

IGA PRODUCT DEVELOPMENT

Expanding Application Opportunities



The Quiet Axial Flow Valve components

Over the years, IGA has developed a reputation for developing new products or adapting existing products to meet specific application and system requirements. Currently, there are two new developments in this area being launched into the market place.

The Quiet Axial Flow Valve

It is a well-known fact that under certain operating conditions the process of pressure reduction can lead to noise problems. Environmental, health and safety concerns often lead to the need to take measures to reduce noise levels. Well-proven, but expensive ways of doing this are by the use of in-line silencers or the provision of acoustic cladding or housings. IGA has now developed a unique integral silencer for the Axial Flow Valve that helps to reduce noise in a far more cost-effective manner.

The design of a special insert for the outlet cage of the AFV combined with modifications of the AFV outlet cage can reduce noise by up to 30 dBa under certain conditions. This concept was developed following specific requests from customers in Hong Kong and the UK and was delivered as a specific location solution. Following recent indications from markets, IGA has now developed this concept to cover the complete range of AFVs, all sizes and all pressures.

In developing the concept, a number of considerations were taken as being priorities:

- The simplicity and operation of the AFV should remain unchanged.
- The solution should be available as either complete for a new installation or as a kit for fitting into existing AFV stations.
- The solution should be cost-effective when compared with competitor solutions or the use of more conventional noise reduction techniques.

All aspects above have been achieved and this solution is now available world-wide. In addition, the existing IGA AFV sizing programme has been modified to provide a sizing programme specific for the QAFV which will allow not only the correct sizing of the regulator but also a prediction of the noise reduction performance.

The IC25 (Feedback) Pilot

The key to the correct operation of any pilot-operated regulator, such as the AFV, is the correct selection of pilot and control systems.

The IC25 pilot is a new development by IGA. The goal of this development was to provide new enhanced levels of control for the AFV for industrial and commercial applications. The challenges with these types of applications are many, but the two critical issues are:

- The downstream loads often change rapidly.
- The volume of downstream pipework is often quite small.

Both factors often lead to pilot-controlled regulators being difficult to control and causing problems such as instability or slow opening/closing. With any pilot-controlled regulator in difficult operating conditions, outlet pressure control is a compromise between speed of response and stability.

The IC25 is a nominally “balanced” pilot so that changing inlet pressure has very little effect on the outlet set pressure. The pilot incorporates a dampening chamber, which is subject to the outlet pressure from the AFV control block. One side of the chamber includes a restrictor. It can be modified to adjust the response of the pilot to load demand changes required of the AFV. Adjustment of the restrictor can reduce (and often eliminate) “hunting” of the outlet at low flow rates when feeding into low volume pipework.

Extensive factory and site testing has shown that this new pilot provides unrivalled control and reliability for these types of applications. Units are now in applications in the UK, Hong Kong, Korea, and China. With this new pilot development adding to the extensive range of control systems already available, the AFV is now one of the most flexible regulators in the world, with one design operating at pressures from 2 bar to ANSI 600, providing reliable and accurate control for district, transmission and industrial/commercial applications.

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The IC25 with a Quiet Axial Flow Valve

The IC25 on trial in Hong Kong

