



October 1, 2021

Safety Alert #Sher1021

Use of Pin Index Valves with Non-Conforming Yoke Style Regulators

It has come to the attention of Sherwood Valve that various yoke style regulators in the market do not conform with the Compressed Gas Association V-1:2021 CGA 870 connection standard (referred to hereafter as “CGA V-1 870”) and may not properly connect to certain oxygen valves made by Sherwood and other manufacturers, whose valves do conform with the CGA V-1 870 standard, resulting in a potential leak at the valve-regulator connection. Sherwood has made CGA aware of the non-conformity of the various yoke style regulators, and CGA is expected to issue further guidance regarding the subject. In the meantime, as described below, Sherwood recommends that you please take action to confirm that regulator yokes used with Sherwood valves conform to the CGA V-1 870 standard and that you share this important information with your distributors, customers, and end users of oxygen cylinders.

CGA V-1 870 specifies the required interface dimensions to manufacture the regulator yoke-to-valve connection. Manufacturers that sell and label their products with the CGA 870 designation must ensure that the features of their products conform to the CGA V-1 870 standard. Sherwood has two styles of valves that fully conform to the standard – one with chamfer corners and one with radius corners.

The CGA 870 dimensions allow for clearances sufficient to provide a gas tight seal with an approved gasket between the yoke and valve. As shown in Figures 1 & 2, when a conforming regulator is used, it is possible to fully close and seal the valve-regulator connection with a valve having chamfer corners (Figure 1) or radius corners (Figure 2).

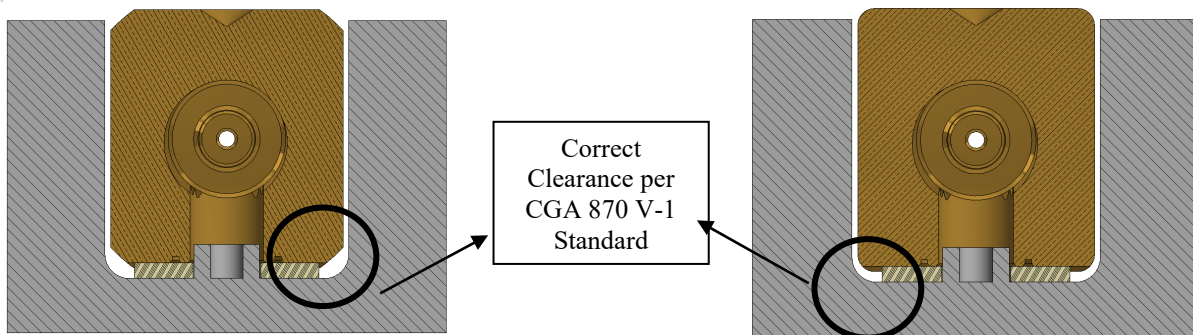


Figure 1

Figure 2



Such a seal, however, may not be achieved when a non-conforming regulator is used with a valve with radius corners. Figures 3 and 4 show one of the areas of non-compliance in the yoke where the blend radius of the connection is manufactured over two times the allowable requirement. The large radius may not allow the valve to seat properly in the yoke connection to sufficiently compress the gasket to form a gas tight seal. This condition could allow gas to leak by the gasket seal.

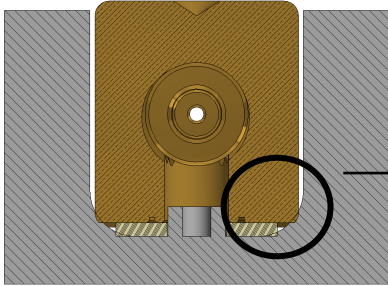


Figure 3

Allowable Radius is
0.093 Max,
Actual Radius is 0.200"

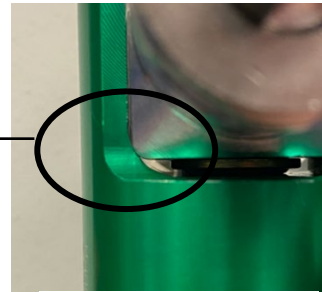
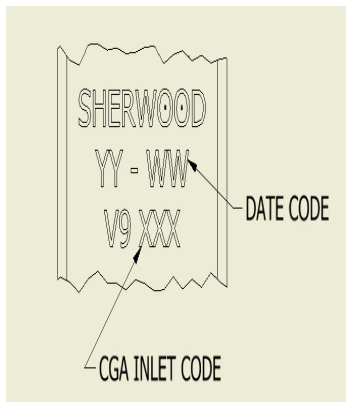


Figure 4

Users should check for this condition before opening the valve. If such condition is encountered, users should disconnect the regulator yoke from the valve, and that regulator should never be used with such valve.

Again, the Sherwood valve with radius corners fully conforms with CGA V-1 870 and can be safely used with yoke style regulators that conform with CGA V-1 870. A potential issue only arises when a valve with radius corners is used with a non-conforming regulator.

A valve with radius corners can be identified by visually observing the shape of the valve and also by the valve's date code. Sherwood has manufactured valves with radius corners from June to September in 2021. Sherwood's date code consists of four digits indicating year and week of manufacture (see below drawing), and is found at the backside of the valve, at the lower portion just before the threaded section (see below photo). The Sherwood valves with radius corners have date codes ranging from **21-22** to **21-39**.





The condition described above is not the result of any problem with, or defect in, a Sherwood valve. Rather, the condition is the result of the non-conformity of various yoke style regulators that do not meet the dimensional requirements of CGA V-1 870. We recommend that you contact your regulator manufacturer or distributor to confirm that their regulators fully conform with the CGA V-1 870 standard and for further guidance.

For any questions regarding Sherwood's valves, please contact Tim Madden, VP of Sales & Marketing, at tmadden@sherwoodvalve.com and 1-216-264-5061.