

# General Specifications

Link-Belt® 33-ton (29.92 metric ton)

## Hydraulic offshore crane

# API-65 “Seahawk”



# API-65 Performance specifications

## Winch performance

Winch	Layer of rope	Rope capacity (feet)	Maximum single line pull at winch (pounds)	Maximum line speed (fpm)
Standard main hoist (12,610 lb. pull)	1	95	12,610	296
	2	199	11,530	324
	3	312	11,530	352
	4	433	9,850	379
5/8" wire rope	5	563	9,180	407
	6	702	8,590	435
	7	850	8,080	463
Auxiliary hoist (11,790 lb. pull)	1	76	11,790	308
	2	160	10,620	342
	3	252	9,670	376
	4	353	8,870	410
5/8" wire rope	5	462	8,190	444
	6	580	7,610	478
Auxiliary hoist (12,493 lb. pull)	1	80	12,493	299
	2	169	11,244	332
	3	267	10,222	363
	4	374	9,370	398
3/4" wire rope	5	490	8,649	432
	6	614	8,031	465
Boomhoist winch	Luffing time, maximum radius to minimum radius, 90 seconds.			

## Maximum wire rope strength — calculated in accordance with API-2C (1983).

Parts of line	Standard		Optional		
	Main hoist	Auxiliary hoist	Main hoist	Auxiliary hoist	Auxiliary hoist
	5/8" 6 x 19 EIPS-IWRC Breaking strength — 41,200 lbs. Maximum load pounds API or ABS	5/8" 19 x 7 EIPS-IWRC Spin resistant Breaking strength — 33,600 lbs. Maximum load pounds API or ABS	3/4" 6 x 19 EIPS-IWRC Breaking strength — 58,800 lbs. Maximum load pounds API or ABS	3/4" 19 x 7 EIPS-IWRC Spin resistant Breaking strength — 48,000 lbs. Maximum load pounds API or ABS	3/4" DYFORM-18 (Bridon American) Rotation resistant Breaking strength — 57,600 lbs. Maximum load pounds API or ABS
1	8,240	6,720	11,760	9,600	11,520
2	16,480	12,440	23,520	19,200	23,040
3	24,720	—	35,280	—	—
4	32,960	—	47,040	—	—
5	41,200	—	58,800	—	—
6	49,440	—	70,560	—	—
7	57,680	—	—	—	—
8	65,920	—	—	—	—

Machine component weights	Pounds
Basic revolving upperstructure with turntable bearing, main load and boomhoist winches, GM 4-71 engine, pump, control valves, A-frame, bridle, bail, operator's cab, catwalks and railings.	20,040
Pedestal mounting base 14" x 55" diameter	1,000
Auxiliary winch (11,790 lb. pull)	920
40' basic angle boom	4,000
20' angle boom extension	1,197
10' angle boom extension	631
5' angle boom extension	413
Boom tip extension	1,000

## API-65 Lifting capacities

Load radius	Top figure — boom angle above horizontal Bottom figure — lifting capacity in pounds*												
	Boom length												
	40' (12 m)	45' (14 m)	50' (15 m)	55' (17 m)	60' (18 m)	65' (20 m)	70' (21 m)	75' (23 m)	80' (24 m)	85' (26 m)	90' (27 m)	95' (29 m)	100' (30 m)
10' (3 m)	79.9° 65,100												
15' (5 m)	72.5° 65,100	74.5° 62,700	76.1° 56,500	77.4° 52,300	78.5° 48,100	79.4° 45,100	80.1° 41,700						
20' (6 m)	64.8° 52,200	67.8° 51,900	70.1° 51,700	72.0° 47,200	73.5° 43,500	74.8° 39,700	75.9° 37,600	76.9° 35,800	77.7° 33,000	78.5° 30,800	79.1° 29,200	79.7° 27,800	80.2° 26,600
25' (8 m)	56.6° 41,700	60.7° 41,500	63.9° 41,300	66.4° 41,000	68.5° 40,200	70.2° 37,700	71.7° 34,800	72.9° 32,200	74.0° 30,500	75.0° 28,500	75.9° 27,000	76.6° 25,700	77.3° 23,900
30' (9 m)	47.5° 34,700	53.1° 34,400	57.3° 34,200	60.6° 34,000	63.3° 33,800	65.5° 33,600	67.3° 32,200	68.9° 29,800	70.3° 28,200	71.5° 26,300	72.5° 25,000	73.5° 23,700	74.3° 22,100
35' (11 m)	36.9° 29,600	44.7° 29,400	50.2° 29,200	54.4° 28,900	57.8° 28,700	60.5° 28,500	62.8° 28,300	64.7° 28,100	66.4° 26,100	67.9° 25,000	69.2° 23,100	70.3° 22,000	71.3° 20,500
40' (12 m)	22.3° 25,700	34.7° 25,500	42.3° 25,200	47.7° 25,000	51.9° 24,800	55.3° 24,600	58.1° 24,400	60.4° 24,300	62.5° 24,100	64.2° 23,100	65.7° 22,000	67.1° 20,300	68.3° 18,900
45' (14 m)		21.0° 22,500	32.9° 22,300	40.2° 22,100	45.6° 21,900	49.7° 21,700	53.1° 21,500	55.9° 21,200	58.3° 21,000	60.4° 20,800	62.2° 20,300	64.8° 18,800	65.2° 17,500
50' (15 m)			19.9° 19,800	31.3° 19,600	38.4° 19,400	43.7° 19,200	47.8° 19,000	51.2° 18,800	54.0° 18,600	56.4° 18,400	58.5° 18,200	60.3° 17,300	62.0° 16,100
55' (17 m)				19.0° 17,600	29.9° 17,400	36.9° 17,200	42.0° 17,000	46.1° 16,800	49.5° 16,600	52.3° 16,400	54.7° 16,200	56.8° 16,100	58.7° 15,000
60' (18 m)					18.2° 15,800	28.7° 15,600	35.5° 15,400	40.5° 15,200	44.6° 15,000	47.9° 14,800	50.7° 14,600	53.1° 14,400	55.2° 14,100
65' (20 m)						17.5° 14,200	27.7° 14,000	34.2° 13,800	39.2° 13,600	43.2° 13,400	46.5° 13,200	49.3° 13,000	51.7° 12,800
70' (21 m)							16.8° 12,800	26.7° 12,500	33.1° 12,300	38.0° 12,100	41.9° 11,900	45.1° 11,700	47.9° 11,500
75' (23 m)								16.3° 11,500	25.8° 11,300	32.1° 11,100	36.9° 10,900	40.7° 10,700	43.9° 10,500
80' (24 m)									15.7° 10,400	25.1° 10,100	31.2° 9,900	35.9° 9,700	39.6° 9,500
85' (26 m)										15.3° 9,300	24.3° 9,100	30.3° 8,900	34.9° 8,700
90' (27 m)											14.8° 8,400	23.7° 8,200	29.5° 8,000
95' (29 m)												14.4° 7,600	23.1° 7,400
100' (30 m)													14.1° 6,800
	<b>Boom at horizontal</b> Top figures — load radius in feet Middle figure — load radius in meters Bottom figure — lifting capacity in pounds*												
	43' (13 m)	48' (15 m)	53' (16 m)	58' (17 m)	63' (19 m)	68' (21 m)	73' (22 m)	78' (24 m)	83' (25 m)	88' (27 m)	93' (28 m)	98' (30 m)	103' (31 m)
	20,800	18,400	16,300	14,000	12,500	11,300	10,500	9,400	8,200	7,600	6,800	6,000	5,400

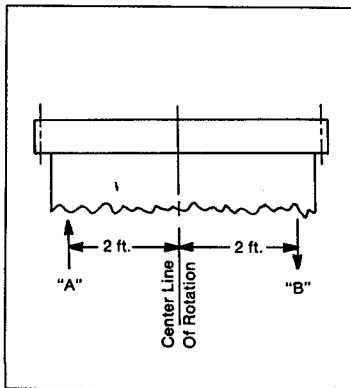
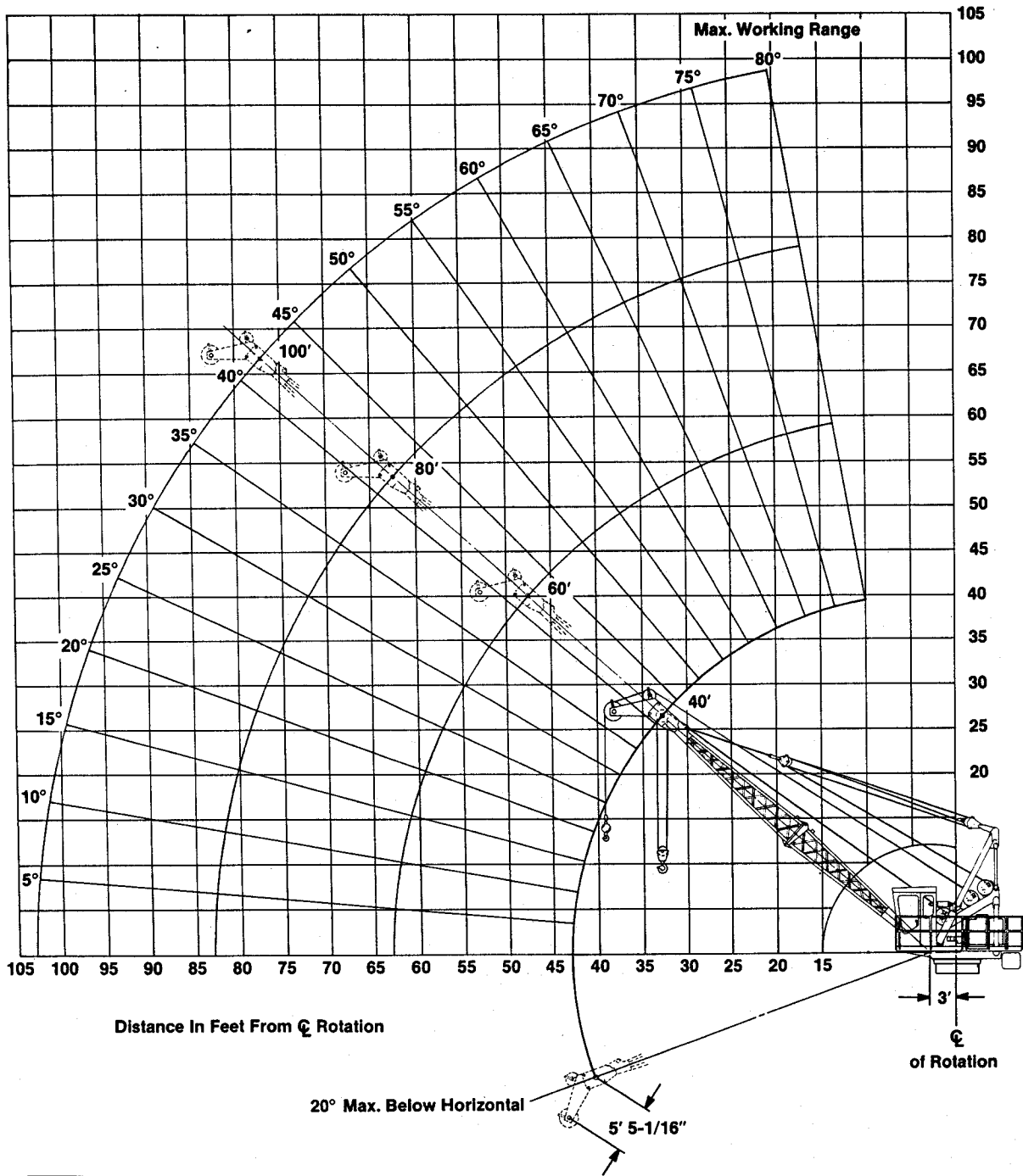
\*Capacities represent maximum allowable loads based on strength capability of machine in accordance with API-2C (1983). With boom tip extension mounted on boom subtract 1,000 lbs. from capacities on this chart. For boom with tip extension support plates, but without tip extension mounted on boom, subtract 400 lbs. from capacities on this chart.

Caution: This material is for reference only. Operator must refer to in-cab capacity plate to determine allowable machine lifting capacities and operating procedures.

Boom tip extension capacity (pounds)*				
Load radius	Boom length			
15' (5 m) to 60' (19 m)	40' (12 m) to 100' (30 m) boom lengths — capacity is 12,000 lbs.			
	70' (21 m)	80' (24 m)	90' (27 m)	100' (30 m)
65' (20 m)	12,000	12,000	12,000	11,800
70' (21 m)	11,800	11,300	10,900	10,500
75' (23 m)	10,500	10,300	9,900	9,500
80' (24 m)	—	9,400	8,900	8,500
85' (26 m)	—	8,300	8,100	7,700
90' (27 m)	—	—	7,400	7,000
95' (29 m)	—	—	6,600	6,400
100' (30 m)	—	—	—	5,800
105' (32 m)	—	—	—	5,400

\*Capacity for tip extension on intermediate boom lengths not shown—use tip extension capacity shown for next longer boom length. Use 2-part line where the tip extension capacity exceeds the allowable single part line pull shown in the auxiliary hoist winch performance chart or the wire rope capacity as shown in the wire rope strength chart.

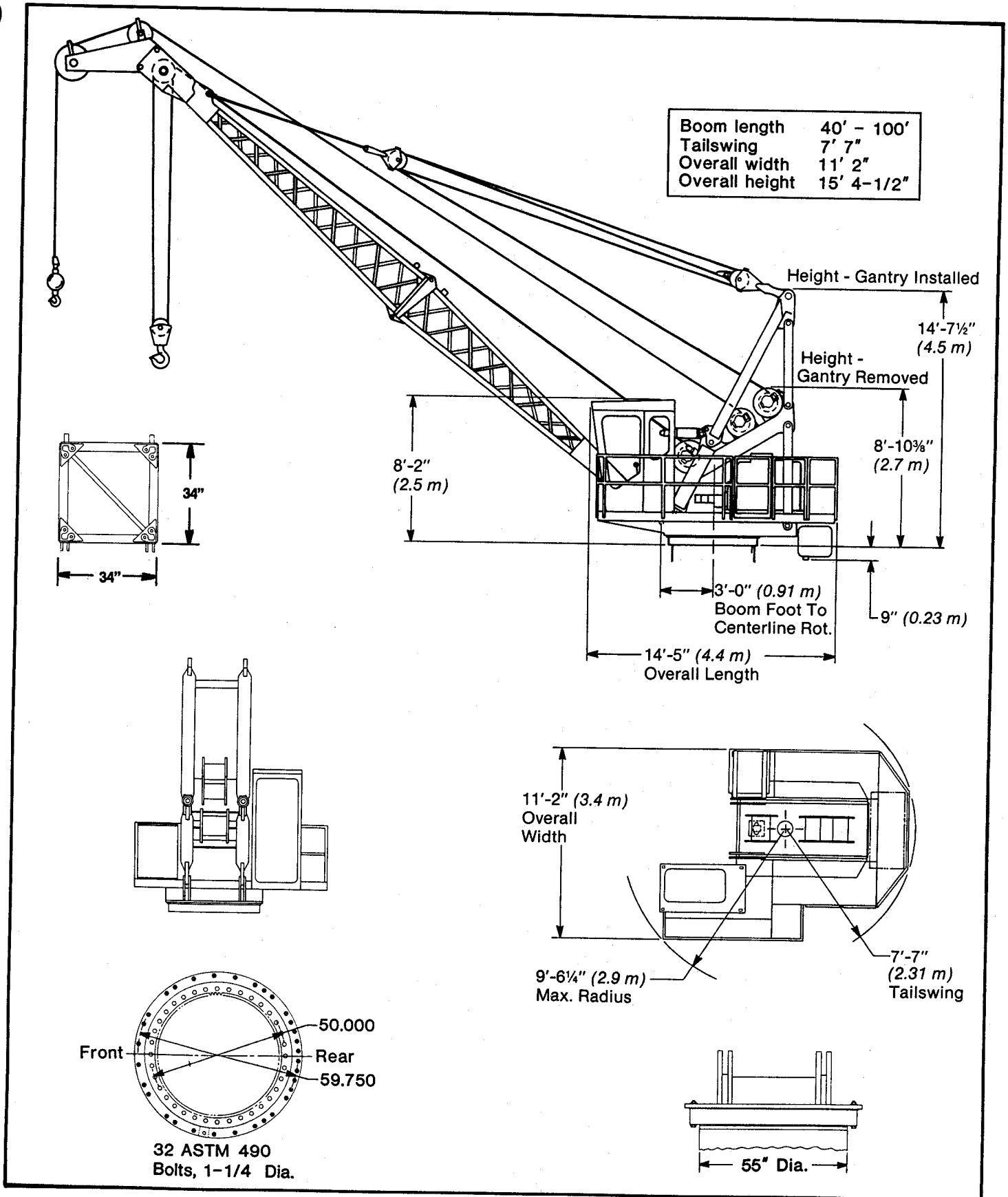
# API-65 Working range and pedestal reactions



MAXIMUM PEDESTAL REACTIONS*				
Boom Length (feet)	Front Reaction In Pounds	Rear Reaction In Pounds	Moment $\bar{C}$ Of Rotation Ft.-Lbs.	Thrust $\bar{C}$ Of Rotation Lbs.
40	578,800	497,500	2,152,500	152,600
60	576,800	485,400	2,124,200	91,400
80	557,500	484,200	2,083,300	73,300
100	509,900	460,300	1,940,400	49,600

\*Based upon 2.0 times static load per API-2C paragraph 7.3.3e.

**API-65 General dimensions**



## API-65 General specifications

### Mounting — pedestal

Standard mounting is a cylindrical pedestal base 14" high, 55" outside diameter with 1-1/4" wall thickness.

### Frame

Reinforced steel plate on which is mounted an A-frame structure. A-frame includes support frame for main and auxiliary load hoist drums and boomhoist drum. Frame also includes boomfoot mounting brackets. Upper portion of frame (upper gantry) supports boomhoist bail.

### Turntable bearing

Ball type, 55" pitch diameter with internal swing (ring) gear. Inner and outer bearing races are bolted 360 degrees on mounting plate with 1-1/4" grade 8 bolts. Retaining ring optional.

### Engine

Detroit Diesel DDA 4-71N diesel engine; 152 brake horsepower @ 2,100 rpm. Equipped with air starter, Maxim muffler and Farr air cleaner. Optional: hydrostarter and water cooled exhaust.

### Fuel tank

100 gallon capacity. Fuel is sufficient for 25 hours of normal operation.

### Pump

Hydraulic system pump — Commercial Shearing, three section, gear type pump. Total output — 120 gpm.

### Hydraulic circuit

Power for main hoist drum is from output of hydraulic pump Section 1, or the combined output of pump Sections 1 and 2.

Power for the auxiliary hoist drum is identical to that for the main load hoist drum.

Power for boom hoisting/lowering is from pump Section 2. When booming, output from pump Section 2 cannot be combined with output of pump Section 1.

Power for swing system is from output of pump Section 3. This circuit is independent of all other circuits at all times. Flow of oil from pump Section 3 is directed through the oil-to-air cooler mounted behind the engine radiator.

All oil flow returns to the reservoir through two 10 micron filters mounted in parallel. Visual maintenance indicator is standard.

### Hydraulic oil reservoir

80 gallon maximum capacity.

### Principal operating functions —

#### Control system

Four floor mounted control levers control main and auxiliary load hoist drums, boomhoist drum and swing. Levers connected through reach rods underneath the operator's cab to control valve bank mounted at outside rear of cab.

#### Load hoisting/ lowering

##### Main drum —

Rope drum 12-2/4" root diameter, 17" wide with 23-1/2" diameter flange. Equipped with counter balance brake valve for load lowering, and spring set disc brake equipped with sprag clutch so that brake remains set when hoisting or holding a load. Brake releases when lowering a load.

##### Auxiliary drum —

Rope drum 10-3/4" root diameter, 16" wide with 19-1/2" diameter flange. Equipped with counter balance brake valve for load lowering, and spring set disc brake equipped with sprag clutch so that brake remains set when hoisting or holding a load. Brake releases when lowering a load.

#### Boom hoisting/ lowering

##### Boomhoist drum —

Rope drum 10-3/4" root diameter, 16" wide with 19-1/2" diameter flange. Equipped with counter

balance brake valve for boom lowering, and spring set disc brake equipped with sprag clutch so that brake remains set when hoisting boom. Brake releases when lowering boom. Also equipped with drum locking pawl to hold boom at fixed operating radius. Boom hoisting speed—approximately 90 seconds from minimum to maximum radius with ten part boomhoist reeving.

### Bail

Pinned to A-frame gantry. Equipped with 10.59" root diameter sheaves mounted on anti-friction bearings.

### Bridle

Serve as connection between boom pendants and boom hoist reeving. Equipped with 10.59" root diameter sheaves mounted on anti-friction bearings.

### Swing system

Hydraulic motor drives vertical swing shaft; swing pinion splined to shaft; mechanical disc swing brake. Maximum 3.2 rpm swing speed. Free swing in neutral. Multiple position mechanical swing lock available.

### Operator's cab

Cab shell 3/16" thick steel plate, all seal welded. Equipped with tinted laminated safety glass, sliding door, window in floor and four-way adjustable seat.

Instrumentation includes tachometer, hour meter, engine oil pressure and water temperature gauges, and main/auxiliary hoist winch pressure gauges. Emergency engine shutdown control and foot throttle are standard.

Sound level in cab is 90 decibels @ low idle; 95 decibels @ full throttle.

### Load weight indicator

Optional equipment.

### Electrical system

Standard machine is non-electric. Lighting systems and collector ring are available as options.

**Attachments**

**Boom —**

Angle: 34" x 34" wide at connections; all main chord angle and lattice joints are seal welded.

**Boom base section —**

20' long; boomfeet on 33" centers.

**Boom extensions —**

Available in 5', 10' and 20' lengths.

**Boom top section —**

20' long.

**Boompint machinery —**

Four 14-1/2" root diameter sheaves mounted on anti-friction bearings.

**Boom connections —**

Offset pin connections.

**Boom tip extension —**

Optional: 5' long fabricated section. Maximum capacity — 12,000 lbs. Equipped with 15.25" root diameter sheaves.

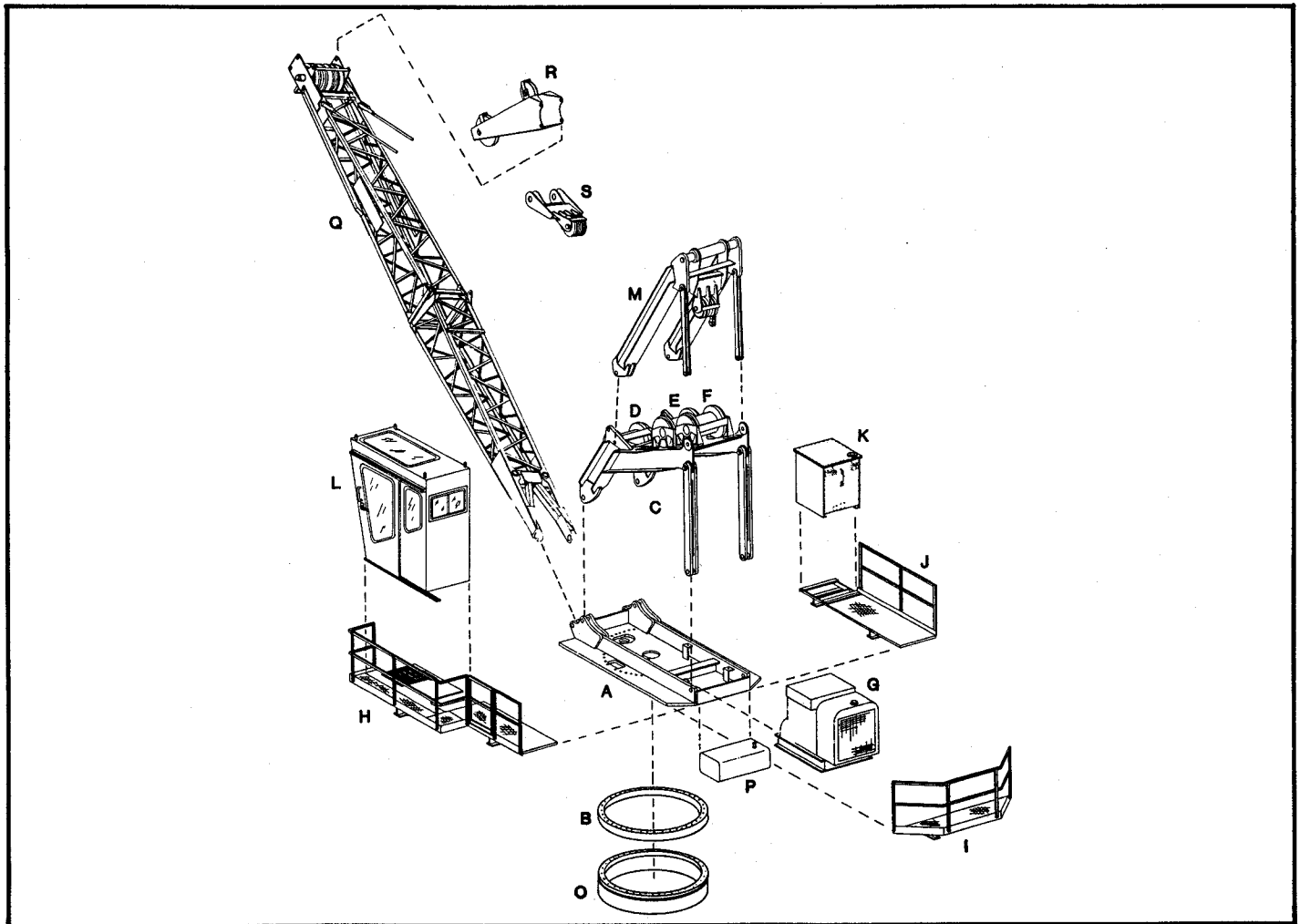
**Boom stops —**

Dual, spring loaded type; mounted on winch frame.

**Boom cradle —**

Owner designed boom cradle should be constructed to support boom at a point where boom sections are joined.

**Nomenclature and component weights**



		<b>Pounds</b>
A	— Frame(w/swing drive)	4,395
B	— Turntable bearing	2,185
C	— Winch frame	2,936
D	— Main load hoist winch	1,360
E	— Auxiliary hoist winch	920
F	— Boomhoist winch	800
G	— Engine	3,375
H	— Catwalk; operator's side	805
I	— Catwalk; rear	321

		<b>Pounds</b>
J	— Catwalk; right side	419
K	— Hydraulic reservoir (w/oil)	1,020
L	— Operator's cab	695
M	— A-frame gantry	1,970
O	— Mounting pedestal base	1,000
P	— Fuel tank	180
Q	— Basic 40' angle boom	4,000
R	— Boom tip extension	1,000
S	— Bridle	375

The Seahawk 65 hydraulic marine crane is designed and built for outstanding performance, reliability, safety and serviceability.

## PERFORMANCE

### Hoist system

- Main Winch  
12,600 lbs. max. line pull;  
463 fpm max. line speed
- Auxiliary Winch  
11,800 lbs. max. line pull;  
478 fpm max. line speed
- Boom Winch  
90 sec. from horizontal  
to minimum boom angle.
- Three section pump.
- Automatic horsepower limiter  
prevents engine stalling.

## DESIGN

- Pin-connected modular  
components.
- 7' 7" tailswing with onboard  
engine.
- Overall height — 14' 7½"  
(can be reduced to 8' 10").
- Weight (less boom) —  
20,000 lbs.

## CAPACITY

"BEST IN CLASS"

- API rating  
50' boom, 30' radius —  
34,200 lbs.
- 70' boom, 70' radius —  
12,800 lbs.
- 12,000 lb. capacity boom tip  
extension.

## RELIABILITY

- Reach rods connect control  
handles to valves — no  
push-pull cables.
- Gravity feed hydraulic reservoir  
keeps pump "flooded" at all  
times.
- 10 micron filtration of all return  
oil.
- Total non-electric design.  
Mechanical engine gauges.  
Air or hydraulic start.
- Seal welded throughout.
- Short hose runs.
- Spring loaded boom stops.
- Three step Carboline paint  
process.
- Rugged seal welded angle  
boom.

## COMPONENTS

- GM 4-71 engine standard.
- Commercial Shearing pump  
and valves.
- Braden winches.

## SAFETY & CONTROL

- Unobstructed view up and down.
- Free drift swing — auto-centers  
over the load.

- Independent swing circuit.
- No valves, hoses or hydraulic oil  
in cab.
- Automatic boom kickout up  
and down.
- Engine gauges in cab.
- Engine start/stop foot throttle  
in cab.
- Galvanized "grip strut" catwalks.

## SERVICEABILITY

- -20° boom angle for access to  
head machinery.
- Full access to both sides of  
engine.
- Hydraulic filters located for easy  
access — visual indicator for  
maintenance.
- All bolts zinc plated.
- Eye level winch location.
- Replaceable bushings in  
frame and boomfoot.
- Standard off-the-shelf  
hydraulic hoses.
- "Auto-drop" bail for  
convenient maintenance  
and reeving.
- Modular fuel and oil  
tanks.
- 3/16" plate operator cab  
permits repeated blast and  
repaint.

We are constantly improving our products and therefore reserve the right to change designs and specifications.

\*Link-Belt is a registered trademark.

**Link-Belt Construction Equipment Company Lexington, Kentucky**