

Manitowoc

**4100W
SERIES-3
RINGER®
SPECIFICATIONS**

36' RINGER COMPONENTS

36' RING ASSEMBLY

RING SEGMENTS: Fabricated, reinforced I-beam construction. The four ring segments - two sides and front and rear are bolt-connected to each other and to the side beam supports to promote fast installation and removal. Basic ring can also be adapted to 3900T and 4000W models.

WEAR PLATES: 3/4" alloy steel plates cut to fit on top of ring roller path to protect roller path from wear. Attached to ring by retainer plates designed to clear the hook roller hanger assembly.

RING SIDE BEAMS: (2) fabricated, reinforced I-beams. Forms integral connection between 36' ring and machine. Bolt-connected to 36' ring and machine carbody wings with crawlers retracted. Hydraulic jacks mounted on ends of beams, outside of ring.

HYDRAULIC JACKING SYSTEM: A complete hydraulic system consisting of controls, piping, 14 HP Kohler 4-cycle gasoline engine driving a hydraulic pump operates the 4 hydraulic jacks with 36" square pads. The entire system is mounted on the ring side beams with the 4 jacks pin-connected to the ends of the side beams outside the ring. Jacks are used to lift and level the entire machine, including crawlers, off the ground.

SCREW JACK SUPPORTS (OPTIONAL): This support system is available to replace the standard blocking system. The system consists of 10 fabricated beams with screw jacks having 50" square pads. 2 front beams and 2 rear beams are pin-connected to carbody lugs; 4 side and 2 side center beams are pin-connected to ring side beams. All beams extend out beyond the 36' ring. Screw jacks attached to beams outside of 36' ring. Simply screw jacks down after lifting and leveling machine with hydraulic jacks.

FRONT ROLLER CARRIER ASSEMBLY

FRONT ROLLER CARRIER: Fabricated, box section construction. Pinned to the normal boom hinge points on the rotating bed and extending forward to the 36' ring. The front roller carrier provides the new hinge points for the fixed mast and boom (mast is pinned to mast support which is pinned to front roller carrier). Divided into a front and rear section that are pin-connected (2 positions for connection - one for 4100W, and one for 4000W and 3900T).

FRONT ROLLER CARRIER ASSEMBLY (cont'd.)

Front section carries large "RINGER" rollers, hook roller assemblies, mast support, and boom hinge point lugs.

CARRIER ROLLERS: (4) antifriction roller bearing mounted rollers located in the front section of the front roller carrier allows the roller carrier to travel over the 36' ring. 9" face and 21" diameter rollers.

HOOK ROLLERS: (2) antifriction roller bearing mounted rollers with 4" face and 8-7/8" diameter; prevents front roller carrier from lifting off 36' dia. ring if uplift should occur.

MAST SUPPORT: Pinned to front section of front roller carrier. Provides hinge point for mast, and wire rope guides for load lines.

FIXED MAST ASSEMBLY

FIXED MAST: No. 22A standard 4100W crane boom with open throat top forms the 130' fixed mast. Mast is pinned to the mast support on the front roller carrier. Upper and lower mast points function as the vertical sheaves in the basic liftcrane gantry for the boom hoist rigging.

BACKSTAY STRUT: Two-section, tubular construction. Supports mast when boom hoist lines are slack.

MAST BACKSTAY PENDANTS: (4) 1-3/4" swaged bridge strand counterweight pendants, and (4) 1-3/8" swaged bridge strand backhitch pendants.

SELF-ERECTING RIGGING (OPTIONAL): Rigging system requires an additional equalizer to be used between the gantry and mast point for the raising of the mast. Mast rigging is powered by a rope coming off the front drum. With the mast in the raised position and the backstays in their pockets the lower backhitch strap is attached between the gantry and backhitch attachment beam by-passing the equalizer which is used only for erecting and lowering the mast.

RINGER COUNTERWEIGHT CARRIER ASSEMBLY

FRONT CROSSOVER BEAM: Pinned to underside of front roller carrier, forms pivot point for the counterweight carrier when raised off 36' ring. Ends pin-connected to counterweight carrier side beams.

RINGER COUNTERWEIGHT CARRIER ASSEMBLY (cont'd.)

COUNTERWEIGHT CARRIER SIDE BEAMS: (2) pin-connected to front crossover beam. "RINGER" counterweight platform rests on rear half of beam. Supports "RINGER" counterweight and carries counterweight roller assembly.

REAR CROSSOVER BEAM: Pin-connected to counterweight carrier side beams. Ties side beams together to assure "RINGER" counterweight and carrier moves as a unit when machine swings.

COUNTERWEIGHT PLATFORM: Rests on counterweight carrier side beams. Forms a loading platform for the "RINGER" counterweights. Top dimension: 8'-2½" x 21'-0".

ROLLER ASSEMBLY: (2) dual equalizing type roller assemblies bolted to bottom of counterweight carrier side beams. Rollers: 5-23/32" face, 14" diameter, antifriction roller bearing mounted.

"RINGER" COUNTERWEIGHTS (OPTIONAL): Fabricated steel boxes, interlocking design; 46,000 pounds each. 275,000 pounds required for maximum lifting capability; 138,000 pounds maximum allowable for traveling. Can be supplied at job in most available form such as cast concrete, steel plate, or billets. Certification of weights recommended to assure accuracy of counterweight.

FRONT END EQUIPMENT

NO. 27 BOOM: 40' butt, 40' open throat top, 20' and 40' inserts. All welded construction. Inverted angle chords and tubular lacing; 100,000 PSI yield steel. Butt, top, and inserts 114" wide x 90" deep at pin-connected joints. Lower boom point equipped with six 32" O.D. antifriction bearing mounted sheaves. Basic boom length 140', maximum boom length 340'. Jib adapter available for No. 123 jib assembly. No. 122A jib attaches to lower boom point.

UPPER BOOM POINT AND SHAFT ASSEMBLIES (OPTIONAL): 1 or 2 sheave shaft assemblies. 36" OD antifriction bearing mounted sheaves.

4-1/2^o OFFSET BOOM TOP (OPTIONAL): Provides greater clearance between load and boom. Standard No. 27 boom converted by adapter links at boom point joint. Basic boom length 140'; maximum boom length 340'. Jib adapter available for No. 123 jib. No. 122A jib attaches to lower boom point.

BOOM RIGGING: 8-part line, reeved between fixed mast and boom equalizer. Controls boom angle by single line continuously reeved from dual independent boom hoist

FRONT END EQUIPMENT (cont'd.)

drums which power boom up and down. Two pair of 1-3/8" diameter pendants connect equalizer to boom point.

EQUALIZER: Standard 4100W equalizer. Steel fabrication. Six vertical sheaves antifriction bearing mounted.

WIRE ROPE GUIDES: Mounted on top side of boom. Two sheaves, bronze bearing mounted.

WIRE ROPE ROLLER GUIDES: Mounted on top side of boom. Induction hardened tubing. Antifriction bearing mounted.

NO. 122A JIB (OPTIONAL): 28.3-ton maximum capacity, 40' length extendible to 50' with 10' insert. Jib angle adjustable to 3, 10, and 20 degrees. All welded construction. Tubular chord and lacing members; 100,000 PSI yield steel. 49" wide x 38-1/2" deep at pin-connected joints. Top section equipped with 27" OD antifriction roller bearing sheave; wire rope guide plates and anchor for 2-part line.

Maximum capacity with insert: 50' - 28.3-tons. Consult jib lifting capacity charts for specific capacity when used on various boom lengths.

NO. 123 JIB (OPTIONAL): 20-ton maximum capacity, 30' length, extendible to 60' with 10' inserts. Jib angle adjustable to 0, 10, and 20 degrees. All welded construction. Tubular chord and lacing members; 100,000 PSI yield steel. 30" wide x 30" deep at pin-connected joints. Top section equipped with 24" OD antifriction bearing sheave; wire rope guide plates and anchor for two-part line.

Maximum capacities with inserts: 40' - 15-tons; 50' - 10-tons; 60' - 5-tons. Consult jib lifting capacity charts for specific capacity when used on various boom lengths.

Other special lift options to tailor "RINGER" to job requirements are available. Consult factory.

ERECTION PROCEDURE FOR 4100W 36' SERIES-3 RINGER

1. Assemble the 4100W at the job site as a standard liftcrane with the crawlers in the retracted position and without boom.
2. Attach ring side beams with hydraulic jacks to the crawler frames; then install ring side and end segments and attach wear plates. Level ring and install blocking or screw jack support system (see FIG. 1).
3. Assemble and install front roller carrier with mast

ERECTION PROCEDURE FOR 4100W 36' SERIES-3 RINGER (cont'd.)

support. Install counterweight carrier side beams, crossover beams, platform, and rollers.

4. First assemble the No. 27 boom according to the rigging drawing, then assemble the 130' No. 22A fixed mast on top of the boom. Attach the mast stop; install mast and boom rigging, and pendants (see FIG. 2).
5. Self-erect mast using boom as a hold back when mast gets over center (see FIG. 3).
6. Attach and tension "RINGER" counterweight and backhitch pendants; then load "RINGER" counterweights on counterweight platform, boom up and the "RINGER" is ready for work.

NOTE:

Consult factory for detailed erection procedure; capacities with various counterweights; operation with blocking or screw jack system; or operation on barge mount.

<u>WEIGHTS</u>	<u>POUNDS*</u>
RINGER ATTACHMENT: Complete with 300' No. 27 boom and rigging, 36' diameter ring with wear plates and side support beams, hydraulic jacking system, front roller carrier assembly with mast support, fixed mast assembly, and "RINGER" counterweight carrier assembly (excluding 130' No. 22A boom and 275,000# "RINGER" counterweight).....	212,850
36' DIAMETER RING:	
(2) Side segments with wear plates.....	11,055 ea.
(2) End segments with wear plates.....	8,250 ea.
(2) Side support beams with hydraulic jacking system:	
Right side beam with motor, pump and 2 jacks.....	11,060
Left side beam with 2 jacks.....	10,530
2 PC. FRONT ROLLER CARRIER ASSEMBLY:	
Front section with hook rollers, mast support assembly, "RINGER" rollers.....	21,770
Rear section.....	3,625
TOTAL.....	25,395
BOOM EQUALIZER:.....	2,040

WEIGHTS (cont'd.)

<u>WEIGHTS</u>	<u>POUNDS*</u>	
RINGER COUNTERWEIGHT CARRIER ASSEMBLY:		
Counterweight platform.....	22,260	
(2) side beams with roller assemblies.....	13,035 ea.	
Front crossover beam.....	2,350	
Rear crossover beam.....	400	
OPTIONAL COUNTERWEIGHT (MAXIMUM REQUIRED):.....	275,000	
OPTIONAL SCREW JACK SUPPORT SYSTEM: With support beams, screw jacks and pads.....	33,710	
BOOM NO. 27:		
Boom butt - (less wire rope and pendants).....	8,485	
Boom top - (equipped with lower boom point, sheaves and basic pendants).....	10,340	
Add for upper boom point and with single sheave.	1,255	
TOTAL.....	11,595	
BOOM INSERTS:		
Insert - 20' w/rope guide roller assembly.....	3,300	
Insert - 40' w/rope guide roller assembly.....	5,830	
MAST ASSEMBLY: (Includes mast stop, mast top pendant links with shaft, upper mast point, lower sheave carrier, backhitch and counter- weight pendants; excludes 130' No. 22A boom)....		13,210
Mast Butt - 30'.....	5,980	
Mast Top - 40'.....	6,880	
Mast Insert - 20'.....	2,425	
Mast Insert - 40'.....	4,375	
COMPLETE MAST ASSEMBLY.....	32,870	

*Weights are approximate and may vary between machines as a result of design changes and component variation.

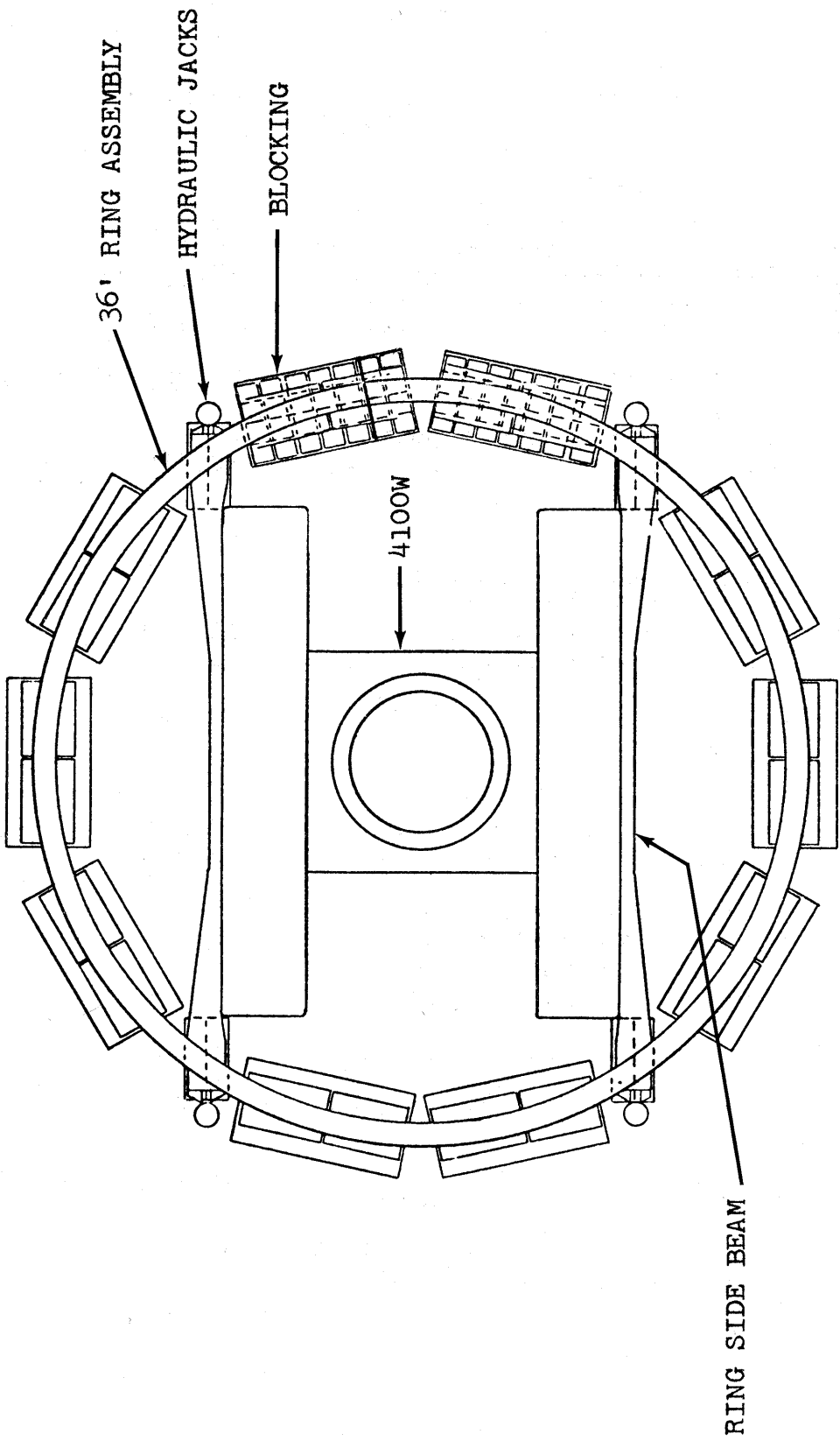


FIG. 1

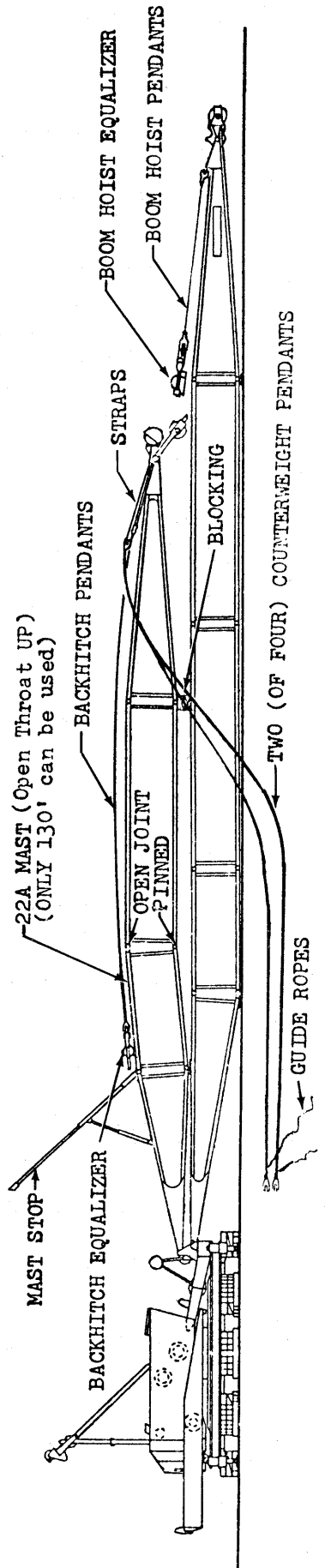


FIG. 2

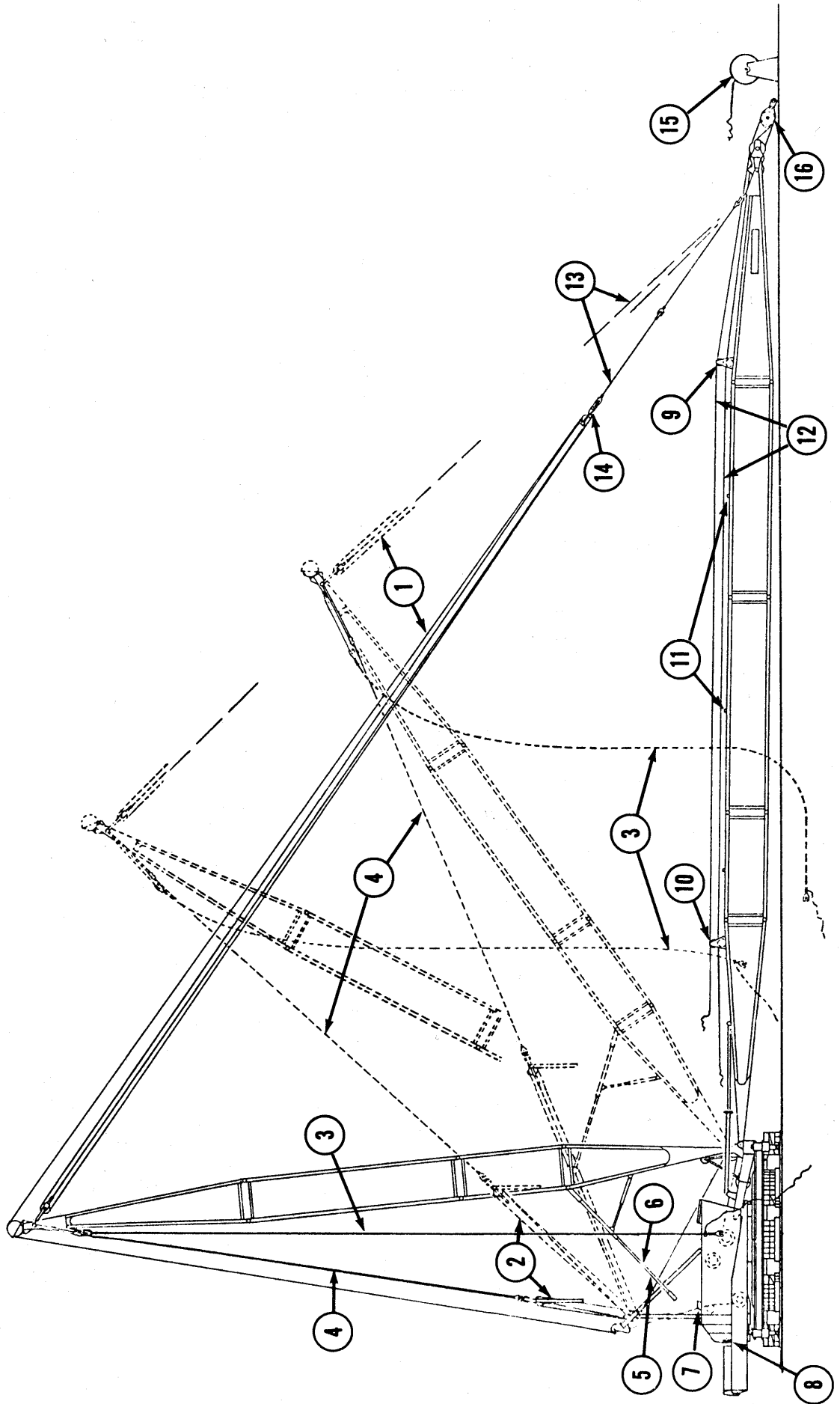
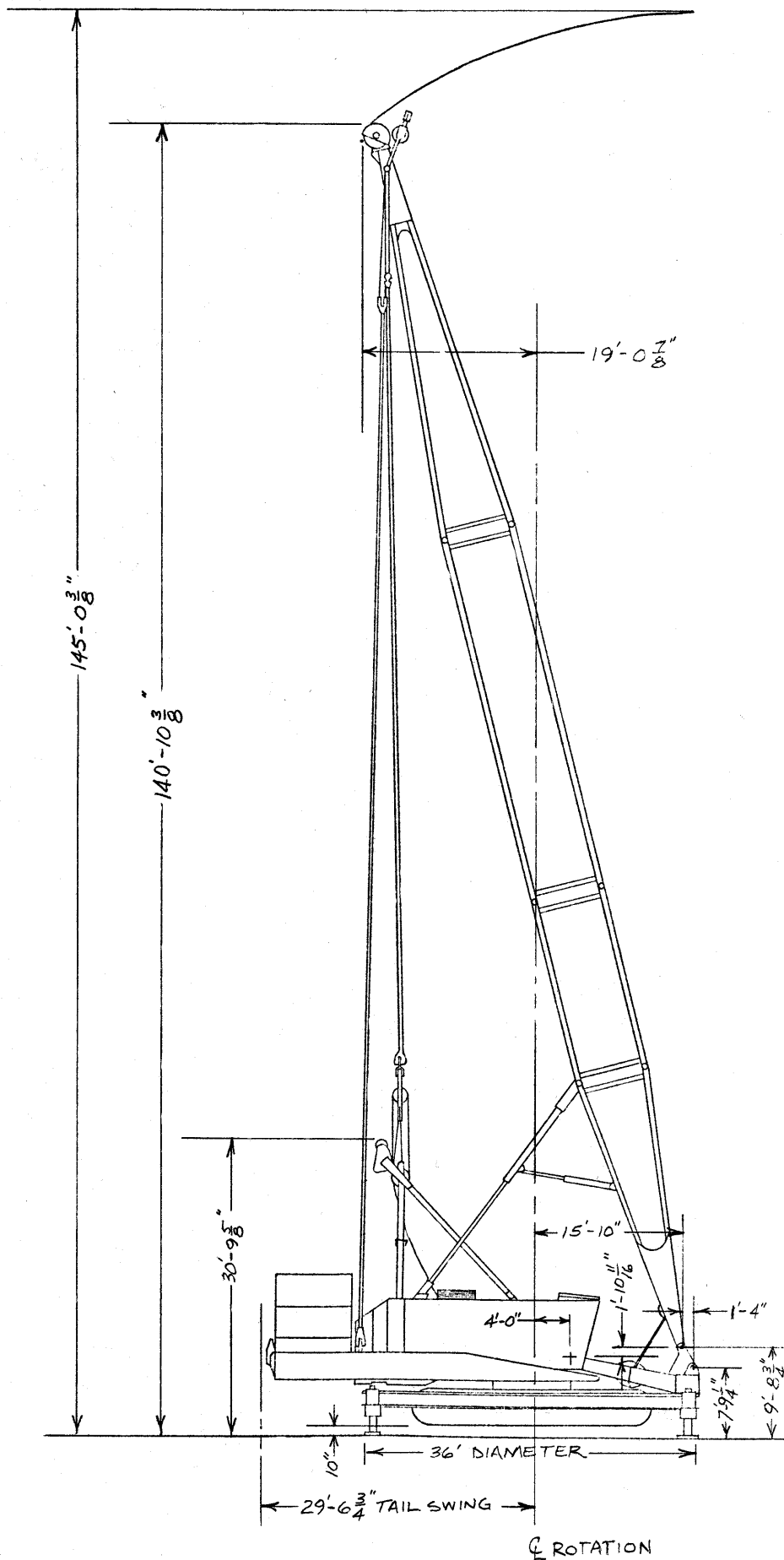
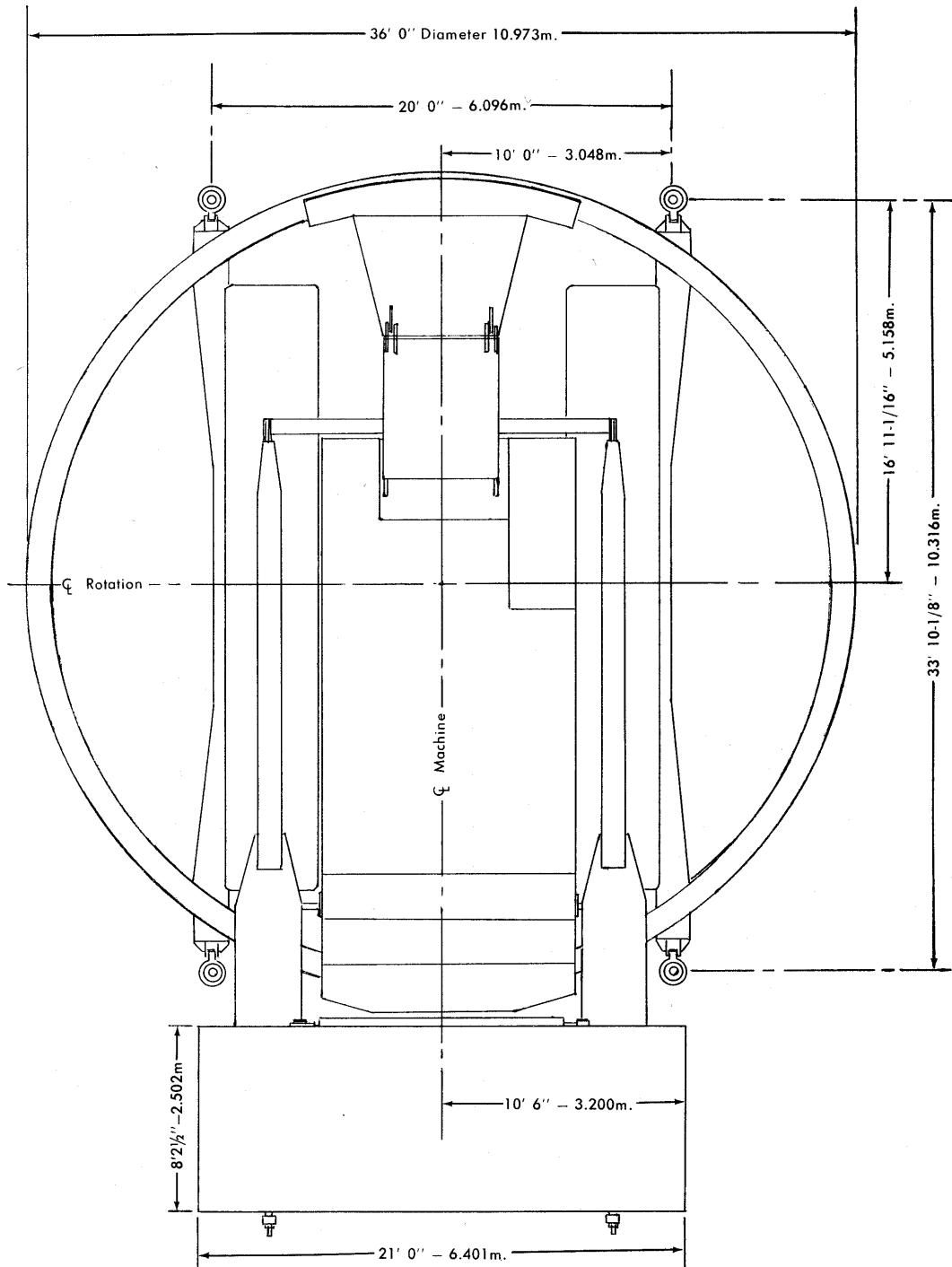
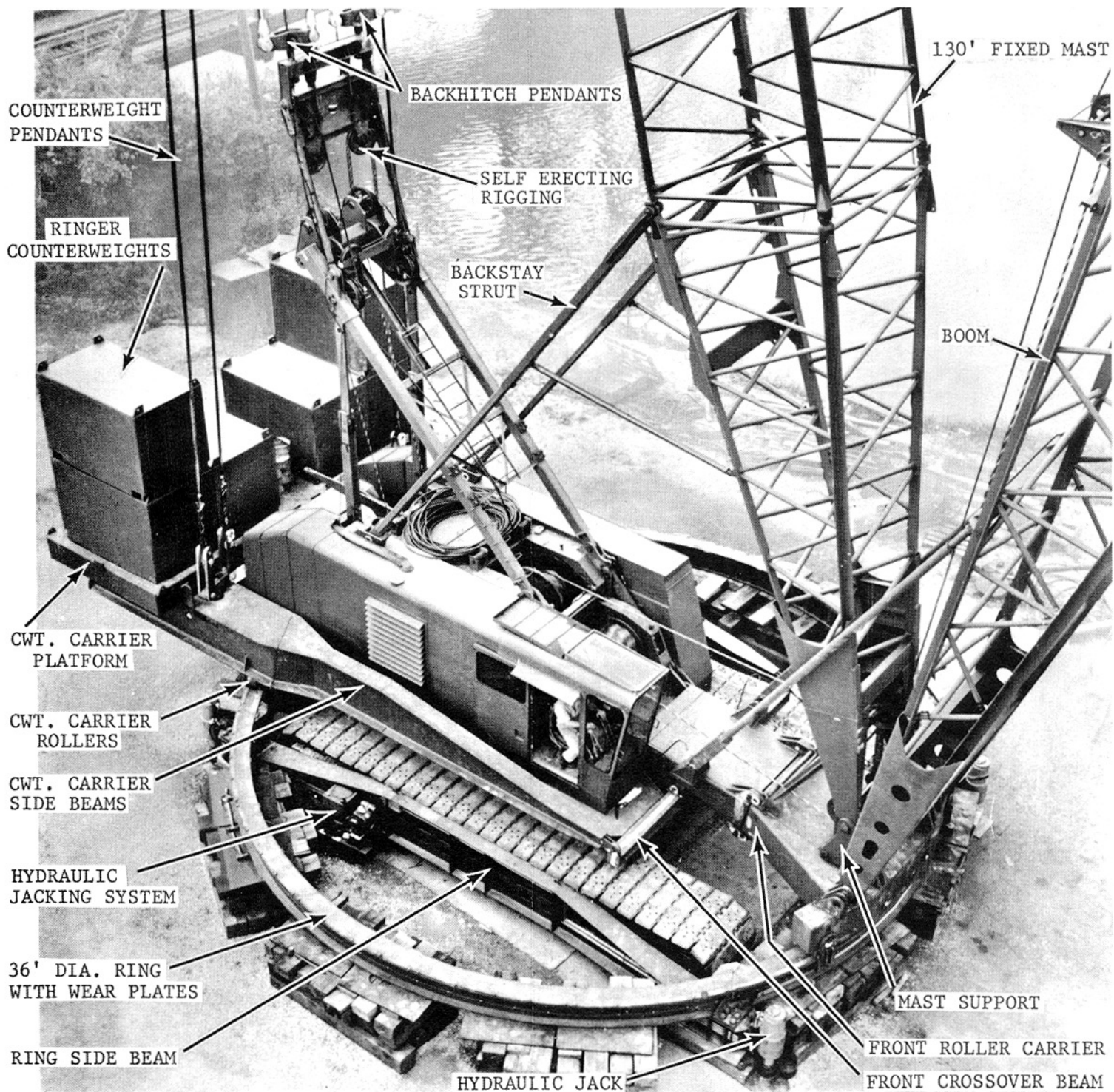


FIG. 3



OUTLINE DIMENSIONS
4100W RINGER





MANITOWOC 4100W Series-3 RINGER® : Note mast self-erecting rigging and wire rope stored on roof.