

Technical Data

Specifications & Capacities

120|HT

Telescopic Boom Truck Crane
120 US ton
110 metric ton



CAUTION: This material is supplied for reference use only. Operator must refer to in-cab Crane Rating Manual and Operator's Manual to determine allowable crane lifting capacities and assembly and operating procedures.

Boom, Attachments, and Upper Structure

■ Boom

Design —Six section, formed construction of extra high tensile steel consisting of one base section and five telescoping sections. The two plate design of each section has multiple longitudinal bends for superior strength. Each telescoping section extends independently by means of one double-acting, single stage hydraulic cylinder with integrated holding valves.

Boom

- 38.3–164.1 ft (11.7–50.0m) six section boom
- Integral boom dolly connection
- Six boom extend modes (EM1 through EM6), controlled from the operator's cab, provide superior capacities by varying the extension of the telescoping sections:
 - EM1 extends to 164.1 ft (50.0m)
 - EM2 extends to 152.4 ft (46.5m)
 - EM3 extends to 140.3 ft (42.7m)
 - EM4 extends to 126.3 ft (38.5m)
 - EM5 extends to 114.6 ft (34.9m)
 - EM6 extends to 89.5 ft (27.3m)
- Mechanical boom angle indicator
- Maximum tip height for each extend mode is:
 - EM1 is 173 ft (52.6m)
 - EM2 is 161 ft (49.1m)
 - EM3 is 149 ft (45.5m)
 - EM4 is 136 ft (41.3m)
 - EM5 is 124 ft (37.8m)
 - EM6 is 99 ft (30.2m)

Boom Wear Pads

- Wear pads with Teflon inserts that self-lubricate the boom sections
- Bottom wear pads are universal for all boom sections
- Top wear pads are universal for all boom sections

Boom Head

- Five 16.5 in (41.9cm) root diameter nylon sheaves to handle up to ten parts of line
- Easily removable wire rope guards
- Rope dead end lugs on each side of the boom head
- Boom head is designed for quick-reeve of the hook block
- Wind speed indicator
- Aviation obstruction marking light and flag

Boom Elevation

- One double acting hydraulic cylinder with integral holding valve
- Boom elevation: -3° to 80°

Auxiliary Lifting Sheave – Optional

- Single 16.5 in (41.9cm) root diameter nylon sheave
- Easily removable wire rope guards
- Does not affect erection of the fly or use of the main head sheaves

Heavy Duty Lifting Sheave Package – Optional

- Necessary to achieve greater than 12 parts of line lifts
- Two 16.5 in (41.9cm) root diameter nylon sheaves
- Easily removable wire rope guards
- Does not affect use of the main head sheaves or auxiliary lifting sheave
- Cannot be used when fly is erected

Hook Blocks and Balls – Optional

- 27 ton (25mt) 1 sheave quick-reeve hook block with safety latch
- 60 ton (55mt) 3 sheave quick-reeve hook block with safety latch
- 90 ton (82mt) 5 sheave quick-reeve hook block with safety latch
- 140 ton (127mt) 7 sheave quick-reeve hook block with safety latch
- 10 ton (9mt) swivel hook ball with safety latch

Fly – Optional

- 9.5 ft–35 ft (2.9m–10.7m) two piece lattice fly, stowable, offsettable to 0° , 15° , 30° , and 45° . Maximum tip height is 207 ft (63m).
- 9.5 ft–35 ft–58 ft (2.9m–10.7m–17.7m) three piece lattice fly, stowable, offsettable to 0° , 15° , 30° , and 45° . Maximum tip height is 231 ft (70.3m).
- 35 ft (10.7m) one piece fly
- 35 ft–58 ft (10.7m–17.7m) two piece fly

Fly Extensions – Optional

- One 16 ft (4.9m) lattice extension to be mounted between the boom head and fly options. Maximum tip height is 246 ft (75.0m).
- Two 16 ft (4.9m) lattice extensions to be mounted between the boom head and fly options. Maximum tip height is 262 ft (79.7m).

■ Upper Operator's Cab and Controls

Environmental Cab – Fully enclosed, one person cab of tubular and sheet steel structure with formed plastic interior panels.

Equipped with:

- Tinted and tempered glass windows
- Extra—large fixed front window with time delayed windshield wiper and washer
- Swing up roof window with windshield wiper and washer
- Sliding left side door with large fixed window
- Sliding right side window and pop—out rear window for ventilation
- Six way adjustable, cushioned seat with seat belt and storage compartment
- Diesel fired warm—water heater with ten air ducts for front windshield defroster and cab floor
- Air Conditioning – Integral with cab heating system utilizing the same ventilation outlets and automatic temperature control (ATC)
- Adjustable sun screen
- Dome lights with red nighttime reading LED's
- Cup holder
- Fire extinguisher
- Two position travel swing lock
- AM/FM Bluetooth radio

Armrest Controls – Two dual axis electronic joystick controllers or optional single axis electronic controllers for:

- Swing hoist
- Boom hoist
- Main (front) winch
- Auxiliary (rear) winch – optional
- Winch high/low speed switch(es)
- Warning horn button
- Swing park brake switch
- Engine throttle lock switch
- Engine set/resume switch
- Cab tilt
- Counterweight removal
- Hydraulic offset fly – optional

Foot Controls

- Boom telescope
- Swing brake
- Engine throttle

Upper Right Console – Controls and indicators for:

- | | |
|-------------------------------------|--------------------------------|
| • Engine ignition | • Radio |
| • Engine stop | • DRI on/off selection |
| • Function lockout | • HVAC controller |
| • Front windshield wiper and washer | • 360 swing lock – optional |
| • Cab lights and upper frame lights | • Boom floodlights |
| • Horn | • Rotating beacon/Strobe light |
| • Dome light with switch | • Top hatch wiper washer |
| • E—stop switch | • Winch(es) disable |
| | • Engine indicator gauge |

Rear Right Side Panel

- 12V accessory outlet (10amp)
- USB charge port

Camera Display – Located on the right A—post with an adjustable mount

- Displays right side of upper
- Displays main and auxiliary winches

Diagnostic Center – Located on the right rear wall behind the seat.

- Engine diagnostic
- RCL CANBUS diagnostic
- Boom CANBUS diagnostic
- Outrigger CANBUS diagnostic

Fuse & Relay Panel – Located on the left rear wall behind the seat.

Link-Belt Pulse 2.0 – The Link-Belt in-house designed, total crane operating system that utilizes a 10 in touch screen color display with integrated RCL and engine data, advanced diagnostics and systems monitoring, Wi-Fi capable for remote software updates, operator customizable, and a readout and operator interface for the following systems:

- **Rated capacity limiter** – LCD graphic audio – visual warning system integrated into the dash with anti – two block and function limiter. Operating data includes:
 - RCL controller USB diagnostic
 - Crane configuration
 - Boom length and angle
 - Boom head height
 - Allowed load and percent of allowed load
 - RCL light bar
 - Boom angle
 - Radius of load
 - Actual load
 - Wind speed
 - Highlighted unit of measurement on working screen
 - Telescope operation displayed in real time
 - Outrigger position sensing
 - Drum rotation direction indication
 - Third wrap indicator
 - Diagnostics
 - Counterweight detection system
 - Operator settable alarms (include):
 - Maximum and minimum boom angles
 - Maximum tip height
 - Maximum boom length
 - Swing left/right positions
 - Operator defined area (imaginary plane)
- **Cab Instrumentation**

• Tachometer	• Swing park brake light
• Engine water temperature	• Engine speed
• Fuel level	• Engine oil pressure
• Hydraulic oil temperature	• Battery voltage
• Stop engine	• Fuel rate (gal/hr)
• Check engine	• Engine load
• Wait to start	• Engine diagnostics
• Diesel exhaust fluid (DEF) level	
• Engine air filter high restriction light	
• Regeneration light	
• Regeneration inhibit switch	
• Regeneration initiate switch	
• High exhaust temperature light	
• Regeneration disabled light	
- **Telematics** – Cellular based data logging and monitoring system that provides:
 - Location and operational settings
 - Routine maintenance
 - Crane and engine monitoring
 - Diagnostic and fault codes

■ Swing

Motor/Planetary – Bi-directional, hydraulic swing motor mounted to a planetary reducer for 360° continuous smooth swing at 1.9 rpm.

Swing Park Brake – 360°, electric over hydraulic, (spring applied/hydraulic released) multi-disc brake mounted on the speed reducer. Operated by a switch from the operator's cab.

Swing Brake – 360°, foot operated, speed reducing system with disc brake hold feature.

Swing Lock – Two-position swing lock (0° and 180°) operated from the operator's cab.

360° Positive Swing Lock – Optional – Meets New York City requirement.

■ Electrical

Swing Alarm – Audio warning device signals when the upper is swinging.

Lights

- Two working lights on front of the cab.
- One amber strobe beacon on top of the cab – optional
- Boom floodlight – Single – One high intensity floodlight mounted at the front portion of the boom base section. Adjustable to fixed positions.
- Boom floodlight – Dual – Two high intensity floodlights mounted at the front portion of the boom base section. Two adjustable to individual fixed positions.
- Boom floodlight package – Three high intensity floodlights mounted at the front portion of the boom base section. Two adjustable to individual fixed positions and one remote controlled.
- Work lighting package – Four high intensity work lights mounted on top of the operator's cab, the right side of the superstructure facing forward, on the upper work platform, and on the left side of the superstructure facing down.

■ Load Hoist System

Load Hoist Performance

Main (Rear) and Auxiliary (Front) Winches – 3/4 in (19mm) Rope										
Layer	Maximum Line Pull		Normal Line Speed		High Line Speed		Layer		Total	
	lb	kN	ft/min	m/min	ft/min	m/min	ft	m	ft	m
1	23,632	105.12	150	45.7	241	73.5	115	35.1	115	35.1
2	21,616	96.15	164	50.0	264	80.5	125	38.1	240	73.2
3	19,917	88.60	178	54.3	286	87.2	136	41.5	376	114.6
4	18,465	82.14	192	58.5	309	94.2	147	44.5	522	159.1
5	17,211	76.56	206	62.8	331	100.9	157	47.9	679	207.0
6	16,116	71.69	220	67.1	354	107.9	168	51.2	847	258.2

Wire Rope Application		in	mm	Type	lb	kg
Main (Rear) Winch	Standard	3/4	19	37x7 rotation resistant – right lang lay (Type KC)	16,000	7 257.5
	Optional	3/4	19	35x7 rotation resistant – right lang lay (Type CC)	17,360	7 874.4
Auxiliary (Front) Winch	Standard	3/4	19	37x7 rotation resistant – right lang lay (Type KC)	16,000	7 257.5
	Optional	3/4	19	35x7 rotation resistant – right lang lay (Type CC)	17,360	7 874.4

Main and Auxiliary Winches

- Axial piston (2-speed) motors driven through planetary reduction unit for positive control under all load conditions.
- Grooved lagging
- Power up/down mode of operation
- Hoist drum cable follower
- Drum rotation indicator
- Drum diameter: 15 in (38.1cm)
- Rope length:
 - Main: 730 ft (222.5m)
 - Auxiliary: 600 ft (182.9m)
- Maximum rope storage: 850 ft (259m)
- Terminator style socket and wedge

Carrier

General

- 8 ft 6 in (2.6m) wide
- 23 ft 5.5 in (7.14m) wheelbase (centerline of first axle to centerline of fourth axle)
- **Frame** — Box—type, torsion resistant, welded construction made of high tensile steel. Equipped with front and rear towing and tie—down lugs, tow connections, and access ladders.

Outriggers

Boxes — Two double box, front and rear welded to the carrier frame.

Beams and Jacks — Four dual stage beams with Variable Confined Area Lifting Capacities (V—CALC) provide selectable outrigger extensions of full, intermediate, and retracted positions. 81 possible outrigger configurations. Jacks with integral check valves, hydraulically controlled from the operator's cab and on both sides of carrier. A fifth front bumper outrigger 16 in (40.6cm) diameter, self—storing with integral check valves is hydraulically controlled from the upper operator's cab and at the front bumper of carrier.

Pontoons

- **Main** — Four lightweight, stow'n go, 23.5" x 27.25" (59.7 x 69.2cm) hexagonal steel pontoons with a contact area of 443 in² (2 858cm²) can be stored for road travel in either the storage racks on the carrier or under the outrigger boxes
- **Front Bumper** — One, lightweight, self—storing, 16" (40.6cm) diameter steel pontoon with a contact area of 199 in² (1 284cm²)

Jack Reaction

- **Main** — 122,000 lb (542.7kN) force and 276 psi (1 903kPa) ground bearing pressure
- **Front Bumper** — 40,000 lb (177.9kN) force and 201 psi (1 386kPa) ground bearing pressure

Steering and Axles

- Dual gear steering system provides hydraulic assisted steering with mechanical link between steering wheel and wheels
- **Drive** — 8 x 4 for on/off—highway travel
- **Axle 1 & 2** — Tandem steered, non—driven
- **Axle 3 & 4** — Tandem non—steered, driven with reduction: 5.38 to 1
- **Inter—Axle Differential Lock** — Locks axle 3 with axle 4. Operated by a switch from the carrier cab.
- Cross axle lock on axles 3 and 4

Suspension

Front — Independent air suspension

Rear — Independent air suspension

Tires and Wheels

Front — Four (single) 445/65R22.5 tires on aluminum disc wheels

Rear — Eight (dual) 315/80R22.5 tires on aluminum disc wheels

- Spare tires and wheels — optional
- Tire inflation kit — optional

Brakes

Service — Full air anti—lock (ABS) disc brakes on all wheel ends. Dual circuit compressed air system with air dryer.

Parking/Emergency — Spring loaded type, acting on 3rd and 4th axles automatically apply when air pressure drops below 60 psi (413.7kPa) in both circuits.

Electrical

Battery — Four batteries provide 24 volt starting and operation, easily accessible battery disconnects, and battery charging posts.

Lights

- Front lighting includes two main daytime running/headlights, two high beam lights, two parking/directional indicators, and three cab marker lights.
- Side lighting includes three parking/directional indicators per side.
- Rear lighting includes two parking/directional indicators, two parking/brake lights, two reverse lights, three marker lights, and a license plate light.
- Other equipment includes hazard/warning system, LED light, instrument panel light, signal horn, carrier cab door courtesy light, and two outrigger LED lights on each side.
- One amber strobe beacon behind the cab
- Compartment lighting inside storage boxes, outrigger control boxes, and fuel fill.

Engine

Specification	Cummins X12
Emissions Compliance Level:	EPA 2021
Maximum Allowable Sulfur Content of Fuel (PPM):	15
Numbers of cylinders:	6
Cycle:	4
Bore and Stroke: inch (mm)	5.2 x 5.67 in (132 x 144mm)
Piston Displacement: in ³ (L)	720 (11.8L)
Max. Brake Horsepower: hp (kW)	445 (339) @ 1,600 rpm 410 (306) @ 2,000 rpm
Peak Torque: ft lb (Nm)	1,550 (2 102) @ 1,200 rpm
Alternator: volts — amps	12 — 145
Crankcase Capacity: qt (L)	48 (45.4)

- Cruise control
 - Cummins X12 three stage engine compression brake
 - Thermostatically controlled, hydraulically driven radiator fan
 - 120 volt engine block heater — X12
 - Ether injection system — optional on X12
 - Grid heater starting aid standard on X12
 - Engine equipped with on-board diagnostics — X12
- (1) Can only be sold and/or operated where EPA2021 on—highway emission standards are accepted.

Transmission

Automated — ZF TRAXON (no clutch pedal) manual transmission with 12 forward gears and 2 reverse gears.

Transport Scenarios – Axle Loads



Base crane: Includes: 250 lb driver, oversize load signs, two winches with cable followers, 730' wire rope on main winch, 600' wire rope on auxiliary winch, no counterweight, 35–58' two piece offset fly, auxiliary lifting sheave, 60 T hook block, 10 T hookball, and 500 lb rigging		Gross Vehicle Weight		Front Tandem		Rear Tandem	
		lb	kg	lb	kg	lb	kg
			90,118	40,877	43,957	19,938	46,161
Add	4,000 lb counterweight on carrier	4,000	1,814	3,108	1,410	892	405
	6,000 lb counterweight on carrier*	6,000	2,722	4,662	2,115	1,338	607
	8,000 lb counterweight on carrier	8,000	3,629	6,216	2,820	1784	809
	4,000 lb counterweight on carrier rear	4,000	1,814	-1,607	-729	5,607	2,543
	4,500 lb counterweight on upper	4,500	2,041	-2,399	-1,088	6,899	3,129
Substitute	9.5'–35'–58' 3 piece offset fly	531	241	715	324	-184	-83
Remove	35–58' 2 piece offset fly	-2,636	-1,196	-2,494	-1,131	-142	-64
	60 T hook block	-1,150	-522	-1,961	-889	811	368
	10 T hookball	-584	-265	-996	-452	412	187

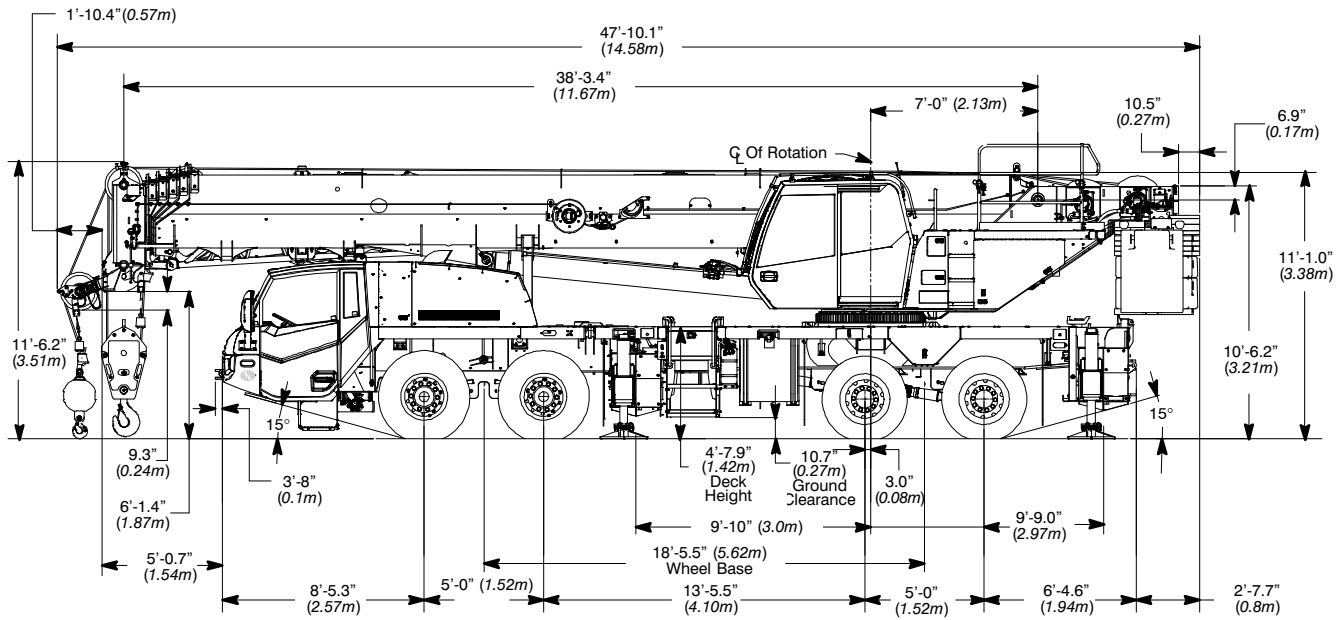
*Requires California Counterweight Package



Base crane: Includes: 250 lb driver, oversize load signs, two winches with cable followers, 730' wire rope on main winch, 600' wire rope on auxiliary winch, no counterweight, 35–58' two piece offset fly, auxiliary lifting sheave, 60 T hook block, 10 T hookball, 500 lb rigging, and 9,000 lb 3–axle close couple dolly. (Boom extended 2' in travel mode)		Gross Vehicle Weight		Front Tandem		Rear Tandem		Dolly	
		lb	kg	lb	kg	lb	kg	lb	kg
			99,180	44,987	31,262	14,180	38,118	17,290	29,801
Add	36,500 lb of counterweight (28,500 lb on dolly, 8,000 lb on carrier)	36,500	16,556	6,217	2,820	1,783	809	28,500	12,927
	16,500 lb of counterweight (8,500 lb on dolly, 8,000 lb on carrier)	16,500	7,484	6,217	2,820	1,783	809	8,500	3,856
Substitute	9.5'–35'–58' 3 piece offset fly	531	241	15	7	15	7	501	227
Remove	35–58' 2 piece offset fly	-2,636	-387	-2,494	-385	142	64	-1,864	-845
	60 T hook block	-1,150	-522	126	57	126	57	-1,402	-636
	10 T hookball	-584	-265	64	29	64	29	-712	-323

General Dimensions

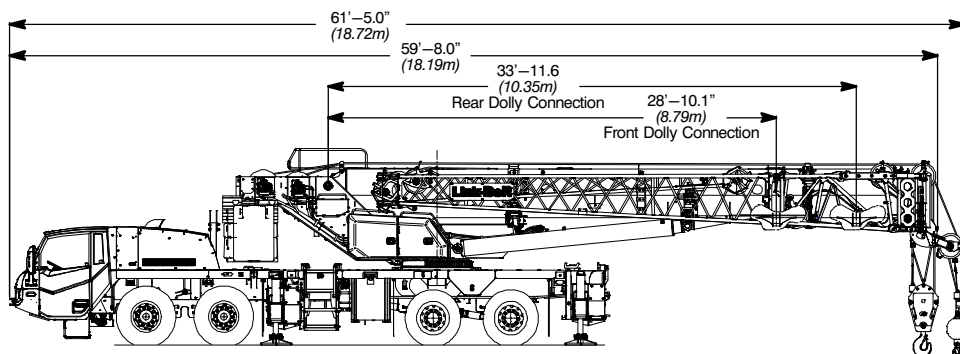
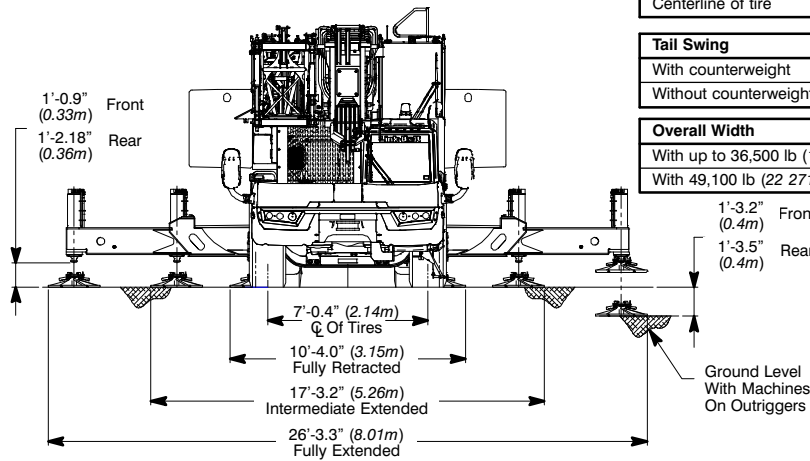
EPA 2021



Turning Radius	English	Metric
Wall to wall over carrier	49'-6.5"	15.1m
Wall to wall over boom	50'-7.8"	15.4m
Wall to wall over boom attachment	51'-10.3"	15.8m
Curb to curb	44'-11.0"	13.7m
Centerline of tire	44'-0.9"	13.4m

Tail Swing	English	Metric
With counterweight	13' 9"	4.2m
Without counterweight	13' 0"	4.0m

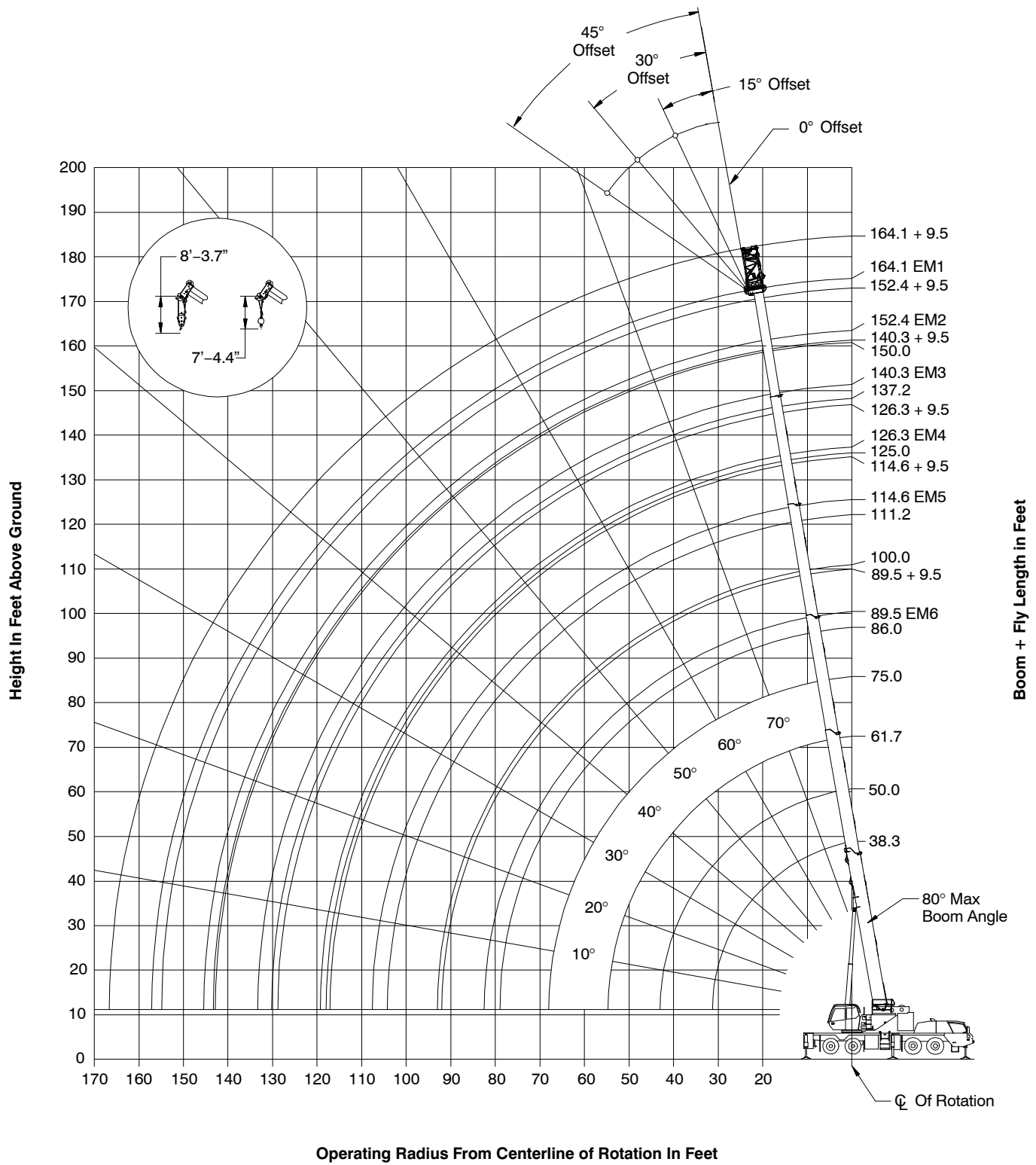
Overall Width	English	Metric
With up to 36,500 lb (16 556.1kg) counterweight	8' 6"	2.6m
With 49,100 lb (22 271.4kg) counterweight	13' 11"	4.2m



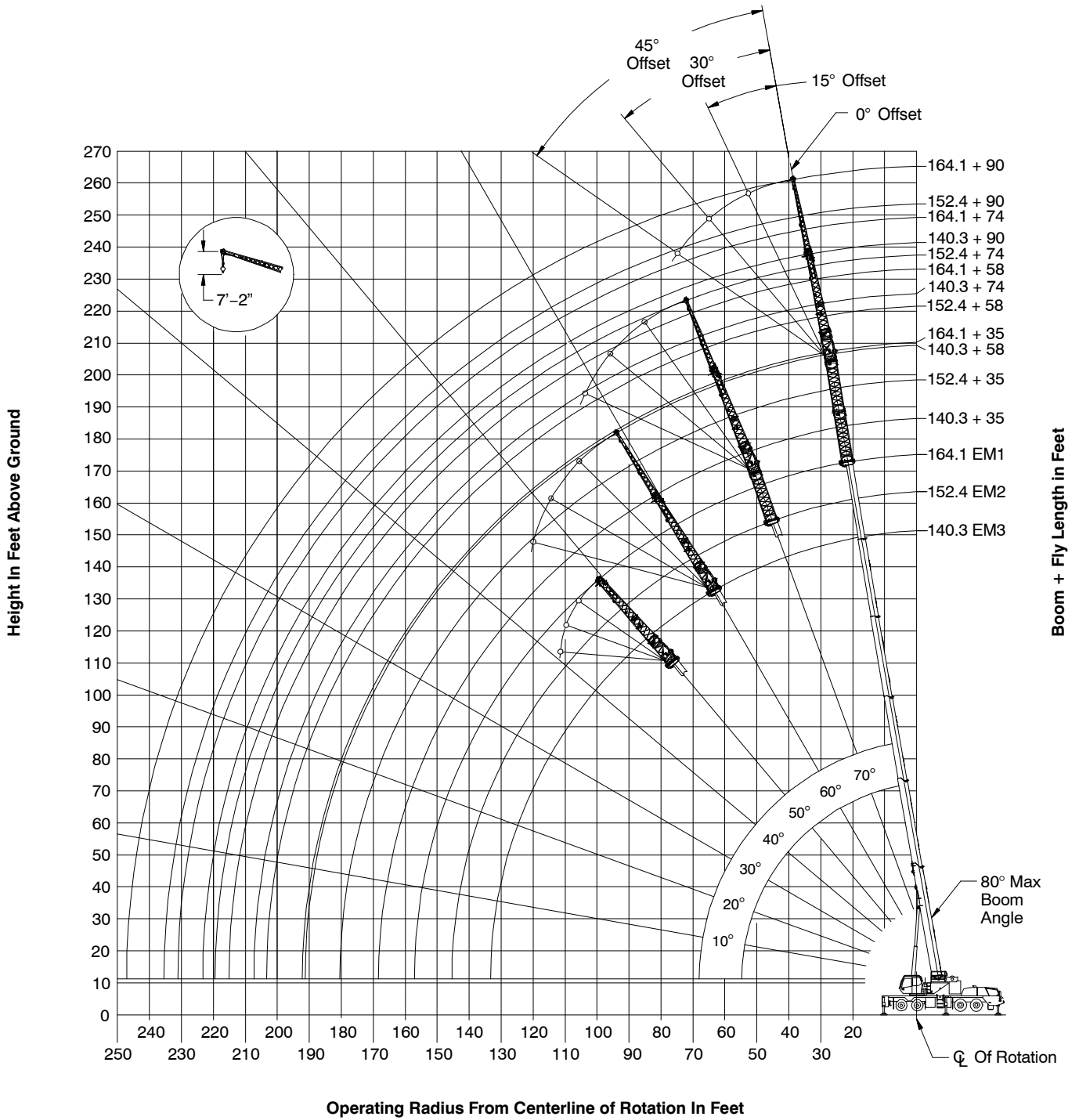
Not To Scale

Working Range Diagram

Main Boom + 9.5' Fly



Working Range Diagram Main Boom + Attachments



49,100 lb Counterweight – Fully Extended Outriggers – 360° Rotation (All Capacities Are Listed In Pounds)												
Radius (ft)	Boom Length (ft)											Radius (ft)
	38.3	49.99-50.45	60-63.03	73.84-76.05	85-89.50	99.44-100	110-115	125-126.34	137.20-140.25	150-152.41	164.1	
7	240,000											7
8	205,000											8
9	180,000											9
10	172,400	160,700	137,600									10
12	156,100	147,300	137,600	120,400								12
15	135,900	130,800	125,000	120,400	91,500							15
20	101,800	103,900	103,800	102,500	91,500	65,800	50,500					20
25	79,500	81,900	82,400	81,600	80,100	65,800	50,500	38,800	25,400			25
30	64,100	66,800	67,500	67,100	65,900	65,800	50,500	38,800	30,800	24,400		30
35		55,800	56,600	57,400	57,400	56,400	46,400	38,800	30,800	24,400	19,600	35
40		47,400	48,700	49,700	49,300	48,300	41,900	38,300	30,800	24,400	19,600	40
45			42,900	43,300	42,900	42,100	38,000	35,300	30,800	24,400	19,600	45
50			37,600	38,000	37,700	36,900	34,700	33,100	29,600	24,400	19,600	50
55			31,300	32,900	32,700	31,800	31,100	30,800	27,500	24,400	19,600	55
60				28,800	28,600	28,700	28,500	27,900	25,700	23,800	19,600	60
65				25,400	25,100	25,800	25,100	24,500	24,000	22,500	19,600	65
70					22,300	23,200	22,400	21,700	22,100	21,500	19,600	70
75					21,100	20,800	20,000	19,600	19,700	20,200	19,000	75
80					18,300	18,700	18,700	18,400	17,700	18,300	17,700	80
85						16,900	16,900	16,700	16,600	16,500	15,900	85
90						15,400	15,400	15,800	15,600	15,100	14,500	90
95							14,000	14,600	14,300	13,700	13,200	95
100							12,800	13,300	13,100	12,500	11,900	100
105							10,800	12,200	11,900	11,400	10,800	105
110								11,200	10,900	10,400	9,900	110
115								10,300	10,000	9,500	9,000	115
120									9,200	8,700	8,100	120
125									8,500	7,900	7,400	125
130									7,700	7,200	6,700	130
135										6,600	6,100	135
140										6,000	5,500	140
145										4,400	5,000	145
150											4,500	150
155											4,000	155

This information is not for crane operation. Operator must refer to the in-cab information for crane operation. Rated lifting capacities shown on fully extended outriggers do not exceed 85% of the tipping loads and on tires do not exceed 75% of the tipping loads.

49,100 lb Counterweight – Fully Extended Outriggers – 360° Rotation (All Capacities Are Listed In Pounds)									
164.1 ft Main Boom Length									
Radius (ft)	35 ft Manual Offset Fly				58 ft Manual Offset Fly				Radius (ft)
	0°	15°	30°	45°	0°	15°	30°	45°	
40	11,000								40
45	11,000								45
50	11,000				7,400				50
55	11,000	11,500			7,400				55
60	11,000	11,500			7,400				60
65	11,000	11,500	11,300		7,400	7,800			65
70	11,000	11,500	11,100	10,100	7,400	7,600			70
75	11,000	11,500	11,000	9,900	7,400	7,400			75
80	11,000	11,500	10,800	9,700	7,400	7,300	6,200		80
85	11,000	11,500	10,700	9,600	7,400	7,100	6,100		85
90	11,000	11,500	10,500	9,500	7,400	7,000	6,000	5,300	90
95	11,000	11,500	10,300	9,300	7,400	6,900	5,900	5,200	95
100	11,000	11,300	10,100	9,200	7,400	6,700	5,800	5,100	100
105	10,500	10,900	9,900	9,100	7,400	6,600	5,700	5,100	105
110	9,500	10,100	9,700	9,000	7,400	6,400	5,600	5,000	110
115	8,600	9,200	9,400	8,900	7,400	6,300	5,500	5,000	115
120	7,800	8,300	8,700	8,800	7,300	6,200	5,400	4,900	120
125	7,100	7,500	7,900	8,100	7,100	6,100	5,300	4,900	125
130	6,400	6,800	7,100	7,300	6,900	5,900	5,300	4,800	130
135	5,800	6,200	6,500	6,600	6,300	5,800	5,200	4,800	135
140	5,200	5,600	5,800	6,000	5,700	5,700	5,100	4,800	140
145	4,700	5,000	5,200	5,300	5,200	5,600	5,000	4,700	145
150	4,200	4,500	4,700	4,800	4,700	5,200	5,000	4,700	150
155	3,700	4,000	4,200	4,200	4,200	4,700	4,900	4,700	155
160	3,300	3,500	3,700		3,800	4,300	4,600	4,600	160
165	2,900	3,100	3,200		3,400	3,800	4,200	4,300	165
170	2,500	2,700	2,800		3,000	3,400	3,700	3,900	170
175	2,100	2,300	2,400		2,600	3,000	3,300	3,400	175
180	1,700	1,900			2,300	2,700	2,900	3,000	180
185	1,400	1,500			1,900	2,300	2,500		185
190					1,600	1,900	2,100		190
195					1,300	1,600	1,700		195
200					1,000	1,200	1,300		200
205						900			205

This information is not for crane operation. Operator must refer to the in-cab information for crane operation. Rated lifting capacities shown on fully extended outriggers do not exceed 85% of the tipping loads and on tires do not exceed 75% of the tipping loads.