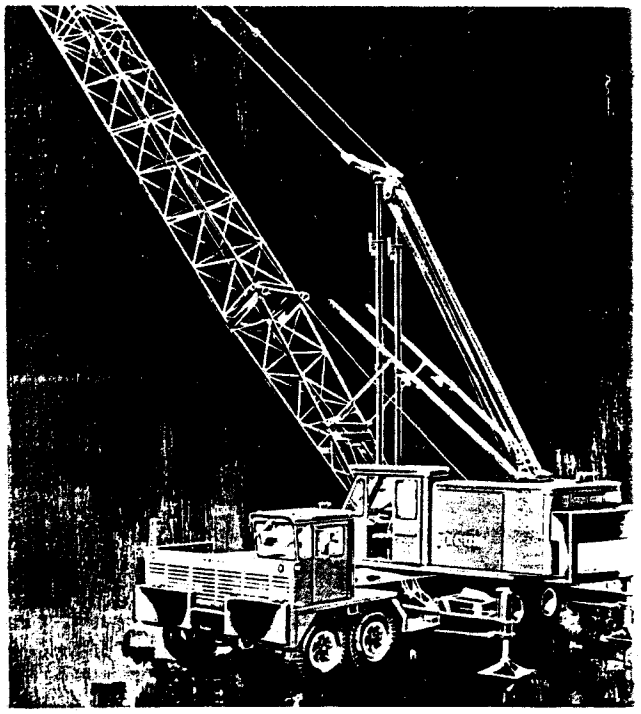
GENERAL INFORMATION ONLY

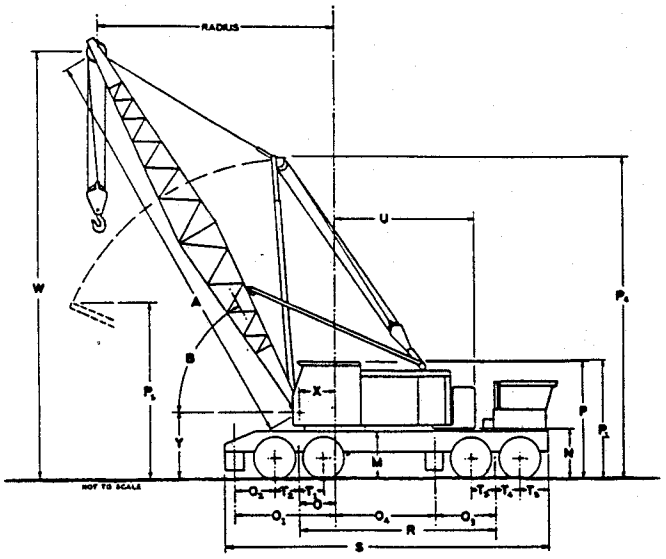
FLYSHEET

HC-138

TRUCK MOUNTED CRANE

Dimensions
Working ranges
Lifting capacities
Specifications





DIMENSIONS AND WORKING RANGES

CARRIER — 8 x 4 11′ 0″ WIDE

Basic boom length	A	40′ 0″
Boom angle	B	
Overall height, top of turntable bearing plate	M	4′ 6″
Ground clearance under counterweight	N	4′ 9″
Centerline rotation to rear axle bogie	O	4′ 0″
Centerline rotation to rear outrigger center	O^1	9′ 9″
Center rear axle to rear outrigger center	O^2	3′ 7″
Centerline rotation to front outrigger center	O^4	6′ 6″
Overall height, boomhoist bail sheave	P^1	11′ 3″
Overall height, boom mast vertical	P^4	30′ 11″
Overall height boom mast, with 40′ boom horizontal	P^5	17′ 11″
Wheelbase	R	19′ 8″
Overall length over rear outrigger box, with front bumper ctwt.	S	32′ 6″
without front bumper ctwt.	S	32′ 2″
Center rear axle to pivot of bogie	T^1 & T^2	2′ 3″
Center front axle to pivot of bogie	T^3 & T^4	2′ 3″
Center front axle to front bumper	T^5	3′ 0″
Center front axle to front bumper counterweight	T^5	3′ 4″
Tailswing of counterweight	U	13′ 5″
Radius of boom hinge pin	X	3′ 2″
Height of boom hinge pin	Y	6′ 11″
Overall height, 40′ boom in travel position over front with boom mast retracted and linked to boom		13′ 0″
Overall width outriggers extended (c/l of jacks)		19′ 6″
Overall width outriggers retracted (floats removed)		11′ 0″

DRUM ROPE CAPACITIES LINE-SPEEDS AND LINE PULL

Wire Rope Dia.	FRONT DRUM						REAR DRUM					
	Lagging		Line Pull and Speed		Drum Capacities		Lagging		Line Pull and Speeds		Drum Capacities	
	Root Dia.	Groove	F.P.M. 1st Layer	Pull, lbs. 1st Layer	1st Layer Capacity	Total Capacity	Root Dia.	Groove	F.P.M. 1st Layer	Pull, lbs. 1st Layer	1st Layer Capacity	Total Capacity
3/4″	14″	Smooth	162	20,200	77′	1071′	14″	Smooth	162	20,200	77′	1071′
	BOOMHOIST DRUM						THIRD DRUM					
3/4″	10 1/2″	Smooth	131	22,800	60′	370′	10 1/2″	Smooth	131	22,800	60′	370′

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GENERAL INFORMATION ONLY

HC-138 CAPACITIES WITH TUBULAR BOOM

PCSA Class 12-320
Refer to ALL notes on page 2.

Capacities are based on machine equipped with boom mast (fully extended), 8 x 4 drive carrier, 11' 0" wide, 14:00 x 20 18-ply rating tires, front and rear power hydraulic outriggers, 18,000# ctwt. and 4,300# bumper ctwt.

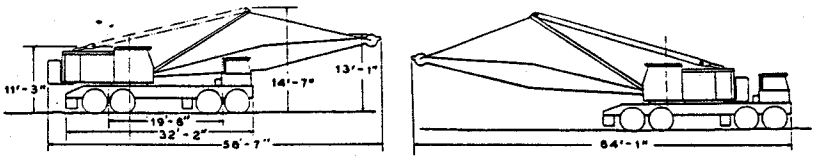
BOOM				ON OUTRIGGERS		ON TIRES	
Length	Radius	Angle	Point Ht. W.	Rear	Side	Rear	Side
40'	12'	78°	45' 11"	130,000*	130,000*	76,700*	62,310*
	13'	76°	45' 7"	128,040*	127,140*	73,870*	58,450*
	14'	74°	45' 4"	119,790*	119,080*	71,250*	55,010*
	15'	73°	45' 0"	112,500*	111,960*	68,790*	51,930*
	20'	65°	43' 1"	86,000*	85,930*	47,760	35,510
	25'	57°	40' 5"	67,530*	66,680	35,540	26,140
	30'	48°	36' 6"	54,380*	49,320	28,010	20,370
	35'	37°	31' 1"	44,890*	38,810	22,880	16,460
	40'	23°	22' 5"	37,240*	31,730	19,150	13,600
50'	13'	79°	55' 11"	127,360*	127,110*	73,630*	58,370*
	14'	78°	55' 8"	119,760*	119,050*	71,010*	54,930*
	15'	76°	55' 5"	112,480*	111,930*	68,560*	51,850*
	20'	70°	53' 11"	85,980*	85,900*	47,890	35,650
	25'	64°	51' 10"	67,600*	66,990	35,650	26,250
	30'	58°	48' 11"	54,490*	49,560	28,100	20,470
	35'	50°	45' 5"	45,000*	39,030	22,980	16,560
	40'	43°	40' 7"	38,150*	31,960	19,270	13,730
	50'	21°	24' 4"	28,390	23,030	14,220	9,870
60'	15'	79°	65' 10"	112,630*	112,070*	68,410*	51,920*
	20'	74°	64' 5"	86,080*	85,990*	48,170	35,930
	25'	69°	62' 8"	67,770*	67,420	35,850	26,450
	30'	63°	60' 6"	54,670*	49,880	28,250	20,630
	35'	58°	57' 8"	45,150*	39,270	23,100	16,680
	40'	52°	54' 2"	38,270*	32,160	19,380	13,830
	50'	39°	44' 4"	28,580	23,220	14,330	9,980
	60'	19°	26' 1"	22,060	17,760	11,020	7,440
70'	20'	76°	74' 10"	85,930*	85,840*	48,150	35,920
	25'	72°	73' 4"	67,680*	67,530	35,810	26,410
	30'	68°	71' 6"	54,600*	49,930	28,200	20,580
	35'	63°	69' 2"	45,080*	39,300	23,050	16,630
	40'	58°	66' 5"	38,190*	32,170	19,320	13,780
	50'	48°	58' 11"	28,580	23,220	14,280	9,930
	60'	36°	47' 10"	22,100	17,800	11,010	7,430
	70'	17°	27' 7"	17,710	14,130	8,690	5,650
80'	20'	78°	85' 0"	85,750*	85,660*	48,100	35,870
	25'	74°	83' 10"	67,560*	67,560*	35,730	26,340
	30'	70°	82' 2"	54,500*	49,940	28,120	20,490
	35'	67°	80' 2"	44,980*	39,280	22,960	16,540
	40'	63°	77'-11"	38,090*	32,140	19,220	13,690
	50'	54°	71' 10"	28,530	23,170	14,180	9,840
	60'	45°	63' 1"	22,050	17,760	10,930	7,350
	70'	33°	50' 10"	17,700	14,120	8,640	5,600
	80'	16°	29' 1"	14,540	11,470	6,920	4,270
90'	20'	79°	95' 4"	81,510*	81,510*	48,030	35,800
	25'	76°	94' 2"	67,420*	67,420*	35,640	26,250
	30'	73°	92' 8"	54,380*	49,920	28,010	20,390
	35'	69°	91' 0"	44,840*	39,240	22,840	16,430
	40'	66°	89' 0"	37,950*	32,080	19,110	13,570
	50'	59°	83' 2"	28,460	23,090	14,060	9,720
	60'	51°	76' 7"	21,970	17,670	10,810	7,240
	70'	42°	67' 1"	17,620	14,040	8,530	5,500
	80'	31°	53' 8"	14,500	11,420	6,840	4,200
	90'	15°	30' 6"	12,110	9,420	5,510	3,170
100'	25'	77°	104' 5"	67,260*	67,260*	35,530	26,140
	30'	74°	103' 2"	54,240*	49,890	27,890	20,270
	40'	68°	99' 10"	37,790*	32,010	18,980	13,440
	50'	62°	95' 2"	28,360	23,000	13,930	9,590
	60'	55°	89' 1"	21,870	17,570	10,680	7,100
	70'	48°	81' 2"	17,520	13,940	8,400	5,360
	80'	40°	70' 10"	14,400	11,320	6,720	4,080
	90'	30°	56' 5"	12,040	9,350	5,410	3,070
	100'	14°	31' 10"	10,170	7,780	4,350	2,250
110'	25'	79°	114' 8"	64,820*	64,820*	35,410	26,030
	30'	76°	113' 6"	54,090*	49,840	27,760	20,150
	40'	70°	110' 6"	37,630*	31,920	18,840	13,300
	50'	65°	106' 5"	28,260	22,890	13,790	9,440
	60'	59°	101' 0"	21,750	17,460	10,530	6,960
	70'	53°	94' 2"	17,400	13,820	8,260	5,220
	80'	46°	85' 7"	14,280	11,200	6,580	3,930
	90'	38°	74' 5"	11,930	9,240	5,280	2,940
	100'	28°	59' 0"	10,080	7,690	4,240	2,140
	110'	14°	33' 0"	8,580	6,430	3,370	1,470

BOOM				ON OUTRIGGERS		ON TIRES	
Length	Radius	Angle	Point Ht. W.	Rear	Side	Rear	Side
120'	30'	77°	123' 10"	53,930*	49,780	27,630	20,010
	40'	72°	121' 1"	37,460*	31,820	18,690	13,160
	50'	67°	117' 4"	28,140	22,780	13,630	9,290
	60'	62°	112' 6"	21,620	17,330	10,380	6,800
	70'	56°	106' 6"	17,270	13,680	8,100	5,060
	80'	50°	99' 0"	14,140	11,070	6,420	3,780
	90'	44°	89' 8"	11,790	9,100	5,130	2,790
	100'	36°	77' 8"	9,960	7,560	4,090	2,000
	110'	27°	61' 6"	8,470	6,320	3,250	1,350
	120'	13°	34' 2"	7,240	5,280	2,520	—
130'	30'	78°	134' 0"	52,380*	49,720	27,490	19,870
	40'	74°	131' 6"	37,280*	31,720	18,540	13,010
	50'	69°	128' 1"	27,960*	22,660	13,470	9,130
	60'	64°	123' 10"	21,490	17,200	10,210	6,640
	70'	59°	118' 4"	17,130	13,550	7,940	4,900
	80'	54°	111' 8"	14,000	10,930	6,260	3,620
	90'	48°	103' 7"	11,650	8,960	4,960	2,630
	100'	42°	93' 7"	9,810	7,420	3,940	1,840
	110'	35°	80' 11"	8,340	6,190	3,090	1,200
	120'	26°	63' 10"	7,120	5,160	2,390	—
	130'	13°	35' 4"	6,080	4,290	1,770	—
140'	30'	79°	144' 2"	47,730*	47,730*	27,340	19,730
	40'	75°	141' 11"	37,090*	31,610	18,380	12,850
	50'	71°	138' 10"	27,760*	22,530	13,310	8,970
	60'	66°	134' 10"	21,360	17,060	10,050	6,480
	70'	62°	129' 11"	16,980	13,400	7,770	4,740
	80'	57°	123' 11"	31,850	10,780	6,090	3,450
	90'	52°	116' 8"	11,500	8,810	4,800	2,460
	100'	46°	107' 11"	9,660	7,270	3,770	1,680
	110'	40°	97' 4"	8,190	6,040	2,930	1,040
	120'	33°	84' 0"	6,980	5,020	2,230	—
	130'	25°	66' 1"	5,960	4,160	1,640	—
	140'	12°	36' 5"	5,070	3,420	1,110	—
150'	35'	78°	153' 5"	39,180*	38,750	21,980	16,580
	40'	76°	152' 4"	34,890*	31,500	18,220	12,690
	50'	72°	149' 4"	27,320*	22,400	13,150	8,800
	60'	68°	145' 8"	21,210*	16,920	9,880	6,310
	70'	64°	141' 1"	16,840*	13,250	7,600	4,560
	80'	59°	135' 8"	13,700*	10,630	5,920	3,280
	90'	55°	129' 2"	11,350*	8,660	4,620	2,290
	100'	50°	121' 5"	9,510*	7,120	3,600	1,510
	110'	45°	112' 1"	8,030*	5,880	2,760	—
	120'	39°	100' 11"	6,820*	4,870	2,070	—
	130'	32°	86' 11"	5,770*	4,010	1,470	—
	140'	24°	68' 4"	4,810*	3,290	—	—
	150'	12°	37' 6"	4,060*	2,640	—	—
160'	35'	79°	163' 7"	36,070*	36,070*	21,830	15,420
	40'	77°	162' 6"	31,450*	31,380	18,060	12,530
	50'	73°	159' 10"	25,070*	22,270	12,980	8,640
	60'	69°	156' 5"	20,110*	16,770	9,710	6,140
	70'	65°	152' 2"	16,680*	13,100	7,430	4,390
	80'	61°	147' 2"	12,760*	10,470	5,740	3,100
	90'	57°	141' 2"	10,520*	8,500	4,450	2,120
	100'	53°	134' 5"	8,660*	6,960	3,420	1,330
	110'	48°	125' 11"	7,110*	5,720	2,590	—
	120'	43°	116' 2"	5,830*	4,710	1,890	—
	130'	38°	104' 5"	4,770*	3,860	1,300	—
	150'	23°	70' 5"	3,130*	2,500	—	—
	160'	11°	38' 6"	2,540*	1,940	—	—

NOTES — *Lifting Crane*

1. For lifting 130,000 lbs., ten parts of 3/4" hoist rope is required.
2. Capacities shown are in pounds, and unless indicated by an asterisk (*), are based on 85% of minimum tipping loads, with machine standing on firm level ground. Deduction must be made for weight of hook block, hook, sling, grapple, etc.
3. For boom lengths exceeding 140 feet, the boom mast with mid-point suspension pendants is required.
4. When boom mast is used as a short boom, maximum lifting capacity is 18,000 lbs. from 10' 0" minimum to 23' maximum radius, with mast extended, on outriggers side and rear.

*These capacities are the maximum capacities, and are based on factors other than the machine's tipping condition.

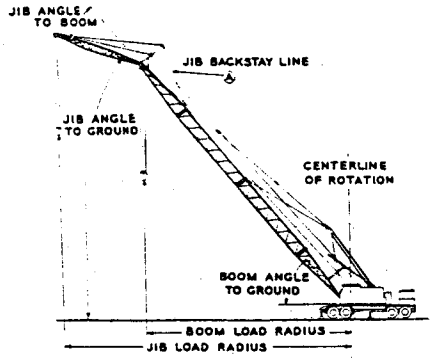


AXLE LOADINGS (approximate)

DESCRIPTION	Component Weight	Total Weight	Upper Facing Front		Upper Facing Rear	
			Front	Rear	Front	Rear
Standard carrier complete with 40′ tubular "Hi-Lite" boom, boom mast, bumper ctwt., hoist lines, backstops.		100,750	24,680	76,070	42,140	58,610
Removable Components						
40′ tubular "Hi-Lite" boom with pendants	− 4,300		+ 7,200	− 2,900	+ 5,445	− 9,745
20′ top section with pendants	− 2,740		− 5,580	+ 2,840	+ 4,435	− 7,175
Boom mast spreader bar and bridle	− 2,570		− 2,290	− 280	+ 1,240	− 3,810
Upper counterweight	− 18,000		+ 7,600	− 25,600	− 15,050	− 2,950
Bumper counterweight	− 4,300		− 5,530	+ 1,230	− 5,530	+ 1,230
Front outrigger box complete	− 5,000		− 2,670	− 2,330	− 2,670	− 2,330
Front outrigger beams only	− 3,500		− 1,870	− 1,630	− 1,870	− 1,630
Rear outrigger box complete	− 5,000		+ 1,460	− 6,460	+ 1,460	− 6,460
Rear outrigger beams only	− 3,500		+ 1,020	− 4,520	+ 1,020	− 4,520
Added Components						
Third drum	+ 1,400		+ 390	+ 1,010	+ 185	+ 1,215
Drum lowering clutch	+ 350		+ 50	+ 300	+ 90	+ 260
Front drum planetary, either side	+ 450		+ 65	+ 385	+ 120	+ 330
Rear drum planetary, either side	+ 450		0	+ 450	+ 180	+ 270
Detroit Diesel — 8V71-N (carrier)	+ 750		+ 770	− 20	+ 770	− 20
GM6082, with torque converter (upper)	+ 2,006		− 536	+ 2,542	+ 1,355	+ 651

HC-138 JIB CAPACITIES

Jib Angle To Ground	JIB LENGTH			
	20′	30′	40′	50′
80°	20,000	16,000	12,000	8,000
65°	16,000	13,000	10,000	6,000
50°	13,000	10,000	8,000	5,000
35°	10,500	8,000	6,000	4,000
20°	9,500	7,000	5,000	3,000



1. Capacities shown are in pounds and are based on a Link-Belt Speeder jib with a cross section 30″ wide by 24″ deep and used with a 10′ 0″ high jib mast in the proper working position.
2. For jib angle to ground, deduct jib angle to boom from the boom angle to ground.
3. The jib backstay line (A) is anchored to the boom upper section.
4. The jib angle to boom must not exceed 30°.
5. Determining machine jib capacities
   a. Add the length of boom plus length of jib used.
   b. Determine the jib load radius.
   c. Refer to lifting crane capacity chart and select the boom length that corresponds to the total length of boom and jib in (a) and the radius in (b).
      (1) The jib capacity is equal to the lifting crane capacity unless restricted by the maximum jib capacities shown above.
   d. If the total length of boom and jib exceeds the longest boom length listed in the lifting capacity chart deduct 600 lbs. from the capacity shown for the longest boom length for the radius required in (b).
      (1) The jib capacity is the resulting figure unless restricted by the maximum jib capacities shown above.
6. Determining lifting crane capacities with jib on boom:
   a. when operating off the main boom peak sheaves with a jib on the boom, the following reductions in machine lifting capacities must be made.
      (1) 20′ jib — 1,600 lbs. (3) 40′ jib — 2,200 lbs.
      (2) 30′ jib — 1,900 lbs. (4) 50′ jib — 2,500 lbs.

MAXIMUM BOOM—JIB MACHINE CAN LIFT OFF GROUND UNASSISTED

*Reduced travel speeds are recommended with long booms; safe speeds depend on road conditions.

	Boom	Boom + Jib
On tires and travel*		
Over rear	140′	120′ + 50′
Over Side	120′	100′ + 50′
On outriggers		
Over rear	160′	160′ + 50′
Over side	160′	150′ + 50′

GENERAL SPECIFICATIONS

GENERAL INFORMATION ONLY

CARRIER (Truck-type — 8x4 — Link-Belt Speeder).

FRAME — Main members alloy steel channel. Machined turntable mounting surface.

FRONT AXLES — Tandem, bogie beam mounted, Shuler Tubular Model FTKC; 110¼" track.

REAR AXLES — Tandem, Clark Planetary Model BD50-70, double reduction, bogie beam mounted; 100" track.

WHEELS AND RIMS — Cast spoke type, front. Integral with planetary hub, rear. 20" wheels, 10" rims.

TIRES — Single tires, front, dual tires rear.

Standard — 14:00 x 20, 18-ply rating, transport type tread.

Optional — 14:00 x 20, 18-ply rating, Custom Hi-Miler.

Optional — 14:00 x 20, 18-ply rating, HCT Rock type tread.

Optional — 14:00 x 20, 18-ply rating, Super Road Lug.

OUTRIGGERS — Full width, double-box front and rear, pin connected to carrier frame. Hydraulically operated beam and jack cylinders are individually controlled from either side of the carrier. Optional control from carrier cab, upper or from any combination available. Hydraulic power is supplied by carrier engine driven hydraulic pump. Check valve at each jack cylinder. Pontoons are alloy steel, lightweight.

BRAKES — (Air)

Service — Eight wheel air brakes standard. MAXI-BRAKE on rear wheels, and single diaphragm air chambers on front wheels. Internal expanding.

Size and Area —

Rear Wheels — 16½" x 17", total effective lining area 910 sq. in.

Front Wheels — 17" x 4", total effective lining area 500 sq. in.

Digging — Eight-wheel service brake applied with air valve on carrier dash.

Parking — Four-wheel rear brakes applied with air valve on carrier dash.

Emergency — Brakes on four rear wheels apply when air pressure drops below 45 p.s.i. in the system. Emergency brake may be manually applied at any time by hand control of dash mounted air valve.

STEERING — Power hydraulic, Ross Model HPS70; 20" diameter wheel.

TURNING RADIUS — 50' 10" over outside of front bumper.

ENGINES — Gasoline or diesel, 12-volt alternator or generator, starter, pressure lubrication, radiator, air cleaner, 15 c.f.m. air compressor, hydraulic pump.

Standard — Waukesha F817-G gasoline engine, six cylinder, four cycle, 5⅜" bore, 6" stroke, 817 cu. in. displacement, 272 maximum brake horsepower at 2,400 r.p.m. full load speed. Peak torque 721 ft. lbs. at 1200 r.p.m.

Optional — GM 6V-71N diesel engine, six cylinder, two cycle, 4¼" bore, 5" stroke, 426 cu. in. displacement, 252 maximum brake horsepower at 2,300 r.p.m. full load speed. Peak torque 649 ft. lbs. at 1,400 r.p.m.

Optional — GM 8V-71N diesel engine, eight cylinder, two cycle, 4¼" bore, 5" stroke, 568 cu. in. displacement, 280 maximum brake horsepower at 2,300 r.p.m. governed load speed. Peak torque 760 ft. lbs. at 1,200 r.p.m.

CLUTCH — Lipe Rollway, 14" 2-plate.

TRANSMISSIONS —

Main — Fuller RTO 915 with fifteen speeds forward and three reverse.

Auxiliary — Fuller 2A92, 2 speed, midship mounted, for creeping only.

UNIVERSALS — Rockwell Standard or Mechanics Universal.

CAB — One-man, fully enclosed.

ELECTRICAL SYSTEM — 12 volt system, including dual sealed beam headlights, directional signals with four-way flashing system, stop and tail lights, clearance lights, horn, two-speed windshield wiper, lighting of instrument panel, dome light, headlight dimmer switch. Two 12-volt 200 ampere batteries.

WEIGHT — Standard truck with bumper ctwt., less turntable bearing approximately 48,160 lbs.

STANDARD EQUIPMENT — Bus type rear view mirrors, boom guide, lug wrench, a two way reading bubble level, and tire inflation hose. Instrument panel and dash includes speedometer, ammeter, fuel gauge, engine temperature gauge, air pressure gauge, oil pressure gauge, low air pressure warning buzzer, key start ignition switch, choke and throttle controls, tachometer. High pressure lube fittings at all bearing points; 70-gal. total capacity fuel tanks.

SPEEDS — All speeds are for HC-138 with engines at governed full load r.p.m.; (GM-2,300 r.p.m. — Waukesha-2,400 r.p.m.)

Gear		Main-Fuller RT0915 15 Speed	Auxiliary-Fuller 2A92 — 2 Speed			
			Waukesha F-817-G		GM 6V-71N	
			1.00:1.00	2.298:1.00	1.00:1.00	2.298:1.00
High	10th	.81	46.4 mph	20.3 mph	44.4 mph	19.4 mph
	9th	1.00	37.6 mph	16.4 mph	36.0 mph	15.7 mph
	8th	1.26	29.8 mph	13.0 mph	28.6 mph	12.5 mph
	7th	1.59	23.7 mph	10.3 mph	22.6 mph	9.9 mph
	6th	2.04	18.4 mph	8.0 mph	17.7 mph	7.7 mph
	Rev.	2.21	17.0 mph	7.4 mph	16.3 mph	7.1 mph
Low	5th	2.59	14.5 mph	6.3 mph	13.9 mph	6.1 mph
	4th	3.20	11.8 mph	5.1 mph	11.3 mph	4.9 mph
	3rd	4.04	9.3 mph	4.1 mph	8.9 mph	3.9 mph
	2nd	5.10	7.4 mph	3.2 mph	7.1 mph	3.1 mph
	1st	6.51	5.8 mph	2.5 mph	5.5 mph	2.4 mph
	Rev.	7.06	5.3 mph	2.3 mph	5.1 mph	2.2 mph

Gear		Main-Fuller RT0915 15 Speed	Auxiliary-Fuller 2A92 — 2 Speed			
			Waukesha F-817-G		GM 6V-71N	
			1.00:1.00	2.298:1.00	1.00:1.00	2.298:1.00
Deep Reduction	5th	3.87	9.7 mph	4.2 mph	9.3 mph	4.1 mph
	4th	4.78	7.7 mph	3.4 mph	7.5 mph	3.3 mph
	3rd	6.03	6.2 mph	2.7 mph	6.0 mph	2.6 mph
	2nd	7.62	4.9 mph	2.1 mph	4.7 mph	2.1 mph
	1st	9.73	3.9 mph	1.7 mph	3.7 mph	1.6 mph
	Rev.	10.55	3.6 mph	1.6 mph	3.4 mph	1.4 mph

The deep reduction low (1st) and reverse speed, with the auxiliary in low gear speed, are based on peak engine torque at 1,200 r.p.m., giving a creep speed 0.46 m.p.h.

UPPER FRAME — All-welded, stress-relieved, precision machined unit. Side housings are welded integral with upper frame.

TURNTABLE BEARING WITH INTEGRAL GEAR — X Roller bearing type. Outer race with external swing gear is bolted to carrier; inner race bolted to upper frame. A machined surface is provided for mounting turntable bearing.

TRANSMISSION — Link-Belt quadruple roller chain enclosed in oil tight chain case with integral sump. Pump driven oil stream lubrication. Engine pinion and chain wheel have machine-cut teeth.

REDUCTION SHAFT — Consist of two shafts with drive pinions. Shafts mounted in line bores on anti-friction bearings. Pinions have machine-cut teeth.

CLUTCHES — Speed-O-Matic power hydraulic actuated for swing, operating drums, boomhoist, third drum and optional load lowering. Internal expanding, two shoe type, aluminum alloy shoes; 18" diameter, 4 1/2" face width.

Spiders — Involute splined to horizontal shafts.

DRUMS — Front, rear, and third (optional) operating drums.

Shafts — Mounted in line bores on anti-friction bearings. Extended to accommodate optional load lowering clutches. Special shaft required to accommodate two-speed planetary driven drums on front and rear drums.

Spur Gears — Machine-cut teeth; mounted on anti-friction bearings on shaft.

Clutch Drums — Bolted to spur gears.

Brakes — Two-piece, external contracting band, mechanically foot pedal operated, front and rear drum 32" diameter 4" face width; third drum 26" diameter 4" face width.

Brake Drums — One-piece, smooth, involute splined to drum shaft.

Drum Laggings — Involute splined to shaft.

DRUM ROTATION INDICATOR (Optional) — Mounted on control stand. Dial actuated by flexible shaft from front and rear main operating drum shafts.

TWO-SPEED FRONT AND REAR DRUMS (Optional) — Planetary driven hoist and lowering. Planetary unit mounts between spur gear and two-shoe clutch drum on extended shaft; available for 70% increase or 40% decrease of standard hoist and load lowering rope speeds. Two-shoe clutch gives standard speed. Planetary controlled by external contracting band through push-button located on clutch control lever.

HORIZONTAL SWING SHAFT — Mounted in line bore on anti-friction bearings.

Spur Gears — Machine-cut teeth. Mounted on shaft on anti-friction bearings.

Bevel Gear — Machine-cut teeth, involute-splined to shaft, fully enclosed and running in oil.

Swing Brake — Two-directional, external contracting band, 18" diameter 3" face width; spring applied and power hydraulically released.

Brake Drum — Involute splined to shaft. 18" diameter 3 1/4" face width.

INDEPENDENT BOOMHOIST — Spur gear driven with precision boom raising through a 2-shoe clutch and boom lowering through a planetary. A rope drum locking pawl, manually controlled from operators position, is provided.

Shaft — Mounted in line bore on anti-friction bearings.

Spur Gear — Machine-cut teeth mounted on anti-friction bearings on shaft.

Wire Rope Drum — Involute-splined to shaft, with ratchet wheel cast integral.

Brake Drum — Involute splined to shaft, 26" diameter 4 1/2" face width.

Brake — External contracting band, 26" diameter 4" face width, spring applied and power hydraulically released.

Planetary Boom Lowering — Unit mounts on outer end of boomhoist shaft. Planetary is activated by external contracting band brake which is controlled by operator from operators control stand.

Boom Lowering Clutch (Optional) — Two-shoe clutch for higher speed boom lowering mounts on shaft outside the planetary unit. Clutch drum bolted to outer face of planetary housing.

BOOMHOIST LIMITING DEVICE — A cab mounted device which, when it comes in contact with the boom, trips a switch and deactivates an electrically energized solenoid valve located in hydraulic boomhoist clutch circuit. The deactivated solenoid valve releases the boomhoist clutch and a spring automatically applies the boomhoist brake. In normal operation, the boom must be lowered before it can be raised again. After solenoid valve is deactivated, an emergency bypass switch mounted on control stand allows hoisting boom for release of drum locking pawl.

VERTICAL SWING SHAFT — Mounted in line bore on anti-friction bearings.

Bevel Gear — Machine-cut teeth, involute-splined to shaft, fully enclosed and running in oil.

Swing Pinion — Involute-splined to shaft; teeth mesh with external teeth of turntable bearing.

SWING LOCK — Mechanically controlled pawl engages with external teeth of turntable bearing.

SWING SPEED — 3.36.

BAIL — Pinned to upper frame, to support boom suspension system. Contains six sheaves, mounted on anti-friction bearings for 14-part boomhoist.

CAB — Operator door swings, rear double doors slide on ball bearing rollers, all other doors hinged; safety glass panels.

COUNTERWEIGHT — 18,000 pounds. Power hydraulic raised or lowered in seconds. Held in place on two hydraulically controlled frustums. Control valves at rear of upper.

CONTROL SYSTEM — Speed-o-Matic power hydraulics; an open system. Operating pressure is transmitted through oil to all operating two-shoe clutch cylinders, swing brake and boomhoist drum brake cylinders. The system includes a pump to provide a constant flow of oil, an accumulator to maintain operating pressure and variable pressure operator-controlled valves to regulate this pressure to each clutch cylinder.

Pump — Vickers; rated at 4.7 g.p.m. at 1,200 r.p.m.

Oil Filter — Link-Belt Speeder; replaceable Skinner ribbon-type filter element.

Relief Valve — Link-Belt Speeder; set to operate at 1,250 p.s.i.

Unloader Valve — Link-Belt Speeder; set to unload

pump at a maximum 1,050 p.s.i. and to load pump when pressure drops below 900 p.s.i.

Accumulator — Link-Belt Speeder; piston-type, pre-charged with nitrogen gas to 650 p.s.i.

Sump Tank — Link-Belt Speeder; 7 gal. capacity with filter and strainer assembly.

Control Valves — Link-Belt Speeder; variable pressure type.

ENGINES — Full pressure lubrication, oil filter, air cleaner, hour meter, hand and foot throttles, 74-gal. capacity fuel tanks with fuel gauge.

	Waukesha F-554-G (1)	GM 6-71 Series (Model 6082) with torque converter (2)	GM 4-71 Series (Model 4030N)	GM 4-71 Series (Model 4082) with torque converter (3)	Cummins H-743-P with torque converter (4)
Number of cylinders Bore and stroke (inches) Piston displacement (cu. in.)	6 5 5/8 x 5 1/2 554	6 4 1/2 x 5 425.6	4 4 1/4 x 5 283.7	4 4 1/4 x 5 283.7	6 5 1/8 x 6 743
High idle speed, r.p.m. Engine r.p.m. F.L.S.	1,880 1,710	1,940 1,800	1,990 1,850	1,207 @ pinion 1,670 @ crankshaft	1,830 1,740
Net engine H.P. @ F.L.S. Peak torque; Lbs. Ft. Peak torque; r.p.m.	109 427 800	165 1,400 (output stall)	110 351 1,200	112 1,000 (output stall)	144 1,770 (output stall)
Electrical system Batteries	12 volt 2—6-volt	12 volt 1—12-volt	12 volt 2—6-volt	24 volt 2—12-volt	12 volt 2—12-volt
Clutch — Type Make Model	Friction-Hyd. cplg. Twin Disc SP211-HP-1	Disconnect between engine-converter	Friction-Hyd. cplg. Twin Disc SP111-HP-1	Disconnect between engine-converter	Disconnect between engine-converter
Transmission — No. chain wheel teeth No. engine pinion teeth	 161 18	 161 18	 161 17	 161 28	 161 18

(1) Two-speed Cotta transmission available.
(2) Allison TCDO 475 Single Stage Converter.
(3) 3.4 ratio Torqumatic TDCOA 435 Single Stage Converter.
(4) Twin Disc Model CO-10065-TC-1 three stage converter.

FRONT END CRANE BOOM EQUIPMENT

BOOM — "Hi-Lite" Tubular. Two-piece; 40′ total length, 20′ upper and lower sections, 44″ deep and 54″ wide at connections. Chords alloy steel, 3″ outside diameter. Bracing of round steel tubing fully coped to fit chords.

Boomfoot — 2 3/8″ wide on 54″ centers.

Boompoint Machinery — Five heat-treated, 18″ root diameter sheaves mounted on anti-friction bearings on boom peak shaft.

Connections — In-line pin-connections facilitate insertion or removal of boom extensions. Tapered pin (with latch pin) for fast, easy pin-up. Exclusive design in-line pin lugs welded to chord tube. Extended hub on female connection serves as anchor for jib staylines and pendant lines when assembling boom.

BOOM EXTENSIONS — Available in 10′, 15′, 20′ and 30′ lengths with proper length pendants.

BOOM BACKSTOPS — Dual, lever type with spring-loaded bumpers.

BOOMHOIST BRIDLE — Serves as a connection between the pendants and live boomhoist rope. Bridle contains 12″ root diameter sheaves mounted on anti-friction bearings; 6 1/2″ root diameter auxiliary hoist sheaves mounted on bronze bushings which enable mast to be used as a short boom.

BOOM MAST — Mounts on front of upper frame; supports boomhoist bridle and mid-point suspension pendants. Required for all boom lengths. Hydraulically extends from 19′ to 23′ long for working position, mechanically retracts to 19′. Controlled by hand valve located on control panel.

Boom Mast Backstops — Mast backstops with spring-loaded bumpers are welded to inner side of each main backstop member for the mast when used as a boom.

JIB — 20′ two-piece with 10′ upper and lower sections; 10′ extensions available for 30′, 40′ or 50′ jib. Jib is 30″ wide and 24″ deep at the connections; chords are 1 1/2″ outside diameter tubing.

Connections — In-line pin connections permit easy removal and addition of sections.

Jib Mast — 10′ high, mounted on jib base section. Two deflector sheaves within the mast, mounted on anti-friction bearings for jib hoist line; two equalizer sheaves for jib frontstay and jib backstay lines mounted to top of mast.

Jib Backstops — Telescoping type, spring loaded; pinned from jib mast to boom upper section and from jib mast to jib lower section.

Peak Sheave — Mounted on anti-friction bearings.

Peak Shaft — Anchor is provided at peak of jib for two-part jib hoist line. Line anchors are suspended from the shaft.

FAIRLEADER — Full-revolving type with barrel, sheaves, and guide rollers mounted on anti-friction bearings.

TAGLINER WINDER — Rud-o-Matic Model 648; spring wound drum type mounted on crane boom. Cable pull off drum — 60′ to 75′ from neutral.

BOOM ANGLE INDICATOR — Mounted near boom base.

ROPE SUPPORTING ROLLERS — To deflect main hoist line over top of boom. Required when third drum rope passes over crane boom. Rollers mounted on anti-friction bearings; following numbers recommended — One through 100′; two through 110′; three through 130′; four through 150′; five through 160′. Requirements increased by one on booms from 50′ through 160′ when using third drum rope over boom head.

BOOM FOLDING EQUIPMENT (Optional) — A special 10′ boom section with lifting lugs is inserted. Upper portion of boom to be folded must be 15′ or 20′ shorter than lower portion. Two links inserted in pendant lines serve to carry folded boom, as well as eliminate the necessity of disconnecting the pendants when the boom is folded. The special section and links can remain in place at all times. A folding wheel and bracket pin-connects at boom top. Wheel has a 6:50 x 16, 6-ply rating grooved implement tire.

WIRE ROPE– GENERAL INFORMATION ONLY

TYPE AND SIZE USED

Live Boomhoist — Type "N", 3/4" dia.
Main Hoist — Type "N", 3/4" dia.
Jib Hoistline — Type "K", 3/4" dia.
Tagline — Type "A", 5/8" dia.
Jib Staylines — Type "N", 3/4" dia.
Boom Pendants — Type "N", 1 1/4" dia.
Mid-Point Suspension Pendants — Type "F", 3/4" dia., Type "N", 7/8" dia.

WIRE ROPE TYPES

Type "A" — 6 x 25 (6 x 19 class), filler wire, improved plow steel, preformed, fiber center, right lay, regular lay.

Type "F" — 6 x 25 (6 x 19 class), filler wire, improved plow steel, preformed, independent wire rope center, right lay, regular lay.

Type "K" — 18 x 7 non-rotating, improved plow steel, fiber center.

Type "N" — 6 x 25 (6 x 19 class), filler wire, extra improved plow steel, preformed, independent wire rope center, right lay, regular lay.

JIB MAST STAYLINES

Backstay — 48' 10" long (39' 3" plus two each 4' 9 1/2" long), for 30° jib to boom angle; removal of 4' 9" lengths allows 15° and in-line jib to boom angle.

Frontstay — For all booms with 20' jib, 46' 5" long. Each 10' jib extension is supplied with two pendants 9' 4" long.

MAIN HOIST LINE LENGTH

Parts of Line	Boom Length (in feet)												
	40	50	60	70	80	90	100	110	120	130	140	150	160
1	125	145	165	185	205	225	245	265	285	305	325	345	365
2	175	200	230	260	290	320	350	380	410	440	470	500	530
3	215	255	295	335	375	415	455	495	535	575	615	655	695
4	260	310	360	410	460	510	560	610	660	710	760	810	860
5	305	365	425	485	545	605	665	725	785	845	905	965	—
6	350	420	490	560	630	700	770	840	910	980	—	—	—
7	395	475	555	635	715	795	875	955	—	—	—	—	—
8	440	530	620	710	800	890	980	—	—	—	—	—	—
9	485	585	685	785	885	985	—	—	—	—	—	—	—
10	530	640	750	860	970	—	—	—	—	—	—	—	—

LIVE BOOMHOIST ROPE LENGTH ..... 530'

JIB HOISTLINE LENGTH

Jib Length (In ft.)	Parts of Line	Boom Length (in feet)												
		40	50	60	70	80	90	100	110	120	130	140	150	160
20	1	135	155	175	195	215	235	255	275	295	315	335	355	375
20	2	200	230	260	290	320	350	380	410	440	470	500	530	560
30	1	155	175	195	215	235	255	275	295	315	335	355	375	395
30	2	230	260	290	320	350	380	410	440	470	500	530	560	590
40	1	175	195	215	235	255	275	295	315	335	355	375	395	415
40	2	260	290	320	350	380	410	440	470	500	530	560	590	620
50	1	195	215	235	255	275	295	315	335	355	375	395	415	435
50	2	290	320	350	380	410	440	470	500	530	560	590	620	650

Link-Belt Speeder
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