TECHNICAL SERVICE BULLETIN

Bulletin No.: **TSB-039**

Date: **November 8, 2019**

Subject: **Emergency Air Supply System**

Models: **All Quantum Virtual Pipeline Lite Trailers**

Background

Quantum Virtual Pipeline (VP) trailers are equipped with a port and valve that allows the introduction of an off board air or gas supply to activate the pneumatic actuators. This feature can be used by service personnel or by emergency responders to allow for opening of the pneumatic actuators from a safe distance.

Condition

Currently the port to supply off board gas or air is at the beginning of the pneumatic actuator activation circuit, any damage that occurs to any portion of the pneumatic actuator activation circuit can inhibit use of the system.

Cause

In the event of an accident, the plumbing used to connect the pneumatic actuators may be damaged. If this plumbing becomes damaged the pneumatic actuators may not be able to be opened using the onboard gas supply or by using an off board air or gas supply.

Correction

A change can be made to the routing of the pneumatic actuator activation circuit so that use of the emergency air supply side will bypass the front and rear master control valves, the actuator control valve and much of the plumbing connecting these valves.
By making this change the probability of the emergency air supply feature working after an accident is greatly improved.

If the customer chooses to make this modification on an older trailer, a parts kit and instructions will be provided at no cost. Following the supplied instructions, the installation can be completed by any service personnel familiar with working with CNG systems or Quantum VP trailers.

All pneumatically actuated production trailers built after October 21, 2019 have been built at the factory with this new pneumatic routing.

TECHNICAL SERVICE BULLETIN

Labor Time

The estimated labor time to complete this repair is between 45' Trailers: 2.0 - 4.0 hours.
The estimated labor time to complete this repair is between 20' / 40' Trailers: 4.0 - 6.0 hours.

All VP Lite Trailers: **Labor OP**: G0007 **Time:** Approval required for excess time

Parts Information

Description	Part Number	Qty
KIT- PNEUMATIC MOD, VP, 45'	120359	A/R
KIT- PNEUMATIC MOD, VP, 40'	120358	A/R
SCREW, HEX HEAD, CONICAL WASH, M8 X 25	S1-20381-008	A/R
NUT- U-SHAPE, LOCKING, M8, LONG	118731-012	A/R

Parts for this modification are currently available for order.

Application
This bulletin may be applied to all the VP Lite Trailers indicated below.

- All Quantum 45' VP lite trailers with double doors built before 10/21/19
- All Quantum 20' and 40' VP lite trailers with a single door built before 10/21/19

Special Tools

Completion of this procedure will require the use of equipment to safety remove the trailer roof panels and work at the top of the trailer.

Contact Information:
E-Mail: QTService@qtww.com
Phone: U.S. 800.816.8691
Outside U.S. 949.930.3411
Fax: 949.930.3401

TECHNICAL SERVICE BULLETIN

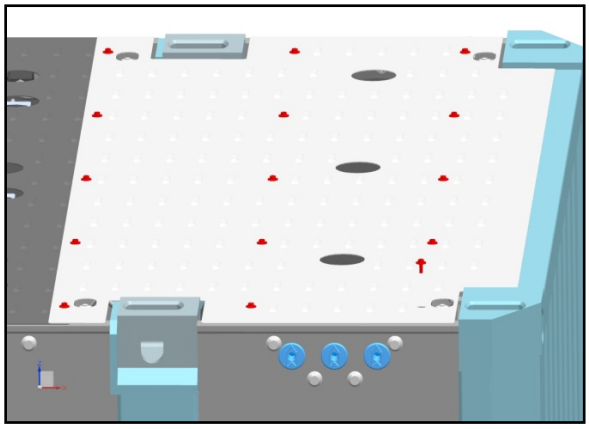
45’ two door procedure

The following procedure can be used to modify 45’ VP Lite trailers with two rear doors built before October 21, 2019

1. Mark the position of the roof panels for ease of reinstallation later.

2. Remove and retain the fasteners holding the front and rear roof panels. Remove the front and rear roof panels.

   If the trailer is equipped with a side mounted front master control valve the front two roof panels will need to be removed.



3. Close the ¼ turn valve above the regulator to isolate the gas supply system from the plumbing that will be rerouted.

TECHNICAL SERVICE BULLETIN

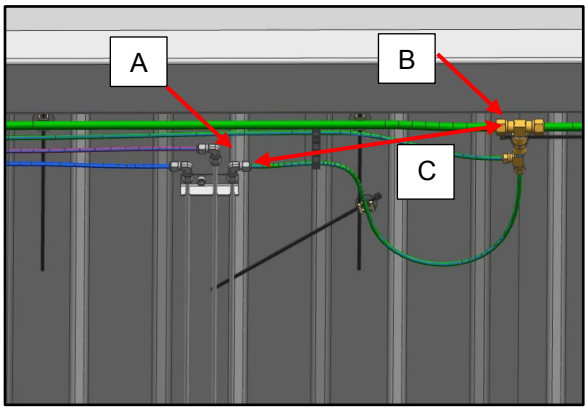
On systems equipped with a forward master control valve on the front of the trailer.

i. Disconnect the green tubing from the master control valve riser (a).

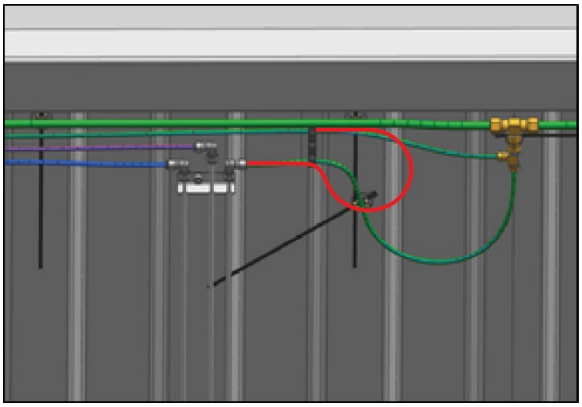
ii. Disconnect the green tubing from the tee fitting (b).

iii. Cut off the tube end with the existing brass nut and ferrule and install a new stainless nut and ferrule on the end of the tube.
Connect the tubing that was disconnected from the tee fitting to the master control valve riser (c).

Tighten 90° – 360° TFFT



iv. The picture to the right shows the new completed routing and connection (in red) over the top of the original configuration

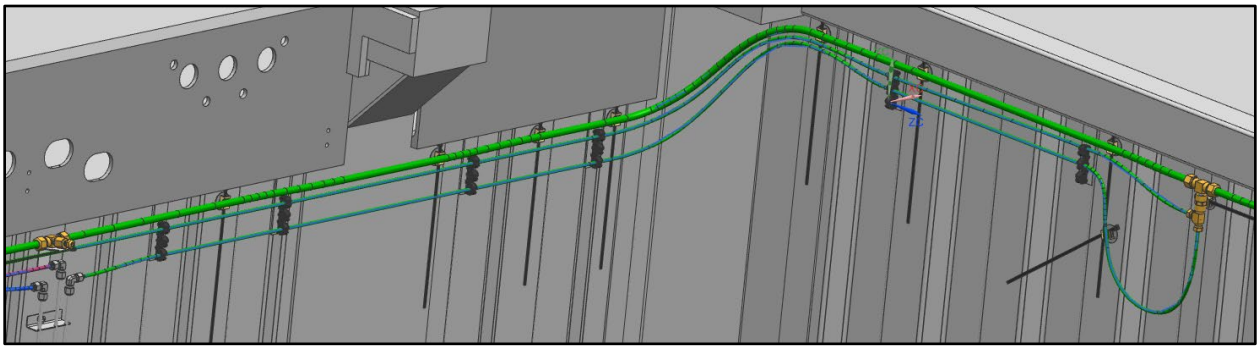


v. Secure the loop of the hose as needed with tie wraps.

Continue with this retrofit procedure

TECHNICAL SERVICE BULLETIN

On systems equipped with a forward master control valve on the side of the trailer.



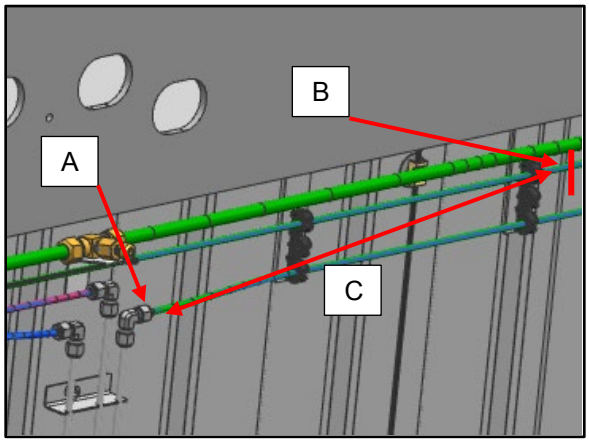
i. Disconnect the green tubing from the master control valve riser (A).

ii. Cut the ¼" green tubing approximately at the area indicated (B).

iii. On the rear portion of the tubing that was cut, install a new insert, nut and ferrule on the tubing.
The stainless nut and ferrule set MUST be used for this connection.

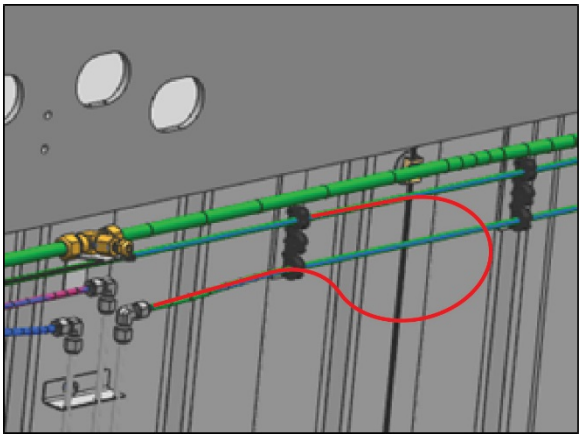
iv. Connect the rear portion tubing that was cut to the master control valve riser (C).

Tighten 90° – 360° TFFT



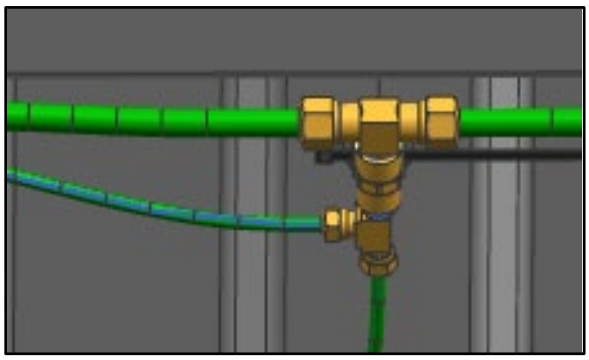
v. The picture to the right shows the new completed routing and connection (in red) over the top of the original configuration

vi. Secure the loop of the hose as needed with tie wraps.

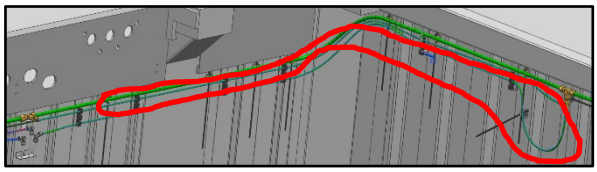


TECHNICAL SERVICE BULLETIN

vii. Disconnect the green tubing from the tee fitting at the front of the trailer.



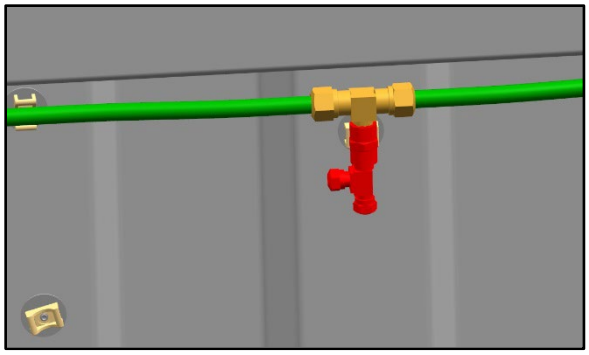
viii. Remove and discard the ¼" tubing from the clips between the master control riser and the tee fitting.



Continue with the retrofit procedure

TECHNICAL SERVICE BULLETIN

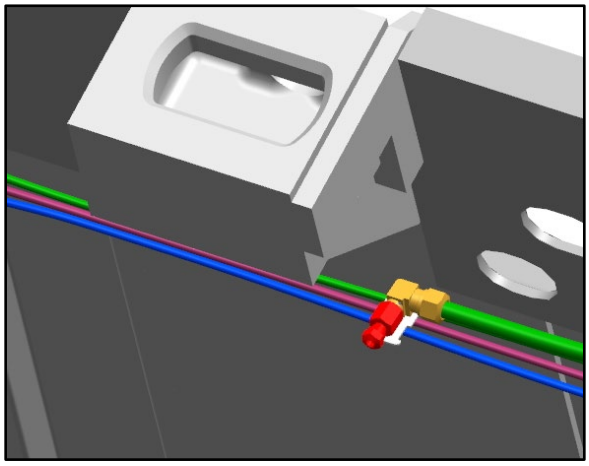
4. Remove and retain the ¼” tube tee fitting and ¼” NPT coupler from the ½” tube tee fitting.



5. Apply thread sealant to the NPT cap fitting and install the cap in the fitting.

   Tighten the cap 1-3 TFFT

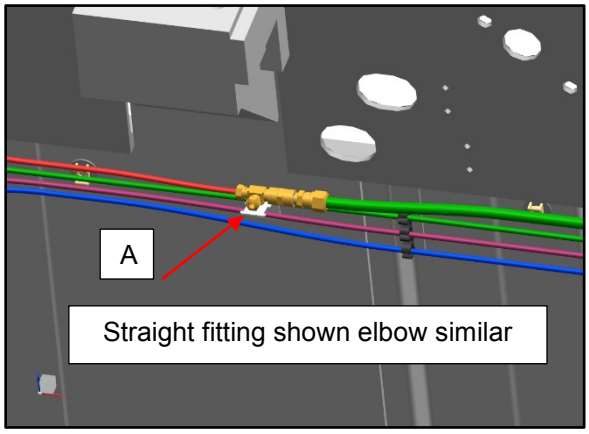
6. At the left rear top of the trailer remove and discard the fitting from the ½” green line.



7. Install previously removed ¼” NPT” x ¼” x ¼” tee fitting and connect the ¼”tube previously disconnected (A). Verify the open port is facing rear ward.

   Tighten 90° – 360° TFFT

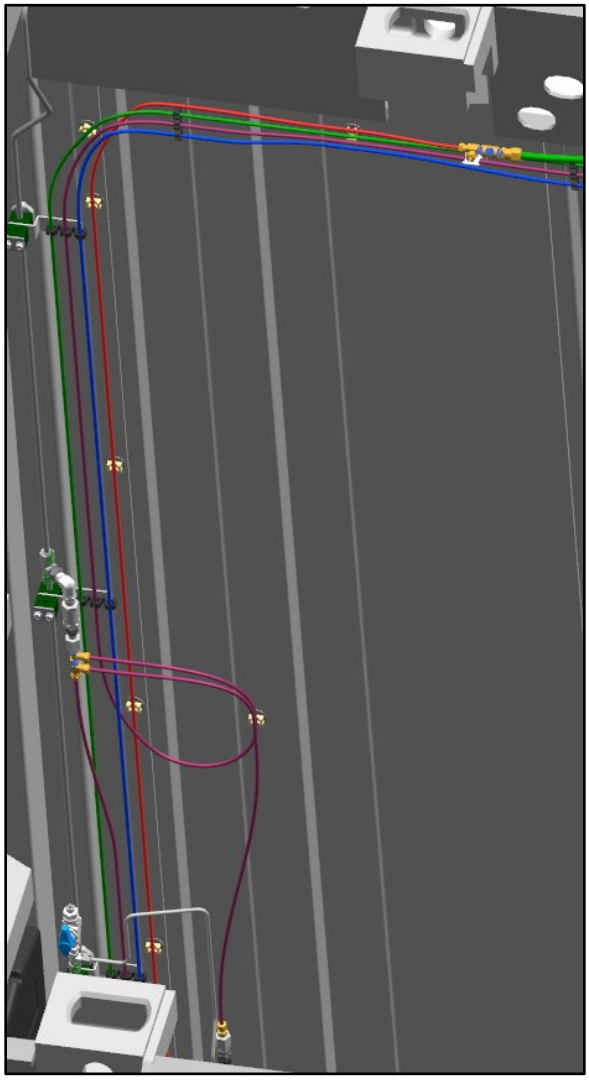
8. Secure the fitting to the bracket using a tie wrap.



TECHNICAL SERVICE BULLETIN

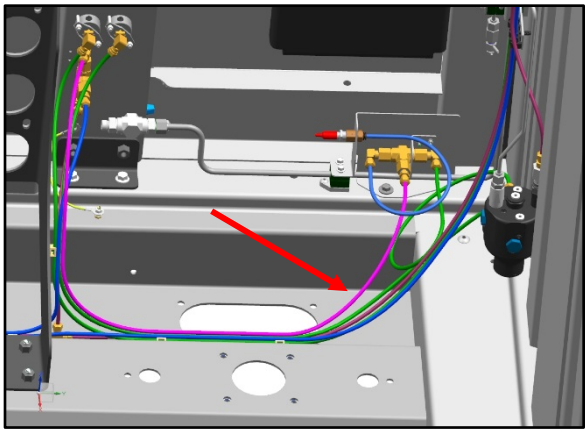
9. Connect a 14’ section of ¼” red tubing (shown in red) to the tee fitting just installed. Route the tubing adjacent to the other tubes and secure as needed. Three position plastic clips (not shown) positioned above the existing clips will provide support for the new tube.

   Tighten 90° – 360° TFFT

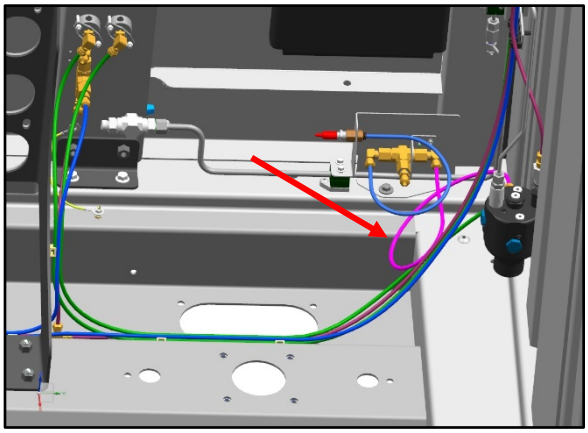


TECHNICAL SERVICE BULLETIN

10. Remove and discard the blue tube (shown purple) that connects the center port of the emergency air supply valve to the top port of the actuator control valve.

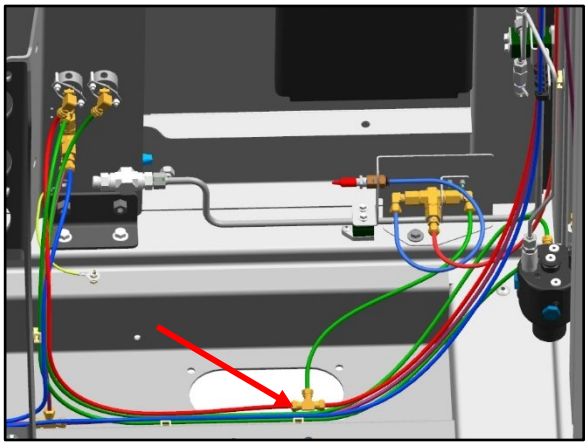


11. Remove and discard the green tube (shown in purple) that connects the LH port of the emergency air supply valve to the regulator.



12. Locate the green tube from the actuator gas pressure gauge (shown in red) that goes up the side of the container (shown in red). Cut the line approximately in the area shown and install the tee fitting.

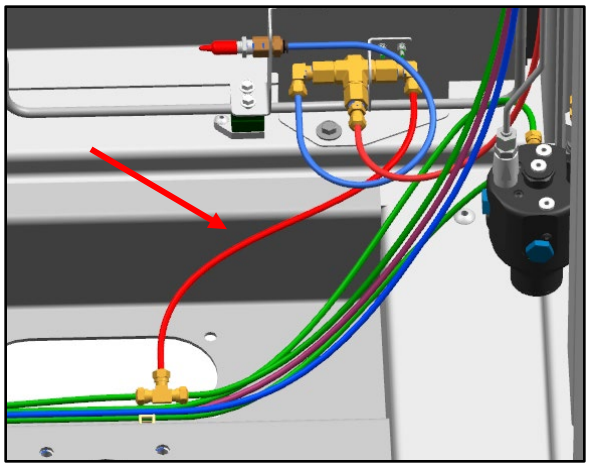
    Tighten 90° – 360° TFFT



TECHNICAL SERVICE BULLETIN

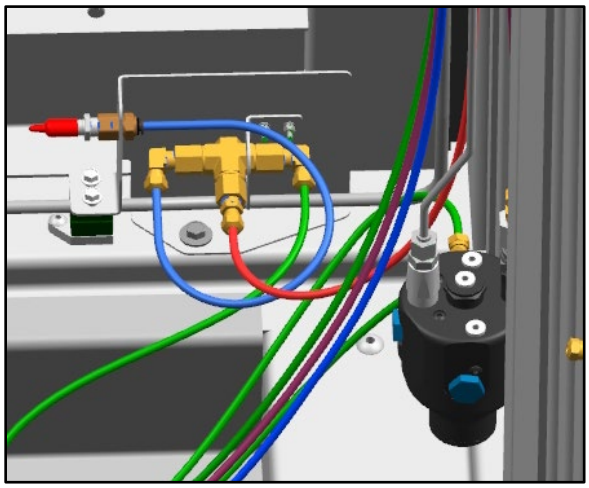
13. Install a 2’ section of green tubing from the tee fitting to the LH port of the emergency air supply valve.

    Tighten 90° – 360° TFFT



14. Connect the previously installed red tube routed from the tee fitting above to the center port of the emergency air supply valve.

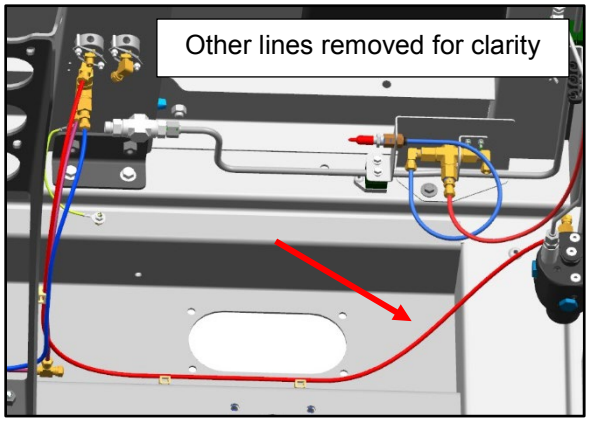
    Tighten 90° – 360° TFFT



15. Install a 3’ section of green tubing from the regulator outlet fitting to the top port of the actuator control valve.

    Tighten 90° – 360° TFFT

16. Open the previously closed ¼ turn valve isolating the gas supply system.



TECHNICAL SERVICE BULLETIN

17. Open the ¼ turn valve above the regulator to supply gas to the system.

System Test

18. Verify operation of the actuator control system using on board gas supply.

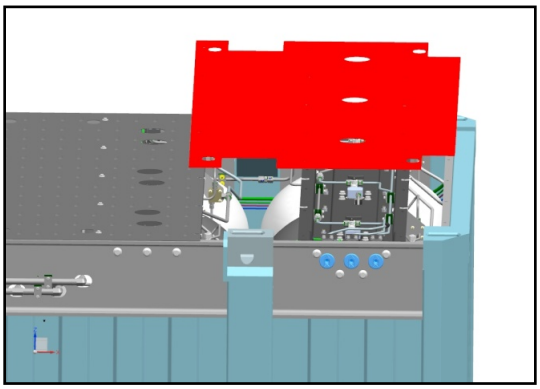
19. Leak check all disturbed fittings and connections while the actuators are in the open position.

20. Verify each of the master control valves work and inhibit actuator function.

21. Verify the emergency air supply system works to open the actuators while in the air supply position.

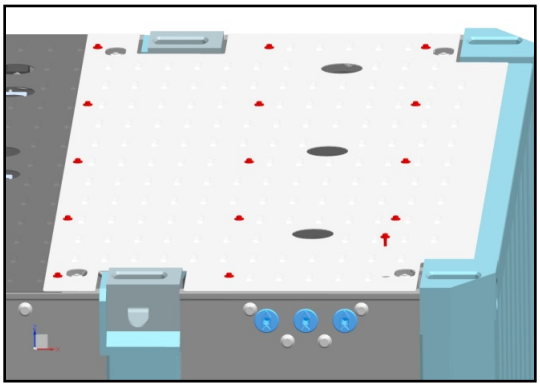
22. Locate the roof panel that was marked during removal for the position being installed. Place the roof panel in the position and align as needed.

    IMPORTANT: Use care when positioning the panels, when sliding the panels across the cross members, the edge of the roof panel can catch and knock off the U-Nuts.
    Where panels overlap, the forward panel should always be on top of the panel to the rear.



23. Loose fit all the roof panel fasteners; be sure to replace any fasteners that may have been missing prior to disassembly.

    Tighten fasteners to 22 ft. lbs (30 Nm.)



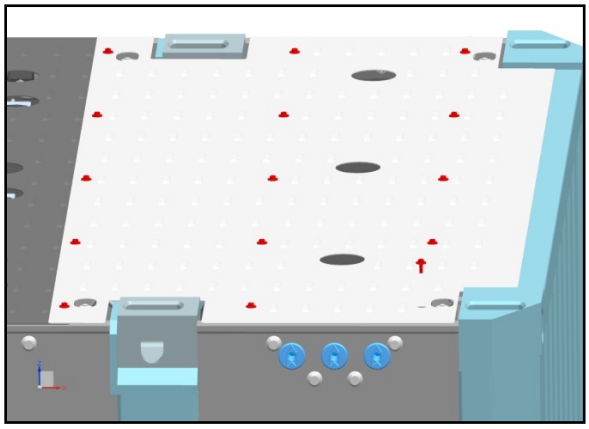
TECHNICAL SERVICE BULLETIN

20’ and 40’ single door procedure

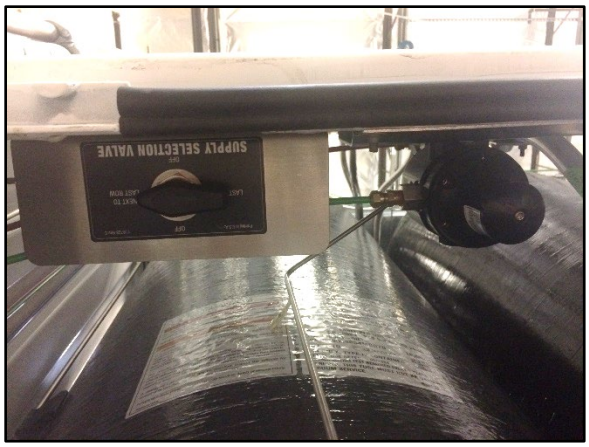
The following procedure can be used to modify 20’ and 40’ VP Lite trailers with a single rear door built before October 21, 2019

1. Mark the position of the roof panels for ease of reinstallation later.

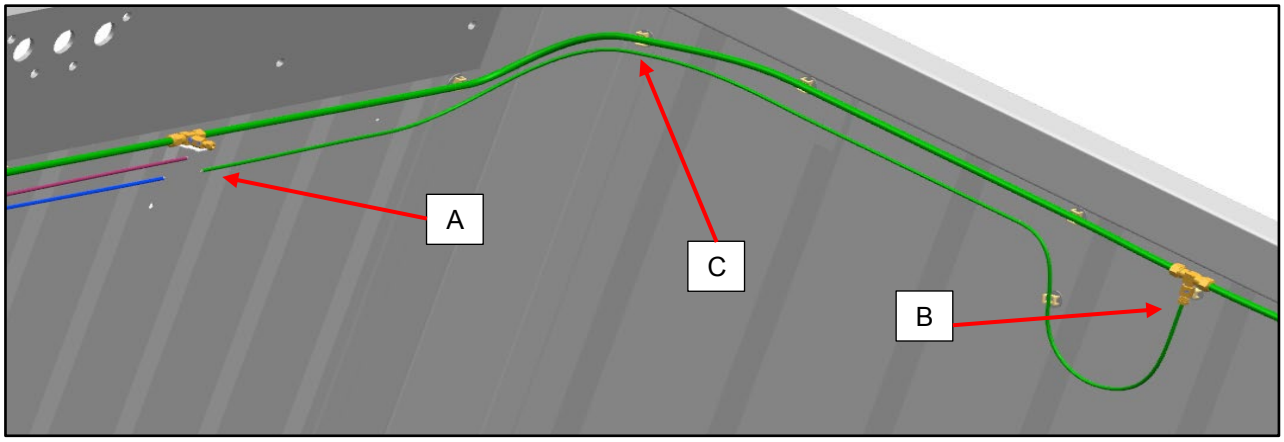
2. Remove and retain the fasteners holding the roof panels. Remove and retain all the roof panels.



3. Close the ¼ turn valve adjacent to the regulator to isolate the gas supply system from the plumbing that will be rerouted.

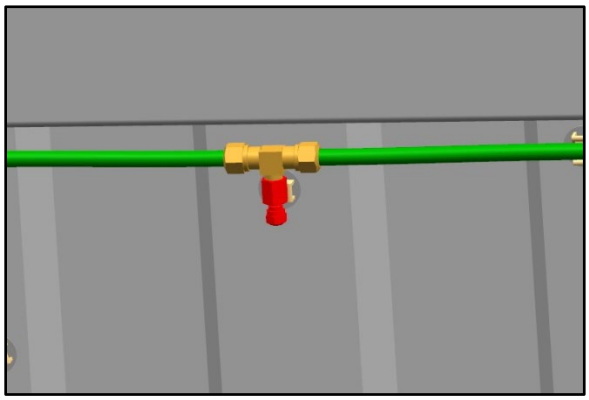


TECHNICAL SERVICE BULLETIN

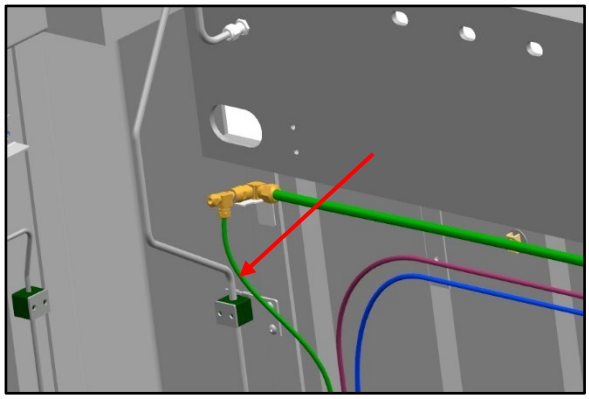


4. Disconnect the green tubing from the master control valve riser (A).
5. Disconnect the green tubing from the tee fitting at the front of the trailer (B).
6. Remove and discard the section of green tubing between the tee fitting and the master control valve riser (C).
7. Remove and discard the tube fitting from the tee fitting.
8. Apply thread sealant to the NPT threads and install a NPT pipe cap on the tee fitting.

   Tighten 1-3 TFFT



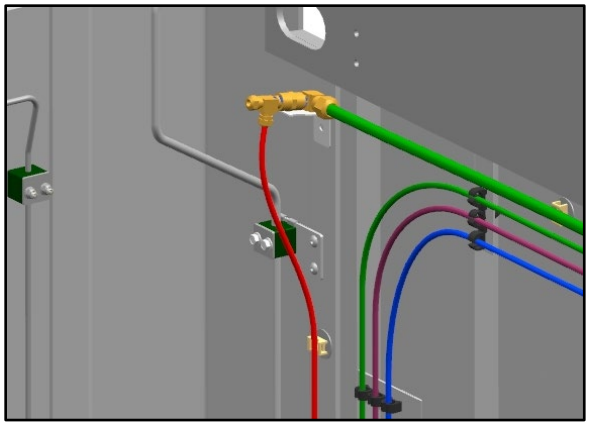
9. At the left rear top of the trailer disconnect the ¼" green tube from the ½" green line.



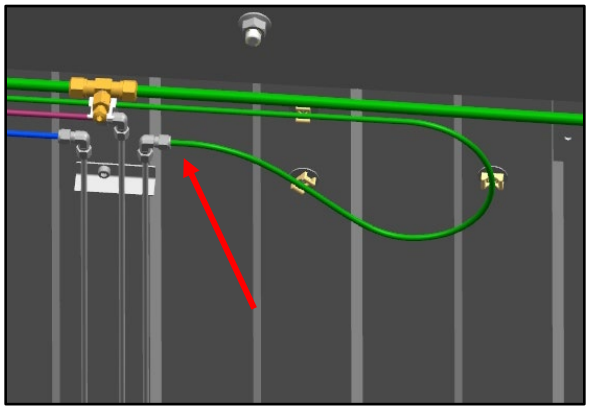
TECHNICAL SERVICE BULLETIN

10. Connect a 14’ section of ¼” red tubing (shown in red) to the tee fitting shown. Route the tubing adjacent to the other tubes but do not secure at this time.

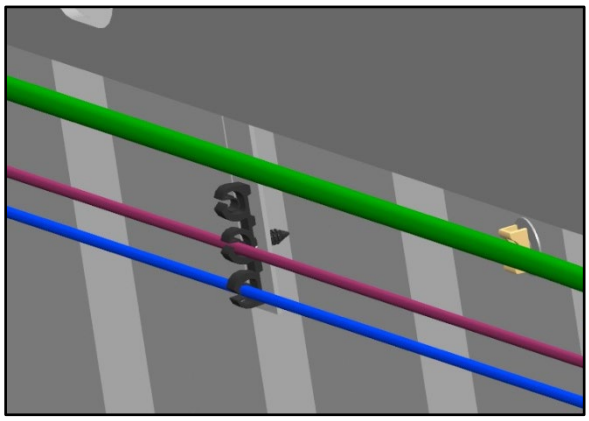
    Tighten 90° – 360° TFFT



11. Connect a 50’ length of green tubing to the forward master control valve riser, route and secure the line approximately as shown. The stainless nut and ferrule set must be used for this connection.

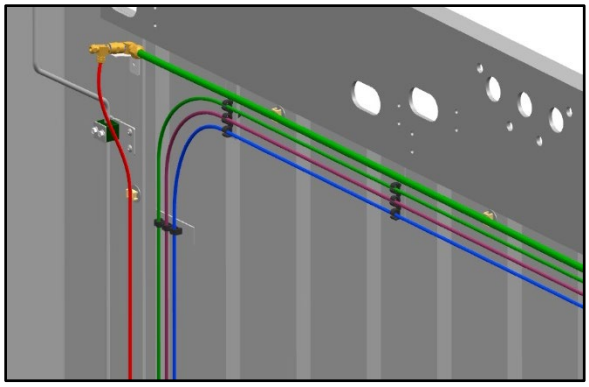


12. Route the green tube toward the rear of the trailer securing in the empty cavity of the line clips down the length of the trailer.

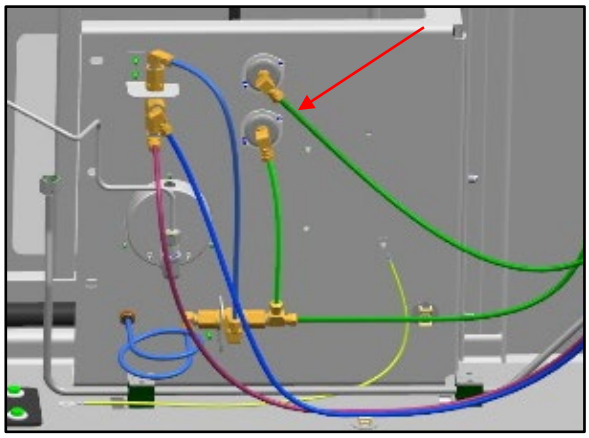


TECHNICAL SERVICE BULLETIN

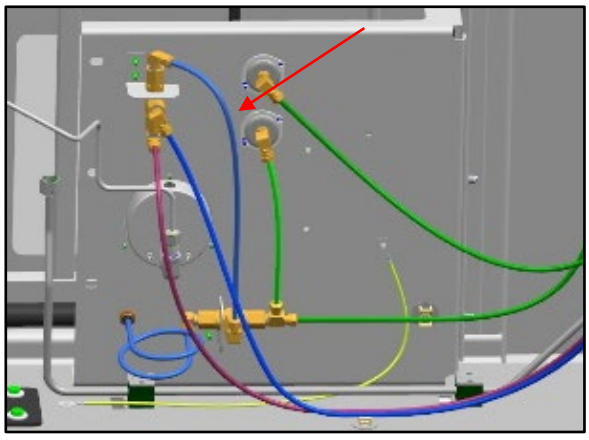
13. Continue routing the green line down the side of the trailer as shown. As the green line is routed and secured, secure the red line previously installed, to the other lines as required.
    Three position plastic clips (not shown) can be used to help support the red line down the inside of the container.



14. Disconnect the green tube from the applied pressure gauge. Remove and discard the tube.

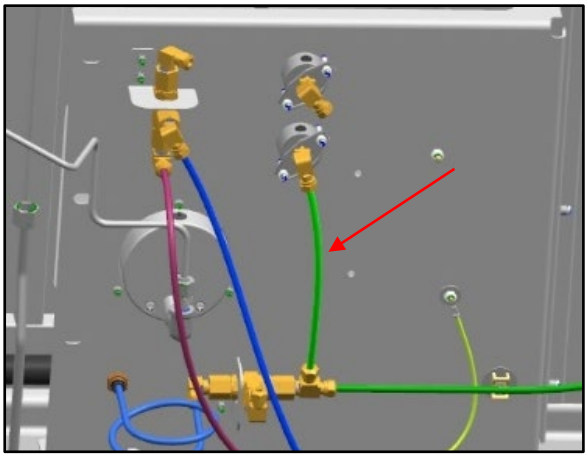


15. Disconnect the blue tube from the top port of the actuator control valve and the center port of the emergency air valve. Remove and discard the tube.

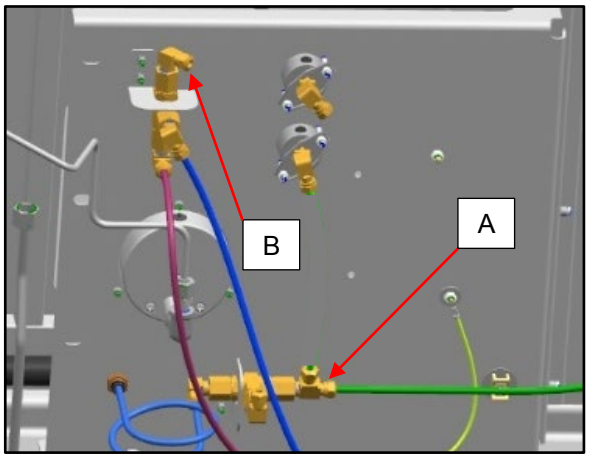


TECHNICAL SERVICE BULLETIN

16. Remove and discard the green tube connecting the LH port of the emergency air valve and the supply pressure gauge.

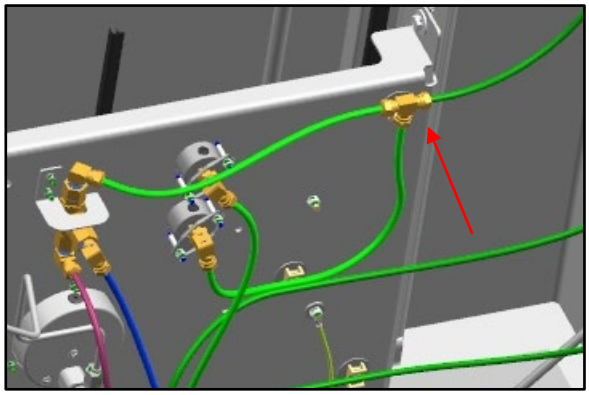


17. Disconnect the green hose from the LH side of the emergency air valve (A) and connect it to the top port of the actuator control valve (B).



18. Cut the green tube just connected to the top port of the actuator control valve in the approximate location shown and install a tee fitting.

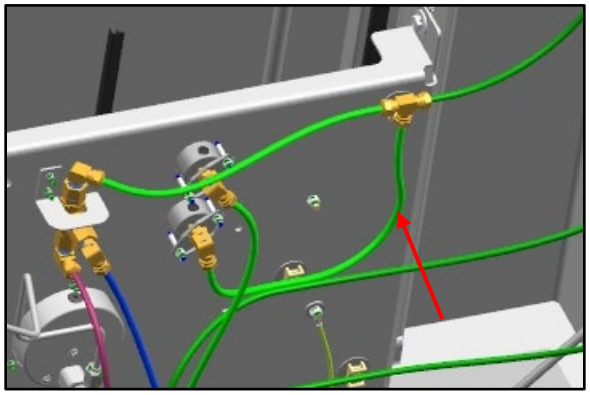
    Tighten 90° – 360° TFFT



TECHNICAL SERVICE BULLETIN

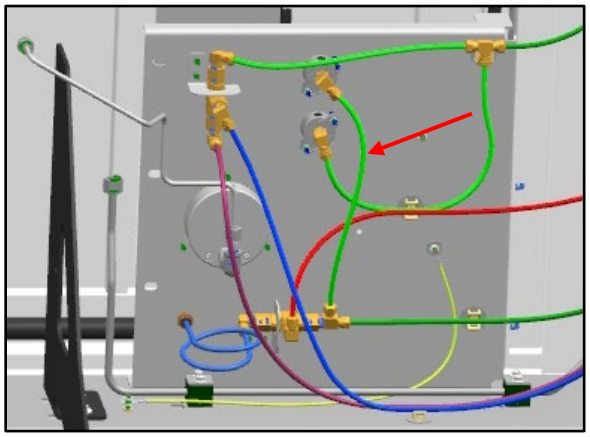
19. Install about a 2’ length green tubing between the tee fitting and the supply pressure gauge as shown.

    Tighten 90° – 360° TFFT

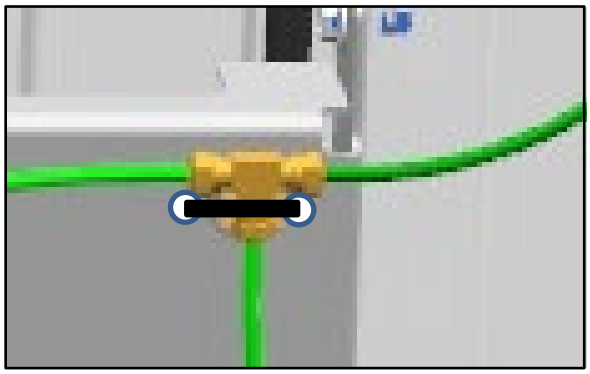


20. Install about a 2’ length green tubing between the LH pot of the emergency air valve and the applied pressure gauge.

    Tighten 90° – 360° TFFT



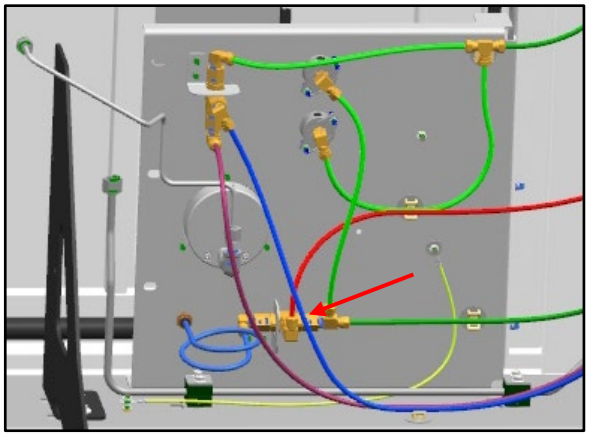
21. Drill two ¼” holes in the panel adjacent to the tee fitting that was just installed approximately as shown. Secure the tee fitting to the panel using a ty strap.



TECHNICAL SERVICE BULLETIN

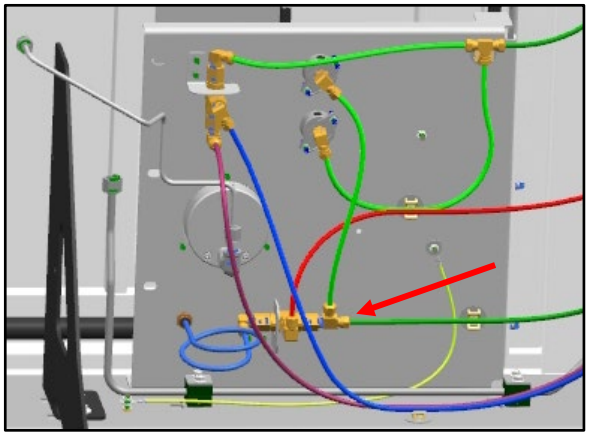
22. Connect the previously installed red tube routed from the tee fitting above, to the center port of the emergency air supply valve.

    Tighten 90° – 360° TFFT

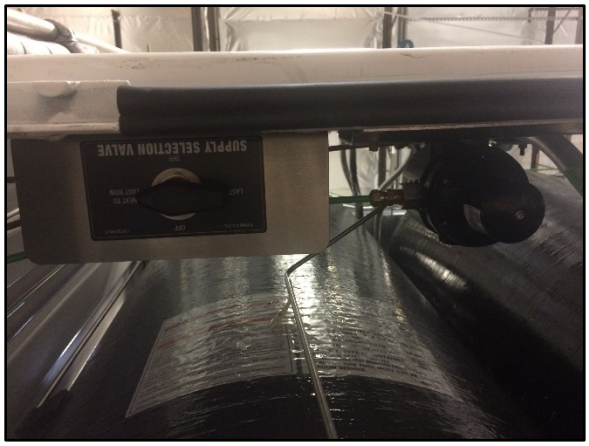


23. Connect the previously installed green tube routed from forward master control valve riser to the LH port of the emergency air supply valve.

    Tighten 90° – 360° TFFT



24. Open the ¼ turn valve adjacent to the regulator to supply gas to the system.



System Test

25. Verify operation of the actuator control system using on board gas supply.

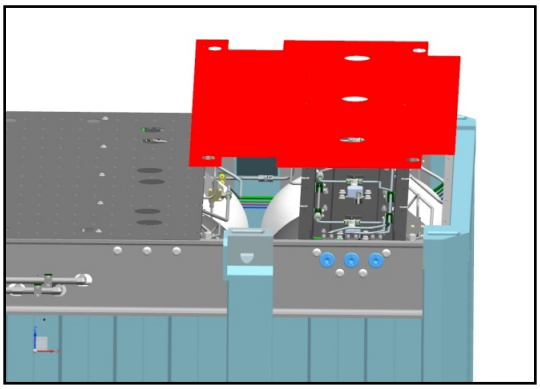
26. Leak check all disturbed fittings and connections while the actuators are in the open position.

27. Verify each of the master control valves work and inhibit actuator function.

28. Verify the emergency air supply system works to open the actuators while in the air supply position.

TECHNICAL SERVICE BULLETIN

29. Locate the roof panel that was marked during removal for the position being installed. Place the roof panel in the position and align as needed.



30. IMPORTANT: Use care when positioning the panels, when sliding the panels across the cross members, the edge of the roof panel can catch and knock off the U-Nuts.
    Where panels overlap, the forward panel should always be on top of the panel to the rear.

31. Loose fit all the roof panel fasteners; be sure to replace any fasteners that may have been missing prior to disassembly.

    Tighten fasteners to 22 ft. lbs (30 Nm.)