



**Application:**



The ESBE thermic valve is a boiler by-pass valve that prevents cool return water temperatures in a hydronic heating system. The purpose is to safeguard conventional non-condensing boilers against corrosion from condensation that would result if a minimum flue gas temperature is not maintained.

The TV valve can be installed in either the hot water feed (160°F) or the return line (140°F or 113°F).

**Typical Applications:**

- Non-condensing boilers matched with high mass, low temperature systems, i.e. concrete radiant floor heating or snow melting systems
- Gravity conversion systems, which typically have large volumes of water
- Water heating systems where solid fuel boilers are used to feed storage tanks

**Features:**

- The thermostatic element within the valve allows flow to by-pass the system until the appropriate fluid temperature through the valve is reached.
- Avoids sustained low water temperatures which would otherwise cause the water vapour to continually condense inside the boiler
- Protection from thermal shock within non-condensing boiler
- Self contained thermostatic element with no adjustment required
- Choice of three temperature values and three connection sizes

**Ordering Information:**

Code No.	Model	Connection (FNPT)	Install On	Opening Temperature	Cv
065B8920	TV461A	1"	Supply Side	160°F (72°C)	10.5
065B8921	TV462A	1-1/4"			16.5
065B8922	TV463A	1-1/2"			20.0
065B8923	TV464A	1"	Return Side	140°F (60°C)	10.5
065B8924	TV465A	1-1/4"			16.5
065B8925	TV466A	1-1/2"			20.0
065B8917	TV464AL	1"		113°F (45°C)	10.5
065B8918	TV465AL	1-1/4"			16.5
065B8919	TV466AL	1-1/2"			20.0

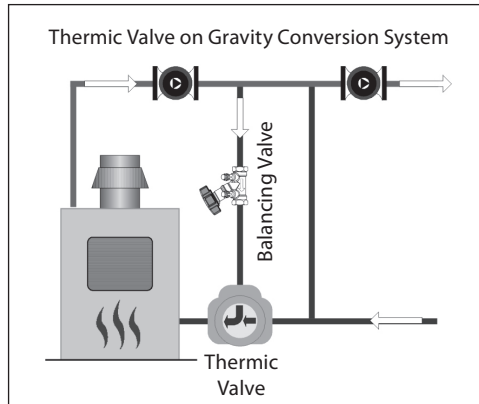
**Spare Parts:**

Code No.	Description	
065B8930	Thermostat	
065B8927		113°F (45°C)
065B8926		140°F (60°C)
		160°F (72°C)

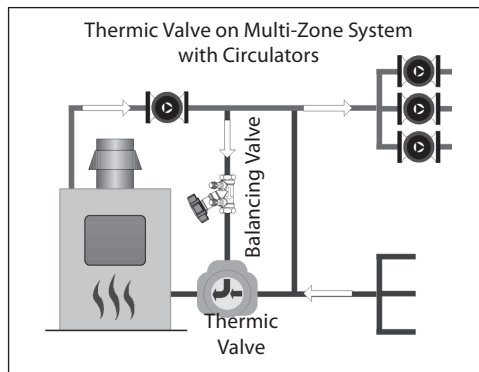
**Technical Specifications:**

<b>Max. operating pressure</b>	85psi (6 bar)
<b>Max. operating temperature</b>	230°F (110°C)
<b>Max differential pressure</b>	7.25psi (0.5 bar)
<b>Allowable fluid</b>	Glycol mixture, max. 50%

**System Layout:**



Gravity conversion systems contain an enormous volume of water, and the water returning to the heat source could be significantly cooler, leading to condensation and a shorter life for the heat source. Adding a thermic valve to the system will prevent the boiler from sustained operation at temperatures resulting in condensation.

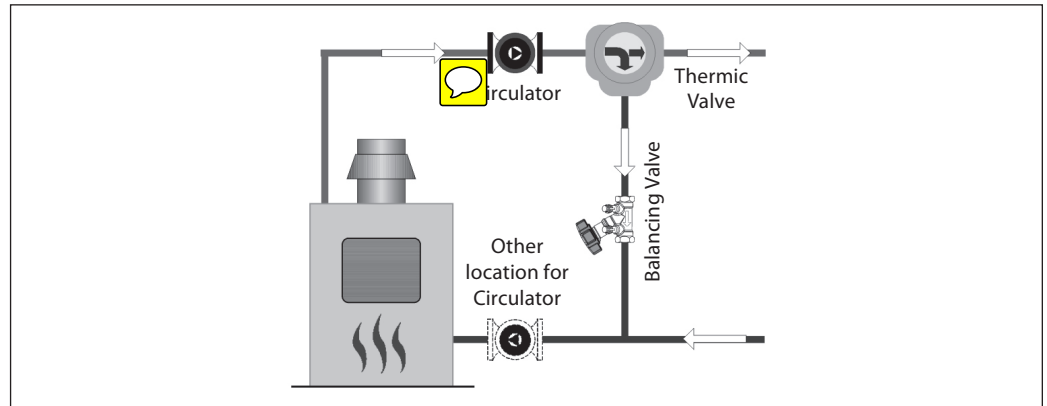


Where a high mass non-condensing heat source is matched with a large low temperature system, a situation could occur where the heat source is unable to maintain the rate of demand from the system. The use of the thermic valve provides the opportunity for the heat source to catch-up.

**Installation:**

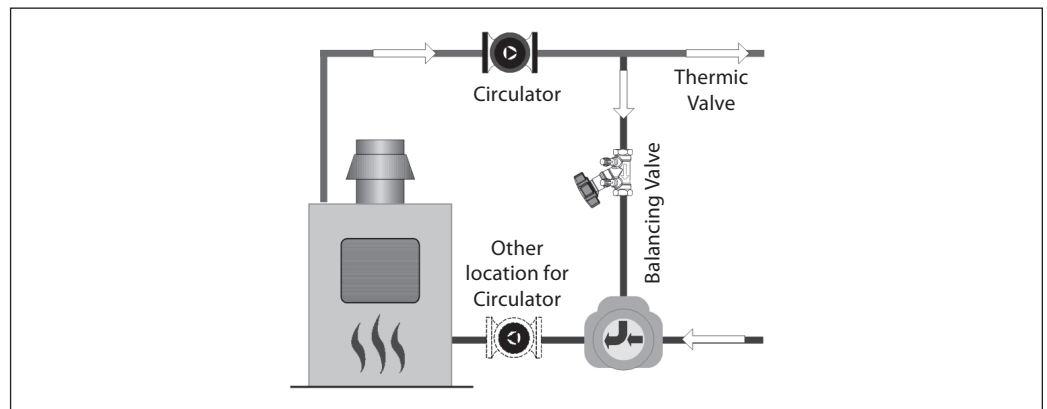
To ensure proper flow to the system an adjustable balancing valve is recommended to be installed on the bypass between the supply and return piping. The piping of the balancing

valve creates a similar resistance as the system to reduce the constant recirculation of heated fluid through the boiler and not out to the system.



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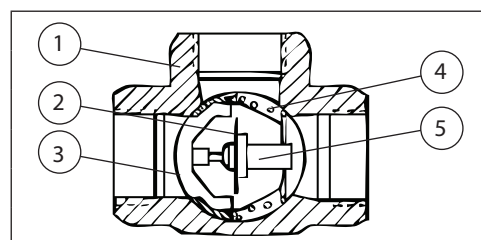
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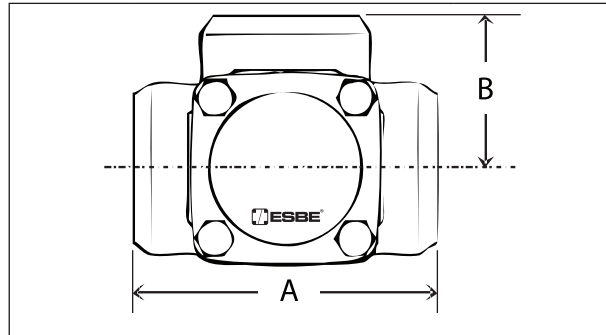
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**Construction:**



No.	Description
1	Valve Body - Cast iron
2	Close off valve seat
3	O-ring - EPDM
4	Spring - Stainless Steel
5	Thermostat - Copper

**Dimensions:**



Size	A in(mm)	B, in(mm)	Weight lb (kg)
1"	4.13 (104.9)	2.10 (53.3)	3.3 (1.5)
1-1/4"	4.52 (114.8)	2.26 (57.4)	4.4 (2.0)
1-1/2"	4.72 (119.9)	2.36 (59.9)	5.3 (2.4)

**Specifications:**

The 3-way bypass valve shall have a self-contained non-adjustable thermostatic element housed within a cast iron construction. The valve body shall have female pipe thread connections and shall be installed on a hydronic heating system. The valve shall be available with a choice of integral thermostatic elements

with fixed opening temperatures : 160°F (72°C) for mounting on the boiler supply side; 140°F (60°C) or 113°F (45°C) for mounting on the boiler return side. The bypass piping between the supply and return must incorporate a balancing valve to ensure proper flow to the system.

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