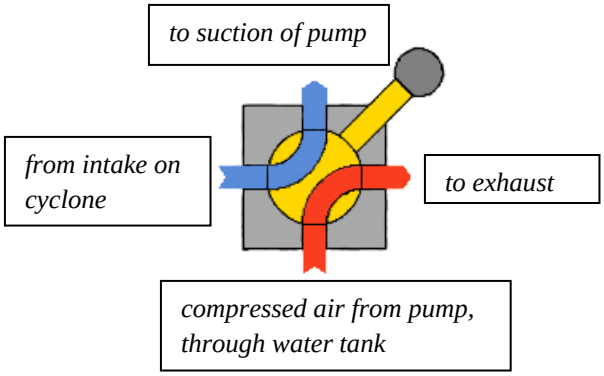
Principles of Operation
Triton® Liquid Ring Blowdown System

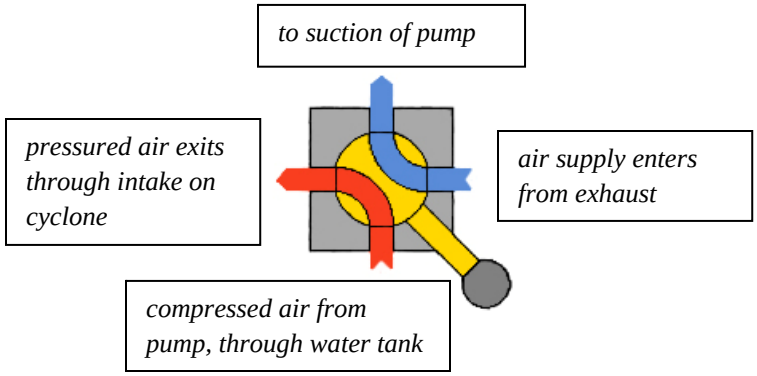
Triton® White Paper

The proprietary Triton Liquid Ring Blowdown system transforms a Triton vacuum into a unit that is capable of also discharging collected liquids under pressure, in the same manner as a vacuum truck. A 4-way valve allows the mode of operation to be changed between vacuum and pressure. The pump still turns the same direction and creates airflow; only the direction of airflow is changed via the 4-way valve to allow the airflow to be used for either vacuum suction or pressure blowdown. Note how the valve has two passages that simply connect adjacent ports, and changing the orientation of the valve controls where the air intake comes from and where the compressed air is delivered.

Vacuum Mode *(valve handle in "v-for-vacuum" vertical position; shown slightly off for clarity):*



Pressure Mode (*valve handle in horizontal position; shown slightly off for clarity):*



There is a 3” Pressure Safety Valve on the water tank that is set to lift at 20 psi. There is a backup 2” Pressure Safety Valve on the cyclone that lifts slightly higher.

This system is designed to allow the blowdown under pressure of liquids collected in a tank. For vacuum operations, the working end of the hose would connect to the intake on the collection tank, and the airflow would then be hosed to the intake of the Triton vacuum unit at the cyclone. For pressure blowdown operations, the intake valve on the collection tank would need to be closed, the bottom drain opened, and the position of the 4-way valve changed from “vacuum” to “pressure”. See Operating Instructions in the next section, as well as the illustration.

For safe operation, the 4-way valve should be turned half way between vertical and horizontal, to the “neutral” position, and allowed to stabilize before shifting to the opposite operation mode. Also, be aware that the drain hose on the collection tank will be pressurized, so it should not be allowed to whip free. Pins should be in place on the ears of camlock fittings and hose ends should be tied off to prevent accidental separation and to prevent whipping.