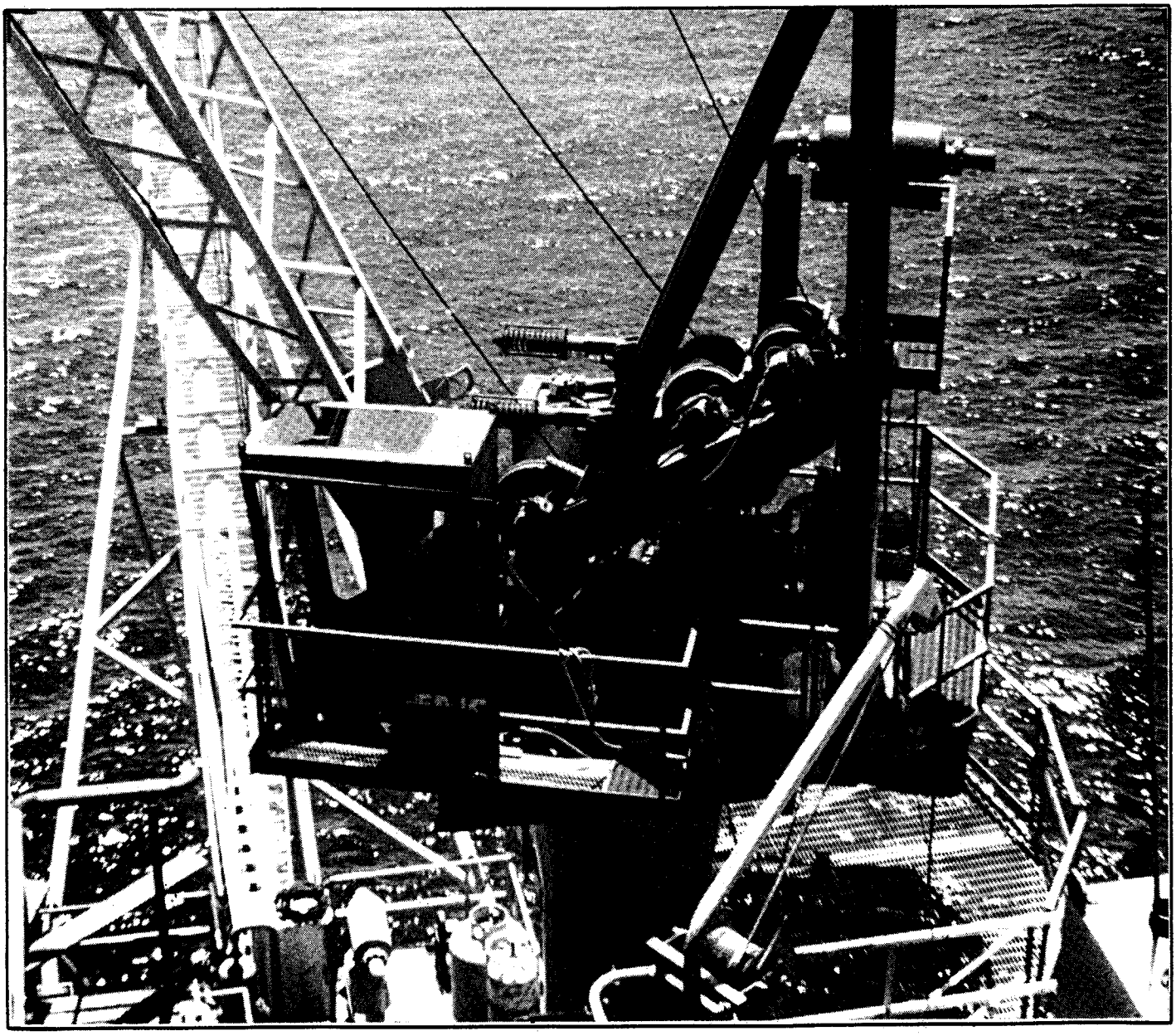
General Specifications

Link-Belt® 50-ton *(45.39 metric ton)*

Hydraulic offshore crane

API-100 "Seahawk"



API-100 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 (17,660 lb. pull) 3/4" wire rope	1	187	17,660	296
	2	390	16,209	323
	3	610	14,978	350
	4	847	13,920	376
	5	1,101	13,003	403
	6	1,371	12,198	429
	7	1,658	11,488	456
Optional main hoist (17,530 lb. pull) 7/8" wire rope	1	161	17,530	299
	2	339	15,880	330
	3	534	14,520	361
	4	745	13,370	392
	5	973	12,390	423
	6	1,218	11,540	454
Auxiliary hoist (14,290 lb. pull) 3/4" wire rope	1	80	14,290	366
	2	169	12,860	407
	3	267	11,690	448
	4	374	10,720	489
	5	490	9,890	529
	6	614	9,180	570
Boomhoist winch	Luffing time, maximum radius to minimum radius, 100 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
	3/4" 6 x 19 EIPS-IWRC Breaking strength — 58,800 lbs.	3/4" 19 x 7 EIPS-IWRC Spin resistant Breaking strength — 48,000 lbs.	7/8" 6 x 19 EIPS-IWRC Breaking strength — 79,600 lbs.	3/4" DYFORM-18 (Bridon American) Rotation resistant Breaking strength — 58,800 lbs.
	Maximum load pounds API or ABS	Maximum load pounds API or ABS	Maximum load pounds API or ABS	Maximum load pounds API or ABS
1	11,760	9,600	15,920	11,760
2	23,520	19,200	31,840	23,520
3	35,280	—	47,760	—
4	47,040	—	63,680	—
5	58,800	—	79,600	—
6	70,560	—	95,520	—
7	82,320	—	—	—
8	94,080	—	—	—

Machine component weights	Pounds
Basic revolving upperstructure with turntable bearing, main load and boomhoist winches, GM 6-71 engine, pump, control valves, A-frame, bridle, bail, operator's cab, catwalks and railings.	32,000
Pedestal mounting base 18" x 60" diameter	3,000
Auxiliary winch (11,790 lb. pull)	920
50' basic angle boom	6,000
20' angle boom extension	1,340
10' angle boom extension	700
5' angle boom extension	450
Boom tip extension	1,000

API-100 Lifting capacities

Top figure — boom angle above horizontal
Bottom figure — lifting capacity in thousands of pounds (kips)*

Load radius	Boom length 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)	105' (32 m)	110' (34 m)	115' (35 m)	120' (37 m)	125' (38m)	130' (40m)
12' (4 m)	80.0° 100.0	80.9 92.3															
15' (5 m)	76.5° 100.0	77.8° 92.3	78.8° 91.7	79.7° 87.1	80.4° 82.8												
20' (6 m)	70.5° 85.6	72.4° 85.2	73.9° 83.4	75.1° 78.2	76.2° 74.4	77.2° 70.9	78.0° 66.9	78.7° 64.0	79.3° 61.3	79.9° 57.9	80.4° 55.2	80.9° 52.8					
25' (8 m)	64.3° 68.5	66.8° 68.2	68.8° 68.0	70.5° 67.7	72.0° 67.5	73.2° 65.5	74.3° 61.9	75.2° 59.0	76.1° 56.7	76.8° 53.0	77.5° 50.8	78.1° 48.8	78.6° 46.2	79.1° 44.2	79.6° 42.6	80.0° 41.0	80.4° 39.4
30' (9 m)	57.8° 56.9	61.0° 56.7	63.6° 56.4	65.8° 56.2	67.6° 55.9	69.2° 55.6	70.5° 55.1	71.7° 53.3	72.8° 51.5	73.7° 49.5	74.5° 47.5	75.3° 45.2	76.0° 43.1	76.6° 41.3	77.2° 39.7	77.7° 38.3	78.2° 36.8
35' (11 m)	50.7° 48.6	54.8° 48.1	58.1° 47.9	60.8° 47.6	63.1° 47.4	65.0° 47.1	66.7° 46.9	68.1° 46.1	69.4° 45.1	70.5° 43.7	71.5° 42.3	72.4° 41.1	73.3° 39.9	74.0° 38.8	74.7° 37.3	75.3° 36.0	75.9° 34.1
40' (12 m)	42.8° 42.1	48.2° 41.9	52.3° 41.6	55.7° 41.4	58.4° 41.1	60.7° 40.9	62.7° 40.7	64.4° 40.4	66.0° 39.8	67.3° 38.6	68.5° 37.4	69.6° 36.2	70.5° 35.1	71.4° 34.4	72.2° 33.6	72.9° 32.7	73.6° 31.8
45' (14 m)	33.6° 37.2	40.7° 36.8	46.0° 36.6	50.1° 36.3	53.5° 36.1	56.3° 35.8	58.6° 35.6	60.6° 35.4	62.4° 35.1	64.0° 34.6	65.4° 34.0	66.6° 32.9	67.7° 31.9	68.8° 30.9	69.7° 30.0	70.5° 29.1	71.3° 28.3
50' (15 m)	21.0° 33.2	32.0° 32.9	38.9° 32.7	44.1° 32.5	48.2° 32.2	51.5° 32.0	54.3° 31.8	56.7° 31.5	58.8° 31.3	60.6° 31.1	62.2° 30.8	63.6° 29.8	64.9° 28.9	66.1° 28.0	67.1° 27.1	68.1° 26.3	69.0° 25.5
55' (17 m)		20.0° 29.6	30.6° 29.4	37.4° 29.1	42.4° 28.9	46.5° 28.7	49.8° 28.4	52.6° 28.2	55.0° 27.9	57.1° 27.7	58.9° 27.5	60.5° 27.2	62.0° 26.4	63.3° 25.5	64.5° 24.7	65.6° 24.0	66.6° 23.2
60' (18 m)			19.2° 26.6	29.3° 26.3	36.0° 26.1	40.9° 25.9	44.9° 25.6	48.2° 25.4	51.0° 25.2	53.4° 24.9	55.5° 24.7	57.3° 24.4	59.0° 24.2	60.5° 23.4	61.8° 22.7	63.0° 22.5	64.2° 21.8
65' (20 m)				18.4° 23.9	28.2° 23.7	34.7° 23.5	39.6° 23.3	43.5° 23.0	46.7° 23.0	49.5° 22.8	51.9° 22.6	54.0° 22.3	55.9° 22.1	57.6° 21.9	59.1° 21.4	60.4° 20.7	61.7° 20.1
70' (21 m)					17.8° 21.9	27.3° 21.7	33.6° 21.4	38.3° 21.2	42.2° 21.0	45.4° 20.7	48.2° 20.5	50.6° 20.3	52.7° 20.1	54.6° 19.8	56.3° 19.6	57.8° 19.2	59.1° 18.6
75' (23 m)						17.1° 19.9	26.4° 19.7	32.5° 19.4	37.2° 19.2	41.0° 19.0	44.2° 18.7	47.0° 18.5	49.3° 18.3	51.5° 18.1	53.3° 17.8	55.0° 17.6	56.5° 17.3
80' (24 m)							16.6° 18.1	25.6° 17.9	31.6° 17.7	36.2° 17.4	39.9° 17.2	43.1° 17.0	45.8° 16.7	48.2° 16.5	50.3° 16.3	52.2° 16.1	53.9° 15.8
85' (26 m)								16.1° 16.4	24.9° 16.3	30.7° 16.1	35.2° 15.8	38.9° 15.6	42.1° 15.4	44.8° 15.1	47.1° 14.9	49.2° 14.7	51.1° 14.5
90' (27 m)	Metric conversion for capacities — Pounds x .4536 = kilograms								15.6° 14.9	24.2° 14.8	29.9° 14.6	34.4° 14.4	38.0° 14.2	41.1° 13.9	43.8° 13.7	46.1° 13.5	48.2° 13.2
95' (29 m)										15.2° 13.6	23.6° 13.5	29.2° 13.3	33.6° 13.1	37.1° 12.8	40.2° 12.6	42.8° 12.4	45.2° 12.2
100' (30 m)											14.8° 12.3	23.0° 12.3	28.5° 12.1	32.8° 11.9	36.3° 11.6	39.3° 11.4	42.0° 11.4
105' (32 m)												14.5° 11.4	22.4° 11.4	27.9° 11.2	32.1° 11.0	35.6° 10.7	38.6° 10.5
110' (34 m)													14.1° 10.5	21.9° 10.4	27.3° 10.2	31.4° 9.9	34.9° 9.7
115' (35 m)														13.8° 9.5	21.5° 9.4	26.7° 9.2	30.8° 9.0
120' (37 m)															13.5° 8.6	21.0° 8.5	26.2° 8.3
125' (38 m)																13.3° 7.7	20.6° 7.7
130' (40 m)																	13.0° 6.9

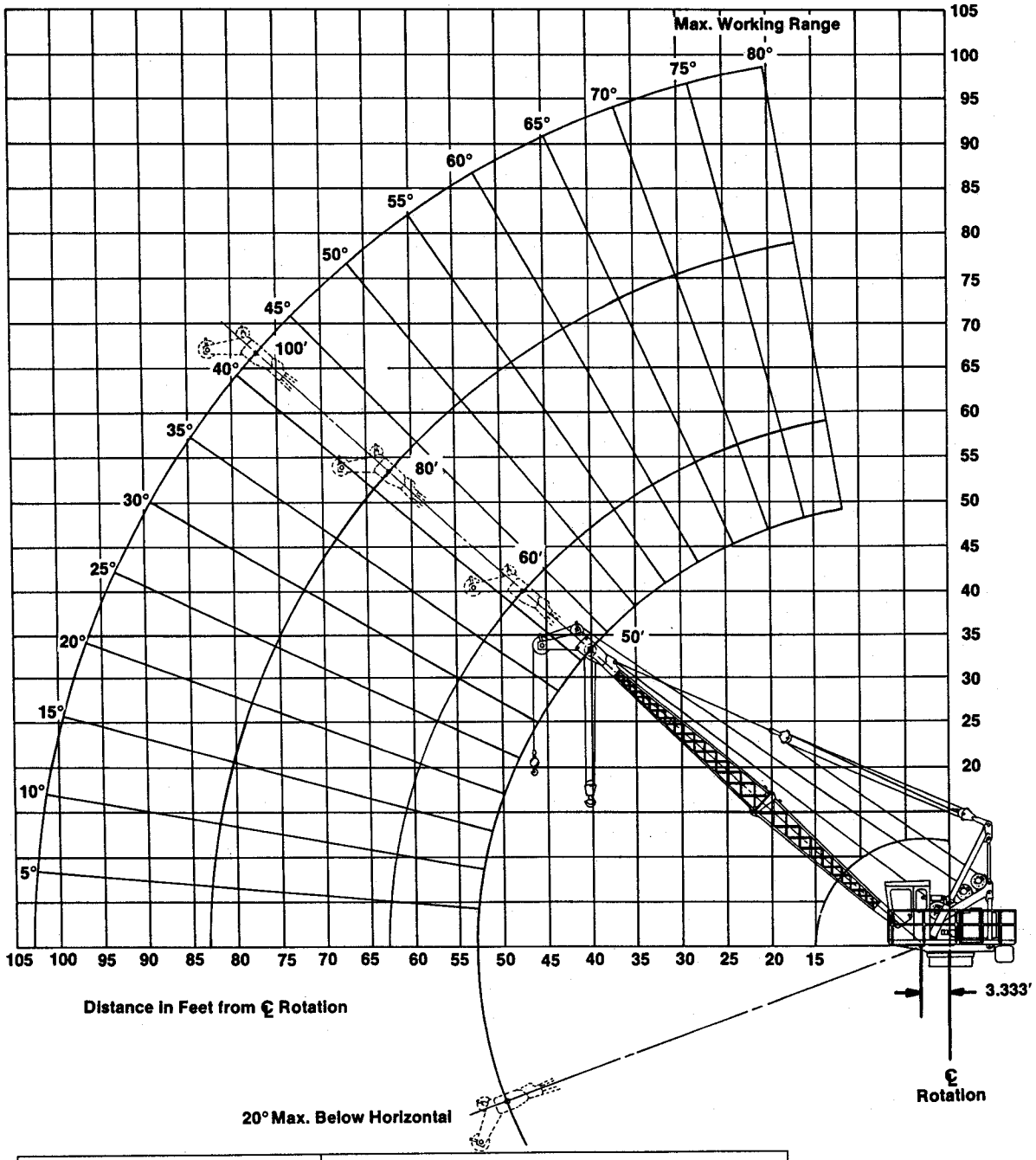
Boom at horizontal
Top figures — load radius in feet
Middle figure — load radius in meters
Bottom figure — lifting capacity in thousands of pounds (kips)*

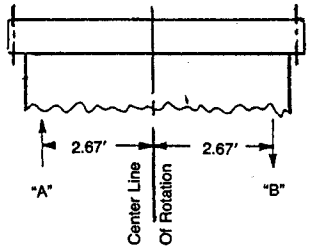
53' (16 m) 24.8	58' (18 m) 21.4	63' (19 m) 20.2	68' (21 m) 18.3	73' (22 m) 16.7	78' (24 m) 15.2	83' (25 m) 13.8	88' (27 m) 12.6	93' (28 m) 11.4	98' (30 m) 10.8	103' (31 m) 9.8	108' (33 m) 8.8	113' (34 m) 7.9	118' (36 m) 7.1	123' (37 m) 6.3	128' (39m) 5.6	133' (41m) 4.9

*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 900 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.

API-100 Working range and pedestal reactions



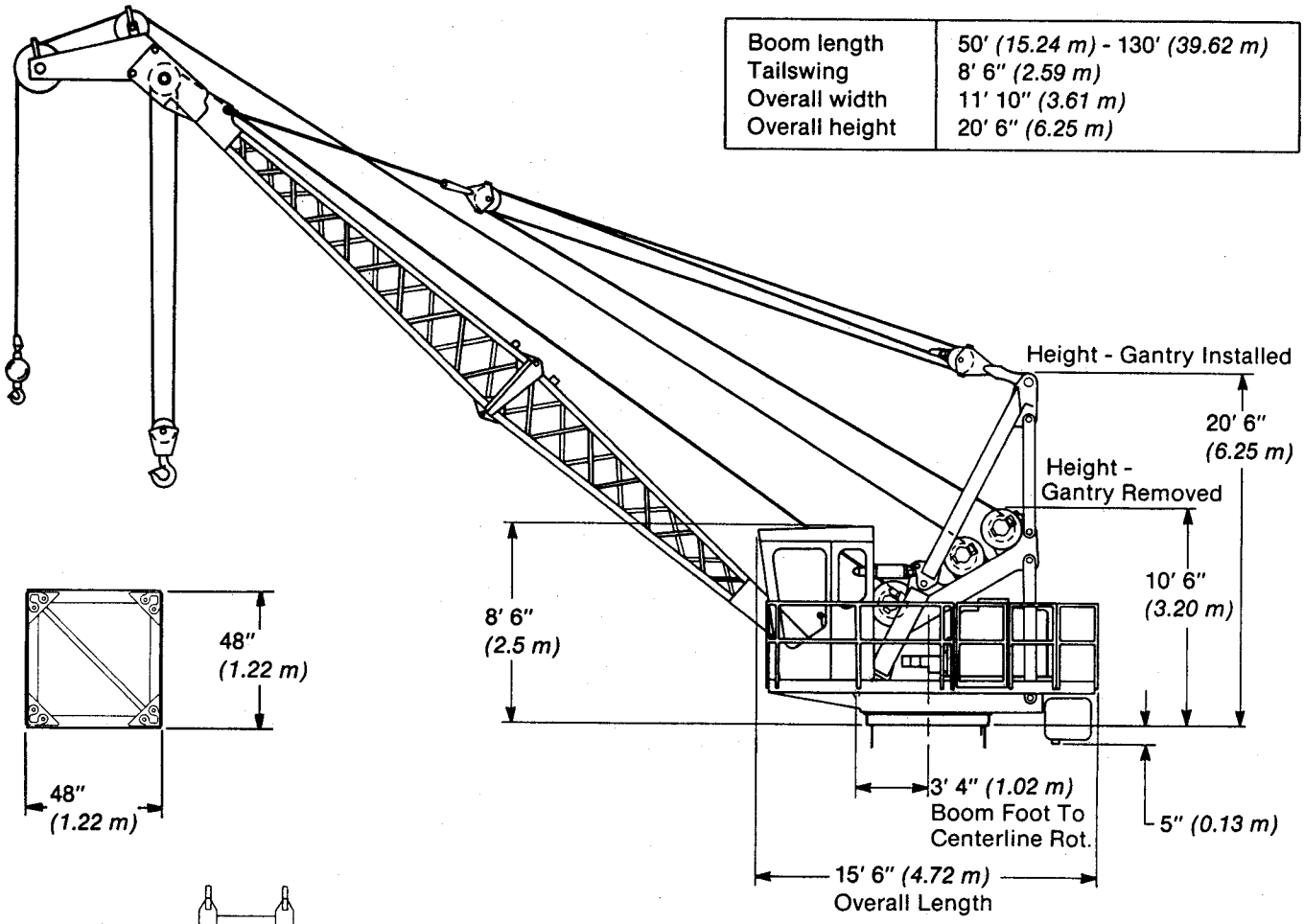


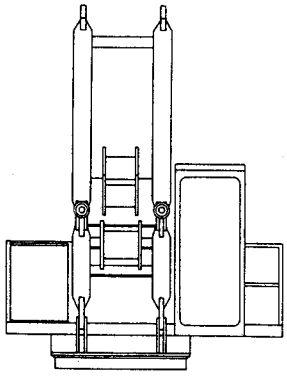
MAXIMUM PEDESTAL REACTIONS*				
Boom Length (feet)	Front Reaction In Pounds	Rear Reaction In Pounds	Moment ℄ Of Rotation Ft.-Lbs.	Thrust ℄ Of Rotation Lbs.
50	728,500	598,100	3,541,700	234,000
70	729,800	582,900	3,504,700	201,400
90	695,700	588,900	3,429,600	165,000
110	663,700	577,200	3,313,100	131,100
130	628,800	554,600	3,159,700	119,300

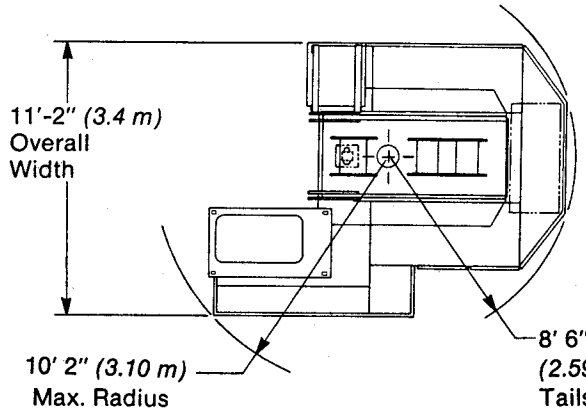
*Based upon 2.0 times static load per API-2C paragraph 7.3.3e.

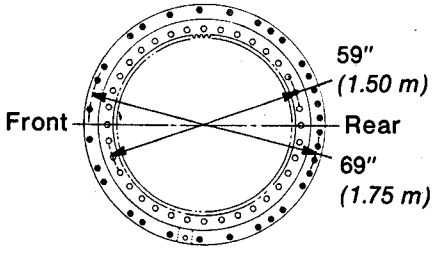
API-100 General dimensions

Boom length	50' *(15.24 m)* - 130' *(39.62 m)*
Tailswing	8' 6" *(2.59 m)*
Overall width	11' 10" *(3.61 m)*
Overall height	20' 6" *(6.25 m)*

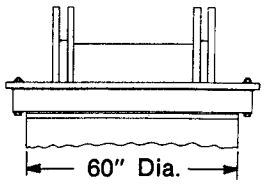








48 ASTM 490
Bolts, 1-1/4" *(31.75 mm)* Dia.



API-100 General specifications

Mounting — pedestal

Standard mounting is a cylindrical pedestal base 18" high 60" 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, 64" pitch diameter with internal swing (ring) gear. Inner and outer bearing races are bolted 360 degrees on mounting plate with 1-1/4" ASTM A490 bolts. Retaining ring optional.

Engine

Detroit Diesel DDA 6-71N diesel engine; 208 brake horsepower @ 2,100 rpm. Maxim muffler, Farr air cleaner and water cooled exhaust manifold. Air start, electric start or hydrostart available.

Fuel tank

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

Pump

Hydraulic system pump — three section, gear type pump. Total output — 160 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 10 micron filter. Visual maintenance indicator is standard.

Hydraulic oil reservoir

100 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 16" root diameter, 32" wide with 27.5" 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 12-3/4" 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.

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 100 seconds from minimum to maximum radius with 12 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 1.7 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, main/auxiliary hoist winch, boom hoist winch and swing pressure gauges. Emergency engine shutdown control and foot throttle are standard.

Sound level in cab is 90 decibals @ low idle; 95 decibals @ 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: 48" x 48" wide at connections; all main chord angle and lattice joints are seal welded.

Boom base section —

25' long; boomfeet on 45-1/2" centers.

Boom extensions —

Available in 10', 20' and 30' lengths.

Boom top section —

25' long.

Boompoint machinery —

Four 21" root diameter sheaves mounted on anti-friction bearings.

Boom connections —

Inline pin connections.

Boom tip extension —

Optional: 5' long fabricated section. Maximum capacity — 18,000 lbs. static. Equipped with 15.25" root diameter sheaves.

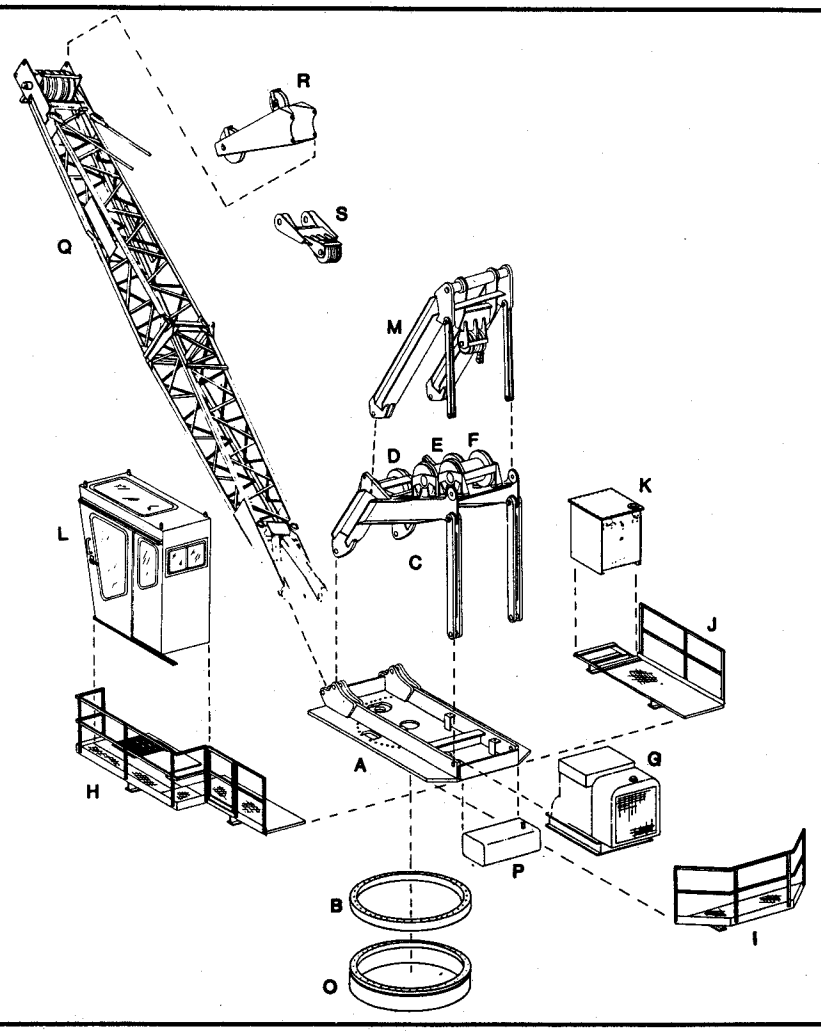
Boom stops —

Dual, spring loaded type; mounted on gantry.

Boom cradle —

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

Nomenclature



		Pounds
A —	Frame (w/swing drive)	9113
B —	Turntable bearing	3013
C —	Winch frame	4436
D —	Main load hoist winch	1360
E —	Auxiliary hoist winch	920
F —	Boomhoist winch	800
G —	Engine	2640
H —	Catwalk; operator's side	917
I —	Catwalk; rear	470

		Pounds
J —	Catwalk; right side	442
K —	Hydraulic reservoir (w/oil)	1198
L —	Operator's cab	852
M —	A-frame gantry	4029
O —	Mounting pedestal base	3115
P —	Fuel tank	190
Q —	Basic 50' angle boom	5530
R —	Boom tip extension	1000
S —	Bridle	600

The Seahawk 100 hydraulic offshore crane is designed and built for outstanding performance, reliability, safety and serviceability.

PERFORMANCE

Hoist system

- Main Winch
  17,660 lbs. max. line pull;
  456 fpm max. line speed
- Auxiliary Winch
  14,290 lbs. max. line pull;
  570 fpm max. line speed
- Boom Winch
  100 sec. from horizontal
  to minimum boom angle.
- Three section pump.
- Automatic horsepower enhancer prevents engine stalling.

DESIGN

- Pin-connected modular components.
- 8' 6" tailswing with onboard engine.
- Overall height — 20' 6"
  (can be reduced to 10' 6").
- Weight (less boom) —
  32,000 lbs.

CAPACITY

"BEST IN CLASS"

- API rating
  50' boom, 30' radius —
  56,100 lbs.
- 70' boom, 70' radius —
  21,700 lbs.
- 18,000 lb. structural 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.

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.
- Single in tank hydraulic filter — visual indicator for maintenance.
- All bolts corrosion resistant coated.
- Easy access to winches.
- 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.

Link-Belt Construction Equipment Company Lexington, Kentucky