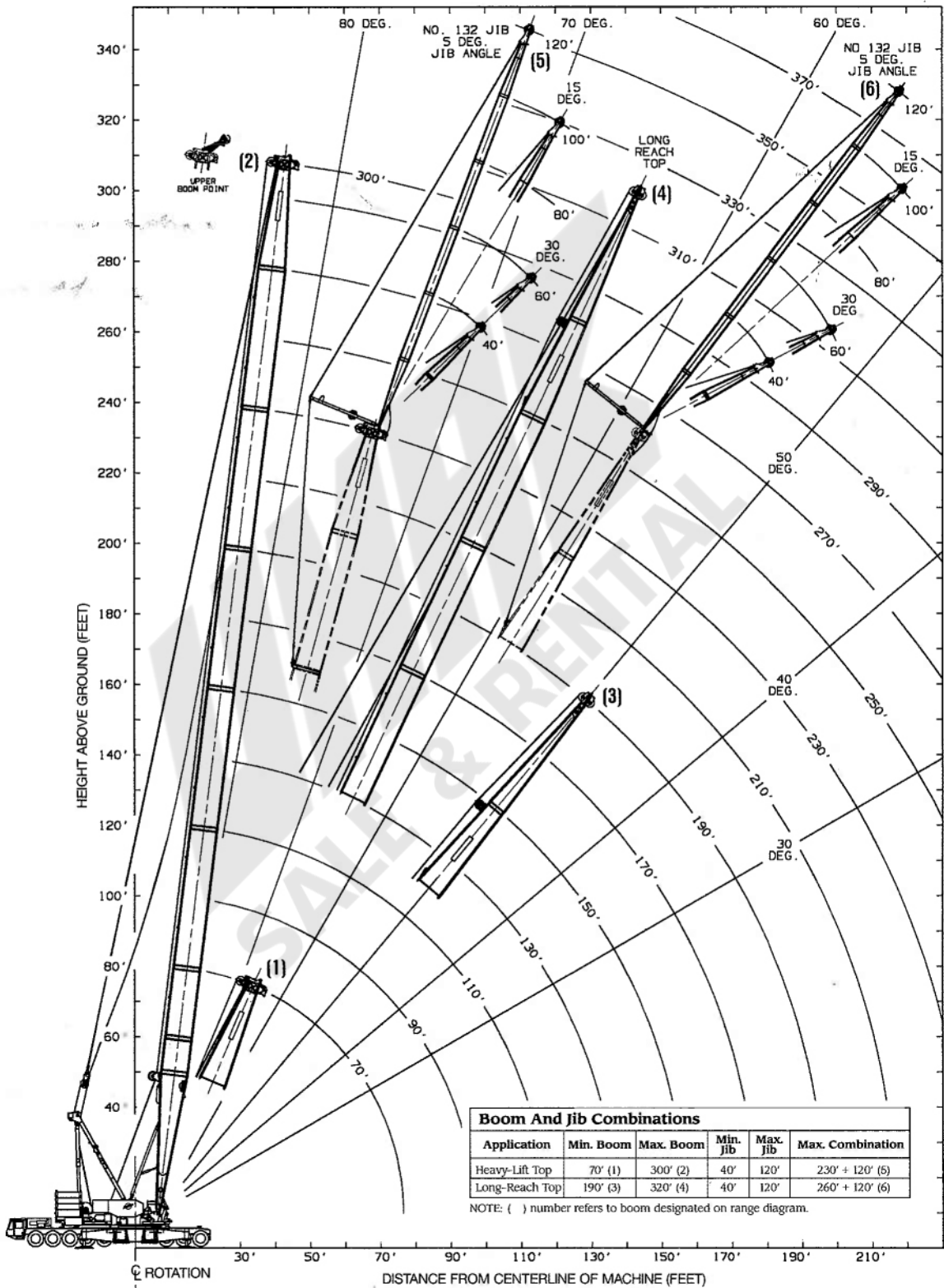


MANITOWOC M250T



300-Ton Truck Crane

SPECIFICATIONS

BASIC CRANE — Upperworks

ROTATING BED: Fabricated steel rotating bed equipped with Manitowoc's patented Fast Aligning Connection Technology (**FACT™**) system for rapid attachment to carrier's rotating module. FACT system uses alignment devices, power-activated pins, and **H-FACT®** hydraulic quick coupler to speed crane assembly and disassembly.

DRUMS: Basic arrangement is a split drum-shaft assembly. Right drum 44 $\frac{7}{8}$ " wide and 22 $\frac{1}{2}$ " in diameter. Left drum 18 $\frac{7}{8}$ " wide and 22 $\frac{1}{2}$ " in diameter. Shaft and drums are antifriction-bearing mounted. Shaft driven by a fixed-displacement radial-piston hydraulic motor through a spur-gear reduction. Internal-expanding drum clutches are spring set, air released. External-contracting drum brakes are air applied, spring released. Parking brakes are spring set, air released. Optional front drum 44 $\frac{7}{8}$ " wide and 22 $\frac{1}{2}$ " in diameter.

BOOM HOIST: Rear-mounted, independent, two-drum boom hoist driven by a variable-displacement hydraulic motor coupled to a planetary reduction, and equipped with ratchet-and-pawl and drum-rotation indicator.

SWING SYSTEM: Independent swing powered by a fixed-displacement hydraulic motor coupled to an internal brake and planetary reduction mounted in the carrier's rotating module. Includes gear-segment type swing lock.

OPERATOR'S STATION: Fully enclosed and insulated steel module mounted to the left front corner of the rotating bed. Module equipped with sliding door, large safety-glass windows on all sides and in roof. Standard equipment includes electric horn, cab space heater, dome light, fire extinguisher, air-circulating fan, and windshield wipers for upper front window, lower front window, and roof window. Module can be repositioned for transportation.

ENGINE/TRANSMISSION: Caterpillar 3406B DITA diesel engine rated at 450 HP at 1,900 RPM provides independent power for all operations through the multi-hydraulic-pump transmission. Power system includes engine block heater (120V), high-silencing muffler, hydraulic oil cooler, radiator, fan, ether starting aid, and alcohol injector in air line.

CONTROLS: Electric-over-hydraulic controls and closed-loop hydraulics provide infinitely variable speed response in proportion to control lever movement. Manitowoc's patented Electronically Processed Independent Control (**EPIC®**) system provides microprocessor-driven control logic, pump control, onboard diagnostics, and service information. Selector switch permits drums to be operated in either free-fall or power-down mode. Rotation indicator standard for each drum. Block up-limit controls for main and auxiliary hoist lines are standard.

Carrier

CARRIER: The 16 x 8 carrier is 58'3 $\frac{1}{2}$ " long, 9'10" wide, and has 8 steering axles. It is powered by a Caterpillar 3406B diesel engine rated at 460 HP at 2,100 RPM, and a 6-speed forward, 1-speed reverse automatic transmission. Carrier equipped with brakes, fenders, and D.O.T. lights.

AXLES: Sixteen 14:00 x 25 tires. Axles 1, 3, 6, and 7 are planetary-drive, steering type, mounted on hydraulic suspension systems. Axles 2, 4, 5, and 8 are steerable with a drop center, mounted on hydraulic suspension systems.

SUSPENSION: Hydraulic/pneumatic system with load compensation within suspension groups. Cab-mounted electronic panel permits automatic or manual adjustment to optimize driver comfort, on-road cornering stability, and off-road travel stability.

OUTRIGGERS: The four outriggers are hydraulic, arranged radially, and equipped with controls on both sides of carrier frame. Hinged beams simplify job-site travel, and outriggers are completely removable for road travel. Check valves for hydraulic jacks are included. Outrigger pads are held to jacks by locking pins.

CAB: The truck cab is a low-profile, one-person, insulated cab with vents and sliding safety glass windows. Cab accessories include windshield wiper, heater and defroster, level-ride seat, oil gauge, tilt steering column, ammeter, temperature and air pressure gauges, tachometer, speedometer, and low-air-pressure warning buzzer.

LIFTCRANE ATTACHMENT

BASIC BOOM: Liftcrane equipped with 70' No. 44A basic boom consisting of 40' butt and 30' heavy-lift top with nine 30" diameter sealed antifriction-bearing sheaves. Includes rope guides, boom-hoist wire rope, boom-angle indicator, and hook and weight ball. Boom features Manitowoc's patented FACT connection system, which uses two vertical positioners, two horizontal connection pins, and alignment pads to connect adjacent sections of boom.

Gantry with telescopic backhitch and power-activated backhitch pins.

Air-cushioned physical boom stop.

Automatic boom stop.

COUNTERWEIGHT: Assembly connected to rear of rotating bed by remote-controlled, power-activated pins. Can be installed and removed as a unit by crane's hydraulic gantry-raising cylinders. Full counterweight — 177,600 lbs. Reducing counterweight to 123,200 lbs. enables on-site travel with up to 250' of boom.

OPTIONAL EQUIPMENT

BOOM AND JIB:

Boom No. 44A

- 10' Insert with pendants
- 20' Insert with pendants
- 40' Standard insert with pendants
- 40' Heavy insert with pendants
- 30' Tapered insert with pendants
(used with long-reach top)
- 40' Long-reach top

Jib No. 132

- 40' Jib with mounting parts
- 20' Insert with pendants

ATTACHMENTS:

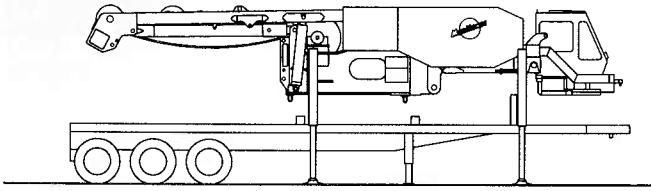
Manitowoc 30-ton single-sheave load block
Manitowoc 60-ton two-sheave load block
Manitowoc 100-ton three-sheave load block
Manitowoc 300-ton nine-sheave load block
Single-sheave upper boom point (whipline)
Pendant links for load-moment sensor pin
Luffing-jib attachment
X-SPANDER™ attachment
MAX-SPANDER™ attachment
Other attachments on request

BASIC CRANE OPTIONS:

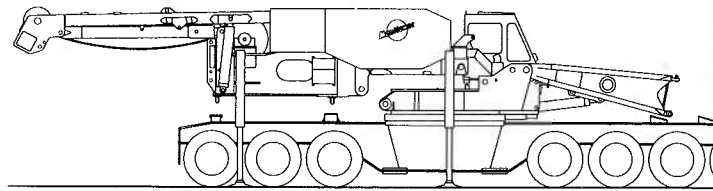
Full-width drum shaft assembly for front drum location
Air conditioners in operator's cabs
Special paint — machinery enamel in
color other than Manitowoc standard
Bail limit control for hoist drums
Self-assembly system with jacks
Grooved laggings for liftcrane

M-250T ASSEMBLY SEQUENCE

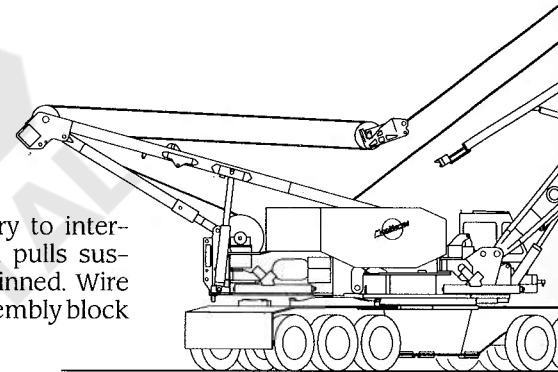
(Crane equipped with optional self-assembly system)



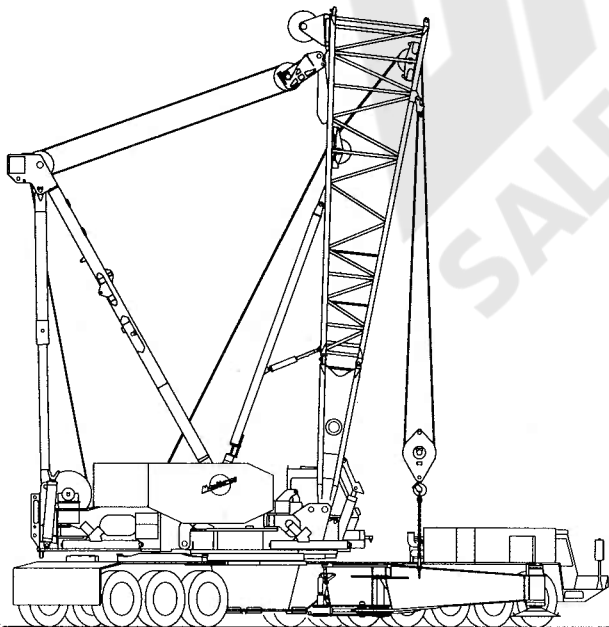
Step 1: Operator's cab is rotated into operating position. Hydraulic jacking cylinders are rotated downward and used to lift upperworks off trailer.



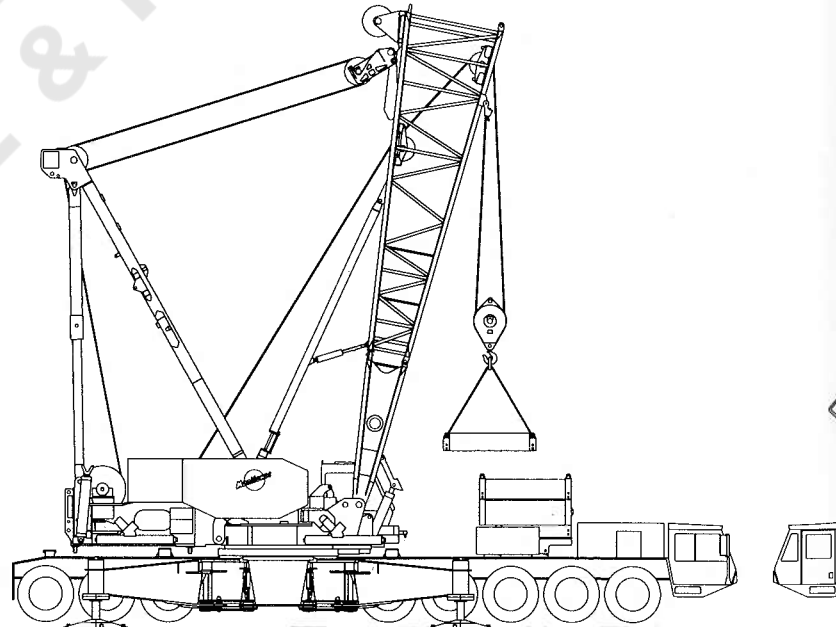
Step 2: Carrier is driven beneath upperworks. Upperworks is lowered, then connected to rotating module by FACT connection system's centering devices and power-activated pins. All power-activated pins used during setup are operated by a hand-held remote control.



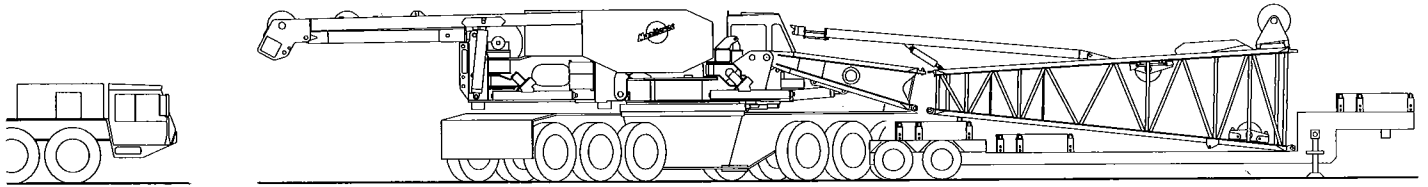
Step 4: After hydraulic cylinders raise gantry to intermediate position, hoist line from rear drum pulls suspended equalizer to boom butt, where it is pinned. Wire rope is removed from wire rope guide, and assembly block is reeved using boom-but sheaves.



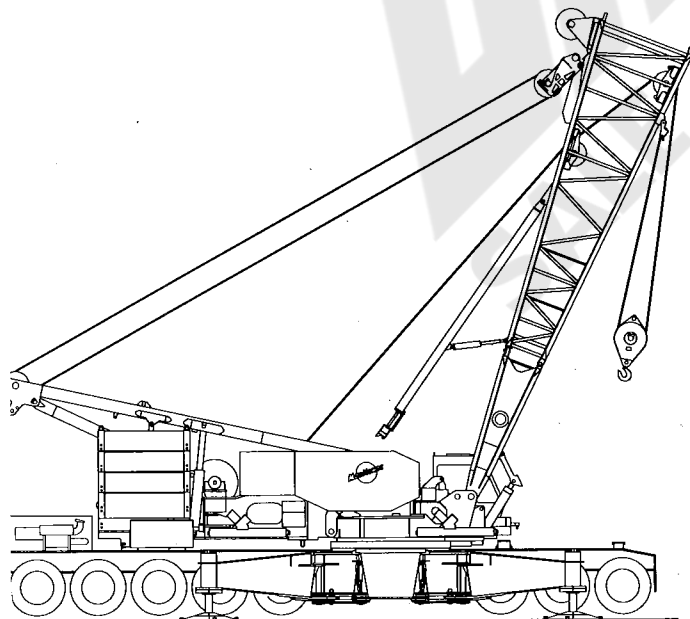
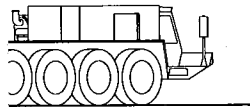
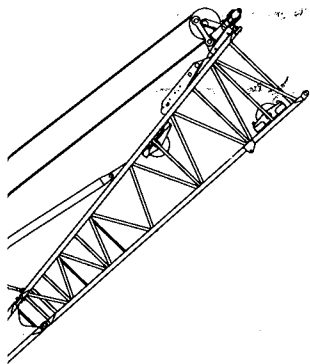
Step 5: Gantry is pulled into upright position with boom hoist and secured by power-activated backhitch pins. Outriggers are removed from trailer and attached to carrier using FACT system of pin connections.



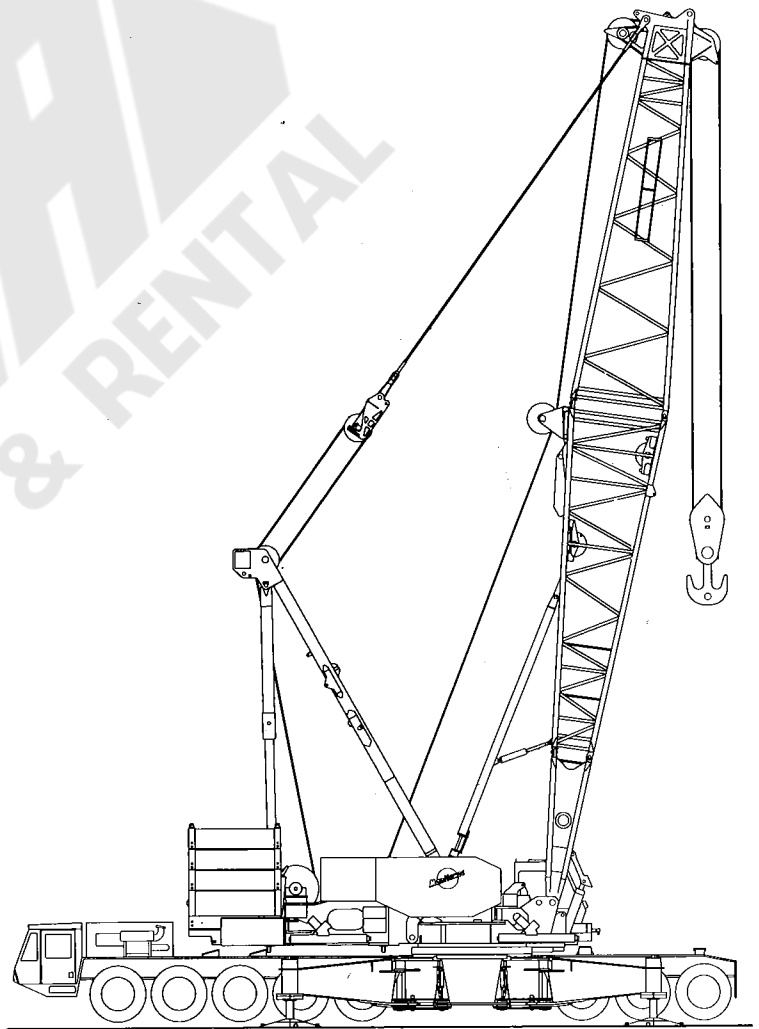
Step 6: Counterweight is removed from trailers and assembled atop carrier.



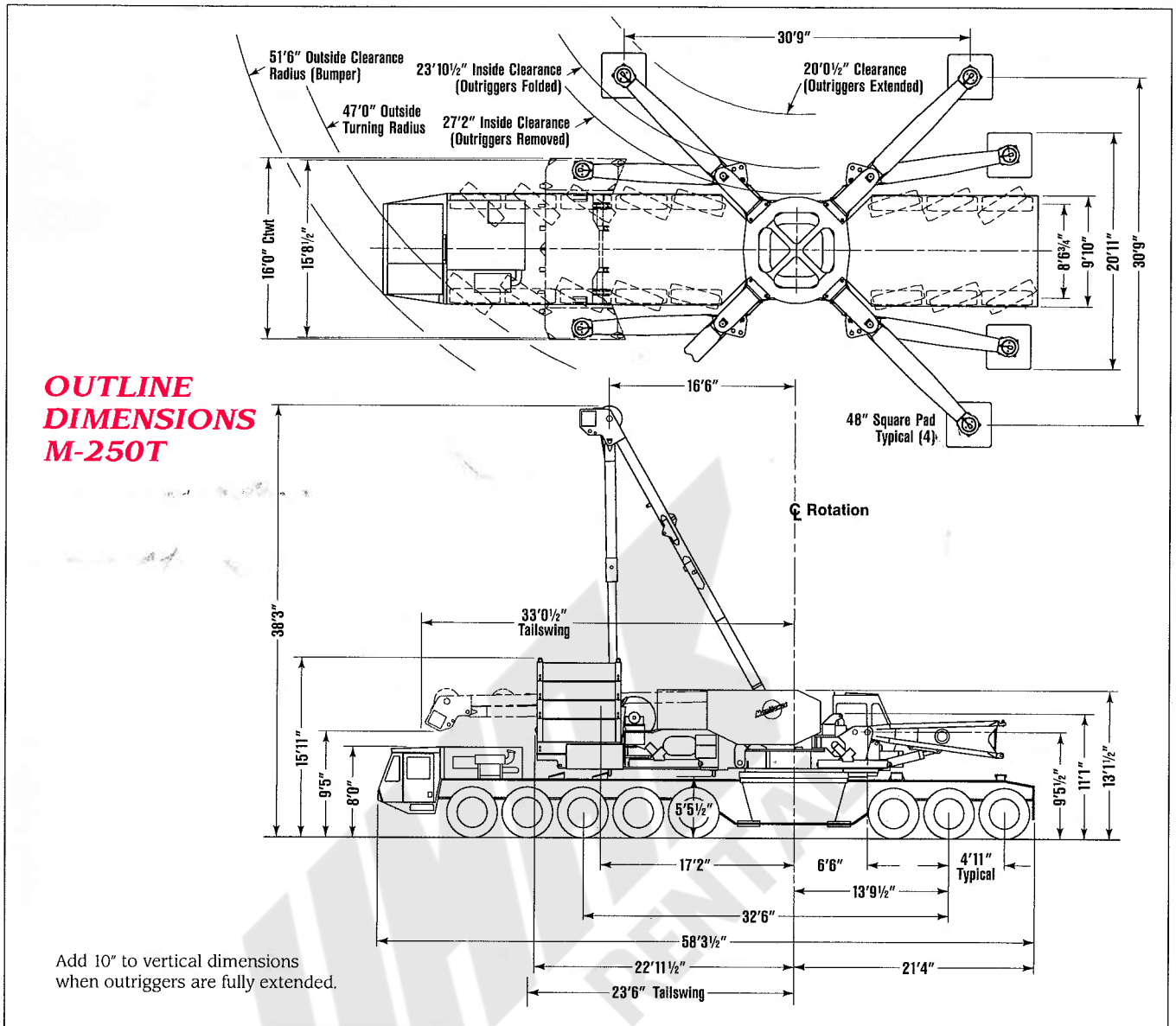
Step 3: Upper boom butt is attached to lower boom butt by FACT connection system's vertical positioners, horizontal pins, and alignment pads. Wire rope from rear drum is reeved through wire rope guide and attached to equalizer. Boom butt is raised by a front-mounted hydraulic cylinder.



Step 7: Gantry is lowered. Counterweight is pendant-connected to gantry; raised into position using counterweight-raising cylinders; and attached to upperworks by power-activated pins.



Step 8: Boom top and inserts are positioned and attached using FACT connection system. Boom pendants are attached to equalizer, and load line is reeved to load block. Crane is ready to operate.



PERFORMANCE DATA

Wire Rope Specifications					
Application	Dia.	Description	Breaking Strength	Weight	Max. Operating Length
Lift	1 1/8"	6 x 31 EIPS Regular Lay	130,000 Lbs.	2.34 Lbs./Ft.	2,050' Hoist 1,050' Whip 2,050' Auxiliary
Boom Hoist	1"	6 x 26 EIPS Alternate Lay	103,400 Lbs.	1.85 Lbs./Ft.	975'

Line Pull vs. Line Speed*						
Line Pull (Infinitely Variable)	Hoist Pump Only		Divert 1 Travel Pump		Divert 2 Travel Pumps	
	1st Layer	8th Layer	1st Layer	8th Layer	1st Layer	8th Layer
0 Lbs.	112 fpm	194 fpm	228 fpm	390 fpm	340 fpm	584 fpm
5,000 Lbs.	110 fpm	190 fpm	225 fpm	380 fpm	334 fpm	564 fpm
10,000 Lbs.	108 fpm	184 fpm	221 fpm	370 fpm	327 fpm	545 fpm
15,000 Lbs.	107 fpm	179 fpm	217 fpm	360 fpm	321 fpm	526 fpm
20,000 Lbs.	105 fpm	174 fpm	214 fpm	350 fpm	314 fpm	506 fpm
25,000 Lbs.	103 fpm	169 fpm	210 fpm	341 fpm	307 fpm	390 fpm
30,000 Lbs.	101 fpm	163 fpm	207 fpm	331 fpm	300 fpm	285 fpm

*Chart data based on 22 1/2" diameter smooth drum.

SWING SPEED: 2.0 RPM.

BOOM HOIST SPEED: 300' boom, 0° to 82° — 2 minutes, 40 seconds.

SHIPPING DATA

M-250T

Description	Weight (Lbs.)	Dimensions (Length x Width x Height)
40' Single-piece boom butt with pendants	8,605	40'11½" x 8'6" x 8'6"
28' Upper boom butt with pendants	7,070	28'6" x 8'6" x 8'6"
30' Heavy-lift boom top with pendants	13,050	33'0" x 8'6" x 9'6"
10' Boom insert with pendants	2,360	10'6" x 8'6" x 8'0"
20' Boom insert with pendants	3,925	20'6" x 8'6" x 8'0"
40' Standard boom insert with pendants	6,545	40'6" x 8'6" x 8'0"
40' Heavy boom insert with pendants	7,165	40'6" x 8'6" x 8'0"
30' Transition insert with pendants	5,198	30'9" x 8'6" x 6'8"
40' Long-reach boom top with pendants	7,921	42'9" x 6'9½" x 5'5"
Upper boom point	905	8'7½" x 1'7" x 2'7"
40' Basic No. 132 jib with strut and pendants	5,780	41'11" x 4'0" x 3'0"
20' Jib strut with sheaves and links	1,360	20'6" x 4'0" x 2'7"
20' Jib insert with pendants	1,045	20'6" x 4'0" x 3'0"
Outriggers, with pads (4)	11,900 ea.	20'3½" x 4'1" x 4'4"
Bottom counterweight with rollers	30,115	16'0" x 7'8" x 2'2½"
Middle counterweight	29,500	8'4" x 6'4½" x 3'0⅝"
Tray for top counterweights	36,000	16'0" x 7'5⅛" x 2'5¼"
Top left counterweights (3)	13,600 ea.	7'5⅛" x 2'9½" x 2'0¼"
Top right counterweights (3)	13,600 ea.	7'5⅛" x 2'9½" x 2'0¼"

PER-AXLE WEIGHT DISTRIBUTION (Pounds)

UPPER FACING FRONT		CONFIGURATION	TOTAL WEIGHT	UPPER FACING REAR	
Front 5 Axles (Ea.)	Rear 3 Axles (Ea.)			Front 5 Axles (Ea.)	Rear 3 Axles (Ea.)
13,089	12,894	Carrier, bearing, swing drive and rotating module	104,125	12,728	13,496
14,048	13,296	Add 12' boom butt, cylinder, and support	110,125	12,787	15,396
15,354	39,127	Add upperworks, gantry (down) with rope, and optional self-assembly jacks	194,150	25,744	21,810
19,394	48,261	Add outriggers with pads	241,750	29,784	30,944
N/A	N/A	Add 123,200-lb. counterweight*	364,905	54,750	30,385
N/A	N/A	Add 70' No. 44A heavy-lift boom (horizontal)	391,590	48,223	50,158
MISCELLANEOUS OPTIONS					
-270	-1,324	Remove 2,275' main hoist line	-5,325	-634	-719
-151	-739	Remove 1,270' whip line	-2,970	-353	-401
+1,367	-2,323	28' Gantry up, in place of down	-135	-1,390	+2,271
+644	+517	Add luffing hoist with rope	+4,770	+166	+1,314
-230	-185	Remove 1,200' luffing rope	-1,705	-59	-470

Please refer to separate sheet of travel specifications for additional details and limitations. *Maximum counterweight permitted for travel.



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Because of a program of continuing improvements, Manitowoc Engineering Co. reserves the right to change specifications at any time, without notice.