

Type HS-ISO

High Velocity Vent, 3rd generation equipment, in a patented non-hammering and non-oscillation executing. Compliance with IMO MSC/Circ. 677/Rev. 1; EN 12874; and ISO 15364.

Type HS-ISO high velocity pressure/ vacuum relief vent is the response to the first marine cargo tank venting equipment standard from the International Standard Organization. This valve is specifically designed with a view to address in-service maintenance, allow inspection of all vital parts from the outside without use of tools, and allow wear parts to be replaced in-situ. Essential functions are reflected by indicators, which are clearly visible from the outside at all times. Thanks to the patented control system for opening and closing pressures, the valve conforms to requirements for non-hammering and non-oscillation. The control system combines the simplicity and low maintenance advantages of a weight-loaded design with the low dynamic pressure drop of a traditional magnet operated design, while adding the in-service advantages of large net clearance through gas passage-ways to minimize clogging due to fouling from residue/ condensate. The control system further allows the designer of the venting system to implement piping of lesser diameter than normal.

It was concluded at IMO in 1996-97 that tank venting equipment in many cases did not meet reasonable quality levels in ways of in-service performance. The rate of incidents was at unacceptable heights and it was in consequence hereof decided to revise SOLAS (II-2-59) to address redundancy and to invite ISO to provide a standard with focus on mechanical properties, maintenance, and in-service requirements as a supplement to IMO's existing test standard. ISO standard (15364) is now an integral part of SOLAS and the Chemical Code (by reference to IMO MSC/Circ. 677/Rev. 1) and therefore mandatory for all new buildings. The approval of this valve type falls in two parts: 1) Testing for fire safety according to IMO MSC/Circ. 677/Rev. 1 with the notified body under the EU directive for marine equipment,

and 2) review of the mechanical properties of the design by the notified body. Certain minimum issues must be verified and included in the certification, but the main novelty is that the qualification process is now placed with the user(s). Showing a class type approval to MSC/Circ. 677/rev.1 is not adequate; the overall properties of the product must be suitable for the intended application based on the product review under ISO 15364. A "677 approved" valve does not automatically meet the requirements of the ISO standard for any application.

Each configuration is tested and approved for non-hammering and non-oscillation and service restrictions are certified and available for the system designer to verify according to IMO MSC/Circ. 731. The instant reduction of pressure drop at set-point allows the designer under IMO MSC/Circ. 731 to select smaller diameter piping than otherwise needed from a tank pressure calculation point.

From a practical point of view, the most interesting aspect of this design is that all wear parts can be replaced without dismantling the unit. Further, all wear parts can be inspected from the outside and the operational condition of the valve checked to determine when maintenance is necessary.

