

## SINGLE-PORTED GLOBE CONTROL VALVES TYPE Z1B®

### Design solutions for special applications

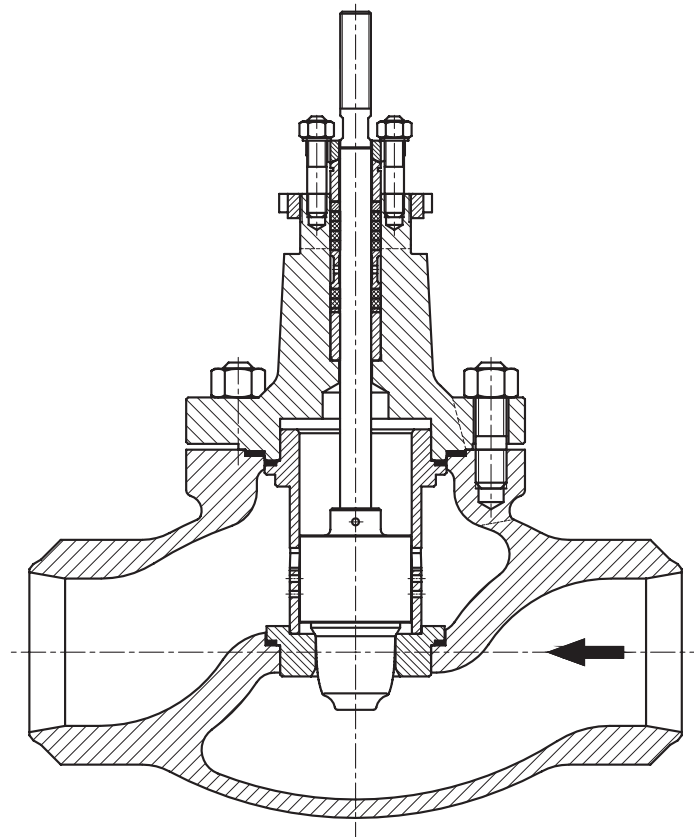
#### INTRODUCTION:

Product versions of valves type Z1B include numerous special executions adjusted especially for particular requirements of installations, in which they are to be installed.

The flow of fluid through the valve (depending on the kind and parameters of the fluid) may cause phenomena having a negative impact on the environment and be destructive to the product's durability.

It often happens that process parameters require application of valves designed strictly for flow parameters, so as to eliminate the occurrence of such phenomena as cavitation, choked flow, noise and to prevent erosion of internal parts.

This catalogue card presents some of most commonly used valve designs, which are comprised in Z1B series, but being special executions, were not included in the main catalogue card of Z1B valves.

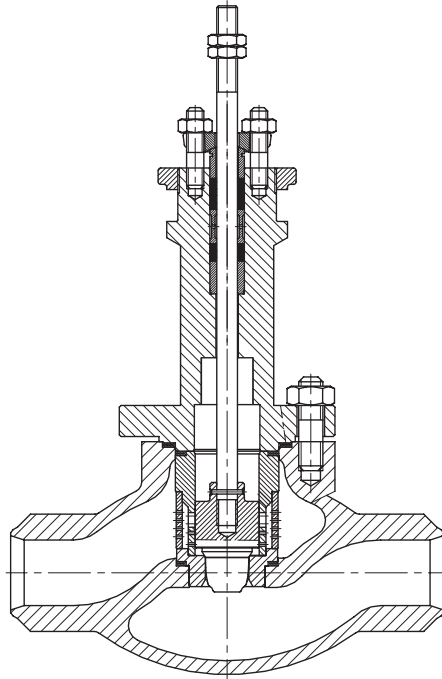


**Valve with two-step plug**

Valves with two-step plugs are designed for eliminating cavitation and choked flow. Each step of throttling has been precisely selected, so as to generate pressure drops below critical values at each point of work. Valve's internal parts are toughened or stellite and nitrided.

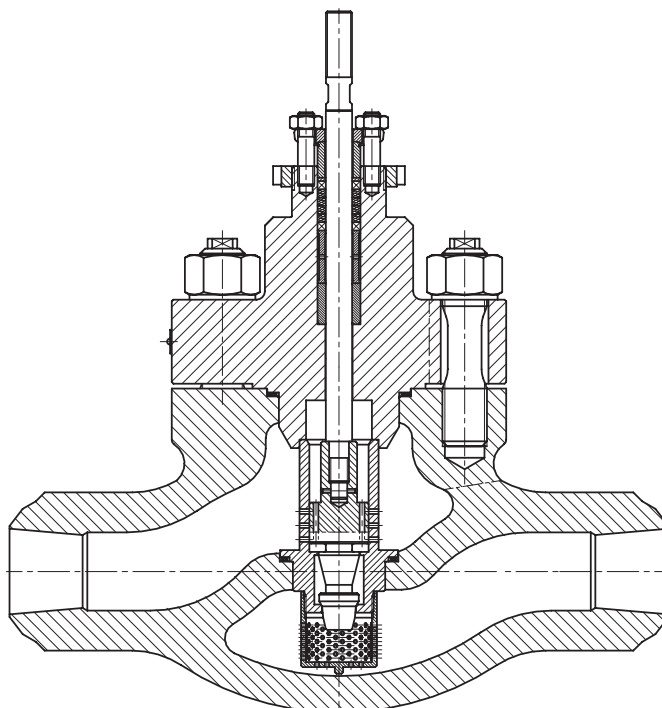
### Valve with two-step plug and throttling cage

Valves with two-step plugs are designed for eliminating cavitation and choked flow. Additional throttling cage is to implement additional throttling step and to reduce the noise level through multihole structure. Valve's internal parts are toughened or stellite and nitrided.



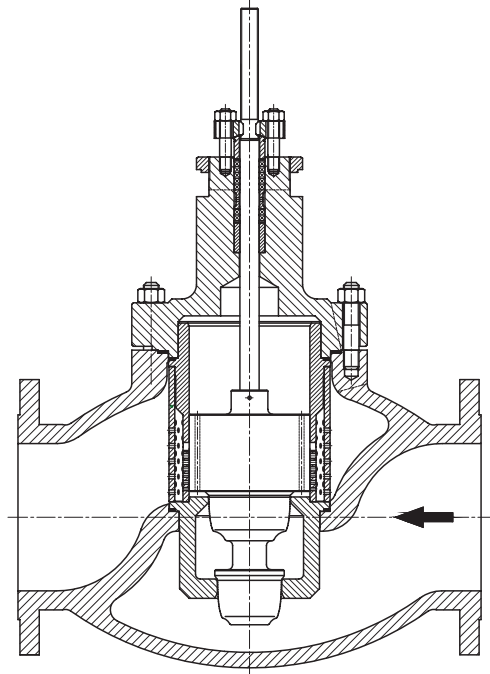
### Valve with three-step plug and filtering element under the seat

Valves with two-step plugs are designed for eliminating cavitation and choked flow for higher pressure drops than valves with two-step plugs. Additional filtering structure under the seat is to protect internal parts against damaging effect of solid particles, which may be present in the fluid. Valve's internal parts are toughened or stellite and nitrided.



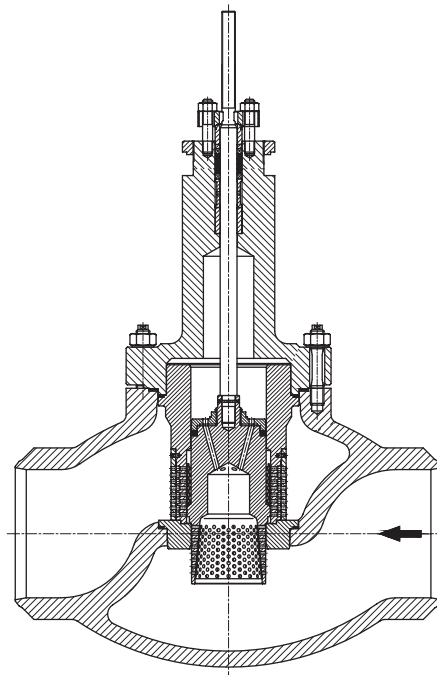
### Valve with three-step plug and throttling cage

Valves with three-step plugs are designed for eliminating cavitation and chocked flow for higher pressure drops than valves with two-step plugs. Additional throttling cage is to implement additional throttling step and to reduce the noise level through multihole structure. Valve's internal parts are toughened or stellite and nitrided.



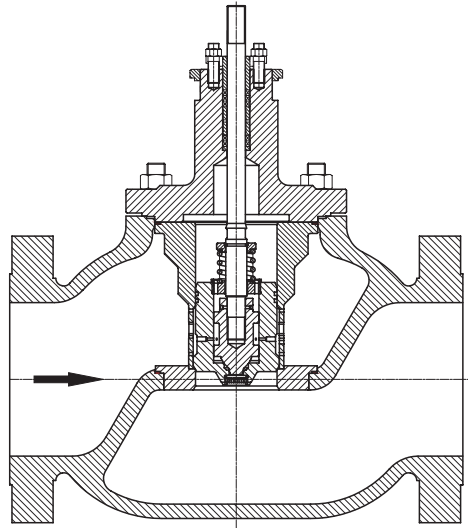
### Valve with two-step perforated plug and two-step active throttling cage

Valves with multi-step active throttling structures in a form of perforated multihole elements, are used for regulation of steam flow, as well as other gas fluids at high pressure drops. This design aims at eliminating chocked flow and excessive noise. Valve's internal parts are toughened or stellite and nitrided.



### Valve with two-step plug pilot balanced and throttling plate

Valves with plug balanced by inner pilot are used for applications requiring increased rangeability. Due to plug being balanced by pilot, it is possible to achieve very high disposable pressure drops at small half-opening of the valve plug and high shut-off tightness of the valve. Valve's internal parts are toughened or stellite and nitrided.



### Valves DN150-300 for nominal pressures PN160-420

Valves for nominal pressures higher than those in the main catalogue card of Z1B valves are made available upon customised requests. Due to large bonnet diameter and high pressure, the packing system in a form of conical self-tightening (under pressure inside the valve) seal was used. Product versions with pressure balanced plugs in different materials are available.

