ThermOmegaTech®

THERM-O-MIX® STATION

THE NEED

An instantaneous and reliable source of tepid water for a safety shower/eyewash system using existing plant steam & water.

OPERATION

When the shower or eyewash is activated, the pressure drop on a diaphragm opens the steam control valve (V-3). Water and steam flow are established instantly heating water and condensing the steam. After exiting the heat exchanger, hot water enters the tempering valve (V-5) and then the mixing valve (V-1) where it is blended with cold water to produce an outlet of 80°F water. Steam valve remains closed should water supply be interrupted.



BENEFITS

- Uses existing plant steam and water supply
- Provides 3 to 25 GPM of 80°F
- Easy to retrofit on existing shower or combination shower/ eyewash stations
- Maintains constant 80°F output regardless of inlet water temperature (between 40°F and 80°F)
- No insulated tanks or expensive recirculation systems required
- Self-purging-no need for elaborate drainage system
- Union connections allow quick and easy installation
- Steam trap on steam inlet included

DESIGN FEATURES

- Plant steam and water never mix-uses compact heat exchanger
- Standard pressure unit available for 45-60 PSIG steam pressure
- Low pressure unit available for 15-30 PSIG steam pressure
- Durable enclosure can be readily removed for service
- Conforms to OSHA and ANSI recommendations
- Designed to meet ASSE 1071 requirements

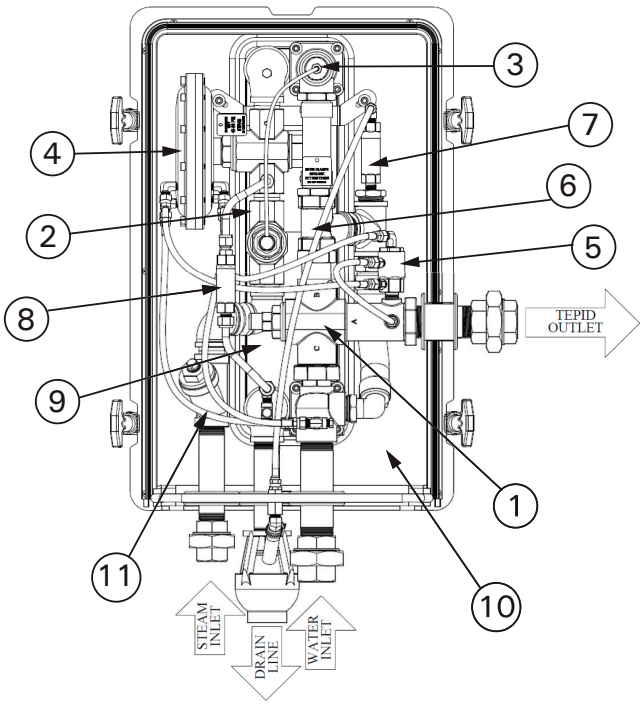
SPECIFICATIONS

	Maximum		Minimum	
Outlet Flow Rate	25 GPM	95 LPM	3 GPM	11 LPM
Ambient Operating Temperature	120°F	49°C	-30°F	-34°C
Inlet Water Pressure	90 PSIG	6 BAR	55 PSIG	4 BAR
Inlet Water Temperature	80°F	27°C	40°F	4°C
Inlet Saturated Steam Pressure	60 PSIG	4 BAR	45 PSIG	3 BAR
Inlet Saturated Steam Pressure (Low Pressure)	30 PSIG	2 BAR	15 PSIG	1 BAR
Maximum Steam Temperature	350°F	177°C		
Cold Water Bypass Flow Rate	24 GPM @ 25 PSI Pressure Drop			
Water Inlet & Outlet Pipe Size	1 1/4" NPT (F)			
Steam Supply & Drain Pipe Size	1" NPT (F)			
Steam Consumption	600 lb./hr @ 25 GPM Flow Rate, 20 lb./hr @ Idle			
Condensate Discharge Rate	12 GPH maximum			
Pressure Drop Water Inlet	25 PSI @ 25 GPM			

THERM-O-MIX® STATION

PARTS & MATERIALS

ITEM	DESCRIPTION
1	WATER MIXING VALVE (V-1)
2	STEAM METERING VALVE (V-2)
3	V-2 TEMPERATURE SENSOR (BULB & CAP)
4	STEAM ON/OFF DIAPHRAGM VALVE (V-3)
5	CONTROL VALVE (V-4)
6	TEMPERING VALVE (V-5)
7	OVER-TEMP PREVENTION VALVE (V-6)
8	TV-HAT, HEAT-ACTUATED TRAP
9	HEAT EXCHANGER (BRAZED PLATE)
10	ENCLOSURE
11	BRAIDED HOSES (STAINLESS STEEL)



REDUNDANT CONTROL

Level 1: V-1 80°F main mixing valve; mixes cold inlet water with tempered water from V-5.

Level 2: V-2 Normally open; senses and controls the hot water temperature out of heat exchanger by regulating steam flow into heat exchanger.

Level 3: V-3 Normally closed; opens in response to pressure differential cause by activation of flowing water, allowing steam to flow to the heat exchanger.

Level 4: V-4 Normally closed; senses water temperature from V-1. V-4 opens if water temperature is too high, short circuiting pressure differential across diaphragm, closing V-3 and turning steam flow off to heat exchanger.

Level 5: V-5 First stage mixing (100°F - 110°F); mixes hot water from the heat exchanger with cold inlet water before entering V-1 where second stage mixing begins. Helps prevent start-up temp spikes > 100°F.

Level 6: V-6 If enclosure air temperature causes an idle unit's water temperature to reach 95°F, this valve flushes the water out of the Therm-O-Mix® piping/valves and allows cooler supply water to backfill.

ORDERING

PART NUMBER	DESCRIPTION
387-112100-003	THERM-O-MIX® STATION, BPHE (45-60 PSIG STEAM)
387-512100-003	THERM-O-MIX® STATION LSP, BPHE (15-30 PSIG STEAM)

NOTES

1. A #20 mesh strainer is recommended for use on the cold water inlet.
2. Warranty information disclosed on IMI.

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TOMix
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Because of continuous improvements, ThermOmegaTech®, Inc. reserves the right to change the design and specifications without notice