Manitex



TC650

65-ton (59 mt) TC650 SERIES PRODUCT GUIDE

CONTENTS

Crane Features 4

Crane Features 5

65131 Chassis Data 6

65159 Chassis Data 8

Outrigger Extension 10

65131 Range Diagram and Load Chart: Main Boom ... 11-13

65159 Range Diagram and Load Chart: Main Boom ... 14-16

Reeving and Area of Operation 17

Technical Description and Options 18-19



Effective Date: November 2020

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Refer to the appropriate Operator's Manual and Load Charts for instructions on the proper use of this equipment to determine allowable crane lifting capacities, assembly and operating procedures.
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KEY

	Operator aids
	Cab
	Heating / Air conditioning
	Controls
	Hoist speed
	1 - Main hoist 2 - Auxiliary winch 3 - Recovery winch
	Rope length
	Rope - Standard/optional
	Rope diameter
	Permissible line pull
	Maximum line pull
	Slewing / Allowable slewing range
	Slewing gears
	Slewing brake
	Outriggers
	2-Person man basket
	Counterweight
	Radio remote control

	Hook block
	Distance from hook to head sheave pin
	Hook and ball
	Hydraulics
	Boom elevation angle
	Max. boom length with extension
	Boom with extension retracted
	Boom angle
	Telescoping mode
	Working radius
	Boom length
	Hydraulic actuated boom
	Fully proportional, full power extension
	Boom head / Hook block dimension
	Main boom with auxiliary head
	Tip height



THE TC650 SERIES TELESCOPIC CRANE

Versatile. Rugged. Operator friendly.

The TC650 series telescopic cranes are built to meet the wide-ranging needs of owner operators who may use it for residential construction one day and bridge work the next. No matter what the task, the 65-ton line of telescopic cranes is designed to get you on the job quickly.

- Go from Free-Swing to No-Free Swing with a push of a button.
- Set up quickly with remote outrigger controls
- Operate comfortably and confidently
- Move from job to job in less time.

Other features include:

- 65-ton capacity @ 6 ft. radius
- 4 or 5 section proportional booms
- Optional telescopic lattice jib (0-15-30°offsets)
- 209 ft. maximum tip height (with optional jib)
- 20° Tiltable cab
- 4-position out-and-down outriggers
- Remote outrigger controls

NEW COMBINED RADIO REMOTE



R.O.C. (RADIO OUTRIGGER CONTROLS)

One control to operate outriggers, winch and boom controls with boom stowed.

R.O.C. (RADIO OUTRIGGER CONTROLS)

Operate the outriggers remotely, with a clear view from anywhere around the machine.

NEW CAB



Equipped with Heat and AC and 200% more air flow. Adjustable cab tilt speed and crane functions. USB ports for quick software updates or phone charging. More leg room and one display unit needed for both crane and chassis operations. Remote mounted HVAC for no vibration and low ambient noise.

TELEMETICS

Parker Mobile IoT

Mobile Equipment OEM Stays Connected with Mobile IoT Technology

A modem is incorporated into the crane PLC system to aid troubleshooting machines in the field. Crane software updates can now be uploaded to the machine without having to send a technician to the field! GPS ready for tracking through the Manitex web portal.

FEATURES



CAB UPGRADES FOR EASIER OPERATOR CONTROL



Externally routed A2B cable. LMI with crane function cut-offs for overload protection. Color graphic display, event recorder, WADS-Work Definition System.

SUB FRAME

- Trapezoid sub-frame and outriggers are mounted to chassis by threaded rods and clamp plates
- Sub-frame: Torsion resistant, rigid 4-plate design mounted under crane full length of truck frame
- Rear under-ride protection: Standard on factory mounted cranes

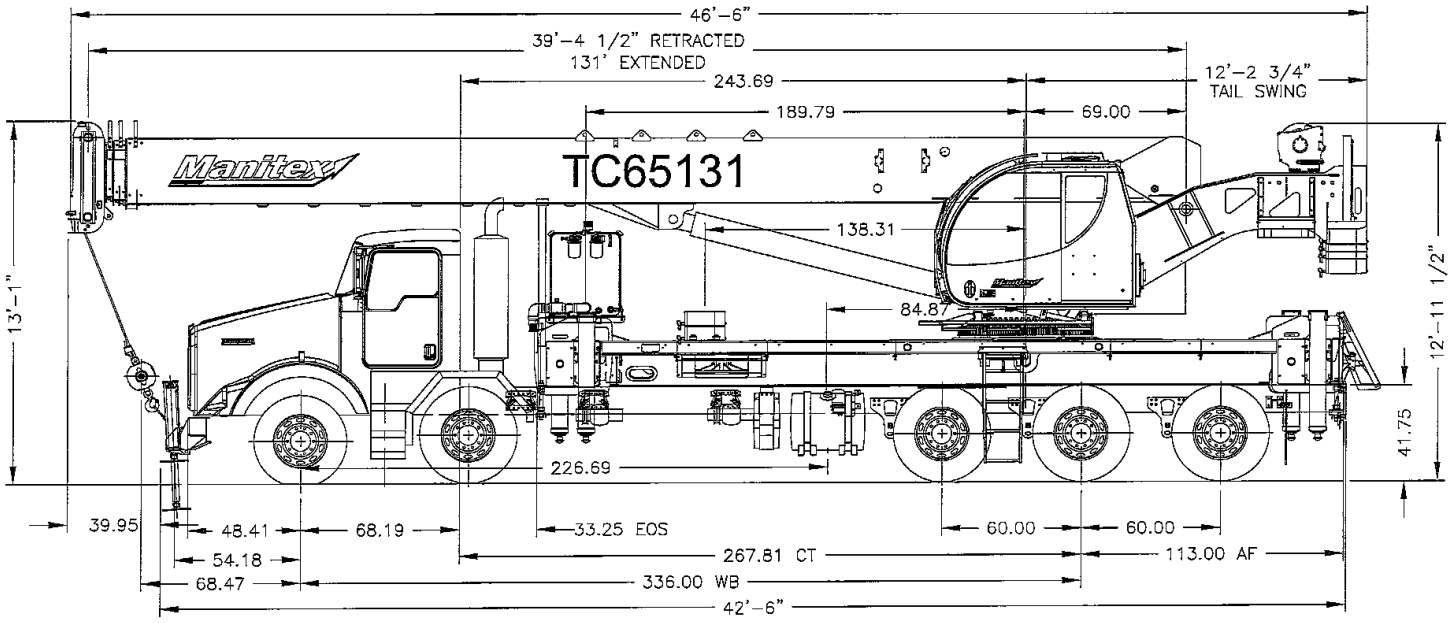
ELECTRICAL SYSTEM

- State-of-the-art, weather-resistant components throughout
- Hermetically sealed enclosure includes power in relays and circuit status LEDs
- 12-24 Volt capability
- J1939 CAN Bus
- IQAN PLC System
- Bluetooth connectivity

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.

65131 CHASSIS DATA

Dimensions



CHASSIS DATA

Model	65131
Frame section modulus at 180/360° area of operation*	27.0 in^3 120,000 psi, 758,423 kPa

* Frame selection modulus at 360° area of operation requires front bumper stabilizer.

TRUCK AXLE WEIGHT

Model	65131
Min. truck axle W - Front**	10,750 lbs. (4876 kg)
Min. truck axle W - Rear**	12,300 lbs. (5,579 kg)
Nominal Frame W	34 in. (864 mm)

** Minimum chassis weight is required to meet 85% stability requirements. Chassis data is general - not for engineering. Some dimensions depend on truck selection.

CRANE WEIGHT

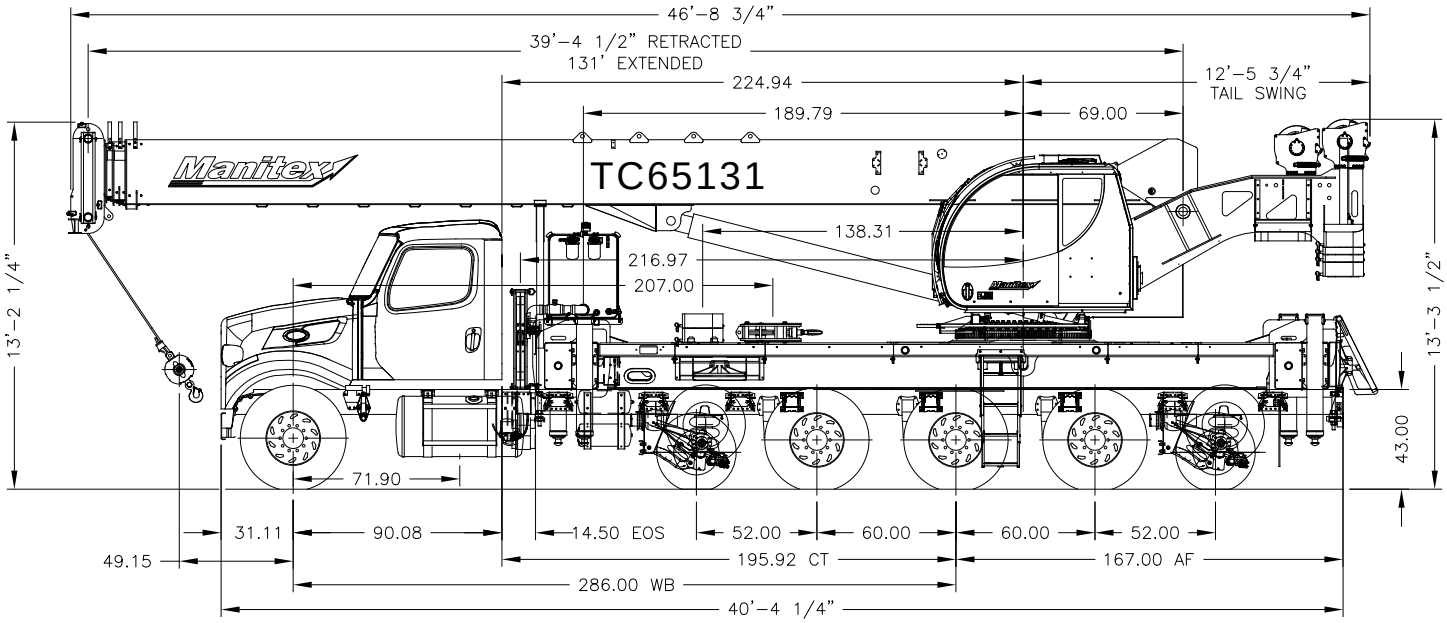
Model	65131
Crane - Dry weight	49,715 lbs. (22,550 kg)
Jib fixed	1,700 lbs. (771 kg)
Jib telescopic	2,300 lbs. (1,043 kg)
Aluminum Platforms	555 lbs. (252 kg)
Counter weight	10,000 lbs. (4,536)

Notes: Additional axles required for federal bridge legal configuration - consult Manitex. Manitex highly recommends the addition of a front stabilizer and it may be required on some installations - consult Manitex.

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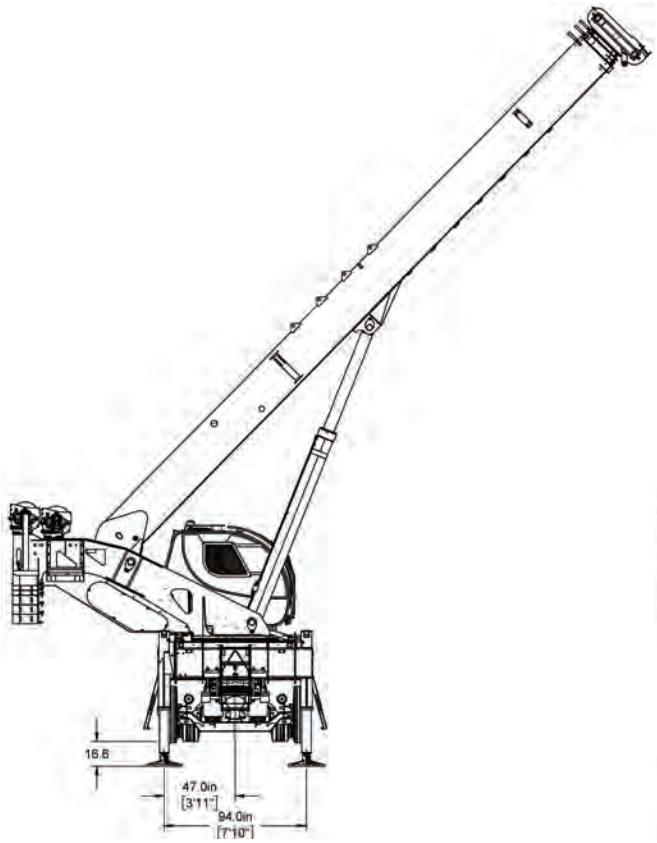
CRANE WEIGHT

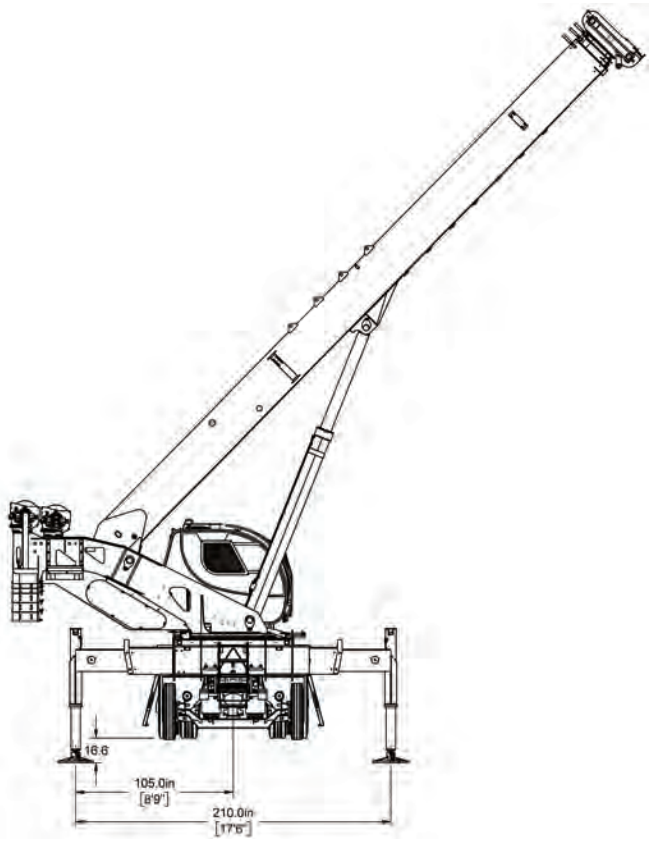
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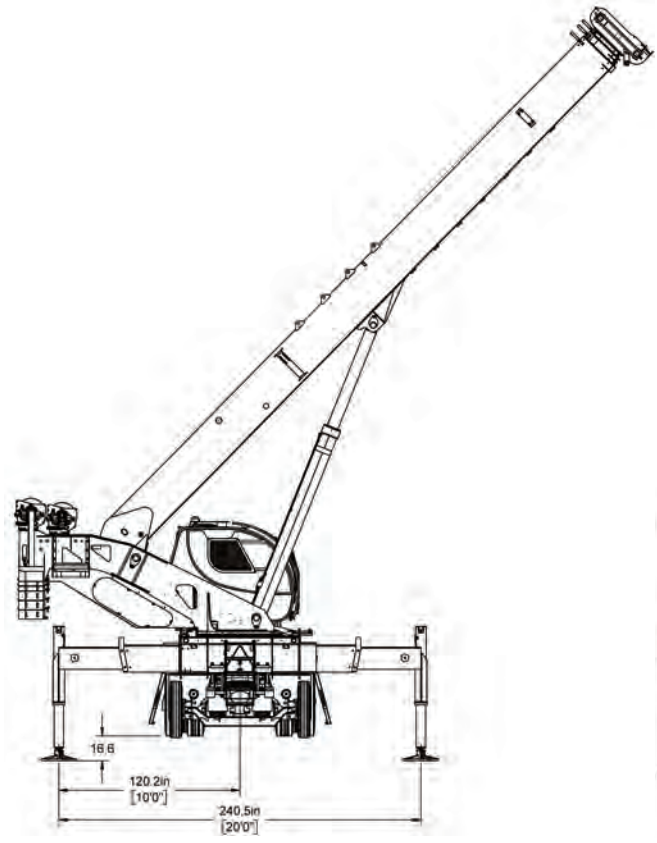
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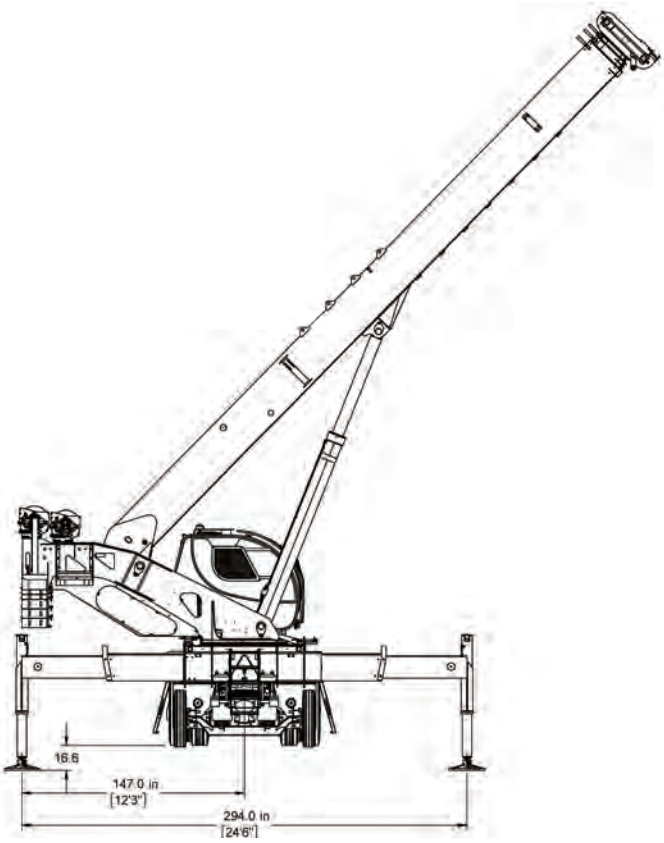
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OUTRIGGER EXTENSION

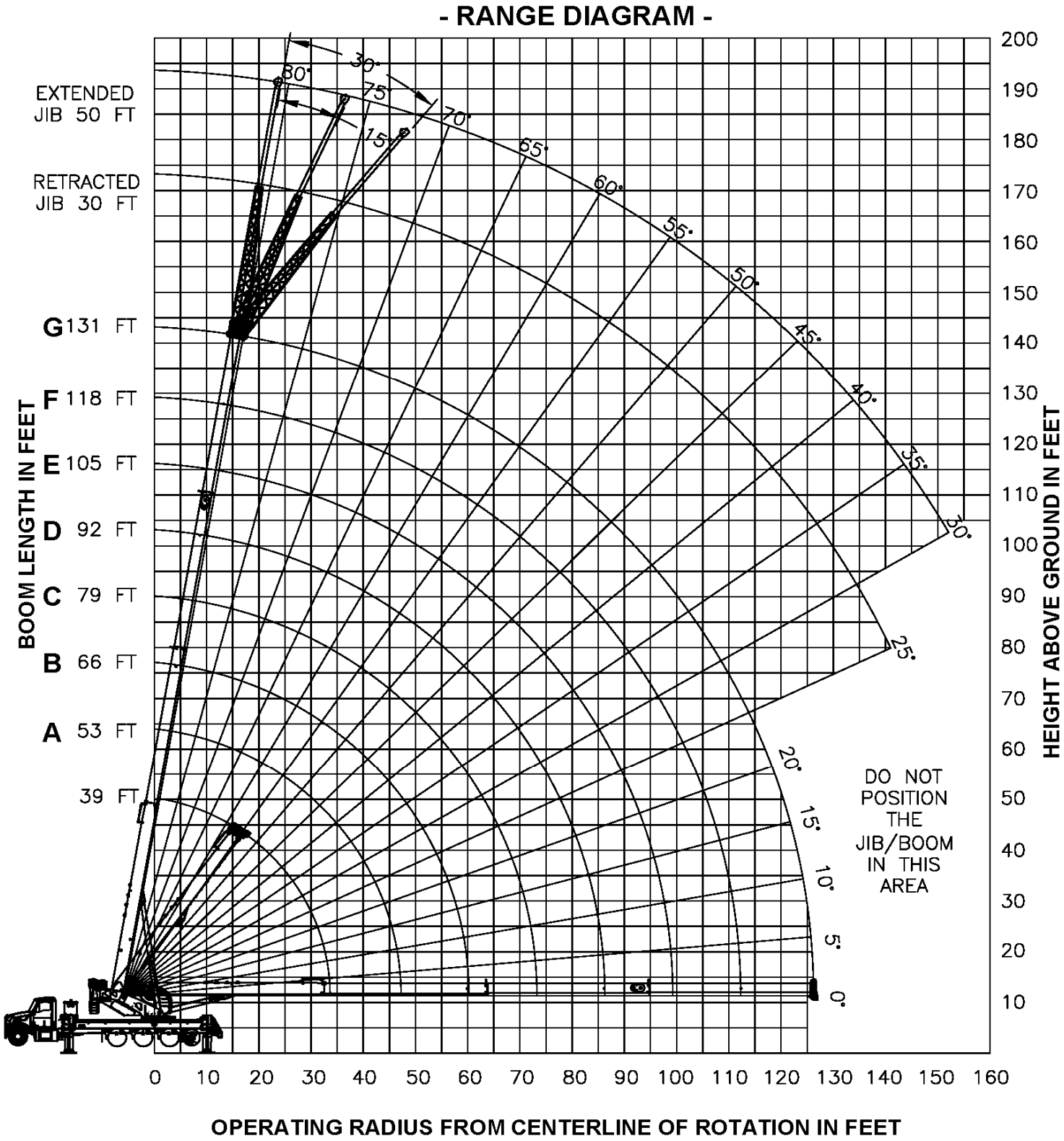






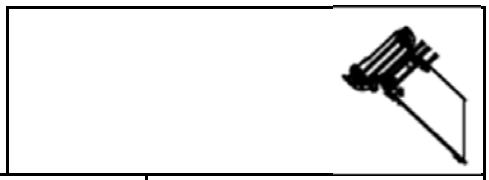


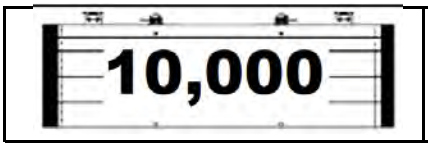
TC65131 RANGE DIAGRAM



65131 LOAD CHART: Main Boom

MAIN BOOM







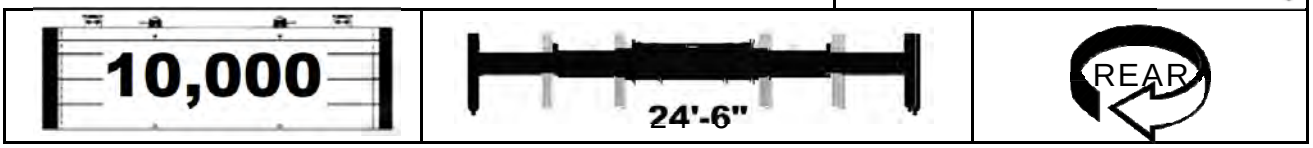


LOAD RADIUS (FT)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	ANGLE	LIFTING CAP. (LBS)	LOAD RADIUS (FT)
LENGTH	***39.3 FT***		***53 FT***		***66 FT***		***79 FT***		***92 FT***		***105 FT***		***118 FT***		***131 FT***		
6	74°	130000															**6**
8	70°	120000															**8**
10	67°	104870	74°	80000	77°	73200											**10**
12	64°	95630	71°	80000	76°	68990	78°	54510									**12**
15	59°	84050	68°	74250	73°	62490	76°	49640	79°	38040							**15**
20	50°	65540	62°	62410	68°	53070	72°	43090	75°	33510	78°	28990					**20**
25	40°	50810	55°	51800	63°	46050	69°	37560	72°	29440	75°	25810	77°	22810			**25**
30	26°	40810	49°	41860	58°	40230	65°	33320	69°	26050	72°	23390	75°	20770	77°	18180	**30**
35			41°	34350	53°	35090	61°	29630	66°	23500	69°	21000	73°	18830	75°	16770	**35**
40			31°	26710	47°	27420	56°	26450	62°	21000	66°	18910	70°	17110	73°	15360	**40**
45			18°	21340	41°	22090	52°	22510	58°	18920	63°	17130	67°	15520	70°	14070	**45**
50					35°	18150	47°	18570	55°	17110	60°	15540	65°	14150	68°	12900	**50**
55					28°	15110	41°	15550	51°	15570	57°	14150	62°	12930	66°	12100	**55**
60					18°	12630	35°	13150	46°	13430	54°	12920	59°	12100	63°	11110	**60**
65							28°	11200	42°	11490	50°	11680	56°	11100	61°	10190	**65**
70							18°	9560	36°	9870	46°	10070	53°	10190	58°	9370	**70**
75									30°	8510	42°	8710	50°	8850	55°	8620	**75**
80									23°	7340	38°	7550	46°	7690	52°	7800	**80**
85									11°	6300	33°	6550	43°	6690	49°	6800	**85**
90											27°	5670	39°	5820	46°	5930	**90**
95											19°	4850	34°	5030	43°	5150	**95**
100													29°	4310	39°	4440	**100**
105													23°	3670	36°	3800	**105**
110													14°	3080	31°	3230	**110**
115															26°	2710	**115**
120															19°	2240	**120**
125															6°	1790	**125**
130																	**130**
DEDUCTIONS FOR MAIN BOOM CAPACITIES	0°	30700	0°	18200	0°	12450	0°	8350	0°	6050	0°	4250	0°	2900	0°	600	
	1570		1140		920		770		660		580		520		460		STOWED
	3510		3240		3100		3010		2940		2890		2850		2820		RET
	3910		3530		3340		3200		3110		3040		2980		2940		EXT
	2620		2420		2320		2250		2200		2170		2140		2120		FIXED

65131 LOAD CHART: Main Boom

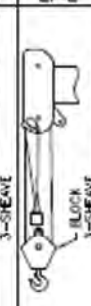
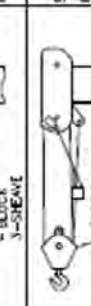
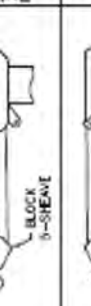
MAIN BOOM





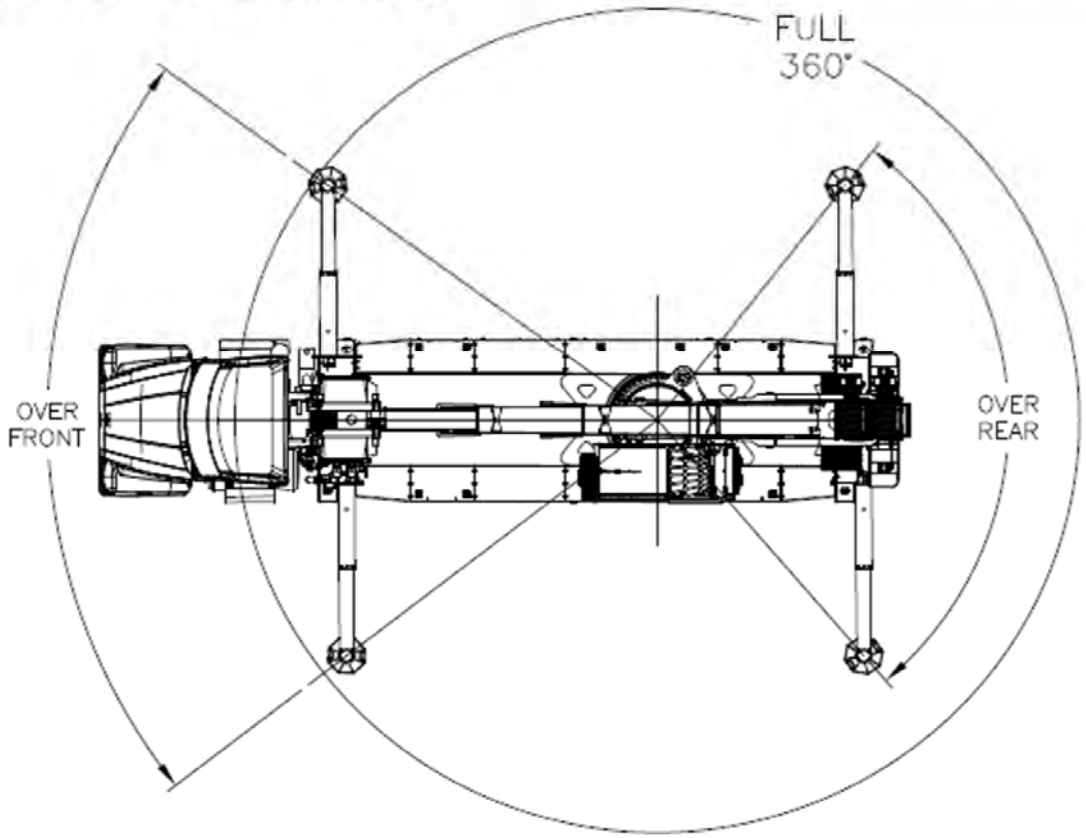
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70							18°	11630	36°	11930	46°	11110	53°	10190	58°	9370	**70**
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	3910		3530		3340		3200		3110		3040		2980		2940		EXT
	2620		2420		2320		2250		2200		2170		2140		2120		FIXED

REEVING and AREA OF OPERATION

ALLOWABLE LINE PULL										
1 PART LINE	2 PART LINE	3 PART LINE	4 PART LINE	5 PART LINE	6 PART LINE	7 PART LINE	8 PART LINE	9 PART LINE	10 PART LINE	11 PART LINE
										
12000 LBS	24000 LBS	36000 LBS	48000 LBS	60000 LBS	72000 LBS	84000 LBS	96000 LBS	108000 LBS	120000 LBS	130000 LBS

WARNING
ANTI-TWO-BLOCK SYSTEM MUST BE IN GOOD OPERATING CONDITION BEFORE OPERATING CRANE. REFER TO THE OWNER'S MANUAL. KEEP AT LEAST 3 WRAPS OF LOAD LINE ON THE DRUM AT ALL TIMES.
5/8" ROT RESISTANT (5:1 SF) 61,200 LBS MIN BREAKING STRENGTH

AREA OF OPERATIONS



WHEN WORKING OVER THE FRONT, THE OPTIONAL FRONT BUMPER STABILIZER (IF EQUIPPED) MUST BE DEPLOYED.
IF NO FRONT BUMPER STABILIZER IS EQUIPPED, THE FRONT TIRES MUST BE CONTACTING THE GROUND.

DEDUCTIONS FROM RATED LOADS FOR LOAD HANDLING DEVICES SUPPLIED BY MANITEX

AUXILIARY BLOCK---------- 50 LBS
AUXILIARY (ROOSTER) SHEAVE---------- 70 LBS
LIFTING FROM MAIN BOOM WITH JIB STOWED OR ERECTED---------- SEE LOAD CHART
OVERHAUL BALL---------- SEE MANUFACTURER NAMEPLATE
LOAD BLOCK---------- SEE MANUFACTURER NAMEPLATE

TECHNICAL DESCRIPTIONS

Boom

Boom lengths: Proportional boom
- 4-section 131 ft. (39.92 m)
- 5-section 159 ft. (48.5 m)

5-Sheave load quick reeve boom point with 2 idler reeve boom points.

Self lubricating slider pads

Boom max. tip height 65131: 141 ft. (43 m)
Boom max. tip height 65159: 169 ft. (51.5 m)

Boom angle (min/max): -6° / 80°

Rotation

Ball-bearing swing circle with external gear Double-reduction planetary gearbox driven by hydraulic motor

Slewing brake: Spring-applied pressure released automatic brake and Free Swing and Non-Free Swing selection from the operator's keypad.

Slewing speed: 1.5 - 2 rpm. (nominal)
Boom rotation: 360° continuous

Outriggers

Outriggers: Out-and-down style
Outrigger monitoring system (for verification only)
Outrigger motion alarm
Full extension 100%
- Front and rear: 24.5 ft. (7,5 m)

Middle extension 68%
- Front and rear: 20 ft. (6,0 m)

Middle extension 50%
- Front and rear: 17.5 ft. (5,3 m)

Full retraction 0%

ROC Solid - Radio operated handheld controller for outrigger, winches and FBS setup
Crane is shipped with the boom radio remote ready.

Operator aids

Externally routed A2B cable. Color graphic display with LMI crane function cut-offs for overload protection, event recorder and WADS-Work Definition System.
HDRI - Hoist Drum Rotation Indicator

Hoist, Rope and Hook

Maximum theoretical line speed: 453 fpm (138 mpm)

Maximum theoretical bottom-layer line pull: 15,000 lbs. (5,919 kg) Limited to 12,000 lbs.

Main winch cable diameter: 5/8 in. (15,9 mm) rotation resistant

Line length: 500 ft. (152 m)

Main winch: Bent axis 2-speed hydraulic motor (activated electrically)
Optional Third Wrap Limiter on both Main and Auxiliary Winch

Hook and Ball: 7T (6,4 mt) capacity hook with heavy-duty swivel and weight is provided for single line operation

Hydraulics

8-bolt direct mounted PTO and SAE C output (factory mounted units only)
1-Section Variable Displacement Piston Pump, SAE C input
Piggy back Fixed Gear Pump (Swing)
Hydraulic Reservior capacity: 210 Gallon
Pump Sections @ 2000 RPM with 100 PSI
- Variable Displacement Pump: 77 GPM (291 lpm)
- Fixed Displacement Gear Pump: 12 GPM (45 lpm)
- Optional Front Bumper Stabilizer

Tiltable Cab/Cab Controls

Standard features:
Curved glass, 0° to 20° cab tilt, Sliding door, heated cloth seat, 8 seat adjustments, lumbar support, reclining and adjustable head rest, sliding windows, rear pop out window, top hinged hatch, with guard, front and top windshield wipers, heater, air conditioning, 12 volt DC outlet, USB ports, engine monitoring system, E-coated cab

Controls:
PLC crane controller, CANBUS communication, J1939 truck engine communication, electric hand and foot throttle, twin dual axis joysticks, electric/hydraulic valve actuation, electronic sensor monitoring, Hirschmann/PAT LMI system available, wired ATB and wired wind speed sensors, telematics, GPS monitoring, remote diagnostic capability, Work Area Definition (WADs)

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TECHNICAL DESCRIPTIONS

Boom

Boom



Boom max. tip height 65131: 141 ft. (43 m)

Maximum Boom Length with Fixed Jib



65131

- Max boom length with extension: 171' (15,2 m)

Maximum Tip Height with 2-Piece Jib



65131

- Max tip height 2-piece jib: 194 ft. (59,1 m)

Maximum Tip Height with 1-Piece Jib



65159

- Max tip height 1-piece jib: 209 ft. (63.7 m)

Hoist, Rope and Hook



Rooster sheave

Wireline options available

2nd overhaul ball available



Load blocks 1-7, 4-8, 2-8, 9-10 part lines

Removable Counterweights



- Removable Counterweights 10,000 lb.
  2 - 1,250 lb.
  3 - 2,500 lb.

OPTIONS

Cab



- Video camera (1 or 2)
- Cab weather band bluetooth radio system
- Wired wind speed indicator
- Cab Step Light
- Perimeter Lighting
- Strobe Light
- Cab Go-light
- Utilization light
- Slide out operator platform
- 4 single-axis controllers

Operator Aids



4-function radio remote crane control system with joy sticks (crane is radio remote ready)

- 900 Mhz
- 433 Mhz

Tool Boxes & Platforms

Tool Boxes

- 2 - 45"x15"x18" storage bins integrated into platforms

Auxilary Winch



Auxiliary Winch Bent axis 2-speed hydraulic motor (activated electrically)

Drum rotation indicator third Wrap Limiter on both Main and Auxiliary Winch (3rd wrap indicator optional)

Data published herein is intended as a guide only. Crane operation is subject to machine specific load charts and information.



TC650

65-ton (59 mt) TC650 SERIES PRODUCT GUIDE

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Technical data can be revised without prior notice

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