



## Convincing in all respects

### Sliding gate valves are part of the standard equipment list of Flensburger Brauerei

An application report by Lutz Riedel

**“When a control valve explodes in your face due to condensate or water hammering, it really makes you think,” says Lutz Riedel, machine supervisor at Flensburg Brewery. This happened to him twenty years ago, upon which he started looking for safe alternatives. And he discovered these in the shape of Schubert & Salzer Control Systems’ sliding gate valves. He began using them as standard in his operations because he was persuaded not only by the high degree of safety but also due to their compactness, easy handling and maintenance.**

The abbreviation “Flens” stands for the pilsner beer produced by Flensburger Brauerei Emil Petersen GmbH und Co. KG and is an internationally recognised term for premium beer. But it is not only the “Flasch Flens” (Flens bottle) that has earned it its worldwide reputation, but also the “Bölkstoff” brand, a light, bottom-fermented lager, featuring the cartoon character Werner, that has practically become a cult drink and not just among the biking community.

The privately-owned brewery, founded in Flensburg in 1888, today brews a wide variety of beers in addition to these two brands. Annual production is around 500,000 hectolitres.

Here, as in all breweries, steam plays a preeminent role as the main operating medium. Riedel experienced physically just how critical steam can be when a globe steam valve burst as a result of water hammering and the individual parts flew everywhere in the plant. In his search for alternatives that would be fit for the future, the weight of a control valve would be another important criterion in addition to its safety. “Many control valves available in the marketplace are so heavy, for example in the DN 100 size that we use most commonly that you can only handle them with lifting gear and at least two people,” Riedel continued. “So, for us these days, that aspect is absolutely crucial”.

Riedel came across Schubert & Salzer Control System’s sliding gate technology, finding that it provided the best answer to his requirements for a new solution. This control valve is distinguished by its uniquely constructed functional unit, consisting simply of two slotted discs sliding against each other and forming a seal.



One of the discs, a seal plate permanently secured in the body at right angles to the direction of flow, has a number of transverse slots. The second disc with the same slot arrangement is moved vertically against the first, thus changing the flow cross section. The pressure difference acting on the moving disc forces it against the fixed disc. This operating principle also has a self-flapping effect by the moving seal disc. This surface-to-surface seal is therefore much less delicate than a ring seal found commonly in globe valves. As a result, sliding gate control valves by their very nature are extremely compact, comparatively light and thus easy to handle.

### Simple maintenance of throttling element

Whenever maintenance is carried out on all conventional valves, the complete valve body has to be dismantled in order to gain access to the seating elements. As Riedel confirmed from his own experience, this requires the use of two workers. Not so with the sliding gate valve. The throttling element can be removed and maintained by a single person on site in the plant within minutes.

Riedel started using the first sliding gate valve as a trial to control a flow of saturated steam: “This test installation of the sliding gate valve more than proved itself. Since we use predominantly control valves in nominal sizes DN 15 to DN 100 in our brewery, with its outstanding weight advantage, the sliding gate valve scored decisively. We can dismantle and reinstall a standard DN100 sliding gate valve, nominal pressure PN40, inside just 30 minutes. And we only need one fitter to do it, completing the work just by himself. To carry out the same thing with other valves, I need at least two men who take between two and three hours to complete the same work”. An 8021 sliding gate valve in size DN100 including a digital positioner weighs a mere 14 kg.

### Outstanding package of valve and digital positioner

The excellent benefits of sliding gate valves in terms of maintenance and repair provided enough reasons to gradually replace other control valves with sliding gate valves. In addition, it turned

out, according to Riegel, “that the sliding gate valves fitted with digital, self-adjusting positioners type 8049, used hardly any compressed air. Admittedly by now this may be available from other suppliers, but the total package of control valve, insensitivity to condensate hammering, higher control precision and, above all, low weight for maintenance and repair offer me such outstanding advantages that I am not interested in other valves these days. Right now, when we have to resolve problems in the brewing process with increasingly fewer personnel and in less and less time, sliding gate valves are unbeatable. With setup times now typically less than an hour, these are benefits that no other valve can offer.”

These outstanding advantages provided the incentive for the Flensburg Brewery’s machine supervisor to gradually install sliding gate valves not only in the entire steam circuit, but also in other control circuits. At the same time, Riedel has also replaced the old valves in the ammonia refrigerating plant with sliding gate valves. “The three sliding gate valves in our refrigerating plant have shown that they are highly compatible in contact with ammonia. Additionally, their excellent tightness against leaks and the very precise control behaviour are further important advantages for us.”

Today, sliding gate valves are even used as in the Flensburg Brewery’s compressed air facility as pressure control valves with no auxiliary power. The next sliding gate valve has already been ordered for maintaining pressure in a glycol facility. Sliding gate valves are produced

- in sizes DN 15 to DN 250
- for pressure stages up to PN 160 and
- media temperatures from - 200 °C to + 530 °C .

With so many material options and different positioners, they can be used not just in all areas of a brewery, but also in the chemical, textile and pharmaceutical industries, steelworks and many other industrial sectors.



**The very compact sliding gate valve offers outstanding advantages in handling. Just one man is needed to maintain the functioning element, even with very short setup times. The perforated discs sliding against each other form the main throttling element in sliding gate valves.**

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