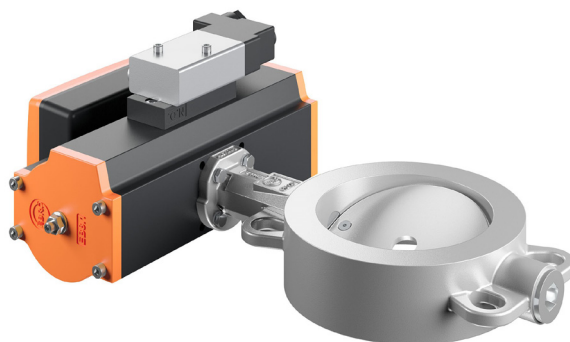


BUTTERFLY VALVE WITH VIBRATING DISC

From a standard valve to a genuine all-rounder

With the Vidos butterfly valve, Ebro is offering plant engineers and operators alike a simple, cost-effective solution for various dosing and discharge applications. The valve allows discharge volumes to be regulated flexibly across a very wide range. Another key benefit: the manufacturer has chosen exactly the same liners, bodies, actuators and control elements as can be found in standard valves.

The functionality aspect of standard valves has grown increasingly important over recent years. Many discharge processes that require product flow to be regulated are straightforward in nature. The silo truck has to be filled from the stationary silo safely and with a greater level of accuracy without generating excessive amounts of dust. In addition, filling times have to be cut and the loading process made as cost-effective as possible, making the equipment usually deployed for dosing too slow or too expensive. As modern logistics can now handle more than just single-product silos, the discharge equipment being used also has to fit various product characteristics (e.g. flow properties, pouring density, susceptibility to “bridging”). The vibrating dosing valve is the perfect tool for a range of discharge tasks, some of them highly challenging. First of all, it allows the product to be discharged virtually unimpeded in its open position (full flow). If a fine flow is required, i.e. a specific reduction in the volume flow, in order to achieve the desired discharge weight on the scales, for instance, the valve can close to an opening angle of just 20°. This is usually



In the past, standard valves were also modified to suit certain applications, here a simple modification to create an aspiration valve.



Vidos -valves allow discharge volumes to be regulated a tight accuracy.

a normal rate to form “bridges”, which often reach as high as the upper parts of the silo, making an even, reliable and, above all, reproducible discharge impossible. The product flow can only be kept going by means of appropriate fluidisation or external vibration.

Horizontal vibration brings success

Vidos valves are specifically designed to prevent these bridges from forming. The valve’s disc vibrates horizontally by means of an adjustable frequency

and amplitude. The operator is free to choose the opening range in which vibration is to be switched on and off. Energy consumption is extremely low and the amount of noise emitted is generally well below that generated by beaters, fluidisation systems or eccentric vibrators. There is effective protection against the medium compacting as the vibration only happens on the horizontal plane, i.e. axially in the direction of the valve shafts and not against the flow. Vidos valves can thus guarantee flexible regulation for a discharge volume across a very wide range. In terms of installation technology, no mechanical adjustments are required compared with a conventional valve. Existing signal cables can

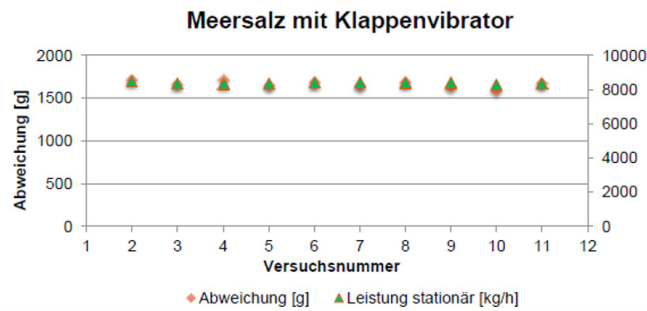
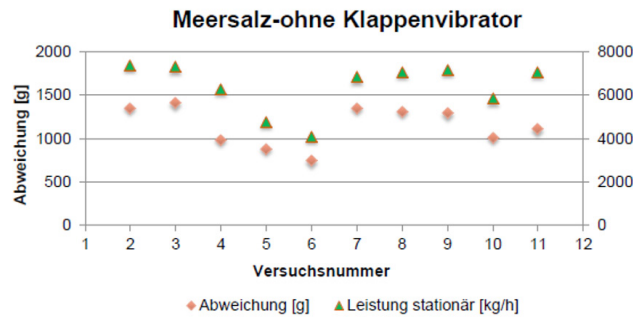
generally be used for the control technology. The dosing valves are arranged at same axis as the product being discharged from the silos. This allows, for example, silos or storage tanks to be placed directly above the scales or mixer, with no need to pump crosswise. In addition, the low installation height and the significantly lower investment costs have an impact on both the costs of system provision and subsequent costs for maintenance and operation (total cost of ownership, or TCO). The chart clearly demonstrates

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how using valves with a vibrator affects repeat accuracy. Provided that the input requirements are met, they also serve to homogenise the product flow as no material builds up on the edge of the opened valve disc during discharge at full flow. This increases performance while also virtually eliminating the disadvantages typical of an interfering contour (i.e. the valve disc in the product flow). This positive effect is particularly noticeable with ultra-fine powders, whose discharge performance can be as much as 30% higher. It is therefore possible to achieve the customary discharge volume using pipes with smaller cross-sections. The performance of existing systems can be improved without the need to spend a lot of time and money on upgrading them.



Repeat accuracy with (bottom graphic) and without vibration (top graphic)

Use as a discharge valve

Vidos valves can be combined with sequenced locks and used as discharge valves in feed pipes, for instance, with the lock acting as the discharge unit and even high differential pressures able to be circumvented without the risk of air pockets. This significantly reduces performance losses due to leaking air as well as service and maintenance costs. In this case, the vibration of the Vidos valve ensures even dosing into the feed pipe. The feed rate can be optimised by adjusting the cycle time of the sequenced lock and the opening angle of the Vidos discharge valve. Both plant engineers

and operators alike thus get a simple, cost-effective solution for numerous dosing and discharge applications. This is because exactly the same liners, bodies, actuators and control elements are used as can be found in standard valves, enabling users to benefit from the global service network, a fact appreciated by international companies in particular. Liners can be supplied in various forms, including as conductive versions, with FDA approval or in accordance with EC 1935. The bodies available include those made from ductile cast iron, aluminium or stainless steel. The Vidos function has now been

successfully applied to PTFE-coated valves as well. The flange-to-flange dimensions are also the same as for standard valves. As the Vidos valves work with low intrinsic angular momentum, small actuators with correspondingly low energy consumption can be used and the space needed for installation can be reduced accordingly. They can be actuated either conventionally via the 4-20 mA analogue signal or using data bus systems. Vidos regulating valves can be used in ATEX zones.

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