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Page 1 of 10
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The IC-80-F is a self-propelled Industrial Crane designed for in-plant lifting and material handling applications, with special features of low height, narrow width, short length, cargo deck, and standard four-wheel steer and front-wheel drive. The chassis includes a frame, four independently controlled hydraulic outriggers, engine, torque converter, 4-speed powershift transmission, front planetary driving and rear steer axles, fuel tank, hydraulic tank, control station, and full power steering. The boom assembly includes a hydraulic powered continuous rotation turret, 3-section boom, hydraulic boom elevating cylinder, hydraulic boom telescope cylinders, and hydraulic powered hoist. Rated Capacity Limiter standard.

IC-80-1F:

3-section hydraulically extended boom with capacity of 18,000 pounds at a 5 foot load radius. Horizontal reach of 20 feet 2 inches and vertical reach of 28 feet 2 inches.

IC-80-2F:

3-section hydraulically extended boom with capacity of 18,000 pounds at a 5 foot load radius. Horizontal reach of 24 feet and vertical reach of 31 feet 9 inches.

IC-80-3F:

3-section hydraulically extended boom with capacity of 18,000 pounds at a 5 foot load radius. Horizontal reach of 30 feet and vertical reach of 37 feet 5 inches.

General:

Length:

IC-80-1F	14 feet 4 5/8 inches
IC-80-2F	15 feet 8 5/8 inches
IC-80-3F	17 feet 8 5/8 inches

Width

6 feet 6 inches

Height:

Overall	7 feet 3 inches
Deck	3 feet 5 inches

Wheelbase

7 feet ¾ inches

Ground Clearance:

Chassis	11 inches
Minimum (rear axle)	7 inches

Angle of Approach

22 degrees

Angle of Departure

21 degrees

Outriggers:

Spread	9 feet 7 inches
Penetration	3 7/16 inches

Boom Movement:

	IC-80-1F	IC-80-2F	IC-80-3F
Rotation	Continuous	Continuous	Continuous
Elevation	0° to 70°	0° to 70°	0° to 70°
Telescope	12 ft. Hyd.	14½ ft. Hyd.	18½ ft. Hyd.

Boom Speeds:

Rotation	2 RPM	2 RPM	2 RPM
Elevation	10 seconds	10 seconds	10 seconds
Telescope	7 seconds	21 seconds	27 seconds

General: (Cont'd)

Sheave Height:	<u>IC-80-1F</u>	<u>IC-80-2F</u>	<u>IC-80-3F</u>
W/O Boom Extension	28 ft. 2 in.	31 ft. 9 in.	37 ft. 5 in.
With Boom Extension	37 ft. 5 in.	41 ft. 0 in.	46 ft. 8 in.

Horizontal Reach:

W/O Boom Extension	20 ft. 2 in.	24 ft. 0 in.	30 ft. 0 in.
With Boom Extension	30 ft. 2 in.	34 ft. 0 in.	40 ft. 0 in.

Weight: (Nominal)

4-Wheel Steer*	15,730 lbs.	15,930 lbs.	16,230 lbs.
4-Wheel Drive**	16,430 lbs.	16,630 lbs.	16,930 lbs.

*With gasoline engine

**With Cummins 4B3.9 diesel engine

	<u>Standard</u> <u>4-Wheel Steer</u>	<u>Optional</u> <u>4-Wheel Drive</u>
Turning Radius	10 ft. 9 in.	11 ft. 8 in.
Aisle Width Req'd 90 Degree Turn	9 ft. 7 in.	9 ft. 9 in.
Steering Modes:	Rear & Round Steer	Rear & Round Steer
Road Speed	22 MPH	27 MPH
Drawbar Pull	10,900 lbs.*	11,500 lbs.**
Gradeability	70 percent*	72 percent**

*Calculated values based on gasoline engine. Wheels may spin before these values are reached

**Calculated values based on Cummins 4B3.9 diesel engine. Wheels may spin before these values are reached.

Engine:**Standard: (ET-42, 43)**

GM Model 3.0L industrial gasoline engine complete with throttle body, electronic fuel injection, dual fuel and engine management system. Water cooled, 4-cylinder, 181 CID, bore 4.00", stroke 3.60", 69 HP at governed speed of 2,500 RPM. Maximum torque, 163 ft. lbs. at 1,600 RPM. Also includes special exhaust valves, seats and valve rotators for use with LPG, 66-amp alternator, 20 gallon fuel tank and 33 lb. LPG tank. High temperature and low oil pressure shutdown is included in engine management system.

Optional Engine Accessories:**Diesel Engine:****Cummins-4B3.9 Diesel Engine: (ET-19, 20)**

Cummins Model 4B3.9 industrial engine. Water cooled, 4-cylinder, 239 CID, bore 4.02", stroke 4.72", 80 HP at governed speed of 2,500 RPM. Maximum torque 193 ft. lbs. at 1,200 RPM. 62-amp alternator included. SAE #3 housing and flywheel machined for torque converter. (Net Weight: 180 pounds)

Spark Arrester Muffler: (SA-3, 7)

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

Catalytic Converter: (CC-6)

Catalytic converter for diesel engine. Reduces emissions. (Net Weight: 10 pounds)

Engine Heater: (EH-1, 6)

Engine coolant heater installed with hoses in coolant system to circulate warm water through engine. Plugs into 120 volt AC extension cord. 1,500 watts.

Ether Injection System: (EI-1)

For Cummins diesel engine. Ether starting aid, controlled by switch at operator station, injects ether directly into intake manifold.

Engine Shut Down Gauges: (SS-10)

System automatically shuts engine down when high engine water temperature or low engine oil pressure occurs.

Transmission:**Standard 2-Wheel Drive: (AS-4)**

Powershift transmission with four speeds in forward and reverse. Provides powershifts at any engine speed in any gear. All shifting is done with a single lever electrical control mounted on the steering column. Multiple-disc clutch packs operated by solenoid valves provide forward, neutral, reverse and speed selection. Equipped with oil cooler and filter.

Transmission Gear	Forward/Reverse Ratios	Travel Speed	Drawbar Pull*
1st	5.72/1	4 MPH	10,900 lbs.
2nd	3.23/1	7 MPH	6,090 lbs.
3rd	1.77/1	12 MPH	3,270 lbs.
4th	1.00/1	22 MPH	1,780 lbs.

*Drawbar pull is calculated based on gasoline engine.

Optional 4-Wheel Drive Transmission: (AS-5)

Remote mounted synchromesh 4 speed. Forward, neutral and reverse control mounted on steering column. 4-Speed control has side lever and push button knob for electric declutching. Can be shifted while in motion. Equipped with oil cooler and filter.

Transmission Gear	Forward/Reverse Ratios	Travel Speed	Drawbar Pull
1st	4.29/1	5 MPH	11,500 lbs.
2nd	2.66/1	8 MPH	7,070 lbs.
3rd	1.41/1	15 MPH	3,670 lbs.
4th	0.77/1	27 MPH	1,930 lbs.

*Drawbar pull is calculated based on Cummins 4B3.9 diesel engine.

Torque Converter:**Standard:**

Stall torque ratio of 2.2:1. Attached to engine flywheel.

Front Axle:**Standard:**

Planetary drive axle with 11.98:1 ratio. Differential is "Limited Slip." Front axle mounted rigidly to frame.

Rear Axle:**Standard: (AS-4)**

Drop-center axle beam casting with 1-1/2 degree oscillation in either direction.

Optional 4-Wheel Drive: (AS-5)

Planetary drive/steer axle with 11.98:1 ratio. Differential is "Limited Slip." Oscillation is 1-1/2 degrees in either direction. Same axle used in front and rear. (Net Weight: 700 pounds)

Steering:**Standard:**

Hydraulic steering unit with two cylinders attached to each axle. Rear axle is the primary steer. An electric switch in the operator's compartment is used to select rear-wheel steering or four-wheel round steering.

Brakes:**Standard:**

Four-wheel hydraulic. Rear axle has drum type on 4 x 2. Front axle has wet disc brakes. Parking brake is disc type.

Optional 4-Wheel Drive:

Wet disc on both axles. Parking brake is disc type.

Tires:**Standard:**

10.00 x 15, load range J radial, pneumatic highway type tread.

Tire Options:**Mining and Industrial Tires: (TO-28) (Standard on 4x4)**

10.00 x 15, 16-ply rating pneumatic belted tires. (Net Weight: 120 pounds)

Tire Options:**Mining and Industrial Tires, Non-Marking: (TO-33)**

10.00 x 15, 16-ply rating pneumatic belted tires. (Net Weight: 120 pounds)

Solid Rubber Tires: (TO-26)

8.25 x 15. These tires will reduce overall height and ground clearance by 1-1/2 inches.

(Net Weight: 400 pounds)

Solid Rubber Tires, Non-Marking: (TO-29)

Same as TO-26 but are non-marking. (Net Weight: 400 pounds)

Foam Filling of Tires: (FF-3)

10.00 x 15, All four tires foam filled. (Net Weight: 900 pounds)

Spare Tire and Wheel Mounted:**Highway Tread, 10.00 x 15, Load Range J, Radial: (SW-24, 25)**

(Net Weight: 163 pounds)

Mining and Industrial Tire: (SW-15, 16) (Net Weight: 193 pounds)**Mining and Industrial Tire, Non-Marking: (SW-31, 32) (Net Weight: 193 pounds)****Chassis:****Standard:****Cargo Deck:**

Total Deck Area: 64 Square Feet*. A maximum of 14,000 pounds may be carried on the deck when centered over or between axles.** Seven stake pockets are provided along edges of deck for 1 inch pipe stakes. Stakes furnished. Cargo decks have skid resistant coating.

*54 Square feet with Cummins engine.

**14,000 lbs. allowed at creep speed of 200 feet in 30 minutes.

Fire Extinguisher:

1A:10B:C, 2½ pound dry chemical. Mounted on the dashboard.

Steps:

A step is located on each front corner providing access to deck area.

Battery:

Located behind door on left-hand rear corner of chassis. Compartment available on right-hand rear corner of chassis for second battery if necessary.

Outriggers:

Four hydraulic outriggers of box-beam construction. Independent controls for each outrigger. Hydraulic cylinders are equipped with direct-connected holding valves. Pad dimensions: 9 inches x 12 inches

Pulling Eyes:

Heavy eyes on front bumper provided for attachment of hook block so main hoist line can be used for pulling loads at or near floor level.

Vandalism Protection:

Lockable hood for protection of engine compartment.

Accessory Storage Box:

Consists of box under front deck plate for carrying sheave block and other items. Flush fitting cover is lockable. Storage box is 14" deep x 10-1/2" wide x 27" long.

Lifting Rings:

Consists of four rings, one at each corner of the load deck, so sling can be attached for lifting crane. Rings hang below deck surface when not in use.

Chassis Options and Accessories:**Auxiliary Winch: (AW-13)**

Optional worm gear winch, mounted behind front bumper, with a lever control at the operator's console. Hydraulic powered to provide bare drum line pull of 5,000 pounds at 46 feet per minute. Winch drum is 3-1/2" diameter by 11" long. This winch includes 75 feet of 3/8" wire rope, hook and four-way roller guide. (Net Weight: 100 pounds)

Pintle Hook - Rear: (PH-5)

T-60-A Holland pintle hook mounted on rear frame member provides capacity for 2,000 lbs. tongue weight and 10,000 lbs. trailer weight. (Net Weight: 10 pounds)

Pintle Hook - Front: (PH-18)

T-60-A Holland pintle hook mounted on front frame member. Provides same capacity as PH-5. (Net Weight: 25 pounds)

Headlight and Taillight Grilles: (HTG-3)

Consists of welded steel protective grilles for headlights and taillights. Easily removable for replacing bulbs. (Net Weight: 40 pounds)

Rear Work Light Grilles: (WLG-1)

Same as above for rear worklight (WLR-2)

Rearview Mirrors: (RM-3)

One right-hand and one left-hand mirror, 6" wide x 16" high mounted on deck stakes. Pivot out of way when contacted by obstacle at side of deck. (Net Weight: 12 pounds)

Operator Compartment:**Standard:**

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

Operator Compartment Options and Accessories:**Operator Guard: (OG-12)** (Not Available with Cab)

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

Operator Guard Cover: (OGC-4)

Clear vinyl cover goes over guard (OG-12) for inclement weather. Has zipper and velcro roll-up door. (Net Weight: 15 pounds)

Operator Guard Door: (OGD-2)

Hinged door covers operator compartment side opening. Has latch handle outside and knob inside. Rubber gasket contacts chassis. (Net Weight: 40 pounds)

All Weather Cab: (WC-40, 41)

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. Includes defroster fan, 24,000 BTU heater with two-speed fan and 12V electric windshield wiper. There are sliding windows in the door and right-hand side. Dome light is included for operator's convenience. Also includes locking caps for fuel and hydraulic tanks. (Net Weight: 215 pounds)

Cab Heater Only: (CH-6, 13)

Provides 24,000 BTU heater with two-speed fan for units without All Weather Cab. (Net Weight: 12 pounds)

Windshield Washer: (WA-3)

Provides reservoir, pump and nozzle for windshield washer.

Floor Mat: (FM-8)

Vinyl mat with foam backing covers floor, front wall and lower portion of right-hand wall of operator's compartment.

Operator Suspension Seat: (SSO-2)

Grammer seat provides additional operator comfort. (Net Weight: 15 pounds)

Operator Compartment Options and Accessories: (Cont'd)**Noise Reduction Kit - Cab: (NR-5)**

Includes rubber floor mats and control valve cover and side panels of foam-backed perforated vinyl for noise reduction. (Net Weight: 13 pounds)

Air Conditioning:

Complete system using R134a coolant. Has combination cooling and heating unit in cab.
(Net Weight: 125 pounds)

Electrical System:**Standard:****12 Volt Battery:**

Gas Units Group 27 with 540 CCA rating
Diesel Units Group 31 with 950 CCA rating.

Instrument Group:

Located at operator's station and includes fuel gauge, ammeter, oil pressure, water temperature and transmission oil temperature gauges. Hourmeter records hours only during actual engine operation. Also included are warning lights for low transmission pressure, turn signal, high beams, hazard lights, parking brake and 4-wheel drive.

Lighting Group:

Consists of two 12V lamps, with high and low beams for driving; integral tail, brake and turn signal lights and backup lights in rear; front turn signals; and emergency flasher switch at operator's station. 12V horn actuated by button located on shifting control.

Back-Up Alarm:

Provides pulsating sound from a 97 dB alarm when ignition is on and transmission is in reverse. Conforms to SAE J994b.

Outrigger Alarm System:

112 dB alarm with alternating two-tone sound is actuated by a switch when the "outrigger down" controls are operated.

Optional Electrical Accessories:**Strobe Lights: (SL-1)**

Two yellow strobe lights, one on each side of turret weight box, for high visibility all around crane. Flash 60-120 times per minute. Each strobe draws only one-half amp. Includes operator controlled switch.

Amber Rotating Beacons: (ARB-3)

Amber rotating beacon mounted on each side of turret weight box. (Net Weight: 10 pounds)

Boom Work Lights: (WL-1)

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

Work Lights - Rear: (WLR-2)

Two work lights recessed in rear bumper. Provides lighted work area to rear of machine.

Hydraulic System:**Standard:**

Tandem pump, direct-driven by engine crankshaft, delivers 17 GPM at 2,600 PSI and 32 GPM at 2,500 PSI at 2,500 RPM governed engine speed. System protected by relief valves, suction line strainer and 10-micron full-flow return line filter. 22 gallon reservoir equipped with filler cap and breather element.

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 extension cylinder and the boom elevation cylinder are equipped with direct-connected holding valves. Boom angle indicators on each side of boom.

Boom Rotation:**Standard:**

Heavy-duty bearing rotation gear with external teeth supports boom. Rotation is powered by hydraulic motor and worm gear drive. Rotation gearbox may be adjusted as wear occurs to minimize backlash. Boom is attached by high strength steel weldment.

Boom Hoist:**Standard:**

Turret-mounted, planetary gear hoist, is hydraulically powered to provide a bare-drum line pull of 10,000 pounds at a speed of 110 ft. per minute. Hoist drum 9-3/4 inch diameter by 13 inches long. Provides even pull and long cable life. The hoist includes 125 feet of 9/16 inch wire rope.

Boom Attachments:**Standard:****Anti-Two-Block Device:**

Prevents damage to hoist rope and/or machine components from accidentally pulling sheave block or downhaul weight against boom tip. Consists of trip arm at boom tip which is moved upward by sheave block or downhaul weight as hook approaches boom tip. Trip arm actuates electric switch which is connected through cable reel mounted on turret to solenoid dump valve in the hydraulic circuit. This valve will dump the "hoist raise", "telescope extend" and "boom lower" circuits. No other circuits are affected. These circuits are returned to normal operation by operating the "hoist lower" or "telescope retract" control.

Sheave Block and Downhaul Weight:

A 124 pound sheave block is provided for two-part line requirements. Block is shorter than normal, 21½" from top to saddle of load hook. 10" O.D. sheave for 9/16" rope. Has swivel hook with safety latch. A 90 pound downhaul weight and swivel hook are also provided for single-part line.

Rated Capacity Limiter: (RCL)

Warns operator of impending overload with audible and visual signals. Prevents overload by stopping boom functions that cause overload. Includes sensors and special electrical slip rings.

Optional Boom Attachments:**Boom Extension - 10 Ft.: (BE-13)**

Provides 10 feet 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 from Capacity Chart when boom extension is in the stowed position. Includes switch for Anti-Two-Block. (Net Weight: 295 pounds)

Boom Extension - 10 Ft. Offset: (BE-18)

Same as BE-13 except has three settings: 0 degrees (in-line), 15 degrees offset and 30 degrees offset. (Net Weight: 340 pounds)

Searcher Hook - Nose Mount: (SH-4)

5,000 pound capacity. Swivel hook with spring latch hangs from support structure projecting outward from boom tip. (Net Weight: 41 pounds)

Should you, as the end user, require an option or special equipment on your IC-80-F 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*****

IC-80-3F 11'-6" - 30'-0" BOOM

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
MAIN BOOM	5	9400	17000	11400
	6	7550	14000	10000
	8	5250	10000	8100
	10	3600	7700	6100
	12	2650	6100	4450
	14	2050	5200	3400
	16	1600	4400	2700
	18	1250	3650	2200
	20	1050	3050	1800
	22	850	2650	1550
	24	750	2300	1350
	26	650	2050	1150
	28	550	1850	1000
	30	450	1650	900
	32	350	1550	750
	34	250	1400	650
10' BOOM EXT.	36	200	1250	550
	38	150	1100	450
	40	100	1000	400
	10-FOOT BOOM EXTENSION - STRAIGHT OR OFFSET			
	MAIN BOOM ANGLE			
	ANGLE	0°	30°	45°
	* 1 0°	2250	2600	3200
	115°	—	2400	2700
	130°	—	2250	2500

* USE 0° FOR STRAIGHT BOOM EXTENSION.

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

BOOM EXTENSION LOADS MUST NOT EXCEED MAIN BOOM CAPACITY.

