

Velocity/Impel Battery Box Upgrade



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Background

The original Velocity/Impel battery box design placed the positive battery post directly under a cab substructure support. The cab substructure could contact the positive battery post cap. Eventually the cab substructure could wear through the plastic cap and cause an electrical short circuit.

The battery box has since been lowered to provide proper clearance. For the vehicles in the field an upgrade kit will be installed. A battery spacer will permanently locate the batteries away from the cab substructure support. In addition the foil backed cab insulation will be removed to eliminate any potential electrical conductivity.

If you have any questions or concerns with this upgrade, contact Pierce Customer Service at 1-888-974-3723.



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Parts and Tools



Parts List

<u>Part No.</u>	<u>Qty</u>	<u>Description</u>
1913369	1	Battery Box Upgrade Kit
Includes:		
1871652	4	Hold down rod, battery
1886532	2	Spacer, battery box tray
82-2081-0075	6	Bolt, 1/4-20 x .75
82-0200-0025	6	Nut, 1/4-20, serrated
82-3029-002	4	Nut, Nylok, 5/16-18
82-1032-0031	4	Washer, flat, 5/16



Setup Tools Required

Safety Glasses	Approved Eye Protection Device
Safety Shoes	Approved Toe Protection
Battery Light	Suitable lighting to safely brighten work area
Wheel Chocks	Block wheels to prevent truck from moving
"DO NOT START" TAG	Attach to truck ignition switch



Work Tools Required

Electrical tape
Straight edge, 18 inch
1/2" deep hex socket, 3/8" drive
3/8" drive ratchet wrench
Side cutter
9/32" drill bit
Drill
7/16", 1/2" hex socket, 3/8" drive
Combination wrench – 7/16", 1/2", 9/16"
Utility knife
Metal router
Marking pen
Tape measure
Tie straps – medium
Black spray paint



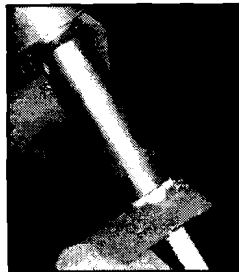
Battery Spacer Installation



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Remove battery cables



Carefully tilt cab and set stay arm in place.

Remove nuts and washers from battery hold down rods.

Disconnect positive battery cables. Tape off bare cable ends with electrical tape.

Disconnect negative battery cables.

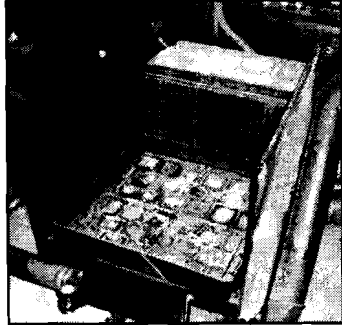
Temporarily lay cables and battery support angle on top of transmission.



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Install spacer

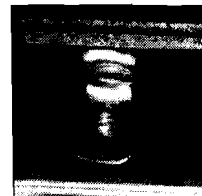
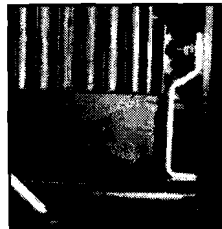


Remove batteries and battery tray.

Install spacer on **front** side of battery box.

Using spacer as template, drill three 9/32" dia. holes through front side of battery box. Be careful to clear discharge and front suction pipes.

Install three 1/4" bolts and serrated nuts to hold spacer in position. Place bolt head on outside of battery box. Tighten to 10-11 ft lb.



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Battery box drain hole



Place battery tray in battery box.

Mark extra clearance needed for battery tray drain hole.

Enlarge drain hole for battery tray clearance.

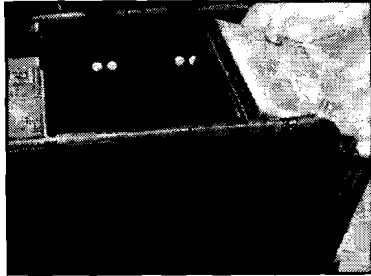
Paint bare metal to prevent corrosion.



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Re-install batteries



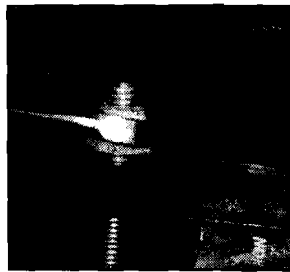
Install **new** battery hold down rods. Reinstall all batteries.

Position battery hold down angle over hold down rods and edge of batteries.

Install **new** flat washers and Nylok nuts on hold down rods.

Tighten nuts securely. **Do not over tighten or battery damage could occur.**

Re-install all battery cables. Tighten battery post fasteners securely.



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Cab Insulation Removal



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Remove cab insulation

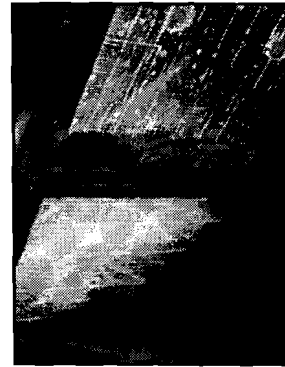
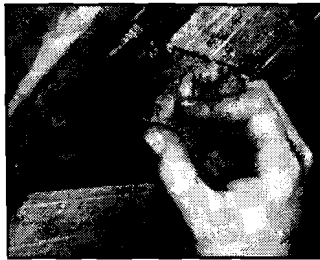


Locate first cab floor support angle rear of wheel well.

Mark a line 2.5 inches from front edge of insulation.

Using a straight edge cut along the marked line.

Carefully remove insulation keeping a neat appearance.



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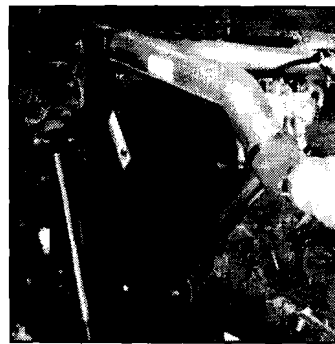
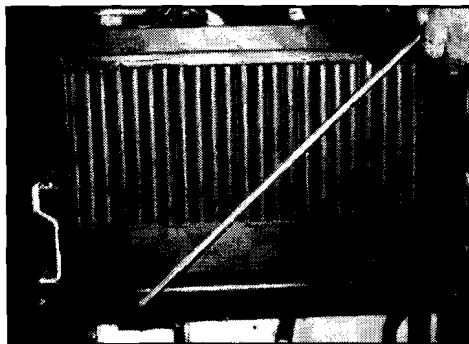
Wrap up

Add battery tray spacer and remove cab insulation on other side of vehicle.

Check battery cable and battery hold down connections.

Carefully remove cab stay arm and lower cab.

Start truck. Make certain all vehicle starting and electrical functions operate properly.



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Paperwork



Warranty / Field Campaign Sign-Off Form - QSD911

After completing the upgrade, fill out and sign the warranty reimbursement form.

Give the fire chief a copy of the form.

Place the truck back in service.

The form is titled "Warranty / Field Campaign Sign-Off Form" and includes a Pierce logo. It contains the following sections:

- Field Campaign:** Number/Description, Customer Name, Job #, Repair Technician, Date Repair Complete, Dealer Class #, Labor Hours, Labor Invoice, and SE/SWS.
- Table:** A table with columns for Quantity, Cost, Material Cost, Parts Price, and Description. It has rows for Parts, Labor, Sublet, and Other Charges.
- Signature Lines:** Lines for Customer, Technician, and Fire Chief.
- Contact Information:** Email for upgrades (upgrades@pierce.com) and contact for service (Department: 1-888-994-3722).
- Footer:** Pierce Warranty Claims and a date stamp (9/16/08).

