



PRODUCT IMPROVEMENTS



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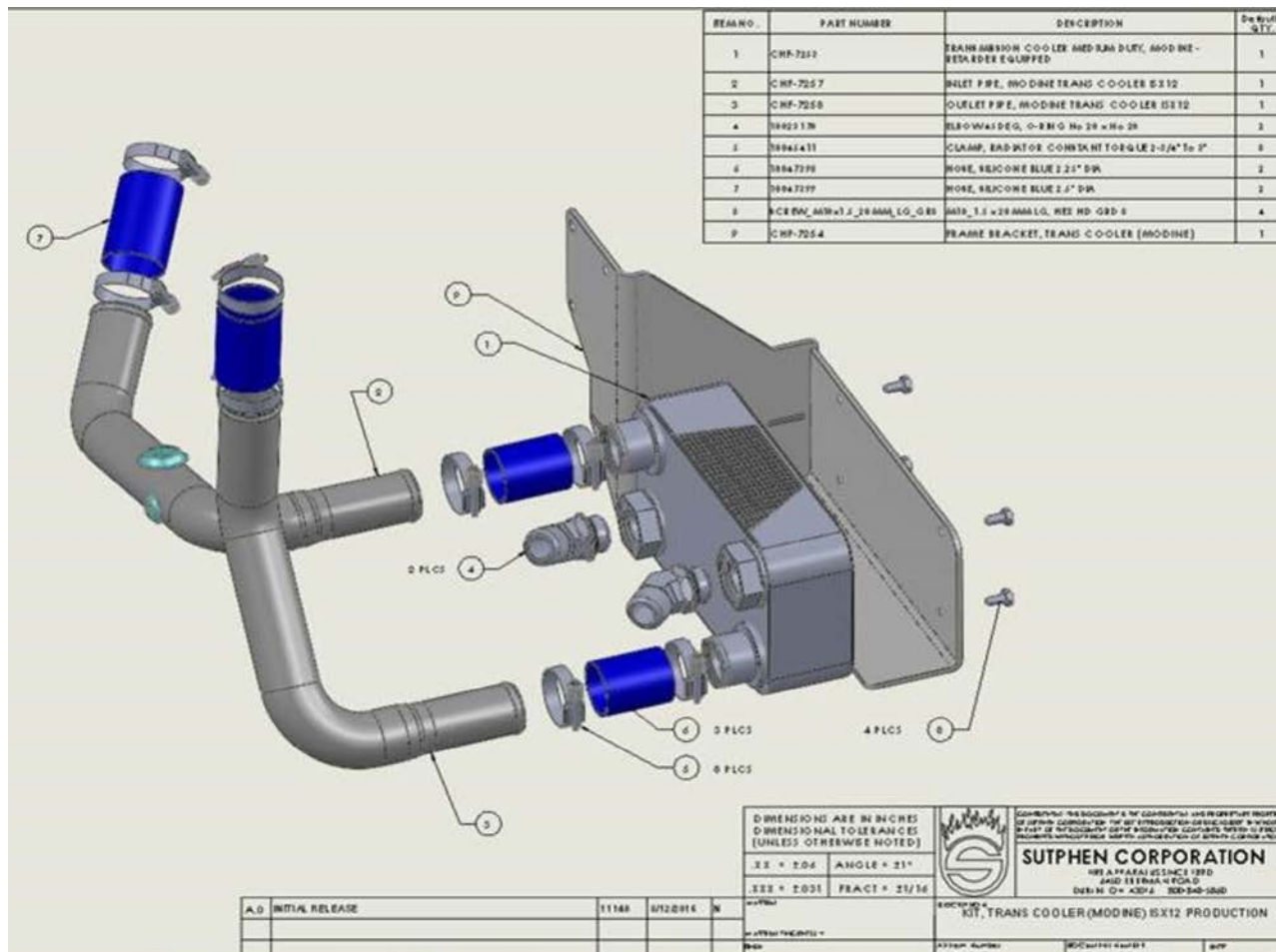
Recent and Potential Product Improvements

- Design and testing completed with Modine to move away from the AKG transmission coolers where failures have resulted 4 transmission failures.
 - Failures to date have only been on Retarder equipped transmissions
- Field retrofit package nearing completion.
 - Once complete and parts are available, we will be retrofitting trucks in operation. Those trucks have temporarily had the retarder feature removed allowing the Jake Brake to provide assistance.



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Recent and Potential Product Improvements





Recent and Potential Product Improvements

- **20k front spring pack in development to help smooth the ride.**
 - **Currently using 23k springs with the stiffer shock and 385 tires with stiffer sidewall. Perfect storm causing rough ride.**
 - **With 20k springs, we're working to move back to the more compliant shock to solve the ride issue.**
- **New spring and shock combination to become...**

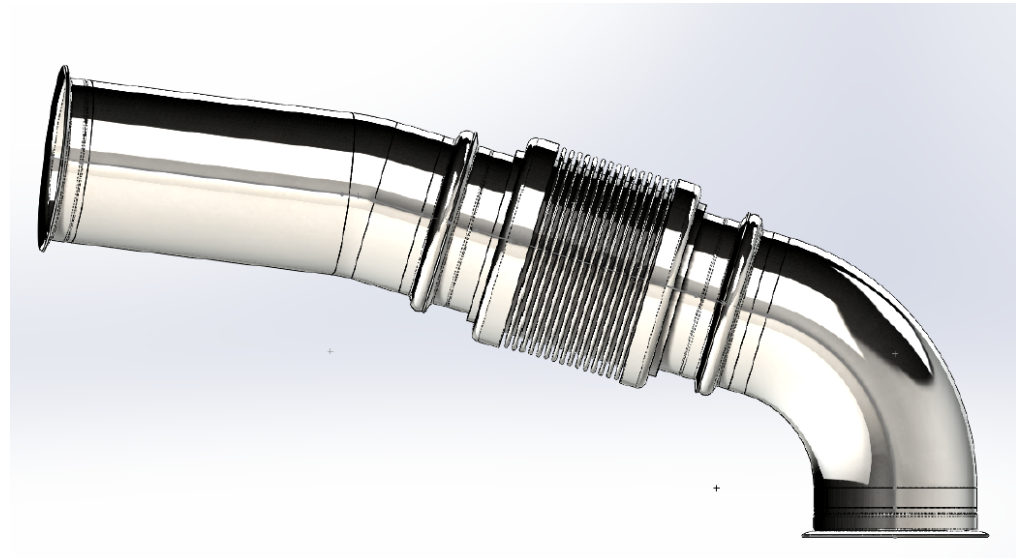
Front Weight	Correct Spring	Spring Mfg'r	Shock	Shock Mfg'r	Tires
18k	19k	Standens	Red	Koni, Road King	315
19k	19k	Standens	Red	Koni, Road King	315
20k	20k	Standens	Red	Koni, Road King	385
23k	23k	Standens	Black	Koni	425
25k	25.5k	Standens	Black	Koni	445



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Recent and Potential Product Improvements

- New more flexible exhaust bellows has been tested and passed to eliminate interference. Working now to formalize a field retrofit kit and to implement into 2017 engine production.





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Recent and Potential Product Improvements

New dash with updated displays and housing to match the command console and engine hood

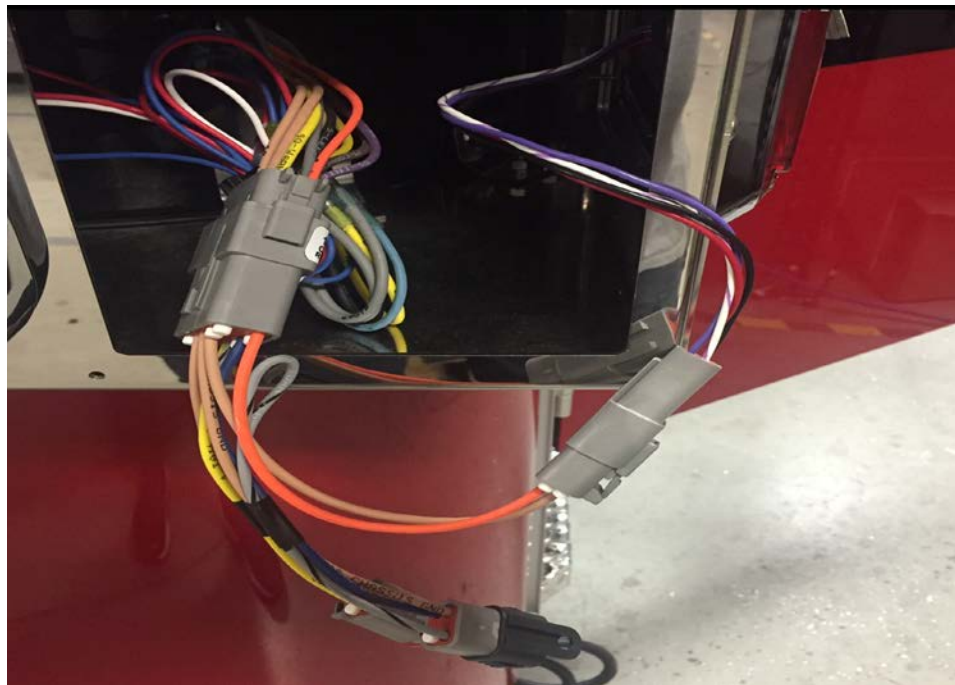




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Recent and Potential Product Improvements

Weather resistant and “easier to use” Deutsch connectors now integrated into the headlight harness.

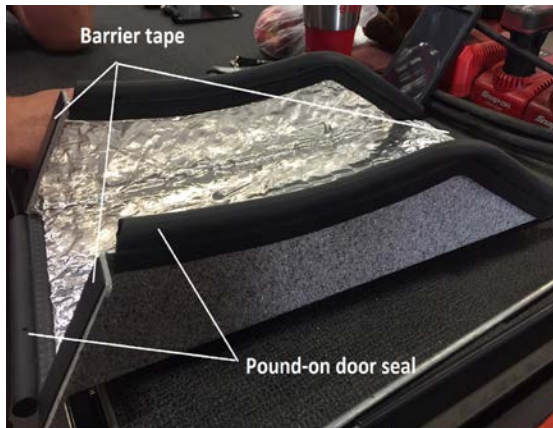




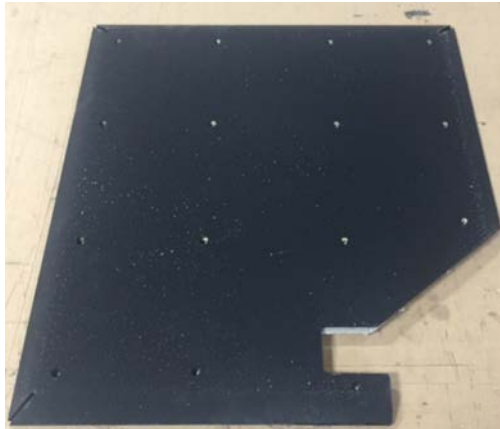
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Recent and Potential Product Improvements

Officer's seat box heat reduction steps implemented and continue to be refined...



Completed, insulated and sealed cover



Going forward, we will eliminate “carpeting” inside the box and add DTA.

With the cooling fan just starting, water temp at 200F and the trans temp at 210F, max sidewall heat reached 85F and hose cover max reached 77F.

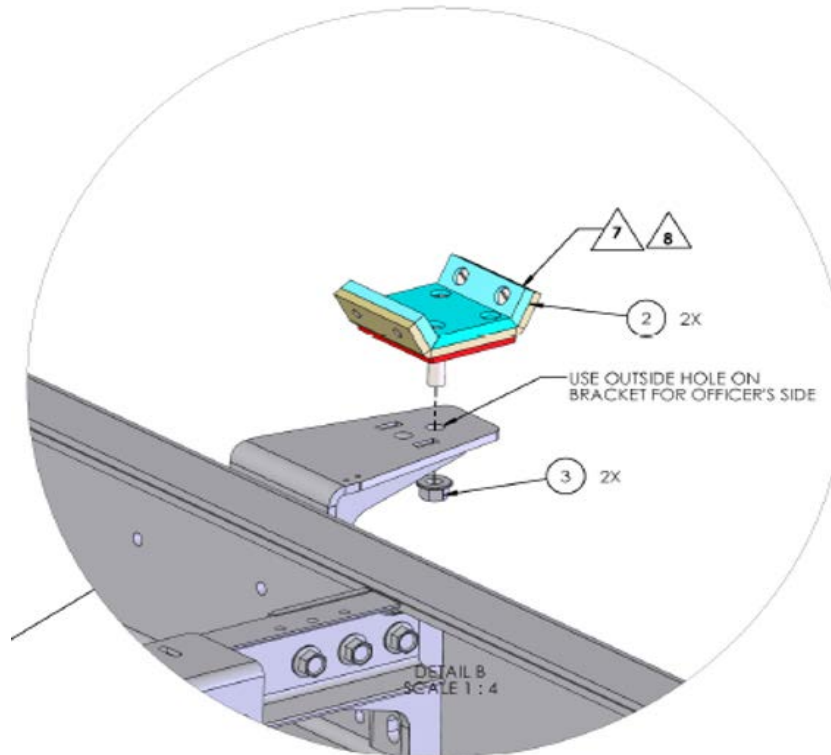


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Recent and Potential Product Improvements

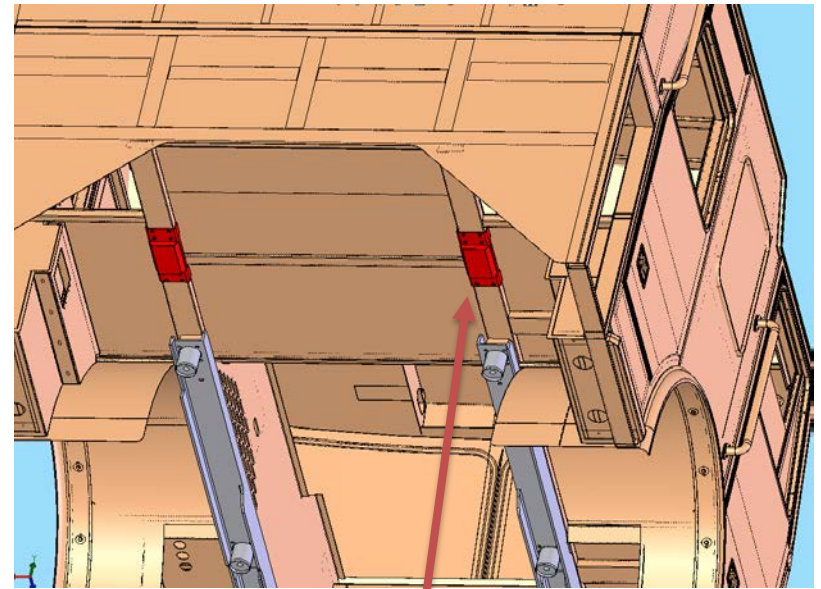
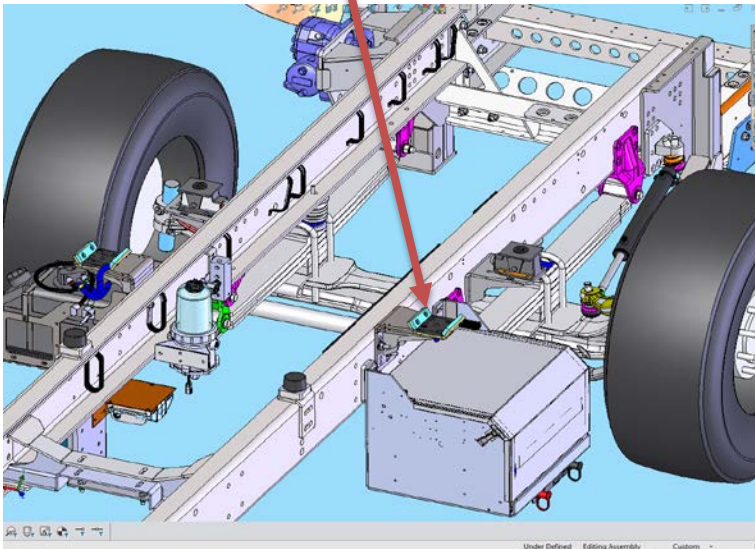
Cab “popping” work;

- V-mount design being tested to stop side-to-side cab movement





V-MOUNT
ASSEMBLY



V-MOUNT CHANNEL
BLOCKS

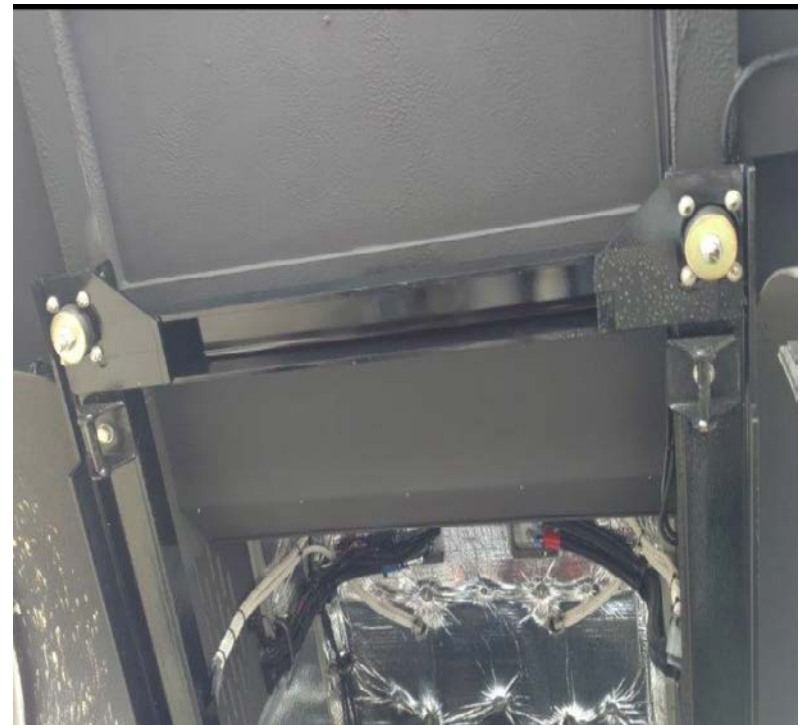
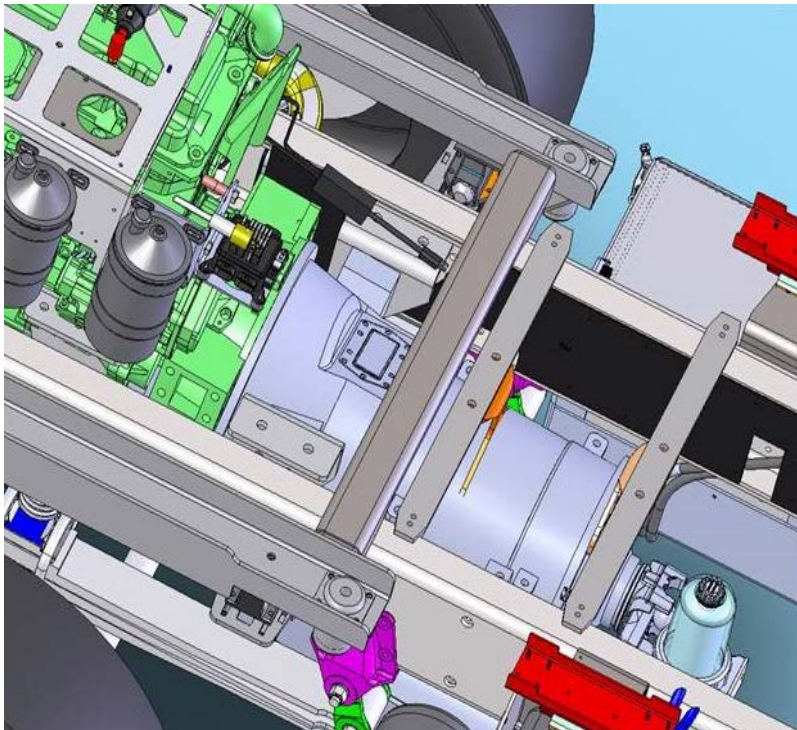


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Recent and Potential Product Improvements

Cab “popping” work continued;

- Tilt-frame “tie bar” being tested to resist up/down cab movement





Recent and Potential Product Improvements

Mechanical tire pressure monitors being tested to improve accuracy and eliminate false readings caused by dead batteries.



Battery powered



Mechanical



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Recent and Potential Product Improvements

Screw caps “covers” to protect occupants arms from the screw heads on the hood.

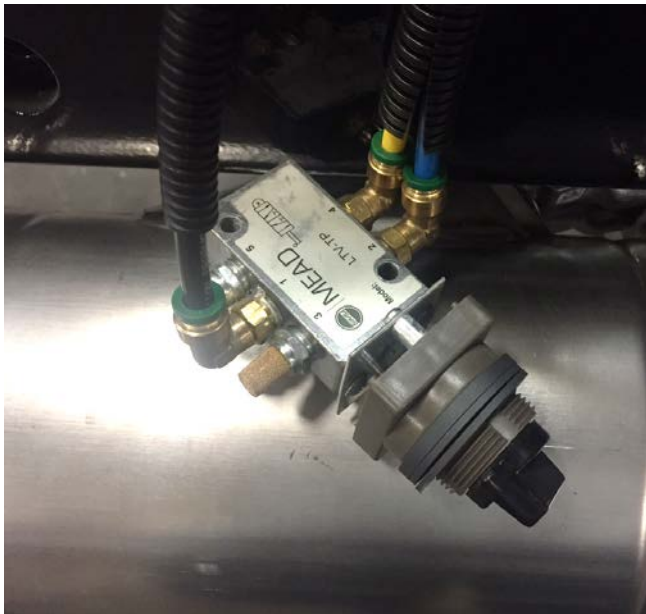




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Recent and Potential Product Improvements

Cab tilt safety latch switch change



- Old Rotary version



New solid brass version



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Recent and Potential Product Improvements

FRP fuel fill quick disconnect to eliminate corrosion





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Recent and Potential Product Improvements

- Considering sources for higher amperage USB Plugs
 - Example below of Kussmaul's offering

USB Dual Ports



091-219
USB Dual Port, 3.1A



091-219-N
USB Dual Port, 3.1A



091-219-4
USB Dual Port, 4.2A



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Recent and Potential Product Improvements

DOT Certified Fuel Tanks;

- 65 gallon in process
- 100 gallon in process
- Fuel beam being designed now
- Other sizes in the pipeline



Old tank



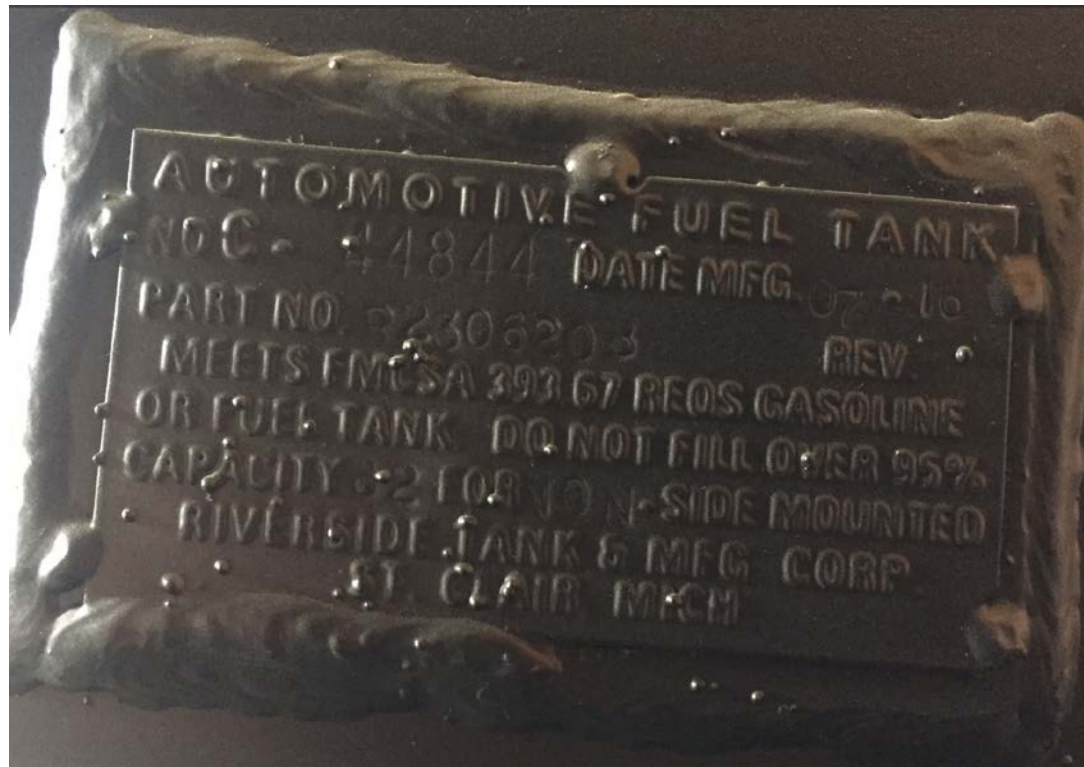
New tank



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Recent and Potential Product Improvements

DOT Certified Fuel Tanks. Label on right side.





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Recent and Potential Product Improvements

**Clamp-in mid-ship window to reduce trapped moisture and
sidewall corrosion**

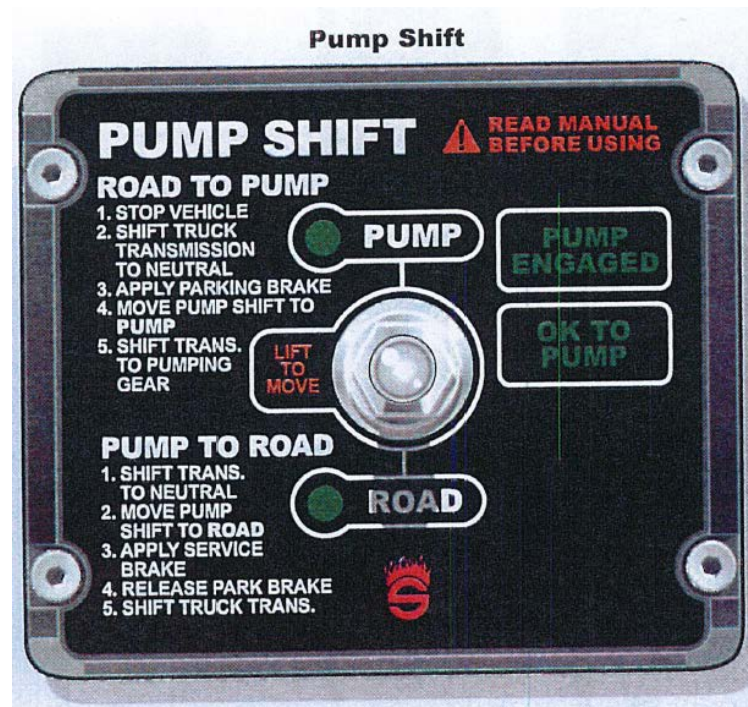




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Recent and Potential Product Improvements

- Considering electrical pump shift switch rather than our current pneumatic version to reduce air leaks.





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Recent and Potential Product Improvements

Bimba cylinder boot to protect from dirt, moisture, corrosion





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Recent and Potential Product Improvements

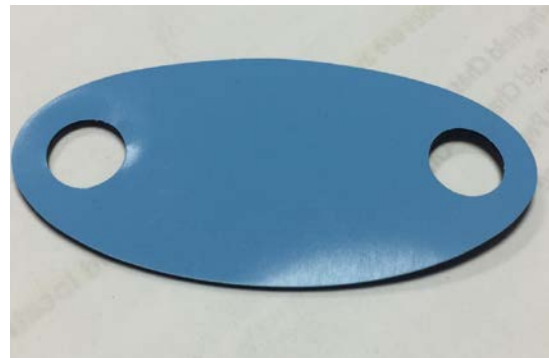
Grab bar gasket/isolator...



OLD



NEW



Eliminates “pressing out”, poor fit and flange cracking. Improves weather seal.



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Recent and Potential Product Improvements

Command console heat....

Options to reduce heat:

- **Add insulation?**
 - **No room under the hood.**
 - **cover top of hood inside the console?**

Options to dispel heat:

- **Ventilate?**
 - **Louver lid**
 - **Grills in the sides to promote flow**



Recent and Potential Product Improvements

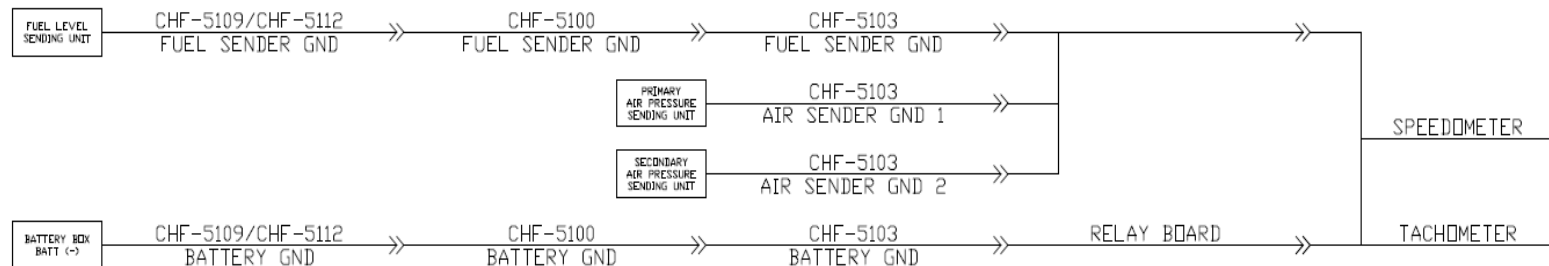
Added new fuel sender ground.

Update wiring to the speedometer. We are now using spare 11 at the fuel sender connecting with spare 7 at the breaker panel.

Spare 7 with ground at pin 2 of speedometer also splicing both air sender gauge grounds at same place.

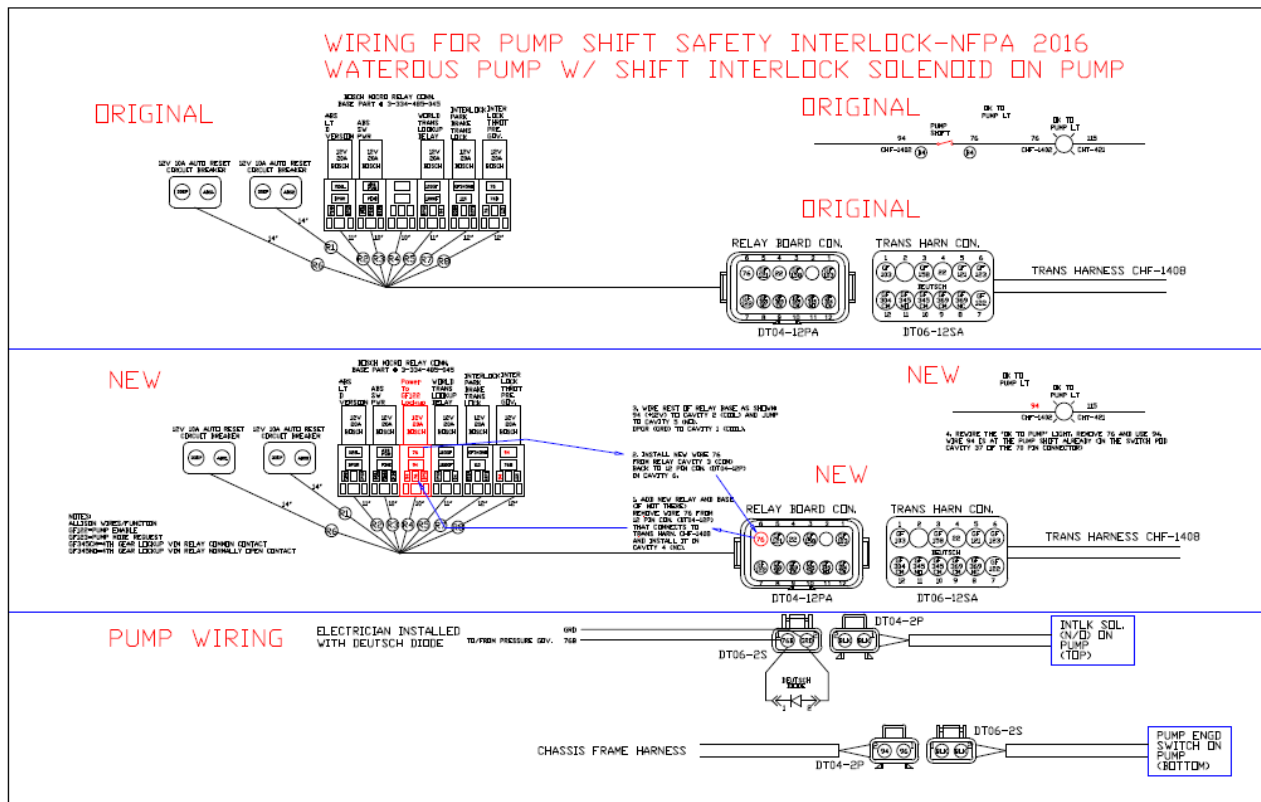
We are running a dedicated battery ground to pin 2 of the speedometer.

With the new wiring IC ground will be dedicated to the dash only .





Added wiring for Waterous pump engaged interlock





Thank you for your attention.

We always welcome suggestions and are anxious to work with you to continue innovating.

Questions?