

Product Improvement Program W08-104

Date: December 10, 2008
To: Manitowoc Lattice Crane Distributor Service Managers
Subject: #79A Top Inspection, Repair and Modification
Model Affected: 18000

Affected Crane And Luffing Jib Serial Numbers And Associated Manufacturing Order Numbers (MO) Of Affected #79A Tops:

Cranes

18001002/137369	18001017/188914	18001027/226714	18001038/274456
18001004/139874	18001018/191666	18001028/235541	18001039/281078
18001007/155047	18001019/202255	18001030/243873	18001041/285638
18001008/150825	18001020/207792	18001032/256689	18001042/289854
18001009/162326	18001021/213517	18001033/258578	18001043/292908
18001011/166132	18001024/228195	18001034/262881	18001047/295108
18001013/176582	18001025/222150	18001035/265730	18001048/299871
18001015/185394	18001026/227521	18001037/271793	18001049/301740

Luffing Jibs

18005014/220116	18005019/238703	18005029/277935
18005015/221388	18005025/268781	

PURPOSE

Manitowoc Cranes has learned that the chord mounting pads on the head section of the #79A tops on the above-referenced Model 18000 cranes and luffing jibs may delaminate. Manitowoc has also determined that the #79A tops may be missing internal welds in the plate work of the head section which may cause cracks to develop in the welds between the chord mounting pads and plate work. Units with delaminated boom chord pads and/or cracked welds at these locations may be structurally compromised and must be immediately taken out of operation.

 **WARNING**

Continued Use Of Affected #79A Tops Without Performance Of The Inspection, Repairs, and Modifications Required Under With This Product Improvement Program Could Cause Boom And/Or Luffing Jib Failure. Boom And/Or Luffing Jib Failure Could Result In Death, Serious Bodily Injury As Well As Damage To The Crane And Other Property.

Maniowoc requires your immediate assistance in shutting down all affected #79A tops until the head section on those tops have been inspected by means of Magnetic Particle Test ("M.T.") performed on all locations specified in this Product Improvement Program (See Required Operations Section A below). If indications of boom chord pad delamination and/or weld cracks are detected during M.T., the top must then be taken out of service until Maniowoc personnel have repaired the boom chord pad delamination and/or cracked welds (See Required Operations Section A below). Even if no indications of boom chord pad delamination and/or cracked welds are observed during M.T., all affected #79A tops must as soon as possible still have Maniowoc personnel install gussets on the bottom chord mounting pads to address the potential missing internal welds in the head section (See Required Operations Section B below). If the required M.T. does not identify any indications of boom chord pad delamination and/or weld cracks, affected boom tops can continue to temporarily be used in normal operation even without installation of gussets provided that a weekly visual inspection of the tops is conducted (See Required Operations Section C below).

REQUIRED OPERATIONS:

A. Shut Down Of #79A Tops Until Completion Of Inspection

Immediately contact customers with affected #79A tops and advise them that their affected tops must be taken out of operation. Then immediately schedule and perform M.T. of the chord mounting pads at all four corners of the head section (locations 1a, 1b, 2a and 2b in Figures 1 and 2) and all welds for each of those four chord mounting pads (again at locations 1a, 1b, 2a and 2b in Figures 1 and 3). Instructions for M.T. of these locations are attached to this Product Improvement Program (See Instructions for Non-Destructive Testing M.T. of 79A Tops below).

If M.T. reveals any indications of delamination of the chord mounting pads and/or any indications of weld cracks, then the #79A top must be kept out of operation until Maniowoc personnel have repaired any boom chord pad delamination and/or cracked welds. Contact Crane Care Lattice Team at 1-888-499-7278 to immediately schedule those repairs. If no indications of boom chord pad delamination and/or weld cracks are detected through M.T., then the #79A top may continue to be used in accordance with the Temporary Use Criteria set forth in Section C (but only on a short term basis until the mandatory modifications, i.e., gusset installations, to the affected #79A tops described in Section B of this Product Improvement Program can be scheduled and completed).

M.T. called for in this Product Improvement Program may be performed by non-Maniowoc personnel only if such individuals have the required competency (specifically ASNT Certification, Level II).

Any delamination repairs and/or weld repairs that are required under this Product Improvement Program shall only be performed by Maniowoc personnel.

Figure 1: Location of Chord Mounting Pads and Welds Which Must Be M.T. Inspected

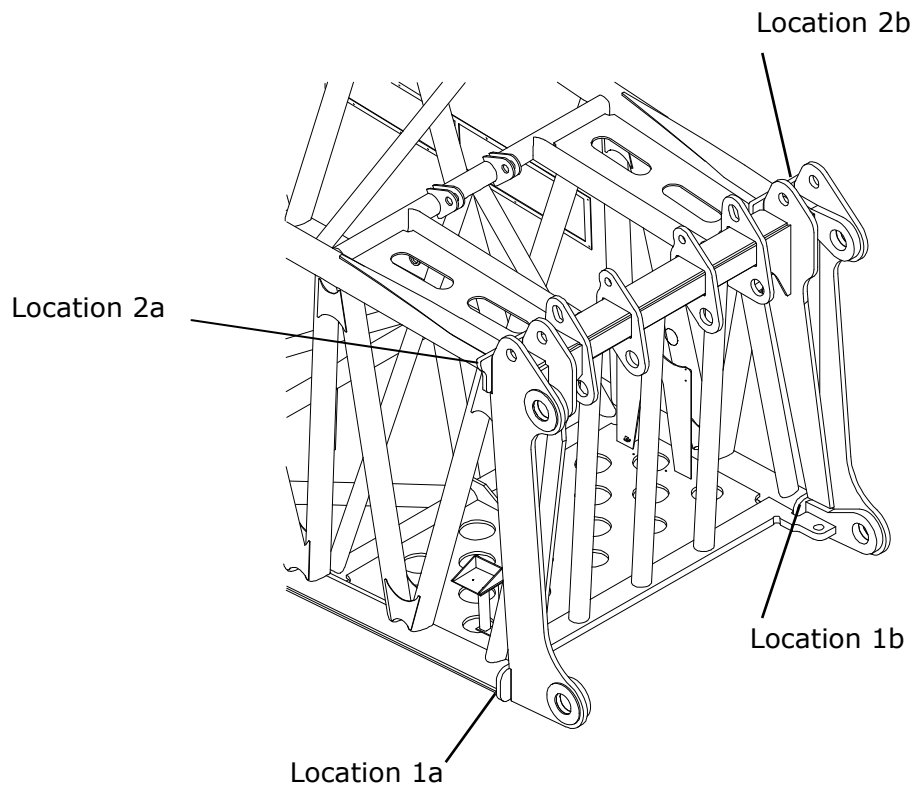
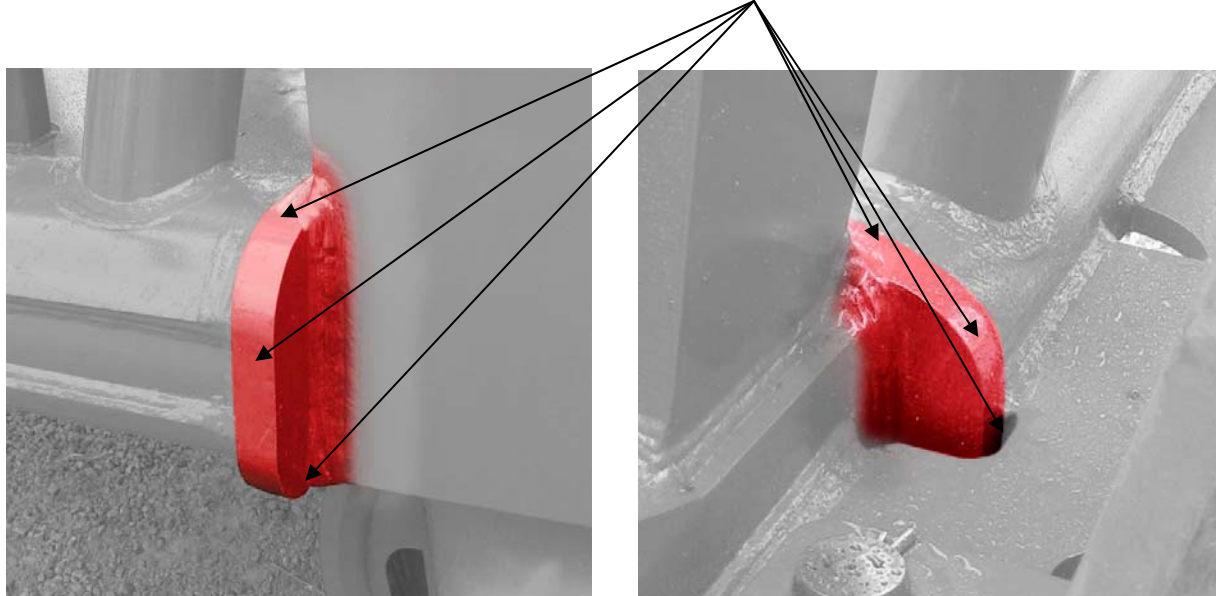


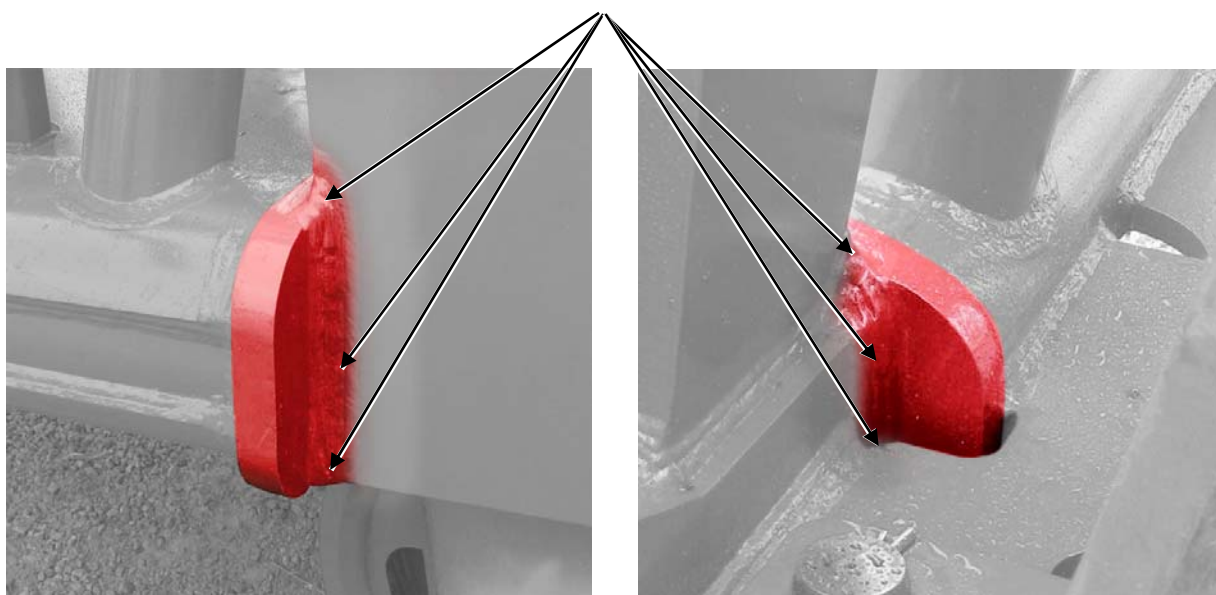
Figure 2: M.T. Inspection of Boom Chord Pad for Possible Delamination. Magnetic Particle Test the entire exposed edge of the boom chord pad.



Outboard Side of Lower
Boom Chord Pad

Inboard Side of Lower
Boom Chord Pad

Figure 3: M.T. Inspection of Chord Mounting Pad for Weld Cracks. Magnetic Particle Test the entire weld around both the outboard side and inboard side of the Boom Chord Pad.



Outboard Side of
Lower Boom Chord

Inboard Side of Lower
Boom Chord Pad

B. Mandatory Modification (Gusset Installation) Of Affected #79A Boom Tops

Regardless of whether any indications of boom chord mounting pad delamination and/or weld cracks were found during the Magnetic Particle Test inspections, all affected #79A tops must be immediately scheduled to have Manitowoc personnel install gussets on the bottom chord mounting pad locations (locations 1a and 1b on Figure 1). All gusset installations required under this Product Improvement Program shall only be performed by Manitowoc personnel. Contact the Crane Care Lattice Team at 1-888-499-7278 to make immediate arrangements to have this modification completed.

C. Temporary Use Criteria

If there are no indications of boom chord mounting pad delamination and/or weld cracks are found during the Magnetic Particle Test Inspections, the #79A top may continue to be used only on a temporary basis until the mandatory modification, i.e., gusset installations, to the top can be completed but only if a Weekly Pre-Operation Inspection is conducted as follows:

1. On a weekly basis visually inspect the boom chord mounting pads and welds around the boom chord mounting pads at the four locations shown in figures 1 through 3 above for any indications of delamination and/or cracks.
2. If no indications of delamination and/or cracks are found in these locations, the top may continue to be temporarily used until the mandatory modifications described in Section B can be scheduled and completed.
3. **If Any Indications Of Delamination And/Or Cracks Are Found Discovered During The Weekly Pre-Operation Inspection, The Top Must Immediately Be Taken Out Of Service Until It Can Be Repaired And Modified In Accordance With This Product Improvement Program.**

THIS PRE-OPERATION INSPECTION IS NOT A SUBSTITUTE FOR DELAYING THE COMPLETION OF THE MANDATORY MODIFICATION ON AFFECTED UNITS. ALL EFFORTS SHOULD BE MADE TO IMMEDIATELY SCHEDULE AND COMPLETE THIS MODIFICATION.

REIMBURSEMENT

Manitowoc Cranes will reimburse you up to 8 hours labor for your time to inspect affected #79A tops for cracked welds and delamination. You will be reimbursed for reasonable travel expenses. Reimbursement will be made upon Manitowoc Crane Care's acceptance of a properly completed warranty claim and Certification of Work Performed. Ensure you note the PIP number in the warranty claim to receive credit for completing this product improvement. A warranty claim must be submitted within thirty (30) days following inspection and completion of any required rework. If you have any questions regarding this product improvement, please contact the Manitowoc Crane Care Lattice Team.

INSTRUCTIONS FOR NON DESTRUCTIVE TESTING OF 79A TOP

Scope

Magnetic particle testing (M.T.) shall be performed to verify the structural integrity of the chord mounting pads (items 1a, 1b, 2a, and 2b in Figures 1 through 3) and the adjacent welds between the chord mounting pads and plate work.

References

- ANSI/AWS D1.1: Structural Welding Code - Steel
- ASNT-SNT-TC-1A: Recommended Practice for NDT Personnel

Definitions

- ANSI – American National Standards Institute
- ASNT – American Society for Nondestructive Testing, Inc.
- AWS – American Welding Society
- SNT-TC – Society for Nondestructive Testing Technical Council. This is a document intended as a guideline for companies to establish their own written practices for qualification and certification for their nondestructive testing personnel.
- ASNT Certification, Level II – Written documentation verifying that the NDT technician has been trained and has met the necessary requirements to be certified per SNT-TC-1A.

Responsibility

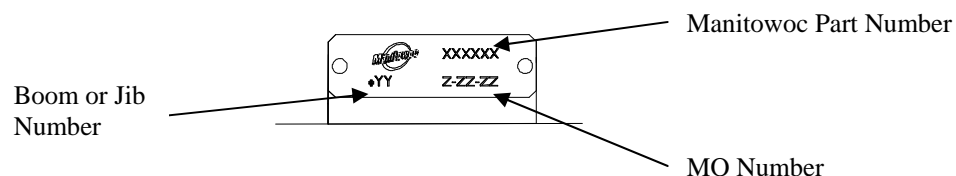
It is the responsibility of the NDT technician – with a minimum level II certification in compliance with SNT-TC-1A – to perform the magnetic particle testing and to complete the specified 79A Inspection Form in a timely manner and return it to Manitowoc Crane Care.

Equipment Requirements

- Portable Magnetic Particle Yoke – AC or AC-DC.
- Dry-Powder Applicator: bulb, shaker, or powder blower.

Instructions

1. Confirm and record the Part and MO numbers for the #79A top.



2. Thoroughly clean all surfaces to be tested. They shall be free of weld spatter, dirt, grease, oil, paint and loose scale. This can be done by grinding or wire brushing.

3. Grind down the outside edges of the chord mounting pads (items 1a, 1b, 2a, and 2b on Figure 1) 1/16 in (1.59 mm) to a smooth finish.
4. MT the exposed edges of the chord mounting pads and the adjacent welds between chord mounting pads and the plate work.
5. Magnetize the part with a magnetic field using the yoke.
6. Dust the magnetized area evenly with powder.
7. Remove excess powder by lightly blowing it away.
8. Look for defects.
9. Reposition the yoke 45 to 90 degrees from the original position and repeat steps 4 through 7.
- 10. Inspect and evaluate all defects, if any. *Acceptance criteria shall be per AWS D1.1, Table 6.1 - Cyclically Loaded Non-tubular Connections.***
11. Mark all defects for rework using a paint marker.
12. Digitally photograph all defects.
13. Complete the 79A Top Inspection Form below documenting any defects identified by the NDT technician.
14. E-mail or fax the #79A Top Inspection Form and digital photographs of all defects as soon as possible to Manitowoc Crane Care at the following:
Fax - 920-683-6338 Email - andy.nourse@manitowoc.com
15. Contact the Crane Care Lattice Team at 1-888-499-7278 to schedule the completion of any required repairs and mandatory modifications.

**#79A TOP INSPECTION AND
CERTIFICATION FORM**

Machine Serial Number _____

**Part Number of Top
(from ID plate)** _____

79A top MO Number _____

Top Right Location

Indications of Weld
Cracks (Y / N)

Indications of
Delamination (Y / N)

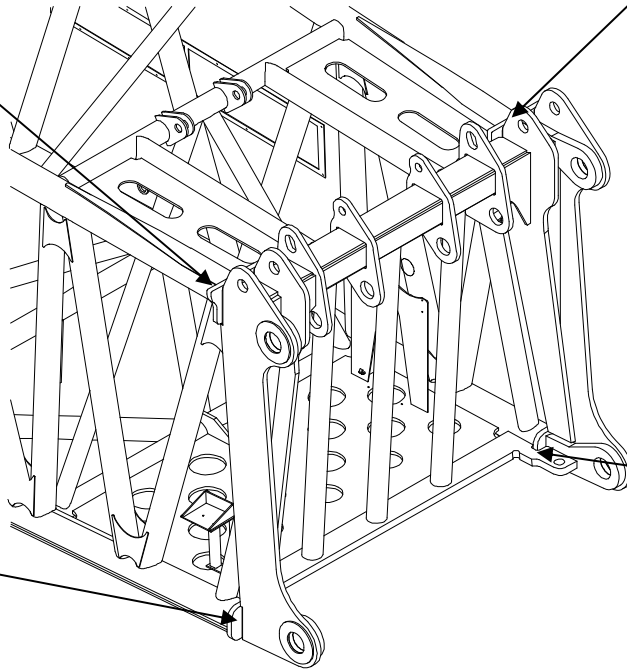
Comments:

Bottom Right Location

Indications of Weld
Cracks (Y / N)

Indications of
Delamination (Y / N)

Comments:



Top Left Location

Indications of Weld
Cracks (Y / N)

Indications of
Delamination (Y / N)

Comments:

Bottom Left Location

Indications of Weld
Cracks (Y / N)

Indications of
Delamination (Y / N)

Comments:

Inspection Certification

Company Name _____

Inspector Name _____

Certification Level _____

Date of Inspection _____

Signature of Inspector _____



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Certification of Work Performed for PIP W08-104

PIP COMPLETED DATE _____

WARRANTY CLAIM NUMBER _____

PART NUMBER _____

PART SERIAL # (MO number) _____

COMPANY COMPLETING PIP _____

DISTRIBUTOR NUMBER _____

TECHNICIAN COMPLETING PIP _____

ADDRESS _____

CITY/STATE _____ POSTAL CODE _____

I CERTIFY THAT THE PIP HAS BEEN COMPLETED ON THE ABOVE MACHINE.

PRINTED NAME

POSITION

SIGNATURE

DATE SIGNED

PLEASE SUBMIT THIS FORM WITH YOUR WARRANTY CLAIM.