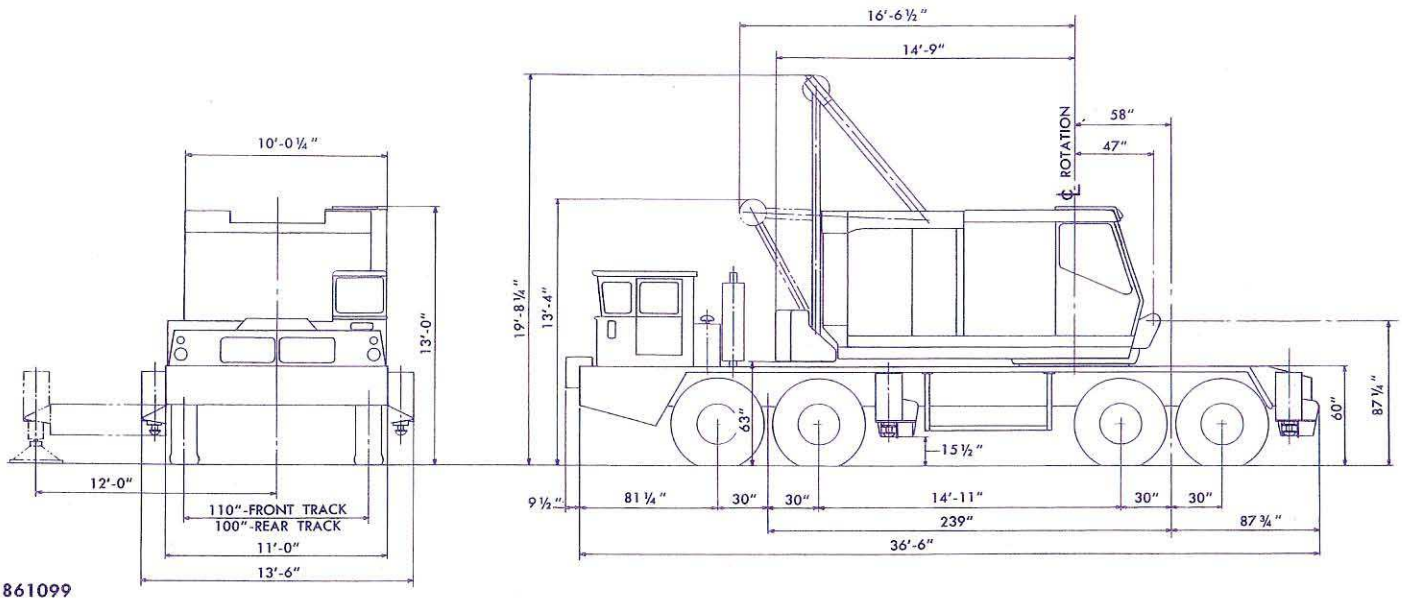
BUCYRUS-ERIE

110-T

110 TON TRUCK CRANE SPECIFICATIONS



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CRANE

Front Shaft:

Main hoist drum, smooth .....16½ in. Pitch Diameter
Hoist rope .....¾ in. or ⅞ in. Diameter
Auxiliary hoist rope .....¾ in. or ⅞ in. Diameter
Auxiliary hoist drum, smooth .....16½ in. Pitch Diameter

Rear Shaft:

Boom hoist drum, smooth .....15 in. Pitch Diameter
Boom hoist rope .....¾ in. Diameter
Third drum, smooth .....12 in. Pitch Diameter
Third drum rope .....⅝ in. Diameter

Boom point sheaves (6) .....18 in. Pitch Diameter

⅞ in. diameter rope required for loads over 200,000 pounds.

LINE PULLS AND SPEEDS

	1-Part Line		2-Part Line	
Drum Pitch Diameter	Pull in Pounds	Speed (Feet/Minute)	Pull in Pounds	Speed (Feet/Minute)
16½ in.	21,100	157	41,600	78.5

Swing Speed:

Standard .....2.25 revolutions/minute
Micro-Swing .....0.65 revolutions/minute

Speeds and line pulls based on engine with torque converter drive operating at full load speed of the output shaft. When torque converter is operating at full stall, line pulls are approximately 220 per cent of those shown in table.

WEIGHTS IN POUNDS

	Crane 40 Ft. Boom
Net weight domestic, approx.	130,150
Working weight, approx.	135,800
Export shipping weight, approx.	135,450
Ship option tons	139

Hook block included in working weight and export shipping weight for lifting crane, but not in domestic net weight.

POWER SPECIFICATIONS

Make - Model	Cummins N-855P
Type	Diesel
Type of drive	Torque Converter
Cylinders	6
Bore x stroke, inches	5½ x 6
Displacement, cubic inches	855
H.P. net @ full load speed	149
Full load speed (R.P.M.)	2,000
Fuel tank capacity, gallons	75
Starting	Elec. - 12 volt
Altitude range, feet	0-9,000

110 TON TRUCK CRANE

UPPER WORKS

Revolving Frame:
All welded construction with integral machinery side frames, lugs and engine mounting plates. Parts subject to high stress concentration are fabricated from alloy steel.

Main Machinery:
Two main shafts with drums, clutches, brakes, and gears on each. Main and auxiliary hoists are on front shaft. Third drum and boom hoist are on rear shaft. Swing shaft, with clutches and brake is mounted forward of the front shaft. Shafts and all parts turning on the shaft are mounted on anti-friction bearings. Power load lowering for main and auxiliary hoist is standard.

Transmission:
Fully enclosed, multiple strand chain drive, running in oil.

Clutches:
Clutches for boom hoist, third drum, main hoist, auxiliary hoist and swing are internal expanding shoe type. Clutches are air controlled.

Clutches for power load lowering, boom hoist lowering and Micro-Swing are internal expanding band type, air controlled.

Drum Brakes:
External contracting band type brakes with single point adjustment. Main and auxiliary hoist brakes are mechanically operated by foot pedals. Positive brake locking device is standard. Third drum brake is spring set — air released. Air cooling of main hoist brake is optional. Blower is chain driven from transmission sprocket.

Controls:
All functions air controlled except main and auxiliary drum brakes, swing lock, engine and torque converter governors. Graduated type control valves actuate clutches for main hoist, auxiliary hoist, third drum, boom hoist and swing. Swing brake and engine clutch controlled by poppet type valves. Air control console is standard. 12 cubic feet per minute air compressor supplies air for the controls.

Foot throttle and twist type throttle on swing lever are standard.

Rotation sensing device for main hoist drum is optional and is manually engaged or disengaged.

Swing Brake:
Friction swing brake with external contracting dual bands on right swing clutch housing is standard. Provides braking in either direction.

House Lock:
An independent positive house lock manually controlled from the operator's station is standard. Upper works may be locked in place facing either the rear or front.

Micro-Swing:
Optional Micro-Swing available for very slow swing speed. Micro-Swing clutches mounted on extensions of the front and swing shafts. Chain drive connects clutches with intermediate shaft. Pinion on end of intermediate shaft mates with swing machinery. A transfer valve is used to select either standard swing or Micro-Swing. The same graduated type control valve is used for either standard or Micro-Swing.

Boom Hoist:
Independent power controlled lowering boom hoist with positive control of boom both up and down by air controlled clutches. Boom hoist brake is spring set — air released. Single lever control for clutches and brake. Air operated locking pawl that engages a ratchet on the boom hoist drum is provided.

Third Drum:
Third drum is standard. A single lever controls the clutch and brake. Single line pull and speed based on engine operating at full load speed, 12,500 pounds at 114 feet per minute.

Rope Drums:
Cast steel, split type bolt on drum laggings for front shaft. Cast steel solid drums on rear shaft. Barrel and flanges of the laggings and drums are machined smooth.

Lowerable A-Frame:
Rear hitch type lowerable A-frame is standard. Power raised or lowered with boom hoist tackle.

Power Unit:
Diesel engine — torque converter drive with twin lever control is standard. Optional diesel altitude engine available.

Lubrication:
All gears are exposed and lubricated with gear compound. Adequate guards and shields are provided.

All bearings and other parts requiring lubrication have easily accessible fittings.

Counterweight:
One-piece unit, pin connected to the revolving frame.

Counterweight Removal Device:
Hydraulic counterweight removal device is optional. Consists of two hydraulic cylinders mounted on the carrier frame for lowering counterweight to the carrier. Includes one sheave in lower boom section for auxiliary hoist line to handle counterweight.

Cab:
Machinery and operator are completely enclosed and protected. Rope drums are outside of cab. Access doors are provided for servicing. Full tempered or duplate glass is used in all windows. Fully adjustable contour seat is standard.

Swing Circle:
The swing circle consists of two independent rows of precision balls and spacers. It is permanently adjusted at the factory and requires only occasional lubrication from easy accessible fittings. Swing gear has hardened internal cut teeth.

CARRIER

Chassis: 8 x 4 (4 axle) type
Specially designed and built by Crane Carrier Co. to Bucyrus-Erie Company specifications. Frame is all-welded box type construction, fabricated from alloy steel plates and shapes, adequately braced and reinforced. Standard equipment includes front grille, top frame decking, full length running boards, towing hooks at front and rear, front bumper, steps, grab handles and storage boxes. An 80 gallon safety type fuel tank is mounted on side of the frame. Open utility compartment adjacent to the engine.

Standard carrier 11 feet overall width with vertical outrigger cylinders removed.

Outriggers:
Front and rear double box type removable, with two reinforced beams per box. Outrigger beams are alloy steel I-beams that slide in the outrigger box. Hydraulic outriggers with hydraulic horizontal and vertical movement, and aluminum floats are standard. Vertical cylinders are equipped with safety interlock — "pilot operated check valves" lock outriggers pistons in set position. Vertical cylinders pin connected to beams for easy removal.

Dual controls located on both sides of carrier frame near rear of cab are standard.

Axles:
Front Axles: Two Shuler FTC axles in tandem, 110 in. track. Dynamic capacity of tandem 44,000 pounds.

Rear Axles: Clark Planetary BD-91,000, double reduction with final reduction in hub, full floating spiral bevel gears and cast housings. 100 in. track. Dynamic capacity of tandem, 110,000 pounds.

Suspension:
Front and Rear: C.C.C. cast alloy steel equalizer beams with four torque rods.

WARNING: The information contained in this specification is to be used only as a guide in evaluating the performance of a machine. For operation of a machine always refer to the capacity plate on the machine (since specifications may apply to a different model or series).

110 TON TRUCK CRANE

MAXIMUM ALLOWABLE LOADS IN POUNDS — CRANE SERVICE

Boom Length In Feet	Radius In Feet	Boom Angle In Degrees	Boom Point Pin Height (Ft.—In.)	Outriggers Set† Over Side or Rear	Without Outriggers On Tires	
					Over Side	Over Rear
40	12	78	46-6	*220,000	96,900	139,700
	16	74	45-9	*185,000	68,600	97,400
	20	66	44-0	*149,000	45,900	64,600
	25	58	41-3	118,900	34,100	47,900
	30	49	37-6	86,700	26,900	37,800
	35	39	22-6	67,900	22,100	31,100
60	15	79	66-3	*180,000	67,900	97,000
	20	74	65-0	*147,000	45,200	63,900
	25	69	63-6	118,500	33,400	47,200
	30	64	61-3	86,200	26,200	37,100
	35	59	58-6	67,400	21,400	30,300
	40	53	55-3	54,700	17,900	25,500
	50	40	45-9	39,400	13,200	19,100
80	20	78	96-9	*145,000	44,600	63,300
	25	75	84-6	118,200	32,800	46,600
	30	71	83-0	85,900	25,600	36,500
	35	67	81-0	67,000	20,800	29,700
	40	63	78-9	54,300	17,300	24,900
	50	55	72-9	38,900	12,600	18,500
	60	45	64-2	29,900	9,550	14,300
	70	34	52-3	24,000	7,550	11,500
90	20	80	96-9	*143,000	44,300	63,100
	25	76	94-9	*117,200	32,500	46,300
	30	73	93-6	85,700	25,300	36,200
	40	66	89-9	54,100	17,000	24,600
	50	59	84-6	38,600	12,300	18,200
	60	51	77-9	29,600	9,250	14,100
	70	43	68-3	23,800	7,200	11,200
	80	32	56-3	19,600	5,650	9,150
100	25	78	105-0	*116,000	32,200	46,100
	30	75	103-9	85,500	25,000	36,000
	40	69	100-6	53,900	16,700	24,400
	50	63	96-0	38,400	10,600	17,900
	60	56	90-0	29,400	7,950	13,800
	70	49	82-3	23,500	6,100	11,000
	80	41	72-3	19,400	4,650	8,900
	90	31	56-3	16,300	3,700	7,300
110	25	80	115-3	*115,000	31,900	45,700
	30	76	114-3	85,300	24,700	35,600
	40	71	111-3	53,600	16,400	24,000
	50	65	107-3	38,200	11,700	17,600
	60	59	102-0	29,100	8,650	13,500
	70	53	96-3	23,200	6,550	10,600
	80	46	86-9	19,100	5,000	8,550
	90	39	75-9	16,000	3,850	6,950
	100	29	60-9	13,600	2,900	5,650
120	25	80	125-6	*114,000	31,600	45,500
	30	77	124-6	85,100	24,400	35,400
	40	73	121-9	53,400	16,100	23,800
	50	67	118-9	38,000	11,400	17,300
	60	62	113-3	28,900	8,400	13,200
	70	57	107-6	23,000	6,300	10,300
	80	51	100-0	18,800	4,750	8,300
	90	44	90-9	15,700	3,600	6,650
	100	37	79-3	13,300	2,650	5,400
	110	28	63-3	11,400	1,900	4,400
130	30	78	134-6	84,900	24,100	35,100
	40	74	132-3	53,200	15,800	23,500
	50	69	128-9	37,700	11,100	17,000
	60	64	124-6	28,700	8,100	12,900
	70	59	119-3	22,800	6,000	10,000
	80	54	112-6	18,600	4,450	8,000
	90	49	104-0	15,500	3,300	6,400
	100	42	94-9	13,000	2,350	5,100
	110	35	82-6	11,100	1,600	4,100
	120	27	65-9	9,600	950	3,250
140	30	79	144-9	84,700	23,900	34,800
	40	75	142-6	53,000	15,500	23,200
	50	71	139-6	37,500	10,800	16,800
	60	66	135-6	28,500	7,850	12,700
	70	62	130-9	22,500	5,750	9,800
	80	57	124-9	18,300	4,200	7,700
	90	52	117-9	15,200	3,000	6,100
	100	47	108-0	12,800	2,100	4,850
	110	41	98-9	10,900	1,350	3,850
	120	34	85-6	9,350	—	3,000
	130	26	68-3	8,050	—	2,250

Boom Length In Feet	Radius In Feet	Boom Angle In Degrees	Boom Point Pin Height (Ft.—In.)	Outriggers Set† Over Side or Rear
150	35	78	154-0	65,600
	40	76	152-9	52,800
	50	72	150-0	37,200
	60	68	146-6	28,200
	70	64	142-0	22,200
	80	60	136-6	18,000
	90	55	130-0	14,900
	100	50	122-6	12,500
	110	45	113-3	10,600
	120	39	102-3	9,050
	130	33	88-6	7,750
160	35	80	164-3	65,300
	40	77	163-3	52,600
	50	73	160-6	37,000
	60	69	157-0	27,900
	70	66	153-0	22,000
	80	62	148-0	17,700
	90	57	142-3	14,600
	100	53	135-3	12,200
	110	48	127-0	10,300
	120	43	117-6	8,750
	130	38	105-9	7,450
170	40	78	173-6	52,400
	50	74	171-0	36,800
	60	71	167-9	27,700
	70	67	164-0	21,700
	80	63	159-3	17,500
	90	60	153-9	14,400
	100	56	147-6	11,900
	110	51	140-0	10,000
	120	47	131-6	8,450
	130	42	121-3	7,150
180	40	78	183-6	52,200
	50	75	180-3	36,500
	60	72	178-3	27,400
	70	68	174-9	21,500
	80	65	170-6	17,200
	90	61	165-3	14,100
	100	58	159-6	11,700
	110	54	152-6	9,800
	120	50	144-9	8,200
	130	46	136-9	6,900
	140	41	125-0	5,800
190	40	79	193-9	51,900
	50	76	191-6	36,300
	60	73	188-9	27,100
	70	70	185-6	21,200
	80	66	181-3	16,900
	90	63	176-9	13,800
	100	60	171-3	11,400
	110	56	165-0	9,450
	120	52	157-9	7,900
	130	48	149-6	6,600
	140	44	139-9	5,500
200	50	77	201-9	36,100
	60	74	199-3	26,900
	70	71	196-0	20,900
	80	68	192-3	16,700
	90	65	187-9	13,600
	100	61	182-9	11,100
	110	58	176-9	9,250
	120	55	170-3	7,650
	130	51	162-6	6,350
	140	47	153-9	5,250
210	50	77	212-3	35,800
	60	75	209-9	26,700
	70	72	206-6	20,700
	80	69	203-0	16,500
	90	66	198-9	13,300
	100	63	194-0	10,900
	110	60	188-6	8,950
	120	56	182-3	7,400
	130	53	175-3	6,050
	140	50	167-3	4,950
220	50	78	222-3	35,600
	60	75	220-0	26,500
	70	73	217-0	20,500
	80	70	213-9	16,200
	90	67	209-9	13,100
	100	64	206-3	10,600
	110	61	200-0	8,700
	120	58	194-3	7,150
	130	55	187-6	5,850
	140	52	180-3	4,700
	150	48	171-9	3,800
	160	45	162-3	2,950

The above ratings apply to machines that are level and standing on hard, level uniform supporting surfaces. Loads must be freely suspended. The radii specified are loaded radii. Ratings include blocks, hooks, slings or other equipment used in handling loads. Proper care must be exercised by the operator at all times to avoid shock or side loadings on the boom. Ratings apply only to machines having booms in first class condition built and recommended by Bucyrus-Erie Company.

†Entire machine supported on both outriggers with rear tires clear of ground.

*Indicates that maximum allowable load is limited by factors other than tipping.

110 TON TRUCK CRANE

BUCYRUS-ERIE

BUCYRUS-ERIE COMPANY

General Offices: South Milwaukee, Wisconsin, U. S. A.

MEMBER PCSA POWER CRANE AND SHOVEL ASSOCIATION

It is the policy of Bucyrus-Erie Company to improve its products continually. The right is reserved to make changes in specifications or design which in the opinion of this company are in accord with this policy, or which are necessitated by the unavailability of materials. The description herein is for the purpose of identifying the type of machine, and does not limit or extend the express warranty provisions in any contract of sale.

Spec. No. 110-T-480 7.5M-HB Printed in U.S.A.