Even before the emergence of the Hydrogen Fuel Cell Industry, CIRCOR Instrumentation Technologies (CIT) has had many years of experience designing and manufacturing high quality fluid control products that perform exceptionally under pressure. Now, with the growing technological needs of the HFC Industry, CIT is committed to providing the best GH2 solutions possible. CIT products and technology are at the forefront of the HFC Industry, helping to expand this new and exciting source of energy.

By combining advanced technology from Hoke, Circle Seal Controls, and Aerodyne Controls, companies within CIT, we are able to offer one of the best ranges of integrated fluid process control components in the industry. Circle Seal Controls’ thermal relief valves have rapidly become the industry standard for HFC. Hoke ball valves meet the demands of high-pressure hydrogen gas shut off and dispensing. Aerodyne Controls is meeting the ongoing challenge of enhancing valve and regulator performance in a broad variety of demanding applications.

CIT built an excellent reputation on design, engineering, machining, assembly and service. However, we are not satisfied to simply dwell on our previous successes. At the dawn of emerging opportunities in the HFC Industry, we are poised to help promote and commercialize opportunities.

**Global Support**

Whether you are a local company in Japan, or an international company headquartered in Germany, CIT has authorized distributors and factory sales representatives serving more than 140 countries worldwide, including the expanding markets of India, China, Russia, and Brazil.

**Certifications**

Regulatory compliances for hydrogen generation and production include: PED, EIHP, ECE R110, ASME B31, PRD-1. All CIT facilities are ISO 9001 certified.
Circle Seal Controls

**RV99-700 700 bar PRD**
Applications include thermal relief for GH₂ fuel systems and tanks, and for on-vehicle and filling station operations.

- PRD-1 compliant 700 bar PRD
- Bubble tight leakage less than 10ncc/hour
- Eutectic material for activation only
- Operating Pressure: 700 bar (10,150 psi)
- Proof pressure: 15,000 psi (1034 bar)
- Operating temperature range: -65°F to +275°F (-54°C to +135°C)
- Activation temperature: 219°F (104°C)
- Flow: 90SCFM of air at 100 psid
- Materials of construction: 316 SS, Buna-N seals, PTFE backup rings

**CV99-700 Check Valve**
A 3/8” spring loaded ball check valve with autoclave MP connections for 700 bar GH₂ service. This valve can be used to prevent backflow of air into tanks and vehicle fuel lines, and for filling station operations.

- A 3/8” spring loaded ball check valve design with autoclave MP connections for 700 bar service.
- Maximum operating pressure: 0-10,150 psig (700 bar)
- Leak free performance at high pressure
- 2 piece construction for ease of maintenance
- Specially cleaned for GH₂ service
- Operating temperature: -40°F to +185°F (-40°C to +85°C)

**HV79-31 Ball Shutoff Valve**
This is a 700 bar valve with a tank connection interface and can be used as the main fuel tank shut off for 700 bar GH₂ vehicle systems.

- Low torque handle, bubble tight sealing
- Cv = 0.5
- Operating pressure: 0-10,150 psig (700 bar)
- Internal leakage: less than 10 ncc/hour of GH₂
- An integrated 700 bar PRD and 1 ½” tank connection can be mounted to this valve (order HV79-34-1)
**HOKE**

**10K631 700 BAR IN LINE FILTER**

This is a high pressure, high flow inline filter for safe and efficient filtration of compressed air lines to protect downstream component from excess debris and corrosion.

- 316 stainless steel body
- Replaceable 316 stainless steel element with PTFE gasket 2-520 micron selection
- Operating Pressure Range: 0-10,150 psig (0-700 bar)
- Operating Temperature Range: -50°F to +450°F (-51°C to +232°C)
- Orifice size: 0.187” (5mm)

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**Aerodyne Controls**

**Pressure Regulator**

The Aerodyne GH₂ pressure regulator is a two stage design consisting of a balanced poppet at the first stage and an unbalanced poppet at the second stage. Inlet gas is reduced to 300 psig (21 barg) at the outlet of the first stage. The second stage reduces pressure to 145 psig (10 barg) at the outlet.

- Medium: GH₂
- Inlet pressure range: 220 psig (15 barg) to 10,150 psig (700 barg)
- Outlet Pressure: 145 psig (10 barg)
- Flow range: 0 to 3 g/s (75 scfm)
- Operating temperature: -40°F to +185°F (-40°C to +85°C)
- Material: 316 stainless steel
- Aerodyne part number: 10257
**Solenoid Valve**

The GH₂ solenoid valve is designed for “in tank” installation. This valve is a piloted shut off design that uses internal tank pressure to assist in maintaining a pressure differential across the main poppet. This differential contributes to the valve’s low internal leakage characteristics.

- **Medium:** gaseous hydrogen (GH₂)
- **Type:** normally closed
- **Inlet Pressure:** 10,150 psig (700 barg)
- **Flow range:** 0-3 g/s (75 scfm)
- **Operating temperature:** -40ºF to +185ºF (-40ºC to +85ºC)
- **Body Material:** 316 CRES
- **Voltage/Current:** 14VDC @ 1 amp (continuous)
- **Aerodyne part number:** 10348

**Additional CIT Components**

CIT offers a wide range of fluid process control components suitable for low pressure GH₂ systems. Consult an authorized distributor to determine whether these components will meet your application requirements.

- **Atkomatic**  solenoid valves
- **Circle Seal Controls**  relief valves, solenoid valves
- **GO Regulator**  pressure regulators, back pressure regulators
- **Gyrolok®**  compression tube fittings
- **Hoke**  ball valves, excess flow valves, manifolds, relief valves
- **Panels-Plus**  custom solutions for alternative fuels and station applications including sequential control panels, de-fueling systems, custom fill posts, and fuel control panels

**About CIRCOR Instrumentation Technologies**

A leading global provider of instrumentation fluid control technology, CIRCOR Instrumentation Technologies (CIT) designs and manufactures a wide range of high quality valves, regulators, Gyrolok® tube fittings, quick couplers, and integrated sampling systems. Brands within CIT include Atkomatic, Aerodyne Controls, Circle Seal Controls, CIRCOR Tech, GO Regulator Gyrolok®, Hoke®, Panels Plus®, and TOMCO. CIT serves primarily the alternative fuels, chemical, petrochemical, refinery, oil & gas, electric & gas utilities, industrial, and instrumentation markets. CIT sells through authorized distributors worldwide. For more information about CIT, visit the company’s website at www.circortechnologies.com.
CIRCOR Instrumentation Technologies (CIT) is the logical choice for fluid control solutions. We provide the lowest cost of ownership, offering the best in class reliability and availability of our products. We have global coverage, delivering value in the form of local, flexible service to meet our customer’s needs. CIT is a product group specializing in instrumentation with orifice sizes typically up to 2”.

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