

# Design Change Notification

**Date:** November 15, 2017

**Document #:** DCN-112-Trifecta® Gas Supply System

**Subject:** Revised design of Trifecta 600 PSIG systems

**Background:** Chart's continuous attention to product improvement and customer satisfaction has resulted in the design modification. The revised design is a culmination of improvements recommended by a number of customers and technicians. These same improvements will be officially released on the other Trifecta models starting in January 2018, along with a redesigned control panel. These new models will be referred to as the Trifecta Pro Series. This new design of the X-Series 600 PSIG Trifecta will be an interim product until the new Pro-Series design is released next year. The addition of a new control panel will be the only change that takes place to this 600 PSIG unit. This unit will only be available in the 15K design.

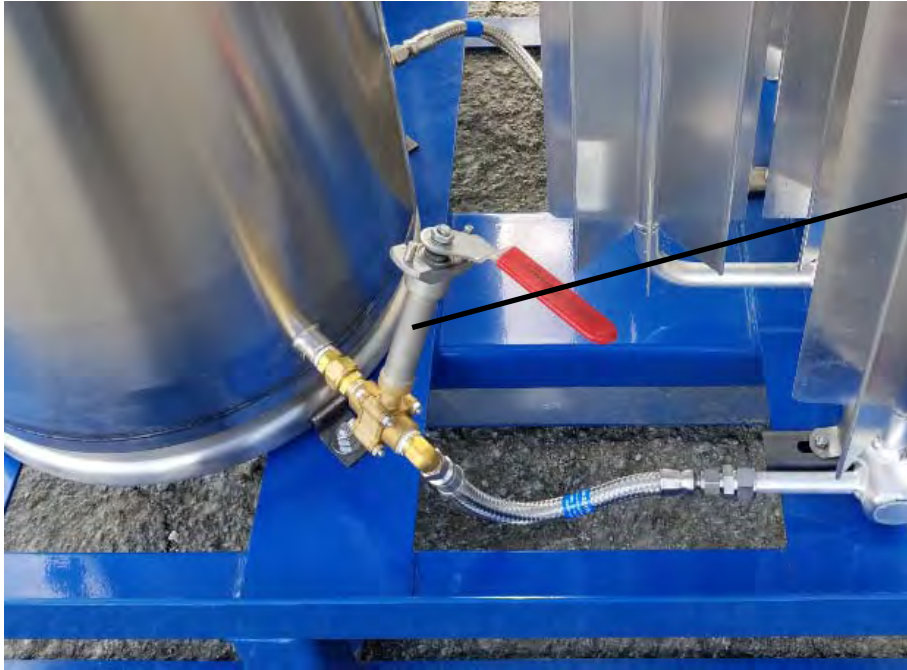
Specification drawing D-21072145 is available upon request as are specific component data sheets.

**Products Affected:** Trifecta 600 PSIG systems:

Old Part Numbers		New Part Number	
20679790	FNL Trifecta X15 600 PSI 120V X-Series	20900990	FNL Trifecta X/Pro Lin-600 15K
20538067	FNL Trifecta X10 600PSI 120V X-Series		

**Description:** The following improvements were made to the design:

- More isolation valves were added to aide in troubleshooting, preventive maintenance, and component replacement. There will now be a high flow extended stem cryogenic ball valve at the inlet of the PB (pressure building) vaporizer. Also, a 4-way valve was added to isolate the Rosemount transmitters and analog liquid level gauge. Refer to photos on next page.



High flow, extended stem, cryogenic ball valve

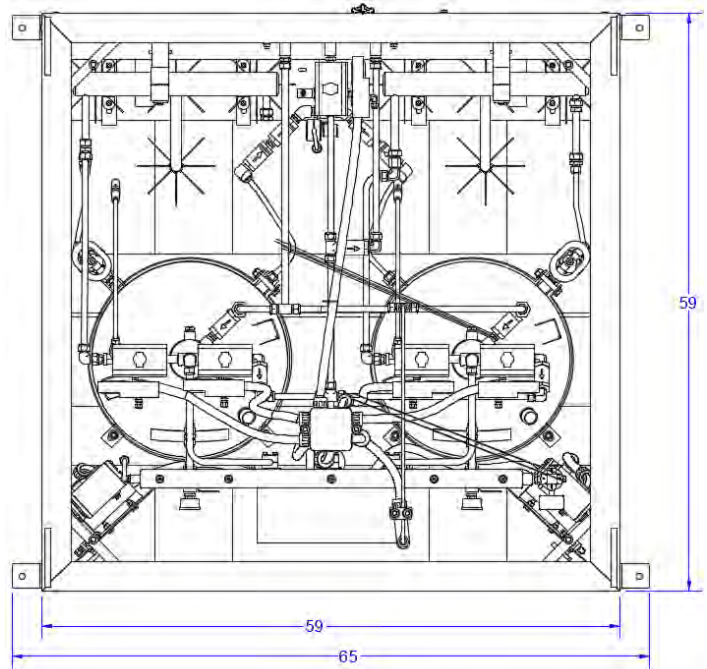


4-way isolation valve for transmitter and liquid level gauge

- The size of the pallet frame was increased to create more clearance for the cylinders and components. This frame is about 4” wider and 6” deeper (refer to front view picture) than the previous design. The height of the frame is unchanged. See specification drawing D-21072145 (shown in top view drawing).

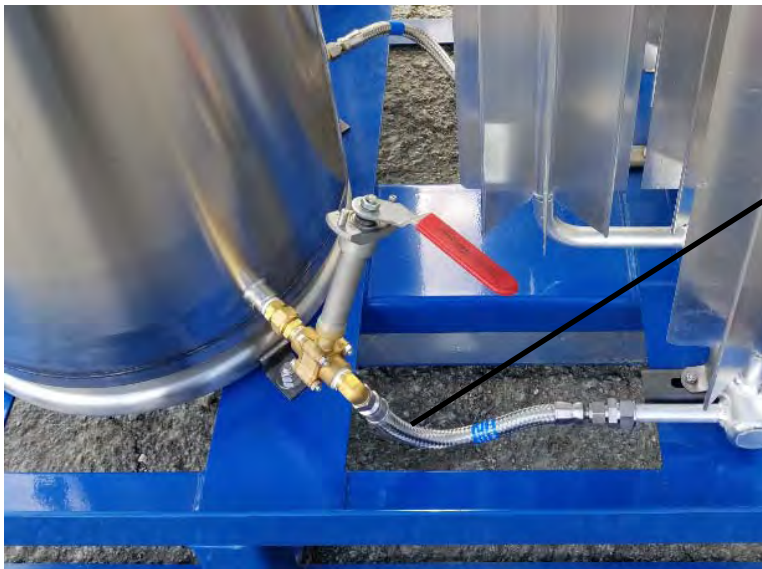


FRONT VIEW PICTURE



TOP VIEW DRAWING

- Flex hoses will now be used to connect the cylinder to the PB vaporizer inlet and on the liquid use line (see photo below). This will help reduce the stress on this section of piping caused by icing and during shipping.



Stainless steel lined, stainless steel braided flex hose



- The liquid use line (Trifecta outlet) exits the cylinder from the bottom instead of through a dip tube (as shown in photo). This was done as a part of an effort to move the liquid lines lower to reduce ice build-up near the solenoids. The extra pressure from the weight of the liquid will also benefit overall performance.



Liquid use line withdraws from the bottom of the tank instead of a dip tube

- Needle valves (shown in photo) were added to the safety tree circuit to allow users to vent trapped pressure after cycling the safety diverter valve.



Bleed valves on safety tree

- Replaced screwed bonnet Rego extended stem globe valve on the liquid use outlet with a Rego bolted bonnet globe valve (as shown in photo) that has a higher flow capacity and a longer lasting seat design.



Rego bolted bonnet globe valve, Chart part number 20990231

- Flex hoses will now be used to connect the cylinder high/low phase lines to the cylinder transmitters and liquid level gauge via the 4-way isolation valve (as shown in photo). This will simplify the piping to allow for easier connections to be made when servicing the transmitters.



Teflon lined, stainless steel braided flex hoses.

- Analog differential pressure gauge (shown in photo) to measure each cylinder's liquid level as a reference to the digital reading coming from the Rosemount transmitters into the PLC.



Analog liquid level gauge,  
Chart part number 20923160

**Contact:** If you have questions or concerns relative to this action, please contact your Chart Customer Service Representative at (800) 400-4683. Thank you for depending on Chart to provide high product quality and service.