RYTECH
TECHNOLOGIES INC.

PATENTED

RADIANT TRACER

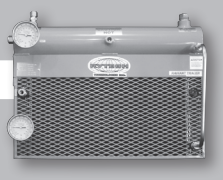
HEAT TRACING SYSTEMS

INSTALLATION & OPERATION INSTRUCTION MANUAL

› STANDARD APPLICATIONS

› MODELS:

RT-1200 & RT-1200B Series



RT-2400 & RT-2400B Series

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TECHNOLOGIES INC.

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CERTIFICATION

The "**Radiant Tracer**" patented heat tracing systems are designed, engineered and certified to operate only with specified pumps, fluids, and all other attached components specifically. Any altering or modifying pumps, fluids or components may cause damage to the units, bodily injury, or loss of certification. Models RT-1200B & RT-2400B Radiant Tracers systems are certified by the Canadian Standards Association (CSA) for use in Class 1, Division 1 and 2, Group D hazardous (classified) locations, temperature code T2C at ambient temperature of 40˚C (104˚F). CSA approved models are equipped for high altitudes: 0-4,500 ft. (0-1,370m) above sea level. Systems are certified for indoor/outdoor installation and for non residential use only.

SPECIFICATIONS

SPECIFIED PUMPS

Wilden Model PX1 1/2" Metallic (CSA/NAT Gas)
Sandpiper Model G05 1/2" Metallic (CSA/NAT Gas)

SPECIFIED ANTIFREEZE FLUIDS (Heat Medium)

NORKOOL Antifreeze
UCARTHERM Antifreeze

- **Supply Maximum Fuel Pressure:** 100 PSI
- **Maximum Manifold Pressure:** 7" WC
- **Fuel Type:** Natural Gas
- **Maximum Flow Capacity:** 8 gal/min.
- **Maximum Working Operating Pressure (WOP):** Atmosphere / (14.69 PSI)
- **Designed Temperature:** 80°C/176°F
- **System Fluid Capacity:** RT-1200B - 1.45 gals/US (5.5 L) or 1.25 gals/IMP (5.5 L)
  RT-2400B - 2.05 gals/US (7.75 L) or 1.71 gals/IMP (7.75 L)
- **Maximum Fuel Input:** RT-1200B - 8000 (BTU/hr @ 0-4,500 ft altitude.)
  RT-2400B -16000 (BTU/hr @ 0-4,500 ft altitude.)
- **Electrical Starter Voltage Rating:** 12V DC / 30Amps
- **Installation Clearances:** Appropriate clearances from must be observed and maintained during installation of the Radiant Tracer (See Chart below).

INSTALLATION CLEARANCES CHART

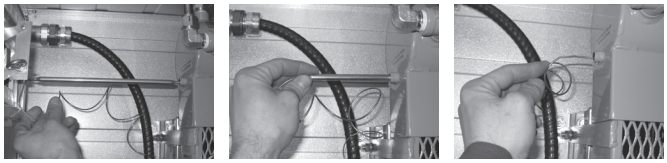
FRONT	BACK	TOP	RIGHT SIDE	LEFT SIDE
12 inches	0 inches	4 inches	4 inches	9 inches

INSTALLATION INSTRUCTIONS

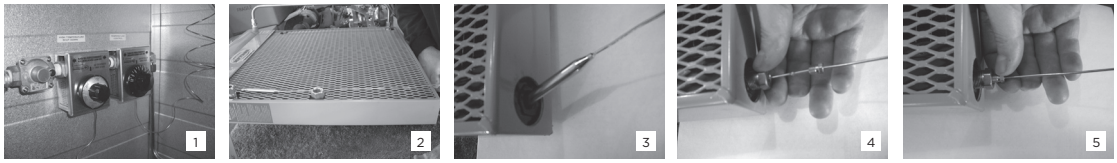
WARNING: ***DO NOT*** **light Catalytic Heater until system is filled with specified fluid and circulation is established. Failure to do so may cause damage to exchanger or bodily harm.**

For maximum efficiency ensure the Radiant Tracer system is mounted inside a building and heat tracing lines are all properly insulated. Exposed heat tracing lines can affect efficiency drastically.

1. Ensure catalytic heater is installed to manufacturer's specification and code regulations. (Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements.)
2. Radiant Tracer installation clearance distances must be maintained for maintenance purposes (See Specifications - Installation Chart, Page 1).
3. Shut off fuel gas to catalytic heater and allow heater to cool down.
4. Remove grill guard from the face of the catalytic heater.
5. Remove top bolts on catalytic heater's mounting brackets, then slide Exchangers brackets over to align the holes, insert bolts through both bracket holes on each side and tighten. (See Fig. 1).
6. Adjust base foot peg to stabilize weight from exchanger to the floor. (See Fig. 1).
7. **IMPORTANT** - Ensure catalytic heater's thermostat temperature controller is rated to manufacturer's proper BTU rating for model size and fuel supply used. (Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements).
8. Ensure catalytic heater's thermostat temperature controller's sensing bulb is inserted into surge tank thermowell. (See Below and Fig.2).



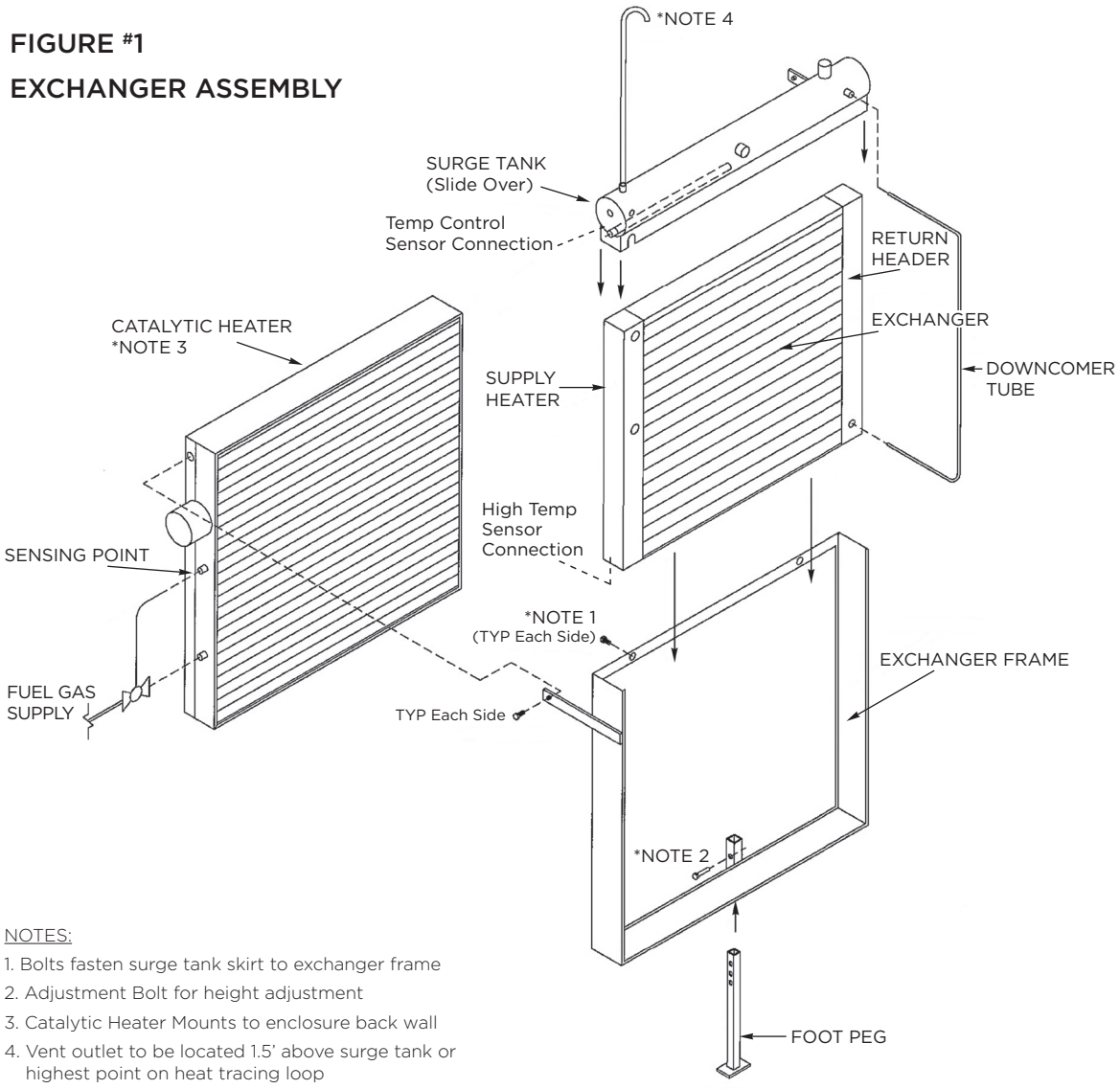
9. Install high temperature shut down controller, upstream of catalytic heaters thermostat temperature controller. Measure 3/4 the height distance on exchanger and insert sensing line and bulb inside the exchanger's supply header tank to this distance and fasten 3/8" bushing into 3/8" NPT port located on the bottom of exchanger. Once 3/8" bushing is fastened into place, tighten 1/8" bushing and ferrule to seal sensing line and bulb to exchanger's supply header. (See Fig. 2 and Steps Below).



10. Set high temperature shut down controller to 176°F/80°C maximum temperature setting. **Do not set higher than recommended.** Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
11. Always vent surge tank vapors outside of the building. Use 1/2" stainless steel tubing and ensure vent line is a minimum of 1.5' above surge tank or higher than highest point on the heat tracing line to prevent any spilling of fluids. (See Fig. 1).
12. **Use 1/2" Stainless Steel Tubing to install pump and for the heat tracing lines.** (See Fig. 2).
13. Install pump securely to the floor and to manufacturer's specifications and codes. Pump requires a minimum fuel gas supply pressure of 20 PSI to operate sufficiently. (READ PUMP OPERATING INSTRUCTIONS BEFORE INSTALLING).
14. **CAUTION:** Pump must be electrically grounded using the grounding conductor provided. Improper grounding can cause improper and dangerous operation.

15. **CAUTION:** The gas outlet of the pump must be vented to a safe location in accordance with local code or, in the absence of local codes, an industry or nationally recognized code having jurisdiction over the specific installation.
16. Connect fuel gas supply to pump and catalytic heater. **CAUTION**: Maximum fuel gas supply pressure 100 PSI. (See Fig. 2).
17. Connect 1/2" tubing from the exchangers Outlet to suction of pump. (See Fig.2).
18. Connect 1/2" tubing from heat tracing supply line / Fluid Outlet to discharge of the pump. Then connect the heat tracing return line / Fluid Inlet back to the exchangers surge tank inlet. (See Fig.2)
19. Check Heat Tracing Lines to see that there are no crimps or blockages in the tubing. THIS WILL RESTRICT FLOW, SLOW DOWN OR STALL PUMP COMPLETELY.
20. Fill surge tank with recommended mixture of heat medium fluid **(60% Antifreeze/40% Water)** until exchanger and surge tank is almost full. Turn Pump "ON"; circulate fluid slowly to purge air out of system. (*Maintain a level in surge tank sight glass while purging*) When system is purged, fill surge tank to approximately 50% in sight glass. (Read MSDS Sheets before handling specified antifreeze/coolant fluid).
21. When purging is completed, check exchanger, fitting and heat tracing lines for any leaks.
22. Insulate heat traced lines. NOTE: Exposed tubing outside of the insulation will affect the heater efficiency.

FIGURE #1
EXCHANGER ASSEMBLY



NOTES:

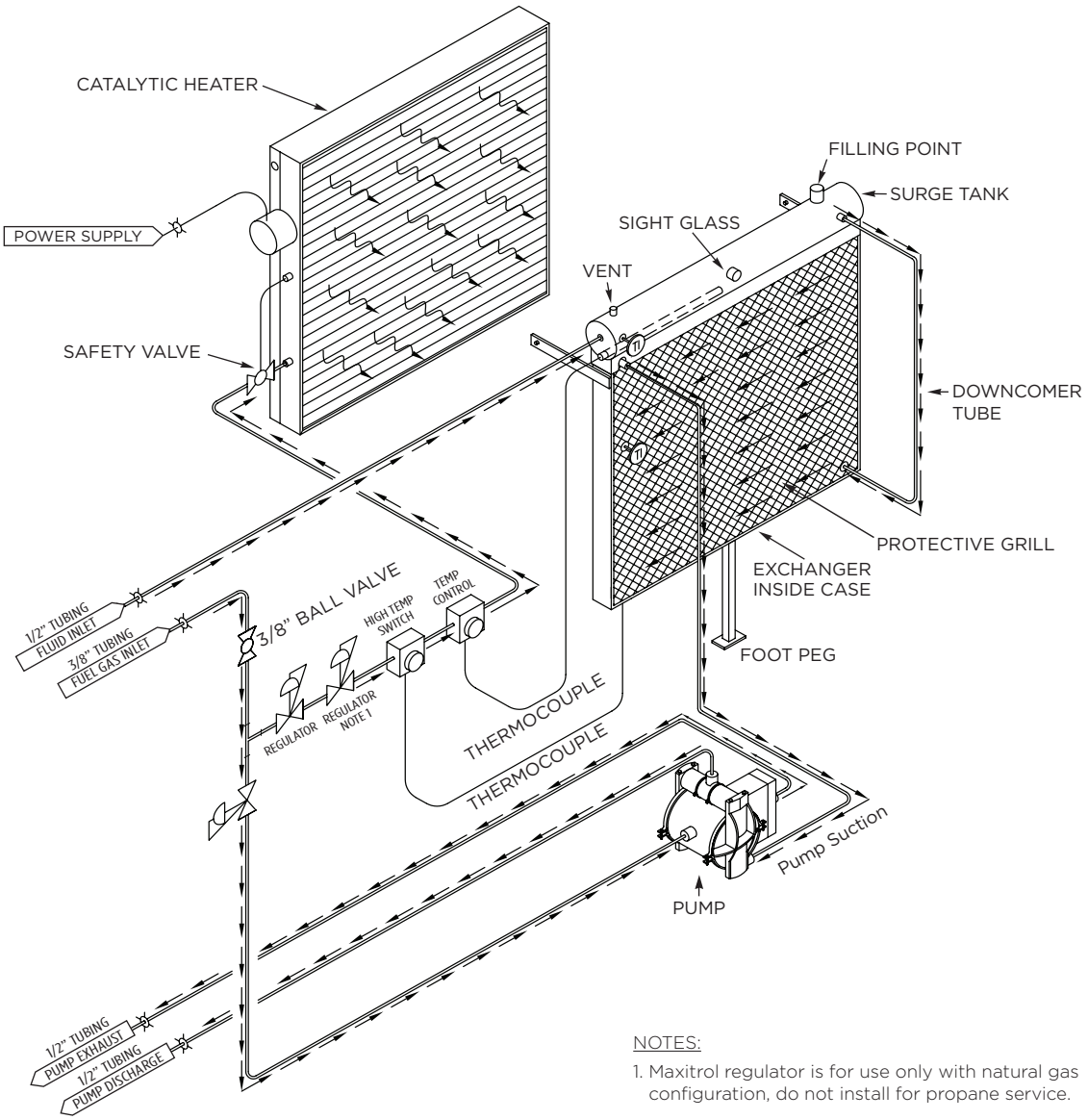
1. Bolts fasten surge tank skirt to exchanger frame
2. Adjustment Bolt for height adjustment
3. Catalytic Heater Mounts to enclosure back wall
4. Vent outlet to be located 1.5' above surge tank or highest point on heat tracing loop

RADIANT TRACER HEAT TRACE SYSTEM OPERATION

Fluid at atmospheric pressure gravity feeds down from the surge tank through the exchanger efficiently absorbing the catalytic heater's radiant heat energy. Hot fluid is then transferred to the suction of the pump which circulates 1 - 5 gal/min. through the heat-tracing loop returning cool fluid back to the surge tank where it is temperature controlled and preheated before repeating its cycle. Surge tank is equipped with a built in thermowell where the catalytic heater's thermostat temperature controller's sensing bulb is inserted to sense and maintain system return fluid temperature of 10 - 40°C (50 – 104°F). When system reaches set temperature, the thermostat controller will adjust fuel supply to catalytic heater, utilizing only what it needs from catalytic heater to maintain system temperature. The Radiant Tracer is also equipped with a built in high temperature shut down controller designed to completely shut off fuel supply to catalytic heater in an event the system is overheated, protecting the system and associated components.

FIGURE #2

EXCHANGER FLOW DIAGRAM



NOTES:

1. Maxitrol regulator is for use only with natural gas configuration, do not install for propane service.

OPERATING PROCEDURES

START UP

1. Ensure catalytic heater's thermostat temperature controller's sensing bulb is inserted into surge tank thermowell. (See Fig. 2).
2. Ensure high temperature shut down controller is installed upstream of catalytic heater's thermostat temperature controller and sensing bulb is properly inserted and fastened to the bottom of exchangers supply header tank. (See Fig 2 and Read "Radiant Tracer" Installation Instructions).
3. Ensure high temperature shut down controller is set at 176°F/80°C maximum. Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
4. **IMPORTANT** - Ensure catalytic heater's thermostat temperature controller is rated to manufacturer's proper BTU rating for model size and fuel supply used. (Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements).
5. Fill system with fluid to 50% of sight-glass.
6. Start pump and circulate fluid at a slow rate to purge air out of lines and exchanger system. Add specified fluid to maintain level in surge tank while purging air out of system.
7. Continue adding fluid to surge tank to maintain level while purging air out of the system. When the system is purged completely, fill surge tank to 50% sight glass level.
8. Start catalytic heater.
9. Set catalytic heater's temperature controller to recommended temperature of 10–40°C (50–104°F) return fluid temperature. **Do not exceed maximum designed temperature of 80°C. This may damage exchanger or cause bodily harm.**
10. Set process recommended flow to 1-5 gal/min to maintain a desired return fluid temperature of 10–40°C (50–104°F) by setting inlet gas pressure to pump. Refer to Pump Manufacturer's Operation Manual Instructions to determine inlet gas pressure needed to achieve 1-5 gal/min. at your current operational parameters.
11. **CAUTION:** Do not exceed designed process fluid flow rate 8 gal/min. This may drastically affect exchanger's efficiency and may overflow the surge tank. Refer to pump manufacturer's operation manual instructions.

SHUT DOWN

1. Shut off gas supply to Catalytic Heater.
2. Shut off gas supply to circulating pump.

GENERAL MAINTENANCE

- Keep fluid level approximately 50% in sight glass plug. Over filling may overflow surge tank due to heat expansion of fluid. DO NOT operate with fluid below sight plug glass, this may damage exchanger.
- **ALWAYS FILL EXCHANGER AND SURGE TANK BEFORE LIGHTING CATALYTIC HEATER. FAILURE TO DO SO WILL DAMAGE EXCHANGER.**
- Ensure catalytic heater's thermostat temperature controller sensing bulb is inserted into surge tank thermowell. Failure to do so will damage exchanger.
- **IMPORTANT -** Ensure catalytic heater's thermostat temperature controller is rated to manufacturer's proper BTU rating for model size and fuel supply used. (Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements).
- Ensure high temperature shut down controller is installed upstream of catalytic heater's thermostat temperature controller and sensing bulb is properly inserted and fastened to the bottom of exchangers supply header tank. (See Fig. 2 and Read "Radiant Tracer" Installation Instructions).
- Ensure high temperature shut down controller is set at 176°F/80°C maximum. Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
- **Do not exceed designed maximum temperature of 176°F/80°C on system;** this will damage exchanger.
- Use **ONLY** specified antifreeze's (See Fluid List) mixed with water in system. **These fluids should also be replaced every 5 years.**
- When the heater is in operation *test the strength of fluid every time fluid is added* to the system. **Recommended Strength is 60% antifreeze and 40% water.**

TROUBLE SHOOTING

PUMP STALLS, OR RUNS SLOWLY

· Check heat tracing flow lines for any crimps or blockages as this may restrict flow and stall pump completely.

· Read pumps Operation Manual for proper installation, operational parameters and trouble shooting.

· Ensure fluid level in surge tank is in sight glass.

· Heat Medium antifreeze strength is too heavy. **Recommended Strength is 60% antifreeze and 40% water.**

· Ensure pump has a minimum fuel supply pressure of 20 PSI. (Read pump operating instructions before installing).

BAD HEAT EXCHANGE ACROSS EXCHANGER

· Check catalytic heater's surface bed with temperature gauge gun. (See Catalytic Heater's Operational Manual for heating output specification).

· Ensure catalytic heater's thermostat temperature controller, regulators, and orifice are set to Manufacturer's specification.

· Ensure temperature gauges are working properly.

· Check flow rate to ensure fluid through exchanger is not over circulating.

EXCHANGER OPERATING HOTTER THAN NORMAL

- The system operates at approximately 10-40°C (50–104°F) return fluid temperature. If system operates hotter than 80°C (176°F) there may be a problem with the catalytic heater's installation, temperature controllers, or regulators. Faulty regulators, temperature controllers, and incorrect installation of catalytic heater will damage exchanger.
- Not enough heat loss through heat tracing loop, or system is oversized for task. See other model for BTU ratings and heat trace capability.

OVERFLOWING SURGE TANK

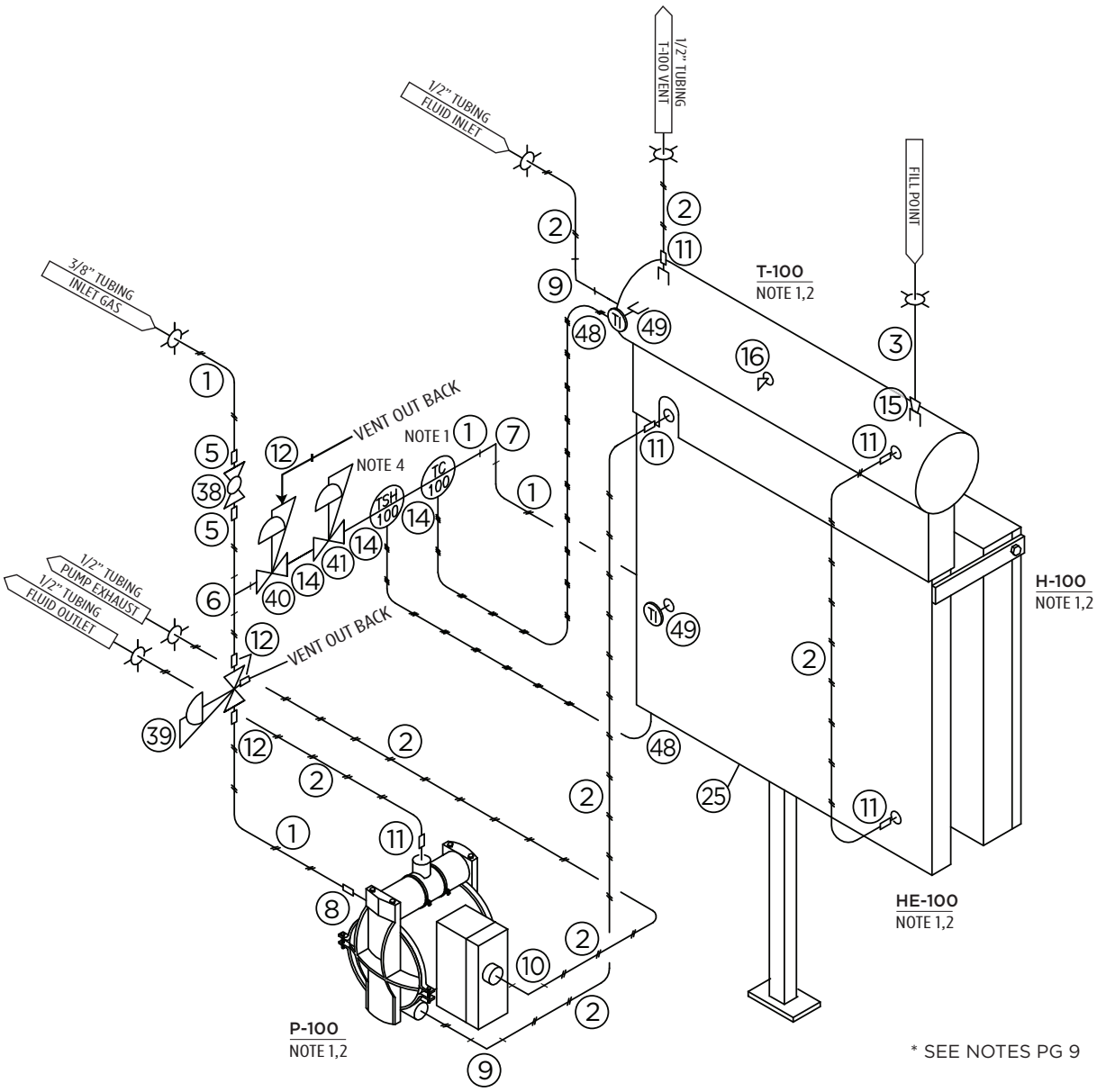
- Fluid too thick or cold to pass through exchanger. Check strength of antifreeze fluid. See Installation Instructions point #14 for fluid strength recommendations.
- Vent line installed lower than recommended. See Installation Instructions point #6 for height requirements.
- Over filling system; fluid may expand while heating up to temperature. Ensure system is filled to 50% level in sight glass as recommended.
- Exceeding maximum designed fluid circulation rate (10 gals/min.), slow pump down.
- Exceeding maximum designed temperature (176°F/80°C) may cause fluid to boil and expand more than surge tank is designed to hold.

CATALYTIC HEATER OUTAGES

- Operating system to hot will cause high temperature shut down controller to trip, shutting off fuel supply to catalytic heater until system cools down. Ensure catalytic heater's thermostat temperature controller is operational and the sensing bulb is inserted into surge tank to properly monitor temperature on returning fluid. (See Fig. 2 and Read "Radiant Tracer" Installation Instructions).

MATERIALS AND REPLACEMENT PARTS

FIGURE #3
PARTS DIAGRAM



* SEE NOTES PG 9

NOTES:

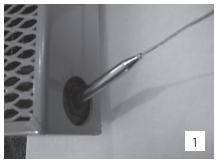
1. For equipment specifications see DWG E08-108-101 and E08-108-102
2. For equipment assembly see DWG E08-108-303
3. All Tubing and Tubing fittings to be Swagelok as ber indicated in part numbers
4. RT2 Appliance regulator is for use only with the natural gas configuration, do not install for propane service.

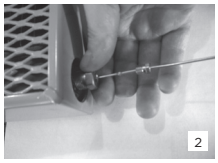
BILL OF MATERIALS

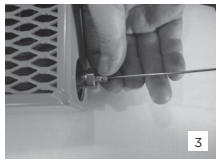
	ITEM	QTY	SIZE	SCH./RATING	DESCRIPTION	MATERIAL
PIPE	1	6M	3/8"	0.035/3300#	TUBING	S-T6-S-049-6ME
	2	6M	1/2"	0.035/3300#	TUBING	S-T8-S-049-6ME
	3	6M	1-1/2"	SCH 160	PIPE, SMLS	A 106 GR B
	ITEM	QTY	SIZE	SCH./RATING	DESCRIPTION	PT NUMBER
FITTINGS	5	2	3/8"	3300#	STRAIGHT MALE CONNECTOR	S-600-1-6
	6	1	3/8" x 1/4"	3300#	MALE BRANCH TEE	S-600-3TTM
	7	1	3/8"	3300#	MALE ELBOW	S-600-2-6
	8	1	3/8" x 1/2"	3300#	STRAIGHT MALE CONNECTOR	S-600-1-8
	9	2	1/2"	2600#	MALE ELBOW	S-810-2-8
	10	1	3/8"x1/2"	3300#	MALE ELBOW	S-600-2-8
	11	5	1/2"	2600#	STRAIGHT MALE CONNECTOR	S-810-1-8
	12	3	3/8" x 1/4"	3300#	STRAIGHT MALE CONNECTOR	S-600-1-4
	13	1	3/8" x 1/8"	3300#	MALE ELBOW	S-600-2-2
	14	3	3/8"	SCH 80	NIPPLE, SMLS, TBE	A 106 GR B
	ITEM	QTY	SIZE	SCH./RATING	DESCRIPTION	MATERIAL
	15	1	1" x 1-1/2"	3000#	SWAGE, SMLS, TBE	A 105N
	16	1	1"	1250#	SIGHT GLASS PLUG	A 105N
	17					
	18					
	19					
EQUIPMENT	ITEM	QTY	DESCRIPTION			
	25	1	RYTECH HEAT EXCHANGER RTE-1200 (12"x24") or RTE-2400 (24"x24")			
VALVES	ITEM	QTY	SIZE	SCH./RATING	DESCRIPTION	PT NUMBER
	38	1	3/8"	125#	BALL VALVE	
	39	1	2/4"	250#	FISHER CFR67 REGULATOR	
	40	1	1/4"x3/8"	250#	FISHER 912 REGULATOR	
	41	1	3/8"	0.5#	RT2 APPLIANCE REGULATOR	
MISC.	ITEM	QTY	SIZE	SCH./RATING	DESCRIPTION	PT NUMBER
	48	2			THERMOCOUPLE	
	49	2	1/2"x4"	0-120°C	TEMPERATURE INDICATOR	

EXCHANGER CORE REPLACEMENT INSTRUCTIONS

1. Ensure catalytic heater and circulating pump is shut down. Allow system time to completely cool.
2. Drain system completely by disconnecting the high temperature controller sensing line and bulb from 3/8" NPT port located on the bottom of exchanger's supply header. (See Fig. 1).
3. Disconnect "down-comer tube" from surge tank outlet and exchanger inlet connection points.
4. Disconnect inlet, outlet heat tracing, and vapour lines off surge tank and exchanger.
5. Remove temperature gauges, thermowells and all connected fittings on front face of exchanger.
6. Slide out catalytic heater's thermostat temperature controllers sensing bulb from surge tank thermowell. (See Fig. 2 and Read "Radiant Tracer" Installation Instructions).
7. Remove both 1/4" bolts on the backside of surge tank. Then slide surge tank off exchanger case. (See Fig. 1).
8. Remove damaged exchanger core and insert new replacement. (See Section "Materials and Replacement Parts" for Exchanger part #'s.)
9. Reinstall surge tank onto exchanger case and fasten using 1/4" bolts removed in step #6.
10. Install temperature gauges, thermowells and all fittings that were removed in step #5.
11. Install the high temperature shut down controller's sensing line and bulb back into exchangers. (See Steps Below).







12. Reconnect "down-comer tube" onto surge tank outlet and exchanger inlet.
13. Reconnect inlet, outlet heat tracing, and vapour lines to surge tank and exchanger.
14. Insert catalytic heater's thermostat temperature controllers sensing bulb back into surge tank thermowell.

IMPORTANT: When repairs and assembly are completed, read and follow through "Start-Up" steps under 'Operating Procedures' in this manual. (See Pg. 5)

CAUTION: Do not operate system without catalytic heater's thermostat temperature controller, high temperature shut down controller and sensing bulbs, installed to manufacturer specifications and recommendations.

SAFETY WARNINGS

THIS EQUIPMENT SHOULD ONLY BE USED AND OPERATED BY EXPERIENCED PERSONNEL. OBSERVE AND READ ALL SAFETY WARNINGS AND THE OPERATION MANUAL BEFORE OPERATING OR REPAIRING EXCHANGER UNIT OR PUMP.

GENERAL SAFETY

IT IS THE OPERATOR'S RESPONSIBILITY TO ACQUIRE AND READ MSDS SHEETS BEFORE HANDLING ANY SPECIFIED HEAT MEDIUM ANTIFREEZE FLUIDS USED IN SYSTEM.

· Ensure catalytic heater is installed to manufacturer's specification and codes.

· Ensure pump is installed to manufacturer's specifications and codes

· This equipment is designed to operate at atmospheric pressure. Exerting more than atmospheric pressure (14.69 PSI) may damage exchanger system, pump, or cause bodily harm.

- Always wear protective clothing (rubber gloves, safety goggles, etc.) when repairing exchanger system, pump, or adding fluid to surge tank. (Read MSDS Sheet before handling specified antifreeze fluids).
- Always shut down catalytic heater and allow adequate time for heater, exchanger system, and pump to cool down before performing any maintenance.
- Shut circulating pump off, before maintenance on exchanger system or pump.
- Bleed all pressure from inlet and outlet of exchanger system before disconnecting exchanger, pump, surge tank or other components.
- Do not operate system if exchanger or pump is leaking, damaged, corroded or is otherwise unable to contain the internal fluids.
- Ensure catalytic heater's thermostat temperature controller's sensing bulb is inserted into surge tank thermowell. (See Fig. 2).
- Ensure catalytic heater's thermostat temperature controller is rated to manufacturer's proper BTU rating for model size and fuel supply used. (Read Catalytic Heater's Manufacturer's Instruction Manual for proper installation requirements).
- Ensure high temperature shut down controller is installed upstream of catalytic heater's thermostat temperature controller and sensing bulb is properly inserted and fastened to the bottom of exchangers supply header tank. (See Fig. 2 and Read "Radiant Tracer" Installation Instructions).
- Do not adjust high temperature shut down controller higher than 176°F/80°C. Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
- Do not operate system without catalytic heater's thermostat temperature controller, high temperature shut down controller, and sensing bulbs installed to manufacturer specifications and recommendations. Failure to do so will result in damage to exchanger, associated components and may cause bodily harm.
- Use *only specified antifreeze fluids* in exchanger.
- Always operate surge tank level at 50% of sight glass.
- Do not attempt repairs on exchanger system or pump while unit is in operation.

CAUTION HOT: DO NOT leave combustible materials near or by the radiant tracer system while it is in operation. This will a create fire hazard and may damage equipment or cause bodily harm.

EQUIPMENT MISUSE HAZARDS

GENERAL SAFETY

- Any misuse of this equipment such as over pressuring, modifying components/parts, use of non-recommended fluid, or using damaged parts, is not recommended. Any of these circumstances could result in splashing or spraying into eyes, on skin, or possible serious bodily injury.

OVER PRESSURIZATION

- This unit is designed to operate at atmospheric pressure. Exerting any pressure over atmospheric (14.69 PSI), may damage exchanger system, pump, or cause bodily injury.
- Read Pump Operation Manual to ensure pump is not operated out of manufacturer's specifications.

VENTILATION

- Always vent surge tank vapors outside of the building. Ensure vent line is 1.5' (ft) above surge tank or higher than highest point on the heat tracing line to prevent any spilling of fluids. (Read MSDS sheet on specified antifreeze fluids).

OVER HEATING SYSTEM

- Always ensure catalytic heater thermostat temperature controller sensing bulb is inserted into the surge tank thermowell. (See Fig. 2). This component controls and regulates process temperature.
- Ensure high temperature shut down controller is set at 176°F/80°C maximum. Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
- **DO NOT light catalytic heater before system is filled with specified fluid and circulation is established. Failure to do so will damage the exchanger.**
- The systems fluid temperature operates at approximately 10-40°C (50–104°F). If system operates hotter than 176°F/80°C there may be a problem with catalytic heater's installation, temperature controller, or regulators. Faulty regulators, temperature controllers, and incorrect installation of catalytic heater will damage exchanger.

INSTALLATION HAZARDS

GENERAL SAFETY

- Always mount Exchanger systems to the top mounting bolt holes on catalytic heater. Also, ensure catalytic heater's wall/floor mount brackets are strong enough to handle the weight of exchanger system before installation.
- **NEVER** mount exchanger system in vertical position.
- **Always shut off catalytic heater and allow adequate time to cool down before attempting to install exchanger system.**
- Ensure exchanger system is resting on foot-peg and not exerting all its weight on catalytic heater's wall/floor mount brackets.
- Ensure catalytic heater's thermostat temperature controller's sensing bulb is inserted into surge tank thermowell. (See Fig. 2).
- Ensure catalytic heater's thermostat temperature controller is rated to manufacturer's proper BTU rating for model size and fuel supply used. (Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements).
- Ensure high temperature shut down controller is installed upstream of catalytic heater's thermostat temperature controller and sensing bulb is properly inserted and fastened to the bottom of exchangers supply header tank. (See Fig. 2 and Read "Radiant Tracer" Installation Instructions).
- Do not operate system without catalytic heater's thermostat temperature controller, high temperature shut down controller, and sensing bulbs installed to manufacturer specifications and recommendations. Failure to do so will result in damage to exchanger, associated components and may cause bodily harm.
- Do not adjust high temperature shut down controller higher than 176°F/80°C. Setting controller higher than recommended will result in damage to exchanger, associated components, or may cause bodily harm.
- Ensure catalytic heater is installed to manufacturer's specifications and codes. (Damage to exchanger may occur). Read Catalytic Heater's Manufacturer Instruction Manual for proper installation requirements.
- Install pump to manufacturer's specifications and codes. DO NOT mount pump near Catalytic heater's heating surface. (Pump damage may occur). (Read pump operating instructions before installing).
- ALWAYS **establish fluid circulation through the entire system before lighting Catalytic Heater.**