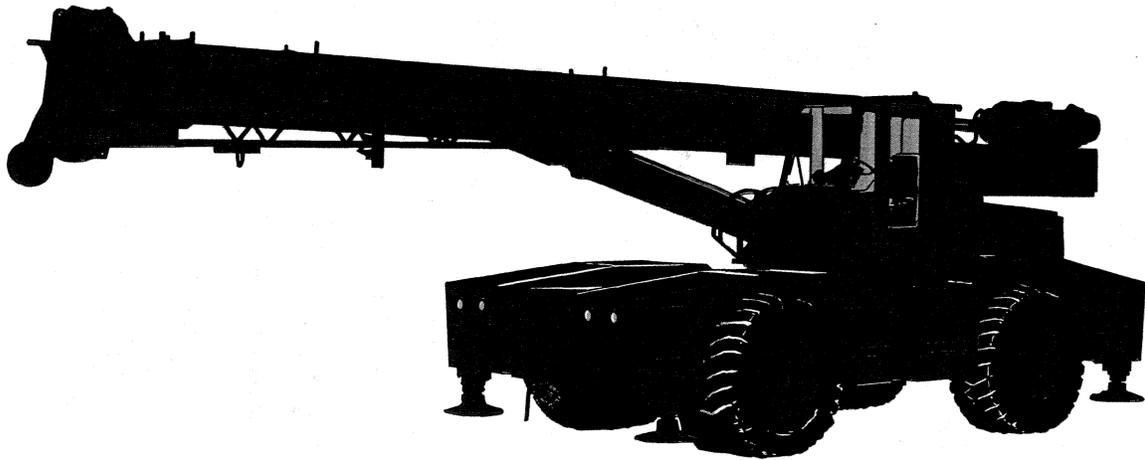


# 4530



## ***Self-Propelled*** 30 Ton Hydraulic Crane

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**Capacities**  
**Specifications**  
**Operating Ranges**



**CONSTRUCTION EQUIPMENT CO.**

**BADGER MODEL 4530**

**CRANE LOAD CHART**

**PCSA CLASS 15-179**

30 TON CAPACITY FULLY HYDRAULIC SELF-PROPELLED CRANE

**ON OUTRIGGERS FULLY EXTENDED - 360° (a)**

RADIUS IN FEET	BOOM LENGTH												POWER PIN SECTION EXTENDED (D)	SIDE-FLY PLUS 81.4 FT BOOM	SIDE-FLY PLUS 105 FT. BOOM	SIDE-FLY PLUS 134.31 FEET	RADIUS IN FEET					
	32.85 FEET		40 FEET		48 FEET		56 FEET		64 FEET		72 FEET							81.45 FEET				
	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.						LBS.	LBS.			
15	53	60 000	60	60 000	66	60 000	69	59 600	72	53 700	75	48 300	77	48 300	74	21 100	74	18 500			15	
20	41	53 900	52	52 900	59	51 200	64	48 700	67	45 300	70	40 800	72	35 200	74	21 100	74	18 500			20	
25	25	40 900	42	42 100	52	42 300	58	39 800	62	38 000	66	34 200	69	30 700	74	21 100	74	18 500			25	
30			29	31 100	44	31 600	52	31 900	57	31 800	61	28 900	65	26 700	71	19 900	71	16 300			30	
35			1	17 300	34	23 400	45	23 700	52	23 900	57	24 200	61	22 900	68	17 800	68	14 600		72	10 000	35
40					21	17 900	37	18 200	46	18 400	52	18 600	57	18 900	65	15 700	65	13 200		70	9 550	40
45							27	14 300	39	14 500	46	14 700	52	14 900	62	13 900	63	12 100		68	8 880	45
50							11	11 300	31	11 800	40	11 800	48	11 900	59	12 300	60	11 100		65	7 850	50
55									21	9 300	34	9 490	43	9 650	55	10 800	57	10 300		63	7 260	55
60											26	7 650	37	7 810	52	9 500	53	9 230		61	6 720	60
65											14	6 100	31	6 300	48	7 990	50	8 240		58	6 110	65
70													23	5 040	45	6 720	47	7 150		56	5 590	70
75													11	3 920	41	5 660	43	6 030		53	5 240	75
80															36	4 740	39	5 070		50	4 830	80
85															31	3 940	35	4 230		47	4 530	85
90															25	3 230	30	3 500		45	4 200	90
95															18	2 600	25	2 850		41	3 570	95
100															2	1 970	18	2 260		38	3 010	100
105																	6	1 710		35	2 510	105
110																				31	2 050	110
115																				26	1 640	115
120																				21	1 261	120

**ON OUTRIGGERS FULLY EXTENDED - OVER FRONT (a)**

RADIUS IN FEET	BOOM LENGTH												POWER PIN SECTION EXTENDED (D)	SIDE-FLY PLUS 81.4 FT BOOM	SIDE-FLY PLUS 105 FT. BOOM	SIDE-FLY PLUS 134.31 FEET	RADIUS IN FEET					
	32.85 FEET		40 FEET		48 FEET		56 FEET		64 FEET		72 FEET							81.45 FEET				
	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.	LBS.						LBS.	LBS.			
15	53	60 000	60	60 000	66	60 000	69	59 600	72	53 700	75	48 300	77	48 300	74	21 100	74	18 500			15	
20	41	53 900	52	52 900	59	51 200	64	48 700	67	45 300	70	40 800	72	35 200	74	21 100	74	18 500			20	
25	25	40 900	42	42 100	52	42 300	58	39 800	62	38 000	66	34 200	69	30 700	74	21 100	74	18 500			25	
30			29	31 400	44	31 900	52	32 200	57	31 800	61	28 900	65	26 700	71	19 900	71	16 300			30	
35			1	17 300	34	23 600	45	23 900	52	24 100	57	24 300	61	22 900	68	17 800	68	14 600		72	10 000	35
40					21	18 100	37	18 400	46	18 600	52	18 800	57	19 000	65	15 700	65	13 200		70	9 550	40
45							27	14 600	39	14 800	46	15 000	52	15 100	62	13 900	63	12 100		68	8 880	45
50							11	11 600	31	11 900	40	12 100	48	12 200	59	12 300	60	11 100		65	7 850	50
55									21	9 680	34	9 860	43	10 000	55	10 800	57	10 300		63	7 260	55
60											26	8 070	37	8 230	52	9 600	53	9 230		61	6 720	60
65											14	6 580	31	6 770	48	8 500	50	8 240		58	6 110	65
70													23	5 550	45	7 340	47	7 480		56	5 590	70
75													11	4 480	41	6 270	43	6 430		53	5 240	75
80															36	5 340	39	5 500		50	4 830	80
85															31	4 540	35	4 690		47	4 530	85
90															25	3 830	30	3 980		45	4 220	90
95															18	3 200	25	3 350		41	3 920	95
100															2	2 570	18	2 780		38	3 480	100
105																	6	2 240		35	2 990	105
110																				31	2 540	110
115																				26	2 130	115
120																				21	1 760	120
125																				14	1 410	125

**ON RUBBER CAPACITIES (a)**

FOR 26.5 x 25 - 26 PR TIRES (f)

RADIUS IN FEET	STATIONARY CAPACITY		PICK & CARRY CAPACITY (b)		
	OVER FRONT	360° ROTATION	CREEP SPEED (c)	2.5 M.P.H.	
				5 M.P.H.	
10	55 000	44 300	54 300	37 500	29 900
12	48 400	33 500	47 200	32 200	25 400
15	40 800	22 500	39 000	28 200	20 400
20	28 600	13 400	28 600	19 300	14 500
25	18 800	8 520	18 800	14 400	10 400
30	13 600	5 840	13 600	11 100	7 720
35	9 710	3 650	9 710	8 300	5 310
40	7 560	2 520	7 560	6 570	3 900
45	5 830	1 560	5 830	5 040	2 640
50	4 280		4 280	3 620	1 430
55	3 260		3 260	2 600	

MAXIMUM ALLOWABLE BOOM LENGTH - 64 FEET

**JIB CAPACITY**

SIDE-FLY PLUS JIB COMBINATION (d)

MAIN BOOM ANGLE	0° JIB OFFSET	15° JIB OFFSET	30° JIB OFFSET
77°	6 000	5 300	4 260
70°	4 670	4 070	3 660
65°	4 000	3 610	3 360
60°	3 580	3 310	3 130
55°	3 270	3 060	2 950

**WEIGHT REDUCTIONS FOR BOOM EXTENSIONS**

30 FT. SIDE-FLY BOOM EXTENSION  
(e) STORED - 650 LBS.  
(e) ERECTED - 1470 LBS.

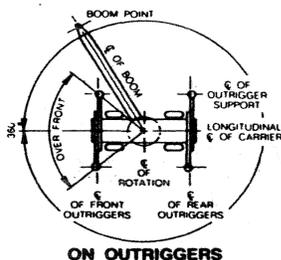
25 FT. JIB  
(e) STORED - 200 LBS.  
(e) ERECTED - 1500 LBS.

(g) REFER TO AREA OF OPERATION CHART FOR DEFINED WORKING ARC.

- (b) MECHANICAL HOUSE LOCK MUST BE FULLY ENGAGED.
- (c) TRAVEL RESULTING IN NOT MORE THAN 200 FT. COVERED IN A 30 MINUTE PERIOD.
- (d) BOOM MUST BE FULLY EXTENDED WHEN LIFTING WITH EXTENDED POWER PIN SECTION OR WITH 30 FT. SIDEFLY.
- (e) REDUCTION IN MAIN BOOM CAPACITIES.
- (f) REFER TO TIRE INFLATION CHART.
- (g) DEDUCT 100 LBS. FROM RATED CAPACITIES FOR MACHINES EQUIPPED WITH AUXILIARY BOOM HEAD.

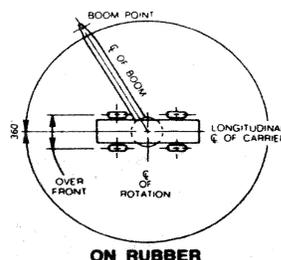
**WARNING:**

- MINIMUM WORKING MAIN BOOM ANGLE FOR THE FULLY EXTENDED BOOM WITH POWER PIN EXTENDED PLUS SIDEFLY AND JIB IS 55 DEGREES. TIPPING CAN OCCUR RAPIDLY WITHOUT ADVANCE NOTICE.
  - FOR OTHER BOOM CONFIGURATIONS, HAVING POWERED SECTIONS NOT FULLY EXTENDED; BUT WITH POWER PIN EXTENDED OR RETRACTED; WITH OR WITHOUT SIDE-FLY; AND WITH OR WITHOUT THE JIB, THE RATED LOADS ARE FOUND IN THE COLUMNS HEADED BY THE MAXIMUM LENGTH OF THEIR RESPECTIVE BOOM CONFIGURATIONS.
- THE BOOM ANGLE MUST BE USED TO DETERMINE THE PARTICULAR RATED LOAD. FOR BOOM ANGLES NOT PROVIDED, USE THE RATING OF THE NEXT LOWER BOOM ANGLE.



**ON OUTRIGGERS**

**AREAS OF OPERATION**



**ON RUBBER**

**TACKLE REEVING MAIN WINCH**

NO. OF PARTS OF HOIST TACKLE	MAX. HOOK LOAD LBS.
1	9 000
2	18 000
3	27 000
4	36 000
5	45 000
6	54 000
7	63 000
8	72 000
9	81 000
10	90 000

# 105' Boom

## IMPORTANT INSTRUCTIONS

Radius of the load is the horizontal distance from a projection of the axis of rotation before loading, to the center of vertical hoist line or tackle with load applied.

Boom angles, which represent the unloaded boom angles, are to be used for reference only. These boom angles must be adjusted to maintain the proper load radius while the load is being picked.

Load ratings in shaded areas are based on machine's hydraulic or structural competence and not on the machine's stability.

Tipping capacities do not exceed 85% of tipping loads for "on outrigger" capacities or 75% of tipping loads for "on rubber" capacities as determined by tests in accordance with SAE recommended practice — "Crane Load Stability Test Code SAE J-765-a."

Crane load capacities are based on freely suspended loads. They are the maximum covered by the manufacturer's warranty with the machine leveled and standing on a firm supporting surface.

Practical working loads depend upon supporting surface, wind, and other factors affecting stability, hazardous surroundings, experience of personnel, and proper handling; all of which must be taken into account by the operator.

The weights of all auxiliary handling devices such as boom attachments, hoist block, hooks, and slings, except hoist rope, shall be considered as part of the load ratings.

Powered boom sections are synchronized to be extended equally at all times. Each section extends to a maximum distance of 24 feet. The maximum powered boom load which may be telescoped is limited by hydraulic pressure, boom angle, and boom capacity. It is safe to attempt to telescope any load within the stated conditions of the rating chart.

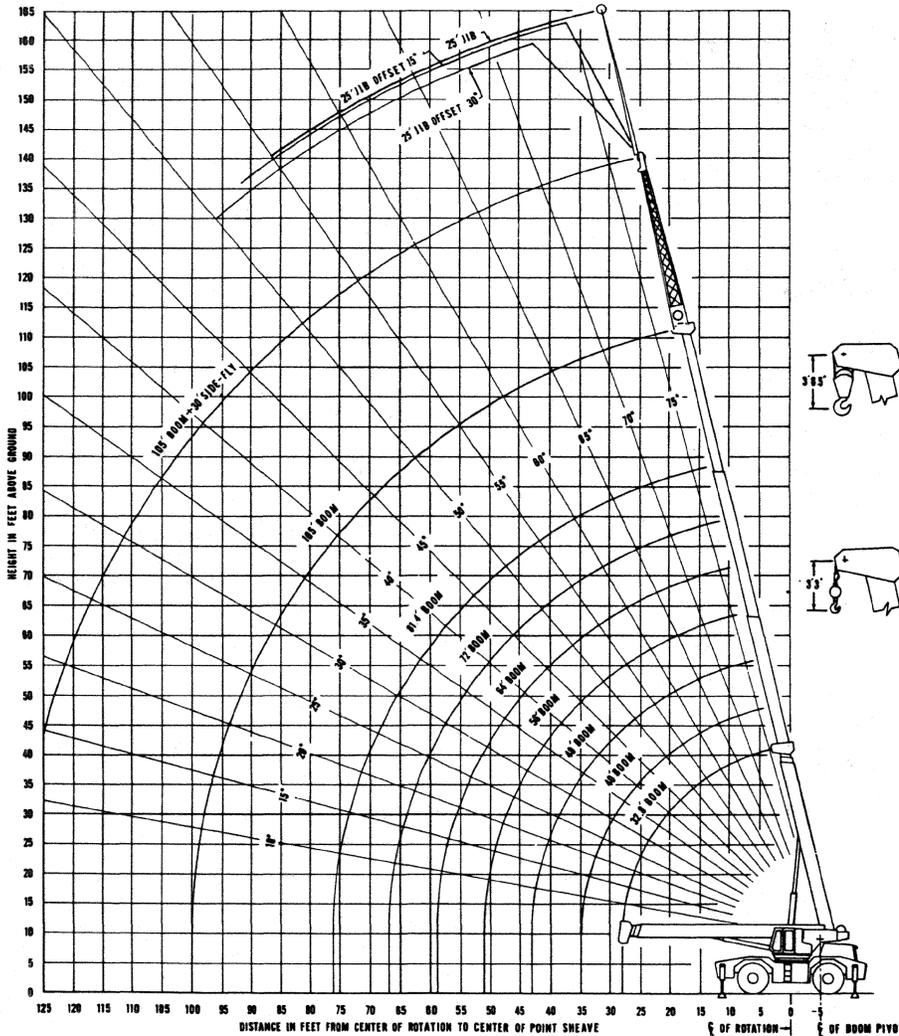
"On outriggers", capacities are based on outriggers being fully extended to a distance of 21 feet from centerline to centerline of vertical jack cylinders.

For boom lengths not shown, use load ratings for next longer boom. For load radii not shown, use load rating for next larger rated radius. Positioning or operation at radii and boom lengths beyond the maximums or minimums shown, is not intended or approved.

The boom assembly shall be fully retracted and leveled when crane is out of service.

From main boom capacities, deduct: 650 lbs. when Side-Fly stowed; 1,530 lbs. when Side-Fly erected; 200 lbs. when jib stowed; 1,670 lbs. when jib erected.

**Hoist reeving should be based on 9,000 lbs. per part of line.**



### WARNINGS:

1. Minimum working main boom angle for the fully extended boom with power pin extended plus sidefly and jib is 55 degrees. **Tipping** can occur rapidly without advance notice.
2. For other boom configurations, having powered sections not fully extended, but with power pin extended or retracted; with or without sidefly; and with or without the jib, the rated loads are found in the columns headed by the maximum length of their respective boom configurations. The boom angle must be used to determine the particular rated load. For boom angles not provided, use the rating of the next lower boom angle.

### HYDRAULIC SYSTEM

Two 2-section tandem pumps, 162 gpm (613 L/min) at 2470 rpm, mounted on torque converter with clutch. Steering pump, 18 gpm (68 L/min).

12 double-acting cylinders:

- 2 boom hoist: 8" (203 mm) ID  
6.0" OD x 5.0" ID (152 mm x 127 mm) rod
- 2 boom telescoping: 6" (152 mm) ID  
5" OD x 4" ID (127 mm x 102 mm) rod

Outrigger cylinders:

- 4 telescoping: 2.5" ID, 1.5" rod  
(64 mm x 38 mm)
- 4 jack: 6.5" ID, 4.5" rod  
(165 mm x 114 mm)

Vane-type swing motor.

Operating pressure: 2500 psi (176 kg/cm<sup>2</sup>) max.

Pressurized reservoir.

Oil capacity: reservoir 182 gal (689 L), system 300 gal (1,136 L)

Filtration unit built into reservoir: 10-micron disposable-element filter with automatic safety relief, built-in magnets; visual indicator or filter housing, indicator lights in engine gauge cluster.

Fin and tube type oil cooler.

Main relief valves in all circuits. Holding valves on boom hoist, boom telescoping and jack cylinders; thermal relief protection in telescope and hoist circuits.

### BOOM

**105' Boom** — Four-section, two self-proportioning hydraulically telescoping section, manually pinned end section. Extends to 105' (32 m), retracts to 32' 9" (10 m). Modified hexagon cross-section is self-aligning. Five-sheave head.

**Side Fly (optional)** — 30' (9.1 m) self-storing boom section, hinged to boom head.

**CAB**

Fully-enclosed all steel cab with safety glass windows, removable front window, hinged skylight and sliding rear window, electric windshield wiper and washer, defroster fan, dome light, fire extinguisher, fully adjustable air cushioned seat, seat belt. Propane or diesel heater optional.

**CONTROL**

Five levers for all boom, winch, and swing movements. One foot pedal, linked to boom raise-and-lower lever. Dead-man type (except swing) are self-centering: when controls are released, machine movements stop automatically. Swing brake, with free swing. Machine leveling gauge, electric horn, mechanical house lock, emergency brake, parking brake.

Key-operated ignition switch with indicator light, starter button, foot throttle, fuel gauge, voltmeter, hour meter. Gauges for engine oil pressure, transmission oil pressure, transmission oil temperature, engine coolant temperature, air pressure. Hydraulic filter and low air warning lights.

**MAIN WINCH**

(Model 34) Hydraulic powered up and down.

Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	313 (95.4)	375 (114.3)	11,490 (5,212)
2	334 (101.8)	400 (121.9)	10,790 (4,894)
3	354 (107.9)	425 (129.5)	10,160 (4,609)
4	375 (114.3)	450 (137.2)	9,610 (4,359)
5	395 (120.4)	475 (144.8)	9,120 (4,137)

Optional 2-speed main winch:

High Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	492 (150)	590 (180)	7,670 (3,479)
2	526 (160)	632 (193)	7,160 (3,248)
3	562 (171)	674 (205)	6,710 (3,044)
4	596 (182)	716 (218)	6,310 (2,862)
5	632 (193)	758 (231)	5,960 (2,703)

Low Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	246 (75)	295 (90)	15,340 (6,958)
2	263 (80)	316 (96)	14,310 (6,491)
3	281 (86)	337 (103)	13,420 (6,087)
4	298 (91)	358 (109)	12,630 (5,729)
5	316 (96)	379 (116)	11,930 (5,411)

Either winch includes 450' (137 m) of 5/8" (15.9 mm) cable. Free fall optional with either main winch.

**AUXILIARY WINCH (Optional)**

(Model PD12) Hydraulic powered up and down. Optional free fall — consult factory.

Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	176 (54)	194 (59)	7,500 (3,402)
2	194 (59)	213 (65)	6,830 (3,098)
3	211 (64)	232 (71)	6,260 (2,839)
4	229 (70)	252 (77)	5,780 (2,622)
5	246 (75)	270 (82)	5,380 (2,440)

Optional: 450' (137 m) of 1/2" (12.7 mm) cable.

**WIRE ROPE**

All winch cable is preformed wire rope, 6x25 strands, right-regular lay, EIPS, steel core.

**SWING**

Planetary, with internal brake. Spring set, hydraulic release. Free swing or automatic brake.

Speed — 3 rpm.

**ENGINE**

GM 6V-53N diesel, 6 cyl ohv, 2 cycle, 197 hp (147 kw) at 2800 rpm, 318 cid (5.2L), 3.875" bore x 4.5" stroke (98 mm x 114 mm), 21:1 compression ratio, 431 ft-lbs (59.6 mkg) max torque at 1500 rpm. Electric starter, 12-volt 65 amp alternator, 225 amp hour battery, 20-hour rate (975 cca). Air compressor, 12 cfm (5.7 L/sec) Fuel capacity: 130 gallons (492L)

**TRANSMISSION**

Six speed with rear axle disconnect. Electric three speed range and directional shift with electric over air high low shift and rear axle disconnect.

Drive	Transmission Range	Gear Shift	Maximum Speed mph (km/hr)
4-wheel	Low	1st	1.5 (2.4)
4-wheel	Low	2nd	3.1 (4.9)
4-wheel	Low	3rd	8.3 (13.3)
2-wheel	High	1st	4.3 (6.9)
2-wheel	High	2nd	8.7 (14)
2-wheel	High	3rd	21.7 (34.9)

Gradeability: NOTE: All performance data is based on standard machines, and may vary due to engine performance and optional equipment. Machine should be operated within a 30° slope limitation due to engine lubrication design.

**AXLES**

Ratio 22.4:1. Planetary steering. Front axle rigidly mounted to frame. Rear axle pinned for oscillation; automatic oscillation lockout, with manual override. Non-spin differential optional.

**BRAKES**

Four-wheel air service brakes. Drums 20.25" x 4" (514 mm x 102 mm). Spring-set emergency and parking brakes on all four wheels.

**TIRES:**

21.00 x 25-24-PR, 15 x 25 rim

**Optional:**

26.5 x 25-20-PR, 22 x 25 rim  
26.5 x 25-26-PP, 22 x 25 rim  
29.5 x 25-22-PR, 25 x 25 rim  
29.5 x 25-28-PR, 25 x 25 rim  
Spare tire, tire inflation kit

**STEERING**

Two independent systems. Front, hydrostatic controlled by Char-Lynn orbital unit. Rear, hydrostatic controlled by toggle switch on dash panel, with rear-wheel centering indicator light.

Turning radius:

Front-wheel steering: 38' (11.6m)  
Four-wheel coordinated: 21'6" (6.6m)

**OUTRIGGERS**

Beam type, hydraulic powered 24" (61cm) diameter floats. 21' (6.4m) spread center-to-center of jacks.

Optional — 30" (76 cm) floats.

WEIGHT—Lbs (kg)	Front Axle		Rear Axle	
	With 105' boom	78,900 (35,782)	41,800 (18,957)	37,100 (16,825)

**STANDARD EQUIPMENT**

Headlights, tail lights brake lights, back-up lights, turn signals, parking lights, front and rear fenders, tow loops, rear view mirrors, mechanical boom angle indicator, electronic back-up alarm, anti-two block audible and visual warning signals only, without automatic stop, for boom, side fly or jib.

**OPTIONAL EQUIPMENT**

Jib: 25' (7.6 m) self-storing. Can only be erected to the end of the Side Fly. Deluxe boom angle indicator: Electronic, with adjustable limit settings and audible warning.

Anti-Two block system: Electric-hydraulic, for boom, Side Fly, or jib. Stops boom lower, boom extended, winch up movements automatically; audible and visual warning signals in cab; manual override.

Working lights: On front of cab and on boom. Rotating amber beacon: On top of cab.

Vandalism protection package: Padlocks for access and storage doors, fuel tank; Lexan windows; tinted safety glass.

Tow winch: Mounted on front of frame, controlled from cab. Line pull 15,000 lbs. (680 kg).

Rooster sheave, 45-ton 5-sheave hook block, 15-ton single sheave hook block, headache ball with 5-ton swivel hook, headache ball with 3-ton swivel hook for auxiliary winch, drum rotation indicators for main and auxiliary winches, front and rear pintle hooks, cold-weather starting kit with extra battery, electric heating element for hydraulic reservoir.



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