

ST™/STE™ Temperature Sensing Control Valves



The Ogontz ST/STE Temperature Sensing Control Valves

Automatically maintains a process temperature in a pipe or tank.

The ST/STE is a fully self-contained temperature control valve. It effectively maintains the desired temperature in a process pipe or storage tank by automatically regulating steam flow in response to changes in fluid temperature. As a result, its operation minimizes costly steam waste and prevents damage to process fluids due to overheating.

High reliability, low maintenance, and long service life are assured by a state-of-the-art precision thermal actuator. The ST/STE valve eliminates the use of delicate capillaries, hazardous chemically-filled diaphragms or thin-walled bellows. It can also be used to back up existing electrically traced systems, with significant savings and equivalent temperature control.

The ST can be attached to a process pipe or tank wall by welding or banding (e.g. stainless steel worm gear pipe clamp) and thermally bonded to the wall with thermal cement, without penetrating the wall.

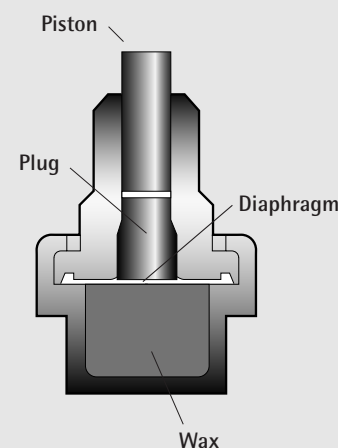
For those applications calling for the penetration of a tank wall, our STE valve can be supplied with an actuator extension of up to 72 inches in brass or stainless steel along with an associated thermal well in those materials. For longer lengths, consult your local authorized distributor for pricing and availability.

Design Features

- Direct acting (no pilot valve)
- Self-contained, solid-liquid thermal actuator requires no external power or operating signal
- High repeatability – no set point drift
- Valve port opens gradually, preventing system shock
- Temperature set points from 35°F to 240°F
- In-line serviceable
- Line sizes 1/2" through 2"
- 100% factory tested

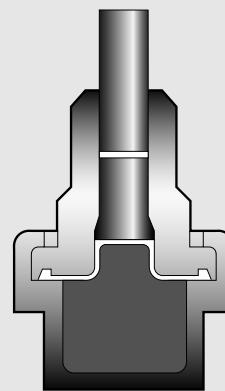
Self-Contained Thermal Actuator

The heart of the valve is the unique, solid-liquid phase thermal actuator. This hydrocarbon wax-filled device actuates the valve in response to changes in ambient temperature. The transition from solid to liquid phase causes a large change in volume, exerting a tremendous force over a narrow temperature band.



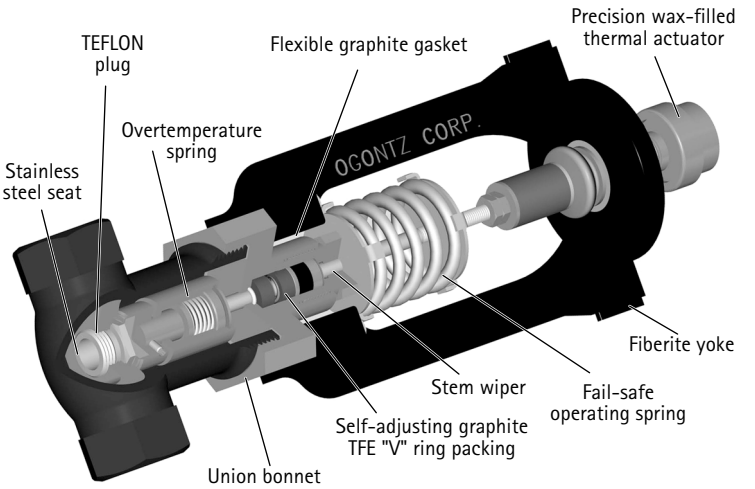
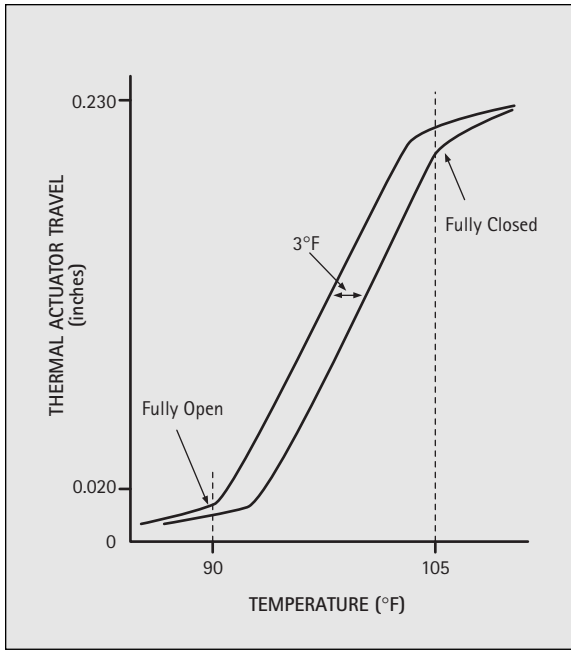
Cold Position

As the ambient temperature drops below the set point, the wax contracts, relieving the force exerted by the piston on the operating spring, and allowing the valve to open. The valve remains open until the temperature rises, at which time the valve begins to close.



Hot Position

As the ambient temperature rises above the set point, the wax starts to expand, exerting force on the piston and operating spring to close the valve. The valve remains closed until the temperature drops, at which time the valve begins to open.



As shown at left, the limited hysteresis of the wax during changes in state from solid to liquid results in a narrow temperature dead band, providing very close control around the temperature set point.

Typical Applications for ST/STE Valves

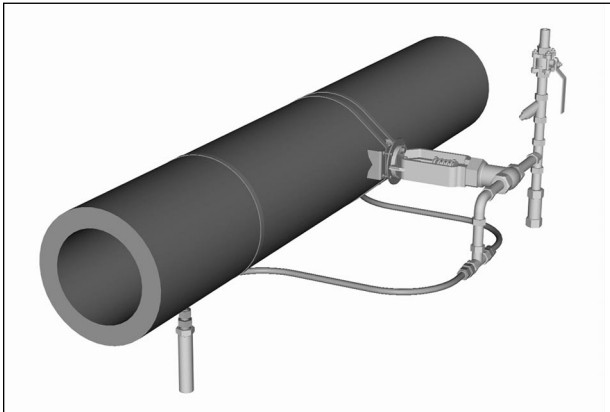


Figure 1: ST valve used for product line temperature control. Attached to pipe line by banding (e.g. stainless steel and worm gear pipe clamp), ST senses process pipe surface temperature and regulates flow of steam to tracer lines. It shuts off automatically when temperature rises above desired set point. One ST valve can control up to 150 feet of product line tracing.

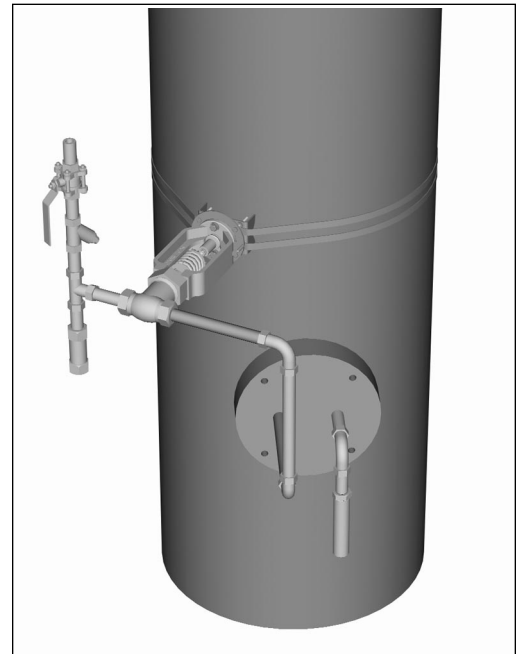


Figure 2: ST valve used for tank temperature control. Any vessel whose tank surface temperature is representative of product temperature can be effectively controlled. Valve maintains desired product temperature in response to changes in tank surface temperature. ST valves can be attached to the tank surface by banding or welding.

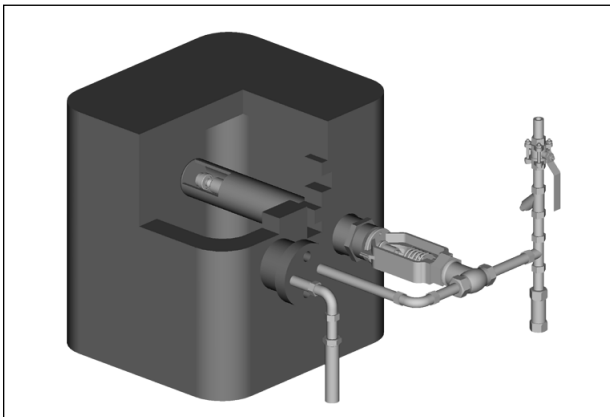


Figure 3: STE valve with well extension attachment shown inserted into a 1-1/4" female NPT thermo-well for control of internal tank heat exchanger coil.

Specifications and Ordering Information

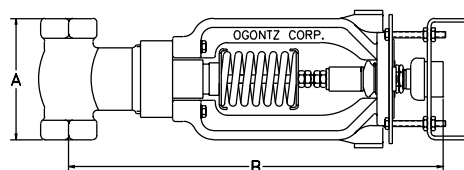
Valve Size NPT	Max Operating (psig)	Port Size	Body Rating	Orifice Size (in.)	Cv ±10%	Maximum Capacity Lbs/Hr. Saturated Steam at inlet pressure psig					
						15	30	50	100	150	200
1/2	200	C	ANSI 300 lb. class	1/2	3.4	186	280	405	718	1030	1343
3/4	200	C		1/2	3.8	208	313	452	802	1152	1501
1	200	C		3/4	5.5	301	452	655	1161	1667	2173
1 1/2	200	A		3/4	5.8	317	477	690	1224	1758	2291
1 1/2	150	B		1	8.3	454	683	988	1752	2515	-
1 1/2	50	C		1 1/2	13.8	754	1135	1643	-	-	-
2	200	A		3/4	6.4	350	526	762	1351	1940	2528
2	150	B		1	8.8	481	724	1048	1857	2667	-
2	50	C		1 1/2	14.1	771	1160	1679	-	-	-

NPT	A		B	C	E	Weight lbs.		
	Bronze	Stainless				Bronze	Stainless	
1/2	3 1/2	4	Nominal	11 1/8	11 1/4	6	7.5	8.5
3/4	3 1/2	4					7.5	8.5
1	4 1/2	4 1/2					9	9.5
1 1/2	6						17	18
2	6						16	17

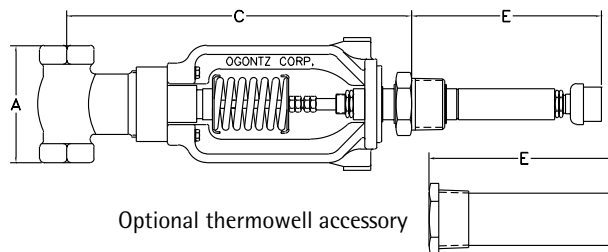
Notes:

- STE standard extension length is 6".
- STE standard extension material is brass (stainless steel available – consult local distributor)
- 1 1/4" NPT female connection required to mount STE valve into well
- Valves supplied with heat conductive compound
- Optional matching length 316SS well, order part number 3402997 (well external threads 1 1/2" NPT)

Model ST



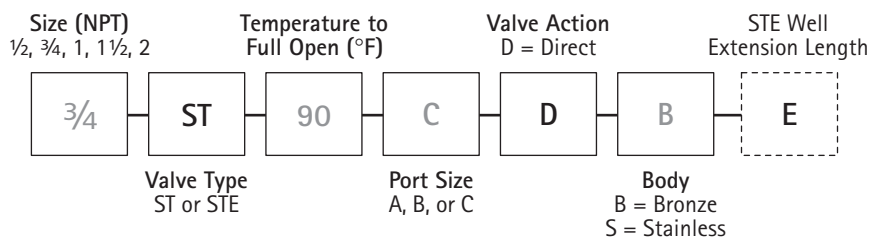
Model STE



Optional thermowell accessory

How To Order

EXAMPLE: To obtain a 3/4" ST Valve with bronze body and set point of 90°F, specify 3/4ST90CDB.



For STE: Specify length (E) from 6" to 72". For longer lengths, contact your local distributor.

Note: Specify the desired full open set point temperature between 35°F and 240°F in 5°F increments. Differential from full open to full closed is typically 15°. Valve normally fails in the open position.

The Ogontz Guarantee

We will repair or replace on a no-charge basis, F.O.B. Willow Grove, PA, any Ogontz product returned to us within 18 months, if found to be defective in material or workmanship.

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