

NABI : C-Frame Welding



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Property and Top Bus Number: All NABI

Issue: Hairline crack on C-frame

Reason/ cause: There are multiple possibilities for C-frame damages, including alignment, road and driving conditions, etc.

Solution: Inspect, repair and re-align C-frames per this work instruction.

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Number of affected buses: as required

Estimate repair hours/bus: 2 hours

Necessary parts:

Degreaser (acetone, denatured alcohol, brake cleaner)

Industrial primer

Black paint

Example

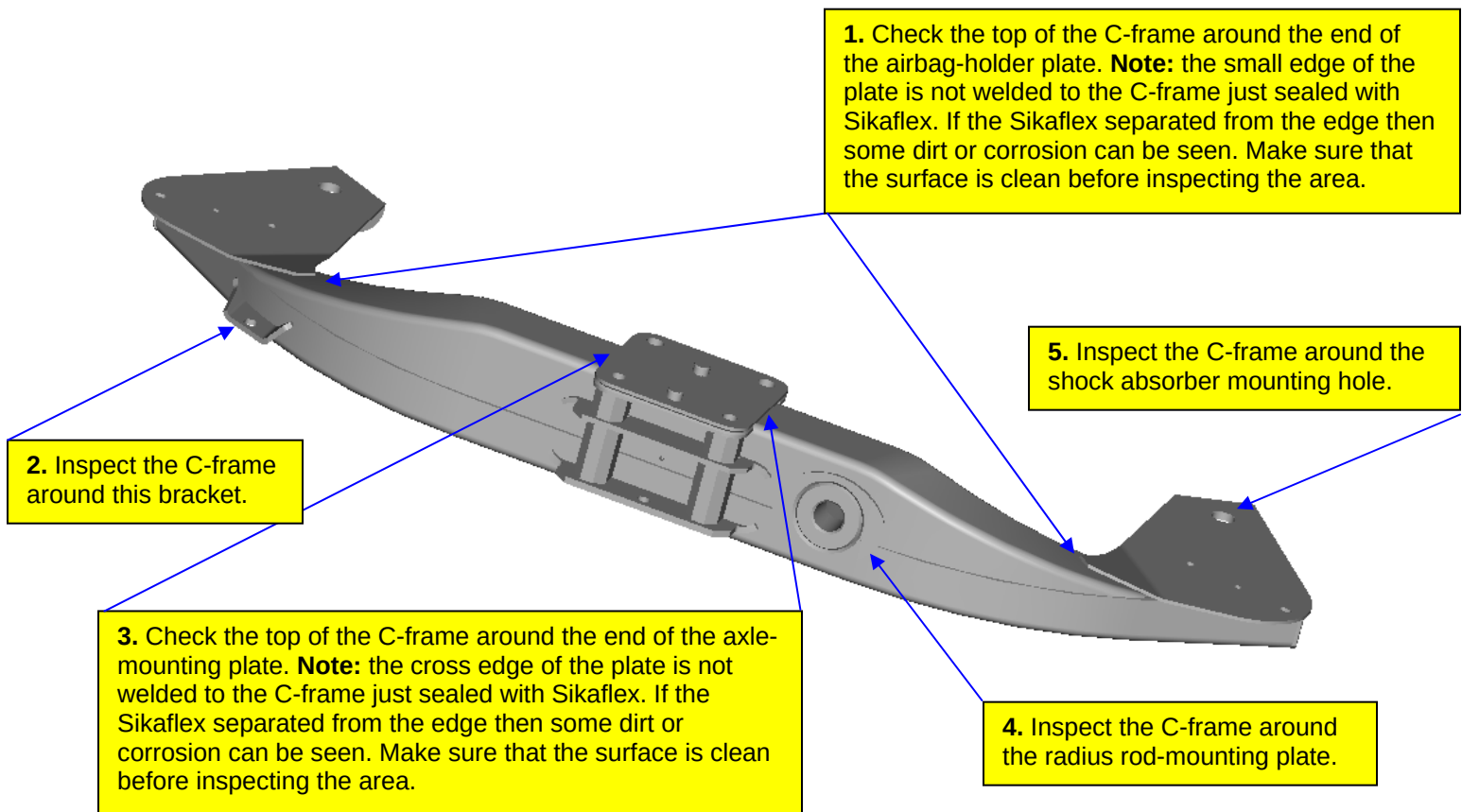


Example

Necessary tools: MIG welding equipment, drill, 1/8" size drill bit, air operated high speed grinding tool with de-burr bit (to V-groove the crack), wire wheel, shop rags

SAFETY PRECAUTIONS MUST BE FOLLOWED ACCORDING TO ACCEPTED INDUSTRY STANDARDS AND LOCAL/PROPERTY REQUIREMENTS.

1. Lift the bus in the air or park bus over a service pit. Apply parking brake and block wheels if using pit.
2. Support the body by jack stands and release the air pressure from the air bags by disconnecting the leveling valve rods from the C-frame bracket and pulling the rods downward both sides.
3. Locate C-frames and inspect them according to the drawing below:



4. If crack longer than 3" was found then park the bus and contact NABI. The C-frame must be replaced before returning bus to service.

5. If hairline crack less than 3" was found (see picture below as an example) then proceed with the repair written below.



6. Turn off battery disconnect switch(es).
7. Tag and disconnect battery cables.
8. Disconnect engine-, transmission ECU-s, disconnect ABS module.
9. Remove surrounding components (wheel, radius rod, mud flap, etc.) if required to get access to the repaired area. Refer to NABI Maintenance Manual about removing certain components.
10. Clean cracked area with wire wheel. Do not use rough grinding wheel or abrasive disc because these wheels will make the surface rough and crack inspection will be difficult.
11. Wipe surface off and find the end of the crack. Use magnifying glasses or penetrate sprays (cleaner, penetrate and developer) if required.
12. Drill the end of the crack by using a 1/8" size drill bit.
13. Bevel the crack (make a V shape groove along the crack) by using high speed air tool with deburr bit.
14. Degrease cracked area by using acetone or equivalent degreasing agent.

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15. Remove paint and clean a spot on the cracked C-frame and attach the ground cable of the MIG welder to this area.
16. Weld the crack with a continuous bead according to the followings:
 - Use 75% Argon and 25% CO2 gas mix.
 - Use 0.035 ER-70 welding wire
 - Perform test welds on a 5-6 mm (0.2”) thick steel plate and check penetration before completing the repair on the C-frame. Adjust amp and wire speed on the MIG welder as required.
17. After the welding is completed spray primer and black paint to the repaired area.
18. Reinstall removed components. Refer to NABI Maintenance Manual about torque values.
19. Inspect and if required adjust ride height according to NABI work instruction # **L3-FSV-135**.
20. Also refer to NABI work instruction # **SOI-09-04-05** about inspection, adjustment or C-frame replacement.
21. Record bus number, mileage, date of repairing and the name of the technician who performed the repair.