

TESCOM™ Air Operated Valve Helps Hydrogen Refueling Stations Handle More Pressure and Reduce Fill-up Times

RESULTS

- Hydrogen refueling station operator reduced refueling times to approximately three minutes.
- The air-operated valve's 360-degree dome port simplified installation for the customer.
- The implementation of a manual override with a safety pin enhanced the system's safety.



APPLICATION

Improving the pressure rate — and thus the fill rate — of a hydrogen refueling system.

CUSTOMER

A regional hydrogen refueling station manufacturer seeking to modify a refueling system.

CHALLENGE

Speed and timing dictate efficiency for people. In the case of refueling a hydrogen vehicle, customers want their fill-ups to take the same amount of time as a gasoline vehicle, which is about three to five minutes depending on the tank size. Currently, hydrogen vehicles take over five minutes to refuel versus hours to recharge an electric car.

Hydrogen fuel cells have superior energy efficiency compared to gasoline systems, with many fuel cell vehicles projected to be able to deliver nearly 70 miles per kilogram of fuel or 350 miles per fill-up.

A hydrogen refueling station manufacturer sought to modify their refueling systems with an air-operated shutoff valve that would provide a higher-pressure rating which will allow for faster refueling time.

A hydrogen refueling retailer updated its systems with TESCOM™ VA Series air operated two-way valves, resulting in higher pressure handling capabilities and reducing refueling times to around three minutes.

SOLUTION

Because the hydrogen refueling station retailer was already familiar with TESCO products for their reliability, the retailer was excited to implement the customized VA Series two-way valve. Suitable for liquid and gas applications, these valves offer 50 millisecond actuation times, normally open/normally closed capabilities, very high cycle life and operating pressures up to 15,000 psi, depending on the version. This pressure was more than enough to meet the customer's target of 8,000 psi.

In addition, the valve consisted of a compact design and custom manual override feature.

The result: The customer successfully reduced vehicle refueling times to around three minutes, thanks to the integration of the TESCO™ VA Series valve.



*Customized TESCO™ VA Series
air actuated valve
with manual override feature*

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