NATIONAL CRANE

GUAY

Series 1500

Hydraulic Crane 36 Ton

Load Ratings

⚠ DANGER

AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO

DEATH OR SERIOUS INJURY

YOU MUST NOT OPERATE THIS CRANE UNLESS

- You have been trained in the safe operation of this crane.
- You read, understand and follow the safety and operating recommendations contained in the crane manufacturer's manuals, your employers work rules and applicable government regulations.
- You are sure that all safety signs, guards and other safety features are in place and in proper condition.

Assembly No. 876932

GUAY

⚠ DANGER

GENERAL

1. This equipment can be hazardous if improperly maintained or operated. Read and comply with the Operator's Manual supplied with this machine for information on safety, operation and maintenance before operating this machine. If these manuals are missing, order replacements from National Crane through the distributor.
2. Rated loads shown on the capacity chart pertain to this machine as originally manufactured and equipped. Modifications to the machine or use of equipment that is not factory specified or approved can be hazardous. Refer to capacity deduction chart for weights which must be deducted from rated loads when accessories are attached to boom or loadline.

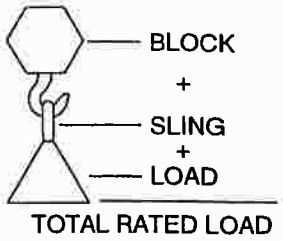
SET-UP

1. Inspect vehicle and crane including crane operation prior to use each day.
2. Load ratings shown on the appropriate charts are maximum allowable loads with the crane mounted on a factory approved truck and all outriggers at either full span or at mid span range and set on a firm level surface so the crane is level and the tires are suspended. This machine is not rated for use without outriggers. All outriggers must be extended equally - Mid span must be pinned. This machine is not rated for use with outriggers retracted.
3. Depending on the nature of the supporting surface, structural supports under the outrigger floats may be necessary to spread the load to a larger bearing surface.
4. Always level the crane with the level indicator located at each outrigger control station or in cab.

OPERATION

1. Operation of this equipment in excess of maximum load rating and disregard of instructions is hazardous. Always refer to the capacity chart for load and area limits before operating the crane. Rated loads at rated radius shall not be exceeded. Overloading this crane may cause structural collapse or instability.
2. Use the LMI/angle indicator as a reference only. When lifting maximum loads, measure radius and be certain of load weight.
3. Full extended outrigger rated loads do not exceed 85% of the tipping load as determined by SAE Crane Stability Test Code J765a when mounted on a factory recommended truck. Mid span outrigger stability loads are determined per ISO 4305, 1991. Structurally limited ratings on the capacity chart are shaded. Stability limited loads are not shaded. Machine will not always tip before structural damage occurs.

4. Rated loads include the weight of the hook block, slings, and other lifting devices. Their weights must be subtracted from the listed rated load to determine the net load that can be lifted.

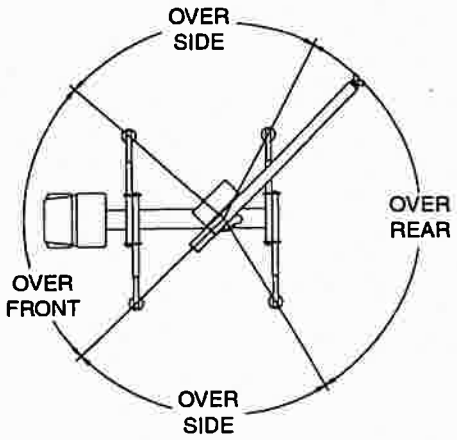


5. Rated loads must be reduced when lifting at the boom tip with a jib stowed or erected. Refer to the chart labeled "Rated Load Reductions with Jib" for the reduction at each boom length.
6. Rated loads are based on freely suspended loads. Always position the boom tip directly over the load before lifting. No attempt shall be made to push down with the boom or move the load sideways in any direction by pulling or dragging the load.
7. The user shall operate at reduced ratings to allow for adverse job conditions such as soft or uneven ground, high winds or erratic operation which produce swinging (side) loads, experience of personnel, two machine lifts, or other hazardous conditions for safe operation.
8. Rated loads account for wind to 20 MPH on the boom capacities and to 15 MPH on jib capacities. Above these wind velocities, loads and/or boom lengths must be appropriately reduced for safe operation.
9. Do not operate at any radii beyond stability limit line on range chart. At these positions, the machine can overturn without any load on the hook.
10. When boom length or radius or both are between points listed on capacity chart, the smallest load shown at either the next larger radius or boom length shall be used.
11. Do not exceed jib capacities at any reduced boom length.
12. It is safe to telescope or retract any load listed if rating is not exceeded. Boom must be fully retracted against boom stops at all times when lifting minimum boom length capacity loads.
13. Always pay out loadline before extending boom to avoid damaging loadline or crane structure.
14. Loads lifted must be within safe winch capacity as well as safe crane capacity. Multiple part rope reeving must be used on loads exceeding winch single part rated pull. Auxiliary boom head and jibs are rated for single part use only.
15. Do not operate the boom over personnel or allow them to walk or stand beneath the boom or load.
16. Do not allow personnel on carrier deck, or crane frame area when rotating crane.

17. Do not allow personnel to ride on hook, hook block, load or any device attached to the loadline. Handling of personnel is only permitted with full extension of all outrigger beams. Use only National Crane approved baskets.
18. If equipped with 31' offset jib, do not use personnel basket with jib deployed at 30° offset.
19. Operate controls slowly and smoothly to avoid damage to crane or personnel.
20. Boom must be in carrying rack and outriggers fully retracted for travel.
21. Maintain a clearance of at least 10 feet between any part of the crane, loadline or load and any electrical line carrying up to 50,000 volts. One foot additional clearance is required for every additional 30,000 volts or less.

DEFINITIONS

1. **Load radius**—Horizontal distance from the center line of rotation before loading to the center of the vertical loadline or block with load applied.
2. **Load boom angle**—Loaded boom angle is the angle between the first section boom and the horizontal, after lifting the rated load at the rated radius. The boom angle before loading should be greater to account for deflections. The loaded boom angle combined with the boom length give only an approximation of the operating radius.
3. **Working area**—Area measured in a circular arc above the center line of rotation as shown on the Working Area diagram.
4. **Freely suspended load**—Load hanging free with no direct external force applied except by the loadline.
5. **Side load**—Horizontal side force applied to the lifted load either on the ground or in the air.
6. **No load stability limit**—The stability limit radius shown on the range diagrams is the radius beyond which it is not permitted to position the boom plus block configuration because machine can overturn without any load on the hook.



WORK AREA DIAGRAM

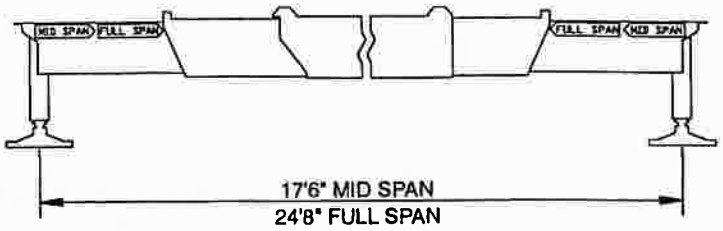
7. **Structural length limit**—An area where the boom or the boom with jib deployed cannot be extended because of structural limitations.
8. **PCSA**—Power Crane and Shovel Association.

GUAY

INFORMATIONAL DATA

OUTRIGGERS

1. Outrigger spread from center to center of the outrigger floats at mid span is 17'6" and at full span is 24'8"
2. No outrigger pad load exceeds 55,000 pounds maximum at full span or 65,000 pounds maximum at mid span.



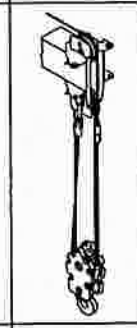
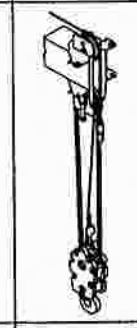
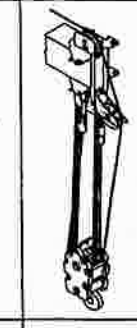
WEIGHT REDUCTIONS FOR LOAD HANDLING DEVICES (See load chart for jib deductions)

1. Hook blocks are rated at maximum capacity for the block. Do not exceed rated cable pull with any block.

	Aux Boom Head	100 LB.
5 TON	Downhaul Weight	180 LB.
15 TON	1 Sheave Block	375 LB.
25 TON	2 Sheave Block	640 LB.
35 TON	3 Sheave Block	870 LB.
36 TON	4 Sheave Block	970 LB.

NOTICE

- Do not deadhead line block against boom tip when extending boom.
- Keep at least 3 wraps of loadline on drum at all times.
- Use only 5/8" diameter rotation resistant cable with 45,400 pounds breaking strength on this machine.

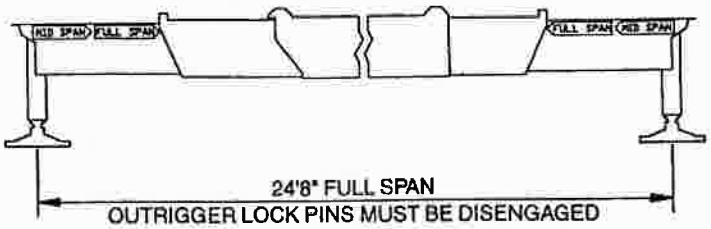
			1 Part Line	2 Part Line	3 Part Line	4 Part Line	5 Part Line	6 Part Line	7 Part Line	8 Part Line
										
MAXIMUM BOOM LENGTH AT MAXIMUM ELEVATION WITH RIGGING SHOWN WITH LOAD BLOCK AT GROUND LEVEL			127' & 31' JIB	114'	83'	64'	52'	43'	36'	31'
Winch	**Cable Supplied**	**Average Breaking Strength**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**	**Lift and Speed**
Standard Planetary Winch Low Speed	5/8" diameter rotation resistant 18 x 19 IWRC	45,400 lbs.	9,000 lbs. 205 fpm	18,000 lbs. 103 fpm	27,000 lbs. 68 fpm	36,000 lbs. 51 fpm	45,000 lbs. 41 fpm	54,000 lbs. 34 fpm	63,000 lbs. 29 fpm	72,000 lbs. 26 fpm
Standard Planetary Winch High Speed	5/8" diameter rotation resistant 18 x 19 IWRC	45,400 lbs.	4,500 lbs. 410 fpm	9,000 lbs. 205 fpm	13,500 lbs. 137 fpm	18,000 lbs. 103 fpm	22,500 lbs. 82 fpm	27,000 lbs. 68 fpm	31,500 lbs. 59 fpm	36,000 lbs. 51 fpm

All winch pulls and speeds are shown on the fifth layer. Winch line pulls would increase on the first, second, third and fourth layers. Winch line speed would decrease on the first, second, third and fourth layers. Winch line pulls may be limited by the winch capacity or the ANSI 5 to 1 cable safety factor. These are shown below:

Winch	Full Drum Pull	Allowable Cable Pull
Standard planetary & Auxiliary planetary	4,500 pounds (high speed) 9,000 pounds (low speed)	9,080 pounds

FULL-SPAN OUTRIGGER

15127
127' BOOM
31' JIB



31 TO 127 FOOT BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (FEET)	LOADED BOOM ANGLE	31 FT BOOM (LBS)	LOADED BOOM ANGLE	55 FT BOOM (LBS)	LOADED BOOM ANGLE	79 FT BOOM (LBS)	LOADED BOOM ANGLE	103 FT BOOM (LBS)	LOADED BOOM ANGLE	127 FT BOOM (LBS)
6	76.4	72,000								
8	72.2	63,000								
10	68	54,000								
12	63.7	47,000	76.8	36,000						
15	57	38,500	73.5	31,000	79.5	25,000				
20	44.3	29,500	67.8	24,600	75.8	20,500	79.6	14,000		
25	27.1	22,000	61.8	20,500	71.9	17,000	77	13,000	79.5	8,700
30			55.5	17,400	68	14,700	74.2	11,700	77.5	8,200
35			48.6	14,000	63.9	12,900	71.3	10,600	75.3	7,700
40			40.7	11,000	59.7	11,300	68.4	9,500	73.1	7,200
45			31.3	9,000	55.2	9,400	65.4	8,400	70.8	6,700
50			18.9	7,400	50.6	7,800	62.2	7,600	68.5	6,200
55					45.4	6,500	58.9	6,600	65.9	5,400
60					39.6	5,300	55.3	5,500	63.3	4,800
65					33.1	4,300	51.5	4,500	60.6	4,200
70					25.1	3,500	47.6	3,700	57.8	3,700
75					12.7	2,850	43.4	3,050	55	3,100
80							38.8	2,400	51.9	2,550
85							33.8	1,900	48.7	2,050
90							27.9	1,500	45.4	1,600
95							20.5	1,100	41.9	1,200
100							7.3	800	38.1	850
105									34	550
	0	15,500	0	6,300	0	2,600	0	750		

31' JIB RATED LOADS

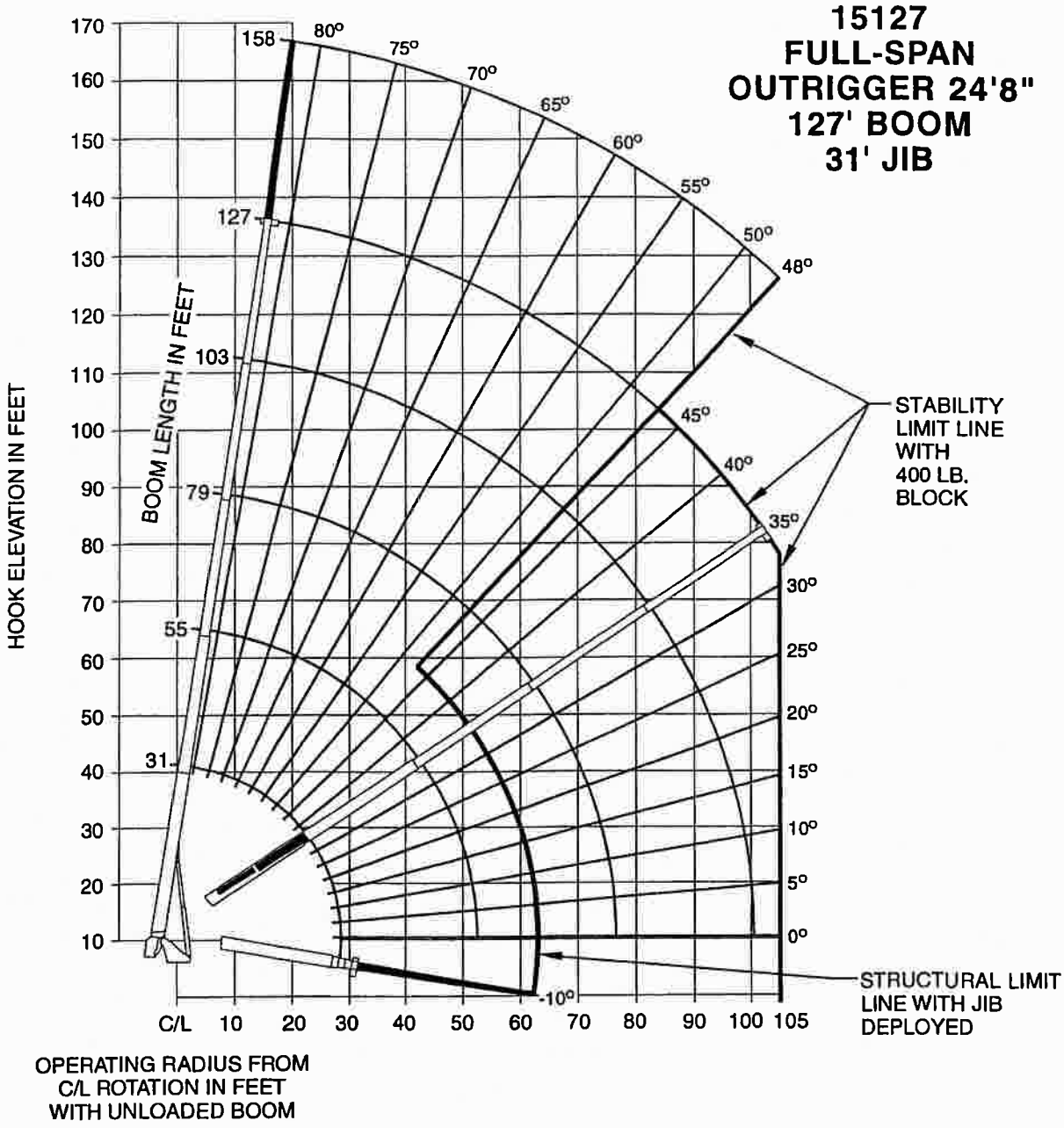
RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
29	80	3,800
44	75	3,300
58	70	2,900
72	65	2,500
84	60	2,150
94	55	1,600
104	50	1,000

RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH	31' JIB STOWED 	31' JIB ERECTED 
31'	Reduce load 500 LB.	Reduce load 1,600 LB.
55'	Reduce load 300 LB.	Reduce load 1,400 LB.
79'	Reduce load 200 LB.	Reduce load 1,300 LB.
103'	Reduce load 150 LB.	Reduce load 1,250 LB.
127'	Reduce load 100 LB.	Reduce load 1,200 LB.

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.



SET-UP

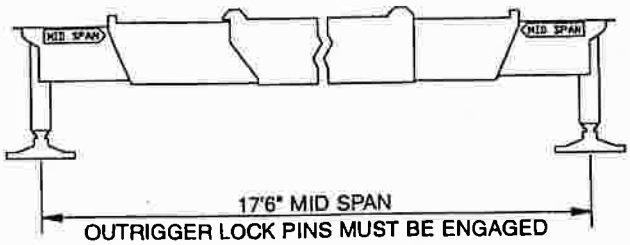
1. Fully extend and set outriggers to full-span location, level crane and set front stabilizer.

OPERATION

1. The 31 ft. boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 55 ft. boom length capacities.
2. Do not extend unloaded boom or jib beyond stability limit line on range chart as loss of stability may occur.
3. Load blocks and slings are considered to be a part of the load.
4. Operate with jib by radius when main boom is fully extended and by boom angle when main boom is partially extended. Do not exceed jib capacities at any partially extended boom length.
5. All jib loads must be lifted with single part reeving.

MID-SPAN OUTRIGGER

15127
127' BOOM
31' JIB



31 TO 127 FOOT BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (FEET)	LOADED BOOM ANGLE	31 FT BOOM (LBS)	LOADED BOOM ANGLE	55 FT BOOM (LBS)	LOADED BOOM ANGLE	79 FT BOOM (LBS)	LOADED BOOM ANGLE	103 FT BOOM (LBS)	LOADED BOOM ANGLE	127 FT BOOM (LBS)
6	76.4	72,000								
8	72.2	63,000								
10	68	54,000								
12	63.7	47,000	76.8	36,000						
15	57	38,500	73.5	31,000	79.5	25,000				
20	44.1	22,100	67.7	23,500	75.8	20,500	79.6	14,000		
25	27.4	13,400	61.4	18,400	71.7	15,300	77	13,000	79.5	8,700
30			54.9	10,100	67.4	10,600	74	10,700	77.5	8,200
35			48.4	7,300	63.4	7,700	70.9	7,900	75.3	7,700
40			40.6	5,200	59.1	5,700	67.6	5,900	72.7	6,000
45			31.3	3,800	54.5	4,200	64.3	4,400	70.1	4,600
50			18.2	2,700	49.7	3,100	61	3,300	67.4	3,400
55					44.5	2,200	57.6	2,400	64.7	2,500
60					38.8	1,500	54	1,650	62	1,800
65					32.2	850	50.3	1,050	59.3	1,200
70					24.2	400	46.4	550	56.4	650
	0	9,400	0	2,200						

31' JIB RATED LOADS

RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
29	80	3,800
44	75	3,300
56	70	2,000
67	65	600

RATED LOAD REDUCTIONS WITH JIB

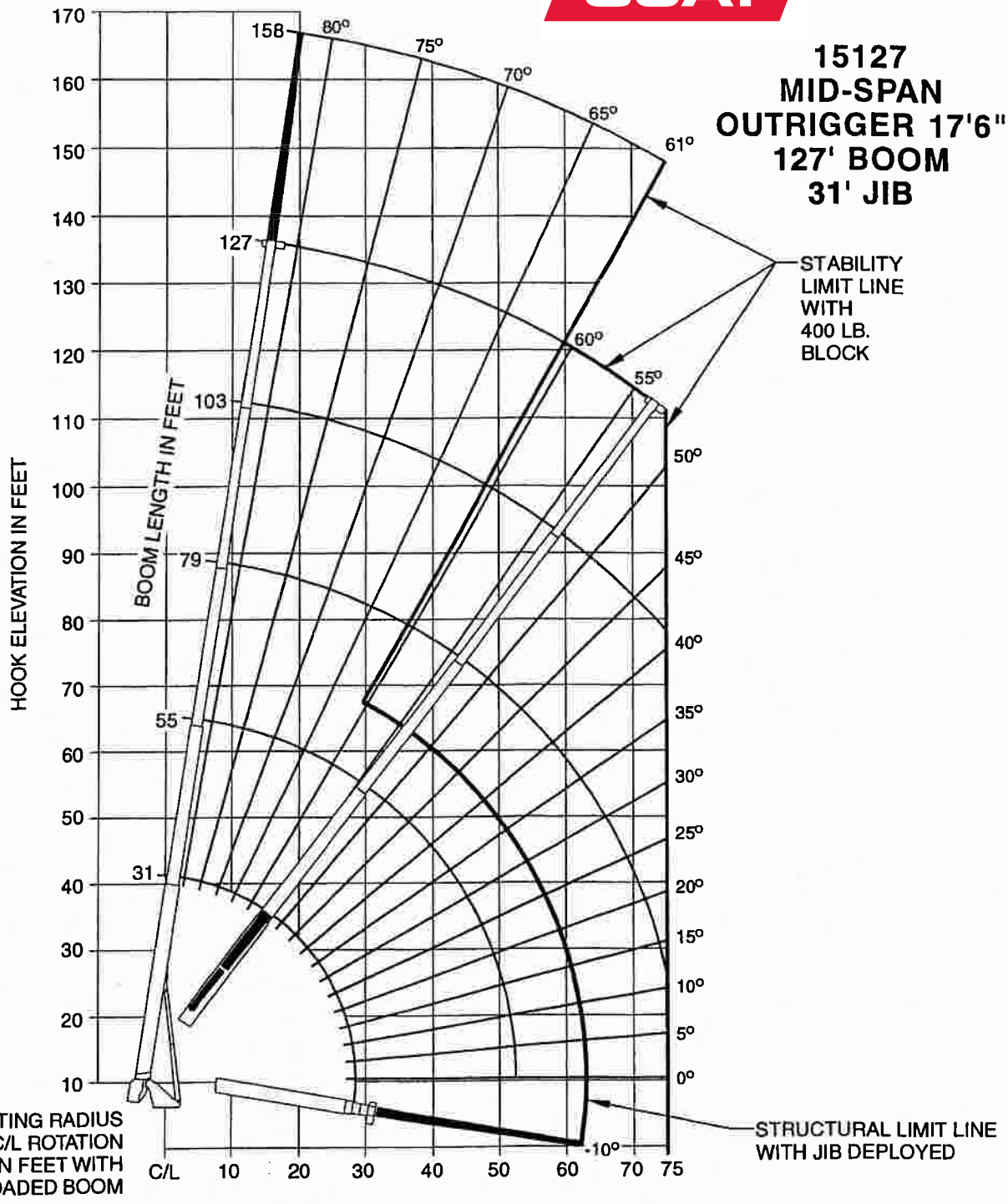
BOOM LENGTH	31' JIB STOWED	31' JIB ERECTED
31'	Reduce load 500 LB.	Reduce load 1,600 LB.
55'	Reduce load 300 LB.	Reduce load 1,400 LB.
79'	Reduce load 200 LB.	Reduce load 1,300 LB.
103'	Reduce load 150 LB.	Reduce load 1,250 LB.
127'	Reduce load 100 LB.	Reduce load 1,200 LB.

NOTE:

1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.

GUAY

15127 MID-SPAN OUTRIGGER 17'6" 127' BOOM 31' JIB



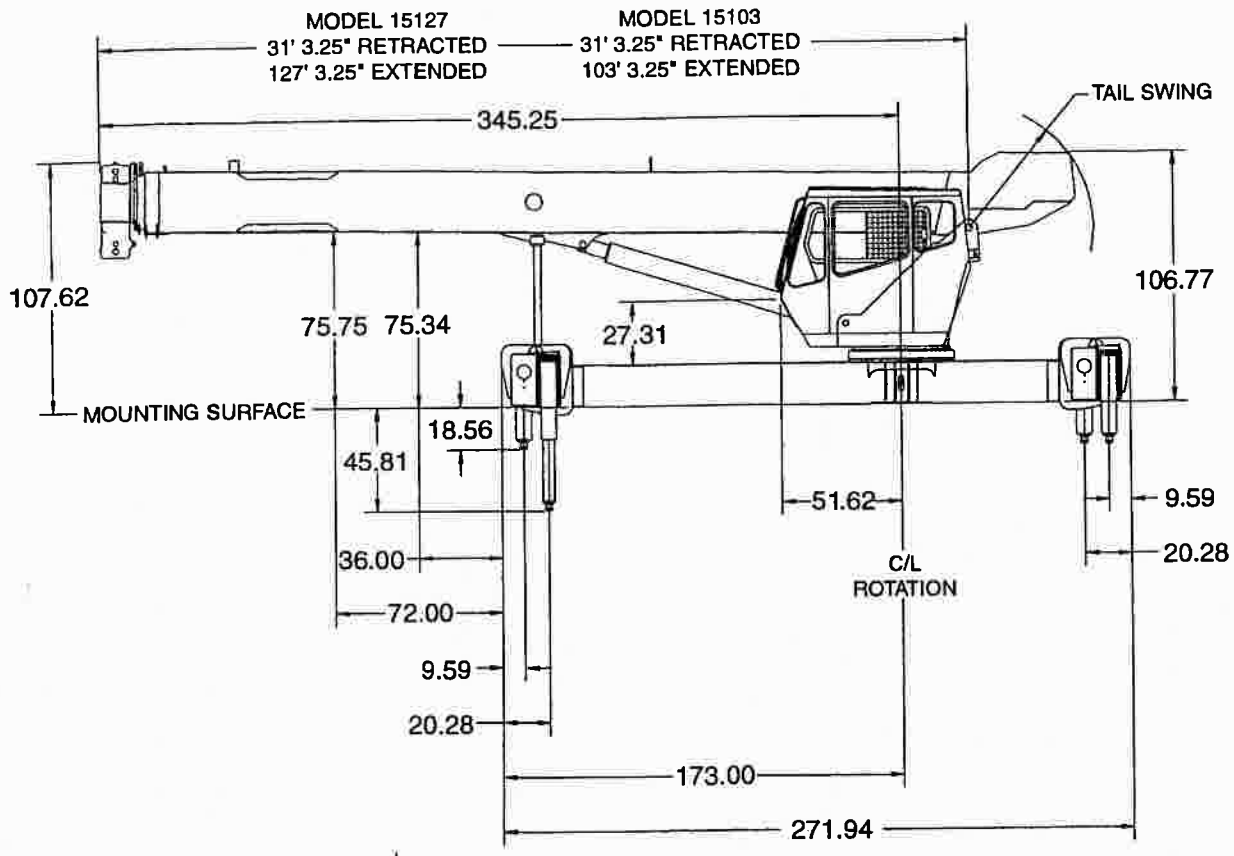
SET-UP

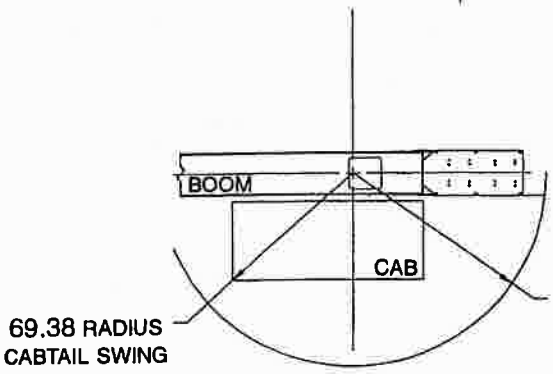
1. Engage mid-span outriggers lock pins, extend and set outriggers to mid-span location, level crane and set front stabilizer.

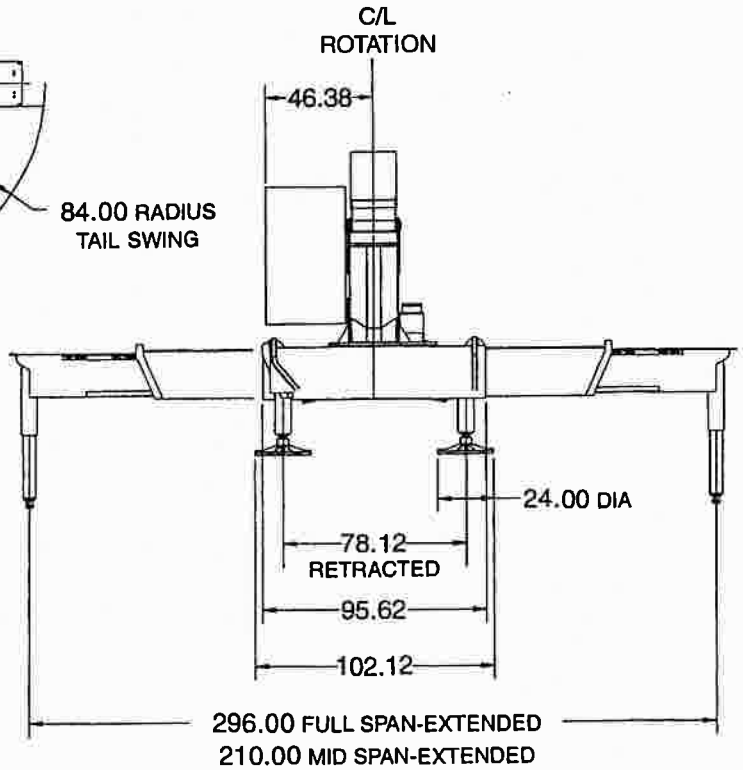
OPERATION

1. The 31 ft. boom length capacities are based on boom fully retracted. If not fully retracted, do not exceed 55 ft. boom length capacities.
2. Do not extend unloaded boom or jib beyond stability limit line on range chart as loss of stability may occur.
3. Load blocks and slings are considered to be a part of the load.
4. Operate with jib by radius when main boom is fully extended and by boom angle when main boom is partially extended. Do not exceed jib capacities at any partially extended boom length.
5. All jib loads must be lifted with single part reeving.

DIMENSIONAL SPECIFICATIONS

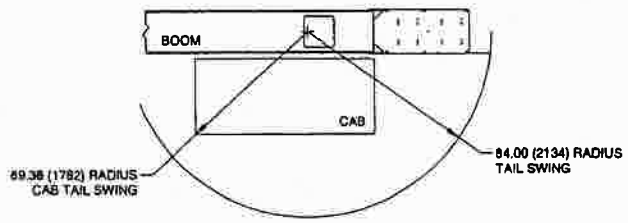


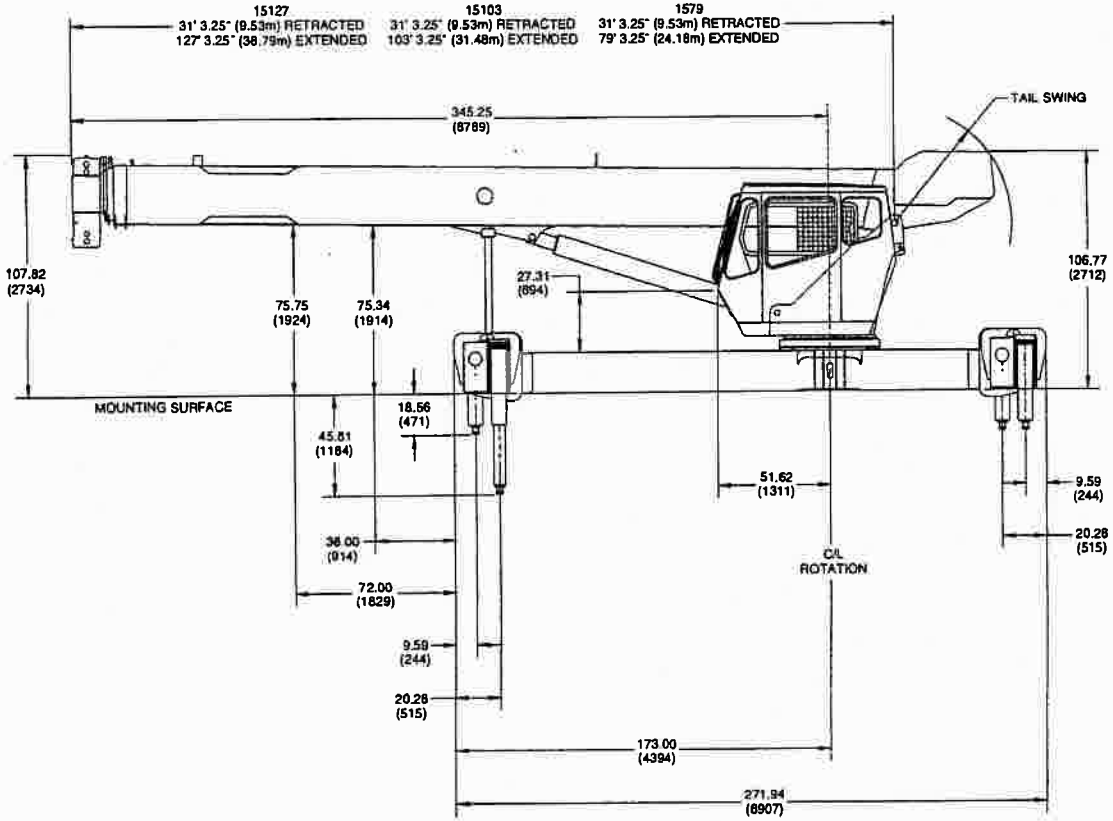


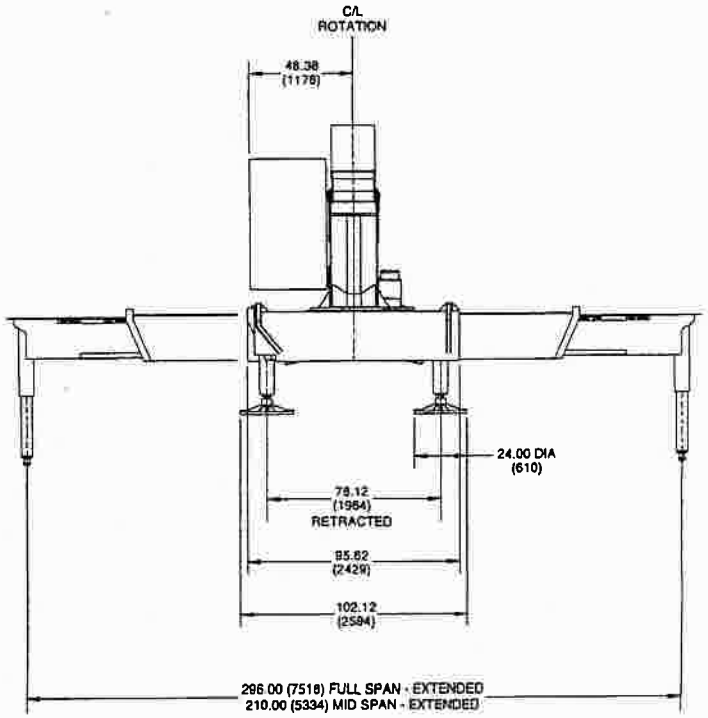


SPECIFICATIONS
(DIMENSIONAL SPECIFICATION)

NOTES:
DIMENSIONS ARE IN inches (mm) UNLESS OTHERWISE SPECIFIED.







SPECIFICATIONS

Pump - variable volume, load sense, pressure compensated axial piston

Standby Pressure	400-425 psi*
Differential Pressure (valve inlet minus load sense)	300 psi
Maximum Pump Compensator Pressure	4200 psi
Flow at Standby (1900 RPM)	1 GPM
Flow at Maximum Displacement (1900 RPM)	70 GPM
Reservoir Capacity	95 Gal.
System Capacity	145 Gal.
Filtration - Reservoir	10 Micron Return
Controller Pilot	10 Micron Pressure

System Pressure/Flow

Winch Up and Down	4000 psi/33 GPM
Boom Up	3500 psi/33 GPM
Boom Down	3500 psi/16 GPM
Telescope Out	2700 psi/33 GPM
Telescope In	2000 psi/16 GPM
Turn CW and CCW	3100 psi/16 GPM
Outriggers	3000 psi/5 to 8 GPM
Main Valve Relief	4200 psi/Flow to 70 GPM if demand exists
Pilot Circuit Reduced Pressure	375 psi/2 GPM
Load Sense relief	3800 psi

Crane Performance

360° Swing (CW and CCW)	30 Sec. (2.0 RPM)**
Boom Up/Boom Down (-10° to +80°)	34 Sec.
Boom Extend/Retract (31' - 127' Five Section)	120 Sec. (48 ft/min.)
(31' - 103' Four Section)	103 Sec. (42 ft./min.)
(31' - 79' Three Section)	71 Sec. (40 ft./min.)

Winch Performance

Wire Rope (Main and Auxiliary)

Standard	375', 5/8 dia. Rotation Resistant Nominal Breaking Strength 22.7T
Optional	375', 5/8 dia. 6 x 25 IWRC Nominal Breaking Strength 20.6T

Speed and Pull (Main and Auxiliary)

Layer	Low Speed/High Pull (Feet/Min.)	(Pounds)	High Speed/Low Pull (Feet/Min.)	(Pounds)	Rope Capacity Feet/Layer
1	145	12800	290	6400	61
2	160	11600	320	5800	128
3	175	10600	350	5300	201
4	190	9700	380	4850	281
5	205	9000	410	4500	370

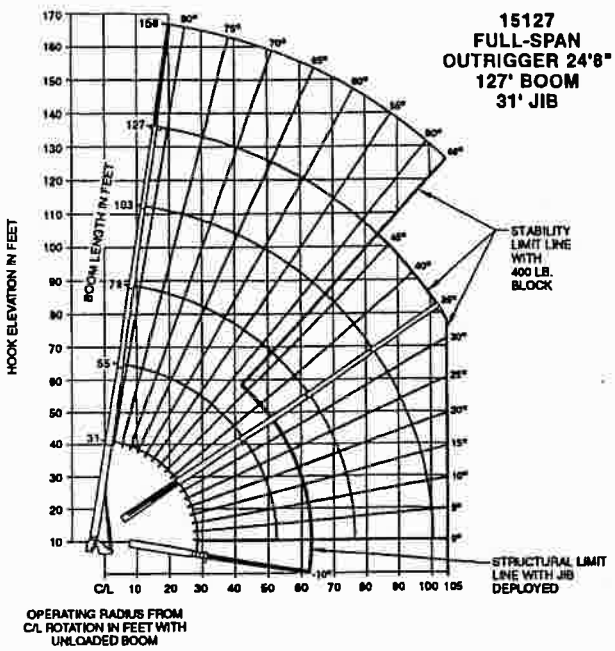
* Note: In cold climates the pump standby pressure may be adjusted up to 500 psi to reduce sluggish startup conditions. The pump standby pressure should be adjusted no higher than necessary, as a higher standby pressure will cause unnecessary wear on the vehicle's starter and will decrease the unit's efficiency while at an idling condition. In climates where seasonal effects cause temperature fluctuations, the pump standby pressure should be adjusted to the standard setting during warm months of the year.

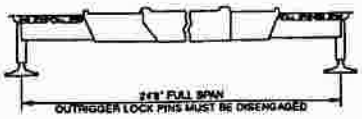
** Note: Units assembled after July 1998 have a swing adjustment knob. The swing speed indicated is based on the adjustment knob in the closed position.

CAPACITY CHART

876957

876957





31 TO 127 FOOT BOOM RATED LOADS WITHOUT JIB

LOAD RADIUS (FEET)	LOADED BOOM ANGLE	31 FT BOOM (LBS)	LOADED BOOM ANGLE	55 FT BOOM (LBS)	LOADED BOOM ANGLE	79 FT BOOM (LBS)	LOADED BOOM ANGLE	103 FT BOOM (LBS)	LOADED BOOM ANGLE	127 FT BOOM (LBS)
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15	57	38,500	73.5	31,000	79.5	25,000				
20	44.3	29,500	67.6	24,800	75.8	20,500	79.6	14,000		
25	27.1	22,000	61.8	20,500	71.9	17,000	77	13,000	79.5	8,700
30			55.5	17,400	68	14,700	74.2	11,700	77.5	8,200
35			48.6	14,000	63.9	12,900	71.3	10,600	75.3	7,700
40			40.7	11,000	59.7	11,300	68.4	9,500	73.1	7,200
45			31.3	9,000	55.2	9,400	65.4	8,400	70.8	6,700
50			16.9	7,400	50.6	7,600	62.2	7,600	68.5	6,200
55					45.4	6,500	58.9	6,600	65.9	5,400
60					39.6	5,300	55.3	5,500	63.3	4,800
65					33.1	4,300	51.5	4,500	60.6	4,200
70					25.1	3,500	47.6	3,700	57.8	3,700
75					12.7	2,850	43.4	3,050	55	3,100
80							38.8	2,400	51.9	2,550
85							33.8	1,900	48.7	2,050
90							27.9	1,500	45.4	1,800
95							20.5	1,100	41.9	1,200
100							7.3	600	38.1	850
105									34	550
	0	15,500	0	6,300	0	2,600	0	750		

31' JIB RATED LOADS

RADIUS FULLY EXTENDED	LOADED BOOM ANGLE	RATED LOADS ALL BOOM LENGTHS
29	80	3,600
44	75	3,300
58	70	2,900
72	65	2,500
84	60	2,150
94	55	1,800
104	50	1,000

RATED LOAD REDUCTIONS WITH JIB

BOOM LENGTH	31' JIB STOWED	31' JIB ERECTED
31'	Reduce load 500 LB.	Reduce load 1,600 LB.
55'	Reduce load 300 LB.	Reduce load 1,400 LB.
79'	Reduce load 200 LB.	Reduce load 1,300 LB.
103'	Reduce load 150 LB.	Reduce load 1,250 LB.
127'	Reduce load 100 LB.	Reduce load 1,200 LB.

NOTE:
1. All capacities are in pounds, angles in degrees, radius in feet.
2. Loaded boom angles are given as reference only.
3. Shaded areas are structurally limited capacities.