

Special Bulletin

SP16-316D

Date	Expiration	Release	Page
07.2016	07.2018	4	1(28)

Rev D: This revision replaces all previous releases
October 20th, 2016 Added gusset positioning jig

FUEL TANK FRAME FRONT SUPPORT WELD

Prevost vehicles

DESCRIPTION

On the vehicles affected by this bulletin, the front fuel tank support needs to be improved to prevent fatigue cracks.

MODEL YEAR(S) AND VEHICLES INVOLVED

NOTICE TO SERVICE CENTERS <i>Verify vehicle eligibility by checking warranty bulletin status with SAP or via ONLINE WARRANTY SYSTEM available on Service / Warranty tab of Prevost website.</i>		
Model	VIN	Fleet Number
X3-45 Commuter Model Year : 2012 - 2012	From 2PCG33495CC73 5053 up to 2PCG33495CC73 5232 incl.	From 2400 up to 2489, incl.
This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. The owners of the vehicles affected by this bulletin will be advised by a letter indicating the Vehicle Identification Number (VIN) of each vehicle concerned.		

MATERIAL NEEDED

Order kit SP16-316:

Part No.	Description	Qty
240036	Gusset	8

NOTE
<i>Material can be obtained through regular channels.</i>

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TOOLS

POSITIONING JIG #35828 	Welders Clamps 
ROTARY GRINDER TOOL 	MIG Welding machine 

PROCEDURE



DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

1. Disconnect all electronic modules to prevent any damage prior to welding.
Refer to MULTIPLEX MODULE DISCONNECTION PROCEDURE in *Appendix B*.
2. Raise vehicle with mobile lifting columns.

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3. Support the fuel tank frame on stands.



Figure 1

4. Locate the front fuel tank supports under the vehicle frame (Fig. 2).



Figure 2

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5. Remove tank frame mounting hardware. Reserve for re-use.
6. Remove existing weld on the mounting ears by grinding. (Fig. 3). If a crack is visible, it needs to be cleaned and prepared to a depth that reaches the root of the crack.



Figure 3 Weld removed.

7. Repair according to "Crack Repair" in *Appendix D*. All Weld must meet IT750004 requirement in *Appendix C*.



Figure 4

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WELDING OVERVIEW

8. Four gussets #240036 will be added on the existing ears, on both sides for a total of 8 gussets. (Fig. 4)

9. Refer to welding drawing in *Appendix A*.

10. Welding Fillet dimension is 3mm (1/8") everywhere. (Fig. 6&7)

Perform welding according to procedure in *Appendix D*.

All Weld must meet IT750004 requirement in *Appendix C*.

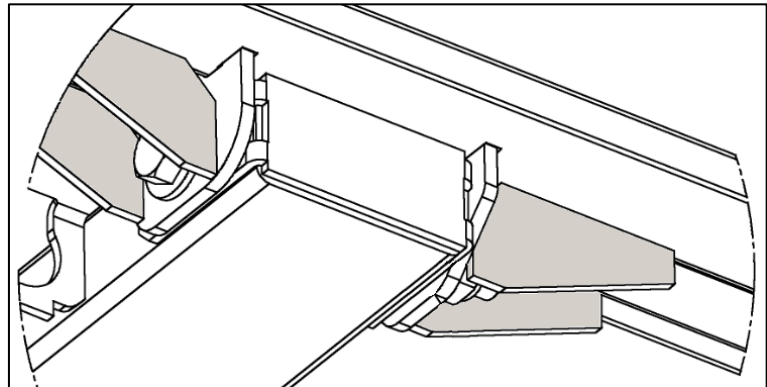


Figure 5

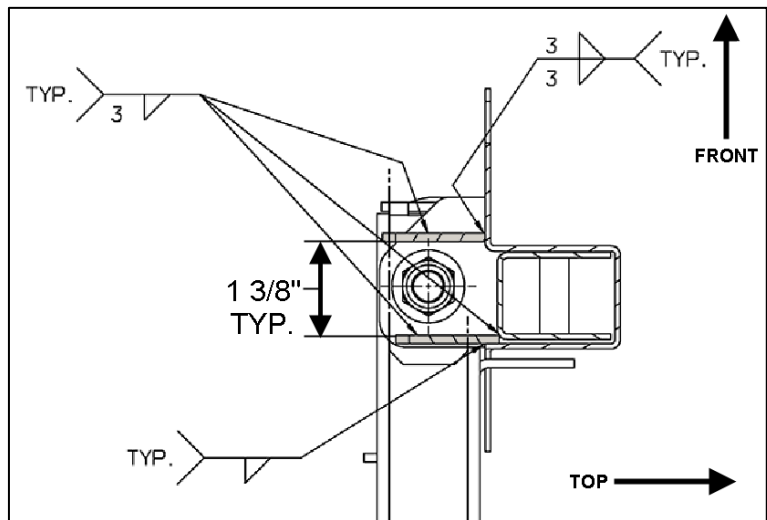


Figure 6

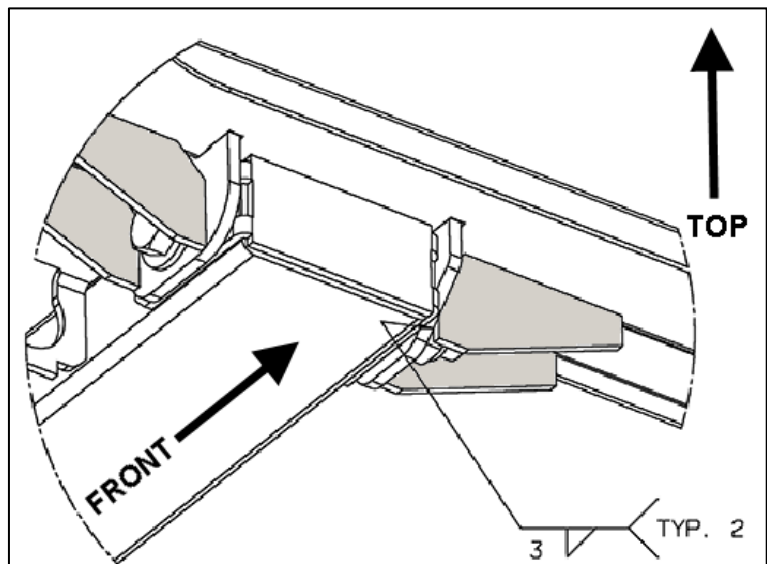


Figure 7

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11. Prepare all welding surfaces by grinding.
12. Place Jig #35828 in road side bolt hole.
13. Place gusset #240036 in the rear roadside position of jig. (Fig. 8)

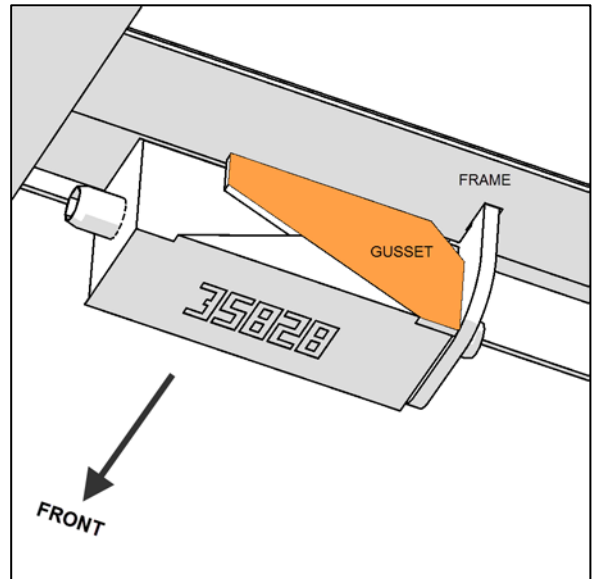


Figure 8

14. Place another gusset #240036 in the front roadside position of the jig. (Fig. 9)

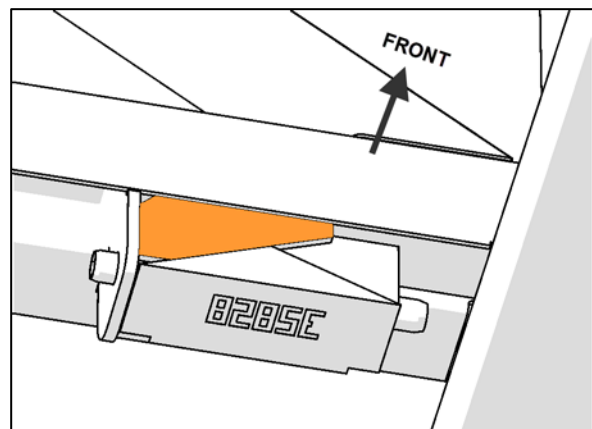


Figure 9

15. Secure the gussets to the jig with a welder's vise.
16. Tack gussets in place.
17. Remove positioning jig.

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18. Place Jig #35828 in curb side bolt hole.
19. Place gusset #240036 in the rear curbside position of jig. (Fig. 10)

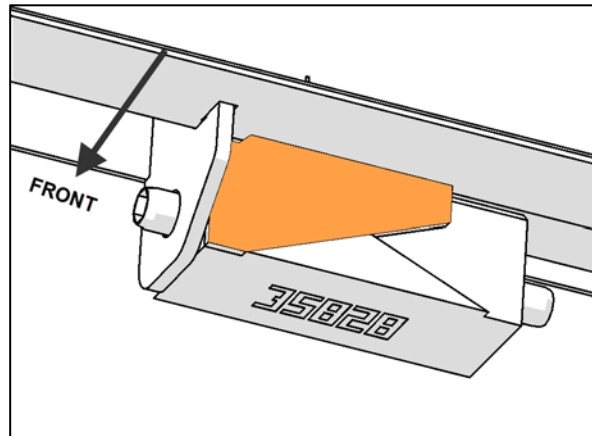


Figure 10

20. Place another gusset in the front curbside position of the jig. (Fig. 11)

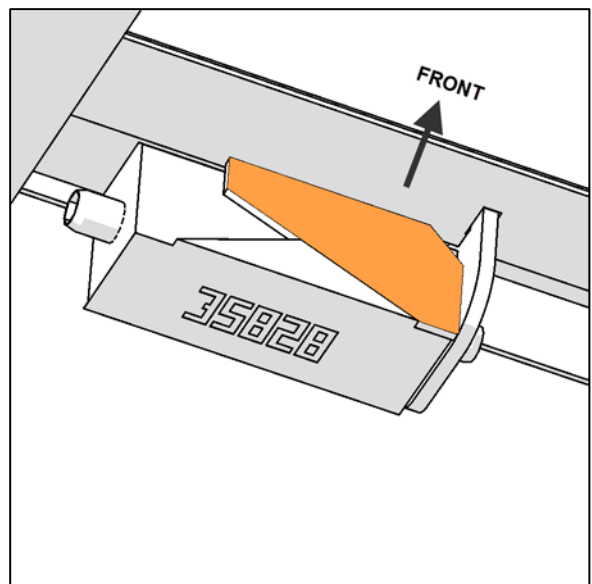


Figure 11

21. Secure the gussets to the jig with a welder's vise.
22. Tack gussets in place.
23. Remove positioning jig.

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24. Weld the gussets according to procedure.



Figure 12

25. Then proceed to the other side of the tank to install the jig and gussets, repeating Steps 11 to 24

26. Re-install Tank frame mounting hardware

Tighten to **50-60 lb-ft** (67-81 Nm)

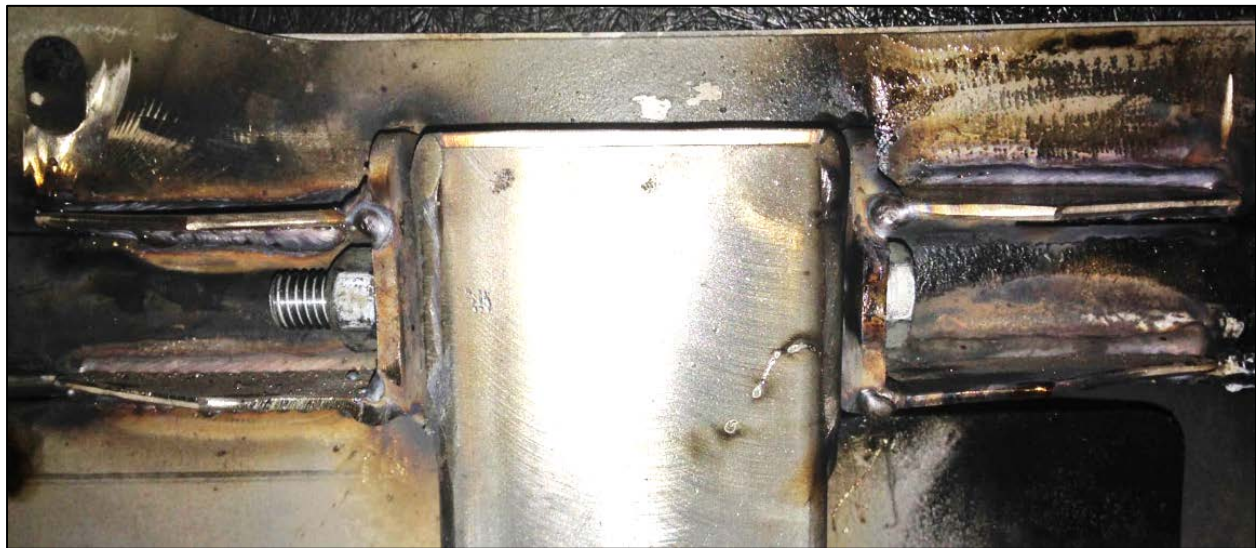


Figure 13

27. Remove stands supporting the tank.
28. Re-connect all electronic modules. Refer to MULTIPLEX MODULE DISCONNECTION PROCEDURE in *Appendix*.

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PARTS / WASTE DISPOSAL

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

ESTIMATED TIME

The time required to perform this special bulletin is approximately two hours.

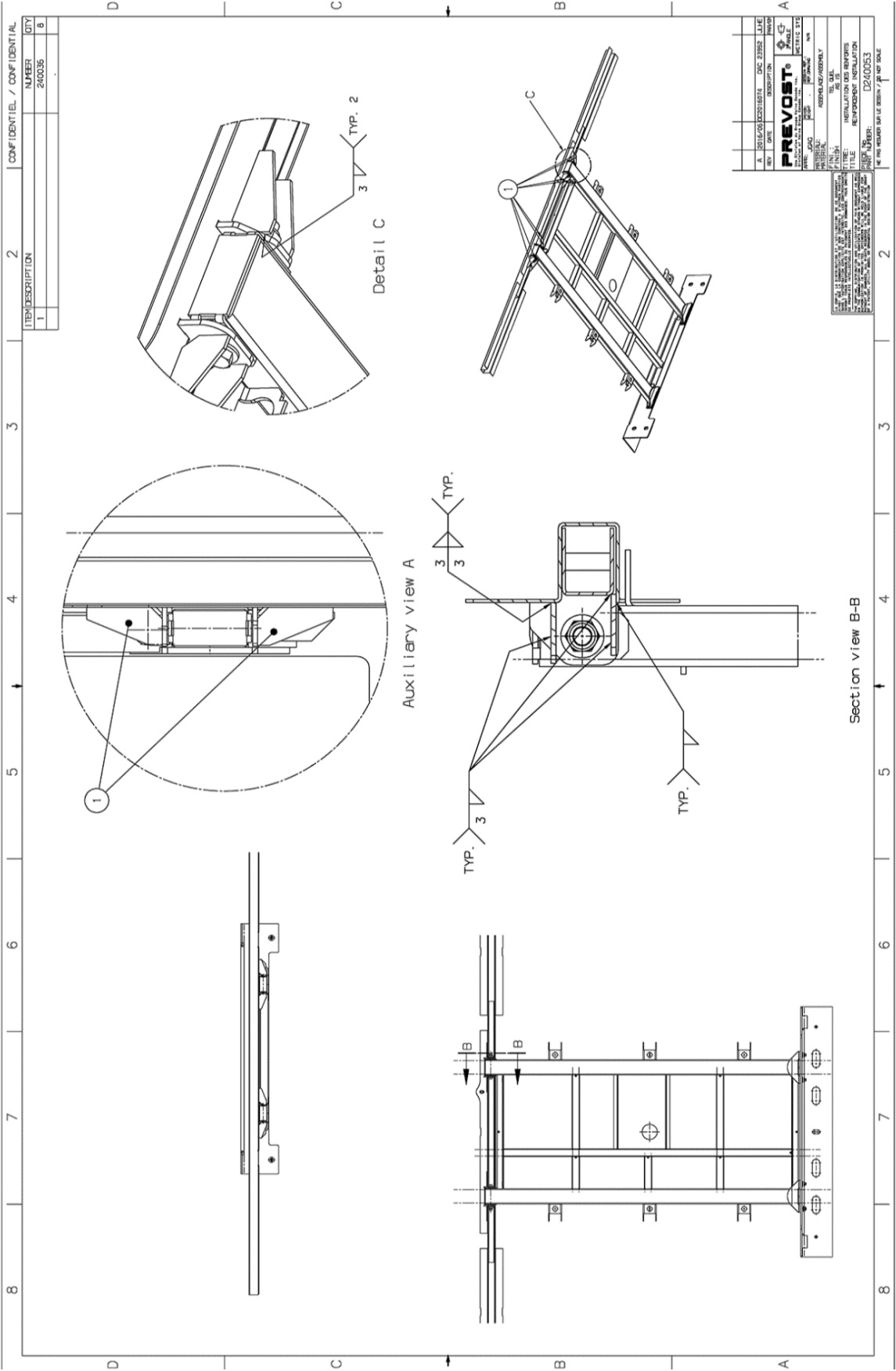
OTHER

VBC Bulletin	N/A
Fail Code	18.08
Defect Code	09
System Condition	B
Causal Part	221592

Prevost engages in a continuous program of testing and evaluating to provide the best possible product. Prevost, however, is not committed to, or liable for updating existing products.

Reference drawing

Appendix A



Multiplex Module Disconnection Procedure

Material: N/A

Equipment(s): Phillips-head screwdriver
Ratchet handle
3/8" socket
Electric tape
Long nose pliers

Reference schematics: N/A

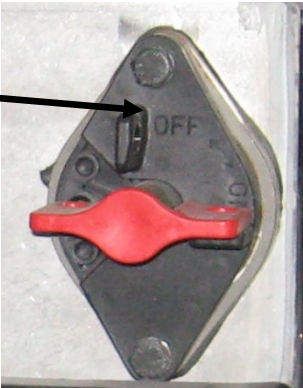
Safety rules:

- Wear safety goggles
- Set the battery master switch to the OFF position first

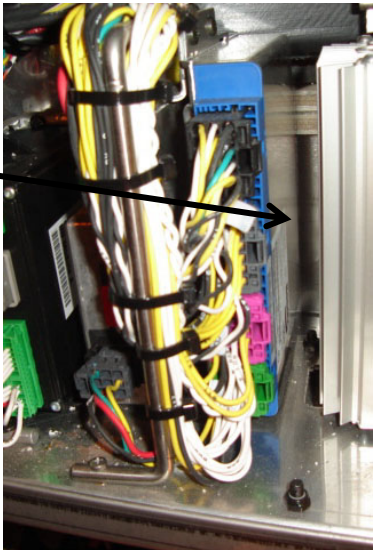
Recommendations: This procedure should be performed by qualified personnel only.

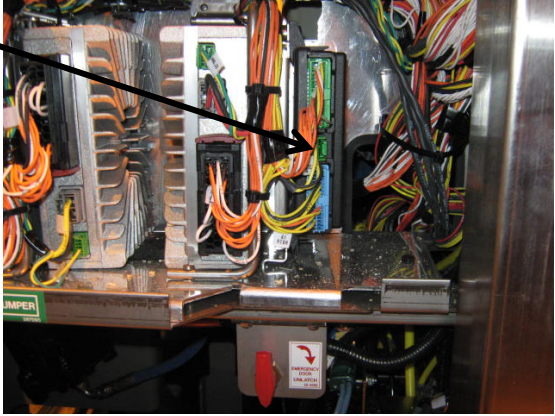
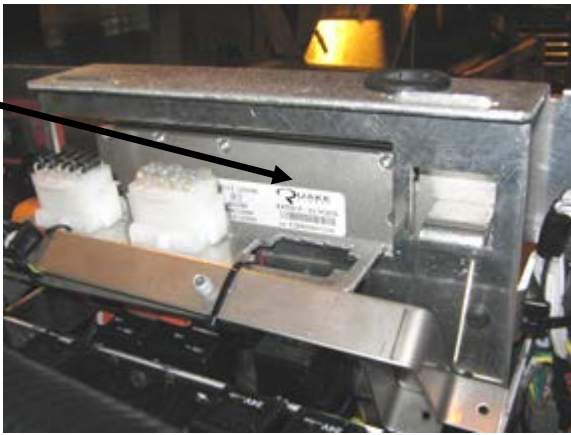
	Effective
Revision 00 : New procedure for cooling 2007 Revision 01 : Modified for EPA 2010	

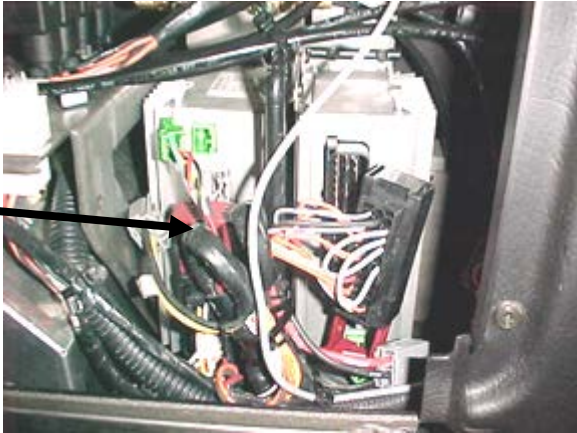
X3-45 Coaches

2.00*	Location: Rear Electrical Panel and Dashboard Set the battery master switch to the OFF position Place the ignition switch to the OFF position.	 
2.05*	Location: Rear Junction Panel Lift cover, trip circuit breakers CB2-CB4-CB6 located on junction panel. Push the red button to open the circuit	 

2.10*	Location: Rear Electrical Panel Disconnect the electronic ground terminals from this stud. Use electric tape; make sure that cables do not touch each others and the vehicle body. Note : <i>With disconnection of the electronic ground terminals, disconnecting the engine ECM, transmission TCM and the dashboard electronic components (telltale module, HVAC module, radio, control head ...) is not required.</i>	
2.15*	Location: Rear Electrical Panel Disconnect the electronic modules: Disconnect all I/O A, I/O B modules. Disconnect C717 Disconnect 3 connectors from each I/O A module Disconnect 3 connectors from each I/O B module Disconnect C397	 

2.20 *	Location: Front Electrical Compartment Disconnect the I/O A, I/O B, ABS, master ID, VECU, CECM, BERU, Volvo Link, Gsecu modules. Disconnect 3 connectors from I/O B and I/O A modules	
	Disconnect 4 connectors from the ABS module	
	Disconnect connector from master ID	

	Disconnect 3 connectors from VECU	
	Disconnect 3 connectors from CECM	
	Disconnect connector A 83 under Volvo Link module	

2.30	Location: Pneumatic accessory panel inside right console Remove the access panel on the right console (R.H. side of dashboard) Disconnect both I/O B modules	
2.40	Location: Condenser Compartment Disconnect connector A 137	

2.50	Location: Evaporator Compartment Disconnect A 54 module located inside the evaporator compartment, on the door.	
2.60	When all the previous steps are done, you can do welding on the vehicle.	ENSURE THAT THE WELDING GROUND RETURN CLAMP IS WELL SECURED AND MAKES A GOOD ELECTRICAL CONTACT WITH A LARGE METALLIC AREA OF THE CHASSIS LOCATED NEAR THE WELDING POINT AS MUCH AS POSSIBLE.
2.70	When welding is completed, reconnect all the modules. Make sure that the connectors locking tab are well engaged!	BE CAREFUL TO MAKE THE PROPER CONNECTIONS, IF NOT, SOME SYSTEMS OR COMPONENTS MAY NOT BE USABLE.

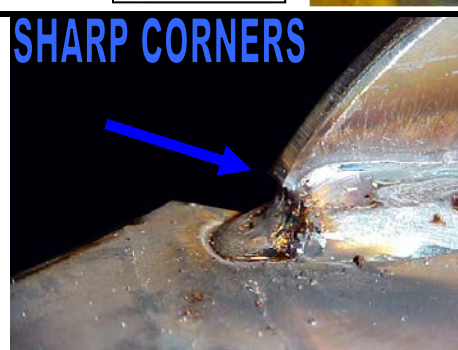
IT750004 Weld Inspection

TITRE: WELD INSPECTION

NO: IT750004A

PROPRIÉTAIRE: Sébastien Guévin

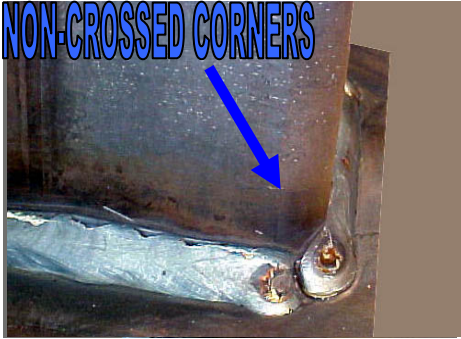
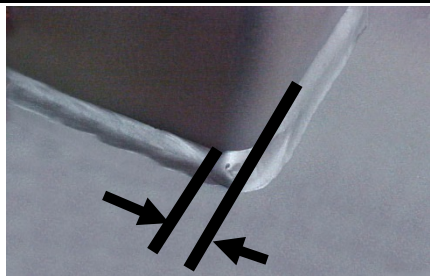
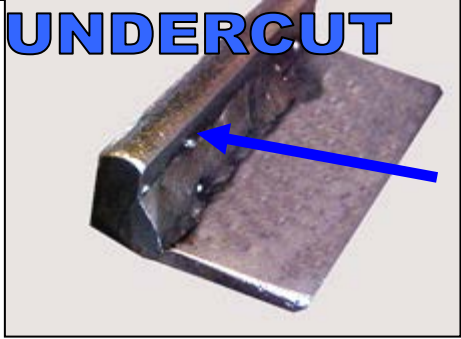
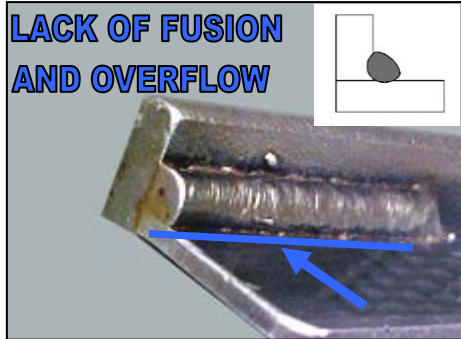
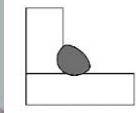
MAJOR DEFECTS

TYPE OF DISCONTINUITY	MATERIAL THICKNESS			REPAIR
		t > 3.2 mm	t ≤ 3.2 mm	
CRACKS 	NONE	NONE	NONE	Gouge or grind to sound metal at craked locations and reweld. Contact the welding technician.
ROUND POROSITIES 	NONE	NONE	NONE	Gouge or grind to sound metal and reweld. Contact the welding technician.
VERMICULAR POROSITIES 	NONE	NONE	NONE	Gouge or grind to sound metal and reweld. Contact the welding technician.
CRATERS  FOR THICKNESSES LESS THEN 3.2MM	No unfilled crater allowed.		Hole accepted at the end of the seam if diameter less than 0.5 mm. No unfilled crater allowed.	Fill with welding Note : If presence of cracks in the crater, grind and weld
SHARP CORNERS 	NONE	NONE	NONE	Grind to eliminate stress concentration or hammering to remove the sharp corner. Reweld if possible.

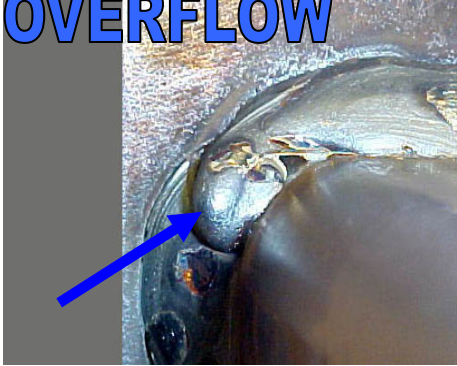
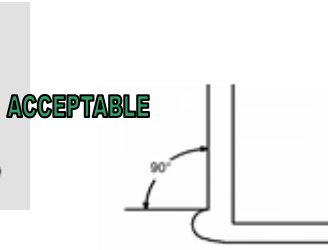
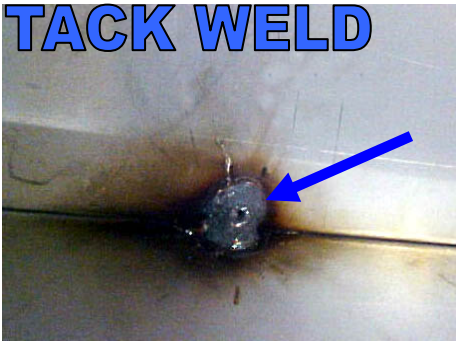
TITRE: WELD INSPECTION

NO: IT750004A

PROPRIÉTAIRE: Sébastien Guévin

TYPE OF DISCONTINUITY	MATERIAL THICKNESS			REPAIR
		t > 3.2 mm	t ≤ 3.2 mm	
NON-CROSSED CORNERS  	Unless otherwise stated on the shop drawing, all welded joints must be so to cross the corners Visually check that : Minimum covering : 3 mm Desirable covering : 5 mm			Add weld.
UNDERCUT    Jauge a profil Check the depth using the profile gauge.	NONE	Max. depth : 0.5 mm Max. 10% of weld length	Max. depth : NONE	Grind if required (MAX 10% of material thickness) Make an additional weld seam, adhering to the weld profile. DOWNWARD WELDING is forbidden with FCAW et MCAW processes.
LACK OF FUSION AND OVERFLOW  	NONE	NONE	NONE	Grind and weld an additional bead.

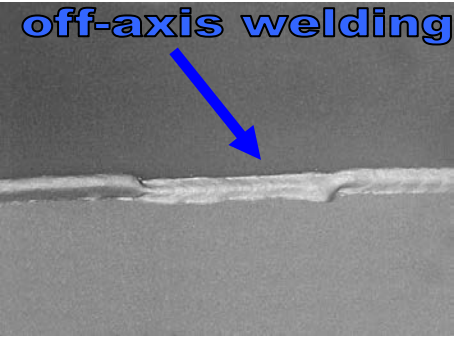
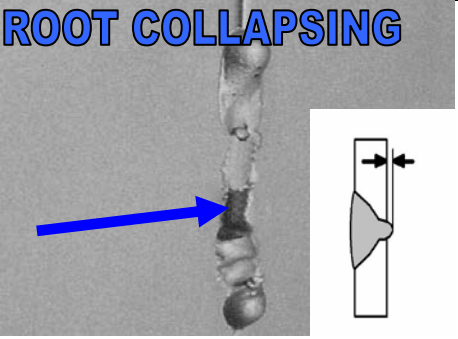
TITRE: WELD INSPECTION	NO: IT750004A	
PROPRIÉTAIRE: Sébastien Guévin		

TYPE OF DISCONTINUITY	MATERIAL THICKNESS			RÉPARATION
	 CC1	t > 3.2 mm	t ≤ 3.2 mm	
OVERFLOW 	NO overflow having a less than 90 degree angle.  			Grind or weld.
TACK WELD 	NONE	NONE	NONE	Grind or fuse with weld bead, minimum length : 10 mm. Blend with weld bead.

TITRE: WELD INSPECTION

NO: IT750004A

PROPRIÉTAIRE: Sébastien Guévin

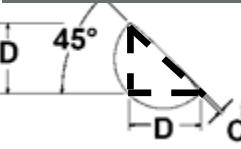
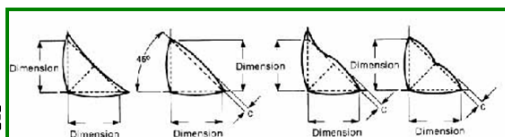
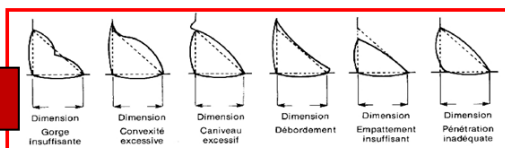
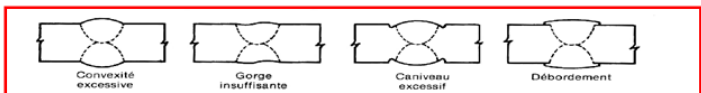
TYPE OF DISCONTINUITY	MATERIAL THICKNESS			REPAIR
	 CC1	t > 3.2 mm	t ≤ 3.2 mm	
ARC STRIKE 	NONE	NONE	NONE	Grind
off-axis welding 	For a skewed weld to be acceptable, it should not exceed the following criterias: Max. length: 10 % of weld length Max. skew distance. : 1.5 mm Not to be located at the end of the weld seam: (12 mm)			Grind and reweld
ALTERED PIECE 	No cut line, cracks or other defects on parts.			The repair must meet the quality criterias. Contact the welding technician to see if the repair is possible, to be analyzed for exemption request.
ROOT COLLAPSING 	The extra thickness of the collapse should not exceed 2 mm. Note : Repair if presence of porosity or undercut.			Excessive thickness : Grind Porosity or undercut: Grind and weld

TITRE: WELD INSPECTION

NO: IT750004A

PROPRIÉTAIRE: Sébastien Guévin

DIMENSIONAL INSPECTION OF WELDS

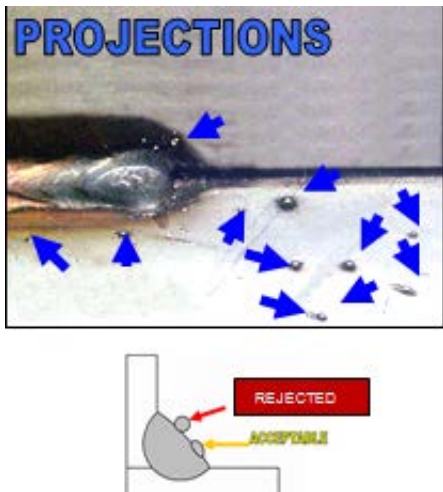
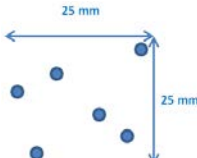
TYPE OF DISCONTINUITY	MATERIAL THICKNESS			REPAIR
	CC1	t > 3.2 mm	t ≤ 3.2 mm	
FILLET WELD PROFILE   	Visually check and control with a dimensionnal gauge to make sure that weld profile is acceptable.			Weld or grind as required.
	The dimension of a continous fillet weld may be 2 mm less than required without correction if it is present on less than 10% of weld length.		As noted on drawing.	
	ACCEPTABLE  UNACCEPTABLE 			
OVER THICKNESS  	Max 3.2 mm	Max 3.2 mm	Max 1.6 mm	Grind excess welding. Weld to add material.
	Bead must be convex.			
				

TITRE: WELD INSPECTION

NO: IT750004A

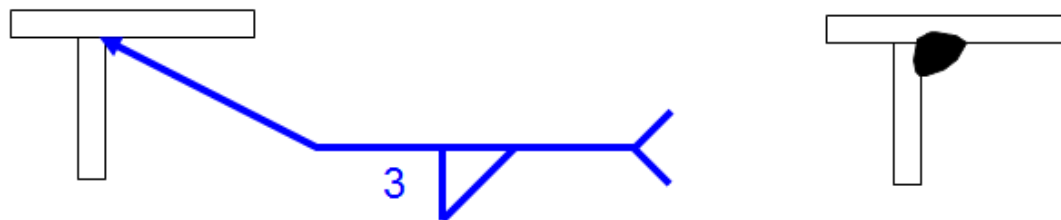
PROPRIÉTAIRE: Sébastien Guévin

MINOR DEFECTS

TYPE OF DISCONTINUITY	MATERIAL THICKNESS			REPAIR
	 CC1	t > 3.2 mm	t ≤ 3.2 mm	
FLUX 	NONE	NONE	NONE	Remove with a flux hammer
PROJECTIONS 	Remove projections which do not fit the acceptable profile. For carbon and stainless steels, non adhesive projections are not permitted. Maximum projections allowed without repair: 6 projections per 625 mm² (1 po²) 			Grind.
STICKED WIRE 	NONE	NONE	NONE	Remove

Welding Procedure

Appendix D



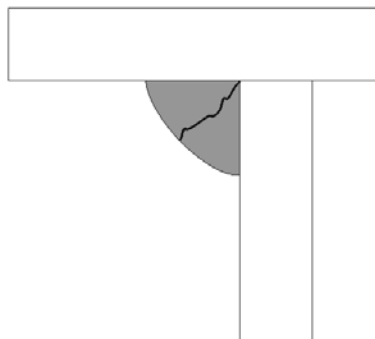
WELDING PARAMETERS

Volt : 19 – 22 V
 Amp. : 130- 190 A
 Wire speed. : 360- 500 in/min
 Position: Overhead
 Welding Wire: ER308 LSI 0.035 "
 Shielding Gas: 98% AR – 2%CO2 **or** 90%He- 7.5% Ar- 2.5 CO2
 Welding Speed: 15- 22 in/min

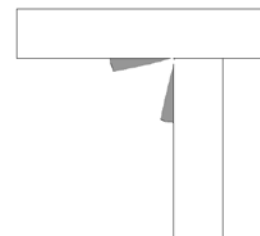
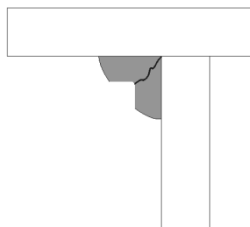
CRACK REPAIR

Weld cracks on the mounting ears must be grinded to the root and welded.

If the crack is visible;



Grind to the root of the crack. Bevel angle between 45° and 90°.



Fillet Weld according to "welding parameters" above.

