

**Engineering  
Spec****IC-35-D**

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BMC's IC-35-2D is a Self-Propelled Industrial Crane designed for in-plant lifting and material handling applications. It has special features of low height, narrow width, short length, cargo deck, rear wheel steer, and front wheel drive. The basic unit consists of a chassis and hydraulic boom assembly. The chassis includes a frame, four hydraulic outriggers, engine, variable speed hydrostatic transmission, front driving and rear power steering axles. The boom assembly includes a hydraulic powered continuous rotation turret, three section telescopic boom, hydraulic boom elevating cylinder, hydraulic boom extension cylinders and hydraulic powered hoist. A Rated Capacity Limiter is standard.

**IC-35-2D:**

3-section hydraulically extended boom with capacity of 8,000 pounds at a 4-foot load radius. Horizontal reach of 19 feet 2 inches and vertical reach of 26 feet. Hoist is located on back of turret.

**GENERAL:****Length:**

Chassis 9 feet 11 inches  
 Overall 11 feet 11 inches

**Width**

5 feet 0 inches

**Height:**

Deck 28 inches  
 Overall 6 feet 6 inches

**Wheelbase**

6 feet 0 inches

**Ground Clearance:**

Chassis 7 inches  
 Min. (Rear Axle) 6 inches

**Angle of Approach**

25 degrees

**Angle of Departure**

24 degrees

**Turning Radius (min.)**

12 feet 2 inches

**Aisle Width for 90 Degree**

Turn (min.) 8 feet 5 inches

**Travel Speed (Max.)**

10 MPH

**Weight**

7,660 pounds

**Weight Distribution:**

Left-Hand, Front Wheel 1,810 pounds  
 Right-Hand, Front Wheel 1,810 pounds  
 Left-Hand, Rear Wheel 2,000 pounds  
 Right-Hand, Rear Wheel 2,040 pounds

**Tire Footprint Area**

46 Square inches, each

**Outrigger Footprint Area**

48 Square inches, each

**Drawbar Pull**

2,400 pounds

**Gradeability**

30 percent (16 degrees)

**GENERAL: (Cont'd)****Boom Movement:**

Rotation	Continuous
Elevation	70 degrees
Extension	12 feet
Tailswing	3 feet 6 inches

**Boom Speeds:**

Rotation	360 degrees in 42 seconds (1.4 RPM)
Elevation	20 seconds
Extension	38 seconds

**Sheave Height:**

Without Boom Extension	26 feet 0 inches
With Boom Extension	33 feet 6 inches

**Horizontal Reach:**

Without Boom Extension	19 feet 2 inches - C/L Rotation
(with 2-part line)	13 feet 11 inches - Front of Chassis
With Boom Extension	27 feet 2 inches C/L Rotation
	21 feet 11 inches - Front of Chassis

**ENGINE:****Standard: (CARB Compliant)****Nissan 2.0L, Zenith EFI Dual Fuel, CARB Tier II and EPA Tier I Certified:**

Nissan Model H20 industrial gasoline engine complete with throttle body electronic fuel injection, dual fuel and engine management system. Water cooled, 4-cylinder, 121 CID, 3.43" bore, 3.27" stroke, 51 HP at governed speed of 2800 RPM. Maximum torque, 105 ft. lbs. at 1600 RPM. 35 amp alternator, 13.5 gallon gas tank and 33 lb. LPG tank. High temperature and low oil pressure shutdown, engine management system. Includes a catalytic converter muffler.

**Optional Engines and Accessories:****Cummins 2.3L, CARB Tier II and EPA Tier II Certified:**

Cummins Model A2300 diesel engine. Water-cooled, 4-cylinder, 140 CID, 3.46" bore, 3.70" stroke. 47 HP at governed speed of 2600 RPM. Maximum torque, 111 ft. lbs. at 1800 RPM. 45-amp alternator. 13.5 gallon gas tank. (Net Weight: 60 pounds)

**Spark Arrester Muffler:**

Spark arrester muffler used in addition to standard muffler.  
(Net Weight: 10 pounds)

**Engine Shut Down Gauges:**

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

**HYDROSTATIC PUMP:****Standard:**

Sundstrand piston type, 2.8 CID per revolution direct driven from engine crankshaft. Maximum flow 34 GPM, maximum pressure 4,000 PSI. Electrohydraulic servo and electronic, automotive-type controller.

**AXLES:****Standard:****Front Axle:**

Channel shaped structure houses torque hubs, brakes and hydraulic drive motors. Front axle oscillates a total of 1-1/2 inches to minimize wheel spin on uneven surfaces.

**Rear Axle:**

Fixed rigid to frame. Box beam crossmember and thrust bearing supported wheel hubs.



**STEERING:**

**Standard:**

Full hydraulic steering unit controls 2-1/2 inch steering cylinder attached to rear axle. Limited steering if engine dies.

**BRAKES:**

**Standard:**

Primary braking from hydrostatic transmission. Foot-actuated disc brake attached into each torque hub for additional braking in some conditions. Parking brake switch locks brakes to hold crane when not being driven.

**TIRES:**

**Standard:**

7.50 x 10 pneumatic tires, 16-ply. Pressurized to 150 PSI for crane rated loads.

**Optional Tires:**

**Solid Rubber Tires:**

For applications where hazardous ground conditions exist. These tires do not change the overall height or ground clearance. (Net Weight: 240 pounds)

**Solid Rubber Tires, Non-Marking:**

Non-marking tires for applications where hazardous ground conditions exist. These tires do not change the overall height or ground clearance. (Net Weight: 240 pounds)

**Foam Filling of Tires:**

Standard tires, foam filled to prevent flats. (Net Weight: 312 pounds)

**Spare Tire & Wheel:**

7.50 x 10 pneumatic tires, 16-ply. Front or rear axle must be specified. (Net Weight: 80 pounds)

**CHASSIS:**

**Standard:**

**Cargo Deck:**

29 square foot area. A maximum of 6,000 pounds 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, one-inch 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 x 8 inches.

**Lifting Rings:**

Includes four lift rings, one at each corner of the chassis for attaching 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 at or near floor level.

**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 at 20 feet per minute. Winch drum is 3-1/2 inches diameter by 6-1/4 inches long. The winch includes 80 feet of 5/16 inch wire rope, hook and four-way roller guide. (Net Weight: 120 pounds)

**Pintle Hook:**

T-60-A Holland 5-ton pintle hook mounted on rear frame member. (Net Weight: 7 pounds)

**Lifting Sling:**

Sling to attach to Lifting Rings. (Net Weight: 20 pounds)

**Headlight and Taillight Grilles:**

Consists of welded steel protective grilles for headlights and taillights. Easily removable or swung out of way for replacing bulbs. (Net Weight: 20 pounds)



**OPERATOR'S COMPARTMENT:**

**Standard:**

Operator control station provides one-position access to all chassis and crane functions. Includes adjustable operator's seat, seat belt, 2-1/2 pound fire extinguisher and bubble level.

**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 4 inches to crane width on operator's side. Includes heater with two-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)

**Cab Heater:**

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

**Operator Guard:**

Tubular steel weldment with heavy expanded steel mesh top, bolts over operator's compartment.  
(Net Weight: 60 pounds)

**Operator Guard Cover:**

Clear vinyl cover goes over optional operator guard (OG-14) for inclement weather.  
(Net Weight: 12 pounds)

**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 two headlights & taillights & 12 volt horn activated by button on instrument panel.

**Instrument Group:**

Located at operator's station and includes fuel gauge, ammeter, oil pressure, water temperature and hydrostatic oil temperature gauges. All gauges are lighted. 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 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)



**HYDRAULIC SYSTEM:**

**Standard:**

Tandem pump mounted to rear end of hydrostatic piston pump which is driven by the engine crankshaft. Delivers 6 GPM at 2,600 PSI for boom circuits and 18 GPM at 2,250 PSI for hoist circuit. System protected by relief valves and two 10-micron filters. Hydraulic reservoir with 14 gallons 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 both sides of boom.

**BOOM HOIST:**

**Standard:**

Turret mounted, planetary gear hoist is hydraulically powered to provide bare-drum line pull of 4,600 pounds and a line speed of 86 feet per minute. Hoist includes 85 feet of 3/8 inch wire rope, downhaul weight, swivel hook and sheave block for 2-part line. (Required for lifts over 4,000 pounds). Sheave block weight is 60 pounds. Downhaul weight is 36 pounds.

**Optional Wire Rope:**

**Extra-Long Wire Rope:**

140 foot long load line instead of standard 85 foot. (Net Weight: 14 pounds)

**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.

**Rated Capacity Limiter: RCL**

Warns operator of impending overload with audible and visual signals. Has read-outs for load, boom angle, boom length and load radius. Prevents overload by dumping boom functions that cause overload: **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. There is an override switch under the dashboard.



**Optional Boom Attachments:**

**Boom Extension - 8 Ft.:**

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

**Boom Extension - 8 Ft. Offset:**

Same as BE-39 except has three settings, 0 degrees (in-line), 15 degrees offset and 30 degrees offset. Deduct 100 pounds from Capacity Chart when boom extension is in stowed position.  
(Net Weight: 150 pounds)

**Searcher Hook: - Nose Mount**

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

**Should you, as the end user, require an option or special equipment on your IC-35-2D that is not listed on our sales literature, please contact your dealer salesperson or the factory to receive a special quoted price.**

**\*\* Specifications subject to change without notice \*\***



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	5000	8000	6700	8000				
5	4000	6800	5800	6800				
6	2850	5850	5100	5850				
8	1800	4150	3500	4150				
10	1250	3200	2350	3400				
12	900	2350	1750	2850				
14	700	1850	1350	2450				
16	600	1500	1100	2150				
18	500	1250	950	1950				
19	450	1150	900	1850				
20	400	1100	850	1600				
22	300	900	700	1450				
24	250	800	600	1300				
26	200	700	500	1150				
27	150	650	450	1100				
8-FOOT BOOM EXTENSION - STRAIGHT OR OFFSET								
MAIN BOOM ANGLE								
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

+ USE 0° FOR STRAIGHT BOOM EXTENSION.  
\* USE 0°, 15° OR 30° FOR OFFSET BOOM EXTENSION.  
BOOM EXTENSION LOADS MUST NOT EXCEED MAIN BOOM CAPACITY.

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

CAUTION: BOOM EXTENSION LOADS MUST NOT EXCEED MAIN BOOM CAPACITY. BOOM EXTENSION DEDUCT: 100 LBS. WHEN STOWED ON BASE BOOM, 300 LBS. IN WORK POSITION WITH LOAD ON MAIN BOOM.



