

**Engineering
Spec****IC-40-2C**(913) 888-0606 FAX (913) 888-8431
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Date: July 2012Replaces:
Dated:

BMC's IC-40-2C 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-40-2C:

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:	64 inches (1.63 m)
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Height:

Deck	31 inches (79 cm)
Overall	6 feet, 10 inches (2.0 m)

Wheelbase:

79 inches (1.99 m)

Ground Clearance:

Chassis	10 inches (25 cm)
Minimum (Axle)	8 inches (20 cm)

Angle of Approach:

24°

Angle of Departure:

24°

Turning Radius: (Minimum)

9 feet, 10 inches (3.0 m)

Aisle Width: 90° Turn (Min.)

8 feet (2.4 m)

Travel Speed: (Max.)

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 Axle	4,210 pounds (1,910 kg)
Rear Axle	4,710 pounds (2,140 kg)
Total	8,920 pounds (4,050 kg)

Tire Footprint Area:

40 square inches (260 cm ²), each

Outrigger Footprint Area:

48 square inches (310 cm ²), each

Drawbar Pull:

2,000 pounds (910 kg)

Gradeability:

Calculated based on gasoline engine.

Grade Limit:

15 %

Boom Movement:

Rotation	Continuous
Elevation	70°
Extension	12 feet (3.65 m)
Tailswing	43 inches (1.09 m)

**Boom Speeds:**

Rotation	360° in 33 seconds (1.4 RPM)
Elevation	17 seconds
Extension	32 seconds

Sheave Height:

Without Jib	26 feet, 4 inches (8.0 m)
With Jib	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:****GM 2.4L, Woodward EFI Dual Fuel, EPA Tier II Certified:**

Industrial gasoline engine complete with multi-port electronic fuel injection, dual fuel, and engine management system. Water-cooled, 4-cylinder, 147 CID (2.4 L), 3.44-inch (87.4 mm) bore, 3.94-inch (100 mm) stroke, 65 HP (48 kW) at governed speed of 2,500 rpm. Maximum torque, 137 foot pounds (185 Nm) at 2,300 rpm. 70-amp alternator, 13.5-gallon (51 L) gas tank, and 33 lb (15 kg) LPG tank. Includes high temperature, low oil pressure shutdown, engine management system, and a catalytic converter muffler.

Optional Engines and Accessories:**Kubota 2.4L, EPA Interim Tier 4 Certified:**

Kubota V2403-M-E3B diesel engine. Water-cooled, 4-cylinder, naturally aspirated, 148 CID (2.4 L), 3.43-inch (87 mm) bore, 4.03-inch (102 mm) stroke. 48.9 HP (36.5 kW) at governed speed of 2,700 rpm. Maximum torque 118 ft-lbs (160 Nm) of torque at 1,800 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).

Engine Shutdown Kit:

Consists of Murphy switches that shut engine down if water temperature is excessive or oil pressure is too low. For diesel engine only.

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.

Front Axle:**Standard:**

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

Rear Axle:**Standard:**

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).



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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:

Consists of welded steel protective grilles for headlights and taillights. Easily removable or swung 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).

Floormat:

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 2 headlights and taillights, and a 12-volt horn activated by button on instrument panel.

Instrument Group:

Located at operator's station. Includes: fuel gauge, voltmeter, oil pressure, water temperature gauges, and hydraulic oil temperature. 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-decibel 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 0.5 amps each. Includes operator-controlled switch.

Boom Work Lights:

Two work lights, one on the side of the boom to light the boom tip, and one on the side of the turret to light the ground under the 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 primary extension cylinder and the double-acting boom elevation cylinder are equipped with direct connected holding valves. Boom angle indicator provided on the side 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 (26m/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 support the boom. Rotation is powered by hydraulic motor and worm gear drive. 360° 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 HOIST RAISE, TELESCOPE EXTEND, BOOM LOWER, SWING LEFT, and SWING RIGHT circuits. No other circuits are affected. These circuits are returned to normal operations by operating the HOIST LOWER or the TELESCOPE RETRACT control. This system uses a trip arm to activate switch.

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July 2012**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 the 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 the 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 except has three settings: 0° (in-line), 15° offset, and 30° offset. Net Weight: 150 pounds (68 kg).

Searcher Hook:

2,000 pounds (900 kg) capacity. Swivel hook with spring latch hangs from support structure, projecting outward from boom tip. Net Weight: 30 pounds (14kg).

***Specifications subject to change without notice.**

Should you require an option or special equipment not listed please consult your dealer salesperson or BMC®.

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





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 EXTENSION ANGLE	8-FOOT BOOM EXTENSION - STRAIGHT OR OFFSET MAIN BOOM ANGLE							
	0°	10°	20°	30°	40°	50°	60°	70°
* 0°	1100	1200	1300	1450	1600	1850	2300	3500
* 15°	—	—	1100	1250	1350	1500	1700	2050
* 30°	—	—	—	1100	1200	1300	1450	1600

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.

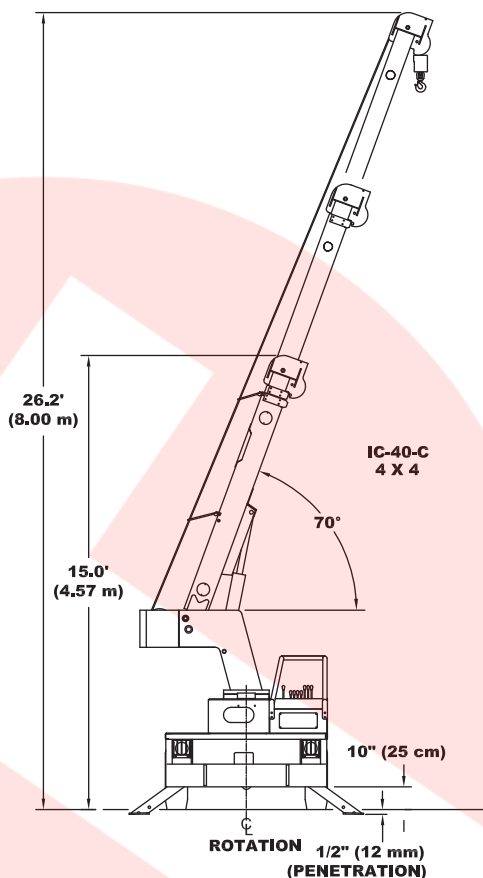
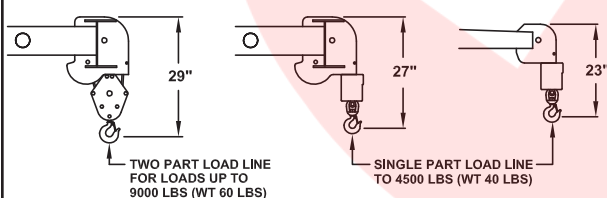
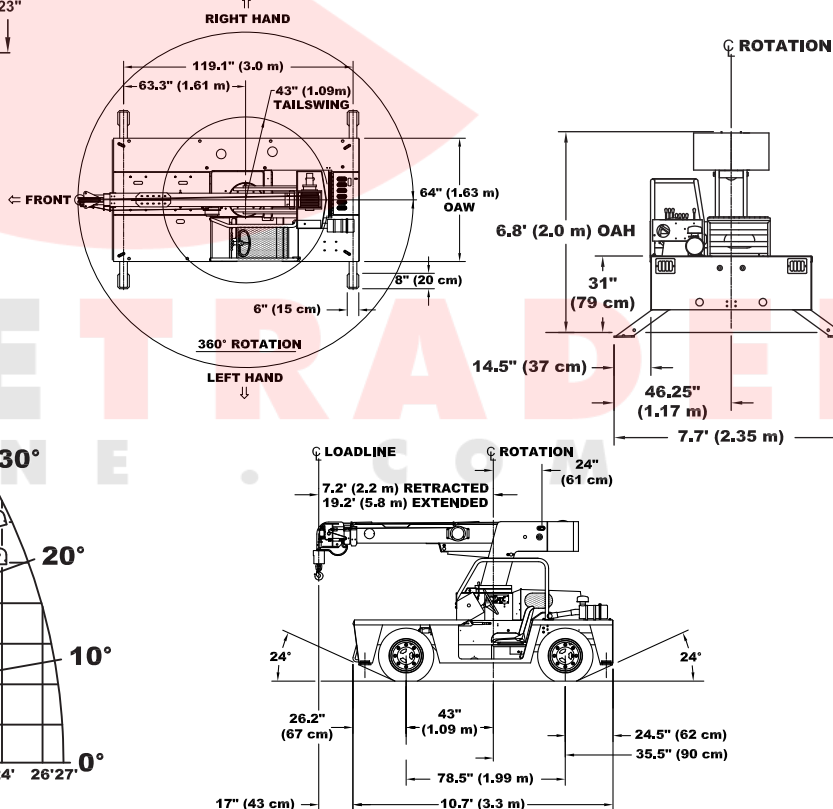
EXCEEDING CAPACITY RATINGS OR APPLYING SIDE LOADS TO THE BOOM OR BOOM EXTENSION IS MISUSE, IS HAZARDOUS, AND VOIDS WARRANTY.

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.

3RD STAGE TIP

BOOM EXT TIP

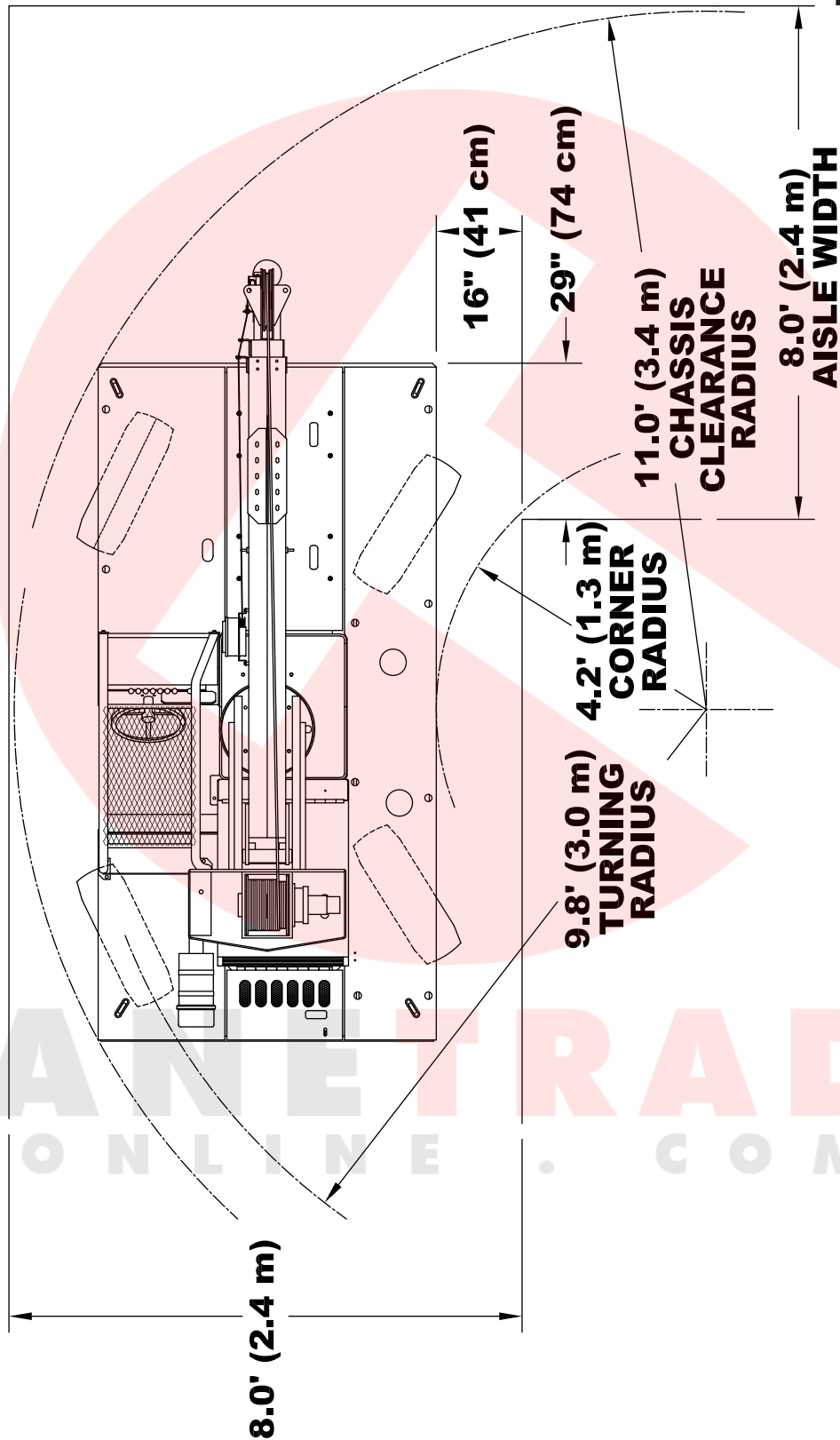
IC-40-2C
Chart



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IC-40-2C Turn Chart



**IC-40-2C**
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
	1.5	2320	3220	2750
	2.0	1450	2390	2250
	2.5	990	1830	1830
	3.0	680	1560	1480
	3.5	500	1350	1170
	4.0	430	1160	940
	4.5	380	980	810
	5.0	330	830	700
	5.8	270	660	520
2.44 m BOOM EXTENSION	6.0	260	660	520
	6.5	220	600	480
	7.0	190	520	420
	7.5	170	450	370
	8.2	130	340	290
	2.44 m BOOM EXTENSION - STRAIGHT OR OFFSET			
	MAIN BOOM ANGLE			
	ANGLE	0°	10°	20°
	+	0°	500	540
	+	15°	590	660
	+	30°	720	840
	+	45°	1040	1590
	+	60°	1480	2250
	+	75°	1830	2750
	+	90°	2320	3220
	+	105°	2750	3850
	+	120°	3220	4380
	+	135°	3750	4950
	+	150°	4320	5550
	+	165°	4920	6180
	+	180°	5550	6830
	+	195°	6200	7500
	+	210°	6870	8180
	+	225°	7550	8880
	+	240°	8240	9580
	+	255°	8930	10280
	+	270°	9620	10980
	+	285°	10310	11680
	+	300°	10990	12370
	+	315°	11670	13060
	+	330°	12340	13750
	+	345°	13010	14440
	+	360°	13680	15130

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