

ESBE THERMIC VALVE TV INSTALLATION INSTRUCTIONS

The ESBE **Thermostatic** Bypass valves type **TV** are designed to allow boilers to reach their optimum operating temperature quickly and to prevent cool/cold return temperature from affecting them.

OPERATION/INSTALLATION

Whether installed on the supply or the return, the thermostat within the **TV** valve allows flow through the bypass until the predetermined temperature is reached.

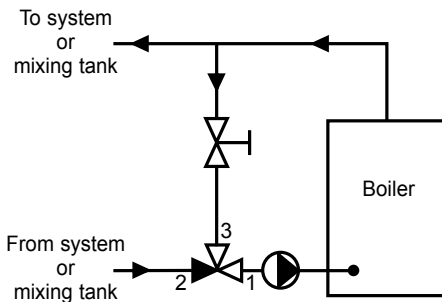
Installation on the Supply: When the valves is piped on the supply, the **TV** will allow flow of hot water to the system or indirect heater when the boiler outlet reaches 160° F (72° C). At approximately 180° F (82° C) a majority of the flow is directed to the system. Between 160° F and 170° F, the **TV** bypasses some supply water to mix with return water keeping operating temperatures high.

Installation on the Return: When the valve is piped on the return, the **TV** allows full bypass until the return temperature reaches 113° F (45° C) or 140° F (60° C) dependent on the selected valves's return temperature. The **TV** will begin opening while maintaining a 113° and 140° F minimum return temperature respectively. When return temperatures reach approximately 131° F (55° C) and 158° F (70° C) respectively, most of the flow will be through the system.

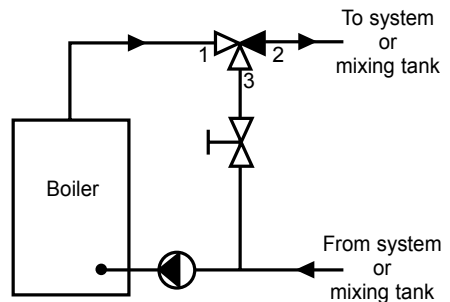
TYPICAL MOUNTING

TV can be installed in any position. An adjustable balancing valve (or ball valve) must be installed on the bypass.

Typical return valve mounting



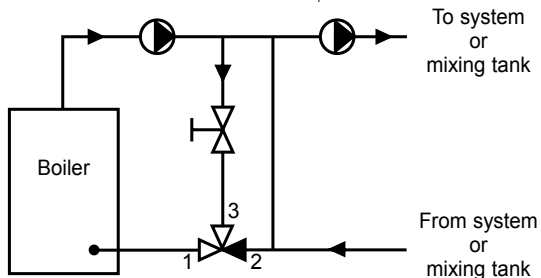
Typical supply valve mounting



Gravity/Large Volume Hot Water Systems:

For installations involving large volumes of water, the following piping is recommended. The considerable volume of water within the system can create a situation where cooler return water causes the valve to remain closed. The recommended piping allows the heat source to handle the returning water while providing heat to

the system.



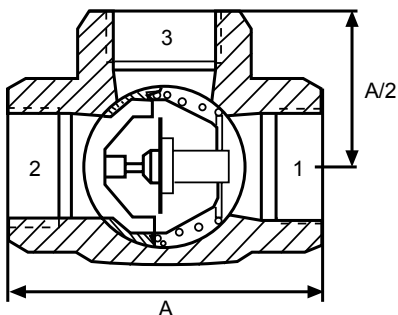
START UP

With the balancing valve on the bypass fully open, operate the boiler until it reaches it's normal operating temperature. If hot water does not automatically flow to the system then adjust (throttle) the bypass balancing valve until flow (hot water) to the system is established. If flow is already to the system, no adjustment is required.

TECHNICAL DATA

Temperature Ranges:

Standard: Supply mounted 160°F/72°C
 Return mounted 140°F/60°C
 Return mounted 113°F/45°C



Type	Code No.	Size	Opening temp.	A	A/2	Cv	Weight
461 A	065 B 8920	1" NPT (Female x Female)	160°F/72°C	4.2	2.10	10.5	3.3 lb.
462 A	065 B 8921	1 ¼" NPT (Female x Female)	160°F/72°C	4.5	2.25	16.4	4.4 lb.
463 A	065 B 8922	1 ½" NPT (Female x Female)	160°F/72°C	4.7	2.35	20.0	5.3 lb.
464 A	065 B 8923	1" NPT (Female x Female)	140°F/60°C	4.2	2.10	10.5	3.3 lb.
465 A	065 B 8924	1 ¼" NPT (Female x Female)	140°F/60°C	4.5	2.25	16.4	4.4 lb.
466 A	065 B 8925	1 ½" NPT (Female x Female)	140°F/60°C	4.7	2.35	20.0	5.3 lb.
464 AL	065 B 8917	1" NPT (Female x Female)	113°F/45°C	4.2	2.10	10.5	3.3 lb.
465 AL	065 B 8918	1 ¼" NPT (Female x Female)	113°F/45°C	4.5	2.25	16.4	4.4 lb.
466 AL	065 B 8919	1 ½" NPT (Female x Female)	113°F/45°C	4.7	2.35	20.0	5.3 lb.

Max operating pressure: 85 psi/6 bar
 Max operating temperature: 230°F (110°C)

For technical support or additional product information, contact:

Danfoss Inc.

7941 Corporate Drive
 Baltimore, MD USA 21236
 Telephone: (433) 512 - 0266
 Fax: (443) 512 - 0270
 E-mail: heatinginfo@danfoss.com
 www.na.heating.danfoss.com

Danfoss Inc.

6711 Mississauga Road · Suite 410
 Mississauga, ON, L5N 2W3 Canada
 Telephone: (905) 285 - 2050
 Fax: (905) 285 - 2055
 E-mail: heatinginfo@danfoss.com
 www.na.heating.danfoss.com