

DESIGNING A CRYOGENIC SYSTEM

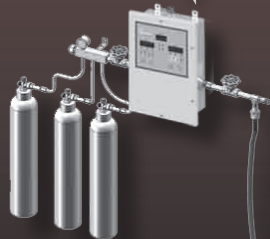


CONCOA cryogenic systems are designed to maintain the pressure and flow of demanding applications. Cryogenic liquid cylinder performance is often misunderstood. The liquid cylinder's specifications typically list gas phase withdrawal directly from the cylinder in the range of 350-400 SCFH. In practice, however, the maximum sustainable flow rate without pressure drop is only 200-250 SCFH. The limiting factor is often the cylinder's pressure-building coil circuit.

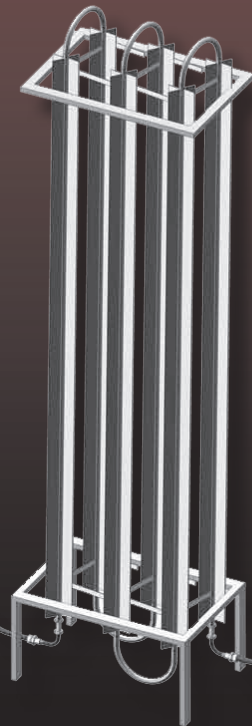
To overcome this condition, the user may use the liquid withdrawal valve connected to an external vaporizer. Flow rates of 700-800 SCFH are achievable for a couple of hours before the liquid cylinder's pressure-building circuit is saturated and pressure falls. As illustrated below, CONCOA has packaged the 630 series cryogenic manifold, 629 series vent kit and an auxiliary pressure-building circuit to extend the liquid cylinders' performance to over 4,000 SCFH. This is achievable by using the regulated gas phase from an additional cylinder to push liquid out of each supply can connected to the 630 manifold. Regardless of the volume of liquid pushed out of the cryogenic manifold, the vaporizer must be sized 1.5 times the desired flow capacity. Ambient temperature is vital to the vaporizer's performance, so location and geography must be considered. A continuous operation is achievable when coupled with CONCOA's IntelliSwitch™ series automatic switchovers.

CRYOGENIC

642 Series IntelliSwitch II (Pg. 18)



629 Series MicroManifold (Pg. 38)



630 Series Cryogenic Manifold (Pg. 36)

