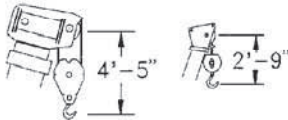


RT230

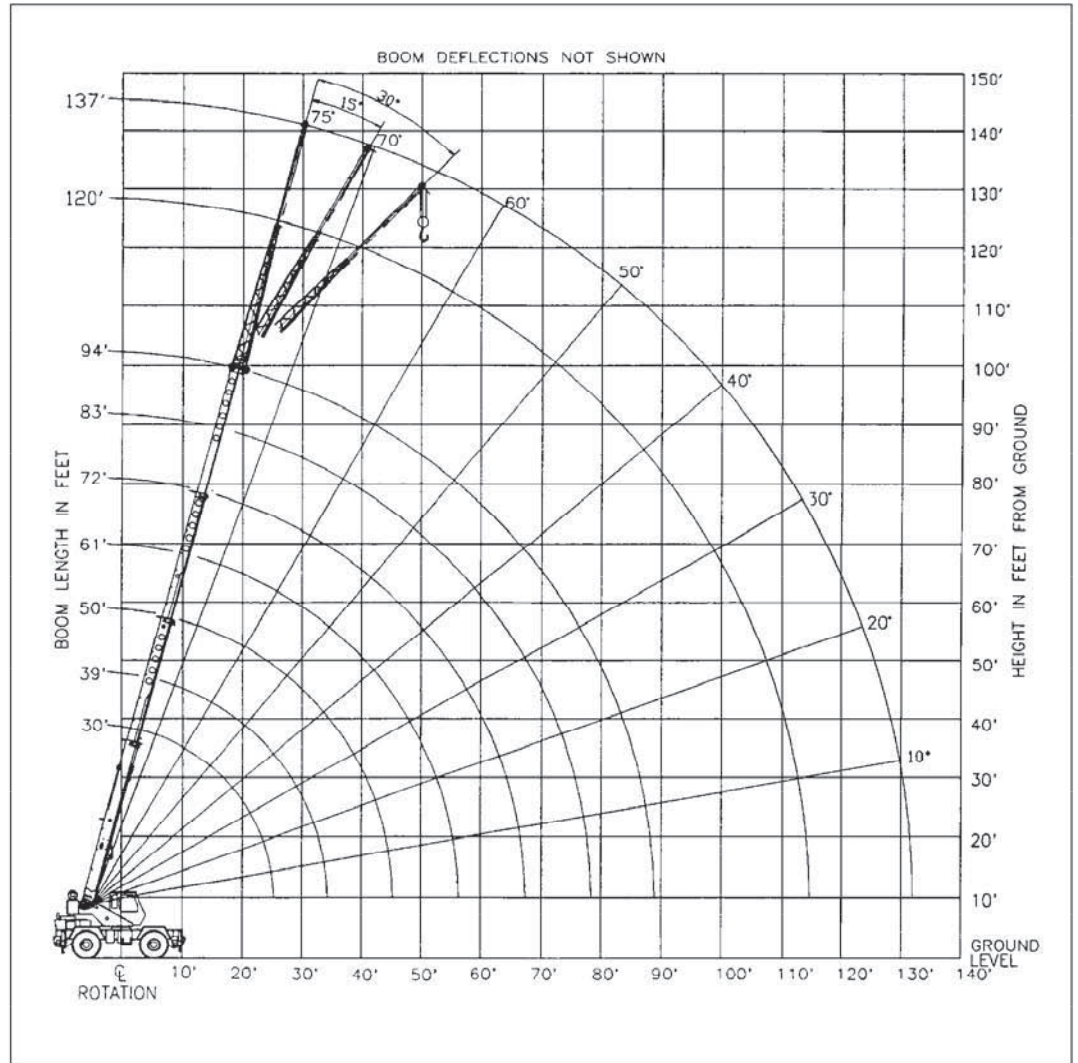
rough terrain crane
30 ton capacity

range diagram & lifting capacities

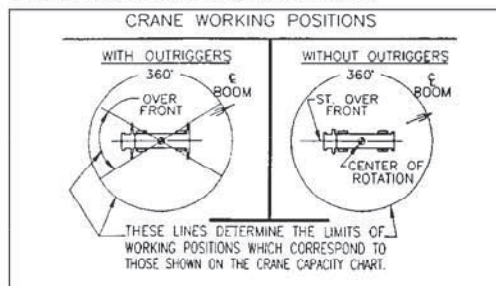


DIMENSIONS ARE FOR LARGEST FACTORY FURNISHED HOOK BLOCK AND HOOK & BALL, WITH ANTI-TWO BLOCK ACTIVATED

Range Diagram (30' - 94' boom)



CRANE WORKING CONDITIONS



REDUCTION IN MAIN BOOM CAPACITY

All Jibs in Stowed Position _____ 0 Lbs.
Aux. Boom in Head Sheave _____ 100 Lbs.

HOOK BLOCK WEIGHTS

Hook & Ball _____ 239 Lbs.
Hook Block (2 Sheave) _____ 680 Lbs.
Hook Block (3 Sheave) _____ 660 Lbs.
Hook Block (4 Sheave) _____ 660 Lbs.

Lifting Capacities – Pounds (30’ – 94’ boom)

MODEL RT230

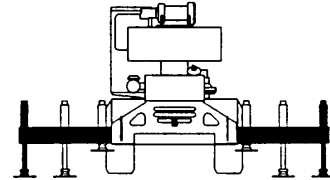
COUNTERWEIGHT:
W/AUX. WINCH 8900 LBS.
W/O AUX. WINCH 10,000 LBS.
BOOM LENGTH 30-94 FT.
OUTRIGGER SPREAD 19 FT.

STABILITY PERCENTAGE
ON OUTRIGGERS 85%
ON TIRES 75%
PCSA CLASS 10-118

CAUTION: Do not use this specification sheet as a load rating chart. The format of data is not consistent with the machine chart and may be subject to change.

ON OUTRIGGERS - FULLY EXTENDED

LOAD RADIUS (FT)	BOOM LENGTH 30 FT			BOOM LENGTH 39 FT			BOOM LENGTH 50 FT			LOAD RADIUS (FT)
	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	
10	63.0	60,000*	60,000*	69.4	46,600*	46,600*				10
12	58.5	50,100*	50,100*	66.2	46,600*	46,600*	71.7	44,500*	44,500*	12
15	51.4	40,100*	40,100*	61.2	40,000*	40,000*	68.0	38,500*	38,500*	15
20	37.4	30,100*	30,100*	52.3	30,000*	30,000*	61.6	30,000*	30,000*	20
25	13.7	22,800*	22,900*	42.0	23,600*	23,600*	54.8	24,000*	24,000*	25
30	**			28.8	18,600*	18,600*	47.3	19,100*	19,100*	30
35				**			38.7	15,500	15,100	35
40							27.9	12,100	11,800	40
45							7.9	9,600	9,300	45
50							**			50
55										55
60										60
65										65
70										70
75										75
80										80
85										85



**USE THESE CHARTS ONLY
WHEN ALL OUTRIGGERS
ARE FULLY EXTENDED**

ON OUTRIGGERS - FULLY EXTENDED

LOAD RADIUS (FT)	BOOM LENGTH 61 FT			BOOM LENGTH 72 FT			BOOM LENGTH 83 FT			BOOM LENGTH 94 FT			LOAD RADIUS (FT)
	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	LOADED BOOM ANGLE (DEG)	OVER FRONT (LB)	360° (LB)	
10													10
12													12
15	72.1	36,000*	36,000*										15
20	67.1	29,500*	29,500*	70.8	27,400*	27,400*							20
25	61.9	24,000*	24,000*	66.5	23,100*	23,100*	69.8	19,000*	19,000*	72.2	15,300*	15,300*	25
30	56.3	19,400*	19,400*	62.0	19,600*	19,600*	66.0	15,900*	15,900*	69.0	13,100*	13,100*	30
35	50.4	15,700	15,400	57.4	15,900	15,500	62.2	13,800*	13,800*	65.7	11,400*	11,400*	35
40	43.9	12,400	12,100	52.5	12,600	12,300	58.1	12,000*	12,000*	62.2	10,000*	10,000*	40
45	36.5	10,000	9,800	47.2	10,200	9,900	53.9	10,300	10,000	58.7	8,800*	8,800*	45
50	27.3	8,200	7,900	41.4	8,400	8,100	49.5	8,500	8,300	55.1	7,900*	7,900*	50
55	13.0	6,700	6,500	34.8	7,000	6,800	44.7	7,100	6,900	51.2	7,100*	7,000	55
60	**			26.9	5,800	5,600	39.5	6,000	5,800	47.2	6,100	5,800	60
65				15.5	4,800	4,600	33.6	5,000	4,800	42.8	5,100	4,900	65
70				**			26.6	4,200	4,100	38.0	4,300	4,200	70
75							17.0	3,500	3,400	32.7	3,700	3,500	75
80							**			26.4	3,100	2,900	80
85										18.1	2,600	2,400	85

** MAXIMUM CAPACITY AT 0 DEGREE BOOM ANGLE

BOOM LENGTH 30 FT			BOOM LENGTH 39 FT			BOOM LENGTH 50 FT			BOOM LENGTH 61 FT			BOOM LENGTH 72 FT			BOOM LENGTH 83 FT			BOOM LENGTH 94 FT		
LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)	LOAD RADIUS (FT)	OVER FRONT (LB)	360° (LB)
25.6	21,900*	21,900*	34.3	15,200*	14,900	45.3	9,400	9,100	56.3	6,300	6,100	67.3	4,400	4,200	78.3	3,100	2,900	89.3	2,100	2,000

Lifting Capacities – Pounds (30’ – 94’ boom)

MODEL RT230

COUNTERWEIGHT: W/AUX. WINCH 8900 LBS.
 W/O AUX. WINCH 10,000 LBS.
 BOOM LENGTH 30-94 FT.
 OUTRIGGER SPREAD 19 FT.

STABILITY PERCENTAGE
 ON OUTRIGGERS 85%
 ON TIRES 75%
 PCSA CLASS 10-118

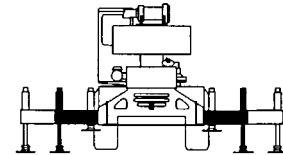
CAUTION: Do not use this specification sheet as a load rating chart. The format of data is not consistent with the machine chart and may be subject to change.

ON OUTRIGGERS - MID POSITION

LOAD RADIUS (FT)	BOOM LENGTH 30 FT		BOOM LENGTH 39 FT		BOOM LENGTH 50 FT		BOOM LENGTH 61 FT		BOOM LENGTH 72 FT		BOOM LENGTH 83 FT		BOOM LENGTH 94 FT		LOAD RADIUS (FT)
	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	
10	63.0	60,000*	69.4	46,600*											10
12	58.5	50,100*	66.2	46,600*	71.7	44,500*									12
15	51.4	38,000	61.2	38,700	68.0	38,500*	72.1	36,000*							15
20	37.4	21,500	52.3	22,300	61.6	22,700	67.1	23,000	70.8	23,100					20
25	13.7	13,800	42.0	14,700	54.8	15,200	61.9	15,400	66.5	15,600	69.8	15,700	72.2	15,300*	25
30	**		28.8	10,300	47.3	10,900	56.3	11,100	62.0	11,200	66.0	11,400	69.0	11,400	30
35			**		38.7	8,000	50.4	8,300	57.4	8,400	62.2	8,500	65.7	8,600	35
40					27.9	5,900	43.9	6,300	52.5	6,500	58.1	6,600	62.2	6,600	40
45					7.9	4,400	36.5	4,800	47.2	5,000	53.9	5,100	58.7	5,200	45
50					**		27.3	3,600	41.4	3,800	49.5	4,000	55.1	4,100	50
55							13.0	2,600	34.8	2,900	44.7	3,100	51.2	3,200	55
60							**		26.9	2,100	39.5	2,300	47.2	2,400	60
65									15.5	1,500	33.6	1,700	42.8	1,800	65
70											26.6	1,100	38.0	1,300	70

** MAXIMUM CAPACITY AT 0 DEGREE BOOM ANGLE

BOOM LENGTH 30 FT		BOOM LENGTH 39 FT		BOOM LENGTH 50 FT		BOOM LENGTH 61 FT		BOOM LENGTH 72 FT		BOOM LENGTH 83 FT		BOOM LENGTH 94 FT	
LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)
25.6	12,900	34.3	7,600	45.3	4,200	56.3	2,400	67.3	1,200				



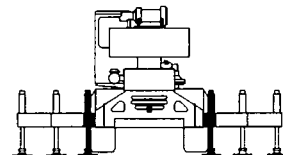
USE THESE CHARTS ONLY WHEN ALL OUTRIGGERS ARE PINNED IN MID POSITION

ON OUTRIGGERS - RETRACTED

LOAD RADIUS (FT)	BOOM LENGTH 30 FT		BOOM LENGTH 39 FT		BOOM LENGTH 50 FT		BOOM LENGTH 61 FT		BOOM LENGTH 72 FT		BOOM LENGTH 83 FT		BOOM LENGTH 94 FT		LOAD RADIUS (FT)
	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	LOADED BOOM ANGLE (DEG)	360° (LB)	
10	63.0	32,800	69.4	33,400											10
12	58.5	23,600	66.2	24,200	71.7	24,600									12
15	51.4	15,800	61.2	16,500	68.0	16,900	72.1	17,100							15
20	37.4	9,100	52.3	9,800	61.6	10,300	67.1	10,500	70.8	10,600					20
25	13.7	5,300	42.0	6,200	54.8	6,700	61.9	6,900	66.5	7,100	69.8	7,200	72.2	7,200	25
30	**		28.8	3,900	47.3	4,400	56.3	4,700	62.0	4,900	66.0	5,000	69.0	5,100	30
35			**		38.7	2,900	50.4	3,200	57.4	3,400	62.2	3,500	65.7	3,600	35
40					27.9	1,700	43.9	2,100	52.5	2,300	58.1	2,400	62.2	2,500	40
45							36.5	1,200	47.2	1,400	53.9	1,500	58.7	1,600	45
50											49.5	900	55.1	1,000	50

** MAXIMUM CAPACITY AT 0 DEGREE BOOM ANGLE

BOOM LENGTH 30 FT		BOOM LENGTH 39 FT		BOOM LENGTH 50 FT		BOOM LENGTH 61 FT		BOOM LENGTH 72 FT		BOOM LENGTH 83 FT		BOOM LENGTH 94 FT	
LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)
25.6	4,900	34.3	2,400										



USE THESE CHARTS WHEN ALL OUTRIGGER BEAMS ARE NOT IN EITHER THE MID OR FULLY EXTENDED POSITION

Lifting Capacities – Pounds (30' – 94' boom)

MODEL RT230

COUNTERWEIGHT: STABILITY PERCENTAGE
 W/AUX. WINCH 8900 LBS. ON OUTRIGGERS 85%
 W/O AUX. WINCH 10,000 LBS. ON TIRES 75%
 BOOM LENGTH 30-94 FT. PCSA CLASS 10-118
 OUTRIGGER SPREAD 19 FT.

CAUTION: Do not use this specification sheet as a load rating chart. The format of data is not consistent with the machine chart and may be subject to change.

SIDE STOW JIB ON FULLY EXTENDED OUTRIGGERS

LOADED BOOM ANGLE (DEG)	26 FT OFFSETTABLE JIB						43 FT OFFSETTABLE JIB						LOADED BOOM ANGLE (DEG)
	0° OFFSET		15° OFFSET		30° OFFSET		0° OFFSET		15° OFFSET		30° OFFSET		
	LOAD RADIUS (REF) (FT)	360° (LB)	LOAD RADIUS (REF) (FT)	360° (LB)	LOAD RADIUS (REF) (FT)	360° (LB)	LOAD RADIUS (REF) (FT)	360° (LB)	LOAD RADIUS (REF) (FT)	360° (LB)	LOAD RADIUS (REF) (FT)	360° (LB)	
75	35	9,100*	40	7,400*	45	5,600*	41	5,100*	50	3,400*	62	2,700*	75
73	39	8,600*	43	6,800*	49	5,300*	45	4,800*	54	3,300*	65	2,700*	73
71	43	8,100*	47	6,300*	52	5,000*	49	4,500*	58	3,200*	68	2,600*	71
68	49	7,300*	52	5,600*	56	4,500*	54	4,100*	64	3,000*	72	2,500*	68
65	54	6,300*	57	5,100*	61	4,100*	60	3,800*	70	2,900*	77	2,500*	65
62	60	5,500*	62	4,600*	66	3,700*	67	3,600*	74	2,800*	82	2,400*	62
59	64	4,800*	67	4,100*	71	3,400*	75	3,400*	81	2,700*	88	2,400*	59
55	70	4,100*	73	3,600*	78	3,000*	82	3,100*	89	2,600*	95	2,300*	55
51	76	3,500	79	3,200*	84	2,800*	88	2,900*	96	2,500*	100	2,300*	51
47	82	2,800	86	2,600	89	2,500*	95	2,500	101	2,100	105	2,000	47
43	87	2,300	91	2,200	93	2,300	101	2,100	107	1,700	110	1,600	43
38	93	1,800	97	1,800	98	1,800	108	1,700	113	1,300	115	1,300	38
32	100	1,400	102	1,400	104	1,400	116	1,200	119	1,000	121	1,000	32
25	106	1,000	108	1,000									25

NOTES FOR JIB CAPACITIES

- A. For all boom lengths less than the maximum with a jib erected, the rated loads are determined by boom angle only in the appropriate column.
- B. For boom angle not shown, use the capacity of the next lower boom angle.
- C. Listed radii are for extended main boom only.

ON TIRES

RADIUS (FT)	MAX BOOM LENGTH (FT)	16:00 X 25-28PR				20:50 X 25-24PR				RADIUS (FT)
		STATIONARY		PICK & CARRY		STATIONARY		PICK & CARRY		
		360°	STRAIGHT OVER FRONT	CREEP	2.5 MPH	360°	STRAIGHT OVER FRONT	CREEP	2.5 MPH	
10	30	23,600	45,900*	36,100*	26,500*	24,000	44,200*	34,700*	23,700*	10
12	30	17,300	39,700*	31,100*	22,600*	19,000	35,300*	29,900*	20,200*	12
15	39	13,000	27,400	25,400*	18,200*	14,100	27,400	24,400*	16,100*	15
20	39	8,000	16,200	16,200	13,200*	8,400	16,600	16,600	11,500*	20
25	50	5,200	11,000	11,000	9,700*	5,400	11,200	11,200	8,300*	25
30	50	3,200	7,900	7,900	7,500*	3,400	8,100	8,100	6,300*	30
35	50	1,900	6,100	6,100	6,000*	2,000	6,100	6,100	5,000*	35
40	61	1,200	4,900	4,900	4,800*	1,300	4,900	4,900	3,900*	40
45	61		3,800	3,800	3,800		3,900	3,900	3,100*	45
50	61		2,700	2,700	2,700		2,800	2,800	2,400*	50
55	61		2,000	2,000	2,000		2,100	2,100	1,800*	55
60	72		1,500	1,500	1,500		1,500	1,500	1,300*	60
65	72		1,100	1,100	1,100		1,200	1,200	900*	65

NOTES FOR ON TIRE CAPACITIES

- A. For Pick and Carry operations, boom must be centered over the front of the crane with swing brake and lock engaged. Use minimum boom point height and keep load close to ground surface.
- B. The load should be restrained from swinging. NO ON TIRE OPERATION WITH JIB ERECTED.
- C. Without outriggers, never maneuver the boom beyond listed load radii for applicable tires to ensure stability.
- D. Creep speed is crane movement of less than 200 Ft. (61m) in a 30 minute period and not exceeding 1.0 mph (1.6 km/h).
- E. Refer to General Notes for additional information.

MAXIMUM PERMISSIBLE HOIST LINE LOAD

LINE PARTS	1	2	3	4	5	6	7
MAX. LOAD	9,080	18,160	27,240	36,320	45,400	54,480	63,560
BOOM HEAD	2	3-D	2-3	1-4-D	2-3-4	2-3-4-D	1-2-3-4
HOOK BLOCK	D	3	3-D	1-4	2-3-D	2-3-4	2-3-4-D
	WIRE ROPE: 5/8" ROTATION RESISTANT COMPACTED STRAND, 18X19 OR 19X19 MINIMUM BREAKING STRENGTH - 22.7 TONS 5/8" 6X19 OR 6X37 IWRC IPS PREFORMED RIGHT REGULAR LAY MINIMUM BREAKING STRENGTH - 17.9 TONS						

RECOMMENDED TIRE PRESSURE

TIRE SIZE	STATIONARY	CREEP	2 1/2 MPH	TRAVEL
16:00 X 25-28PR	115 PSI	115 PSI	95 PSI	95 PSI
20:50 x 25-24PR	95 PSI	95 PSI	70 PSI	70 PSI

GENERAL NOTES

GENERAL

1. Rated loads as shown on Lift Charts pertain to this machine as originally manufactured and equipped. Modifications to the machine or use of optional equipment other than that specified can result in a reduction of capacity.
2. Construction equipment can be hazardous if improperly operated or maintained. Operation and maintenance of this machine shall be in compliance with the information in the Operator's, Parts and Safety Manuals supplied with this machine. If these manuals are missing, order replacements from the manufacturer through your distributor.
3. These warnings do not constitute all of the operating conditions for the crane. The operator and job site supervision must read the OPERATORS MANUAL, CIMA SAFETY MANUAL, APPLICABLE OSHA REGULATIONS, AND SOCIETY OF MECHANICAL ENGINEERS (ASME) SAFETY STANDARDS FOR CRANES.
4. This crane and its load ratings are in accordance with POWER CRANE & SHOVEL ASSOCIATION, STANDARD NO. 4, SAE CRANE LOAD STABILITY TEST CODE J765A, SAE METHOD OF TEST FOR CRANE STRUCTURE J1063 AND APPLICABLE SAFETY CODE FOR CRANES, DERRICKS AND HOISTS, ASME/ANSI B30.5.

DEFINITIONS

1. **LOAD RADIUS** – The horizontal distance from the axis of rotation before loading to the center of the vertical hoist line or tackle with a load applied.
2. **LOADED BOOM ANGLE** – It is the angle between the boom base section 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 boom length give only an approximation of the operating radius.
3. **WORKING AREA** – Areas measured in a circular arc about the centerline of rotation as shown in the diagram.
4. **FREELY SUSPENDED LOAD** – Load hanging free with no direct external force applied except by the hoist rope.
5. **SIDE LOAD** – Horizontal 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, when the boom angle is less than the minimum shown on the applicable load chart, because the machine can overturn without any load.
7. **BOOM SIDE OF CRANE** – The side of the crane over which the boom is positioned when in an OVER SIDE working position.

SET-UP

1. Crane load ratings are based on the crane being leveled and standing on a firm, uniform supporting surface.
2. Crane load ratings on outriggers are based on all outrigger beams being fully extended or in the case of partial extension ratings mechanically pinned in the appropriate position, and the tires free of the supporting surface.
3. Crane load ratings on tires depend on appropriate inflation pressure and the tire conditions. Caution must be exercised when increasing air pressures in tires. Consult Operator's Manual for precautions.
4. Use of jibs, lattice-type boom extensions, or fourth section pullouts extended is not permitted for pick and carry operations.
5. Consult appropriate section of the Operator's and Service Manual for more exact description of hoist line reeving.
6. The use of more parts of line than required by the load may result in having insufficient rope to allow the hook block to reach the ground.
7. Properly maintained wire rope is essential for safe crane operation. Consult Operator's Manual for proper maintenance and inspection requirements.
8. When spin-resistant wire rope is used, the allowable rope loading shall be the breaking strength divided by five (5), unless otherwise specified by the wire rope manufacturer.
9. Do not elevate the boom above 60° unless the boom is positioned in-line with the crane's chassis or the outriggers are extended. Failure to observe this warning may result in loss of stability.

OPERATION

1. **CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.**
 2. When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
 3. Do not operate at longer radii than those listed on the applicable load rating chart (cross hatched areas shown on range diagrams).
 4. The boom angles shown on the Capacity Chart give an approximation of the operating radius for a specified boom length. The boom angle, before loading, should be greater to account for boom deflection. It may be necessary to retract the boom if maximum boom angle is insufficient to maintain rated radius.
 5. Power telescoping boom sections must be extended equally.
 6. Rated loads include the weight of hook block, slings, and auxiliary lifting devices. Their weights shall be subtracted from the listed rated load to obtain the net load that can be lifted.
When lifting over the jib the weight of any hook block, slings, and auxiliary lifting devices at the boom head must be added to the load.
When jibs are erected but unused add two (2) times the weight of any hook block, slings, and auxiliary lifting devices at the jib head to the load.
 7. Rated loads do not exceed 85% on outriggers or 75% on tires, of the tipping load as determined by SAE Crane Stability Test Code J765a. Structural strength ratings in chart are indicated with an asterisk (*).
 8. Rated loads are based on freely suspended loads. No attempt shall be made to drag a load horizontally on the ground in any direction.
 9. The user shall operate at reduced ratings to allow for adverse job conditions, such as: Soft or uneven ground, out of level conditions, high winds, side loads, pendulum action, jerking or sudden stopping of loads, hazardous conditions, experience of personnel, two machine lifts, traveling with loads, electric wires, etc., (side pull on boom or jib is hazardous). Derating of the cranes lifting capacity is required when wind speed exceeds 20 MPH. the center of the lifted load must never be allowed to move more than 3" feet off the center line of the base boom section due to the effects of wind, inertia, or any combination of the two.
**Use 2 feet off the center line of the base boom for a two section boom, 3 feet for a three section boom, or 4 feet for a four section boom.
 10. The maximum load which can be telescoped is not definable, because of variations in loadings and crane maintenance, but it is permissible to attempt retraction and extension if load ratings are not exceeded.
 11. Load ratings are dependent upon the crane being maintained according to manufacturer's specifications.
 12. It is recommended that load handling devices, including hooks, and hook blocks, be kept away from boom head at all times.
 13. **FOR TRUCK CRANES ONLY:** 360° capacities apply only to machines equipped with a front outrigger jack and all five (5) outrigger jacks properly set. If the front (5th) outrigger jack is not properly set, the work area is restricted to the over side and over rear areas as shown on the Crane Working Positions diagram. Use the 360° load ratings in the overside work areas.
 14. Do not lift with outrigger beams positioned between the fully extended and intermediate (pinned) positions.
 15. Truck Cranes not equipped with equalizing (bogie) beams between the rear axles may not be used for lifting "on tires". Truck Cranes equipped with equalizing beams and rear air suspension should "dump" the air before lifting "on tires".
- ## CLAMSHELL, MAGNET, AND CONCRETE BUCKET SERVICE
1. Maximum boom length for clamshell and magnet service is 50 feet.
 2. Weight of clamshell or magnet, plus contents are not to exceed 6,000 pounds or 90% of rated lifting capacities, whichever is less. For concrete bucket operation, weight of bucket and load must not exceed 90% of rated lifting capacity.

