

Upperstructure

■ Boom

Patented Design. Boom side plates have diamond shaped impressions for superior strength to weight ratio and 100,000 p.s.i. (689.5 MPa) steel angle chords for lateral stiffness. Boom telescope sections are supported by top, bottom and adjustable side wear shoes to prevent metal to metal contact.

Microguard 434, Rated Capacity Limiter "RCL" - Standard; Graphic audio-visual warning system built into dash with anti-two block and function limiters. Operating data available includes boom length, boom angle, head height, radius of load, machine configuration, allowed load, actual load and percent of allowed load. Presettable alarms for maximum and minimum boom angles, max. tip height, max. boom length, swing left/right positions. Operator defined area alarm is standard. Anti-two block weight designed for quick reeve of hook block.

Optional; Load rating bar graph for quick operator reference.

Boom — 35' 6" - 110' 0" (10.82-33.53 m) four-section full power boom.

Two Mode Boom extension — The basic mode is the full power, synchronized mode of telescoping all sections proportionally to 110' 0" (33.53 m).

The exclusive *A*-max mode (or mode 'A') extends only the inner mid section to 60.3' (18.38 m) offering increased capacities for in-close, maximum capacity picks.

Boom head — Four 16-1/2" (0.42 m) root diameter nylon sheaves with a fifth nylon sheave available to handle up to 10 parts of wire rope. Easily removable wire rope guards; rope dead end lugs provided on each side of boom head. Boom head designed for quick reeve of hook block.

Auxiliary lifting sheave — *Optional;* Single 16-1/2" (0.42 m) root diameter nylon sheave with removable wire rope guard, mounted to boom. For use with one or two parts of line off the optional front winch. Does not affect erection of fly or use of main head sheaves for multiple reeving.

Boom elevation — Two Link-Belt designed hydraulic cylinders with holding valves and bushings in each end. Hand control for controlling boom elevation from -3° to + 78°.

■ Fly

Optional — 34' (10.36 m) offsettable stowable one-piece lattice type with lugs to allow for addition of second section. Can be offset 1°, 15°, or 30°.

Optional — 34' - 56' (10.36 - 17.07 m) offsettable stowable 2-piece lattice type. Can be offset 1°, 15°, or 30°.

■ Cab and Controls

Environmental cab; isolated from sound and vibration by a neoprene seal. All windows are tinted and tempered safety glass. Sliding rear and right side windows and swing up roof window for maximum visibility and ventilation. Slide by door opens to 3' 0" (0.91 m) width. 6-way adjustable operator's seat with retractable seat belt. 4-way adjustable tilt/telescoping steering wheel. Control levers for swing, boom telescope, winch, and boomhoist with foot control swing brake. Outrigger sight level bubble and controls.

Cab instrumentation — Dash mounted gauges for hydraulic oil temperature, convertor temperature, oil pressure, water temperature, fuel and voltmeter. Air pressure gauge with low air warning light and buzzer.

■ Swing

Bi-directional hydraulic swing motor mounted to a planetary reducer for 360° continuous smooth swing at 2.6 r.p.m.

Swing brake — Foot operated, spring released disc brake mounted on the speed reducer.

Swing lock — Standard; two position travel lock operated from the operator's cab.

Counterweight — Bolted to upperstructure frame. 13,000 lb. (5 897 kg) cwt.

■ Hydraulic System

Main pump — 3-section gear-type pump. Combined pump capacity 142 gpm (538 lpm). Mounted on torque converter, powered by engine through a pump disconnect. Pump disconnect is a spline-type clutch engaged/disengaged from carrier. Pump operates at 3,000 p.s.i. (20.7 MPa) maximum system pressure. O Ring Face Seal (ORFS) technology throughout with hydraulic oil cooler standard.

Swing / outrigger / steering pump — Single gear-type pump, 25 gpm (95 lpm)

maximum. Mounted on torque converter, powered by engine through a straight mechanical drive. Pump operates at 3,000 p.s.i. (20.7 MPa) maximum system pressure.

Reservoir — 170 gallon (643.5 L) capacity. Diffusers for deaeration.

Filtration — One 10-micron filter located inside hydraulic reservoir. Accessible for easy replacement.

Control valves — Six separate control valves allow simultaneous operation of all crane functions.

■ Load Hoist System

Standard — 2M rear winch with grooved lagging, two-speed motor and automatic brake; power up/down mode of operation. Bi-directional gear-type hydraulic motor, driven through a planetary reduction unit for positive operator control under all load conditions. Asynchronous parallel double crossover grooved drums minimize rope harmonic motion.

Optional — 2M front winch with two-speed motor and automatic brake, power up/down mode of operation.

Line pulls and speeds — Maximum line pull 16,200 lbs. (7 348 kg) and maximum line speed of 474 f.p.m. (144 m/min) on standard 17" (0.43 m) root diameter grooved drum.

■ Additional Equipment - Standard

360° swing lock (meets New York City requirements), rotation resistant wire rope, controls for future addition of auxiliary winch, fire extinguisher, warning horn, mirrors, tilt/telescoping and locking steering wheel, drum rotation indicators, electric windshield wiper, windshield washer, circulating fan, cup holder, sun screen, backup alarm, top hatch window wiper, audible swing alarm and travel lights.

■ Additional Upperstructure Equipment - Optional

Diesel or hydraulic heater, 50-ton hook block, 8-1/2 ton hook ball, boomhoist foot control, foot and hand throttle, rear steer indicator, emergency steering system, low oil pressure & high water temperature audio/visual warning system, tachometer, air conditioning, amber strobe light, boom floodlight, and cab mounted spotlight.

Carrier

■ Type

10' 10-1/2" (3.31 m) wide, 151" (3.84 m) wheelbase.

4 x 4 x 4 — (4-wheel steer, 4-wheel drive) — For rough terrain with limited turning area.

Frame — 100,000 p.s.i. (689.5 MPa) steel, double walled construction with integral 100,000 p.s.i. (689.5 MPa) steel outrigger boxes.

■ Axles

Front- Heavy duty planetary drive/steer type.

Rear- Heavy duty planetary drive/steer type.

■ Suspension

Front axle - Rigid mounted to frame.

Rear axle - Pin-mounted on bronze bushings. Automatic hydraulic rear axle oscillation lock-out cylinders engage when upperstructure rotates past 2-1/2° of centerline.

■ Tires

Front and Rear

Standard — 29.5 x 25 (28-PR) Earthmover type.

Optional — 29.5R25 XHA 1 star radials

■ Brakes

Service — Dual, full air, drum-type brakes at each wheel end. Drum diameter 20-1/4" (0.51 m). Shoe width 4" (101.6 mm). Air service ports standard.

Air dryer — Desiccant type with change indicators; water and oil separator operational to -39°F.

Parking/emergency — Drum type spring applied, air released, fade resistant; cab controlled, mounted on front/rear axles.

■ Steering

Hydraulic two wheel, four wheel and "crab" steering; modes selected by toggle switch on dash. All modes fully controlled by steering wheel.

■ Transmission

Clark three-speed two range power shift transmission. Six speeds available forward and two reverse. Front axle disconnect for two or four-wheel drive.

■ Outriggers

Three position (fully extended, intermediate, and fully retracted) operation capability. Four hydraulic, telescoping beam and jack outriggers. Vertical jack cylinders equipped with integral holding valve. Beams extend to 22' 0" (6.71 m) centerline-to-centerline and retract to within 10' 10-1/2" (3.31 m) overall width. Equipped with stowable, lightweight 24" (0.61 m) diameter aluminum floats. Controls and sight level bubble located in upperstructure cab.

Confined Area Lifting Capacities

(CALC™) System - Outriggers may be extended to an intermediate position (15' 6" - 4.72 m) for working in confined areas. In addition, capacities are available with the beams in the 9' 3/4" (2.76 m) fully retracted position. When the outrigger position levers (located on the outrigger boxes) are applied, the operator can set the crane in the intermediate or fully retracted outrigger position without having to leave the cab.

■ Additional Equipment - Standard

Cab steps, 2 front and rear carrier steps, front axle disconnect, nonskid safety strips on carrier deck, deep front storage, fenders, pontoon storage, full lighting package, 120 volt block heater, water/fuel separator on engine, lifting lugs and front towing shackles.

■ Additional Equipment - Optional

Ether injection package, spare tires and rims, tire inflation kit, front and rear mounted pintle hook, outrigger cover package, and front tow winch.

Engine	Cummins 6CT8.3
Cylinders - cycle	6 - 4
Bore	4.49" (114.05 mm)
Stroke	5.32" (135.13 mm)
Displacement	504 cu. in. (8 259 cm ³)
Maximum brake hp	210 @ 2200 rpm
Peak torque (ft. lb.)	567 @ 1500 rpm
Electric system	12 volt
Starting sytem	24 volt
Fuel capacity	100 gallons (378.5 L)
Alternator	130 amps
Crankcase capacity (total system)	23.7 qts. (22.4 L)

Travel speeds and gradeability

Engine	Tires	Maximum Speed		*Gradeability at 70% converter efficiency	Maximum tractive effort at 70% converter efficiency		Gradeability at 1.0 mph (1.61 km/h)	Maximum tractive effort at 1.0 mph (1.61 km/h)	
		mph	km/h		pounds	kg		pounds	kg
Cummins 6CT8.3	29.5 X 25	20.3	32.66	105.5%	64,664	29 332	60.9%	46,839	21 246

*Machine operating angle must not exceed 35° (77% grade).

Numbers reflect main hydraulic pump engaged.

Axle loads

Base machine with standard 35' 6" — 110' 0" (10.82 - 33.53 m) four-section boom, 2M main winch with 2-speed hoisting and power up/down, 550' (167.6 m) 3/4" (19 mm) wire rope, 4x4x4 carrier with Cummins 6CT8.3 engine, 29.5 x 25.0 tires, counterweight, and no fuel.	G.V.W. ^①		Upper facing front				Upper facing rear			
			Front axle		Rear axle		Front axle		Rear axle	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
	83,867	38 042	41,299	18 733	42,568	19 309	31,068	14 092	52,799	23 950
29.5R25 XHA tires	1,240	562	620	281	620	281	620	281	620	281
Jack cylinder covers	154	70	72	33	82	37	72	33	82	37
Tow winch	686	311	1,002	454	-316	-143	1,002	454	-316	-143
100 gallons (378.5 liters) fuel	685	310	364	165	321	145	364	165	321	145
2M auxiliary winch w/550' (168 m) of 3/4" (19 mm) rope (includes cwt. change)	853	387	133	60	720	327	653	296	200	91
Diesel heater with tank	70	32	21	10	49	22	43	20	27	12
Hydraulic heater	110	50	29	13	81	37	72	33	38	17
Air conditioning	264	120	69	31	195	89	174	79	90	41
34' (10.36 m) offsettable lattice fly stowed	1,383	627	2,778	1 260	-1,395	-633	-1,505	-683	2,888	1 310
34' (10.36 m) offsettable lattice fly w/tip lugs stowed	1,466	665	2,945	1 336	-1,479	-671	-1,595	-723	3,061	1 388
34' - 56' (10.36 - 17.07 m) offsettable lattice fly stowed	2,122	963	3,913	1 775	-1,791	-812	-1,959	-888	4,081	1 851
Fly storage brackets with all fly options	160	73	257	117	-97	-44	-110	-49	270	122
Auxiliary lifting sheave assembly	110	50	343	156	-233	-106	-242	-109	352	159
8.5-ton hook ball @ boom head	325	147	977	443	-652	-296	-677	-307	1,002	454
40-ton 4-sheave hook block @ boom head	720	327	2,164	982	-1,444	-655	-1,501	-681	2,221	1,007
50-ton 4-sheave hook block @ boom head	1,109	503	3,333	1 512	-2,224	-1 009	-2,312	-1 049	3,421	1 552

① Adjust gross vehicle weight & axle loading according to component weight.
Note: All weights are ± 3%

Tire	Max. Axle Load @ 20 mph (32.7 km/hr)
29.5 x 25 (28-PR)	53,000 lbs. (24 041 kg)
29.5R25 XHA 1 Star	53,000 lbs. (24 041 kg)