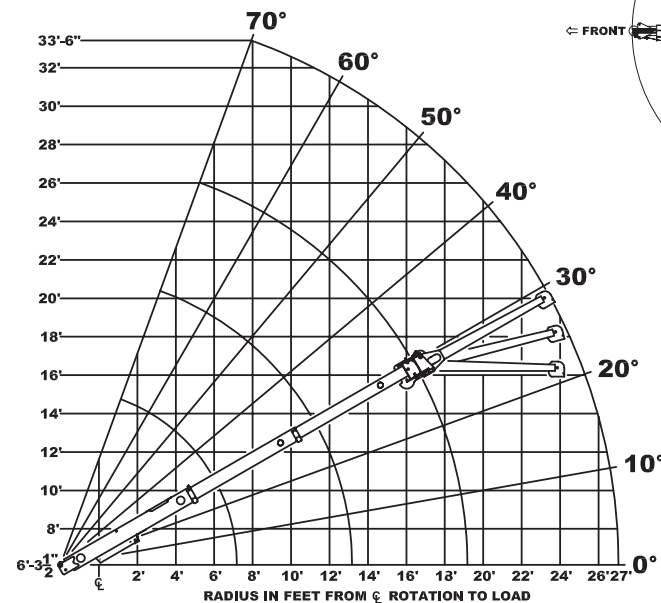
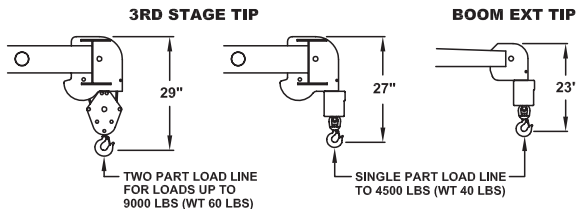
* USE 0° FOR STRAIGHT BOOM EXTENSION.

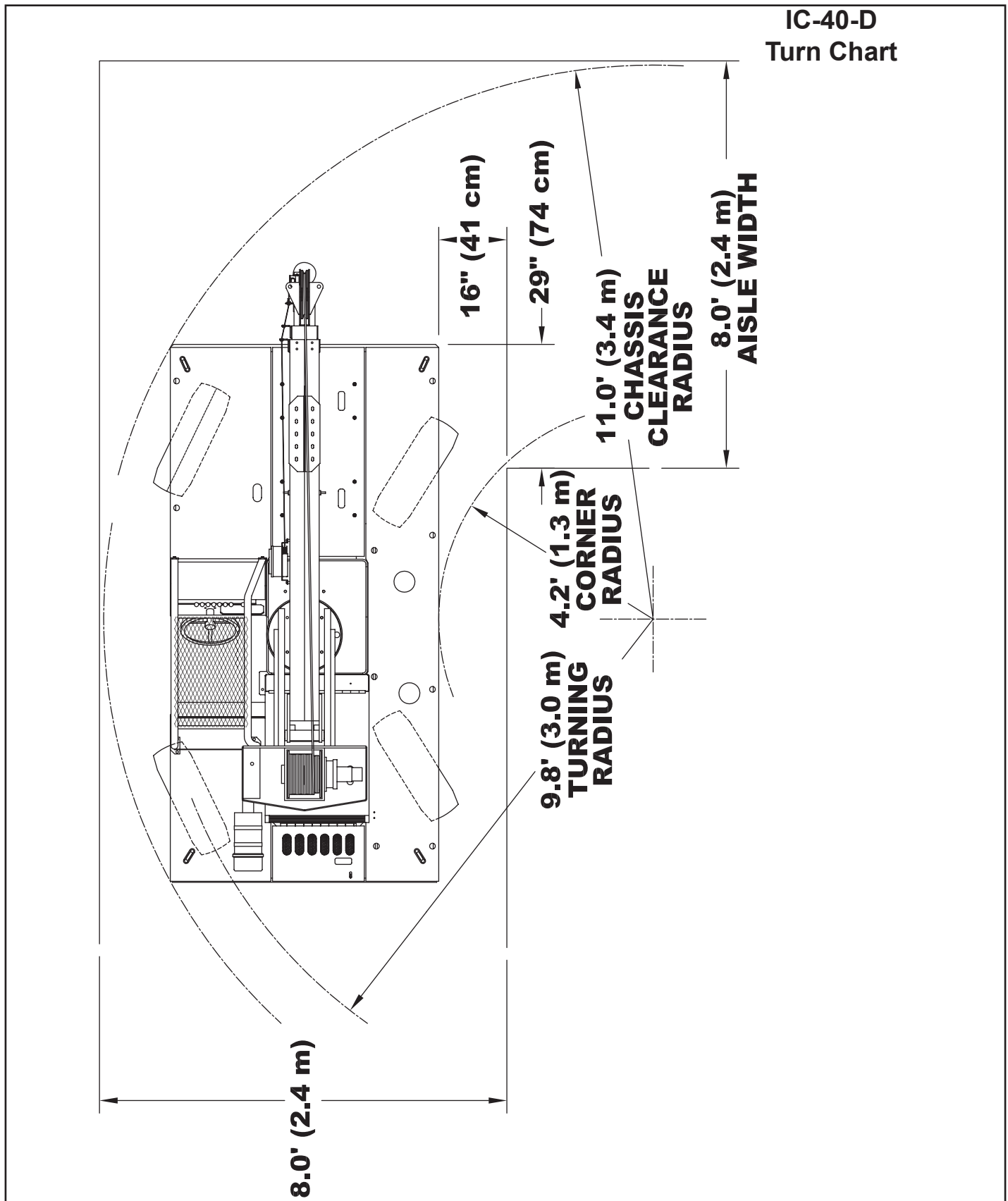
* USE 0°, 15° OR 30° FOR OFFSET BOOM EXTENSION.

EXCEEDING CAPACITY RATINGS OR APPLYING SIDE LOADS TO THE BOOM OR BOOM EXTENSION IS MISUSE, IS HAZARDOUS, AND VOIDS WARRANTY.

CAUTION: BOOM EXTENSION LOADS MUST NOT EXCEED MAIN BOOM CAPACITY. DEDUCT 100 LBS. FROM CAPACITY WHEN BOOM EXTENSION STOWED ON BASE BOOM. DO NOT PICK & CARRY WITH LOADS ON BOOM EXTENSION. ENSURE ANTI-TWO-BLOCK SWITCH IS FUNCTIONAL AFTER DEPLOYING OR STOWING BOOM EXTENSION.

CAPACITIES ON OUTRIGGERS ARE 85% OF TIPPING LOADS. CAPACITIES ON RUBBER ARE 75% OF TIPPING LOADS. CAPACITIES BELOW BOLD LINE ARE LIMITED BY TIPPING. OTHER CAPACITIES ARE LIMITED BY STRUCTURAL OR HYDRAULIC CAPABILITIES.





IC-40-D Metric Chart

CAPACITIES APPLY TO OPERATION ON FIRM LEVEL SURFACE								
LOAD RADIUS METERS	MAIN BOOM OR EXTENSION CAPACITIES IN KILOGRAMS							
	360° ROTATION		OVER FRONT					
	ON RUBBER	ON OUTRIGGERS	ON RUBBER	ON OUTRIGGERS				
MAIN BOOM	1.2	3170	3850	3260	4080			
	1.5	2320	3220	2750	3220			
	2.0	1450	2390	2250	2400			
	2.5	990	1830	1830	1830			
	3.0	680	1560	1480	1560			
	3.5	500	1350	1170	1350			
	4.0	430	1160	940	1180			
	4.5	380	980	810	1050			
2.44 m BOOM EXTENSION	5.0	330	830	700	960			
	5.8	270	660	520	840			
	6.0	260	660	520	750			
	6.5	220	600	480	680			
	7.0	190	520	420	620			
	7.5	170	450	370	570			
	8.2	130	340	290	500			
	BOOM EXTENSION	2.44 m BOOM EXTENSION - STRAIGHT OR OFFSET						
MAIN BOOM ANGLE								
ANGLE	0°	10°	20°	30°	40°	50°	60°	70°
+ * 0°	500	540	590	660	720	840	1040	1590
* 15°	—	—	500	560	610	680	770	930
* 30°	—	—	—	500	540	590	660	720

LOAD RADIUS IS THE HORIZONTAL DISTANCE FROM THE CENTER OF ROTATION OF THE UNLOADED CRANE TO THE VERTICAL LOAD LINE WITH THE LOAD APPLIED.

* USE 0° FOR STRAIGHT BOOM EXTENSION.

* USE 0°, 15° OR 30° FOR OFFSET BOOM EXTENSION.

EXCEEDING CAPACITY RATINGS OR APPLYING SIDE LOADS TO THE BOOM OR BOOM EXTENSION IS MISUSE, IS HAZARDOUS, AND VOIDS WARRANTY.

CAUTION: BOOM EXTENSION LOADS MUST NOT EXCEED MAIN BOOM CAPACITY. DEDUCT 100 LBS. FROM CAPACITY WHEN BOOM EXTENSION STOWED ON BASE BOOM. DO NOT PICK & CARRY WITH LOADS ON BOOM EXTENSION. ENSURE ANTI-TWO-BLOCK SWITCH IS FUNCTIONAL AFTER DEPLOYING OR STOWING BOOM EXTENSION.

CAPACITIES ON OUTRIGGERS ARE 85% OF TIPPING LOADS. CAPACITIES ON RUBBER ARE 75% OF TIPPING LOADS. CAPACITIES BELOW BOLD LINE ARE LIMITED BY TIPPING. OTHER CAPACITIES ARE LIMITED BY STRUCTURAL OR HYDRAULIC CAPABILITIES.

