IS 16988 : 2018 - Compressed natural gas cylinder valve integrated with solenoid operation

IS 16988:2018 establishes the technical specifications, performance criteria, and testing methods for **Compressed Natural Gas (CNG) cylinder valves integrated with solenoid operation** for use in automotive applications. These valves play a critical role in regulating the flow of compressed natural gas from high-pressure storage cylinders to the engine while ensuring safety and efficiency. With the integration of solenoid operation, these valves enable precise and remote control, making them ideal for modern vehicles, including passenger cars, buses, and commercial vehicles operating on CNG.

Consumers have high expectations for the quality of these valves, particularly regarding safety, durability, and performance. A key requirement is **leak-proof operation**, ensuring no gas escapes under any circumstances. **Durability** is another critical parameter, with valves expected to withstand corrosion, wear, and repeated high-pressure cycling over an extended service life. The solenoid mechanism should provide **quick and precise control**, allowing the gas flow to be regulated seamlessly from a remote location. Additionally, consumers value the inclusion of robust **safety features**, such as pressure relief devices (PRD), and **fail-safe designs** to mitigate risks during emergencies. Reliable performance across a wide temperature range, from -20°C to +65°C, and resistance to vibrations encountered in automotive conditions are also vital.

The standard addresses these expectations comprehensively. It prescribes the use of high-strength, corrosion-resistant materials suitable for high-pressure applications. Detailed design requirements ensure the inclusion of safety features like PRDs, leak-proof seals, and manual overrides. IS 16988:2018 also specifies rigorous testing protocols, including leak, pressure cycling, fire resistance, and vibration tests, to validate safety and durability. Furthermore, it mandates the proper marking and certification of valves, ensuring traceability and compliance with safety standards.

By meeting the guidelines of IS 16988:2018, manufacturers can deliver valves that satisfy consumer demands for safety, reliability, and performance, supporting the growing adoption of CNG as an eco-friendly automotive fuel.