



OPERATION AND SERVICE MANUAL

This Manual has been prepared for and is considered part of -

N50 Series Articulating Crane

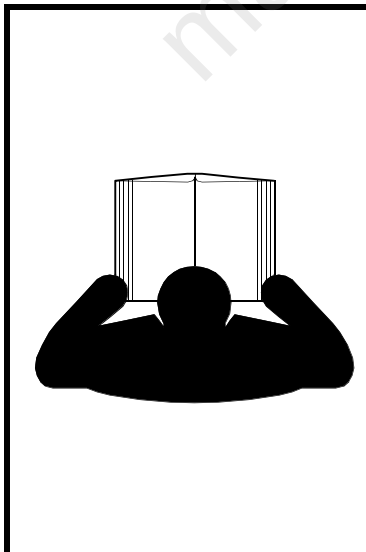
This Manual is Divided into the following Sections:

SAFETY AND OPERATION
SERVICE AND MAINTENANCE
SPECIFICATIONS
CRANE INSTALLATION

NOTICE

The crane serial number is the only method your distributor or the factory has of providing you with correct parts and service information.

The crane serial number is identified on the builder's decal attached to the crane frame. **Always furnish crane serial number** when ordering parts or communicating service problems with your distributor or the factory.

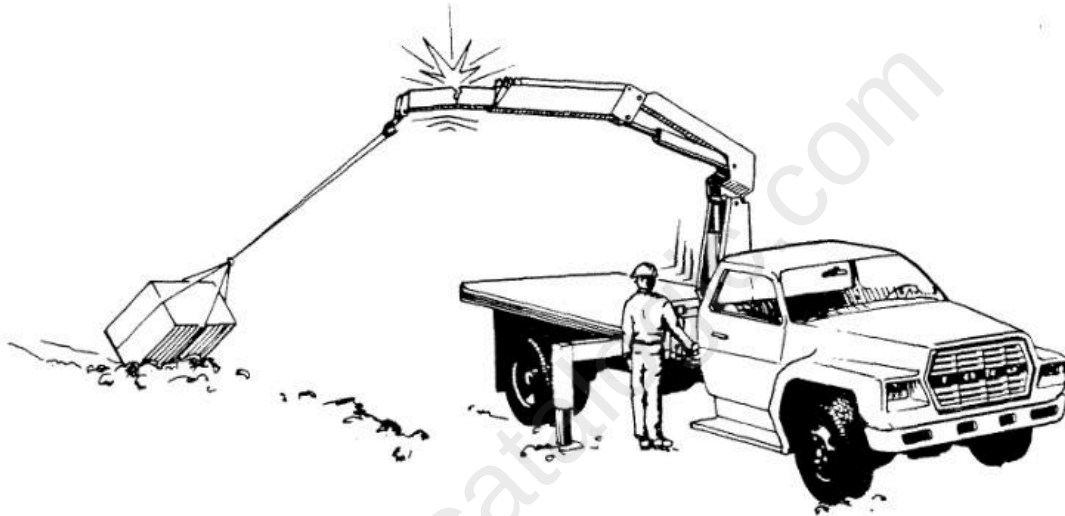


WARNING

To prevent death or serious injury:

- Avoid unsafe operation and maintenance.
- This crane must be operated and maintained by trained and experienced personnel. National Crane is not responsible for qualifying these personnel.
- Do not operate or work on this crane without first reading and understanding Operator's Manual and Rating Plate supplied with crane.
- If Operator's Manual or Capacity Charts are missing from crane, contact your distributor for new ones.

- When using multi-part reeving, be sure cable is properly routed.
- Check the winch brake for proper operation before handling the load.
- Know the lifting capacities of both the winch and boom. They will have different capacities. The weight of the load and loadline attachments must not exceed the lesser capacity.
- Do not drag loads with winch or boom.
- Always wind loadline under tension to assist proper spooling.



DO NOT DRAG LOAD

! **DANGER**

A diagram showing a crane boom extending from the bottom left towards the top right. A cable labeled "WINCH PULL" is attached to the boom. The boom is labeled "BOOM EXTENDING" with an arrow pointing towards the tip. At the tip of the boom, there is a hook block. An arrow labeled "BOOM DOWN" points downwards from the boom tip. A worker's head is shown at the bottom right, with a starburst indicating a collision between the hook block and the worker's head.

TWO BLOCKING THE CRANE WILL CAUSE DEATH, SERIOUS INJURY OR PROPERTY DAMAGE.

Do not allow the hook block to contact the boom tip by hoisting up, extending or lowering the boom.

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TORQUE VALUES FOR GRADE 5 AND 8 BOLTS

UNC SIZE	GRADE 5 TIGHTENING TORQUE		GRADE 8 TIGHTENING TORQUE	
	ft - lb	(N.m)	ft - lb	(N.m)
1/4 — 20	8 ± 2	(11 ± 3)	12 ± 2	(16 ± 3)
5/16 — 18	17 ± 3	(23 ± 4)	25 ± 4	(34 ± 5)
3/8 — 16	30 ± 5	(41 ± 7)	45 ± 7	(61 ± 10)
7/16 — 14	50 ± 8	(68 ± 11)	70 ± 11	(95 ± 15)
1/2 — 13	75 ± 11	(100 ± 15)	110 ± 11	(150 ± 15)
9/16 — 12	110 ± 11	(150 ± 15)	150 ± 15	(200 ± 20)
5/8 — 11	150 ± 15	(200 ± 20)	220 ± 22	(300 ± 30)
3/4 — 10	260 ± 26	(350 ± 35)	380 ± 38	(520 ± 52)
7/8 — 9	400 ± 40	(540 ± 54)	600 ± 60	(810 ± 81)
1 — 8	580 ± 58	(790 ± 79)	900 ± 90	(1220 ± 122)
1- 1/8 — 7	800 ± 80	(1080 ± 108)	1280 ± 128	(1740 ± 174)
1- 1/4 — 7	1120 ± 112	(1520 ± 152)	1820 ± 182	(2470 ± 247)
1- 3/8 — 6	1460 ± 146	(1980 ± 198)	2380 ± 238	(3230 ± 323)
1- 1/2 — 6	1940 ± 194	(2630 ± 263)	3160 ± 316	(4280 ± 428)

UNF SIZE	GRADE 5 TIGHTENING TORQUE		GRADE 8 TIGHTENING TORQUE	
	ft - lb	(N.m)	ft - lb	(N.m)
1/4 — 28	10 ± 2	(14 ± 3)	14 ± 2	(19 ± 3)
5/16 — 24	19 ± 3	(26 ± 4)	25 ± 4	(34 ± 5)
3/8 — 24	35 ± 5	(47 ± 7)	50 ± 8	(68 ± 11)
7/16 — 20	55 ± 8	(75 ± 11)	80 ± 12	(110 ± 16)
1/2 — 20	90 ± 14	(120 ± 16)	120 ± 12	(160 ± 16)
9/16 — 18	120 ± 12	(160 ± 16)	170 ± 17	(230 ± 23)
5/8 — 18	180 ± 18	(240 ± 24)	240 ± 24	(320 ± 32)
3/4 — 16	300 ± 30	(410 ± 41)	420 ± 42	(570 ± 57)
7/8 — 11	440 ± 44	(600 ± 60)	660 ± 66	(890 ± 89)
1 — 12	640 ± 64	(870 ± 87)	1000 ± 100	(1360 ± 136)
1- 1/8 — 12	880 ± 88	(1190 ± 119)	1440 ± 144	(1950 ± 195)
1- 1/4 — 12	1240 ± 124	(1680 ± 168)	2000 ± 200	(2710 ± 271)
1- 3/8 — 12	1680 ± 168	(2280 ± 228)	2720 ± 272	(3690 ± 369)
1- 1/2 — 12	2200 ± 220	(2980 ± 298)	3560 ± 356	(4830 ± 483)

NOTE:

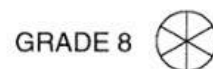
Torque values are in foot pounds (N.m). Torque values apply to plain finish and zinc plated fasteners. Torque values specified are dry with as received residual oils. Special lubricants are not recommended.

Torque values for bolts listed above are not affected with the use of Loctite. Loctite should not be used on rotation bearing fasteners. Hardend washers should be used with Grade 8 fasteners.

Hex socket and Torx head fasteners are considered Grade 8, and unless otherwise specified, Grade 8 tightening torques should be used. Grade 5 tightening torques should be used for all wear pad fasteners.



Grade of stud bolts is identified by radial lines stamped in the end with the shortest thread length.



MAST ROTATION CHANGEOVER

If reversing the boom is required, use the following sequence:

1. Remove lower bearing retaining capscrews.
2. Hoist mast or upper assembly to disengage rotation gear from the rack. Raise assembly four inches minimum.
3. Rotate mast 180°.
4. Lower mast to engage rotation gear with rack.
5. Reinstall mast retaining bolts.

See "Service & Maintenance" section "Mast Rotation Bearing or Thrust Bearing Replacement" for service specifics.

Full Version Available

National Crane N50 Articulating Crane Service Manual

National Crane N50 articulating crane service manual with repair procedures, adjustments and troubleshooting. 140-page English PDF. Instant PDF download.

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