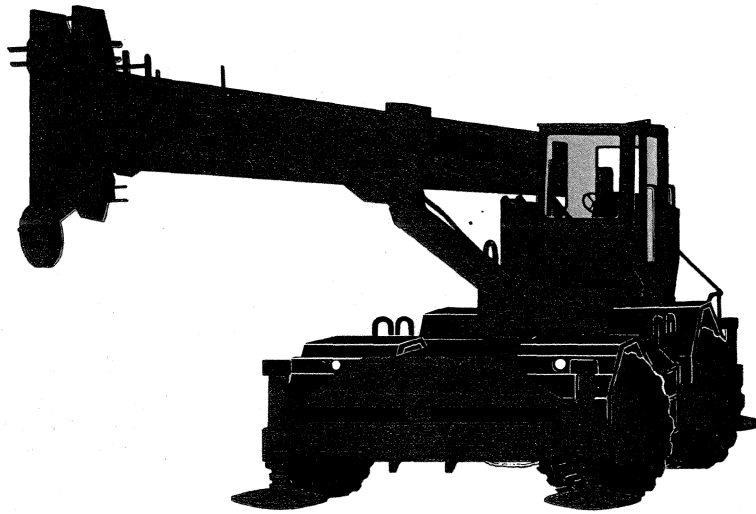


4435C



Self-Propelled 35 Ton Hydraulic Crane

**Capacities
Specifications
Operating Ranges**



CONSTRUCTION EQUIPMENT CO.

35 TON CAPACITY FULLY HYDRAULIC SELF-PROPELLED CRANE

ON OUTRIGGERS FULLY EXTENDED - 360°(a)																				
RADIUS IN FEET	BOOM LENGTH														30 FT. SIDE - FLY PLUS 86 FT BOOM	RADIUS IN FEET				
	34 FEET		40 FEET		48 FEET		56 FEET		64 FEET		72 FEET		80 FEET				86 FEET		116 FEET	
	Δ°	LBS.	Δ°	LBS.	Δ°	LBS.	Δ°	LBS.	Δ°	LBS.	Δ°	LBS.	Δ°	LBS.			Δ°	LBS.	Δ°	LBS.
10	67	70 000	71	61 100	74	52 500													10	
12	64	54 900	68	53 500	72	52 100	74	45 000											12	
15	58	46 400	63	45 300	68	43 900	71	42 900	74	37 500	75	34 800							15	
20	47	36 500	55	35 900	61	34 900	66	34 000	69	33 200	71	30 800	73	23 700					20	
25	34	27 800	45	28 400	54	28 700	60	28 100	64	27 400	67	26 900	69	21 000					25	
30	11	18 800	34	20 100	46	20 600	54	21 000	59	21 300	63	21 600	66	18 700	71	17 100	73	13 400	30	
35			16	14 900	37	15 500	47	15 900	53	16 200	58	16 400	62	16 600	64	13 900	70	11 900	35	
40					25	12 000	39	12 400	48	12 700	53	12 900	57	13 100	60	12 500	67	9 830	40	
45							38	9 890	41	10 200	48	10 400	53	10 600	56	10 700	65	9 550	45	
50							18	7 980	34	8 260	42	8 470	48	8 650	52	8 770	62	8 700	50	
55									24	6 770	36	6 980	43	7 150	47	7 270	59	7 750	55	
60									8	5 520	28	5 780	38	5 950	43	6 060	56	7 330	60	
65											18	4 770	31	4 960	37	5 070	53	6 330	65	
70													23	4 120	32	4 230	50	5 370	70	
75													11	3 380	24	3 520	47	4 560	75	
80															14	2 890	43	3 860	80	
85																	39	3 260	85	
90																	35	2 730	90	
95																	31	2 260	95	
100																	26	1 840	100	
105																	19	1 460	105	
110																	9	1 100	110	

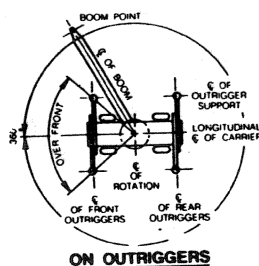
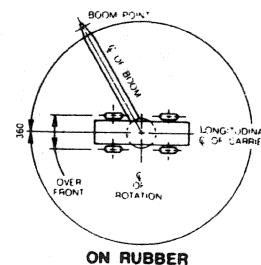
ON OUTRIGGERS FULLY EXTENDED - OVER FRONT (a)																			
RADIUS IN FEET	BOOM LENGTH																30 FT. SIDE - FLY PLUS 86 FT BOOM		RADIUS IN FEET
	34 FEET		40 FEET		48 FEET		56 FEET		64 FEET		72 FEET		80 FEET		86 FEET		116 FEET		
	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	▲°	LBS.	
10	67	70 000	71	61 100	74	52 500													10
12	64	54 900	68	53 500	72	52 100	74	45 000	76	37 500									12
15	58	46 400	63	45 300	68	43 900	71	42 900	74	37 500	75	34 800							15
20	47	36 500	55	35 900	61	34 900	66	34 000	69	33 200	71	30 800	73	23 700					20
25	34	28 200	45	28 500	54	28 700	60	28 100	64	27 400	67	26 900	69	21 000	71	17 100			25
30	11	18 800	34	22 900	46	23 200	54	23 400	59	23 300	63	22 800	66	18 700	71	15 300	73	13 400	30
35			16	17 400	37	19 200	47	20 400	53	19 500	58	19 600	62	16 700	64	13 900	70	11 900	35
40					25	16 100	39	16 100	48	16 400	53	16 600	57	15 200	60	12 500	67	9 830	40
45							30	12 900	41	13 200	48	13 400	53	13 500	56	11 300	65	9 550	45
50							18	10 500	34	10 800	42	11 030	48	11 200	52	10 400	62	8 700	50
55									24	8 920	36	9 160	43	9 360	47	9 300	59	7 750	55
60									8	7 370	28	7 660	38	7 860	43	7 990	56	7 330	60
65											18	6 420	31	6 630	37	6 760	53	6 700	65
70													24	5 600	32	5 730	50	5 250	70
75													11	4 700	24	4 860	47	5 720	75
80															14	4 090	43	5 320	80
85																	39	4 580	85
90																	35	3 930	90
95																	31	3 350	95
100																	26	2 840	100
105																	19	2 380	105
110																	9	2 030	110

ON RUBBER CAPACITIES (a) LBS.					
FOR 23.5 X 25 X 24 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	45 300	31 500	46 300	33 300	26 600
12	40 000	25 500	40 200	28 600	22 700
15	32 600	17 700	33 200	23 400	18 400
20	24 100	10 600	23 000	17 400	13 400
25	17 000	6 790	17 000	13 500	10 100
30	11 900	4 330	11 900	10 500	7 660
35	9 120	3 100	9 120	8 690	6 190
40	7 290	2 270	7 290	7 290	5 100
45	5 890	1 610	5 890	5 890	4 190
50	4 550		4 550	4 550	3 260
55	3 740		3 740	3 740	2 660
60	2 830		2 830	2 830	1 980
MAXIMUM ALLOWABLE BOOM LENGTH - 64 FEET					

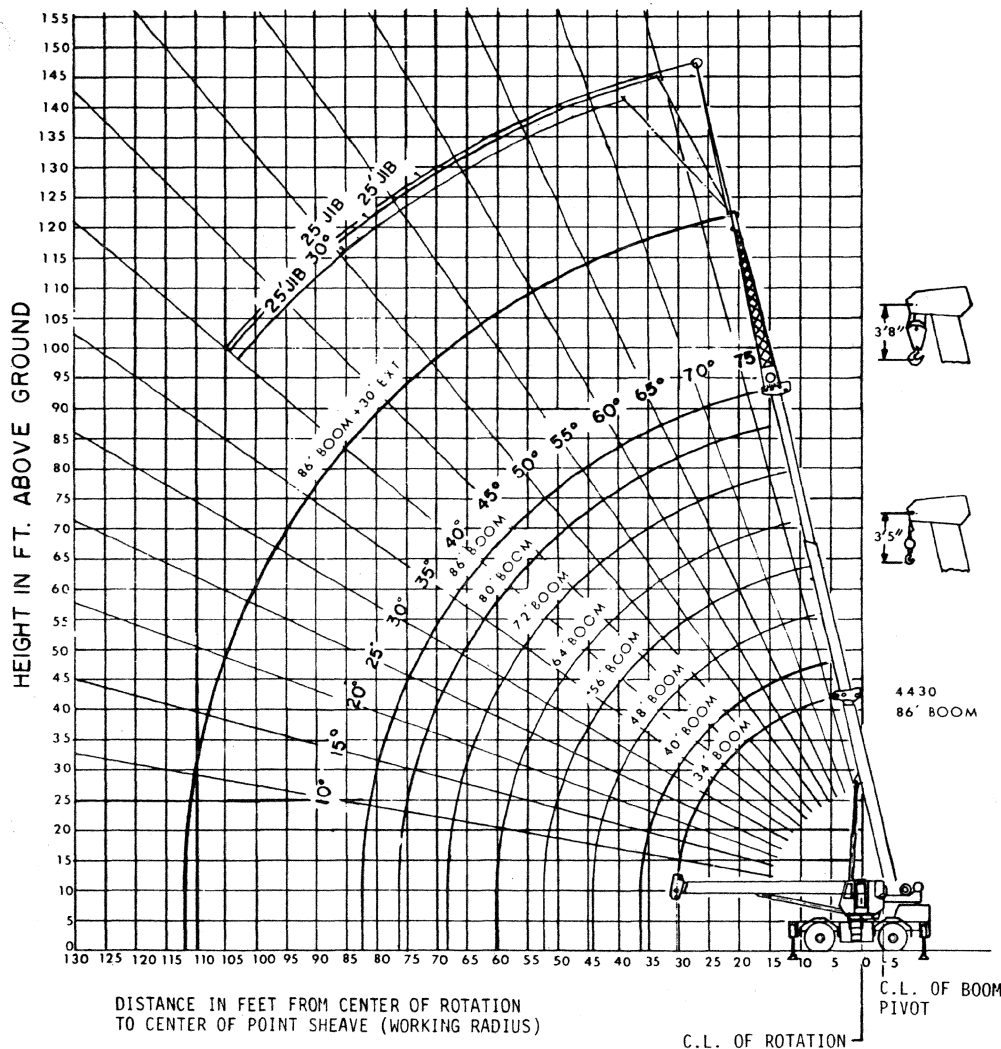
JIB CAPACITIES			
30 FT. SIDE-FLY PLUS 25 FT. JIB COMBINATION 360°			
MAIN BOOM ANGLE	0° JIB OFFSET LBS.	15° JIB OFFSET LBS.	30° JIB OFFSET LBS.
77°	6 000	5 300	4 260
70°	4 870	4 070	3 660
65°	4 000	3 610	3 360
60°	3 580	3 310	3 130
55°	3 120	2 850	2 670
50°	2 260	2 070	1 850
45°	1 610	1 460	1 280
40°	1 090		

WEIGHT REDUCTIONS FOR BOOM EXTENSIONS	
30 FT. SIDE-FLY BOOM EXTENSION	
(e) STORED - 755 LBS.	
(e) ERECTED - 1795 LBS.	
25 FT. JIB	
(e) STORED - 518 LBS.	
(e) ERECTED - 2272 LBS.	

- (a) 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.
 (e) REDUCTION IN MAIN BOOM CAPACITIES.
 (f) REFER TO TIRE INFLATION CHART.

AREAS OF
OPERATION

86' Boom



WARNINGS:

1. Minimum working main boom angle for the fully extended boom plus sidely and jib is 40 degrees. **tipping** can occur rapidly without advance notice.
2. For other boom configurations, having powered sections not fully extended, with or without sidely; 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, 120 gpm (454 L/min) at 2215 rpm, mounted on torque converter with clutch.

10 double-acting cylinders:

1 boom hoist: 9" (229 mm) ID
6" OD x 5" ID (152 mm x 127 mm) rod

1 boom telescoping: 5½" (140 mm) ID
4¼" OD x 3½" ID (114 mm x 89 mm) rod

Outrigger cylinders:

4 telescoping: 2.5" ID, 1.5" rod
(64 mm x 38 mm)

4 jack: 5" ID, 3¾" rod
(127 mm x 95 mm)

Vane-type swing motor.

Operating pressure: 2500 psi (176 kg/cm²) max.

Pressurized reservoir.

Oil capacity: reservoir 148 gal (560 L), system 300 gal (662 L)

Filtration unit built into reservoir: 10-micron disposable-element filter with automatic safety relief, built-in magnets; visual indicator on 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

86' (26.2M) Boom — Three section. Base section plus two self proportioning hydraulically telescoping sections. Extends to 86' (26.2 m), retracts to 34' (10.4 m). Modified hexagon cross-section is self-aligning. Four-sheave head.

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

OPERATING 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. The boom angle before loading should be slightly greater to account for boom deflection.

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 85% 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 26 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 19 feet from centerline to centerline of vertical jack cylinders. "On Rubber" capacities are based on the tire as specified in the table. Machine must be on a firm and smooth level surface

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

From main boom capacities, deduct: 755 lbs. when Side-Fly stowed; 1,795 lbs. when Side-Fly erected; 518 lbs. when jib stowed; 2,272 lbs. when jib erected.

Hoist reeving should be based on 7,500 (3,402KG) lbs. per part of line.

CAB

Fully-enclosed all steel cab with tinted safety glass windows, removable front window, hinged skylight and 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.

CONTROLS

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, 360° mechanical house lock, emergency brake, parking brake. Two speed main winch with finger tip control.

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 C2H175) Two speed, hydraulic powered up and down.

High Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	334 (101.8)	371 (113.1)	5,454 (2,474)
2	370 (112.8)	411 (125.3)	4,920 (2,232)
3	406 (123.8)	451 (137.5)	4,476 (2,030)
4	443 (135.1)	492 (150.0)	4,106 (1,863)
5	480 (146.3)	533 (162.5)	3,792 (1,720)

Low Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	179 (54.6)	199 (60.7)	10,137 (4,598)
2	199 (60.7)	221 (67.4)	9,145 (4,148)
3	218 (66.5)	242 (73.8)	8,320 (3,774)
4	238 (72.5)	264 (80.5)	7,632 (3,462)
5	258 (78.6)	286 (87.2)	7,049 (3,197)

Winch includes 450' (137 m) of 5/8" (15.4 mm) cable.

AUXILIARY WINCH (Optional)

(Model PD-12) Hydraulic powered up and down.

Speed — fpm (m/min)

Wrap	Maximum Line Speed		Line Pull Lbs (kg)
	Full Load	No Load	
1	156 (47.5)	171 (52.1)	7,500 (3,402)
2	171 (52.1)	188 (57.3)	6,825 (3,096)
3	186 (56.7)	205 (62.5)	6,263 (2,841)
4	202 (61.6)	222 (67.7)	5,783 (2,623)
5	217 (66.1)	238 (72.5)	5,375 (2,438)

Fluid capacities in U.S. gallons. Specifications subject to change without notice.

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

WIRE ROPE

All winch cable is preformed wire rope, 6 × 25 strands, right-regular lay, EIPS, steel core.

SWING

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

Speed — 2.7 rpm.

ENGINE

GM 4-53T Diesel, 4 cyl., 2 cycle, 175 bhp (131 kw) at 2,500 rpm, 212cid (3.48L), 3,875" (98mm) bore × 4.5" (114mm) stroke, compression ratio 18.7:1, torque 420 ft-lbs (545 nm) at 1800 rpm.

Electric starter, 12-volt 65 amp alternator, 225 amp hour battery, 20-hour rate (975 cca).

Air compressor, 7.25 cfm (3.4 L/sec)

50 gallon fuel tank

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	1.6 (2.6)
4 wheel	Low	2nd	3.3 (5.3)
4 wheel	Low	3rd	8.8 (14.2)
2 wheel	High	1st	4.5 (7.2)
2 wheel	High	2nd	9.2 (14.8)
2 wheel	High	3rd	23.2 (37.3)

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 27° slope limitation due to engine lubrication design.

AXLES

Ratio 16.65:1 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 over hydraulic service brakes. Independent front and rear systems. Drums 17.25" × 4" (438 mm × 102 mm). Electric control, automatic, air over hydraulic emergency brakes with manual set and release on all four wheels; parking brake on front axle pinion with Maxi air release, spring set chamber, drum 13.38" × 2" (340 mm × 51mm).

TIRES

23.5 × 25-24PR 19.5 × 25 rim

STEERING

Exclusive safety feature — automatic revers: front axle steering when operating over rear carrier.

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

Front-wheel steering: 37.29' (11.4m)
Four-wheel coordinated: 18.97' (5.8m)

OUTRIGGERS

Beam type, hydraulic powered. 24" (61cm) diameter floats. 19' (5.8m) spread center-to-center of jacks.

Optional — 30" (76 cm) floats.

WEIGHT — Lbs (kg)		Front Axle	Rear Axle
With	52,900	29,400	23,500
86' boom	(23,995)	(13,336)	(10,660)

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.

Electronic boom angle indicator.

Deluxe boom angle indicator: Electronic, adjustable limit settings and audible warnin_

Anti-Two block system: Electric-hydraulic, for boom, Side Fly, or jib Stops boom lower, boom extend, 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.

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

Rooster sheave, 30-ton (27.2MT), 4-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, propane or diesel cab heater, non spin differential.

BADGER CONSTRUCTION EQUIPMENT CO.

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