

LINK-BELT SPEEDER CORPORATION, Cedar Rapids, Iowa

DETAIL SPECIFICATION

November 25, 1957

Supersedes Specifications dated April 25, 1957

* Indicates revisions or additions to Specifications dated 4-25-57

STANDARD CARRIER

(Manufactured by Available Truck Co.)

6x4 Drive — Standard

6x6 Drive — Optional

1. **FRAME AND CAB**—Frame side rails, and cross members, 18"x58# steel channel with ample reinforcing to assure maximum strength. One-man cab, 32" wide, fully enclosed, offset to extreme left.
2. **FRONT AXLE**—Shuler #FE-18 heavy-duty, 82" track. Overload spring standard. Front wheel drive axle is optional at extra cost.
3. **REAR AXLE**—Timken Hypoid #SFD-4700 tandem, spur double reduction, heavy duty drive. Positive drive to four full-floating dual wheels. Ratio 10.16 to 1.00. Bogie mounting. 90" track. Oil capacity each axle, 16 quarts.
4. **WHEELS AND RIMS**—Front—Budd #69750-D2 pressed steel disc wheels—20x10, 6" offset rims.
Rear—Budd #69190-D3 pressed steel disc wheels—20x9, 8½" offset rims.
5. **TIRES**—All wheels, 14.00x20, 18-ply, military type, non-directional mud and snow tread. Dual tires on rear wheels and single tires on front wheels.
- *6. **OUTRIGGERS**—Front: Double beam sliding type in fixed outrigger box. Rear: Double beam sliding type in removable outrigger box. Two 4" diameter x 2" wide rollers are mounted in each outrigger box to facilitate easy movement of beams. Screw jacks and pontoons are offered as options at extra cost. Hydraulic operated outrigger beams and jacks optional extra.
7. **SERVICE BRAKES**—Westinghouse air, six wheel. 17¼" x 4" front, 16½" x 7" rear, 12 cu. ft. compressor.
8. **EMERGENCY BRAKES**—16" diameter, four shoe, disc type, plus automatic application of rear wheel air brakes simultaneously with application of emergency brake.
9. **STEERING GEAR**—Ross P720 hydraulic power steering. Oil capacity 5½ pints.
10. **ENGINE**—Waukesha 145GKB six cylinder, 4-stroke cycle, 5¼" bore, 6" stroke, 779 cu. in. displacement, brake horsepower of stripped engine at maximum recommended governed speed of 2400 r.p.m., 240 H.P. Maximum torque 595 ft. lbs. at 1000 r.p.m.
11. **CLUTCH**—Lipe 14" diameter two plate, dry disc type.
12. **TRANSMISSION**—Main—Fuller 4A86, 4-speed, oil capacity 8½ quarts.
Auxiliary—Brown-Lipe Model 8031-C, 3 speed, oil capacity 6 quarts.
13. **UNIVERSALS**—Universals are heavy duty Spicer 1700 main to auxiliary transmission and between rear axles. Spicer 1800 auxiliary transmission to forward rear axle.
14. **SPEEDS**—

WAUKESHA 145GKB (Engine Speed 2200 r.p.m.)

Gear	4-Speed Main Transmission Fuller 4A86	3-Speed Auxiliary .75 to 1.00 Brown-Lipe 8031-C	3-Speed Auxiliary 1.00 to 1.00 Brown-Lipe 8031-C	3-Speed Auxiliary 2.59 to 1.00 Brown-Lipe 8031-C
High	1.00 to 1.00	39.6 m.p.h.	29.6 m.p.h.	11.4 m.p.h.
Third	1.76 to 1.00	22.4 m.p.h.	16.8 m.p.h.	6.5 m.p.h.
Second	3.27 to 1.00	12.1 m.p.h.	9.1 m.p.h.	3.5 m.p.h.
First	6.54 to 1.00	6.1 m.p.h.	4.5 m.p.h.	1.7 m.p.h.
Reverse	7.24 to 1.00	5.5 m.p.h.	4.1 m.p.h.	1.6 m.p.h.

MODEL
HC-108
35 TON
ZEPHYRCRANE

15. **ELECTRICAL SYSTEM**—12 volt starting, lighting and ignition. Two 6 volt batteries, 21 plate, 145 ampere hour capacity. Heavy-duty starter with Bendix drive, and self cooling generator. Voltage regulator. Sealed beam headlights, tail lights, highway lights and turn signals.
16. **CENTERPIN**—Cast-steel, 10" diameter welded to chassis.
17. **TURNTABLE**—Cast-steel double-flanged, machined, 63" outside diameter. Internal gear with cast teeth, 5" face.
18. **WEIGHT**—Complete chassis, without centerpin and turntable, approximately 37,000 pounds with removable rear outrigger.
19. **DIMENSIONS:**

Wheelbase	220"
Over-all Width (over tires)	10' 3"
Over-all Length	28' 3"
Over-all Width (outriggers extended)	14' 6"
Turning Radius	45'
20. **STANDARD EQUIPMENT**—Steel cowl, running board of heavy duty design and construction throughout. Heavy expanded metal grille protects radiator core from injury, forged tow hooks secured to each corner of the frame. Instrument panel provides full complement of instruments including speedometer, ammeter, fuel level gauge, engine temperature indicator, air pressure gauge, oil pressure gauge—also hand throttle, choke control and ignition. Loud 2-tone electrical horn. Low air pressure warning light. Foot accelerator. Air operated windshield wiper. Rubber nipples on distributor and coil terminals to prevent shorting. Complete kit of high quality tools. High pressure grease gun, spare wheel. Tire inflation hose. Rear fenders—heavy, diamond plate construction. Fuel tank 80 gallon capacity.

OPTIONAL CARRIER

(Manufactured by Hendrickson Mfg. Co.)

8x4 Drive

1. **FRAME AND CAB**—Frame side members, 18"x77# beams with ample reinforcing and cross member to assure maximum strength, tapered rear end for additional clearance. One man cab fully enclosed, offset to extreme left.
2. **FRONT AXLES**—(Tandem)—Shuler FE-15G-34SW13-1, 84³/₄" track. Straight tubular section, Hendrickson suspension.
3. **REAR AXLES**—(Tandem)—Timken SFD-4702, 90" track. Hendrickson suspension with solid equalizing beams. Ratio 10.16 to 1.00.
4. **WHEELS and RIMS**—Budd wheels. 20x9 offset V-rims on both front and rear.
5. **TIRES**—(Standard)—All wheels front and rear, 14.00 x 20, 18 ply military type mud and snow tread. Dual tires on rear wheels, single tires on front wheels.
6. **OUTRIGGERS**—Front: Double beam sliding type in fixed outrigger box. Rear: Double beam sliding type in removable outrigger box. Rollers are mounted in each outrigger box to facilitate easy movement of beams. Screw jacks and pontoons are offered as options at extra cost.
7. **BRAKES**—Service Brakes—Bendix Westinghouse heavy duty air brakes on all 8 wheels, front 17¹/₄" x 4", rear 16¹/₂" x 7" tapered ³/₄" block lining. Manually operated service brake pedal lock. 12 cu. ft. compressor.
- *8. **EMERGENCY BRAKES**—American Chain & Cable 4-shoe 16" brake, mounted on propeller shaft at rear of auxiliary. Rear wheel air brakes are applied simultaneously with emergency brake.
9. **STEERING GEAR**—Ross model TE-71, cam and twin lever roller bearing mounted. Oil capacity 3 qts. Garrison hydraulic assist power steering.
10. **ENGINE**—Waukesha 145GKB six cylinder, 4 stroke, 5¹/₄" bore, 6" stroke, 779 cu. in. displacement. Maximum horsepower 240 @ 2400 r.p.m. Maximum torque 595 ft. lbs. @ 1000 r.p.m.
11. **CLUTCH**—Lipe, Rollway, 14" two plate. Area 416 sq. in. Torque capacity 780 lb. ft.
12. **TRANSMISSION**—Main, Fuller model 4-A-86. 4-speed, oil capacity 8¹/₂ quarts. Auxiliary, Brown-Lipe model 8031-C. 3 speed oil capacity 6 quarts.

13. UNIVERSALS—Spicer propeller shafts and joints, needle bearing type.

14. SPEEDS—

WAUKESHA 145GKB (Engine Speed 2200 r.p.m.)

Gear	4-Speed Main Transmission Fuller 4A86	3-Speed Auxiliary .75 to 1.00 Brown-Lipe 8031C	3-Speed Auxiliary 1.00 to 1.00 Brown-Lipe 8031C	3-Speed Auxiliary 2.59 to 1.00 Brown-Lipe 8031C
High	1.00 to 1.00	39.6 m.p.h.	29.6 m.p.h.	11.4 m.p.h.
Third	1.76 to 1.00	22.4 m.p.h.	16.8 m.p.h.	6.5 m.p.h.
Second	3.27 to 1.00	12.1 m.p.h.	9.1 m.p.h.	3.5 m.p.h.
First	6.54 to 1.00	6.1 m.p.h.	4.5 m.p.h.	1.7 m.p.h.
Reverse	7.24 to 1.00	5.5 m.p.h.	4.1 m.p.h.	1.6 m.p.h.

15. ELECTRICAL SYSTEM—12 volt starting, lighting and ignition, two six volt batteries in series, 19 plate. Heavy duty electric starter. Self-cooling generator with current and voltage regulator. Sealed beam headlights, combination stop and tail light, clearance lights; front, rear and on sides of forward outrigger. Directional lights, front and rear. Dual set of lights on rear for removable outriggers.

16. CENTERPIN—Cast-steel, 10" diameter welded to chassis.

17. TURNTABLE—Cast-steel, double-flanged, machined 63" O.D. Internal gear, 51" O.D., 5" face.

18. WEIGHT—Complete chassis without centerpin and turntable, approximately 39,400 pounds.

19. DIMENSIONS

Wheelbase (center of rear bogie to center of front bogie)	200"
Over-all width (over tires)	10' 1"
Over-all length	28' 10"
Over-all width (outriggers extended)	173"
Turning Radius	61'

20. STANDARD EQUIPMENT—One man cab, 32" wide offset to extreme left to allow crane boom to be lowered and carried in forward position, wide vision windshield. Large ventilating type side and rear windows. Electric windshield wiper. Side mounted rear view mirror. Extra capacity oil bath air cleaner. Electric horn. Front, side and rear ICC reflectors, water temperature gauge, oil gauge, ammeter, speedometer, tool kit with special wrenches, spare wheel, channel type, pressed steel front bumper. Diamond plate front and rear fenders, diamond plate on top of main frame to cover opening between main members. Air brake system low pressure warning device. Muffler. Two front tow loops. Tire inflation hose. 75 gallon fuel tank.

UPPER REVOLVING FRAME

21. UPPER FRAME—All-welded, stress-relieved unit with main members of 12"x35# ship channels.

22. CENTERPIN BEARING—Bronze bushing, 10" inside diameter, 4½" long.

23. TURNTABLE ROLLERS—Eight conical hook-type forged-steel rollers 8½" diameter x 3½" face. Four equalized pairs, two in front and two in rear. Two tapered roller bearing assemblies in each roller. Shims adjust rollers for wear.

*24. TRANSMISSION—¾" pitch Link-Belt roller chain, enclosed in case. Oil drip lubrication.

Engine	Engine Pinion	Chain Wheel
Waukesha 140GK	18 tooth	161 tooth
Waukesha 135GKBU	24 tooth	180 tooth
Caterpillar D318G	20 tooth	161 tooth
Caterpillar D318	20 tooth	161 tooth
GM Series 4-71 (Model 4030C)	18 tooth	161 tooth
GM Series 4-71 (Model 4082)	28 tooth	161 tooth
International UD 525	18 tooth	161 tooth
Cummins JS-6	28 tooth	216 tooth

25. REDUCTION SHAFT—Steel 3½" diameter. Mounted on ball bearings. Shaft speed: 179 r.p.m. — full-load speed.

Drive Pinions—Two—Steel, induction-hardened, machine-cut teeth. Both pinions involute splined to shaft.

26. REVERSE SHAFT—4" diameter, heat-treated, mounted on ball bearings.

Spur Gears—Cast-steel, machine cut teeth, 3" face.

Bevel Gear—Cast-steel, heat-treated 3" face. Fully enclosed and running in oil.

Clutches—Internal-expanding two-shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

27. **FRONT DRUM**—12" between flanges. Two-piece, removable cast-steel smooth lagging, 13¼" root diameter. Clutch and brake drums cast-iron. Clutch shoes cast-aluminum.

Shaft—Steel 4.33" diameter, heat-treated. Mounted on ball bearings. Shaft speed: 38 r.p.m. @ full-load speed. Extended shaft for reversing clutch is standard equipment.

Gear—Cast-steel, machine-cut teeth.

Brake—Two-piece external-contracting band type, 27" diameter x 4" face, mechanically operated.

Clutch—(R.H.)—Internal-expanding two-shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

Reversing Clutch—(L.H.)—Optional at extra cost for power controlled load lowering. Internal-expanding two-shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

Reversing Gear—Standard with front drum reversing clutch. Cast-steel, 3" face, machine-cut teeth.

28. **REAR DRUM**—12" between flanges. Two-piece removable cast-steel lagging, 13¼" root diameter. Clutch and brake drums cast-iron. Clutch shoes are cast aluminum.

Shaft—4.33" diameter, heat-treated, mounted on ball bearings. Extended shaft for reversing clutch is standard equipment.

Gear—Cast-steel, machine-cut teeth.

Brake—Two-piece external-contracting band type, 27" diameter x 4" face, mechanically operated.

Clutch—(R.H.)—Internal-expanding two-shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

Reversing Clutch—(L.H.)—Optional at extra cost for power controlled load lowering. Internal-expanding two shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

Reversing Gear—Standard with rear drum reversing clutch. Cast-steel, 3" face, machine-cut teeth.

29. **THIRD DRUM**—(Optional at extra cost)—10⅜" between flanges. Two-piece removable cast-steel grooved lagging, either 9" or 11" root diameter. Unit is mounted in auxiliary housings and bolted to front of main side housings. Clutch and brake drums alloy cast-iron. Clutch shoes cast-aluminum alloy.

Shaft—3.33" diameter, mounted on ball bearings.

Gear—Cast-steel, 3" face, machine cut teeth.

Brakes—External-contracting band type, 18" diameter x 3" face.

Clutch—Internal-expanding two-shoe type, 17¼" diameter x 4" face, power hydraulic (Speed-o-Matic) controlled.

30. **INDEPENDENT RAPID BOOMHOIST**—Spur gear driven with boom raising and lowering controlled by two-shoe Speed-o-Matic clutches for extra precision.

Shaft—Steel, 4" diameter, mounted on ball bearings.

Drum—8" root diameter x 6" wide, with a 22" diameter x 3¼" face brake drum. Integral safety locking ratchet manually controlled from operator's position.

Brake—External-contracting band, 22" diameter x 3" face. Spring-applied and hydraulically released.

Hoist and Lowering Clutches—Internal-expanding, two shoe type, 20" diameter x 5" face, power hydraulic (Speed-o-Matic) controlled.

Spur Gears—Cast-steel, machine cut teeth.

Optional Extra—Boomhoist Lever Kick-Out Device—Safety mechanism activated by boom at minimum radius, automatically kicks out boomhoist lever and disengages boomhoist clutch.

31. **VERTICAL DRIVE SHAFT**—Steel, 4½" diameter. Upper end mounted on roller bearings and lower end on ball bearings.

Bevel Gear—Cast-steel, heat-treated.

Spur Gear—Cast-steel, heat-treated, machine-cut teeth.

NOTE: The bevel and spur gears are involute-splined to the shaft and are fully enclosed and run in oil.

32. **VERTICAL SWING SHAFT**—Steel, 4½" diameter, heat-treated. Upper end mounted on ball bearings and lower end on roller bearings.

Spur Gear—Cast-steel, heat-treated, 4" face, machine-cut teeth, involute splined to shaft. Fully enclosed and running in oil.

ENGINES	Waukesha 140GK ④ ⑤	Waukesha 135GKBU with Torque ⑥ converter	Caterpillar D318G ④ ⑦	Caterpillar D318 ④	GM 4-71 Series (Model 4082) with torque converter ⑤ ⑥	International UD525	Cummins JS-6 With Converter	
							Standard ⑥	Logger ⑦
Number of cylinders	6	6	6	6	4	6	6	6
Bore & Stroke, inches	4 1/2 x 5 5/8	4 1/2 x 5 5/8	4 1/2 x 5 5/8	4 1/2 x 5 5/8	4 1/4 x 5 283.7	4 1/2 x 5 5/8	4 1/8 x 5 401	4 1/8 x 5 401
Piston Displacement, cu. in.	525	426	525	525	283.7	525	401	401
High Idle Speed (r.p.m.)	1780	1500 @ pinion	1780	1780	1780	1780	1420 @ pinion	1420 @ pinion
Full Load Speed (r.p.m.)	1600	1980	1610	1610	1665	1630	1990	2090
Hp. @ Full Load speed AMA or NACC h.p. ⑧	99	122 ⑥	99	99	117 ⑥	99	123 ⑥	133 ⑥
Peak Torque lbs.-ft. (max.)	48.6	43.3	48.6	48.6	28.9	48.6	40.8	40.8
Peak Torque, r.p.m.	390	705 (output) stall	336	336	1000 (output) stall	357	705	805
Lubrication	Full Pressure	Full Pressure	Full Pressure	Full Pressure	Full Pressure	Full Pressure	Full Pressure	Full Pressure
Oil Cooler	No	No	Yes	Yes	Yes	No	Yes	Yes
Oil Filter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crankcase Cap., gal.	2.5	3	5.5	5.5	4.2	4.5	4	4
Starting System	Direct Electric Starting 12-Volt 2-6-Volt batteries	Direct Electric Starting 12-Volt 2-6-Volt batteries	Direct Electric Starting 24-Volt 2-12 Volt batteries	Elec. starting on Gasoline starting Engine	Direct Electric Starting 12-Volt 2-6-Volt batteries	Direct Electric Starting 12-Volt 2-6-Volt batteries	Direct Electric Starting 12-Volt 2-6-Volt batteries	Direct Electric Starting 12-Volt 2-6-Volt batteries
Ignition	Magneto	Magneto	None	Magneto on Starting Eng.	None	Magneto for starting	None	None
Air Cleaner	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath	Donaldson Heavy Duty Oil Bath
Fuel Tank, Cap. gal.	50	50	50	50	50	50	50	50
Fuel Injection Pump Carburetor	None Zenith Updraft Screen	None Zenith Updraft None	Caterpillar None	Caterpillar None	GM None	International None	Cummins None	Cummins None
Fuel Filter (replac'ble)	10.5	13	7.5	13.6	6.7	6.7	Yes	Yes
Cooling System, gal.	Twin Disc B211P2	Clutch between engine and converter	Twin Disc 16167	Twin Disc 16167	Allison Heavy Duty 11 1/2 2 1/4 1	Twin Disc B-114P-1 14 2 1/4 1	Clutch between Engine and converter	Clutch between Engine and converter
Clutch—Make								
—Model								
Plate Diameter, inches	11 1/2		14	14	11 1/2	14	Clutch between Engine and converter	Clutch between Engine and converter
Shaft Diameter, inches	2 1/4		2 1/4	2 1/4	2 1/4	2 1/4		
Number of plates	2		1	1	1	1		

① Standard ② Muffler is standard ③ H. P. = (No. of cylinders) x (bore in inches) x 2.5
 ④ Hydraulic coupling available at extra cost.
 ⑤ Boom lowering clutch required.
 ⑥ Stripped engine.
 ⑦ For logging work only. ⑧ 2-Speed Cotta transmission available for lifting crane service. Reduces operating speeds approximately 50%.

32. (Continued)

Swing Pinion—Cast-steel, heat-treated, 5¼" face. Pinion involute-splined to shaft; meshes with with internal teeth of the ring gear.

33. VERTICAL SWING BRAKE SHAFT—Steel, 4¼" diameter, upper end mounted on roller bearings and lower end on ball bearings.

Spur Gear—Cast-steel, heat-treated, machine-cut teeth, involute-splined to shaft. Fully enclosed and running in oil.

Brake—Cast-iron drum, 14" diameter x 2¼" face, involute-splined to shaft. Brake is a two-directional, external contracting band type. Speed-o-Matically applied and spring released.

34. LUBRICATING PUMP—For lubrication of all enclosed gears in the upper machinery, a Brown and Sharpe rotary-gear pump is bolted to the upper frame and is driven by the right-hand reverse spur gear. Oil is pumped from the bottom of the transmission case into the bevel gear case. Two pipes leading from the bevel gear case transfer oil forward to the vertical travel shaft and to the rear of the vertical swing shaft and spur gears.

36. SWING LOCK—Two-tooth pawl mounted on the inside front of the revolving frame engages with the internal teeth of the ring gear. Mechanically operated from the operator's position. A hand operated Speed-o-Matic swing brake is standard equipment.

37. GANTRY—Retractable High Gantry—Standard equipment. Pipe front and bar and angle rear members. Recommended for booms over 60' long.

38. CAB—No. 12-gauge steel sides and top. Sliding doors on ball-bearing rollers. Safety-glass panels in operator's compartment

*39. COUNTERWEIGHT:

	Counterweight "A"
Waukesha 135GKBU	20,400#
Waukesha 140GK	20,400#
General Motors 4030C and 4082	19,800#
Cummins JS-6	19,800#
International UD-525	18,600#
Caterpillar D-318G	19,200#
Caterpillar D-318	18,600#

Counterweight Removal Device—Optional at extra cost—Device consists of two power hydraulic jacks mounted on counterweight base slab and a control valve panel located inside of left rear door. The main 16,600 pound counterweight is removed with this device.

*40. WEIGHTS: (Approximate)

Basic Machine (Standard Carrier)	79,000#
Basic Machine (Optional 8x4 Carrier)	81,400#
Crane Boom Attachment (40' Boom)	5,000#
Crane Boom Attachment (25' Boom)	4,700#

41. DIMENSIONS:

Cab Width	8' 0"
Tailswing, Counterweight "A"	10' 10"
Radius, Boom Hinge Pin	3' 2"
Height, Boom Hinge Pin	7' 0"
Over-all Height Retractable Gantry—Raised	15' 9"
Over-all Height Retractable Gantry—Lowered	12' 10"
Over-all Height with Low Gantry	12' 8"
Minimum Counterweight Clearance from Ground:	
Counterweight "A"	4' 11"

42. LAGGINGS—Root diameter given in inches:

	Front Drum	Rear Drum
Crane	13¼ (Smooth)	13¼ (Smooth)

NOTE: Front and rear drum smooth laggings are interchangeable. Grooved laggings are also available.

*43. CABLE CAPACITIES OF DRUMS:

13¼" Diameter Lagging			Boomhoist Drum	
5/8" Cable	3/4" Cable	7/8" Cable	5/8" Cable	3/4" Cable
829'	530'	392'	410'	275'

44. SPEEDS AND LINE PULLS (@ full-load speed):

Swing Speed	3.9 r.p.m.
Boomhoist Cable Speed	101 f.p.m. on first wrap; 222 f.p.m. on eighth wrap (full drum)
Rear Drum Line Pulls and Speeds (1-part line)	
13 $\frac{1}{4}$ " root diameter lagging	21,200# @ 139 f.p.m.
Front Drum Line Pulls and Speeds (1-part line)	
13 $\frac{1}{4}$ " root diameter lagging	21,200# @ 139 f.p.m.

NOTE: Line pulls based on engine with friction clutch. For engines with torque converter, the line pull at stall will be up to 200% of the friction clutch engines' full load speed line pull depending on the engine-converter combination.

45. MISCELLANEOUS STANDARD EQUIPMENT—Horn for signal purposes, foot throttle in crane cab, handrail at operator's door, hour meter and fuel level gauge on fuel tank.

SPEED-O-MATIC CONTROL SYSTEM

46. SPEED-O-MATIC power hydraulic control system is a closed circuit and has the hydraulic lines filled with oil at all times. Operating pressure is transmitted through the oil to all operating cylinders. The system includes a pump to provide a constant flow of oil, an accumulator to maintain operating pressures, and valves to regulate this pressure to each operating cylinder. Oil pressure and flow to the operating cylinders is controlled through the operation of short levers actuating the variable pressure valves in the control stand.

Pump—Vickers, Inc. Rated at 4.7 gallons per minute at 1200 r.p.m.

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

Relief Valve—Link-Belt Speeder. Set to operate at 1250 p.s.i.

Unloader Valve—Link-Belt Speeder. Set to unload the pump at a maximum of 1050 p.s.i and to load the pump when accumulator pressure drops to 900 p.s.i.

Accumulator—Link-Belt Speeder. Piston type, precharged with nitrogen gas to 650 p.s.i.

Sump Tank—Link-Belt Speeder. 7 gallon capacity with filter and strainer assembly to keep the oil clean.

Control Valves—Link-Belt Speeder. Variable-pressure type.

CRANE ATTACHMENT

*47. BOOM (standard)—Two piece 40' all-welded box-lattice with upper and lower sections each 20' long, 34" deep and 34" wide at connection. Each boomfoot is 1 $\frac{5}{8}$ " thick; 38" boomfoot centers. Boomfoot pins are 2" diameter.

Head Shaft—Steel, 3" diameter. Three bronze-bushed sheaves, 18" root diameter.

Connections—Sections bolted with eight 1 $\frac{1}{4}$ " bolts as standard. Pin connections to permit folding or easy removal and replacement of sections available at extra cost.

Optional Boom—Two piece 25' all-welded box lattice with 8'7" long upper and 16'5" long long lower sections, 34" wide at connection. Each boomfoot is 1 $\frac{5}{8}$ " thick, 38" boom foot centers, boomfoot pins 2" diameter. Same head shaft and connections as standard boom.

Optional Extras—Cable support rollers on boom—Needed when third drum cable passes over crane boom. Steel tubing 3 $\frac{1}{2}$ " x 20" long, mounted on ball bearings.

For booms up to 40' long—one required.

For booms 45' to 60' long—two required.

For booms 65' to 80' long—three required.

For booms 85' to 100' long—four required.

—Crane boom angle indicator.

—Crane boom head guide rollers.

—Single wide mouth sheave and lower rigid guard.

—Head machinery sheaves mounted on needle bearings.

48. BOOM EXTENSIONS—Optional at extra cost in 5', 10', 15' and 20' lengths. All-welded box lattice type 34" wide x 34" deep at connection.

NOTE: Maximum recommended boom length—100'.

49. BOOM BACKSTOP—Standard equipment. Dual spring loaded tubular type.

50. JIB BOOMS—All jibs are of all-welded steel construction and are available in the following lengths:

20', 30' or 40' Jib Boom—Basic Jib is in two 10' sections, bolted together. 10' sections are available to make a 30' or 40' jib. Box-lattice type 18" deep by 22 $\frac{3}{4}$ " wide at connections.

Jib Strut—10' high.

Jib Strut Deflector Sheaves—Cast-iron, both mounted on needle bearings.

Peak Sheaves—Ductile iron, mounted on needle bearings.

Peak Shaft—Steel, heat-treated, 2" diameter. Cable anchor is provided at peak of jib for 2 part hoist line.

***51. BOOMHOIST BRIDLE—Serves as a connection between extender cables and boomhoist line. Bridle (for 8-part line) consists of a single fabricated frame having four cast-steel bronze-bushed sheaves, 9½" root diameter.**

Optional Extra—Bridle for 10-part line, having same construction as standard but with five sheaves.

—Bridle for 12-part line, having same construction as standard but with six sheaves.

52. CABLES:

Attachment and Lines	Cable Diameter	Parts Line	Gantry	ALL BOOM LENGTHS
CRANE Boomhoist	¾" ①	8	High	255
	¾" ①	10	High	310
	⅝" ①	12	High	360
Hoist	⅝" ①	1-6	----	See Chart #1
JIB Hoist	½" ①	1	----	See Chart #2
Boom Guy	⅝" ①	----	----	
Jib Guy	⅝" ①	----	----	

①6 x 19, Improved plow steel, hemp center, right lay, regular lay, preformed.

CHART #1, HOIST CABLE LENGTHS:

BOOM LENGTH IN FEET	CABLE LENGTH FOR GIVEN PARTS OF LINE					
	1	2	3	4	5	6
40	95	140	185	230	275	320
50	115	170	225	280	335	390
60	135	200	265	330	395	460
70	155	230	305	380	455	530
80	175	260	345	430	515	600
90	195	290	385	480	575	670
100	215	320	425	530	635	740

NOTE: To lift Maximum Rated Crane Capacity, 6 Part—¾" Diameter Hoist Line is required.

CHART #2, JIB (WHIP) LINE LENGTHS:

BOOM LENGTH IN FEET	HOIST LINE (1-Part) JIB			HOIST LINE (2-Part) JIB			JIB GUY LINE JIB			BOOM GUY LINE JIB		
	①	①	①	①	①	①	②	②	②	②	②	②
	20'	30'	40'	20'	30'	40'	20'	30'	40'	20'	30'	40'
40	135	155	175	200	230	260	25	35	45	40	40	40
50	155	175	195	230	260	290	25	35	45	50	50	50
60	175	195	215	260	290	320	25	35	45	60	60	60
70	195	215	235	290	320	350	25	35	45	70	70	70
80	215	235	255	320	350	380	25	35	45	80	80	80
90	235	255	275	350	380	410	25	35	45	90	90	90
100	255	275	295	380	410	440	25	35	45	100	100	100

① Only one cable length shown below required.

② Two cables of length shown below required.

***53. EXTENDER CABLES** (Standard for all crane boom attachment)—1¼" diameter, improved plow steel, wire rope center, fitted sockets at each end. Basic cables connect the boomhead anchor to the boomhoist bridle. The basic extender cable length for the standard 40' basic boom with retractable high gantry is 17' 3½". For each extension added to the basic boom, an extender cable of the same length as the extension is furnished.

WE ARE CONSTANTLY IMPROVING OUR PRODUCTS AND THEREFORE RESERVE THE RIGHT TO CHANGE DESIGNS AND SPECIFICATIONS