

## General Notes | RT780

## Range Diagram and Lifting Capacity | RT780

### GENERAL

- 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 or other than that specified can result in a reduction of capacity.
- 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.
- 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 STANDINGS FOR CRANES.
- 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

- 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.
- 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.
- WORKING AREA** - Areas measured in a circular arc about the centerline of rotation as shown in the diagram.
- FREELY SUSPENDED LOAD** - Load hanging free with no direct external force applied except by the hoist rope.
- SIDE LOAD** - Horizontal force applied to the lifted load either on the ground or in the air.
- 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.
- BOOM SIDE OF CRANE** - The side of the crane over which the boom is positioned when in OVER SIDE working position.

### SET-UP

- Crane load ratings are based on the crane being leveled and standing on a firm, uniform supporting surface.
- 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.
- 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.
- Use of jibs, lattice-type boom extensions, or fourth section pullouts extended is not permitted for pick and carry operations.
- Consult appropriate section of the Operator's and Service Manual for more exact description of hoist line reeving.
- 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.
- Properly maintained wire rope is essential for safe crane operation. Consult Operator's Manual for proper maintenance and inspection requirements.
- 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.
- Do not elevate the boom above 60° unless the boom is positioned in-line with the crane's chassis or the outrigger are extended. Failure to observe this warning may result in loss of stability.

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**Disclaimer. Effective Date: March, 2008.** Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this document are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or to otherwise act irresponsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and Terex makes no other warranty, express or implied. Products and services listed may be trademarks, service marks or trade-names of Terex Corporation and/or its subsidiaries in the USA and other countries.

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### OPERATION

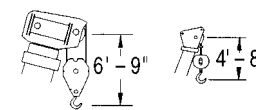
- CRANE LOAD RATINGS MUST NOT BE EXCEEDED. DO NOT ATTEMPT TO TIP THE CRANE TO DETERMINE ALLOWABLE LOADS.
- When either radius or boom length, or both, are between listed values, the smaller of the two listed load ratings shall be used.
- Do not operate at longer radii than those listed on the applicable load rating chart (cross hatched areas shown on range diagrams.)
- 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.
- Power telescoping boom sections must be extended equally.
- 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.
- 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 (\*).
- Rated loads are based on freely suspended loads. No attempt shall be made to drag a load horizontally on the ground in any direction.
- 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" off the center line of the base boom section due to the effects of wind, inertia, or any combination of the two.  
\*\*Use 2' off the center line of the base boom for a two section boom, 3' for a three section boom, or 4' for a four section boom.
- 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.
- Load ratings are dependent upon the crane being maintained according to manufacturer's specifications.
- It is recommended that load handling devices, including hooks, and hook blocks, be kept away from boom head at all times.
- 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.
- Do not lift with outrigger beams positioned between the fully extended and intermediate (pinned) positions.
- 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

- Maximum boom length for clamshell and magnet service is 50'.
- Weight of clamshell or magnet, plus contents are not to exceed 6,000 lb 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.

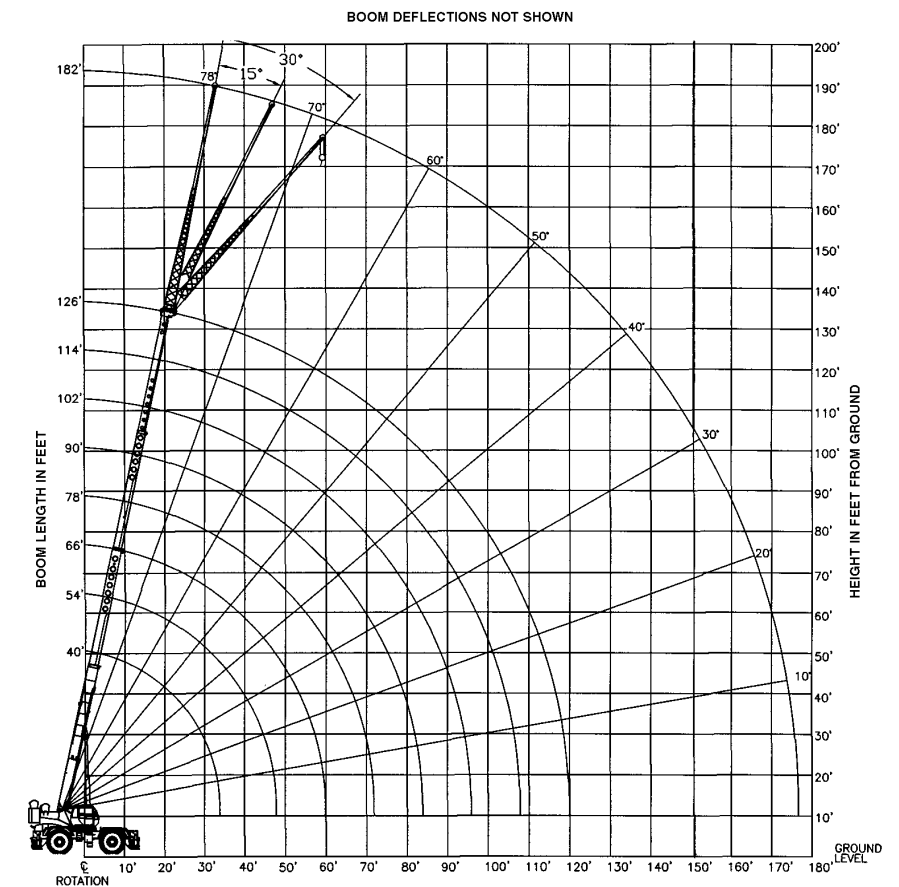
### 80 TON LIFTING CAPACITY

### RANGE DIAGRAM 40' - 126' BOOM

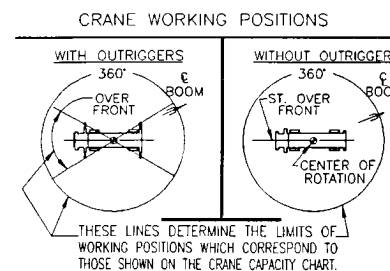


Dimensions are for largest factory furnished hook block and hook & ball, with anti-two block activated

COUNTER WEIGHT	W/AUX. WINCH 13,660 LB W/O AUX. WINCH 15,200 LB
BOOM LENGTH	40'-126'
OUTRIGGER SPREAD	24'
STABILITY PERCENTAGE	ON OUTRIGGERS 85% ON TIRES 75%
PCSA CLASS	10-316



### CRANE WORKING CONDITIONS



### REDUCTION IN MAIN BOOM CAPACITY

All jib in stowed position	0 lb
Aux. boom in head sheave	100lb

### HOOK BLOCK WEIGHTS

Hook and ball	419 lb
Hook block (5 sheave)	1608 lb







ROUGH TERRAIN CRANE  
**RT780**

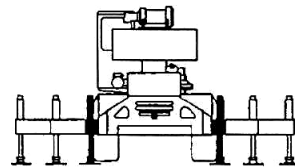
**LIFTING CAPACITIES**

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 - RETRACTED AND WITH 15,200 LB COUNTERWEIGHT**

LOAD RADIUS (FT)	BOOM LENGTH 40'		BOOM LENGTH 54'		BOOM LENGTH 66'		BOOM LENGTH 78'		LOAD RADIUS (FT)
	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	
	REF.		REF.		REF.		REF.		
10	69.4	84,600	75.0	85,700					10
12	66.2	59,400	72.8	60,400					12
15	61.3	39,400	69.3	40,500	73.3	40,900			15
20	52.3	23,300	63.4	24,400	68.6	24,900	72.1	25,100	20
25	42.0	15,000	57.1	16,100	63.8	16,600	68.1	16,900	25
30	28.5	9,900	50.3	11,000	58.7	11,500	64.0	11,900	30
35	**		42.6	7,600	53.3	8,100	59.8	8,500	35
40			33.6	5,100	47.7	5,700	55.3	6,000	40
45			21.0	3,300	41.1	3,800	50.6	4,100	45
50									50
55									55

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



**\*\*MAXIMUM CAPACITY AT 0 DEGREE BOOM ANGLE**

BOOM LENGTH 40'		BOOM LENGTH 54'		BOOM LENGTH 66'		BOOM LENGTH 78'	
LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)	LOAD RADIUS (FT)	360° (LB)
33.9	7,000						

**ON OUTRIGGERS - RETRACTED AND WITH 15,200 LB COUNTERWEIGHT**

LOAD RADIUS (FT)	BOOM LENGTH 90'		BOOM LENGTH 102'		BOOM LENGTH 114'		BOOM LENGTH 126'		LOAD RADIUS (FT)
	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	BOOM ANGLE (DEG)	360° (LB)	
	REF.		REF.		REF.		REF.		
10									10
12									12
15									15
20	74.6	25,300							20
25	71.2	17,100	73.5	17,100					25
30	67.7	12,100	70.5	12,100	72.6	12,200			30
35	64.2	8,700	67.5	8,700	70.0	8,900	72.0	9,000	35
40	60.6	6,200	64.3	6,200	67.2	6,400	69.5	6,600	40
45	56.8	4,400	61.1	4,400	64.5	4,600	67.1	4,800	45
50					61.6	3,100	64.5	3,400	50
55									55



ROUGH TERRAIN CRANE  
**RT780**

**LIFTING CAPACITIES**

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 AND**

LOADED BOOM ANGLE (DEG)	32' OFFSETTABLE JIB/NO PULL OUT INSTALLED									33' OFFSETTABLE JIB/PULL OUT RETRACTED									LOADED BOOM ANGLE (DEG)
	0° OFFSET			15° OFFSET			30° OFFSET			0° OFFSET			15° OFFSET			30° OFFSET			
	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	
	(REF)			(REF)			(REF)			(REF)			(REF)			(REF)			
77	41	12,600*	12,600	50	8,500*	8,500*	57	6,600*	6,600*	41	12,600*	12,600*	50	8,600*	8,600*	57	6,500*	6,500*	77
75	46	11,900*	11,900	55	8,200*	8,200*	61	6,400*	6,400*	47	12,100*	12,100*	56	8,200*	8,200*	62	6,300*	6,300*	75
73	51	11,300*	11,300	60	7,800*	7,800*	66	6,300*	6,300*	52	11,600*	11,600*	61	7,900*	7,900*	67	6,200*	6,200*	73
71	57	10,400*	10,400	66	7,400*	7,400*	71	6,000*	6,000*	58	11,000*	11,000*	67	7,600*	7,600*	72	6,000*	6,000*	71
68	65	9,600*	9,600*	73	7,100*	7,100*	78	5,900*	5,900*	66	10,000*	10,000*	74	7,200*	7,200*	79	6,000*	6,000*	68
65	73	8,900*	8,900*	80	6,800*	6,800*	85	5,700*	5,700*	74	9,300*	9,300*	81	6,800*	6,800*	86	5,700*	5,700*	65
62	80	8,300*	8,300*	87	6,500*	6,500*	92	5,500*	5,500*	81	9,000*	8,700*	88	6,500*	6,500*	93	5,500*	5,500*	62
59	87	7,700*	7,700*	94	6,200*	6,200*	98	5,300*	5,300*	88	7,700*	7,400*	95	6,300*	6,300*	99	5,400*	5,400*	59
55	96	7,000*	6,600	102	5,900*	5,900*	106	5,200*	5,200*	97	6,300	5,800	103	5,800	5,300	107	5,300*	5,300	55
51	104	5,800	5,400	110	5,500	5,100	113	5,000*	5,000*	105	5,100	4,600	111	4,800	4,300	114	4,400	4,400	51
47	112	4,800	4,400	116	4,600	4,200	119	4,300	4,300	113	4,100	3,700	117	3,900	3,500	120	3,600	3,600	47
43	119	4,100	3,700	123	3,900	3,500	125	3,600	3,600	120	3,300	3,000	124	3,200	2,800	126	2,900	2,900	43
38	126	3,300	3,000	130	3,100	2,900	131	3,000	2,700	127	2,600	2,300	131	2,400	2,100	132	2,300	2,000	38
32	134	2,700	2,300	137	2,500	2,200	137	2,400	1,900	135	2,000	1,700	138	1,800	1,500	138	1,700	1,200	32
25	141	2,100	1,700	142	2,000	1,700				143	1,400		144	1,300					25

**SIDE STOW JIB ON FULLY EXTENDED OUTRIGGERS AND WITH 15,200 LB COUNTERWEIGHT**

LOADED BOOM ANGLE (DEG)	57' OFFSETTABLE JIB									LOADED BOOM ANGLE (DEG)
	0° OFFSET			15° OFFSET			30° OFFSET			
	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	LOAD RADIUS (FT)	FRONT ONLY (LB)	360° (LB)	
	(REF)			(REF)			(REF)			
77	48	6,600*	6,600*	66	4,600*	4,600*	75	3,400*	3,400*	77
75	56	6,500*	6,500*	72	4,400*	4,400*	81	3,300*	3,300*	75
73	63	6,300*	6,300*	77	4,200*	4,200*	87	3,200*	3,200*	73
71	70	6,100*	6,100*	83	4,000*	4,000*	92	3,100*	3,100*	71
68	80	5,500*	5,500*	91	3,800*	3,800*	100	3,000*	3,000*	68
65	90	5,000*	5,000*	99	3,600*	3,600*	108	2,900*	2,900*	65
62	98	4,600*	4,600*	106	3,400*	3,400*	115	2,800*	2,800*	62
59	106	4,300*	4,300*	114	3,200*	3,200*	121	2,700*	2,700*	59
55	116	3,900*	3,900*	123	3,000*	3,000*	129	2,600*	2,600*	55
51	125	3,600*	3,600*	132	2,900*	2,900*	137	2,600*	2,600*	51
47	133	3,000	2,900	140	2,800*	2,700	143	2,500*	2,500*	47
43	140	2,500	2,300	147	2,400	2,200	149	2,400	2,100	43
38	148	1,900	1,700	154	1,800	1,600	155	1,800	1,600	38
32	157	1,400	1,100	161	1,300	1,100	162	1,300	1,100	32
25	165	900								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 fully extended main boom only.

**ON TIRES**

RADIUS (FT)	MAX BOOM LENGTH (FT)	29.5 X 25 28 PR			
		STATIONARY		PICK & CARRY	
		STATIC		CREEP	2.5 MPH
		STRAIGHT OVER FRONT			
		360°			
10	40	48,000	74,100*	56,100*	47,100*
12	40	40,600	65,200*	49,100*	41,000*
15	40	30,100	54,300	40,900*	34,000*
20	40	20,200	36,100	31,400*	25,700*
25	54	13,800	25,000	24,800*	20,000*
30	54	9,400	18,300	18,300	15,700*
35	54	6,700	14,300	14,300	13,900*
40	66	5,000	11,700	11,700	11,200*
45	66	3,500	9,700	9,700	9,100*
50	66	2,400	8,000	8,000	8,000
55	78	1,600	6,400	6,400	6,400
60	78		5,000	5,000	5,000
65	78		3,400	3,400	3,400
70	90		3,200	3,200	3,200
75	90		2,800	2,800	2,800
80	90		2,300	2,300	2,300

**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' (61m) in a 30 minute period and not exceeding 1.0 mph (1.6 km/h).
- E. Refer to General Notes for additional information.

**RECOMMENDED TIRE PRESSURE**

TIRE SIZE	STATIONARY	CREEP	2 1/2 MPH	TRAVEL
29.5 x 25-28 PR	62 PSI	62 PSI	62 PSI	54 PSI

**MAXIMUM PERMISSIBLE HOIST LINE LOAD**

LINE PARTS	1	2	3	4	5	6	7	8	9	10	11
MAIN & AUX. HOIST	13,800	27,600	41,400	55,200	69,000	82,800	96,600	110,400	124,200	138,000	150,000
WIRE ROPE	3/4" ROTATION RESISTANT 34 X 7 COMPACTED STRAND, GRADE 2160, MINIMUM BREAKING STRENGTH - 34.5 TONS. WEIGHT 1.24 LB/FT 3/4" 6X19 OR 6X37, IPS, IWRC, PERFORMED RIGHT REGULAR LAY MINIMUM BREAKING STRENGTH - 25.6 TONS. WEIGHT 1.04 LB/FT										