baelz automatic®

North America

Baelz NA

Three Way Control Valves

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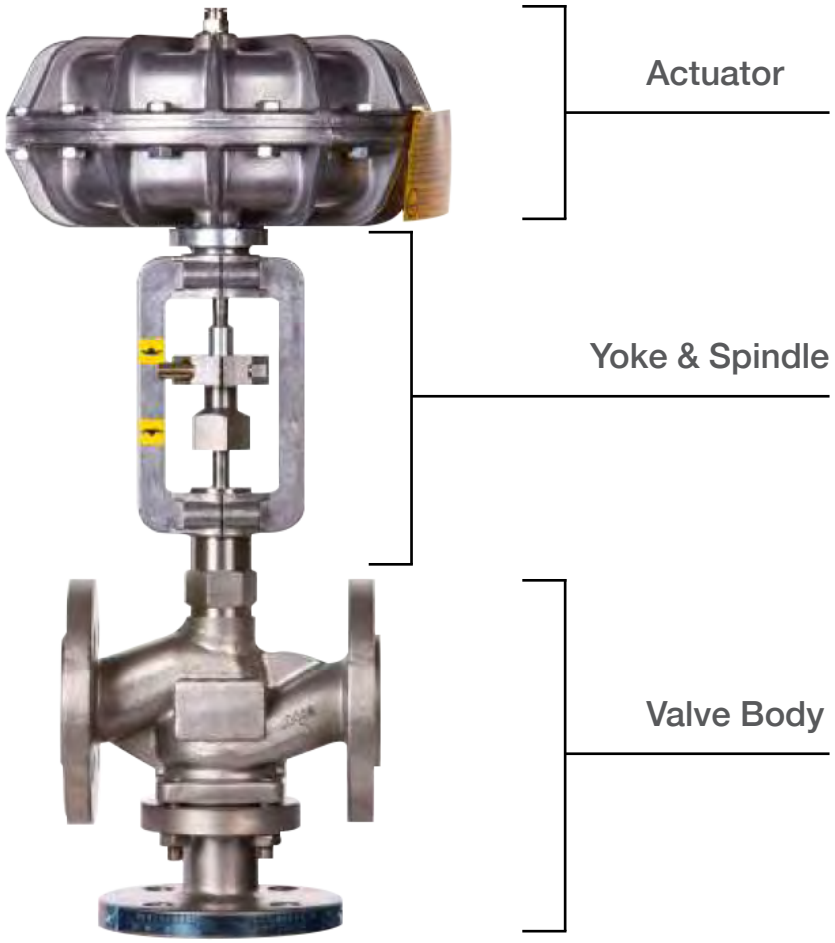
Allowing for great versatility, control valves are employed across a huge range of industries to manage the flow of various fluids. Serving as integral parts in all process industries, these valves are available in both three-way and two-way configurations to meet specific process requirements.

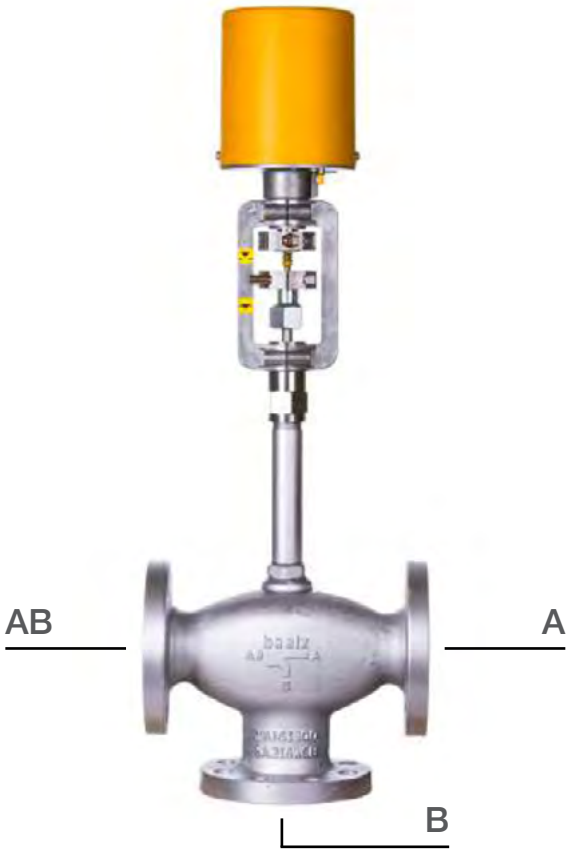
Baelz Automatic is proud to be a premier producer of high-end control valves for use in many different industrial applications. Every control valve manufactured by Baelz has three main components: the valve body, the actuator, and the plug with its spindle. The actuator moves the valve plug up and down, controlling the valve to open or close, thus regulating the flow temperature. It is possible to design all three components to specific application requirements. In general, the actuators can be either pneumatic or electric.



Our valves also come in multiple valve body options, and can be built to support high pressures or can be designed with inert materials — such as stainless-steel bellows and plug/spindle. Baelz also offers stainless steel body valves to provide reliable chemical resistance. These features may be chosen if the valve is expected to withstand above-average temperatures or be exposed to corrosive chemicals.

Three-Way Control Valves

Three-way valves have three ports, referred to as “A,” “B,” and “AB.” In addition to providing flow regulation, these valves can be oriented to divert the flow or to mix two inlets at different temperatures or pressures to provide appropriate parameters needed within the process. This is often done when the temperature of the working fluid needs be to adjusted and or controlled to meet a certain flow rate out. All of Baelz’s three-way valves have the structure described above.



Additionally, all ports are bidirectional. This greatly improves the flexibility with many different valve orientations, allowing fluid to flow in both directions from all ports. A linear spindle with a plug is moved up and down to operate the valve. When the spindle moves up, the plug disables flow from A to AB. Conversely, a downward movement of the spindle closes port B, and facilitates flow from A to AB.

Mixing Valves Vs. Diverting Valves

These valves can operate as mixing valves or diverting valves. When functioning as a mixing valve, two ports (A and B) function as inlets, and one port (AB) functions as the outlet. The inlet fluids from ports A and B mix inside the valve body and are delivered through port AB.

As a diverting valve, there is one inlet (AB) and two outlets (A and B). However, for efficient operation as a diverting valve, the maximum differential pressure of 0.6 bar must not be exceeded, and electric actuators are to be used verses pneumatic. It is very important to note that operating three-way control valves as diverting valves at higher differential pressures can cause valve chatter and possibly cause catastrophic failure of the valve assembly.

Installing a three-way mixing valve is much less complex than installing a three-way diverting valve. However, it is typically much more efficient and cost-effective to employ three-way valves rather than multiple two-way valves.

The Benefits of Baelz's Three-Way Valves

Our three-way valves offer a number of unique advantages. For example, Baelz's valves come equipped with a tight seal that allows for better leakage protection. This allows the valve to operate more efficiently with high temperature and pressure environments.

baelz 342-B

baelz 342-BK-SS

baelz 347-B
baelz 347-BB
baelz 347-B-EMF
baelz 347-BB-EMF

baelz 347-BK-SS
baelz 347-BBK-SS

baelz 353 / 354

baelz 367-K-SS-A3

The spindle and plug, which are composed of stainless steel, are designed to offer a longer lifespan on the valve seal, and can support over 100,000 reps open/close before experiencing any kind of wear or damage.

All of our control valves are manufactured in an entirely in our factory, based in Germany and quality checks of the highest standards are performed before the valves are shipped.

As an industry player, we are capable of offering many valve part options — such as longer cooling tubes, stainless-steel bellows, and balanced/caged plugs — to satisfy unique customer requirements. In fact, our stainless-steel bellows allow the valves to operate efficiently at temperatures as high as 662 °F. This, in turn, allows the valves to regulate hot oil, high-temperature water, and even steam in critical applications such as energy generation.

Our valves are manufactured with both DIN and ANSI flanges, allowing the valves to be integrated smoothly into other systems.

Learn More

Baelz North America (NA), the official distributor of Baelz Automatic components and engineered systems in North America. We can provide top-of-the-line Baelz valves and accessories to satisfy any type of industrial application. We take pride in providing the best possible support for our customers, and will work with you to identify the ideal three-way valve for your specific job.

To learn more about our three-way mixing and diverting control valves, reach out to the team today or watch our video.

Download Our

Components Brochure

Identify and order the right Baelz components for your new or existing application. Our components can supply thermal transfer systems, clean steam generators, saturated or superheated steam, controlled steam to vapor mixers, and custom systems to promote productive and efficient process.

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