

**Manitowoc**

**M-80W**



**88-Ton Liftcrane ■ 20,000-Lb. Clamshell ■ 18,000-Lb. Dragline**



## LOWERWORKS

**CARBODY:** Single-piece steel fabrication. Integral turret provides mounting for inner race of turntable bearing. Wings on carbody mate with pockets in crawler frames.

**CRAWLER ASSEMBLIES:** Two reinforced steel fabrications, each supporting a front idler roller, 12 intermediate rollers, hydraulic drive motor, fully-enclosed travel planetary, crawler tumbler, and tread. Abrasion-resistant steel slide rails along crawler frame top.

**FRONT IDLER ROLLER:** Double-flanged, 33" (838mm) diameter, fabricated steel roller is mounted on stationary shaft supported at both ends by crawler frame.

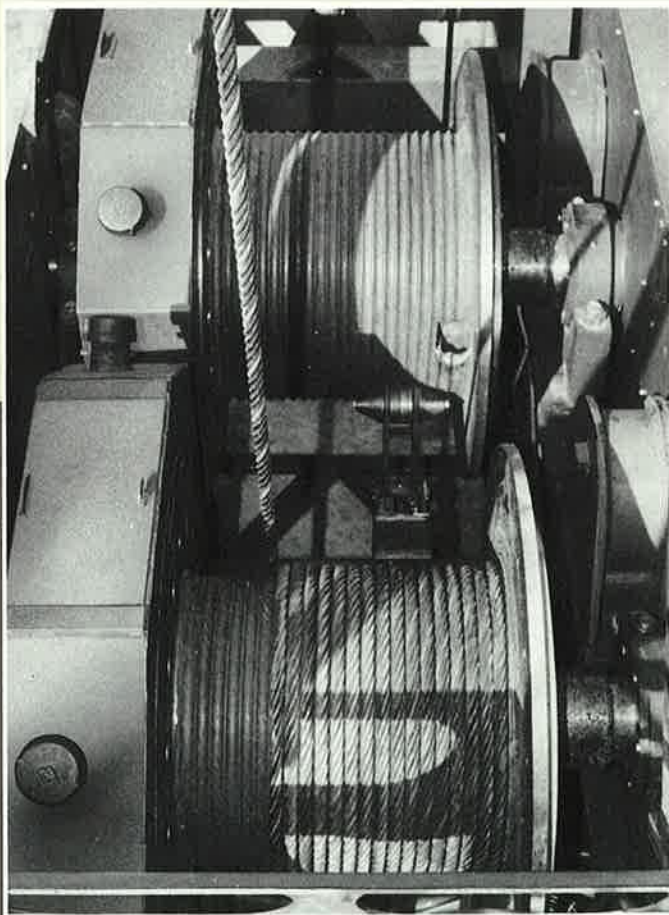
**INTERMEDIATE ROLLERS:** Double-flanged, 12" (305mm) diameter rollers are mounted along underside of crawler frame. Each roller is mounted on a 2 $\frac{3}{4}$ " (70mm) diameter stationary shaft whose ends are supported by welded frames and held in place by keeper bars.

**CRAWLER DRIVE TUMBLER:** Planetary driven tumbler transmits drive torque to crawler tread. Tumbler is supported at both ends by crawler frame.

**CRAWLER TREADS:** 30" (762mm) wide, 49 pads per crawler assembly. Adjacent pads connected by two high-carbon steel pins. Each pad is cast alloy steel with center driving lug.

**INDEPENDENT TRAVEL POWER:** Two pressure-compensated, variable-displacement hydraulic motors, one driving each crawler. System enables each crawler to be rotated independently in either direction at variable speed.

**TURNTABLE BEARING:** 66 $\frac{1}{4}$ " (1.68M) diameter single-row ball bearing bolted to carbody and rotating bed provides circle for swing. Ring gear with machine-cut teeth is integral part of bearing's inner race.



FULL-WIDTH TANDEM DRUMS

## UPPERWORKS

**ROTATING BED:** Single-piece, welded-steel fabrication with vertical side frames and internal framing provides support for mounting all other upperworks components. Bed rotates on 66 $\frac{1}{4}$ " (1.68M) diameter turntable bearing. Complete upperworks can be mounted on carbody or truck chassis.

**DRUM SHAFTS:** Two full-width drums are provided for the main hoist and whip lines. Main hoist drum is 21 $\frac{3}{8}$ " (543mm) wide, and has a 19" (483mm) diameter grooved barrel with 37" (940mm) diameter flanges. Whip line drum is 21 $\frac{3}{8}$ " (543mm) wide, and has a 23" (584mm) diameter grooved barrel with 37" (940mm) diameter flanges. Each drum is antifriction-bearing mounted on a heat-treated alloy steel shaft that is antifriction-bearing mounted on rotating bed. Each drum shaft is driven independently by a fixed-displacement, low-speed, high-torque, radial-piston motor. Gears are fully enclosed and operate in oil. Clutches are spring-set, air-released, internal-expanding, band type. Service brakes are external-contracting, air-applied, spring-released, band type. Parking brakes are spring-set, air-released. Rated line pulls to 20,000 pounds (9,072kg).

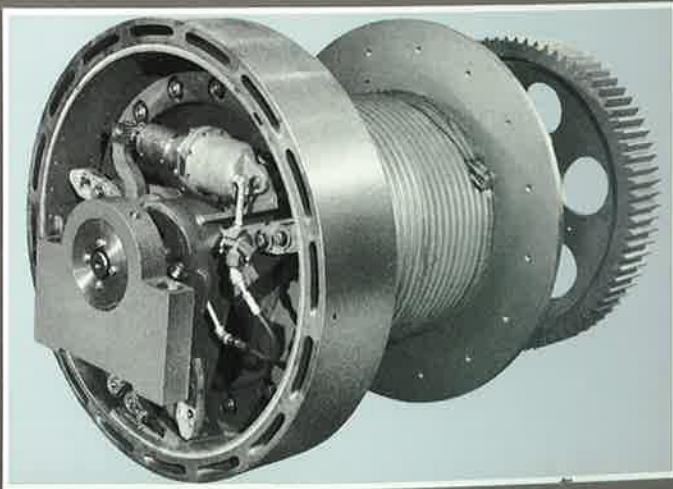
**INDEPENDENT SWING:** Driven by two fixed-displacement hydraulic motors coupled to planetary reducer. Reducer is splined to swing pinion that engages ring gear on turntable bearing's inner race. Manually-controlled parking brake on one hydraulic motor. Hydraulically-controlled, spring-loaded, gear-segment-type lock engages ring gear for positive locking.

**INDEPENDENT BOOM HOIST:** Dual drums welded to single shaft antifriction-bearing mounted on rear of rotating bed. Boom hoist drum shaft driven independently by fixed-displacement hydraulic motor coupled to internal brake and planetary reducer. Ratchet and pawl standard.

**POWER PLANT ASSEMBLY:** Welded steel frame supports engine, radiator, hydraulic pump drive and pumps, fuel tank, and hydraulic reservoir.

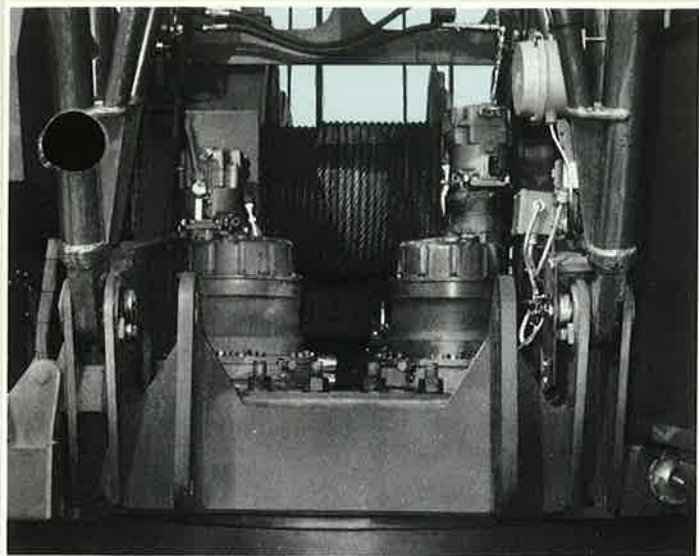
**POWER TRANSMISSION:** Diesel driven, hydrostatic system. Each function driven by its own pump and motor, providing totally independent operation.

**POWER LOWERING:** An integral function of system. Pump and motor provide hydraulically-powered rotation in either direction, resulting in loads being hoisted and lowered under power for positive control.

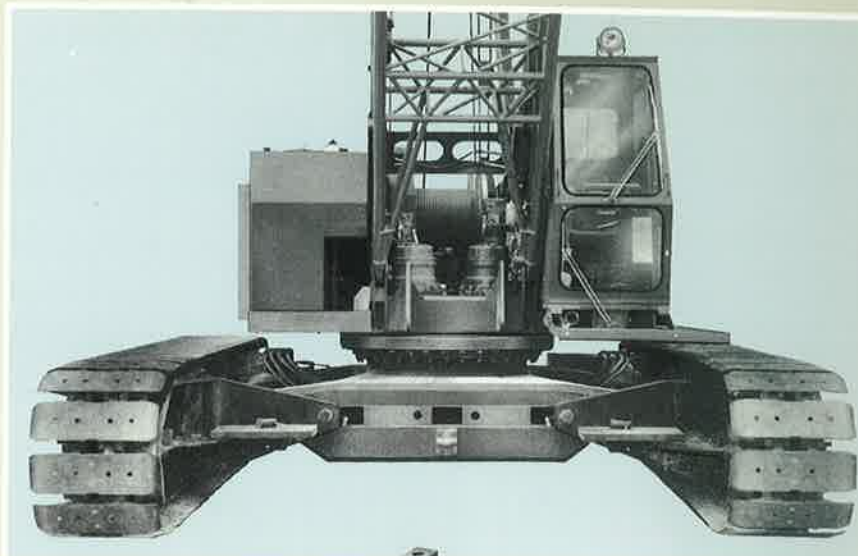


FULL-POWER/FREE-FALL DRUM

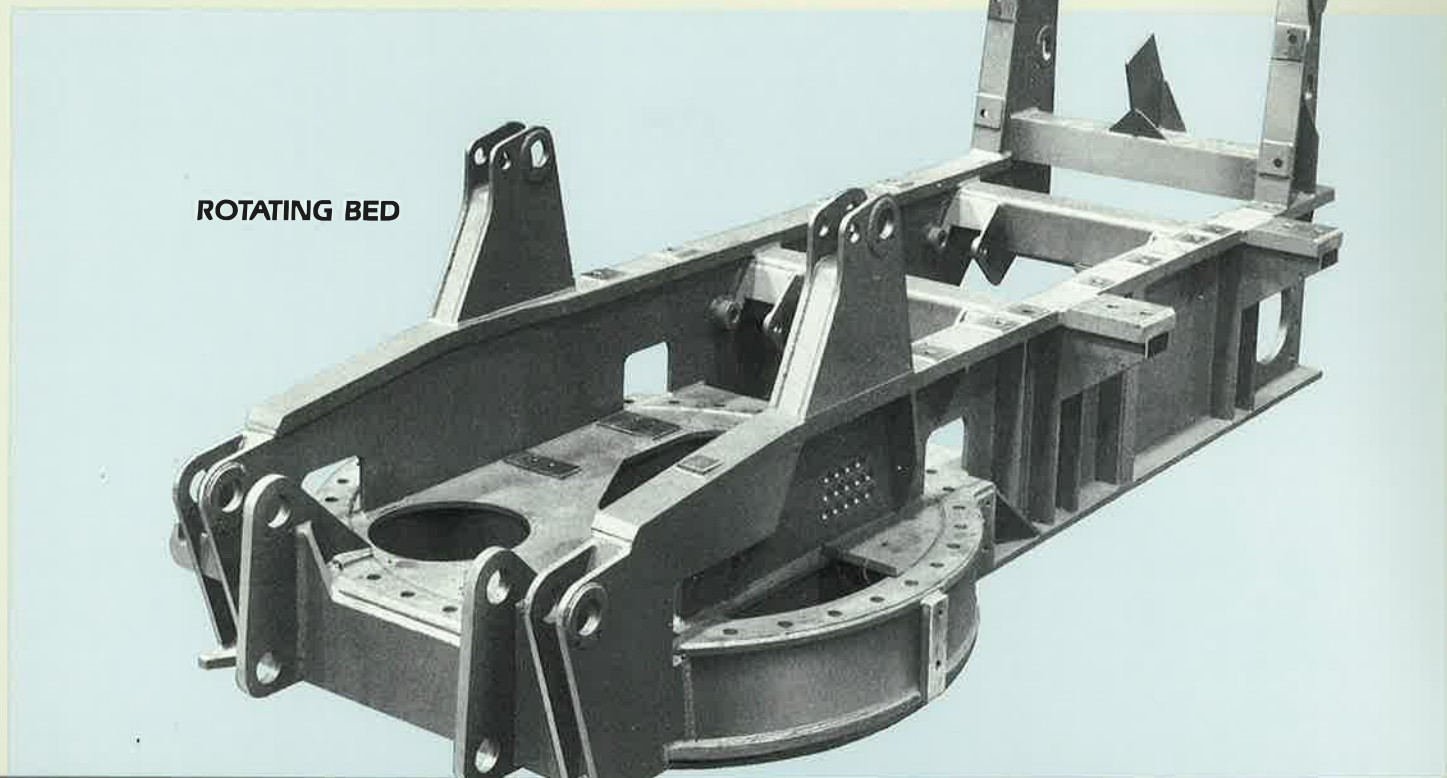




**INDEPENDENT HYDRAULIC SWING**



**EXTENDIBLE/RETRACTABLE CRAWLERS**



**ROTATING BED**



**FULLY-ENCLOSED UPPERWORKS MACHINERY**



**WIDE-VIEW OPERATOR'S CAB**



## FRONT END ATTACHMENTS

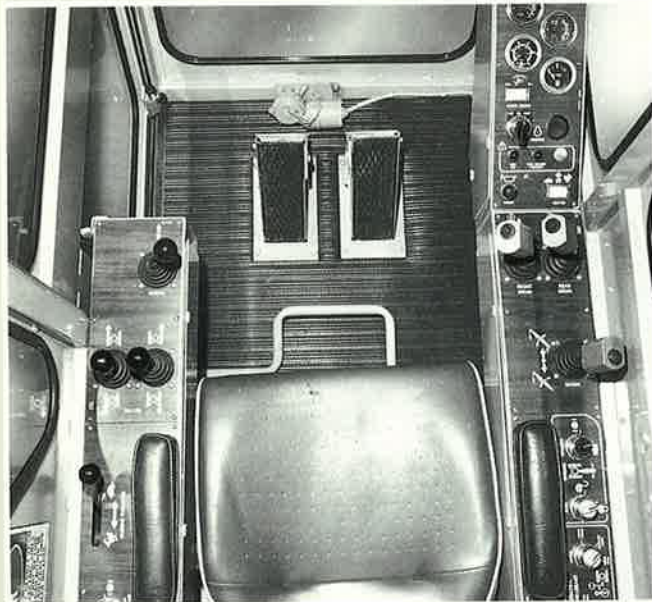
**NO. 42 BOOM:** 19' (5.79M) butt; 10' (3.05M), 20' (6.10M), and 40' (12.20M) inserts; 21' (6.40M) open throat top. Rectangular box-section design. All-welded construction with tubular chords and lacings. All boom sections are 51" (1.30M) wide x 54½" (1.38M) deep at pin-connected joints. Each insert matched with two 1¼" (32mm) diameter, single-length pendants. Lower boom point equipped with four 20" (508mm) diameter nylon sheaves. Optional, detachable, upper boom point has one 20" (508mm) diameter nylon sheave. All sheaves are antifriction bearing mounted. Basic boom length 40' (12.20M); maximum length 200' (60.95M).

**BOOM RIGGING:** Single line reeved from boom hoist drums through sheaves on gantry and equalizer forms 10-part rigging. Equalizer is connected to boom point by two 1¼" (32mm) diameter pendants. Rigging used to raise or lower gantry for counterweight installation and removal.

**GANTRY AND BACKHITCH:** Gantry is fabricated plate with parallel box-section legs. Supported on pins by rotating bed. Link-type backhitch pin-connects to gantry and rotating bed. Nylon gantry sheaves are antifriction-bearing mounted.

**EQUALIZER:** Fabricated steel frame supports four vertical sheaves and two horizontal sheaves, all made of nylon and antifriction-bearing mounted.

### ERGONOMIC CONTROL CONSOLES



FOUR-TRUCK SHIPABILITY

**AUTOMATIC BOOM STOP:** Boom contacts push rod, stopping boom hoist operation when boom angle reaches 82° from horizontal.

**TELESCOPIC BOOM STOP:** Hydraulically-cushioned telescoping tubes pinned to boom and rotating bed start cushioning at 75° boom angle and provide positive physical stop at 85° from horizontal. Standard on liftcrane.

**WIRE ROPE GUIDE:** Two fleeting sheaves bushing-mounted in steel frame on upper side of boom top.

**WIRE ROPE ROLLER GUIDES:** Optional. Mounted on top of boom inserts. Rollers are induction hardened tubing, antifriction-bearing mounted.

**NO. 128 JIB:** Optional. 10-ton (9.07-metric ton) maximum capacity. 30' (9.15M) basic length extendible to 40' (12.20M), 50' (15.25M), or 60' (18.30M) with 10' (3.05M) inserts and matching pendants.

Jib offset angle adjustable to 0, 10, or 20 degrees. All-welded construction with tubular chords and lacings. Rectangular box-section 21½" (546mm) wide x 21½" (546mm) deep at pin-connected joints. Jib point has 20" (508mm) OD, nylon sheave, antifriction-bearing mounted. Maximum boom-and-jib combination, 180' (54.86M) + 60' (18.30M).

## GENERAL

**MACHINERY ENCLOSURES:** Steel housings along sides of crane protect engine and hydraulic components. Enclosures swing open to permit access for service. Catwalks and railings, optional.

**OPERATOR'S STATION:** Fully enclosed and insulated steel module mounted at left front corner of rotating bed on vibration-absorbing rubber cushions. Large, rubber-mounted safety glass windows on all sides and in ceiling provide clear, wide-angle view. Sliding door on left side; large window on right side. Conveniently-located controls. Electric signal horn, heater, windshield wiper, and circulating fan, standard.

**CONTROLS:** All functions operated by electric-over-hydraulic controls, with speed directly proportional to control lever movement. First movement of boom hoist and travel controls releases a parking brake; further movement increases speed. Movement of swing control lever immediately regulates power, and free swing exists when lever is in neutral position. Swing parking brake applied by separate switch.

Controls for hoisting drums can be operated in "full-power" (liftcrane) or "free-fall" (excavator) modes as applications require. Operator selects each mode by positioning switch on control console. In "full-power" (liftcrane) mode, drum clutches always remain fully applied and loads are powered down using hydraulic system. In "free-fall" (excavator) mode, drum clutches release automatically when control levers are in neutral position, and all lowering is controlled by pedal-operated service brakes. Additionally, mode-selector switch offers a "clamshell" setting that permits both drums to be controlled simultaneously with one lever. In any mode, hoisting speeds can be doubled by engaging selector switches that divert flow from travel pumps to drum motors.

**SWING SPEED:** Variable, 3.4 RPM maximum.

**TRAVEL SPEED:** Variable, 1.0 MPH (1.61 KPH) maximum.

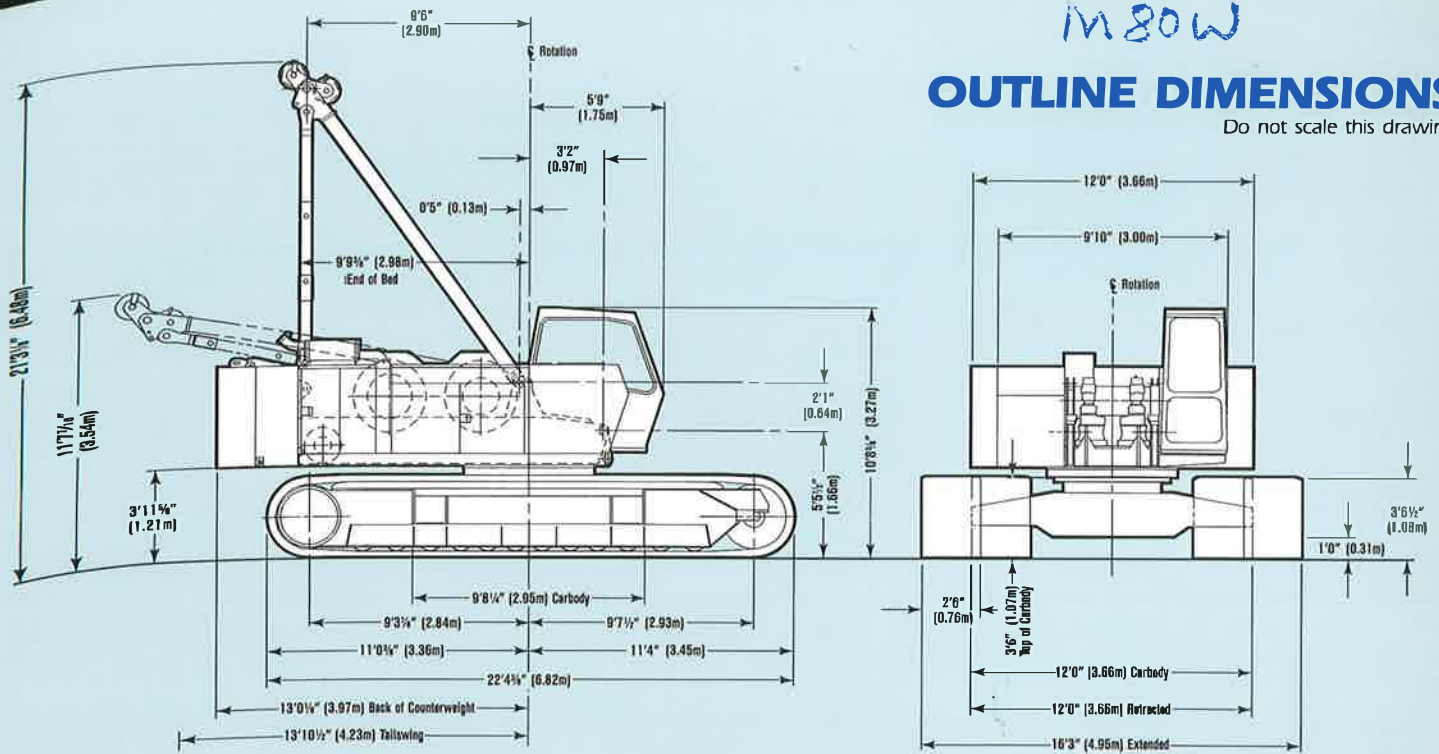
**GRADEABILITY:** 30%.



M80W

## OUTLINE DIMENSIONS

Do not scale this drawing



## WEIGHTS

**LIFTCRANE**, complete with 40' (12.20M) No. 42 boom, gantry and backhitch, boom hoist rigging and pendants, front and rear drums with load lines, swing machinery, telescopic boom stop, 22'4" (6.81M) long crawlers, 30" (762mm) wide treads, counterweight, hook and weight ball, and 88-ton (80MT) capacity hook block .....

Pounds Kilograms

149,255 67,701

**REMOVABLE COUNTERWEIGHT**, (2-piece)

Inner .....  
Outer .....  
Total .....

28,500 12,927  
24,800 11,249  
53,300 24,176

**CARBODY AND UPPERWORKS**, complete with operator's cab, front and rear drums with load lines, boom hoist wire rope, power plant, gantry, backhitch, equalizer, boom butt, and telescopic boom stops .....

Pounds Kilograms

57,960 26,290

**CRAWLER ASSEMBLIES (2)**, with 30" (762mm) wide treads, each assembly 16,625 lbs. (7,541 kgs.) .....

33,250 15,082

**BOOM NO. 42:**

**Butt**, 19' (5.79M) .....  
**Top**, 21' (6.40M) with lower point and wire rope guide .....  
**Inserts:**  
10' (3.05M) .....  
20' (6.10M) .....  
40' (12.20M) .....

1,275 578  
1,695 769  
565 256  
1,040 472  
1,915 869

## POWER PLANTS

	Model	Cylinder	Bore	Stroke	Cubic Inch Displacement	Net HP @ RPM (at flywheel)
<b>BASIC</b>	Detroit Diesel 8V-8.2T	8	4.25" (108mm)	4.41" (112mm)	500.9 (8,208cc)	230 @ 2,600
<b>OPTION</b>	Cummins 6 CTA 8.3	6	4.49" (114mm)	5.31" (135mm)	504.6 (8,270cc)	230 @ 2,200

## DRUMS AND LAGGINGS

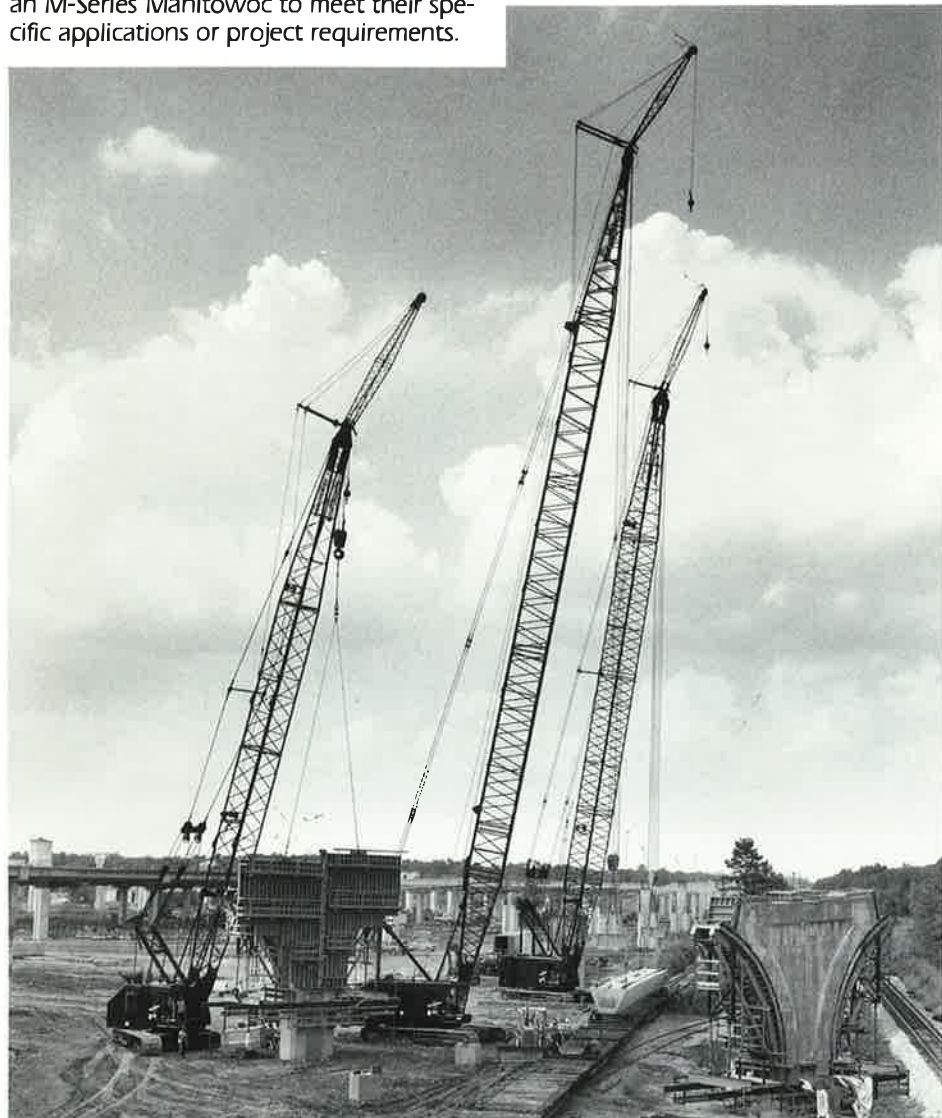
Application	Drum	Drum Diameter	Drum Width	Type of Drum Or Lagging	Wire Rope Size	Spooling Capacity		
						1st Layer	Layers	Maximum
<b>LIFTCRANE</b> Hoist Whip (Optional)	Front	19" (483mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	115' (35.1M)	7	1,013' (308.8M)
	Rear	23" (584mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	138' (42.1M)	5	788' (240.2M)
	Rear	29" (737mm)	21 3/8" (543mm)	Grooved Lag.	3/8" (22.2mm)	172' (52.5M)	2	354' (107.9M)
<b>CLAMSHELL</b> Closing Holding	Front	19" (483mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	115' (35.1M)	—	—
	Rear	23" (584mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	138' (42.1M)	—	—
<b>DRAGLINE</b> Drag Hoist	Front	19" (483mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	90' (27.4M)	—	—
	Rear	23" (584mm)	21 3/8" (543mm)	Grooved Drum	3/8" (22.2mm)	138' (42.1M)	—	—

<sup>1</sup>Spooling capacity limited by fleetling.

## NEW MODELS ... MORE CHOICES ... from MANITOWOC!

To complement its field-proven line-up of VICON®-powered liftcranes and excavators, Manitowoc has recently introduced its new M-Series cranes. Now, contractors worldwide can select a 'traditional' Manitowoc, a remanufactured Manitowoc, or an M-Series Manitowoc to meet their specific applications or project requirements.

**Right:** In addition to the 88-ton capacity M-80W, Manitowoc's M-Series product line includes the 55-ton capacity M-50W. In the coming months, Manitowoc will also introduce other M-Series cranes, including 70-ton, 110-ton, and 300-ton units.



**Above:** Developed as a quality, cost-attractive alternative, every remanufactured Manitowoc is rebuilt to our original equipment specifications, is identified with a new serial number and model year designation, is covered by a 12-month, 2,000-hour warranty, and is backed by a worldwide parts and service network.

**Right:** Ranging in capacity from 100 to 1,000 tons, Manitowoc's 'traditional' crawler cranes, exemplified by two 4100W's and a 4000W, are recognized as industry standards for versatility, dependability, and lifting performance.

**Manitowoc** **M-Series**  
...the new generation of  
liftcrane performance!

**MANITOWOC ENGINEERING CO.**

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