

Manitex



CM190

19-ton (17 mt) TELESCOPIC CRANE
PRELIMINARY PRODUCT GUIDE

PRELIMINARY CONTENTS //

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Effective Date: September 1, 2013

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The photographs, and /or images in this document are for illustrative purposes only and may include optional equipment and accessories and may not include all standard equipment.

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.

Failure to follow the appropriate operator's manual or load chart(s) 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. Manitex makes no other warranty, expressed or implied.



















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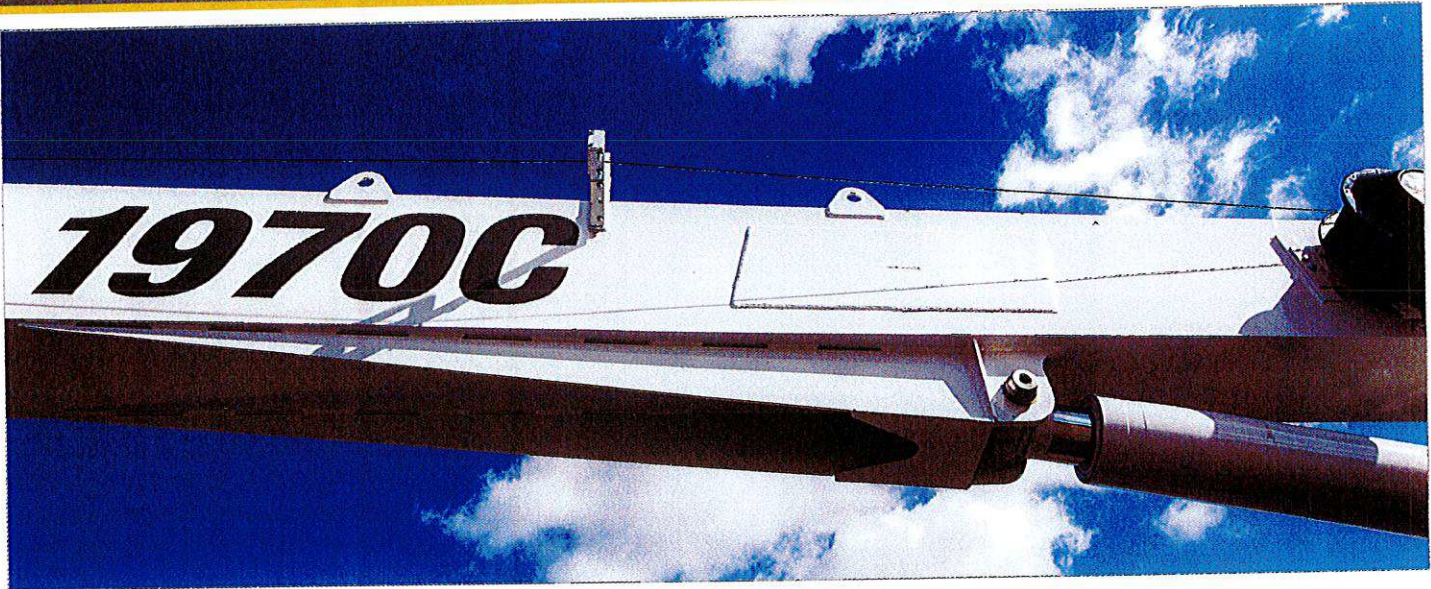
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KEY

| | |
|---|--|
|  | 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 / Lifting on 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 |
|  | Full power mechanical synchronized |
|  | Boom head / Hook block dimension |
|  | Main boom with auxiliary head |
|  | Tip height |



THE CM190 TELESCOPIC CRANE

Maximize Rental Use and Value

The CM190 telescopic crane strikes the perfect balance between the three things customers tell us they care about most in a rental crane: features, cost and ease of use. It's one of the highest-capacity cranes available on a 4x2 chassis, yet it's competitively priced and packed with standard features designed to save time and money.

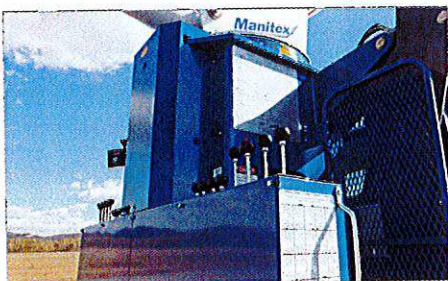
- Change line speed on the fly and minimize rope stacking with its 2-speed planetary hoist with grooved drum and negative draft flange.
- Minimize maintenance costs with replaceable, self-lubricating boom slider pads.
- Get active and immediate feedback on load with the integrated load-moment indicator system.

Other features include:

- 19-ton capacity @ 5 ft. radius
- 70 ft. 3-section proportional boom
- 80.8 ft. max boom tip height
- Optional 24 ft. fixed jib
- Optional 24 ft./41 ft. telescopic jib
- Wired anti-two block with lockout ATB
- Removable boom rest

USER-FRIENDLY CONTROLS

Dual operator stations are equipped with engine start/stop, foot throttle, signal horn, boom angle indicator, load chart and range diagram.



OUTRIGGER DEPLOYMENT

An audible alarm sounds as outriggers are being deployed, and indicator lights verify when they are fully extended.

LOAD MOMENT INDICATOR

The load-moment indicator sounds a warning or shuts down the machine when lift limitations are about to be exceeded.

INCREASE PROFITABILITY

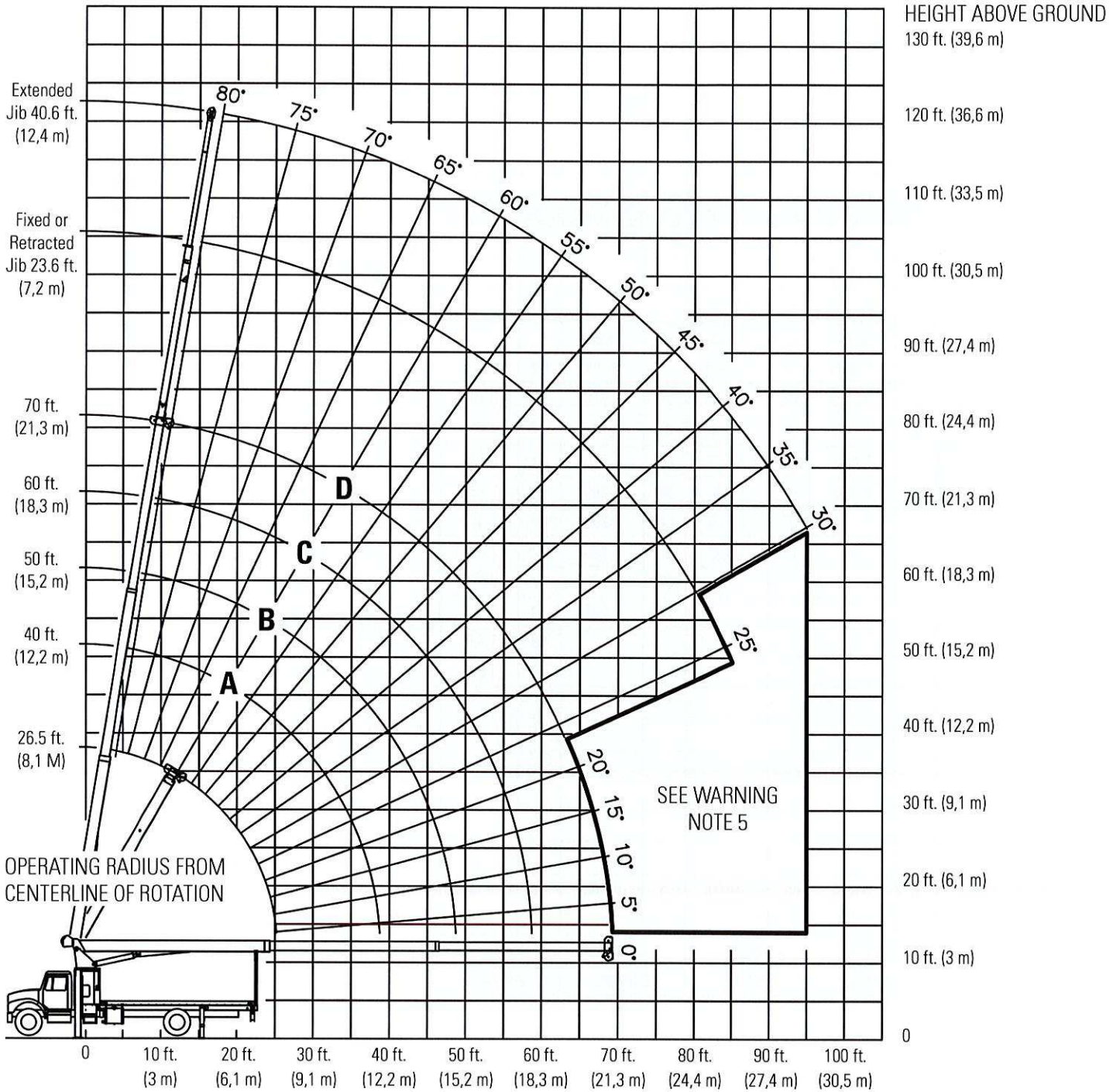
The versatile CM190, designed to be used with a commercial carrier, helps both owners and operators make the most of their investment.

- Travel to and between jobs at highway speed.
- Ride in comfort with a carrier suspension designed for highway driving.
- Get repairs done quickly and by qualified technicians at commercial truck centers.



BOOM DIAGRAM

Imperial & Metric Units




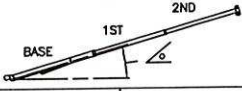
Data published herein is intended as a guide only. Crane operations is subject to machine specific load charts and information.

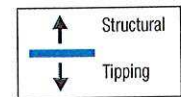
LOAD CHART: Main Boom and Jib

Lifting Capacities 3-section Boom 26.5 ft. - 70 ft.
Jib 23.6 ft. - 40.6 ft.

 20.8 ft. (100%)

 372° Non-continuous

| Load Ratings in (lbs.) with Outriggers and Stabilizers Extended | | | | | | | | | | | Jib Load Ratings in (lbs.) with Outriggers and Stabilizers Extended | | | | | | |
|---|-----------------------|----------------------|---|----------|----------|----------|----------|----------|----------|----------|---|---|---|---|----|-------|--|
| LMI Code #1 | | | | | | | | | | | LMI Code #2, #3, #4 | | | | | | |
| Loaded Boom Angle (ft.) | Loaded Boom Angle (°) | Boom Length & Marker |  | | | | | | | | Loaded Boom Angle (ft.) | Fixed Jib | | Telescopic Jib | | | |
| | | | A (lbs.) | | B (lbs.) | | C (lbs.) | | D (lbs.) | | | LMI Code #2 | LMI Code #3 | LMI Code #4 | | | |
| | | | 40 ft. | 50 ft. | 60 ft. | 70 ft. | | | | | Jib Length for All Boom Lengths See Warning Note 4 | Jib Length for All Boom Lengths See Warning Note 4 | Jib Length for All Boom Lengths See Warning Note 4 | Jib Length for All Boom Lengths See Warning Note 4 | | | |
| 5 | 79 | 38,000 | | | | | | | | | | | | | | | |
| 8 | 73 | 27,010 | 79 | 24,000 | | | | | | | | | | | | | |
| 10 | 68 | 22,330 | 76 | 21,100 | 80 | 18,000 | | | | | | | | | | | |
| 12 | 63 | 18,410 | 73 | 18,230 | 77 | 16,320 | 80 | 13,420 | | | | | | | | | |
| 15 | 55 | 14,420 | 69 | 14,600 | 74 | 13,940 | 77 | 11,900 | 80 | 9,400 | | | | | | | |
| 20 | 40 | 10,350 | 61 | 10,540 | 68 | 10,600 | 72 | 9,810 | 76 | 8,180 | 80 | 4,400 | 80 | 4,200 | | | |
| 25 | 12 | 7,830 | 52 | 8,070 | 61 | 8,130 | 67 | 8,170 | 71 | 7,000 | 78 | 4,200 | 78 | 4,000 | 80 | 3,000 | |
| 30 | | | 41 | 6,400 | 54 | 6,470 | 62 | 6,510 | 67 | 6,050 | 75 | 4,000 | 75 | 3,800 | 78 | 2,660 | |
| 35 | | | 28 | 5,160 | 47 | 5,240 | 56 | 5,280 | 62 | 5,280 | 71 | 3,600 | 71 | 3,380 | 75 | 2,380 | |
| 40 | | | | | 37 | 4,200 | 50 | 4,260 | 58 | 4,300 | 68 | 3,220 | 68 | 3,010 | 72 | 2,150 | |
| 45 | | | | | 25 | 3,360 | 43 | 3,420 | 52 | 3,460 | 65 | 2,880 | 65 | 2,650 | 69 | 1,940 | |
| 50 | | | | | | | 35 | 2,790 | 47 | 2,820 | 61 | 2,580 | 61 | 2,340 | 66 | 1,770 | |
| 55 | | | | | | | 24 | 2,290 | 40 | 2,330 | 57 | 2,310 | 57 | 2,060 | 63 | 1,620 | |
| 60 | | | | | | | | | 33 | 1,930 | 60 | 2,020 | 53 | 1,790 | 60 | 1,490 | |
| 65 | | | | | | | | | 23 | 1,600 | 65 | 1,690 | 49 | 1,460 | 57 | 1,380 | |
| 70 | | | | | | | | | | | 70 | 1,410 | 45 | 1,180 | 54 | 1,280 | |
| 75 | | | | | | | | | | | 75 | 1,180 | 40 | 950 | 51 | 1,190 | |
| 80 | | | | | | | | | | | 80 | 980 | 34 | 750 | 47 | 1,030 | |
| 85 | | | | | | | | | | | 85 | 810 | 27 | 570 | 43 | 850 | |
| 90 | | | | | | | | | | | 90 | | | | 39 | 700 | |
| 95 | | | | | | | | | | | 95 | | | | 34 | 560 | |
| | 0 | 6,650 | 0 | 3,820 | 0 | 2,700 | 0 | 1,960 | 0 | 1,370 | | | | | | | |
| | | 350 lbs. | | 240 lbs. | | 190 lbs. | | 160 lbs. | | 140 lbs. | | Deductions for stowed fixed jib | | | | | |
| | | 530 lbs. | | 350 lbs. | | 280 lbs. | | 240 lbs. | | 200 lbs. | | Deductions for stowed telescopic jib | | | | | |



NOTES:

- All loads rated at 360° pick
- Loads based on crane on outriggers
- All "on outriggers" loads are based on 85% tipping
- Loads above heavy line are based on structural rating
- Loads below heavy line are based on tipping rating


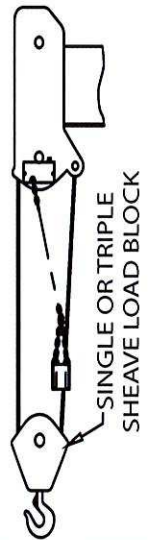


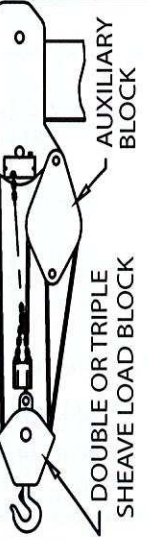
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LMI OPERATING CODES

| Code | Crane Configuration | Outrigger Configuration | Area of Operation |
|------|---|-------------------------|---------------------|
| #1 | Main Boom | Fully Extended | 372° Non-continuous |
| #2 | Fixed Jib | Fully Extended | 372° Non-continuous |
| #3 | Telescopic Jib - Retracted | Fully Extended | 372° Non-continuous |
| #4 | Telescopic Jib - Extended | Fully Extended | 372° Non-continuous |
| #5 | Personnel lifting platform on main boom | Fully Extended | 372° Non-continuous |
| #6 | Personnel lifting platform on fixed jib | Fully Extended | 372° Non-continuous |
| #7 | Personnel lifting platform on tele. jib - retracted | Fully Extended | 372° Non-continuous |

WARNING: Lifting personnel from extended jib is not approved.

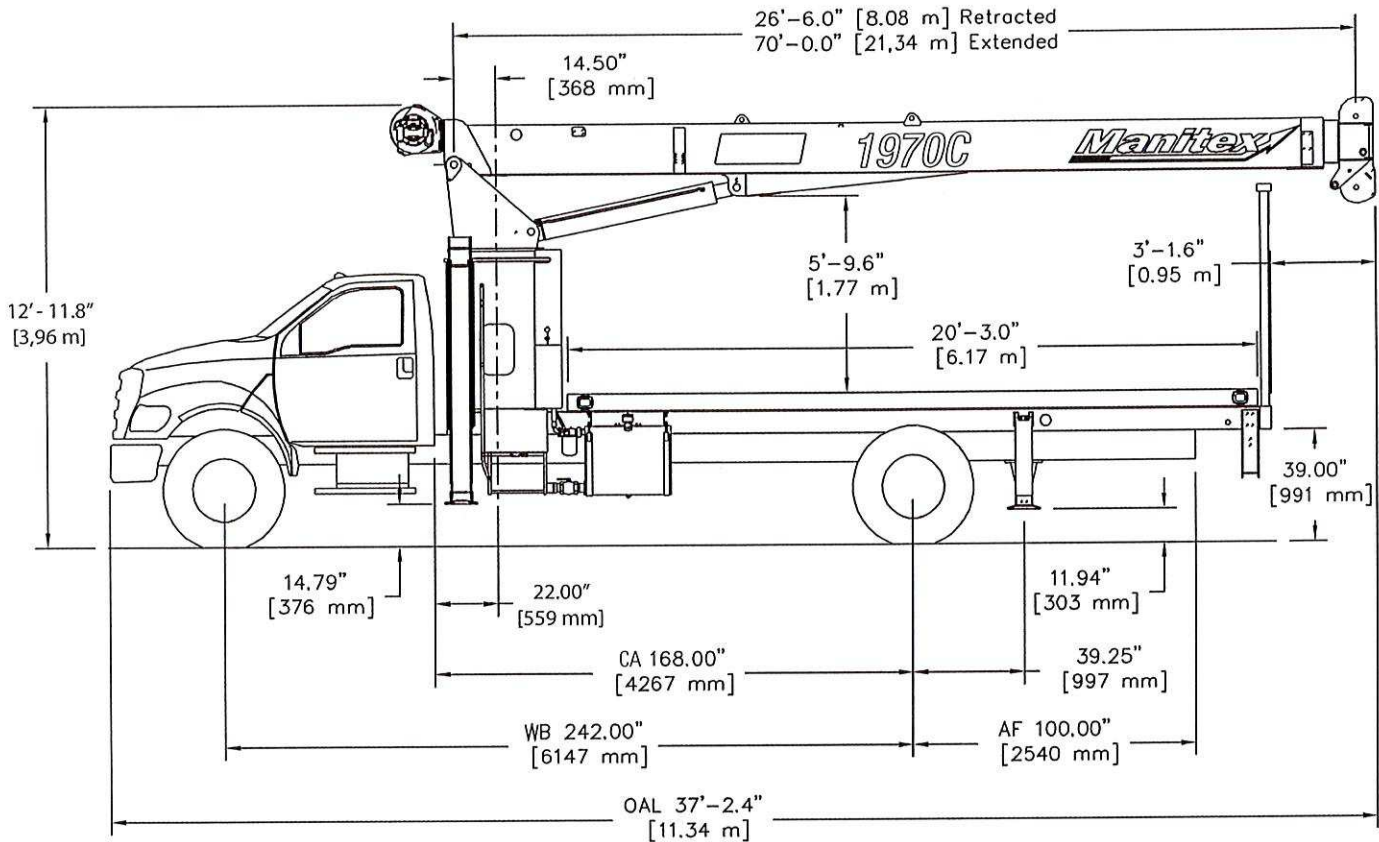
REEVING DIAGRAM

| ALLOWABLE LINE PULL | | | | | WARNING |
|--|--|--|--|---|---|
| 1 PART LINE | 2 PART LINE | 3 PART LINE | 4 PART LINE | 5 PART LINE | |
|  |  |  |  |  | <p>ANTI-TWO-BLOCK SYSTEM MUST BE IN GOOD OPERATING CONDITION BEFORE OPERATING CRANE. REFER TO OWNER'S MANUAL.</p> <p>KEEP AT LEAST 3 WRAPS OF LOAD LINE ON DRUM AT ALL TIMES.</p> |
| 8500 LBS | 17000 LBS | 25500 LBS | 34000 LBS | 38000 LBS | |
| 7700 LBS | 15400 LBS | 23100 LBS | 30800 LBS | 38000 LBS | <p>9/16" - 6X25 IWRC (3.5:1 S.F.) 29750 LBS. BREAKING STRENGTH</p> <p>9/16" ROT RESISTANT (5.0:1 S.F.) 38800 LBS. BREAKING STRENGTH</p> |

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CRANE DIMENSIONS

Imperial & Metric Units



CHASSIS DATA

| | | | |
|---|---|------------------------------------|----------------------------|
| Wheelbase (WB): | 242 in. (6,147 mm) | Minimum truck axle weight - front* | 6,000 lbs. (2,722 kg) |
| Cab to axle (CA): | 168 in. (4,267 mm) | Minimum truck axle weight - rear* | 4,000 lbs. (1,814 kg) |
| After frame (AF): | 100 in. (2,540 mm) | Nominal frame W: | 34 - 35 in. (864 - 889 mm) |
| Frame section modulus at 180°/360° rotation (min.): | 15.9 in. ³ - 110,000 psi (758,422 kPa) | Front axle gross weight rating: | 12,000 lbs. (5,443 kg) |
| | | Rear axle gross weight rating: | 21,000 lbs. (9,525 kg) |

CRANE WEIGHTS

| | |
|---|------------------------|
| Basic crane weight: | 14,625 lbs. (6,634 kg) |
| Fixed jib 23.6 ft. (7,2 m): | 532 lbs. (241 kg) |
| Telescoping jib: 23.6 ft. (7,2 m) to 40.6 ft. (12,4 m): | 823 lbs. (373 kg) |
| Flatbed 20 ft. (6,1 m): | 1,720 lbs. (780 kg) |

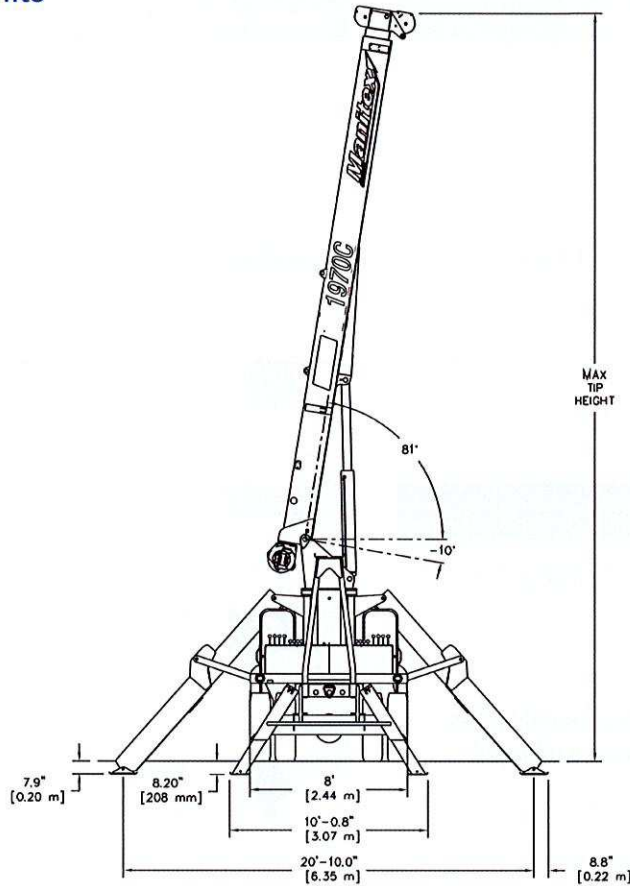
* Flatbed weight not included in crane weight.

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

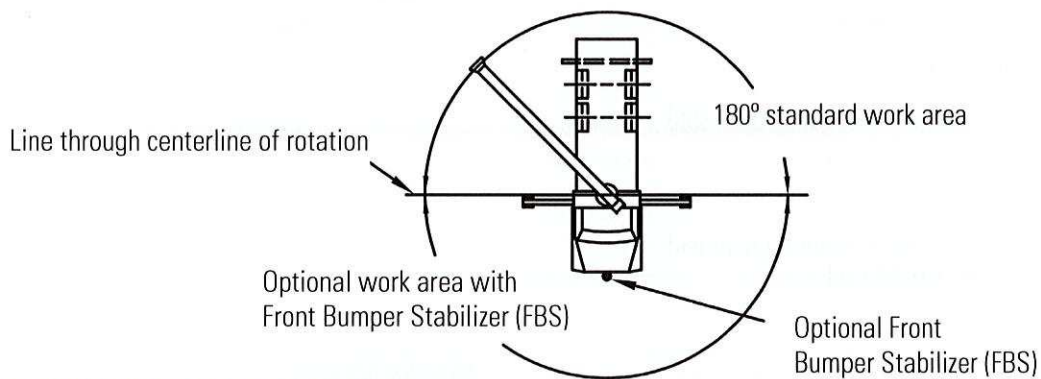
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OUTRIGGER EXTENSION

Imperial & Metric Units



AREA OF OPERATION



Deductions from rated loads for load handling devices supplied by Manitex

Overhaul ball

Load blocks

Hose reel

Swing-around jib

See overhaul ball mfr. nameplate

See block mfr. nameplate

160 lbs. (73 kg)

See load chart

WARNING: Lifting off the main boom point while the jib is erected is not intended or approved.

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TECHNICAL DESCRIPTIONS

Boom



Boom length: 3-section 70 ft. (21,3 m)
proportional boom
3-sheave quick reeve boom point



Boom max. tip height: 80.8 ft. (24,6 m)
Boom min. tip height: 37.7 ft. (11,5 m)



Boom angle (min/max): -10° / 80°

Rotation



Oversized diameter ball bearing swing circle
with external gear



Slewing brake: Wet, multi-disc internal brake,
spring applied, hydraulic pressure released



Boom rotation: 372° non-continuous
Slewing speed: 1.5 - 2 rpm. (nominal)

Outriggers



Outriggers: A-frame

Front Spread

- A-frame, to outer edge of pad:
20.8 ft. (6,4 m)

Rear Spread

- A-frame, to outer edge of pad:
10.1 ft. (3,1 m)

Stowed

- A-frame, to outer edge of pad:
8 ft. (2,4 m)

Outrigger motion alarm

Hoist, Rope and Hook



Maximum theoretical line speed:
300 fpm (91 mpm)



Maximum theoretical bottom-layer line pull:
11,500 lbs. (5,216 kg)



Main winch cable diameter: 9/16 in.
(14,3 mm) 6 x 25 EIPS IWRC



Line length: 300 ft. (91,4 m)



Main winch: Bent axis 2-speed hydraulic
motor (activated electrically)



Load ball: 5T (4,5 mt) capacity hook with
heavy-duty swivel and weight is provided for
single line operation.

Hydraulics



6-8 bolt direct mounted PTO and SAE B or
output or SAE BB output
3-section gear pump, SAE BB input (standard)
Hydraulic reservoir capacity: 70 gal. (265 L)
Pump sections @ 2000 rpm with 100 psi

- Shaft end pump: 32.4 gpm (123 lpm)
- Center pump: 20.6 gpm (78 lpm)
- Cover end pump: 10 gpm (38 lpm)

Operator aids



LMI with crane function cut-offs for
overload protection
Graphical display
Anti-two block system - Cable externally routed



TECHNICAL DESCRIPTIONS

Control System



Dual operating stations are equipped with four single-lever crane controls arranged in accordance with ANSI B30.5 standards.

Fully proportional control valves

Each station includes:

- Individual control levers for each outrigger and stabilizer
- Engine start and stop
- Electronic foot throttle
- Signal horn
- Boom angle indicator
- Beverage holder
- Load chart with range diagram and mount for removable LMI display

Electrical System

State-of-the-art, weather-resistant components throughout

Hermetically sealed enclosure includes power in relays and circuit status LEDs

Mounting System

Pedestal sub-frame and stabilizers 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.

Boom rest: Heavy-duty fabrication, easily removed for unencumbered loading and unloading of crane deck.

Options

Tool Boxes & Bulkhead

24 in. L x 20 in. W x 18 in. H - Steel
(610 mm L x 508 mm W x 457 mm H)

48 in. L x 24 in. W x 24 in. H - Aluminum
(1219 mm L x 610 mm W x 610 mm H)

Bulkhead: 24 in. (610 mm)

Options

Jib



1-section fixed jib 23.6 ft. (7,2 m)

2-section telescopic jib
23.6 ft (7,2 m) - 40.6 ft. (12,4 m)



Max. boom tip height with extension:
121.2 ft. (36,9 m) from ground

Max. boom tip height with extension retracted:
104.5 ft. (31,9 m) from ground

Hoist, Rope and Hook



Load block: 1-sheave

Hydraulics



3-section vane pump, SAE B input

Hydraulic oil cooler

Hose reel - boom mounted

FBS - Front Bumper Stabilizer

2-Person Baskets



2-person man basket - Aluminum or steel - consult Manitex

- Non-rotating (600 lbs. cap.)
- Rotating (1,000 lbs. cap.) - main boom only

Operator Aids



4-Function radio remote crane control system

Bed Options

20 ft. (6,1 m) Wood or steel

20 ft. (6,1 m) Steel heavy hauler

In order to ensure continuous improvement, Manitex reserves the right to change design and specifications without notice.

Manitex



CM190

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PRELIMINARY PRODUCT GUIDE

UPTime

UPTime is the Manitex commitment to complete support of thousands of units working every day.

MANITEX

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