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PROGRAM INFORMATION BULLETIN NO. P08-17

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SUBJECT: Potential Boom Failure on Komatsu America Corp. Model
PC400LC-7L Excavator

Who needs this information?

Mine operators, independent contractors, mobile equipment operators, miners' representatives, Mine Safety and Health Administration (MSHA) enforcement personnel, and other interested parties should have this information.

What is the purpose of this Program Information Bulletin?

This Program Information Bulletin (PIB) informs the mining industry about the potential hazards of boom failures on Komatsu America Corp's. (Komatsu) model PC400LC-7L excavator and the factory campaign to its distributors concerning repair of the booms.

What type of equipment is involved?

This PIB applies to Komatsu model PC400LC-7L excavators.

Information

Komatsu issued factory campaign number 7C0641 on January 11, 2008, to instruct its distributors to repair all model PC400LC-7L excavator booms. An insufficient weld during the excavator boom assembly caused field failures in which cracks developed in the boom at the arm cylinder mounting bracket. Some of these cracks propagated across the top plate of the boom. In at least one case, it was reported that the boom completely separated at the mounting plate. Although no injuries have been reported, a potential for injury still exists to personnel that may be near the boom. Komatsu's distributors will repair the boom regardless of whether a crack is present or not. Komatsu's distributors will evaluate the condition of the boom to determine the proper repair procedure.

Attached please find a copy of Komatsu Factory Campaign Announcement 7C0641.

What is the recommended action concerning the Model PC400LC-7L excavator boom repair?

If your model PC400LC-7L excavator has not been repaired by a Komatsu distributor, you should contact your local distributor to schedule the repair. Until the repair is made no one should enter the area under the boom. The operator must be trained for the potential risks from boom failure during operation of the machine. The affected area of the boom must be inspected regularly for cracks. An inspection program should be developed in consultation with Komatsu. Komatsu can be contacted directly as follows:

Contact Information:

Komatsu America Corp.
One Continental Towers
1701 W. Golf Rd.
Rolling Meadows, IL 60008

Mr. Tony W. Robson
Manager, Technical Service
Crawler Product
Office: (847) 437-4091
Cell: (262) 496-5802
Fax: (847) 437-9462

or

Mr. Alex M. Vidakovic
Manager of Product Integrity
Office: (847) 437-5052
Fax: (847) 437-5955
E-Mail: avidakovic@komatsuna.com

What is the background for this PIB?

Komatsu received reports of field failures on the model PC400LC-7L excavator boom at the arm cylinder mounting bracket. Komatsu determined some units were not manufactured with the correct weld joint configuration. The combination of high stress and an improper weld penetration has contributed to cracks developing at the arm cylinder mounting bracket on some excavator booms.

What is MSHA's authority for this PIB?

The Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq.; 30 C.F.R. §§ 56.14100(b)/57.14100(b); 30 C.F.R. § 77.404(a); and 30 C.F.R. § 77.1606.

Where is this PIB on the internet?

This PIB may be viewed on the World Wide Web by accessing MSHA's home page at www.msha.gov, choosing "Compliance Info" and "Program Information Bulletins."

Who are the MSHA contact persons for this PIB?

Coal Mine Safety and Health
Stephen Gigliotti (202) 693-9479
E-mail: Gigliotti.Stephen@dol.gov

Metal and Nonmetal Mine Safety and Health
Bill Wilson, (202) 693-9640
E-mail: Wilson.William@dol.gov

Technical Support
Stephen B. Cole (304) 547-2304
E-mail: Cole.Stephen@dol.gov

Who will receive this PIB?

MSHA Program Policy Manual Holders
Coal Mine Operators
Metal and Nonmetal Mine Operators
Miners' Representatives
Independent Contractors
Special Interest Groups

Factory Campaign Announcement

KOMATSU

Komatsu America Corp

January 11, 2008

CAMPAIGN NUMBER: 7C064 1

TO: **ALL DISTRIBUTORS**

MODELS: PC400LC-7 L

ATTN: **SERVICE MANAGERS**

SUBJECT: PC400LC-7L REPAIR OF ARM CYLINDER BRACKET ON BOOM. ***NOTE:
EXTENDED COMPLETION DATE 6/27/2008 KF***

PURPOSE: REPAIR THE BOOM AT THE ARM CYLINDER MOUNTING BRACKET.

TYPE: Mandatory. Do modification as soon as possible.

SAFETY RELATED (N-No, Y-
Yes): N

MAXIMUM METER
READING: 999999

APPLICABLE MACHINES: [See Attached Machine Locator.](#)

PARTS REQUIRED:

PARTS PROCUREMENT: NONE

REIMBURSEMENT:

LABOR	4.00 Hours
MILEAGE	One Round Trip
PARTS	No Parts are required for this FC
SHIPPING	N/A
TRAVEL_TIME	One Round Trip

EXPIRATION DATE: Distributors must submit all claims by August 31, 2008.

CLAIM INSTRUCTIONS: Complete modification as soon as possible. Normal submission through SAP with a failure code of H170 HA

ATTACHMENTS: [See Attachments](#)

COMMENTS: PLEASE FOLLOW THE ATTACHED INSTRUCTIONS. REPAIRS MUST BE PERFORMED TO BOTH SIDES, EVEN IF NO CRACK IS PRESENT. WHEN POSSIBLE PLEASE TARGET MACHINES IN A MORE AGGRESSIVE APPLICATION FIRST. IF YOU FIND THE DAMAGE IS BEYOND REPAIR CAPABILITY CONTACT YOUR REGIONAL CSM & KAC SHQ. DB MUST INCLUDE PICTURES OF THE FAILURE BEFORE AND AFTER REPAIR, ALSO

ATTACH PHOTO'S TO CLAIM WHEN SUBMITTING. REVISED VERBAGE
2/21/2008.

It is the distributors responsibility to complete all machines in this campaign as soon as possible.

We reserve the right to make changes in specifications, constructions or design at any time without incurring obligation to make such changes.

Problem Description

There have been field failures on PC400LC-7L due to the arm cylinder bracket to bracket strip weld set-up. The drawing calls for a 10mm gap to be maintained at this weld joint to achieve penetration. However some units may have been manufactured with a gap below 10mm. With high stress and improper weld penetration at these points, cracks may develop in this area and in some cases propagate across the top plate.

Following instruction are :

Page 2 & 3 : Modification instruction to prevent crack

Page 4 : Repair instruction for crack if found

Page 5 : Repair instructions for crack in top plate

Page 6: Weld specification and criteria

1. Place the machine on level ground and lower boom to lowest possible position.
See Photo 1



2. Remove all hydraulic tube clamp brackets on top side of boom.

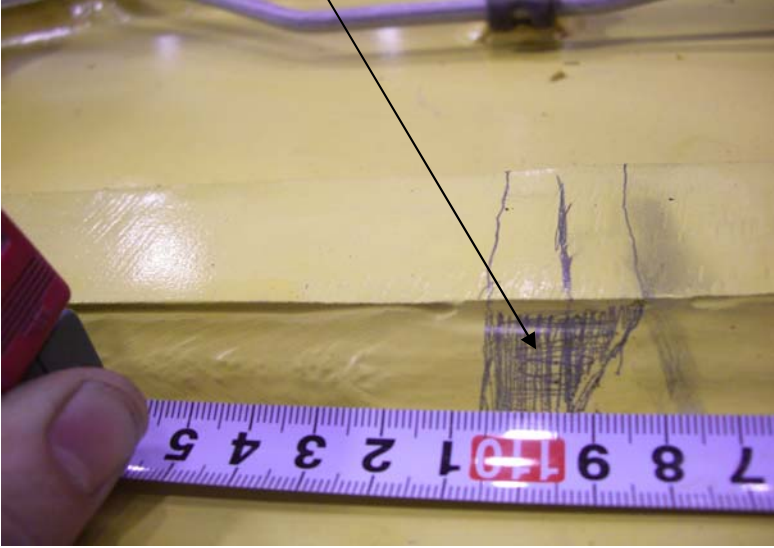
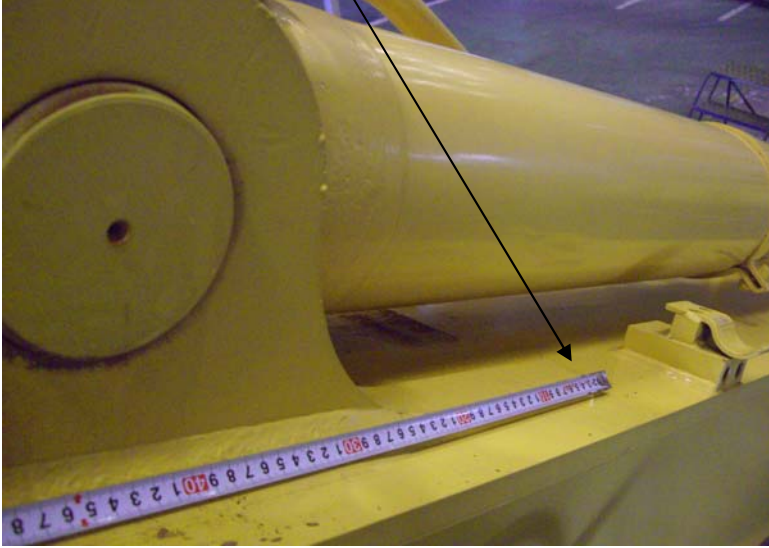
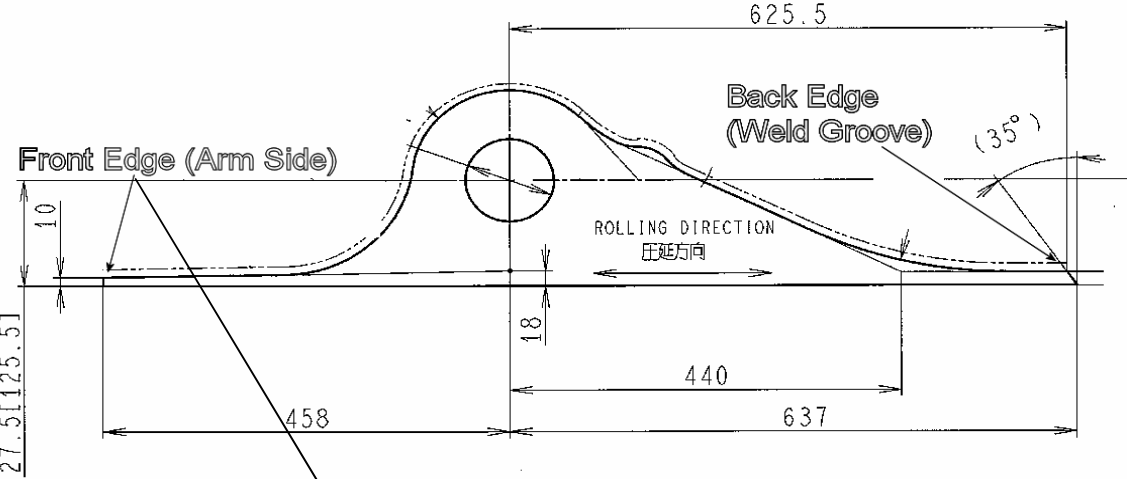


3. Without breaking any hydraulic connections, pull tubes off to side of boom and band tie together to make access for weld repair. See Photo 2.

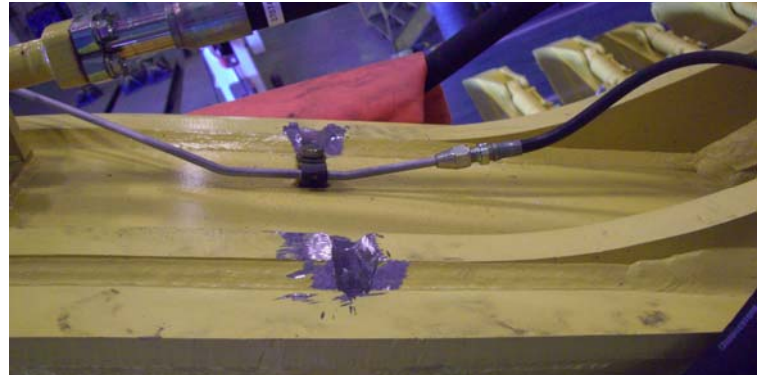
4. Layout and mark area to be ground out.

If there is no visible crack, weld root is 1095 mm from front edge of bracket.

Note: Protect work lamp, hoses, cab etc. from grinding/gouging sparks with fire proof blankets.



5. Grind out and prepare weld groove as described on page 4.



6. Liquid penetrant (PT) inspect weld groove to ensure top plate is not cracked. *Note: Dye will bleed out between cyl. bracket and top plate and between reinforcing strip and top plate as shown; Check is to ensure there is no crack in fillet welds at side of bracket or in the boom top plate.* **If cracking has occurred in top plate; See page 4/5 for additional instructions.**



Proceed with step 7 if top plate is not cracked.

7. Clean weld groove and weld per page 6 procedure.



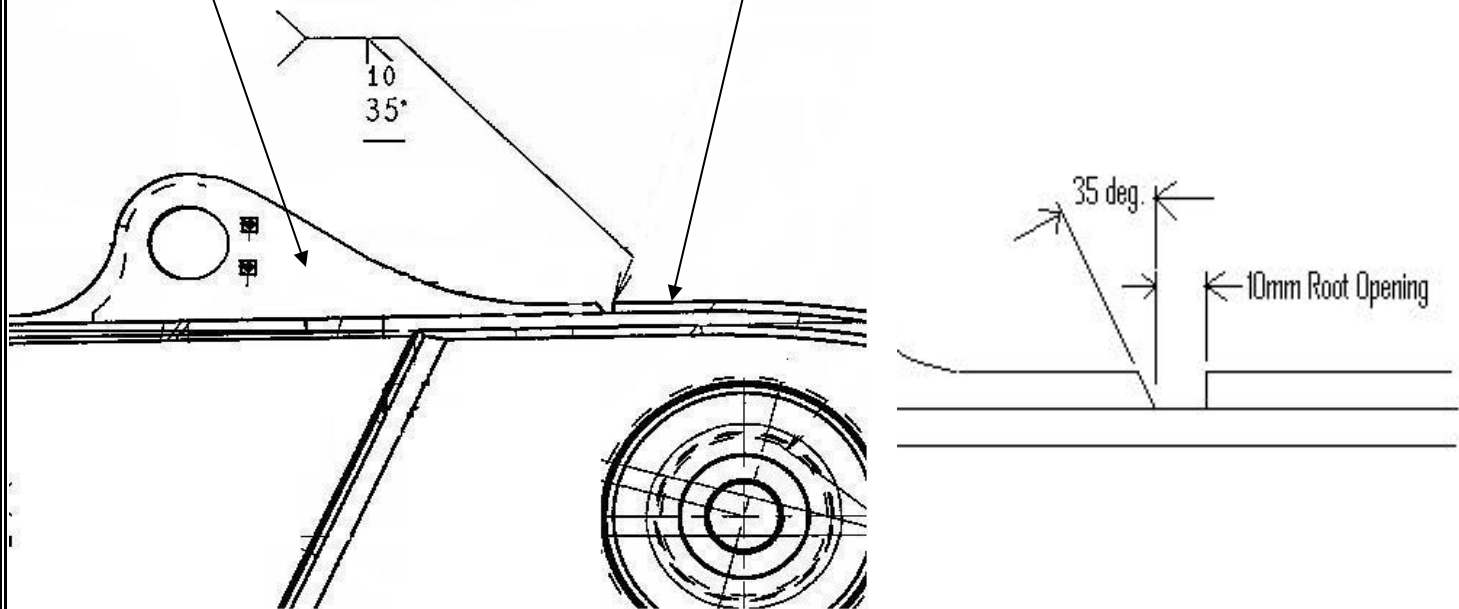
8. Grind and paint as shown, reassemble tubes to boom.



WELD JOINT

Cylinder Bracket

Reinforcing Strip



PROCEDURE AND SEQUENCE

1. Air arc or grind out entire crack 16mm deep including 5mm on each side into sound base metal. Include 35 deg. Bevel.
2. Liquid penetrant (PT) or Magna Flux (MT) inspect weld root area to ensure crack has not progressed into boom top plate.
3. Weld per procedure on page 6.
4. Grind weld cap pass flush with bracket and blend ends of weld with existing fillet weld.
5. Recommended (but not mandatory) UT inspection of finished weld to ensure there is no lack of fusion.
6. Paint.

If visual or PT/MT inspection reveals cracking in top plate, use grinder or air arc to completely remove.



If crack has propagated through the thickness of the top plate; open up enough of a groove to allow for inserting a backing plate made of A36 material. This is recommended to ensure complete joint strength.

Do not bridge groove without backing: cracking may reappear as shown in pictures below of a previously repaired machine.



Use liquid penetrant insp. to ensure entire crack has been completely removed prior to weld repair.

If cracking is excessive and has propagated from top plate into sideplates, please contact service representative prior to performing any work.

JOINT:

JOINT DESIGN: "V" Groove
 ROOT GAP: 10mm
 BUTTERING: N/A
 BACK GOUGING: N/A
 GAS PURGE: N/A
 BACKING MATERIAL: Boom Top Plate (A36)

PREHEAT:

PREHEAT TEMP.MIN.: 50 deg. F Ambient
 METHOD: _____
 INTERPASS TEMP: MIN: _____
 INTERPASS TEMP: MAX: _____
 MAINTENANCE: _____

BASE METALS:

BASE METAL: THICKNESS:

Top Plate 22mm
 Cylinder Bracket 16mm at weld joint
 Bracket extension strip 16mm

POST WELD HEAT TREATMENT: None

HEATING RATE: _____
 HOLD TEMP: _____
 HOLD TIME: _____
 COOLING RATE: _____

FILLER METALS & GAS:

PROCESS: SMAW
 ELECTRODE: E 7018
 SIZE: 1/8 - 3/32
 PROCESS: GMAW
 WIRE: ER 70S-6
 SIZE: 0.045"
 GAS:COMPOSITION: Ar 75%, CO2 25%
 FLOW RATE: 30-45 CFH
 ORFICE OR GAS CUP SIZE: _____
 CONTACT TUBE TO WORK DISTANCE: _____

TECHNIQUE:

STRING OR WEAVE BEAD: Root Pass is 2 stringers, remaining can be weaved.
 RESTRICTION OF WEAVE: SMAW: 2X Elec. Dia., GMAW: 25mm
 INITIAL & INTERPASS CLEANING: Remove all paint/grease min. 1" from weld
 BACK GOUGING METHOD: N/A
 OTHER NOTES: _____

POSITION:

WELDING POSITION: Flat
 WELDING PROGRESSION: Up (If Vertical)
 OTHER: _____

INSPECTION:

METHOD: PT on Top Plate After Grind, Prior to Weld
UT if available Final Weld to Ensure There is no Lack of Fusion.
 HOLD POINTS: After cleaning, prep.
After completion of weld, prior to paint.

